

THE
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No. 2

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The Reviewing Officer inspecting the Graduation Parade of No 96 Entry

THE GRADUATION OF No 96 ENTRY

The Graduation Parade of No 96 Entry took place on the morning of 1st August, 1969. The Reviewing Officer was Generale Duilio S. Fanali, Chief of the Air Staff, Italian Air Force. The parade was commanded by Senior Under Officer A. P. Matthews and the Parade Adjutant was Under Officer C. J. Morris. The Sovereign's Squadron was commanded by Senior Under Officer E. J. Waterfall and 'A', 'B' and 'C' Squadrons were commanded respectively by Under Officer P. N. Derbyshire and Senior Under Officers S. G. Appleton and S. W. Hunt.

After the Advance in Review Order, the Reviewing Officer presented the Sword of Honour to Senior Under Officer A. P. Matthews, the Queen's Medal to Under Officer C. J. Morris and the Groves Memorial Prize and Kinkead Trophy to Senior Flight Cadet C. C. Baldwin. He then gave the following address :

Cadets of the 96th Senior Entry, Ladies and Gentlemen : The Italian Air Force and I, personally, are deeply honoured to have received this invitation to officiate this important ceremony, so much more considering the long list of illustrious figures that have preceded me, above all your gracious Sovereign, Her Majesty Queen Elizabeth.

However, I like to feel that I am not a complete stranger amongst you. As a young officer in the early thirties, while I was training for the Schneider Trophy, I first experienced a competitive and friendly feeling towards the Royal Air Force pilots whom I was going to race against.

World events unhappily put a stop to all this and during World War Two, I had first-hand proof of the gallantry and skill of the Royal Air Force in the skies of Malta, of North Africa, of the Mediterranean and, later, almost at the conclusion of the war in Europe, with the Italian Fighter Units, as part of the Balkan Air Force.

I served as Air Attache to the Italian Embassy in London immediately after the war. I have now the great privilege of counting in the Royal Air Force many friends, most of whom graduated from this famous College.

The links between this College, so full of tradition, and the Italian Air Academy are, today, very close ; they reflect, as well as a similarity of institutions and customs the bonds which have existed for many years between the Royal Air Force, the first in the world to be born as an independent Service, and the Italian Air Force, who very closely followed.

Bonds of friendship and reciprocal esteem started years ago during peaceful competitions and developed in wartime with episodes of great chivalry, generosity and respect on both sides.

The Atlantic Alliance has decisively sealed an old and historic bond.

Aviators are bound by firm links and perhaps more especially the military ; this gathers them into a unique family whose ties are sometimes even stronger than brotherhood.

I am sincerely happy to be among you today and to be present at this ceremony. That it holds a deep meaning for you and most certainly for me is confirmed by the solemnity of the occasion and the roll of important figures who presided over it in the past.

It would seem a superfluous platitude to say that the parade was carried out to perfection, given the tradition for perfection which your College has.

Perfection is not just a habit, however. The shining glory of the past creates and demands a greater zeal for the future and increases the burden of responsibility which has to be shouldered.

Being convinced of this, I wish to offer my most sincere congratulations first to the prize winners ; for the ceremony and the parade, to all those who were concerned in it — the Commandant, the Officers and you all, the Cadets, who are the real hope of the future.

I would like to address you (guardandoli a ventaglio) in particular and from my previous statements it will no longer seem strange that an officer who is a foreigner, and fervid friend, belonging to an Allied Country, should speak to the Cadets of this College as though they were his own.

We, Airmen, recognize each other and understand each other, beyond all language barriers. In fact some amongst you may even understand what I am saying. You all have anyhow already experienced this feeling as some of you come from different countries.

This kinship is the natural outcome of three fundamental causes :

The aim of our profession ;
The sphere in which we work ;
And the training which we have received.

The aim of our profession undoubtedly demonstrates a noble and courageous reason for its existence.

The Armed Forces throughout the ages have always been inspired by a noble ideal.

They have always been the most genuine expression of a people, leading them through

the most significant and important moments through better and worse, ready to bring glory and success to the entire nation and withstand hardship and sacrifice in times of distress.

The position of the Armed Forces today is even nobler than in the past, since in the civilised and peaceloving nations of the world their role is solely defensive.

Defence is a sacred right of all the peoples in the world. It is born from the right to survive within the bounds of liberty, from tradition and from the outlook on life.

The Armed Forces are an assurance to civilisation and are only called upon when a threat darkens the skies ; whilst they are a means of training, of friendship and of education when peace and security reign.

The cells of these vital organisations can be compared to white corpuscles in the blood ; ready to fight against illness and to sacrifice themselves in order to restrain, destroy and ward off evil.

Here lies the true merit of the man who dedicates himself to military life, who is still



The Reviewing Officer with Under Officer C. J. Morris, Senior Under Officer A. P. Matthews and Senior Flight Cadet C. C. Baldwin



The Reviewing Officer presenting the Sword of Honour to Senior Under Officer A. P. Matthews

more worthy because of his unselfishness and spirit of abnegation, when one takes into consideration the large scale competition at all levels of civilian life, especially regarding personal gain.

The sphere in which we work : if we ponder on the Airman's environment we have to admit that it places him in a position not fully natural to man. He finds that he is in continual conflict with himself.

By dominating an ever more powerful and complex machine, breaking the natural barrier and living the loneliness found in continually comparing himself with the universe, the Aviator modifies and exalts his state of mind. He creates a certain psychological wall, and thus Airmen are a race apart, ready to consider themselves as the sole citizens of a world real but fantastic, unusual and expensive and above all materially and spiritually distant from the many sorrows of life.

And finally there is the training.

Youth is moulded both physically and spiritually and welded into an exact model of perfection by the moral preparation given in Military Colleges. This is due to the conscientious education, the exaltation of spiritual and inner values, such as loyalty, generosity, spirit of sacrifice and submissiveness of the individual to Society.

What I have already said should be sufficient to explain fully the spiritual affinity, the unity of purpose and dedication in work among the Airmen of many different countries.

However, I would like to refer to another question which, I think, is very pertinent and to the point ; I am referring to the sentiment and realisation which drives all Europeans, whether they are continentals or islanders, and more especially the younger generation, to feel themselves citizens of a greater, nobler Motherland, without loss of love or loyalty to their individual Countries. This nation that provided our origins and traditions ; this Motherland in whose bosom every patriotic ambition and dissention will be understood and quelled, linked by a common brotherhood and unity : this Europe !

You who are listening to me today, the young Cadets of this College, may perhaps be bored and impatient with this long speech given by an old Aviator, but listen to me just another moment and think upon the message that I want to bring to you.

One of man's greatest conquests is Aviation ; it has laid open the way to the exploration of the Cosmos.

You, the youth, are fortunate in the life that awaits you. I do not imply that it will be paved with flowers and roses, but I think that you are fortunate because what counts now and will count in the future will be overall the inspiration of your choice.

A whole universe of discoveries, sensations and success lies before you : so wonderful that it is able to feed the spirit of man with a perpetual flame of enthusiasm, and compels an old man, as represented by the person who is addressing you today to say : " I wish I could start all over again."

Besides, being made officers today, a degree of Authority will be conferred upon you. You are destined to lead other men and not just means of war that are developed by the high technical ability, ingenuity and diligence, to be found in the British people.

Added to this Authority imparted to you there will always be a corresponding responsibility, for even if man is an integrating part of this huge mechanism called progress, he is also the only true protagonist in the grandiose happenings of this century, particularly in these days when we have been spectators of the realization of a world-old dream : man's conquest of the moon, due above all to his intelligence, to his will, to his perseverance and to his courage.

I am sure that you fully understand the real meaning of the life that awaits you and that you will always be worthy of the glorious tradition of your College, your Air Force and your Country.

Speaking to you with the heart of an old and knowing Airman, I extend to you my warmest wishes for your future career and life. Very good luck. Buona fortuna.

THE WINGS AND PRIZES CEREMONY

Presentation of Wings and Prizes to No 96 Entry were made by the Commandant, Air Vice-Marshal T. N. Stack, CB, CVO, CBE, AFC, in the Whittle Hall on 31st July, 1969.

After making the presentations Air Vice-Marshal Stack addressed his audience :

Ladies and Gentlemen : It is always a great pleasure to welcome so many parents, relations and friends of the Senior Entry to this ceremony which precedes the parade tomorrow.

I realise that some of you have come long distances and are put to considerable inconvenience to be here for these two days of celebrations but your presence adds considerably to the occasion and I am sure anyway that you wouldn't wish to miss it, for it marks the end of all the basic training which we can give here to the members of 96 Entry. Tomorrow we see them march off the parade ground as commissioned officers in the Royal Air Force.

Having just given out the bulk of the prizes I remind you that the three major ones have yet to be presented : and they will be given tomorrow during the parade by our visiting Reviewing Officer, Generale Fanali, the Chief of the Italian Air Staff.

The General is an extremely experienced pilot - with 8,000 hours - and is a graduate of the Italian Air Force Academy - our opposite number in Italy. Among his many appointments he has served as air attaché in London and has been Commandant of the NATO Defence College in Rome. He visited Cranwell last year and we're delighted that he has been able to come back.

And now I am sure you would like to join with me in congratulating the winners of the three main awards :

Senior Under Officer A. P. Matthews, who has won The Sword of Honour ;

Under Officer C. J. Morris who has won The Queen's Medal ; and

Senior Flight Cadet C. C. Baldwin who has won the R. M. Groves Memorial Prize and Kinkead Trophy for Flying.

Well done you three - and indeed well done all the winners - but don't forget that there is often only a very fine dividing line between the first who gets the prizes and the others who don't. So there's no need to be despondent just because you haven't won anything. There will be other opportunities in life and your turn will come.

While on the subject of prizewinners I must make mention of 'A' Squadron's achievements - they have (as you will have noted), pretty well swept the board of cups and trophies and I commend them on becoming Sovereign's Squadron as a result of their efforts. However, I don't doubt that the other Squadrons will make up their minds to do something about this next term !

Now before I regale you with the success (or otherwise) of No 96 Entry I would like to comment on one or two matters of concern to us here.

We have seen at the College, particularly during the period that the Entry has been under training, a number of plans for changes in the College training pattern. And as the outcome, which we all know of, we are now working towards the Graduate Entry Scheme : and this means that very shortly the only entrance qualification acceptable for coming to Cranwell will be a degree. This is perhaps the most important change in recruitment policy in the 49 years history of the College and while I have heard much discussion on the rights and wrongs of this step, I firmly believe it to be right.

The Royal Air Force must continue to demand the highest qualities of leadership and ability from its young men but — as the world advances so quickly in the sociological as well as in the technological field, we must ensure that our officers have the trained minds to cope with the complexities which have yet to come.

This doesn't mean that those of you on 96 who won't get diplomas or degrees are therefore "thickheads" - as was suggested in your Review ! (although I'm willing to bow to your well-informed opinion on the matter!) - but it does mean that we've got to look ahead to the next decade and beyond and plan our training accordingly, and not just assume that what has suited the last fifty years will do for the next fifty.

To take an example, a week ago we all watched enthralled while the most adventurous event ever known to man unfolded. The three astronauts, Armstrong, Aldrin and Collins embarked on a mission to the moon of immense complexity and they, the top of the pyramid of 400,000 people of all disciplines engaged on the project, brought it to a successful conclusion.

Some say it was the biggest event in human history since the Wright Brothers ; others say since Columbus. Yet others liken it to that moment in our human evolution when the first fish moved on to dry land. That last is perhaps too fanciful ; but it is certainly true that the moon landing is the first time we humans have moved into a completely alien environment by setting foot as we did on another celestial body.

By any standard it was a stupendous step forward and one for which we in the Air Force naturally feel a greater affinity and a greater understanding than do the other two Services. As "Flight" commented the other day : " We mustn't forget that this greatest achievement of the human species is an aviation achievement. And when we talk about Man's awesome technological progress, we are nearly always talking about aviation progress."

I'm not saying that any of you here are necessarily destined for the moon just yet, but I'm sure that we in the Air Force must in due course be concerned in space, either in a European space venture or more probably in a joint US - Europe programme. And when the time comes our young men must have had the necessary mind training to cope ; and here we see one of the reasons for moving to the graduate scheme.

For the moment of course lack of money

keeps us out of space, but the time will come. Until it does, however, you must keep aware of the military implications of events such as this and not feel that space is something for others but never for us.

But as well as keeping an eye on space matters you must keep abreast of successful advances in techniques for current operations and you should be ever seeking better and more efficient methods of doing your job - which is - I must remind you - to wage war, so that you are at the peak of your efficiency should this country ever again need defending.

Of course the problem in all the studies which lie ahead of you is that events and achievements never stand still. One so often wishes that they did for a few years at least ! But the rate of scientific discoveries and their exploitation will continue to increase ever faster. An example will show you what I mean.

After many thousands of years of the world's history, the first humans ever to experience powered flight, the Wright Brothers, left the ground for 150 yards in the early 1900s, flying at about 30 to 40 mph. Some 40 years later 400 mph was reached and for some time after, this was considered near the upper limit because of the sound barrier. Today jets fly at 1,500 mph and we have spacecraft doing no less than 25,000 mph.

Admittedly to get comfortably about our solar system and certainly to leave it and to reach the nearest star we have to think in terms of speeds approaching a respectable fraction of the speed of light, which is of the order of 200,000 miles per second. This appears to be quite unattainable now - after all a round trip from here to the moon and back in $2\frac{1}{2}$ seconds is moving some - but I suggest to you that just as we went through the sound barrier so we will eventually deal with what we might call the light barrier.

Similar examples of the fantastic rate of advance in science and of the forecasts that follow from them could be drawn from the fields of weapons, communications, methods of computation and indeed from a host of areas vital both to the civilian and the military man.

One could develop the theme but since this occasion is yours I will round off the matter by emphasising to you the importance of appreciating this rate of change and gearing your studies and your attitudes to it - and having said this I will now return to the present and to 96 Entry.

No 96 started at the College two and a half years ago, sixty-four strong - and although they have lost quite a few of their number there has been a large inflow from 95 entry, and thus with luck 62 members should march up the College steps tomorrow to the strains of Auld Lang Syne.

The 15 engineers who, incidentally, are the last entry following their particular course of studies - still have some considerable time to go before they will be fully qualified. They have just sat their Stage II examinations and the results appear accept-

able, although the general standard of studies has been lower than we have seen in the past. Compensatory features for the course however include a marked ability in practical engineering.

The eleven Equipment and Secretarial graduates also stay on at Cranwell, but only for six months. They have proved to be above average and are to be congratulated on their achievements in their specialist training.

The five Regiment Flight Cadets have completed all their training when they leave here and will be the first graduates of No 96 to be productive. This incidentally is the largest number of the Regiment Branch ever to pass out in an entry. The former Commandant-General is sitting in the hall here tonight and it is a nice compliment to the Regiment Flight Cadets that both he and the current



General Duilio S. Fanali, Chief of Staff of the Italian Air Force, presenting the Commandant with a memento of his visit.

Commandant-General are going to watch you all and them on parade tomorrow.

The biggest loss rate of the Entry (50%) has been sustained by the Navigators, and only four remain. They have put up an above average performance however, and indeed one of this small band has won the second highest prize here.

The pilot contingent is 27 strong - much smaller than normal. They have kept their failure rate down to a commendable 12% and pass out at a good average standard. They have also bettered the Command Ground School exam. average.

And how has the Entry performed academically? Overall they are assessed as average. In common with previous entries the written work has not matched oral ability but the Director of Studies Essay Prize competition entries were of a high standard and Senior Under Officer Appleton is to be congratulated on his submission.

Senior Flight Cadet Page did very well to gain his Civil Service Linguist examination in French and Senior Under Officer Waterfall and Senior Flight Cadet Deacon-Elliott are also to be congratulated on qualifying for the award of £100 apiece for their proficiency in that language.

Finally, mention must be made of the Entry's sporting activities. They have gained no less than 39 sports colours, with 11 flight cadets winning double colours. This is a splendid record.

They have played for and represented the College in practically every sport we have to offer and have also represented in various sports the Command, the Royal Air Force and the local County. One flight cadet managed to be in the pair that won the Royal Air Force Inter-Station tennis doubles.

You have all set extremely high standards in your support of College and Service activities and I suspect it could be many years before we see such an excellent performance again. Well done! I would also like to say that by and large yours has been a happy course and a pleasure to have at the establishment.

Now before I finish I want to impress one point upon you all this afternoon concerning your results and your general standards - and this is that during your stay at Cranwell you have had the benefit of first class and dedicated instruction.

From what I know of the staff here and staffs elsewhere I consider that you have been privileged to have some of the best that the Royal Air Force can produce. This covers your officer training, your specialist training, and your academic training.

For example, you may not be aware but the ground training staff includes 114 graduates, of whom 38% hold post-graduate qualifications.

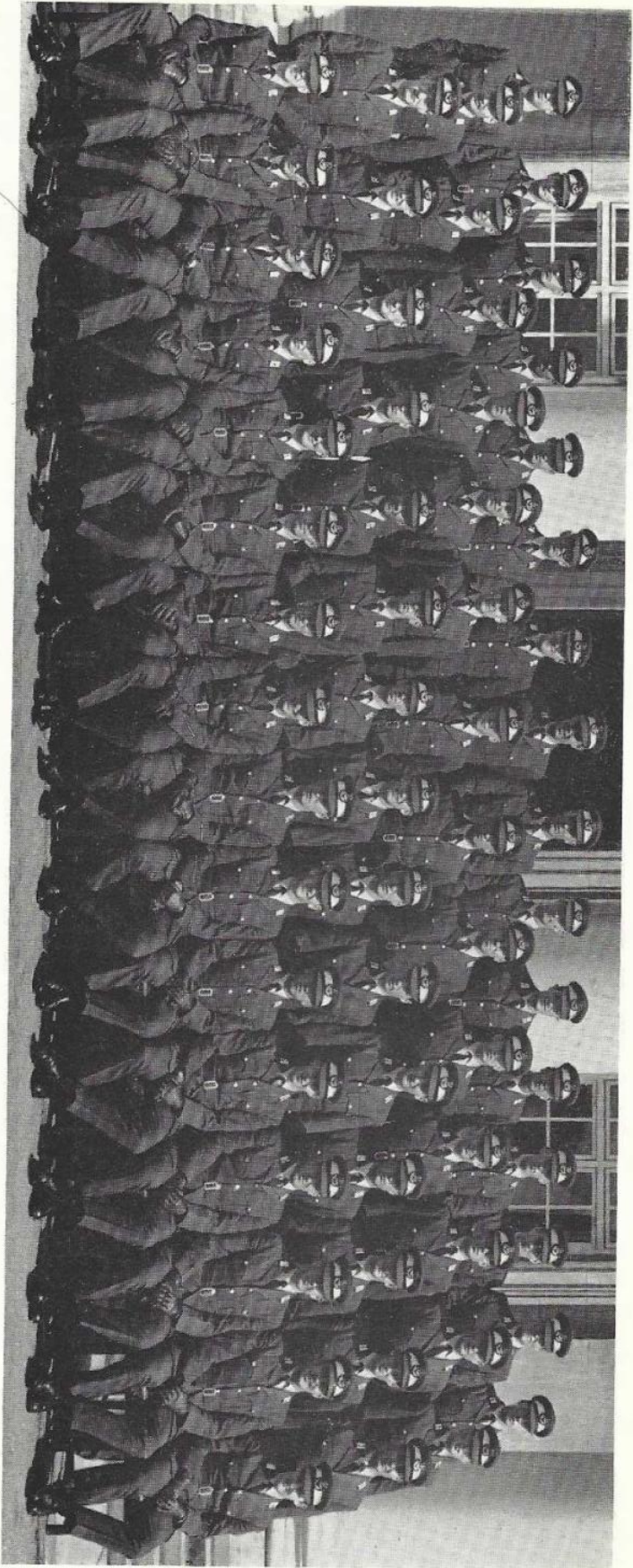
On the flying staff, of 64 pilot instructors, we boast three A1's and eighteen A2 category instructors. These are high standards indeed. Among our navigation instructors we have the only A1 navigation instructor in the whole of the Command.

And to add point to our quality, for the second year running a Cranwell flying instructor has won the coveted Training Command Wright Jubilee Trophy for aerobatics.

I sing the praises of the instructional staff to remind you and your parents that you have started your careers with the best possible grounding that the Royal Air Force can offer. I would like to record my thanks and appreciation to all the staffs - and in many cases, to their wives - for the devoted and loyal manner in which they go about their most demanding duties.

Don't forget the standards that you have seen during your stay at the College. If you profit from this start I am sure every one of you should have a full and worthwhile career ahead of you.

Well, there you are - I've given you a little advice and I've done a little crystal-gazing. I've run through your achievements and given you a pat on the back; and I've given the establishment a pat on the back! And I'll finish by wishing you all good luck in your very exciting future.



No 96 ENTRY

- Back Row :* Senior Flight Cadets R. N. Lawrence, R. J. N. Warren, J. K. Cartledge, Z. A. Saffurrahman, N. B. Hunter, A. F. Cant, J. M. Womphrey, A. W. Chacksfeld, P. J. Harding, A. G. Proctor, D. G. Sefton, J. C. Bradshaw, J. B. Clark, R. C. Deacon-Elliott, R. A. Cole, K. L. Anderson.
- Third Row :* Senior Flight Cadets R. H. Hunter, J. V. Rainondo, J. Sargent, J. D. V. Hardie, C. C. Baldwin, C. E. Wade, B. S. Page, C. D. P. Thorpe, R. P. Radley, T. J. Summers, G. Bairstow, P. C. Minter, P. J. Scott, F. W. Foster.
- Second Row :* Under Officers W. Metcalf, R. M. Collier, Senior Flight Cadets W. A. Houseman, B. G. Handyside, Bandar bin Sultan bin Abdul Aziz, I. R. McN. Spalding, J. McCartney, J. W. Pearson, H. M. C. Bates, P. M. Akelurst, C. D. Joyner, A. Dunmore, J. L. Hanner, M. Shewry, Under Officer D. T. Bills.
- Front Row :* Under Officers W. G. Simpson, P. A. Bottery, A. J. Park, B. N. B. Leigh, C. J. Morris, C. J. Everitt, Senior Under Officers E. J. Waterfall, S. G. Appleton, A. P. Mathews, S. W. Hunt, Under Officers C. K. Neo, P. N. Derbyshire, R. J. G. Calder, G. F. Hodgson, M. Davies, C. D. Evans.

COMMISSIONING LIST

No 96 ENTRY

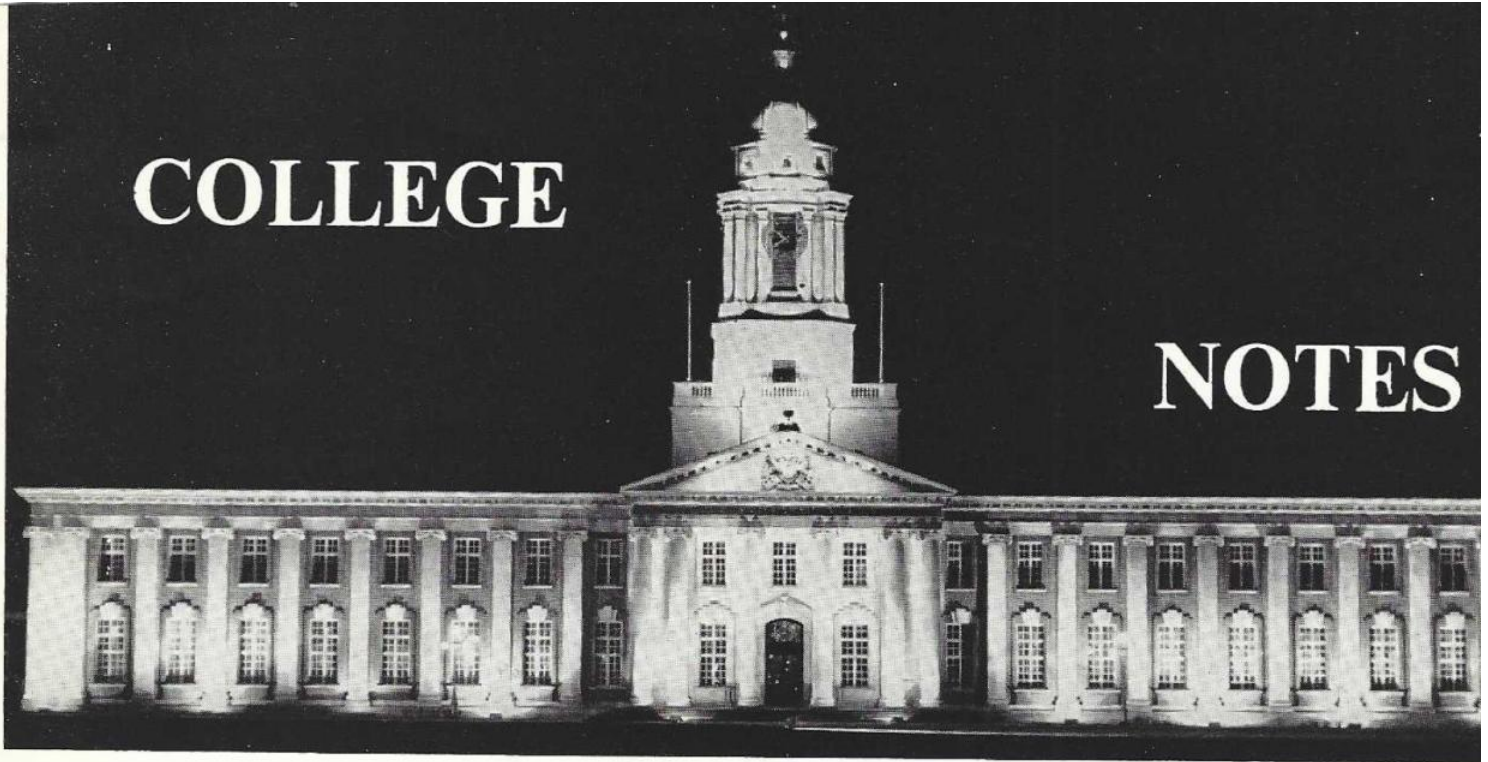
- S. G. APPLETON, *Senior Under Officer (Secretarial)*: Director of Studies Essay Prize 1968; Cross-country (Vice-Captain, Colours), Royal Air Force Athletics (Vice-Captain, Colours).
- S. W. HUNT, *Senior Under Officer (Pilot)*: The Philip Sassoon Memorial Prize; Squash (Colours, Captain); Golf (Colours); Rugby; Cricket.
- A. P. MATTHEWS, *Senior Under Officer (Equipment)*: The Sword of Honour and the R. S. May Memorial Prize; The Ministry of Defence Prize for Equipment Flight Cadets; The Alastair Black Memorial Trophy for General Service Training; Football; Cricket; Debating; Cadet Editor of College Journal, 1968.
- E. J. WATERFALL, *Senior Under Officer (Pilot)*: Cricket (Colours); Rugby; Hockey; Athletics; Paragliding; Aeronautical Society.
- D. T. BILLS, *Under Officer (Regiment)*: Judo; Rugby; Go-Karting.
- P. A. BOTTERY, *Under Officer (Engineering)*: Judo (Royal Air Force); Soccer; Walking; Radio Society.
- R. J. G. CALDER, *Under Officer (Pilot)*: Rugby; Judo; Squash; Parasailing; Skiing.
- R. M. COLLIER, *Under Officer (Secretarial)*: Basketball; Cricket; Music Society.
- M. DAVIES, *Under Officer (Engineering)*: Canoeing (Command Colours); Sailing.
- P. N. DERBYSHIRE, *Under Officer (Pilot)*: Football; Cricket.
- C. D. EVANS, *Under Officer (Secretarial)*: Rugby (Colours); Athletics (Colours); Mountaineering; Dramatic Society; Walking.
- C. J. EVERITT, *Under Officer (Pilot)*: Hockey (Colours); Golf (Colours); Sailing; Motoring Society.
- G. F. HODGSON, *Under Officer (Navigator)*.
- B. N. B. LEIGH, *Under Officer (Secretarial)*: Athletics (Colours); Cross-country (Colours)

- W. METCALF, *Under Officer (Pilot)*: Rugby; Sailing; Gliding; Aeronautical Society.
- C. J. MORRIS, *Under Officer (Navigator)*: The Queen's Medal; The Ministry of Defence (Royal Air Force) Prize for War Studies and Humanities and the Royal New Zealand Air Force Trophy; Basketball.
- C. K. NEO, *Under Officer (Engineering)*: Badminton (Colours); Tennis (Colours).
- A. J. PARK, *Under Officer (Pilot)*: Rugby (Colours); Athletics; Badminton; Tennis; Hillwalking.
- W. G. SIMPSON, *Under Officer (Equipment)*: Fencing (Colours); Motoring; Walking; Aeronautical Society.
- P. M. AKEHURST, *Senior Flight Cadet (Pilot)*: Basketball (Colours).
- K. L. ANDERSON, *Senior Flight Cadet (Secretarial)*: Football; Athletics.
- G. BAIRSTOW, *Senior Flight Cadet (Pilot)*: Football.
- C. C. BALDWIN, *Senior Flight Cadet (Pilot)*: The R. M. Groves Memorial Prize and Kinkhead Trophy for Flying; The Dickson Trophy and Michael Hill Memorial Prize for Applied Flying; Badminton; Flying Club.
- BANDAR SULTAN, *Senior Flight Cadet (Pilot)*: Fencing; Squash; Soccer; Flying Club.
- H. M. C. BATES, *Senior Flight Cadet (Pilot)*: Cricket (Colours); Soccer (Colours).
- J. C. BRADSHAW, *Senior Flight Cadet (Engineering)*: Aircraft
- A. F. CANT, *Senior Flight Cadet (Equipment)*: Walking.
- J. K. CARTLIDGE, *Senior Flight Cadet (Engineering)*: Skiing (Colours).
- A. W. CHACKSFIELD, *Senior Flight Cadet (Regiment)*: Sailing; Rugby.
- J. B. CLARK, *Senior Flight Cadet (Pilot)*: Athletics (Colours); Cross-country (Colours); Walking.
- R. A. COLE, *Senior Flight Cadet (Pilot)*: Gliding; Shooting; Rowing; Canoeing.
- R. C. DEACON-ELLIOT, *Senior Flight Cadet (Pilot)*: Squash (Colours); Cricket; Hockey; Rowing; Paragliding; Gliding; Dramatical Society Aeronautical Society.
- A. DUNMORE, *Senior Flight Cadet (Engineering)*: The Chicksands Cup for B.Sc. (Hons) Sandwich Course in Electrical/Mechanical Engineering; Riding; Radio Society.
- F. W. FOSTER, *Senior Flight Cadet (Pilot)*: Sailing (Colours); Ocean Sailing; Motoring; Gliding Instructor.
- J. L. HAMER, *Senior Flight Cadet (Engineering)*: Riding (Colours).
- B. G. HANDYSIDE, *Senior Flight Cadet (Pilot)*: Skiing; Cricket; Rugby; Editor of College Journal.
- D. J. V. HARDIE, *Senior Flight Cadet (Pilot)*: Shooting (Colours).
- P. J. HARDING, *Senior Flight Cadet (Engineering)*: Hockey (Colours); Tennis (Colours); Skiing.
- W. A. HOUSEMAN, *Senior Flight Cadet (Engineering)*.

- N. B. HUNTER, *Senior Flight Cadet (Pilot)* :
Swimming (Colours) ; *Water Polo* ; *Para-*
sailing ; *Debating*.
- R. H. HUNTER, *Senior Flight Cadet (Pilot)* :
Skiing (Colours) ; *Sailing* ; *Shooting* ; *Para-*
sailing ; *Ocean Sailing* ; *Gliding* ; *Photo-*
graphy.
- C. D. JOYNER, *Senior Flight Cadet (Pilot)* :
Basketball (Colours) ; *Tennis (Colours)* ;
Athletics.
- R. N. LAWRENCE, *Senior Flight Cadet* :
(Regiment) : *Motor-Cycling* ; *Parashuting* ;
Angling ; *Pop Group*.
- A. H. MANN, *Senior Flight Cadet (Regi-*
ment) : *Badminton (Colours)* ; *Modern*
Pentathlon (Colours) ; *Fencing*.
- J. McCARTNEY, *Senior Flight Cadet (Engi-*
neer) : *The Ministry of Defence (Royal*
Air Force) Prize for the Higher National
Diploma Course ; *Badminton* ; *Radio Soci-*
ety ; *Record Society*.
- P. C. MINTER, *Senior Flight Cadet (Engi-*
neering) : *Photography* ; *Radio Club* ;
Climbing ; *Walking*
- B. S. PAGE, *Senior Flight Cadet (Equip-*
ment) : *The Ecole de l'Air Trophy for*
French Studies ; *Cricket* ; *Rugby* ; *Ski-*
ing ; *Mountaineering*.
- J. W. PEARSON, *Senior Flight Cadet (Pilot)* :
Hockey ; *Motoring Society*.
- A. G. PROCTER, *Senior Flight Cadet*
(Pilot) : *The Hicks Memorial Trophy for*
Ground School Subjects ; *The Abdy Gerrard*
Fellows Memorial Prize for Maths and
Science ; *Hockey* ; *Canoeing* ; *Badmin-*
ton ; *Swimming* ; *Sub-Aqua* ; *Choir*.
- R. P. RADLEY, *Senior Flight Cadet (Pilot)* :
Water-Skiing ; *Music Society*.
- J. V. RAIMONDO, *Senior Flight Cadet*
(Engineering) : *Sailing* ; *Canoeing* ; *Photo-*
graphy ; *Skiing*.
- Z. A. SAIFURRAHAM, *Senior Flight Cadet*
(Engineering) : *Hockey (Colours)* ; *Radio*
Club.
- J. SARGENT, *Senior Flight Cadet (Pilot)* :
Badminton ; *Motoring Society* ; *Photo-*
graphy.
- P. J. SCOTT, *Senior Flight Cadet (Engi-*
neering) : *Golf (Colours)* ; *Cricket*.
- D. G. SEFTON, *Senior Flight Cadet (Equip-*
ment) : *Sailing (Colours)* ; *Ocean Sailing*.
- M. SHREWRY, *Senior Flight Cadet (Regi-*
ment) : *Swimming (Colours)* ; *Water-*
polo ; *Judo* ; *Skiing*.
- I. R. McN. SPALDING, *Senior Flight*
Cadet (Secretarial) : *The Ministry of*
Defence (Royal Air Force) Prize for Secre-
tarial Flight Cadets ; *Cricket* ; *Soccer* ;
Skiing ; *Canoeing*.
- T. J. SUMMERS, *Senior Flight Cadet*
(Pilot) : *The Battle of Britain Trophy for*
Aerobatics ; *Photography* ; *Gliding*.
- G. D. P. THORPE, *Senior Flight Cadet (Sec-*
retarial) : *Sailing (Colours)* ; *Go-Karting* ;
Skiing ; *Ocean Sailing*.
- C. E. WADE, *Senior Flight Cadet (Naviga-*
tor) : *The Institute of Navigation Trophy*
and the Ministry of Defence (Royal Air
Force) Prize for Navigators ; *Go-karting*.
- R. J. N. WARREN, *Senior Flight Cadet*
(Engineering) : *Squash* ; *Cricket*.
- J. H. WOMPHREY, *Senior Flight Cadet*
(Pilot) : *Basketball (Colours)* ; *Paragli-*
ding ; *Water-skiing* ; *Fine Arts*.

COLLEGE

NOTES



**GROUP CAPTAIN
G. R. D. CALDER, DCAe, C Eng,
AMI Mech E, AFRAeS**

After three years in the post of Chief Instructor Mechanical Engineering Wing, Group Captain Calder, who was promoted to his present rank in January 1969, left the Royal Air Force College in July 1969 to take up an appointment at the Ministry of Defence.

During his tour at the College he has done much to develop and improve engineering training and the Department of Engineering owes much to his energy, drive and ability. He made a significant contribution to the development of the new CNAA Degree Course and by his untiring efforts has done a great deal to improve the professional recognition of Royal Air Force Officers by the Institute of Mechanical Engineers.

He has always shown a great interest in the welfare and progress of the students under his control and was highly admired and respected by all ranks.

We extend our very best wishes to Group Captain and Mrs. Calder for their continuing happiness and success in the future.

**GROUP CAPTAIN
G. E. THIRLWALL, B Eng, DCAe,
C Eng, AFRAeS, MBIM**

Group Captain Thirlwall came to the College from CFS in April 1967 to fill the newly established post of Group Captain Training in the Department of Engineering. It was his second training appointment, having been a member of the staff of Systems Engineering Wing at the Royal Air Force Technical College from 1958-1960.

At the time of his arrival, the Department was still in the process of settling down after the merger with the Technical College Henlow and with his customary energy he was soon deeply involved in the many problems facing the Department. He played a major part in the restructuring of the new CNAA Degree Course and throughout his tour his logical approach and tremendous drive has been an inspiration to all those who have worked with him.

He left the College in April 1969 to become the Officer Commanding No 30 MU Royal Air Force Sealand. We extend our very best wishes to Group Captain Thirlwall and Mrs Thirlwall and wish them every happiness and success in the future.

GROUP CAPTAIN
A. W. CULMER, MBE, BSc (Eng),
DCAe, C Eng, MI Mech E, AFRAeS,
ACGI

Group Captain A. W. Culmer was appointed Group Captain Training in the Department of Engineering at the Royal Air Force College on 14th April 1969.

He first served in the Royal Air Force from 1942-1945 and during this period gained his pilot's wings. He left the Service in 1945, but re-joined in 1949 as an Education Officer. Shortly after, he completed a two year course at Cranfield, being awarded a Diploma with Distinction and the Governor's Prize. He subsequently served as an instructor at Henlow before transferring to the Engineer Branch in 1956. As an engineer officer he has served in a wide range of appointments at home and in the Middle East. More recently he has been with the Ministry of Defence in the Directorate of Mechanical Engineering, with special responsibility for the engineering aspects of the introduction into service of the Phantom.

We extend a very warm welcome to Group Captain Culmer, Mrs Culmer and their family.

HONOURS AND
COMMENDATIONS

The *Journal* offers its congratulations to the following College personnel, who have received honours, awards and commendations :

Group Captain D. B. Craig, OBE, MA, Officer Commanding College Unit, was appointed Aide-de-Camp to Her Majesty the Queen.

Flight Lieutenant D. G. Robinson, LRAM, ARCO(CHM), ARCM, was made a Member of the Order of the British Empire.

Flight Sergeant T. J. Palmer, Chief Technician J. E. G. Fallen and Sergeant M. Bethune were awarded the British Empire Medal.

Flight Lieutenant R. L. B. Bell was awarded the Queen's Commendation for Valuable Service in the Air.

The Air Officer Commanding-in-Chief has commended Flight Lieutenant K. Broughton, Warrant Officer J. S. Foot and Mrs I. E. Burrows for meritorious service.

The Air Officer Commanding has commended the following for meritorious service : Mr. R. C. Dickinson, Mr. J. Louth, Mr. T. B. Wheeler and Mr. G. M. Williams.

Mr. P. A. Pulford, who has completed 31 years' service with the Air Ministry Works Department and the Ministry of Public Buildings and Works was awarded the Imperial Service Medal.

PROMOTIONS - No 97 ENTRY

The following promotions were made in No 97 Entry in August 1969 :

'A' Squadron : Flight Cadet Senior Under Officer T. C. Hewlett ; Flight Cadet Under Officers A. R. Taylor, M. S. Rees, W. L. J. Coyle, A. J. W. Boyd.

'B' Squadron : Flight Cadet Senior Under Officer R. M. Thomas ; Flight Cadet Under Officers R. A. Forsythe, M. A. Micallef-Eynaud, J. J. E. Parr, K. J. Burgess.

'C' Squadron : Flight Cadet Senior Under Officer D. S. Pollard ; Flight Cadet Under Officers D. B. Bowden, G. Timms, P. D. Scoffham, R. C. Wardhaugh.

'D' Squadron : Flight Cadet Senior Under Officer R. J. North ; Flight Cadet Under Officers G. A. Paterson, C. Fitzpatrick K. A. Hartley.

INTER-SQUADRON
COMPETITIONS

The competition for the Prince of Wales Trophy and the title of Sovereign's Squadron was won in the Summer Term by 'A' Squadron who won the Knocker Cup, the Ferris Cup and the Chimay Trophy.

THE GRADUATE ENTRY SCHEME

THE INTER-WAR YEARS

Following the publication of the article 'Thirty Years On' in the July 1969 *Journal* we are very grateful for the following retrospective view of the life of a Graduate Entrant of the 'thirties' from Wing Commander E. A. Howell, OBE, DFC, RAF (Retd.):

Dear Sir,

As a University Entrant (BSc Hons) at Cranwell in the second of three courses held from 1934 to 1936, I read with interest Flight Cadet Hilton's article "Thirty Years On" in the July 1969 *Journal*.

Our Course (1935) was a very happy one and our experience at Cranwell was entirely rewarding. Friendships with the main group of cadets and with some of our instructors proved permanent, though many individuals did not survive the war. Of my course, the only other one alive today, is W. F. Beckwith.

We were all sorry that these courses were discontinued in 1936. My impression was that the mixture of University with other cadets was more an administrative headache than one of incompatibility as the article suggests.

For instance, I had already completed 400 hours as a Flying Officer in the Auxiliary Air Force (602 Squadron) before coming to Cranwell. Others had flown with the University Air Squadrons. So our instruction had to be tailored to suit and we could not be fitted into the general cadet courses.

Whatever the reasons, it was a pity that all regular officers could not enter the Service through Cranwell as we were fortunate enough to do. The new scheme now provides for this.

As a postscript may I add that I enjoyed my 14 years of Royal Air Force service more than somewhat! I was a Flight Commander (16 Squadron) by 1936 and a Squadron Leader by 1939. I commanded 33 Squadron (Hurricanes) in the Battle of Crete

in 1941, was wounded there and taken prisoner. After escaping in 1942 I served on the Air Staff as a Wing Commander at the Air Ministry and in the Pentagon. After Staff College in 1946, war wounds necessitated my retirement. Men like Brian Burnett, Bill Beckwith, Brian Roberts and others enjoyed long and distinguished careers in the Service and amply justified the *raison d'être* of the University Entrants at Cranwell of the Thirties.

Yours sincerely,

E. A. Howell.

No 99 ENTRY PRE-UNIVERSITY STREAM UNIVERSITY AND COLLEGE PLACING

Archer J., GD/P, Hull, BA Geography ; Attwood D. J., GD/P, Southampton, BSc Aeronautical Eng ; Bannister A. J., Equip, Cranwell, BSc, Engineering ; Chamberlain D. B., GD/P, Edinburgh, BSc (Ord) Geography ; Cheeseman S. B., GD/P, Manchester, BSc Aeronautical Eng ; Clifford G. F., GD/P, Southampton, BSc Eng Science ; Daffarn G. C., GD/N, City BSc Civil Eng ; Edenbrow R. A. O., GD/P, L Chelsea, BSc Geology & Biology ; Fry B. G. P., Sec, Portsmouth, BA English & History ; Garstin J. C., GD/P, Portsmouth, BSc Economics ; Gash C. A., Equip, Portsmouth, BSc (Ord) Elect Eng ; Graves D. G., GD/P, Manchester, BSc Aeronautical Eng (4-year) ; Greeves B. J., GD/P, Exeter, BSc Eng Science ; Griffiths R. O., GD/P, Belfast, BSc Aeronautical Eng (4-year) ; Grigor H. S., GD/N, Edinburgh, BSc (Ord) Civil Eng ; Hurrell A. J., GD/P, Strathclyde, BA Hotel & Catering Management ; Hutchinson R. D., GD/P, Portsmouth, BA Geography ; Jasinski N. Z. R., GD/P, Loughborough, BSc Modern Europe ; Johnston M. A. I. GD/P, Sheffield, BSc Electronic Eng ; Kenvyn I. P., GD/P, Manchester Inst of Sci/T, BSc Civil Eng ; Lannen C. A., Sec, Heriot-Watt, BSc Civil Eng (4-year) ; Mallaband P. D., GD/P, Manchester, BSc Metallurgy ; McCarthy K. R., GD/P, Leicester, BSc Eng ; McLean A. H., GD/P, City, BSc Chemistry ; Moules P. L., GD/P, Kent, BA Law ; Oakley D., GD/P, Bristol, BSc Geography ; Oliver J., GD/P, Manchester, BSc Mechanical Eng ;

Pedley J. F., GD/P, Reg St Poly, BSc Sociology ; Pritchard K. H., GD/P, Southampton, B.Soc. Sci. Economics and Politics ; Quick G. J., GD/P, L Chelsea, BSc Human Biology ; Rank M., GD/P, City, BSc Aeronautical Eng ; Rees G. D., GD/P, Manchester, BSc Aeronautical Eng ; Richey F. A., GD/N, Manchester, BSc Electrical Eng ; Robinson J. E., GD/P, Durham, BA General ; Slater, N. J, GD/P, Southampton, BSc Aeronautical Eng. ; Smith A. J., GD/P, NW Poly, BA General ; Sproates G. N., GD/P, NW Poly, BA English ; Stacey P. W., GD/P, Birmingham, BSc Physics ; Swann A. H., GD/P, Reading, BA Modern History and Politics ; Symes G. D., Sec, Birmingham, BA History ; Todd F. W., GD/P, Glasgow, BSc (Ord) Appl Science ; Togneri, R., GD/P, Edinburgh, BSc (Ord) Elect Eng ;

Walker P. B., GD/P, Durham, BA General ; Wells T. J. G., GD/P, East Anglia, BSc Maths & Physics ; West A. M., Equip, Leeds, BSc (Ord) Fuel Science ; Weston D. J., GD/P, Southampton, B.Soc. Sci. Economics ; Wilcock, N. J., GD/P, L QMC, BSc Aeronautical Eng ; Witts J. J., GD/P, Portsmouth, BA Geography ; Yarrow T. B., GD/P, Portsmouth, BSc General.

Mr FREDERICK BROWN

We have just learned, with deep regret of the death of Mr Frederick Brown, Head Steward in College Hall. Mr Brown served at Cranwell for over thirty years and we express our sincere condolences to his widow.

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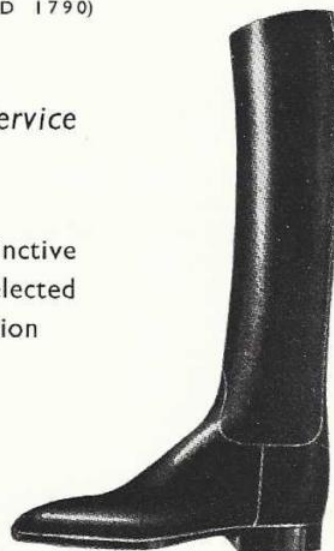
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COLLEGE UNIT SPORT

SUMMER 1969

The excellent weather of last summer was matched by some fine performances from Cranwell teams and individuals. Flight Lieutenant A. S. Painter won the Foil competition in the Inter Services Fencing Championships and represented both the Royal Air Force and the Combined Services.

The Swimming Team had a good season, finishing first in the Training Command Championships and the Water Polo side won the Royal Air Force Inter Station Competition. Cranwell marksmen were on target too, the Small Bore Rifle teams winning the Command Small Bore Rifle Championships and Small Arms Efficiency Cup for the third successive year. Corporal R. A. Jones won the Individual Small Bore Rifle Competition, Flight Lieutenant D. M. Dale won the Weston Trophy and the first stage medal on Target Rifle at Bisley. He also represented the Royal Air Force.

In the Royal Air Force Equitation Championships held in May, Cranwell came first, with Flight Lieutenant K. E. J. Rayner taking individual first place. The unit's athletes had a successful season and Flying Officer R. Clarke, Sergeant W. Cameron, Sergeant D. Hannah and Corporal M. Hurd all represented the Royal Air Force.

Flight Lieutenant P. Graves won the Training Command Singles Tennis Championships and he and Pilot Officer P. Harding carried off the Inter-Station pairs title. Flight Lieutenant Graves also represented the Royal Air Force on several occasions.

The two Cranwell teams competing in the East Midlands Golf League finished the season in first and second places.



Flight Lieutenant A. S. Painter

Four Cranwell oarsmen represented the Royal Air Force in the Inter Services Championships — Flight Lieutenant J. B. Hill, Flight Lieutenant M. B. Langham, Flying Officer J. M. Cross and Flying Officer P. J. J. Day. In the world of sailing, both Squadron Leader J. H. Copland and Flight Lieutenant M. P. Osborne gained places in the Royal Air Force team.

Last but not least, all sections took part in the Mounsey Trophy Competition and this year's total of 2,687 points exceeded the 1968 total by some 45 points, thus making Cranwell firm favourites to win the competition for the fourth consecutive year.

VISITS - SUMMER TERM 1969

Visitors to Cranwell during the Summer Term included :

MARCH

On 10th. Wing Commander H. O. Howard, Royal Australian Air Force.

On 19th. Air Vice-Marshal M. D. Lyne, Senior Directing Staff (RAF), Imperial Defence College, and Air Vice-Marshal J. S. Rowlands, Director General, Training, Ministry of Defence.

On 27th. Air Vice-Marshal M. M. Gardham, Air Officer Administration (Designate), Headquarters Training Command.

APRIL

On 3rd. Lieutenant General Sir Walter Walker, General Officer Commanding, Northern Command.

On 14th. Air Marshal L. D. Mavor, Air Officer Commanding - in - Chief, Training Command.

MAY

On 13th. Dr F. S. Dainton, Vice Chancellor of the University of Nottingham.

On 14th. Colonel J. B. MacWherter, Chief Scientist, United States Air Force European Office of Aerospace Research, Brussels.

On 15th. Wing Commander G. S. Zantuck, Royal Australian Air Force.

On 18th. The Right Reverend R. S. Hook, Bishop of Grantham.

On 20th. General di S. A. Roberto Fassi, Commander-in-Chief Training Command, Italian Air Force.

On 22nd. Colonel F. Fahringer, Chief of the United States Air Force / Royal Air Force Exchange Programme and Colonel R. Gill, Commandant, Air Force Institution for Professional Development.



The Commandant and Capitaine G. Cowen with the Members of 'La Patrouille de France'



Major General P. T. Tower (fourth from left) with the Assistant Commandant (Engineering), the Station Commander, the Commandant, Wing Commander (Cadets) and the Director of Studies

JUNE

On 10th. Captain G. Cooper, Canadian Defence Force (Air Force).

On 19th. Professor R. T. A. Howell, Brunel University.

On 29th. Commandant Barcaroli and 10 members of the Patrouille de France.

JULY

On 3rd. Lieutenant Colonel and Madame Gimbert, French Air Force Academy.

On 7th. Major General P. T. Tower, Commandant, Royal Military Academy, Sandhurst.

On 8th. Air Vice-Marshal B. P. Young, Commandant General, Royal Air Force Regiment.

On 13th. Air Commodore P. M. Brothers, Director of Public Relations (RAF) and Mrs. Brothers.

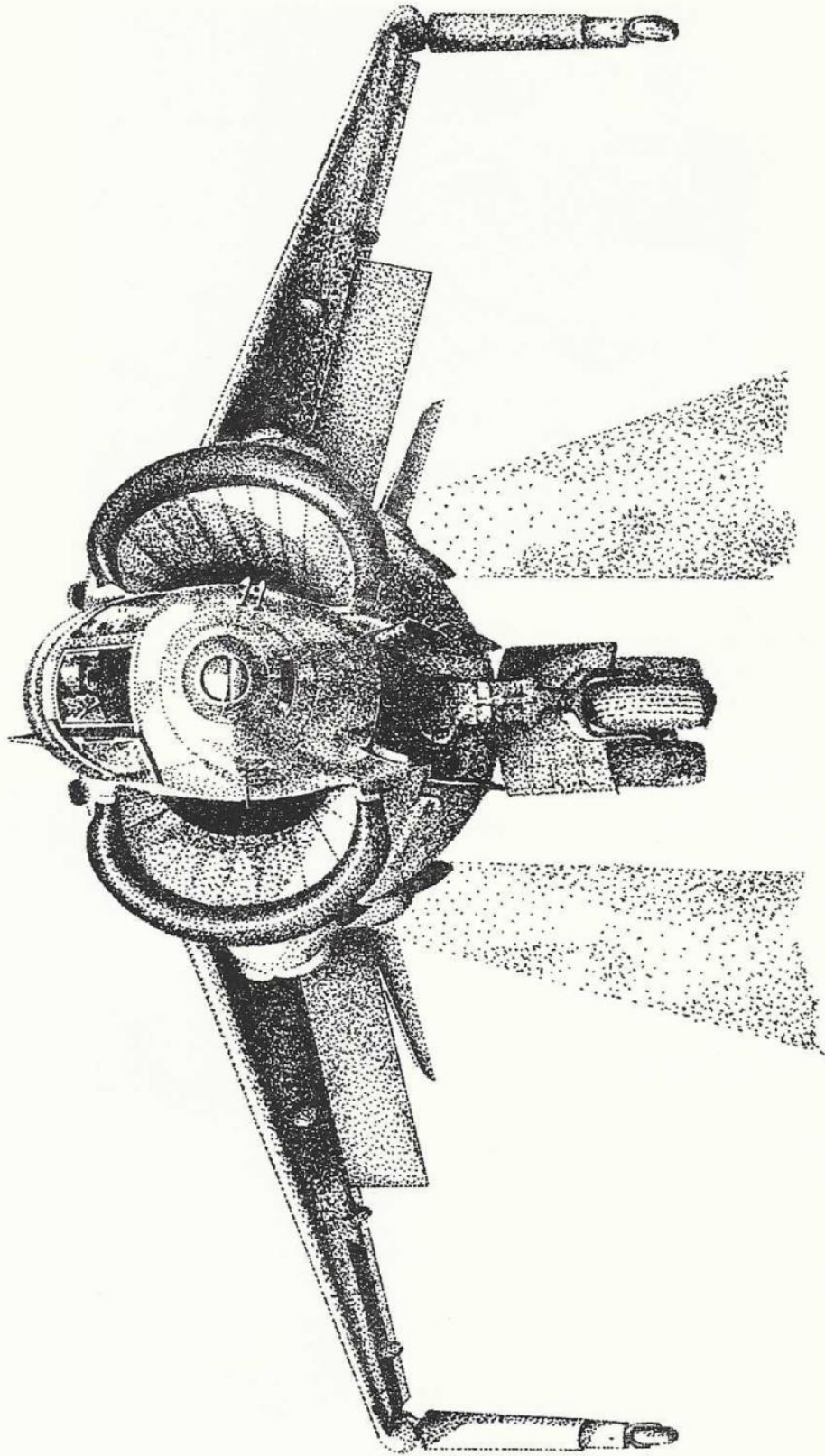
On 14th. Air Vice-Marshal K. H. Gooding, Director General of Equipment (RAF).

AUGUST

On 1st. General D. S. Fanali, Chief of Staff of the Italian Air Force, who was the Reviewing Officer for the Graduation Parade of No 96 Entry.



Air Marshal L. D. Mavor, Air Officer Commanding-in-Chief, Training Command



Harrier by John B. Ellingham

Flying Training Wing

Flying For Fun

Civic Day Air Display

The Poachers

To Germany By Tiger

Briefly Flying



by WING COMMANDER B. HUXLEY

One of the most difficult questions you can ask an airman about his profession is, "Why do you like flying?". The answers, though never entirely satisfactory, are often illuminating.

The cynic will compare aviation with the pastime of the inmate of a mental asylum, who developed the habit of banging his head against the wall because it felt so good when he stopped. Most airmen who have experienced the physical and mental discomfort of flying a far from waterproof aircraft on a cold dark wet night, a long way from home, and with little advice or comfort from external agencies, will agree that there is a grain of truth in this theory. But, as a general explanation of why people still enjoy flying, it fails because there are so many simpler and more accessible forms of masochism.

The romantic may talk of the unending struggle against the elements, and the triumph of man's conquest of the air. True,

there is a certain satisfaction in performing a feat which was considered impossible two or three generations ago. This would explain a person's desire to fly once, or perhaps to fly solo; but, having done this and proved the point, why make a meal of it by repeating the performance every day or two for the next twenty-five years?

The thrill of popular acclaim, perhaps? This theory was pursued at a recent Midlands air display by a television interviewer, who asked a member of a well-known Lincolnshire aerobatic team whether he ever thought of all the boys and young men gazing up at him in admiration. The impromptu reply, delivered with rather more candour than tact, was that if he ever had time to think of such a thing, he would be far more interested in the reactions of the girls and young women. But most aircrew carry out their work well away from the public eye, with a negligible prospect of even attracting a favourable headline, let

alone a sackful of fan mail.

Is it a matter of escape from the worries, frustration and petty restrictions of terrestrial existence? Admittedly one can "slip the surly bonds of earth" but the benign shackles of MOD Flying Orders, Air Staff Instructions, Station Flying Regulations and CFI's Memoranda follow one to the limits of the atmosphere, and Big Brother, alias Midland Radar, is always watching.

There are, indeed, those who maintain that flying isn't what it used to be, that the fun has gone out of it, and that there are now just too many rules and regulations. Fortunately, this is a view held only by a minority of airmen who began their flying in a more free and easy environment, and who fail to appreciate that even the most comprehensive regulations and procedures that surround flying today lose much of their sting once they are properly understood and sensibly applied. We are fortunate so far to have retained enough air space over and around the United Kingdom to do pretty well anything we want to, provided we choose the right time and place.

This is important, because in flying more than in any other way of life, enjoyment of the job seems to be the prerequisite of success. One never meets a good pilot or navigator who doesn't enjoy every minute he spends in the air, or conversely, an unenthusiastic man who is any good at all.

Military flying is a serious business, and, at Cranwell, we claim to teach it at least as well as anywhere in the world. At the same time, we consider it vital that each cadet who passes through Flying Training Wing should learn to love flying for its own sake. The reason may be complex and elusive - perhaps the physical sensation of steering a vehicle in three dimensions; perhaps the joy of seeing the earth in its true perspective; perhaps the distinction of being the operator of a piece of machinery which represents the work of hundreds of skilled craftsmen; perhaps the companionship of a select group of specialists; perhaps the excitement of playing a game in which, for all the built-in safeguards, the stakes are unlimited, and the trump card is one's own skill and ability. Each individual has his own reasons for enjoying flying; it may be a mixture of those I have suggested, or it may be quite different. Regardless of the reasons, if, during a man's training at Cranwell, we fail to kindle a love of flying which will last him throughout his career, we will have fallen short of our objective.

Some of you will remember the words of "The Instructor's Lament", in which the speaker complains bitterly that his flying life has been spent on "circuits and bumps and turns, laddie, and how to get out of a spin". Happily, our horizons are now a little broader than that, and some of the articles which follow give a glimpse of what Flying Training has been doing and seeing this year.

CIVIC DAY AIR DISPLAY

The shrill whine of ten Jet Provosts taxiing from dispersal got the 1969 Cranwell Civic Day under way. With perfect flying and spectacular weather Flying Wing displayed before many guests from local council and civic bodies on the 7th June.

After the Jet Provosts, lead by the CFI, had flown by in Diamond Nine formation, the spectators were given a first class display of solo aerobatics by Flight Lieutenant D. J. Willison, this year's winner of the Wright Jubilee Trophy. Not to be outdone

by such exotic manoeuvres, Squadron Leader N. Lamb put the ageing Varsity through its paces and adequately proved that the "flying classroom" was not limited to a life of straight and level. To the obvious delight of everyone present Squadron Leader J. Delafield showed off his "Phoebus C" glider at its best. During his unique display of aerobatics and silent speed he maintained his own airborne commentary. From the serene silence of gliding to the roar of jets again, and a mock demonstration of that dying colonial art: the destruction of a

dissident's fort. After an onslaught of rocket, cannon and finally bomb, justice was administered as the fort collapsed in a frighteningly realistic mushroom cloud. The smoke had barely died away before Flight Lieutenant J. C. Hemsley appeared flying a 7/10th scale Hawker Fury, (this scale being determined by the diagonal of the builder's bedroom!). Doubtless this was nostalgic for some of the spectators, and it certainly provided a thrilling display for all present. This was the only aircraft in the display not strictly home based, but at the time it was on loan to the pilot for display purposes.

Chipmunk flight "did their thing" in the form of a combined solo and synchronised aerobatics display lead by Flight Lieutenant M. McKinley. This was sadly their last appearance as they have now disappeared from the Cranwell scene.

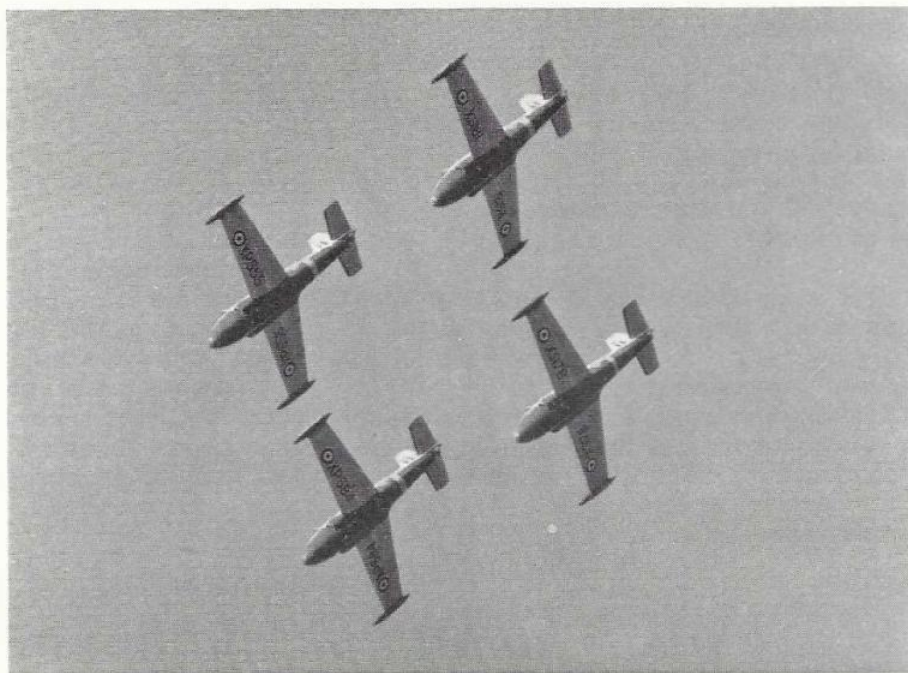
A fine afternoon concluded with the Poachers formation aerobatics team led by Squadron Leader W. P. Jago prior to their departure for Belgium to give their first display at an international air show.

W. M. C.

THE POACHERS

by

SQUADRON LEADER
W. P. JAGO



"One Hand-held Tip-tank!"

By courtesy of 'Sleaford Standard'

Years ago the College always had a formation aerobatic team but for some time now this has not been the case. However in 1968 the CFI, Wg Cdr Parker (54E), resurrected the Poachers, and in 1969 for the first time the Poachers took on a full commitment of displays. This involved long hours and plenty of hard work, but at the same time there was the honour and pleasure of doing something really worthwhile.

The season started for us in January when I picked the team and started working up. I chose for my No 3 and deputy leader Flt Lt Timms who has been in aerobatic teams before in Germany and at Chivenor. Before coming into Training Command in 1965, he had been flying Hunters for 10 years. The other two members of the team, Flt Lts Screen and Harrison, are both 'second tourists' who served together on 43 Sqn in

Aden on Hunters. The split, of two members from each of the two squadrons in Flying Training Wing, was intentional.

Initially we spent a considerable number of hours above 5000 ft before attempting to display our talents over the airfield. In fact before being cleared down to 1500 ft we had worked out and flown a complete 10 minute sequence. Unfortunately after our first showing of that sequence it had to be completely altered because it involved too many formation changes and it tended to confuse the audience. However, towards the end of April the sequence was settled and we were ready for our first display at Jurby on the 26th April.

The weather at Cranwell on that day was ghastly ; 700 ft cloud base, rain, icing and solid cloud up to 30,000 ft. However the forecast for the Isle of Man was better. After fifty minutes of formation flying in cloud, under the control of Midland, Northern and Ulster radar units, God bless them, we broke cloud at 10,000 ft. and could see the whole island beneath us, a very welcome sight. Jurby was our first introduction to flying clubs with their gaily painted aircraft to match our red and white Command colours, and their 'court-martial-offence-every-minute' type of flying. It was also to be my first radio interview which was ignominiously interrupted for a 'Coca Cola' advert ! The weather was perfect for formation aerobatics and apart from a little stage fright in the first loop the show went down very well.

After Jurby we had two displays at American Armed Forces Days. At the second one at Mildenhall we managed our full display whereas the Red Arrows only managed a flat show. Really it is an unfair comparison but it did our morale a lot of good.

After several more small shows we performed in Belgium. For this we had "Cranwell Poachers" painted on the tip tanks. There is always something special about a display on the continent and a grand feeling of achievement if it all goes down well. For this show the weather was perfect ; unlimited visibility and a light breeze. It was difficult to find a centre point for the display because, as so often happens on the continent,

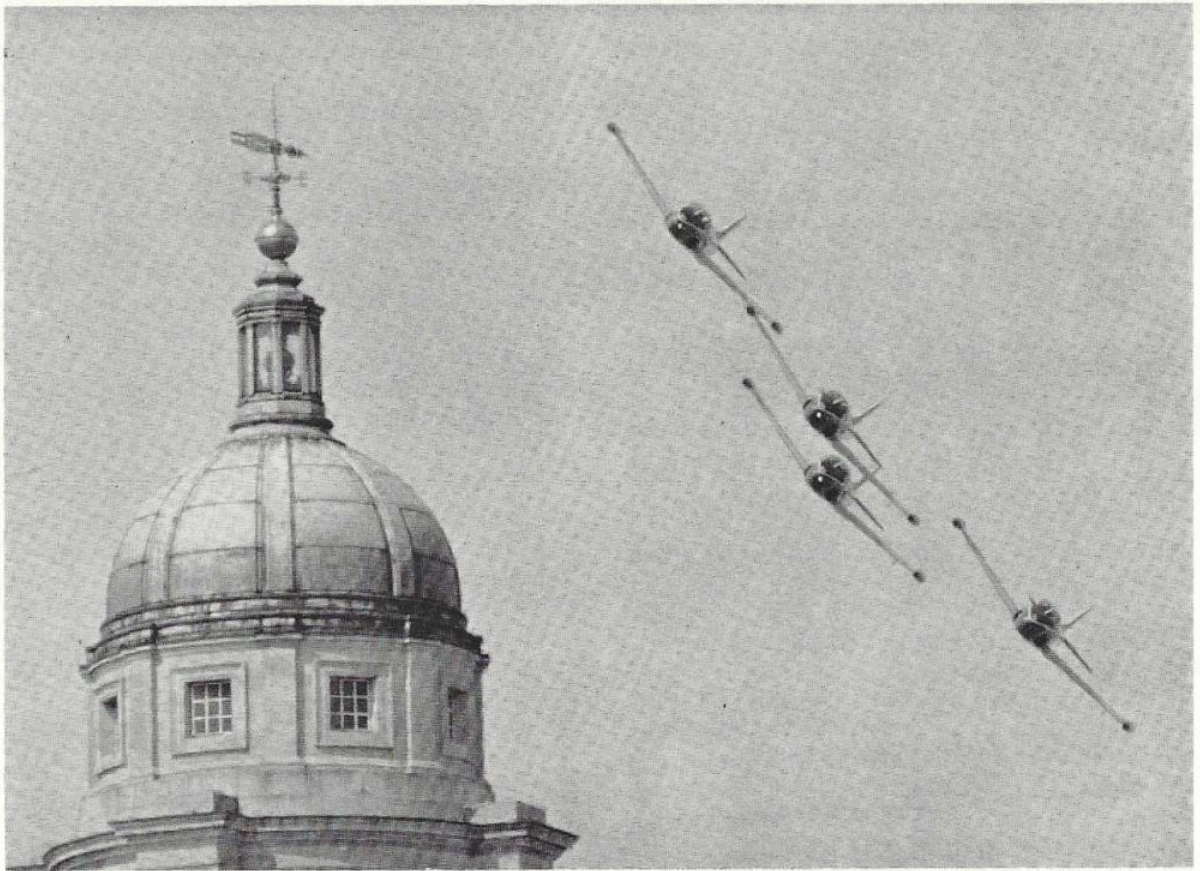
the crowd was scattered all over the countryside. We were extremely well looked after during our stay, and it was a very reluctant team that returned to Lincolnshire next day.

The next week we did a show for Anglia television, but that unfortunately was shown the week-end we were up in Sunderland. Part of the programme included a short interview in which the first question put to me was 'Squadron Leader, don't you think this is all a bit of a waste of money ?' More of that later, but I gather ATV didn't show my initial physical reaction.

We did a few more displays including one for the Old Cranwellians and a stand-in for the Red Arrows at Woodford before I unfortunately had an accident. I won't dwell on that as it has been fully reported in another magazine, but it gave the team an enforced rest of six weeks covering half of July and August.

Our return to display flying came at the beginning of September at Tollerton, when an old peoples' home complained in the press that we had dive-bombed them. BAC expressed interest. This was followed by a week-end in Germany for a display at the Werdohl Flying Club. This was a staggering success and included many amusing incidents. The day prior to the display we did a practice over the club and the German controller kept asking me if the Leeming Gemini team were going to practice as well. I can't understand why but I was convinced that he was asking me to have a beer. I am sure a tape recording of the R/T would have gone down well on the Goon Show.

After the show we were airlifted to the club from our base at Gutersloh. On arrival we were met by some amazing scenes and were completely mobbed ; some luckier members of the team had the pleasure of signing autographs on Frauleins' legs ! We were entertained royally that night and returned the next morning by taxi to Gutersloh. A Mercedes on the autobahn is a magnificent ride providing you don't mind speed - like 120 mph. Looking back it was quite amusing watching our reserve pilot trying to work out the German for "Slow down for sake !"



Poachers 'Round the Clock'

By courtesy of 'Sleaford Standard'

Our final display of the season at Biggin Hill was without doubt our best. The control was excellent and the timing of the individual items strictly adhered to. We started our display with minimum fuel and pulled as tightly as we could. We had all registered $5\frac{1}{2}$ G on the clock when we landed. The show was televised and most of it shown on BBC TV the next day. Everybody was extremely complimentary and it was a grand note to finish on.

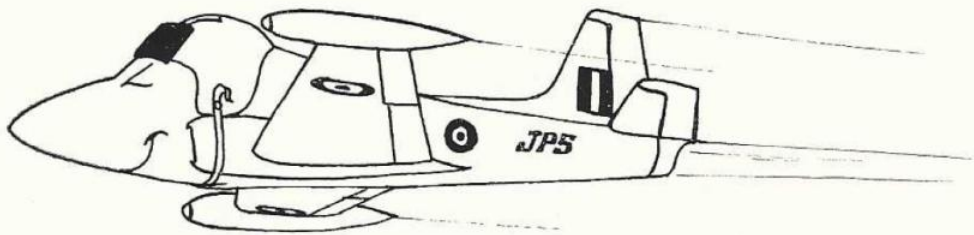
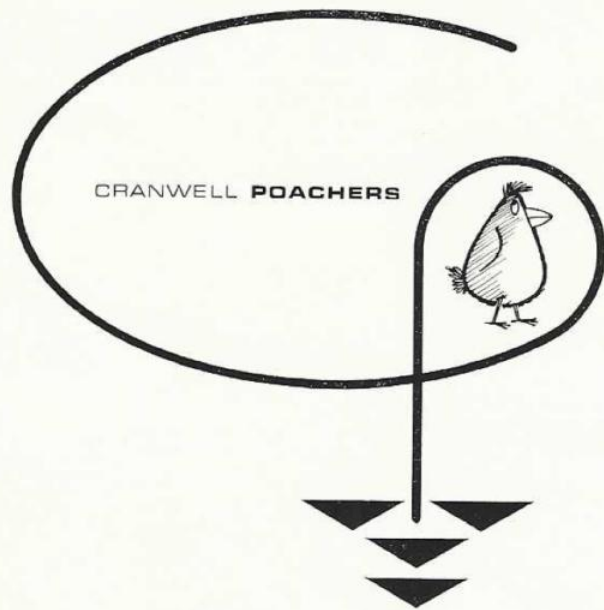
Looking back on the season it has all been very successful and worthwhile. A leader has to be able to set the tone of the display but the team are the real workers. The effectiveness of the display depends largely on the neatness and perfection of the formation flying, and all the credit for this must go to my hangers-on. I think everyone will agree

that neat formation in turbulence in a JP is not easy. We had a named reserve but he wasn't trained up to display standard. At no time throughout the year did we lose a sortie through sickness or colds - a lesson I am sure to the perpetual 'sickies' amongst the students. Looking forward to next year, the 50th anniversary of the College, having made ourselves a good reputation, we are hoping for an even better season. My deputy and I will still be here. If it is possible the other members will be relative newcomers to Cranwell to give them at least two years with the team.

I have always thought that regardless of the size of the audience, a display is good publicity for the College and the Royal Air Force, and it is right that the public should see part of what their taxes are paying for.

We always made the effort to try and land at the display airfield to increase the public's feeling of involvement with the team. It also helps a possible recruit to meet some pilots and have a closer look at the type of aircraft he might fly or service in the future. Not only that, it does our ego good to sign masses of autographs ; I believe the going rate is now down to 50 Jagos for one Ray Hanna.

Finally I would like to thank all those who helped the team throughout the year. We have had tremendous support from all at Cranwell, from the Commandant, who flew the last sortie of the season with us, to all the airmen. We always took airmen to displays with us and they became invaluable. They were part of the team, never let us down and I became very proud of them. It would have been impossible to represent Cranwell without the support we were given. It has made my job that much easier knowing that so many people are willing to do that much extra to get the Cranwell Poachers airborne.



TO GERMANY BY TIGER



Getting Airborne

by FLIGHT LIEUTENANT R. H. SCREEN

Following a successful visit to the Royal Air Force Laarbruch Flying Club in Germany during 1968, three active members of the Royal Air Force College Flying Club approached me with a 'repeat performance' in mind for 1969.

Initial administrative arrangements were to include an Operation Order the production of which dampened enthusiasm until a copy of the 1968 order was found. With a few alterations to dates and names the task was resolved and routine correspondence started. Official approval was granted by the Station Commanders concerned; Shell-Mex produced the necessary fuel and oil carnets; the Board of Trade confirmed clearances; and the British Light Aviation Centre were helpful in providing route information. Once the maps arrived, flight planning proceeded in top gear. Meanwhile SAC Ken Leech of Supply Squadron,

Cranwell, under the supervision of Ray (Dicky) Dickinson of MT Flight, Cranwell, prepared the aircraft for the flight.

These were Club aircraft G-AVPI, DH 82A Tiger Moth (ex-RAF and, until recently, ex-RN) built by Morris Motors at Cowley in March 1943, and G-ANEF Tiger Moth built by De Havillands at Chester in 1945. Both were standard apart from the added refinements of electric intercomm. sets. However, as neither aircraft had radio and the transit was to be flown in loose formation, I considered it a precaution to provide some means of communication between aircraft. To this end OC Engineering Wing produced two 'air portable blackboards' (APBs) for use in emergency. They were received with a mixture of amusement and scepticism.

Our fourth member, Doug Whalley, a

poultry farmer from Newark organised a meeting the week before to discuss general items concerning progress. It was agreed that warm clothing would be necessary and emphasis was placed on the small luggage space. A briefing was held the evening before departure, and after a few quiet beers we retired with the conclusion that it would be all right on the day!

The 4th April dawned gin clear : an 8/8 blue day which luckily was to be standard for the whole visit. With last minute flight plan calculations completed all the chaos dissolved as we ascended at 0830 hrs. South of the Thames we ran into half cover of cloud and elected to fly over the top of it at 3000 ft. As we turned on time at Rochester we caught a glimpse of the airfield through a hole. Shortly after we were in the clear again, and then letting down on a green aldis signal from Lympe tower. The first approach was almost disastrous. The wind speed had increased considerably since our departure, and the windsock was now indicating a steady 20 kts. To enable an approach into wind to be made - a must in a Tiger - it was necessary to overfly the steep sides of a wooded valley at low level. Our intended landing was marginal in terms of length, gradient and surface, but on the second attempt the aircraft stopped after a ground run of only 75 yards.

Filing the flight plan took longer than expected. Where do you find the code letters for a Hawker Siddeley Tiger Moth? Refuelling, however, proceeded smoothly. Customs were characteristically disinterested in our departure, and apart from demanding a declaration that we would not export the aircraft we departed on good terms.

The tower insisted that we depart from a different grass strip. To do this the aircraft had to be lined up within two yards of the boundary fence so that we would be airborne before the raised edge of the main runway. Take off was uneventful! Four minutes flying put us in the Cross-Channel light aircraft corridor between Folkestone and Cap Gris Nez. Although the visibility was about 5 miles we had an indeterminate horizon with sky and sea merging into one another. The crossing took 25 minutes, two minutes behind flight plan time. These two minutes

created apprehension, especially as a stronger easterly component could have made the crossing considerably longer! During the last half-hour of the two-hour trip it was necessary to hold a push force on the control column to maintain level flight even with full nose-down trim. This was caused by the aft movement of the C. of G., by no means a rare occurrence in a heavily laden Tiger Moth.

Ghent came up on time : a small grass field situated between a motorway to the east and a block of flats to the west. The haze was noticeably yellow in this part of the world because of nearby chemical works. The second touchdown of the day, in nil wind conditions, provided contrast with the first. Customs were friendly and helpful, but refuelling took time. They take the afternoon nap very seriously, it seems! Coffee and sandwiches were the order of the day as I was anxious to make the final leg to Laarbruch before dark.

We set off in loose formation hoping to admire the view and get some air-to-air photographs. However the APB was soon substituted for the camera as we obtained a fix well south of track within minutes of taking off. After some frantic gesticulation we turned on to a correcting heading. The features came up as planned, with Doug Whalley mumbling over Eindhoven that his last trip in the area had been in 1943 as an air gunner. Abeam De Peel the Bolköw Junior of the Laarbruch Club turned up to meet us ; one hour fifty minutes from Ghent we entered the Laarbruch circuit in an extended vic formation. Squadron Leader Phillips, our host club CFI, made us most welcome, and we retired to the bar.

Saturday 5th April was bright and breezy. So much so that the wind was outside Tiger limits, and so flying was restricted to check flights in the Bolköw. The wind abated in the evening sufficiently to give spinning instruction to their pre-solo student pilots. Sunday proved to be the perfect flying day and we flew instructional sorties all morning apart from a ten minute break for a formation flypast and a few minutes to film a Tiger in a spin (intentional!). A flour bombing competition was organised for the



Hand Refuelling

afternoon, and despite efforts by the experts the first prize went to a 10 year old girl passenger !

After a further day's full flying came the time to leave. Our departure was prompt, and after a farewell run past we were escorted 20 miles out by the Bolkow which had radio contact with Laarbruch radar. With this assistance, a waggle and a wave they departed and we pursued our fair weather course to Ghent. Our arrival proved untimely, as on landing we learnt that the airfield was still closed. Apart from that our return to England was uneventful. The usual haze engulfed the Channel, making steady compass headings difficult to hold. Customs inbound took some convincing that we were not pilots of a scheduled RAF flight, and they seemed impervious to the fact that

we were operating civilian aircraft. Once we had convinced them that the Tiger Moth had been out of the Royal Air Force for well over ten years, we were allowed to proceed with our duty-free rations. The return up country to Cranwell went well, with Gipsy Majors running faithfully and wires humming in the breeze. Despite the blue skies and arctic clothing each member felt the cold, and after six hours flying we lumbered from the cockpits stiff, numb and tired.

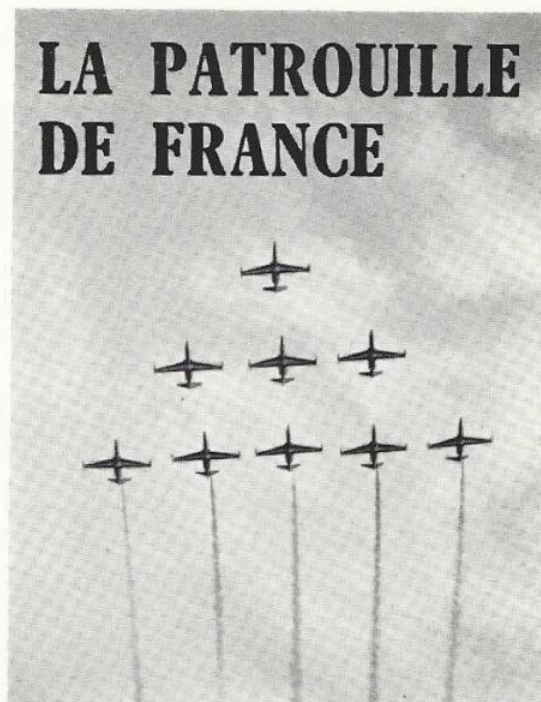
The aim of the trip had been to give Club members experience in planning and executing flights to the Continent of Europe, and, in addition, to introduce the Laarbruch Club to another type of light aircraft. I am sure that we achieved these aims during the visit, as well as having a worthwhile and enjoyable Easter vacation.

French Week 1969 started with a flourish when the Patrouille de France arrived in their nine Fouga Magisters. The Patrouille, which is based at l'Ecole de l'Air in Salon-de-Provence, represents the French Air Force at air displays all over Europe. During their short stay at Cranwell they gave three thrilling displays over the airfield.

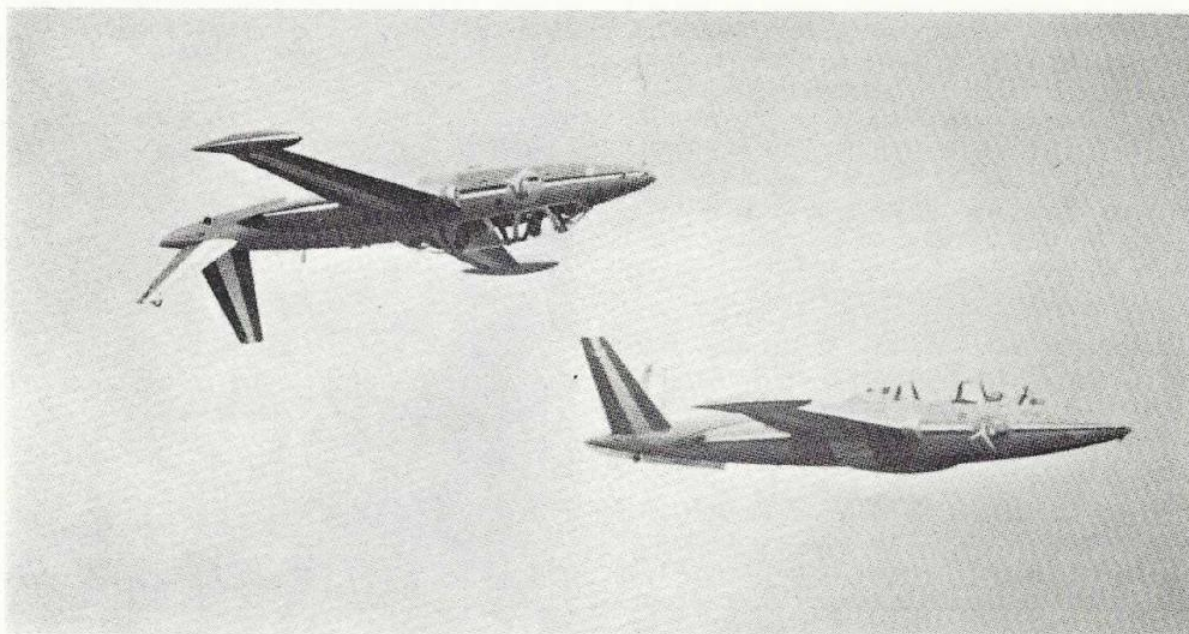
Their display is based primarily on loops and barrel rolls flown in different formation positions, but they are at their most spectacular when inverted. They are the only formation aerobatic team in the world to roll seven aircraft inverted and fly past in close formation, followed immediately by a pair performing a mirror roll in the opposite direction.

Throughout their displays at Cranwell their performance was crisp and yet flowing, with the two solos capturing the audience's attention while the main formation was reversing. They wove their path across the sky in neat, symmetrical patterns of red, white and blue smoke which was particularly striking in their bomb-burst manoeuvres.

