

RAF COLLEGE CRANWELL

College Journal Extracts



1981

1981 - Opening Pages

EDITORIAL NOTES

During 1979 and 1980, the College experienced considerable turbulence as a result of the introduction of a revised management structure and the decision to concentrate all initial officer training at Cranwell. In contrast, 1981 was a year of consolidation and relative calm. It was, however, a significant year, for it saw the birth of a new College tradition. Her Majesty The Queen visited Cranwell in July on the occasion of the first Queen's Review. Henceforth, the annual Queen's Review will feature as the pre-eminent event in the College calendar.

Once again, there have been a number of senior staff changes. On 6 March 1981, Group Captain R A Miller, the Director of the Department of Air Warfare, left the College to take up his new appointment as Director of Air Staff Briefings in MOD. We wish him every success in this new role. In his place, we welcomed Group Captain D P J Melaniphy. On 20 March 1981, Group Captain D E B Dowling, Group Captain University Air Squadrons retired from the Royal Air Force and we wish him every happiness during his retirement. He was replaced by Group Captain D St J Homer.

1981 also saw the retirement from the Royal Air Force of the Deputy Commandant, Air Commodore E G P Jeffery, who left us on 9 May. We wish him every happiness in his retirement. We welcomed, in his place, Air Commodore M R Williams. On 24 August,

Wing Commander J B S Meek assumed command of the Support Unit vice Wing Commander K Bradley, who took up his new appointment as PG3 at MOD Barnwood. Finally, Group Captain M J Rayson, Director of the Department of Initial Officer Training, left Cranwell on promotion to Air Commodore, in order to prepare for his new appointment as Air Attaché, Bonn. We offer him our heartiest congratulations on his promotion and wish him every success in Germany. In his place we welcomed Group Captain R M Robson.

The staff of the Journal wish every happiness and good fortune to all those who have left Cranwell during 1981 and thank them for their work and efforts. In particular, we would like to thank the wives for their magnificent contributions to the life and work of the Cranwell community. We welcome all the newcomers to Cranwell and hope that their time here will be both rewarding and fulfilling.

As the year drew to its close, it was announced that, late in January 1982, the Air Officer Commanding and Commandant, Air Vice-Marshal B Brownlow, would hand over command of the College to Air Vice-Marshal R C F Peirse. We wish Air Vice-Marshal Brownlow success in his next appointment as Director General of Training (RAF) and hope that he and Mrs Brownlow will enjoy every happiness in the future. We look forward to welcoming Air Vice-Marshal and Mrs Peirse to the Lodge.

CAREER BRIEF

AIR COMMODORE M R WILLIAMS MA RAF



Air Commodore M R Williams, born in Haverfordwest, Pembrokeshire, on 9 August 1929, was educated at Marlborough and Trinity College, Dublin, and joined the Royal Air Force in 1954. After a tour on Meteor and Hunter day fighters, he qualified as a flying instructor and

taught at Cranwell from 1959-1961. He completed the 1962 course at the Empire Test Pilots' School and spent the next 3 years as a test pilot at A&AEE Boscombe Down.

After an Air Staff appointment in Aden, he commanded Oxford University Air Squadron from 1967-1969 and then attended the Joint Services Staff College, Latimer. Following staff tours in operational planning in the Ministry of Defence and with the Central Tactics and Trials Organisation, he was Station Commander of RAF Little Rissington from 1973-1976. His next posting was to the directing staff of the Senior Officers' War Course at the Royal Naval College, Greenwich, after which he was Exercise Controller on the staff of the United Kingdom Commanders-in-Chief Committee. He became Air Officer Commanding Air Headquarters and Deputy Commander British Forces Cyprus in March 1979 prior to assuming the appointment of Deputy Commandant of the RAF College in May 1981.

Air Commodore Williams and his wife, Jackie, were married in 1965 and have 2 sons and a daughter. His main interests outside aviation are shooting, fishing and music. In September 1981, Air Commodore Williams became President of the Royal Air Force Modern Pentathlon Association.

1981 - HM Queen's Review (1)

THE QUEEN'S REVIEW 1981



Her Majesty The Queen, with the Air Officer Commanding and Commandant, Air Vice-Marshal B Brownlow, in attendance, presenting The Queen's Medal to Flight Lieutenant E G Jones

The highlight of the College year was undoubtedly The Queen's Review on 24 July 1981, when we were honoured by the visit of Her Majesty The Queen, accompanied by His Royal Highness The Duke of Edinburgh. This was the inaugural Queen's Review and it was particularly appropriate for the College to welcome Her Majesty The Queen, its Commandant-in-Chief, as the Reviewing Officer.

At 1120 hours precisely, on a damp wintry day, the 2 Royal Standards were broken simultaneously at the College Hall Flagmast and at College Headquarters to mark the arrival of the Royal Aircraft. Her Majesty The Queen was received at the airfield by the Earl of Yarborough JP, Her Majesty's Vice Lord Lieutenant for the County of Lincolnshire, who presented the following members of the reception party:

Mr P C Goodhart MP, Parliamentary

Under Secretary of State for the Armed Forces.

Air Chief Marshal Sir Michael Beetham GCB CBE DFC AFC ADC, Chief of the Air Staff.

Air Marshal Sir Michael Beavis KCB CBE AFC, Air Officer Commanding-in-Chief Royal Air Force Support Command. Air Vice-Marshal B Brownlow OBE AFC FRAeS, Air Officer Commanding and Commandant Royal Air Force College.

The official reception over, the Royal Party drove to the College Parade Ground for the Ceremonial Parade. As The Queen, escorted by the Air Officer Commanding and Commandant, and the Duke of Edinburgh, escorted by Air Commodore M R Williams MA, the Deputy Commandant, approached the dais a diamond nine formation of Jet Provost aircraft from the Basic Flying Training School flew past in salute to Her Majesty.

The parade comprised the graduating officers of No 52 Initial Officer Training Course and 2 supporting squadrons from Nos 53 and 54 Initial Officer Training Courses. The Queen's Colour for the Royal Air Force College was paraded; 4 officers from the Basic Flying Training School formed the Colour Party. Ceremonial music for the parade was played by the Band of the Royal Air Force College conducted by the Director of Music, Flight Lieutenant C R Tomsett ARCM LTCL.

When Her Majesty The Queen had taken her position on the dais, the Parade Commander, Flying Officer R Rowlands, ordered the Royal Salute and, as the full National Anthem was played, the Colour Bearer let fly and lowered The Queen's Colour.

On completion of the salute, the Parade Commander reported the parade and invited Her Majesty to inspect the graduating squadrons. During the inspection, The Queen was preceded by her 2 escorts, who had been selected from the graduating officers, and accompanied by the Air Officer Commanding and Commandant, the Parade Commander and the Equerry-in-Waiting, Squadron Leader

A N Wise, a graduate of No 88 Entry. The inspection completed, the graduating squadrons marched in column of flights, first in slow time and then in quick time. Having reformed on the receiving base, the parade advanced in Review Order and executed a second Royal Salute.

Her Majesty then presented the College annual prizes for the prizes and awards year 1980 to the following officers:

THE QUEEN'S MEDAL – Flight Lieutenant E G Jones BSc MB ChB, No 33 Initial Officer Training Course

The Queen's Medal is awarded to the RAF or WRAF cadet who, during initial officer training, has proved himself or herself to be the most outstanding cadet of the year.

SWORD OF HONOUR – Flight Lieutenant C M Foan BSc, No 57 Initial Officer Training Course

The Sword of Honour is awarded to the RAF cadet who, during initial officer training, has produced the most distinguished performance of the year in leadership.

SASH OF HONOUR – Flying Officer A Hill BSc WRAF, No 44 Initial Officer Training Course

The Sash of Honour is awarded to the WRAF cadet who, during initial officer training, has produced the most distinguished performance of the year in leadership.

