

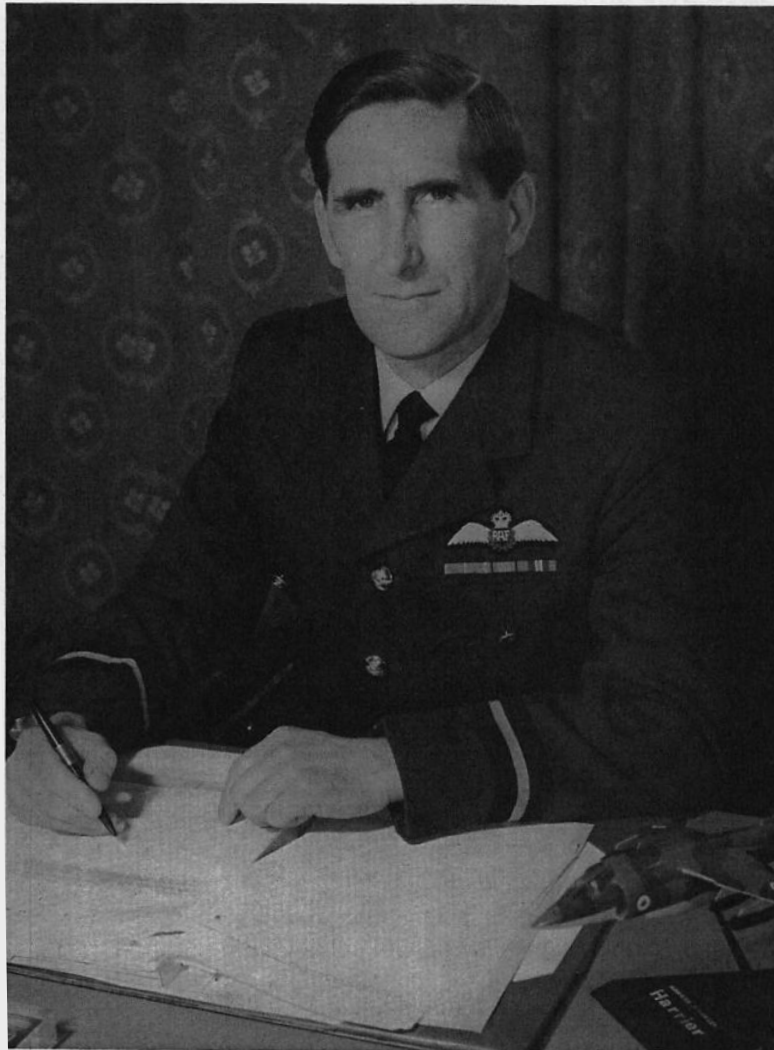
RAF COLLEGE CRANWELL

College Journal Extracts

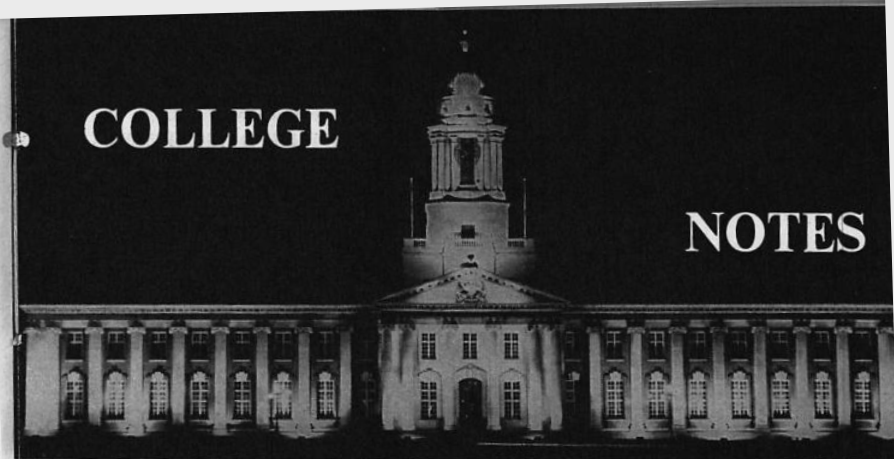


1974

1974 - College Notes (1)



Air Commodore J. P. Rogers, Assistant Commandant, Department of Air Warfare and Deputy Commandant, Royal Air Force College.



NEW APPOINTMENTS

AIR COMMODORE J R ROGERS

Air Commodore J R Rogers was born at Brentwood, Essex, and was educated at Brentwood Grammar School. He entered the Royal Air Force in 1944 as an Aircraft Apprentice and trained as a Ground Radio Fitter at No 1 Radio School Cranwell until 1947. He won a cadetship to the Royal Air Force College Cranwell and was a student of No 49 Entry until his commissioning in 1951.

After AFS and OCU training he joined 141 Squadron at Coltishall for 6 months before going to 219 Squadron at Kabrit in the Suez Canal Zone, flying Mosquito and then Meteor night fighters. This was followed in 1953 by a three year tour with the All Weather Development Squadron of the Central Fighter Establishment. He was then posted to flying exchange duties with USAF at Tyndall Air Force Base Florida.

In 1959 he became, in the rank of Squadron Leader, OC 56 Squadron at Wattisham, flying Hunters and Lightnings. He then served as Personal Staff Officer to the AOC in C Fighter Command before attending the 1963 Staff College Course at Andover.

In 1964 he became OC Air Fighting Development Squadron, Central Fighter Establishment at Binbrook in the rank of Wing Commander. Revisiting USA in 1965, he became the Royal Air Force Phantom Procurement Manager in Washington. He returned in 1968 to become Station Commander of Coningsby, the first Royal Air Force Phantom station. This was followed in 1970 by a short appointment as Group Captain Operations HQ 38 Group, Odiham. Then, on promotion, he was posted to MOD in 1971 as Director of Operational Requirements 3.

Air Commodore Rogers is married and has four children. The *Journal* extends a warm welcome to him and his family.

1974 - College Notes (2)

THE COLLEGE PRIZES

At each Passing Out Ceremony in the Department of Officer and Flying Training, and at ceremonies in other Departments, prizes are awarded. What is not generally known is the history behind the awards. This article deals with 6 such awards; subsequent articles will describe others, forming a permanent record of yet another chapter of the College's past. We are indebted to Mr Hensby for his painstaking research and for his careful preservation of the documents forming College history.

THE QUEEN'S MEDAL

The Queen's Medal, originally the Kings' Medal, was awarded for the first time in 1935 to Flight Cadet Sergeant A J Mason, later Group Captain A J Mason, DFC. On the accession of Queen Elizabeth II the title was changed to the Queen's Medal, the first winner being Flight Cadet R J Barnard (55 Entry) in April 1952. Her Majesty was pleased to sanction the award for Graduate Entrant Officers on an annual basis and appropriately HRH the Duke of Kent presented the first medal to Flight Lieutenant J D Arkell (11 GE) in June of this year.

The medal, bearing on the obverse side the effigy of the Queen and on the reverse the words "The Queen's Medal Royal Air Force College Cranwell" and the year of the award, has the full name of the winner stamped around its edge. It is awarded by the Queen to the officer, who in the opinion of the Commandant, has produced the best performance in all aspects of training.

THE SWORD OF HONOUR

The Sword is awarded by the Air Force Board of the Defence Council to the graduate entrant who is recommended by the Commandant as having most distinguished himself in leadership and in general influence for the good of the College.

It was first awarded in 1921 to Under Officer C L Falconer, later Air Commodore

Falconer CBE. To date 106 swords have been awarded, 93 to Flight Cadets and 13 to Graduate Entrant Officers.

The first sword was presented at a Passing Out Ceremony by Winston Churchill when he was Secretary of State for War. The first Graduate Entrant Sword of Honour was presented in August 1971 to Flight Lieutenant G H MacKay by Air Chief Marshal Sir Dennis Spotswood, Chief of the Air Staff.

The sword is based on a light infantry pattern with a $\frac{3}{4}$ in. dumb-bell shaped blade, 32 $\frac{1}{2}$ in. in length, embossed with the eagle and crown of the Royal Air Force on one side and the Royal Coat of Arms on the other. Both sides are embossed with scroll work and laurel leaves. The winner's name and rank are also embossed on the blade.

The hilt is a half basket type of infantry pattern, gold plated to a quality of 18 microns. The eagle backstrap is unique to the Royal Air Force, with a Royal Air Force Cartouche on the hilt. The grip is covered in bleached fish skin bound by 3 turns of wire — 2 thin and one thick.

THE PHILIP SASSOON MEMORIAL PRIZE

Sir Philip Sassoon, who died in 1939, was a former Under Secretary of State for Air. In his will he made provision for an annual income to provide the award to the best all-round student of the entry, excepting the winner of the Sword of Honour. The current value of the award is £35 and the money may be spent on some item of an intrinsically permanent nature.