LA PATROUILLE DE FRANCE

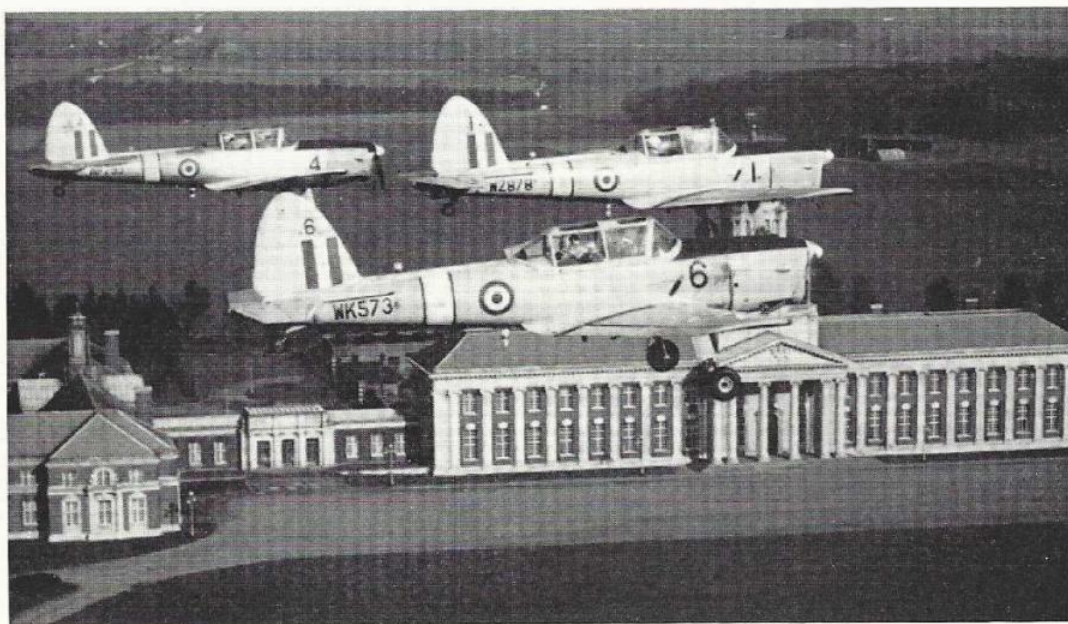


From beginning to end the Patrouille gave a sparkingly Gallic demonstration of precision aerobatics. We hope to see them again soon.



Mirror Formation

BRIEFLY FLYING



"Farewell"

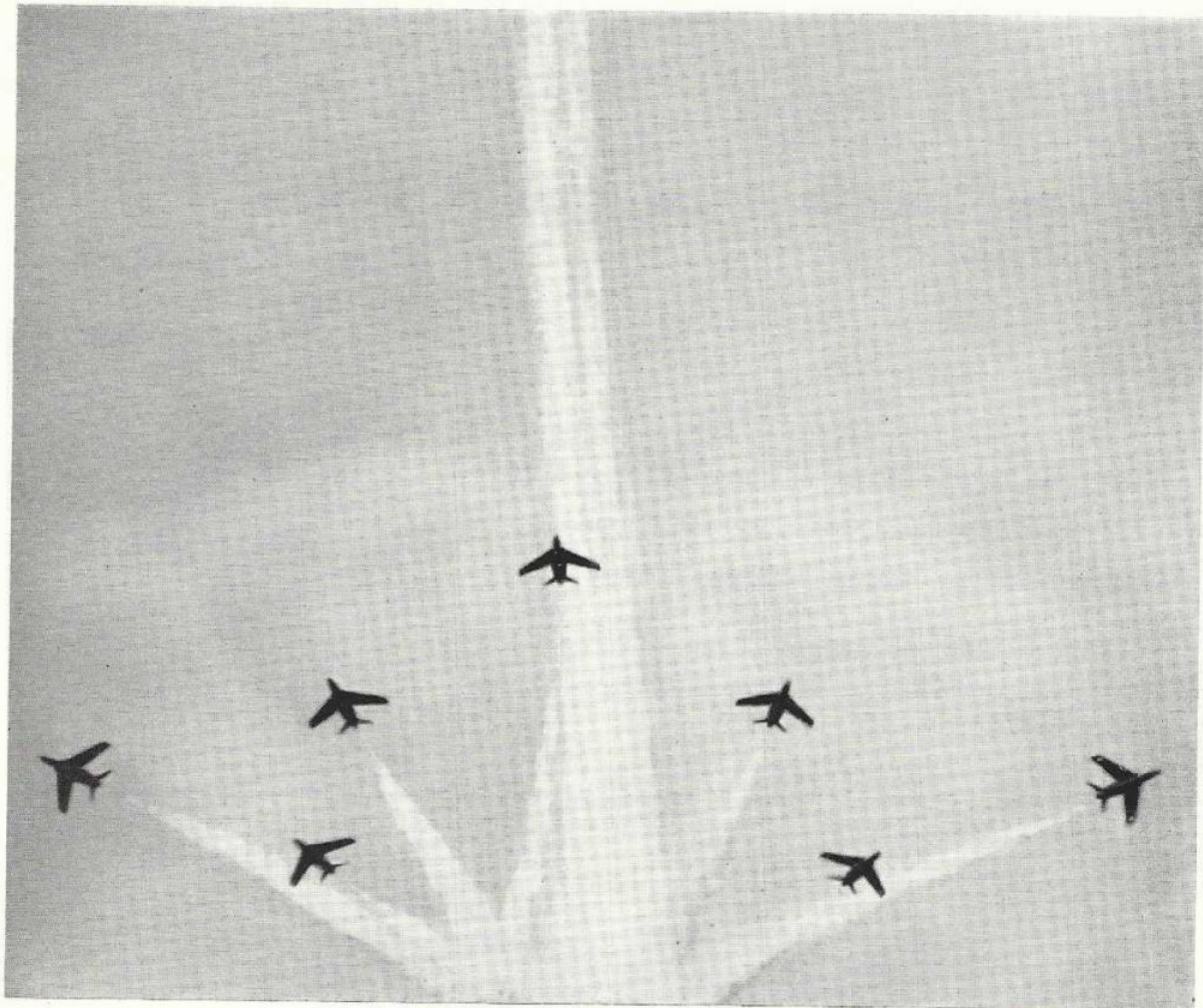
In June Wing Commander J. M. A. Parker left Cranwell after nearly two years in Command of Flying Training Wing. He was largely responsible for the reappearance of "The Poachers" and Graduation "Fly-Pasts". Our best wishes go with him in his new post. He was replaced by Wing Commander B. Huxley who came in August from MOD, saying he was "happy to be back flying". We wish him every success as CFI.

Although bad weather on the day prevented the 20 Jet Provosts from flying over 96 Entry's Graduation Parade, this photograph shows what it would have looked like.

Flight Lieutenant D. J. Willison, recently posted from Cranwell, was this year's winner of the Wright Jubilee Aerobatic Trophy for Training Command aircraft. This is the second year running that Cranwell has brought home this coveted trophy.



The '96' Formation - in Practice !



'The Red Arrows'

The "Red Arrows" visited the College in July and displayed to a large and enthusiastic audience on the north airfield during the Lord's Taverners cricket match. The weather was glorious and as usual the Arrows delighted the spectators with their precise polished performance.

Sadly the end of the Summer term also saw the end of the Chipmunk flight. With the

change in the future training of pilots at the College all student pilots will have completed their primary training at University Air Squadrons. Thus they will start their training at the College on the Jet Provost. However the Chipmunk will not disappear completely from the scene ; the sole remaining one will occasionally be seen flying from the South airfield.

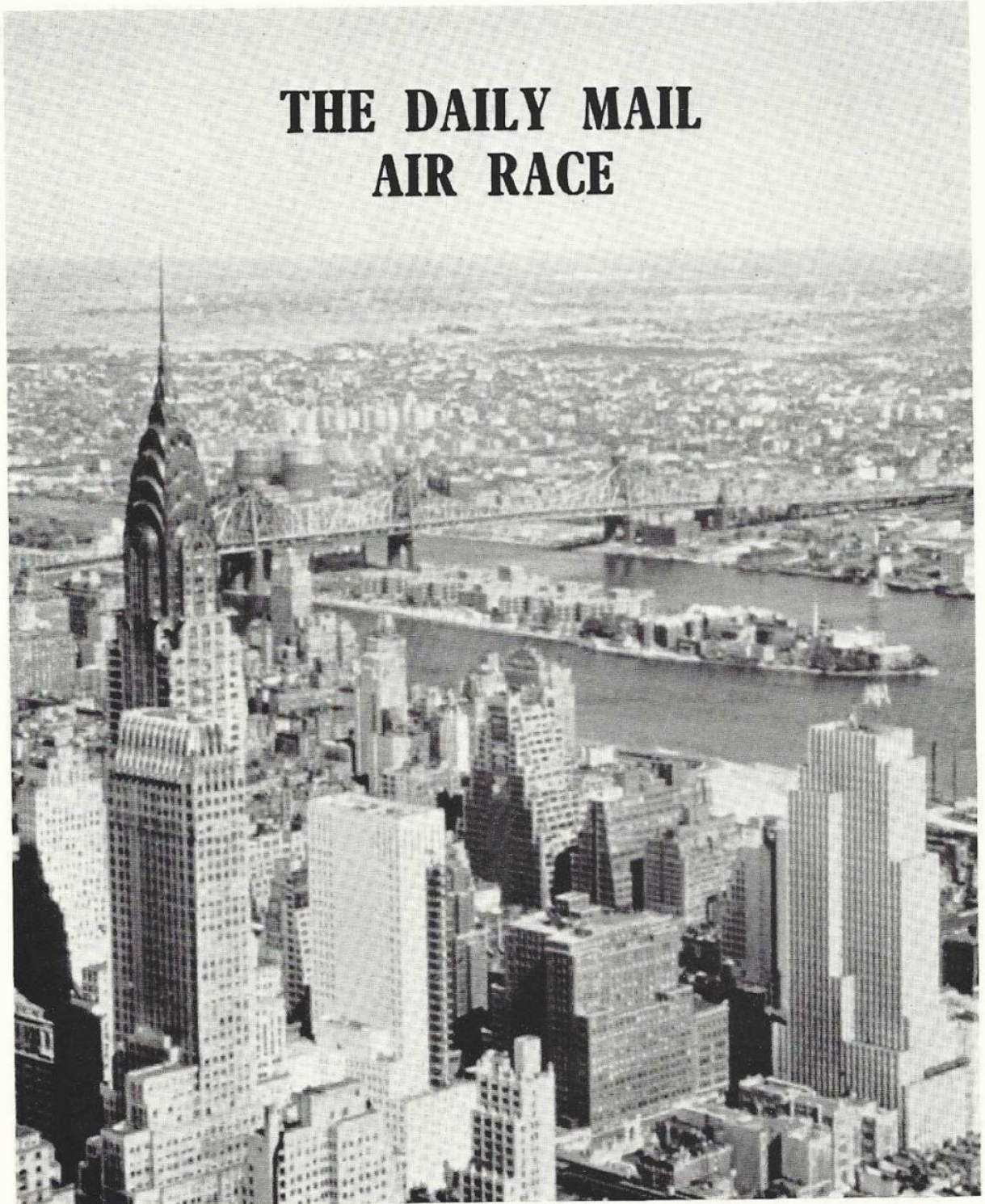
Cadet Journal

Summer Term 1969

Articles, Vacation Activities and Verse

Sport and Society Notes

THE DAILY MAIL AIR RACE



DAILY MAIL AIR RACE

It was early on Friday the 9th May 1969 when I stamped my time card at the top of the GPO tower in London. 15 seconds later Flt Cdt S. T. Morrell had stamped his, and we were both in the lift making 1000 ft per minute in the direction of the ground floor.

We emerged from the lift and ran around the maze of passages at the bottom of the tower, across a road and into Snr Flt Cdt Sultan's Aston-Martin. So far we had taken 30 seconds of our proposed schedule.

At this point Snr Flt Cdt 'Nuvolari' Sultan began to utilise David Brown's creation to the full, whilst we received words of encouragement from Sqn Ldr Bee. We also donned our Bone - domes at this stage.

We arrived at St Pancras Coal-yard, still ahead of schedule, to find a Wessex of 72 Sqn, with its engines revving up and a rather large Sergeant waiting to literally heave us aboard. The helicopter averaged 120 kts from St Pancras to Northolt and our waiting JPs and aviators extraordinary Flt Lts Rudin and Yule.

Our Mercy Purple formation took off, seconds after our arrival by chopper, for Brize Norton at approximately 0928. Our JPs flew at 700ft to 1000ft under Radar Control and through a thunderstorm at 320 kts. Changes in course were made by rate four turns.

Our arrival at Brize Norton coincided with Captain Westrop, of the 11th Hussars. Captain Westrop and his team mate, Prince Michael of Kent were to travel across the Atlantic on the same aircraft as ourselves, hence neither team held the other up. The 10 Sqn VC 10 took off at 0956 and the 7½ hour trip across the Atlantic began. Morrell and myself now had time to sit back and reflect upon the events of the previous 24 hours.

We had arrived in London from Cranwell on the Thursday afternoon. At the GPO tower we met Sqn Ldr Bee, Flt Lt Harding, Snr Flt Cdt Sultan and our back-up driver, who had a Royal Air Force mini. The team



The Cranwell Team

had a couple of practice runs from the tower top to the coal-yard, where we met the extremely efficient Royal Air Force Regiment detachment, who promised to 'fix' lifts and the traffic on the following day. We then adjourned to the Royal Air Force Club to rest for our exertions on the morrow. Snr Flt Cdt Sultan, however, appeared at the Club at 2000 hrs. and proceeded to wine and dine us. The party started at a restaurant in South Kensington, which doubled as the basement for a North Thames Gas Board office. The evening terminated at the Playboy Club.

It was therefore two very 'merry' Flt Cds who arrived in the dining room for breakfast in flying gear. This, I understand, was another first for the Royal Air Force College.

We left the Royal Air Force Club for the Tower at 0830. Here we had a final look around, had our picture taken, and sat back

to watch Captain Westrop leave at 0912 hrs. 14 minutes later we started our race.

On reflection we thought, as we winged our way across the Atlantic, things had gone exceptionally well, but the most uncertain part of the trip was yet to come. MOD had not allowed us a recce in the USA and, although Sqn Ldr George had been over there as our man in the States, he obviously could not hold our hands for the 16 miles from the airport to the Empire State building. The plan was for a helicopter to airlift us from the airport to the United Nations Heliport.

When the aircraft landed we were met at the bottom of the steps by Sqn Ldr George who had obtained abridged customs clearance for us. We were then told that the helicopter was 'not on' because of bad weather - it was raining heavily at the time - and we would have to travel the entire distance by motor cycle.

This motor cycle ride was one of the most thrilling experiences I have ever enjoyed, and no amount of praise can be too high for the two BSA riders who manoeuvred their machines in driving rain along a crowded free way, which had a surface that can at best be described as poor, and at one stage even consisted of cobble stones. They averaged 60 mph from our getting on to our getting off their machines.

I arrived at the top of the Empire State building one minute ahead of Morrell and made my way up the building. Morrell came up with a Royal Air Force Regiment officer. When Steve stepped into the lift, the lift man became convinced that he was Prince Michael. Steve did nothing to disillusion him and hence reached the 86th floor in record time, only to trip climbing the only six stairs in the building !

Thus we 'clocked in' and realized to our joy that we were free in New York for 30 hours. The people who worked in the building were especially helpful, and one, seeing my flying suit drenched, offered to dry out my documents in his hamburger oven. This he did successfully.

My time for the trip was 8 hrs 17 mins 22.49 secs. Steve's was one minute more. The main reason for this rather long time was the 120 Kt headwinds encountered over the Atlantic, winds which were not there on

the early days of the race, and the bad weather of New York meant even more time stacked over JFK airport than usual. Comparison with other competitors is difficult for a number of reasons, not the least of which was the loose definition of the scheduled aircraft class which we entered. An example of this was the fact that a Pan Am 707 Captain took 1 hr 40 mins off the normal schedule by using 60% extra fuel on the crossing. Captain Westrop who travelled on the same aircraft as ourselves, however, took approximately fifteen minutes longer than ourselves.

The VC 10 crew, in common with everyone else concerned with our part of the race, did their best to help us and we felt that they did not deserve the criticism that they should sit with their feet on the throttles rather than the instrument panel.

We would, therefore, like to thank everyone who helped us and gave us encouragement and who generally made it possible for us to compete in this memorable race. Although we did not win any prize we did beat our Army rivals, and in this respect we would like to feel that we acquitted ourselves and the College well.

R. Handfield

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PARIS AIR SHOW 1969

Concorde 002 Airborne, Concorde 001 waiting to take-off

Or - for short - 'la fete aerienne internationale, au vingt-huitieme salon international de l'aeronautique et de l'espace, a l'aeroport de Paris au Bourget' (known in this country as Air Fair).

Attendance at the 'Salon' was the target, on Saturday 7th June 1969, of a collection of RN and Royal Air Force officers and Cranwell Flight Cadets. The party took off from Royal Air Force Northolt at 1000 hrs, in three of Air Support's Argosies, landing at Villecoubly, Paris, an hour later. It was understandably frustrating therefore, that the journey across the middle of Paris to Le Bourget, in a coach with fixed windows at the height of a phenomenally hot summer's day, took twice as long.

We eventually arrived at Le Bourget, having glimpsed on the way the Boeing 747 leaving for the US. Beyond the Exhibition Hall, the Static Display contained not only those aircraft which have become familiar at Air Displays for several years, but also several new types and variants. To name but a few : Lightning, Phantom, HS 748, BAC 167, Buccaneer, Jaguar, Draken, Hercules, Ilyushin-62, Breguet 941, Mirages 4 and 5,

Fiat G91Y, Breguet Atlantic, and Skyvan.

A group of somewhat famished flight cadets (Mates, Parsons, Stimpson and Sudlow) proceeded to the Spectators' Enclosure, purchasing en route handfuls of 'sandwiches,' and discovering later, after a little mathematical deliberation, that each morsel of bread and lettuce had cost an equivalent of 5s 6d.

The Royal Air Force opened the flying display (who else) with a flypast of two Victors, in-flight refuelling two Lightnings and a Harrier, followed by a display by the Falcons free-fall parachute team. A very impressive aerobatic sequence was given by the Shrike Commander, which looped above the threshold on both engines, then on one, and finally with no power, landing at the bottom of the loop.

Several 'executive' jets were displayed, including the Handley Page Jetstream, whose presentation was followed by that of the BAC 167 Strikemaster. At 1500 hrs, three Jaguars took off in formation, and gave a comprehensive and very varied sequence.

Apart from the 15-minute demonstration

given by Concorde 001 and 002, which was undoubtedly the day's highspot, the 'show-stealers' were the Mirage aircraft, the F-1, the M5, and the G (variable geometry aircraft). Their joint presentation was co-ordinated, efficient, and dramatic. The Royal Air Force returned to the scene with the Harrier and the Vimy, which immediately preceded Concorde 002's arrival from the North, and 001's take-off. The two giant white airliners gracefully circled the airfield together, before 002 turned back towards London.

The Saab Viggen followed, and after a competently handled display, gave an impressive demonstration of a reverse-thrust

assisted short landing. It was by now approaching 1700 hrs, our deadline for the coach back to Villecoublay, and we drifted reluctantly towards the 'Aerogare,' as the Breguet 941 STOL Transport obligingly took up no more than 50-100 yards of runway for take-off and landing.

As the coach was leaving, unfortunately, the 'Patrouille de France' was just arriving; it meant that we would have to wait for them to come to us at Cranwell. Nevertheless, we left with gladdened hearts and ruptured ear-drums, and returned to London, feeling slightly cheated to find that it had been even hotter and clearer there that day than in 'Gai Paris.'

C. W. Stimpson

SUB-AQUA EXPEDITION - CYPRUS

A party consisting of Pilot Officer A. G. Proctor (96 Entry), Under Officer M. S. Rees and Senior Flight Cadets R. Tuxford and P. W. Haigh commanded by Squadron Leader C. R. Chrisp, took part in an expedition to Cyprus in August 1969.

The aim of the expedition was to carry out a survey of as many suitable diving areas as possible and to obtain ostracod samples from deep water for the Marine Zoology Department of the British Museum. In addition, the aim was to give members the maximum opportunity to obtain experience of open-water diving.

A snorkel survey of the area between Cape Gata and Hospital Point was carried out in the first three days and because the expedition equipment did not arrive until 9th August the flight cadets, under Pilot Officer Proctor, were sent to survey the North West coast line, carrying out a diving survey near Fontana Amorosa.

With the arrival of the expedition equipment, it was possible to start the expedition proper. Once the permission of the SBAA Area Officer had been obtained the expedition set off for Cap Andreas night-stopping at Salamis on the way, and carrying out a local underwater survey and a night-snorkelling exercise there. Arriving at Cape Andreas the party moved into the out-buildings attached to the light-keeper's house and set up camp. The Oxford University Sub-Aqua group were encamped nearby, and for the period of the expedition both groups operated to mutual advantage. Over the next three days a large number of dives were made

particularly around the island at 35° 42'N 34° 36'E. On the north side the rock face descended steeply to more than 100 ft and a superb, unbroken amphora was found at 90 ft on a coral ledge. A number of other pottery pieces were found and they were recovered at the request of the Oxford group who had an excavation licence. A series of night dives were made in the bay near the camp and fish were speared by underwater torch light. Byzantine stone anchors were discovered and it was found over this period that it was possible to snorkel dive in the very clear, warm water to depths claimed as much as 80 ft. The water was at a constant high temperature to 90 ft, but there was a marked cold layer below this.

In previous years the prevailing wind had been westerly and because of the swell it had been difficult to operate on the north side of the islands off the Cape. However, on this trip the wind was steady from the south and it was possible to explore the steep northern sides of the islands below the moored dinghy.

On the afternoon of August 15th the three cadets on the trip had to return to Cranwell because of flying commitments. However, Squadron Leader Chrisp and Pilot Officer Proctor, assisted by Flight Lieutenant Hurst - a member of the Cranwell teaching staff on leave in Cyprus - remained at Cape Andreas carrying out further dives to 100 ft obtaining sand samples containing ostracod specimens, together with sea grass samples carrying parasitic ostracods. These samples, together with others obtained by Squadron Leader Chrisp, were sent to the British Museum on return to U.K.

M. S. Rees

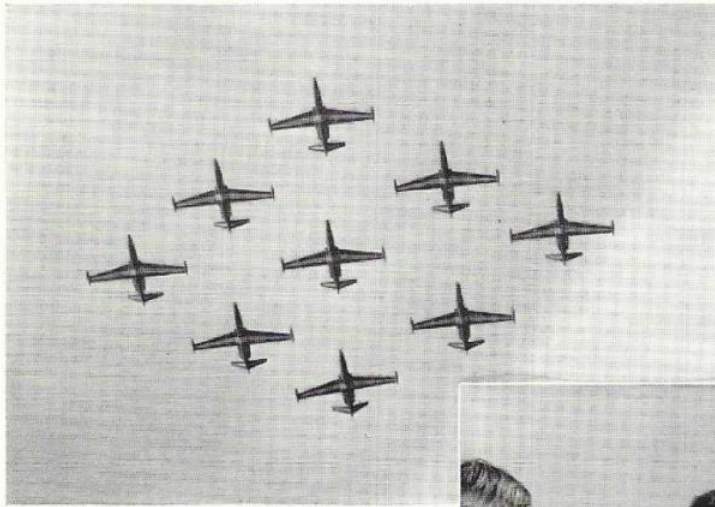
A Crying in The Wilderness

We are the lonely men : tears are our companions now.
For bed-ridden children have turned their backs on us
Closing the womb so that we shall not be born again.
We are the hermits, neighbours alone to the quiet rain,
Detached from the chicken-hearted, spared the feeble-minded
Too afraid to give us time to get to know you better.
We are the scavengers, muck-raking, seeking consolation from the dirt
Avoiding the pit-falls that you, walking with your hands upright
Spurning the dust that bore you, might find in trusting your dull senses.
What hunger by association do you feel that numbs the brain,
While watching legions of the lost drawing on State charity,
Hissing through broken teeth, clutching pence in trembling fingers,
Croaking like frogs in the marsh, confiding secret indifferences —
While all around, empire-builders gently bulldoze us out of existence.
We sold flowers at street corners with the rising sun
But the sap has dried and left us with only withered petals.
We sold matches from trays while snow blanketed our feet
But we were properly ignored, and the warming fires died.

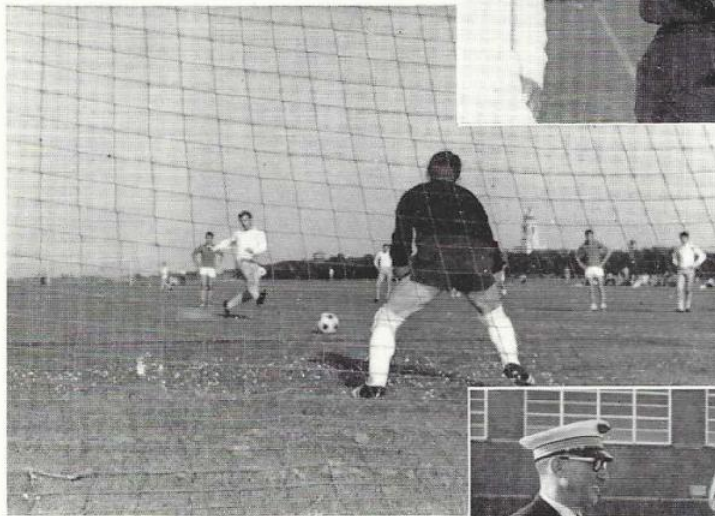
The buskers on the kerb-side played " Roll out the Barrel "
Keeping time to your foot-steps, hurrying back to the pot-boilers
And clothes-menders who share your menial lives.
Tap ! Tap ! Tap ! Tap !
The blind beggar walks behind, beating out some sad sweet song,
Like rain playing on the August slates of a now-forgotten chapel.
Tap ! Tap !
But the stick breaks and worlds fall
He calls on you but the band drowns out his dying cadence.
Seated snugly on your morning train you chat behind your papers.
The pages quiver at your laughter.
Of course you are sorry but you are no part of it.
Mounting rotten steps at night, the soulful face of pity begs your light
But the lamp on the landing goes out.
And behind locked doors your bed-sheets quiver at your laughter.
Of course you are sorry, but it is no part of you.
We are the lonely men,
We have no pride for you have taken it from us.
We have no love for you have killed it in us
We have no souls without pride or love.
Bodies warped from too much worry,
Our creaking backs speak witness of our sin —
We forsook the World that took us in.

We are the forsaken, the lost, the forgotten.
Alone like emperors we sit in a barren land,
Breaking dry bread to feed the famished affections
Starved of life in an empty land.
We are the Governors of Nothing, Worlds where we alone belong.
A kingdom of sun-bleached bones,
An empire of wind-blown sand.

J. B. S. Hilton.



**29 JUNE
— 4 JULY**



**FRENCH
WEEK**



The "Tricolor" was to be seen in force at Cranwell again this year, the occasion this time being French Week, held from 29th June - 4th July.

The festivities started on the Sunday evening with a presentation by the Film Society of two French films, "Le Soupirant" and "La Ballon Vole."

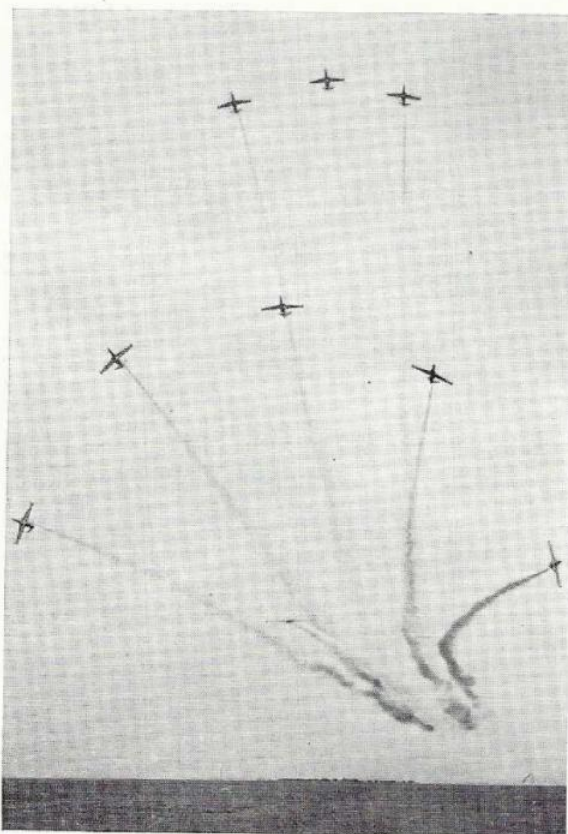
Even as the films were underway the famous French aerobatic team, the Patrouille de France had arrived with their support aircraft. Their long line of Fouga Magister trainers, painted in the French national colours made an interesting spectacle for travellers on the A17.

The next day we were to see this famous aerobatic team perform. They had flown over from their base at the Air Academy at Salon, where they constitute the official French team. They have given displays all over the world and chose the Fouga Magister as their display aircraft because of its inverted flying capability and its high degree of manoeuvreability. The display, which was watched by a large number of people, featured some excellent formation flying and showed the skill of the pilots and the capability of the aeroplane to the full.

Tuesday evening brought everyone back to earth again in the form of a Soiree Musicale. The appearance of the American contralto Charlene Peyton delighted a full house, as did the music of the College Band ; under the Director of Music, Flight Lieutenant D. S. Stephens LRAM, ARCM, BBCM. During the interval prizes of French perfume were given to the winners of a draw.

The invitations to sample the wines and cheeses of La Belle France appealed to a large number of people and there was no lack of support for this event in College Hall on the Wednesday night. One could choose from a large and varied selection of wines from all regions of France and this went down very well with the array of cheeses.

The hard work of the Dramatic Society came to a climax on Thursday night with the production of 'Becket' by Jean Anouilh. The players were given a warm reception by



' La Patrouille '

a large audience, including a large number of French cadets, who enjoyed and seemed able to follow the English dialogue.

A special prize of a weekend for two in Paris, offered by French Railways was an added attraction.

The final day was the time that all the visiting cadets from Salon had been waiting for. The Soccer match against a junior College team ended with a victory for Salon after an exceedingly hard fought match, the score of 4-3 not really telling the whole story, or so any Cranwell supporter will tell you.

Everyone who took part in the preparations and participated in the activities enjoyed themselves very much and our French guests went away, not only elated over their soccer win, but with some happy memories of a memorable week. It can only be hoped that such a feature will become a regular part of the calendar.

J. A. Stockill.

THE HANS NANSEN EXPEDITION 1969



Summit of the Home Mountains

In March of this year, two officers and ten flight cadets spent a fortnight at the mountain lodge of Colonel Hans Nansen in Norway. The purpose of the expedition was to become acquainted with the various skills associated with mountain and snow survival.

It was an honour to be entertained by "Uncle Hans". Not only is he a nephew of Fridtjof Nansen, the famous arctic explorer, scientist and humanitarian, but he was also the leader of the Norwegian Resistance during the war. He was responsible for the translation and broadcasting of Churchill's speeches, and finished the war in the hands of the Gestapo.

The boat journey to Norway took us through the roughest North Sea for sixteen years. It laid out most of the party and it was as much as the remaining three or four could do to look after the multitudes of beautiful Scandinavian au pairs on the voyage. After a land journey involving mountain trains, taxis, snow carts, and feet, we finally arrived at the lodge, Valhoud.

During the ten days spent at the cabin we were instructed in the various arts of skiing and snow survival by Lieutenant Neilson of the Royal Norwegian Air Force. We spent

several complete days in the mountains and one night each in a self-constructed snow cave. We were taught the construction and use of snow shoes and various methods of casualty evacuation.

The climax of the course was the Norway Cup. This is a trophy presented by Uncle Hans, to be competed for by the various courses attending his school each year. We had to do a cross country lope and a written test on Norwegian hut culture and winter survival. It turned out later in the year that Cranwell had won the cup. Individual prize winners were Flight Cadets Pine, Carr and Sharp.

One highlight of the course was the 'Valhoud Sauna Bath.' All of us took the heat and then skipped around, stark naked, in the cold Norwegian snow, much to the amusement of all our amateur photographers.

After the period in the mountains we spent two days in Oslo. During this time we were given a first class tour of the city, including Kon Tiki, the From House and the Viking ships. After a sad farewell with Uncle Hans we boarded the "Braemar" for the homeward trip.

C. Harrington.



The 1969 Hans Nansen Expedition with Colonel Nansen outside the Lodge at Valhoud

RAF CADETS WIN BEAUTIFUL NORWEGIAN TROPHY

Translation of a Report in "Aftenposten" (Norwegian National Daily Newspaper) dated 30th October 1969.

Two young Royal Air Force officers, Squadron Leader J. H. Copland and Pilot Officer A. P. Matthews were in Oslo yesterday to receive a trophy which has been won in this country by cadets from the Royal Air Force College Cranwell. This trophy is called the Norway Cup and for a number of years it has been competed for by members of the winter survival courses organised by 69 years old Hans Nansen from his mountain lodge "Valhoud" near Gol. About three hundred British Officers, Cadets and College students have taken part in these courses since the first one was held in 1948. The British have learned skiing, building snow caves and bivouacging in conditions of extreme cold : above all they have learned to survive in very arduous winter conditions. The background for giving young British cadets such training is not least because of what happened in Norway in 1940 when many British servicemen were lost or captured because they did not know how to survive in the Norwegians mountain. But

also these courses have been organised by Hans Nansen as an expression of his love and admiration for Britain. The presentation of the Norway Cup took place in the British Embassy in the presence of His Excellency the British Ambassador, Mr T. F. Brenchley, the British Defence Attache, Wing Commander Nicholas Bowen and a number of Norwegians who, in different ways, have helped Hans Nansen with his work on the Winter Courses. "Uncle Hans" as he is affectionately called by everyone who has visited Valhoud throughout the years is now a sick man and should be in bed. However he said he had to be present when the two young RAF officers were there to receive the beautiful crystal trophy which the cadets from Cranwell won two years in succession. The 20 years old Matthews who captained the Cranwell cadets team received the trophy. By the way he has some Norwegian blood in his veins and has blue eyes and blond hair. During the presentation Hans Nansen said that because of his ill health there would be no more winter courses at Valhoud and he offered his heartfelt thanks to everyone who had helped him in his work.

SENIOR ENTRY REVUE

Paul Fred / Clint Akehurst chewed reflectively on his ample cigar, rolled it elegantly round his mouth, twitched his cloak, and began to walk. The hall was hushed, tense and breathless, it awaited a happening, a dramatic moment. Our hero strode down the centre aisle, paused, (the 'moment' was undoubtedly at hand), looked over his shoulder and squeaked bloodcurdlingly "Lathth one to the bar ith a thiththy." Whereupon the 96 Entry cast led a furious rush to the bar, and so ended their end-of-course revue.

This revue was primarily an experiment. It was a test of the qualities of tact, judgement, taste and sense of decorum of 96 Entry, especially those of the producers. It was vital that the contents of the revue should be 'good clean fun' and it was made abundantly clear that obvious bad taste would result in the withdrawal for an indefinite period of a quite considerable liberty. These terms of reference placed a very real responsibility on the producers' heads, but Bruce Handyside, John Hardie and their associates took it all in their stride. Judging by the mixture of audible sighs of relief and genuine applause at the end, they won a recognisable victory.

The revue itself began sluggishly but gradually picked up tempo and by the time the neurotic Jock Clark appeared, complete with full range of histrionics, the audience was co-operating. (This was Jock's classiest performance - better even than his one bar rendition of Tchaikovski's 100th (!) in a German Gasthof during King Rock Follies '67). Chris Everitt was supremely confident in his own ability to DJ the performance, with a genuine pseudo-american accent.

His jokes were bad, but he kept the show moving. Bruce Handyside aped his way skilfully to 'Jungle Book' music and, in a different sketch, played an inarticulate 'Rock Ape' who encouraged a singular beast, a "Garbett-bird" to carry on! This bird, played by Dave Bills, complete with distinctive red plume is dignified in its bearing, but tends to gabble incoherently at its young. Fidel Lawrence, the revolutionary, though hidden behind the scenes, used his inimitable voice, that has haunted and bedevilled Squadron Commanders and Flight Sergeants for three years, to provide the perfect foil to Ian Spalding's rigid conservatism. These two incomparables took the lid off the pretensions of Cranwell society, and devastatingly exposed the naked truth. Ian's other performance - as the archtypical, autocratic Squadron Commander was a huge success. Chris Everitt went into the pulpit, an anxious moment for the safety of future revues, but was harmless and the 'Peaches Red' a troupe of heavy weight, flying-suited ballet dancers glided elegantly through the stage floor with intoxicating gracefulness.

"All this and much more"- one hour's ribald music-hall humour deftly produced and swiftly executed, and a thrash in the bar to follow! Cranwell has its goodies, baddies and uglies, and fun was poked at all three, but at no time did the revue degenerate into waspish abuse. 96 Entry redeemed the College Executive Body's faith in the ability of the Cadets to produce a well-intentioned and entertaining End-of-Course Revue. Good luck 97 Entry!

S. G. Appleton.

Semper lacrimae, Semper dolens

My eyes are dry, not so my heart,
But my lute weeps gently to me.

The world's face is quiet, not so her heart,
And nations cry for freedom still.

The nations cry, my lute I play,
My ears are touched, my mind is freed.

My lute I play, the nations weep,
But lie crushed beneath oppressors' feet.

ELIOT GOES "POP"

A truly great writer or poet is not merely a dreamer or a remote brooder. He is a prophet, a genius whose imagination can carry his mind fifty or, perhaps, a hundred years into the future. His groping, sensitive fingers first feel the texture of his time while his clear eye and responsible mind explore fully the walls of his own world before they probe deeper into the mists beyond. He is directed by what he sees and by what he senses but he is transported forwards by pure vision. And he then becomes a fisherman whose cast travels years beyond the realm of the eye, a cast which drifts downstream to play among the lives and waters of unborn men and discovers if the current there is surging with life or stagnant and still. But only time can breathe life or blow death onto his fantasies and reveal the truth or the fallacy of them. Only time can uncover whether his dream is to be buried along with him in a wooden cask and piped to his ear alone, or survive as fact, not fantastic or foreign, but open to the air, and true, real, alive. And if his words are true, they drift unconsciously across the world and descend slowly, unnoticed, into the minds and works of the young writers of that future age and are there reflected in the views of these people who are children of the old poet and witnesses to the reality of his dream-world. Such a poet is T. S. Eliot. Such a child is John Lennon.

Over 30 years ago, Eliot visualised what he thought it would be like to live in the scientific worlds of today and to-morrow. He knew that progress and increased population were inevitable, and, indeed, necessary. But what interested and disturbed him was the effect that vast, climbing cities, containing millions of people in comparatively cramped living-space would have upon the minds and happiness of these same people. And what he saw is stark and terrifying, more so when every day brings fresh hints that Eliot's prophecies are, to some degree at least, following the pattern he said they would.

Eliot believed that as cities and their population increased, man would become further and further removed from his many

neighbours until he had so many neighbours that he would experience terrible feelings of urban loneliness; until he had so many comforts afforded him by applied science that he would feel life was empty and pointless; until he had so many pressures forced on him by a jet-aged world he would scramble desperately in a rat-race society. He foresaw what these conditions would do to the attitudes and minds of the new generations reared under such circumstances. He saw their scepticism, their disbelief in everything but the material and their attempts to escape from a crowded, complex world by trying to hide from themselves and reality. But Eliot pictured this reality as being, in a sense, unreal because it was meaningless. Man was nearing a stage where science was creating a virtual heaven on earth. The need for God was being replaced by the comforts of man's own invention. Physically, there was hardly anything left for man to aspire to so man began to believe that he was his own master and turned from God. However, by so doing, Eliot believed that man would pay for the worship of the purely material at the expense of spiritual contentment. Man would have everything his eye could see but always there would be something missing, life would be somehow incomplete and aimless. And science would satisfy and drug his senses for 99 per cent of the time but the individual would never have a sense of achievement or true contentment.

There is no denying that Eliot paints a very bleak picture which is not to be taken too literally. But who can deny that these broad outlines are not present in various forms and to certain degrees in our own society of to-day but more especially, in the home of applied science that is America? And how can John Lennon of the Beatles, a writer of "pop" songs, verify the claims of a great poetic mind?

Well, what else is a song but a poem set to music? But more important, in this analysis at least, is the substance of the song, the words, the picture it reveals. There has not been a writer yet, good or bad, who did not write about what he saw or felt personally

about a subject. And the subject we are concerned with is life as it is seen through the eyes of a young, modern and popular writer who, in my opinion, has a certain brilliance of his own. He observes life as all of us do, unconsciously, only he has the sensitivity of a poet and expresses exactly what he sees and feels, not only about himself but also of other people of his generation, our generation. And what Lennon sees and records is, to my mind, a first-hand view of certain aspects of the life Eliot described would come upon us. In essence, Lennon in a diluted form to a more wide-spread audience than the poet himself could command, the old master creating the atmosphere, the young pupil seeing and feeling the effects.

In the "Hollow Men" Eliot describes the world as being a dead, barren place, for all the comforts of science. This concrete desert is inhabited by hollow men, empty of purpose, meaning or even life.

"This is the dead land. This is the cactus land . . . We are the hollow men. We are the stuffed men, leaning together, head-piece filled with straw. Alas! Our dried voices, when we whisper together are quiet and meaningless . . ."

The same lack of purpose and meaning are also evident in Lennon's description of aimless, futile living in "Strawberry Fields Forever."

"Let me take you down 'cos I'm going to Strawberry Fields, Nothing is real, and nothing to get hung about, Strawberry Fields Forever . . . Always 'no' sometimes, think it's me, but you know, I know, and it's a dream. I think a 'no,' I mean a 'yes,' but it's all wrong, That is, I think I disagree."

In "Preludes" Eliot reveals the loneliness of a great city, the loneliness of an individual in a rush-hour crowd or a bed-sitter where loneliness is not sought or fleeting but an endless stone wall built around him.

"You tossed a blanket from the bed, you lay upon your back, and waited; You dozed, and watched the night . . . Sitting along the bed's edge, where you curled the papers from your hair, or

clasped the yellow soles of feet in the palms of both soiled hands."

Is not this the world of "Eleanor Rigby," the world of "all the lonely people?" Even some of the allusions are similar.

"Eleanor Rigby picks up the rice in the church where her wedding has been, lives in a dream. Waits at the window, wearing the face that she keeps in her jar by the door, who is it for? All the lonely people, where do they all come from? All the lonely people where do they all belong? Father MacKenzie, writing the words of a sermon that no one will hear, no one comes near. Look at him working, darning his socks in the night when there's nobody there, what does he care?"

And, finally, in "The Rock" Eliot describes the apathy and blind indifference of a world which has left its soul and meaning of life stretched far behind it on the road to nowhere. The comforts of scientific living have induced a sort of desert in the hearts of men and dealing with other men so that they are concerned only with themselves and therefore turn from the Rock, the symbolic image of the Church.

"And now you live dispersed on ribbon roads, and no man knows or cares who is his neighbour, unless his neighbour makes too much disturbance. But all dash to and fro in motor cars, Familiar with the roads and settled nowhere . . . Life you may evade, but Death you shall not. You shall not deny the Stranger."

Again, "Nowhere Man" strikes a familiar note.

"He's a real nowhere man, sitting in his nowhere land, making all his nowhere plans for nobody . . . Doesn't have a point of view, knows not where he's going to, isn't he a bit like you and me."

Here, in a nut-shell, we have the relationship between Eliot and Lennon. Eliot gives us the reason why "Nowhere Man" lives in the manner that he does while Lennon describes the manner, the indolency. And such is the case with many of today's "pop" song writers. These young men write for

money and are not concerned with making social comment but, nonetheless, this is what they do every time they put pen to paper. They do it quite unconsciously and undeliberately because, for the most part, they are concerned with the "sound" they produce rather than the effect of the lyric which is secondary. But the lyric must deal with something and more often than not it is a picture of daily life, daily feelings and daily attitudes. The young writer writes about what he sees and feels and what he sees and feels is what Eliot said he would, to various degrees, of course. And this is why I have used Lennon in this analogy with Eliot. Lennon is more aware, more sensitive and more successful than any other modern

writer of his kind and this is not only because of the Beatles' tremendous "sound". The Beatles have moved with the times musically, but also lyrically, which must prove something. And what of the other young writers, what little scenes of modern life lie latent beneath their pounding "beat"? Picture the sights and feelings which went into "Here Comes Your Nineteenth Nervous Breakdown", "Dead End Street", "Eve of Destruction" and countless others. Listen to the words next time and then ask yourself if we are not just running because it has become the habit. Maybe Eliot wasn't really up in the clouds or just another remote brooder, afraid to face progress. After all, Eliot has gone "pop".

D. Strickland.

USE NAAFI INSTALMENT CREDIT

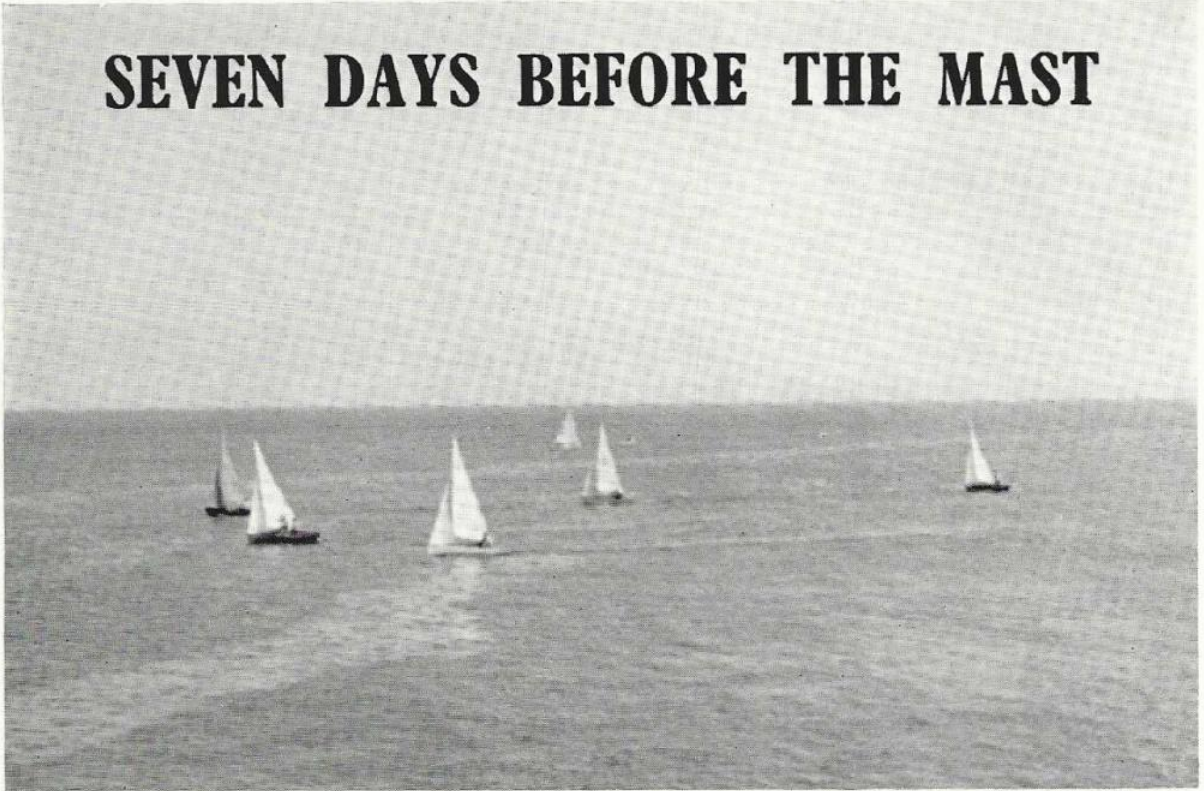
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SEVEN DAYS BEFORE THE MAST



“Are you for the Amulet?” said a voice as we placed our Royal Air Force holdalls on the quay at Fowey at seven o’clock on Saturday 16th August. He must have recognised us by our blazers, cavalry twill trousers and that certain air which reveals a Cranwell cadet.

“I’m your skipper, Dick, and this is Mark, your mate.” However it remained to be seen what kind of mate he was going to be. “And this is Fleur, the daughter of the owner, who is coming with us. Shall we go on board?” It was then we first saw the Amulet, a 45ft sailing ketch built in 1891, with the original sails. She was painted red, white and blue and the closer we got, the more her appeal of age and character came over us.

Once on board we stowed our bags

“downstairs” and were then told that it was not “downstairs” but “below”. Five minutes later we were peeling spuds on deck for the evening meal. There were ten on board altogether, six cadets, Flt Lt Snell the skipper and his son, Flt Lt Anderton the mate and last but not least Fleur.

We made an early start on the Sunday morning after taking water on board, and once clear of the harbour we began to hoist the sails. At first we gazed open-mouthed at the mass of halyards, sheets, stays and rigging and at the first attempt everything moved but the sails. By the end of the week however we became expert. The weather was fine and we set course for a harbour on the coast near Lands End but halfway during the day, as the wind was favourable, we set course for Guernsey instead. This entailed sailing through the busy shipping lanes during the night and so we divided into two

watches, each doing four hours at a time. Just after dark on Monday night we anchored in Guernsey harbour.

On waking on Tuesday morning we saw the towering bow of the BR steamer overhanging the Amulet, but it moved off with us slowly uncrossing our fingers. We had a day of rest in Guernsey lazing about sunbathing and at night we celebrated one of the cadet's 21st birthday in shipboard fashion with some invited guests from nearby boats. The wine and song flowed free well into the night.

"Get on deck you scaley toads", was the shout that roused us from sleep the following morning. With pneumatic drills hammering in our heads we crawled up the ladder and were hit by brilliant sunshine and a very good wind. Jersey was our target and we set sail.

Once clear of the harbour we saw Jersey on the horizon, over thirty miles away. The day was beautiful for sailing and with a strong force 5 westerly wind we made excellent time. I say excellent time meaning about 7 kts as that was about the maximum speed the Amulet would go under full sail. This consisted of a jib, large fair weather staysail, mainsail and the mizzen. There was a very heavy swell running with the Amulet sinking into the troughs and being completely surrounded by large walls of water and then rising to the crests and perching there for a second before descending again. The swell was coming directly broadside and so the boat was rolling, pitching and sliding sideways all at once. This "pitchin' an' 'eavin'" turned one or two members of the crew a beautiful hue of green and as the rest found it really amusing, they suffered.

Jersey was reached by about five at night and we anchored in the harbour. Then it was everyone ashore for a slap-up meal at a steak house. The party then split up, those who were tired returned to the boat whilst the rest decided to sample the night life. To their indignation they were turned away from the dance hall because one of them, who shall remain nameless but was not a cadet, was wearing sandals without socks underneath. Dispirited they decided to return to the boat to sleep.

It was just as well for the next day entailed some very tiring sailing. We had to beat into wind and swell and constantly change tack. It was excellent sailing with the boat beating bows under all day. The night before we had a mutiny and two of us became skipper and mate for the day. It is just left to add however, that it was a good job we had certain "scaley" crew members to advise us. We made excellent time and reached Guernsey by dusk and sleep was welcome that night.

Friday dawned bright and stormy and so began our last day on board the Amulet. The wind was very favourable so we set sail for Sark. We anchored before lunch in a rock-surrounded bay with only one entrance and divided into two parties to go ashore. We had to divide into two for it needed five people to stay on the boat in case it began to drag the anchor. We found Sark extremely interesting and beautiful. It was almost as if we had returned a hundred years into the past. There were no cars or buses, only horse drawn carts. No roads, only dirt tracks and the thing that struck us immediately, no noise. Our time was only too short in this small piece of the past and we had to leave.

Once back in Guernsey harbour we packed our bags. There was a steamer leaving at midnight and we decided to take it instead of waiting until the Saturday morning. Before we left the new crew came on board and everyone agreed secretly that it was just as well that we were leaving when we were. For the last time we rowed in the dinghy to the quayside and left the Amulet just as we had first seen her lying at anchor in harbour only this time in Guernsey and not at Fowey.

We boarded the steamer and collapsed into the seats but were far too tired to notice the girls sitting next to us and the next thing we knew was that we were in Weymouth harbour. Our week had finished and not one of us would admit that it had not been the best week any of us had spent at any time. We were tired out, greatly sunburnt and ravenously hungry but every minute had been worth it.

C. J. Kennedy.

“ AVAST BEHIND ! ”

“ Warrington !! Come in.”

“ Yes, Sir.”

“ You have been selected to spend a week on detachment.”

Visions of the Far East, lazing on some tropical beach, fanned by nodding palm trees, or perhaps studying the climatic effects on aircrew in the South of France, or at least sampling the duty free pleasures of Royal Air Force Germany

“ With the Royal Navy on HMS Acheron - a submarine.”

- Fixed smile and mixed feelings — could be quite good fun and yet I could see the headline now “ Royal Air Force Cadet presses button and starts World War III ” together with a picture of yours truly wearing a weak grin.

“ That should be nice, Sir.”

“ Only one snag, you’ll have to spend a week in Gibraltar afterwards because the sub is going there.”

The fixed smile becomes more real as the palm trees nod back into sight.

“ What a shame, Sir, but never mind I’ll go.”

“ Good.”

Nevertheless it was a rather apprehensive Cadet who presented himself at HM Dockyard at Devonport. The kitbag was slung, I hoped, nautically over one shoulder and contained pairs of khaki, ankle-length shorts and khaki, thigh-length socks. I wondered how the Navy would react to this little upstart from the Brylcream crowd. My fears were soon dispelled when the captain of the submarine greeted me heartily and bought me a pint. I since found out he put it on my mess-bill, bless his little, cotton bell-bottoms.

We left the next morning and moved majestically out into the estuary. There was much piping and saluting from the bridge as we passed the other ships in the dockyard. Very impressive, I thought.

“ Head south ” the captain shouted down the voicepipe with just the right overtones of Captain Bligh. The bow of the sub swung majestically round. It wasn’t till we had done a complete 360° turn that the captain felt justified into enquiring of the helmsman

what the blankety blank he thought he was blankety doing. A plaintive voice echoed up the pipe

“ Which way is south, Sir ? ”

“ Who’s that on the wheel ? ”

“ The chef, Sir.”

“ Get off it,” was the icy reply.

I remember thinking at the time it was very unfortunate that this incident should occur in front of the Admiral of the Fleet’s Residence in Plymouth.

Then followed four days of staring at a few square miles of sea which isn’t really likely to send anyone into paroxysms of delight. The only high spot was when the boat slowed to a halt in 6000 feet of water about 40 miles off Portugal, and hordes of white pimply bodies emerged from the hatches and proceeded to throw themselves over the side. As I did not notice any rats among them, I decided it was safer to stay on board and view the whole affair with puzzled amusement, as we Royal Air Force chappies are wont to do in occasions like this.

All having been safely gathered in, we submerged and proceeded to hunt for another submarine in the area. The captain, with a nonchalant sweep of the hand and matter of fact tone of voice, informed me that the sound equipment on board could not only detect other shipping in the area but tell how many propellers they had, how many blades on the propeller and how fast it was going. I tried to look suitably impressed. Later that day, or was it night ? the klaxon sounded and figures began scurrying around looking very efficient. “ Action Stations ” were dramatically announced. The sound operation had detected a twin-screw vessel doing probably 230 revolutions (4 bladed propeller !) We proceeded to home in on the intruder in typical World War II style. Nautical orders buzzed over the intercom and chinagraph crosses appeared on illuminated perspex plates. Then was a bit of panic when it seemed nobody could remember who knew how to work the torpedoes, but this was glossed over in the excitement. After an eternity had elapsed, the threshing of water above indicated that we had passed directly

under a merchant ship - one propeller doing 130 revolutions. At the time our fin was only 30 feet beneath the waves and some of those merchant ships are large! Warrington's stiff upper lip trembled slightly and the headline changed to "Royal Air Force Cadet in Submarine Disaster - found after floating for six weeks in an open life-jacket." The captain murmured "You can't win 'em all" and the incident was closed.

The rest of the trip was spent learning the intricacies of torpedoes, reading cheap American paperbacks (and the Navy List), and playing "Ukkas." For the uninitiated it is a raucous form of Ludo during which everybody cheats.

Needless to say the young raw cadet was clapped round the shoulder and forced to drink some rum. I managed to stomach $\frac{1}{4}$ th of a pint of distilled rubber tubing with appropriate nonchalance by following the sailors advice of not breathing for five minutes. I think I climbed in their estimation after that.

My sleeping accommodation warrants a brief mention - it consisted of 2 sq ft of irregular Dunlopillo about 1 ft from the top of the hull from which taps and pipes valves hung in festoons.

I should imagine a 2ft high dwarf who had done a bit of yoga could have got into it but he wouldn't have slept.

The climax of the trip was the ceremonial entry into Gibraltar. Immaculate "whites" were extracted from lockers all over the ship and the crew appeared spick and span. We took our place at the rear of a convoy of six submarines and moved majestically through the harbour entrance. Instead of cheering throngs greeting us from the quayside, there was a Moroccan photographer in a rather twee skin-tight, lime-green, tee-shirt leaning over the side of a rather grubby tugboat. The only other observers were a bunch of Russian sailors wearing regulation light grey singlets as they leant over the side of their survey ship.

I stepped, rather gratefully, onto Gibraltar Quay and bid a fond farewell to the officers and men of the "Acheron." I had

seen how the other third lived and I was now embarking upon a week's holiday in one of the most pleasant places I have ever been. "Franco - who do you think you're kidding!" stared at me from the side of a house. I agree.

Joking apart, of course, the submariners did me proud — it was certainly an unforgettable experience, and rather them than me! Polaris or no, I wish them the best of luck in their none too pleasant and exacting life.

L. Warrington.

Sea-Struck

The evening falls

I listen to the pulse-beat

Of the sea

Incessant

Knocking with beautiful

Monotony against

The shore, where I stand.

The sun slips down

Behind a screen

Far out in the west

And I must wait

Forever,

Listening on the threshold of the sea

Knocking on the portals

Of the lost.

This is Poseidon's
Kingdom

And I must stay

Forever.

EXERCISE MONS - CRANE JUNE 1969



It was fitting that this year's visit by 96 Entry coincided with the 20th Anniversary of the foundation of the North Atlantic Treaty Organization, at a time when the very nature of the Organization itself is coming under review. So the visit to NATO units in Europe, which took place from 1st to 7th June could not have come at a better period.

Air Support Command rose to the occasion yet again and picked up the party of 57 officers and cadets from Waddington to deliver them at Brussels National Airport on time after an uneventful flight. The party were accommodated at a hotel in the heart of Brussels, a suitable base for the first stage of the trip which was to be a tour of the NATO Headquarters at Evere, just outside the capital. Time being at a premium, no chance was lost in getting to know the city a little better. As it happened the benefits of this were far reaching. The following morning the coach driver succeeded in getting lost several times on his way to Evere, refusing to accept either our directions or the fact that

we were driving around in circles. English cadets giving a Flemish bus driver directions in French is a situation to be avoided if at all possible.

At Evere the party was welcomed by Air Chief Marshal Sir David Lee, who outlined in great detail the aims of NATO and set a very informative and interesting background for the visit.

The afternoon spent at SHAPE, situated at Castelle near Mons, lent even more emphasis to the fact that NATO is Big Business. After an opening address by General Doumier, an Italian army general on the international staff, the group had a chance to enter into a very lively and high-spirited question-and-answer time with the Deputy SACEUR himself, General Sir Robert Bray.

There then followed a guided tour of the vast complex that makes up SHAPE, including the messes, clubs and schools for children of 16 Nations.

The final port of call, the Officers' Club for the Vin d'Honneur, turned out to be an extremely popular move.

On the third day the party split into two groups, bound for Royal Air Force Germany, via the Belgian Air Force stations of Kleine Brogel and Beauchain. Both parties were treated to a comprehensive tour of the stations and the Belgian Air Force are to be complimented on their patience in allowing cadets to crawl over their F-104 G's and then to make remarks like "THAT can't fly - it's got no wings!" Actually the very professional outlook of the BAF and the confidence they have in their men and machinery impressed everyone.

One party went on to Royal Air Force Bruggen, only to be reunited with half of the party who had laid "squatters rights" to second the best rooms, they themselves having been moved from Rheindahlen due to a shortage of accommodation. The evening was spent striking up friendships among members of Nos 213 and 80 Squadrons, who entertained in a most impressive manner and no doubt this will fire the interest of many to apply for a tour in Germany at the earliest chance.

An early start the next day took both groups to Brunsumn in Holland to visit HQ AFCENT. In spite of the security aspect of this stage of the visit some very entertaining talks by members of the staff more than made up for not being able to see all we would have liked.

A visit to HQ Royal Air Force Germany and a day spent seeing the 'sharp end' at Bruggen and Laarbruch concluded a very busy few days. In between generally looking over the stations and flying with the squadrons the more enterprising members of the party found time to fit in visits to the War Museum at Overloon and the night life in Dusseldorf ; but not in that order.

This year's NATO visit will be remembered by everyone who went as an instructive and worthwhile experience, marred only by the fact it was not long enough. If anything the only one with problems on the whole trip was the customs officer at Waddington, last seen saying to himself, "They couldn't have wanted **ALL** that drink for the Grand Ball"

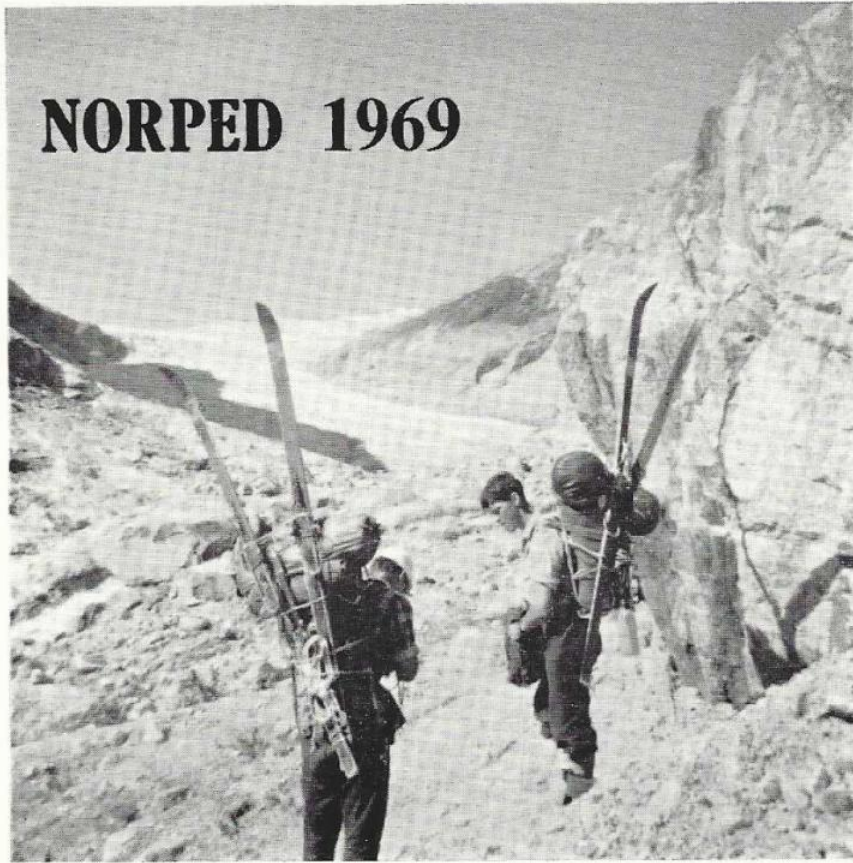
R. M. Collier.

Colours of Love

Rainbow-lovely you are
And clover-sweet
Sea-emerald eyes
That smoulder in my heart
Rain-pale are you
And lovely
Mud-raven hair
In which to hide my shame
Eagle-high you are
And swan-soft
More remote than stars that touch my soul
Summer-young are you
Yet Autumn wise
Your heart is Winter
But still for Spring I hope
My love you are
And incorruptible
A dream plucked,
Set free for me to chase.

G. M. Eddy.

NORPED 1969



8th August 1969, King's Cross Station.

“ The train about to leave from Platform 8 is the 1330 for Newcastle, calling at” Anyone who had just missed that train and were cursing their bad luck and the London traffic in the same breath, need not have bothered. They were the lucky ones.

The journey in question is not an enjoyable one at the best of times, but on this particular day it was rendered worse by a small group of British Servicemen who contrived to block every corridor, or so it seemed, and, I might add, achieved a degree of success remarkable for so few. But, before you start deriding one particular Service, let me tell you that this was a Joint-Service operation -

Royal Navy, Royal Marines, Army and Royal Air Force.

If, on alighting from the train at Newcastle at 1830, the passengers were so presumptuous as to think their ordeal was over, they were wrong. In fact, the situation was rendered more desperate when the group was met by reinforcements on the station. The amount of havoc wreaked by these twenty-three people was out of all proportion to their number, but not quite so surprising when you learn that each was armed with a rucksack weighing anything up to 70 lbs., (the masochists carried two), and a ticket for the 1835 bus. Just suffice it to say that the chaos and inconvenience caused would have put a traffic warden to shame, and must have required a high degree of co-ordination and training.

They reached the good ship Jupiter after a twenty minute bus ride, and if the porters at the station were glad to see the back of them, those at the dock loading bay did not exactly welcome them with open arms. Nevertheless, by sailing time they were all aboard and ready to embark on Norped 1969. (For those ignorant of Latin, Norped derives from two words: Nor - Norway, and ped - by foot; and this describes exactly what these intrepid adventures were going to do). Walking, however, was only a necessary prelude in order to reach the ski-ing, surveying and climbing centres that would form the nuclei of the expedition.

Two days journeying by boat, rail and bus brought them to within six miles of their base camp, which was finally reached by a tractor journey, along a narrow mountain track, which reduced even the most 'steely' climbers to gibbering nervous wrecks. Dazed, blinded by dust, numbed by cold and exhausted after two days of constant travelling, they pitched tents, crawled into their sleeping bags and fell into a restless sleep, frequently interrupted by the hordes of kamikaze mosquitoes.

It is said that sleep is the best cure and, sure enough, next morning the adventurers looked better for their rest, although there were a few blotchy faces where the enemy had pressed home their attacks during the night.

For the first week the sun shone and all the members of the expedition indulged in their favourite pastime of "bronzy, bronzy" - i.e. getting a sun tan. In between these punishing sessions the expedition members split up into groups of four, organised the base camp and spent four days on the nearby mountains and glaciers. This served three purposes: acclimatisation; familiarisation with snow and ice work; and getting used to carrying a 70 lb pack for six hours a day.

It was on the eighth day that tragedy struck - the sun went in. However, this only served to heighten the level of activity and the base camp emptied like a village with the plague, as groups scurried off in all directions in search of those sacred ultra-violet rays.

They returned a week later telling of their fruitless search and of their adventures. How one group had been marooned in their tents for 36 hours, and another caught in a roaring blizzard in the Hurringane mountains. In passing, I would just like to mention the group that did not return. The only clue as to their whereabouts was a postcard of a pretty village, marked with a cross and annotated 'Norped 1969, Group 3.' Needless to say, the cross marked the village pub.

One of the tasks of the expedition was surveying the Lodalsbreen glacier, and groups took it in turn to sweat and slave whilst carrying the theodolite up the glacier. However, all was not in vain, and the work was duly rewarded with the knowledge that the glacier had moved four metres in the past year!

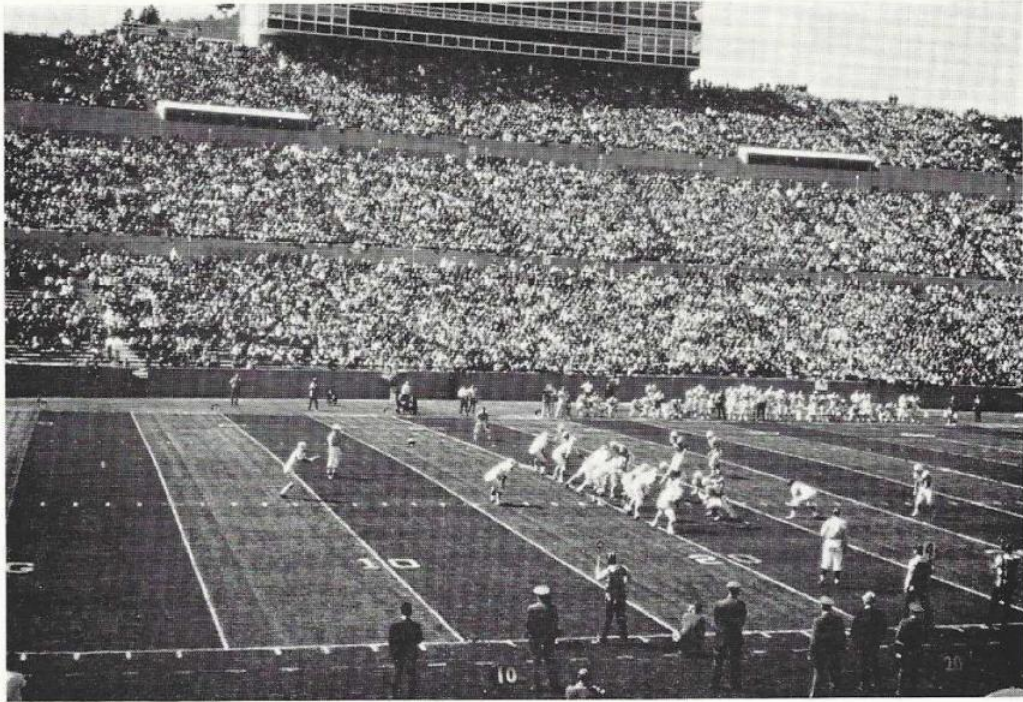
Meanwhile, the real purpose of the expedition - sun worship - was proceeding apace, and peeling skins were beginning to heal. New sports and activities were springing up, and the College contingent featured prominently in these.

Mike (David and Goliath) Barcroft 'bagged' the only Ptarmigan of the expedition with a well aimed handful of pebbles. Dave 'Durability' Bowden pushed man's resistance to cold to unprecedented limits when he slept on the ice-cap in a polythene bag covered with ice - on the inside! John 'Ginger' Womphrey grew the best beard on the expedition and was duly awarded the title "Nansen of the North 1969," and if the College ski-ing team needed another member, they need look no further than Alf 'Jean-Claude' Harrington. (The fact that it was his first time on skis probably accounted for the fact that he could not live up, or stand up, to his name).

And then, without any warning it seemed, the month was over, and as we left Norway, there was not one amongst us who did not hold some regrets at leaving. So, if you have nothing to do next summer, are masochistic, mentally disturbed, or just plain mad, let me recommend Norped 1970 to you.

C. Harrington.

FALCON CRANE 1969



American Football at Academy Stadium

During the week April 13th until April 19th 1969 sixteen officers and eighty-three Flight Cadets of 97 Entry visited the United States Air Force Academy at Colorado Springs.

This is an annual visit, and is designed to give Cranwell cadets the opportunity to observe the difference in training between the USAF Academy and the Royal Air Force College, and to foster goodwill between the sister services.

One of the most striking first impressions of the Academy is its size. It stands on an 18,000 acre site at an altitude varying from 6,340 to 8,040 feet. There are over 100 miles of road, 75 miles of which are paved. The acreage is six times that of Cranwell, and does not include an airfield, as Cranwell does, though there is an airstrip.

The Cranwell cadets were housed in Vandenberg Hall, which is the largest building at the Academy, and has all the

qualities of a first-class maze. This building is one quarter of a mile long, six stories high, and will house 1320 cadets.

Lectures for the Cranwell cadets were kept to a minimum. A five minute brief was provided on the subject of sport, and the same for the academic system.

The lecture which gripped all cadets was given by Lt Colonel W. H. Copp, USAF, and Captain D. G. Middleton, on NORAD. Here the Cranwell cadets became really involved, and the question period which followed the NORAD brief was well-used.

A brief word, now, about the training received by a USAFA cadet whilst at the Academy. There are about 3200 cadets at the Academy, and about 75% of those qualify for pilot training. However, they receive no formal flying training, but do manage 36½ hours of flying in T-41 aircraft, and 30 hours of ground school. The main part of the four year course is the academics,

which results in a cadet, on successful graduation, receiving an accredited B Sc degree as well as a regular commission.

The College played the Academy varsity teams in four sports - Rugby, Soccer, Basketball and Squash. None of the teams won, due in part to the altitude, in part to the superior fitness of the hosts, and in part to the fact that only one entry visited the Academy, whilst College sports teams are drawn from all entries. So, in fact, the results (Rugby, 0-14 ; Soccer, 2-3 ; Basketball, 20-76 ; Squash, 0-5) were not too disappointing.

Squadron Leader Delafield led a team of six Flight Cadets to represent the College Gliding Club at the Academy. The Academy Gliding Club operates from Academy Fields, a small airstrip at the foot of the Rompart Range. Airfield elevation is 6,500 feet, with the Rockies towering above it to over 14,000 feet. With a westerly wind the Romparts produce both primary and secondary waves, extending to an estimated 55,000 feet.

The aircraft used were a Schweiger 2-33, and a 1-26. The Americans spent the whole afternoon with only one objective in mind - to get the Cranwell team off solo and soaring.

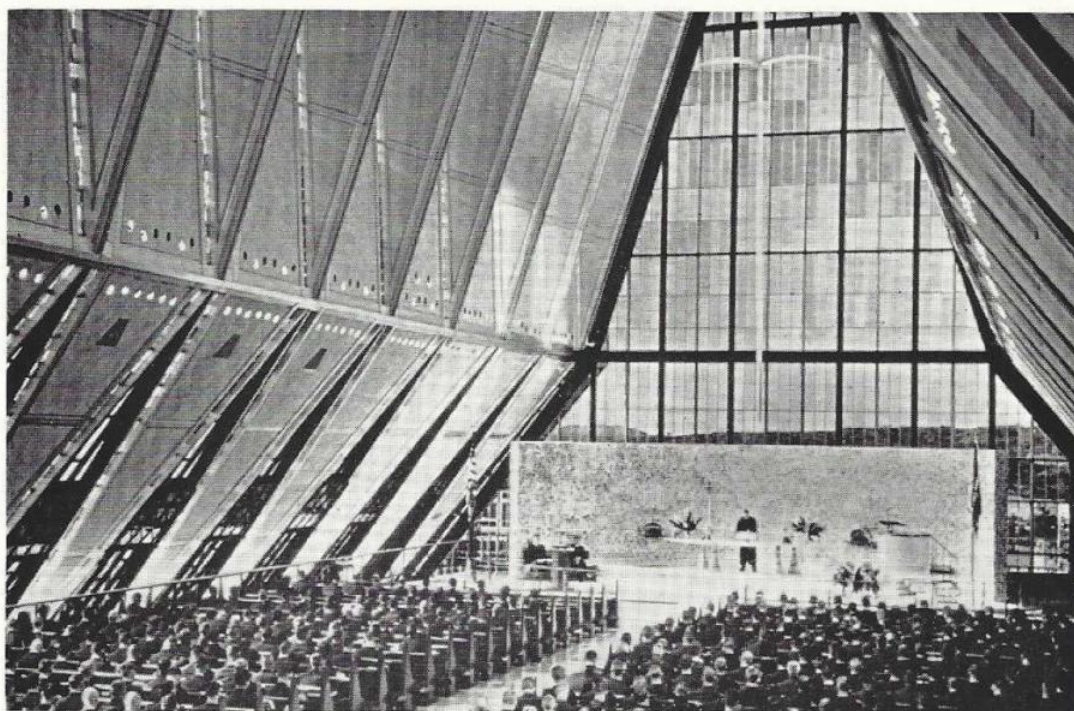
Thus, after a check in the tandem two seat 2-33, they solo'd in the 1-26. The gliding conditions met by the team there are impossible to parallel in this country.

On the Tuesday a party of cadets were taken skiing at, would you believe, Loveland ! Those four who did not ski visited Royal Gorge for a sightseeing tour. Both trips were extremely enjoyable.

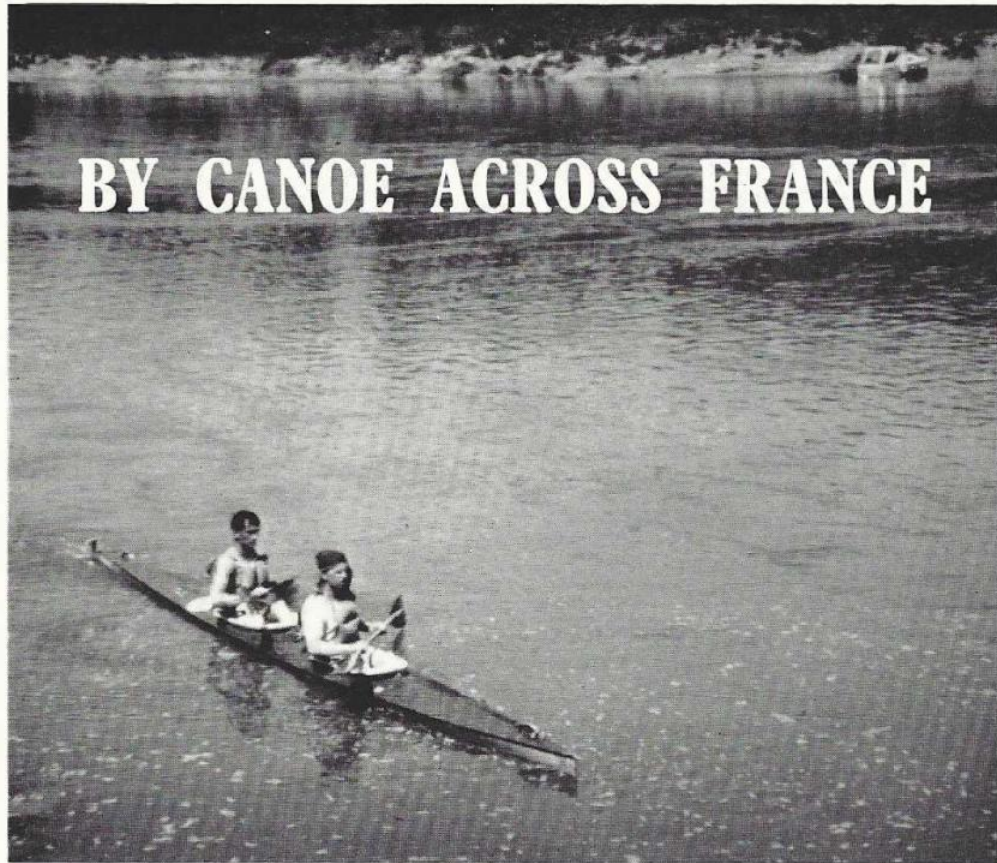
It would be an impossible task to relate in detail the entertainment that was provided for Flight Cadets, since eighty-three cadets manage a wide area of activities. As an indication, Flight Cadets were transported in their hosts' cars to and from numerous sources of entertainment, until we were convinced that the Americans must have invented the word 'hospitality.'

All too soon it was time for them to board the aircraft and return home - slightly (!!) delayed by an unscheduled night stop at Andrews Air Force Base.

The visit gave everyone from Cranwell an insight into USAF training methods, the American way of life, and a clearer understanding of the US as a whole.



The Protestant Chapel at the Academy



On 2nd August 1969 four members of 97 'A' Squadron left Cranwell in a College minibus heading for the cross-channel ferry and the South of France. A Trenchard Award Project which had been in the planning and administrative stages for eight months, was at last under way.

The aim : to canoe from the Atlantic to the Mediterranean along the rivers and canals of Southern France. The minibus was to be used only for the journey down and the journey back to England. The canoeing phase, covering some 300 miles in two weeks, was to be carried out completely independently of any support party or vehicle.

Two fast double canoes were prepared for the expedition and trials were carried out on the River Trent at Newark. The participants, Under Officer Taylor, Senior Flight Cadet Davison, Senior Flight Cadet Banks and Flight Cadet Applegate, all had some canoeing experience and through a sequence

of trial and error and several capsizes on the comparative safety of the Trent, the techniques and skills required for the trip were worked out.

The journey down through France was fast and uneventful apart from a tendency of the minibus to overheat and stall in the most embarrassing situations, usually half way round a busy traffic island, much to the amusement of the local inhabitants. Our destination was Royan, a holiday resort at the head of the Gironde estuary, 80 kms NNW of Bordeaux and it was here that we took to the water and began the long journey, paddling at first cautiously in the calm sea conditions, then more confidently as we got the feel of the loaded canoes. Steady paddling brought us to Blaye in a day and a half. The original plan had been to canoe through Bordeaux but the vast quantity of shipping proceeding up river to the fifth largest port in France made the prospect potentially rather dangerous. Instead, therefore, one

member of the party hitch-hiked back to Royan to collect the minibus, the canoes were loaded up once more and we drove through Bordeaux to Villenave. Our view of the river, as we crossed an impressive suspension bridge into the city, confirmed the decision to avoid it ; the water was fast and turbulent and heavily trafficked and the banks inhospitable in the event of an emergency.

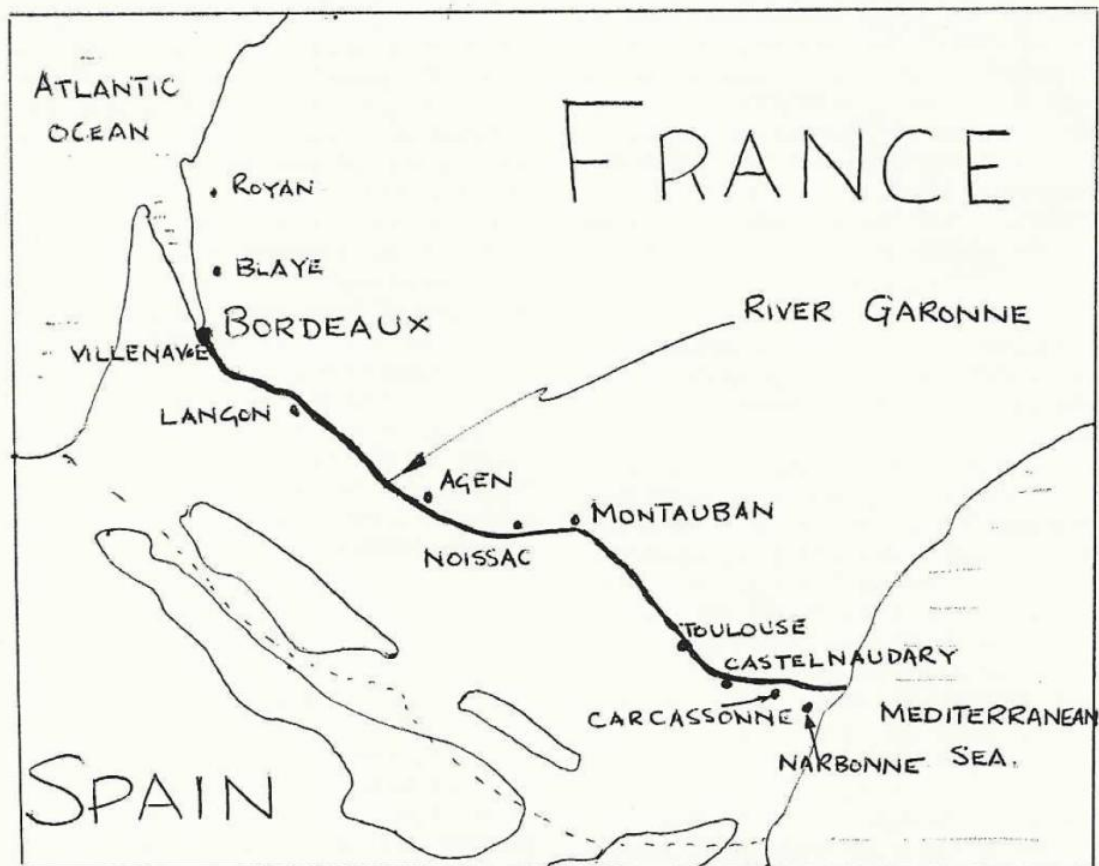
At Villenave camp was established and the party split up temporarily whilst Taylor and Banks drove the minibus to Toulouse, garaged it, and returned by train. The long haul now began as the two canoes headed up the River Garonne against a powerful four knot current. The day was hot and sunny and when, after nine hours struggling upstream, at times barely making headway, we arrived at a campsite at Langon, 35 kms SE of Bordeaux, the strain was beginning to tell. We could not hope to maintain the desired rate of progress in those conditions and decided to leave the river earlier than intended in favour of the canal lateral "a la Garonne." The next day 10 kms canoeing on the river brought us to Castets ; a portage round the huge double lock and we were on the wide and pleasant canal which carries a considerable barge traffic through Toulouse and ultimately to Marseilles.

Good progress was made on the sweeping curves and tree lined straights of the canal, carrying the canoes around the frequent locks, each with their picturesque cottage and friendly lock-keeper. Only one exception was found to the latter ; an irate gentleman purple with rage refused to let us even land at his lock. Such was his anger that he threw the book at us literally and metaphorically speaking ; a large heavy volume which he hurled at us was deftly fielded by Applegate and thrown back. Eventually we backed off the way we had come, landed and carried the canoes round without further hindrance. Although amazed at his behaviour and ourselves rather annoyed at the time, we had a good laugh about the incident when we pitched camp that evening beside a road bridge just south of Marmande. A swim in the rather muddy waters of the canal was very refreshing after a hard day's canoeing and, after supper, a drink at the nearby inn was even more refreshing.