KINKEAD TROPHY – Flying Officer C Chattaway, No 10 Initial Basic Flying Training Course

The Kinkead Trophy is awarded to the RAF pilot in the Basic Flying Training School who is placed first in the combined order of merit for flying and associated ground school studies for the year.

MICHAEL HILL MEMORIAL PRIZE – Flying Officer C Chattaway, No 10 Initial Basic Flying Training Course

The Michael Hill Memorial Prize is awarded to the RAF pilot in the Basic Flying Training School who has shown the most proficiency in applied flying during the year.

1981 - HM Queen's Review (2)



1981 - HM Queen's Review (3)

HALAHAN PRIZE – Flying Officer P J Scott BSc, No 2 Basic Aerosystems Engineering Course
The Halahan Prize is awarded to the student of the Aerosystems Specialisation of the Initial Specialist Training (Engineering) Course who has achieved the best all round performance of the year.

CHICKSANDS PRIZE – Flying Officer J P Baggott BA, No 1 Basic Communications – Electronics Course
The Chicksands Prize is awarded to the student of the Communications-Electronics Specialisation of the Initial Specialist Training (Engineering) Course who has achieved the best overall performance of the year.

THE ROYAL NEW ZEALAND AIR FORCE PRIZES

Aerosystems Specialisation – Flying Officer S P Davis-Poynter BA, No 1 Basic Aerosystems Engineering Course

Communications-Electronics Specialisation – Flying Officer S H Cassia BA, No 1 Basic Communications-Electronics Course

A Royal New Zealand Air Force Prize is awarded to the student of each specialisation of the Initial Specialist Training (Engineering) Course who has achieved the best performance of the year in applied technologies.

THE BECKWITH PRIZE – Flying Officer R G Torrens BSc, No 1 Basic Aerosystems Engineering Course

The Beckwith Prize is awarded to the student of the Initial Specialist Training (Engineering) Course who, irrespective of specialisation, submitted the best paper of the year on a selected engineering subject.

THE SUPPLY PRIZE – Flight Lieutenant A K Kopp, No 327 Initial Supply Course

The Supply Prize is awarded to the student of the Initial Supply Course who has achieved the highest standard of the year in professional studies.

Following the presentation of prizes The Queen addressed the Parade in the following words:

“I am delighted to be with you at Cranwell for the first Queen's Review of the Royal Air Force College. Apart from the pleasure of being your Commandant-in-Chief, my personal and family links with Cranwell date back to before the foundation of the Royal Air Force College, when my father spent some of his war-time

service as an instructor at HMS Daedalus. I am very pleased that one of your officers' messes is today called York House in memory of him.

“On my last visit, in 1975, I presented the Colour which is on parade today. It serves as a focus for your loyalties and as a symbol of the close connection between the Armed Forces and the Crown. Just as the Colour was originally used as the rallying point in battle, so the position of the Sovereign, as head of the Armed Forces, represents today the keystone of the structure of authority, without which military organisations cannot function.

“Since 1975, much has changed at Cranwell. Instead of training only a small number of university graduates, the Royal Air Force College now undertakes initial training for all officers entering the Service, and further professional training for a large number of them. But the idea that Cranwell presents the highest possible standard that can be reached by entrants to commissioned service has not in any way changed. In the last war they used to say, ‘he must be good, he was Cranwell trained’. The College still exists to set and maintain the highest levels of competence in command and leadership. All that has changed is that the advantages of Cranwell training are now open to very potential officer.

“To the people, both uniformed and civilian, who are responsible for the organisation and training of potential officers, and for all other aspects of the work of the College, I express my admiration and gratitude for the way in which you have managed to put the new training system into practice without any reduction in the quality of the Cranwell graduate. On you rests the heavy responsibility of maintaining the great traditions of the College. What I have seen so far today gives me nothing but confidence in your ability to discharge that task.

“To the graduating officers of No 52 Initial Officer Training Course, I would like to offer my congratulations on your smart turnout and excellent bearing on this impressive parade. You are joining the commissioned ranks of the Service, which today, more than ever, plays a vital part in the defence of the United Kingdom. You will have to defend your country with fewer resources against potentially greater threats than those who passed before you. Like them you will be asked to display courage, devotion to duty and, above all, high standards of professional skill. Whether you exercise your skills as aircrew, or in other branches of the Service, you



Luncheon in the dining hall of College Hall Officers' Mess

must never let your standards lapse for one moment from the very best that you can achieve. I wish you good luck and success in your future careers.”

In his reply, the Air Officer Commanding and Commandant welcomed Her Majesty to the College and thanked her for agreeing to be present on the occasion of the first Queen's Review, for her inspiring address and for her continuing deep interest in Cranwell's affairs. The Parade Commander called the Three Cheers for Her Majesty The Queen.

The 3 Senior Chaplains of the Royal Air Force College said prayers for The Queen and Country, the Royal Air Force and the Royal Air Force College. The graduating officers then responded to the Padre's charge in the traditional declaration of dedication to the service of Queen and Country.

The Queen's Colour was marched off and the Ceremonial Parade was completed by the graduating officers marching in slow time through the ranks of the support squadrons and up the steps into the College Hall to the tune of ‘Auld Lang Syne’.

The Royal Party then walked over to College

1981 - HM Queen's Review (4)

Hall, where an official photograph was taken on the main entrance steps with the prize-winners. On entering College Hall, The Queen and The Duke of Edinburgh were received by the President of the College Hall Officers' Mess Committee, Wing Commander J M Sprackling.

After a reception, Her Majesty presided at luncheon during which The Queen's Colour stood in its traditional position above the top table. For the reception and luncheon The Queen, The Duke of Edinburgh and other members of the Royal Party, Air Vice-Marshal and Mrs B Brownlow and Air Commodore and Mrs. M R Williams, were joined by the following distinguished guests:

- The Earl and Countess of Yarborough
- Mr and Mrs Philip Goodhart
- Marshal of the Royal Air Force Sir Dermot and Lady Boyle
- Marshal of the Royal Air Force Sir Denis Spotswood
- Air Chief Marshal Sir Michael and Lady Beetham
- Air Chief Marshal Sir Wallace and Lady Kyle
- Air Chief Marshal Sir Neville and Lady Stack
- Air Marshal Sir Roy and Lady Austen-Smith
- Air Marshal Sir Michael and Lady Beavis
- Air Vice-Marshal and Mrs W E Colahan
- Air Vice-Marshal and Mrs D Harcourt-Smith
- Air Vice-Marshal and Mrs F D Hughes
- Air Vice-Marshal and Mrs M D Lyne
- Air Commodore and Mrs E G P Jeffery
- Air Commodore and Mrs E D McK Nelson
- His Excellency Malillah Habib and Mrs Habib

After luncheon, The Queen and The Duke of Edinburgh were driven to Queen's Avenue, where Her Majesty planted a lime tree. The area around Queen's Avenue and No 1 Initial Officer Training Parade Square was thronged with Service personnel and their families and civilians from the local region. Special arrange-

ments had been made to seat senior citizens from Cranwell Village and members of the Lincolnshire Society for the Physically Handicapped. As The Queen and The Duke of Edinburgh walked past the assembled spectators, The Queen accepted bunches of flowers spontaneously offered by the happy and excited children. At the end of the walkabout, Her Majesty received an official bouquet presented on behalf of the College by 8 year old Miss Kirsty Murray, daughter of Corporal and Mrs A T Murray.



Finally, The Queen and The Duke of Edinburgh were driven to the airfield for the leave-taking before departing in an Andover of The Queen's Flight, accompanied by the Captain, Air Commodore Sir Archie Winskill. As the aircraft doors closed, the Royal Standards were lowered simultaneously at the College Hall and College Headquarters flag masts.