World War II delayed the award's coming into effect and the first Philip Sassoon Memorial prize was awarded in April 1948 to Flight Cadet H R W Morris.

In addition to the monetary prize the winner receives a scroll and his name is inscribed on the appropriate Honours Board.

THE ROBERT MARSLAND GROVES MEMORIAL PRIZE

The prize was donated to the College in memory of Air Commodore R M Groves CB, DSO, AFC, who was killed in a flying accident in Egypt in 1920. Air Commodore Groves was the first Vice-Chief of the Air Staff.

The two principal donors of the award were Air Commodore Groves' mother and an uncle, Mr W G Groves. After their deaths, the association with both the College and the Royal Air Force was continued by Group Captain H M Groves who died in March of this year. The sole surviving donor is now Major Keith Groves, a brother of R M Groves, but keen interest in the award is maintained by other members of the family.

The prize consists of a book or books suitably inscribed with an inset portrait of Air Commodore Groves and a reproduction of his autograph. The choice of the books is that of the prizewinner, and there is also a monetary prize.

The Prize was first awarded in 1921 to Flight Cadet Sgt Hayter-Hames, subsequently killed in action in Warziristan. From 1929 the Kinkead Trophy was associated with the R M Groves prize, but it was not until 1958 that the prize was designated and awarded as "The R M Groves Memorial Prize and the Kinkead Trophy".

The late Group Captain Groves had taken steps to ensure that the financial value of the prize was sufficient to be awarded to Graduate Entrant officers. This became effective in 1973 when the prize was awarded to Flight Lieutenant P L Moules of No 9 Graduate Entry.

THE KINKEAD TROPHY

This handsome trophy was donated by the family and friends of Flight Lieutenant S M Kinkead DSO, DSC, DFC, who was killed in 1928 while attempting to break the world air speed record. As can be seen from his decorations, Flight Lieutenant Kinkead had an outstanding war record. He was an instructor at Cranwell from 1920-1924.

The trophy was presented to the College in 1929 and from that year until 1958 was



The Kinkead Trophy

awarded to the Squadron member of which had won the R M Groves Memorial prize. In 1958 it was decided to give greater recognition to the trophy and so it was presented to the Flight Cadet who won the R M Groves Memorial prize and thus the names of two brave men were permanently linked.

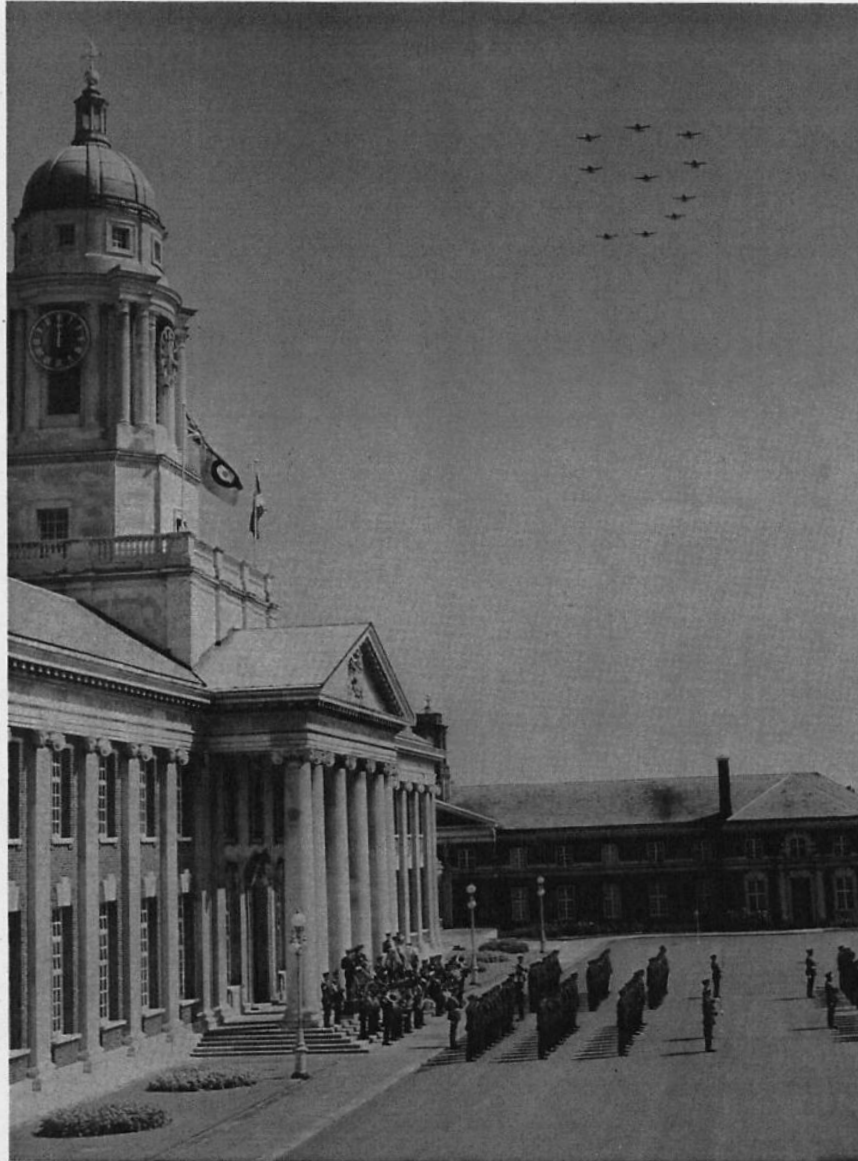
R S MAY MEMORIAL PRIZE

The donor of the prize was Flight Lieutenant Richard May who entered the College as a Flight Cadet in 1948, was commissioned in 1950 and who was killed in a flying accident in 1958.

Flight Lieutenant May had made provision in his will for a sum of money to be placed in trust to produce an annual income sufficient for a monetary prize for each Sword of Honour winner. The first Flight Cadet to be awarded the prize was Senior Under Officer T F H Mermagen in July 1959 and in 1972 the necessary legal procedure was instituted so that the award might be transferred from the flight cadets to the Graduate Entrants. The first graduate entrant officer to receive the award was Flight Lieutenant P L Moules (9 GE).

These then are the awards: the Kinkead Trophy to the R S May Memorial Prize commemorating brave men who, even in death, sought to give back to their College in return for what they had received. At each Passing Out Ceremony let us remember such men and strive to follow their example of selfless Service.

1974 - Passing Out 9 GE and 10 GE (S&S)



Teamwork is the essence of success in the Royal Air Force.

PASSING OUT CEREMONY

The Passing Out Ceremony of No 9 Graduate Entry (GD and Engineer Branches) and No 10 Graduate Entry (Supply and Secretarial Branches) took place on 10th August 1973. The Reviewing Officer was Air Chief Marshal Sir Lewis Hodges, KCB, CBE, DSO, DFC, RAF.

PRIZE WINNERS

The Sword of Honour. Awarded for Leadership and general influence for the good of the College. Flight Lieutenant P L Moules.

The Philip Sassoon Memorial Prize. Awarded to the best all-round student excepting the Winner of the Sword of Honour. Flying Officer D A Lee.

The Kinkead Trophy and R M Groves Memorial Prize. Awarded to the student placed first in the overall final order of merit for flying skills. Flight Lieutenant P L Moules.

The Hicks Memorial Trophy. Awarded to the student who gained the highest mark in the Final Flying Wing Ground School examinations. Flying Officer G A Forbes.

The Dickson Trophy and Michael Hill Memorial Prize. Awarded to the student who showed the greatest proficiency in applied flying. Flight Lieutenant P L Moules.

The Battle of Britain Trophy. Awarded to the best aerobatic pilot. Flight Lieutenant N J Slater.

The Chicksands Cup. Awarded to the student who submitted the best paper on an engineering subject. Flying Officer D A Lee.

The Prize for Secretarial Studies. Awarded to the officer who achieved the highest standard in Secretarial Studies. Flying Officer G P C Wooding.

LIST OF PASSING OUT OFFICERS

General Duties Branch (Pilots). No. 9 Graduate Entry. Flight Lieutenants R W Brabbins; S B Cheeseman; B J Greeves; S Heppenstall; I P Kenvyn; P L Moules; P A Newton; N J Slater; A H Swann. Flying Officers S K Clarke; G A Forbes; N M Huckins; A F Irwin; P J Kirton; A H McLean; N A Pitchforth; R Togneri; T B Yarrow.

Engineer Branch. No. 9 Graduate Entry. Flying Officers C R Alexander; B J Bailey; C W Chinn; S G Christie; J R H Douglas; G S Evans; R J C Kiralfy; R G Ladds; D A Lee; J Mackreath; R Pickavance; A J Ray; C D Short; G Slater; R A de B Walkerley; D A R Ward.

Supply Branch. No. 10 Graduate Entry. Pilot R W Mathew.