The weather continued fine and warm and we made good progress to a few kms outside Agen. We passed through many villages and under narrow bridges ; a system was developed of counting bridges and locks to keep track of our progress on the very detailed maps. Sometimes, in our anxiety to reach the next objective and have a rest and some of the excellent local lemonade, we miscounted and there was much wailing and gnashing of teeth when we discovered that we weren't where we thought. Many barges were encountered, their wake providing a brief interlude from the sunlit calm of the canal as it meandered its way along the valley of the Garonne. The deeply laden barges, each beautifully kept and crewed by an entire family, created quite a disturbance in the confined waters and often the front man in each canoe received a huge wave wake in his lap as the boat ploughed through the wake like a surfacing submarine. The barge people were very friendly and news of our progress spread along the canal ahead of us, carried along by their gossip. The following morning we treated ourselves to a glorious breakfast of ham, eggs and coffee at an hotel in the village where we had camped overnight. Much to our surprise the landlady had already heard of our exploits from the passing barges.

At Agen the canal crossed the River Garonne by an impressive aqueduct ; the river far below, although very wide, was quite shallow and rocky at this point and certainly very fast flowing - not at all suitable for canoeing upstream. We were ambitious that day, setting ourselves a target of nearly 60 kms. The canal ran through the centre of Moissac, in the heart of the wine growing country, and the populace gazed at us curiously, fishermen cursing us affably, as we glided through the town, the splashes from our paddles echoing between the high walled banks.

Another easy day's canoeing brought us to Carcassonne and we took time off to look round the shops and visit the historic and unique walled city. A few kilometres beyond here we transferred the canoes to the River Aude for the final 70 kms to the Mediterranean. The river combined pleasant, tranquil stretches and shallow, fast-flowing rapids. The weather, which for several days



Map of Journey

had been overcast, though still very warm, turned bright and sunny. Everyone was in high spirits although manoeuvring the twenty one foot long canoes down the rocky stretches was a hazardous business and on several occasions the crews had to wade down the rapids, guiding the boats by hand. Surprisingly the river showed an alarming tendency to get narrower and faster as it neared the sea. We had to portage round several large weirs and progress slowed considerably.

Disaster struck about 7 kms NW of Narbonne, when within 25 kms of the sea, one of the boats failed to negotiate a sharp turn at the foot of a fast-flowing rapid, and ran onto a sharp rock. Although the crew clambered out quickly the current was so strong that the boat was forced against the rocks and was filling rapidly with water.

Eventually the canoe was dragged clear but not before three gashes had been torn

in the hull. After some debate it was decided to try and continue on the Canal de la Robine to Narbonne. The damaged boat would still float but had to be upturned and emptied about every ten minutes. It took about two hours to reach Narbonne and camp was set up on the outskirts of the town. We were so near the sea that our objective was considered reached ; to continue was in any case not very practicable as two days would have been necessary to effect a repair with the glass-fibre kit and time was precious.

Accordingly Taylor and Applegate caught a train to Toulouse to retrieve the minibus, which overheated even more in the glorious Mediterranean climate. All that remained was to pack up and head for home. Although the original plan had been modified to a certain extent we felt that we had achieved our aim. Certainly it was a most enjoyable and worthwhile trip.

C. M. Davison

Epitaph for a King

Trapped by environment
He waits for the line of friendship to be cut by a friend
And yet he entertains no thought of the future fall and sudden end.
Embittered by his jealousy ill-defined as love
He balks at every thing that comes between
Himself and what is his.
"I am the King," he cried
For when this friendship had long died
He lacked aught else on which to pin his life.
He weeps, is broken on the wheel.
Tortured by the growing doubts of losing faith
And love, he begs forgiveness at the seat of power.
The sounds of raucous laughter fading hour by hour
Break from a distance on his ear, and visions soured
By remembering flash across his brain . . .

One who hates what he would love because love had despised
His weakness for it. Torn between the noblest thoughts of life
And baser ones of death, he fumbles, cries,
He stumbles, collapsing his world around him. Dissatisfied
With what he has, he loses all, gains nothing but remorse.

Let him wander with his thoughts.
The power of all emotion has left his ailing spirit.
He can do no harm, neither in defence of what he loved,
Nor even yet in spite of it.

J. B. S. Hilton.

KING ROCK '69

The first year at the College for 99 Entry culminated in the annual Exercise King Rock. This was the last time the standard and pre-university elements of the Entry acted together. The Exercise was held once again, in the well-loved forest around Brilon, under the command of Squadron Leader Bridges, the SRI.

The first half of the party, having overcome their initial, and continuous disbelief that a camp could be set up amongst the blackened stumps, swiftly set about erecting the tents, assisted by the first shower of the seemingly never ending deluge that accompanied our fortnight in Germany. For the first time a centralised cooking system was employed, with the duty section for the day being responsible for all working and maintenance of the camp.

Activities during the Exercise were the

same as in previous years, i.e. Field Training and canoeing with the substitution of Functional Leadership for Rock Climbing, which was a disappointment for many members. Another innovation was that the Squadron Officers replaced senior cadets in the capacity of Section Executives. Disappointing news was that the Regiment Mile had been deleted from the syllabus of training. Surprising, after its popularity with the members of 97 and 98 Entries.

Field Training commenced on the first day, with a Navex of some 24 miles, followed by burrowing under para-teepees. After the following day's march (in pouring rain) to search for an "ejectee" the river-crossing with the casualty was cancelled due to the flooding of the river. Similar exercises occupied the following two days of Field Training, accompanied as usual by deluges of rain.



Cadet Camp - somewhere in Hochsauerland

The Functional Leadership phase of the Exercise, being a new introduction, suffered its teething troubles, but will, it is hoped, be expanded to a more interesting item of training.

Survival training was given to the Squadrons by their respective Squadron Commanders. Besides being useful training it also gave Flight Cadets the chance to resurrect their childhood skills of "Hide and Seek." Fire-lighting took some groups longer than others, although one wonders whether the surreptitious addition of hexamene blocks was quite in keeping with the exercise of survival training! An incredible amount of ingenuity was shown in building snares and traps, including one astounding feat of engineering which was quite capable of felling an elephant!

Canoeing on the exercise provided basic training in stability for most people and showed up to various effects, those whose balance was not quite what it should have

been. It did however, provide amusement for units of the Bundeswehr, who were encamped next to the lake. "B" Squadron won the Hennessy Trophy.

The highlight of the exercise was the Escape and Evasion exercise. The first night must have been the wettest for many months, but it did not dampen the spirits of the escapees. The prospect of having two enemies, the Directing Staff and the Army was slightly daunting, but despite all, three crews managed to survive unscathed. Interrogation was dropped this year, and instead "tactical questioning" substituted. Judging by the stories told by those captured, the "tactical questioning" retained its effectiveness.

After due consideration over native bars in both Brilon and Cranwell, the success of King Rock '69 was agreed upon. It seems that the success of this exercise varies in direct proportion to the amount of beer consumed (afterwards, of course!).

A. J. Pennington.

ROMANS - AUGUST 1969

They say there is no substitute for being in a country if you are going to learn a language and so the invitation for a party of cadets to attend this year's "stage" was readily taken up.

The course allows for young men and women with a common interest in French to spend ten days studying the language in a region of France that was new to them all. The 43 French and British students, in their early twenties, arrived at the sleepy town of Romans, in the Rhone Valley early on the evening of Sunday 17th August. The preceding eight or nine hours had served to convince the English members that perhaps British Rail were winning after all. Soon established at The Maison des Jeunes et de la Culture, the Cranwell contingent of Senior Flight Cadets Bolton, Davison and Corbitt and Flight Cadets Parsons and Stockill carried out a successful sortie to locate that infamous French institution "le Bar." Our first impressions of "Chez Nous" were most favourable. A Youth Hostel by any other name, the MJC was a real attempt to provide

for one's creature comforts, and there can be no doubt that they did. Sports facilities were also excellent, and any doubts we may have had about the quality or quantity of the food were dispelled on the first visit to the modern restaurant. In view of the stories that filter back across the Channel we had looked upon mealtimes with some apprehension. But as long as you like bread, undercooked meat, cold vegetables and wine this was the place for you! However, they have yet to convince us that a bowl of hot chocolate will ever serve as a substitute for a good "cuppa" first thing in the morning and so breakfast never rated very high on our list of daily activities.

The introduction to the course had promised us a strenuous time and it only took two days to prove they meant business. Physical activity was at a minimum, but in an attempt to complete their very full programme they seem to have forgotten that there are only 24 hours in a day. We were often up at the crack of dawn and it was at this time that we met up with something that was to become

a good friend in the weeks to come - le BLUE RAPIDE - a genuine you'll-never-get-the-windows-open - non-air-conditioned-French-luxury coach. Once on board we set off on one of many interesting, if lengthy tours of the surrounding countryside. We covered a lot of ground in this way, often arriving back at the MJC after 22.00 hours but well worth it in view of the unusual places we managed to see. The advantage of this sort of travel was that it took us away from the normal tourist areas and gave us a better insight into the French way of life than we would otherwise have experienced.

During these first few days our French friends appeared somewhat "reserved"; being unable to communicate was not the problem and we felt it needed something to break the ice. The opportunity came during a visit to a wine cellar in the old castle at Tournon, which overlooks the Rhone. After a few glasses of wine any barriers were soon broken down and we were amazed at the way in which Flight Cadet Parsons suddenly grasped such an excellent command of the French Language, almost as it were, on tap The coach journey home provided us with entertainment second only to that found on a good rugby bus. I still haven't worked out what all those songs they taught us meant.

Part of our visit was planned so that we would have a chance to study in detail an aspect of local French life. The Cranwell party split into two groups, one to explore the industrial and the other the agricultural activity in the region. The Agriculture group had done some homework on this occasion, and it was no surprise to find we were in one of the major fruit and wine producing regions of France; it will come as no great surprise to those on the course to learn of a drastic drop in wine and fruit output for the month of August, but that is another story. These sessions were of value in that they brought us into contact with the real people of France and showed us two of their greatest characteristics : their kindness and ability to talk ! They were all very enthusiastic, especially upon hearing of the presence of "la RAF," to demonstrate their particular skill and would happily have kept us talking all day.

Towards the end of our stay we were to log many more hours on the coach but the nature of the visits was such that it was worth putting up with the odd spell of claustrophobia.

Avignon in particular stands out as a memorable day. The 70 mile trip from Romans took us down the Rhone Valley, stopping on the way to visit one of the dams on the river. A Catalina flying boat obliged by doing "rollers" on the water in front of the dam. Avignon itself, complete with "pont" (on which no one dares dance these days, and anyway it will cost you a franc for the privilege) has all the story book charm associated with a place of such historic interest. Having "done" the town in a manner that would have been a credit to any American tourist we set off to see the older quarters, just within the walls of this ancient city. We ended up near the bridge, now sadly in danger of being eroded away by the Rhone and anyone dancing there would do so to the accompaniment of pneumatic drills and cement mixers.

The next visit, in complete contrast, took us from the flat plains of the Rhone Valley to the mountainous National Park region called Le Vercors. This is the sort of country that thrives on Alpine Rally special stages (the Coupe des Alpes was due through two weeks later) and provided us with some of the most spectacular mountain scenery we had ever seen.

The conclusion of the course came much too soon in our opinion, and took the form of a presentation by each group of their specialist field of study.

Our wild English imaginations appealed to the French on this occasion and the comedy show we put on for them went down far better than we had ever hoped. There was no doubt that everyone had enjoyed themselves, the friendships formed at Romans will continue for many years to come and we will always look back on it as a very worthwhile experience. A world of thanks must go to the organisers, with all their patience and to everyone who made our stay so enjoyable. To you we say "Bon Courage" - "Enjoy your Beer !"

J. A. Stockill.

GLIDING EXPEDITION - CAMPHILL '69

On the morning of Saturday 2nd August four Flight Cadets with a College Society Mini-bus and the College Ka7 glider in tow departed from Cranwell for the Derby and Lancs Gliding Club at Great Hucklow. They had spent the previous week preparing for the expedition. Jobs to be done ranged from cleaning the glider to fitting an instrument panel in the rear cockpit.

The journey to Camphill was uneventful, but the party arrived in time to miss lunch. No time was wasted ; soon after arrival the glider was airborne and by Saturday evening all members of the expedition had been checked out on the site. Due to the shortage of hangar space it was necessary to de-rig the glider each evening and re-rig it again the following morning. By the end of the week the party was able to rig the glider in record time and had developed muscles where they didn't think it possible.

Sunday was spent gaining further experience on the site. On Monday the members were awakened to an overcast day with little wind blowing in the wrong direction (so they thought). At about a quarter to twelve Dusty Miller walked into the club-room and told the rest of the party, who at that time were playing cards, that he was going to fly. After much debating the glider was rigged and Dusty was launched into what appeared to be dead air. By now the rest of the club members were eating lunch, convinced that Miller was doomed to the bottom field. Five hours later the College Ka 7 glider returned having gained for its pilot the duration flight that he required to complete his Silver 'C' Certificate. At one stage during the flight the glider disappeared below the level of the trees on the ridge, and at no time was it more than 500 feet above the level of the ridge - the height that one would normally be thinking about landing not soaring.

Tuesday started with great hopes when Pete Harborne sat down and planned his five hour duration flight and a 50 km distance flight to Sutton Bank. He took off and flew straight into a thermal off the top of the launch and was soon out of sight to the north of the airfield. Aircraft were being rapidly rigged when members thought that Cranwell might once again show them what

gliding is all about. One member prepared his Skylark 4 aircraft for a Gold C distance attempt. They need not have worried for in one and a half hours time Harborne had landed out in a field at the bottom of the ridge. So disgusted were the rest of the party that they decided to have lunch before retrieving him. The rest of the day was uneventful except for the large quantities of beer bought by Pete that evening.

On Wednesday, after much assistance from club members recommending and demonstrating the local sources of lift Nigel Tingle added a Bronze leg to his gliding certificate. His attempt to gain a second Bronze leg failed miserably. Eddie Hughes then proceeded to show the members of the club what soaring was all about. He took off under some rather dark looking cloud and remained airborne for an hour and a half, returning only for tea and to let someone else have a go ; meanwhile everyone else at the club was having to make do with six minute circuits.

The following day Eddie continued to demonstrate his ability to soar with a total of three hours flying, again while everyone else was doing circuits.

On Friday Pete Harborne took off on his second attempt to gain his Silver C duration. This time he planned to fly across to Mam Tor (Mother Rock) and soar the ridge there. When club members realised that it was possible to get there two other gliders quickly joined him. He almost gained his duration flight but, unfortunately, he had left his take off until after lunch, too late for a serious attempt. At twenty to seven Pete landed in the emergency field at the bottom of Mam Tor having clocked up just under four hours.

On Saturday Nigel and Dusty, along with three club aircraft, went for a "jolly" to Mam Tor. Unfortunately the lift was not strong enough, for by the time of the last pass instead of the people on the ridge waving up at them, they were waving up at the people. Then was the time to go and join the other gliders in the bottom field.

All in all it was a very good camp : every member of the expedition did a lot of flying and they fostered a very good relationship with Camphill.

S. T. Walker.

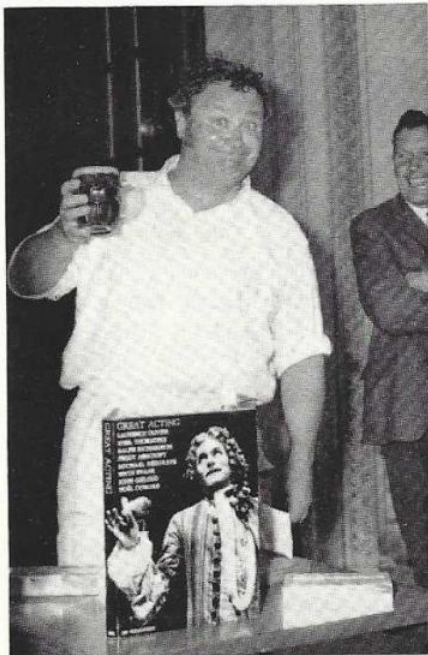
THE LORDS TAVERNERS



"Sporting Guests"

On Sunday 13th July the College played host to cricket teams from the Royal Air Force Cricket Association and the Lords Taverners. The match was organised in aid of charity, and the afternoon's entertainment included 'something for everyone' with displays by the Red Arrows and the Royal Air Force Falcons parachute team, plus, inevitably enough, the goonish antics of Harry

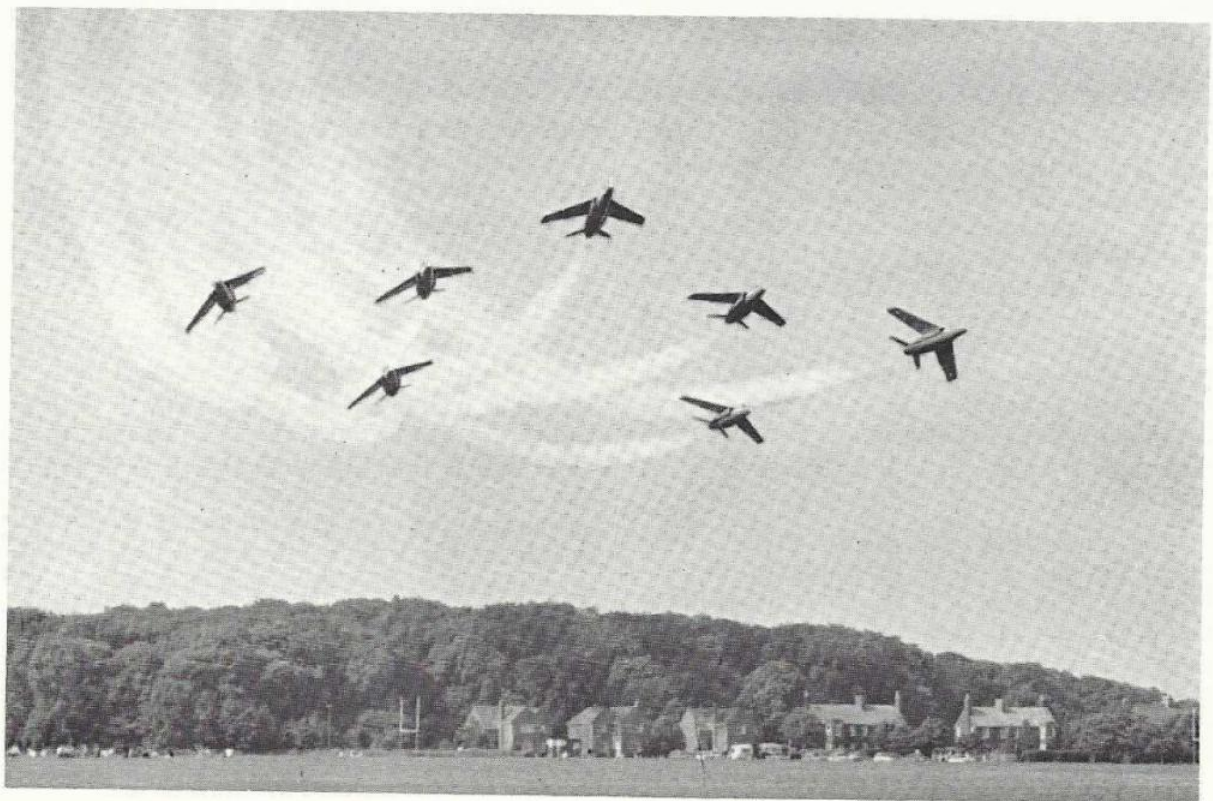
Secombe and Leslie Crowther. In addition, there were also liberal helpings of good cricket, between the bouts of humour and impressive displays. The afternoon was a huge success in all ways and six thousand people attended. From the proceeds a donation of over £1,000 was made to the National Playing Fields Association.



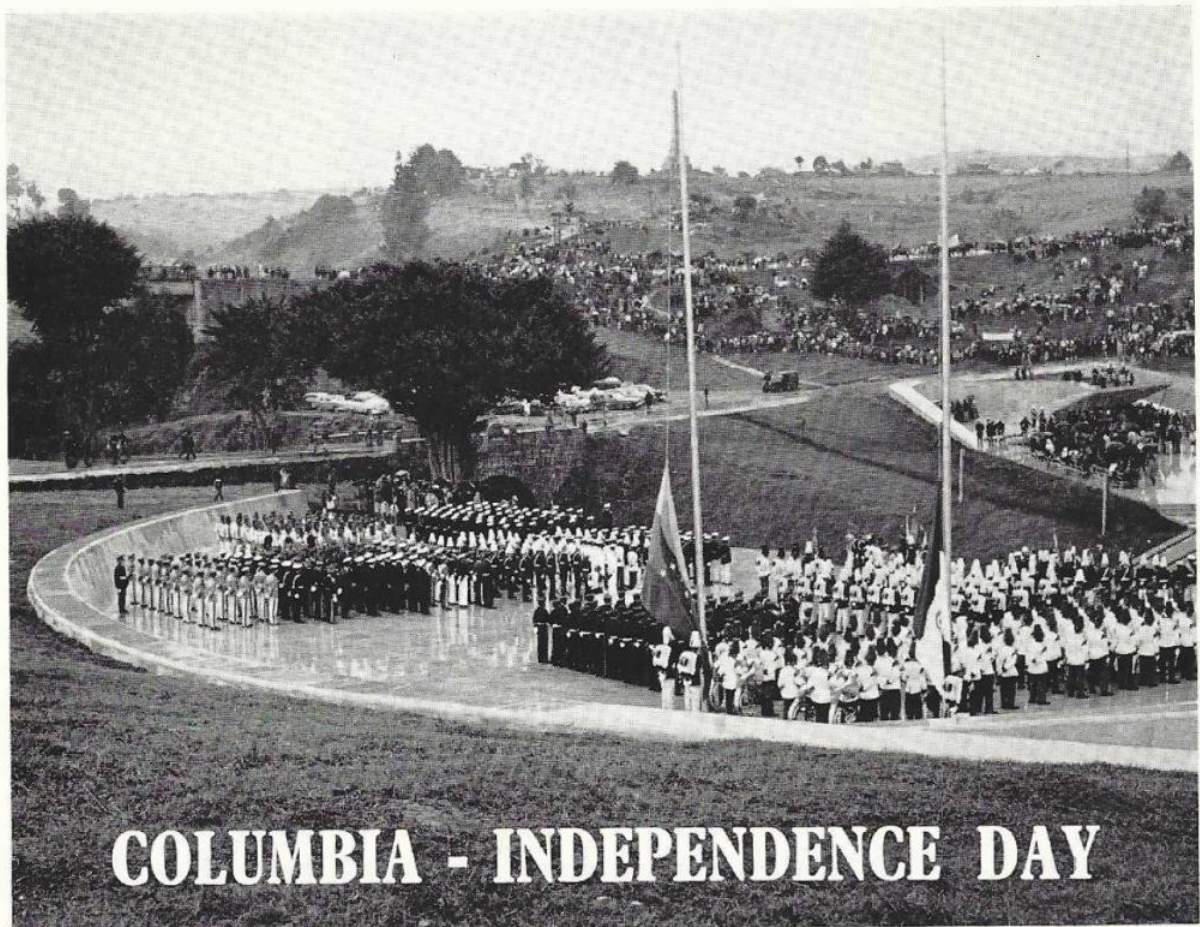
A well known Member of the Welsh Air Force



A Member of the Falcons free-fall team



The Red Arrows



COLUMBIA - INDEPENDENCE DAY

On 4th August 1969, a party of one officer and ten cadets, in company with similar contingents from RMA Sandhurst and BRNC Dartmouth and led by Air Vice-Marshal M. H. Le Bas, visited Colombia as Great Britain's representatives at the celebrations to mark the 150th anniversary of Colombia's independence. The reason a British Contingent was invited is part of the history of Colombia, as a British Legion commanded by Colonel James Rooke aided Simon Bolivar, in liberating Colombia from Spanish rule.

The contingent left Royal Air Force Lyneham and flew, in a Britannia of Air Support Command, to Bogota via Gander and Kingston, Jamaica. At Bogota they were met by a mixture of Pressmen and cadets from the Escuela Militar - the Colombian equivalent of Sandhurst.

Visits were arranged to the 'Museo del Oro' (the Gold Museum), the National Museum, the house of Simon Bolivar, now a shrine, and a Salt Mine, which in itself was of little interest, but inside the mine the

workmen had, over the years, carved out a full-sized Cathedral. In the evenings there were parties and receptions to attend and on one evening there was a Colombian Folk Lore concert. The last evening was spent at a Ball organised by the cadets of the Escuela Militar.

In addition to the social and local interest side of the visit, the College as part of the British Contingent also participated in the military celebrations. These consisted of a three hour long parade with speeches by the Presidents of Colombia and Venezuela, in the pouring rain, and a march through the centre of the city of Bogota. The British Contingent was led by the pipe band of the Black Watch and we received an enthusiastic welcome from the people of Bogota.

The visit was very enjoyable and the British Contingent was warmly received, not only by our military hosts, but also by the people of Colombia. This was due in part to historical ties, but it was also because we were the only non-Latin American contingent there, and we had come a long way to share their independence celebrations.

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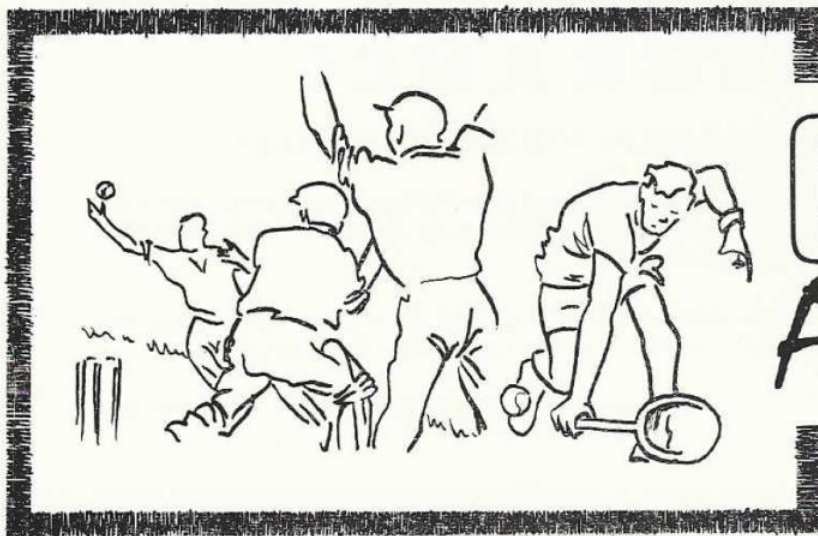
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CADET Activities

1ST AND 2ND XI CRICKET

1st XI CRICKET 1969

Contrary to expectations the 1st XI had an unsuccessful season and out of the 16 matches completed, only three were won with a further two being drawn.

On paper the side was quite well balanced but it lacked an off spinner and a pace bowler to partner Derbyshire whose performance almost certainly suffered through lack of hostile support at the opposite end. As it was, Bates, the captain, had to turn himself into a utility 'seamer' and although he performed well on occasions, especially against Sandhurst when he took 10 of the 14 wickets to fall, his efforts with the ball did not compensate the side for his loss of form as a batsman. This was a great pity because he is a natural attacking player, but all too often he found himself in 'do-or-die' situations which, allied with the cares of captaincy, tended to inhibit his stroke play.

In fact batting was once again the side's Achilles heel and although Chinneck, Penney, Bates, Warren, Waterfall, Dee and Page all had good innings at some time in the season they never really came off well together in the same match.

The bowlers all worked hard but apart from Thomas, the leg spinner, who took 38 wickets, they were seldom very penetrative.

Although Bates set a magnificent example to his players, the fielding was inconsistent

and on several occasions dropped catches played a significant part in the side's downfall. However, Penney generally kept wicket efficiently and together with Thomas he was awarded his colours.

All the cricket club will be sorry to see the departure of Squadron Leader Allerton and Squadron Leader Findlay who have both put a great deal of time and effort into cadet cricket. We wish them every success in their new postings.

2nd XI CRICKET 1969

Generally the 2nd XI had a disappointing season, the basic weakness being a dearth of regular players. Of the fifteen matches played, only three were won, whilst the team suffered four defeats, the remaining games being hard-fought draws with the 2nd XI invariably on the defensive. The cricket was played in an atmosphere of good-humoured enthusiasm, injected for the most part by players "guesting" from other sports; never was this atmosphere more in evidence than after successive dismissals for 25 and 22!

There were no outstanding wicket-takers, although Eddey bowled well without luck. The fielding was, to say the least, mercurial, whilst, on the credit side, Mates, Matthews and Saeed scored fifties. The spirit of the side was a direct reflection of the enthusiasm and effort displayed by our guiding officer, Flt Lt Digby, to whom we express our appreciation.



The Long Haul Ashore

BOAT CLUB

The RAFC Boat Club once again had an outstanding year, which was made up of a number of notable successes not least of which, were the victories gained at the Royal Air Force Regatta, the Royal Air Force Head of the River Race, and the Royal Air Force Winter fours.

The Royal Air Force Regatta was perhaps the most pleasing of the results since the College won three important classes and, thanks to the efforts of FS Boxell, the veteran sculls.

The event which, perhaps, had the most stimulating effect on our morale, was the yearly challenge to Dartmouth in which we soundly beat the RN on their own element,

an effort which we feel sure we can repeat this term.

A great number of other events were entered, of which Evesham, Worcester, Hereford and Kingston regattas were typical, and whilst we did not win any of these, a healthy spirit of competition prevailed.

As yet the Boat Club has not suffered from a lack of Flight Cadets. With the leaving of 97 Entry however a number of experienced oarsmen will leave the Boat Club, but we feel that the new members that came with 99 Entry, and possible members from 100 Entry, will enable us to fill the coach to Newark and the Trent for a number of years to come.

SWIMMING AND WATER POLO



This year the College maintained a good record during all the competitions held both here at Cranwell and away. The team had lost several valuable swimmers from 1969, Ian Dow, the Royal Air Force Swimming Captain, being the most notable. There were very few swimmers in 99 Entry to replace the losses but a strong team was soon built up.

This year the triangular swimming event was held at RMA Sandhurst. The College had a winner in every event but one and won the swimming overall, the Army being second with the Navy third. The College Team also visited Laarbruch to swim against Royal Air Force Germany where it was again successful and a good time had by all.

The 1969 season was not the tennis team's most successful season. A full flying programme and the demands of the engineer course made team selection a problem, and our poor results reflect our difficulties in fielding the strongest side.

The match against RMA Sandhurst was perhaps the most pleasing of the first team's victories. Playing against a potentially stronger team, consistency and determination made up for lack of skill and the result was a fine 8-1 victory for the College. Regrettably this was not repeated in our away match against BRNC Dartmouth, where a strong Navy team beat a considerably weakened College side by nine games to nil.

The Water Polo team shared more success than the actual swimming team winning the triangular matches. Several games were organised with certain clubs and universities and a Water Polo tournament held at the College during the season provided some good games both to play in and to watch.

During the 1969 season three cadets represented Training Command at Water Polo and Swimming, one swam for the Royal Air Force and two were in the Royal Air Force Water Polo squad. We look forward to another successful season in 1970 and for more support from other members of the College at our home fixtures.

TENNIS

It had been hoped, by travelling over with the College cricket team, that a match could be played against Royal Air Force Germany, but no mutually convenient date could be arranged.

The second team's fixture list was often restricted because of the lack of players of a sufficiently high standard to represent the College. The team was often badly weakened as players' services were continually being sought by the first team.

We were fortunate in obtaining the services of Warrant Officer Norris, of the Station gymnasium, for his expert coaching, similarly that given by Flight Lieutenant D. G. Edwards was most beneficial.

A SELECTIVE SERVICE

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ATHLETICS

Having lost few athletes of repute from 94 and 95 Entries, the athletics team was looking forward to a highly successful season in 1969. The arrival of 99 Entry conveniently filled many gaps in the team, although for the whole season it was left sadly depleted of middle-distance runners. A superfluity of sprinters made the team healthily strong in these events, but, for the first time in many seasons, the bulk of the strength lay in the field event athletes.

The first match of the season against Sheffield University and Sheffield Colleges was an outstanding win for us, and one College record was broken. This one match was the foundation of an excellent team spirit which prevailed for the rest of the season.

Matches versus the local Universities and Colleges produced mixed results, but the potential shown by the team in the early season did not really materialise since many "star-performers" were continually on detachment or otherwise made unavailable.

The Sandhurst - Dartmouth match produced superb results in most events with many athletes giving personal or near best performances. Unfortunately the team once

again had to take second place to Sandhurst in the results, but took first place for fighting spirit.

During the season Applegate broke the College hammer record on three occasions, finally letting it rest at 151 ft 1 in. Taylor raised his javelin record to 197 ft 9 in.

Applegate, Appleton, Paterson, Reece and Taylor all represented the Royal Air Force, and 11 athletes were chosen to represent Training Command in the Royal Air Force Championships.

A number of College athletes made considerable impact on the Lincolnshire AAA County Championships, producing County Champions in Paterson (Long jump and 100m), Reece (high jump) and Taylor (javelin) and runners-up in Applegate (hammer), Pine (shot) and Renwick (high jump).

Colours were awarded to Applegate, Boyd, Evans, Leigh, Paterson, Pine and Renwick.

Finally we must offer our thanks to Sgt James and the groundsmen for ensuring perfect track conditions, Sgt Hannah for his expert coaching and Sqn Ldr Goulding for his diplomatic handling of the team as Guiding Officer. Best wishes for 1970.

FENCING

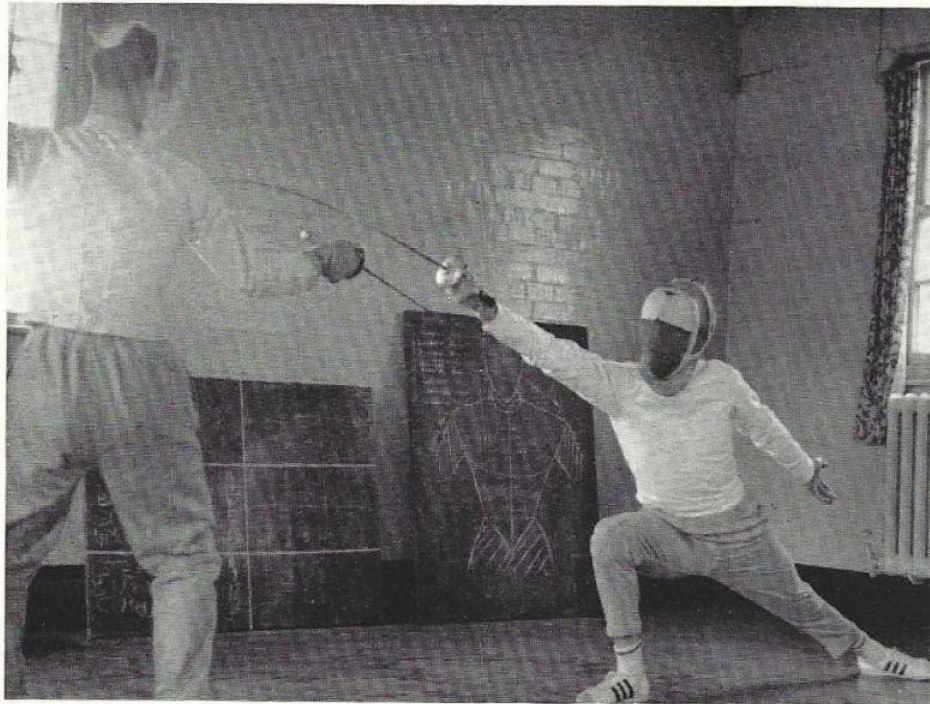
The Fencing Club carried its winter season through into summer this year in an attempt to meet a full and active calendar. The College 1st team were well placed in the Inter-Command Championships held at St. Athan, representing Training Command in the process. Fighting a man short in sabre, they more than held their own against the much stronger team of Air Support Command.

The summer also brought a visit to the Young Officer and Cadets Championships, held at the Royal Tournament. Flight Cadet A. J. Gatland became the first cadet to retain the foil championship for the second year running. Gatland is also to be commended for his 27th place in the World Youth

Championships, which took place in Genoa in April, and for numerous appearances for the Royal Air Force.

The prospects for the coming season look good. A new entry always provides "new blood" for the sport and with the services of our newly acquired coach we should be able to produce a team capable of taking on any other Forces fencing club. It just remains to be seen whether we can still administer the same sort of justice to RMA Sandhurst and BRNC Dartmouth as we did last year.

As usual we have a full fixture list for the coming season and providing there are no cancellations, many interesting matches can be looked forward to.



Practice Makes Perfect



SHOOTING

Now the full-bore shooting season is over, and sadly the Shooting Team has had to consign its beloved .303 rifles to the scrap heap. For the old No 4 rifle, which has served the College for many years both on the range and the Parade Ground is to be retired from competition shooting, and will be replaced next year by a new 7.62 mm Target Rifle.

During the last summer the No 4 performed magnificently and lost us not a single match. The team scored convincing victories over RMA Sandhurst, Royal Air Force Gaydon, Halton Apprentices and Oundle School to mention a few of our opponents. During the Royal Air Force Championships held at Bisley these rifles even won money for some of the luckier members of the team !

Besides shooting the No 4 Target Rifle,

the team has been putting in creditable performances with the Service Rifle (SLR). However the results of the Service competition at Bisley were disappointing owing to the difficulty of obtaining the release of sufficient team members from the clutches of Whittle Hall.

During the first few weeks of the Autumn, the team will be busy digging out the 0.22 Rifles and getting ready for what promises to be a busy and, we hope, victorious small-bore season. We shall be only too pleased to see new faces in the club-room, so if you fancy shooting as a Wednesday sport - come along.

As well as retiring our guns this season, we are saying goodbye to our energetic Guiding Officer, Flight Lieutenant Meredith, and we all thank him for his hard work and wish him luck in his new posting.

MODERN PENTATHLON



“ Well Clear ”

After winning the Royal Air Force Tetrathlon Team Prize in the previous term the Modern Pentathlon team was spurred on by hopes of further victories later in the year.

Our members made us the strongest team the College has ever seen but we missed the experience of Under Officer Henderson who graduated in March, nevertheless we were able to enter three teams of three and two

individuals in the Royal Air Force Modern Pentathlon Championships held at the College during May. The 'A' team were unfortunately only runners up to a very strong team from Coltishall, however Flight Cadet Clarke managed to gain an individual event "first" by winning the fencing overall.

The intensive training undergone by the teams in building up for the Championships paid off two weeks later when we went to Sandhurst for the Triangular Match. The term Triangular is somewhat misleading however because Dartmouth have not competed for some years now. Although the Sandhurst 'B' team totalled up enough points to come first the College teams took 2nd, 3rd and 5th places.

The final match of the season ended in

victory over our old rivals Durham University who always provide a splendid competition. Playing at home our 'A' team eventually won by some 40 points with encouraging results by all members.

We were sorry to see a great proportion of the team leave at the end of the term. Our Captain, Senior Flight Cadet Mann graduated and many left to go to University where a few hope to form a team of their own.

Colours were awarded to Flight Cadets Clarke, Hutchinson, Luker, R. V. Thompson and Yarrow.

We would like to extend our sincerest thanks to Major Thorpe for the considerable amount of time and effort he has put into guiding the team and wish him every success when he leaves the College later this year.

GLIDING CLUB



"Ka 7 and Crew"

Following a five day camp held at the College over the Easter Grant the weather became generally indifferent and for several weeks only circuits and training flights were possible. However, some evening flying was

made possible with the help of Pilot Officer Chandler whose gliding qualifications enabled the Club to overcome the shortage of qualified Officer instructors. However, due to his recent marriage the Club is once

more in search of Officer 'B - Cats' !

Though late, the season started well with a sudden increase in gliding enthusiasts following Squadron Leader Delafield's impressive display in his Phoebus at the Open Day. Flight Cadet Miller flew 84 km cross-country to Church Fenton in the Ka7 to gain a leg of his Silver-C. Later in the term six members took the Ka7 to Swinderby and gained two Silver-C gains of height and a leg of the Bronze-C to bring the term's total to three Silver-C legs, six Bronze-C legs, four C certificates and eight A and B certificates.

WALKING SOCIETY

Since the last period of walking the following changes have been made. Flight Cadet Kelly has been appointed Captain and Flight Cadet Gardiner, Secretary.

Throughout this term the walking society has been very active. The main objective was the 'Ten Tors' walk on Dartmoor, and many training week-ends were conducted in Wales, Derbyshire and on Dartmoor. In

During the Summer Grant four Club members and the Ka7 travelled to Camphill in Derbyshire and returned with a completed Silver-C and Bronze leg, several hours experience of hill and thermal soaring and a broken wing-tip. (So there I was at 150 ft in 2 down and looking up at the spectators)

Once again, despite tremendous odds, the Gliding Club has enjoyed a successful season and is looking forward to an equally successful winter away from the plains of Lincolnshire to the ridge and wave sites of Derbyshire and Scotland.

February, eighteen Flight Cadets attempted the Lyke Wake walk and despite adverse weather conditions, fourteen finished. On May 24th two teams of six entered for the 'Ten Tors' and as a reward for their hard work, all twelve finished within the twenty-four hours allowed.

The society looks forward to another active and successful term.

TEN TORS

The activities of the Walking Society were again directed towards entering two superbly fit teams for the annual Ten Tors Expedition; sixty miles on Dartmoor over the Whitsun weekend. The training programme was embarked upon with great enthusiasm, particularly from 99 Entry, and we were fortunate in having several strenuous walking weekends in Derbyshire, Wales and on the North Yorkshire Moors as well as the official Royal Air Force training walk on Dartmoor, held in abysmal weather conditions.

As part of their training the teams completed the famous Lyke Wake Walk in Yorkshire, achieving very creditable times for the wet and muddy 42 mile crossing.

Conditions on Ten Tors were favourable for the first time in several years and the teams set off in high spirits at 0100 on Saturday 24th May. We were travelling light, having dispensed with tents, and rested weary legs and feet that night cocooned in full-length polythene bags.

One of the College teams was involved in a minor drama when it came upon an unfortunate person completely alone on the moor and in the throes of an epileptic fit !

It seemed incredible that he had been deserted by the team with which he was walking ! With commendable initiative the Cadets managed to calm him and escort him to the nearest checkpoint before continuing on their way.

Imagine the surprise of Davison, Kenvyn, Kelly, Archer, Oakley and Hunt when, 5 miles from the finish, they were taking a short rest, only to see Bottery, Middleton, Greeves, Gardner, Daffarn and Weston plod into view heading in the same direction. Although on different routes the teams had made a perfect rendezvous and marched triumphantly together over the finishing line having completed the course in 23 hours. The medals and certificates, and the tremendous feeling of satisfaction were well worth the effort that went into it.

Mention must be made too of the excellent support team comprising North, Coates, Harding, Hulland, Hartley and Watkins - the stew that awaited us at the finish was delicious. With fine team spirit and enthusiasm the College deserved to achieve its best performance ever and also the best overall performance of any Royal Air Force Entry.

MOUNTAINEERING

The abolition of climbing as a Wednesday afternoon sport and many College commitments at weekends unfortunately restricted the summer activities. One enjoyable weekend was spent in North Wales, in the company of the Ten Tors Trainees who toiled up hill and down dale whilst the climbers pursued their more skilful (and less exhausting!) sport. Three Sundays were also spent climbing at Stanage Edge, which continues to be

a good training ground for novice climbers.

The Winter term has already got under way with trips to North Wales and Stanage and a further visit to the Lake District is planned. Given reasonable weather rock climbing can continue to flourish during the Winter and of course there should be opportunity to further snow-climbing techniques as well.

LITERARY AND DEBATING SOCIETY

Orson Welles's production 'Citizen Kane' was perhaps the climax of the term's activities of the Literary and Debating Society. This film was one of a number shown by the Society between the months of March and August, and which were chosen with the development of production techniques in the cinema over the last 30 years, in mind.

'Citizen Kane' was perhaps more representative of these changes in technique than any of the others that were screened. The inspiration that Welles showed, in the utilization of new developments in photography, still lives today and is quite noticeable in many modern productions. Welles also played the lead role in 'Citizen Kane,' hence

projecting even more of his personality into this film.

Other films shown included 'The Servant' and 'Born Yesterday,' which were of a more literary interest. This was especially true with respect to 'The Servant,' in which a very strong-minded young man was reduced to a mental wreck by the assertions of his man servant, played by Dirk Bogarde.

The summer term was therefore an active one, a trend which will be continued through until next February. The emphasis will however shift towards the debating aspect of the society with opponents from both inside and outside the College.

RIDING

The Summer Term began quite well for the Saddle Club, when several of its members competed in the Royal Air Force Equitation Association Championships on May 18th. One Cadet competed in the Cranwell team and two others competed as individual entrants. The Cranwell team took nearly every major prize between them and the first four in the Royal Air Force Individual prize were members of the Saddle Club.

On June 8th the Chimay Inter-Squadron riding competition took place, and after gallant efforts by several cadets impressed solely for the competition the final result was 1st - D Sqn, 2nd A Sqn, 3rd C Sqn, 4th B Sqn.

The Lincolnshire Agricultural Show afforded the opportunity to see some show-jumping live - a chance taken by some members of the club. This seemed to whet their appetites as a visit was then arranged to the Royal International Horse Show in London where some top internationals showed everyone how it should be done.

The Club wishes to thank those Old Cranwellians who have been subscribing for many years to defray the costs to Flight Cadets of hunting. The subscriptions are put towards a block subscription to the Blankney Hunt, which enables Flight Cadets to hunt for a nominal cap fee.

OCEAN SAILING



The activities of the ocean sailing section this season have been most successful. At the beginning of the summer four cadets went on week-end expeditions in Wing Commander Phipps' own boat, 'Macwester', an opportunity which he has generously made available to flight cadets for the past few years.

At the end of July Senior Flight Cadet Jordan and Flight Cadet Spencer became captain and secretary respectively. It was at this time that our new Guiding Officer, Sqn Ldr J. H. Copland, announced the final details of the highlight of the year, two expeditions during the summer leave on the privately owned boat 'Amulet'.

On Saturday, 9th August the first crew of cadets joined Mr Ripper, the owner, and two officers, Flt Lt Morris and Fg Off Yorke, at Fowey. The expedition set off from Fowey after lunch and arrived at Plymouth that evening, where Flight Cadet Slater joined the party. The following day 'Amulet' sailed for Salcombe and then returned to Fowey overnight giving two young ladies a lift. This proved to be extremely beneficial to all concerned, as the ladies were excellent cooks and willingly helped with the daily chores. It was

during this trip that the crew gained the valuable experience of sailing through a force six gale, at night. After this initiation the cadets (none of whom had been ocean sailing before) considered themselves veteran "Sea Dogs" and spent the remaining part of the week cruising up and down the Cornish coast practising their newly acquired arts of navigation, changing and trimming sails and generally keeping the boat "ship-shape."

The second crew of cadets went aboard 'Amulet' on Saturday evening and sailed from Fowey Harbour at 1000 hrs on Sunday with her new skipper, Flt Lt Snell, and first mate, Flt Lt Anderton. It was decided that after the initial handling tests a course should be set for the Channel Islands. During the crossing avoiding action was taken several times early on Monday morning but dawn found 'Amulet' unscathed and land was sighted once more at midday. The recommended approach to St Peterport, Guernsey, is from the south to avoid the dangerous rocks and currents around the east coast. However, as dusk drew near a mist came down but despite this it was not necessary to lay off until morning and 'Amulet' was safely docked that evening. The following

day was spent meeting fellow sailing enthusiasts of various nationalities, and enjoying the sun and other attractions of the Channel Islands.

Jersey and Sark were also visited in the next few days, one evening being spent at each island. On Tuesday evening, after an excellent dinner at a restaurant in the port of St Helier the crew decided to visit a local discotheque. One, however, was refused

admission because he was not wearing any socks. Suffice to say he was not a cadet !

On Friday evening the cadets regretfully packed their bags and caught the ferry back to Weymouth. Both crews agreed that the expeditions had been thoroughly enjoyable. The valuable experience gained had only whetted their appetites for ocean sailing and all have already asked to be reconsidered for next summer's expeditions.

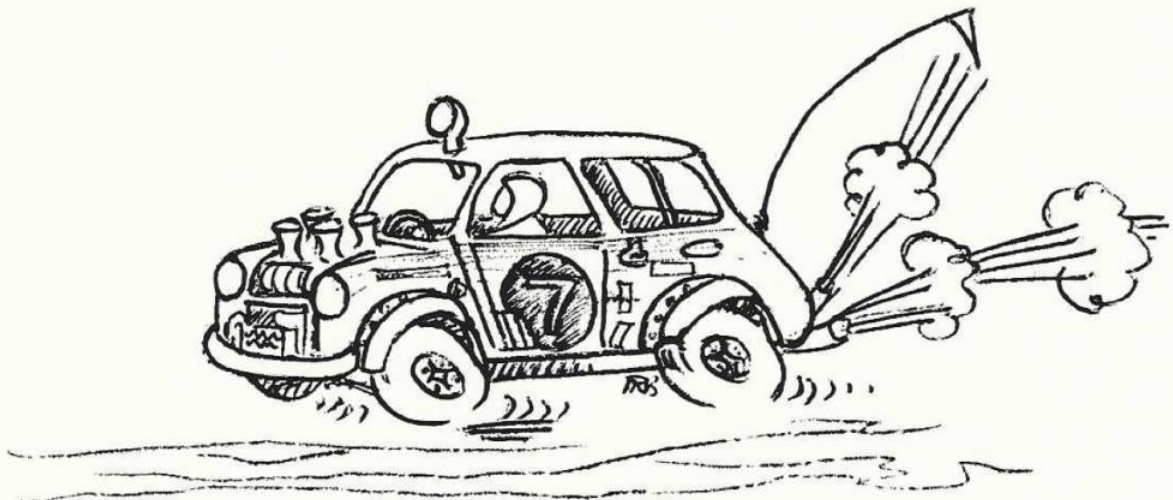
COLLEGE CHRISTIAN UNION

The College Christian Union continues to hold regular but varied weekly meetings, all aimed at learning more about Christ and the Christian life in the Royal Air Force.

Highlight of the Summer Term was the Christian Union Weekend, 30th May to 1st June, which was led by Major W. F. Batt, DL, JP. Over 60 different people attended one or more of the meetings and many of these were ex Christian Union members who travelled back to Cranwell for the weekend.

Members of the Christian Union and others continue to make regular visits to the hospital for the mentally ill at Rauceby. This is extremely rewarding since many of the patients have no other visitors than those from Cranwell and look forward to the fortnightly visits very much. The Christian Union also continues to support the work of the South American Missionary Society and we were delighted to welcome as one of our speakers in the Summer Term Douglas Milmine, "our" missionary from Chile.

MOTORING SOCIETY



The sound of engines in full song, wheels spinning and grit flying are sounds that have been absent from the College for sometime. But all this was to be put right when 14 cars left the Junior Mess car park on the start of the first of the Motoring Society's newly revived Navigation Tests. Four such tests were held during the term, providing not only the chance to prove driving and navigation skills on the excellent Lincolnshire back roads, but also supplying action and interest for all those who assisted in the organisation.

The last Test, which took place in late July, proved by far the most successful. After sorting out the problems and intricacies of running an event of this nature the Society ventured into the realms of inter-club competition with a meeting against the local Heckington Car Club. They had kindly presented a trophy for the victorious team, only to win it themselves! There are high hopes for many more inter-club meetings, especially against other stations.

Once again the proposed visits to BRM and Lotus failed to materialise. Both found their racing commitments too great to accommodate a visit by the Society. But it is hoped that the visits will take place during the coming term as the racing calendar draws to a close. At the end of last term we bade our Guiding Officer, Lieutenant Commander W. H. H. MacLeod RN farewell, and welcome Lieutenant Commander M. P. A. Baldwin RN who takes over the running of the society. Our thanks go to Commander Macleod for all the effort and enthusiasm he put into the Society. All those hours spent at lonely country check points were much appreciated.

It is with great regret that we record the tragic and untimely death of Flight Cadet Roger Ingram who served the Society as Secretary last term. He did much to re-establish the Society as one of the most go-ahead and successful outdoor societies in the College. His passing is a great loss to all.

DRAMATIC SOCIETY

True to its policy of one large production in the summer term, the society presented 'Becket' by Jean Anouilh as its contribution to French week. This spectacular play involved thirty to forty of the section's members and many lavish costumes were hired from the Royal Shakespeare Theatre, Stratford. Although rather expensive it was felt that these costumes greatly added to the overall effect of the play. The production attracted an audience of about three hundred, and judging by the reception given to the cast, they greatly enjoyed the evening's entertainment.

In order to hold the interest of the section's newly acquired members, theatre trips were organised throughout the term. These trips included trips to Stratford to see 'King Lear,' 'Troilus and Cressida,' and 'Pericles,' and also visits to Nottingham Playhouse to see 'Arturo Ui,' 'The Alchemist,' 'The Entertainer' and 'King Lear.' Judging by the numbers and reactions of members taking

part, these trips are very popular and it is hoped to continue them next term.

Building 109 is now being used by the society, though not extensively as yet, as a workshop for the construction of scenery. It is also being used by the Choral Society for the same purpose and for future productions, the Drama and Choral Societies will share timber and materials for reasons of economy.

Our plans for the future consist of producing a modern play with a small cast to be entered for the Kesteven Drama Festival in February, 1970. As it will not be possible to include all of the section's members in this production, it is hoped that a number of modern plays will be recorded for the use of the English Department. It is felt that these recordings will be much more productive and enjoyable than the normal play readings which have been held up to now.

'Ars Gratia Artis'

Becket

Theatre 329

The Amorous Prawn

COSTUMES
BECKET

Becket



Louis



Henry

Bishops



ELLINGHAM 69

Becket

It was a steamy, sultry night in the Whittle Hall, in fact almost perfect for a Tennessee Williams production rather than Anouilh's 'Becket.' It needed only a great fan suspended from the ceiling rotating slowly and creakily to put us all in the mood of a Bourbon Street cafe theatre in New Orleans.

But it was the Whittle Hall and it was Becket that had the stage. It was a powerful production, in terms of man hours involved a production of phenomenal magnitude. There was a certain laboriousness between scenes as the cast shuffled out on a darkened stage to move the furniture about.

Jean Anouilh's 'Becket' is a good play. All the ingredients are present in varying doses. The purist would debate the characterisation given Henry II, as shallow, base, and historically inaccurate. To quote Trevelyan, "Henry II was an autocrat Henry II with his foreign legal learning and his gift for choosing men, made a famous bench of royal judges." After all we leave the 6th form with the affirmed conviction that Henry II was responsible for great reform in the English common law. Nevertheless as the character is written Sinclair Hilton was exceptional - he was especially convincing and extremely confident as the bawdy, blustering, sometimes sentimental and often tragic King Henry.

Becket is the most challenging role, and perhaps we've had too much of Becket to be objective any longer. Depending on our persuasion we look to Becket and see Richard Burton, or Christopher Plummer or perhaps if we are political we think of Harold Wilson, Enoch Powell or John Kennedy. As Thomas says to Henry in the first act, "I'll add that I adore honour" and later after the suicide of Gwendolen, "But where is Becket's honour?" Graham Stirrup was stirring as Thomas, his smile, his twinkling eye were infectious. A more pleasant Becket could not be found, but the role is difficult. It demands creditability - Thomas the gay, man-about-town becomes the sincere overtly sensitive man of the cloth. Thomas is the most demanding role - it must advise the audience that Becket is sincere in his char-

acter change and development.

Besides being adept at the 'quick change' the supporting cast provided some very entertaining moments. Suzanne Gracie was a lovely Gwendolen, the song provided for her by Maureen Kearns, née Watterson, was a graceful and touching melody, before the tragedy. Ian Wilson looked outrageously healthy as the Archbishop of Canterbury, but it was immediately obvious that a great deal of work had gone into his perfection of that aged prelate's voice. John Ellingham is an excellent King Louis, in fact he could fit the Hollywood Mould to play any of the Louis' of France.

Ron Handfield was good as the poor Saxon illiterate in a scene that was particularly well done. Glyn Rees portrayed well the tragic little monk who perpetuated a personal civil war against the Normans and consistently the five barons as Henry's hedonistic high-born slobs turned in good performances, although Andrew Penington occasionally gave the impression that he should be portraying a more genteel part.

Sqn Ldr Kearns is to be commended on choosing our Maltese contingent to play the Papacy. Mark Micallef-Eynaud was convincing as Cardinal Zambelli and Peter Abela hesitant and cautious as the Pope.

One of the most hilarious moments was during the first act when John Hurrell appeared dressed as a peasant Saxon boy with a glistening Omega showing on his otherwise poverty-stricken wrist.

Other members of the supporting cast provided a great deal of competency to some very difficult roles.

The publicity campaign was first rate, perhaps some would say 'pure West-End.' The poster art work was superb, and it certainly did everything a good poster is supposed to do.

Sqn Ldr Mike Kearns is to be commended for bringing some excellent theatre to Cranwell, it was an ambitious production which could only be a success through the tireless efforts of an ambitious cast and an equally ambitious director.

T.M.K.

THE CRANWELL LITTLE THEATRE

A Brief History

There has been some form of Amateur Theatre at Cranwell since the war years. The first records of a stage production concern a play called "I had a Dream," which was written by a then lecturer at Cranwell, Flying Officer J. G. Lyons, and which was performed in March 1942. The play had previously been presented in the West End, and was subsequently to be seen by British and American troops during the latter years of the war. The interest in theatrical productions at that time seems to have been a casual one, and it was not until 1945, when Leslie Sands founded the Cranwell Little Theatre, that the permanent foundations for a Theatre Club at Cranwell were laid.

The first production staged by Leslie Sands was J. B. Priestley's "When We are Married." It was presented in the old NAAFI building on East Camp, and included in the cast Peter Sallis who, like Sands, has since become a familiar name on the professional stage. The play was well received but despite this first burst of enthusiasm the original Cranwell Little Theatre was to be short-lived, for in the following year, the end of the war meant the run-down of numbers on the Station, and the consequent departure of many of the Theatre's leading lights. Accordingly, it was decided to disband the group, and a "farewell" performance was given in the NAAFI towards the end of 1946. As a symbolic gesture Leslie Sands once again presented "When We are Married" as the final play.

The Little Theatre, however, was not allowed to die, and from 1947 plays were produced regularly at the rate of one or two a year in the ASTRA Cinema. Cranwell shared this method of staging plays with the

majority of Royal Air Force stations at home and abroad. Those who have ever been connected with Royal Air Force Theatre Clubs will know that this is not the happiest way of attempting to mount a play. They will know of the panic which follows the final film show on the Wednesday evening of the week of the play. They will have seen the shadowy figures of stage hands and actors lurking in the wings, waiting for the final chord of "God Save The Queen" before following the curtains across the stage to commence their preparations. The screen, which to the chagrin of amateur Theatre enthusiasts has grown in size in recent years, has to be rolled up, pushed back or taken down. The whole night and most of the following day are spent in hastily erecting flats and drapes, setting lights and attending to all the other paraphernalia which is part and parcel of a theatrical production. The Thursday evening dress rehearsal is conducted to the accompaniment of bangs off-stage and the swishing of large distemper brushes, and on more than one occasion has the Friday evening curtain gone up on a harassed, and embarrassed, stage manager frantically applying the final touches to his set. In short, the arrangement is not conducive to a well-planned production, although the majority of Royal Air Force Theatre Clubs are still obliged to present plays in this way.

For Cranwell Little Theatre, the years of subjugation to the tyrants of Africa House came to an end with the building of Whittle Hall. Here was a theatre which, but for the inordinately large size and somewhat peculiar shape of the stage, was the dream of any aspiring producer. The availability of the stage for rehearsal, the excellent acoustic properties and sight-lines, and the audi-

torium, comfortable by any standards, all contributed to make the Whittle Hall Theatre a far cry from the old ASTRA. In its new "home" the Cranwell Little Theatre grew from strength to strength. The quantity and quality of its productions increased. The Scott Trophy, presented each year for the best play in the Kesteven Drama Festival, was carried off by the Cranwell group on two consecutive occasions; in 1965 with "Six Characters in Search of an Author" by Pirrendello, and again in 1966 with Zuckmayer's "The Devil's General." The Little Theatre had set itself a high standard of production which was maintained in the plays which followed, notably "The Wizard of Oz" (1967) and "Androcles and the Lion" (1968) both of which were Christmas productions, and the latter of which was regarded very highly by the Kesteven adjudicator, Mr Philip Hedley of the Lincoln Theatre Royal, who called the play "a very real achievement."

Although the Whittle Hall was obviously a contributory factor to the overall professionalism of their productions, the members of the Little Theatre still felt the need for a place of their own, in which theatrical experiments could be conducted away from the awesome gaze of a Whittle Hall audience. Besides, Whittle Hall was of course used for numerous other stage presentations, and still had to be booked in advance. The set still had to be erected in a hurry, calling for elaborate plans beforehand with little margin for miscalculation, and although the problem was not as acute as that posed by the old ASTRA, it was nevertheless one which was worth consideration.

In 1964, the Little Theatre Club had taken over a huge barrack room in Block 329, which is now the Station Education Section. In 1968, it was considered that it would be feasible to convert this room into a theatre / clubroom and several suggestions were made as to how this should be done. Ideas started to materialise quite suddenly one evening towards the end of 1968, when the members of the club found themselves with nothing else to do. By Spring of the following year, the theatre was almost complete, and comprised an auditorium, bar, clubroom and workshop behind the stage. The somewhat old but none-the-less valuable lighting board

in the ASTRA was dismantled and carried piece by piece to Block 329, where it was re-assembled in a specially constructed lighting box at the back of the auditorium. Generous financial help from Training Command and various non-public funds on the station bought draperies, lights, and more recently a raked floor for the auditorium. The new, permanent home of the Little Theatre group named, logically, Theatre 329 was opened officially on 21st May 1969 by the Commandant, before the first performance of the first play to be presented there: "The Amorous Prawn" by Anthony Kimmins.

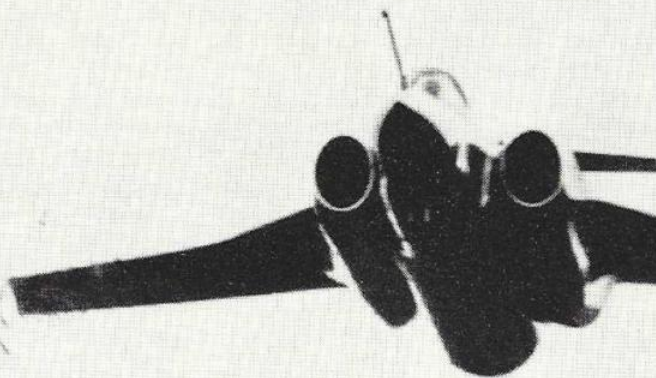
The new Theatre is still not finished; a way has yet to be found of improving the sight lines in the somewhat confined space available, and the place still needs painting. The thing which has characterised the two plays which have so far been performed there, however, is the intimate atmosphere, due in no small measure to the proximity (some 4 yards) of the audience front row to the actors on the stage. While this would not be a welcome feature for all productions, it certainly helps to bridge the gap between observer and participant which is important to so many modern plays. The advantage of this feature was certainly felt during the second production in Theatre 329, "Loot" by Joe Orton, in which many of the tongue-in-cheek comments would have been lost in the comparative vastness of Whittle Hall.

The big advantage, from the practical point of view, of staging plays in Theatre 329 is that the set can be started and built well before the dress rehearsal. To have full stage facilities during the early rehearsals is of particular advantage to the inexperienced actor.

Plays will continue to be presented in Whittle Hall. Big colourful productions, or plays which involve split-level sets and many scene changes would be neither appropriate nor possible in Theatre 329. The smaller cast play however, into which category fall many modern pieces, lends itself well to performance before a small audience, and it is this sort of play for which Theatre 329 was evolved.

A. B. T.

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THE AMOROUS PRAWN

Experiment and adventure came to a sudden end in Theatre 329 when the curtain rose on its opening production, "The Amorous Prawn". Anthony Kimmins's comedy is very much the well-made play. The plot twists its sinuous way towards a denouement that satisfies the audience morally even if the letter of Queen's Regulations can only too clearly be seen to be broken, while all the misunderstandings are definitively and conveniently resolved by the final curtain.

The service audience accepted the major premise of the plot — that the General Officer Commanding North-Western District had serious financial problems — without demur, and probably anticipated all the difficulties that the General's wife faced in running her sumptuous married quarter as a hotel. The guests who arrived were a cross section of any holiday hotel's guests, although General and Lady Fitzadam possibly had more luck than they were entitled to when the Amorous Prawn, who is no other than Lord Vernon the Secretary of State for War, chooses their house for his illicit weekend. Once both sides' transgressions are discovered, the British ability for compromise comes into its own, and they all live happily every after.

Tom Whitby's production was rightly played at a very slick pace and his setting was convincingly and commendably realistic.

Much of the responsibility for keeping the play moving rested upon Verley Carrington as Lady Fitzadam and Tony Travis as Corporal Green and they deserve every credit. Tony Travis with a fashionable Merseyside accent produced a fine comic performance. Susanne Gracie as the flirtatious, attractive, young Suzie Tidmarsh also showed a comic talent, and General Fitzadam (Geoffrey Shore) was militarily credible as well as convincing in winning our sympathy for his financial plight. The other military staff, Gill Whitby, Mike Beck and Derrick Woodburn all displayed the utmost loyalty to their Commanding Officer and to monetary reward; Derek Woodburn was very funny indeed in his drunk scene. Neil McLellan and David Priestly were suitably American as transatlantic guests; Andy Whyte as the politician amorous prawn was suitably politic, Martin Heywood appeared briefly as Uncle Joe.

This production was undoubtedly a success, and the Cranwell Little Theatre are to be congratulated on their initiative and enterprise in creating Theatre 329. It is to be hoped, however, that there will soon be a raked floor in the auditorium. It is difficult to appreciate stage movement when all one can see is a series of bobbing heads, and at least half the audience lost a lot through not being able to see the whole stage.

J.V.T.



AIR COMMODORE SIR FRANK WHITTLE

SPECULATION *

By FLIGHT CADET F. WHITTLE.

I was once asked by an optimistic sub-editor of this magazine for an account of how I intended to reach the moon. I was naturally a little shaken at first, as I have never contemplated leaving this homely planet, but, thinking that I might write a little light fiction, I promised; only to find that I cannot rise to the level of Verne or Wells. It, however, caused my thoughts to soar above the tropopause (for the benefit of those who have never been initiated to the mysteries of meteorology, the tropopause is that altitude above which the temperature of the atmosphere remains constant), and the following speculation is the result.

The trans-Pacific flight marks the greatest step in aviation to date, yet it is little more than a score of years since the crossing of the Channel by air was acclaimed as a marvellous feat. There is no reason to suppose that this progress is going to cease, and it is my intention to discuss possible lines of future development. We are not yet satisfied. We want greater range, greater speed, better freight-carrying ability, and more economical air travel.

The formula connecting distance which may be flown with the characteristics of an aeroplane using petrol is

$$R = 2800 (\phi) \psi \eta \text{ Log. } \left[1 + \frac{\omega}{W} \right]$$

where R is the distance in miles which may be travelled in still air, by an aeroplane of weight W lbs. (without fuel) carrying ω lbs of petrol ;
 (ϕ) is the thermal efficiency of the engine ;
 ψ is the airscrew efficiency ;
 η is the lift drag ratio of the whole aircraft.

It may be seen that R will be decreased by increasing the speed of a given aeroplane beyond that for its incidence of maximum Lift / Drag ratio, as the rapid increase of passive drag would cause a decrease of η .

It may also be seen that as R is in air miles, the actual range depends upon the winds encountered. Now above the tropopause (about 35,000 feet) such things as depressions do not exist, because this region is isothermal, consequently there are no convection currents. Therefore winds, if any, will be of constant value.

There is another case for high altitude flight. The density of the atmosphere falls off very rapidly with altitude, and for an aeroplane flying at a given incidence (its best) at any altitude,

its speed in level flight must be $\sqrt{\frac{\rho_0}{\rho_H}} V_0$, where V_0 is its speed at ground level for level

flight, ρ_0 is the ground level density of air, and ρ_H is the density of air at the altitude of flight. As the lift and incidence are the same as for ground level, so also will be the drag. Therefore

$HP_H = \sqrt{\frac{\rho_0}{\rho_H}} HP_0$, where HP_0 and HP_H are the horse power for level flight at ground level, and the power for level flight at that altitude respectively. Similarly, as the air forces on

the airscrew will be the same, $N_H = \sqrt{\frac{\rho_0}{\rho_H}} N_0$ where N_0 and N_H are the rate of rotation

* This article first appeared in the 'RAF Cadet College Magazine,' Autumn 1928.

of the airscrew at ground level and at that altitude respectively.

The value of $\sqrt{\frac{\rho_0}{\rho_H}}$ is given by the curve (Fig. 1).

This curve clearly shows that the most efficient method of obtaining great speeds is to attain great altitudes, as an increase of speed obtained through altitude does not mean an increase of landing speed.

For example, an aeroplane at 80,000 feet must go five times as fast as at ground level. The HP necessary for level flight must also be five times as great, so also must the airscrew revolutions.

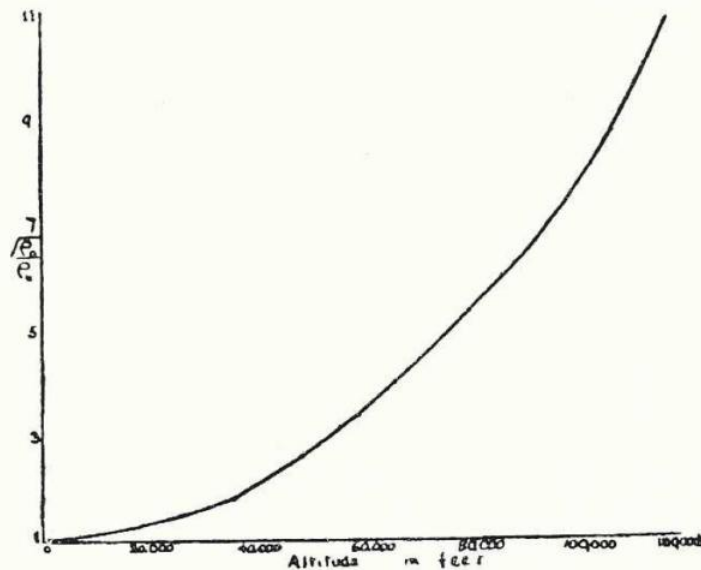


Figure 1

Example :—

Aircraft weight 2,000 lbs fully loaded.

Overall L/D of 10.

Air speed 60 mph at ground level.

Drag will be $\frac{2,000}{10} = 200$ lbs.

Speed is 60 mph = 88 fs.

∴ HP for level flight = $\frac{88 \times 200}{550} = 32$.

At 80,000 feet this machine would fly at 300 mph for the same incidence and would require 160 HP for level flight.

The reasons why we cannot yet reach these altitudes are :—

(1) The engine speed is limited, and thus the only method of obtaining the extra airscrew speed would be by gears.

(2) The tip speed of an airscrew is given by $\frac{V}{P} \times \pi D$, where V = velocity of aeroplane in ft / sec, P is practical pitch of air-screw in feet, D is airscrew diameter in feet. It has been found by wind channel research that the efficiency of an airscrew falls off as the tip speed approaches

1,100 fs, therefore for great speeds $\frac{P}{D}$ must be greater than one, and efficiency falls off for increasing values of $\frac{P}{D}$.

(3) The present type of aero engine depends for its power on the weight of mixture it takes into its cylinders per unit time, and as practical limitations prevent the increasing of revolutions as the density of the atmosphere decreases, a supercharger must be used which will supercharge the air to ground level density to maintain full power. A supercharger which will cope with the rarified atmosphere of great altitudes without absorbing much power has not yet been devised.

Even if winds do exist at these altitudes, their effect on aircraft would be very much less than at ground level. For instance, a 100 mph wind against a machine travelling at 300 mph at 80,000 feet would have the same effect as a 20 mph wind against the same machine doing 60 mph at ground level.

If such advantages are to be attained by high altitude flight, how are we going to overcome the difficulties which prevent it? The solution seems to me to be the development of a more suitable power unit.

We have heard much recently about the rocket-driven car, and of proposals for an aeroplane to be driven on the rocket principle. The principle is this:—If gases be ejected from rest, under pressure in a chamber, through a nozzle, there is a reaction equal and opposite to the force giving the gas its kinetic energy in the nozzle. Now suppose W lbs of gas per second pass through nozzle with a final velocity V fs. Then the force exerted on the gas, and therefore the reaction

$$= \frac{W}{g} V \text{ lbs. The kinetic energy per second given to gas by heating agent} = \frac{W}{2g} V^2 \text{ ft lbs — ie,}$$

power given to gas = $\frac{W}{2g} V^2$ ft lbs / sec. Now if the vehicle being driven in this manner has a velocity v f.s. in the direction of the reaction, then the power for driving

$$= \text{Reaction} \times v \text{ ft. lbs / sec} = \frac{W}{g} Vv \text{ ft lbs per sec.}$$

$$\text{Efficiency} = \frac{\text{Output}}{\text{Input}} = \frac{W}{g} Vv \div \frac{W}{2g} V^2 = \frac{2v}{V}$$

Now suppose we want a thrust of 200 lbs and we can at most pass 1 lb of gas per second through the nozzle.

$$\text{Then } 200 = \frac{W}{g} V = \frac{1}{32} V$$

∴ Velocity of gas = 6,400 fs
and the efficiency of the "engine"

$$= \frac{2v}{6,400} = \frac{v}{3,200}$$

where v fs is the velocity of the object being propelled. Thus in this particular case, we should require 1 lb of rocket mixture for every second of flight, and even if the velocity were as great as 300 mph — ie, 440 fs — efficiency would only be $\frac{440}{3,200} = 13.7\%$.

The rocket principle is obviously impracticable unless one applies it to a rotating nozzle where high linear speeds are possible; then one is, of course, approaching the principle of the turbine, which I now propose to discuss.

The steam turbine is the most efficient prime mover in common use. It has a high thermal efficiency compared with the aero engine and is a smoother running machine. Of course, a steam turbine is out of the question for aircraft owing to the enormous weight, but there seems no reason why an air turbine should not be developed, with petrol or crude oil as the heating agent. In the case of an air turbine the heating agent may mix directly with the working agent and thus exhaust via the nozzles. There being no heat wasted in flue gases, an air turbine should have a greater thermal efficiency than a steam turbine.

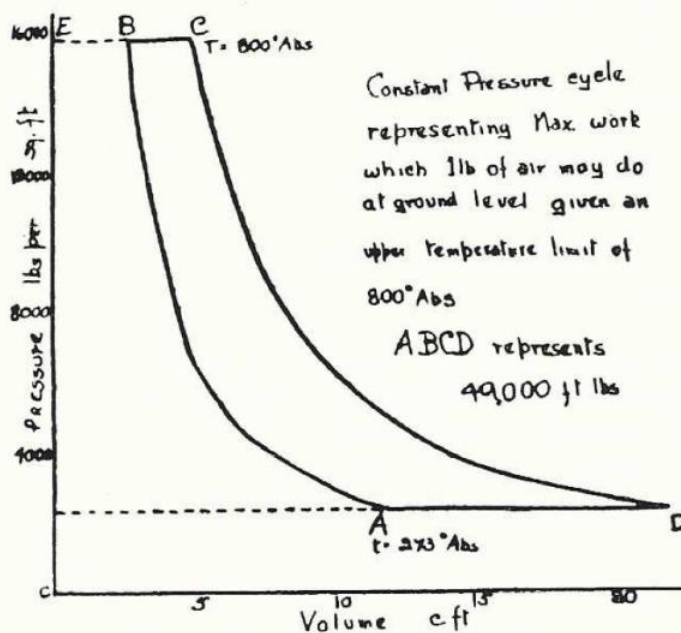


Figure 2

The cycle is shown in the two examples, Figs 2 and 3, which are actual constant pressure cycles for 1 lb of air at ground level (Fig 2) and at 115,000 feet (Fig 3).

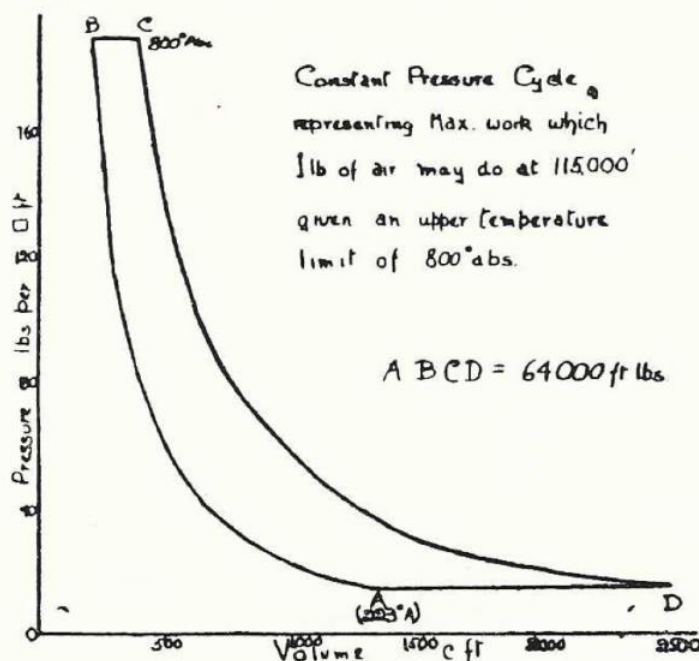


Figure 3

Air is compressed adiabatically AB. It then passes into a heating chamber and is heated at constant pressure BC. It then passes through the nozzles, expanding adiabatically CD, and finally cools at atmospheric pressure outside the engine DA.

The efficiency is given by $\eta = 1 - \frac{1}{R^\gamma - 1}$, where R is the compression ratio.

The velocity of the gas at the nozzles, on which depends the most efficient velocity of the turbine rotor [the most efficient velocity of the turbine blades = $\frac{1}{2} V \cos \alpha$, where V is velocity of gas at nozzle, and α is the angle that the axis of the nozzle makes with the rotor] is such that the kinetic energy of the gas equals the area ECDF (Fig. 2) ; thus the power of the turbine is not dependent on the rpm.

The power is given in the particular cases shown by

$$\text{IHP} = W \times \text{area ABCD} \div 550,$$

where W is the weight of air undergoing the cycle per second.

The maximum work which 1 lb of air may be made to do is only limited by the maximum temperature which the materials of the heating chamber will stand and the temperature of the atmosphere.

Maximum work = $336 (\sqrt{T} - \sqrt{t})^2$, where T is the maximum temperature (absolute) and t is the atmospheric temperature (absolute).

The idea as a whole is very similar to the steam turbine, the differences being that air is pumped adiabatically into a heating chamber, where it mingles with a burnt petrol-air mixture instead of water being boiled. As far as the nozzles and rotor are concerned, such an engine would be similar to the steam turbine.

The advantages of such a power unit may be stated as follows :—

- (1) The only limit to the compression ratio is the maximum temperature which the heating chamber may stand.
- (2) Power is not dependent on r.p.m., as in the case of the petrol engine.
- (3) The work which may be done by 1 lb of air increases with altitude, and partly compensates for the smaller quantity of air available.
- (4) Supercharging does not appear to be necessary.
- (5) Rotors of different diameters may be used to act as gearing.

The main disadvantage as far as air work is concerned is the gyroscopic effect of the rotors, but on reviewing the points for and against it seems as though the air turbine is the aero engine of the future.

COMMENT ON SPECULATIONS OF 1928

by AIR COMMODORE SIR FRANK WHITTLE, KBE, CB, MA, ScD, FRS, C.Eng, RAF (Ret'd)

The Editor has asked me to agree to the re-publication of 'Speculation' which appeared in the College Magazine for the autumn of 1928 shortly after I had graduated from the College. He also asked me to write a similar article giving my present views about the future. However, I felt obliged to excuse myself from the latter on the ground that, though I have kept in general touch with aeronautical engineering over the past few years, I have been mainly concerned with oil well engineering, and I would need to do a lot of brushing up to attempt such a task. Moreover, the thought was in my mind that one can stick one's neck out a long way as a Flight Cadet aged 21 and get away with it, but I cannot do that today with impunity. Inter alia, there is too big a risk of inadvertently forecasting things which may already be on the drawing board and under security wraps. That could lead to awkward questions as many would assume that I am 'in the know' when, in fact, I am not. I have run into this difficulty in the past. For example, in 1943 I wrote a paper on probable developments in submarine design which was submitted to the Admiralty. A few years later (long after the war) I requested permission to publish. This permission was granted but only subject to important deletions, because I was rather too close to secret work then in progress. However, I agreed to the re-publication of 'Speculation' and to write this commentary on it.

I fear it was a very amateur effort, but I suppose it has some historical value because — so far as I recall — it was the first article on a technical subject by me to be published. It was a condensation of part of my fourth term thesis "Future Developments in Aircraft Design."

Unfortunately, it was marred by printing errors to such a degree that it was probably only comprehensible to anyone so familiar with aerodynamic and thermodynamic theory that the mis-prints would have been obvious. The proofs were never submitted to me for correction, so I cannot wholly be blamed for the apparent errors though, undoubtedly, my handwriting was largely at fault. Generally speaking, the errors took the form of the Greek letter 'rho' appearing as 'P'; the Greek letter 'gamma' appearing as 'Y'; indices appearing as coefficients; + signs instead of the word 'and'; 9 for the symbol 'g' etc. eg

$$\sqrt{\frac{\rho_0}{\rho_H}} \text{ appeared as } \sqrt{\frac{P_0}{PH}}$$

As may be seen, I looked into the possibilities of rocket propulsion and into propellers powered by internal combustion turbines — it had not then occurred to me that the gas turbine was the best way of producing a propelling jet (for aircraft propulsion at least). The penny dropped just over a year later, by which time I had raised my sights to speeds of the order of 500 mph.

Though I did not know it at the time, the first formula in the article (for range) was a form of the Breguet Equation (the figure 2,800 was the calorific value of petrol in foot pounds per pound divided by 5,280 — to convert feet into miles). It can be applied to jet aircraft by the substitution of the appropriate efficiencies.¹ The formula tends to ignore climb and descent — I

¹ It is now often written in the form

$R = \frac{V}{f} \frac{L}{D} \text{Log}_e \frac{W_1}{W_2}$ where V is flight speed (mph if R is in miles or knots if R is nautical miles); f is specific fuel consumption in lbs / hr / lb of thrust; W₁ is all up weight at beginning of cruise and W₂ is all up weight at end of cruise.

probably assumed that the extra fuel required for climb was compensated for by fuel saved on descent. It also requires that the flight condition is at constant lift / drag ratio ie, at constant incidence, which implies a gradual climb as the weight is reduced by fuel consumption. I did not then foresee that traffic control requirements would usually prevent adherence to this optimum flight plan. (With jet aircraft one must fly at a speed somewhat higher than that for maximum L / D because as the thrust of a jet engine varies only slightly with speed at cruising speeds any attempt to fly at maximum L / D — ie, minimum drag — would mean that the slightest deceleration would result in the drag becoming greater than thrust, thus causing further deceleration)²

My views about conditions in the stratosphere were distinctly optimistic but I could not know this as no-one had ever been there nor, so far as I knew, had anyone devised any means for regular exploration of the stratosphere. Such things as jet streams had yet to be discovered as also the fact that the tropopause is very much higher in the lower latitudes (I have seen cumulonimbus towering many thousands of feet above when flying across the Caribbean at 35,000 feet).

The discussion of propulsion by rocket leaves a great deal to be desired, but I was, of course, thinking only in terms of aircraft propulsion. (I think I would have been as disbelieving as anyone if someone had suggested that man would set foot on the moon within 31 years). I remember being very uneasy at the expression I derived for the efficiency of rocket propulsion because of the implication that if the flight speed became more than half the jet velocity, the efficiency would exceed 100% which is improbable to say the least of it. However, this condition would have meant flight speeds more than seven times greater than the 300 mph I was considering. I must have decided not to worry about such a seemingly remote possibility. One of the things I did not take into account was the work done in imparting kinetic energy to the vehicle in addition to overcoming drag. A satisfactory definition of the efficiency of rocket propulsion still seems to me to be a somewhat elusive thing.

The discussion of the gas turbine in the latter part of the paper is, I fear, very amateurish. It is evident that I was thinking only in terms of what was then known as the simple impulse turbine of the de Laval type and that I was still far from being familiar with turbine theory. The most serious defect of this section, is that I evidently assumed that the losses in the processes of compression and expansion would be negligible whereas, as I came to realise shortly after, compressor and turbine efficiencies were all important. The low values then usual for rotary machinery of this type was, coupled with the lack of materials capable of withstanding high stresses at high temperatures, the main stumbling block in the several unsuccessful attempts to develop the gas turbine in the early years of the century.

On reflecting on this serious defect in my argument, my embarrassment is somewhat mitigated by the knowledge that I wrote a paper entitled "The Case for the Gas Turbine" while I was a floatplane and catapult experimental test pilot at the Marine Aircraft Experimental Establishment, Felixstowe between January 1931 and July 1932. This paper was never published but, though I had still to receive my engineering training at Henlow and Cambridge, it shows that I

² When I embarked on the task of finding a range formula I fully expected to find that great increases of range could be obtained by flight at great altitudes and my disappointment was great when I was forced to accept that maximum still air range was independent of height.

had greatly advanced in my knowledge of gas turbine theory and had acquired a much more realistic approach and become well aware of the importance of component efficiencies and the need for suitable turbine blade materials. By that time I was, of course, concentrating on the jet engine application of the gas turbine.