The Earl of Yarborough

Mr P C Goodhart

Air Chief Marshal Sir Michael Beetham

Air Marshal Sir Michael Beavis

Air Vice-Marshal B Brownlow

Air Commodore M R Williams

1981 - Honours & Commendations

HONOURS AND COMMENDATIONS 1981

SERVICE PERSONNEL

Officer of the Most Excellent Order of the
British Empire
Wg Cdr T F Hayward

Queen's Commendation for Valuable
Service in the Air
Sqn Ldr D Whatling
Sqn Ldr W M N Cross
Flt Lt J Lloyd

Commendations by the Air Officer
Commanding-in-Chief Support Command
FS A L Rowe
Sgt R Venn
Sgt G P Larratt
FS J R MacLachlan
Sgt B C A D'Souza

Commendation by the Air Officer
Commanding-in-Chief Strike Command
Sgt I R Burgin

Commendation by the Air Officer
Commanding-in-Chief RAF Germany
Sgt D J Marks

Commendations by the Air Officer
Commanding and Commandant

FS N D Hibberd
FS R R Downer
Sgt M E Buckberry
Cpl J D McCormick

Commendation by the Air Officer
Commanding Training Units
Chf Tech G Yalland

Clasp to LS and GCM
WO A G Tilley

CIVILIAN PERSONNEL

Imperial Service Medal
Mr R A Graham
Mr J W Collishaw

Commendations by the Air Officer
Commanding-in-Chief
Mrs P P Hall
Mr L G Amies

Commendations by the Air Officer
Commanding and Commandant
Mr J Todd
Mr E Hopkin
Mrs M P Simons
Mrs S Wilson
Mr H G T Tyler

1981 - Course Awards (1)

COURSE AWARD WINNERS 1981

THE DEPARTMENT OF INITIAL OFFICER TRAINING COURSE AWARDS

The Sword of Merit is awarded to the RAF cadet of each course who has demonstrated outstanding ability, leadership and other officer qualities, and the greatest potential for further development.

Winners:

48 IOTC	Fg Off G J Davey BSc		
49 IOTC	Plt Off A F McNish BA	GD/P	Feb 81
50 IOTC	Fg Off N A Bliss	GD/P	Mar 81
51 IOTC	Plt Off P R Jones BDS	GD/P	Apr 81
52 IOTC	Plt Off M P Stephenson	GD/P	Jun 81
53 IOTC	Not Awarded	GD/Nav	Jul 81
54 IOTC	Plt Off S A Seeley		
55 IOTC	A Plt Off D L Williamson	Sy (Regt)	Oct 81
		Sy (Regt)	Nov 81

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The Sash of Merit is awarded to the WRAF cadet of each course who has demonstrated outstanding ability, leadership and other officer qualities, and the greatest potential for further development.

Winners:

48 IOTC	Plt Off G E Larkin	Admin (Cat)	Feb 81
49 IOTC	Fg Off S D Stratford MA	Admin (Cat)	Mar 81
50 IOTC	A Plt Off A H Ward-Platt	GD (Grd) FC	Apr 81
51 IOTC	A Plt Off P M McDevitt	GD (Grd) FC	Jun 81
52 IOTC	A Plt Off C J Thomson	GD (Grd) AcC	Jul 81
53 IOTC	Not Awarded		
54 IOTC	Not Awarded		
55 IOTC	A Plt Off S J Marshall	GD (Grd) AcC	Nov 81

The Hennessy Trophy and Philip Sassoon Memorial Prize is awarded to the best all round RAF or WRAF cadet of each course, other than the winners of the Sword of Merit or the Sash of Merit.

Winners:

48 IOTC	Fg Off R Sayer	Admin (Sec)	Feb 81
49 IOTC	Fg Off K O Faulkner	ALM	Mar 81
50 IOTC	Plt Off C R Huckstep BA	GD/P	Apr 81
51 IOTC	Plt Off G E Forman BA	GD/P	Jun 81
52 IOTC	Plt Off K A Revell BA	GD/P	Jul 81
53 IOTC	A Plt Off B G Graeme-Cook	GD/P	Sep 81
54 IOTC	Fg Off R L Jones	Admin (Educ)	Oct 81
55 IOTC	A Plt Off M L Bamber	GD/P	Nov 81

1981 - Course Awards (2)

The British Aircraft Corporation Trophy is awarded to the cadet, whether RAF, WRAF or F&C, with the highest mark for professional studies on each course.

Winners:			
48 IOTC	Plt Off N Collins-Bent B Tech	Eng	Feb 81
49 IOTC	Plt Off B V Nabbs MSc BSc	GD/P	Mar 81
50 IOTC	Plt Off C R Huckstep BA	GD/P	Apr 81
51 IOTC	Fg Off T F Osborne	Air Eng	Jun 81
52 IOTC	Fg Off B G Chipps	Air Eng	Jul 81
53 IOTC	Fg Off W J Wilson	Sy (Prov)	Sep 81
54 IOTC	Fg Off N Mitchell	Eng	Oct 81
55 IOTC	Fg Off I H Maxey	Eng	Nov 81

The Overseas Students' Prize is awarded to the F&C cadet on each course who has the best overall performance in leadership, officer qualities, and professional studies.

Winners:			
48 IOTC	Not Awarded		Mar 81
49 IOTC	Air Sub Lt M G Thackray	Zimbabwe AF	Apr 81
50 IOTC	Plt Off A N M Al-Hajri	SOAF	Jun 81
51 IOTC	Plt Off Z S R Al-Hajri	SOAF	Jul 81
52 IOTC	Plt Off A M A Al-Farsi	SOAF	Sep 81
53 IOTC	Plt Off H A M Al-Faraji	SOAF	
54 IOTC	Not Awarded		Nov 81
55 IOTC	Plt Off T S A Al-Qahtan	SOAF	

The Alasdair Black Memorial Trophy and Prize are awarded to the RAF or WRAF cadet on each course who submits the best essay on war studies.

Winner:			
48 IOTC	Plt Off M T Doel BEd	Admin (Sec)	Feb 81
49 IOTC	A Plt Off A S Rowland	GD/P	Mar 81
50 IOTC	Plt Off C R Huckstep BA	GD/P	Apr 81
51 IOTC	A Plt Off K R Dove Dixon	GD/P	Jun 81
52 IOTC	Flt Lt P Mellings BSc	Eng	Jul 81
53 IOTC	Plt Off S A Bingham BA	GD (Grd) AcC	Sep 81
54 IOTC	A Plt Off A J Irons	GD/P	Oct 81
55 IOTC	Fg Off N J Mackinnon	P Int	Nov 81

THE DEPARTMENT OF SPECIALIST GROUND TRAINING COURSE AWARDS
The Whittle Prize is awarded to the student on the Aerosystems Engineering Course who has been adjudged the best student in terms of progress in studies and contribution to the success of the course as a whole.

Winner: Sqn Ldr L M P Walsh, 14 AEC Dec 81

The Royal United Services Institute Prize is awarded to the student who has been adjudged runner-up to the winner of the Whittle Prize.

Winner: Flt Lt P M Eckert Dec 81

The Halahan Trophy is awarded to the student of the Aerosystems specialisation who achieves the best all-round performance on each Initial Specialist Training (Engineering) course.

Winners:			
3 BAEC	Fg Off R Watson		Feb 81
4 BAEC	Fg Off T C Burke BSc		Jun 81
5 BAEC	Fg Off J R Owen		Aug 81
6 BAEC	Fg Off P A Lean BA		Nov 81

The Chicksands Cup is awarded to the student who achieves the best overall performance on the Communications-Electronics specialisation of the Initial Specialist Training (Engineering) course.

Winners:			
6 BCEC	Fg Off C R Edwards		Aug 81
7 BCEC	Fg Off R J Kerr BSc		Oct 81

The Royal New Zealand Air Force Trophies are awarded to the student of each specialisation of the Initial Specialist Training (Engineering) course who achieves the best performance in applied technologies.

Winners:			
4 BAEC	Fg Off T C Burke BSc		Jun 81
5 BAEC	Fg Off M R Jenkins		Aug 81
6 BAEC	Fg Off P A Lean BA		Nov 81
6 BCEC	Fg Off G Christie BSc		Aug 81
7 BCEC	Fg Off H E Morgan		Oct 81

1981 - Course Awards (3)

The Beckwith Trophy is awarded to the student of each Initial Specialist Training (Engineering) course who, irrespective of specialisations, submits the best paper on a selected engineering subject.