Secretarial Branch. Flying Officers D C Cramp; T J Gerrard; N McGregor-Edwards; G P C Wooding.



Flight Lieutenant P L Moules receiving his Sword of Honour

1974 - Passing Out 10 GE (1)



The Inspection.

NUMBER 10 GRADUATE ENTRY

The Passing Out Ceremony of No 10 Graduate Entry (GD and Engineer Branches) took place on 2nd November 1973. The Reviewing Officer was Anthony Kershaw Esq., MC, MP.



Flying Officer D Oakley receiving the Battle of Britain Trophy

PRIZE WINNERS

The Sword of Honour. Flying Officer C G Vallance.

The Phillip Sassoon Memorial Prize. Flight Lieutenant G Peck.

The Kinkead Trophy and R M Groves Memorial Prize. Flight Lieutenant G Peck.

The Hicks Memorial Trophy. Flight Lieutenant G Peck.

1974 - Passing Out 10 GE (2)

The Battle of Britain Trophy. Flying Officer D Oakley.

The Dickson Trophy and Michael Hill Memorial Prize. Flight Lieutenant G Peck.

The Chicksands Cup. Flying Officer P A Shreeve.

LIST OF PASSING OUT OFFICERS

General Duties Branch (Pilots). Flight Lieutenants T N C Elsdon; W H Gowing; J King; D G Millar; W E Ovel; G Peck; J E Robinson; M P S Smith; P W Stacey; R M Taylor; D J Weston. Flying Officers R A O Edenbrow; P G Houghton; A J Hurrell; P D Mallaband; D Oakley; G D Rees; K R Trowbridge; P B Walker.



The Reviewing Officer congratulates Squadron Leader Stephens and the College Band



A permanent reminder of a happy occasion

Engineer Branch. Flying Officers P J Bonsall; S P Brown; L M Down; J A Foster; P I M Hingston; C A Lannen; P J Pharoah; R Record; C M Ruskell; P A Shreeve; R F Trembaczowski-Ryder; C G Vallance.



1974 - Passing Out 11 GE and 12 GE (S&S)

NUMBERS 11 & 12 GRADUATE ENTRIES

The Passing Out Ceremony of No 11 Graduate Entry (GD and Engineer Branches) and No 12 Graduate Entry (Supply Branch) took place on 11th January 1974. The Reviewing Officer was Air Marshal Sir Derek Hodgkinson, KCB, CBE, DFC, AFC, RAF.



The Colour Party

The Dickson Trophy and Michael Hill Memorial Prize. Flying Officer J D Arkell.

The Battle of Britain Trophy. Flying Officer J D Arkell.

The Chicksands Cup. Flying Officer N P G Elliott.

LIST OF PASSING OUT OFFICERS

General Duties Branch (Pilots). No 11 Graduate Entry. Flight Lieutenants A D Bodiam; D J Bradley; A Hughes; A W Medford; S J Oddy; D Reeh; M D Seear; A R Sinclair; T J G Wells. Flying Officers J D Arkell; P C Barton; D P Calvert; I R Harvey; I M Hunter; R McMillan; K Schultz; A J Sephton; I Struthers.

Engineer Branch. Flying Officers J Bristow; H E J Davies; N P G Elliott; M T Moffett; J M Page; A M Wallett.

Supply Branch. No 12 Graduate Entry. Flying Officer J C Garstin.

PRIZE WINNERS

The Sword of Honour and R S May Memorial Prize. Flying Officer J D Arkell.

The Phillip Sassoon Memorial Prize. Flying Officer M T Moffett.

The R M Groves Memorial Prize and Kinkead Trophy. Flying Officer J D Arkell.

The Hicks Memorial Trophy. Flying Officer K Schultz.



The Reviewing officer greets Flight Sergeant Pike

1974 - Passing Out 12 GE and 13 GE (Supply)

NUMBERS 12 & 13 GRADUATE ENTRIES

The Passing Out Ceremony of No 12 Graduate Entry (GD and Engineer Branches) and No 13 Graduate Entry (Supply Branch) took place on 15th March 1974. The Reviewing Officer was Air Chief Marshal Sir Denis Smallwood, KCB, CBE, DSO, DFC, RAF.

PRIZE WINNERS

The Sword of Honour and R S May Memorial Prize. Flight Lieutenant A P Couch.

The Philip Sassoon Memorial Prize. Flying Officer G E Willis.

The R M Groves Memorial Prize and Kinkead Trophy. Flight Lieutenant N C A Beasant.

The Hicks Memorial Trophy. Flying Officer A T Hudson.

The Dickson Trophy and Michael Hill Memorial Prize. Flight Lieutenant N C A Beasant.

The Battle of Britain Trophy. Flight Lieutenant N C A Neasant.

The Chicksands Cup. Flying Officer J Brindley.

The Prize for Supply Studies. Awarded to the officer who achieved the highest standard in Supply Studies. Flying Officer S A Cartwright.

LIST OF PASSING OUT OFFICERS

General Duties Branch (Pilots), No 12 Graduate Entry. Flight Lieutenants R M Andrews; N C A Beasant; A P Couch; G P Cowling; J L Duckham; I J Foord; R E Holden; K R McCarthy; S Morgan. Flying Officers S Banks; R Hamill; D J T Hickin; A T Hudson; S A Willbourn.

Engineer Branch. Flying Officers J Brindley; I R Hancox; G E Willis.

Supply Branch, No 13 Graduate Entry. Flying Officer S A Cartwright.



The Prize Winners with the Reviewing Officer

1974 - Passing Out 14 GE (S&S) and 15 GE (Supply)

NUMBERS 14 & 15 GRADUATE ENTRIES

Passing Out Ceremony of No 14 Graduate Entry (Supply and Secretarial) and No 15 Graduate Entry (Supply) took place on 24th May 1974. The Reviewing Officer was Air Vice-Marshal R Bullen, GM, RAF, Air Officer Administration Training Command.



Air Vice-Marshal R Bullen and Flying Officer Oliver Delany

LIST OF PASSING OUT OFFICERS

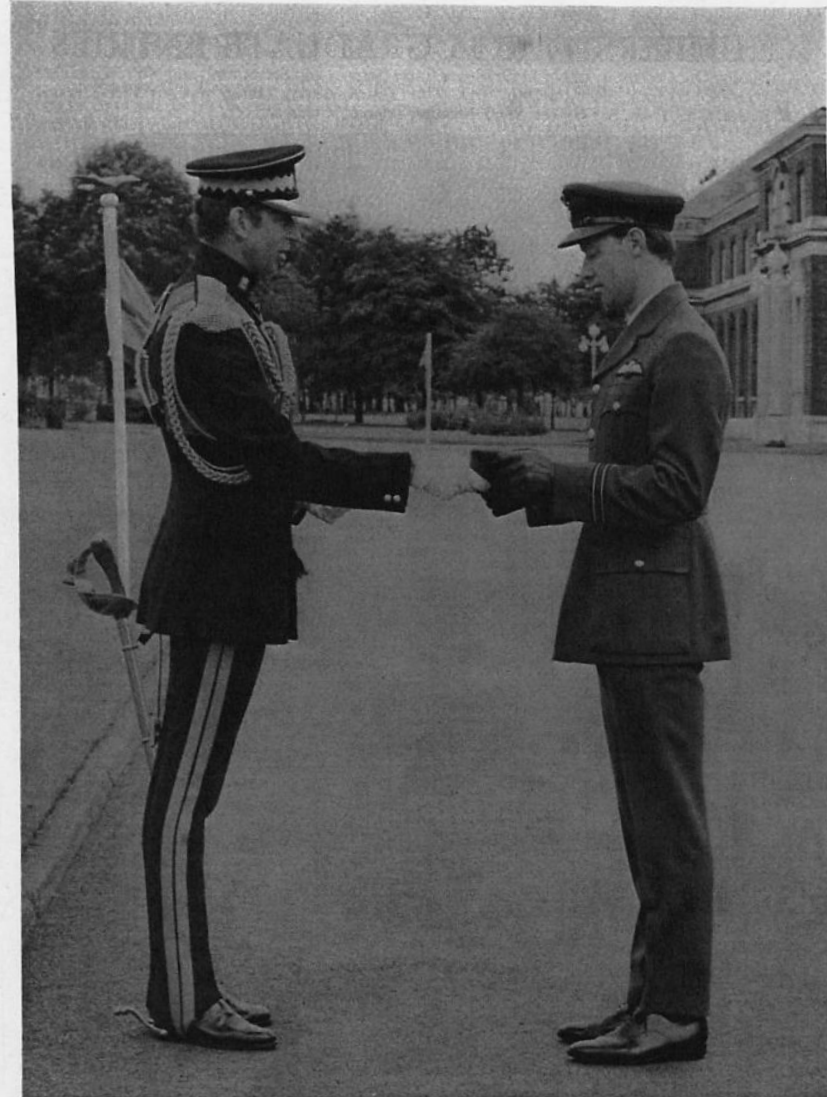
Supply Branch. Flying Officers G R Jenkins; A J Ovens. Pilot Officer C H Devonshire.