The advantages as listed at the end of 'Speculation' also show that my ideas were still somewhat nebulous. The first would have been better stated as "The limiting pressure ratio is governed by the component efficiencies and the maximum cycle temperature which available materials will permit." Item (2) is wrong. I was evidently thinking of steam turbine characteristics. Even so it should have read "Power is not as dependent on rpm". However, as everyone now knows, when the compressor is driven by the turbine, power is in fact far more sensitive to rpm than in the case of the piston engine. (The static thrust of our first flight engine — the W1 — was 860 lbs at 16,000 rpm, 1,000 lbs at 17,000 rpm and 1,240 lbs at the full design speed of 17,750 rpm.)

Item (3) was (and is) quite sound and becomes even more true when compressor and turbine losses are taken into account. Item (4) also proved to be sound in the event, but I cannot remember what I had in mind when I included (5). I am also puzzled by the fact that I did not include the advantages of low weight, absence of vibration, insensitivity to fuel type etc. However, a year or so later I was in the habit of including these.

The formula given for the maximum work per lb of air per second for a constant pressure cycle (the last formula in the article) looked very unfamiliar and I thought that there must be quite a serious misprint but on checking I found that, except that the coefficient 336 (the specific heat of air at constant pressure in ft lbs per lb) appeared as 356 it was correct for the ideal cycle. In later years I would have preferred it in the form

$$w_{\max} = K_p T_O \left[\sqrt{\frac{T_m}{T_O}} - 1 \right]^2 \text{ where } w \text{ is the work/lb of air/sec, } K_p \text{ is the}$$

specific heat at constant pressure, T_m is highest cycle temperature and T_O is lowest cycle temperature (ie atmospheric static temperature in an open cycle engine).

A particularly interesting thing about this formula is that it indicated the beginning of a very useful line of reasoning. As time passed I acquired the habit of dealing with thermal cycles almost entirely in terms of absolute temperatures, temperature ratios and pressure ratios. Included in this system was the practice of thinking of velocities in terms of temperature equivalents and vice versa. (The conversion is given by $V^2 = 2 g K_p \Delta T$ where ΔT is the temperature change corresponding to velocity V . It happens that $\sqrt{2 g K_p}$ has the same digits as the factor for conversion of mph into fps — 1.47 — hence the useful rule that kinetic temperature rise in °C is equivalent to the square of the speed in hundreds of miles per hour, eg, if air travelling at 500 mph is brought to rest the temperature rise is 25°C ; for 1,000 mph it is 100°C and so on—hence the problems of kinetic heating which arise at very high Mach numbers).

In detail design one has to allow for a number of minor factors such as increase of specific heat with temperature, the fact that the mass flow in expansion is greater than the mass flow in compression due to the added fuel mass etc., but these secondary 'adjustments' can be ignored for the purpose of preliminary design and especially for comparative purposes when seeking the optimum cycle for any particular application. With this system it is possible to 'work round' a jet engine cycle in a matter of three or four minutes after a little practice.

When compressor and turbine losses are taken into account the above formula for w_{\max} becomes modified to

$$w_{\max} = K_p T_0 \frac{T_0}{\eta_c} \left[\sqrt{\eta_c \eta_t \frac{T_m}{T_0}} - 1 \right]^2 \text{ where } \eta_c \text{ is compression efficiency}$$

and η_t is expansion efficiency. This condition occurs at a temperature ratio $r = \sqrt{\eta_c \eta_t \frac{T_m}{T_0}}$

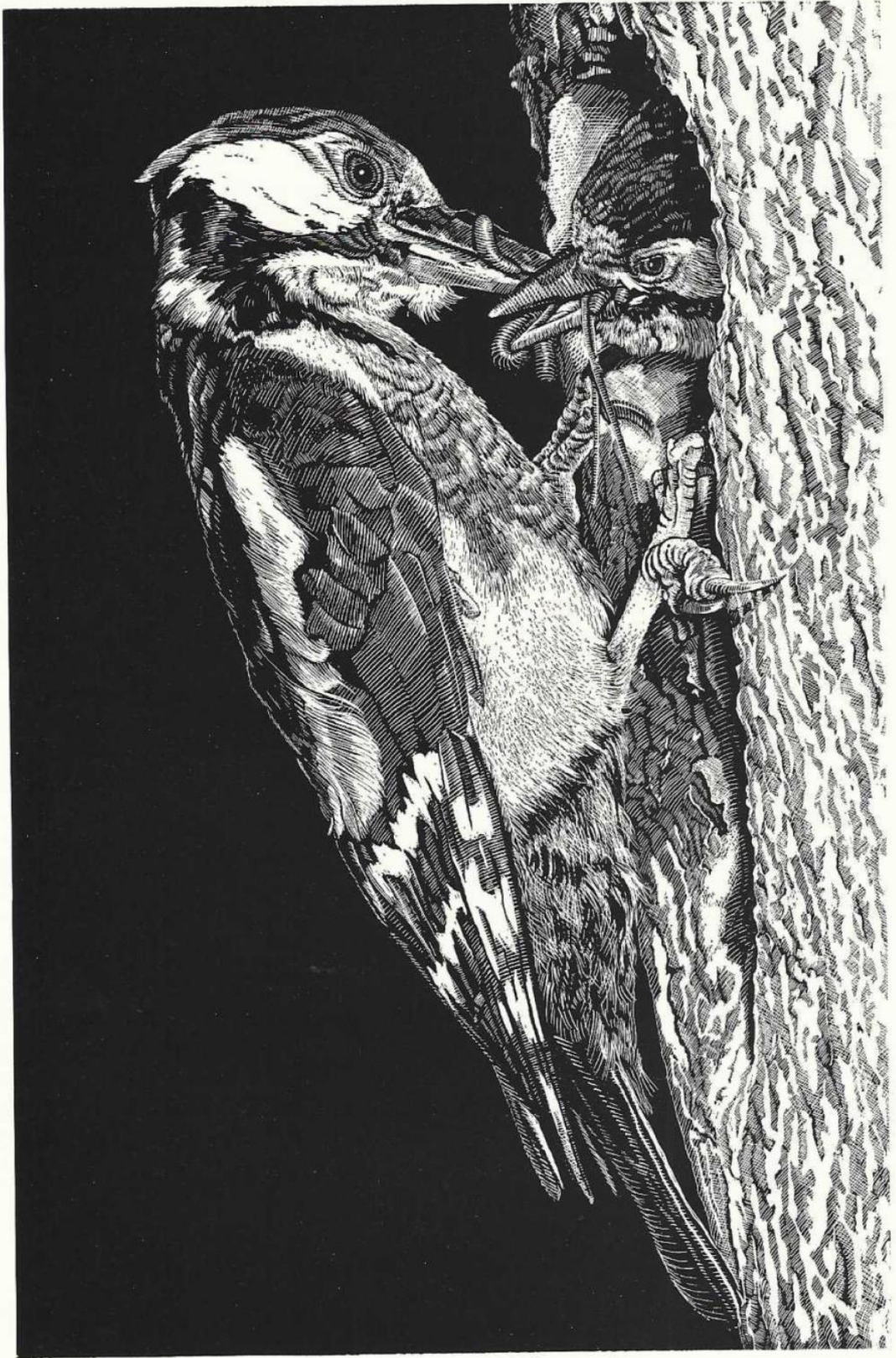
eg, for standard sea level conditions ($T_0 = 288^\circ\text{K}$) with $T_m = 1100^\circ\text{K}$, $\eta_c = 0.86$, $\eta_t = 0.90$ the value of r for w_{\max} is 1.72 which gives $w_{\max} = 58,200 \text{ ft lbs/lb}$ or 106 hp/lb/sec . Thus the mass flow of air for 10,000 hp would have to be 94.3 lbs/sec.

Unfortunately, the temperature ratio for highest overall efficiency is substantially higher (about 2.1) so that peak efficiency can only be obtained at the sacrifice of output per unit flow, and vice versa.

In practice η_c decreases as temperature ratio (and therefore pressure ratio) is increased but η_t increases. Both effects are due to the conversion of losses into heat during the compression and expansion processes.

Well ! there is my apologia. If I did drop a few bricks, I can claim that I picked them up again a short time later and learned quite a lot in doing so.

When I look back over the years I am struck by my own relative pessimism at a time when others thought me a wild optimist. The power, size, reliability and performance of jet aircraft have gone far beyond anything I ever predicted. I was, however, usually over optimistic about time and cost, though, in my opinion, my estimates of time **could** have been achieved. For example, there was no serious obstacle to the introduction of the large by-pass ratio turbofan about, say, 1946 or the successful achievement of supersonic flight at about the same time. Unhappily, the contracts for our large by-pass ratio engine (the LR1) and for the Miles M52 experimental supersonic aircraft were cancelled.



J. L. King

'Miscellany'

The Fascination of Ocean Sailing

High Speed V.T.O.L. Transports

British Sport at the Crossroads

Book Reviews

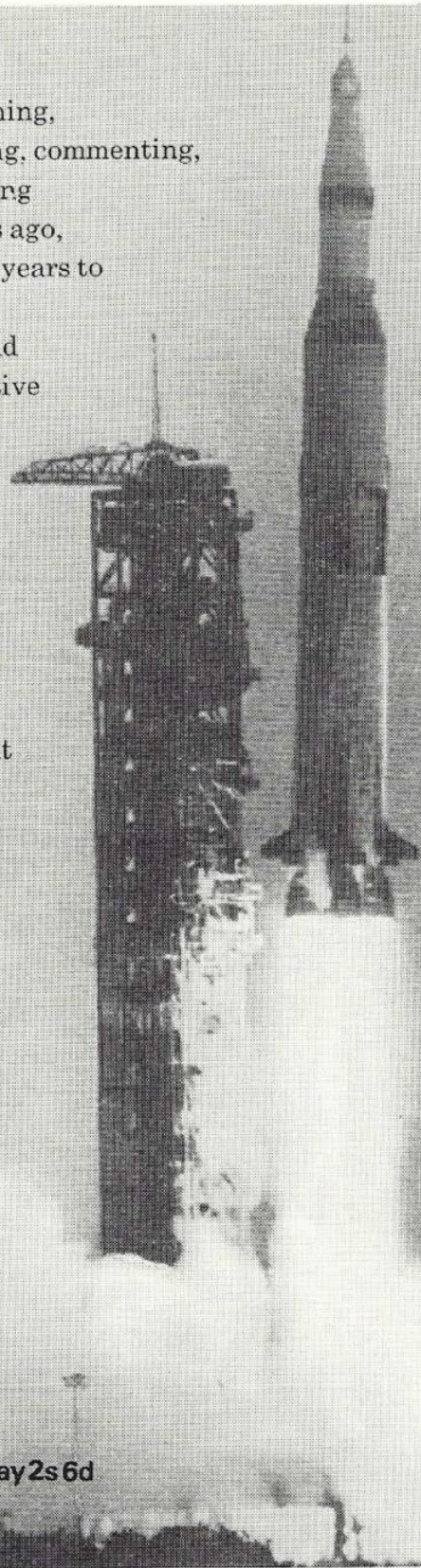
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THE FASCINATION OF OCEAN SAILING

by SQUADRON LEADER J. H. COPLAND

Just imagine yourself one dark night, on board a 34-foot sloop, banging into a head sea somewhere south of the Fastnet Rock in the southern approaches to Ireland.

You are there, working out your watch on deck. You sit, wet and weary, thinking only of your approaching turn in your sleeping bag. Trickle of salt water thrust impudent icy fingers between your oilskins and your neck and armpit. You are locked into your misery, holding fast to the remaining glimmer of the only true happiness - your feet are still warm and dry. Then that unfeeling taskmaster, the skipper, thinks its time to change headsails. So you go forward, get newly wet to the navel, fill your boots, and with eyes stinging with salt you come gasping back to the cockpit.

"She feels better," he says. "Bull dust," you think and the time has come when you have joined a gallant company. You are with Ulysses at Scylla and Charybdis, Leif Ericson in the Davis Strait, and Magellan in straits of his own. They, too, at one time or another, must have asked themselves: "What am I doing out here?"

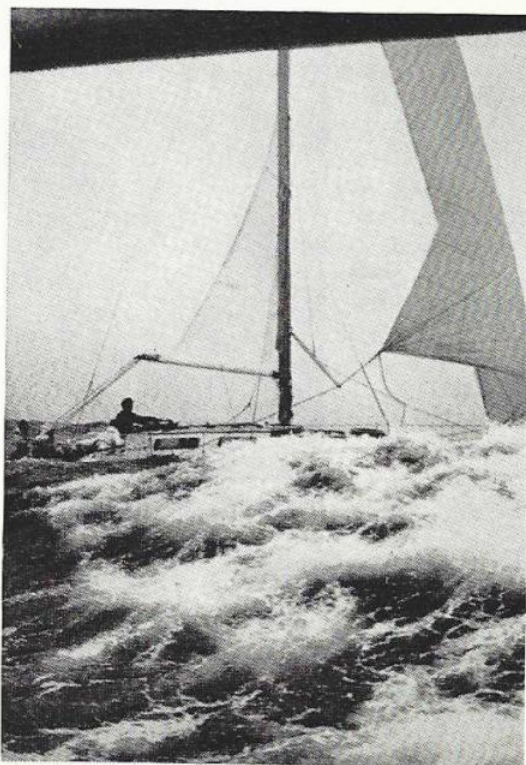
That's the question each ocean sailor answers for himself. You do not even have to be on deck for the question to arise. The sanctuary below decks is such only by comparison. Try sleeping inside a bass drum while the orchestra is playing the "1812 Overture". That's what that little glass fibre island sounds like as she shoots off the top of a long green wave and falls into the hollow at the back side. You swear you can hear the keel of the mast grinding through the mast step into the bottom of the boat. You pulse with each whack of the keel on a bigger than usual wave. In a detached way you wonder how long this marvellous arrangement of glass fibre, bronze, stainless steel and nylon can hold together. But you'll think about that tomorrow.

Your bunk is no retreat. You are a vagrant chunk of ice in a cocktail shaker. You hold

on to the berth with your toes and the muscles of your derriere, all the time trying to keep out of the way of the Chinese torture-drop that is the condensation dripping off the cabin roof. You don't feel like eating but the cook, intent on showing off, has lit the stove. The cabin slowly fills with fumes which make your eyes smart and which go right to the pit of your stomach before his miserable scrambled egg can get there.

My friend you are ocean sailing: which as a sport can provide more concentrated discomfort than anything I know and what it loses in vehemence, it makes up for in duration.

And still people fight for a berth on a yacht going to sea. They can't all be masochists. There must be something more than that. Despite the opinion held in some



quarters that anyone who would go to sea for a pastime would go to hell for his pleasure

the men who go out in small boats show more or less rational attitudes to most other aspects of living. There must be a reason for such an unreasonable madness.

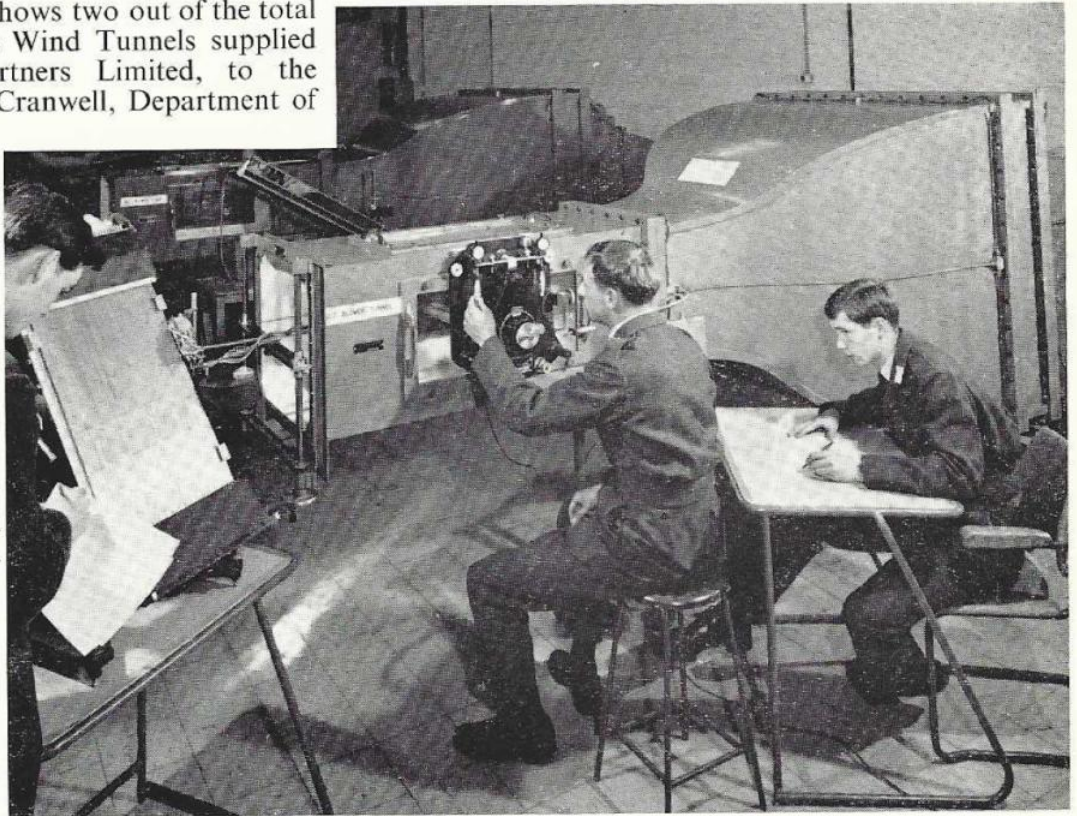
And so there is, but to each his own. To one, it is the kinetic loveliness of a yacht working its way through the seas. To another it is the challenge of the unruly elements. To one man it may be the competitive zest of a race, whilst to his shipmate, it could be the landfall after days at sea. To some it is the sea itself, "which has no memory and shows no compassion and which shows an indifference so vast as to make man go

silent in its presence." To all, it is a unifying love for the sea, the love of ships and the wonder of things nautical - natural, man created and historical. They are part of a new and growing fellowship of the sea - those who go out upon the ocean in small boats for the enjoyment of this peculiar form of pleasure. For, despite all the discomforts to be, there will come great pleasures - pleasures in their own skills at a time when individual skills are disappearing into a man-automated complex ; a sense of victory in contest with powerful elements and above all the companionship of their fellows in the midst of a shared adventure.

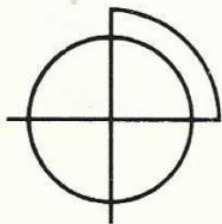
The illustration shows two out of the total of four Subsonic Wind Tunnels supplied by Plint & Partners Limited, to the R.A.F. College, Cranwell, Department of Aeronautics.

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HIGH SPEED VTOL TRANSPORTS

or UP, UP AND AWAY

by Squadron Leader P. C. SQUIRE, BSc, DCAe, CEng, AFRAeS

If, as the pundits tell us, there will be "standing room only" by AD 2000 in urban areas, then if we live in a city it will not only be aircraft take-off's that will be performed vertically! More seriously, various authors quote world population as approximately 7×10^9 by the turn of this century and a maximum of 50×10^9 one or two centuries from now. Such large increases would lead to interconnected cities forming large urban areas of many tens of millions of people living at a high density. This trend is already evident on the eastern seaboard of the United States from Boston to Washington DC, and in the ever-increasing population of Los Angeles. Population densities of up to 50-200 per hectare (10^4 m^2) are forecast (the density of the Greater London Council area averages 50 per hectare).

As a result of consideration of these figures one can see that if man continues using conventional take-off and landing (CTOL) techniques, then he will spend even more of his time travelling to the long runways with their associated large aircraft and noise problems in pursuance of air travel than he does at present, and these are bad enough already.

The answer to this travelling time from door to airport problem lies in the use of vertical take-off and landing (VTOL) or short take-off and landing (STOL) aircraft. VTOL aircraft can, at present, only carry a limited number of passengers, perhaps 40 at the most. This is due to the fact that the aircraft engine's thrust must be at least equal to the weight of the aircraft during the vertical mode. This leads to heavier and more powerful engines than would be required for a CTOL aircraft of the same passenger size, whose thrust is mainly used to overcome the drag of the aircraft. This is a vicious circle in the sense that more passengers mean extra weight, extra thrust, bigger engines, more weight Since

weight is so vitally important fuel loads are comparatively low leading to a short range aircraft capable of city-centre to city-centre operation. STOL aircraft on the other hand are capable of carrying more passengers, since some of the aircraft weight is wing-borne when the aircraft leaves the ground. Their range is likely to be greater than their VTOL cousins. It is perhaps mainly due to their differences in range that VTOL is receiving more attention in the UK than STOL, which looks like being the favourite intercity transport in the USA, if only as an interim measure.

Since this article concerns itself with VTOL transport in the foreseeable future let us consider now in more detail what is in the pipeline in this country.

The major market for the advanced VTOL vehicle will be on the mainline short- medium stages (say 150-650 miles) with cruise speeds competitive with conventional aircraft. There is an estimated market in scheduled European operations for at least 500 aircraft to this specification in the decade following its introduction into service. With the background knowledge of current VTOL development and the technical possibilities open to manufacturers, high speed VTOL services are feasible before the end of the 1970s. Unlike SST the VTOL system will benefit a large proportion of the travelling public and cause little annoyance to the community at large.

The VTOL field can be divided into three main configuration categories.

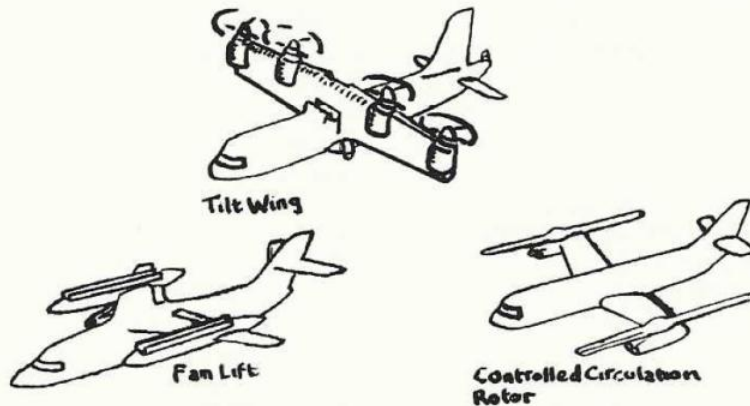
- Rotor - Large conventional helicopters.
- Advanced compound helicopters.
- High speed rotorcraft - stopped rotors.
- convertible rotors.

- Propeller - Tilt wing.
 - Fixed wing - Tilt propeller.
 - Tilt duct.
- Fan lift - Fixed wing - Tilt fans.
 - Fixed fans.
 Remotely driven and individual fan units.
- Three of these configurations are shown in Figure 1.

the target level of safety should be improved in relation to that set for CTOL. However this is open to doubt, eg a large jet or SST approaching at say 160 knots, in bad visibility is probably a greater hazard than a VTOL aircraft descending slowly into a terminal site.

- There are two approaches to safety
- (i) Safe life - simplex 'chain' systems.
 - (ii) Fail safe - multiplex systems.

Figure 1



Configurations for the VTOL Mode

The aspects which affect selection of a particular configuration both from the point of view of the airframe and the powerplant manufacturer are

- (i) Noise
- (ii) Safety and reliability
- (iii) Economy and time saving
- (iv) Available technology
- (v) Aircraft acceptability - airline and passenger appeal, comfort etc.
- (vi) Ultimate development potential.

Since the aircraft will be operating out of virtually city centres noise is of vital importance. Jet lift is out of the question (noise is approximately proportional to $(V_{jet})^8$!). The highest figure to be aimed for within the noise "footprint" directly under the VTOL engine is 90 PN db (a Boeing 707 passing over Kensington at 2500 ft on its approach to Heathrow causes 95 PN db on the ground).

Rolls Royce are therefore designing a "quiet" fan lift engine with low component tip speeds and a low efflux velocity in the region of 500-600 ft/sec.

Safety

Due to the third party risks associated with VTOL operations into densely populated areas, the Air Registration Board believe that

In configurations which employ mechanically interconnected propeller drives obviously the fail safe solution is impracticable, and to approach the target of one catastrophic failure in 10^7 flights (suggested by Hawker Siddeley) is costly since expensive full scale proving of the whole system, restricted lifing of major components and sophisticated failure detection with the associates maintenance and operating cost burden, are all required.

The fan-lift philosophy is the use of multiplex failure survival systems for the major systems and components. Nowadays engine designs are based on a safety level target of 10^8 , which for aircraft with more than 8 to 10 engines, implies allowing for the loss of two critical engines under the most adverse conditions while retaining adequate control power. The vast background of statistical information available on propulsion engines enables reliable predictions of safety level to be made on fan lift aircraft.

Economics

The high speed VTOL aircraft's first cost may be 60-70% higher than its conventional counterpart. Translated into a cost per flying hour, this results in a 40-45% penalty due to the proportion of items which are not aircraft

cost dependent and remain sensibly fixed. Also landing charges will be less due to lower investment on terminals. The upshot of this is that fare levels might be about 10% higher for VTOL, for a given load factor.

Against this has to be set the reduction in fares and incidental charges for the ground stages of the journey. The net result is that the total expenditure to the passenger will be the same whether he travels by CTOL or VTOL. But with the VTOL service he will have saved at least an hour and if we put a value on time the effective fare can be at least 10% in favour of the VTOL service.

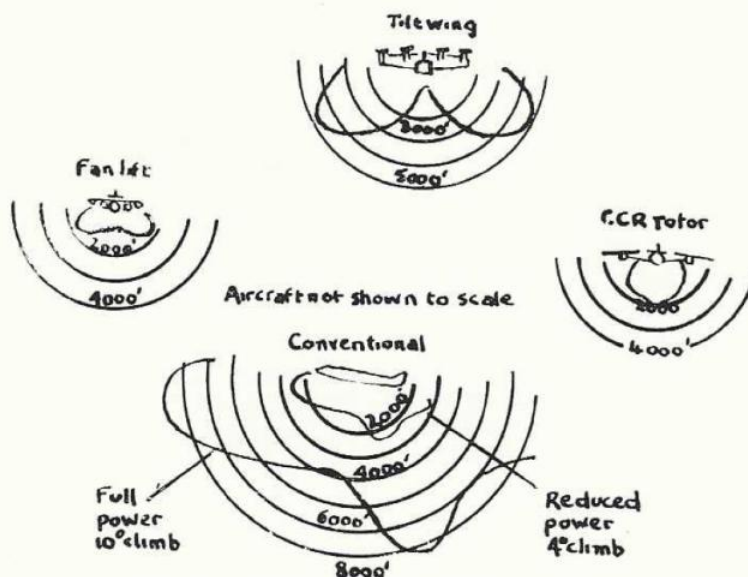
The most promising contenders for VTOL race are probably those aircraft employing

The D031 is the largest high speed VTOL transport aircraft in the world, and the only one in Europe. I believe that future VTOL aircraft will follow in the Dornier's footsteps, the only major alteration being the exchanging of the present RB162 jet lift engines, for the lighter and quieter advanced fan lift engines such as the RB202.

The engine installation is the heart of the fan lift aircraft. Up to 15% of the weight and over one third of the cost of the aircraft may be tied up in their engines and their installation.

As with all new ideas the initial problems are many and too numerous to include in this short article. However two that are not often encountered in CTOL aircraft deserve mention.

Figure 2



Relative Noise Contours for 90 PN db

direct lift defined as those which lift themselves in the VTOL mode directly by their engines without intermediate shafting and/or ducting to drive another actuator (turbine) removed from the engine itself. This embraces jet or fan lift using either individual lift engines or deflection of the propulsion engine efflux.

The direct lift principle is the most flexible insofar as it places no constraints on configuration and speed inherent in other systems such as those present in helicopters.

Many direct lift aircraft have flown successfully and include the Sc-1 and P1127 / Kestrel / Harrier family in the UK, the VJ101 and D031 in Germany, the Balzac and the Mirage IIV in France.

The first problem involves ground proximity effects and exhaust reingestion. The interference effects may be negative or positive and have associated implications on stability and control. (By careful selection of aircraft geometry, including undercarriage height, a hovercraft effect may be obtained close to the ground). Any large VTOL aircraft will cause an extensive disturbance in the region of the take-off pad (due to the momentum transfer equal to the weight of the aircraft). It would therefore be best if, especially for extensive operations, the aircraft were to take off and land on a perforated grid. However it is obviously best if the aircraft behaves satisfactorily both from a grid or from a solid surface. Reingestion of exhaust gases has always been a problem on

the earlier jet lift type aircraft, but extensive test work has shown that with the much cooler (less than 100°C) and lower efflux velocity of the lift fans, this problem is alleviated to such an extent that wide configuration options become possible.

The second problem involves aerodynamic interference in free air. In the vertical ascent or hovering flight all VTOL systems suffer an interference lift loss due to the flows and induced flows past the airframe itself. As forward speed builds up during transition the interaction between the lift system and normal aerodynamic characteristics can be very considerable. This interference effect may be attributed to inlet and exhaust flows separately. The particular configuration chosen for VTOL must ensure that characteristics of lift gain or loss, drag or thrust increment due to the interference effects are not unacceptable.

The more knowledgeable reader will probably be of the opinion that I have concentrated too much on fan lift to the exclusion of the pure helicopter and so called "blown" rotor. I believe that the pure helicopter is limited in the range and speed required of the modern VTOL transport while the circulation controlled rotor (CCR), stowed in the fore-and-aft position during horizontal flight, has the frightening tendency to break the wings on which it is mounted.

A simple experiment that is illustrated in Figure 3 may be used to demonstrate this effect.

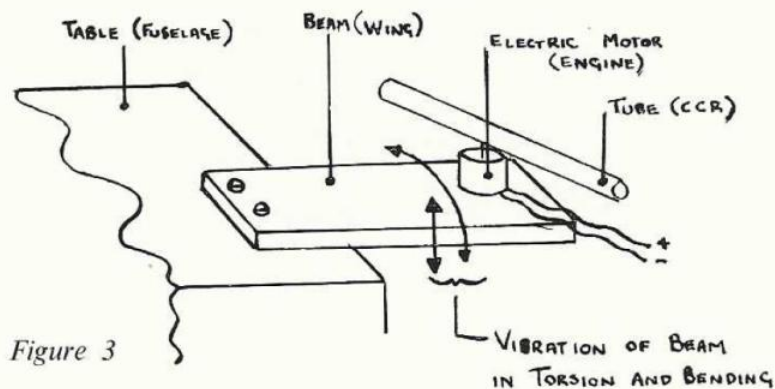


Figure 3

The flat beam is rigidly fixed to the bench representing the fuselage of the aircraft. The electric motor representing the engine driving the circulation controlled rotor, or more simply a tubular bar, is mounted on the end of the beam or wing. As the rotor is speeded

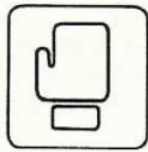
up the beam vibrates in twisting and bending. The forces which produce this vibration are not aerodynamic but result directly from the fact that the moments of inertia along the bar and at right angles to it are so different.

The tilt wing aircraft such as the XC142 has not been forgotten but it has yet to overcome the problem of noise. If we refer to Figure 2 it can be seen that the noise level of 90 PN db extends to a range of approximately 4,500 ft while that of the fan lift engine is much quieter, the noise level only extending to approximately 1800 ft.

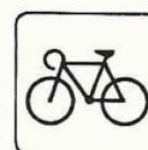
Like the swept wing, the jet engine, and supersonic transport, VTOL development offers the UK and Europe wonderful opportunities in the expanding field of commercial aviation. Military advantages including operation from forward positions in unprepared areas are well known.

VTOL must be used to penetrate the short stage civil airline networks in the '70s but operate complimentary to the medium and longer range conventional aircraft. Its development will alleviate the problems and difficulties facing aviation in the near future, leading in the longer term to benefits for the air traveller and the community at large, particularly in arresting the ever-increasing demands on land and capital due to the proliferation of large multi-runway airway airports.

VTOL is not new. Direct lift technology has been built up in the UK and Europe over the last 15 years. Let us hope that it is not regarded as a series of interesting, albeit expensive, projects and its potential is fully realised.



BRITISH SPORT AT THE CROSSROADS



by Flight Lieutenant J.M.Harries BA

As we enter a new decade those of us who are interested in sport generally - and in the performances of British sportsmen and women in particular - can reflect that we have had little enough to cheer about in the last ten years. It is true that there have been encouraging and even outstanding successes in certain fields - the dramatic World Cup victory of 1966, the recent Wimbledon triumph of Ann Jones and the almost unchallenged supremacy of British racing cars and drivers are particularly noteworthy examples - but, in general, results in many major sports have been disappointing to say the least. Time after time we have seen British sportsmen trounced by the opposition, trailing in a forlorn last in Olympic competitions, eliminated from the top tennis tournaments in the first and second rounds and given thorough drubbings on the rugby fields and golf courses and in the swimming baths and boxing rings of the world. Not to put too fine a point on it, the "good loser" ethos has become emblematic of our achievements and the long-standing jibe about the "horizontal heavyweight" is, sadly, applicable in its implication to more British sporting performances than one likes to admit. Why is this so? The "pundits" - both acknowledged and self-styled - have advanced many diverse arguments to account for the decline. Some find in our gradual

sporting eclipse a reflection of the lethargy and apathy which they allege to be affecting the nation generally. These observers see Britain's lack of success in sport in the same light as wildcat strikes and drug-addiction - symptoms of the "opting out" malaise! Another, more vociferous, body of opinion asserts that our demise can be accounted for by our old-fashioned tradition of "amateurism at all costs," (!) and indeed it seems ludicrous to consider that until very recently most County Cricket captains changed in a different dressing-room from the rest of their sides because of the near-disdain felt by the game's "top brass" for the man shameless enough to earn a living from his sporting talents! One feels, however, that each of these arguments leaves much to be desired - the first is superficially convincing but surely over-fanciful while the second is vague and nebulous in its application.

After a reasoned consideration of the subject one feels that the following factors are of paramount significance :

- a. The rapid emergence of previously "under-developed" countries.
- b. The failure of successive British governments to provide adequate coaching and training facilities.

- c. The reluctance of various British sporting authorities to streamline their organisation along modern lines.

About the first point much has been written and broadcast ; suffice to say that upon gaining independence one of the first priorities of the emergent countries (after the creation of a national anthem, flag and airline) seems to be success in an international sporting contest. Whether one likes it or not, sporting success is now an important factor in determining the "status" of a country, and the spread of nationalism has accelerated the progress of many nations in the spheres of sporting activity. When organised and determined coaching systems were harnessed to the considerable natural ability of these nations (particularly on the African continent) it was only a matter of time before outstanding results were achieved. This has meant that Britain no longer has to contend only with the traditionally strong sporting powers of Europe and the Americans. Increased competition has led inevitably to better performances, and this is most welcome, but from our stand-point it means that standards which were hitherto impressive are now commonplace and consequently our targets must be set much higher than in the past ; in an increasing number of sports, to be champion of Britain is no longer very meaningful in terms of international ratings. It is a sad comment, for example, on the state of British swimming that in the last European Junior Championships two swimmers set new United Kingdom records but were still unable to qualify for the **FINALS** in their respective events !

This brings one to the second main point - the failure of British governments to provide adequate financial assistance in the provision of coaching and training facilities. World-class performances depend largely on the ready availability of world-class amenities. We may quote two of the more pathetic cases ; Mike Bull, the best pole-vaulter Britain has ever produced had to travel six hundred miles each week last winter because of the paucity of adequate indoor training facilities while until recently there was only **ONE** Olympic-sized swimming pool with full diving facilities in the whole of the United Kingdom ! The problem is basically simple - if Britain is to be able to compete on level terms with the rest of the world then we must

be prepared to spend large sums of money to build athletics stadia with the latest track surfaces and field-event facilities, swimming pools of the requisite standard, heated gymnasia and so forth.

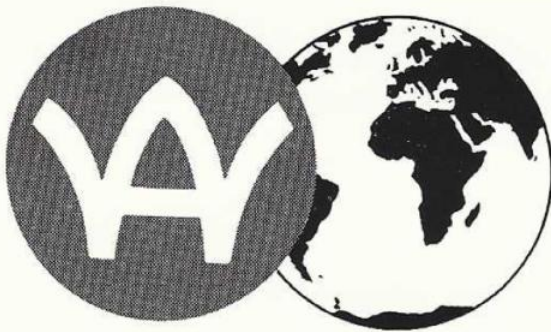
Similarly systems of coaching must be completely reassessed and overhauled ; each year hundreds of promising youngsters are lost to their respective sports because there are so few qualified coaches to assist them to make the really important break-through to world class. It is a salutary thought that while there are only 35,000 active senior athletes in this country, East Germany (with a population of just over 17 million) has more than 2 million regularly-competing athletes, juniors included. Essential steps must be the provision of athletics scholarships to universities, on the American lines, the appointment of permanent well-paid coaches in all major sports at various strategically-placed centres throughout the country and the setting-up of a nation-wide integrated system of "talent-spotting". One anticipates the horrified reaction to such proposals on the part of those people who rather pitifully adhere to the philosophy that "the game's the thing" and who consider that anything which smacks of organisation and discipline is unethical, unsporting and un-British ! Whisper not the word "professionalism" in the corridors of British sporting power ! Without labouring the point further, if the powers-that-be insist in sticking to this outmoded way of thought then Britain's prospects for the next decade are very sad indeed.

One must point out however, that the Government is not alone in having to accept the blame ; many of the ruling authorities in British sport are tottering along with an administrative set up which belongs more to the Victorian era than the space-age. To name them would be churlish, perhaps, but one is increasingly convinced that some controlling bodies are amongst the last bastions of reactionary-mindedness and ostrich-like unawareness of what is happening in the rest of the world : these houses must rapidly be set in order ! There are some grounds for hope, it is true ; after years of indifferent performances by the England soccer team, Sir Alf Ramsey's insistence on squad-training and collect-

ively organised coaching is paying off handsomely. A similar system is being introduced by the Welsh Rugby Union (and none of the Home Countries will ever match the All Blacks without it). The PGA no longer frowns on our young golfers spending their time on the American circuit. We have open tennis tournaments at least and Davis Cup sponsorship, and although much remains to be done in athletics at last the appointment of full-time regional coaches and the introduction of an Inter-Club League are steps in the right direction.

What then, are the prospects for the next ten years? The would-be prophet's lot is not an enviable one but it would appear that British sport - perhaps like Britain itself - is at the crossroads. The choice lies between accepting "second class citizenship" or

harnessing and channelling our undoubted talents along progressively enlightened and scientifically-orientated lines as outlined above, with more authority being given to a new generation of controllers who would replace the "elder statesmen" at the helm today. The reorganisation and revitalisation of British sport will be a long-term project and we may have to wait several years until we can send a rugby side to New Zealand, a Ryder Cup team to the United States or an Olympic Games contingent anywhere, in the **REASONABLE EXPECTATION** that they will **WIN** (and this surely is what the business of sport is really about at this level); but unless radical changes are made, then we can be certain that there will be even fewer occasions on which we can celebrate British victories in the sporting arenas of the world.



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BOOK REVIEWS

THE PEOPLE'S WAR

ANGUS CALDER

Jonathan Cape

65/-

When do contemporary events become history? In a sense, when a generation grows up born after the events have happened. Much more so then "history" has really arrived when the historian himself was born after what he is describing or at least was too young to remember. This is the case with Angus Calder. His book is about Britain during the Second World War, though he himself was born only in 1942. In a sense this is both an advantage and a disadvantage. An advantage because he can bring to his narrative an approach uncluttered with personal memories. A disadvantage because when describing the mood and feeling of those traumatic years there is no substitute for having lived through them. The strengths of his long but very entertaining book derive from the first point; the weaknesses from the second.

Mr Calder's research has been deep and widely ranging - he has drawn upon almost every conceivable source in order to find out what really happened in the war years in this country and how people felt. His style is very readable; the first-hand accounts he quotes are carefully chosen to give balanced cross-sectional view of events; his anecdotes are sometimes witty, often moving. This is a book to recommend to people who lived through this period to stir their memories, and, perhaps more important to give to younger people to show them what the war was like. The Blitz, for instance, is admirably described in all its facets, from dogged humour - "If I don't see yer, it means they'll be digging me out," through pathos - "My missus were just making a cup of tea for when I come 'ome. She were in the passage between the kitchen and the wash'ouse, where it blowed 'er. She were burnt right up to 'er waist. 'Er legs were just two cinders. And 'er face - The only thing I could recognize 'er by was one of 'er boots - I'd 'ave lost fifteen 'omes if I could 'ave

kept my missus," to the frustration at official red-tape - "Father John Groser, one of the historic figures of the 'blitz,' took the law into his own hands. He smashed open a local food depot. He lit a bonfire outside his church and fed the hungry. There wasn't a cabinet minister or an official who would have dared to stand in his way or to challenge this 'illicit' act".

But the title of the book indicates that Mr Calder is not just seeking to describe what it felt like, he also wants to bring out the social significance of the events. Here he seems to be on less sure ground, and at times to be reading into what happened meanings which were not there at the time. Certainly this was "the People's War" in a sense that no other previous war, not even the First, had been, but one doubts whether there was the same desire to effect dramatic social change as the author believes. The tendency of man to want to believe in only one enemy at a time was seen not only in the way we so happily accepted Russia as our ally, but also in the way most people in this country had as their only aim that of defeating Germany, rather than of planning to ensure that the old social status quo was not restored at the end of the war.

Nevertheless this is a very readable and entertaining book, deserving of a much larger readership than probably its price will allow.

A.C.R.

SCIENCE AND SOCIETY

(The Meaning and Importance of Scientific Method)

MICHAEL BASSEY

U.L.P.

15/-

This book does not set out to be a deep analysis of scientific method addressed to scientists or would-be scientists, but rather to be a primer on scientific method addressed to the responsible (and probably young)

citizen to help him to solve the problems of practical life. The author is concerned chiefly with the problems of modern society (eg how to reduce lung cancer, tooth decay, crime, etc. by social control) and believes that these stand a better chance of solution if responsible citizens understand the principles of scientific method and resolutely apply them. The author calls his book a primer in problem solving.

In its four chapters (totalling about 25,000 words), the book engagingly describes methods of problem solving other than the fully scientific, discusses the philosophic subtleties of defining the nature of fact and the important distinction between statements of fact and statements of value, outlines with examples the scientific method of solving problems, and concludes with pithy presentations of some social experiments that have been performed in modern times to solve some major problems.

One is so conscious of the difference in scale between the examples of problem solving in the earlier part of the book (which are rather like party games) and those quoted in the last chapter (eg crime and punishment), as to feel that the author is somewhat naive to suppose that a training in the former will have much effect in dealing with the latter. Generally speaking, the responsible citizen has the duty of forming an opinion about the effectiveness of social experiments. He has little or no role in performing them. Thus his opportunity to apply scientific method is likely to be limited to such homely counsels as : Do not jump to conclusions ; Reserve your judgement until you know all the relevant facts ; Make sure you have allowed for all imaginable underlying causes. Certainly the author succeeds in reminding the reader of the ease with which one can misinterpret the statistical results of social experiments.

The book is to be recommended to undergraduates of any discipline for its lucid and brief presentation of Scientific Method, for its useful introduction to a few important principles of philosophy and clear thinking, and for its cautionary tales about some social experiments.

S.E.

THE SPACE ENVIRONMENT

Edited by N. H. Langton

U.L.P.

35/-

This is the first volume of a series on Space Research and Technology intended to provide a wide coverage of the science and technology of astronautics, and aimed at the universities, and scientists and engineers working in the many fields of astronautics.

This volume is divided into a number of chapters, each complete of itself, and written by an acknowledged expert in the field.

Chapter I deals with the History of Astronautics, and although some of the work is already dated by the landing of men on the moon it provides an interesting and informative resumé of the activity in this field, which has made enormous strides in a comparatively brief recent period in time.

Chapter II deals with the atmospheric structure of the planets Earth, Venus and Mars, much of the information provided, being the result of observation and analysis by sounding rockets and the space probes of the mariner type.

Chapter III is intended as an introduction to the problem of determining temperatures in space, introduces a considerable amount of theoretical physics of radiation and emission, and includes several very useful and informative worked examples.

Chapter IV is concerned with the problems of radiation and radiation protection during short and long space flights, in particular the biological effects of exposure to radiation, and outlines the kind of work being done to establish the real magnitude of the problem more exactly.

Chapter V sets out the problem of meteorite collisions with spacecraft, but concludes that insufficient information is yet available for reliable solutions of the problem to be produced, although the evidence seems to indicate that the problem has been over-emphasised.

Finally, Chapter VI is concerned entirely with the problems associated with manned

space flight, and the detailed problems of providing adequate environment and facilities.

The whole book is well illustrated, and makes interesting and informative reading in spite of a number of small printing errors. Any aero-space engineering student will find it invaluable, and it is to be hoped that future volumes will be as well written and presented.

A.W.

CAMPING & HILL TREKKING

P. F. WILLIAMS

Pelham Books

30/-

This book is well written by a man who has experienced all aspects of camping and hill trekking. The description of techniques and method can be easily understood by the novice. He is led stage by stage through intricacies of map, compass, and camping techniques. Graduated exercises on map and compass are described in detail, with particular attention paid to safety and emergency procedures.

For the instructor, as a reference book, it is invaluable. All aspects of camping and hill trekking are covered in great detail by the author. He goes to the extent of explaining the manufacture of tents and sleeping bags. The author deals at some length with the aspects of survival, making shelters and adapting nature's readily available material to improve camp comfort.

In conclusion, this book would be invaluable as a reference book for both 'novice' and 'expert' alike. It is comprehensive, the author's approach to the subject being very methodical.

R.E.J.

TEACH YOURSELF BOOKS DATA PROCESSING

K. N. DODD

E.U.P.

11/-

The intending reader who feels that, at the end of the 168 pages of this book, he will

have taught himself data processing may well find himself somewhat ill equipped after the effort.

Data processing is a vast subject and the techniques are many and varied so that, in a book of this size it is not surprising that the author's aims are severely limited.

The intention in this book is to present a survey of various types of routine calculations and data handling problems common to many commercial businesses and show how these have been eased by the application of electronic computers.

After introducing, in the first chapter, the basic principles behind the operation of a computer and a simple programming auto-code the author considers first the application to a payroll problem for an average business. The programming is perhaps rather laboured except perhaps for the few readers who are able to program in a similar auto-code but the process is nevertheless well described.

Various other problems are considered in subsequent chapters, Stores and Accounting, Production and Distribution, Banking and Insurance being among them. In each case examples are given of the types of associated problems suitable for computer application and often useful illustrations of actual implementations.

In the closing chapter mention is made of the techniques of project planning.

An interesting little book for general background reading in this wide subject.

G.C.H.

STRUCTURAL COMMUNICATION TOPICS 1 CHEMICAL STRUCTURE

A. M. HODGSON in association with the
Centre for Structural Communication

U.L.P.

15/-

In his introduction the author fails to communicate the meaning of "structural communication." However, it later becomes

clear that it is a form of programmed learning. The subject matter is broken down into a number of sections called "Study Units," and each of these is constructed in the same pattern. The intention of the section is stated briefly, followed by a presentation of the subject matter. A number of theoretical problems are then posed, which the student can answer in terms of twenty statements given in table form. Some of the possible combinations of statements which the student may have made are then discussed, given reasons as to their suitability, or otherwise. A great deal of flexibility has been built into the system, so that the nine "Study Units" can be worked through in several different sequences.

The concept is good in principle, but fails in practice because the author attempts to cover too much ground in the limited space available. The actual presentation of information occupies only 35 pages, and as a result a great deal of knowledge is assumed which the sixth-former, for whom this book is designed, would probably not have. The choice of problems is good, but more of them would be an advantage, as would an extension of the discussion of the merits and demerits of possible answer combinations.

It is doubtful whether a sixth-former, or other student at a similar level, would benefit greatly from using this book as his main source of learning. However, it would seem to have considerable value as a back-up to a more formal course. In these circumstances the limitations already mentioned would not be a major disadvantage, and the alternative approach, student participation, and flexibility of the study, would be very useful.

G.R.P.

STRUCTURAL COMMUNICATION TOPICS 2 BASIC IDEAS OF ABSTRACT MATHEMATICS

R. M. FYFE and D. WOODROW in association with the Centre for Structural Communication

U.L.P.

15/-

This paperback is one of a series presenting topics through a technique described as

"structural communication", a technique which is revealed in the early part of the book to have many similarities with programmed learning.

The theme of each book of this series, in this case Abstract Mathematics, is presented in a set of independent study units, each covering one topic. The units are not necessarily to be studied in sequence but it is suggested that appropriate courses of study may be constructed by selecting 'units' from this and other books of the series.

To aid selection each unit is introduced by a statement of INTENTION describing briefly the theme, which is then expanded in a section titled PRESENTATION. The reader's understanding of the work is then tested in an INVESTIGATION section which poses a set of situations and invites the reader to comment by referring to a tabular display of 20 statements in a RESPONSE INDICATOR. According to the choice of statements made, the reader is then directed to various sections of a DISCUSSION section. Finally, in each unit the author presents further observations on the theme of the unit.

Aimed at sixth form students and those in early university years this volume covers Sets, Number Systems, Finite Arithmetic, Groups, Mappings, Vectors, Matrices, Boolean Algebra, Rings and Fields - a comprehensive field of study for 96 pages, particularly since only about a third is concerned with the presentation of material. Inevitably no topic is treated to any depth, as indeed the title suggests, and the treatment given is insufficient for the book to provide the sole source of study on these topics. The book will be of greatest value in a small class group where the investigation and discussion sections will provoke valuable interest. For individual study the new student may well be deterred by the effort required in relating responses to a sometimes sparsely posed situation and will certainly feel the need of a greater degree of consolidation than is provided. With previous knowledge of the topics or outside guidance however, a student will no doubt derive considerable benefit from the treatment of those topics which this volume provides.

G.C.H.

THE TESTING OF INTERNAL COMBUSTION ENGINES

A. B. GREENE AND G. G. LUCAS

E.U.P.

20/-

The original book of this title was published in 1936 and the authors of this edition have updated the text in regard to techniques and equipment used in engine testing. The title could have indicated that it is concerned with reciprocating IC engines. The previous authors were hardly obliged to differentiate between rotating and "up and down" engines.

The book is well laid out and easy to read. The treatment of the subject is deceptively simple, encouraging the reader to nod knowingly and proceed.

After a short introductory chapter on general test procedures and report writing from which, students of engineering generally and not a few staff, would do well to read; the next four sections deal mainly with test equipment. The limitations of the equipment are discussed in addition to the general theory and method of use. More could have been said about electronic equipment and in this area diagrams are sparse. Again more information could have been given about proprietary equipment other than the old faithfuls mentioned here. This could perhaps have been done at the expense of somewhat superfluous treatment of the air standard cycles. The final chapters deal with testing reciprocating engines and ancillary experiments. Reasons for carrying out the tests are clearly stated and the student who is unable to write conclusions on his engines laboratory would well find this part of the book very useful.

Although British units, the authors say English units, are used in presenting data from the many clearly marked examples used in the book, the results are in most cases given in SI units. Nothing is lost by this dichotomy, students for some time to come will almost certainly be converting such terms as ft lbf/min into kw.

The authors point out that the book is primarily concerned with educational testing as opposed to routine and R & D testing and is aimed at students of engineering up to degree level. In this context they have succeeded in producing what could be a standard undergraduate text book.

G.Y.

STRUCTURAL COMMUNICATION TOPICS 4 THERMAL PHYSICS

A. G. E. BLAKE, BSc. in association with the Centre for Structural Communication
U.L.P.

15/-

The layout of Thermal Physics is similar to that described in Topic 1 of this series.

In this refreshing book Mr Blake has attempted to give the 'A' Level (or equivalent) student a modern approach to the learning and understanding of Simple Thermodynamics.

The main difference between this and the more conventional text book lies in the use of the investigation section of the Study Unit. Whereas the usual approach is to present a series of facts and experiments followed by "past paper" examples, an attempt has been made here to ensure the comprehension of the student by some relevant, well thought out discussion problems. These discussion problems are so designed that the responses invoke thought which is guided by the author by means of the response indicator. The student may then check his replies with the discussion comments of the author.

One regrets the marked lack of numerical examples in the book which would help to clarify certain topics - the sign convention adopted with the first law of Thermodynamics for example - but I am perhaps speaking as a product of our examination and qualification conscious society.

Definitely recommended either as a first step in Thermodynamics or for general perusal.

K.J.E.

OLD CRANWELLIAN NOTES

ANNUAL REUNION JUNE 1969



" Church Parade "

The Reunion was held on the weekend of the 21st / 22nd June and what we have now come to regard as Reunion weather, warm sun and blue skies, was with us yet again. Our sincere hopes and prayers are that next year - the 50th Anniversary of the College - we shall be similarly favoured. May I ask all our Associate Member Padres, amongst whom is the Chaplain-in-Chief, to intercede for a ridge of High Pressure to be over Cranwell on that June day.

We had the usual representative gathering of one hundred and thirty eight Officers, which included twenty six Officers of Air Rank and some 'crusty' old Group Captains (my apologies to those who do not consider they merit the adjective 'old'), one of whom, Group Captain E. A. Hodgson, was my Under Officer when I was a Flight Cadet in 'A' Squadron ; it was very pleasant to meet him again after an interval of forty-seven years ! Unfortunately our President

Air Chief Marshal Lord Bandon was not able to attend and, of course, he was much missed. However, we were delighted to have Marshal of the Royal Air Force Sir Dermot Boyle with us after his absence last year.

The usual games of Cricket, Tennis, Squash and Golf were played, and I believe there was some sailing also. The Cricket was won by the Flight Cadets with just one wicket in hand. I regret that I am unable to give the details of Tennis and Squash as these were not posted, but I am sure that which ever side won, those taking part enjoyed themselves. Although there was no Golf match v. the Cadets, I am glad to say that two Cadets of the Senior Term, Senior Under Officer Hunt and Senior Flight Cadet Scott, joined in the games with the Old Cranwellians which were played at Rauceby.

On behalf of the Association I should like to thank all those Old Cranwellians who wrote or telephoned stating their inability to attend and wishing the Reunion all success. Space does not permit me to give all the names, but letters from abroad were from : Squadron Leader A. G. Bridges in Muscat, Flight Lieutenant M. C. Turner and Flight Lieutenant J. B. M. Butler (our only Medical Associate Member) both from Malaysia, Flight Lieutenants C. J. Thomson, R. A. F. Wilson and K. B. Chalkley from Germany, Flight Lieutenant P. Riley in Texas, Group Captain E. E. Vielle from Switzerland, Flying Officer M. D. C. Fonfe from Malta G.C., who assures me that a warm welcome awaits any of his Term. And finally from Squadron Leader M. M. Foster in Belgium. I always recall a splendid remark made by Squadron Leader Foster during a large Conference, some years ago, dealing with the complex subject of the Training Syllabus for Flight Cadets. He said : " and, Gentlemen, I feel we should remember that we are training young men for a Fighting Service." There was a little hush when he sat down but I am sure that everyone thought clearer and felt better for what he had said.

At the Annual General Meeting there were a number of important points on the Agenda. Firstly, it was agreed that the subject for a Portrait of a distinguished Old Cranwellian should be Air Chief Marshal Sir George Mills. Sir George was one of the 1st Term at

Cranwell in February 1920. He passed in top and a little under two years later passed out top. He has had a most distinguished career and his senior appointments include that of Commander-in-Chief Bomber Command. It is hoped that his Portrait will be completed before the next Reunion. Secondly, a letter was received from an Old Cranwellian serving in FEAF, in which a request was made for a grant from Old Cranwellian Association Funds to assist in defraying the expense of an Old Cranwellian Dinner out there. After discussion it was decided that that this could not be agreed as it was felt that there was only one Reunion which was held in the College, and furthermore if such a request was approved it could lead to many more of a similar nature which could involve the Association in considerable expense. Thirdly, Messrs Rolls Royce had most kindly offered to present an oil painting to the College, depicting an historic event in Air Operations in the last War, with the proviso that the aircraft employed on such an Operation was powered by Rolls Royce Engines. The Meeting approved the selection of an Operation involving the sinking of the Tirpitz by Lancaster Aircraft ; the commander of the Squadron was Group Captain J. B. Tait, an Old Cranwellian, who won his fourth D.S.O. for his leadership in this operation. Lastly, there was a discussion regarding the 50th Anniversary Celebrations of the College next year. From replies received to date regarding the alternative of a Dinner or a Ball at the Reunion, the Ball has one hundred and fifty two votes to sixty eight for the normal Dinner. In recording this fact the Commandant, as Chairman of the Meeting, said that everything would be done to meet the majority wish for a Ball, but, he stressed, if this proved too difficult from an administrative angle, bearing in mind the other problems connected with the Celebrations involving very heavy work by the College Civilian Staff, the Ball may have to give way to a Dinner. If such a decision had to be made he asked Old Cranwellians to accept what would clearly be a disappointment to many with good grace and understanding. The Commandant also stressed the fact that there would be no accommodation at Cranwell for Members and their wives. The Meeting accepted the problems which would confront the Commandant and his Staff on the two Celebration days. As re-

gards the Presentation to H.M., details are given in a separate sheet enclosed in the *Journal*.

Following the Meeting, which overran its appointed time by a quarter of an hour, Members made good use of the Free Bar, and judging from the cost drank deeply and expensively. Both Mr Curt and Mr Tom Bailey, the retired Head Steward and retired Head Batman respectively, were present to have a drink with us and renew many friendly acquaintances. It was nice to see them and they both looked in excellent form. Fortunately for Association funds, Dinner was announced promptly and the Commandant with the Guest of Honour, Air Chief Marshal Sir George Mills, GCB, DFC, led us into the Dining Hall with our eight Station Guests.

After the Loyal Toast had been drunk the Commandant rose and gave a clear resume of the achievements of the College in the past year and also a picture of the very considerable changes that will affect the College in the immediate future. Marshal of the Royal Air Force Sir Dermot Boyle then thanked the Commandant for his excellent speech and went on to introduce the Guest of Honour. Air Chief Marshal Sir George Mills was then called upon. In his speech he recalled and related, with some gusto, the not inconsiderable problems and situations he had encountered as a young officer with men and aeroplanes in the early 1920s. Such incidents would not occur today, but these were the comparative early days of Service aviation. As each incident followed another, it was plain to see that he was - and still is - a most determined character capable of surviving and overcoming all his difficulties. Such a tempering in the 'forge' of life stood him in fine stead in his later life as a very senior officer when his wise and astute mind most successfully dealt with problems of national and international importance. Finally he enlightened us on some of his experiences as Black Rod, which will not be reported here, and sat down to receive a very warm and sincere round of applause. Finally, in thanking Sir George for his speech, Air Chief Marshal Sir Theodore McEvoy chided him, in mock severity, for the somewhat dilapidated state of his O.C.A. Tie, observed earlier in the day. Sir Theodore, with a

twinkle in his eye, stated that bearing in mind the strain to make ends meet, on even an Air Chief Marshal's pension, he would like to relieve Sir George from the expense of purchasing a new one by presenting him with a new tie as a gift from the Association. With a gallant gesture this was handed over and accepted with pleasure, alacrity and grateful thanks. This concluded Dinner, but not the evening which was spent in a manner well known to Old Cranwellians and continuing to the early hours.

The usual full scale Church Parade took place on Sunday with a good representation of Old Cranwellians. Canon Wright, an Associate Old Cranwellian, preached an excellent sermon and was listened to with more than ordinary attention. After Church the salute at the March Past was taken by Marshal of the Royal Air Force Sir Dermot Boyle. Sherry and Lunch in the College or with local friends heralded the departure of visiting Old Cranwellians, some, I regret to say, without paying their Mess Bills. Will these guilty ones please note and reach for their cheque books? Ten shillings is the average and will be gratefully accepted.

No Old Cranwellian would wish a report of the Reunion to end without a word of sincere and most grateful thanks to the College Civilian Staff for all they do for us on these occasions. Headed by the College Mess Secretary, Flying Officer Armstrong, they give us attention and willing service, seldom equalled, and we thank them for contributing so much to the success of these Reunions.

NOTA BENE!

Will all Old Cranwellians please note that it is NOT, repeat NOT, necessary to inform the OCA Secretary of a change in their Service Addresses. All Journals and other OCA correspondence is forwarded to Serving Officers' Banks for redirection to their Units.

Any change of Bank or a change of address of the same Bank must, however, be notified to the OCA Secretary. Also, if a member resigns from the Association he must inform the OCA Secretary.

HONOURS AND AWARDS

The *Journal* offers its congratulations to Old Cranwellians who received Honours and Awards on the Queen's Birthday.

Air Marshal Sir John Hugh Lapsley (36-37B) was made a Knight Commander of the British Empire. Air Vice-Marshal T. J. Hanlon (35-37C) and Air Commodore A. D. Panton (36-37B) were made Companions of the Order of the Bath. Wing Commander K. E. Richardson (46A) was made a Member of the Order of the British Empire. The Air Force Cross was awarded to Squadron Leader H. W. J. Rigg (67A). The Queen's Commendation to Valuable Service in the Air was awarded to Wing Commander R. C. Wood (52A), Squadron Leaders G. D. Andrews (73A), G. C. Crumbe (78D), S. A. Edwards (69A), P. L. Gray (58A), R. J. Manning (69B), R. F. Mundy (69B), M. G. Simmons (73C) and Flight Lieutenants R. L. B. Bell (72B) and R. D. Lightfoot (79C).

PROMOTIONS

To the following Old Cranwellians who have been promoted since our last issue, the *Journal* offers its congratulations.

Air Marshals Sir J. H. Lapsley (36-37B) and L. D. Mavor (35-37B); Air Vice-Marshal A. H. W. Ball (1939A); Group Captains G. M. Hermitage (45A), F. R. Lockyer (50C) and R. C. F. Peirse (55B); Wing Commanders P. Gilliat (50B), R. E. Gladding (6E & S), M. J. Hardy (62A), V. A. Hodgkinson (9E & S), I. H. Keppie (62C), P. H. Lewis (57B), A. R. Martin (4E & S), B. W. Opie (8E & S), B. H. Plaskett (6E & S), B. McD. Randolph (1E & S), B. E. Taylor (62B) and J. Wilkinson (56A); Squadron Leaders T. A. M. Bond (63A), M. G. Blinman (67B), P. G. Blake (75B), R. L. B. Bell (72B), J. J. J. Dinnis (62A), K. J. Dearman (77B), D. O. Crwys-Williams (79C), A. R. Craig (63B), D. N. Cousins (64B), H. Coriat (76A), M. A. B. Collin (77B), W. A. Edwards (72C), D. C. E. England (61A), J. F. Forsham (72C), N. R. Hayward

(79D), G. G. Jones (68C), M. E. Kerr (65B), D. J. Loveridge (75C), M. J. Matthews (63C), H. E. B. Mayes (69C), J. B. S. Meek (75B), B. N. Rogers (73B), A. J. Ross (78D), J. G. Saye (74B), C. E. G. Quayle (10E & S), G. R. Pitchfork (79D), H. R. Ploszek (71B), R. G. Peters (79C), D. C. Packmam (76B), B. T. Mitchell (68C), C. A. Rainbow (75C), I. W. Strachan (75A), F. R. Styles (76A), B. N. St C. Turner (62C), P. J. Welby (63A), D. C. Whitham (64A) and N. R. W. Whitling (74C).

RETIREMENTS

News has reached the editor of Old Cranwellians who have retired since the last issue of the *Journal*.

Air Marshal Sir Reginald Emson, KBE, CB, AFC (30-31C); Air Commodores J. M. N. Pike CB, DSO, DFC (35-37A) and W. Pitt-Brown, CBE, DFC & Bar, AFC, DFC (USA) (36-38B); Wing Commander R. A. Streatfield (56A); Squadron Leaders D. J. Belson (55B), N. J. Glass (54C), M. J. P. Walmsley MVO (57A), P. N. Legge (56B) and B. W. Weskett (58B); Flight Lieutenants N. C. Adamson (75A), I. Fazackerly (81C), R. E. Gamble (51A), J. L. Harrison (57B), N. H. Giffin (56A), P. J. Faid (67A), D. P. Malin, DFC (72A), R. L. Rose (58C), C. H. M. Holmes (9D(E & S)), P. A. Jenner (79A), R. E. Pyrah (57/58A), J. M. N. Pickersgill (59C) and B. Thrussell (57A).

NEWS FROM MEMBERS

Squadron Leader J. I. Miller (62A) wrote earlier in the year to say that he was engaged in flight testing at the USAF Flight Test Centre at Edwards Air Force Base where he has been since September 1966. His present assignment is as Project Pilot on the Lockheed C5A Galaxy performance programme. At the time of his writing (late May '69) he was one of four service pilots (including USAF pilots) to be checked out in this particular aircraft.

AIR VICE-MARSHAL AMYAS EDEN BORTON, CB, CMG, DSO, AFC

It is with great regret we announce the death on 15th August 1969 of a former Commandant of Cranwell and a highly popular and well-known Air Force officer. "Biffy" Borton, as he was known throughout the service, was born in 1886, the Son of Lt Col A. C. Borton. Educated at Eton he joined the Black Watch (Royal Highland Regiment) in May 1906. Shortly after the outbreak of the First World War he transferred to the Royal Flying Corps as a Flight Commander with the rank of Captain. After the end of the war, during which he was severely wounded, he transferred to the newly founded Royal Air Force with the rank of Wing Commander, becoming a Group Captain less than a year later. On becoming Commandant of Cranwell in 1922 he was made Air Commodore. It was during his period here as Commandant that T. E. Lawrence was serving as AC Shaw and Lawrence records with pleasure how "Biffy" Borton helped him to preserve the anonymity he so much desired at that period in his life. As a mark of this respect Lawrence presented Air Commodore Borton with a spoiled proof copy of the first edition of "The Seven Pillars of Wisdom" edited by Lawrence himself. This book was presented by AVM Borton to the College Library and is probably its most valuable single work. AVM Borton left Cranwell in 1926 to become Director of Personnel Services at the Air Ministry being promoted to AVM in 1929, retiring in 1933. Even in his retirement he took a very active interest in Service matters being Chairman of the Kent Territorial and Air Force Association from 1938 to 1949.

IN MEMORIAM

Wing Commander J. A. Mansell (50B), killed in a flying accident on 21st May. Flight Lieutenant J. J. Bowler (83C), killed in a flying accident at CFS Little Rissington on 26th March. Flight Lieutenant T. V. Spencer (74B), killed in a flying accident whilst on an exchange posting to RAAF East Sale, Victoria, Australia, 15th April. Flight Lieutenant A. R. Thomas (89A), killed in a flying accident whilst serving with No 13 Squadron, Royal Air Force Luqa, 25th March. Flying Officer C. N. Hubbard (92D), killed in a flying accident at Royal Air Force Chivenor on 23rd July. Flight Cadet R. C. Ingram (98A), killed in a road accident whilst proceeding home on leave on 2nd August.

We extend our deepest sympathy to the families and relatives of the deceased.

THE
ROYAL AIR FORCE
COLLEGE



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JULY, 1970

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No. 1

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Air Vice-Marshal F. D. Hughes, CBE, DSO, DFC, AFC, MA.

COLLEGE

NOTES

An Ulsterman, Air Vice-Marshal Desmond Hughes (50) was born in Belfast. His father was the late Fred C. Hughes of Donaghdee, Co. Down, and his mother now lives in Portballintrae, Co. Antrim. His paternal grandmother was a MacLean of Duart. He was educated at Campbell College, Belfast and Pembroke College, Cambridge.

At Cambridge, he joined the University Air Squadron and was commissioned in the RAFVR shortly after the outbreak of war in 1939. After further flying training at Cranwell, he joined No 264 (Defiant) Squadron in June 1940 and flew on daylight operations throughout the Battle of Britain. With this squadron he was later awarded the first of his three DFC's for night fighter operations. In 1942, now flying Beaufighters, he was a flight commander with No 125 Squadron in South Wales and in 1943 commanded a flight of No 600 (City of London) Squadron during the invasions of North Africa, Sicily and Italy. In 1944, by now a Wing Commander, he commanded No 604 (County of Middlesex) Squadron flying Mosquitos, taking it to Normandy as the first night fighter squadron based on the Continent after the D-Day landings. In 1945 he was awarded the DSO.

Since the war, he has served at HQ Fighter Command ; with No 64 Operational Train-

ing Unit at Leeming, Yorkshire ; taken the Royal Air Force Staff College course ; and commanded the Central Fighter Establishment all-weather wing. He has also served on the Staff College directing staff, been PSO to Marshal of the Royal Air Force Sir Dermot Boyle when Chief of the Air Staff, and commanded Royal Air Force Geilenkirchen, Germany. After serving as Deputy Director of Air Staff Plans (2) at the Air Ministry, he became Director of Air Staff Plans in January 1963. He was appointed Aide-de-Camp to The Queen in 1963, and in September 1966 became Air Officer in charge of Administration, Flying Training Command. In October 1968 he was appointed AOC 18 Group and Air Officer Scotland and Northern Ireland.

Air Vice-Marshal Hughes is married to Pamela, daughter of the late Julius Harrison, composer and conductor, and has two sons, the elder of whom, S. P. Hughes, was a member of 84 Entry and won the R. M. Groves Memorial Prize and Kinkead Trophy as well as the Royal United Services Institution award, and later became the Royal Air Force Ski Champion.

The *Journal* welcomes the new Commandant, Mrs. Hughes and their family.

AIR VICE-MARSHAL T. N. STACK, CB, CVO, CBE, AFC

Air Vice-Marshal T. N. Stack, CB, CVO, CBE, AFC, left Cranwell for Ankara at the beginning of March to take up the appointment of United Kingdom Permanent Military Deputy to CENTO which carries the rank of Air Marshal, after one of the longest tours as Commandant in recent years (3 years 1 month).

The period of his command marked a particularly turbulent era of change culminating in the end of the Flight Cadet system and the birth of the Graduate Entry Scheme.

True to the example of his predecessors he maintained a lively interest in all the sporting activities of the flight cadets, though his own main enjoyment was in Field Shooting. Through this sport he cemented the already strong ties between the College and the local community.

Though a tenacious defender of the College's traditions, he pointed out to the flight cadets and student officers that events and achievements never stand still and stressed the importance of appreciating this rate of change and of gearing their studies and attitudes to it.

Together with Mrs Stack and Andrew, his son, Air Marshal Stack motored overland to their new home in Turkey — an adventurous trip typical of one trained in the best Cranwell traditions.

We congratulate the Air Marshal on his promotion and wish him and his family (which also includes a daughter, Georgina) all the best in their new surroundings.

HONOURS AND COMMENDATIONS

The *Journal* offers its congratulations to the following College personnel, who have received honours, awards and commendations :

Wing Commander P. H. T. Lewis, MBE, BEng, CEng, MIMechE, AMBIM, AFRAeS,

was made an Officer of the Order of the British Empire.

Wing Commander J. M. A. Parker and Squadron Leader M. E. Bee were awarded the Air Force Cross.

Wing Commander N. G. Sewell was awarded the Queen's Commendation for Valuable Service in the Air.

The Air Officer Commanding-In-Chief has commended Flight Lieutenant D. J. Willison, Warrant Officer F. R. Westgate and Mr A. E. Goode for meritorious service.

The Air Officer Commanding has commended the following personnel for meritorious service : Chief Technician A. Davis, Chief Technician J. R. Massey, Sergeant A. T. Peach and Mr J. S. Ellis.

PROMOTIONS - No 98 ENTRY

The following promotions were made in No 98 Entry in February 1970 :

No 3 Squadron : Flight Cadet Senior Under Officer D. J. Edington ; Flight Cadet Under Officers A. J. Gatland, W. A. J. Mates, B. M. Longhurst.

No 4 Squadron : Flight Cadet Senior Under Officer C. D. O'Connell ; Flight Cadet Under Officers C. J. Kennedy, T. J. Wood, A. G. O. Dee.

INTER SQUADRON COMPETITIONS

The competition for the Prince of Wales Trophy and the title of Sovereign's Squadron was won in the Winter Term by 'C' Squadron ; 'A' and 'C' Squadrons tied for first place on points, but 'C' Squadron were declared the winners as they scored more points in the Chimay Cup.

IMPERIAL SERVICE MEDALS

During the Winter Term, Imperial Service Medals were presented to the following members of the Civilian Staff :

Messrs. B. V. Carolan, BEM, A. Codd, E. Collison, C. R. Pepper, F. R. Priestley, F. Thompson and A. V. Valentine.

The *Journal* offers its congratulations.

ROYAL AIR FORCE COLLEGE - HISTORY

To commemorate the Fiftieth Anniversary of the Royal Air Force College, a short history, mainly pictorial, is being published and will be available in July. The cost, including postage, will be six shillings. Orders should be sent to the College (CPLO), cheques being made payable to the Royal Air Force College.

DEATHS

It is with deep regret that the *Journal* records the deaths of the following long-serving members of the Civilian Staff :

Messrs G. Barnes (30 years service), F. R. Robinson (32 years service) and S. Law (20 years service).

RETIREMENTS

The following long-serving members of the Civilian Staff have retired :

Messrs E. Collison (36 years service), R. C. Hemsall (22 years service), G. F. Priestley (46 years service) and H. L. Wade (11 years service, after 37 years in the Royal Air Force).

The *Journal* wishes to record the College's appreciation of the devoted service rendered by the above personnel, and wishes them a long and happy retirement.

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PRESENTATION OF RETIREMENT GIFTS TO CIVILIAN STAFF, AT ROYAL AIR FORCE COLLEGE CRANWELL

On Thursday, 18th September, 1969, two members of the civilian staff of the Royal Air Force College Cranwell with 68 years service between them were presented with retirement gifts by the Air Officer Commanding and Commandant, Air Vice-Marshal T. N. Stack.

Mr Ralph Charles Hemsall of 2 Heath Lane, Normanton-on-Cliffe, Grantham, had been employed at Cranwell since 1947, 18 of his 22 years at the College being as a batman looking after senior cadets. He retired prematurely due to ill health in July. He was presented with a cheque from the College.

Mr George Frederick Priestley of 7 Cedar Avenue, Sleaford, had been at the College since 5th May, 1923, as batman and subsequently head batman. He was the College's longest serving civilian employee, having been at the College for 46 years, except for service in the Royal Air Force Volunteer Reserve during the Second World War.

The College at that time bore little resemblance to the present day College ; a huge Airship hangar stood at the Lighter-than-Air Site and the Camp Piggeries housing several hundred pigs occupied the site where Officers' Married Quarters now stand. The cadet population of about 80 was housed in timber and zinc huts.

Mr Priestley has served under all the College Commandants and remembers many notable occasions, among them the laying of the foundation stone of College Hall. The Cadet Commander on this occasion was Under Officer D. R. S. Bader ; Mr Priestley was his batman. Group Captain Bader has never severed his connection with Mr Priestley and visits him whenever he is in the area and has the opportunity to do so. Group Captain Bader was only one of the many famous names whom he remembers serving, including the Beamish brothers.

The Air Officer Commanding and Commandant presented Mr Priestley with a cheque from the College and a cheque and a clock from the Old Cranwellians Association.



Mr R. C. Hemsall receives his cheque from Air Vice-Marshal Stack



Air Vice-Marshal T. N. Stack, Mr R. C. Hemsall and Mr G. F. Priestley examining the clock presented to Mr Priestley by the Old Cranwellians Association

COLLEGE UNIT SPORT—WINTER 1969-70

Despite the foul weather conditions which obtained for much of the winter season, Cranwell teams and individuals managed to put up their usual fine performances ; the hard work put in by the groundsmen has had much to do with this and they are to be congratulated on the very high standard maintained throughout the season.

The Cross Country team has done particularly well, winning both the Senior and Open Events in the Royal Air Force championships, and providing the Individual Winner in Flying Officer R. Clark, who also took first place in the Inter Services Championships. In addition to Flying Officer Clark the following Cranwell personnel also represented the Royal Air Force : Pilot Officer S. Appleton, Pilot Officer Robertson, Sergeant W. Cameron, Sergeant D. Hannah and Flight Cadet Burton.

The Squash Team, after four years as Champions, lost the Royal Air Force Inter-Station title, but in the Royal Air Force Championships Flight Lieutenant P. Stokes won the title for the sixth successive year and Wing Commander A. Williams was runner-up in the Veterans Competition. Both these players, and Wing Commander G. R. Palin and Flight Lieutenant P. Graves represented the Royal Air Force.

The Fencing Club continues to flourish and the following personnel represented the Royal Air Force Fencing Union : Flight Lieutenant A. Painter, Pilot Officer Simpson and Flight Cadet A. J. Gatland.

Cranwell marksmen too, have been 'on target' and, after an extremely successful season—in which the 'A' team created a Lincolnshire record in December by scoring 496 points out of a possible 500—five members of the Shooting Club have been selected to represent the Royal Air Force in the Inter Service Competition—Flight Lieutenant Dale, Pilot Officer Hockley, Pilot Officer Taylor, Pilot Officer Green and Corporal Jones.

There have been notable achievements in the water, as well as on land ; the Water Polo Team won the Royal Air Force Inter-Station Cup and Flight Sergeant Boxall the Veterans Sculls in the Royal Air Force Rowing Associations Head of the River race. The Mounsey Trophy was retained for the fifth successive year.

The Rugby team won the Newark Seven-a-Side tournament and also reached the Semi-Final of the Inter-Station Competition and the Walker Cup, while the Basketball side has reached the finals of the Inter-Station Plate and the 23 Group Competitions.

The Judo Club has been well to the fore in Service Competitions, winning the Team Event in the Royal Air Force Novices and Training Command Championships, in which Corporal Marcantonio, the Club captain, Flight Cadet Roberts and SAC Wilkin also gained individual titles.

The Soccer team is currently on top of Division I of the Lincolnshire Services League and has reached the Semi-Final of the 23 Group Competition. Although the Hockey side has won no titles this season two players have represented the Royal Air Force, Pilot Officer Saifurrahman and Pilot Officer Harding. Our Badminton players have met with considerable success, too, winning the 23 Group Cup; Squadron Leader J. Gearing, Flight Lieutenant T. McTeer, Flying Officer (W) J. Bailey, Warrant Officer M. Norris, Sergeant M. James and SAC E. Linge have all represented the Royal Air Force Badminton Association.

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VISITS - WINTER 1969-1970

Visitors to Cranwell during the Winter Term included :

SEPTEMBER

On 8th-20th. Mr G. Lunde, Lecturer in Political Science, Norwegian Air Academy.

On 11th. Major-General Sir Leonard Atkinson, President of the Institute of Electronic and Radio Engineers, accompanied by Mr G. D. Clifford, Director of the Institute, and Mr A. Reeder, Education Officer of the Institute.

On 19th. The Lord Kings Norton, Chairman of the Council for National Academic Awards.

On 22nd. Air Vice-Marshal W. D. Hodgkinson, Senior Air Staff Officer, Headquarters Training Command, and Mrs Hodgkinson.

On 24th. Air Vice-Marshal Sir Thomas Shirley and Mr D. Edmundson, President-Elect of the Institute of Electrical Engineers.

On 30th. Wing Commander O. P. Golas, Indian Air Force.

OCTOBER

On 8th. Commodore R. D. Bortot, Argentine Military and Air Attache, together with four officers of the Argentine Air Force.

On 14th. Mr W. R. Elliot, Senior Chief Inspector, Department of Education and Science.

On 16th. Lieutenant-General A. F. Clark, Commander, Air University, United States Air Force Base, Maxwell; Brigadier-General W. H. Seamark, Commandant, Canadian Forces College Toronto; Air Vice-Marshal N. M. Maynard, Commandant, Staff College Bracknell, and Group Captain P. E. Bairsto, Group Director, Staff College Bracknell.

On 21st. Colonel R. M. Gill, Commandant, and a lecture team of the Institute for Professional Development, Air University, United States Air Force Base, Maxwell.



Air Vice-Marshal Stack, The Lord Kings Norton and Air Marshal Sir Leslie Mavor



Colonel R. M. Gill and a lecture team from the Air University, United States Air Force Base Maxwell with Air Commodore Thomas and members of his staff.

NOVEMBER

On 4th. Air Vice-Marshal L. W. G. Gill, Director General of Manning.

On 9th. The Venerable L. J. Ashton, Chaplain-in-Chief, and the Reverend C. F. Davison, Acting Principal Chaplain, Strike Command.

On 11th and 12th. Dr R. Parker, Vice-President, Portsmouth Polytechnic.

On 24th. Air Marshal Sir Christopher Foxley-Norris, Air Officer Commanding-in-Chief Royal Air Force Germany.

JANUARY

On 13th and 14th. Dr F. A. Vick, Vice-Chancellor, Queen's University Belfast.

On 20th. Professor Sir William Mansfield-Cooper, Vice-Chancellor, Manchester University.

On 26th. Colonel W. W. Hemenway, United States Air Force, Assistant Air Attache.

FEBRUARY

On 8th. Air Marshal Sir John E. A. Baldwin and the Right Reverend S. W. Betts, Dean of Rochester and formerly Bishop to the Forces.

On 17th and 18th. Air Commodore A. Sidney-Wilmot, Deputy Director of Legal Services.

On 27th. Air Chief Marshal Sir Donald Evans, who was the Reviewing Officer for the Graduation Parade of No 97 Entry.



Flypast at the Graduation of No. 97 Entry

THE GRADUATION OF No 97 ENTRY

The Graduation Parade of No 97 Entry took place on the morning of 27th February, 1970. The Reviewing Officer was Air Chief Marshal Sir Donald Evans, KBE, CB, DFC, the Senior Serving Old Cranwellian. The parade was commanded by Senior Under Officer T. C. Hewlett and the Parade Adjutant was Senior Flight Cadet E. G. Samuel. The Sovereign's Squadron was commanded by Under Officer A. R. Taylor and 'B,' 'C' and 'D' Squadrons were commanded respectively by Senior Under Officer R. M. Thomas, Senior Under Officer D. S. Pollard and Senior Under Officer R. J. North.

After the advance in Review Order, the Reviewing Officer presented the Sword of Honour to Senior Under Officer T. C. Hewlett, the Queen's Medal to Senior Flight Cadet E. G. Samuel and the R. M. Groves Memorial Prize and Kinkead Trophy to Senior Flight Cadet P. V. Harris. He then gave the following address :

Gentlemen,

I first came on parade here at Cranwell 40 years ago (next September) and, as was the custom in those days, I was wearing a bowler hat, which was ceremonially destroyed a few weeks later at the First Term Guest Night. Tomorrow I put on a new bowler hat and I retire from the Royal Air Force. You can imagine therefore what a particular pleasure and honour it is for me to spend my last day in the Service with you. And over and above this I feel very proud — and humble — to be one of the Reviewing Officers in this the 50th Anniversary year of the College.

As is the custom, I am now going to offer you some words of advice. This is a risky business. I know of one cadet who remembers only one thing he was told when he left here. He remembers it quite clearly, because it seemed to him so inappropriate and wide of the mark that it has stuck in his mind ever since, and all the wise things which no doubt were said he has long since forgotten. However it is a risk to be run. I shall speak for five minutes and give you three pieces of advice.

First, I must congratulate you on a splendid parade. Your drill was good ; your dressing was good ; and when you were supposed to be standing still, you stood still. You carried yourselves as if you were proud of yourselves, which I hope you really are because you have every cause to be so. Do keep up this standard of smartness, and maintain your bearing when you go out to the squadrons and the stations. I thought our drill was good when I was here — and so it was — but I think yours today was better. This is not only a very good show but it is interesting, because you have achieved

this standard although you only do between one half and one third of the drill that we did.

This leads me to the first of the thoughts I want to leave with you, because here is a good example of making the best use of the time available. It will be of the utmost importance throughout your careers that you find the answer to getting the quart out of the pint pot — whether in terms of the most efficient use of time (as in this case), of men, of money, or of material. This was one of Lord Trenchard's great themes when he was building up the Royal Air Force, virtually from scratch, in the 1920's. I know that you study this subject today, probably under the heading of Management, using different words and better techniques, so you know what I am talking about. I shall not say more about it therefore, except that with the limited funds available for Defence, getting the quart out of the pint pot has never been more important than it is today — and it will probably become even more important in the years ahead.

My second point was stressed at the very first Graduation Parade at Cranwell 50 years ago by the Reviewing Officer, Mr Winston Churchill who told the cadets he hoped they would be forward-looking ; and examples he gave of problems he felt needed solving are interesting. One, he said, was to find something better than the propeller as a means of propulsion, and another was to find the answer to vertical flight. As you know, an ex-cadet, Frank Whittle, solved the first of these ; and as regards vertical flight the first Harrier squadron, commanded by an Old Cranwellian is now operational. The Royal Air Force always has had a fine reputation for being



The Reviewing Officer with Senior Flight Cadet E. G. Samuel, Senior Under Officer T. C. Hewlett and Senior Flight Cadet P. V. Harris

forward-looking and original. It will be more difficult for you because the pace of development is greater, but I have no doubt at all that you in your turn will be as original and bold and forward-looking as your predecessors.