Winners:		
3 IST (Eng) Fg Off P L Guy RNZAF		Feb 81
4 IST (Eng) Fg Off S J C Pollock		Jun 81
5 IST (Eng) Fg Off A W Gransden		Aug 81
6 IST (Eng) Fg Off G Christie BSc		Aug 81

The Supply Cup is awarded to the student who achieves the highest standard in professional studies on each course.

Winners:		
332 ISC Fg Off T G Burrows		Feb 81
333 ISC Flt Lt P D G Philo		Apr 81
334 ISC Flt Lt B E Devlin		May 81
335 ISC Flt Lt P M D Pugh MBIM		Jul 81
336 ISC Plt Off A A Hay BEd WRAF		Aug 81
337 ISC Fg Off J A Edgell		Oct 81
338 ISC Plt Off A D Farnsworth		Nov 81

THE GROUP CAPTAIN P W LOWE-HOLMES AWARD FOR SPORT

The award is made to the student officer or officer cadet from DIOT or commissioned student from DSGT or BFTS undergoing IST who, by active cheerful and sportsmanlike participation, has given the greatest service to sports and sportsmanship at the College during either the summer or winter season.

Winners:		
Summer 1980	Plt Off A Hill BSc WRAF	
Winter 1980/81	Fg Off T Heslin	
Summer 1981	Fg Off V E Thomas BSc	

THE DEPARTMENT OF AIR WARFARE

The Andrew Humphrey Memorial Gold Medal is awarded to the best overall student on the GD Aerosystems course.

Winner:		
14 GDASC Flt Lt P S Smith MSc BA	GD/Nav	Dec 81

The Aries Trophy is awarded to the student on each GD Aerosystems course who produces the best personal project.

Winner:		
14 GDASC Flt Lt P S Smith MSc BA	GD/Nav	Dec 81

THE BASIC FLYING TRAINING SCHOOL COURSE AWARDS

The Hicks Memorial Trophy is awarded to the RAF pilot who is placed first in his course order of merit in Ground School.

Winners:		
19 IBFTC Flt Lt B D Maughan BSc		
20 IBFTC Not Awarded	Jan	81
21 IBFTC Flt Lt C J M Mannion		
22 IBFTC Fg Off R Andrewartha BSc	Apr	81
23 IBFTC Fg Off J F Bowles BSc	Apr	81
24 IBFTC Flt Lt C M Foan BSc	Jul	81
25 IBFTC Fg Off R Lock BSc	Jun	81
26 IBFTC Flt Lt S P Newbold BSc	Dec	81
27 IBFTC Flt Lt M J D Castle BSc	Sep	81
	Nov	81

The Dickson Trophy is awarded to the RAF pilot who on completion of his training course has shown most proficiency in applied flying.

Winners:		
16 IBFTC Plt Off S M Wright	Jan	
17 IBFTC Flt Lt A Golledge BSc	Apr	81
18 IBFTC Not Awarded		81
19 IBFTC Flt Lt M D Hollingdale BSc	Jun	
20 IBFTC Flt Lt T M B Yorath BSc	Sep	81
21 IBFTC Not Awarded		81
22 IBFTC Fg Off G K Rawles BSc	Nov	
23 IBFTC Flt Lt M C Green BSc	Dec	81

The Battle of Britain Trophy is awarded to the RAF, Navy or Army pilot, who on completion of his training is judged to be the best acrobatic pilot on his course.

Winners:		
16 IBFTC Not Awarded		
17 IBFTC Not Awarded		
18 IBFTC Flt Lt A F Clitherow BSc	Apr	
19 IBFTC Flt Lt D W D Mackay BSc	Jun	81
20 IBFTC Not Awarded		81
21 IBFTC Not Awarded		
22 IBFTC Not Awarded		
23 IBFTC Flt Lt A G H Cownie BSc	Dec	81

The R M Groves Memorial Prize is awarded to the RAF pilot who is placed first on his course in the combined final order of merit for flying and associated ground school subjects.

Winners:		
16 IBFTC Plt Off S M Wright	Jan	81
17 IBFTC Flt Lt A Golledge BSc	Apr	81
18 IBFTC Flt Lt A F Clitherow BSc	Apr	81
19 IBFTC Flt Lt D W D Mackay BSc	Jun	81
20 IBFTC Flt Lt T M B Yorath BSc	Sep	81
21 IBFTC Flt Lt C J M Mannion	Oct	81
22 IBFTC Fg Off G K Rawles BSc	Nov	81
23 IBFTC Flt Lt M C Green BSc	Dec	81

1981 - Flypast Planning (1)



24 Jet Provost aircraft fly overhead in E II R formation at the first dress rehearsal for The Queen's Review

1981 - Flypast Planning (2)

PUTTING THE E II R TOGETHER

"We're having The Queen's Review of the College on 24 July. What sort of formation shall we fly? A diamond 9 is rather ordinary . . . a diamond 16 would be okay . . . what about an E II R?" "You must be joking, the '25' for the Jubilee flypast was difficult enough and that took the combined resources of Cranwell and Linton, a lot of effort and a fairly intensive work-up period." "Well I reckon that we could manage an E II R with about 24 aircraft, but I'm not quite sure what it would look like!"

A survey of the 3 Basic Flying Training School squadrons in February 1981 revealed that some of the instructors had already booked holidays in the sun but that there would still be sufficient talent available for The Queen's Review on 24 July. Drawings of an E II R with 24 aircraft, 9 in each of the characters 'E' and 'R' and 6 in the 'II', looked reasonable, despite being a little unusual. It seemed that this would provide a balanced formation, comprising a realistic minimum number of aircraft in each element. The project was not without its sceptics, who thought that the idea was, at the least, a little ambitious for a unit that rarely flew more than 3 aircraft 'same way, same day' as part of the students' basic training. Apart from the requirement for a lot of pilots to fly non-standard formation positions, the engineers would have to provide 30 serviceable aircraft, and worse, owing to the noise restrictions during the parade, the aircraft would have to be operated out of Barkston Heath. Lack of overnight hangarage at Barkston would necessitate an early morning transit and a surreptitious recovery back to Cranwell during the hubbub of the official lunch. On the flying side, there would be the problem of arranging and maintaining the overall balance and shape, compounded by the need to turn this unwieldy conglomerate round the holding racetrack. Calculations showed that the inside element in the left hand turn, the 'R', would have to reduce speed by about 7 knots to hold position. The turns would be stepped up or down as normal within sections, with section leaders flying flat on each other.

Another not unimportant aspect was that of timing: the accepted tolerance was ± 10 seconds over the parade and there would be no prizes for being earlier or later than the 10 seconds allowed! The usual flypast holding pattern was a short 'racetrack' to the east of Cranwell and

the timing technique appeared to rely more on black art than mathematics, resulting in speed changes to make good the time on target. This would be no problem to a small formation but would do nothing to help the shape of an E II R. A longer racetrack was selected, which went as far as the Wash Weapons Area, giving a 10-mile straight with a reduced bank angle of 20° on the turns. The new plan revolved around a constant speed air plot to achieve the correct time at the Initial Point, Ruskington; any timing errors were to be taken out by adjusting the time at which the turn was commenced at the far end of the racetrack. The 'system' was designed in the form of a graph for ease of use in the air and could cater for variations in take-off time, errors in forecast wind and would even compute the actual wind for subsequent orbits – amazing! These solutions looked fine on paper; however, they had yet to be proved in the air: were the shapes all right, could they be turned safely, would the magic graph sort out the timing at a constant airspeed?