Secretarial Branch. Flying Officers I F Bruton; O D L Delany; R G Hutchings; R A H Meaton; B W Moxey.

PRIZE WINNERS

The Prize for Secretarial Studies. Awarded to the officer who achieved the highest standard in Secretarial Studies.

Flying Officer O D L Delany.



His Royal Highness presenting the Queen's Medal to Flight Lieutenant Arkell.

1974 - Passing Out 13 GE

NUMBER 13 GRADUATE ENTRY

The Passing Out Ceremony of No 13 Graduate Entry (General Duties Branch) took place on 28th June 1974. The Reviewing Officer was His Royal Highness The Duke of Kent, GCMG, GCVO, ADC(p).



HRH and Flight Lieutenant Chubb

THE QUEEN'S MEDAL

The Queen's Medal is awarded to the Graduate Entrant Officer who has proved himself to be the most outstanding student officer of the year. The first Graduate Entrant to win this award is Flight Lieutenant J D Arkell, No 11 Graduate Entry.



Although the weather was dull, the Parade had all the glitter of a Royal occasion. His Royal Highness carried out a thorough inspection, the College Band lived up to its reputation, and the Duke was much impressed by 'the splendid parade'

LIST OF PASSING OUT OFFICERS

General Duties Branch (Pilots). Flight Lieutenants M P J Butler ; A B Chubb ; N G Fox ; J A Glas ; D S Griggs ; P Hayton ; P J A Hopkins ; D Maynerd ; S B Schofield ; B P Simmonds ; D G Stein ; A F Stopp ; R J Tripp ; M G L Wooldridge. Flying Officers A N Clements ; I Mortimer ; D Pickavance.

PRIZE WINNERS

The Sword of Honour and R S May Memorial Prize. Flight Lieutenant A B Chubb.

The Philip Sassoon Memorial Prize. Flying Officer S A Cartwright.

The R M Groves Memorial Prize and Kinkead Trophy. Flight Lieutenant D G Stein.

The Hicks Memorial Trophy. Flight Lieutenant D G Stein.

The Dickson Trophy and Michael Hill Memorial Prize. Flight Lieutenant A B Chubb.

The Battle of Britain Trophy. Flight Lieutenant A B Chubb.

The address by His Royal Highness The Duke of Kent, GCMG, GCVO, ADC(p).

It is a very considerable honour for an officer of one of the other Services to be invited to take a Passing Out Parade at Cranwell, and I am very conscious of this. I am also well aware that addresses by Reviewing Officers are tolerable only in inverse proportion to their length. On my own Passing Out Ceremony at another establishment we received our commissions at the end of the course. It was blowing a blizzard and the wise words of the very senior officer who was addressing us were only intermittently audible above the tempest. I confess I cannot remember very much of what he said. So let me assure you your sufferings will be brief. But I do want to speak for a moment about an aspect of your future careers that I believe is supremely important — namely, leadership.

All of you who are graduating here today have now received your Wings — the highly coveted mark of a qualified pilot and a well deserved reward for what I know is a very challenging and demanding course. You have good reason to be proud of what you have achieved and I congratulate you all — in particular the prizewinners. But I am sure you also realise that this is only a beginning. The Service you have just joined needs men who are capable of exploiting the full potential of its very sophisticated and expensive modern aeroplanes and, with some further training, you are all expected to have that ability.

But if that were all that was required of you it would probably be met in about half the time by sending you on an intensive flying course. This would make excellent pilots no doubt but would not produce officers. It is precisely because an officer's job is so much more than purely piloting aircraft that you have had this very much broader training with the added qualification of your university background.

In your profession, your handling of people, your relationship with your subordinates is going to matter tremendously. Don't forget that as well as being members of a military organisation they are also human, with the

strengths, follies and weaknesses that this implies. Like most people they will probably respond well to sympathetic handling, and reluctantly — or not at all — to a ham-fisted approach. Above all, do remember that they are people and not numbers. Apart from anything else, yours is the glamorous and exciting job; theirs very often the necessary but mundane one.

I doubt whether there has ever been a time when, to use a rather old-fashioned phrase, the officer qualities have been in greater demand and not only in this country. Men who are prepared to take responsibility, to put the needs and welfare of others before their own; who take a pride in their professional skill, whose integrity is unquestioned and above all who inspire confidence in others by their character — such men are at a premium in any walk of life. In the armed services they are the ideal that every officer must aim at, with the added demand that his leadership may be tested in the heat of battle. There are a lucky few — a very few — to whom these gifts come naturally. Most of us need to work pretty hard at acquiring them. But acquire them you must if you are going to have any claim to being leaders. In short, what I believe you have constantly to keep uppermost in mind is that first you are good officers and, second you are good pilots.

The armed forces of this country have a reputation for gallantry and service that is unexcelled anywhere. All of you, I know, must feel a sense of pride as you are about to take your places in operational units of the Royal Air Force. I am confident that you will never for one moment fail to live up to that reputation. You have put on a splendid parade and I have been much impressed by your bearing and smartness.

Now let me wish you all success and happiness in the careers that lie ahead of you. I know they will be full of excitement and challenge. God bless you all.

1974 - Lead Article (1)

DEPARTMENT OF AIR WARFARE



A Surface to Air Missile scores a direct hit on target aircraft.

THE DEPARTMENT OF AIR WARFARE

The Department of Air Warfare was formed in January 1974 following the closure of the Royal Air Force College of Air Warfare, Manby. Described below is the historical background to the Department, its current organization and activities.

HISTORY

The Department's history started in 1938 when Manby was opened to become the home of No 1 Air Armament School, tasked with the ground training of armament officers, instructors and aircrew and the air training of air gunners and bomb aimers. Although the title of this school and its organization were subsequently changed, Manby remained the home of armament training and it was traditionally associated with air weapons throughout the last war and the period immediately after it. At the end of 1944 the unit was renamed the Empire Air Armament School.

In 1949 the Air Council reviewed the work of the Empire Schools. It was then decided that appropriate aspects of the work of the Schools should be combined to form a new establishment at which specialised training would be provided for General Duties officers, commensurate with the future needs of the Royal Air Force. Thus the Royal Air Force Flying College was formed at Manby in July 1949, within Flying Training Command, and with the following charter :

'The fighting efficiency of the Royal Air Force derives in special measure from the personal skill, knowledge and experience of those who command flying units or who are concerned with the operation of aircraft in all weathers. The Royal Air Force Flying College has therefore been established to give selected officers a practical course in flying in all weather conditions and in navigation and the use of weapons, so that they will be able by their own knowledge and example to train those under them in the most effective use of aircraft as weapons of war.'

With the aims of the charter in mind, the emphasis of the Flying College Course was placed equally on theoretical and practical aspects of air warfare. Potential commanders

and staff officers selected for the Course studied the implication of new doctrines and modern navigational equipment and weapons, with particular emphasis on their proper employment in strategic and tactical air operations. Most important, students and staff then had the opportunity to see for themselves, by practice in the air, the advantages and limitations of various aspects of their studies.

COLLEGE OF AIR WARFARE

This Flying College Course was short lived. By 1956 the courses were flying Canberra and Hunter aircraft, but the cost of replacing these aircraft and their ground services with the complex and expensive types then coming into front line service precluded the furtherance of this most effective training ideal and it was decided, with reluctance, that the last Flying College Course would complete its training in December 1960. The College then became known as the Royal Air Force College of Air Warfare.

Concurrent with the establishment of the Flying College Course, other courses had taken up residence at Manby where they could take advantage of the facilities offered by the College. Of these, the Specialist Navigation Course, which has since developed into the GD Aero-Systems Course, was the first to arrive from Shawbury in 1952. General Duties Guided Weapons Courses started in 1956; these were the first of a succession of GD Weapons Courses which, under the current title of Weapons Employment Courses, were completely trained at the College. The Staff Navigation Courses were absorbed into the College from Shawbury in 1963.

As part of the campaign to conserve material and financial resources, the College moved to Cranwell in January 1974 to become the Department of Air Warfare. The Dominic Squadron, which supports the flying aspects of the GD Aero-Systems and Staff Navigation Courses, moved concurrently.

The Assistant Commandant (Air Warfare) is responsible for the conduct of all Departmental courses. To achieve this task he has a

1974 - Lead Article (2)

staff of 44 officers who, together with supporting services, occupy part of Whittle Hall. The Assistant Commandant is also responsible for the administration of three other units that moved from Manby: the AP 3456 Editorial Staff, the Training Command Aircrew Categorisation Staff and the Command Examination Board.