Third and last, remember that when you receive the Queen's Commission you become servants of the Crown ; and that your job, and your life, will be to serve. You will serve those above you and those below you. You must get to know and be known by those below you. People like those over them to know them and to take an interest in them — and to show that they take an interest. Perhaps through diffidence, this may not come naturally to some of you and, if so, you must overcome this diffidence ; because important though machines clearly are to our Service, people (the men under you) are even more important.

To refer again, in this Anniversary year, to Cranwell's first Reviewing Officer. Winston

Churchill, whom we remember as the great leader, took a tremendous pride in serving the Queen, or the King, and in serving the country and the people whom he was leading. And you will find, if you don't know it already, that a life of Service is a very satisfying life and one that can bring you great happiness.

Those then are the thoughts I should like to leave with you :

Serve the Queen.

Serve, and know, and be known by, those under you.

Find the secret to getting the quart from that pint pot.

And be forward-looking, as the cadets here were told to be long ago.

As I said at the beginning, to have been your Reviewing Officer today has been a great honour for me. Good luck to each one of you, and may you all be very happy in your careers, and very successful.



The Reviewing Officer planting a tree to commemorate the occasion of the Graduation of No. 97 Entry



Senior Flight Cadet E. G. Samuel, Winner of the Queen's Medal, Senior Under Officer T. C. Hewlett, Winner of the Sword of Honour, and Senior Flight Cadet P. V. Harris, Winner of the R. M. Groves Memorial Trophy and Kinkead Trophy for Flying

THE WINGS AND PRIZES CEREMONY

Presentations of Wings and Prizes to No 97 Entry were made by the Commandant, Air Vice-Marshal T. N. Stack, CB, CVO, CBE, AFC, in the Whittle Hall on 26th February 1970.

After making the presentations, Air Vice-Marshal Stack addressed his audience :

Welcome to our Wings and Prizes Ceremony. To those visitors who have come long distances — from Singapore, the Congo and India, and not forgetting Ireland, Scotland and Wales — a particular welcome.

You have just seen the distribution of most of the prizes to be awarded to the Entry. When I came here over three years ago the Sovereign's Squadron was C. As an ex-member of C Squadron myself it gave me particular pleasure to hand the Prince of Wales Trophy to them now, just before I go. However, I'm bound to observe that they haven't exactly hogged the trophy in the interim !

The three major prizes remain to be given and I'm sure you would like to join with me in congratulating the winners :

Senior Under Officer T. C. Hewlett who has won the Sword of Honour ;

Senior Flight Cadet E. G. Samuel who has won The Queen's Medal ; and

Senior Flight Cadet P. V. Harris who has won the R.M. Groves Memorial Prize and Kinkead Trophy for Flying.

These three prizes will be presented tomorrow by Air Chief Marshal Sir Donald Evans who is the senior serving Old Cranwellian.

This being the College's Jubilee Year we felt it would be a fitting tribute if both the flight cadet end-of-course parades for 1970 could be taken by eminent Old Cranwellians. This I'm delighted to say has been arranged and having got the senior serving Old Cranwellian for this parade, we are equally delighted that our most illustrious Old Cranwellian, Marshal of the Royal Air Force Sir Dermot Boyle, will be taking the Summer one. He can't be described as retired, of course, because Marshals of the Royal Air Force don't retire, but he's not filling an active post in the Royal Air Force and in that sense he is retired.

Air Chief Marshal Sir Donald Evans graduated in 1932 and has had a distinguished career. His earlier years were spent on fighters and during the war he was engaged on night fighter operations and trials before becoming involved in planning for the Sicily and Normandy landings.

After the war, Sir Donald continued his association with Fighter Command, but from 1964 he was successively Commander-in-Chief of Technical Training Command, then Air Secretary and finally Commandant of the Imperial Defence College, a post which he gave up at the New Year. We are honoured and extremely pleased that he has come for tomorrow's parade.

At this stage, and before getting down to a few facts and figures about the Senior Entry, I normally give them a few words of advice. However, having checked on the previous seven occasions on which I've spoken at these ceremonies, and having seen that I had covered a variety of subjects ranging from moonshots to matrimony, I felt that perhaps this time I would leave well alone and just comment very briefly on coming events at Cranwell.

The first thing to mention is of course the future of our College. I spoke about this at length last time and so I won't go over it all again. Suffice to say that as most of you know, a new pattern of training is coming here and the successor to the flight cadet is going to be the graduate from university.

This of course is a big change in concept and brings with it many problems. Some of these problems are common not only to us in the College but also to the training machine as a whole outside. Thus our solutions are in many cases dependent on outside decisions and because of this we are not finding the going too easy just now over one or two of our future plans.

But even where we have full control of decisions things can still be very awkward ;

for example, a consequence of the changing scene has been that the number of flight cadets is steadily diminishing as the new look makes headway ; this reduction in numbers may seem insignificant to outsiders and even to ourselves now. But simple things like arranging suitable fixtures or setting up a respectable parade can become real headaches.

Incidentally, to help out with numbers on games we will in future call on those of you who graduate but remain at Cranwell doing your specialist training. So, members of No 97 Entry in this category, don't throw away your bright and shining equipment or your fitness for games — and even parades ! This last may surprise you but I can tell you that you will certainly need to be in parade practice for the visit by our Commandant-in-Chief, The Queen.

There is also the problem of keeping up the morale and spirits of the dwindling band of flight cadets. We all realise it will be difficult but you know there's never been much wrong with the flight cadet as a species, and I wager that as their numbers go down so their sense of belonging and of identity with one another will go right up.

Mark you, you mustn't be beastly to the graduate. He will be expecting some help and guidance from you old inhabitants when he arrives here, and you must make sure he gets it ! Indeed another small bet I am willing to make is that there will be much more understanding between flight cadet and graduate than is at present expected.

Nevertheless it will be a testing time for all and I urge the staff to apply themselves wholeheartedly to the problem in order to see it through successfully.

And now a word about our 50th Year. A number of items have been planned, and the first event to be held was a lunch in the House of Lords for the surviving members and some staff of the first entry on the exact 50th Anniversary of the opening of the College, February 5th. This was arranged by Black Rod, Air Chief Marshal Sir George Mills, himself one of No 1 Entry and it was by all accounts a great success.

The next event was our annual remembrance of Founder's Day in which most of

the flight cadets took part, and to celebrate which we invited a number of local guests. After an excellent sermon by Bishop Betts we saw a fine parade in glorious, though cold, sunshine, and my own Commandant from before the war, Air Marshal Sir John Baldwin, took the salute.

Publicity for the year too has already started. There has been a Radio 4 programme about the College, and in June we'll have TV coverage. Also a booklet on the history of the College is now with the publishers ; as it is largely composed of pictures it is not too demanding and I hope all you flight cadets will buy a copy.

Your graduation of course fits into our Anniversary celebrations and as I have said earlier, both you and No 98 Entry are having distinguished Old Cranwellians to do the honours for you. The main celebrations for the 50th Year are however centred on the weekend 12th to 14th June.

On the 12th there will be our Jubilee Parade at which Her Majesty The Queen will take the salute. Prince Philip will also be here and we are planning a number of items to interest them and the many Old Cranwellians who will attend. The weekend which immediately follows this day will be the usual Old Cranwellian Association one but the evening will see the first Ball in the history of the Association. I'm sure it will be a good one and I hope some of you in No 97 Entry will be able to get to it.

On the Sunday of the Reunion weekend we will have our usual church service. I am delighted to report we will have the sermon from our old friend Bishop Cocks, a past chaplain of the College and a past Chaplain in Chief of the Royal Air Force.

So much for the coming year. I would now for the edification of their parents and friends, like to take a look at No 97 Entry and assess their contribution to Cranwell over the past 2½ years.

Considering them first of all statistically — or unemotionally as it were — I found they have set up a few records.

They started 103 strong on 2nd October, 1967 and if no-one had been transferred in,

they would have lost altogether 49 chaps — nearly a 48 per cent chop rate. However, they have gained 11 souls, which puts their total at 65, but this still leaves them with an overall suspension rate of 38 per cent and as the Assistant Commandant said the other day — those left must therefore be pretty good! How then have the 65 fared? Let us look firstly at Academics — that old favourite!

In Humanities, I am pleased to report, you have proved yourselves to be assertive and forthright; and you have produced challenging views and ideas. Your standard of written work was the best we have seen for some time. Good work too was seen in the International Relations, War Studies and Strategy courses.

Among individual achievements should be mentioned the passes in the Civil Service Commission linguist exam in French by Cocksedge, Knight, Bolton and Hilton, and in the Royal Air Force Colloquial examination in French by Harris, Flinn, Corbitt and Davison.

In maths and sciences there was some changing of syllabuses to give them a more practical bent, and although academically 97 rate on a par with their predecessors, the staff inform me that they were more responsive in class and consequently a pleasure to teach.

So much for Academics. Turning now to the specialist training, we look first at the pilots of the Entry and find that they have suffered the brunt of the high suspension rate. Of an original 52 only 32 remain. These however have flown well to pass out with 15 of them high average, 14 average and 3 low average pilots.

The Battle of Britain aerobatic competition was flown in challenging weather and although low cloud upset all the performances I congratulate West on his fine achievement in winning the Trophy.

In Ground School the Entry produced the second highest marks of the last two years with an average of 74 per cent.

The Navigators started six strong and gained one. They have maintained a high standard in Ground School with a creditable 80 per cent in the Command examinations and 84 per cent in their final composite plot.

I did hear that one Navigator went so far as to take his sextant home on leave so he could plot his position en route. This elicits from me the same comment as that attributed to the old lady when she saw a camel for the first time: 'I b...y well don't believe it!'

The Engineers were the first of the entries to experience the CNAA degree course in its new guise and statistics show they too have had a pretty severe buffeting. Of the 37 flight cadets who started, 21 have been lost from the degree course. It is some consolation that seven of these are continuing their engineer studies at Cranwell as Direct Entry officers on the Standard course, and a further 11 have continued flight cadet training in other branches.

There is little doubt however that our new degree course was set at a very high standard and has demanded a combination of academic ability and personal effort of the highest order. In fact almost of too high an order and with the help and advice of both the Council for National Academic Awards and our External Examiners we have ameliorated matters to a certain extent for subsequent courses.

The 16 surviving members therefore deserve great credit for their perseverance and resilience, and though they still have a long way to go we are hopeful, even confident, that the worst is over and that they will be duly rewarded both by good degrees and by an engineering training which bears favourable comparison with any in the country.

There are nine engineering flight cadets taking Honours Degrees and it is both fitting and highly commendable that one of them, Senior Flight Cadet Samuel, has won The Queen's Medal in open competition with all branches in the Entry for the most meritorious performance in every aspect of training.

The Equipment, Secretarial and Regiment flight cadets have all reached the required standards with the latter as usual going straight off to their operational units.

Now to look at other activities of the Entry. The standard of drill has been commendably high and I am sure this will be maintained when they command and lead the parade tomorrow.

On Exercise King Rock they proved to be extremely fit. They still recall with happy smiles their visit to those well loved, damp, soggy and never-to-be-forgotten areas around Brilon in Germany.

On the field of sport, playing for the College and for Command, they have been very well represented, but their outstanding achievements have been made in some of the less popular sports such as rowing and canoeing.

A rowing four, Timms, Scoffham, Forsythe and Pollard, won the Royal Air Force Junior Fours. They too formed the nucleus for the winning eight at the Royal Air Force Regatta which went on to give the College its third successive win in the Royal Air Force 'Head of the River' race.

Still dealing with water sports, Harris is to be congratulated on his most successful leadership in a wide variety of canoeing events.

Overall, 30 College sports colours were awarded to the Entry. Three members, Bowden, Taylor and Harris gained College double colours and Bowden and Taylor repeated this success at Command level.

So on this record I think it is fair to say that No 97 have played their full part in sport. This is true too of their activities as Senior Entry.

Final Reports on No 97 show it described as: high spirited; active; energetic; respected and sociable. Lest they get swollen headed, I must say here that they have not always earned such glowing praise. A few other adjectives have crept across the pages from time to time, but we won't dwell on those now!

The Entry has a theatrical bent. We have all enjoyed the productions of the Drama Group and Choral sections in which Messrs Hilton and Frost have been to the fore. Mention must also be made of Nussey who has stage managed every flight cadet production since he arrived at the College 2½ years ago. And the recent entry review was excellent; incidentally I was glad to see in the review that we've tracked down the man who created the graduate entrant — Professor PHIPPENSTEIN.

But it is sad to note that with your leaving, the first obvious change must now take place when the flight cadets remaining amalgamate into only two squadrons. Such a move is always a testing time and loyalties will be strained, but I feel sure you have left behind you a College well fit to cope with the ensuing metamorphosis. You have set high standards and for this we are all grateful.

Your change from flight cadet status coincides with the publication of the Military Salary. I have noted that a pilot officer's pay is virtually doubled but governments have a habit of taking away with the left hand that which they give with the right. So I would suggest you wait until you see the size of your bank balance before you take delivery of an 'E' type.

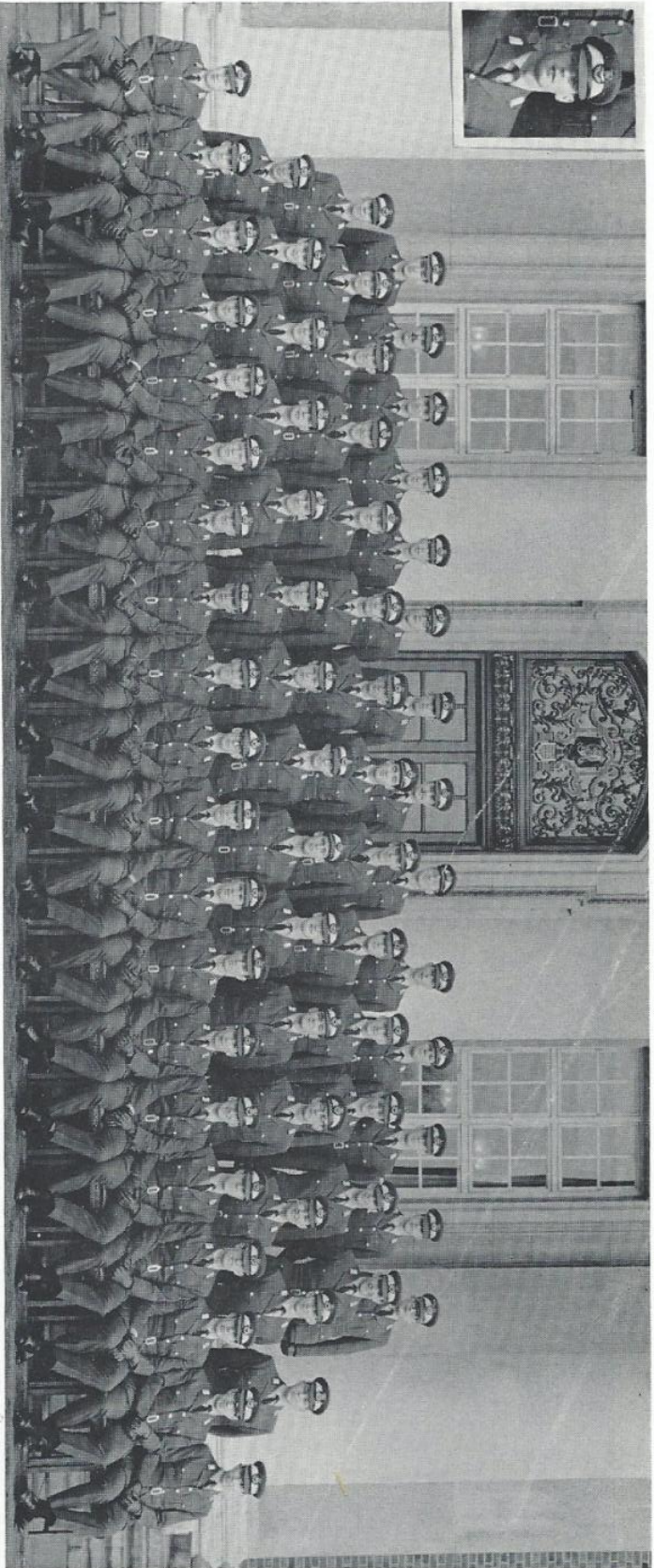
And now to end on a personal note. My wife and I leave after a spell of three years, having had a most happy tour at Cranwell and having found it a rewarding and indeed exhilarating experience to work for, and with the young — and the not-so-young.

My successor, Air Vice-Marshal Desmond Hughes, is well qualified to come to Cranwell at this time. He is a graduate from Cambridge who learned to fly here early in the war; he also had a son on 84 Entry; and so he should be fully warned of the problems set not only by graduates but by flight cadets.

To the staff I say thank you for all you have done for me and I ask you to maintain your endeavours for Air Marshal Hughes. The planning and organisation for the next stage in the history of Cranwell will only be set on the correct path by your continued hard work.

To those flight cadets remaining I wish you luck and urge you not to be too put out by the changes you will see taking place. I assure you the change is necessary and it is up to you chaps to maintain your fine spirit and keenness in spite of the turbulence going on around you.

To 97 Entry, I give my congratulations on your first class achievements, and I wish you all the best of good fortune in your years ahead in the Royal Air Force.



NO 97 ENTRY

- Back Row :* Senior Flight Cadets J. G. Coates, G. Bakewell, M. S. Taylor, E. G. Samuel, A. G. Harding, I. P. G. Potter, R. Tuxford, P. A. Robinson, J. A. Hall, J. B. S. Hilton, I. M. Coleman, A. Davie, M. J. Knight, A. K. Cassar.
- Third Row :* Senior Flight Cadets C. E. Hughes, D. R. Banks, T. J. Finn, A. P. N. Lambert, J. L. Davison, P. S. West, C. M. Davison, T. H. Brown, S. T. E. Walker, A. G. Jordan, A. J. Dory, P. V. Harris, A. E. Jones, D. W. Frost.
- Second Row :* Senior Flight Cadets J. B. Bishop, B. N. Bolton, H. T. Elliott, P. M. Leadbetter, A. S. Nussey, I. T. Sturgess, D. A. Bell, G. S. F. Booker, M. P. Cockledge, D. W. Taylor, D. F. Archer, P. Goddard, A. G. Corbitt, D. B. Hudson, D. F. Cook.
- Front Row :* Senior Flight Cadets P. W. Haigh, A. N. R. Wharton. Under Officers G. Timms, M. A. Micallef-Eymund, A. R. Taylor, A. J. W. Boyd, M. S. Rees. Senior Under Officers T. C. Hewlett, R. M. Thomas, D. S. Pollard, R. J. North. Under Officers J. J. E. Parr, R. A. Forsythe, K. J. Burgess, R. C. Warhaugh, P. D. Scoffham, D. B. Bowden, C. Fitzpatrick, G. A. Paterson, K. A. Hartley.
- Inset :* Senior Flight Cadet W. J. McGrath.

COMMISSIONING LIST

No 97 ENTRY

- T. C. HEWLETT, *Senior Under Officer (Pilot)*; *The Sword of Honour and the R. S. May Memorial Prize.*
- R. J. NORTH, *Senior Under Officer (Pilot).*
- D. S. POLLARD, *Senior Under Officer (Pilot)*; *Rowing (Colours).*
- R. M. THOMAS, *Senior Under Officer (Pilot)*; *The Philip Sassoon Memorial Prize*; *Cricket (Colours).*
- D. B. BOWDEN, *Under Officer (Regiment)*; *Cross Country (Colours).*
- A. J. W. BOYD, *Under Officer (Navigator)*; *The Alasdair Black Memorial Trophy for General Service Training*; *Athletics (Colours).*
- K. J. BURGESS, *Under Officer (Pilot)*; *Basket Ball (Colours).*
- W. L. J. COYLE, *Under Officer (Engineering).*
- C. FITZPATRICK, *Under Officer (Pilot)*; *Shooting (Colours).*
- R. A. FORSYTHE, *Under Officer (Pilot)*; *Rowing (Colours).*
- K. A. HARTLEY, *Under Officer (Pilot).*
- M. A. MICALLEF-EYNAUD, *Under Officer (Pilot)*; *Riding (Colours).*
- J. J. E. PARR, *Under Officer (Pilot).*
- G. A. PATERSON, *Under Officer (Engineering)*; *Athletics (Colours).*
- M. S. REES, *Under Officer (Pilot)*; *Sailing (Colours).*
- P. D. SCOFFHAM, *Under Officer (Pilot)*; *Rowing (Colours).*
- A. R. TAYLOR, *Under Officer (Engineering)*; *The Ministry of Defence (Royal Air Force) Prize for the BSc (Ord) Course*; *Athletics (Colours)*; *Shooting (Colours).*
- G. TIMMS, *Under Officer (Pilot)*; *Rowing (Colours).*
- R. C. WARDHAUGH, *Under Officer (Pilot)*; *Rugby (Colours).*
- D. F. ARCHER, *Senior Flight Cadet (Equipment)*; *The Ministry of Defence (Royal Air Force) Prize for Equipment Flight Cadets.*
- G. BAKEWELL, *Senior Flight Cadet (Engineering)*; *Hockey (Colours).*
- D. R. BANKS, *Senior Flight Cadet (Engineering)*; *Badminton (Colours).*
- D. A. BELL, *Senior Flight Cadet (Pilot)*; *Badminton (Colours).*
- J. B. BISHOPP, *Senior Flight Cadet (Pilot)*; *The Abdy Garrard Fellowes Memorial Prize for Maths and Science.*
- B. N. BOLTON, *Senior Flight Cadet (Equipment)*; *College Journal.*
- G. S. F. BOOKER, *Senior Flight Cadet (Engineering).*
- T. H. BROWN, *Senior Flight Cadet (Pilot).*
- J. G. COATES, *Senior Flight Cadet (Engineering).*
- M. P. COCKSEDGE, *Senior Flight Cadet (Pilot)*; *The Ecole de l'Air Trophy for French Studies*; *Squash (Colours).*
- I. M. COLEMAN, *Senior Flight Cadet (Navigator)*; *The Institute of Navigation Trophy and the Ministry of Defence (Royal Air Force) Prize for Navigators*; *Rowing (Colours).*



*The Lord Kings Norton presenting Flying Officer G. C. Fordham with his B.Sc. (1st Class Honours)
in Mechanical Engineering*

THE PRESENTATION OF ACADEMIC AWARDS

A ceremony to mark the award of Bachelor of Science Degrees and Higher National Diplomas in Electrical and Mechanical Engineering to No 13 Engineering Degree Course, No 93 Engineering Diploma Course and No 5 Standard Engineering Diploma Course was held in the Whittle Hall on 19th September 1969. The certificates were presented by The Lord Kings Norton, DSc, PhD, DIC, MIMechE, FRAeS, FInstF, Chairman of the Council for National Academic Awards.

After making the presentation The Lord Kings Norton gave the following address :

‘ Commandant, Commander-in-Chief, Ladies and Gentlemen. May I first of all thank you, Sir, for the very kind way in which you introduced me. The unavoidable resemblance to the Vicar of Bray is not really your fault. It is a particular pleasure for me to be here today, because for nearly all my life I have been concerned with aeronautics, and for the last quarter of a century with higher education. The progress in both in my lifetime has been spectacular, more obviously so perhaps in aeronautics than in education, and I am conscious that I have been privileged in being associated with two trends of such major social importance. I am delighted that both form the background to today’s ceremonies at Cranwell.

In speaking to you here at Cranwell I hope I shall not be misunderstood if I assume that the Royal Air Force people here know more about aeronautics than about education, but I cannot refrain from a few words about the great technology which, whether we are scientists or engineers, navigators or pilots, whether we are in civilian or in Service employment, binds us together. To me progress in aeronautics and progress in aviation have been the great inspirations of a long career. I was born a few months before the first successful powered flight. As a schoolboy enthusiast before the First World War, I made my models and I saw the great pioneers — Graham White, Bertram Hucks, Gustav Hamel — perform on their Farmans, their Bleriot’s, their Moranes, and before the war was over I managed to achieve a humble part in the tail end of the design of a splendid two-seater fighter for the Royal Air Force. In the 1920’s I was completely absorbed in the

design and construction of R 101. The 1930’s was for me a period of research in aeronautics, of research in structures, and the second war period a time of gas turbines and jet propulsion, when I had the honour to be associated, as the Commandant has already remarked, with that great alumnus of this establishment — Sir Frank Whittle.

But aircraft will never be superseded in my affections by space vehicles. That no doubt is the emotion of an elderly person and you now graduating, or soon to do so, may have different feelings. But whether your interest is engaged by aircraft or spacecraft you have a profession with, I think, a character which makes your work a pleasure and thinking about its future an inspiration.

Aeronautics par excellence illustrate the scientific and technological progress of our age. It has, by its tempo, its methods, its achievements, stimulated progress in other industries and it has brought other technologies — electronics, computer science, metallurgy — in specialised forms into its own rapid development. Its development in the future, whether we think in terrestrial or spacial terms, is inevitably dramatic in its scope and scale, and almost terrifying in its social implications. This is not a matter which I intend to pursue today but many of you will have read the so-called Second Century Papers which have been appearing in the *Aeronautical Journal*, and you will know that my adjectives are not excessive.

It is this rapid progress, paralleled in and involving other technologies, which at one and the same time makes one wonder at the fruit-

fulness of man's abilities and to doubt his strength to guide his products to the greater happiness of his kind and not its decay or destruction.

We know indeed that our knowledge has outrun our wisdom ; we see a world around us beset with troubles beside which our own, serious as they are, are dwarfed : in which the forces for good and evil are greater than ever before. It is not a happy picture and when one looks for remedies one feels rather daunted, but not hopeless. The hope must lie in education and there is no reason why we, in this country, less beset with difficulties than any other great nation, should not continue to give the lead, should not, by solving our own problems, show the way to others to do the same.

As the industrial revolution developed its torrential momentum two great and harmful dichotomies developed too. One is that characterised by Lord Snow as the two cultures : the sciences and the humanities. The other, less important but still damaging, is the dichotomy of theory and practice.

Whether study of the humanities necessarily develops humanity I beg leave to doubt. Our leaders in former times, nourished in the classical tradition, do not seem to have been particularly humanitarian. Today it is humanity we must concern ourselves with rather than the humanities. The liquidation of the two cultures : the creation of a single culture appropriate to the world around us, must I think be based upon an education in which the gaining of knowledge and skill is achieved in an atmosphere sympathetic to both arts and sciences : in which depth in learning in one direction is accompanied by breadth of learning in many others ; and above all in which ideas of discipline, of decisiveness, of courage, of tolerance, of kindness are inculcated and developed. Whether education in the Royal Air Force could yet be described in this way I am not sure. But I believe it moves towards such an apotheosis, and I hope I am not being fanciful when I say that education for the Services could set an inspiring example in the educational world, and, a fortiori, in the world at large.

It is because I believe this and because I am sufficiently old fashioned to believe in good behaviour and merit, that I am one of those

who deeply regretted, and still regret, the passing of National Service. Short as it was, it was long enough to be a good influence on the whole on young people preparing for adult life, and could have been developed as part of the educational process in a way which would, in this country at any rate, have opposed, and I think prevented, the development of the unclean, untidy, undisciplined minority which we gather is part of the permissive society.

I think that Service educational establishments have great opportunities, great opportunities in the development of educational methods, and I hope they will not keep their progress and their ideas to themselves. Cranwell has been the scene of notable changes, some of which as Chairman of the Council for National Academic Awards, I am glad to have been associated with.

In that Council too I have been concerned — and now I get on to the hobby horse which the Commandant hinted I frequently rode — I have been concerned with the attack on the other dichotomy I mentioned : that between theory and practice. For under the CNAA and its predecessor, The National Council for Technological Awards, a great complex of sandwich courses has been built up in the new universities, in the polytechnics and the colleges of technology. In these courses young men and women progress in the practical and academic sides of their professional work in alternating periods. This not only means that when they qualify for their degrees they are immediately usefully employable, but that the human contacts which industrial and commercial experience supplies have had a maturing influence on them, an influence which the arts graduate rarely experiences until after graduation — a fact not unconnected with student unrest.

I accept the Commandant's explanation that the conventional sandwich was inappropriate diet at Cranwell. In the educational context the appetite for sandwiches is more important than their geometry, and I am sure that the Cranwell variant of the open sandwich is intellectual pabulum admirably nutritious to the military mind.

I know that in the earlier part of my remarks I suggested the possibility of a disturbing future and you may feel that my educational remedies are on an inadequate

scale, but just as the torrential technological trend had small beginnings, and has become almost exponential may we not hope for an educational development following a similar curve? May we not hope for a diminishing phase difference between the two so that our ability to control our knowledge is achieved before we are overwhelmed by it? I think we may, and I think that Cranwell can add its undoubted influence in the right direction.

I have known, and know, many, many officers who are the product of this great place. They are a splendid testimony to the ideas and ideals which are inculcated here. You who have been educated here showed great good sense in wanting to come here. You are extremely fortunate in having got here and I wish you all success and happiness in your careers in your great Service to which this country owes so much.'

No 13 ENGINEERING DEGREE COURSE

Flying Officer A. CHILVERS : BSc (1st Class Honours).
 Flying Officer G. C. FORDHAM : BSc (1st Class Honours).
 Flying Officer R. A. K. MITCHELL : BSc (1st Class Honours).
 Flying Officer R. A. POULTER : BSc (1st Class Honours).
 Flying Officer T. BUFTON : BSc (2nd Class Honours, 1st Division).
 Flying Officer P. W. HENDERSON : BSc (2nd Class Honours, 1st Division).
 Flying Officer K. E. SHELL : BSc (2nd Class Honours, 1st Division).
 Flying Officer I. P. SMITH : BSc (2nd Class Honours, 1st Division).
 Flying Officer K. J. HARRIS : BSc (2nd Class Honours, 2nd Division).
 Flying Officer A. R. HAYNES : BSc (2nd Class Honours, 2nd Division).
 Flying Officer D. W. POLLARD : BSc (2nd

Class Honours, 2nd Division).
 Flying Officer P. WRAY : BSc (2nd Class Honours, 2nd Division).
 Flying Officer T. F. BALL : BSc (3rd Class Honours).
 Flying Officer I. BRACKENBURY : BSc (3rd Class Honours).
 Flying Officer K. H. DALZIEL : BSc (3rd Class Honours).
 Flying Officer R. M. H. FLETCHER : BSc (3rd Class Honours).
 Flying Officer J. G. JAMIESON : BSc (3rd Class Honours).
 Flying Officer A. J. KENT : BSc (3rd Class Honours).
 Flying Officer C. G. LEUCHARS : BSc (3rd Class Honours).
 Flying Officer M. S. PEARCE : BSc (3rd Class Honours).
 Flying Officer J. G. ROOTES : BSc (3rd Class Honours).

No 93 ENGINEERING DIPLOMA COURSE THE HIGHER NATIONAL DIPLOMA

Flying Officer G. C. DEARDEN
 Flying Officer P. F. DOBBS
 Flying Officer A. V. HALL
 Flying Officer G. A. JOHNSTON
 Flying Officer R. A. D. NORRIS
 Flying Officer P. S. J. ROWLEY-BROOKE
 Flying Officer P. G. SUMMERS
 Flying Officer D. A. L. TOMBLESON
 Flying Officer P. F. WEIGHT
 Flying Officer J. C. WILDMAN
 Flying Officer G. J. WOODLEY

No 5 STANDARD ENGINEERING DIPLOMA COURSE THE HIGHER NATIONAL DIPLOMA

Flight Lieutenant P. M. ROSBOTTOM
 Flight Lieutenant P. A. WATSON
 Flying Officer C. W. F. ATKINS
 Flying Officer G. CHARLES
 Flying Officer J. R. CLEGG
 Flying Officer J. S. FORBEAR
 Flying Officer R. M. FORDER
 Flying Officer T. J. FREEMAN
 Flying Officer D. R. HIGNETT
 Flying Officer K. R. KENDRICK
 Flying Officer P. J. LOCK
 Flying Officer I. A. MITCHELL
 Flying Officer J. M. PEEKE-VOUT
 Flying Officer P. N. ROBINSON
 Flying Officer M. P. ROWNTREE
 Flying Officer D. SMITH
 Flying Officer J. N. WALKER
 Flying Officer N. V. ZOTOV

THE ICE AGE PASSETH

Generally thought that these three great things were combined with a Gliderman's talent to form an ACF's masterpiece and a beautiful trophy award.

The writer was of course very close to the scene in being present as the three great things were combined in the Ice Age Passeth and the trophy award was presented to the winner of the competition.

For the Ice Age Passeth is not a trophy award but a trophy award in itself. It is a trophy award in itself and a trophy award in itself.

It is a trophy award in itself and a trophy award in itself. It is a trophy award in itself and a trophy award in itself.

Flying Training Wing

The Ice Age Passeth

A QFI's Day

Competition Gliding

Jottings

THE ICE AGE PASSETH

by WING COMMANDER B. HUXLEY

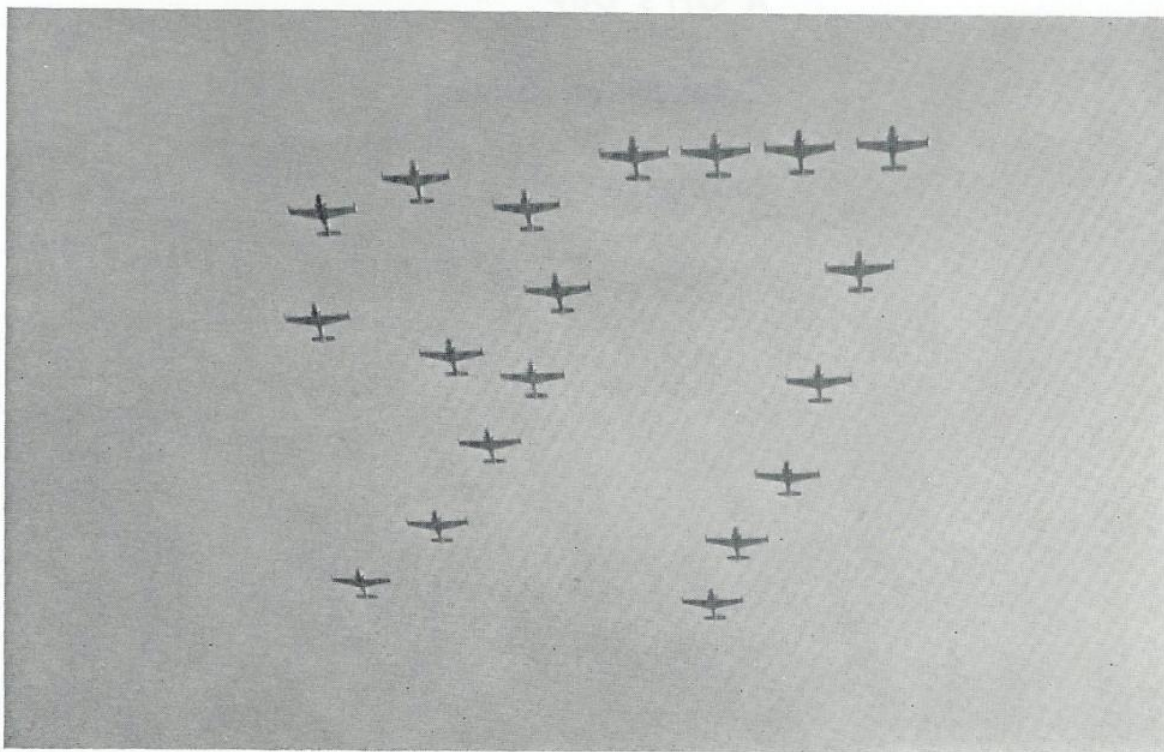
Few of us could honestly claim to look forward to Winter at Cranwell, and Flying Training Wing has particular reason to view that time of the year with concern. Apart from the normal domestic discomforts, Winter interferes with our work.

It can be proved conclusively by anyone with only a nodding acquaintance with meteorology that, between October and April, a wind from the Wolds, the Wash, the Fens, the Midlands or the Trent Valley will bring atrocious flying weather, and furthermore that if there is no wind there is a grave risk of fog.

There is nothing new in this, of course. The phenomenon must have been recognised, and dismissed, by the planners of 50 years ago. It is officially acknowledged today by a statistical device known as the Weather Factor, which concedes that over the entire year we can only be expected, on average, to work the equivalent of three days a week. This should not be confused with the Cranwell Factor, a hypothetical facet of local planning, which

generally ensures that those three good flying days coincide with a Graduation Parade rehearsal, an AOC's inspection, and a bout of runway excavation.

Last Winter was, as usual, one of the worst in living memory as far as flying was concerned. Fortunately we were not entirely unprepared. In the late Summer and Autumn, the Flight Commanders could be seen scurrying like squirrels between the Flight Line Controller and the detail boards, laying up a store of flying hours against the lean months ahead. No 97 Entry went home for Christmas with such a healthy balance of flying hours that we felt quite sadistic in demanding that they should return the following Monday to continue flying while the rest of the College relaxed through the New Year: yet, true to form, six weeks later some of them were wondering whether they would finish the course in time to graduate. Nevertheless, we just got them through in time, and managed to rehearse and fly a recognisable '97' for their final parade.



“ a recognisable '97' ”



' . . . shove, blow, scrape, sweep etc. '

The engineers served us well whenever the snow came, which was very frequently. Over the years they have developed an imposing array of machines to shove, blow, scrape, sweep and melt the stuff off the airfield surface, and they never gave up. There must have been many days when the MRD's burnt more paraffin than the aircraft which eventually got airborne, but they were back at dawn to start over again.

As this column goes to press in mid-April, it might be tempting fate to say that the Winter is quite over, but at least the worst is behind us and the signs of Spring are beginning to appear. Now and again a Flight Commander looks inquisitively from his office, sniffing the air and thinking of the rich

harvest of hours in the months to come. Here and there a blade of fresh grass pushes up between the concrete flags of the taxiway, because those snow machines also have a marked tendency to shove, blow, scrape, sweep and melt the surface off the airfield. The Superintendent of Works paces the course, and wonders if it will last another season.

However, if you think we have all spent the last six months in a state of hibernation, read on. Some of us, like John Delafield, were lucky enough to escape to a civilized climate; others found interesting things to do nearer home. And now that the great Ice Age is past, we are all beginning to remember that Cranwell is a pretty good place for flying.

A QFI's DAY

by FLIGHT LIEUTENANT J. A. BARNES

- 0700 Batman calls with tea and Met — Cloud, surface wind and R/W state — decide can fly so will rise — switch on tranny for news — not good — world still too peaceful, so stuck in Tr****ng C*d for yet another day.
- 0730 Brekky part one.
- 0800 Met Brief — pictures of unrelieved gloom — SOP.
- 0810 Leave met brief — lovely day — batman right, met man wrong — also SOP.
- 0815 Visit sqn — wheels various playing musical slots with program but — engineers forgot to get a/c out — so
- 0829-30 Brekky part two.
- 0845 Revisit sqn — still no a/c but — Boss' winge — usual — many haircuts needed, don't drive so fast don't drink too much, don't sleep while I'm talking.
- 0850 By way of variation, Flt Cdr's winge — don't sleep while I'm talking, don't drink too much, don't drive so fast, and get haircut — more visitors expected.
- 0900 Engineers find key to hangar, so
- 0905 Airborne on weather check — can afford to take time in Tr****ng C*d.
- 0907 make a detailed examination for low stratus outside sqn — no stratus, but notice grass needs mowing.
- 0907.15 Air Traffic on R/T — say get back here quick — say get hat on — say give personal debrief on weather check to CFI — say pronto.
- 0912 Chat with CFI — in a one sided manner — his — say weather check so impressive you win 1st prize — like SDO — like today.
- 0930 Airborne on dual trip — get funny feeling in water that airplane not feel right — hurry home — snag a/c — give clear concise etc explanation in Form 700 like 'airplane not feel right'.
- 1000 Coffee in college — very nice — free bikkies — crowded as usual — notice on leaving muddy imprint of flying boot on carpet — wonder who in College wears muddy flying boots.
- 1030 Back in sqn — morning mail — get friendly letter from stores saying got too much kit flying troops for the use of — also say give back or we send heavy squad to collect kit or cash in lieu — plus 25% departmental expenses and donation for OC Supply holiday fund — thinks — will donate willingly if can suggest a good place to go.
- 1045 Enter irate engineer — think — emotional breed, must have much high blood pressure — I.Eng says don't understand clear concise etc F700 explanation — suggest reading lessons and conversation degenerates.
- 1055 Weather clamps — retire to Mess, consult Batman — Forecast 1140 clearance.
- 1105 Argue with Flt Cdr — he say wasting trips — he say don't care if airplane don't feel right — he say press on regardless — me say why don't chase line all the way to top — like hangar roof — then jump — conversation degenerates.
- 1140 Weather clear — naturally — airborne to do battle with Bloggs — me trying to teach — him try to kill — me.
- 1240 Arrive back at end of GCA — friendly controller say 'look ahead and land' — so look ahead, but find large furniture van contending use of A17 with me — he wins — make mental note re-parentage of

- friendly controller and make own arrangements to land.
- 1250 Telephone chat with friendly controller — recall mental observation re parentage — conversation never rises above degenerate level.
- 1300 Lunch — Greasy Spoon — all off — 'poached eggs very nice' — choke !
- 1330 Present from Boss — he say specially chosen from among all other volunteers — do unit enquiry — he say know you can hackit — or else.
- 1345 Arrive Admin Wing for brief on Unit Enquiry.
- 1400 Admin Wing return from lunch — get brief — very brief.
- 1401-1500 Do enquiry — get it wrong — argue with Admin Wing — conversation degenerates.
- 1515 New and bigger prize — appointment with Stn Cdr for 1530.
- 1529.55 Arrive at Stn Cdrs office — timing a bit slack but will do in Tr****ng C*d.
- 1530-1550 Get much useful advice from Stn Cdr — like get new hat — like burn cold weather jacket — like remove flying boots — like get cycle out of rose bushes — like get out of sight.
- 1551 Finally sign on as SDO — enjoy icy silence from Admin Wing.
- 1600 Meet OO — hope for one of us, but get one of them — ensure trews on straight, buttons polished, nose wiped — deliver clear concise etc brief — like don't bother me and don't pigs.
- 1615 Secondary duty — mess committee meeting — friendly discussion — kids in Mess — Hon Mems — private parties — conversation degenerates.
- 1800 Cmttee adjourns to Bar — several social pints.
- 2000 Dinner — then several more social pints.
- 2045-2145 Unravel OO pigs.
- 2200 Visit other drunks in Guard Room — speculate on whether OO would be comfortable there.
- 2210-2300 Several more social pints.
- 2301 Attempt to close bar — friendly brother officers debag and throw out.
- 2330 New bags — clear bar of friendly brother officers with aid of friendly chair leg — close bar.
- 2359 Retire to bed — OO next door — — cosy — much phone ringing — OO keeps asking 'what now' — finally barricade door. Sleep — sleep of just — naturally.

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Stanley Robinson

COMPETITION GLIDING

by Squadron Leader J. Delafield



First of all, competition gliding does not consist of duration or height competitions. Likewise, and contrary to popular belief, it does not entail flying along the windward face of a hill all day, enjoyable though this may be.

In simple terms competition gliding is remarkably similar to yacht racing : it comprises a number of races around prescribed courses, the winner being the pilot who achieves the shortest elapsed time. Such flights may well last for six hours or more and the distance covered may be over 300 miles. In more detail, the prescribed courses, or 'tasks' as glider pilots call them, fall into two main categories :

- a. Straight races.
- b. Closed circuit races.

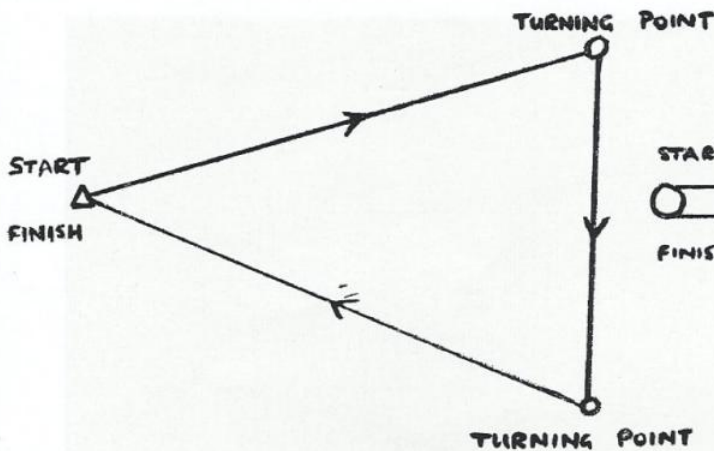
A straight race is, as its name indicates, a race between two points. The course may be a straight line or it may be set around one or more turning points thereby increasing the distance flown, hence the time of flight, for any given straight-line distance between the start and finish. A closed circuit race differs

from a straight race in that the aim is to arrive back at the starting point at the end of the flight. In other words the start and finish is at the same place. Such a race normally follows a triangular course but there are a number of other variations : the two most common types are illustrated in Figure 1.

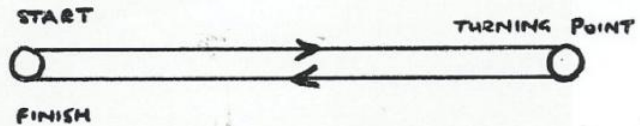
Before going on further I should explain that there are a number of other tasks which can be set but to describe them here would involve unnecessary and misleading detail. Suffice to say that the bulk of competition flying is concerned with racing.

So much then for the general outline of competition gliding ; but how does it all work ; for example how do the organisers ensure that a pilot goes around the prescribed course ?

A competition normally comprises about 40 single seat gliders, each with one pilot although it is not uncommon for two pilots to share a machine by flying on alternate days. Each glider is backed up by a ground crew of one or two helpers together with a car and



(a) TRIANGULAR COURSE



(b) 'OUT-AND-RETURN' COURSE

glider trailer. Two-way radio between the glider pilot and his crew is a fairly standard feature. The ground organisation normally consists of a meteorologist, a 'Task Setter' and a number of towing aircraft and pilots. A small operations centre is also maintained.

A competition will normally last for a week or more and, weather permitting, a task will be set every day. The task itself is, of course, very much dependant upon the weather and so the 'Task Setter' and meteorologist are performe a closely knit team. Once the task for the day has been determined a formal (some times informal !) briefing is held at which the task is declared ; the weather briefing is given, followed by an air traffic and airfield briefing. (Remarkably similar to a daily briefing at a Royal Air Force Flying Training School).

Take off is normally achieved by arranging the gliders in the take off area in what is known as a 'grid'. (See Photo).

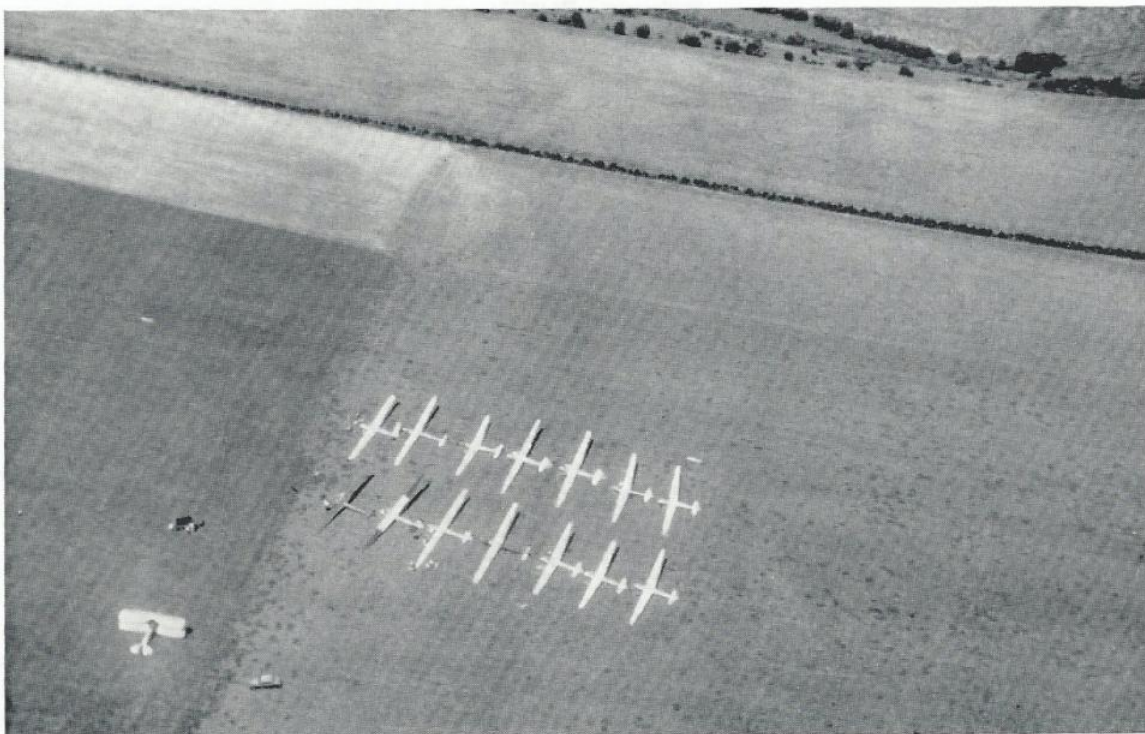
At a time declared by the organisers launching commences, each glider being towed to about 2000 ft by a tug aircraft and released over a prescribed point. Once the glider pilot has released he is on his own and the success of his flight depends almost entirely upon his own judgement and decisions.

His first decision is to select the optimum

time to cross the starting line. He must cross the line below a height of 3,200 ft (1000 metres) and for tactical reasons he should aim to cross at this maximum height and at the maximum permitted speed for the glider. By so doing he begins the race with the greatest possible advantage. As for deciding when to cross, this is a function of the time of day, the probable time needed to complete the task and, above all, the look of weather on the first leg of the task.

Assuming the pilot has surmounted this first phase of the task he is then faced with a continuing series of decisions on how fast to fly, where to find the next upcurrent and so forth. His flight will follow a pattern - climb cruise, climb, etc. To describe in detail how he locates the various up currents would not only give away a few trade secrets but would also take several volumes to explain. In general, however, a glider pilot on a cross-country flight will use thermal up-currents, in other words, convection currents induced by solar radiation. Frequently such currents will be associated with cumulus clouds, as depicted in Figure 3.

When the pilot reaches a turning point a system is obviously required to ensure that he flies round it correctly and does not cut the corner. The current technique is to install a camera in each glider and by taking a photograph of each turning point, together with a



The 'Grid'

'control' photograph (to ensure that the photograph submitted was in fact taken on the flight in question and not on some previous one in a powered aircraft), the required evidence is obtained.

Having rounded the turning point the flight continues in much the same way as the first leg until the glider is within gliding range of its destination. When this occurs the glider pilot is then primarily concerned with employing his remaining height to ensure that he arrives at the destination at the minimum practical height. To gain surplus height would merely waste time. This final part of the flight, known as the 'final glide', is often the most exciting aspect of the whole trip and is probably the most spectacular part from a spectator's viewpoint. A steady stream of gliders crossing the finish line at minimum heights at speeds well in excess of 100 knots is indeed a spectacle !

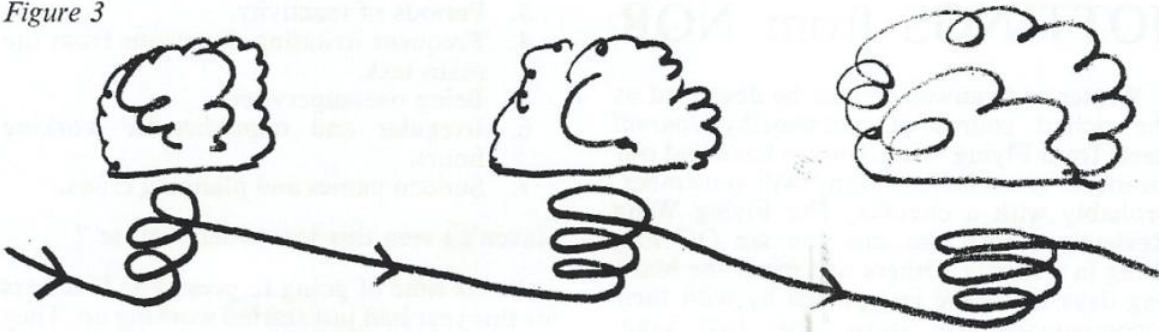
So much then for those that complete the course ; alas, some gliders will fall short of

the goal and in all probability will have to land in a field. For these pilots the journey home is somewhat more tedious with a road retrieve by their ever patient crews, who will have probably spent the day chasing their pilots around the countryside. Strangely enough it can be quite enjoyable, especially if the route home is by way of an inn !

That, then, is an outline of a typical competition task. All that remains at the end of the day is to calculate the score earned by each competitor : these scores are then used at the end of the contest to determine the overall winner.

To win a competition is a major achievement in gliding circles. Not only does it call for consistent flying and sound judgement in the air but also for a considerable amount of stamina to endure the pressures of competitive flying over the protracted period of each event. In the forthcoming World Championships in Texas each pilot will probably log over 60

Figure 3



hours flying during the two-week competition and each crew may well drive over 300 miles daily. With day time ground temperatures of over 90° F this will call for a fair measure of

fitness from all concerned ; it will certainly not be a relaxing holiday.

But it is fun !



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Without Obligation

JOTTINGS from NOR

Winter at Cranwell cannot be described as the richest source of newsworthy *Journal* items from Flying Wing, but we have had our moments nonetheless. Many will remember, probably with a chuckle, The Flying Wing Review — where else can you see OC Eng Wing in a skirt? Others will recall the black flag days that have just passed by with their accompanying rain, snow, sleet, hail, icing, fog, low cloud and turbulence.

For some Winter has been a form of human hibernation, for others it has been a chance to dash away for a fortnight's skiing, while for one or two it has been an opportunity to get down to some work. One such worker came across an official list of reasons for 'lack of job satisfaction' while browsing through AP 3222 :

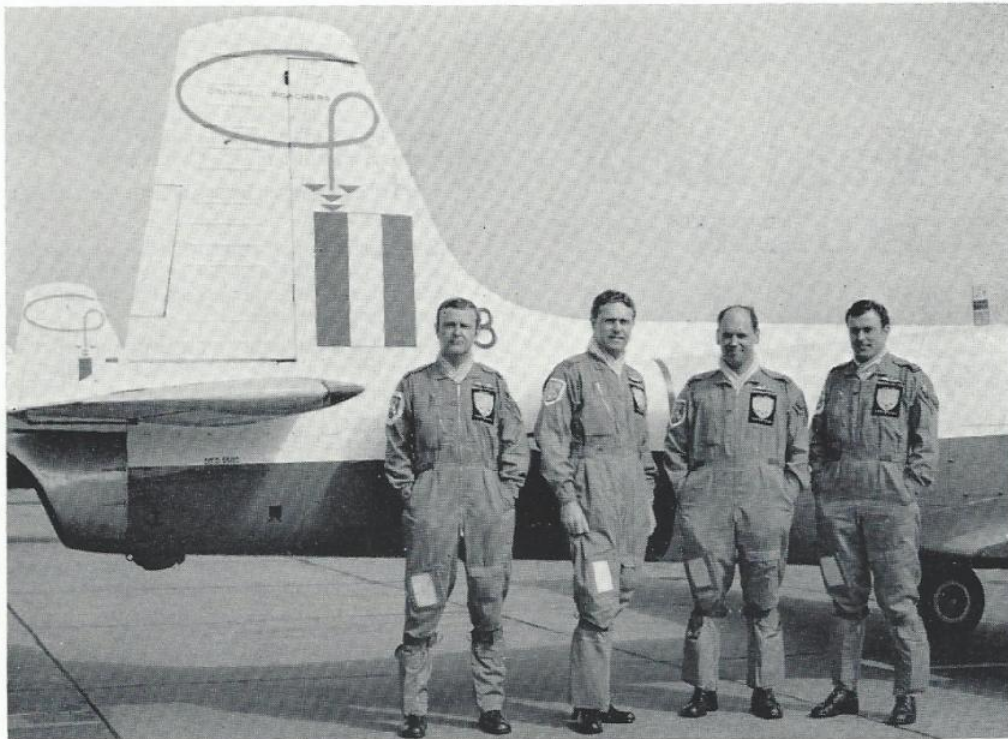
1. Tackling a task that appears to be endless.
2. Doing a routine, monotonous or repetitive task.

3. Periods of inactivity.
4. Frequent irritating diversions from the main task.
5. Being oversupervised.
6. Irregular and unpredictable working hours.
7. Sudden panics and planning crises.

Haven't I seen this somewhere before ?

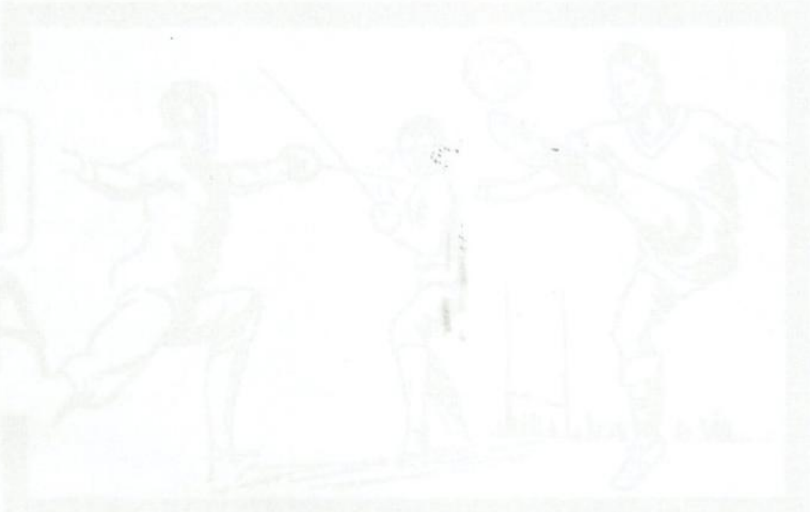
At the time of going to press The Poachers for this year had just started working up. They are being led by Squadron Leader W. P. Jago, last year's team leader. Flight Lieutenant G. W. Timms is the other member remaining from last season. They have been joined by Flight Lieutenant P. J. J. Day, an ex-Javelin pilot, and Flight Lieutenant H. B. Hill, who used to fly Hunters. They have already got a fairly full display timetable for this, the College's fiftieth year.

Recently we lost ten of our Jet Provost fleet, and several QDI's have been looking speculatively at the refuelling bowser, muttering that although it's a bit short on top speed, it should be great for endurance !



Tailpiece — 'The Poachers'

(left to right) Flight Lieutenant J. B. Hill, Flight Lieutenant G. W. Timms, Squadron Leader W. P. Jago, Flight Lieutenant P. J. Day

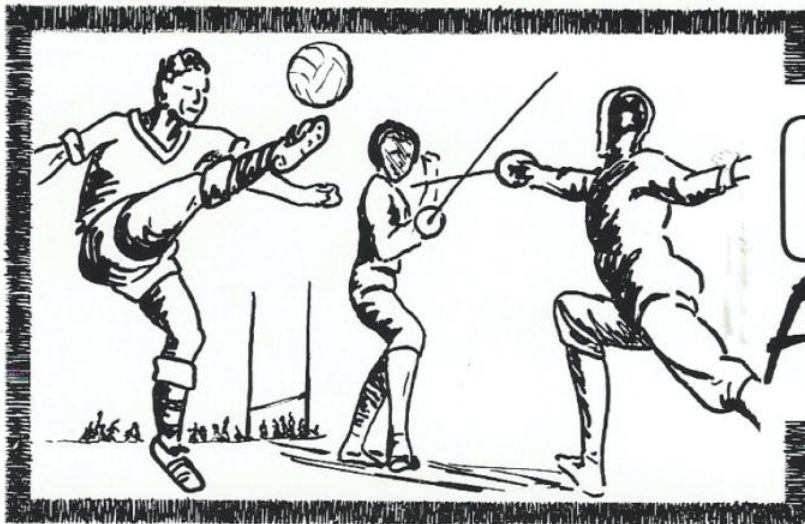


Cadet Journal

Winter Term 1969-70

Sport, Society Notes, Articles

Poetry Review



CADET Activities

ASSOCIATION FOOTBALL

1969-70 SEASON 1ST XI

	<i>Played</i>	<i>Won</i>	<i>Drawn</i>	<i>Lost</i>	<i>For</i>	<i>Against</i>
1st XI	24	18	0	6	74	43

In view of the fact that there were only three 1st XI players left over from the previous year, the 1969-70 season has been extremely successful. It is fair to say that this success has been achieved through teamwork, rather than individual skills, and a high level of team spirit.

Our first success was victory in the final of the Argonaut Shield, which was held over from the previous season, and the team comprised many of last year's players.

It was decided to enter the 1st XI in the Lincolnshire Services League and the competition has undoubtedly increased the will to win. The team has had some very hard games with notable double victories against Royal Air Force Scampton and Royal Air Force Swinderby.

At the time of writing the College team is challenging Royal Air Force Newton for the top of the league position and with two games in hand has a clear five points lead over Royal Air Force Scampton in third position.

Probably our best performance was against Sandhurst, whom we defeated 4-1, only to be followed by a most disappointing defeat at Dartmouth. Two other creditable victories were gained against Icarus and Balliol College, Oxford.

The team travelled to Cyprus in the New Year and although we suffered two defeats the short tour was extremely worthwhile. The first game against Royal Air Force Episkopi did not bring a very good performance, but the second, against what was virtually a NEAF side provided a closer game than was expected by our opponents.

The 1st XI remained almost unchanged throughout the season with Harrington in goal ably covered by Furlong, Graham, McGrath and Longhurst in defence. In mid-field, Nash and Penny worked hard and gave good support to the forward line of Williams, Mates, Wood and Orwell, with McBain and Stanton proving competent substitutes. Another tireless worker was Squadron Leader Hearnshaw, whom the whole team would like to thank for his support and encouragement throughout the season.



From Left to Right : J. Harrington, D. R. Williams, G. P. Nash, W. A. J. Mates, W. J. McGrath, K. M. Graham, S. P. Stanton, R. Furlong, T. J. Wood, S. J. McBain, B. M. Longhurst, A. T. Penny, S. J. Orwell.

Colours were awarded to N. J. McGrath, B. M. Longhurst, J. Harrington and D. R. Williams. T. J. Wood and A. T. Penny earned their colours the previous season.

completed with Eddey as captain. It is hoped to run a College 2nd Team next season for those players who play for enjoyment only, in the absence of a great deal of skill.

2nd XI Soccer

The College 2nd XI soccer team did not have a very successful season as regards results, but all team members and 'occasional' players borrowed from other sports thoroughly enjoyed the matches played. Samuel was an excellent captain and worked hard at the back assisted by Oakley and Hayes. At centre forward, Taylor played well and he and Hartley shared most of the goals scored. Towards the end of the season Gallaway and Simpson were valuable additions and the goal-keeping of Parker was not in any way reflected by the large number of goals conceded.

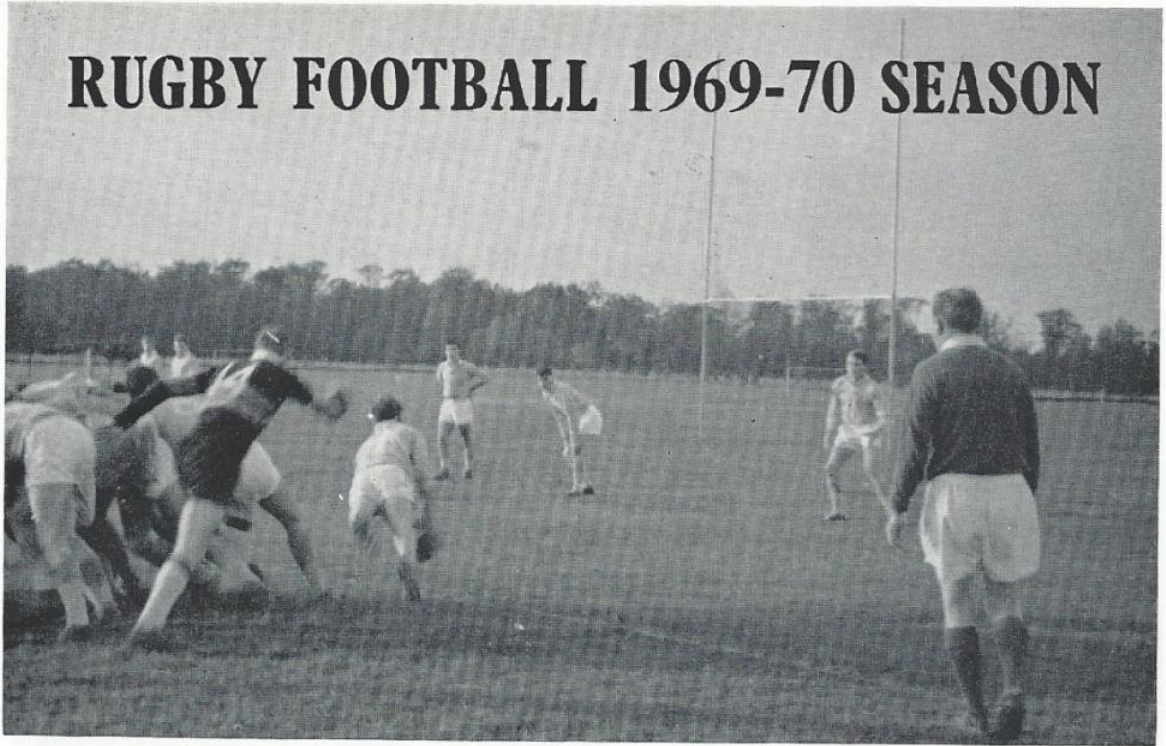
After the Graduation of No 97 Entry the second team lost its captain and two other valuable players, but with makeshift teams and remaining 'regulars' the season was

THE CANOEING CLUB

The winter season this year has as usual been a quiet one and activity has been limited. In January we entered three crews for the Inter-Command Whitewater Championships on the river Wye, all three canoes were damaged in the heavy conditions and a lot of repair work was required.

Since getting our canoes serviceable again we have been training hard in preparation for the 'Devizes to Westminster Canoe Race' over Easter weekend. The training has included several runs from Nottingham to Newark-on-Trent and two weekends spent on the Thames both of which provided useful experience and a great deal of enjoyment.

RUGBY FOOTBALL 1969-70 SEASON



Because of the decrease in numbers of flight cadets at the College over the last 12 months, we found ourselves with only a small squad of some 40 rugby players to choose from for the 1969-70 season. Whereas in the past we have fielded three or even four XV's, we were now reduced to two teams. This unfortunately meant the cancellation of several long-standing fixtures and because our teams were not as strong as in previous years, the 1st XV occasionally took the 2nd XV fixtures, and the 2nd XV some of the 3rd XV fixtures.

The standard of the teams is perhaps reflected in the results :

1st XV played 32, won 13, drawn 1, lost 18 points for 330, against 615.

2nd XV played 25, won 10, drawn 0, lost 15 points for 290, against 382.

Against such opponents as Harlequins Wanderers, Richmond 'A,' London Scottish 'A' and Loughborough University we suffered some heavy defeats, which is perhaps excusable ; but throughout the season we did not play very convincingly, often losing against mediocre sides by unnecessarily giving

away far too many points. This was mainly attributable to our somewhat inexperienced back division.

However, there was one bright spot during the season, namely the Sandhurst match. In extremely wet and unpleasant conditions, our forwards really excelled themselves and although reduced to seven men after twenty minutes, they played with great fire and managed to deny their opponents possession of the ball for much of the match. On the few occasions the powerful Sandhurst three-quarters managed to get the ball, our backs did well to contain them. We finally ran out winners by 6-3, sweet revenge for the massive defeat we suffered at Sandhurst last season.

We travelled south for the Dartmouth match with great optimism, since Sandhurst had recently beaten them 17-0. Alas, our hopes were shattered. With nothing to lose, and in nearly perfect conditions, Dartmouth played with great spirit and won easily 32-0. Their backs proved to be considerably faster and more enterprising than ours, and Cran-

well were not helped by some ineffective tackling. We also had two players off the field injured for most of the second half, but to be fair to Dartmouth they were already leading 15-0 at half-time.

We again toured Malta during the Christmas leave, and were very well hosted by Royal Air Force Luqa. Our team was strengthened by some student officers from the station side, and we beat the Malta Overseas Club after playing a little above our normal standard. Two days later a very strong Royal Air Force Luqa side just managed to revenge their defeat of last year.

Our last match of importance this season was against l'Ecole de l'Air. On a snow covered pitch, the French played with Gallic fervour and showed more initiative than the flight cadets. A bad mistake by the College in the first few minutes gave away the only try of the match and we lost 0-5. It was a disappointing display by the team, losing for only the third time since the fixture was first played in 1948.

Next season the forthcoming changes in the pattern of training will sadly see the disappearance of flight cadet rugby as we have known it for the last 50 years. The reduction in the number of flight cadets will force us to join with the Station rugby side to form a combined Cranwell Rugby Club fielding three or four teams. The Sandhurst, Dartmouth and l'Ecole de l'Air fixtures will continue to be played, but staff will be excluded and teams will be selected from just student officers and flight cadets ; eventually when the last flight cadet has left Cranwell these teams will consist of student officers only.

Colours this season were awarded to Under Officer R. C. Wardhaugh, Senior Flight Cadet H. T. Elliott, Flight Cadets C. Roberts, R. D. H. Pine, I. C. Atkinson, C. H. Lawrence and K. J. G. Platt. Senior Flight Cadet J. A. Hall (captain) and Flight Cadets D. J. Edington and I. D. Vacha received theirs last year.

Senior Flight Cadet Hall and Flight Cadet Edington have also played for Training Command this season, and Flight Cadet Atkinson was selected for the reserve squad.



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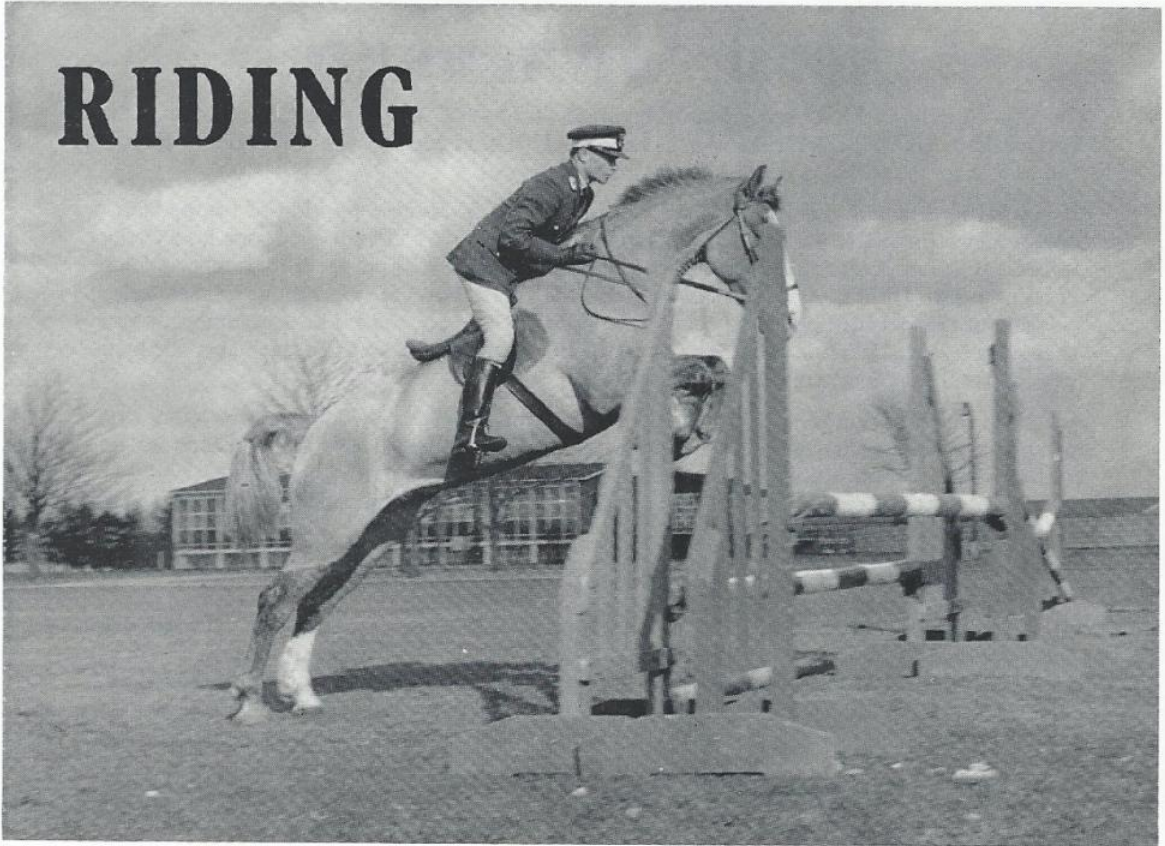
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RIDING



The Saddle Club has had an excellent term with more matches, events, and instructional courses than ever before, and it looks as if the future is going to be equally bright.

Three Flight Cadets, Gregory, Humphries and Allen, took part in the Royal Air Force Hunter Trials at Rauceby in October, and despite the Knocker Run half way through, they managed to come back and do quite creditably.

The College Riding Team, captained by Senior Flight Cadet R. D. Gregory, has done extremely well this year. The Secretaryship was taken over from Senior Flight Cadet Lambert by Flight Cadet Humphries and competitions with several Universities have been arranged. The College defeated Leicester and Cambridge, and came second in a triangular match against Sheffield and Manchester. Further such successes can be hoped for in the future.

Evening activities of the Club include useful instructional courses run by Sergeant Roger-

son for hunting and for training instructors, whilst the entertaining talk given by Mr Gilbert Smith on his exploits in the 'equestrian world' was much appreciated. A Station competition afternoon was held one Sunday and was well attended giving spectators and participants alike a great deal of fun. It is hoped to have more such popular functions.

The Saddle Club now has ten horses, Lucifer having been sold and replaced by Jester. Several Cadets from 100 Entry have shown great interest in riding (judging by the large number of tumbles!) so that even with the declining numbers of Flight Cadets in the College as a whole, it seems as if the Riding Team will not suffer.

Our profuse gratitude must be expressed for all the kind help and advice given to the Club by Mrs Barbara Davies. We are very sorry to hear that she is leaving and will miss the authoritative 'keep your weight in your heels!' We wish her every happiness and success in the future.

HOCKEY 1969/70

The 1969/70 season was the most disappointing for some years. With only a very small nucleus of players remaining after the departure of 95 and 96 Entries we were fortunate to find so many players in 100 Entry, who soon adapted themselves to the different type of hockey from that which they had played before.

The College was defeated in both the RMA Sandhurst and BRNC Dartmouth matches. Although we played well in the early stages of both matches we seemed to lose our confidence after conceding a goal just before half-time.

Unfortunately we were only able to field a second team on very few occasions ; mainly

because of the lack of players.

Senior Flight Cadet G. Bakewell, captain of the team, deserves special mention for holding the team together in some of the tougher matches. He and Senior Flight Cadet P. V. Harris were awarded colours.

Our thanks go to our guiding officers Flight Lieutenant M. E. Williamson and also to Flight Lieutenant D. J. Earle, Pilot Officer P. J. Harding and Pilot Officer Z. A. Saifurrahman for their welcomed appearances in some of the harder matches.

Our congratulations go to Flight Cadet P. I. A. Neil on being appointed captain for the forthcoming season.

BASKETBALL 1969-70

The Basketball team began the Winter Term poorly, and failed to play with consistency. However, we gradually improved and finished the season with a measure of success, finishing third in the Lincolnshire League and reaching the semi-finals of the Lincolnshire Knock-Out Cup. In the League we won eleven of the sixteen games played, scoring 1,188 points, while conceding 639.

Our record against Universities was not so good though, for we could only win two of the six games played.

The two 'needle' matches against Sandhurst and Dartmouth both resulted in victory for the College. Against Sandhurst we had a very close match, winning 52-47. The match went into extra time at which stage we only had four players left on the court. However,

Flight Cadet Rounds controlled his team very calmly and took them into the lead which they held until the final whistle. Against Dartmouth the score was 75-58 in the College's favour. Flight Cadet Rounds must surely have played his best game of the season on this occasion and was top scorer.

During the season Flight Cadets Rounds and Wyer represented Training Command competitively. Colours were awarded to Flight Cadets Burgess, Gatland, Rounds and Wyer.

The tireless work and enthusiasm of Major Ingalls was a source of inspiration throughout the season and all of us connected with Cadet Basketball thank him most sincerely and wish him well on his return to the United States.

BADMINTON

At the beginning of the season there was considerable support for badminton, which was reflected in the keen competition to join the College team and by the numbers present during Wednesday afternoon sport.

As the season progressed this support was gradually reduced by the decline in the cadet population. This was most noticeable in team matches where, in the event of a team member being unable to play, difficulty was experienced in finding a replacement.

In January and February interest was revived by the Chimay Inter-Squadron Competition. Badminton was the last sport to be played in the competition and as the scores up to this point were very close a great deal of effort was put in by all four squadrons. The final result was 'A' Squadron first, followed by 'D', 'C' and 'B' Squadrons respectively.

The College team was captained by Senior Flight Cadet Tuxford, the other members

being Under Officer Coyle, Senior Flight Cadets Bell, Davison and Banks and Flight Cadet Morrell.

The Graduation of 97 Entry reduced the team to one member and it proved impossible to build a new team. Because of this all further fixtures had to be cancelled, which produced a disappointing finish to an otherwise successful season.

GLIDING CLUB

After rather a poor start to the season, generally because of adverse weather conditions, we have managed to clock up over thirty hours soaring in the College Ka7 glider which compares favourably with the same period last year. It was proposed to hold another expedition to the Scottish Gliding Union at Portmoak, but unfortunately this had to be cancelled owing to circumstances outside our control; however two members went on an expedition to Sutton Bank during their Christmas leave.

A very successful camp was held at Cranwell over the Easter break. In spite of the very

strong winds one cadet went solo for his first time at Cranwell.

Number 100 Entry are taking a very active part in the club; filling nearly half of the club's membership. One, Flight Cadet Medhurst, has been appointed as Equipment Member and will shortly be going on an instructor's course at Royal Air Force Spitalgate.

Many hours of valuable work have been devoted, by members, to preparing all the aircraft for what is beginning to look like a very promising summer season.

CROSS COUNTRY

With the graduation of 96 Entry the College lost many of its better cross-country runners. The success of the coming season depended very much on how many runners could be recruited from No 100 Entry when they arrived. Fortunately an above average number of arrivals showed a keen interest in cross-country, enabling the College team to fulfil its usual full fixture list of matches against Universities and Service Clubs.

The Sandhurst match which was at Cranwell this year resulted in a win for the Sandhurst team. At Dartmouth after a difficult match on a typically hilly Dartmouth course, the College team was narrowly defeated.

Among the notable victories during the seasons were the wins against King's College,

London and York University. In the University College Relay the College team was placed 21st out of 44 teams, while in the Hyde Park Relay the team achieved its best ever place of 30th out of nearly 100 teams.

An extremely enjoyable fixture was held at Akrotiri running against six teams from Service Clubs in Cyprus. Although the match was run in a shade temperature of 66°F the College team managed to take 4th place.

At the end of the season colours were awarded to Flight Cadet G. P. Evans.

Flight Cadet I. R. Burton is to be congratulated on his leadership of the team and consistently good running throughout the season, which earned him a place in the Royal Air Force team for his second year.

JUDO

The past year has been an extremely successful one for the Judo club. Our instructor, Corporal Ray Marcantonio (Black Belt, 1st Dan), held one grading session when Senior Flight Cadet Haigh was awarded his green belt (3rd Kyu), and Flight Cadets Purt, Sefton and Houlton were awarded orange belts (4th Kyu).

In the Sandhurst and Dartmouth fixtures the College team managed to defeat Sandhurst 33-23, but were beaten by a strong Dartmouth team 40-27.

The combined College and Station team were extremely successful in various championships held this year. In the Royal Air Force Novice Championships the team won the team event, and Senior Flight Cadet Haigh (then 4th Kyu) came second in the individual contest. In the Training Command Championships held at Cranwell in January, Corporal Marcantonio won the individual

heavyweight title ; Senior Aircraftsman Wilkin won the open title and came second in the individual middleweight ; Flight Cadet Roberts won the individual welterweight and Flight Cadet Houlton came third in the same event ; Flight Cadet Houlton came second in the individual novice and the Cranwell team won the Inter-Station Senior event.

Houlton, Purt and Roberts were selected for the squad to represent Training Command in the Inter - Command Championships. Houlton and Purt were unable to attend owing to College commitments, but Roberts (3rd Kyu) represented the Command, and is to be congratulated on the award of his Training Command colours.

But what of the future ? The Judo Club desperately needs new blood (no pun !!). Look what we have achieved this year. We did the same last year. Come and help us do it again next year.

SMALL BORE SHOOTING

This term saw us as a changed club. We were amalgamated with the Station Rifle Club to form the Cranwell ' A ' and Cranwell ' B ' teams. These were entered into the largely civilian Lincolnshire League where they did very well, coming top in their respective divisions. Four of the ' A ' team and most of the ' B ' team were cadets.

The A-team which was made up of members of the Station and cadets Under Officer C. Fitzpatrick, Under Officer A. R. Taylor and Flight Cadet I. P. Durn, competed in the Nobel Cup Competition and became Training Command Champions by beating Royal Air Force Cosford in the first round.

Amalgamation with the Station has in no way managed to daunt Cadet shooting activities. In ten away matches, the College VIII lost only one match, against Cambridge

University, whom we managed to beat quite decisively on home ground. We were also successful in our matches against Dartmouth and Sandhurst. Both fell victim to our marksmen despite a good effort by each team.

The graduation of 97 Entry saw the departure of Under Officer Fitzpatrick, the team captain, and Under Officer Taylor. Both were enthusiastic and very proficient shots, and our good wishes go with them.

We would like to express our thanks to Flight Lieutenant Meredith, who was posted away at the end of last term. Flight Lieutenant Dale is a very keen and able shot, and his help has been invaluable during the season.

Colours were awarded to Under Officer A. R. Taylor and Flight Cadet D. Mather.

COLLEGE CHRISTIAN UNION

Thursday night is CCU night when a group which ranges in number between 6 and 30 meets to learn more about the Lord Jesus Christ and His relevance to Service life.

Meetings vary considerably. The monthly pattern has been as follows recently — Bible Study, led by one of the members of the Christian Union ; a film night (and we have had some excellent and really challenging films); an 'ABC of Christianity' night, when Wing Commander Everall talks on a different aspect of Christianity (we are a long way from Z yet, but are still wondering what we are going to do with 'X'!); and a visiting speaker. We have had missionaries, doctors, ministers and others to tell us of their ex-

periences of the wonderful way in which Jesus Christ is at work today.

Our other interests embrace the practical and prayer support of a missionary and his wife in South America, and the organisation of the visiting of the local mental hospital at Rauceby. In this latter we are joined by others on the station and it is tremendously rewarding work — out of all proportion to the effort put into it.

By the time this is printed we hope to have another Christian Union Weekend at Cranwell (29th to 31st May) with the Rev Mark Ruston of Cambridge as the visiting speaker on the Saturday evening.

THE 97 ENTRY END OF COURSE REVUE

The Revue was held in College Hall on Monday, 23rd February, and on the whole, it was in keeping with the traditions of College Revues, inasmuch as it poked fun at staff and cadets alike. The Multi-million dollar Dave Frost production ran very smoothly — a credit to producer and players in view of the short time allowed for preparation- and can be regarded as an unqualified success.

The opening sketch of a Squadron Commanders' Meeting was capably over-acted by the four Senior Under Officers and Dave Frost himself as a rather fearsome Wing Commander, and the method of selecting promotions that this sketch exposed was, to say the least, ingenious. 'Pedro' Goddard solved the nation's power problems with equal resourcefulness but the audience was not overimpressed with some of his statistical evidence. Ken Burgess as the wicked 'Dr Phippenstein' produced a preview of the famed Cranwell

Film, which was probably as near or as far from the truth as one can get, inside the bounds of possibility and the law.

The Flying Wing sketches were possibly a little too long and tended to fall flat in places, even as far as the initiated were concerned, but the main complaint against the revue was that it was largely Pilot-orientated, but on the other hand the General Duties Branch is in the majority at Cranwell, and the Engineer Cadets of 97 Entry had very little time available to prepare sketches.

The Revue was successful and little was said that reduced the audience to a stunned silence and there was nothing really that could have been considered offensive and it is worthwhile to point out that the staff received the revue in the light-hearted spirit in which it was given.

G. M. Eddy.

VISIT TO MALTA

Eight flight cadets and six officers went on a liaison visit to Malta in January on a trip which was designed to give an insight into the workings of the Nato Southern Flank, concentrating on the naval aspect of it.

All and sundry arrived by Argosy in Malta on the Saturday evening and were escorted to HMS St Angelo, the British Naval Base, where we were to stay. The remainder of Saturday and all Sunday were spent acclimatising to the warmth, women, and wine, and most of us managed to commandeer cars, in which we went for 'jollies' around Malta.