On 11 June, the Graduation of No 51 IOT Course, with the Chief of Defence Staff as Reviewing Officer, provided the opportunity to fly a 9 ship flypast. Two practices were flown, the aim being to fly past in diamond 9 and change into an 'E' and then a 'R' for photo runs over the airfield. The results were encouraging and the use of a video recorder improved the quality and effectiveness of the debrief! A major purpose of these practices was to familiarise the 'whip' with the exact shapes that he would have to mould on the day.

The sceptics still thought that turning a formation of this size and shape would prove to be a problem but, when the front 4 aircraft were flown round the route, it was found that a smooth power reduction by the inside element leader, 15 seconds before the start of the turn, enabled him to stay in position during the flat turn without losing sight of the middle element. The new timing method and large racetrack were used for these practices and, except for a couple of teething problems with the mathematics, it worked well.

The final complication arose when someone realised that there would be a Royal Flight on 'the day'. The normal separation criteria would have to be observed, and our E II R was not exactly manoeuvrable, not to mention the chaos an unplanned turn would induce in the timing!

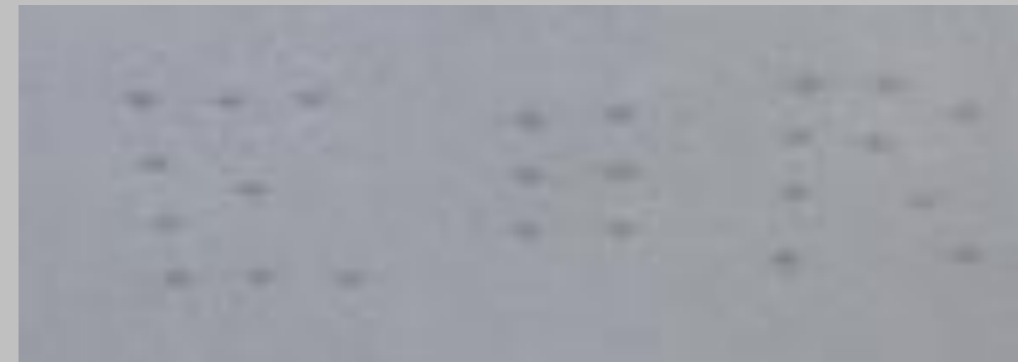
Fortunately the timing of the Royal Flight and the formation were planned to precise limits and, on closer examination, it was found that the 2 were out of phase. Happily, the Royal aircraft would be inbound on the approach when the formation was outbound on the race-track, leaving a comfortable separation between them, assuming both were on time . . .

The whole E II R was put together for the first time on 17 July and, despite being 'hard work at the back', it arrived over the parade square in good shape and on time. The method of recovery to Cranwell was simple in principle – aircraft within sections moving into line astern and sections then peeling off, completing an interesting 180° turn, with the 'E' and 'R' having 9 aircraft in line astern, and landing from a normal run and a break from echelon. Much to everybody's amazement the simple solution worked.

The dress rehearsal took place on 21 July and entailed the full procedure of flying the formation from Barkston Heath. The aircraft dispersal is far too small to accommodate such a large gathering and so the secondary runway was used for parking, replenishing and servicing the aircraft. All facets of this dress rehearsal

had gone well and, so as not to tempt providence, the second, on 22 July, attracted only a token singleton aircraft to represent the flypast.

The morning of the 24th did not bode well, the cloudbase was low, it was raining and the forecast indicated only a slow improvement. Thirty aircraft were once again dispatched at minute intervals to Barkston Heath, where they all landed in good order despite the low stratus and very wet runway. From the time of the first practice O-ship for the Graduation of No 51 IOT Course, a diamond 9 'team' had been nominated as a reserve option in case of bad weather. Shortly before the crews had to walk out to their aircraft for the big event, the decision was made to cancel the E II R and fly the reserve diamond 9. Later, the airborne conditions showed this was the right choice. However, at the time it was not an easy decision to make; 'the pressure was on', not least from the 54 pilots who were raring to get airborne, confident in their ability to place an immaculate E II R over the College for Her Majesty! Sadly, in the end all the preparation counted for naught – the weather had had the final say and The Queen's Review was started, on time, by a neat but rather ordinary diamond 9.



1981 - DAW News (1)

DEPARTMENT OF AIR WARFARE 1981

The academic programme for the Department during 1981 was very similar to that undertaken in previous years. There were no major changes in the various course contents and a total of 54 courses and study periods were scheduled. Altogether, 730 students attended the 1981 courses and study periods; of these 52 were civilians (mainly on the University Students Aerospace Study Period) and 129 were officers from the NATO and Commonwealth countries. This is only a slight decrease over the 1980 student figure and resulted from the cancellation of one Senior Officers' Aerospace Study Period.

One significant milestone achieved during the year was the 'graduation' of the 1,000th student on the Flying Supervisors' Course. This course started in April 1975 and is designed for newly-appointed officers in charge of flying squadron commanders and flight commanders to be brought up to date on all matters connected with the efficient management of flying

units. The Department runs 14 such courses per year with an additional 2 courses primarily intended for officers of NATO air forces.

In 1981 the Department again provided individuals and teams to lecture at other Service and scholastic establishments at home and abroad. These lectures included visits to Rome and Toronto and, again, to the Defence Services Command and Staff College in Bangladesh.

Past graduates of the Flying College and Air Warfare courses met at the annual dinner of the Association in College Hall Officers' Mess in June. The President of the Association, Air Chief Marshal Sir David Evans, was present, together with 102 guests, members and Department staff; the Guest of Honour was Sir Austin Pearce, Chairman of British Aerospace. The next Air Warfare and Flying Colleges' Association annual dinner will be held at Cranwell on 2 June 1982.

The Department's annual academic prizes,

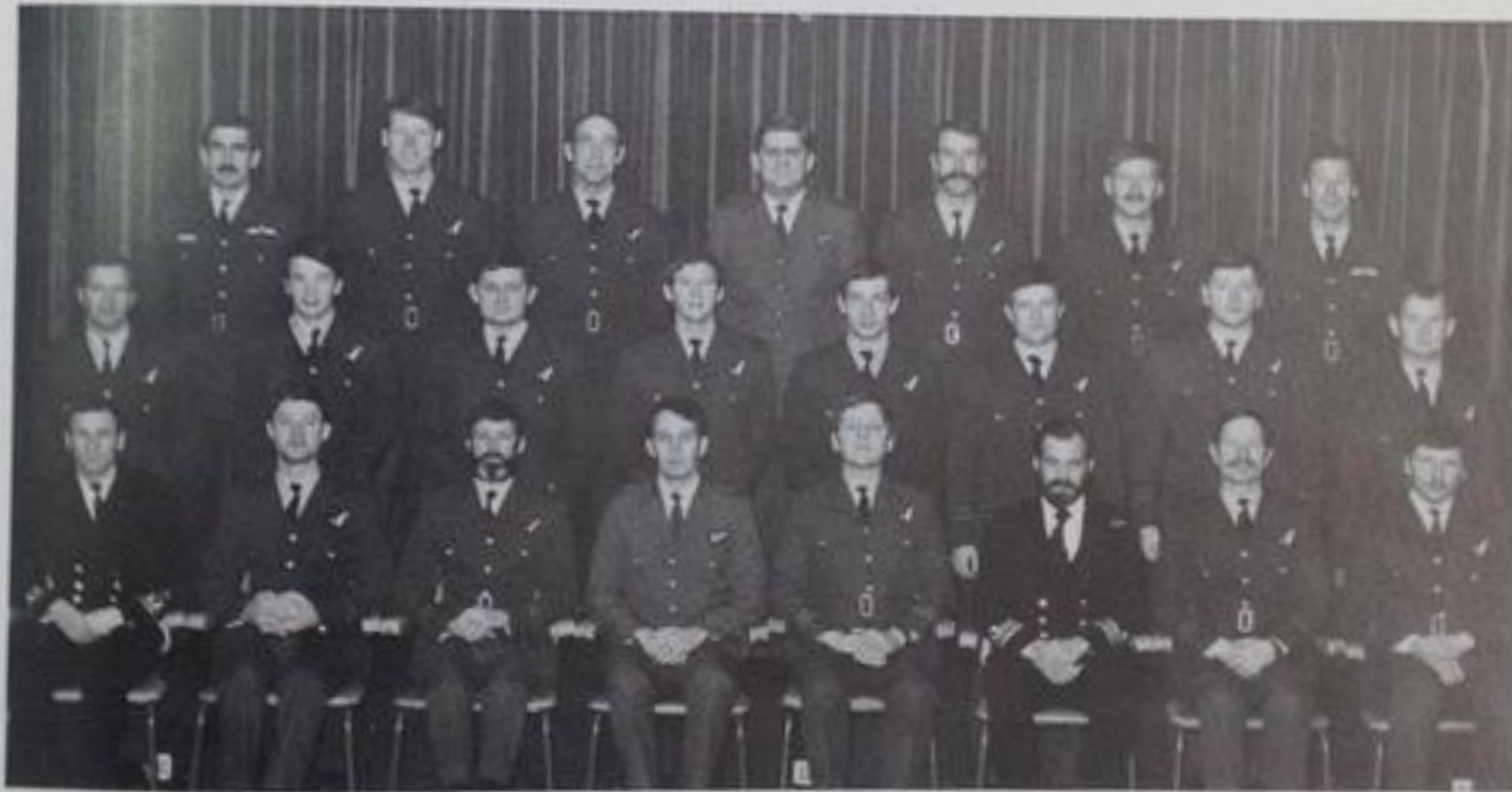
namely the Aries Trophy for the best student personal project on the General Duties Aerosystems Course and the Andrew Humphrey Memorial Gold Medal for the best overall student on the same course, were both won in 1981 by Flight Lieutenant P S Smith MSc BA. The prizes were presented by Lady Humphrey, who was kind enough to accept an invitation to attend the farewell guest night for the No 14 General Duties Aerosystems and the No 13 Engineering Aerosystems Courses in York House Officer' Mess on 11 December 1981.