The Department staff is drawn predominantly from the Royal Air Force, but includes officers from the Royal Navy, Canadian Forces, Royal Australian Air Force and United States Air Force. The staff work as a number of cells, each of which has a specific field of interest: Operational Studies, Aero-Systems and Navigation, Weapons and Astronautics, and Applied Sciences and Electronic Warfare.

It is from this pool of expertise that instructors are allocated to specific courses and for specific topics. The cross-fertilisation of knowledge engendered by this system provides a most effective and productive service to all courses and at all levels and is the *raison d'être* for the concentration of such a wide variety of courses under a common roof.

COURSES

Today there are four major courses within the Department: the Air Warfare Course, General Duties Aero-Systems Course, Staff Navigation Course and Weapons Employment Course.

The senior course held by the Department is the Air Warfare Course, the successor to the Flying College Course and retaining precisely the same aims as the original course. The flying experience hitherto offered by the College has necessarily been replaced by some limited flights in front line aircraft during Course visits to operational stations; the scope of the syllabus has been increased to include more comprehensive aspects of air operations. The Air Warfare Course currently runs for five and a half months and two courses are held each year. The Course is open to officers of the Royal Air Force, Royal Navy, Army Air Corps, Canadian Armed Forces, Royal Australian Air Force and the United States Air Force. There may be an officer from each of these Services on every course; there are places for officers of the Royal Air Force Engineering Branch and the Royal Air Force Regiment. There are 16 to 18

students on each course; the senior student is a Group Captain, the remainder being of Wing Commander equivalent.

The student body is divided into two syndicates balanced as far as possible to make the most use of the experience available. Each syndicate is controlled by a Wing Commander Directing Staff, who acts as syndicate leader and the two are ultimately responsible for the content of the syllabus and its regular review. The syndicate leaders are directly responsible to the Group Captain (Air Warfare) who is the Senior Directing Staff of the Air Warfare Course.

The Course comprises three main phases: a basic studies phase and two operational studies phases.

The basic studies phase is an intensive period of formal lectures aimed at the revision of basic academic notions and the creation of a common foundation for the remainder of the syllabus.

OPERATIONAL PHASE

The first operational phase lasts for 12 weeks and concentrates on all spheres of air warfare within Europe. It includes a week's visit to the NATO forces in Central Europe. The culmination of the phase is the presentation by the students of their solutions to problems related to air operations in this region. To this guests from both NATO and the Royal Air Force are invited.

The second phase of the Course is shorter and follows a similar pattern, but the emphasis of the studies is now towards Theatre Operations and Joint Operations, and includes a visit to the Joint Warfare Establishment. In this section of the Course students study NATO flank operations.

Each of the operational phases contains a comprehensive study of the available weapon systems and their capabilities and includes an appraisal of possible threats and of strategic and political implications in the areas concerned.

The Course visits a number of operational stations at home and visits are also made to industry and establishments associated with the employment and development of weapons systems. A number of visiting lecturers, including senior Royal Air Force officers from

the Ministry of Defence, Defence Establishments, industry, and the Commands address the Course at appropriate stages. The Course concludes with a series of lectures on various aspects of Royal Air Force policy.

It may fairly be said that students of the Air Warfare Course, in just under six months, have an unrivalled opportunity to examine the tasks and capabilities of all the operational units of the Royal Air Force and to relate them to the whole broad spectrum of Air Warfare and its implications at present and in the foreseeable future.

AERO SYSTEMS COURSE

The General Duties Aero-Systems Course was introduced in 1968, having evolved from the Specialist Navigation Course. It is designed to give selected officers with flying experience the background to be technically competent to play a major part in the planning, development, procurement, testing and operation of new aircraft and equipment for the Services.

The length of the Course is one year, and the 24 students are selected from officers of the ranks of Squadron Leader and Flight Lieutenant. The Course is open to all aircrew categories and normally includes officers from the Royal Navy, RAAF and USAF. Officers from other NATO countries and RNZAF officers also attend from time to time. This year's course includes, for the first time, students from Germany and Italy; such participation is likely to increase in the future with the introduction of the tripartite MRCA.

During the first half of the Course the students study in depth those basic academic aspects necessary for the subsequent detailed investigation of current and future systems and equipment directly related to the requirements of national air defence. Subjects in particular are Mathematics, Statistics, Computing, Control Engineering, Guidance and Avionics. Additionally the students have the opportunity to become familiar with current navigation equipment and modern evaluation techniques during flights in Dominie aircraft. A Polar flight is undertaken in a transport aircraft of Strike Command which is specially equipped for the sortie with a variety of gyro instruments, avionic equipment computers

and inertial systems, all of which are evaluated during the mission. Equipment on this year's flight included three inertial navigation systems together with automatic Omega and Loran receivers. The Department is greatly indebted to industry and the Defence Establishments for their assistance in these flights and for the opportunity to evaluate new equipments in the R & D stage.

The latter half of the year is spent in making a study of air operations, the aviation industry and research and development establishments in this country and North America. To achieve the latter, each course spends almost three weeks in Canada and the United States, giving its members a unique opportunity to study the development and the operation of aero-systems at US Air Force, US Navy, Canadian Forces and North American aerospace manufacturers' establishments.

On graduation, the students fill appointments in Ministry of Defence headquarters and establishments and in operational headquarters throughout the Royal Air Force. There are a number of exchange posts with the CF, RAAF and USAF.

STAFF NAVIGATION COURSE

The Staff Navigation Course was formed in 1942. The purpose of the Course is to give experienced air navigators a wider and deeper knowledge of air navigation in all its spheres so that they are qualified to become navigation^o instructors or to fill navigation staff appointments.

Five courses are held each year. The work on the course is intensive and lasts for 17 weeks, in which students are refreshed in Mathematics and Physics, and study Avionics, Meteorology, Guidance and Applied Navigation in detail. The students are also given an introduction to new navigation systems and those under development. The flying on the Course is carried out on Dominie aircraft where the students practise less familiar and advanced navigation techniques. The emphasis on the practical side is one of broadening technical expertise so that, for example, the tactical low-level navigator may find himself taking astrosights for the first time in many years, the maritime navigator will find himself employed in low level map reading.

1974 - Lead Article (3)

The Staff Navigation Course draws students from officers of all Commands of the Royal Air Force and from the Royal Navy. Officers from the other Air Forces, notably those of Germany, India, Kenya, Pakistan and South Africa, have been included in recent years.

WEAPONS EMPLOYMENT COURSE

The Weapons Employment Course started in its present form in 1967 with the task of providing General Duties officers of the ranks of up to Wing Commander, with a grounding in the proper use of air weapons so that they might fill responsible posts in the weapons field throughout the Service. Within the eight weeks of the Course students study present and future weapons of the Royal Air Force, their capabilities and limitations and their lethality and effectiveness against a wide range of targets. In order to meet this task, the students must also gain an appreciation of the capability and performance of the aircraft in service with the Royal Air Force, the nav-attack systems, the performance of all types of radar systems and the types of operations and differing environment in which the Royal Air Force may be required to function. During the Course visits are arranged to establishments and civil firms involved with the development of weapons systems and to operational units in this country. Recently USAF and RAAF officers have attended this Course.

Other than the four major courses held within the Department, there are a large number of briefing periods, mainly for senior officers of all three Services. The courses last from two and a half days to a fortnight. During these short courses a concentrated programme is provided with the express purpose of assisting participants to become familiar with contemporary roles and equipment of the Royal Air Force, the employment of air weapons, electronic warfare and developments associated with space.

ELECTRONIC WARFARE

Electronic Warfare Study Periods are held separately for NATO senior officers, including senior commanders of land, sea and air forces, senior commanders of the British Services and staff officers. The courses cover a

detailed study of all aspects of electronic warfare.

WEAPONS STUDY

Senior Officer Weapons Study Periods deal with the combat capabilities of the Royal Air Force, and the use, effectiveness and limitations of current and future weapons systems. The air aspects of recent conflicts are also covered. Separate study periods are held to provide briefings on UK defence matters for senior officers destined for appointments abroad or with other Services.

The remaining study periods cover aerospace. They are held to acquaint senior officers with the latest developments in the military and civilian use of space and space vehicles.

BRIEFINGS

Briefing teams from the Department frequently give presentations to military and civilian establishments in this country and abroad. However it is probably the Department's "Royal Air Force Aerospace Briefing Team" that is most familiar to officers within the Services as well as to many civilians. This team was first formed in 1962; the members are drawn from the different sections of the Department and, over the years, they have given countless aerospace presentations throughout the British Isles, Europe and Asia to military colleges, professional bodies and universities.

Over 450 officers of rank of up to Air Chief Marshal have passed through the Department within its first year of integration within the Royal Air Force College. This period covered about 30 courses, study periods and symposia of duration of between a day and a year. Students and staff have enjoyed the excellent facilities available within York House Mess, which is now used solely by the Department.