Monday was the first working day, and we all went to sea, to have a look over the *USS Forrestal*, one of the two US aircraft carriers in the Mediterranean. It was quite a shock to walk on to the flight deck and find oneself confronted by 90 odd aircraft — including Phantoms, Skyhawks and Vigilantes. The whole day was taken up on the *Forrestal*, which is not altogether surprising when one thinks of it as a small floating town, as indeed it is.

Tuesday contained a trip to another of the US 6th Fleet, the *USS Semmes Dog*. This was a guided missile and anti-submarine destroyer. The afternoon was more relaxing as we were given the chance to do a spot of sub-aqua. Only two eventually got into the water, and they faced the additional hazard of having their air tubes periodically stepped upon by those on dry land.

Every evening was one's own, and having given the more renowned quarter a thorough 'going over', everyone spread their wings.

Wednesday was viewed with some apprehension, as we were to spend all day at sea on

an exercise with *HMS Charybdis*. A few of us had good cause to have felt this slight reluctance, but it did not altogether deter from the enjoyment of seeing the ship fire away merrily at a small island, and drop depth charges, which exploded with tremendous force — and kept the ship in supply of fresh fish for weeks.

Thursday saw us away from the action, and in the morning we had a look at some of the workings of AFSOUTH (Allied Forces Southern Europe), and had the good fortune of a brief chat with the C in C. Lunch time arrived, and with it drinks all round, supplied by the officers of *HMS St Angelo*. Whilst being very pleasant at the time, the drinks caused slight concern during our afternoon visit to Royal Air Force Luqa, when some of us were desperately trying to keep the eyelids from the fatal last shutdown.

Friday morning saw us on a guided tour of the Port, *HMS St Angelo*, and with this went many legendary stories, one of which went along the lines that the garrison, having run out of ammunition, lopped off the heads of their prisoners and sent them winging on their way towards the enemy, in lieu of cannon balls. We had time afterwards to collect a few goodies from shops in Valetta before we departed for Royal Air Force Luqa, and England.

The trip itself was enjoyed tremendously by everyone, and all were very glad they had the chance to go, and it is only fitting that I should end with our sincere gratitude to everyone we met on *HMS St Angelo* for the marvellous hospitality we received on this all-too-brief visit.

P. I. A. Neil.

Written on a Fly-Leaf

The critical eye that reads my sheet
May find no sense in a word of it,
But on advice of other eyes,
More learned in the art of lies,
Will search a fact that lies disguised
Or faults that hide the truth of it.

J. B. S. Hilton.

POETRY REVIEW

UPON IMMINENT DEATH THE SOLDIER WRITES

Thus as we waited for the day, the night drawn softly round our heads,
He came ; his robe hung loosely round his bones,
And in his withered pock-marked hand, the quivering hour glass
That told our passing in its trickling sand.
The finger beckoned and we rose powerless to withstand
The staring of those shrunken eyes.
From the shadow of his cowl
Came words that none could understand.

' I come before Time to show the treasures of the Earth
To such as you from whom the face of beauty is kept veiled.'
His trembling voice on cankered breath echoed in the sniping wind,
Seemed to wither the sharpened sense within
The dulled potential of the mind.
Nor recognising truth from lie
None before me dared reply,
As I suffered words I could not find.

He showed us valleys cast in stone where countless hundred armies died
Preserving Peace, Prosperity, and a politician's thousand lies.
He showed us chambers where the willing slept side by side and hand in hand,
Sacrificed to the humble worm for the arrogance of Man
Sinning, dying to the tune of some great Universal plan.
And through the gall of Hell and Heaven's sludge
We with out eyes tight-shut against it trudged,
Too brain-disturbed to understand.

' Judge not too harshly what we did,' one bloodied corpse of soldier cried.
' Our death for you not martyrdom, nor even substance for your pride.
We did what Man has always done, and sought sufficient reason
To destroy the foe, ourselves and those we loved the best.
Go to your trench and in the Grand Attack
Think not of us nor yet of looking back.
Go forward to this damned eternal rest.'

J. B. S. Hilton.

BRITISH WINTER SATURDAY—1969

We awoke in the dark,
we would not work today.
Long live Comrad Marx,
Kosygin and Saturday
demonstrations against America,
peaceful co-existence and let's
set fire to an Embassy
the best in smoking yet.
Day dawns, unpoetically,
the sky is not fired with pink
and songbirds, untypically
do not find a reason to sing.

The joy of British Winter
Saturday, vista of Georgie Best
or Geoff Astle, or young Peter
Shilton diving to his left
to stop a great shot!
or just to see the fights
along the terraces, or just to watch
a winter's afternoon fade into night.
To sit and sip your tea and smoke,
while mini-skirted dollies
freeze fashionably in the King's Road
the wind whines wolf-whistles
between their permissive thighs.

I sit and scoff
its easier to break an image
than to create one.
British winter Saturday
Nineteen Sixty-nine.
How soon
 Will you
Become like me

A breathless, waste of time.

G. M. Eddey.

Remembering

Unlock Pandora's Box
and float away.
Away from the steel-grey
afternoon, that locks
us to the present
with its oppression.
Un-know the mundane matters
before time and dreams are shattered,

by the day.

Fade back in memory,
the fire escape of my
beleaguered soul, time-holy,
sinless ; as the sky
with agonised blue fingers
through iron cloud is reaching.
To think, to write is meaningless
just sink back into emptiness

and dream.

In memory, is truth
the obvious anarchy
like a realist's dream ?
or is it butter
to the bread of fantasies,
a mind-room with a view ?
It takes a wiser man than I to know
for memory says ' but I told you so '

I told you so.

G. M. Eddey.

CONSEQUENCES

I could see a grey head, quite flat
Painted on the glass — moving, but painted.
And through it, miles of world, rolling past
(I'm sure I was). I had left someone who
Had rolled on with the world, and now
I was still and seeing things: when he rolled round again
Perhaps I could stop him long enough to tell him
The things I could see when I was still.
I could say, ' Did you know the whole world can change
In three moments ? ' But, no, he looked happier when
He was rolling ; so,
' It's allright. It doesn't matter. Goodbye.'

D. Strickland.

CLOUDBANK-STEAMHAMMER BLUES

You have heard my voice
in a soft voice calling
on the evening wind,
telling of images and errors,
and of the ultimate sadness
we shared, for a moment,
in a dream, you have lifted
your head and listened
to the petal-softness of
words you did not want
spoken, or the vibrations
of thoughts you had not wished
for, letting your hair hang
in mourning for our still-born
love, that not even my
energy could revive.

Cloudbank-steamhammer,
low tide bird call ;
while guitars moan,
an ecstasy of nothing
that you call tears.

G. M. Eddey.

Time of my Remembering

All that had beauty, man destroyed
All that spoke of life, had in death.
One looked and looked again — all changed.
Tomorrow slips the wrong way, to the depths.

(i)

We were a green land, time way back,
Green with open meadows, trees in leaf
By Lochranza and Blackwaterfoot,
Where swallows summer-simple swooped
And flew by nectar-honeyed air
That hung with freedom, peace and love,
While cuckoos echoed flitting down the groves.

We had our dreams too, did we not,
Those days that fell on us in golden splendour ?
The poets wrote for us, carpet kings obeyed our rules.
Not for us the whimperings of mirth-infested fools
Reality in mind and soul and purpose.
Those dreams we bought are now in short supply
To dream again, reality must lie.

I see the lines are forming in your face ;
Like claws of cat they tear and scratch.
Tears long gone are leaving in their place
Dried gullies ; like wire fences you they catch.

In this not-yet Autumn of your waring life
The leaves are falling dark brown sodden.
Chenonceaux and Castle Katz
Stand on dried rivers, salt-caked flats
Whipped by storms to dry in dust inquisitive
That searches fissures in the rocks
Pushing twisted dusty fingers into mountain blocks

Above it all the Valkyries, whose wings
Beat to crescendo and stir the clouds,
Carry the wounded pride of politicians' words
Above the pride-dissenting crowded world
To some green land, still green and young.
Where war is play, the dead will rise again.
After some millenia a brave new world of brave new men.

(ii)

But now you'll see we are a barren land
of black and red, scared and twisted pines,
That blindly grope at a dying sun
Whose tireless work is done and now declines to shine.

Come from your lair one sun-forsaken day ;
Your body's stench, your hermit filth wash clean.
There is no sun but by the campfire light
Gather ashes, dust and stores ; make busy in the night
To build a last great temple to our name
This is our future, this at last our peace
No more of dreams, realities : Let mind and body cease.

J. B. S. Hilton.

PERSPECTIVES

Echoeless shores of unused peace
Lie gently within my befuddled brain.
Silent lines of unspoken joy
Came falling with the rain,
Lawning seas of fragrant green
And skies of quiet blue,
Small waves lap in ecstasy
All the pathways of my mind
To wipe away the footsteps that echo
Quite insane.
And I feel new and peaceful now
As a void within the night
On a star-shining night.

D. Strickland.

'Ars Gratia Artis'

Pinochio

Patience



Children's Theatre returned to the Whittle Hall in January, when Cranwell Little Theatre, following up their success of the previous year, presented 'Pinocchio' before some 1,700 children and parents. The play was an unqualified success, and credit must go to the producer, John Ellingham, aided so ably by Cicely Sandford, for having successfully directed such a large, not to say unwieldy, cast.

The setting, designed and built by members of the Little Theatre gave a truly story-book atmosphere to the whole play, and many of the effects, such as the transformation of a wooden log into a puppet, and the appearance on the stage of a huge sea-monster were carried out with professional skill by the back-stage staff.

Much of the comedy of the play was contained within the character of the clown,

played by Mike Beck, who delighted the children throughout, and managed to capture the right sort of relationship with his young audience. The slap-stick barber's shop scene, in which he was aided by fellow-clowns Mike Mitchell and Rahim Omer, was particularly well conceived and executed.

Verley Carrington, facing perhaps the most daunting challenge of her theatrical career with the Little Theatre, gave a very accomplished performance as Pinocchio, combining excellent puppet-like movement with a clear, chirpy voice, and showing herself well capable of tackling even the most difficult of parts. Much of the 'rapport' established between the audience and the well-known characters on stage was attributable also to John Sandford, playing Gepetto, the puppet's father. Throughout, Gepetto was a character the children could love, and one whose clever interpretation of the part could earn also the respect of the adult members of the audience.

The thing, which, to judge from the reaction of the audience most delighted the children, was the brilliantly timed head-on collision between Pinocchio and the Policeman, played with fine voice and presence by Geoffrey Shore, who, with many Little Theatre performances behind him, seemed to find his true 'métier' in this stupendous guardian of the law.

The rogues Fox and Cat, the former played in convincingly dastardly fashion by Paul Hopkin, and the latter in a beautifully feline way by Penni Ingram created an excellent love-hate relationship with the children, whilst their opponents, the detectives, played in good sleuth-like fashion by Andy Whyte and John Sandford, accompanied by their bloodhounds, Gill Whitby and Denise Gibbs delighted the audience and made contact with the children at every opportunity.

The travelling puppet theatre, which, as well as playing an integral part in the story, presented also some extremely well-rehearsed and executed puppet shows, was under the tyrannical control of the awe-inspiring Mr Fire Eater, portrayed boldly and comically by Michael Kearns. His use of an Italian accent throughout lent added colour to the part, and was handled extremely well. The puppets, Tony Travis, Susanne Gracie, and Mike Mitchell, together with their manipulators, Denise Gibbs, Gill Whitby and Alison Sandford, worked well as a team, and their excellent presentation of the 'Harlequinade' was one of the highlights of the whole show. Fire Eater's children played by Ann Wagstaff, Clare Bowden, Simon Shore, Karen Finch, Mark and Susan Carrington, and John Troughton were a well-rehearsed and vital family, full of enthusiasm and jollity, who did much to make the link with the children in the audience.



Verley Carrington as Pinocchio



Cricket (Nell Bazalgette), Pinocchio, Gepetto (John Sandford)

John Towey, playing a double role of Antonio and the Coachman gave two very strong performances. He has a fine voice and a real sense of theatre, whilst Nell Bazalgette, playing also the double role of the Fairy and the Cricket, gave one of the finest performances of the evening. She was full of the right sort of grace and favour, without being too sugary, but really excelled in her guise as Cricket, when her movement and stage presence, helped by excellent make-up, were a delight to watch.

No big production like this could be a success without the colour added by the costumes, and Hazel Bowden and Shirley Scoggins deserve the highest praise for their skill and patience in producing such a wide

variety of excellent costumes. Particularly effective were those of the Policeman and the Bloodhounds.

Kay Eburne, well-known for her piano playing in the Whittle Hall, showed herself equally capable of supplying well timed and unobtrusively played accompaniment to the whole play. Aided by John Rogers on drums, she played the musical accompaniment, including some original pieces by Denzil Stephens, most effectively, and did much to add to the overall atmosphere of this production, which, combining as it did so successfully all the different aspects of children's theatre, gave a really enjoyable and delightful evening's entertainment.

A. B. T.

PATIENCE (BUNTHORNE'S BRIDE)

All the delight and humour of nineteenth century society and its taste for military 'glamour' came to life on the Whittle Hall stage in a colourful production of Gilbert and Sullivan's *Patience* on 29th and 30th October, 1969.

Once again Kay Eburne was a delight to watch and hear. In the title role her transition from the demure dairy maid, puzzled by the brooding lovesick maidens, to her declaration of love for her somewhat less than perfect Grosvenor, was admirably performed. Sid Rees in the part of Grosvenor showed himself to be a gifted musical comedy actor who seemed to relish being the personification of human perfection. He was always entertaining from his first entrance to sing the duet with *Patience*, to the finale and his incredibly quick costume change.



Kay Eburne as Patience

Pauline Stephens' portrayal of the mature besotted Lady Jane was the perfect foil to the bizarre poet Bunthorne, played by Ian Wilson. Their duet 'Now go to him . . .' was a highlight of the show. Lady Jane competed with the twenty lovesick maidens for the affection of this melancholy, literary subject of the dragoons' ridicule. Ian Wilson fully exploited his natural talent in this unusual role.

Michael Bedworth, David Frost and Roger Pearce led a powerful, resounding chorus of dragoons resplendent in their scarlet uniforms. The efforts of this trio to emulate the poets aestheticism in the pursuit of their ladies was hilarious. The dragoons gave a fine comic team performance and provided the required contrast to the languorous love-sick maidens.

The ladies Angela, Saphir and Ella all have hard tasks in keeping the plot going. Mary Clark, Sylvia Kirby and Marjorie Rumbles were all deliciously rapturous and tuneful.

John Kennedy exploited the full dramatic content of the plot and made the fullest use of the acting abilities of his cast. The acting area was well used and the production had much movement and form. Cicely Sandford's advice and influence were appreciated by all the cast and were evident in the full production. Effective stage sets were designed and erected by Ian Burton and a team of willing helpers.

Great credit for the musical success must be attributed to Air Commodore Suttle and Hilary Bedworth for their inspiring and tireless efforts during rehearsals and their delightful interpretation during the two performances. Flight Lieutenant Denzil Stephens whose guiding hand was much appreciated by all, maintained an approving eye over the performances.

Judging by the response of the audience, the production was a resounding success and marked a colourful event in the College calendar.



'Aesthetic Pose'

Sextet :

*David Frost, Mary Clarke, Roger Pearce,
Marjorie Rumbles, Michael Bedworth, Sylvia
Kirby*



Clive Roberts (right) as the Solicitor

'Miscellany'

France and NATO

A Visit to The Technical Academy of the German Air Force—Neubiberg

A Yank at Cranwell

Man's Predicament and the Relevance of Christianity

Book Reviews

FRANCE AND NATO

by WING COMMANDER J. WALSH, BEM, BA.

THE FRENCH WITHDRAWAL

In March 1966, NATO received probably its greatest rebuff: the French Government formally announced its decision to end on 1st July 1966 the assignment to the Allied Command in Europe of the French ground and air forces stationed in Germany, and to withdraw French personnel in NATO headquarters; it moreover expressed its wish to end arrangements made for the support of NATO by the provision of facilities in France. The French note to the US Government stated that France had made her decisions 'because of the impossibility of amending, by mutual agreement and under satisfactory conditions, the provisions in force in the North Atlantic Treaty Organisation', a statement that was immediately challenged by the American Government which quoted Article 12 of the treaty of 1949 which permitted revision of the treaty. Although she withdrew from the organisation, France nevertheless remained a member of the Alliance and has often reaffirmed her determination to accept her treaty obligations. The Soviet invasion of Czechoslovakia in 1968 was a salutary reminder to France, as to the other Western European countries, of the need to maintain the Alliance.

In addition to some major political considerations which had a bearing on France's decision to withdraw, there was a clear-cut conflict between France and NATO on strategic grounds over the acceptance by NATO of the doctrine of flexible response. France had argued that flexible response, which was pressed by the Americans, not only cast a doubt on the Alliance's willingness to use nuclear weapons (and was therefore an invitation to an enemy to see what gain he could achieve at a limited, conventional cost); but also implied an American willingness to use Western Europe as a battleground for at least tactical nuclear weapons so as to maintain North America sacrosanct.

FRENCH STRATEGY

Massive Retaliation

France withdrew from NATO and followed

her own independent strategic line. The doctrine of what has usually been called 'massive retaliation' was the central point of her defence policy: the French leadership was determined to show their will to use the nuclear weapons of the Force de Frappe when necessary, and accordingly to prove that, owing to this posture, the weapons would not have to be used. No doubt the possession of an independent nuclear striking force was also appreciated by France as a potential means of 'blackmailing' the USA, for if France had to do the 'unthinkable' — send off her nuclear striking force in earnest — such an action would certainly trigger off an American response against the enemy. France's small nuclear force could therefore give her greater influence than its size might seem to merit.

In this independent strategy there was little attempt to maintain balanced forces. M. Pompidou, then premier, stated in the Assembly in April 1966 that he regarded conventional forces as irrelevant since they had no deterrence power. In any case, it seemed that, with the large investment which was being made in the nuclear striking force, funds for the maintenance of conventional forces would have a low priority.

The doctrine of massive retaliation was not specifically levelled at the USSR. General Ailleret, Chief of Staff, in a statement that was supported by President de Gaulle, announced a concept of 'tous azimuts' (all horizons) defence, insisting that France had to be able to defend herself in all directions rather than from attacks from the east only. In view of France's continued membership of the Atlantic Alliance, this was a controversial concept.

The New Strategy

A change in strategy was, however, announced in March 1969 by General Ailleret's successor as Chief of Staff, General Fourquet.¹

¹ In an address published in 'Revue de Défense Nationale,' May 1969 and reprinted in 'Survival,' July 1969.

The new strategy differed from that previously stated in two main ways :

- a. It accepted the use of tactical nuclear weapons, not as before, as part of a generalised concept of deterrence but as weapons to support the conventional arms so that 'the enemy is prevented from thinking that aggression below the level of strategic attack would enable him to avoid nuclear weapons being used'. He argued that it would be impossible for the French to know what enemy intentions were without 'raising the conventional stakes' to a level which caused him to halt, and this level would be unacceptable to the French because of the 'disproportionate use' of conventional forces likely to be required for such a course of action. Therefore tactical nuclear weapons would be used. Consequently it can be seen that France, after earlier withdrawal from NATO partly at least over flexible response, is herself adopting a form of this strategy, substituting it for the almost automatic use of her strategic nuclear weapons. The French version, admittedly, seems to put more weight on tactical nuclear weapons than on conventional forces on which the stress in NATO has been increasingly placed.
- b. It broke away from the concept of 'tous azimuts' and once again brought the focus back on an enemy coming from the east as the potential enemy. It also clearly envisages co-operation with Allies : for example, Fourquet stated 'To seek maximum effectiveness leads us to search for theories of employment on a European scale and to confront the enemy as far as possible from our frontier . . . profiting as much as possible from the earlier effort of the Allies'.

The Forces for the Strategy²

The main element on which France has relied in pursuing her independent strategy has been the force of Mirage IVA bombers, armed with 60KT atomic bombs and adapted to low-level penetration, with a supporting force of KC 135 tankers. The full force of 60 has been available since 1968. Complementing the aircraft will be a force of IRBMs with a range of 3,000 KM and with warheads of 100-150KT. It is planned that there will be twenty-seven in all, some of which will be operational

in 1971. Four fleet ballistic missile submarines are scheduled for completion by 1975, of which the first, the Redoubtable, launched in 1967, should be on station in 1972. The submarines will be armed with eighteen missiles, each with $\frac{1}{2}$ MT warheads.

Although there have already been delays in the IRBM and missile submarine programmes, the problems posed are not so great as those posed in the development of tactical nuclear weapons, on the availability of which the new French strategy will depend. Two-thirds of the planned 150 weapons will be for the Army, for which the Pluton rocket launcher mounted on a tank chassis and fitted with a nuclear warhead will be a crucial weapons system. Fifty tactical nuclear weapons will be available for the Air Force, which it seems will use the Mirage F1 in the tactical nuclear role.

The new strategy therefore gives a more important role to the mechanised divisions and tactical air units. Says General Fourquet³, 'The combined land-air battle constituted by the 'forces de manoeuvre' has the task of testing the enemy's intentions . . . Mobile, flexible, it can . . . deal with enemy actions as long as required while retaining its ability to fulfil a nuclear role before the level of strategic exchange is reached'.

There will also be forces responsible for the territorial defence and air defence of France, the former amounting to sixty battalions backed by locally-mobilised forces. Additionally there is the Force d'Intervention, with a strength of about one division and a main role outside Europe. These forces are seen as protectors of missile bases and airfields against airborne attack.

General Fourquet made it quite clear that the priority task of the naval forces will be the protection of the ballistic missile submarines.

SOME PROBLEMS FOR FRANCE

Cost

An independent strategy outside the military organisation of the Western Alliance has

² Details are taken mainly from the lecture 'French Defence Policy' by General Beaufre, published in 'The RUSI Journal,' March 1970.

³ *Op cit.*

posed numerous problems for France. To go it alone is an ambitious aim and an expensive one when defence policy is based on nuclear strike capability, mobile ground forces and an extensive territorial defence organisation. France has paralleled Britain in her nuclear bombers and missile submarines: she has also gone in for land-based missiles in silos and for developing her own tactical nuclear weapons. By so far not carrying out much large-scale re-equipment of conventional forces, she has kept defence expenditure down to a similar percentage of GNP (5.3%) as Britain's, but the percentage may well rise in the future.

Of course, the financial crisis late in 1968 brought about by the riots and strikes of the early summer brought some economic restraints. The immediate effect on defence was the imposition of delays on major nuclear weapons programmes.

Technological Resources

The technological effort is an immense one for a medium-sized country determined to be self-reliant in what she sees as a most vital sector, the production of nuclear weapons and the means of delivery. In the less vital sectors of defence technology she is willing to co-operate and indeed actively seeks partners in projects, e.g. the Anglo-French Jaguar. In the immediate future she will probably be forced, in the effort to spread research and development costs as well as to ensure wider markets, to co-operate more and more with other countries, even in the vital nuclear sector. In particular, the lack of expertise in miniaturisation of nuclear warheads and the pressing necessity for the weapons on which the already announced strategy has to be based has made France turn to Britain with initiatives for Anglo-French nuclear co-operation. It has been pointed out⁴ that France could benefit from British experience and technical competence in many ways, but particularly in the design of warheads for the Pluton system, in the development of an air-to-ground tactical nuclear weapon and in the perfection of tele-guidance systems in her submarine launched missiles.

Co-operation with NATO

Although France in 1966 withdrew from an integrated organisation, she nevertheless considered that co-ordination of strategy was

possible, and, from the French national viewpoint, desirable in some fields. She left forces in West Germany as a result of a simple bilateral arrangement with that country; co-operation with NATO over the air defence of West Europe has continued; and in the Mediterranean, French naval and air force reconnaissance units have co-operated with NATO in keeping watch on Soviet naval forces. The new French strategy, moreover, as indicated earlier, explicitly suggests co-operation with Allied ground forces.

Because, it seems, France is not likely to possess her own tactical nuclear weapons for a few years, General Fourquet has made informal proposals to NATO whereby they could be provided to France on a contingency basis as a stop-gap measure, and NATO has apparently made a vague agreement with the French to provide them 'when required' at some unspecified time after the outbreak of hostilities.⁵ To NATO leaders, the logic of the situation is that France should be a member of NATO's Nuclear Planning Group, set up in 1967, but the changes in French attitude can not, in fact, be viewed as a prelude to French re-entry into the military organisation. The extent of co-operation and co-ordination will continue to be a problem both for France and NATO, some of whose members consider that France is trying to get the best of both worlds — protection and assistance from the organisation while staying outside it and denying it her facilities.

Philosophy of Deterrence

After a few years of arguing the merits of 'massive retaliation', the French have changed their position from one of a choice of 'suicide or surrender' to one where other choices are given by means of 'tests' (as General Fourquet put it) of an aggressor, particularly by tactical nuclear forces. The conceptual difficulties which can arise are well appreciated by General Beaufre, leading French strategist and Director of the Institute of Strategic Studies in Paris. In answer to a question after a lecture given to the RUSI in October 1969, he said that the changed strategy was not 'flexible response': he argued that 'it is utterly dangerous to state in

⁴ Michael J. Brenner in 'The Bulletin of the Atomic Scientists,' Nov. 1969.

⁵ Michael J. Brenner, *Op. cit.*

peace-time that you are too reasonable, and that whatever the enemy does he is sure not to have the full blow in return. By doing that you decrease your deterrent posture . . . By having our own position, we increase the deterrent posture because we raise a doubt about our own rationality'. Later, to another question, he replied 'The practical answer is to say that deterrence must be achieved by a solution of a kind of delayed massive retaliation . . . not an immediate full blow because one must make one's decision'. The question of the credibility of a relatively small deterrent force in the background of France's strong criticism of the dangers and ambiguities of NATO's flexible response is exercising the minds of the French leaders and will continue to do so for some time to come.

CONCLUSION

France has, in the last few years gone through the difficult experience of a middle-sized country asserting her independence of what seemed to her leaders as the control of her defence policy by the USA : integration (in NATO) to France meant domination. Through her new freedom of action France has restored some of the old 'gloire' that President de Gaulle sought ; but owing to the cost of her policy, to technological difficulties in the time-span within which she wished to act and to problems inherent in her deterrence doctrine, she has found that her freedom of action is far from complete and that in any case it is wise to maintain strong links with NATO.



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A YANK AT CRANWELL

(OPINIONS AND EXPRESSIONS UPON DEPARTURE FROM CRANWELL
AND THE UNITED KINGDOM)

by CAPTAIN T. M. KLUZ, MA, USAF

Seven days in 'Swinging London'. Oh What a lovely war! My colleagues all in South East Asia and me in London on the way to three years at Cranwell. Yes, London does swing but does it deserve the adjective any more than San Francisco, Chicago, New York, Hamburg or Tokyo? Perhaps in its diversity; more museums, more history, more theater, but not in its surface flamboyancy. New York probably has more swinging permissiveness, Tokyo more swinging violence, Hamburg more swinging sex; but frankly it's a moot point because I am sure 'Swinging London' was some frustrated ad man's attempt to encourage more travel to Britain on the part of America's rich — I have missed something — upper middle class.

Perhaps being in the forces makes us too sophisticated, as Spiro Agnew would say, 'You've seen one big city, you've seen them all'. Money buys anything in London perhaps a wee bit more than it will buy in Las Vegas or New Orleans but for the most part the same commodities, be it flesh or otherwise. Perhaps I have become a Socialist, and need a trip to Havana to restore perspective.

Generally, however, as a confirmed capitalist, our cities need help. I walked along Park Lane at 1700 on a weekday, the air was stifling, I would have paid 6d. gladly for a whiff of Tokyo vending machine oxygen. I have seen what the motor car is doing and has done to New York, Philadelphia and Boston and that same motor car is gearing up for a similar assault on London. Be on guard, for along will come the urban planners with their motorways and car parks and as soon as they make it easier to drive into town, more people do so and the problem increases. So then what, they take the shops out to the suburbs and build huge shopping centres with sprawling car parks and then the old city begins to strangle itself. It seems Cleveland, for one, cannot live with the motor car and cannot live without it.

On the other hand, cities must have a green belt, and plenty of exits from all neighbour-

hoods in the city to that belt. But we know from experience that as the exodus from the city grows, so proportionally does the pressure for land and housing estates. And sooner or later the city is surrounded by one big bedroom community, i.e. Tokyo, Los Angeles. I am not sure why this is bad, plenty of reasons come to mind but none conclusive enough to state here. But my point here primarily is to mention those things I see in our environment which should cause us all concern.

Anyway, after seven days we were off. The taxi driver talked incessantly, the entire trip from Lancaster Gate, London to Sleaford. First impression, the natives are articulate, regardless of level of education. But, second impression, we had not even been introduced but he talked to us; shatter went an old established illusion or prejudice. After all is it not true that Englishmen did not even speak to each other while huddled in the bomb shelters during the trying days of 1940 in London, and had we not made innumerable trips on the London Underground in our seven days and not once did anyone speak under any circumstance whatsoever? Well, we moved bag and baggage into the Claridges of Sleaford, the White Hart, and after a month of hotels, motels, inns we eagerly waited for Quarter Accommodation. For sixty-two days we waited in that 9 foot square luxury room in Sleaford. It seems there were thirty other officers on the housing list and after all it is not British to jump the queue. Luckily, Uncle Sam was willing to pay £5 per day toward provincial hotel accommodation, the room bill was £4 10s. so that left ten shillings per day for diversion which consisted primarily of warm English bitter. As Charlie Brown would say 'Warm beer — good grief', but strangely enough it does not taste as good iced cold. Mind you, good is relative.

After those sixty-two days, with a great sigh of relief we moved into quarters. And the first response, typical of naive Americans;

'Where is the furnace?'

'How do you heat this place?'

'You mean this little fireplace heats the whole house?' and thus it went, finally a harried families officer made an unseen hasty exit from the garden door leaving me with one cold fireplace. After a week of soot filled lungs, a dozen dirty shirts, and a very dusty living room lounge, I mastered the fire-place, and I could then turn to the coke stove in order to get the hot water to wash up the fireplace mess. Another week and the coke stove was mastered so much so that the hot water tank bubbled and gurgled all through the night waking up the children and convincing me that all was not well and soon the whole place would be blown into a polar orbit.

In retrospect our family history calls that fortnight the 'fortnight of epithets and curses' and to be sure the term is correct for hardly a soul on camp missed hearing a curse bursting forth from our humble quarter during that period. No sooner was that over than a new challenge appeared, it steadily grew colder and colder and colder outside and so did the quarters inside. Up went the poly-thene, another pair of draperies was placed on the windows and tape was put over all the cracks in the plaster. Never before had we developed such an aversion to fresh air, never before had we encountered so much fresh air. Thus battle lines were drawn and by the second year victory was ours. We can state categorically that not a single case of frostbite was reported in our quarter.

Sarcasm aside, these things are all superficial, I was seconded here to teach not to be warm. It is the people who matter anywhere and it is the people who mattered at Cranwell. What a superb place this is, what a homely, friendly, personal place it has been for us.

General Observations

One of the last *New York Times* leaders I remember reading in August of 1967 concerned the perilous state of the British economy. Sterling was supposedly overvalued and the balance of payments was in a shocking condition. I have been privileged to watch the whole cycle, from deficit to surplus in international trade, from devaluation of sterling to revaluation of the Deutsch Mark and, from pseudo wage-price controls to price rises and wholesale demands for wage increases. And it was with some smugness that I read last month in the *International Herald Tribune*

that Great Britain is producing the economic miracle of the seventies. But the International Monetary Fund cautions that intemperate wage awards could wreak havoc upon this economic bliss. So be it, but one cannot argue against increases for nurses, teachers and others who seem so woefully underpaid. After all European wages are rising also, even those in Italy, so British goods should not become disproportionately dearer. Overall, the situation to avoid is the American one where inflation continues at a rate about 6% for the second year running. American goods have become much dearer, the demand for imports, mainly British and Japanese, has skyrocketed, and those on fixed incomes, i.e. pensions, suffer terribly. I only hope that the American experience does not produce a great hue and cry in Washington for increased protectionism which, as we know from the 1930's, damages nearly everyone. I have become a firm believer in reciprocal moves toward freer trade situations.

Watching the economic situation here has been only slightly more interesting than observing a British Government in its last year of office. And unless Mr Wilson makes the Common Market the primary election issue, surely this must be his last year in Downing Street. This strikes me as a peculiar situation for democracy, surely a set fixed date of general election is fairer to all concerned. Why should the reigning government be able to choose the most propitious time for an election? I am not convinced that this advantage balances the out-of-power support that normally accrues to the other major party. But on the other hand perhaps this works better than the 'lame duck' period confronting American political machines in their last year of office. Likewise, I was pleased to see the news photo of Edward Heath scanning Joe McGinness's best selling political pseudo-history 'The Selling of the President'. Especially a few weeks later when the Tories marched out of conference with the old Nixon 'Law and Order' banner. Is there a crime wave, is there disrespect and disregard for the law? I am not sure; I have seen the statistics and heard the arguments, but I still remain unconvinced as to the relevancy of the issue. Not so is the case with the racial issue. There is a racial problem in the United Kingdom, not nearly as dangerous as Mr Powell would lead us to believe, but serious enough

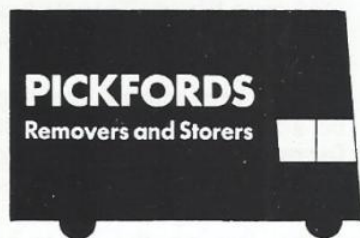
to halt further immigration, both Indian and Irish, for that amount of time necessary for the population to adjust and the Race Relations Board to accomplish its assigned task. Can anything be more frightening, regardless of how sophisticated we are, than to witness the collapse of the old order, the weakening of established values and general change in accepted tradition? Change is good for all of us but not overnight. The most successful examples of integrated communities in the United States have been those where one or two coloured families live among ten or fifteen white ones. And in these cases the new culture, amalgamation or what have you that results is more diverse, valid and interesting than its predecessor. Surely this is our aim.

On the whole my feelings upon departure are mixed. The BBC will be sorely missed. I have never been privileged to witness so many good plays on the television, or for that matter so many bad ones, but at least I have seen real theatre rather than Gunsmoke, Lucy and Peyton Place. I will not miss the Forsytes

but I will miss the Zola, Elliott, Hardy and other serialized productions. Most of the musical programmes have been excellent; such extravaganzas as the 'Miss World' contest, which, for example, is as trite as its counterpart 'Miss America'. I have missed the 'advert' so just to return some normality to my existence I must turn to Anglia or Yorkshire once per week to get back some perspective. Be that as it may, television is good here and I would commend the BBC.

One cannot leave the United Kingdom without some comment on the weather. I have never been physically this close to the North Pole, and at times I felt we were on top of it, and I do know why a 'sunshine holiday' has so much importance to the British. However, it could be worse, two feet of snow in New York city or 60 days of freezing in Berlin. What else can one say?

Three years in the United Kingdom is a valuable experience. It is the relevancy of civilization. We 'colonials' could do worse.



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A VISIT TO THE TECHNICAL ACADEMY OF THE GERMAN AIR FORCE — NEUBIBERG



The Cranwell Party with their Hosts.

On Monday, 13th October, 1969 a party of three Department of Engineering staff officers and eight engineer officer students commanded by Wing Commander C. L. Parkinson left Cranwell to start a four-day visit to the German Air Force Technical Academy at Neubiberg. This visit was by way of being a return match, since staff and students of the Technical Academy had previously visited Cranwell in October 1968.

After a pleasant flight in an Air Support Command Andover, we arrived at Neubiberg on the late afternoon of Monday, where we were greeted by Brigade-general Alslert, the Commandant of the Technical Academy, and the staff and students of the Academy who were to look after us during our stay.

After the introductions were over, we were ushered into our immaculate and comfortable German Air Force Mercedes bus, which was to be 'our' bus for all the many trips we made during the rest of our stay. This bus had been specially fitted with an intercom. system, which proved to be a useful aid during

the guided tour which followed of the Neubiberg base.

After settling into our accommodation, we attended a formal welcome which had been arranged for us in the Officers' Mess, which gave us the opportunity to meet many more of the staff of the Technical Academy. After an excellent dinner, the party swiftly became a good deal less formal, with our hospitable hosts losing no time in introducing us to the delights of the splendid German beer.

The following morning we set off for a sight-seeing tour of Munich — an historic and beautiful city, and clearly a very prosperous one. It was interesting to see the extensive reconstruction work, particularly in expanding the city transport system, which was under way in preparation for the 1972 Olympics. At mid-day our tour brought us to the City Hall, where we were joined by Brigade-general Alslert for a reception which had been arranged for us on behalf of the Munich City Council. Next we were off to the Old Pinakothek, which is one of the six largest art

galleries in the world, and where we were expertly guided round a fabulous collection of paintings which included originals by Rubens and Holbein. Our tour ended with a visit to the Television Tower from the top of which we had a magnificent view of Munich, and in particular of the Olympic Games site, where construction of the various arenas and stands is well advanced.

Our next port of call was the Monastery of Andechs, some 20 miles into the country from Munich. This Monastery appears to be more famous for the beer it brews rather than for its religious dogmas, and after an excellent meal at a local restaurant we were able to sample this beer, which came in two-litre steins. It has the appearance and consistency of Guinness, and was strong — very strong. The writer's recollections of the remainder of the evening are a trifle hazy . . .

The following morning a rather subdued Royal Air Force contingent foregathered in our bus for a trip to the nearby Bollsnoy factory. Dark glasses were much in evidence, and conversation was spasmodic.

Thursday was taken up with a trip which was for all of us the high spot of our stay in Germany. This was a bus trip through the Bavarian Alps to Bad Reichenall, an extremely picturesque spa town. The journey of nearly 90 miles was through countryside of outstanding beauty, the Alps standing out sharply in the crystal-clear atmosphere.

Once at Bad Reichenall, we were conducted round the local brewery — the Bungerbrau —

by the Brewmaster. Thereafter we had an interesting tour round a local salt factory, one of the oldest established in Germany.

The day ended with a really excellent dinner, which had been arranged in a hotel owned by the brewery, at which we were given ample opportunity to sample the brewery's products.

Friday was the last full day of the visit, and the morning was taken up with a briefing on the aims and organisation of the Technical Academy, followed by a tour round the very fine Academy building.

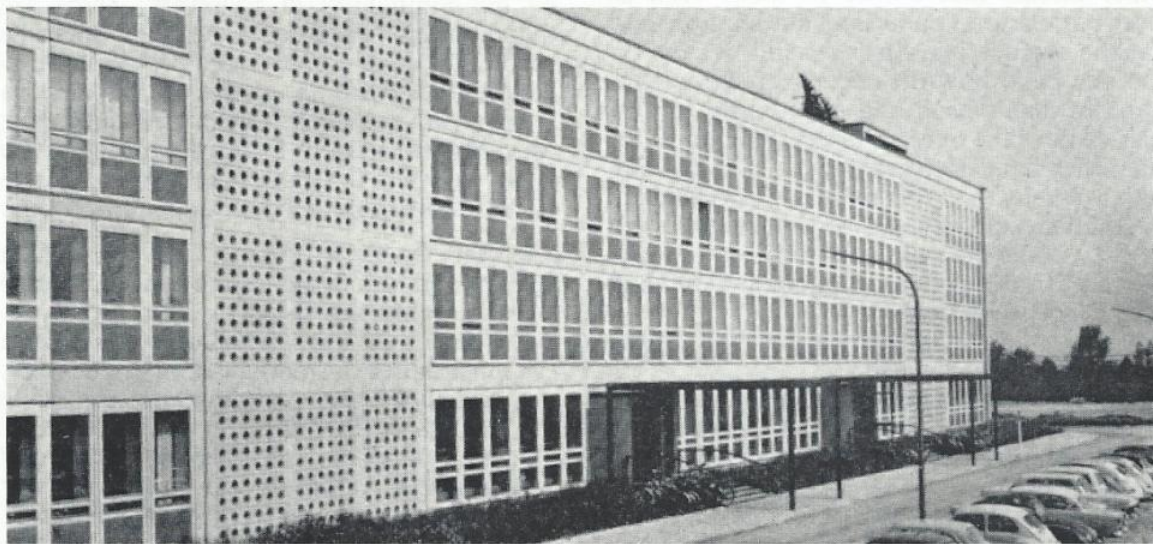
The afternoon was devoted to a shopping expedition into Munich, with our hosts advising us on what was best to buy.

The Munich shops all appeared to be of a consistently high standard, with prices comparable to those in the United Kingdom.

For the final evening of our stay, the planned programme was changed to allow a farewell party to be held in the Mess, where we were able to return some of our hosts hospitality through the provision of two gallon jars of scotch, and also present a copper salver to the Academy to mark the occasion of the Cranwell visit.

The party was a success.

The following morning, the Cranwell party gathered in the mess for final farewell drinks with our hosts prior to our return flight to the United Kingdom. Champagne was produced, to bring a fitting close to what had been an outstandingly enjoyable and instructive visit, made the more so by the great lavishness and hospitality of our hosts.



The Technical Academy.

MAN'S PREDICAMENT AND THE RELEVANCE OF CHRISTIANITY

by WING COMMANDER S. EVERALL, MA.

(The following article is the substance of a talk given to 100 Entry Engineers as part of their Liberal Studies course).

Man's Predicament

When all the problems that face mankind are listed, they may be resolved generally into two main concerns. First, in common with all animals, is man's concern to survive and to reduce the pain of life. Second, unlike other animals, is his concern for a purpose. Why bother to struggle to survive, to postpone death, if there is no satisfying purpose to live for ?

The urge to survive and reduce the pain of life largely accounts for the phenomenal growth of science and technology, the advances in medicine, transport and communication. But although man in the better off parts of the world has done so well for himself in this way as to be tempted to consider himself to be the only necessary god, he has paradoxically thereby created new threats to his life which are perhaps worse than those he has conquered. By discovering nuclear energy, he has not only found an aid to survival of great value but has let himself in for the threat of destruction on a colossal scale. The same paradox can be traced in the other threats that bother us today such as over-population, pollution, automation and genetic engineering. Stranger still, we see on the one hand how the success of science has gone to man's head and encouraged him to believe he is the only necessary god, whilst on the other hand his theory that he is nothing but a product of the mindless, mechanistic evolutionary process has so shattered his ego as to vitiate his will and purpose. As Sir Kenneth Clark has said, modern man has lost confidence in himself.

Writing in the *Observer's* weekend magazine, John Davy reports :

"growing numbers of patients are crowding clinics and consulting rooms complaining . . . of ' a sense of total meaninglessness in their lives ' . . . it seems that one-fifth of all neuroses may now be of this kind . . . Professor Frankl blames a modern form of nihilism, which he calls ' nothing-but-

ness ' . . . We are, according to neo-Darwinist doctrine (nothing but) the outcome of a string of accidents ; our ultimate ancestor was some fortuitous conjunction of molecules in a primeval oceanic soup. A long chain of accidents, guided only by ' natural selection ' of favourable combinations, has produced all the ascending variety and complexity of life from amoeba to man. a growing body of scientists, led by Arthur Koestler, are challenging this nothing-but approach (or ' reductionism ' as it is properly called).

Christianity, if it is true, is highly relevant to this dire predicament of man because it explains the cause of the predicament, it offers (and ultimately ensures) a cure for the predicament, it offers every man a satisfying purpose for his life, and it restores human confidence.

Outline of Christian Message

The Christian message took time to develop. It originated about 4,000 years ago with one man, Abraham, from whom grew the unique nation of Israel out of which came Jesus, who claimed to be the Christ (or Messiah), in whose life, death and resurrection, the message became especially clear and has been propagated ever since throughout the world by his community of followers. There are today many variations of this message according to the way in which people chose to handle the teaching of the Bible and to interpret it, but if, for our present purposes, we accept the straight-forward meaning of the Bible, where it is straight-forward, we arrive at the following main points and implications:

- a. There exists a unique free will which brought into existence the entire Universe and continues to keep it in existence. Whether all the atoms of the Universe materialised instantaneously or by degrees, we do not know ; but anything is possible to such a will. This Superwill could today de-create all or part of the Universe at any moment ; could create new parts, or could will new patterns of behaviour of the old parts. Changes could be in minute steps or in big jumps. The fact that the

Universe behaves consistently enough for us to formulate laws of physics is interpreted by the Christian as a display of love towards us, for otherwise life would be intolerable. In one corner of the Universe are human beings, whilst elsewhere are other beings invisible to humans. All owe their existence to the continuous action of the Superwill whose nature they reflect in their ability to reason, to act freely (within limits), to appreciate love, beauty and joy.

- b. The Creator brought the Universe into existence for a purpose which is that all things should happen harmoniously ; a purpose which may be summarised as

Joy for the individual through mutual love and creative enterprise.

Joy is an end itself. No one experiencing joy asks for its purpose. Even five minutes of joy justifies itself. Mutual love means that all beings are to be bonded together with the Creator by love. The Creator purposes that every individual should experience joy, but that the individual himself should be seeking the joy of his neighbour. The individual's attitude to his neighbour should be what he believes to be that of the Creator to the individual himself. Creative enterprise refers to music, art, literature, science, medicine, adventures of discovery, teaching, all forms of service in business and so on.

- c. So far this purpose has been achieved only sporadically. Human beings are not co-operating properly with the Superwill. Of the invisible beings, some are totally pro-Superwill and some totally anti-Superwill. The latter have played ' merry hell ' with the Earth-world and have so tampered with human nature as to make it impossible for humans, as yet, to co-operate fully with the Superwill. Humans find that they cannot break away from self-interest to be sufficiently interested in the Superwill.
- d. The Superwill, by definition, cannot be ultimately frustrated and has taken action to achieve his purpose. About 2,000 years ago, he created a new type of human nature, a Mark II, in Jesus of Nazareth. He was distinguished from the Mark I human nature by being entirely free of opposition to the Superwill whom he addressed as Father.

- e. The anti-God power tried every means of destroying this new creation. It tried seduction, deception, torture, horror and finally death ; but failed. All this resulted only in the Mark II human developing still further by returning from the death-state with unlimited power. A few weeks later, he dematerialised for an unspecified period, at the end of which he proposes to materialise again and exercise his unrivalled authority in the then existing world.
- f. This action of the Creator was the beginning of a new race of humans. From that time onwards the Creator has been converting Mark I human natures into Mark II natures modelled on the Prototype. The conversion involves the Prototype becoming amalgamated or fused with a Mark I being. It is a little difficult to be sure as to just when this takes place. Some associate the rite of baptism with it more strongly than others, but all would agree that ' believing in ' the Prototype is essential to the process. The believer finds himself increasingly interested in the Creator's purpose and increasingly able to co-operate. The conversion is not completed until after death when the Mark I body is replaced by a Mark II body. The converting of Mark I's into Mark II's is to continue until some pre-ordained date which seems to be associated with the materialisation of the Prototype as mentioned above.
- g. The Creator proposes to complete the aim of a perfect order by finally de-creating all that is left of the opposition.

Relevance of the Christian Message

Assuming all this to be true, we now ask what relevance it has to man's predicament in the present world. Does it decrease the pain of life on this Earth or the threat of pain and misery ? Does it increase peace in the world ? Does it enable us, as individuals, to find a satisfying purpose for living ? Does it do anything about the threat of death ? Does it do anything to bring about a perfect society and environment ? Has it done anything like this in the past ?

With regard to the past the answer is a mixed one ; sometimes Christianity has been a blessing and sometimes a curse. When the latter, it has been a pseudo-Christianity

pressed upon the world by ruthless Mark I humans and has not measured up to our outline of the Faith. The genuine article has worked marvels in the past in individual lives and in communities of all sizes. It is too big a task to analyse the past record here, but there is enough in it to be vastly encouraging. For the present, Christianity is relevant for at least the following reasons :

- a. It gives a fundamental diagnosis of the cause of our problems. In any predicament it is essential to have a sound diagnosis of its cause for any progress to be made. Christianity declares that at the root of the world's problems lie the following causes :

First, the world, by and large, ignores the existence of the Superwill and therefore has no common allegiance to his revealed purpose, but rather goes its own way. This phenomenon is largely due to human beings being inherently too self-centred.

Second, the world is up against invisible, destructive, superhuman intelligencies.

This diagnosis is not at all popular, of course, especially the idea that there is something inherently faulty with human nature. The generally accepted view is that human nature is inherently good and that our troubles arise from ignorance, poverty and psychological maladjustment due to faulty upbringing. Give the people education, money and psychiatric treatment and all will be well. Many politicians have dedicated their talents to this hope only to be disillusioned, or at any rate sadly disappointed. Mr George Brown admitted to Mr Malcolm Muggeridge on television very recently that this was so for him. Professor Joad wrote (in "God and Evil") during the last war, after many years as an agnostic that :

" Evil is not merely a by-product of unfavourable circumstances ; it is too widespread and too deep-seated to admit of any such explanation ; so widespread, so deep-seated that one can only conclude that what the religions have always taught is true, and that evil is endemic to the heart of man."

He goes further in affirming his newly found conviction that we are up against an evil agent in the Universe for which we are no match :

" To be confronted with a universe which contains evil as an ultimate and ineradicable fact, to know that there is no defence against it save in the . . . weakness of one's own character . . . of one's own unaided efforts — *this I find to be a position almost intolerably distressing.*"

" I have seen that the times are wicked, and I have seen that I myself am wicked ; I have come, in other words, to have what is called a sense of sin."

" I am willing, as I once was not, to bank on the religious hypothesis being true "

- b. Christianity provides a cure for man's problems. The cure is as radical as the diagnosis. It is not an instant cure but has a long preparatory period in which we are now living, at the end of which the Creator will take drastic and effective action in the form of a great surgical operation to remove the cancer. During the present preparatory period, cancerous cells are being changed into healthy, obedient cells, which in turn should be encouraging other cancerous cells to follow suit.

- c. Christianity offers every individual a purpose for living which, for the Mark II man, is free from the worm of futility for it is not limited by physical death. Every one, whether talented or not, is invited to be a fellow worker with the Creator in promoting individual joy through mutual love and creative enterprise.

- d. Christianity offers free access to the Creator's present-day power. If it is true that the Creator's power and wisdom is available to act on man's behalf in the present-day world in response to man's appeal then clearly this is of tremendous importance. The power of prayer is unlimited because it is the power of God. It was meant to encourage us enormously when Christ said that God would move mountains if the individual could raise a mustard seed of faith, just a speck of it. ' All things

are possible to him that believes,' he said. Prayer knows of no physical boundaries or obstacles. A few people praying in a house or in a church, one man praying in his study or bedroom, can set the Will of God free to work in a summit-level conference room on the other side of the world.

To many the Christian message will seem too dependent on faith, too much of a pious hope. They will hanker for a solution to man's predicament which is more obviously practical. If only there was an educational programme that seemed assured of success, or a political programme or a scientific programme. But even if there were such panaceas, they would take years to mature and would call for faith all along the line. There is no instant cure. Christianity does *not* call men to abandon educational, political and scientific programmes, but to recognise that all programmes are going to disappoint them and fall far short of their aim unless the Creator is fully recognised as the only adequate power, and his broad purposes as the true direction in which to plan all our enterprises and upon which to make our agonising moral decisions. Every panacea, Christian or otherwise, calls for faith and

enthusiastic work to bring it to fruition. Witness the ardour of marxists. The Christian programme is no exception, though it may make greater demands on our faith, intelligence, goodwill and humility.

For the Christian message to be seen in proper perspective as the answer to man's predicament, it must be seen to deal with man's existence in a wider context than the visible universe. Even if we had a programme successful in avoiding wars, etc., we would still be faced with death which we would only have succeeded in postponing. Christianity claims to have conquered this ultimate predicament which overshadows all others. The Prototype has already demonstrated this victory and lives today on the 'other side' of death. He asserts that when a Mark I human fuses with him, then that man is also, in a sense, on the 'other side' already: 'Whoever believes in me shall never die'. The Christian programme offers a joy and a peace to the individual, when he is fused to the Prototype, which is independent of his environment come what may. Nevertheless, he is called to labour with might, main and faith for his fellowmen in this world to reduce their pain, to bring to them the Creator's purpose to live for, and to hasten the Creator's promise of total control over his Enemies.

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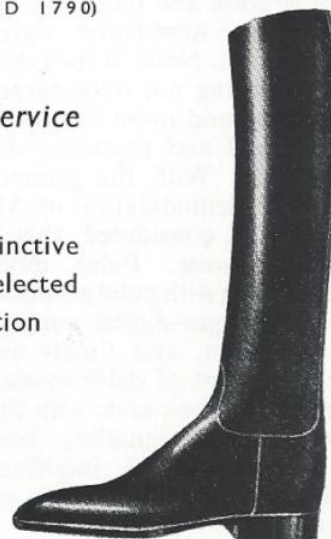
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BOOK REVIEWS

SIGNAL PROCESSING, MODULATION AND NOISE

J. A. BETTS

English Universities Press

42/-

This paper-back is the latest volume in the Science and Technology series from English Universities Press. It is a thoroughly modern treatment of basic Telecommunication System theory aimed at the undergraduate level.

As evidence of the growing confidence in the 'signal processing' approach to Telecommunications, the author has divided the book into two parts and has placed the majority of the mathematical proofs in the three appendices which make up the second part. This allows the reader to gain an immediate appreciation of the communications problem without being slowed by the important but more theoretical techniques of signal analysis.

The approach taken is one which is increasingly seen: an introduction which discusses the concept of 'baseband signals' and the general ideas behind line and radio communication followed by a detailed study of the generation and reception of amplitude and frequency modulated signals in the absence of noise. Noise is then described and analyzed by using not only parameters such as noise figure and noise temperature but by using statistical and frequency-domain properties as well. With the groundwork thus prepared, the demodulation of AM and FM signals is again considered, this time in the presence of noise. Pulse modulation is covered, starting with pulse amplitude modulation then analogue-digital conversion, pulse code modulation, and finally an unusually detailed treatment of delta modulation. The first part of the book ends with the baseband analysis of digital signalling including such topics as intersymbol interference, error probabilities, and the spectra of random-sequence digital signals.

The appendices, an integral part of the book, include time and frequency domain

analysis techniques, probability theory, correlation functions, power spectral density functions, and tables of Bessel and normal error functions.

Although intended primarily for the undergraduate student of Telecommunication Principles, this book contains material found only in scattered post-graduate level texts of just a few years ago. It is therefore a very useful reference for the practising engineer concerned with the fundamental theory of information transmission. The inclusion of exercises with answers and worked examples makes it useful for self-study as well. It is a well-written and clearly illustrated book which should be of great value to students of this subject. It would be a useful textbook in Telecommunications for degree-level electronic engineering courses as well as for post-graduate systems engineering courses, although the lack of coverage of Information Theory prevents it from being self-sufficient. Its value as a reference, too, is decreased by the tendency of the soft-cover binding to crack and pages to be lost.

J.M.Y.

TEACH YOURSELF SERIES

TEACH YOURSELF ELECTRICITY

WILMAN

E.U.P.

11/-

This is a 1969 edition of a book first published in 1942, revised so as to use 'SI units throughout'. Unfortunately the revision did not include presentation and this is consequently about fifty years out of date.

Over the past ten years or so a great deal of research has been done in 'programmed learning'. Much of it has produced results ideally suited to the 'Teach Yourself' situation. What a pity that the producers of this series have not taken notice of these results instead of turning out another text book which is mediocre by any standards.

L.L.

TEACH YOURSELF HOCKEY

E.U.P. *Hockey Association*

10/-

When endeavouring to teach what is predominantly a physical skill, albeit requiring mental application, the idea that it can adequately be covered in a book of 198 pages would cause scepticism to the most rabid 'teach yourself' enthusiast. This extremely well-written book, authorised by the Hockey Association and based on its official manual 'Hockey Coaching', makes no pretensions as to the complete coverage of the subject, but is an authoritative guide to the subject to the novice who, with playing experience would more quickly appreciate the various facets of the game, as well as being of great use to the hockey coach and to experienced players.

The book is divided into two parts : part one deals with the fundamentals of hockey and basic skills and part two covers positional play and tactics. Each part is well-illustrated and has simple, logically-developed explanations.

Anyone considering taking up this game, or players and coaches already participating, would greatly benefit from the ten shilling investment in this well-presented book.

P.C.C.

TEACH YOURSELF SHOOTING

E.U.P.

11/-

This book comprises 176 pages making up fourteen chapters written by experts 'for the express purpose of serving as an introduction to various aspects of shooting with rifles, pistols and shotguns'. The first part of this book deals with the technique of shooting including such chapters as 'Before Shooting', 'Gun Safety', 'Fullbore Rifle Shooting', 'Smallbore Rifle Shooting'. As a beginner's book it provides a good deal of useful information particularly in the realms of gun safety and methods of finding and joining a club. Though gun safety is stressed in the book, one must obviously have reservations as to the advisability of inflicting an armed man, with only this slim volume to guide him, upon an unsuspecting public. This is obviously

not the authors' intention and while one can doubt the wisdom of shooting being the subject of 'teach yourself', this book does fulfil its function of giving much more valuable information to the beginner interested in this sport, who having read it should derive even more benefit from personal instruction. The explanations and advice on the technical aspects of shooting are well written and easy to follow, illustrated where necessary with clear, simple diagrams.

The second part of the book, dealing with things shot, comprises chapters on 'Wild-fowling', 'Ground Shooting', 'the Pigeon', 'the Grouse', 'the Partridge', 'the Pheasant' and 'Deer', and packs in a mine of easily digested information and tips which the aspiring hunter will find invaluable.

A.J.G.

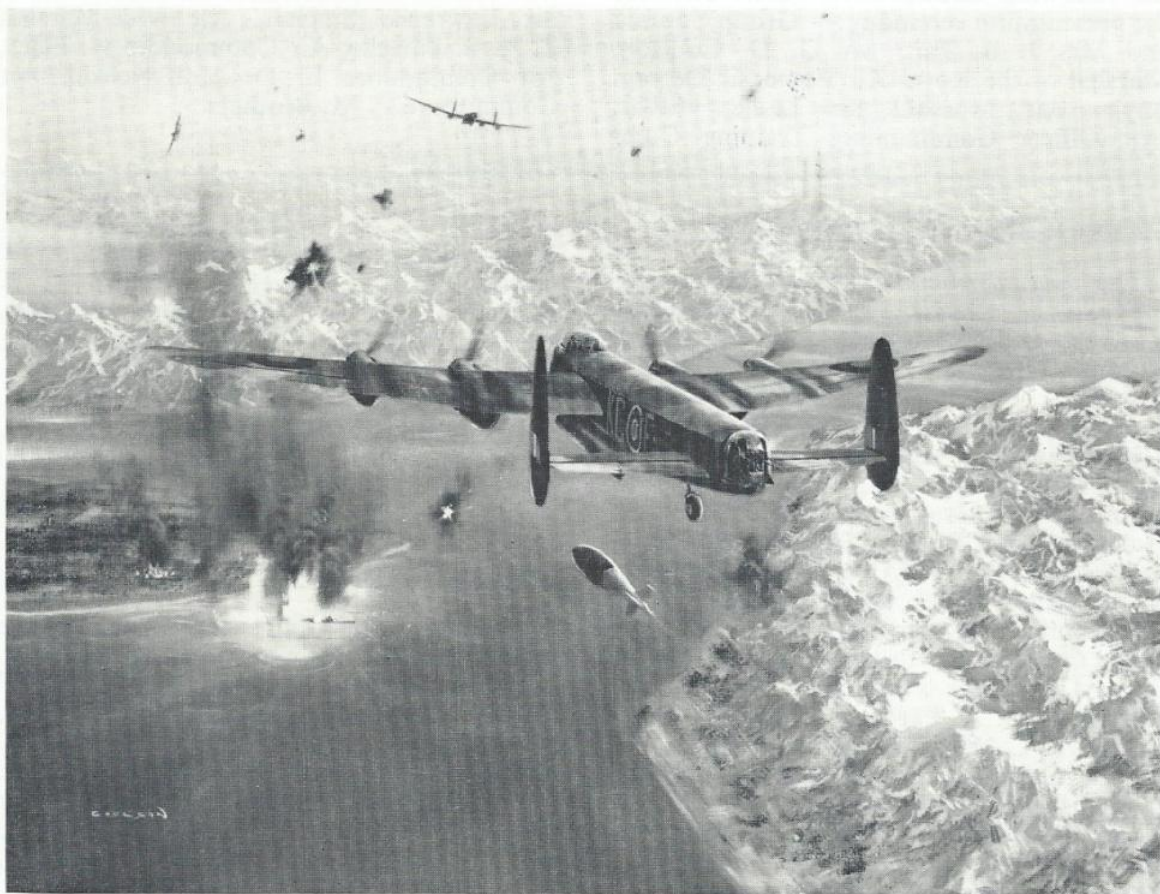
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OLD CRANWELLIAN NOTES



“The Sinking of the Tirpitz”

The painting, ‘The Sinking of the Tirpitz’ by Mr. G. D. Coulson was presented to the Royal Air Force College by Rolls Royce Limited on 7th November, 1969. The painting was handed over to the College by Sir David Huddie, Managing Director of Rolls Royce Limited and nine senior officials of the company attended the ceremony.

The plaque which accompanies the painting summarises the details of the raid on Tromso Fjord in 1944 and the part played in this splendid achievement by an Old Cranwellian, Group Captain J. B. Tait, DSO, DFC, ADC. The account of the raid is as follows:—

‘In 1944, the 35,000-ton German battleship ‘Tirpitz’, threatening the Atlantic from

the north of Norway, was damaged in attacks by the Royal Navy and by Royal Air Force Lancasters operating from Yagodnik in Russia. She was withdrawn to Tromso Fjord, bringing her within range of home-based Lancasters. On 12th November, 1944, a force of thirty-one Lancasters of No. 617 and No. 9 Squadrons, took off from Lossiemouth to bomb the ‘Tirpitz’. The raid was led by Wing Commander J. B. Tait, DSO and three bars, DFC and bar, a former flight cadet of ‘B’ Squadron from 1934-36. The bombing was executed between 12,850 and 16,000 feet in perfect weather. Direct hits were scored with 12,000 lb bombs and the ship capsized — a total wreck. As a result, the Royal Navy was then able to move its capital ships to the Far East where they were urgently needed.’

In addition to Sir David Huddie and the senior officials from Rolls Royce Limited, the following distinguished guests attended the presentation ceremony:— Group Captain and Mrs J. B. Tait, Mr G. D. Coulson, Marshal of the Royal Air Force Sir Dermot Boyle, Air Marshal Sir Leslie Mavor, (Air Officer Commanding Training Com-

mand,) Air Chief Marshal Sir Wallace Kyle, Air Chief Marshal Sir George Mills, Air Marshal Sir John Baldwin, Air Vice-Marshal Sir Lawrence Sinclair, Air Vice-Marshal T. A. B. Parselle, Air Commodore H. Eeles, Air Commodore E. D. McK.Nelson, Air Commodore P. M. Brothers.

HONOURS AND AWARDS

The *Journal* offers its congratulations to the following Old Cranwellians who received Honours and Awards in the New Year's Honours List.

Air Marshal L. D. Mavor, CB, AFC (35-37B) was made a Knight Commander of the Order of the Bath. Wing Commander H. E. Clements (48B) was made an Officer of the Order of the British Empire. Squadron Leader B. R. Kent (63A) was made a Member of the Order of the British Empire. Wing Commander P. H. Lewis was made a Member of the Order of the British Empire. The Air Force Cross was awarded to Wing Commander J. M. A. Parker (54C), Wing Commander R. C. Wood (52A), Squadron Leader M. E. Bee (73C), Squadron Leader G. C. Williams (71B), Flight Lieutenant R. D. Lightfoot (79C) and Flight Lieutenant R. C. Shuster (89C). The Queen's Commendation for Valuable Service in the Air was awarded to Flying Officer M. J. Bennee (92D), Squadron Leader E. H. Hunter (76C), Squadron Leader C. G. D. Jonklaas (54B), Flight Lieutenant K. B. Mace (85C), Squadron Leader J. W. Canning (68A) and Squadron Leader D. P. English (53C).

PROMOTIONS

To the following Old Cranwellians who have been promoted since our last issue, the *Journal* offers its congratulations.

Group Captains D. A. Arnott (50A) and M. M. J. Robinson (45B); Wing Commanders L. P. Adams (51D), E. D. Frith (62B), J. M. Lowendon (54D), J. E. Maitland (60B), F. A. Mallett (61A), K. W. Hayr, AFC (69A), F. D. Hoskins (54C), C. P. James (62B), D. Parratt (48B) and R. Smith (54D); Squadron Leaders P. F. J. Burton (79A), C. I. Carr-White (74B), A. S. Cottingham

(71B), R. A. K. Crabtree (78B), N. M. J. Fraser (66C), M. J. Barringer (77A), A. P. Hilton (64C), R. H. Holmes (76B), V. B. Howells (76A), I. F. C. Hutchinson (76B), A. R. C. Ingoldby (71C), P. J. Kemp (77C), D. J. Liggitt (77A), R. G. Meredith (75C), H. M. Stroud (75A), C. R. B. Tickell (69B), R. P. O'Brien (81C), C. S. Parkin (76B), D. M. Paul (80B), J. S. Pilgrim-Morris (74A) and A. R. Read (76A).

RETIREMENTS

The following Old Cranwellians have retired since the last issue of the *Journal*.

Group Captains T. R. Burne, DSO, AFC (38-39B), L. Rose, C Eng, FRAeS, MBIM, psa (33-34B); Squadron Leaders G. D. Andrews (73A), I. C. B. Brettell (57B), C. Crook, MBE, AMBIM (56A), J. A. Fryer (52A), D. J. Ilesley (59D) and M. A. Kelly (61A); Flight Lieutenants L. Dent (61A), I. L. Gawn (88A), F. D. A. Harlow (89C), D. H. E. Hinton (57B), F. R. Lund (54B), R. K. C. Melville (77B), M. T. Wilson (87A), W. E. Woods (57B) and M. C. Wright (78D); Pilot Officer M. S. Britton (95C).

UNEXPECTED DELIVERY !

The old education building known to generations of Cranwellians as the Taj Mahal now houses the Department of Engineering Library. In March last year the Department's Librarian ordered via 'normal channels' 15 volumes of Chambers's Encyclopaedia at a cost of £120. Despite numerous memos and telephone calls 15 volumes of Chambers's Encyclopaedia did not arrive at Cranwell despite constant assurances that it had in fact been despatched. Over a year later the obvious and simple truth emerged. From HMSO came the message that 'as far as they knew or could trace it had been forwarded in error to the Taj Mahal — in India' !!

AIR VICE-MARSHAL G. R. C. SPENCER, CB, CBE, ARAeS

We regret to announce the death of Air Vice-Marshal Geoffrey Roger Cole Spencer, CB, CBE, ARAeS, who died on 7th December, 1969. Air Vice-Marshal Spencer was born in 1901 and was educated at the Royal Naval Colleges at Osborne and Dartmouth and served as a midshipman in the First World War from 1917 to 1919. In 1920 Air Vice-Marshal Spencer joined the RAF College, Cranwell, and was one of the members of the original 1920 (Naval) Entry. He was later to rejoin the College as a flying instructor from 1931 to 1933. The outbreak of World War II found him a Wing Commander. During the war he served as a station commander, as a staff officer in Bomber Command, North Africa, and the 2nd Tactical Air Force during the invasion of Europe having risen to the rank of Air Commodore in 1943. In 1946 Air Vice-Marshal Spencer formed and commanded the Central Bomber Establishment and in 1949 was appointed AOC RAF Gibraltar. From 1950-52 he was AOC No 19 Group, Mount Batten, and SASO HQ MEAF, 1952-54. His final appointment was as Air Officer in charge of Administration at HQ Technical Training Command; in 1956 he retired. Air Vice-Marshal Spencer's early connection with the sea made him to the end of his life a most keen supporter of the RAF Yacht Club.

Our sincerest condolences are offered to his family.

IN MEMORIAM

Flight Lieutenant M. J. Dunlop (80C) who was killed in a road accident on 26th November, 1969. Flight Lieutenant Dunlop was serving on 54 Squadron at Royal Air Force Coningsby.

Flying Officer A. T. Carter (93B) was killed in a flying accident on 3rd January, 1970, whilst attached to Royal Air Force Valley.

We extend our deepest sympathy to the families of the deceased.

THE
ROYAL AIR FORCE
COLLEGE



JOURNAL

CRANWELL

DECEMBER 1970

VOL XLII No. 2

THE ROYAL AIR FORCE COLLEGE JOURNAL

DECEMBER 1970

VOL XLII

No. 2

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*Her Majesty Queen Elizabeth II, Commandant in Chief of the Royal Air Force College
inspecting the Ceremonial Parade held in her honour 12th June, 1970*

50 YEARS AGO
Royal Air Force
Cadet College Magazine

Foreword by

THE COMMANDANT OF THE ROYAL AIR FORCE COLLEGE
AIR VICE-MARSHAL F. D. HUGHES, CBE DSO DFC AFC MA

In writing this brief foreword to the Fiftieth Anniversary edition of the Royal Air Force College Journal, I am privileged to find myself in very distinguished company.

In September, 1920, when the 'Royal Air Force Cadet College Magazine' first appeared, Lord Trenchard wrote the following words :—

' I hope this magazine will live and prosper . . . '

That it lives is self-evident; that it has prospered is reflected in its circulation of four thousand copies, distributed throughout the world to the military academies of many nations, to academic institutions and of course to Old Cranwellians serving and retired wherever they may be.

Wherever it is read the Journal reflects the ideas, attitudes and way of life of the Royal Air Force College. As the College enters its fifty-first year our task and the way we accomplish it are as vital as ever to the Royal Air Force and to the nation. The chronicle of our efforts and achievements will be provided, as ever, by the Journal, and I wish it every success in fulfilling this valuable role in the years to come.

50 YEARS AGO

Royal Air Force

Cadet College Magazine

VOL. I.]

SEPTEMBER, 1920.

[No. 1.

This is the first number of the ROYAL AIR FORCE CADET COLLEGE MAGAZINE, and I would like to write a few words.

I hope this magazine will live and prosper, and be a great help in forming and guiding the destinies of this College.

It was decided to form this Cadet College because it was realized from the first that such a College was the essential foundation of a separate Air Service. This College, in conjunction with the School of Technical Training for boys at Halton, will have the making or marring of the future of this great Service, which was built up during the war by all the gallant Pilots and Observers and other ranks who fought through it, and won a name in the air second to none in the world. It always held, and finally conquered completely, the German Air Service. If it is to continue its great work, which I am convinced we all intend that it shall do, we all realize that it has to live up to its war reputation, and we must ensure by every means in our power that it does so.

We have to learn by experience how to organize and administer a great Service, both in peace and war, and you, who are at present at the College in its first year, will, in future, be at the helm. Therefore you will have to work your hardest, both as Cadets at the College and subsequently as officers, in order to be capable of guiding this great Service through its early days, and maintaining its traditions and efficiency in the years to come.

H. TRENCHARD.

It pleases me very much to think that the R.A.F. Cadet College is to have a magazine of its own, and I hope that it will achieve the most complete success.

The Chief of the Air Staff has already sent you a message, the sentiments expressed in which I entirely endorse.

Nothing that has ever happened in the world before has offered to man such an opportunity for individual personal prowess as the air fighting of the Great War. Fiction has never portrayed such extraordinary combats, such hairbreadth escapes, such absolute superiority to risk, such dazzling personal triumphs. The devotion and courage of the airman was no higher than that of his comrade on the land or on the sea ; nor were his trials or sufferings greater. But the battle to the death in the high air called forth a combination, for the purposes of war, of spirit, eye, and hand more complete and more harmonious than any previously believed to be within the range of human nature.

It is to rival, and no doubt to excel, these feats of your forerunners in the Service that you are now training yourselves, and I, for one, look forward with confidence to the day when you who are now at the College will make the name of the Royal Air Force feared and respected throughout the world.

WINSTON CHURCHILL.



**THE CHIEF OF
THE AIR STAFF,
AIR CHIEF MARSHAL
SIR JOHN GRANDY,
GCB KBE DSO RAF**

It is a great pleasure for me to contribute a foreword to the 50th Anniversary Edition of the College Magazine.

Lord Trenchard founded this College to meet the challenges of a young Service. He realised that, above all, the Royal Air Force needed officers with imagination and flexibility of mind to understand the potential of air power — and the determination to apply what they believed. These qualities had to be developed from the earliest days of training and this is what Cranwell geared itself to do. In meeting this responsibility Cranwell has faithfully reflected the spirit on which the Royal Air Force has been built.

The fighting traditions of the Royal Air Force in two world wars have been second to none. But we have also forged a reputation in peace no less to be admired and on which our traditions can continue to flourish. During the second 25 years of Cranwell's life our country has not been involved in any major war, but the Royal Air Force has nevertheless taken part in a large number of diverse operations, large and small, on many fronts worldwide. No doubt there will be others as the second fifty years of Cranwell's life unfold.

Cranwell training has undergone many changes during the last few years. The Service is ever ready to accept the need to introduce change and to adjust to changing circumstances. This is one of our strengths ; one which Cranwell itself has always recognised.

Those at Cranwell today are fortunate to be there during this historic year. I wish you all every success in the splendid life you have chosen.

THE PARLIAMENTARY UNDER-SECRETARY OF STATE FOR DEFENCE FOR THE ROYAL AIR FORCE

Mr. Antony Lambton M.P.



The splendid reputation which Cranwell has acquired over the past 50 years has rested on two foundations : first, on the need to produce officers of the highest calibre and ability and, secondly, on the need to adapt to changing times.

Greater changes are now taking place in your training pattern than ever before. This is largely a reflection of the increasing rate of change of technological progress in a society whose academic standards are daily increasing. The need for the Royal Air Force to appreciate and keep abreast of these changes requires trained minds possessing both knowledge and flexibility of thought.

The cost of defence equipment and manpower is always rising ; it will continue to do so. The problem of obtaining the greatest value from limited resources is, thus, an ever increasing challenge to us all. The need for technological innovation in facing this problem is readily recognised ; what is often forgotten is that man-management is equally important. The Man is still the greatest single factor in the strength of your Service and good leadership is therefore as valuable an asset as ever. The contribution which Cranwell has made to the high standard of leadership which the Royal Air Force has enjoyed during the past 50 years cannot be over-estimated. I am confident that this fine tradition will continue.

In choosing to serve in the Royal Air Force you are embarking on a career which will be full of both challenge and adventure. My best wishes go to you all.

12th JUNE, 1970

MESSAGES OF CONGRATULATION

FM MOD NL AIR THE HAGUE
TO RBDWC/COMMANDANT RAF COLLEGE CRANWELL SLEAFORD
LINCOLNSHIRE GREAT BRITAIN
INFO ZEN/NETH AIR ATTACHE LONDEN
BT
UNCLAS A 10047
ATTN PERSONAL TO AIR VCE MARSHAL F.D. HUGHES FROM
LT-GENERAL A.B. WOLFF
MY SINCEREST CONGRATULATIONS WITH THE 50TH ANNIVERSARY
OF YOUR COLLEGE EARLY THIS YEAR AND WITH THE HONOUR THE
QUEEN IS TAKING THE PARADE ON THIS OCCASION ON JUNE 12TH 1970
BT

FM RAF SHARJAH
TO RAF COLLEGE CRANWELL
BT
UNCLAS LDBI626 PERSONAL FOR COMMANDANT PD THIRTY SEVEN OLD
CRANWELLIANS SERVING IN GULF REUNITE AT SHARJAH 12 JUN 70
PD THEY WISH TO CONVEY THROUGH YOU LOYAL GREETINGS
COMMANDANT IN CHIEF HER MAJESTY THE QUEEN CMN AND TO
YOU AND ALL CRANWELLIANS BEST WISHES ON THE OCCASION
OF FIFTIETH ANNIVERSARY
BT
C WA OLD CRANWELLIANS

FM ANKARA
TO RAF COLLEGE CRANWELL
BT
UNCLAS TELNO RTT 188 DATED 111330Z FOR COMMANDANT FROM
UKPMD. PLEASE TELL PATRON AND PRESIDENT OCA HOW SORRY
WE ARE NOT TO BE WITH YOU AT THIS TIME. ALL GOOD LUCK
WITH THE WEEKEND AND HOPE THE SUN KEEPS SHINING.
OTHERS ASSOCIATED WITH CRANWELL HERE IN ANKARA JOIN
WITH US IN GOOD WISHES FOR OLD CRANWELLIANS.
THESE INCLUDE TURKISH AIR FORCE LIEUTENANT GENERALS TUNCCEL,
DURAL AND OZAYDINLI TRAINED CRANWELL 1942 and GROUP CAPTAIN
BUTT, 62 ENTRY. PAKISTAN AIR ATTACHE HERE.
BT
C WA OLD CRANWELLIANS

From: Group Captain A. F. Tucker

New Zealand High Commission

New Zealand Defence Liaison Staff
New Zealand House
Haymarket
London SW1
Whitehall 8422 Telex 24368

Reference DO. 2/4/6

4 June 1970

Air Vice Marshal F. D. Hughes, CBE, DSO, DFC, AFC, MA, RAF,
Air Officer Commanding and Commandant,
Royal Air Force College,
Cranwell, Sleaford,
LINCOLNSHIRE.

Dear Air Marshal,

The Chief of Air Staff of the Royal New Zealand Air Force, Air Vice Marshal W. H. Stratton, CBE, DFC, has directed me to forward the following message to you: -

"On the occasion of the Fiftieth Anniversary Celebrations of the College on 12 June, 1970 I would like you to accept the very best wishes of the Royal New Zealand Air Force. Our past ties are warmly remembered not only by those members of the Royal New Zealand Air Force who have had the privilege of attending College courses, but by the Service as a whole which has benefited so greatly. The Royal New Zealand Air Force congratulates you on the fine record and proud traditions which you have established during the highly successful and rewarding years you now celebrate."

Yours sincerely,

Fred Tucker.



Ceremonial Parade : The Queen's Colour being paraded in slow time.

1920



1970

50TH ANNIVERSARY

Visit of

HER MAJESTY
THE QUEEN

and

HIS ROYAL HIGHNESS
THE DUKE OF EDINBURGH
to the
ROYAL AIR FORCE COLLEGE

Cranwell

12th June, 1970

THE ROYAL VISIT

At 1120 hours on the morning of Friday, 12th June, 1970, the Royal Standard was broken simultaneously at the College flagmast and at Station Headquarters, to mark the arrival of the Royal Aircraft bringing Her Majesty the Queen and His Royal Highness the Duke of Edinburgh to Cranwell on a Royal Visit to commemorate the fiftieth anniversary of the founding of the Royal Air Force College.

The Royal Party was received at the airfield by the Earl of Ancaster, TD, JP, Her Majesty's Lieutenant for the County of Lincolnshire, who presented the following officers to Her Majesty :

Air Chief Marshal Sir John Grandy, GCB, KBE, DSO, Chief of the Air Staff.

Air Marshal Sir Leslie Mavor, KCB, AFC, Air Officer Commanding-in-Chief, Training Command.

Air Marshal Sir Andrew Humphrey, KCB, OBE, DFC, AFC, Air Member for Personnel.

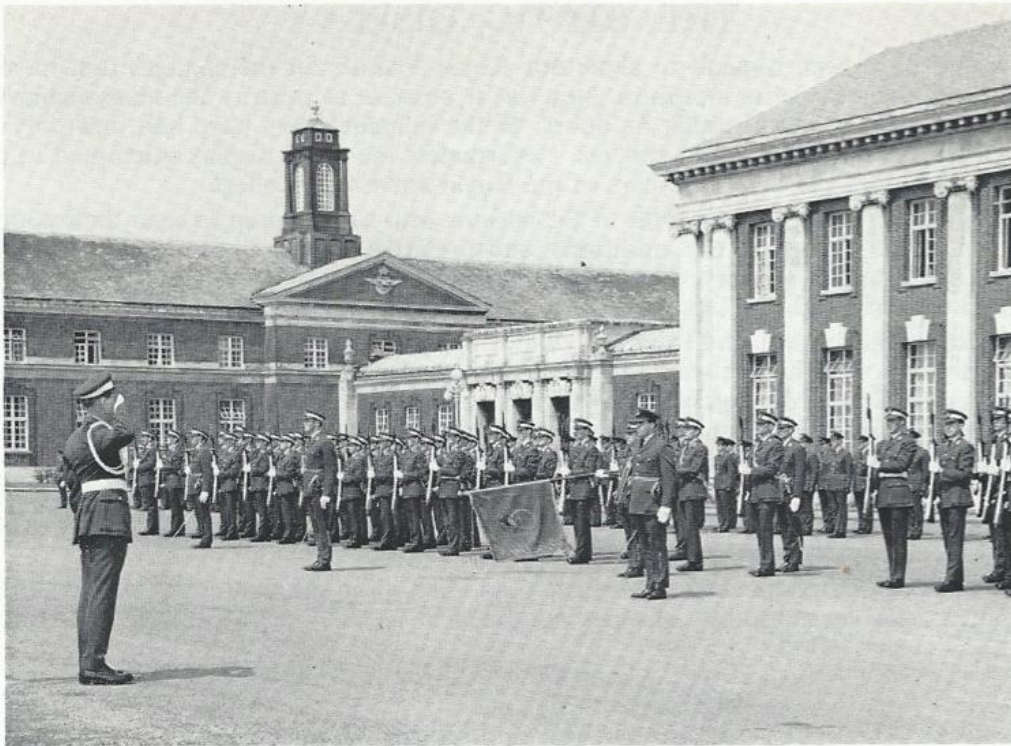
Air Vice-Marshal F. D. Hughes, KCB, DSO, DFC, AFC, MA, Air Officer Commanding and Commandant, Royal Air Force College.

Air Commodore J. E. Bazalgette, DFC, MBIM, Assistant Commandant (Cadets) Royal Air Force College.

The official reception over, the Royal Party then drove to the Orange for the Ceremonial Parade. As the Queen, escorted by the Commandant and the Duke of Edinburgh accompanied by the Assistant Commandant approached the dais, Jet Provost aircraft flew over in '50' formation. Her Majesty was received by a Royal Salute and was then invited by the Parade Commander to inspect the Parade. The College is honoured in having Her Majesty the Queen as its Commandant-in-Chief and on this occasion the Queen's Colour Escort Squadron was formed of Flight Cadets with Officer Students forming two supporting squadrons.



The Royal Party arrives at the Parade Ground as the '50' formation flies in salute overhead.



The Ceremonial Parade — ‘ Royal Salute ’

COMPOSITION OF THE CEREMONIAL PARADE

Parade Commander	Flying Officer R. W. Hooper
Parade Adjutant	Flying Officer R. J. C. Dawson
Parade Warrant Officer	Warrant Officer J. Garbet

COLOUR PARTY

Colour Bearer	Under Officer C. J. Kennedy
Escorts	Flight Cadet C. D. Poate
	Flight Cadet I. S. Cartwright-Terry
Colour Warrant Officer	Senior Flight Cadet I. D. Vacha

ESCORT SQUADRON

Commanding	Senior Under Officer D. J. Edington
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No 1 SUPPORT SQUADRON

Commanding	Flying Officer J. M. Joint
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No 2 SUPPORT SQUADRON

Commanding	Pilot Officer D. S. Pollard
Commandant's Orderlies	Flight Cadet I. P. Burn
	Flight Cadet H. G. Britten-Austin

The Student Officers and Flight Cadets of the
ROYAL AIR FORCE COLLEGE

THE BAND OF THE ROYAL AIR FORCE COLLEGE

The Director of Music	Flight Lieutenant D. S. Stephens, LRAM, ARCM, BCM
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THE STATIC DISPLAY

It would have been difficult to show our Royal Visitors all the changes that have taken place at the College since its inception. Nor was it possible to portray the many achievements of those who have passed through its doors, or the influence they have had, not only on the Royal Air Force, but in far wider spheres. Nevertheless the static display attempted to present an overall picture of the first fifty years of the Royal Air Force College.

A map of the world showed some of the nations who have chosen to send their young men to Cranwell to be trained in our traditions, and prepared for the highest ranks in their own Services. The Founders' Gallery, dominated by a huge portrait of Lord Trenchard, paid tribute to the men who inspired and led the College in its difficult early years.

Then came the aircraft and training syllabus of the 'twenties and 'thirties, with pictures of the accommodation as it then was, followed by a montage depicting Cranwell in its role as a Flying Training School during World War II. The 'modernisation' of Cranwell in the 'fifties and 'sixties was symbolised in a display depicting the thirty-six, or more, aircraft that have been used to train pilots and navigators at the Royal Air Force College.

In designing the Gallery of Fame, the choice was almost limitless but those who were included served, not only to recall their own prowess and heroism, but also to represent the deeds of others, equally worthy who could not be included.

The whole mood of the display was aptly summed up in the final item; an extract from a poem, taken from an anthology of verse compiled in 1938 by a staff officer and three flight cadets :

' How can they know that joy to be alive
Who have not flown ?
To loop and spin and roll and climb and dive
The very sky one's own.'



Photo by courtesy of Grantham Journal

Squadron Leader W. P. Jago, leader of the 'Poachers' aerobatic team is presented to Her Majesty during her tour of the Static Display. Accompanying Her Majesty are the Commandant and Wing Commander Northmore.