During the latter part of 1980, formal proposals were accepted which enabled graduates of the General Duties Aerosystems Course to be considered for the award of the City and Guilds Insignia Award (CGIA) on the strength

of their personal project submitted as part of the course syllabus. In that year, 14 members of No 13 General Duties Aerosystems Course gained the CGIA warrant. More recently, 16 members of No 14 General Duties Aerosystems Course were similarly honoured.

1981 saw a large turnover of more than one-third of the Department's lecturing and support staff, together with the arrival, in March, of the new Director, Group Captain D P J Melaniphy. As was forecast last year, the replacements were well able to satisfy the demands of the task of a very busy Department. This task is unlikely to decrease in 1982 and the Department faces another demanding year ever confident of maintaining the standard of tuition expected of the College as a whole.

1981 - DAW News (2)



No 14 GD Aerosystems Course

*Fli Lt P J Rogers, Fli Lt J M Woolley, Fli Lt I F Harper, Fli Lt K W McPherson (RAAF), Fli Lt N H Fox, Fli Lt W J Turner, Fli Lt R J Walters
Fli Lt T E Marsden, Fli Lt G J Williams, Fli Lt P J Brook, Fli Lt B J Mullen, Fli Lt J P Towle, Fli Lt G Blanchfield, Fli Lt J M Clifford, Fli Lt D C M Ringland
Li J N Saunders (RN), Fli Lt R F Blunden, Fli Lt D F D Watson, Sqn Ldr D J Schubert (RAAF), Sqn Ldr D F Cook, Lt Cdr D J Morehouse (RAN), Fli Lt P S Smith,
Fli Lt D A Kennedy*

1981 - DAW News (3)



41 Air Warfare Course

*Lt Col McAber (CF), Wg Cdr Lake, Wg Cdr Morris, Wg Cdr Strachan, Lt Col Roberts (RRW), Cdr Wren (RN), Lt Col Wages (USAF), Wg Cdr Monks, Wg Cdr Pridoux,
Wg Cdr Johnson, Wg Cdr Gauvain, Wg Cdr Brown, Gp Capt Hornockx, Gp Capt MacLennan, Wg Cdr Brinkman, Wg Cdr Ferguson, Wg Cdr Hunter*

1981 - DAW News (4)



No 42 Air Warfare Course

*Wg Cdr Jones, Cdr McKeele, Lt Col Wallis, Wg Cdr Scoulles, Wg Cdr Bell, Wg Cdr Wilson, Wg Cdr Wood, Lt Col Jock, Wg Cdr Collier
Wg Cdr Dearman, Wg Cdr Gross, Wg Cdr Houghton, Gp Capt Gould, Gp Capt Cross-Williams, Wg Cdr French, Wg Cdr Wilk, Wg Cdr Eley*

1981 - Electronic Warfare (1)

Electronic Warfare – Gaining Control of the Electromagnetic Spectrum

(by Squadron Leader J D M Widdess, Senior Electronic Warfare Specialist, Department of Air Warfare)

Drive, with your car radio on, underneath a set of power lines and you will experience, first hand, communications noise jamming. We are all familiar with the crackling sound that makes reception of the wanted signal impossible – so familiar in fact that we probably take it for granted. In any case, that particular interference is over in less than a couple of seconds. However, if the broadcast you were listening to contained a vital message, and, if the noise jamming was occurring continuously, being able to read 'through' the noise would be of the utmost importance.

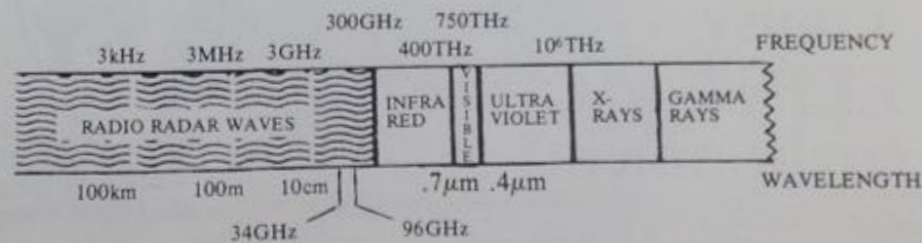
Communications noise jamming obviously concerns electronic warfare, but it is only part of that very complex subject. The NATO accepted definition of electronic warfare is, "that division of the military use of electronics, involving actions taken to prevent or reduce an enemy's effective use of electromagnetic (EM) energy, and actions taken to ensure our own effective use of radiated EM energy". One may well consider that a better name for EW would be Electromagnetic Warfare. Whatever the name, the side which gains the upper hand will be the one which manages best to control the EM spectrum.

cept, locate, analyse and record EM signals and are entirely passive in nature. Radar warning receivers, electronic intelligence (ELINT) collectors and anti-radiation missile sensors are the 3 major categories of ESM with widely differing requirements and design specifications.

A radar warning receiver, although needing to span the whole of the enemy's threat radar spectrum, can be relatively insensitive, since it only needs to react to radars that are locked on and posing a direct threat. ELINT and sensing platforms are required in contrast to be extremely sensitive to fulfil their tasks. Just as in the audio spectrum any troop movements can now be accurately pinpointed by sensitive listening devices, any radar emitter can be sensed and categorised from a great distance by delicate electronic receivers. Certainly, in the 1980s, any EM transmission will act as a beacon for such sensors and even low power devices, such as radar altimeters and doppler navigation systems, could in future be spotted and categorised.

Recently, the advent of microprocessors and modern data handling techniques together have made radar categorisation a far more timely operation. It is now possible to store in data base

The Electromagnetic Spectrum



The 3 sub-systems that make up the EW system are: Electronic Warfare Support Measures (ESM), Electronic Counter Measures (ECM) and Electronic Counter Counter Measures (ECCM). ESM concern that part of EW in which we search for, inter-

the vital parameters by which radar types can be determined. Incoming pulse trains, from many different radars, can be separated, sorted and matched against the stored data base. Having identified a number of threat radar emitters, these can then be ranged in priority

order and the highest threats addressed with counters. All this can now be accomplished in just a few seconds.