The Department of Air Warfare is now firmly established at Cranwell and both staff and students are proud to be members of the Royal Air Force College.

1974 - Lead Article (4)



No 27 AIR WARFARE COURSE, JANUARY-JUNE 1974

Back Row : *Lt Col M D Thom, Wg Cdr J J R Cohu, Wg Cdr R G Smalley, Cdr G A I Johnston RN, Wg Cdr T S C Jones, Wg Cdr J M Alcock, Wg Cdr P F Hobley, Wg Cdr S Hitchen*

Front Row : *Lt Col F S Hudson USAF, Wg Cdr G M A Hines, Wg Cdr N A D Nugent, Gp Capt W F Knapper, Gp Capt P G C Wilson, Wg Cdr J A Rixom, Wg Cdr B M Burley.*

1974 - Lead Article (5)



No 7 GENERAL DUTIES AERO-SYSTEMS COURSE, JANUARY-DECEMBER 1974

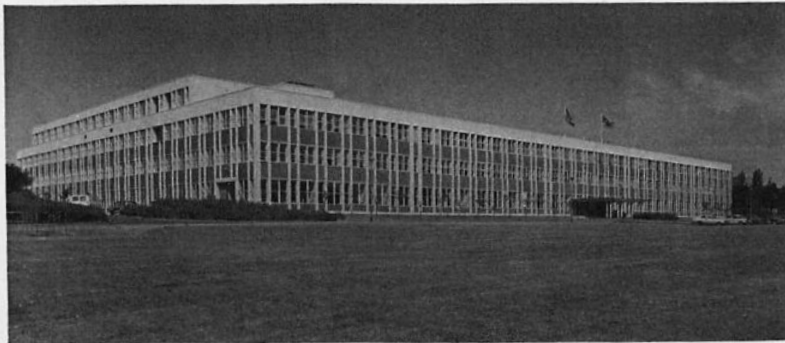
Back Row : *Flt Lt D C Travers, Flt Lt H Wainman, Flt Lt D W Smith, Flt Lt R J Scrivener, Flt Lt P Kelly, Flt Lt G D Aram, Flt Lt A L C McIntyre, Flt Lt D Pike.*

Centre Row : *Sqn Ldr S F Gallagher, Sqn Ldr P D R Jolly, Flt Lt J F Callaghan, Flt Lt R E Byfield, Flt Lt B W Johnson, Flt Lt J D Martin, Flt Lt T Miles, Flt Lt K G Logan*

Front Row : *Capt W C Lamont USAF, Sqn Ldr D J Charles, RAAF, Lt Cdr P Torchalla GNY, Lt Col A Bortolin IAF, Sqn Ldr P J Hogdson RAAF, Sqn Ldr R J Klitscher RNZAF, Flt Lt R K Craigen, Flt Lt R A Greathead.*

1974 - Second Article (1)

THE DEPARTMENT OF SPECIALIST GROUND TRAINING



The hub of Engineering Training, Trenchard Hall, Department of Specialist Ground Training.

Engineer Officer training was introduced to the Royal Air Force College in January 1966 when the Royal Air Force Technical College at Henlow merged with the Royal Air Force College and became the Department of Engineering accommodated in the newly erected Trenchard Hall. At that time the Department comprised four wings, namely Electrical, Mechanical, and Systems Engineering Wings and an Engineering Management Wing. In 1972 basic science studies were transferred from Whittle Hall to form a Basic Sciences Wing, thus allowing the Department to cater fully for the training of all Engineer Officers.

In January 1974 the organisation was again restructured to include the Secretarial and Supply Wing, and the department was renamed Department of Specialist Ground Training. The current structure of five wings includes the original Electrical and Mechanical Engineering Wings, and the newly transferred Supply and Secretarial Wing. The Basic Sciences Wing has broadened its responsibilities to include computer training, aerodynamics and aircraft design and has been retitled the Engineering Sciences Wing, whilst the Systems and Management Wings have amalgamated. The new Department's

task involves the professional training of nearly all Ground Branch Officers of the Royal Air Force, together with a commitment to train many officers from overseas Air Forces.

Courses in Trenchard Hall are many and varied, but all have the same aim: the consistent achievement of the highest operational effectiveness for the Royal Air Force at the least cost in resources. Increasing accent is being placed on effectiveness of training to allow the officer to cope with the ever increasing areas of responsibility and associated complex equipment and systems. Training in the Department is reinforced by visiting lecturers and course visits to other Royal Air Force establishments and civilian research and industrial organisations.

The pattern of training is continually changing, and the introduction of the Graduate Entry Scheme had particularly marked effect. The cadet entries undertaking the CNAA Degree Engineering Course have now been phased out, and students of No 100 Entry, which was the last entry to include engineers among its numbers, completed their degree studies in July 1973, and passed out after their technology phase in March 1974.

The 2½ year Standard Engineering Course leading to the award of the Higher National Diploma in Engineering will also cease when No 11 Entry completes training in March 1975. Discontinuance of these courses has led to increased numbers of students taking the Initial Engineering Courses (IEC). The IEC has superseded the well known Technical Officer Graduate (TOG) and Applied Engineering courses which ran so successfully for some 20 years, and now accepts students from both the Officers Cadet Training Unit at Henlow and the Graduate Officer Training Course run at the Royal Air Force College. Also catering for candidates from Henlow is the Maintenance Engineering Course designed for commissioned ex-NCO's holding Ordinary National Certificates or equivalent.

After officer training all Secretarial Officers are trained on a common 9½ week Secretarial Officers' Initial Course (SOIC) in the Department. The course trains the student in the field of administration to enable him to fill junior administrative posts at station level. Permanent commission officers continue training at Cranwell for another 12½ weeks on the Accountant Officers' Course (AOC).

Royal Air Force and certain overseas officers entering Supply Branches of their respective Services attend the 13 week Initial Supply Course (ISC). The course is modular in structure and, after an introductory module, the student trains on packages specifically related to the appointments he may hold as a junior supply officer at unit level. Such appointments may cover stock control and accounting, technical supply, electronic supply, fuels (POL), mobility and domestic supply.

The Department runs several post experience courses, the longest being the Aero-systems Engineering Course of 15 months' duration. The more highly qualified engineer officers and some education officers are selected to attend the course which is pitched at Master's Degree level. The internal Aero-systems course is designed to meet the specialist needs of officers concerned with new projects, operation requirements, and technical intelligence duties. The emphasis is on breadth rather than specialisation. The course culminates in a 7 week feasibility study to meet a simulated operational requirement. An audience, expert in the particular field, is

invited from both civilian and service establishments to attend the one day project presentation.

Other suitable qualified students read for appropriate Masters' Degrees at selected universities. When the Advanced Training Scheme was introduced most candidates either studied Electronic Engineering at the University of Southampton, or Aircraft Engineering Subjects at the College of Aeronautics, Cranfield. However, currently students are being selected to study for Masters' Degrees in a wide range of discipline and this year's subjects, to mention just a few, include Behavioural Science, Industrial Engineering and Management, and Operational Research, in addition to the more usual engineering studies. The spread of universities attended has also increased, and this year students are attending under the supervision of staff of the Department of Engineering, some eight different institutions.