Following the visit to the Static Display the Royal Party drove to College Hall where the Queen was received by the President of the Mess Committee, Wing Commander W. F. Knapper. Marshal of the Royal Air Force Sir Dermot Boyle, GCB, KCVO, KBE, AFC, then presented the Queen with a gift of a silver chalice on behalf of the Old Cranwellian Association. Mr. D. Birch the Lincoln silversmith who made the chalice was one of the many guests presented to the Queen and the Duke of Edinburgh before and after the official luncheon. During the luncheon the Queen's Colour stood in its traditional position above the Top Table where Her Majesty the Queen, His Royal Highness the Duke of Edinburgh and the other members of the Royal Party were joined by the following distinguished guests :

Air Chief Marshal Sir John Grandy, GCB, KBE, DSO and Lady Grandy.

Air Marshal Sir Leslie Mavor, KCB, AFC and Lady Mavor.

The Earl of Ancaster, TD, JP.

Air Vice-Marshal F. D. Hughes, CBE, DSO, DFC, AFC, MA and Mrs. Hughes.

Marshal of the Royal Air Force Sir Dermot Boyle, GCB, KCVO, KBE, AFC and Lady Boyle.

Air Marshal Sir Andrew Humphrey, KCB, OBE, DFC, AFC and Lady Humphrey.

Air Chief Marshal The Earl of Bandon, GBE, CB, CVO, DSO and The Countess of Bandon.

The Right Reverend K. Riches, DD, STD Lord Bishop of Lincoln and Mrs. Riches.

Air Commodore J. E. Bazalgette, DFC, MBIM and Mrs. Bazalgette.

After luncheon The Queen and the Duke of Edinburgh paid a short visit to St. Michael's Church before going on to the final event of the day which was fittingly, a Flying Display. The Display featured a fly-past of historic aircraft, all of which had seen service at the Royal Air Force College, and ended with a display of formation aerobatics by the college's current aerobatic team the 'Poachers.'

At the end of the Flying Display Her Majesty was presented with a bouquet by nine years old Miss Kim Herd. The Official Reception Party, led by the Earl of Ancaster then escorted The Queen and The Duke of Edinburgh to the Royal Aircraft. As the Royal Aircraft took off at 1500 hours the Royal Standards were lowered at the College and Station Headquarters.



Her Majesty The Queen says farewell to the Commandant, watched by the Earl of Ancaster, TD, JP and Air Marshal Sir Leslie Mavor, KCB, AFC.



The Royal Visit





12th June, 1970





BUCKINGHAM PALACE

13th June, 1970.

My dear Commandant,

The Queen, as your Commandant-in-Chief, has asked me to convey to you and to all at The Royal Air Force College, Cranwell, her warm appreciation for a splendid day on the occasion of the Golden Jubilee of the College. Her Majesty was most impressed by the outstanding smartness of the parade and wishes to congratulate all those concerned.

The Queen and The Duke of Edinburgh were delighted to have this opportunity of seeing so much of the College and of meeting so many former members, staff, student officers and cadets. They greatly enjoyed the static and flying displays and an excellent lunch, and were very pleased to see St. Michael's Church. I have written separately to Marshal of the Royal Air Force Sir Dermot Boyle to convey Her Majesty's thanks for the lovely silver chalice from The Old Cranwellian Association.

The Queen has also asked me to say how pleased she is that The Prince of Wales will be joining the College next year.

*Signed - your sincerely
Philip Moore*

THE GRADUATION OF No 98 ENTRY

The Graduation Parade of No 98 Entry took place on the morning of 31st July, 1970. The Reviewing Officer was Marshal of the Royal Air Force Sir Dermot Boyle, GCB, KCVO, KBE, AFC. The parade was commanded by Senior Under Officer D. J. Edington and the Parade Adjutant was Senior Flight Cadet J. Harrington. The Sovereign's Squadron was commanded by Senior Under Officer C. D. O'Connell and Number 3 Squadron was commanded by Under Officer A. J. Gatland.

After the Advance in Review Order, the Reviewing Officer presented the Sword of Honour to Senior Under Officer D. J. Edington, the Queen's Medal to Senior Flight Cadet J. Harrington and the R. M. Groves Memorial Prize and Kinkead Trophy to Under Officer A. J. Gatland. He then gave the following address :

Gentlemen,

This is the second occasion on which I have had the honour and pleasure of being the Reviewing Officer of a Graduation Parade at this College. Last time it was 14 years ago and I was Chief of the Air Staff. Today it is in your 50th Anniversary Year.

Forty-six years ago yesterday I myself graduated on one of these parades. The Reviewing Officer then was Field Marshal Sir William Robertson and I see from the record that he then said to us that we belonged to the First Service of the three Fighting Services, and that everyone thought that the next war would be to a great extent decided in the air. This showed great realism and foresight on Sir William's part ; but, unfortunately, at that time very few people saw things the way he did.

I've had a fairly long and continuous association with this College for 48 years of the 50 years of its existence, and there is one simple practical point which I have learned in that time. That is — that here and now is not the time and place to expect any of you to remember anything that anyone standing here might say to you. According to the history books I heard Lord Trenchard say certain things when I was on parade here as a cadet which ultimately affected me. I wouldn't like to cross swords with the historians, but all I can tell you in absolute honesty is that I do not remember hearing these things. I was thinking about much more important, much more immediate things as you are ; and indeed I was much too modest in those days to believe that anything that Lord Trenchard might be saying about us in general would affect me in particular. When I tell you that was at the end of my first term, you will realise the height of my modesty. I am therefore going to be brief.

My first and most pleasant duty is to congratulate everyone concerned on the excellence of this parade and indeed on all the arrangements surrounding it. The flypast, the timing, on the ground and in the air, the smartness and the justifiable pride which you all show in taking part, whether as the principal performers — the Graduating Entry — or as organisers, parents or spectators ; all proud to be associated with the College — all glad to be here today — a very heart-warming occasion.

At my age and in my position in relation to this College I am going to risk making a suggestion for a small improvement in this parade ; and that is I think it is right that a flypast in honour of this occasion should be properly recognised by a proper salute from the Reviewing Officer — if not also from the assembled company. After all, a lot of skill and effort goes into that flypast, and in addition it is in a sense symbolic. It was flying that brought the Royal Air Force into being. It was because of flying that this College was founded, and it was by flying that the Royal Air Force saved this country from disaster in the last war. Therefore I say — ' Salute the Fliers, and don't forget what we owe them.'

As you will all know only too well, great changes are taking place in the organisation of this College at the present time. Changes are absolutely essential if we are to keep ahead of the changing conditions in which we live. The Royal Air Force has always been forward thinking. In fact the technology in which we operate compels us to be so, but we must try and ensure that in the midst of change we retain the essentials while merely modifying the methods of achieving them.



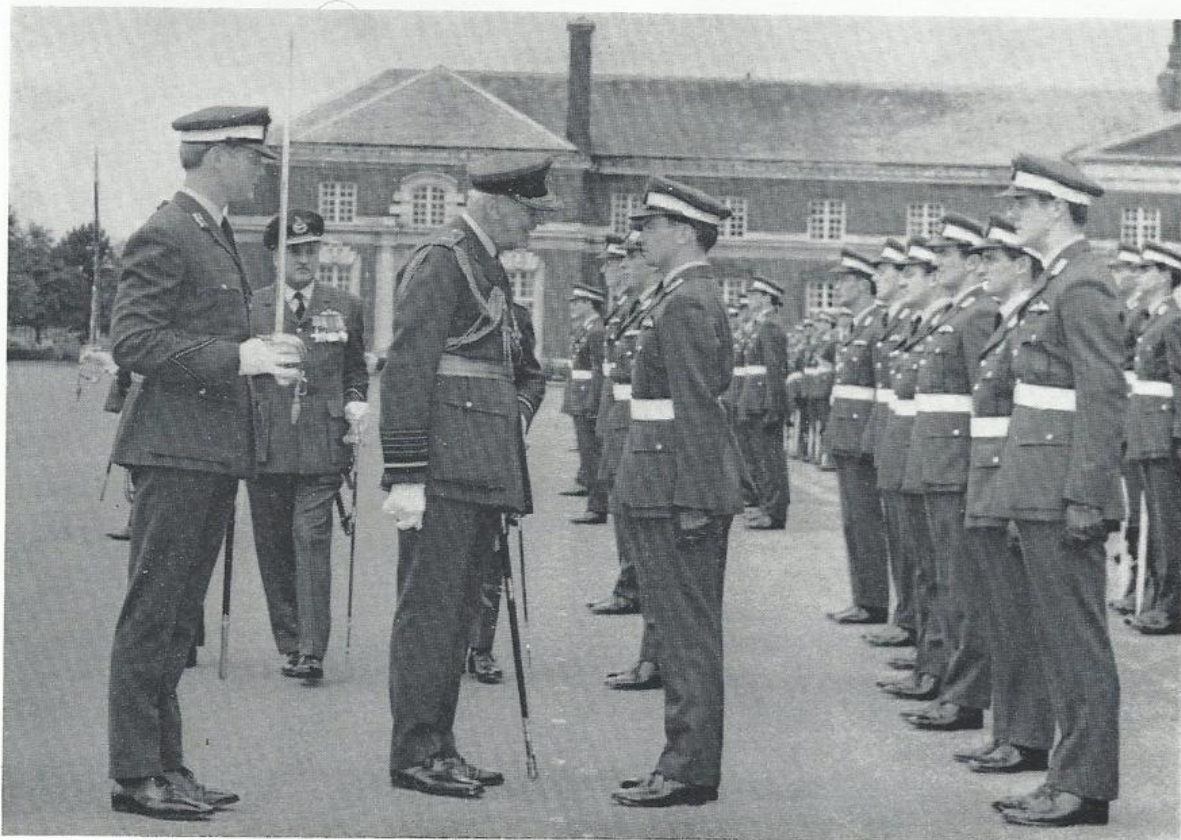
The Reviewing Officer with Under Officer A. J. Gatland, Senior Under Officer D. J. Edington and Senior Flight Cadet J. Harrington.

There are three essentials as I see it for any cadet graduating from this College. The first is dedication to the Royal Air Force, the Service of your choice. Then full recognition and acceptance of the responsibilities and loyalties which fall to you as commissioned officers. This is of ever increasing importance since these loyalties are increasingly being challenged throughout the world, and finally professional competence in the branch of the Service for which you have been trained. These are the stepping stones to higher rank in the Service, but there is one further very important quality when you reach high rank. That is, that you should be able to argue the Royal Air Force case. Trenchard did this through foresight, faith and determination. He had virtually no proof as to what the air could do but he foresaw quite rightly (as history later showed) what air power — or the lack of it — could mean.

You too, I am sure, have got determination and foresight, but you also have one very great advantage, and that is unlimited proof of the dominant part played by air forces in

modern war. If you are to be successful as a negotiator for your Service in years to come, you must have all the unanswerable facts and arguments at your fingertips. The Minister of Defence is unlikely to agree to a large expenditure on equipment for the Royal Air Force unless he has first been persuaded by somebody that such expenditure is necessary. We hear much about inter-Service co-operation these days. This is nothing new, but even so I don't think we have reached the stage where we can expect the admirals and the generals to make our case for us, except perhaps in war when driven to it by dire necessity — but then it will be too late !

No, the future of the Royal Air Force must depend increasingly on the graduates from this College and your ability to argue a case that has already been proved beyond doubt in many different theatres of war, but is so easily and so conveniently forgotten in peace time. You've got to be able to re-establish the facts of war in the midst of peace — a difficult and frequently unpopular task.



The Reviewing Officer inspecting the Graduation Parade of No 98 Entry.

And now a word for 98 Entry, whose day this is. First of all, my congratulations to you on your showing on this parade. I understand that you've had a very difficult time in the midst of all the changes that have been forced upon you in the last few months, and I also understand that this has not damped your enthusiasm or your unity as an Entry, or your cheerfulness — all valuable qualities — enthusiasm, good humour and comradeship. Perhaps it is not inappropriate for me to remind you that after 50 years of output from this College you follow in the footsteps of a great concourse of men, many of them of outstanding ability — and I am not referring only to those who have publicly made their mark and are known to you all, but rather to the greater number who have never made the

headlines of success, who are probably unknown to most of you, but, in spite of that, were very great men.

Those who have known the output of this College for as long as I have would be able to name dozens of people of the kind I have in mind, and I think it is right for me to remind you of this rich heritage so that you may be proud to succeed them as graduates of this College. You now go out into the Royal Air Force, and, with every sincerity I wish you every success. Ultimately as powerful advocates for the case of your Service; immediately as dedicated men and experts in your particular Branch; and always as officers holding the Commission of our Queen and Commandant-in-Chief.



The Reviewing Officer signing the Visitors' Book.

THE WINGS AND PRIZES CEREMONY

Presentations of Wings and Prizes to No 98 Entry were made by the Commandant, Air Vice-Marshal F. D. Hughes, CBE, DSO, DFC, AFC, MA, in the Whittle Hall on 30th July, 1970.

After making the presentations, Air Vice-Marshal Hughes addressed his audience :

It gives me great pleasure to welcome all our guests to this Wings and Prizes Ceremony. I am especially grateful to those of you who have come long distances, often at considerable personal inconvenience, to be here for our two days of celebrations. I do assure you that your presence adds enormously to the occasion. It also allows me to thank you all for the support and encouragement you have given to your young men throughout their stay with us. My son came through Cranwell on 84 Entry and I well know how much parents become personally involved in their off-springs' progress. I do look forward to having you with us tomorrow, and will share your moment of emotion and pride as we see them slow-march off the parade ground to become holders of Her Majesty's Commission.

You will have observed that the three major prizes remain for presentation on the parade tomorrow. However, I am sure you would like to join with me now in congratulating the winners :

The Groves Memorial Prize and its conjoint Award, the Kinkead Trophy : Under Officer A. J. Gatland.

The Queen's Medal : Senior Flight Cadet J. Harrington.

The Sword of Honour : Senior Under Officer D. J. Edington.

Those prizes will be presented tomorrow by Marshal of the Royal Air Force Sir Dermot Boyle, our distinguished senior Old Cranwellian, and this ceremony serves to mark another important event in our Golden Jubilee Year at the Royal Air Force College.

Sir Dermot has had a very full and — need I say it — highly successful career. He passed out from Cranwell in 1924 and started his flying career on Sopwith Snipes and Woodcocks. After a tour in India he completed the Staff College course before returning to Cranwell as Chief Flying Instructor. He saw war service on Hampdens operating from nearby Scampton and then graduated to duties with the War Cabinet Office. From

here his promotion took him through a succession of important appointments including AOC of No 1 Bomber Group and C in C of Fighter Command, until he became Chief of the Air Staff in 1956. It was during this period that Sir Dermot had to put up with nearly three years of my ministrations as his Personal Staff Officer. In contrast to that severe trial, he had the great pleasure of reviewing a Passing Out Parade at the College when he presented the Sword of Honour to his son, Senior Under Officer Tony Boyle of 67 Entry, C Squadron.

As Patron of the Old Cranwellian Association he has continued to take a close interest in the future of the College and it is our privilege and my own very great pride and pleasure to welcome both him and Lady Boyle to Cranwell immediately after this ceremony.

I see from past Wings and Prizes speeches that on this occasion the Commandant is allowed the unique opportunity of giving an entirely 'captive' audience a few words of advice. This is a tradition I intend to perpetuate.

The first point I wish to bring to your attention is one that I am sure had not escaped your notice. You are starting your commissioned service in the Royal Air Force at a most interesting time in its history. The new aircraft appearing in the front line squadrons such as the Harrier, Nimrod, Phantom and Jaguar will be exciting machines to fly and operate. They bring new weapon systems, new tactics, and of course a host of new problems both tactical and technical. It is these problems that you young men will help to solve. I envy you this opportunity and wish I was starting all over again with you. But to succeed in this very professional force, you must keep abreast of developments. Keep yourselves well informed on strategic matters and scientific advances ; use some of your leisure time to read. Only by this conscious effort will both the Royal Air Force and yourself obtain the best results from our new equipment.

We are also entering a time however when I believe we may once again hear talk of take-over bids for our Service — not necessarily by our Sister Services themselves, but by well meaning but ill-informed economists. Both the Army and the Navy require us to give them aid in war. That aid must be given speedily and effectively. In peacetime, our ability to do this can only be demonstrated in realistic exercises. It therefore behoves us all to ensure that we fulfil any task we should be given in a highly operational and competent manner — and, what is more, we must be seen to understand their problems and have a burning will to solve them. In this way you will prove that the Trenchard doctrine of an independent air force is the just and right one.

My third and final point is that you should strive continually to present the Royal Air Force in the best light to the general public. Past experience shows that, in prolonged periods of peace, the Services tend to be regarded — even by people who should know better! — as a bunch of idlers who are an unnecessary drain on the nation's resources. The long-outdated image of the officer whose week-ends last from Thursday to Monday, whose working afternoons are concerned chiefly with hunting, shooting and fishing, and whose evenings are devoted to demolishing bottles of port, dies hard. Wherever you may be stationed, make it one of your aims to get to know the locals. With the consummate tact with which you are all endowed, get across to your new friends the fact that the modern Air Force is a highly efficient and professional body of chaps whose global peace-keeping role, within NATO in particular, is essential to the wellbeing of the nation.

Many of you, in a surprisingly short time ahead, will find yourselves moving in high circles, meeting Royalty, Ministers, Ambassadors, rulers of overseas territories, the 'top brass' of foreign armed forces, and local dignitaries here at home. Never forget that it will be by your behaviour on these occasions that the quality and social standing of the Royal Air Force as a whole will be judged. What may appear to you just now as irritating and old-fashioned little social conventions are an essential part of the social scene throughout the civilised world. If you fail to observe them you will soon find yourselves crossed off the local guest lists. This will deny you much

enjoyment — but, far worse, gentlemen, you will have tarnished the image of the Service in which you have been commissioned.

Now what of the gallant 98th? A quick glance at the statistics shows that they joined in April 1968, 53 strong, and tomorrow we are due to graduate 48. On the surface this would suggest the happy state of affairs that here was an Entry with only some 10 per cent falling by the wayside for one reason or another. Unfortunately, this rosy picture does not stand much examination for this Entry has achieved a remarkably high standard in cross-fertilisation! Closer scrutiny reveals that no less than 31 per cent of those due to march off parade tomorrow started with 97 Entry and that 98 Entry itself has lost some 40 per cent of its original intake!

But first let us have a quick look at the academic studies. In the Humanities they are assessed as somewhat disappointing. At that stage of development there were no outstanding personalities among its members and they were reported to be somewhat unresponsive to teach, requiring considerable provocation before any positive reaction could be obtained. That, of course, was a year ago — I suspect the provocation 'flash point' has dropped a few degrees by now!

Let's face it, their examination results could have been better. In the final Humanities examination eight cadets failed in Economics, two in War Studies, and one in Associated Studies. All of them, however, by means of the achievement of group passes or by resitting examinations, managed to qualify. But, lest they should think the Old Man is being excessively brutal, I hasten to say that there were some bright spots. Some very good work was done in Associated Studies by Stirrup and Longhurst. Harrington, who gained 80 per cent in his final Economics examination, equalled the record set for the best mark in that examination by Butt of 93 Entry. Harrington, too, won the 1969 Director of Studies Essay prize with a very good piece of work on the Arab-Israeli conflict, and I must also make mention of the very deep research carried out by Salisbury in connection with his study on 'The Negro in America.' Orwell was specially commended for his essay on Russell Braddon's attitude to war; Roberts passed the Civil Service Com-

mission's Interpretership in German, and Sudlow the Linguist examination in French. In the Royal Air Force Colloquial examination Parsons and Stockill were successful in French and Trewinnard in German.

The Languages Department proved to be a very useful travel agency for flight cadets studying languages. Apart from the usual participation in Inter-College sports visits, no less than six flight cadets managed to arrange 'personal cultural and linguistic detachments' to France and Germany. And judging by the success of certain young men, who went to Salon for the Graduation Ceremony and Ball of our sister French Air Force College, in dancing till dawn with a series of gorgeous 'jeunes filles,' the value of colloquial French is now fully appreciated in some quarters! I'm all in favour of this and congratulate them on their enterprise.

The academic problems however were not confined to the Humanities. No less than 20 flight cadets were involved in Mathematics and Science re-sits, but I am glad to say that 15 of them went on to complete successfully the academic course.

Overall I am informed that the kindest thing that can be said of their performance in this sphere is that they finished the Applied Science much better than they started the Basic Science phase, and made more progress than some recent past entries. As they progress in their careers, however, I am confident that they will come to realise that the general broadening of their horizons by their academic year here will have been most valuable.

In November last year, joyfully shaking off the dust of Whittle Hall, the Entry got off to a steady start with their pilot training. Unfortunately, due to severe winter weather they had fallen 80 hours behind their task by February and, when bad weather dogged their night flying period, they were nearly 400 hours below their target by the end of the Royal Visit. Only concentrated efforts by instructors and ground staff enabled them to complete over half of their flying training in the last three months. The lads responded well to the demands made of them and the Chief Flying Instructor tells me that they really came to life under the stimulus of flying continuity. Piloting ability covered the normal average

band, but four members are to be congratulated on their above average assessments in their final handling tests.

I thoroughly enjoyed helping to judge the Aerobatic Competition. All four contestants put up a spirited performance but, once the judges had done their sums and compared notes, it was a unanimous view that Miller had nosed ahead to collect a well-earned Battle of Britain trophy.

The Entry's professional keenness in the Ground School is well reflected in the Command Examining Board's results which were the highest achieved by any Cranwell course. Their overall average of 77 per cent also follows the example of 96 Entry, being a higher average than the current results obtained at the other two Basic Flying Training Schools. This is a most praiseworthy achievement.

Unlike other specialisations on the course, the Navigator fraternity, having started only three strong at one time, increased their complement to eight by transfers from other entries and branches, and I am glad to say that seven have successfully completed the course. They are adjudged as a lively and interesting group who are well liked by their instructors. Two of them even managed to get me to Berlin and back — though not without drama! Harrington deserves our warmest congratulations on gaining the very rare distinction of an 'Exceptional' assessment at the end of his training.

As there were no Engineering flight cadets on this Entry I can speed straight on to the Supply and Secretarial chaps. The Suppliers (to give them their new title!) were about average in professional studies, but I must congratulate the Secretaries — both of them! — on attaining an above average standard, and also on applying themselves to their professional training with commendable enthusiasm.

The sole Regiment representative — Parsons, whilst not among the prize-winners, achieved the high standard demanded by his Branch and, of course, will be the first man of the Entry to begin productive service. I wish him good fortune in his tour with No 15 Field Squadron. It is sometimes said in Confidential Reports 'This man will go far.' It seems that

Parsons is going farther than most for his first post may be in Hong Kong. Any connection between this and his impersonation of the Senior Regiment Instructor during the Revue last Monday is purely coincidental !

On the square, the Entry has made steady progress in standards of drill and ceremonial throughout the course. They all deserve praise for this but I must make special mention of Edington on his able command of the Escort Squadron during our recent Ceremonial Parade for the visit of our Royal Commandant-in-Chief on 12th June. This took place under the eagle eyes of a record number of Old Cranwellians who were full of praise. Tomorrow will be the last opportunity that you have for demonstrating your prowess in this sphere and, with the Senior Old Cranwellian on the dais, I know you will pull out that last vital stop which makes all the difference between just a good and a truly memorable occasion.

What then of 98's achievements in the field of sport ? As with their immediate predecessors, they have tended to shine more in the individual events such as fencing and rowing than in the major team sports. Exceptions to this are of course Edington whom I congratulate on representing Training Command at Rugby and Vacha who also had a game for the Command side.

The fencing accolade must of course go to Gatland. He has represented his own country, New Zealand, and was included in their team which reached the finals of the 1970 Commonwealth Games in Edinburgh. He has also fenced for the Royal Air Force and in slack periods he has proved himself to be an outstanding player in our College Basketball Team. Fencing has been popular with the Entry, for Wilson has also fought for the Royal Air Force, and Mould and Stockill for Training Command.

The 1970 College Swimming Team has enjoyed a most successful season under the leadership of O'Connell who has represented the Royal Air Force at Water Polo. Sharp is also congratulated for his success in representing the Royal Air Force at both Water Polo and Swimming and in gaining a third prize in the Royal Air Force Championships yesterday. Wyer represented Training Command at Basketball, and Kennedy has represented the Royal Air Force at Canoeing

and Rowing. Kennedy's excellent performance in the Canoe Slalom event against Dartmouth this year was largely responsible for our win over the Naval College in this event. Finally, Handfield represented Training Command in Rowing.

To their great credit, 98 Entry have improved in the sporting sphere over their predecessors though their numbers were small ; no less than five of them have represented the Royal Air Force. There has been no lack of honest endeavour and they have kept all sports alive. Therefore we must congratulate them on their efforts.

The Entry has felt the first breezes of the 'wind of change' now blowing through Cranwell as it evolves towards becoming a post-graduate training centre. I feel sure that this must account largely for their lack of any shattering impact on the College. They have seen a large slice of 99 Entry go off to University, and may have lacked the stimulus of a Junior Entry to guide and supervise. They have seen the flight cadet population reduce progressively during their time in residence. They have suffered from a spell of bad weather early in their flying programme which caused them to fall well behind the task ; this has meant much late evening and weekend flying. They were also faced with the challenge and problems associated with the disappearance of the old A, B, C and D Squadrons and may have felt that this unavoidable upheaval robbed them of their old identity and loyalties.

Despite this, as an Entry they will always be remembered for an excellent spirit of brotherhood which I am sure they will carry forward into their future service. Their combined contribution may not have been outstanding but individually they have contributed much to the continued success of the College. Certainly some quite engaging 'characters' have emerged once Final Handling Tests and similar milestones have been passed !

I would ask you all to take one further thought with you as you proudly pass out from the Royal Air Force College. You are entering a service that relies enormously on teamwork and in your flights and squadrons your efforts can lead to the success or failure of your particular unit. As Cranwellians, a great deal will be expected of you. You will be

required to be above the average ; if you are not, you may be regarded as a partial failure, perhaps especially by non-Cranwellian commanders. You must set yourselves high standards and persistently strive to achieve them and, by sheer example, encourage your fellow squadron members and juniors to do likewise. Remember, the 'single list' concept is on its way for all the major Branches — the 'Way to the Stars' will be immensely competitive. Your promotion will depend on your annual confidential reports which will probe deeply into every aspect of your activities. I commend to you the occasional study of Form 1369A and a dose of honest self-criticism in its light.

In a lighter vein — in years gone by, the annual confidential report was a much less weighty document and comments by com-

manders were short and sharp. One hard-riding huntin' type is credited with writing : 'I would not breed from this officer.' Another well-beloved officer, one of my distinguished predecessors here, is said to have written : 'I know of no officer I would rather have with me in a tight corner. Unfortunately, I know of no other officer more likely to get me into one !' Joking aside, modern comments are even more penetrating !

I congratulate you warmly on reaching the high standards we rightly demand of holders of The Queen's Commission. I wish you a glorious succession of good 1369's. May you all get the squadrons or stations that are your heart's desire, and may you have the best of good fortune in the exciting and rewarding careers which lie before you in the Royal Air Force.



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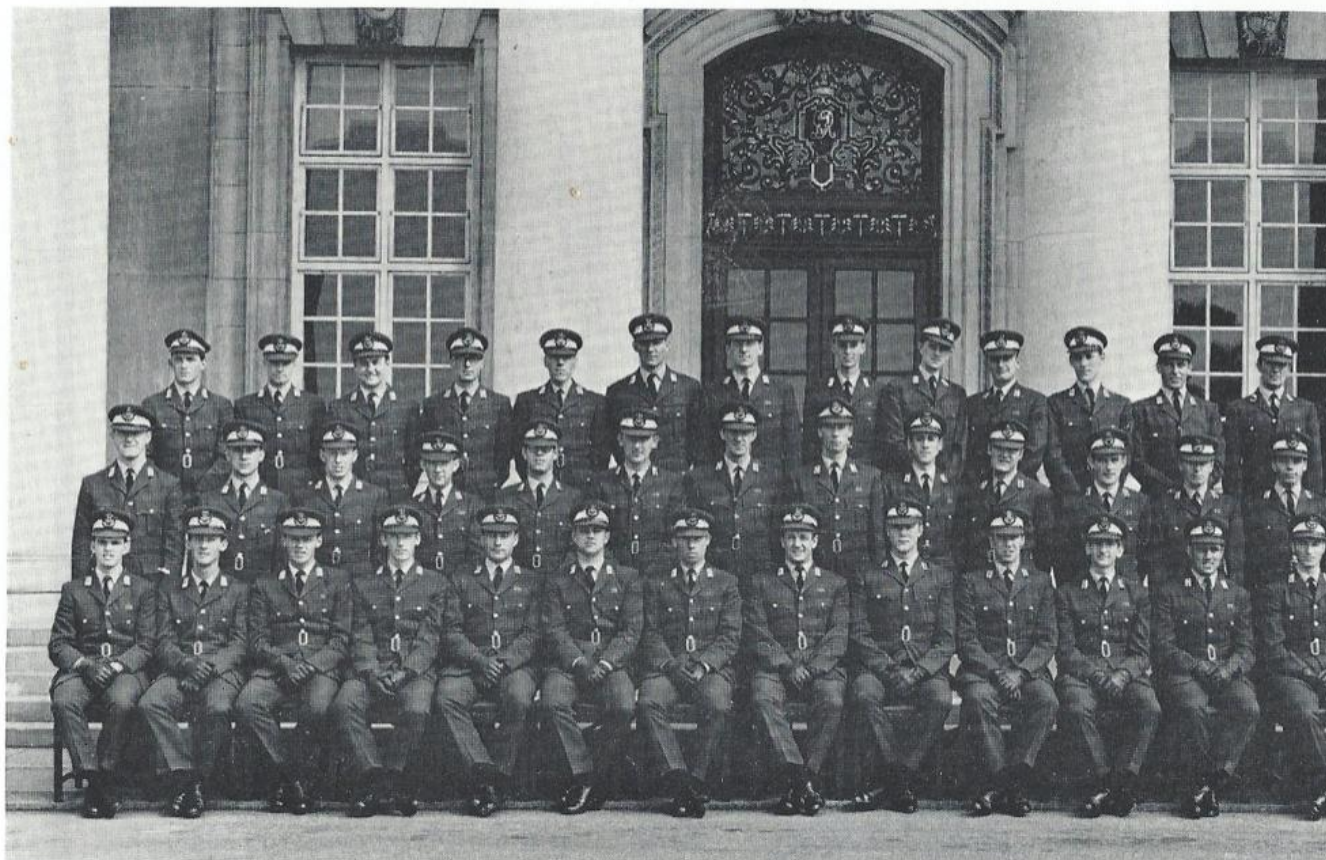
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No 98 ENTRY

- Back Row :** *Senior Flight Cadets : A. M. L. Barcroft, R. D. Gregory, R. Handfield, J. A. Stockill, K. McGuire, I. D. Wood, R. A. A. Sudlow, L. M. Warrington, S. T. Morrell, R. D. Parry, N. Barton, R. P. Watkins, R. Furlong, A. T. Wood.*
- Centre Row :** *Senior Flight Cadets : K. M. Graham, J. Sefton, G. P. Evans, A. Davies, C. P. Hicks, S. J. Orwell, E. J. Wood, G. E. Stirrup, M. B. D. Puri, S. G. Mould, J. Middleton, E. Hunkin, A. S. Miller, J. A. D. Houlton.*
- Front Row :** *Senior Flight Cadets : L. P. Trewinnard, D. J. Mather, J. J. Barnett, K. W. N. Salisbury. Under Officers : Wood. Senior Under Officers : C. D. O'Connell, D. J. Edington. Under Officers : W. A. J. Mates, A. J. Flight Cadets : S. B. McBain, R. J. Sharp, P. I. Parsons, J. Harrington.*

COMMISSIONING LIST

No 98 ENTRY

- D. J. EDINGTON, *Senior Under Officer (Supply); The Sword of Honour and the R. S. May Memorial Prize; Rugby (Colours).*
- C. D. O'CONNELL, *Senior Under Officer (Navigator).*
- A. G. O. DEE, *Under Officer (Pilot).*
- A. J. GATLAND, *Under Officer (Pilot); The R. M. Groves Memorial Prize and Kinkead Trophy for Flying; The Dickson Trophy and Michael Hill Memorial Prize for Applied Flying; The Alasdair Black Memorial Trophy for General Service Training (shared); Basketball (Colours); Fencing (Colours).*
- C. J. KENNEDY, *Under Officer (Pilot); The Philip Sassoon Memorial Prize; The Alasdair Black Memorial Trophy for General Service Training (shared).*
- B. J. LONGHURST, *Under Officer (Pilot).*
- W. A. J. MATES, *Under Officer (Supply); The Ministry of Defence (Royal Air Force) Prize for Supply Flight Cadets.*
- T. J. WOOD, *Under Officer (Pilot); The Abdy Gerrard Fellowes Memorial Prize for Mathematics and Science.*
- A. M. L. BARCROFT, *Senior Flight Cadet (Supply).*
- J. J. BARNETT, *Senior Flight Cadet (Pilot); The Hicks Memorial Trophy for Ground School Subjects.*
- N. BARTON, *Senior Flight Cadet (Pilot).*
- A. K. CLARKE, *Senior Flight Cadet (Pilot).*
- A. DAVIES, *Senior Flight Cadet (Navigator).*
- G. P. EVANS, *Senior Flight Cadet (Pilot); Cross Country (Colours).*
- R. FURLONG, *Senior Flight Cadet (Pilot).*
- R. L. GOODISON, *Senior Flight Cadet (Navigator).*
- K. M. GRAHAM, *Senior Flight Cadet (Pilot).*
- R. D. GREGORY, *Senior Flight Cadet (Pilot).*
- R. HANDFIELD, *Senior Flight Cadet (Pilot).*
- J. HARRINGTON, *Senior Flight Cadet (Navigator); The Queen's Medal; The Institute of Navigation Trophy and the Ministry of Defence (Royal Air Force) Prize for Navigators; The Ministry of Defence (Royal Air Force) Prize for War Studies and Humanities and The Royal New Zealand Air Force Trophy.*
- C. P. HICKS, *Senior Flight Cadet (Supply); Athletics (Colours).*
- J. A. D. HOULTON, *Senior Flight Cadet (Pilot).*
- E. HUNKIN, *Senior Flight Cadet (Pilot).*
- D. J. MATHER, *Senior Flight Cadet (Pilot); Shooting (Colours).*
- S. B. McBAIN, *Senior Flight Cadet (Pilot).*
- K. McGUIRE, *Senior Flight Cadet (Pilot).*
- J. MIDDLETON, *Senior Flight Cadet (Navigator).*
- A. S. MILLER, *Senior Flight Cadet (Pilot); The Battle of Britain Trophy for Aerobatics.*
- S. T. MORRELL, *Senior Flight Cadet (Pilot).*
- S. G. MOULD, *Senior Flight Cadet (Pilot).*

S. J. ORWELL, *Senior Flight Cadet (Pilot)*.

R. D. PARRY, *Senior Flight Cadet (Pilot)*.

P. I. PARSONS, *Senior Flight Cadet (Regiment)*.

A. T. PENNY, *Senior Flight Cadet (Navigator)*.

M. B. D. PURT, *Senior Flight Cadet (Pilot)*.

C. ROBERTS, *Senior Flight Cadet (Pilot) ; Rugby (Colours)*.

K. W. N. SALISBURY, *Senior Flight Cadet (Secretarial) ; The Ministry of Defence (Royal Air Force) Prize for Secretarial Flight Cadets*.

J. SEFTON, *Senior Flight Cadet (Pilot)*.

R. J. SHARP, *Senior Flight Cadet (Pilot)*.

G. E. STIRRUP, *Senior Flight Cadet (Pilot)*.

J. A. STOCKILL, *Senior Flight Cadet (Secretarial)*.

R. A. A. SUDLOW, *Senior Flight Cadet (Pilot) ; The Ecole de L'Air Trophy for French Studies*.

L. P. TREWINNARD, *Senior Flight Cadet (Pilot)*.

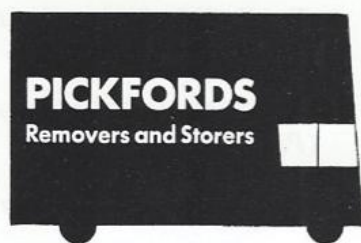
I. D. VACHA, *Senior Flight Cadet (Navigator) ; Rugby (Colours)*.

L. M. WARRINGTON, *Senior Flight Cadet (Pilot)*.

R. P. WATKINS, *Senior Flight Cadet (Pilot)*.

I. A. B. WILSON, *Senior Flight Cadet (Pilot)*.

E. J. WYER, *Senior Flight Cadet (Pilot) ; Basketball (Colours)*.



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FLYING THROUGH THE YEARS

The Air part of the Royal Air Force Cadets was highlighted during the afternoon of the Royal Air Force Day at a display of aircraft and ground services of the RAF. Flight Lieutenant James-Jones opened the proceedings with a detailed display of low-level aerobics in a jet trainer. The display was held in the afternoon - instead of earlier - when the air of the day caught the attention of the spectators. The display included a variety of formation of current aircraft at Cranwell, the RAF's flying school, and the Varsity. However, the highlight of the show was a display of formation aerobics by the 'Preston'.

Below are some of the aircraft that were on display either on the ground or in the air.

Despite being a relatively modern aircraft, the Hawk was the first to be displayed at the Royal Air Force Day in 1975 and was well received by the public. It was a two-seat trainer. The Hawk is now used by the RAF as a two-seat trainer. The Hawk is now used by the RAF as a two-seat trainer. The Hawk is now used by the RAF as a two-seat trainer.

Flying Training Wing

Flying Through The Years

50 Formation

Tiger II. Probably the most famous of all training aircraft, the Tiger II was used for over 15 years with the Royal Air Force. The Tiger II was used for over 15 years with the Royal Air Force. The Tiger II was used for over 15 years with the Royal Air Force.

After being in the RAF for over 15 years, the Tiger II was used for over 15 years with the Royal Air Force. The Tiger II was used for over 15 years with the Royal Air Force.

FLYING THROUGH THE YEARS

The 'Air' part of the Royal Air Force College was highlighted during the afternoon of the Royal Visit by a flypast of current and former aircraft of the College. Flight Lieutenant James of 2 Squadron opened the proceedings with a polished display of low-level aerobatics in a Jet Provost T.4. Barely had he left the scene — inverted, of course — when the first of the oldies caught the attention of the spectators. The flypast finished with a medley formation of current aircraft at Cranwell, the Jet Provost and the Varsity. However, the highlight of the show was a fine display of formation aerobatics by the 'Poachers.'

Below are some of the aircraft that were on display either on the ground or in the air.



Sopwith Snipe. Originally designed as a single seat fighter, the Snipe first reached the Royal Air Force in late 1918 and was used until the late 1920's as a two-seat trainer. The one shown here was flown specially from Canada (by courtesy of Air Support Command) for the Royal Visit.

Hawker Fury. The Fury was chosen as the Royal Air Forces standard interceptor in 1931 and was the first Royal Air Force fighter in squadron service to exceed 200mph. The one in the picture is a 7/10th scale model and is privately owned.



Tiger Moth. Probably the most famous of all training aircraft, the Tiger Moth served for over 15 years with the Royal Air Force. The model shown here belongs to the College Flying Club and can be seen regularly in the skies around Cranwell.

Avro Tutor. In 1933 the Tutor came to Cranwell as the training replacement for the Avro 504N, thus carrying on the tradition of Avro trainers in the Royal Air Force.





Avro Anson. The Anson first flew in 1935, entering Royal Air Force service the following year. By the end of its production over 8,000 Ansons were built in Great Britain for general reconnaissance duties and the training of navigators and wireless operators.

Harvard. This was one of the first American aircraft ordered for the Royal Air Force and was used extensively for flying training from 1938 to 1955.

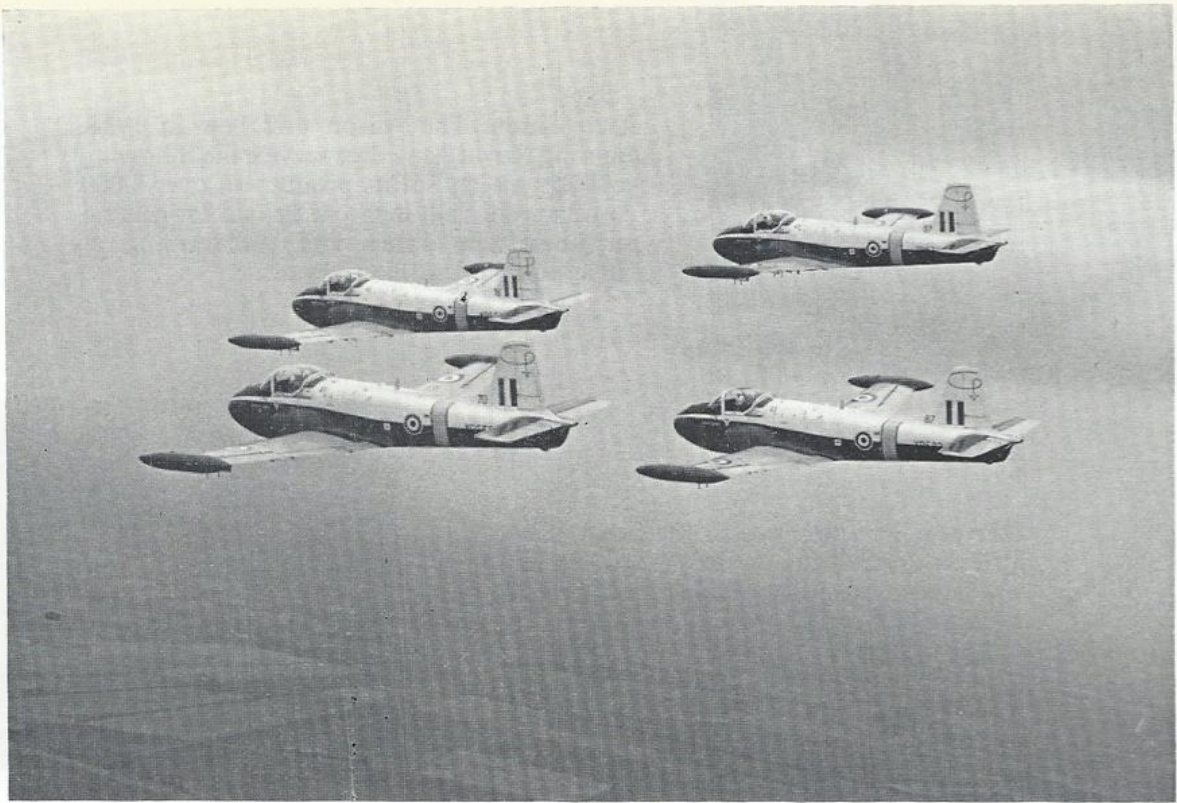


Piston Provost. In late 1954 the Piston Provost came to Cranwell as the Chipmunk replacement, and it continued as a basic trainer until 1961, when it was replaced by the Jet Provost.

Vampire T11. The Vampire was the first jet trainer to see service at Cranwell and was the first jet aircraft on which pilots actually gained their wings. It came to Cranwell in 1956 as a replacement for the Balliol.



Vickers Varsity. Shown here in formation with Jet Provosts, the Varsity was originally designed as a crew trainer, but is now used to give advanced training to pilots and also, as at Cranwell, to train navigators.

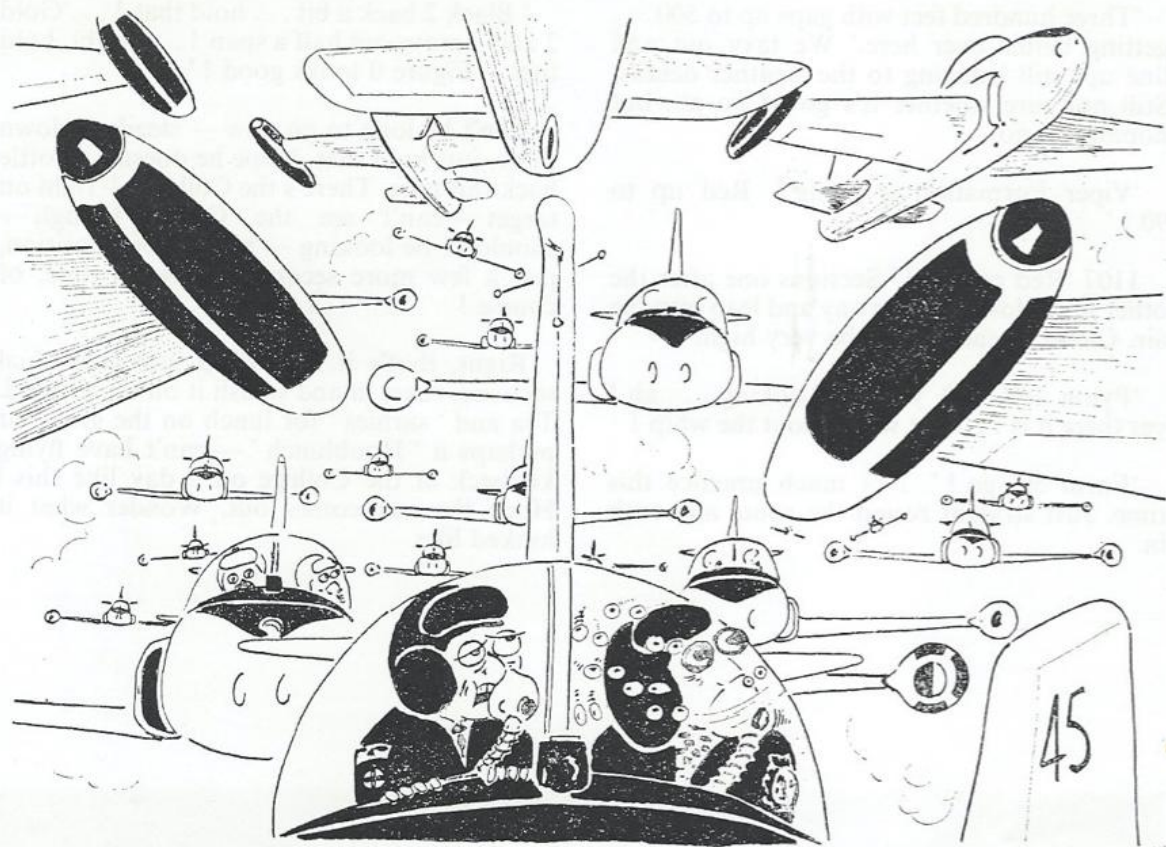


Jet Provost. The principal training aircraft of the Royal Air Force is the Jet Provost which has been at Cranwell since 1961. These pictures show the Cranwell formation aerobatic team, 'The Poachers,' led by Squadron Leader W. P. Jago.

P.S. Tradition with aircrew dies hard. After a day filled with nostalgic moments we felt obliged to do justice to the opinion expressed in the November 1918 issue of *Roosters And Fledglings* :

'It appears necessary for the well-being of the average pilot that he should indulge in a really riotous evening at least once or twice a month !'





"WHEN DO WE CLOSE UP INTO THE '50' THING THEN?"

50 FORMATION

What were 45 QFI's doing, sitting on the ground at Barkston when all the rest of Cranwell was waving at the Queen? Well, there were 45 (plus the Stn Nav) because we only had 23 aeroplanes, and we were sitting on the ground at Barkston because there were no chairs and Cranwell was Purple Airspace. You see, we were doing this '50' thing. It went like this.

Grey overcast sky. No horizon at all. Cloud base ragged, and pretty low by the look of it. Can't see us getting airborne in this . . . well, not with 23 aircraft as a figure 50 formation anyway.

Take-off, scheduled for 1030, is delayed once and then again. But we kick the tyres and strap in . . . bloody weather! Last possible take-off time is 1107 to make 1129.30 overhead the College. Will we, won't we?

Start engines! Twenty-three variable noise machines whine up together.

'Viper Formation, check in!'

'Red 2, 3, White 1, 2, 3 . . . etc!'

There goes the weather aircraft. We listen out as he passes details of the en-route weather . . .

'Three hundred feet with gaps up to 500 . . . getting better over here.' We taxi out and line up, still listening to the weather details. Still not sure whether it's go or no go, but hoping it's go.

'Viper Formation is going! Red up to 90!'

1107 'Red rolling!' Sections one after the other burn down the runway and leap into the air. Cloud already, can't be very high.

'Pylon left 100 yards.' Looking . . . ah! yes there it is . . . but what about the whip!

'Form 50, go!' Not much practice this time. Just straight round the route and rush in.

'Black 2 back a bit . . . hold that! . . . Gold 2 and 3 move out half a span! . . . right, hold that! Figure 0 looks good!'

Can't be long to go now — steady it down there, just hold that. Hope he doesn't throttle back this time. There's the College — right on target — can't see the Queen though — shouldn't be looking — watch your position, just a few more seconds. Bang on time, of course!

Right, that's it. Break up into individual sections, roast in and smash it on the ground. Tea and 'sarnies' for lunch on the grass, or perhaps a 'Houblunch' — can't have flying kit back at the College on a day like this! Hope the sun comes out. Wonder what it looked like.



'Just a few more seconds'



Have you ever seen your father scoring the winning goal for his team? If you have, I doubt if you've seen your grandfather do the same. Yet, fifty years ago, he was a good sportsman, and could well have been a member of all the teams representing the Royal Air Force College during the period 1919/20. Not too difficult a feat in a College of which it was written :

'It would be foolish to expect any high standard of achievement in any one branch of sport in an institution so new as ours, where 52 Cadets with scores of diverse interests represent the aggregate from which the harassed captain of a football or cricket team has to select his side.'

(*RAF College Journal* Vol. 1, No. 1, Sept. 1920).

In the first edition of the *Royal Air Force College Journal* in 1920, mention is made of the Chimay Cup, presented by Prince Chimay, to be awarded to the best squadron at sport each year. Articles on Rugby, Boxing, Athletics, Beagling, Cricket and Cross-Country extol the virtues of their particular sport. In this same year, a Cross-Country team representing the Royal Air Force College and the Royal Air Force College Cranwell Unit (four Flight Cadets and four Airmen), won the Royal Air Force Cross-Country Championships, but the College Athletics team lost to RMA Woolwich. In 1921 the unit Athletics team, including nine Flight Cadets, won the Royal Air Force Inter-Unit Athletics Championship, and new inroads were made into sport at the College, as illustrated by the following prophetic extract :

'The Soccer has been very much in its elementary stages so far, but for all that, the

future should hold good prospects for us !'
(*Royal Air Force College Journal* 1921)

In 1921 sportsmen gave the CFI (Chief Flying Instructor) some invaluable advice which, unfortunately, seems to have been disregarded. In the cause of progress, and to help counter bad flying weather and flying costs, the advice is once again offered :

'Quite apart from the value of riding a horse as an aid to piloting an aeroplane — because the use of the muscles, and the nervous control of the limbs is almost identical in both riding and flying — in war knowledge of horses is frequently of utmost value to the flying officer.'

(*Journal* Vol. 1, No. 3, August, 1921)

In 1922, the Rugby team gained their first victory over RMA Woolwich, although they lost to RMC Sandhurst. It is in this year too, that first mention is made of Hockey at the College, fixtures having been played regularly in February and March 1922. Rugby, Cross-Country and Athletics (again Royal Air Force College Cranwell won the Inter-Unit Athletic Championship but lost to Sandhurst and Woolwich) were now firmly established, and the Royal Air Force College was now a power in these sports within the Royal Air Force. All sports, however, complained that :

'The College is too remote, and means of transportation so difficult, it is impossible to attract good opposition !'

On 28 April 1924, the Royal Air Force College Cranwell Golf Club was formed, using the Sleaford Golf Course :

'Pending the layout of a course on the Aerodrome, which it is hoped will be feasible in due time !'

So, Sport at College was 'cleared for take-off,' and such sports as Squash, Tennis, Rowing, Shooting, Horse Riding and Fencing were accepted, and made the Royal Air Force College a sportsman's dream.

I wonder if, in 1939, the lucky sporting Flight Cadet ever dreamed of what he would pass on to the sports playing Flight Cadet of 1970? Some thirty-one different sports can now be participated in by Flight Cadets. I wonder how Grandfather would have viewed Sub-Aqua Swimming, Judo or Canoeing as sports? The facilities for sport at the College are first-class and include two gymnasia, indoor swimming pool 110ft long, indoor equitation arena, cinder athletic arena, indoor .22 shooting range as well as squash and tennis courts and playing fields. However, one

thing never changes over the years. We still strive to 'put one across' Sandhurst and Dartmouth, and our successes are now more regular . . . in fact 'We've arrived!' What of the men of Cranwell? Yes, many men have given something to sport at the College; some by active participation and some by good advice and administration. It would be easy to pick out known Cranwellian sports personalities, many even internationally known men, but there are many more who are unknown. Let it be enough that they can know with pride that they helped to build the College — the reputation not the building. Their message to our future trainee officers, I am sure, would be:

'Here it is. Get weaving!'

L.H.J.



Chimay Athletics Cup winners 1970

THE BAND OF THE ROYAL AIR FORCE COLLEGE

1920 — 1970

Many will know already that, next to the Central Band, the Band of the Royal Air Force College is the most senior in years of our Service bands.

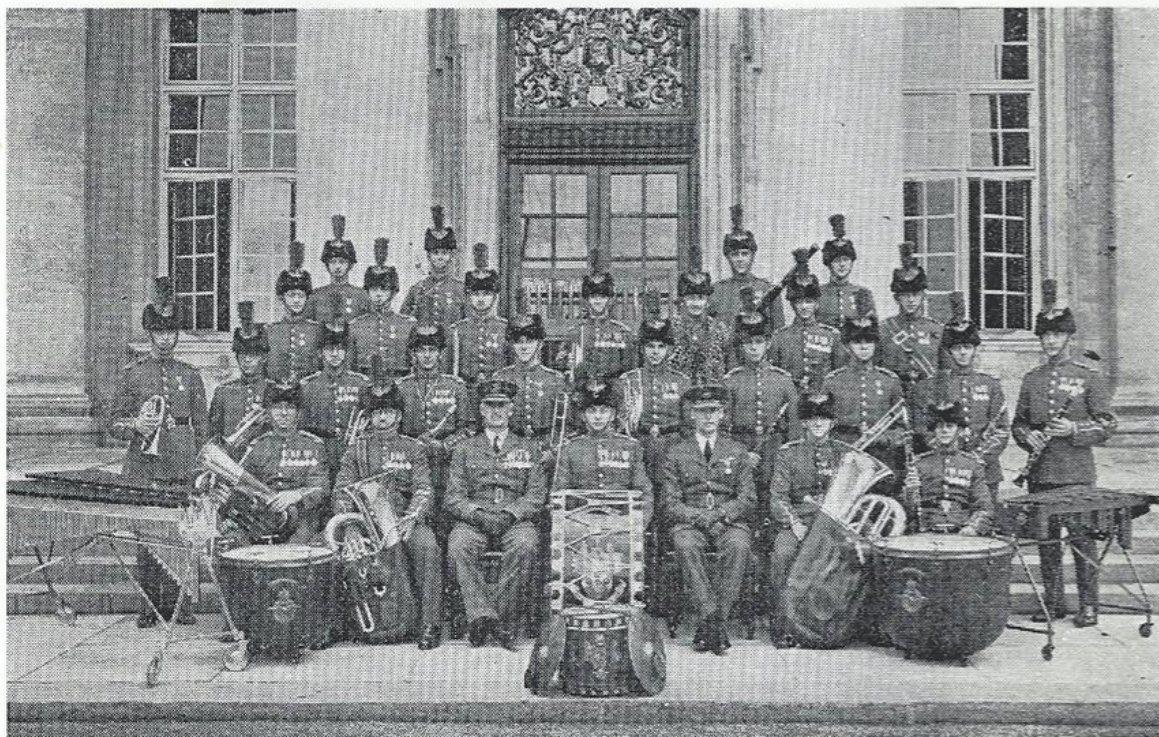
According to information which appears in our oldest files, it was shortly after the formation of the Central Band in April 1920 that a group of musicians were certified 'free from infection' and fit to travel to the Cadet College to assist in the formation of the College Band.

Warrant Officer A. E. Halford of the 1st Battalion King's Regiment became the first bandmaster, and, much to the concern of his Colonel, it appears he sought to coax several regimental musicians to come with him. Apart from this the band has remained mainly thoroughbred.

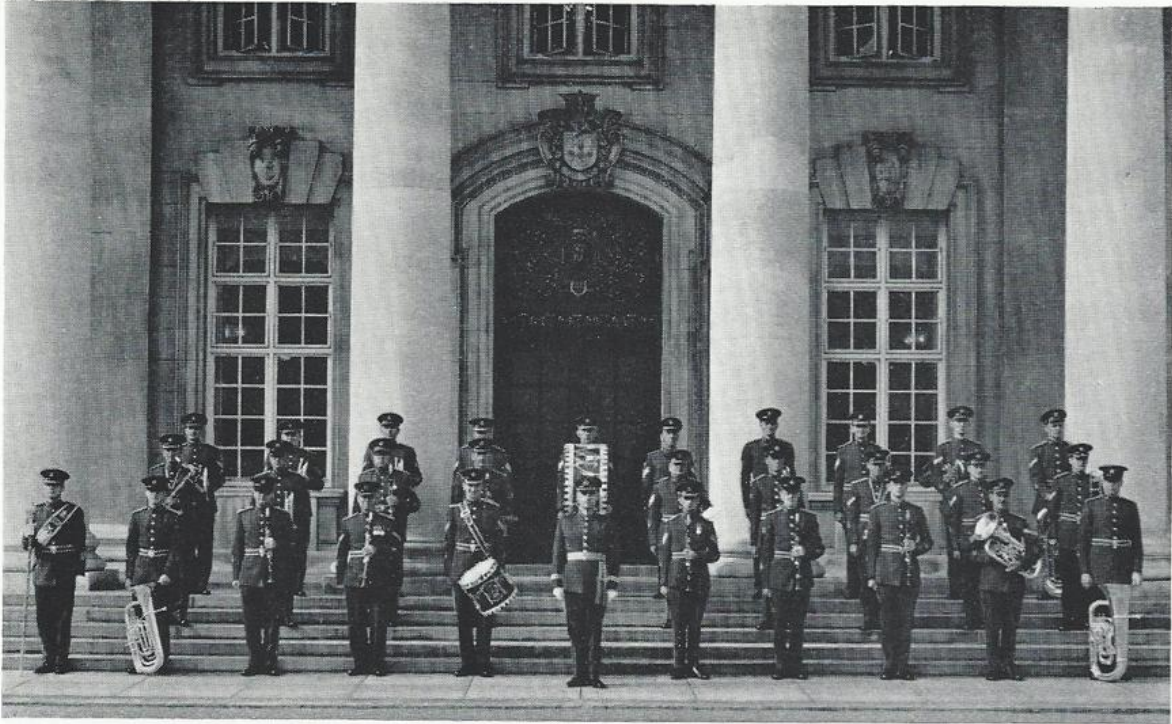
The first loyalty of the band has always been to the College itself, and since the College was established the band has been present on all occasions where music has been necessary: each parade, Sunday Church Service and Guest Night, and numerous other less formal occasions when they have simply entertained by concert-giving.

The Band was also popular outside the College. After its first public appearance in 1921, it made a first broadcast from Cardiff in 1923. This was followed by further broadcasts from the North and West Region Stations, and it was not long before the band was known to a wide audience.

Old programmes and account books show that the band appeared at numerous county shows and seaside resorts. One of our more



The Band of the Royal Air Force College 1937



*The Band of the Royal Air Force College 1970
(Director of Music, Flight Lieutenant D. S. Stephens)*

interesting printed programmes was produced by the City of Plymouth where the band presented daily concerts on the Hoe in the week before the last war commenced in 1939. The band was present at the Jubilee Celebrations of King George V, and was selected to attend with the Royal Guard of Honour at Buckingham Palace at the Coronation of King George VI and Queen Elizabeth. At the Coronation of Queen Elizabeth II in 1953 the College Band appeared in the procession.

One of the now retired members of the band Sergeant E. 'General' Grant, who resides in Cranwell Village joined the College Band as a boy musician at the age of 17. He finally retired after serving at the College for 38 years without a break. He can recall the times when Aircraftsman Ross (Lawrence of Arabia) would call in the band billets for a tête-a-tête.

At Guest Nights, choosing music to aid digestion is sometimes a problem. However, we have left behind us the time when no dinner programme was complete without 'Daisy,' 'My Bonnie,' and 'Lily of Laguna.' Our own music library includes an interesting and meticulously kept programme book for the period 1934-1939 in Wing Commander Sims' own hand. The Wing Commander was Director of Music at the College from 1932 to 1946 and on a programme dated 26th July 1937 he recorded the fact that two items were not played, firstly owing to there being 'too much of a rough house,' and secondly 'A game of leap-frog was in progress.' During a third item a Xylophone appears to have been smashed in what he describes as 'A Grand Rag'! Clearly the musicians have not always enjoyed the Palm Court placidity which has accompanied Guest Nights of more recent years.



During the 50 years of Cranwell, serving and retired members of the Army have played a small part in the staffing of the College. In the early days, many of the education officers were retired Army officers. The *College Journal* suggests that much of their time was spent hunting and shooting. Some Old Cranwellians of 1928 may be able to remember Major F. C. W. Taylor and Captain A. S. Thomas to bear this out. No doubt a popular Army member of the staff was the Army dentist. It would appear that the Royal Air Force Dental Services needed support from the Royal Army Dental Corps. This support came in the form of Captains Bennett and Whiter who were later replaced by Major Sumerling. He pulled teeth from 1929 to 1930.

Without doubt Major R. W. Allen was quite invaluable to the organisation of the College. Many journals mention how well-controlled the Cranwell Hunt Club Stables were, remarking how he exercised the horses before breakfast and fed them after work in the evening. The conscientious Major undoubtedly found time to hunt at least two or three times a week to keep his hunters in trim. There were various ex-Army education

instructors up to the time of the war, but they would not have been seen as such to cadets. Education instructors in those days were in civilian clothes. Lieutenant Colonel R. A. N. Lowther, MC, seems to have become very much part of the Cranwell scene. He was assistant adjutant from 1938 until the war, returning to the Army during that period. After the war, he returned to Cranwell as the Adjutant of Flying Wing from 1946 until 1949.

From 1948, Cranwell instituted the Army Instructor as we see him today, a member of the war studies instructional staff. Fourteen Army officers have served at Cranwell for a period of up to two years. Only two of that number have not been infantrymen, these two were gunners. Though none of the Army Instructors have reached the highest ranks of the Army, on average most have made Lieutenant-Colonel and one is now serving as a Brigadier. For the interest of Old Cranwellians and members of the staff since 1948, I have listed the details of each officer as they are now known. In many cases their Regiments are lost to the British Army, but I have updated them to show their present titles :—

Rank	Initials	Name	Present Day Regiment	Cranwell Dates	Present Address
Colonel	T. G.	Steele	The Royal Regiment of Fusiliers	1947-1948	Now MOD (Army) representative for the NAAFI. Lives at 25 Dodds Crescent, West Byfleet, Surrey
Colonel	M. A. C.	Osborn, DSO, OBE, MC	The Prince of Wales's Own Regiment of Yorkshire	1948-1950	Retired 1964 to Skiathos, Greece
Colonel	I. H.	Batye, MBE, BA	The Queen's Regiment	1950-1952	Retired 1968 to Ferry House, Quayside, Woodbridge, Suffolk
Lieutenant Colonel	G. J. S.	Cotton	The Royal Anglian Regiment	1952-1954	Now a Retired Officer Grade III at HQ BAOR (Q Qtr) BFPO 40
Major	J. W.	Peyton, MC	The Royal Highland Fusiliers	1954-1956	Retired in 1958 to 2816 Seaview Road, Victoria, British Columbia
Brigadier	D. W.	Coyle, MBE, DFC	Royal Artillery	1956-1957	Now Brigadier HQ Director of Army Aviation, Middle Wallop, Nr. Stockbridge, Hants.
Lieutenant Colonel	A. J.	Noble, MC	Queen's Own Highlanders	1957-1958	Retired 1958 to Flatfield House, Symington, Ayrshire
Lieutenant Colonel	B. D. H.	Clark, MC, GM	The Irish Rangers	1958-1960	Retired to Knockragow, Kilmacnogue, Co Wicklow, Eire as Sec RNLI in Eire
Colonel	W. H.	Atkins, OBE	Royal Artillery	1960-1962	Now Colonel Executive Branch Intelligence Division SHAPE
Lieutenant Colonel	A. F. F. H.	Robertson	Royal Anglian Regiment	1962-1964	Now Commanding 23 SAS Regiment, TAVR Centre, Kingstanding Road, Kingstanding, Staffs
Lieutenant Colonel	D. C.	Thorne	Royal Anglian Regiment	1964-1966	Now at the RAF Staff College, Bracknell, Berks
Major	J.	Tadman	Royal Anglian Regiment	1966-1968	Now with 2nd Battalion The Royal Anglian Regiment, Hyderabad Barracks, Colchester, Essex
Lieutenant Colonel	J. J. L.	Thorpe, MBE	The Parachute Regiment	1968-1969	Now GSO 1 at the JWE, Old Sarum, Wilts
Major	I. G.	Nason	Queen's Own Highlanders	1969-	Present incumbent.

THEY ALSO SERVE.

As generations of old Cranwellians will readily testify, the Royal Air Force College owes a great deal to the members of the civilian staff who have served its aims and traditions with loyalty and devotion to duty during its fifty years of existence. Here then is a brief portfolio of six of the longest serving members of the civilian staff who are still serving at the College.



Left to right : C. V. Collishaw, F. C. Richardson, G. W. Bennett, A. M. Pirie, G. Allen-Lyne, B. Hickson.

Mr C. V. COLLISHAW (BATMAN)

Mr Collishaw, eldest of four brothers employed at Cranwell, started work as a Servant on 16 January 1926, and is therefore the longest-serving civilian here today. He enlisted in the Royal Air Force (VR) on 22 November 1940 and was discharged on 14 November 1945, when he resumed his former employment. Mr Collishaw's father was employed at Cranwell during the period 1919-1933, so the family has half a century of continuous service with the College.

Mr F. C. RICHARDSON (HEAD BATMAN SERVANT)

Mr Richardson was employed privately by the College as an errand boy from 4 January 1927 to 18 September 1931. On 19 September 1931 he commenced employment with the Royal Air Force as a batman. He was called up and served in the Royal Air Force from 10 December 1940 until 21 November 1945, when he was reinstated as a batman. He was regraded to Servant on 5 May 1948 and promoted Head Servant on 6 February 1964. He has therefore served continuously in the College, with the exception of the war years, since 4 January 1927.

Mr GEORGE WILLIAM BENNETT

Mr Bennett commenced work at Royal Air Force Cranwell, in the grade of Cook, on 12 December 1929. Except for a break between 22 November 1940 and 9 January 1946, when he joined up for war service, he has had continuous service with the College.

He was awarded the Air Officer Commanding-In-Chief's commendation on 2 January 1961, and the BEM in 1968. He is at present employed in College Hall in the capacity of Head Cook.

Mr ANDREW McARTHUR PIRIE

Mr Pirie joined Royal Air Force Cranwell on 20 May 1935 as a Waiter ; shortly afterwards he was regraded to Driver MT.

From 16 July 1937 until the outbreak of war Mr Pirie was employed as a Ministry Warden (Constable).

After the war he was reinstated in the grade of Driver MT and on 5 November 1956 was promoted Charge Hand. He remains in that capacity at the present time.

Mr BERNARD HICKSON

Mr Hickson commenced work at Cranwell in July 1935 as a Labourer. In October 1936 he was regraded Waiter and employed in the Sergeants' Mess until the outbreak of war, when he was recalled for service with the Royal Air Force and attained the rank of Sergeant. After the war Mr Hickson spent two years at Royal Air Force Fulbeck as a Batman, returning to Cranwell in 1948 as a Waiter. In 1952 he was regraded Batman and employed in College Hall. In 1969 Mr Hickson was awarded the Imperial Service Medal.

Mr GILBERT ALLEN-LYNE

Mr Allen-Lyne commenced work at Cranwell on 3 July 1931 and was employed as Steward, Waiter and Batman until November 1940 when he joined the Royal Air Force and served until 7 November 1945.

On 8 November 1945 he was reinstated as Batman, and remained as such until he was regraded to Hall Porter and transferred to No 2 Officers' Mess on 5 April 1967. In December 1967 he was awarded the Imperial Service Medal.

Two other well-known College stalwarts, Mr 'Eddie' Cant, hall porter and 'Pep' Pepper, the head batman, were invited to take part in the BBC broadcast 'Cranwell' which was transmitted on 22nd February, 1970, to commemorate the Fiftieth Anniversary of the Royal Air Force College. The BBC has kindly allowed us to reproduce some of their reminiscences from this broadcast.



Mr 'Eddie' Cant

Mr 'EDDIE' CANT

One of the commandants here was Air Vice Marshal Atcherley, and he knew everyone, it didn't matter who came into his room he always knew what their name was and I could never understand how he did this. Another was Air Commodore Nelson, he was Commandant and he always used to tell a story against himself about how he was the only cadet that got restrictions on the Passing Out parade. The Reviewing Officer came down the line and he stood in front of him and said 'Your hat's not on straight. Who do you think you are, Napoleon?' And he said 'No, Sir, my name is Nelson.'

Oh, the cadets in those days used to be up to all sorts of tricks. One morning I was at work just outside the College and there was a procession coming along. When it got near me I saw it was a mock funeral. It appeared that they'd had three days of plum duff for lunch so they decided to bury it.

Mr 'PEP' PEPPER

I started here at Cranwell in January 1929 when we used to live in single officers' quarters, and the pay in those days was 38/3d a week and we used to work 70 and 80 hours with no overtime, but we used to get time off in lieu to play the cadets at different games. They used to ring up on Wednesday and say right, bring a team over, Pep, we'll play football or hockey, or whatever game it was, and then we used to go down at night to watch the cadets box. We used to go over to the graduation balls and when they'd had one or two drinks, they used to get up to all sorts of capers, and it was a real hectic night. And I remember one time when the old mess was a wooden hut, there used to be two cannons in front and they used to pull them into the mess.

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Mr 'Pep' Pepper



AIR CHIEF MARSHAL SIR GEORGE MILLS, GCB, DFC,
Gentleman Usher of the Black Rod.
(after the portrait now hanging in College Hall).

CRANWELL CADET—1920

by AIR CHIEF MARSHAL SIR GEORGE MILLS, GCB, DFC

When the Royal Air Force (Cadet) College opened on 5 February 1920, there were fifty of us Cadets. Seventeen were from the Navy, two Sub-Lieutenants and fifteen Midshipmen. They wore uniform with the two war ribbons. The rest, the Schools Entry, wore suits and bowler hats and that is how we paraded till our uniforms were ready. One character did appear once in breeches, stockings, trilby hat and gauntlet gloves but not for long.

The Naval entry had been offered the chance of a permanent commission after a year at Cranwell. This was at a time when big cuts in naval strength were inevitable. The rest of us were to do two years. We had taken the same examination as candidates for the Army who trained at Woolwich and Sandhurst. There was a qualifying standard but beyond that it was competitive. In those days the first forty or fifty would go to Woolwich with the rest up to the required number to Sandhurst. At first our standard was low in comparison, for instance I was first for Cranwell but only forty-fourth for Woolwich. This changed very quickly.

On the other hand our medical standard was much higher and kept out several who would otherwise have qualified easily. This upset the plan of one of my friends who purposely failed the written examination so he could stay on to captain his school rugby team till Easter. He was called in to take a vacant place. Another friend benefitted too. He was late for the examination but was allowed a place on nomination by his Headmaster, only to be turned down three times with a defective eye. He did not give up, he got a list of pilots who had done well in the war with only one good eye and sent it direct to the Secretary of State with an appeal. He got in and was a first-class, natural, born pilot. The Secretary of State was Winston Churchill.

Why did we choose Cranwell? There is no single answer but there are two overriding factors. First, flying was new and had come right into the public eye during the war. Secondly, when the war ended in 1918 all

chance of learning to fly virtually ended until Cranwell opened. So some came simply to fly, others who would have chosen a Service career anyway, were able to branch into something new and others, notably the Naval term, were able to combine both with a better chance of staying in a Service. In common with Woolwich and Sandhurst we cost our parents or guardians about £125 a year. There was some reduction for sons of deceased and serving members of the forces below the rank of Group Captain. A King's Cadet, from the Boy Apprentice Schools, was free. A Prize Cadet, the first three in the entrance examination, cost only £20 or so. On the other side of the ledger, we were paid 5/- a day in our first and 10/- a day in our second year, plus 1/- a day ration money.

February 5th was a Thursday and the rest of the week was taken up with settling in, being detailed to two Squadrons and being measured for uniforms. About now too, Cadet NCO's were appointed. For the Naval Entry this was simple, they had their seniority, for us it seemed necessary to have a moustache to qualify. However it worked, and those of us with young, boyish faces were left with two carefree years as simple flight cadets.

When we began our regular work it was very disappointing to find that we would not begin pilot training till the next year. However, two periods a week were allowed for flying so it was not too bad seeing that most of us had not even sat in an aeroplane. We never averaged two flights a week, it was more like one, but the prospect kept us going.

Within a fortnight we had our first flights. It is hard to recapture the excitement, and the anxiety lest we should not like it after having set our hearts on it for so long. In fact two left very soon because they were airsick. Our flying kit was simple ; helmet and goggles, a pair of thin leather gauntlets, with a sort of bag on the back which could come over the fingers, a pair of silk linings, two pairs of overalls and a huge pair of rubber overshoes we never wore except in the snow. It was a

pale blue, slightly hazy day with no cloud when I first flew. I had asked the pilot to loop and he did, but I did not see much of it because I was looking inside the cockpit and centrifugal force kept my head down. I was rather disappointed, but he did several other things and I thoroughly enjoyed it. From now on we tended to live for the next flying day and to worry lest the weather should stop us which it so often did. We enjoyed life alright, it was so much freer than school but the thought of flying again before long added greatly to our enjoyment.

We were at the West end of the camp, with our Mess opposite the present entrance to the Orange about 100 yards from the road. Our huts were to the east of it and were of black, tin-hutted construction. Next came Station HQ and the Officers' Mess as now, then the airmen's quarters and finally the East Camp where the Boys' Wing was. Practically all flying was from the south aerodrome, huge then as now. The north aerodrome was unobstructed except for a few sports grounds tucked in on its southern edge. To the north was Lighter than Air with its big airship shed unused except for storage ; it stood where the officers' married quarters now stand. The Lodge was occupied, there were five other officers' married quarters to the west of our mess, and a few for airmen towards East Camp. A small railway ran from the camp to Sleaford station. We used it once or twice early on, then it seemed to revert to freight.

We lived five to a hut. One half was bedroom, with plenty of room for our five beds and chests of drawers, the other half sitting room with five tables and chairs, some easy chairs and a coal stove. There seemed to be plenty of washing and lavatory facilities. Each hut had a civilian batman who kept it clean, made the beds, did our boots and called us. We did our buttons. Some of the batmen stayed for years and were great characters. One night early on when we were in bed we heard a lot of shouting from the main camp and this went on for some time. We learnt later that some airmen had chased the Sergeant Major into the Guard Room because he was so strict. We never heard how it all ended. We had to stand to our beds for kit inspections and medical inspections. The latter came about once a term when we stood in shirts only, ready to

bare our innocence as the MO came by. Kit inspections came more frequently, always after lunch and for only two huts at a time. There was therefore enough time to borrow if necessary.

Raised and covered wooden footways connected the huts to the Mess. They did not keep out the wind or driving rain ! The mess was comfortable and furnished in officers' mess style. The food was good and we had plenty. Drinks were only served at meals and beer was the only alcohol allowed except for a glass of port on Fridays for the loyal toast. This cost a shilling. We wore mess kit at least five nights a week and had a roll-call before dinner. Later when there were more of us it was easier to answer for someone who was a bit late. Our mess accounts were made up daily in a big ledger in which our pay was credited. Periodically we drew any balance due to us, or our parents had to make up any deficit. I usually had a small credit even on 5/- a day.

The parade ground which lay just behind the mess was the domain of the two Flight Sergeants, Allan of 'A' Squadron and Burdett of 'B' ; and later of the famous Sergeant Major Gorwood, who did the rest of his service at Cranwell. Between them they made drill very bearable and made us quite good. They had to too because we soon became the centre of a hollow, three-sided square on the daily, colour-hoisting parade, with the Boy's Wing on one side and the rest of the station on the other. Even then we marched off to the RAF March and the 'Lincolnshire Poacher' and the sound of either, now, still takes me straight back to that parade ground. Once, on colour-hoisting, we saw an NCO discharged with ignominy. He was marched in front of us, his sentence and crime read out and his buttons and stripes ripped off. Another time a workman was working on the mast as the colour went up to the yardarm and took off his cap with a fine flourish as we presented arms. Colour-hoisting was every day except Sunday when we had Church Parade, with a keen inspection by the Assistant Commandant. It was during inspections before these daily parades that summonses to the Squadron Commander's orderly room were issued. Few can forget the refrain as the Flight Sergeant passed behind us, 'Office for you Mr so-and-so,' and 'Eyes



Flight Cadet G. Mills.

front !' as ' Mr so-and-so ' looked round in horror.

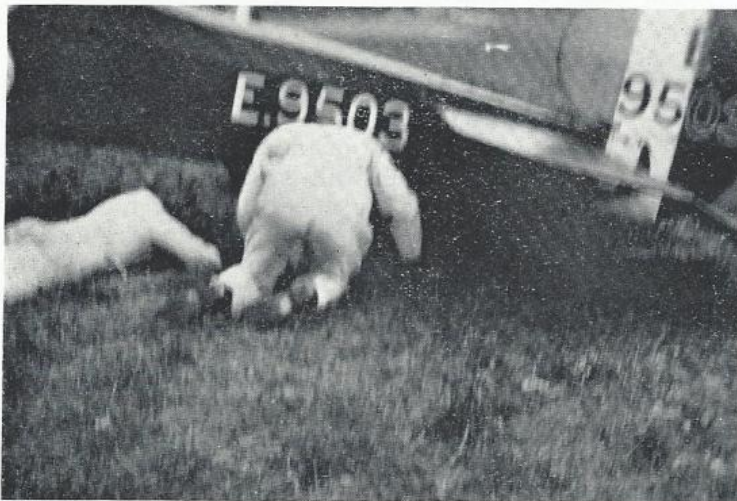
Our other ground subjects of course took much more time than drill but it is hard now to remember much about them except where we went and a few odd details. Engineering was simply fitting and rigging, which we did in a hangar across the road from the mess. Apart from the Gnome, Falcon and Liberty engines, fitting included metal work and making those dreadful steel cubes which got smaller and smaller as we tried to get them right. Rigging was largely a matter of getting the aeroplane symmetrical, quite an art with a structure of wooden members and bracing

wires. There was woodwork too for repairing damaged parts, and control cable splicing. We made many of the toilet-paper boxes on the camp, all with laboriously dove-tailed joints. Later, to encourage our mechanical sense, P & M motor bikes were issued to some of us. Petrol was supplied but we did the maintenance. They could be used outside the camp in certain circumstances which was useful as we were not allowed our own bikes or cars even if we could afford them. Our maintenance was rather shown up in a reliability run held towards the end of our time. Less than half completed the course in time, with many straggling home in the dark without lights. One cadet broke his leg.

Armament was taught in a building near the road to the airship shed. 20lb, 112lb and 250lb bombs were current issue and had a confusing range of fuses, detonators and exploders. For guns we had the moveable Lewis and fixed Vickers. The CC gear allowing the latter to fire through the propellor was a difficult mystery to handle.

Academic subjects like English, Science and Mathematics had a brick building near to Station HQ. We did written exams here too. The instructors were civilians and many became familiar figures to many terms, unlike the Service instructors who stayed for relatively short periods. In mathematics we got to elementary calculus, in English we could choose our own subjects for essays. This was very advanced. I remember little else except that our Squadron Commander once came to an evening class in full uniform with breeches and field boots and a civilian cap. Those were the days of field boots for Squadron Leaders and above and puttees for those below, even for flying.

In a hut near the parade ground a Flight Lieutenant with an Observer's Wing taught us Law and Air Photography. Another did wireless, where we wrestled with morse keys and headphones. There was no voice radio and the W/T operator was very much of a specialist. We wrestled with service organisation under our own officers. All I can remember is that boys in the Navy could be caned in those days.



Tail Skid Problems.

Airmanship and Navigation lectures came in our flying periods when weather prevented flying, which seemed much too often. They were bad days. We would march to the hangar still clinging to hope and our Cadet NCO would go in to report. Then out he would come giving the 'wash-out' signal and march us off to a nearby hut. It was hard to concentrate when you felt so disappointed. The Church, gym and swimming bath were all in hangars on the south aerodrome just east of the present ones. All three padres were great characters.

Games and exercise of all kinds were vigorously encouraged and we were expected to do something active every free afternoon. During our first year, in September, I was lucky enough to break a finger at hockey. Not only did this keep me off rifle drill and other tiresome things but left me free to hang around the hangars if anyone was flying. I got four extra passenger trips this way. But for my finger I could have been in trouble for skulking round the tarmac instead of taking exercise.

At first with so few of us, competition to get into the teams was not severe, but the arrival of new terms in September and the new year quickly altered this and standards rose fast. By the next summer we began regular fixtures with Woolwich and Sandhurst.

Riding was very much encouraged, because it developed the sensitive hands so essential in the air, where the feel of the controls meant so much. Anyone could readily get time off for hunting, but very few indeed could afford even to ride. The cadet who won the first R. M. Groves Memorial Prize for flying was one who did. I think he had ridden all his life. Beagling was encouraged but did not have the same virtue as hunting. We could get transport but not time off for it.

We had about four weeks leave at Christmas and in the Summer and about ten days at Easter. We would travel to and from Grantham in 5 ton Leyland lorries, twenty or more of

us, all standing. A dozen or less might have a 30 cwt Crossley tender which had a bench down each side. Our leaves were entirely free of any special activities, the only snag was having no chance to fly.

We flew from the south aerodrome, the hangars being where they are now. There were no runways, parachutes or flying control. The procedure was simple. You took off and landed in your own time into wind and where it was most convenient. The pilot was responsible that all was clear ahead and that he would not obstruct anyone else already landing or taking off. A machine landing always had right of way. We always spoke of 'machines' then. All our flying was on the Mono Avro, the 504K with a 100 HP Gnome Monosoupape rotary engine. With luck one could get a short flight in another type if an instructor could borrow it from a visiting pilot. I had two that way.

The Mono Avro was used in great numbers as a trainer during the war. It was very well-suited, big enough to avoid torque trouble, reasonably light on the controls and robust enough to stand a good bit of bumping about. It was good for aerobatics, 'stunting,' for beginners. Loops, half rolls, stalling turns and an occasional falling leaf and spin were our normal repertoire. She did about 70 mph level, came in at around 60 and had to be dived to 90 for a loop.

She had no inherent vices but was not easy to taxi in a wind. This prevented flying on many occasions, as did low cloud and poor visibility, since we had no radio or blind flying instruments. For intercom there were two Gosport tubes, one from instructor to pupil and vice versa. These were flexible metal voice pipes with a mouthpiece at one end. The other end connected with two earpieces in our helmets via a metal Y piece and thinner lengths of rubber tubing. They were quite effective.

The engine was a slight problem as it only ran at one speed, the throttle lever simply allowing a fine adjustment of the petrol flow to let it do so. In the air when you closed the



Q.F.I's.

throttle in the normal way your forward speed kept the propellor, and engine, windmilling. To start again the lever must be pushed forward to the correct setting. If the engine stopped through gliding too slowly you could start it by diving if you had enough height. For waiting on the ground and taxiing there was a blip switch in the top of the control column ; this allowed the engine to be run in short bursts without upsetting the throttle setting which was critical. The engine used castor oil and used it lavishly. The smell of it and the noise of the blipping engines are quite unforgettable. They were heaven. All the same this inability to throttle back made it easy to lose your propellor on landing. This was not so bad if flying with an instructor, you just got out and swung it. You were not so popular if you were alone and someone had to come out to do it.

On the first detail for the day the machines were lined up for inspection and when the word was given our instructor led us round, with the rigger and fitter in attendance. He would check the wheels, flip a wire and tweek a control cable here and there and maybe test the tailplane for firmness ; there seemed to be no set procedure and certainly no maintenance sheets to sign. When all were done we carried on flying.

Our first year we sketched villages and places and map read, while we followed the progress of the Naval term with interest and envy. They were all flying solo by the summer. That autumn the weather was very bad and

the naval term had to have preference, so we got very little flying, which was miserable. Nevertheless by Christmas we had done ten hours or so each and had got used to being in the air. Our only real excitement was when a naval cadet, Yale, had the only crash in our two years. He stalled making a forced landing, badly damaging the undercarriage and front of his Avro. He was unhurt. We saw the wreck coming in on a trailer, it was a great thrill !