ECM describe any method used deliberately to interfere with the enemy's EM transmissions. This interference is known as jamming and is usually sub-divided into noise jamming and deception jamming. The car radio interference mentioned earlier is a fine example of the former.

However, when jamming is used against radar and communications systems, its effectiveness depends on the amount of EM energy that can be directed, at the correct frequency, in the direction of a given platform. Aircraft, with low power jamming pods, inevitably lose out in this power battle against more powerful ground based radars, and thus have to resort to the more subtle means of deception jamming.

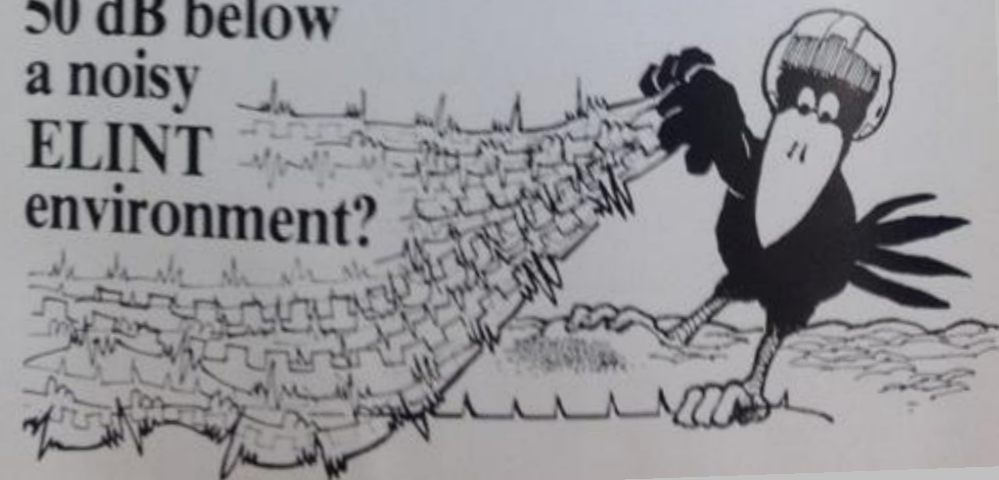
One of the most commonly employed deception techniques is that of false target generation. A radar pulse train is intercepted, analysed and the signal then reproduced by the jamming system. This false echo is increased in power and re-radiated back to the source radar's receiving system. All that this achieves is to make the aircraft plus jamming echo much easier to locate. However, if false information is fed into the repeater jamming system in the form of time and parameter changes, great confusion can result from numerous false target echoes flooding the radar screen.

One of the most significant threats to aircraft is a target tracking and fire control radar which locks on to and continuously follows the target. We can deny an enemy full use of the EM spectrum by attacking the various information gathering features of his fire control system. Since we know how range, angle and velocity tracking radars operate, we can programme a tactical jamming system to deny or deceive the automatic tracking circuits. In this way, we are able to utilise the power available to the best possible advantage. This, however, does rely on our knowing the tracking system employed and exploiting its weakness.

It is for this reason that EW has become one of the most dynamic forms of warfare. If intelligence information becomes available about a new enemy missile system, it is necessary first to assess the system's weaknesses before we can start to design jamming counters that exploit those vulnerable areas. From this, we can see that the EW battle must be both reactive and fast moving, if it is to provide electronic counters for use against new threat systems.

However, it is unrealistic to manufacture a specific answer to each electronic threat as it appears. Methods need to be available so that the enemy advantages gained by new threats can swiftly be negated. This aspect leads to the third area of EW, that of ECCM. This can be defined as measures taken to ensure the correct

Looking for something
50 dB below
a noisy
ELINT
environment?



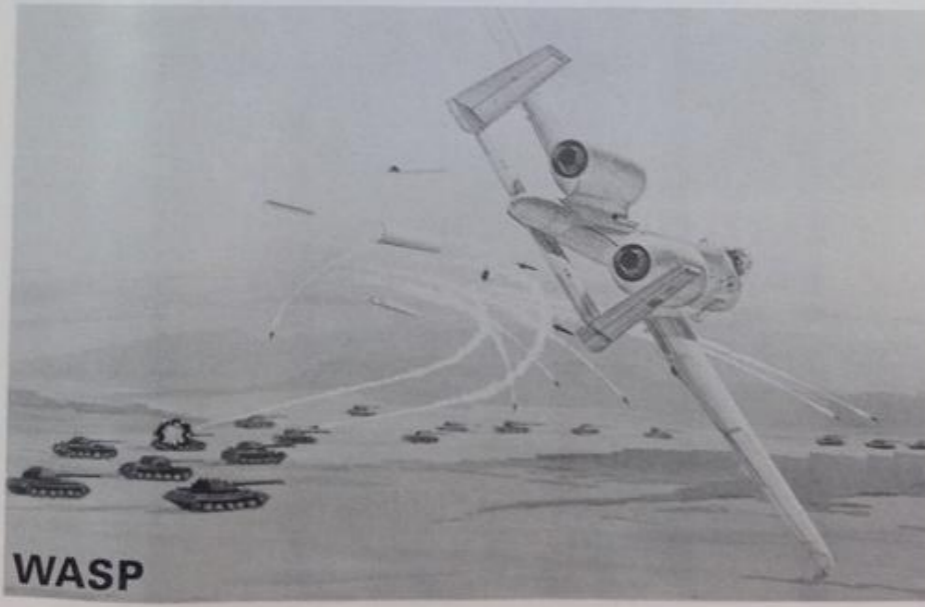
1981 - Electronic Warfare (2)

functioning of friendly radars and communications systems despite the enemy's EW activities. They are sub-divided into anti-ESM and anti-ECM activities.

Against an enemy's passive ESM sensors, we can, and do, employ emission control and emission security procedures to reduce to a minimum the usable information available. Against ECM, we can employ engineering solutions to harden the systems so that they become less vulnerable to jamming. Perhaps more important, we can train our operators to make optimum use of their equipment, so that they become familiar with operations in a realistic jamming environment. Some modern communications and radar systems now employ much wider bandwidths than necessary with the intention of making a transmission that looks very like noise to any but the intended receiver. These spread-spectrum techniques, as they are called, whilst being extremely difficult to detect, provide high orders of "processing gain". By burying the required signal in ambient noise, such systems can be made very resistant to ECM and also extremely hard to detect by ESM. Spread-spectrum and low probability of intercept systems will, in future, make the job of the ECM engineer very difficult indeed and tip the scales in the favour of

the ECCM sub-systems.

Up to this point, we have examined EW in its conventional theatre; that of radio and radar, the frequencies of which range from ultra low, under 100 Hz to around 20,000 MHz (1 MHz = 1,000,000 Hz). Examination of the EM spectrum shows us that these bands are just the lower portion of the full spectrum. Above 15,000 MHz, atmospheric attenuation starts to become a severe problem. Somewhat surprisingly, the rate of attenuation is not linear, and 2 small frequency bands exist where, with wavelengths of millimetric proportions, propagation through the atmosphere can occur relatively unimpeded. The advantage inherent in the 34,000 MHz and 96,000 MHz windows, as they are termed, are that, since the length of the EM wave measures but a few millimetres, complete radar and sensing systems can be constructed in very small units. These units are so small that it is possible to fit such a system into the heads of a series of mini-missiles. Thus, the artist's impression of the WASP anti-armour missiles, each with its own guidance system becomes feasible, providing the sensors are constructed to operate at 96,000 MHz. Introduction of such systems must signal development of sensors, warning devices and counter measures as a direct EW response to



WASP

the use of these higher frequencies. Higher up the EM spectrum still, we get to the infra red (IR) portion. Already, IR warning devices and 'flash' detectors are available, providing ESM, whilst infra-red decoy (IRD) and hot brick devices are much used as ECM protection against IR heat seeking missiles.