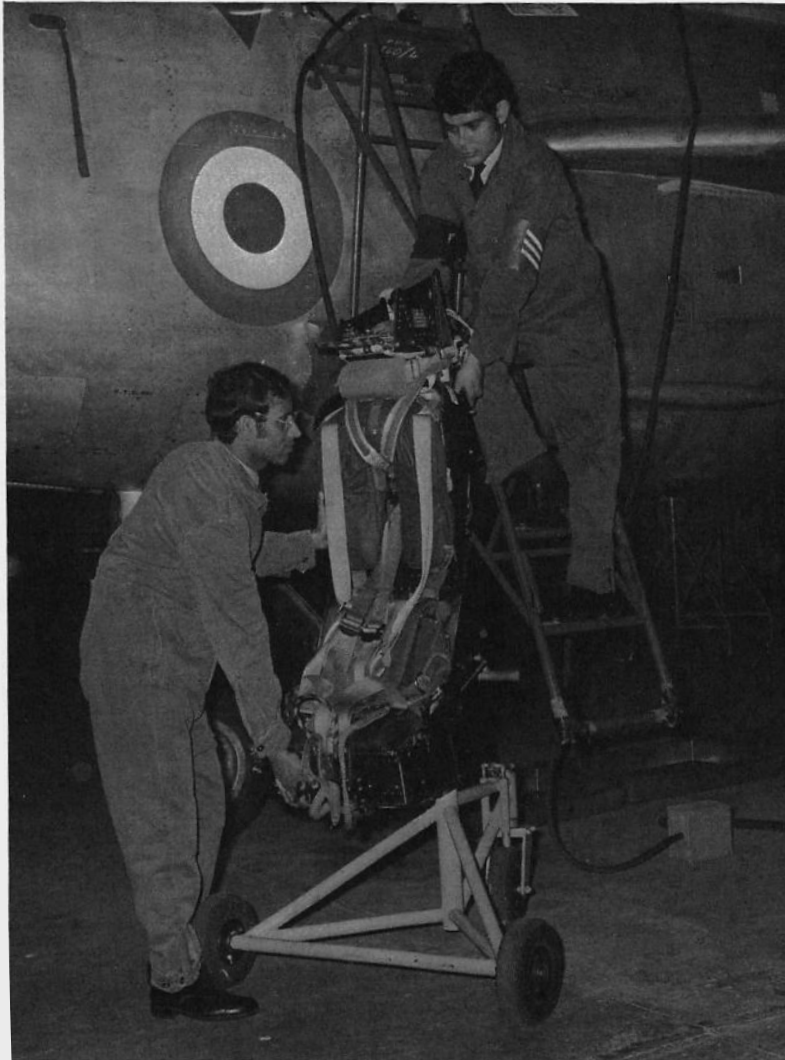
The young junior engineer in his early appointments usually operates as a leader of a team of subordinates in a hierarchical structure. As he advances into middle management he progressively has to operate as one of a team of colleagues of equal status in face to face situations. The Advanced Maintenance Engineering Course (AMEC) run by the Department aims to develop promising junior engineers (who will usually have completed three operational tours) into middle managers capable of framing policy relating particularly to the introduction of new weapon systems. The 18 week course familiarises students with behavioural and quantitative principles and techniques through participation in integrated team exercises. After six weeks each team is given an Air Staff Target to study and eventually manage. This type of training involving management games was introduced into the syllabus in 1972, and recently directing staff were placed clear first for their presentation on the development of the management phase of the course in the first round of a nationwide competition organised by the British Institute of Management. The second place in the competition was won by a team of former students now on the staff of the College Unit Engineering Wing for their presentation on Monte Carlo Simulation, a technique introduced to them on the Initial Engineering Course, and now used in controlling the College's aircraft servicing task.

1974 - Second Article (2)



Members of 10 Maintenance Mechanical Course accompanied by Air Commodore Taylor and other staff members photographed with guides and "showpieces" on Course visit to Hawker Siddeley Aviation Ltd., Manchester.

1974 - Second Article (3)



37 Armament Course. Lieutenant Bedaway, Royal Saudi Air Force. Lieutenant Shiyab, Royal Jordanian Air Force.

Supply Branch junior squadron leaders and senior flight lieutenants who are midway through their careers are selected to attend the eight week Advanced Supply Course, which is structured to update the student in current supply concepts and policies, and to equip him to deal effectively with logistic matters in his future appointments. Students on the course are made increasingly aware of the financial constraints on the Defence Budget, and are taught techniques for planning the best use of resources available. The operational needs of the Royal Air Force are continually changing, particularly in the field of mobility and rapid deployment; the Supply Officer must objectively assess the logistic effort required in meeting the operational task. Whilst on course the student considers

both the present, and probable future, role of the Air Force with particular accent on his own role as a manager in an efficient, developing supply organisation.

The departmental scene would be incomplete without mention of the courses specifically designed for overseas Air Forces. The three courses which are run specialise in Electrical and Instrument Engineering, Armament Engineering, and Mechanical Engineering. Each of the courses is of one year's duration and over 400 overseas officers from some 30 countries have been trained in the past 20 years. Some overseas officers also attend courses designed for Royal Air Force Engineer Officers, and in 1974 there are some 46 officers of 15 nationalities under training.



10 Maintenance Mechanical Engineering Course on Crash Recovery Practice (Aircraft Hall.)

1974 - Second Article (4)



*Supply Students of No 305 ISC taking a close look at the Dominie during their visit to Engineering Wing on the first day of their Course.
(This was the first combined Direct Entrant—Graduate Entrant Course).*

1974 - Second Article (5)

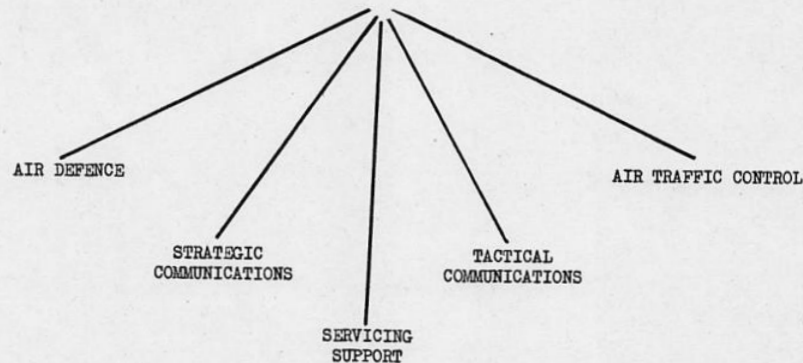


37 Armament (Overseas Officers Course) Gun Pack Change.

1974 - Third Article (1)

FOCUS ON GROUND RADIO ENGINEERING

BY FLIGHT LIEUTENANT T J FARMER



Among the popular misconceptions in the Royal Air Force about ground radio engineering are that there are few posts for engineer officers, that the field is very narrow, and that such posts are usually filled by experienced Branch officers. Such views are usually based on what is normally seen at a flying station: a transmitter site, a receiver site and one or two radar aids.

The ground radio field is, in fact, a very wide one and employs large numbers of young electrical engineer officers. During the last two years, about 45% of all first tour appointments for electrical engineers have been to ground radio engineering.

In addition to the airfield facilities, ground radio engineering embraces air defence, strategic and tactical communications and a world-wide servicing support organisation.

ENGINEERING IN THE FIELD

In air defence are major radar stations employing a variety of long range high power primary radars, secondary radars, display complexes, computer systems and ground to air communications facilities. A first tour engineer at such a station would probably be responsible for the minute-to-minute serviceability of all this equipment, for providing all

the services required by the operators, and for first and second line servicing. He would typically have a team of about 20 highly skilled technicians. Although most of air defence radars are static, there are also air-transportable systems for use in technical situations: with the latter equipments the engineer meets additional challenge since he has to be able rapidly to set up and maintain the radars under field conditions.

Land line, high frequency (HF) and satellite communications are all used in the Defence Communications Network, linking Royal Air Force, Royal Navy and Army users throughout the world. The junior engineer in this environment might find himself responsible for the reception, handling and transmission of thousands of signal messages each day. This would involve the selection of optimum transmission frequencies, supervision of the traffic, monitoring for errors and responsibility for maintenance of all the equipment involved. His team would consist of 30 to 40 men and women. Alternatively, he could be stationed at a satellite earth terminal. Here he would be concerned not only with the maintenance of the ground equipment but also with the operation of the satellite control, telemetry and relay systems.

TACTICAL COMMUNICATIONS

Tactical communications units provide forward area communications in the field as well as air traffic aids for forward airstrips. Long and short range communications are required and the scale of operations varies considerably. For a junior engineer, this provides an exacting challenge. In charge of anything from two to fifty men, he would be on a few hours standby for deployment to any part of the world, with his men and equipment, to set up and maintain communications to support, for example, a joint military exercise or a civil relief operation. This is by no means a job for those who put home comforts first.

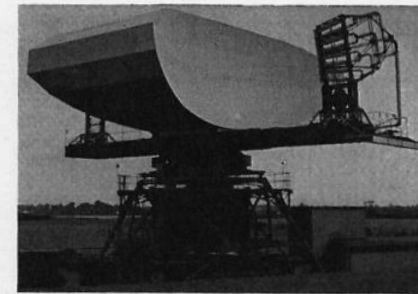


Satellite Communications Earth Station.

GROUND RADIO AND AIR TRAFFIC CONTROL

The ground radio aspects at the average airfield are very largely involved with air traffic control. The engineer officer has a variety of equipments to maintain, including the ground to air transmitters and receivers, the navigation aids, such as Tacan, Eureka,

ILS and CADF, and the surveillance and precision approach radars. As well as this, he is responsible for the operation of all the telephone and tele-printer services on the station. Typically he might have 30 men to maintain the radio and radar aids and a further 20 in the telephone exchange and communications centre.



An Air Defence Radar.

GROUND RADIO SERVICING

Servicing support for all these tasks is provided by the Ground Radio Servicing Centre (GRSC) and the Radio Engineering Unit (REU). These units provide third and fourth-line servicing respectively, on a world wide basis, exclusively for ground radio equipments. The level of servicing offers a much greater depth of engineering than most jobs: some equipment may require completely rebuilding, special equipment may need building, obscure and complex faults may need rectification. The engineer officer will often have to visit other units to resolve unusual problems and may well be responsible for teams installing new equipment both at home and overseas.