When we began dual instruction in February 1921 we flew much more often, sometimes maybe three or four times in a week. It was fun but at times I thought I would never learn to land. The first of us went solo at the end of March and the rest of us over the next month or so. We had had between ten and fifteen hours instruction. I got very impatient and rather frightened as I began to feel ready to go but felt quite calm when I was sent off alone. I lost my prop just before touching down but that was forgivable on a first solo and I was not too far from the tarmac.

After this, apart from frequent short checks by our instructors, we always flew alone. We would be told what to practice and for how long ; anyone who landed late when someone else was waiting was very unpopular. Very soon we added aerobatics on our own, often egged on by hearing that someone else had tried. Some were shown how by their instructors but I never was. This was in line with the Gosport doctrine that a pupil should be encouraged to find out for himself once he could fly reasonably safely. It could make you breathe a bit, making up your mind to do things, particularly for the first time ! Like going up through an unbroken cloud layer ; we had no blind flying aids. But the wonder of breaking out into bright blue sunshine with the dazzling white of the clouds piled up around was worth a bit of anxiety. Once I got in a panic just because I was in the air. I knew there was an eclipse but when the light went an eerie, greeny-brown, I felt I must get down. But I couldn't because my time was not up, so I went down and flew at 'nought feet' across the north aerodrome. There I saw our shadow picked out like a drawing, struts and all. Then I felt better and went back up and carried on. We never really spoke about being frightened even amongst ourselves, but no doubt most of us were from time to time. In fact it was this mixture of fright and enjoy-

ment that made flying such fun and so fascinating.

We did two cross-country flights, one to Lincoln and back and the other a triangle of 45 miles ; the sight of the big airship shed was as always a great comfort. We never landed away from Cranwell except for engine failure. These were still quite frequent and had a marked effect on flying technique. In lectures we were taught always to keep a possible landing place in view and how to tell the wind at ground level. Do cows still lie down into wind ? In the air every landing had to be treated as a forced landing ; once you had shut off your engine that was that, it was the height of bad airmanship to use it again to drag yourself in to the desired spot. We were taught how to sideslip off height, undershooting was bad. 'No 1 deadly sin' was of course to turn back on take off.

Thanks to this teaching but even more so to the size of the aerodromes at Cranwell and of the fields around, Yale was the only one to come to grief in a forced landing. I do not know how many we had, but I see I had six in 1921 in thirty-four hours flying, three alone and three with my instructor. The causes are interesting. In two, one to each of us, we ran out of petrol and flew back after someone had flown out with a can or two. We had only been flying some twenty minutes at the time ; normal endurance was $1\frac{1}{2}$ hours or so ! Once we had a broken connecting rod. When I did my first loop and 'hung' on top, the distributor wire fell out of the magneto because the split terminal was loose. I got down in a field. Another time gliding from 11,000 ft the oil congealed and I could not get the engine to turn. This was over the aerodrome. The other time involved a three-mile walk home for help, while my instructor waited with the machine. My log book gives no cause. No special notice was taken of these incidents and both times I flew out of the fields I had landed in.

We were not allowed to fly together or take passengers but shortly before we left two particular friends in our term flew with me. I had extra flying in the afternoon and picked them up and landed them again on the North aerodrome, and we got away with it. Probably others did the same but one did not talk about it.

By mid-December flying finished and exams began. We averaged about forty-five hours in

the air of which eighteen to twenty were solo and around fifteen dual. About this time too we heard that a third of those passing out would stay in UK, the rest would be posted to Egypt, including Palestine and the Sudan, India and Mesopotamia (Iraq). We were allowed to state a preference and though the overseas tour was five years I believe enough of us volunteered. We could also say what type we wanted to fly, DH9a, Bristol Fighter or, I think, Sopwith Snipe.

There must have been special parades when the Naval term passed out and when we did a year later but I cannot remember them. I can remember speeches in the gym after lunch, with prize-giving when we left. There were only three prizes then, the Sword of Honour, the Groves Memorial prize for flying and the Abdy Gerrard Fellowes for Science and Mathematics. We had passing-out Balls each year too, though I cannot recall that we were at any time told if we had passed out. That came later in letters from the Air Ministry after we had left. In the same envelope we had our posting instructions when most of us seemed to get what we had asked for. Sixteen of the original seventeen on the Naval course were commissioned and twenty-seven of the thirty-three on ours.

Those who stayed at home went to a conversion squadron but the rest of us did no more flying till we got to our overseas Commands in April. We travelled of course by troopship. In Egypt there was a full-scale flying school where they could convert, in India and Mesopotamia our squadrons had to do it. This was quite a problem for them, with us so inexperienced and facilities pretty sketchy with the one dual aircraft often un-serviceable. Moreover the squadrons were mostly quite occupied with other work, including small wars and air control operations. It was not all that easy to learn a new type in these circumstances and I know that at times I must have strained people's patience to the limit. No doubt others did too. These men had all seen war service and many did not have permanent commissions as we did, yet nothing seemed to diminish the great kindness and friendliness with which we were treated. There was none of the 'keep the new boy in his place' attitude which was quite common in the other two services. This is perhaps the warmest and deepest of the host of cheerful and happy memories I have of those early days.



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COLLEGE

NOTES

GROUP CAPTAIN D. B. CRAIG, OBE, ADC, MA.

Group Captain D. B. Craig handed over his responsibilities as Station Commander in August and left to take up an appointment as Director of Plans and Operations HQ Far East Command.

He assumed his duties in March, 1968 and has helmed College (Unit) during an extremely busy period which culminated in the visit of Her Majesty The Queen and The Duke of Edinburgh to celebrate the 50th Anniversary of the College.

As unit commander he has been responsible for routine administration associated with a Royal Air Force station and, even more important, providing the necessary support to allow the training of flight cadets and engineer officers to be conducted in a calm and peaceful manner free from irritations and distraction.

The fabric and surrounds of the College have been of particular concern and he will long be remembered for having the courage to authorise the removal of long established hedges thus opening up the vistas of the College, which has never looked better. This may have had some bearing on his appointment as ADC to Her Majesty The Queen.

All sporting activities and social amenities have received his enthusiastic support and the College is now richer by a Petrol Station and Laundrette.

He has been ably supported by his charming wife who has been a tower of strength in

all matters concerned with the domestic side of Cranwell.

They will be missed and we wish both he and his family success and happiness in his new appointment.

GROUP CAPTAIN

A. W. CULMER, MBE, BSc (Eng), C Eng, FI Mech E, FRAeS, ACGI

Group Captain Culmer came to the College from MOD DG Eng (Royal Air Force) in succession to Group Captain Thirlwall as Group Captain Training (Engineering) in April 1969.

During his time at the College he was directly involved in the detailed planning of Graduate Entry Scheme engineer officer training. He was also the College member of the Working Party to the MOD Steering Committee on Engineer Training which is reviewing further engineer training policy. In all fields, his experience and common sense did much to ease the problems involved, and assist progress. From their arrival, both he and Mrs Culmer showed keen interest in Cranwell activities and in the social life of Staff and Student Officers' Messes, making many friends here and in the surrounding area.

He left the College in September 1970 to take up a new post in MOD as DD Eng Pol 2. We extend our very best wishes to Group Captain and Mrs Culmer and wish them every happiness and success in the future.



Group Captain G. L. Pendred.

GROUP CAPTAIN G. L. PENDRED

Group Captain G. L. Pendred assumed command of the Royal Air Force College Unit on 28th August, 1970.

Group Captain Pendred was born in Caythorpe, Lincolnshire — his father was, at the time, a Flying Instructor at Cranwell. He was educated at Bedford School and Christ's College Cambridge, and joined the Royal Air Force in 1942. After gaining his wings he served in 197 Squadron and 17 Squadron before being appointed as a QFI at the Royal Air Force College in October 1948.

His career has been wide and varied, including appointments as Personal Air Secretary to the Secretary of State for Air (1952-54), Chief Instructor, No 2 FTS Syerston (1962-64) and a member of the Directing Staff at the Royal Air Force Staff College Bracknell (1964-66). He has just completed a tour as Director of Air Staff Briefing at the Ministry of Defence (Air).

Group Captain Pendred is a graduate of the Royal Air Force Staff College and the Joint Services Staff College. He has represented the Royal Air Force in Athletics and Fighter Command at Rugby.

The *Journal* welcomes Group Captain and Mrs Pendred and their family to Cranwell.

HONOURS AND COMMENDATIONS

The *Journal* offers its congratulations to the following personnel of the College who have been awarded honours and commendations in the Birthday Honours List 1970 :

Wing Commander W. F. Knapper was made an Officer of the Order of the British Empire.

Squadron Leaders D. S. Eburne and D. G. Marr were made Members of the Order of the British Empire.

Mr A. F. Wishart was made a Member of the Civil Division of the Order of the British Empire.

The Air Officer Commanding-in-Chief has commended Warrant Officer J. A. Garbet and Chief Technician E. R. Forster for meritorious service.

The Air Officer Commanding and Commandant has commended Corporal H. F. Tierney and Senior Aircraftsman K. J. Wilkin for meritorious service.

IMPERIAL SERVICE MEDALS

During the Summer Term Imperial Service Medals were presented to the following members of the civilian staff :

Messrs B. Buckley, B. Hickson and W. Knowles.

The *Journal* offers its congratulations.

PROMOTIONS — No 99 ENTRY

The following promotions were made in No 99 Entry in July 1970 :

No 3 Squadron : Flight Cadet Senior Under Officer D. R. Williams ; Flight Cadet Under Officers N. G. Matheson, C. H. Lawrence, J. G. Sutherland.

No 4 Squadron : Flight Cadet Senior Under Officer C. D. Poate ; Flight Cadet Under Officers I. C. Atkinson, I. S. Cartwright-Terry, M. G. Wilson.

RETIREMENTS

The following long-serving members of the civilian staff have retired :

Messrs C. R. Pepper (41 years service), W. Knowles (32 years service), G. M. Williams (22 years service) and W. H. Barnes (21 years service).

The *Journal* wishes to record the College's appreciation of the devoted service rendered by the above personnel, and wishes them a long and happy retirement.

DEATHS

It is with deep regret that the *Journal* records the deaths of the following long-serving members of the civilian staff :

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GUINNESS SCIENCE AND MATHEMATICS AWARD 1970



Flight Lieutenant C. N. J. Tily, a lecturer in the Department of Engineering, receiving the Guinness Science and Mathematics Award from Lord Ritchie-Calder.



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COLLEGE UNIT SPORT

Once again the College Unit performed most creditably in many Inter-Station Competitions and was well represented at both Royal Air Force and Command level.

The Badminton team won the Royal Air Force 'B' Cup and the 23 Group Competition, and four players represented the Royal Air Force and Command teams. Flying Officer (WRAF) Gill Bailey captained the Womens' Royal Air Force team in the Women's Inter-Services Championships and represented the Women's Royal Air Force on several occasions.

The Cross Country team won the Lincolnshire League and Flying Officer R. W. Clarke and Pilot Officer S. Appleton represented the Royal Air Force. The Rowing Club, represented by Squadron Leader J. S. Pilgrim-Morris, Squadron Leader Clark, Flight Lieutenant P. J. Day, Flight Lieutenant J. B. Hill and Flight Lieutenant B. Fuller won the Royal Air Force Head of the River Race.

In the Training Command Golf Champion-

ships Cranwell won the team event and had two individual champions in Squadron Leader H. M. F. Davies (Handicap Winner) and Squadron Leader I. Troughton (Scratch Winner).

Other successful sportsmen were Flight Lieutenant A. Painter who represented the Royal Air Force Fencing Union and Flight Lieutenant M. Christy who played for the Royal Air Force Cricket team. In the world of canoeing, Flying Officer B. Witter represented Great Britain in competitions held in Italy and Switzerland.

The Athletics Club suffered from the fact that the Inter-station Final was held during the College Summer Leave period, but ten Cranwell athletes were chosen for the Training Command team which was the Inter Command Championships and Flying Officer Clarke, Pilot Officer G. A. Paterson, Pilot Officer A. R. Taylor, Sergeant W. A. Cameron and Flight Cadet J. Reece all represented the Royal Air Force during the season.



STATION SOCCER. 1969-70 SEASON

Standing : SAC J. Kobiela (Coach), Cpl J. R. Gale, SAC T. Kelleher, Sqn Ldr G. Goulding, Sgt K. Pattison, LAC W. Collins, Sgt K. Roper.

Kneeling : SAC C. Sutherland, Fg Off B. Wakely, Cpl G. Johnson (Capt), Cpl K. Wilkinson (Vice-Capt), Cpl T. Kenyon, LAC K. Archer.

VISITS - SUMMER TERM 1970

Visitors to Cranwell during the Summer Term included :

MARCH

On 6th. General Saint Crieq, Commandant, l'Ecole de l'Air, plus six officers, twenty-nine cadets and nine SNCO's.

On 12th. Air Commodore G. H. Ford and Air Commodore C. T. Nance.

APRIL

On 15th. Commodore W. P. Hayes, Commandant of the Royal Military College of Canada, and Mrs Hayes.

On 21st. General de Brigade Driss N'Michi, Deputy Chief of Staff and Commander of the Royal Moroccan Armed Force, with senior officers of the Moroccan Armed Services.

MAY

On 4th. Major C. Gemmeke and five cadets of the Netherlands Royal Military Academy.

On 13th. Dr C. Whitworth, Vice-Chancellor, University of Salford.

On 14th. Professor M. W. Thring, Head of the Department of Mechanical Engineering, Queen Mary College.

JUNE

On 12th. Her Majesty the Queen and His Royal Highness The Duke of Edinburgh.

On 17th. Air Vice-Marshal C. M. Clementi, Senior Directing Staff (Royal Air Force), Imperial Defence College.

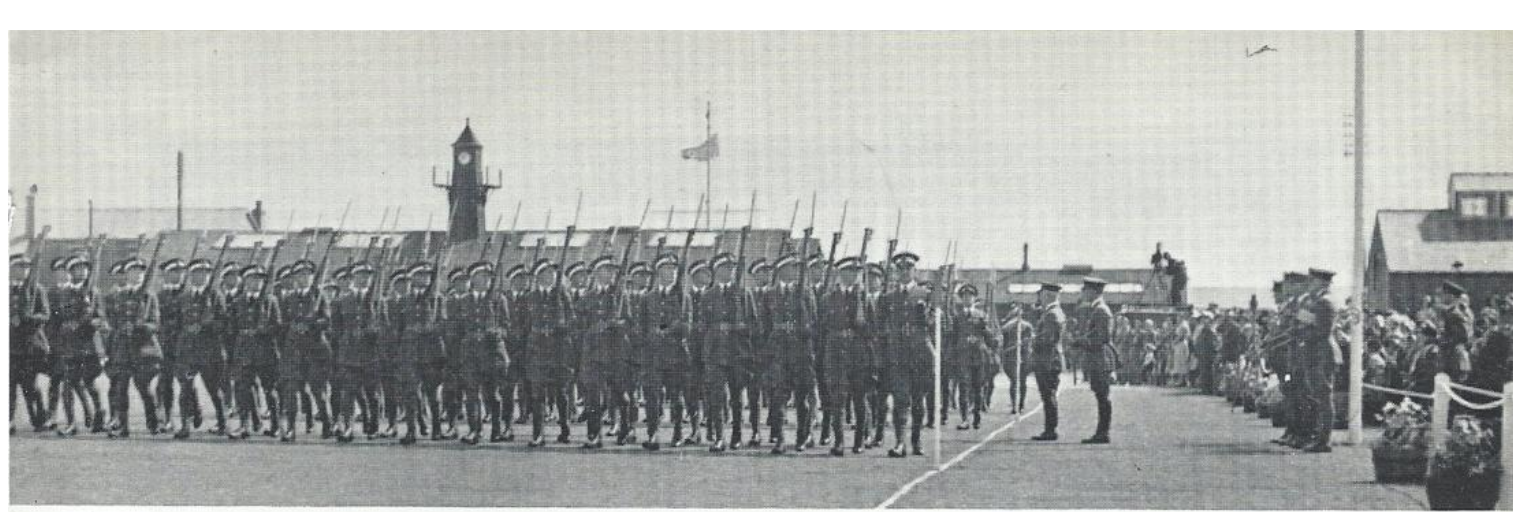
JULY

On 13th. Air Vice-Marshal F. B. Sowrey, Senior Air Staff Officer, Training Command.

On 31st. Marshal of the Royal Air Force Sir Dermot Boyle, who was Reviewing Officer at the Graduation Parade of No 98 Entry.



General de Brigade Driss N'Michi arriving at the College.



Cadet Journal

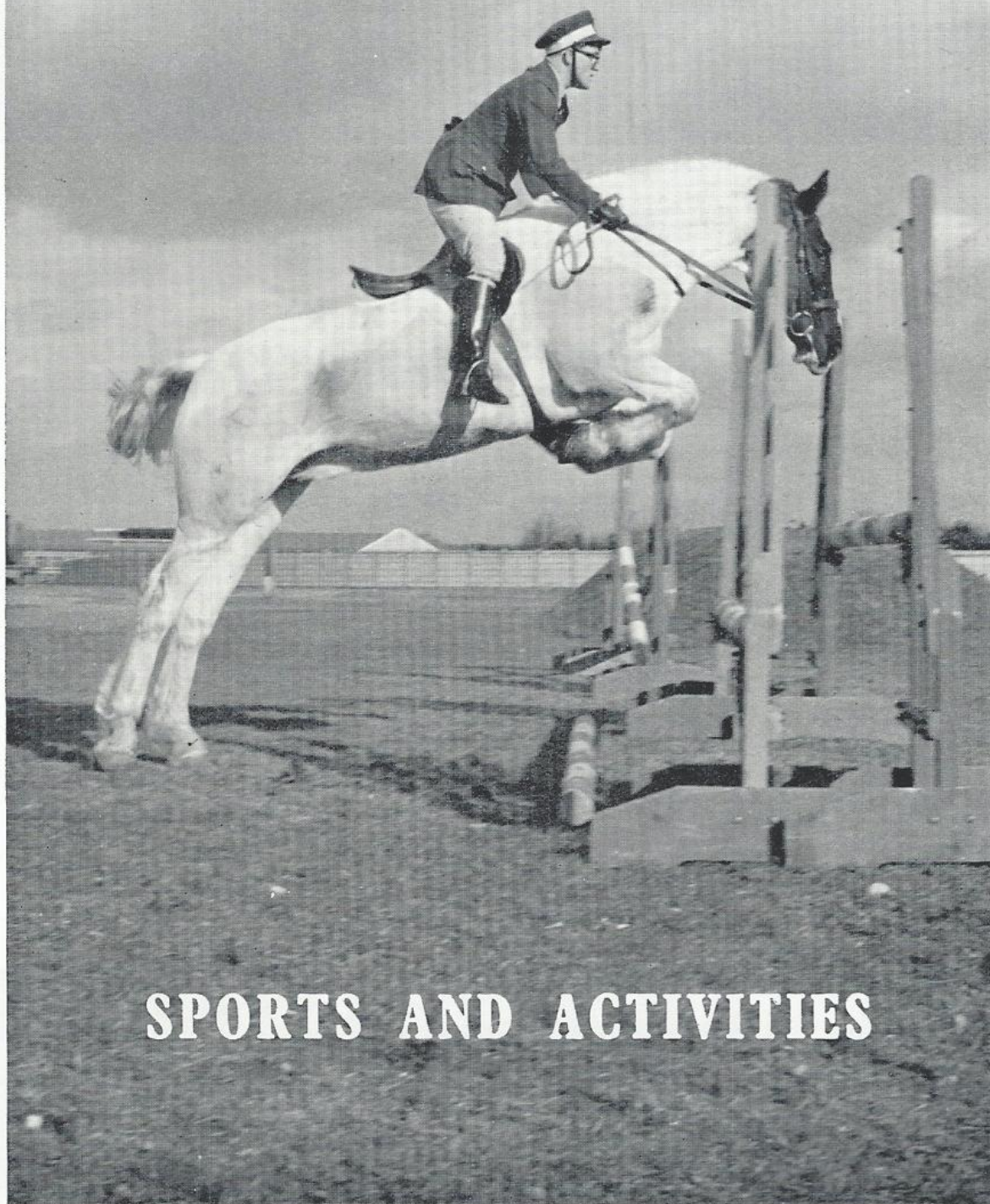
Summer Term 1970

Sport, Society Notes, Articles

Poetry Review



SUMMER TERM 1970



SPORTS AND ACTIVITIES

RIDING

With the introduction of a professional, full-time stable manager and the growing experience of the Cadet members, the Royal Air Force College Saddle Club can look back on a very successful term. The Cadet Riding Team have competed against several university teams at home and away, winning the majority of the matches.

Four cadets, whilst on the United States Air Force Academy visit of No 99 Entry, managed to ride out into the foothills of the Rocky Mountains and found the horses more used to the altitude than themselves! Whilst No 99 Entry were in the USA, the Saddle Club entered some riders in a local Hunter Trials at Brant Broughton and the cadets were represented by Flight Cadet Young of No 100 Entry. The station was represented at the Training Command Equitation Championships at Royal Air Force Halton. Senior Flight Cadet Gregory rode in the First Team and Flight Cadets Humphries and Young rode in the Second Team; all gained valuable match experience.

Saddle Club activities have become more popular this term because of the warmer and lighter evenings. They include a quiz, a treasure hunt and a 'pick-a-fence' competition, the latter being won by Flight Cadet Humphries.

The Jorrocks Trophy for Chimay Riding was won by No 3 Squadron, captained by Flight Cadet Allen who also came first individual.

Planning ahead to next term, it is hoped to increase the number of university matches. A station Gymkhana organised by the cadets is going to be held in September and it is hoped that this will be an even greater success than the one held last term. Finally, with the arrival of No 101 Entry and the graduate entries, College membership of the Saddle Club should increase to fill the gaps left by Nos 97 and 98 Entries.

FULL BORE SHOOTING

A very unsuccessful season was experienced this summer due to the lack of range bookings at Beckingham, an Army establishment. No open range practices were available and there was also nowhere to host visiting teams. In the two fixtures that were arranged, the team put up a good effort winning one and losing the other by only a small margin. However, individual attempts in the Training Command Championships were exceptionally good with Flight Cadet P. W. Medhurst winning the Young Officers' and Airmen's Target Rifle event and Senior Flight Cadet D. J. Mather coming third. The team was, in fact, promising but with no openings for practice, good results could not be achieved. The coming small bore season, however, does appear to be somewhat better and it is hoped that the team's potential will be realised.

SAILING CLUB

The hot summer provided some excellent sailing weather for the Sailing Club, after a fairly late start to the season.

In the matches the club had, a fair amount of success was achieved, as well as a lot of very enjoyable sailing. The best sail of the season was at Guernsey, where the wind was so powerful that of the six boats racing only two finished, resulting in a win for Cranwell.

The inter-College match at Bembridge was sailed in unfamiliar boats, and meant a duel with the Marines for third place, which Cranwell took; however the team learned a lot this year which will be very useful for the 1971 match.

All told the Sailing Club had an excellent season of competitive sailing and is looking forward to a thorough refit and good season next year.

ATHLETICS



The Assistant Commandant (Training) with the Cranwell, Sandhurst and Dartmouth Teams.

Now that the number of flight cadets is so small it was decided to combine cadets with officer students in order to produce a team of reasonable standard this year. This produced a good, balanced team for the annual inter-College triangular match, in which we were hosts to Sandhurst and Dartmouth.

The match, held on the newly-converted 400 metre track, produced some excellent athletics. We were particularly strong in the field events taking five first places out of seven. The pole-vault was especially interesting, with the athletes making the most of the new inflated landing area — a most welcome gift from the Nuffield Trust. Sandhurst, fairly inevitably, beat us into second place with Dartmouth trailing, although the score was much closer than for a number of years.

Matches against local universities and colleges produced mixed results. Sheffield City College figured prominently, as we were matched against them three times, with the results two to one in our favour.

In Service competitions the team has been bolstered with a few station athletes to produce what must be one of the strongest unit teams in the Royal Air Force. This was particularly evident in the 23 Group Cham-

pionships in which the Cranwell team took first and second places in the majority of events. As a result 17 athletes were selected for the Group team in the Training Command Championships but seven were prevented from competing by training and other commitments. Those who did compete, however, made considerable impact, five of them becoming Command champions and Plt Off A. R. Taylor (97 CNA) setting a new Command record in the javelin.

Eight of our team went on to help Training Command win the Inter-Command Championship in which Plt Off G. A. Paterson (97 CNA) set up a new College record of 7.27 metres in the long jump.

At the time of writing we are through to the second-round of the Inter-Station competition and are reasonably confident of reaching the final once again.

As previously mentioned, another major change this season has been the conversion to metric of all distances and measurements. It was decided to convert existing field records to their metric equivalents but to establish new records in track events and to leave the current track records, shown below, permanently in the record books.

Linear track records

<i>Event</i>	<i>Holder</i>	<i>Time</i>	<i>Year</i>
100 yds	P. B. Glover	9.7s	1966
220 yds	P. B. Glover	21.9s	1966
440 yds	T. Parselle	50.2s	1931
880 yds	R. F. Sandford	1 m 53.3s	1966
1 mile	D. B. Bowden	4 m 18.6s	1968
2 miles	D. B. Bowden	9 m 24.2s	1968
120 yds Hurdles	} C. Granville-White G. J. Pilgrim-Morris	15.5s	1961
4 × 110 yds Relay		Dobbs, Glover, Harrison, Phillips	44.0s

Whilst on the subject of records, it is interesting to note in this 50th Anniversary year, that the high-jump record of 6 ft (1.83 m) set by F. E. Nuttall in 1921 — surely the first season of College athletics — still stands !

The following Cranwell athletes have represented the Royal Air Force during the season : Fg Off R. W. Clark, Plt Offs G. A. Paterson and A. R. Taylor, Flt Cdt J. Reece and Sgt W. A. Cameron.

Finally we must offer our thanks to Sqn Ldr Goulding and Sgt Hannah for their invaluable help and coaching. Our thanks are also due to all those members of the PF staff and ground staff who helped to keep the Stadium in such a fine condition. Good luck in the 1971 season!

FIELD SHOOTING

During the Winter Season the Field Shooting Section thrived with regular shoots at Barkston Heath. At the start of the season the bag was filled with Hare, Partridge and Pheasant but the birds became very aware of the approach of Christmas and the bag became rather thin. Fortunately the section was able to buy two guns in the Officers' shoot and this enabled several of the better guns to take part in shoots at Cranwell North and South and at Fulbeck.

Out-of-season activities have been centred on clay pigeon competition shooting with Dartmouth and Sandhurst. In spite of special coaching from a representative from Eleys, the College team was beaten into third place in the triangular match which was used to determine Sandhurst as the 1970 winner of the Moss Bros Clay Pigeon Shooting Trophy.

SWIMMING AND WATER POLO

With a team that has been reduced in strength from last year, losses from 96 and 99 pre-university entries unfortunately not being balanced by the two 100 Entry swimmers, a reasonably successful record was maintained. The student officers filled the gap, however, and unexpected detachments produced two of last year's swimmers.

The annual triangular event was held at Dartmouth this year. Sandhurst achieved their long yearned for ambition and managed to beat the college team by one point, 56 - 55. Dartmouth followed up with 23.

The water polo team has had more success this year beating both Sandhurst and Dartmouth, 3 - 2 and 11 - 0 respectively, and as the station team we have entered the Lincolnshire League and knockout competitions, and the Royal Air Force Cup series.

It is hoped that the College will provide members for the Training Command swimming and water polo teams. Senior Under Officer O'Connell is already a member of the Royal Air Force water polo squad.

Finally, I would like to thank Squadron Leader G. S. Goy, Flying Officer T. A. Reed, Sergeant S. Wilson and Corporal J. D. Cunningham for their invaluable coaching and training this year.

POTHOLING CLUB



This term has seen a great increase in the membership of the club and also a broadening of its activities. Membership now stands at eighteen, eleven of which have been introduced to the sport this term.

Three major expeditions, for more experienced members, have been staged in the Ingleborough and Birkwith areas of Yorkshire. Here, the standard of potholes available is high and much ladder experience has been



' Much Ladder Experience was Gained '

gained, especially on more complex potholes such as Alum Pot and Sell Gill Holes.

There have also been a number of day trips to familiarise novices with basic cave techniques. These trips have been to Derbyshire and have gained a number of members to the club's ranks. Underground photographic work has also been introduced in the later stages of the term.

Due to the increase in the society's activities, it was decided to plan a challenging event for the summer leave. Thus, a party of five members are heading for Italy in the first two weeks of August, to the caves and potholes of the Ligurian Alps, visited by the society in 1964. It is hoped, on this trip, to visit 'Caverna di Cranwell,' a cave discovered by that expedition.

The club looks forward to the coming term with hopes of more keen beginners and more advanced and demanding potholing for the experienced members.

TENNIS

The 1970 season brought with it mixed fortunes for the College tennis team. With the departures of Nos 96 and 97 entries, last season's team disappeared in its entirety: leaving us to rely solely upon the tennis strength of No 100 Entry. Despite their enthusiasm, they were unable to match the teams put forward by the top schools and universities with whom fixtures had been arranged.

However, the taste of success was not to evade us for the whole season; by calling in the services of our student officers we were able to gain victories over BRNC Dartmouth (9-0): RMA Sandhurst (8-1); and Loughborough College (4-0).

Thus another season comes to an end, leaving behind memories of some very entertaining matches played with high spirits and good humour.

We would like to thank Warrant Officer Norris for his coaching, the student officers for coming to our rescue and Flight Lieutenant C. R. Geach for his firm guiding hand throughout the season.

KARTING SOCIETY

The major event of this season was the purchase by club members of two BMF100 racing engines which enabled us to put a competitive team into the 1970 Royal Air Force Kart Championships at Royal Air Force Little Rissington. We had a mixed success with Senior Flight Cadet Barcroft drawing attention to the Royal Air Force College by gaining the trophy for the best novice ; no mean feat among so many highly experienced drivers. The second Kart in the team driven by Flight Cadets Boardman and Kelly suffered mechanical trouble and only completed one heat.

Throughout the season we have attended meetings at Fulbeck and have had regular driving on the pan on the south airfield.

Although we have purchased two new engines and are looking for a new frame we are still very short of equipment and so membership of the club unfortunately has to be restricted to six members.

Next season with new frames and engines we feel that we will meet with a greater amount of success than the present season has brought.

COLLEGE CHRISTIAN UNION

The big event of the Summer Term was the second College Christian Union Weekend (29 - 31 May). A number of old ex-Cranwell friends and others joined us from various points of the compass for this weekend. The Reverend Mark Ruston (Vicar of the Round Church, Cambridge) was guest speaker at the Saturday evening meeting, which attracted 130 people and kept us busy serving numerous cups of tea afterwards.

Otherwise the programme has been varied as usual — one Bible Study a month, one ABC of Christianity talk by Wing Commander Everall (we have reached 'K' for Kingdom of God and are still wondering about 'X' and 'Z' !) one film evening and one guest speaker.

We continue to support the work of the Southern American Missionary Society and especially Canon Douglas Milmine (an ex war-time Royal Air Force pilot). We also help in the visiting of the patients in Rauceby Hospital every fortnight, and in the various activities of the churches here at Cranwell.

Several of our regular members left at the end of the Summer Term. Among these was Leslie Trewinnard, whom we thank for his work as Cadet Secretary for two years. We wish them all well on their new stations. Under the new arrangements at Cranwell, the Christian Union will continue to exist as a station society under the auspices of PSI.

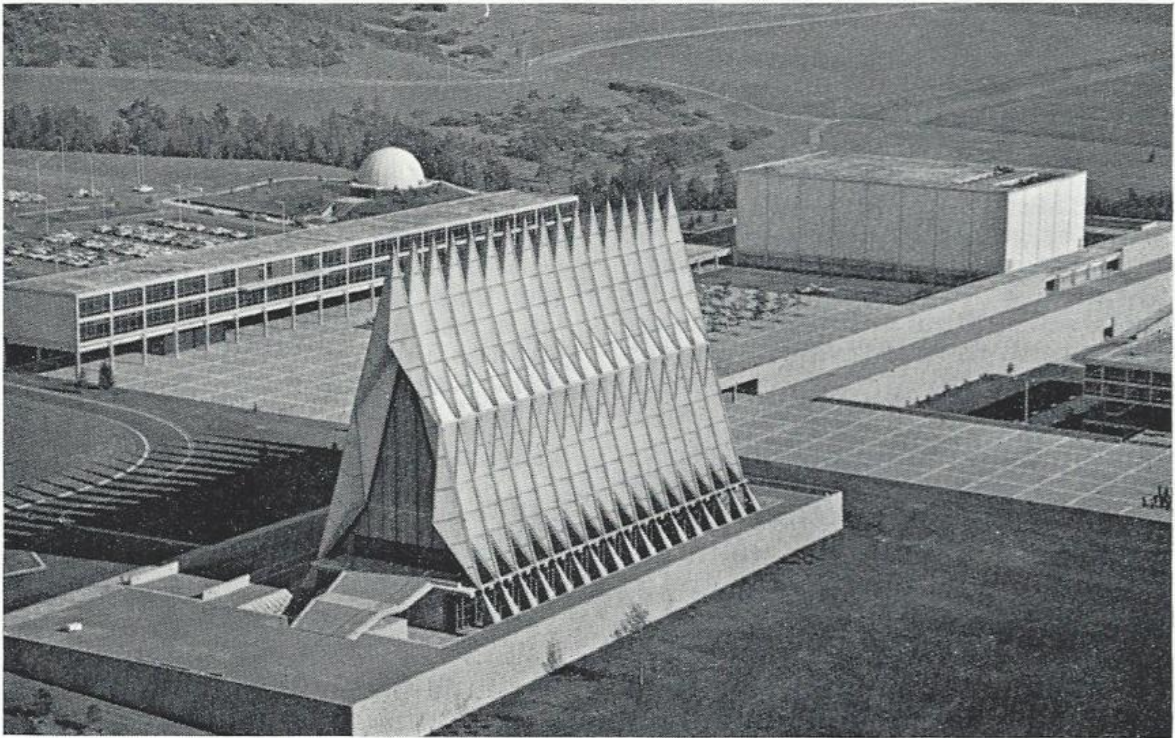
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FALCON CRANE 1970



At a very early hour on 11 April 1970, 59 cadets of 99 Entry and a small party of officers and senior NCO's left the College for the annual visit to the USAF Academy. Due to exercise BERSATU PADU we had to travel by Britannia and the journey was further prolonged by bad weather at Gander : after an attempted landing we were diverted to Goose Bay for refuelling. We then continued our journey to Andrews AFB and we stayed the night in excellent accommodation on the outskirts of Washington DC.

The following day we completed our journey, arriving via Petersen AFB at 1600 local time. Still weary from travel, we were whisked off to welcoming parties in various parts of Colorado Springs. We were all given a foretaste of the hospitality which prevailed throughout the visit, and everyone returned that night tired, none the worse for a little refreshment and apprehensive of what the week might have in store. The Academy covers 18,000 acres and accommodates nearly 4,000 cadets, in spacious and modern surroundings. On Tuesday we were given a most interesting tour, highlighted by a fascinating

presentation on the ' evolution of the sun ' in the Planetarium. We were very impressed by the chapel, which dominated the campus with its awe-inspiring size and beauty.

We rapidly became aware of how much ' bigger and better ' everything is in the USA, and the gymnasium and field house were no exception. The Royal Air Force College could easily have been lost in either of these buildings which contained two olympic swimming pools, an ice rink, an indoor football ground and ample facilities for all other sports.

It probably goes without saying that there were acres of playing fields surrounding the Academy. The cadets use these to very good effect and produce a first class team in all American sports. Their fitness and keenness was demonstrated physically on the Tuesday afternoon. Our noble Rugby team was defeated by the grand total of 31 - 0, and the soccer team lost by a comparable margin of 5 goals to 0. We were obviously handicapped through not being acclimatised to the rarefied atmosphere at 6,000 ft above sea level, but in

all fairness we were given a lesson in fitness and team spirit. Squadron Leader Mason, who is well remembered at Cranwell, is now stationed there and has taken great pride in developing their standard of Rugby — unfortunately for us.

All cadets participated in skiing at Loveland on the Wednesday, and despite Arctic conditions a great time was had by all. After a short while even the beginners were hurtling down the slopes at tremendous speeds, much to the anxiety and fear of more experienced skiers. No injuries were sustained, though the altitude left us extremely weary at the end of the day. This visit seemed to kindle a great enthusiasm for skiing and many cadets are now considering furthering their experience of the slopes.

On the following day we went soaring ; this was very much appreciated since at the foot of the Rockies there are some of the best possible conditions for this activity. (Try telling that to the GDP who was sick whilst airborne !)

Each day of the week we had marched to the dining hall with our host squadron, but on the final day of the visit two flights of Cranwell cadets marched to lunch in Royal Air Force style. The American cadets were impressed by our drill which contrasts with their more casual style.

During the week we spent several hours in lectures with our hosts, getting an insight into the life of an American cadet and an idea of the type of training he receives. Many hours were spent in discussion, often concerning the differences between our two countries.

A very reluctant party arose early on the Saturday morning, to begin the long journey back home. We again spent the night near Washington, but this time we were able to tour the capital and see all the famous sights.

All too soon we were back in England, and during the ensuing month members of 99 Entry bored the rest of the College with their anecdotes and stories.



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ROYAL NORWEGIAN AIR FORCE ACADEMY WINTER EXERCISE

In March of this year Flight Lieutenant Edwards and Flight Cadets Uprichard, Hobart and Parker spent a fortnight as guests of the Royal Norwegian Air Force Academy in Trondheim, Norway and took part in their Winter Exercise. We arrived on a Thursday and spent the next two days on the slopes of Trondheim learning the various techniques of ski-ing, the most basic being the art of standing up on the skis. Our antics would have made a good slapstick film and as we left for the exercise area on the Sunday, equipped with a fair knowledge of what ski-ing involved, I am sure the inhabitants of Trondheim breathed a sigh of relief.

The exercise was to take place at Gjevilvasshytta about 70 miles south of Trondheim, and our headquarters was a beautiful wooden lodge overlooking the frozen lake Gjevilvannet. As soon as we arrived we were eager to try out our new found skills and immediately went out on to the slopes. We soon found out how much more difficult ski-ing in the virgin snow was compared with the well-used slopes of Trondheim but after Dave Uprichard broke a ski and Flight Lieutenant Edwards a ski stick we became more proficient.

The programme for the ten days we were up there was to be a full one and it included the downing of 64 crates of beer we had brought with us. We went shooting with the SLK rifle and Luger 9 mm pistol on an assortment of targets laid out about 1 km from the lodge. Three experts came down from Oslo and took us all into the mountains to explain the dangers of avalanches and how avalanche rescue is carried out. In fact, we learned a great deal that day and now realise how important the study of avalanches is.

It was always an early start to the day with temperatures round about -15°C but the more than adequate clothing ensured we never felt the cold and I think we were all agreed that the coldest part of the two weeks was the trip over in the Varsity. There was a

night exercise using white ski clothing which proved very effective clothing even in a full moon. We were given instructions on winter tactics on skis and collected some amusing pictures as cadets were brought down by the booby traps they had laid. The first of the two big races we were to take part in was a 10 km circuit, won by Dave Uprichard but with John Parker taking second place in a photo finish with Flight Lieutenant Edwards. Again more beer as we prepared for the highlight of the trip — spending a night out in the snow.

We were to build shelters during the day and sleep in them at night. Although Flight Lieutenant Edwards did not take part in the actual building he came round to ensure his snow-case was big enough to sleep in. Dave Uprichard spent the night in an igloo which began to melt as it was so warm inside; Dave Hobart braved a lean-to but complained of a tree stump sticking in his head. John Parker spent a luxurious night in his four-man snow cave helped by a drop of the hard stuff.

The Saturday before we left was to be our big day — it was the 10 km ski race which had to be completed in under 65 minutes to gain a badge. All succeeded and the day was rounded off with a party in which the Royal Air Force's fighting spirit went on display. The Monday was to be our hardest day with a 20 km course over which we had to perform various tasks. We survived and so ended our stay in the mountains. A farewell party was held on the Monday evening and on the Tuesday we left after saying goodbye to all the cadets. They were to spend a further four days in the mountains and cover about 60 km on skis. We were all impressed by their fitness, their friendliness towards us all and their unending patience which I am sure must have been stretched at times.

And so ended our stay in Norway and I know it was a fortnight enjoyed by the Cranwell party and one which they will never forget.

RHINE CRANE 1970 : VISIT TO THE 14/20 KING'S OWN HUSSARS, PADERBORN

The 14/20 Hussars are situated on the outskirts of Paderborn in barracks and tank pens once belonging to a German Panzer unit during the last war. The traditional emblem of this regiment is the Prussian Eagle, granted to the 14 Light Dragoons in 1798 in honour of the Princess Royal of Prussia, for providing an escort to the Princess on her journey to England to marry the Duke of York in 1791. This century saw the amalgamation of the 14 Light Dragoons and 20 King's Hussars and the Prussian Eagle was recognised as the regimental emblem. During the last war the regiment acquired battle honours in North Africa and Italy to add to the many received throughout its life.

An array of officers and flight cadets departed from Waddington by Britannia on a Monday morning destined for arrival at Royal Air Force Gutersloh. On reaching this point the group divided into small parties, some remaining at Gutersloh whilst others proceeded further to Berlin and the delights within. Our party consisted of nine flight cadets and three officers. Military Transport drove us through the bleak and dismal but impressive former SS barracks along the bricked roads to the modern officers' mess.

The atmosphere of the camp instilled a sense of urgency, as the soldiers set about their designated tasks in a very diligent and professional manner. Occasionally, one would divert one's attention to the shuddering bellow and roar of a giant Centurion tank as it rumbled through the camp at speed.

We were warmly received by the Commanding Officer Lt Colonel M. Palmer and the officers of the regiment, before settling down to a delectable reception lunch. That afternoon we received a lecture from the CO on the structure and composition of command in West Germany and how the system co-ordinated the tasks of the forces operating in West Germany. That evening we spent in the mess generally taking full advantage of the duty-free items and slowly adjusting ourselves to the casualness of the mess.

The following day, Tuesday morning, we were conducted on a tour of the armoured vehicles and REME workshops. The vehicles varied from a Chieftain tank, a Stalwart

(amphibious carrier), a ferret, an APC and a Gigantic recovery vehicle. In the afternoon, all garbed in combat kit, we were transported to a nearby area of ground where we were allowed the opportunity of controlling the armoured vehicles which we drove 'hell for leather' and eventually returned to camp with mud spattered faces. In the evening, the CO very kindly invited us to a drinks party being held at his house. Throughout the course of the party we lost one flight cadet to ground level and the CO's black Labrador was delivering puppies at the rate of approximately one every half-hour. Each delivery gave further cause for celebration.

Wednesday found the group visiting an artillery regiment in Dortmund, equipped with Abbott tanks. These tanks, fitted with 105 mm howitzer guns, were supported by specialized crews, each crew either involved with range finding, projection angles or the firing of the gun. Following the tour of the tanks and associated systems equipment, we sat down to lunch in the mess. The next unofficial item on the agenda was a guide tour of the cellar below the mess, where we were pleased to discover a RAFC plaque on the wall above the bar. On the return journey to Paderborn we stopped off at the Mohne Dam, the site of one of the famous Dambuster raids.

The gap through which the water once gushed in the order of tons per second after being successfully burst by the unusual bomb, is still discernable today even though the wall has been rebuilt. This is significant due to the discoloration between the original stone and the new stone used to rebuild the wall. Standing in the middle of the wall, looking out to the approach the Lancasters must have taken over the horizon to the lake below at low-level, one could almost visualize the event taking place once more, with the flanking gun towers sending out deadly streams of gunfire.

Wednesday evening we ventured upon a night of entertainment. We managed to accomplish this aim by 'dropping in' on the local night club attended by numerous serious 'locals' who considered our jovial entrance as a rude intrusion. The whole affair was thoroughly debauched and amusing, naturally



... Spurs ... polo-sticks and a hard, high-speed ball.

appealing to a flight cadet's sense of humour.

The next morning we were delegated the task of cleaning the mud-covered tanks from the Tuesday afternoon exercise. Being somewhat versatile by nature, as all flight cadets are, this was set upon with alarming vigour. Finally completed, the remainder of the morning was dedicated to shopping in Paderborn. During the afternoon we attended a display by the Royal Engineers and toured the other unit stationed in Paderborn, namely the Missile Regiment equipped with the American 'Honest John' missiles. This tour proved to be most interesting and we soon became aware of the capabilities of missiles employed in the field and their frightening effects.

That evening, our last at Paderborn, we all togged up with mess kit and attended the guest night in the mess. After the three hour dinner, the traditional after-dinner drink, in the form of champagne, was handed round the dinner table in the Emperor's pot. Now the Emperor's pot once belonging to the Emperor during the Peninsular War and used for natural purposes, being made of none other than silver, was captured by the 14 Light Dragoons. The regiment has since retained this traditional loot and the 'potty' cloth which went with the pot. Each member of the Guest night ensemble, on receiving the pot (full of champagne) from the sergeant major, rises to his feet, shouts 'To the Emperor!' and then gulps down as much of the contents

as possible without a pause. During this procedure the remainder of the members shout encouragement and rhythmically bang the table in unison. The pot is then returned to the sergeant major who wipes the rim with the potty cloth and passes it on to the next member.

The CO then selects a junior officer to rise a second time and swallow as much champagne as the CO thinks sufficient without pausing. After either swallowing the lot or pausing, the junior officer lifts up the pot and places it upside down on his head. The one we witnessed, however, managed to hack it.

Following this the regiment officers imitated a Royal Air Force bomber crew adding as many sneidy comments as they could fit in between take-off and landing. The mess games varied from mounted hand-to-hand combat, polo with spurs, polo sticks and a hard high speed ball (which now sits safely static on my dressing table), individual wrestling and finally to chasing a pet ferret around the mess. All eventually retiring from the mess games in a state of semi-stupor.

The next day we packed our bags, collected our duty-free 'booty,' presented the CO with a plaque and departed from Gutersloh by Argosy bound for Waddington. On behalf of the group I feel I should offer our most sincere gratitude to the CO, the officers, in particular our liaison officer Lt Hoare, and the men of the 14/20 who made this visit the success that it undoubtedly was.

GHOSTS

I returned to the place a year later
to look for ghosts. A few there were,
vague, indistinct,
but embryonic ?

They should have been ; the stage was set —
the tables, the glasses, the seats, the forecourt,
the ivy-covered pub —
the fine, far, falling summer evening . . .
But the bench — our bench —
was taken. Four
young Greeks or Italians
or what the hell, and four
young Irish girls who were that as well
laughed as they drank
as they fought the ghosts away.

They left at closing time,
and I took back my place
to bid the ghosts return.
No bidding needed
swift they came :
as full as her lips
and warm as her body
and bright as her smile
and fresh as her laugh
and soft as her touch
and kind as her soul
and sad as the moment.

Sad ? Sad that moment
when time stood still
yet ran so fast.
And with every slip of that falling dusk
so slip't my effete fingers.
I could not stop with them
the stranglehold which now the ghosts
took care to remind me of
But the ghosts I thank ;
for had they not been there, would I ?

And now the night.
If dusk existed once,
this night denies it. And though the ghosts still sit
and lounge around me,
they have nothing new to say.
No more to add
to what I have remembered.
This night, this enemy,
is taking up again
the attack on my dear ghosts.

In spirit I will never leave them.
But this my body
shivers, wraps its clothes around,
and rises, to surrender to the night.

C. W. Stimpson.

POETRY REVIEW

The Privileged Prisoner

Crucify me in mountains.
Let the setting sun take my black corpse
where it hangs, and kiss the bloody nails.
Let vultures, sweet and beautiful,
caress and gouge my thankful eyes.
And O, on the outraged body and gentle cross,
let children, undefiled, make play ;
and harlots dance, and sinners laugh and rape.

Then, death will not come leering, but with a mother's care
will bear aloft her newest child, to warm and peaceful breasts.

But this is hope, and prisoners must not hope—
not give their captors victory contrived.
I rest, condemned to luxury,
to all my smallest needs, and more.
And yet, the greater this great bounty,
the more perverted it must be.

for being captive, all the gift
is turned to burden.

No ; rather I lie athwart the sleeping clouds,
and let Nature's sleeping people love me,
transcend the agony, and be at one with me.

I think, when at last I slept, I would be smiling ;
kissing the sun for the last time farewell
and cloaking myself in the soft deep blue and green of night.

Crucify me in the mountains.
Let the dropping flesh of my body
mingle with the dust of the hills,
and the dropping flesh of my soul
with the dust of eternity.

C. W. Stimpson.

NOW

White walls and dead men
are listening to a voice
and white light in unsympathetic
scrutinizing aberrations
and doodles, scrawled
on file paper
amongst the notes as badly scribbled.
And F equals m over g times $(u_j$ minus $u_o)$.
and T equals d over v
where t is time and time is slow.
Too slow to bear.

The sound proofed ceiling
contains fourteen thousand, four hundred and twenty-four holes.
Not counting those
out of sight
behind the light
the light is white
but dark as night
for it does not hold
virgin innocence ;
rather unscrupulous watchfulness
augmented by its perfidy.
And P_1 over P_2 equals T_1 over T_2 all to the power
of gamma over gamma, minus one.

And the sun falls blurred across my scrawl ;
there is a wanton sitting by a prison grille
who taunts the starved, condemned prisoner
with her breasts, her body
unattainable, denied ; and now
she eats some food
and throws some more away.
The prisoner's hand can reach
but half an inch.

I look towards that perfect wanton,
but her temptress face is a million times diffracted
by windows meant not for the eye.
And out beyond the glass
runs life, desire, and love.
They flow past, not five feet away

which equals infinity

which equals J times C_v from C_p .

Put your name in the book for inattention.

C. W. Stimpson.

"The Sky, My World"

Far above rugged mountains and rolling vales
The pilot flies in his metal bird ;
While down below, in a shady dale,
A skyward glance shows a long white trail.

I am alone, the sky is my own ;
The world is at my feet, and if
I glance below I see where the wandering river flows ;
And I am alone, the sky is my own.

What could disturb this peace, this tranquility ?
What could destroy my pleasure ?
There simply can be no measure,
Of war, and its hostility.

Perhaps I would be wrested from my throne,
Thrown down, given up by the sky,
For my last few moments, the sky would be my own,
And then — I die !

But do not mourn my passing ;
Life must go on, others will rise to take my place ;
Peace will return, for a few years grace ;
And they will murmur below, ' We Will Remember Them . . . '

W. L. Miller.

A TOAST

(Hégésippe Simon, we are told by Robert Lynd in his essay, 'The Humour of Hoaxes,' was an imaginary character invented by the editor of the French magazine *L'Eclair*, Paul Berault, to make fun of the opposing political faction. 'The great precursor' produced such great aphorisms as 'The darkness vanishes when the sun rises.')

Hégésippe Simon, great precursor,
I come to praise, not to curse yer.
Was it you, O mighty one, who said,
If you're starving its because you haven't been fed ?
Oh how you nourish us with all your words
(Well, if not all, at least two-thirds)
In your almighty wisdom did you not decide
That if you use 'Brand X' you can't use 'Tide.'
Hégésippe Simon, by jings,
How my heart applauds and sings
And lifts above the world's great schisms
Just to hear one of your great aphorisms ;
Hégésippe Simon, its your centenary,
And the world has changed its scenery,
Since your pen last scratched on royal foolscap.
Now old Lloyd George is gone and others wear the fool's cap.
He rules the country with an iron rod,
And when its hot we strike by god ;
They even have a woman in on the act,
Barbara Castle's her name in fact.
She invented a thing called the breathalyser
To tell if you've had too much Scotch — or Tizer.
Hégésippe Simon, born at an early age,
You are our country's proudest sage,
Greater than any pop star
Who tries to play the fool — or bass guitar,
You taught us everything we ever knew, or know,
That when we come, we cannot go.
Was it you who said, with a piteous jerk,
If you're unemployed its because you're out of work.
Hégésippe Simon, allegations are made about your literary worth,
But when I catch the alligators, they'll regret their very birth,
For you are as great as any artist there's been —
Mozart, Dostoievsky, Rembrandt — or Colin Stein.
Hégésippe Simon, our country's greatest educator,
Let us drink a toast to you. Bring the whisky over here,
Mr Waiter.

D. S.



MIRANDA — A LESSON IN MORTALITY

Naked, I came
from the enchanted waters,
smiling the same
sad smile of my mortality
belied by my
spindrift hair that shone
and my eyes
that promised oblivion.

Perhaps my skin
was much too smooth
to believe in,
my eyes were too blue
to speak truth,
or maybe in your doubt
you needed proof
of my reality.

The summer went
behind the hard mist's edge.
Your heart was spent,
my love was tossed away ;
your mind convinced,
your heart still wanting proof
my mortal love
is dead, is that enough ?

G. M. Edey

BOOK REVIEW

NO MAN AN ISLAND

EILEEN WAUGH

Triton Books

£1.25

In March 1945 a Mosquito, taxi-ing across the airfield at Ford in Sussex, inexplicably smashed into a crew-truck ; one of the truck's occupants, twenty-year-old Sergeant Pilot Peter Spencer, broke his neck, lost one arm and had the other permanently crippled as a result of the accident. This, his biography, tells how he pulled himself back from death, against all medical forecasts, and went on to rebuild his life, not merely surmounting many personal obstacles but devoting himself to the work of helping others. He became a councillor in his home town of Wallasey and an 'ambassador' for the International Association of Mouth and Foot Painting Artists.

This, then, can be termed an 'inspirational' book, and certainly one has the highest admiration for Spencer's courage and resilience, but, as a biography, it has definite shortcomings. Miss Waugh lacks the true biographer's selectivity in organising her material and her style, at times, verges on the maudlin ; frankly one cannot agree with Douglas Bader's comment in his foreword to the book that she writes with 'delicacy and understanding.' Her research has obviously been painstaking but for this reviewer at least the penetrative analysis is missing.

Without doubt Peter Spencer is a brave and proud man, and his achievements command the highest respect ; unfortunately the author fails to do her subject full justice. While the book will be of considerable interest to the Service reader, judged by dispassionate critical standards it is something of a disappointment.

J.M.H.

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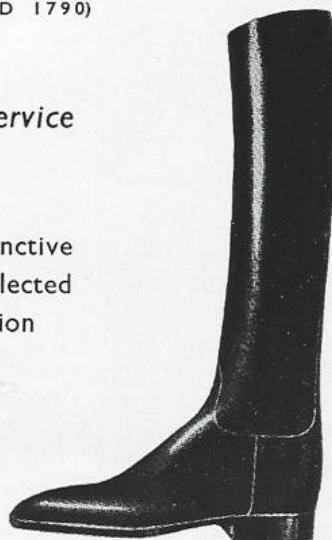
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OLD CRANWELLIAN NOTES



The Silver Chalice presented to Her Majesty by The Old Cranwellian Association.

No doubt so much has been written elsewhere, in this *Journal*, regarding the 50th Anniversary Celebrations that it would be mere repetition to recount the events on the morning and afternoon of the 12th June, apart from the ceremony of presenting the Silver Chalice to Her Majesty. Let it be sufficient to say that we were greatly honoured by the presence of Her Majesty The Queen as Commandant in Chief, and accompanied by H.R.H. Prince Philip, as the Reviewing Officer at the Parade and afterwards to Lunch in the College.

It may not be out of place, here, to mention that, as one who has seen 40 Graduations, the Flight Cadets have never Paraded better; their Arms Drill and Marching were excellent and they carried themselves with a pride that matched the occasion. This, I know, is the opinion of those who were present and it is therefore only right that the Cadets should be made aware of the impression they made.

Praise too, to the Student Officers who manned the Support Squadrons for their steadiness throughout the Parade.

The Silver Chalice was presented to Her Majesty in the Guest Room on her return to the College after viewing the various Static Exhibitions. Present in the Guest Room were ten Officers each one representing a block of ten Entries from No. 1 to No. 97; a Senior Under Officer of No 98 Entry was also present. All were presented to Her Majesty, by the Commandant and also to H.R.H. Prince Philip, by the Assistant Commandant. Included as the representative of the first ten Entries was Air Chief Marshal Sir George Mills of whom more later. Also present was Air Chief Marshal Lord Bandon as President of the OCA and Marshal of the Royal Air Force Sir Dermot Boyle, who as Patron of the Association, presented the Chalice to Her Majesty on behalf of the OCA. In presenting the Chalice Sir Dermot said that it carried

with it the loyal wishes of all Old Cranwellians who were ever mindful of the great honour Her Majesty had conferred on the College by becoming Commandant in Chief in 1960. Her Majesty expressed her thanks to Sir Dermot, and with H.R.H. Prince Philip admired the design and workmanship of the Chalice. Mr D. Birch, the Silversmith who made the the Chalice, was later presented to Her Majesty. Old Cranwellians will be very interested to know that Her Majesty intends to use the Chalice in St. George's Chapel Windsor.

The Cocktail Party for Old Cranwellians and their wives was attended by some 600 and was held in the College. The Party started at 18.30 immediately following the Beating of the Retreat by the College Band on the Parade Ground in front of the College. This ceremony, which was attended by a large number, was excellently performed and the Band are to be congratulated. Shortly after the Party had started and everybody had been served with a drink the Commandant called for silence and, after the hubub had died down, asked Air Chief Marshal Lord Bandon to unveil the portrait of Air Chief Marshal Sir George Mills, which had been presented to the College by the Old Cranwellian Association. Lord Bandon, with his usual flair, outlined the career of this distinguished Old Cranwellian from the time that Sir George had passed in top of the first term to enter Cranwell to the time that he had taken up the appointment as Black Rod. He concluded by saying that he was glad that someone else in 'Fancy Dress' was to join him on the walls of the Dining Hall (referring to his own portrait in the Robes of a Peer and to Sir George who was painted in the uniform of Black Rod). Mrs McGregor, who painted the portrait was present with her husband Squadron Leader McGregor, and she was warmly congratulated by Lord Bandon, not only on the excellent likeness of Sir George, but also on the expertise of the actual painting. Sir George Mills in his reply said that he most sincerely and humbly thanked the OCA for the very great honour they had done him. He felt deeply honoured, not only for the portrait, but by the occasion and the kind words Lord Bandon had said about him. He also complimented Mrs McGregor on the kind, considerate and charming manner in which she had gone about painting his

portrait. Old Cranwellians, on viewing the portrait, agreed that it was an excellent likeness and beautifully painted. Following the unveiling the Party got seriously under way and the general atmosphere of gaiety was enhanced by the Champagne Cocktails which were provided. Everyone present had many friends to meet, indeed friends who had not been seen for a great many years, but time and the numbers present made it difficult to seek out all the old companions and have a word with them. At 20.00 hrs, or thereabouts, the Party ended and with reluctance we dispersed to our various destinations.

At 11.30 hrs on Saturday, the Annual General Meeting of the Association was held in the Whittle Hall. It was disappointing that, in spite of the attractions of a bar in the Hall Common Room, very few members attended. In fact only 29 Members were present discounting the Committee. No doubt this was caused by the fact many Old Cranwellians who were present on the Friday had returned to their homes, whilst those attending the Ball had either not arrived or were staying in friends' houses some distance from Cranwell. The more important points of the Meeting were as follows :—

- (a) The Accounts showed that a profit of £126 had been made by the Association in the Financial Year ending 31/3/70.
- (b) The College Journal would in future cost 8/5d. a copy instead of 6/- as had been the case in the last five years, due to increased printing charges etc. This would mean that if two Journals were issued a year the cost would amount to 16/10d. — say 17/-, which would leave only 8/- out of the 25/- Subscription for Reunion expenses and other items such as Retiring Staff Gratuities, Gifts etc. It was suggested by the Secretary that if only one Journal was issued a year the cost could be kept down to approx 10/- and this would further reduce the postage costs by approx. £70. After a short discussion it was unanimously decided that only one Journal should be issued annually and this would cover the whole range of events for the year. This would take effect in 1971.
- (c) The Commandant said that, following inquiries instituted by his predecessor,

Air Marshal T. N. Stack, approval had been given by Garter King of Arms for supporters to be included in the College Armorial Bearings. The King of Arms not only approved, but welcomed this addition as a tribute to the tradition of the College and in honour of the fact that Her Majesty is Commandant in Chief. This is a very unique distinction and signal honour. It is believed that the College is the first Royal Air Force Unit to be awarded this distinction. Although it is not certain it is thought that the Supporters will be Heraldic Eagles placed on either side of the present Armorial Bearings.

- (d) The Meeting was informed of the tremendous amount of highly efficient work that had been done by Wing Commander Stevenson (Project Officer Anniversary Celebrations), his deputy, Squadron Leader Turner and the POAC Staff. Both Wing Commander Stevenson and Squadron Leader Turner had been invited to the Ball as Guests of the OCA, and also to the Cocktail Party with four

Officers of POAC Staff in order, in some way, to show the appreciation of the Association for all they had done. It was suggested by the Secretary that the two lady typists, a Royal Air Force Corporal and Mr Dickenson should be given some gift from the OCA for their part in the Anniversary work. The Meeting passed a unanimous and very warm vote of thanks to all ranks of the POAC Staff and left it to the Committee to decide upon a gift to those mentioned above.

- (e) The Commandant informed the Meeting he had received Signals congratulating the College on reaching its 50th Anniversary from the following: Air Marshal T. N. Stack in Ankara, the CAS of the Royal New Zealand Air Force, General A. B. Wolff CAS of the Royal Netherlands Air Force, and also from 37 Old Cranwellians stationed at Sharjah in the Persian Gulf.

At the end of the Meeting the Commandant gave his review of the past year and the plans for the future of the College. This was the



The Commandant and Mrs Hughes with Sir Dermot and Lady Boyle at the Anniversary Ball.

only time that the Commandant could give his traditional Speech, normally made at the Reunion Dinner. In concluding his review the Commandant mentioned that at the next Reunion in 1971, Members would have to make up their minds as to whether they wished the OCA to consist of Members as at present, i.e. Officers who had been Flight Cadets and had graduated to a Commission from the College, or whether they were prepared to include Officers who had been at Universities and following this had received one year's training at the College. The Commandant said that he would be circulating a Paper on this matter in the coming year to all Members of the Association.

The Anniversary Ball was held on the Saturday night starting at 2100 hrs, and from all accounts this was a great success. It was originally thought that some 700 would attend (i.e. 350 Old Cranwellians and their Ladies), but on the 1st April, and closing date for applications, only some 100 Members had applied and so the acceptance for applications was kept open to 'The Off' and this finally resulted in some 450 Old Cranwellians and Ladies. To make the figure up to 500, applications to attend the Ball, on a paying basis, were extended to Station Officers and some local civilians, and this was approximately the final figure. In order to ease the matter of accommodation some 70 rooms in the College were made available for those Members and their wives who had come from afar. There were two Ball Rooms, the Lecture Hall where the College Band played and No 1 Ante Room where there was a Discotheque. Some, perhaps most of the elder Old Cranwellians found the Discotheque music and beat a little beyond them, but they were interested in and not a little envious of the acrobatics and gyrations performed by the younger ones with an easy nonchalance. Enough to say that the College Band and the Discotheque provided excellent music and rhythm to suit all tastes and physical capabilities. As regards the Buffets, the fare provided was by any standard magnificent and the Catering Officer and his Staff of Chefs are to be warmly congratulated both on the quality of the food and the way it was presented. There were plenty of Bars and Wing Commander Knapper, the PMC, Flight Lieutenant Earle, the Mess Secretary and Warrant Officer Jenkins, the Mess Manager

deserve many thanks for the organisation of the College for the Ball. Of course the ever faithful College Civilian Staff assisted by a number of Airmen Waiters gave their usual splendid service and we are most grateful to them. The Ball ended at 02.00 hrs but the Bars remained open for a further half hour for a small 'run down.' One must mention the excellent arrangements of flowers which added much to the decor, these arrangements were done by members of the Sleaford Ladies' Flower Club who have received our thanks.

On Sunday there was a very full attendance in Church and everyone looked surprisingly fit after their late night. The Bishop of Shrewsbury, the Rt Revd F. W. Cocks — a past Chaplain in Chief of the Royal Air Force — preached the sermon. Like all good sermons it was simple, dignified and in keeping with the Anniversary occasion and it was delivered with that calm authority which demands attention. We were all delighted that he could be with us accompanied by his attractive wife. There was no Parade after the Service as the majority of Cadets were on long weekend (to make available accommodation in College) and so we went straight off to the Staff Officers' Mess. (The College was being cleaned up after the Ball), where Wing Commander Northmore the PMC had very kindly arranged for a Bar for Old Cranwellians. After what was really a Farewell session, visiting Old Cranwellians departed, with their wives at the wheel, and so the Anniversary Celebrations ended.

This report would not be complete without mentioning the generous kindness of the Commandant and Mrs Hughes in entertaining, at the Lodge, a large number of Old Cranwellians and their wives not only to a Buffet Supper after the Cocktail Party but also to Drinks just prior to the Ball. Those who attended would, I am sure, like me to express here, their grateful thanks and appreciation of this kindness.

In summing up one can only say that the Anniversary was a great occasion. We were greatly honoured by the presence of Her Majesty and H.R.H. Prince Philip on the Friday, we were blessed with wonderful weather, the arrangements were above reproach and we had a very good attendance of Old Cranwellians covering a range from the

first to the most recent Graduating Entries. It certainly was a nostalgic weekend for those who had been Cadets in the first early days to see how Cranwell had developed over the 50 years since 1920. One feels sure that the Founders of the College; Sir Winston Churchill, Marshal of the Royal Air Force Lord Trenchard, Field Marshal Jan Smuts and Air Vice Marshal Sir Charles Longcroft — the first Commandant — would have been proud and satisfied in what they would have

seen had they been spared to be present on this occasion. The continuance of the Cranwell tradition is now mainly in the hands of the young and present generation of Royal Air Force Officers. One is sure they will continue to uphold the record of the past 50 years and when the 100th Anniversary, in 2020, is celebrated both Past, Present and Departed Old Cranwellians will say 'Well Done.'

F.E.N.

HONOURS AND AWARDS

The *Journal* offers its congratulations to the following Old Cranwellians who received Honours and Awards in the Queen's Birthday Honours List.

Air Vice-Marshal R. L. Wade, DFC (38-39A) was made a Companion of the Bath. Group Captain J. R. Rogers (49C) was made a Commander of the Order of the British Empire. Wing Commander W. F. Knapper (49B) was made an Officer of the Order of the British Empire. Squadron Leader A. G. Bridges (65A) was made a Member of the Order of the British Empire. The Air Force Cross was awarded to Wing Commander L. A. Jones (60A), Wing Commander J. Wilkinson (56A), Squadron Leader R. H. B. Le Brocq (71C) and Flight Lieutenant R. P. Evans (65C). The Queen's Commendation for Valuable Service in the Air was awarded to Flight Lieutenant M. G. Warner (86D).

PROMOTIONS

To the following Old Cranwellians who have been promoted since our last issue, the *Journal* offers its congratulations.

Air Marshal T. N. Stack, CB, CVO, CBE, AFC (37-39C) (former Commandant); Air Vice-Marshal I. R. Campbell, CBE, AFC (39-40A); Group Captains D. P. Hall, AFC (55C), D. Harcourt-Smith, DFC (56A), M. H. Miller, AFC (47A), D. I. O'Hara (49D), D. G. Slade (56C); Wing Commanders D. A. Atherton (55D), J. F. H. Chick (51A), D. J. H. Collins (68B), J. G. De'ath, MBE, AMBIM (61B), P. L. Gray (58A), C. A. Herbert (64B), F. M. A. Hines (64A), D. B. Hives (58A), D. J. Hollis (63A), R. Horsfield (64A), A. W. Law (55D), K. F. E. Mallett (54D), B. F. Tomlin (63C), J. R. Walker (68B); Squadron Leaders F. G. Allen (77C), P. F. A. Canning (78D), J. B. V. Collins (68B), E. R. Cox (78D), W. M. N. Cross

(81A), T. Cumberland (78A), P. B. Curtin (72B), J. Evans (79C), M. D. Evans (77A), M. J. Gibbons (74C), R. P. Hallam (78B), H. D. Herd (76C), A. C. E. Holborn (72C), J. A. Horsfall (76C), R. J. Howard (77A), C. E. King (62C), R. D. Lightfoot, DFC (79C), R. B. Lloyd (77C), S. A. H. Maffett (80D), R. I. Morris (80A), C. R. Paterson (77C), M. Perkins (73C), R. M. Prothero (77B), P. M. Riley (79A), J. A. F. Ross (79D), J. D. Rust (77B), D. C. Scouller (70C), S. M. V. Situnayake (64C), A. B. Stephens (81D), A. L. Terrett (80D), C. J. Thomson (81A), I. D. C. Tite (73C), P. S. E. Tootle (82A), J. T. Tuckey (61B), M. J. F. White (69C), M. E. Williamson (75C), R. A. F. Wilson (81D).

RETIREMENTS

The following Old Cranwellians have retired since the last issue of the *Journal*.

Air Chief Marshal Sir Donald Evans, KBE, CB, DFC (30-32B); Air Marshal Sir Kenneth Porter, KCB, CBE, CEng, FIEE, FRAeS, FBIM (31-32B); Air Vice-Marshal W. D. Disbrey, CB, CBE, AFC, CEng, MIMechE, FRAeS (31-33B), S. B. Grant, CB, DFC (37-38B), R. I. Jones, CB, AFC (33-35A); Air Commodores J. W. Bayley, MBE, AFRAeS (33-35A), A. M. Ruston, CBE, DFC (38-39B); Wing Commander D. A. Cooper (54B); Squadron Leaders J. C. Brown (60B), M. E. Dark (55A), E. S. Denson (60C), D. C. L. Holman (58D), D. J. House (58B), W. J. Hodgkinson (58D), J. I. Miller (62A), J. Y. Nowell (59C), R. M. Salt (58B), I. F. Weston (57B); Flight Lieutenants D. A. Briggs (61A), D. R. Burles (59C), J. P. S. Dixon (61B), R. Humpherson (57A), D. Maslin (82C), M. Osbourne (66A), D. M. A. Samuels (58B), R. Hoare (60C), G. C. Taylor (58B), V. W. Yates (89D); Flying Officer G. C. Dearden (93A).



BUCKINGHAM PALACE

13th June, 1970.

My dear Marshal,

The Queen wishes me to express to you and to all members of The Old Cranwellian Association her warmest thanks for the silver chalice which you presented to Her Majesty at Cranwell yesterday on behalf of the Association. The Queen is delighted to have this beautiful chalice and greatly appreciated the thought behind the gift. I shall of course let you know when Her Majesty has decided in which of her Chapels the chalice is to be used. I should be grateful if you would also convey Her Majesty's appreciation to Mr. D. Birch who made the chalice.

The Queen asked me to say how much she, as Commandant-in-Chief, and also The Duke of Edinburgh had enjoyed meeting such a large number of former members of the College. It was an outstanding occasion of which Her Majesty has brought back very happy memories.

*Yours sincerely,
Philip*

Marshal of the Royal Air Force
Sir Dermot Boyle, GCB, KCVO, KBE, AFC.

50th ANNIVERSARY LUNCH

Arranged by Air Chief Marshal Sir George Mills, GCB, DFC
for Officers of the No 1 Entry to Cranwell

On the 5th February, 1970, Air Chief Marshal Sir George Mills, who holds the appointment of Black Rod, arranged to give a Lunch Party, in the Cholmondley Room at the House of Lords, to surviving members of the Naval Entry and No. 1 Entry who had passed in to Royal Air Force Cadet College at Cranwell, as it was then called, exactly 50 years before. The intention to hold this Reunion was first suggested by Air Commodore A. P. Revington, early in January 1970, who wrote to Air Commodore W. D. F. Bonham-Carter, both of whom were No. 1 Entry Cadets. The latter brought this suggestion to the notice of Air Chief Marshal Sir George Mills, the most senior member of No. 1 Entry, who, it was rightly considered, in his position as Black Rod, was in the best situation to organise such a Reunion. Sir George acted promptly and his first move was to ask the Air Board if they wished to take any official action to promote such a Meeting. The Board replied stating that in view of the Anniversary Celebrations to be held at Cranwell in June, they would take no action. Relevant extracts taken from a letter written by Sir George regarding this Reunion are as follows :—

‘ By dint of magnificent help from Wing Commander J. M. Stevenson of Cranwell and Mr L. A. Jackets — the Air Historian of MOD (Air), I was able to write to all the 19 surviving members of the Naval and No. 1 Entry in the UK. There was no time to write to Air Vice-Marshal N. H. D’Aeth (Naval Entry) and Group Captain G. H. Huxham (No 1 Entry) who reside permanently in Australia and New Zealand. Two Guests were invited, who were Cadet Wing Officers in 1920, and also the Commandant at Cranwell — Air Vice-Marshal T. N. Stack, unfortunately, due to other commitments was unable to attend and his place was taken by the Assistant Commandant (Cadets).

‘ The Lunch was a great success and I’m doubtful if anyone can recall what we ate or

drank, we were all too busy talking. But we were pleased to see that we could still recognise each other, that we all seemed reasonably fit and most seemed to have kept their relative shapes. We broke up shortly before 3 p.m., time seemed to go much too fast, but we had a wonderful refreshing time.’

The Air Chief Marshal considers that mention should be made concerning the only ex Airman now on Black Rod’s Staff. This is Warrant Officer I. W. Langridge, who although a few years after the No 1 Entry was at Cranwell, insisted on being detailed for duty to meet the Officers at the House of Lords and also to be present at their departure. Sir George feels that this was an exceedingly nice and loyal gesture by Warrant Officer Langridge.

Those who were present at the Lunch were :
1920 Cadet Wing Staff : Wing Commander Sir Archibald James (Squadron Leader ‘ B ’ Squadron), Air Vice-Marshal W. B. Callaway (Flight Lieutenant ‘ B ’ Squadron).
Assistant Commandant (Cadets) : Air Commodore J. E. Bazalgette.
No. 1 Entry : Air Commodore D. W. F. Bonham-Carter, Group Captain J. R. Brown, Group Captain T. J. Desmond, Air Commodore C. W. Gore, Group Captain M. B. Mackay, Air Chief Marshal Sir George Mills, Air Vice-Marshal F. G. S. Mitchell, Air Commodore A. P. Revington, Air Commodore R. H. S. Spaight, Lieut. Col. C. J. Stone, Group Captain R. A. B. Stone, Air Commodore R. N. Waite.
Naval Entry : Air Marshal Sir Colin Weedon.

Those who were unable to attend were :—
No. 1 Entry : Air Commodore C. L. Falconer, Air Vice-Marshal G. Combe, Group Captain R. A. R. Mangles, Wing Commander F. C. T. Rowe, Group Captain G. C. Shepherd.
Naval Entry : Group Captain C. J. Collingwood.

F.E.N.



Air Marshal Sir Richard Atcherley, KBE, AFC.

AIR MARSHAL SIR RICHARD ATCHERLEY, KBE, AFC

A TRIBUTE BY MARSHAL OF THE ROYAL AIR FORCE

SIR DERMOT BOYLE, GCB, KCVO, KBE, AFC

We are assembled, appropriately in this beautiful Royal Air Force Church which is filled to capacity, to pay our tribute to probably the most colourful and dedicated airman the Royal Air Force has ever known.

Dick Atcherley was educated at Oundle together with his twin brother David but his school reports gave no hint of the outstanding qualities he was later to display and I suspect that the unfortunate school staff rarely knew to which twin they were speaking or on which twin they were reporting — a confusion which the brothers did little to dispel and which humourously persisted throughout their lives.

Arriving at Cranwell as a Flight Cadet in 1922, it quickly became apparent that Dick was going to be a pilot of outstanding ability and, on graduation, he won the much coveted Groves Memorial Flying Prize. Even in those early days, he was imbued with the potential of the aeroplane as a war-winning weapon if properly applied. He was a great admirer of Trenchard and, before coming to Cranwell, had read many papers on air power and the controversy surrounding it. But it was as a pilot, an innovator, a leader and a character, rather than as a strategist that he was destined to excel.

Shortly after leaving Cranwell, I heard him say that the job of a junior officer was to learn to operate any aircraft to the limit of its capability in all conditions — a task which he set about with lively enthusiasm and absolute dedication to the anxiety of many but the admiration of all.

He went from one spectacular flying success to another. By 1929, he had established himself as a quite outstanding aerobatic pilot and was an Instructor at the Central Flying School. He was a member of the victorious 1929 Schneider Trophy team and set up a world speed record in the Supermarine S.6. In the same year, he won the King's Cup Air Race flying a Gloster Grebe, having been forced into second place the previous year because of a broken flying wire.

By this time 'Batchy,' by which name he was affectionately known, had established a world-wide reputation and was invited by the International Air Races Committee to give aerobatic displays in the USA at Chicago and Cleveland. On arrival, he found that all the leading world aerobatic experts were performing more or less the same routine and he asked the Committee if they would like him to do some crazy flying as performed by the Royal Air Force.

After some vicissitudes, including being chased by two motor-cycle Cops around the airfield while he was practising and, in turn, chasing the Cops into the security of the buildings and, finally, after landing, being marched by one Cop at pistol point to the authorities, he was invited to do his crazy flying. This stole the show and resulted in him being invited to perform at the Cleveland and Chicago meetings on four successive years. An unique distinction.

In 1934, he went to the RAE Farnborough as a test pilot and, while there, initiated the development of a system of flight refuelling. He appreciated, we now know rightly, that refuelling aircraft in the air would in future be of great strategic importance to the Royal Air Force. So when we read with great pride that Royal Air Force supersonic fighters are flying non-stop from England to Singapore in just over 14 hours — establishing world records in doing so — let us spare a moment's thought for the man who, some forty years ago, realised that this would be a requirement and set about doing something practical to make it possible.

In 1937 when Dick went to the Staff College, war was beginning to loom large on the horizon and his thinking directed itself accordingly. He paid private visits to Germany and Italy to see, as he put it, 'what they were up to in the air.'

When war came, he was quickly involved in the toughest, shortest and most desperate of campaigns — in Northern Norway. He tackled the Herculean task of producing airfields in impossible terrain with inadequate facilities and in appalling weather conditions. He succeeded by sheer determination, brilliant improvisation and a leadership which inspired every living person in the area to serve his purpose, and his personal example encouraged them to ignore enemy air attacks and get on with the job.

His next achievement was as Commanding Officer at Drem in Scotland when he was quick to realise the impossible position in which Station Commanders were placed by having to choose between lighting paraffin flares — a lengthy process — to help pilots land but at the same time guiding hostile bombers to the attack, or, alternatively, not to light the flares and put at risk friendly pilots and aircraft that were airborne. His solution was quite simple: 'It must be done at the turn of a switch' he said. This he proceeded to achieve in spite of every convention and to the despair of the accountants, electrical engineers and administrators who saw all the time-honoured and time-consuming processes discarded as if they did not exist. But quickly, under Dick's dynamic leadership, they became capable and enthusiastic collaborators in this unofficial exploit. The war-time Air Force owed an enormous debt of gratitude to Dick Atcherley for this single innovation.

As the war proceeded, Dick continued to play an energetic, inspiring and gallant part at home and overseas. He was shot down when returning from a fighter operation over France. Though wounded, he managed to bale out and was rescued by a British mine sweeper.

In 1943, he went to the Middle East to command 211 Group and brought a new mind and his usual inspiring approach to the operation and control of close-support aircraft in the battle area. When on a low-level reconnaissance, his Hurricane was badly damaged by light flak but he managed to get safely back to base. Later he said: 'I was not sorry to lose the Hurricane as I got a Spitfire instead.'

In 1944, he became the first Commandant of the newly formed Central Fighter Establishment where he managed to bring together, analyse and resolve many powerfully conflicting views on fighter tactics put forward by those who had taken part in air operations throughout the world.

After the war, he became Commandant of the Royal Air Force College, the first ex-Cadet to fill this appointment. His task was to re-create the College which had been closed during the war. Here there was full play for his foresight, leadership and inspiration. His vision of the College's future was not limited by the past but had the breadth and scope demanded by the future.

After Cranwell, he became Commander-in-Chief of the Royal Pakistan Air Force. He provided exactly what that young Service needed at that time — was greatly admired and respected and won the affection of everyone. I met a senior Pakistan Air Force Officer recently who was deeply distressed at the death of his late C.-in-C. and he told me that as a junior officer when he was waiting to fly, his C.-in-C. appeared in the hangar and they sat down together and talked for ten minutes — an unforgettable ten minutes in the life of that Officer. It is significant that when Dick Atcherley's death was announced, it received headline treatment in Pakistan both on radio and in the Press and this in spite of the fact that it is some twenty years since he was their C.-in-C.

From Pakistan, Dick came home to be AOC 12 Group during which appointment he suffered the greatest tragedy of his life — the death of his twin brother David who was lost when flying in the Middle East. Only those who are identical twins can understand what the loss of one means to the other but Dick really never recovered from this blow. He seemed to come out of top gear for the first time in his life.

After an appointment in Washington, he came home for his final job before retirement — Commander-in-Chief Flying Training Command. Here his intense interest and experience in flying training and his great gift for inspiring the young ensured his success.

On leaving the Royal Air Force, Dick joined the Folland Aircraft Company where again his knowledge of flying training and his personal contacts and influence with foreign Air Forces enabled him to continue his contribution in the aviation field.

I have, so far, been speaking of Dick Atcherley's qualities as an airman and a leader, but what was he like as a man? He was essentially a kindly person who loved young people and animals — dogs, lions, horses — he kept them all. He was devoted to his parents and family and sustained a lively correspondence with his mother throughout her lifetime. He went home to York on every possible occasion, generally by air and frequently in the most appalling weather.

He was a man of outstanding integrity and courage. He always seemed to me to be entirely disinterested in his own future while at the same time being totally dedicated to the Royal Air Force and to whatever job he was currently doing.

He lived a Christian life in the true sense. I have never heard him say an unkind thing about anyone and I have never known him to be in a bad humour. He was always full of fun and original ideas.

He inevitably at times came up against authority — generally due to his aerial activities, including a Court Martial for giving a very low aerobatic display over a tennis party at which, unfortunately, his Commander-in-Chief was present. But he never bore a grudge against higher authority. Each clash merely became the occasion for a further spate of good natured stories.

In turn, the authorities managed, with great wisdom, to discipline this 'young genius' as Lord Dowding called him, without breaking his spirit or making it impossible for him to develop his full potential.

His nickname is wholly appropriate, provided it is not interpreted as implying stupidity or lunacy. Dick was an extremely capable and shrewd person. How otherwise could he have achieved his many successes? How otherwise could he have survived being flown by himself for more than 7,000 hours, each hour inevitably, by virtue of his nature, packed with adventure, experiment and challenge?

During the last ten years of his life, he suffered very great pain from an arthritic hip but, in spite of his suffering, his sense of humour never failed him. At the height of a winter sports season, he met in his Club three young Officers with various parts of their anatomy in plaster. With mock severity he hailed them saying: 'I cannot understand why you young gentlemen seek your disabilities abroad at such great expense. Why don't you follow my example and do it here at home quietly, unobtrusively and free?'

Dick was born three weeks after the Wright Brothers' historic flight and died a few hours after witnessing on television the dramatic safe return of the Apollo 13 astronauts, an event at which only for his illness he would have been present in person. His life coincided with the birth and growth of the air age. He was of that age in word, deed and spirit and to it he made a splendid, courageous and colourful contribution.

We extend our deepest sympathy to those members of his family who survive him, but it must be a proud consolation to be able to count a man of Dick Atcherley's calibre as a member of your family in the same way as we shall be for ever grateful and intensely proud that he was a member of the Royal Air Force.

His many friends, too, will feel that we have been privileged to know a man of unique quality who leaves behind a wealth of inspiring memories and enduring goodwill and good humour.

IN MEMORIAM

We regret to announce the death of 7 August, 1970, at the age of 86, of Flight Lieutenant R. E. Gorwood, MBE, RAF Retd. As Sergeant Major Instructor Gorwood he will be remembered by early generations of Old Cranwellians and as one who enthusiastically supported the sporting activities of the College.

It is with regret we announce the death of Mr Tom Bailey, former head barman of the College from 1939 to 1966. Tom was noted for his cheerful disposition at all times and we offer our deepest sympathy to his wife and two children.

We also extend our sympathy to Mrs R. Carter on the death of her husband, Mr Ron Carter, who served as a batman in the Junior Mess from 1948 to his retirement in 1966.

We regret to announce the deaths of :

Flight Lieutenant A. F. Bailey (91B), killed on 19.3.70 in a Hunter of 79 Squadron, Royal Air Force Chivenor.

Flight Lieutenant P. J. Faid, Royal Air Force Retd. (67A), killed in a flying accident in Ghana on 22.7.70.

Senior Flight Cadet W. L. Miller (98A), killed night flying at Cranwell on 29.4.70.

Flying Officer J. C. Webster (92A), missing believed killed in a Lightning of No 74 Squadron, Royal Air Force Tengah, on 26.5.70.

Flight Lieutenant F. Whitehouse (89B), killed in a Lightning of No 74 Squadron, Royal Air Force Tengah, on 27.7.70.

Pilot Officer J. M. Womphrey (96B), killed in a Chipmunk whilst attached to Royal Air Force Honington, on 13.7.70.