1974 - Third Article (2)

TRAINING

To be effective in any of these areas of ground radio engineering, an engineer officer must have a good working knowledge of the various equipments and systems in use. Within the Department of Specialist Ground Training, this element of the engineers officer's training is provided by Ground Radio Systems Squadron. The squadron is staffed solely by engineer officers and technicians, all of whom are experienced in some aspect of ground radio engineering.

The bulk of the squadron's task is devoted to the electrical engineer students of the Initial Engineering Course, the Maintenance Engineering Course, and the Standard Engineering (Diploma) Course. Their Syllabus time is divided equally between communications and radar, and about one third of the total is spent on course visits.

The course introduces students to the operational requirements of the various systems, and typical operational environments. The Engineer Officer has not only to appreciate how a system works, but also why it is required, how it is used operationally, and what performance the "customer" expects. The engineer with a broad equipment engineering and application knowledge, is better able to understand the user's problems, and hence able to provide a better service to operations staffs.

Communications engineering training forms an important phase of the course. Strategic systems embrace world wide communications. The student studies military radio, telephone and teleprinter systems, to sufficient depth to ensure world wide maintenance of communication.

Shorter range tactical communication equipments are investigated on a more practical basis. A one day field exercise is mounted for each course. Students are deployed in two or three groups to remote sites about 70-100 miles apart. On arrival the students set up equipment and aerials, and carry out a realistic communications task involving frequency changes as conditions dictate, and attempting to overcome the artificial difficulties injected by the staff. The remaining communications areas cover air traffic control communications, including the ground teleprinter systems, such as the Royal Air Force Air Move network, and ground to air HF, VHF and UHF radio systems.



10 Maintenance Electrical Engineering Course on a Communications Exercise.

Ground radar instruction falls into three main areas. The first part covers the techniques that are common to most primary ground radars, such as transmitters, aerials, receivers, signal processing and displays. Secondary radar systems are also included. The various air traffic control aids are dealt with next; these include not only the long and short range radars, but also the navigation aids. The third area covers the air defence environment, including the organisation of the UK air defence system. Most of the major air defence radars and IFF systems are dealt with, as well as surface-to-air missile radars and the BMEWS System.

In both the communications and the radar phase, the students are given a certain amount of practical work, but, because of the high cost of equipment there is understandably little available in the Squadron. Visits, therefore, play an important role in the instruction, allowing students to see the various equipments in operation and to discuss them with their engineers and users.

The remainder of the Squadron effort is given to Mechanical engineers of the Initial, Maintenance and Standard Courses, and to the Advanced Maintenance Engineering Course. For mechanical engineers, this cross-training is aimed at giving them an understanding of what ground radar engineering involves.

Ground Radio Systems Squadron tries to ensure that every electrical engineer officer leaving the College has an adequate knowledge of the techniques, systems and organisation to enable him to be effective in any ground radio appointment.



The presentation of Academic Awards to Graduates of No 99 Engineering Degree Course, and No 9 Standard Engineering Course, by Air Marshal Sir Charles Pringle, KBE, MA, C Eng, FrAeS, Royal Air Force.

1974 - Academic Awards

THE DEGREE OF BACHELOR OF SCIENCE UNDER THE AEGIS OF THE COUNCIL FOR NATIONAL ACADEMIC AWARDS

No 99 ENGINEERING DEGREE COURSE (HONOURS)
FIRST CLASS HONOURS
Flying Officer C A SUCKLING

SECOND CLASS HONOURS (DIVISION I)
Flying Officer M J W ALLEN
Flying Officer H G BRITTEN-AUSTIN
Flying Officer T J OAKLEY
Flying Officer K J G PLATT

SECOND CLASS HONOURS (DIVISION II)
Flying Officer M R S CHINNECK
Flying Officer I P DURN
Flying Officer B A LEE
Flying Officer C D SEVIOUR
Flying Officer R W MUSSARD
Flying Officer J W C SPENCER
Flying Officer J C P ROBINSON

No 99 ENGINEERING DEGREE COURSE (BSc)
Flying Officer I C ATKINSON
Flying Officer H J BOARDMAN
Flying Officer P W CHOLARTON
Flying Officer G JONES
Flying Officer W J R KELLY
Flying Officer C H LAWRENCE
Flying Officer A L LEWIS
Flying Officer C B MONTAGU
Flying Officer D G WILSON

No 100 ENGINEERING DEGREE COURSE (HONOURS)
SECOND CLASS HONOURS (DIVISION I)
Pilot Officer CHAK KONG LEONG
Flying Officer J S PARKER
Flying Officer E A FORD

SECOND CLASS HONOURS (DIVISION II)
Flying Officer P E ASHMORE
Flying Officer G J COPSEY
Pilot Officer ABU HASSAN BIN ALI
Pilot Officer JAAFER ALI BIN TUFAIL
Flying Officer P N VALE
Flying Officer J W WITNEY
Flying Officer M J WRIGLEY

THIRD CLASS HONOURS
Flying Officer G B JONES

No 100 ENGINEERING DEGREE COURSE (BSc)
2nd Lieutenant A M IDRIS
Pilot Officer ABDUL LATIF BIN TAHA
Flying Officer NAWI BIN ABDULLAH
Pilot Officer MOHAMED RAMLY BIN AJIR
Flying Officer P A B ROBERTS
Flying Officer A S RUTTER
Pilot Officer AHMAD SUJAK BIN BON

THE HIGHER NATIONAL DIPLOMA

No 9 STANDARD ENGINEERING DIPLOMA COURSE
(ELECTRICAL AND MECHANICAL)
Flying Officer P C BADCOCK: Electrical
Flying Officer J BROWN: Electrical
Flight Lieutenant R S FISHER: Electrical
Flight Lieutenant P R WOOLFORD: Mech.

No 10 STANDARD ENGINEERING DIPLOMA COURSE
(ELECTRICAL)
Flight Lieutenant W J BARBER
Flight Lieutenant K COBURN
Flight Lieutenant K D FRAZER
Flight Lieutenant F GOOD
Flying Officer G S HARKER
Flight Lieutenant S S KEEN
Flight Lieutenant R A LEWIS
Flying Officer J W STAFFORD
Lieutenant TAN ENG SENG
Lieutenant M N UMARU

(MECHANICAL)
Pilot Officer MOHAMMED BIN ABU BAKAR
Flying Officer A P HAYES
Flight Lieutenant B E HILLIER
Flying Officer D A HOBART
Lieutenant H M JABER
Flight Lieutenant R M H KNOTTS
Flight Lieutenant R A LEWIS
Flight Lieutenant K MORTIMER
Flying Officer R E SEARLE

PRIZES

The Whittle Prize : Flying Officer J S PARKER.
The Royal United Services Institute Award : Flying Officer P E ASHMORE.
The Mechanical Engineering Studies Prize for BSc Honours Student : Flying Officer E A FORD.
The Electrical Engineering Studies Prize for BSc Honours Student : Flying Officer M J WRIGLEY
The Mechanical Engineering Studies Prize for BSc Student : Flying Officer P A B ROBERTS.
The Mathematics Prize for BSc Honours Student : Flying Officer E A FORD.
The General Studies Prize : Flying Officer P N VALE.
The Minerva Prize : Flying Officer R E SEARLE.

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1974 - Fourth Article

THE HALAHAN TROPHY

Air Vice-Marshal Halahan was educated at Dulwich and in 1894, at the age of 14, he joined *HMS Britannia*. He then served for 4 years on *HMS Immortalite* before specialising in gunnery; in 1905 whilst with the Atlantic Fleet he was badly injured in a gun explosion.

In August 1906 he was posted as Gunnery Lieutenant to *HMS Dreadnought* on which ship he carried out practices with 12 inch guns with King Edward VII and the then Prince of Wales, later King George V, on board, and as a result of this he was awarded the MVO. During that year he attended a staff course at the School of Gunnery Sheerness and became one of the greatest authorities of his time on naval gunnery.

Shortly after the outbreak of war in 1914 he was given an Admiralty appointment in charge of anti-aircraft defences of London. In

1915 he qualified as a pilot at Hendon on a Maurice Farman Longhorn and then commanded the Royal Naval Air Service units at Dover and Dunkirk. In the last year of the war he commanded 5th Group of the newly formed Royal Air Force and then held successively Directorates of Equipment, Inspection and Technical Development before becoming Commandant of the Royal Air Force College in 1926.

He died in 1965 and three years ago his son and daughter, Guy and Pat Halahan, donated not only the Halahan Trophy, but also two handsome salvers which are on display in Trenchard Hall Officers' Mess, in his memory. As well as the trophy which is awarded to the best overall student on the Maintenance Course, Miss Halahan has arranged monetary prizes for the winner and runner up.



Flying Officers G S Lynn (the runner-up) and Flying Officer H D Bromidge (the winner) holding the Trophy after the ceremony held on 19th July 1974.