However, it is higher still, in the visual portion of the EM spectrum, that we will see the most revolutionary developments in EW over the next decade. To understand this, we must remember that the definition of EW concerns gaining controls of the EM spectrum. One of the ultimate measures to achieve this must be the use of EM energy in the form of laser and particle beams to neutralise completely the enemy's sensors. These sensors range from radar and ELINT receivers to IR and laser detectors. They must also include probably the most important sensor of all, the human eye.

Laser ranging and missile beam riding systems have been with us for some time. In the future, we must expect development of laser

beams of much greater power, capable of neutralising most types of sensors. It would seem probable that the manned aircraft of the future will need to be provided with a complete range of ECCMs to protect all its sensors against the new generation of laser weapons.

We have seen that EW devices cover the whole EM frequency spectrum, ranging from communications and radar jammers, up through millimetric and IR devices, to sensor damage lasers and particle beam weapons. The subject is both dynamic and pervasive. As more systems rely on electronic information and data links to function, the opportunities for disrupting these links also increase. Above all, the EW situation is never static but changes day-by-day, as new counters and counter counters are developed. To gain the upper hand in the EW battle, we must have the capability to control the EW spectrum. The ability to gain control of the EM spectrum, and deny its use to an enemy, will be a crucial factor in determining the outcome of future air operations and ultimately in our ability to wage war.

1981 - Satellite Warfare

THE VULNERABILITY OF SATELLITES

(By Squadron Leader G L Thurston, Astronautics Specialist, Department of Air Warfare)

One interesting result of the early flights of the Space Shuttle was the torrent of accusations from the Soviet Union that the United States was about to embark upon the militarisation of space. This may partly be explained by an understandable resentment at losing the monopoly on manned spaceflight, which the Soviet Union had enjoyed and exploited since 1975, and partly by a real concern that the United States was equipping itself with a vehicle of enormous military potential. Whatever the real inspiration for these outbursts, it seems a good time to take stock of each major power's ability to wage war on the other's satellites.

The launching of a satellite into orbit has now become so commonplace that it rarely rates a mention in the popular press. People all around the world take it for granted that they will be able to see each goal as it happens during the next World Cup. Few, however, will give even a thought to the satellites high in the sky over the Equator relaying those pictures. The world's weather is regularly depicted by satellites as an aid to meteorological forecasting and the resulting images are used in the explanation and prediction of our local weather by TV forecasters. In a similar way, conventional fighting forces are being made ever more effective by reliable satellite communications, by satellite-aided weather forecasts, by extraordinarily accurate satellite navigation systems and, in many other ways, by the satellite's capacity for collection and dissemination of data. Modern forces can obviously fight without the aid of satellite information but not so efficiently as when it is available. Therefore anything that can be done to deny an enemy his satellite systems is beginning to look a very attractive option.

At this stage, it is probably worthwhile examining some of the more important characteristics of satellite flight, since these will indicate why satellites have been generally regarded as invulnerable so far and to what extent they might be vulnerable to the more exotic weapons that are now being postulated. In order to sustain the meanest of orbits, a satellite has to be raised to a height of at least 200 km and accelerated to a speed of nearly 8 km per second.

Once established in orbit, the motion of the

vehicle is determined to a very large extent by the earth's gravity, which constrains the satellite to describe closed orbits around the earth and, most importantly, the orientation of the orbit with respect to outer space will be fixed while the earth turns within this orbit. Once this simple fact is grasped, it becomes much easier to understand the flight of satellites and, in particular, to visualise their motion relative to fixed points on the earth's surface. A direct consequence of the satellite's enormous speed and hence momentum, is that it is very reluctant to be shifted from its original orbit and, even if the craft is equipped with a rocket engine, it will be able to make only relatively small adjustments to its pre-ordained flight path before its fuel is exhausted. So now we can see that the satellite will be a difficult target by reason of its speed and height but it will generally be steadily moving and therefore predictable.

Let us now look at the possibility of intercepting a satellite by launching an anti-satellite (ASAT) from the ground. The only practical way to intercept is to launch when the ASAT launch site is almost directly beneath the orbit of the victim satellite and this can occur no more than twice per day - remember the earth carrying the launch site rotates within the orbit once per day. Thus the opportunities for launch of an ASAT, the so-called launch windows, will be infrequent and easily predictable by both victim and aggressor so that any rocket launch within these windows may be interpreted as hostile and provoke an early evasive manoeuvre by the victim that will defeat the carefully planned intercept.

There is no doubt that the Space Shuttle has the performance to intercept satellites which it could then inspect or damage in various ways or even capture within its payload bay. However, the limited amount of manoeuvre available to the shuttle would make it liable to the simple countermeasure of evasion and so it cannot be counted a very effective ASAT. The same limitations would apply to the rocket-launched ASAT which the Soviet Union has apparently tested as many as 19 times. Press reports indicate that this ASAT is designed to complete an intercept within 2 orbits so as to give minimum warning to its victim; over half these



tests resulted in a fly-by less than 1 km from the target. So it seems that the Soviet Union has already developed a weapon capable of fulfilling the role it is now attributing to the space shuttle, albeit subject to the many limitations that this role implies.

There have been further suggestions that the space shuttle will be used as a platform for a laser weapon for use against other satellites. This is certainly an attractive alternative to having to make a physical intercept and would benefit from the already demonstrated ability of laser light to propagate unhindered over vast distances in the vacuum of space. If the enormous power of the industrial laser could be directed against a distant target then it would seriously damage that target and it might prove a formidable weapon. However, such a weapon has not yet been introduced to the battlefield; its capability and limitations remain a matter for speculation and it is surely too early to suggest that it might be capable of carriage into space for operation from the cargo bay of the space

shuttle. There have, admittedly, been reports that a 1985 shuttle mission will carry a laser-pointing experiment for the Department of Defence but, once again, this is a far cry from the deployment of an operational laser weapon. It is probably also worth pointing out that the Soviets have had several manned stations available for research and development work and that the latest of these, the Salyut 6 craft, has been in orbit since 1977.

In summary, it seems that both superpowers now possess systems potentially capable of limited hostile action against low flying satellites but that these systems are inherently susceptible to simple countermeasures. Operational laser weapons in space still seem some way off and may yet exhibit all sorts of limitations which could be exploited by the satellite defender. The real importance of the Space Shuttle is that it will reduce the cost of access to orbit and thereby increase the cost-effectiveness of military satellite systems which in turn will improve the effectiveness of conventional fighting forces.

1981 - DIOT News (1)

Department of Initial Officer Training – personal views by Officer Cadets on No 54 Initial Officer Training Course

REFLECTION (by Officer Cadet P Devereux)

On graduation day of No 54 Initial Officer Training Course (IOTC) I will be 45 years and one month old, and as I walk up the steps into the College Hall for the first time I can reflect on the events that have led me to this memorable day. I will be following directly in the footsteps of some very illustrious officers, who have, no doubt, trodden this same path. The RAF College, Cranwell, and the Apprentice Training School at Halton are perhaps the 2 most solid material memorials to the founder of the RAF, Lord Trenchard. Since the formation of the RAF on 1 April 1918, there have been many changes to the structure of the RAF. In later years there have been swingeing defence cuts by different governments, but over the years both Halton and Cranwell have been relatively untouched by all the changes. Even RAF stations that are synonymous with the history of this country in the last 30 years, for example RAF Kenley and RAF Biggin Hill, have been

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closed, or run down to such an extent that they are now forgotten by the majority of the people. So in a very small way I feel my presence at the RAF College under training as an officer cadet and subsequently as a commissioned officer will make me a very small part of RAF history.

A walk through the corridors of College Hall among the portraits of the Marshals of the RAF, the photographs and portraits of previous Commandants and the photographs of all previous flight cadets and officer cadets is like looking through the pages of the history of the RAF. What a tradition to follow. I doubt very much whether I will be able to make as much of a contribution to aviation as Sir Frank Whittle, but I will endeavour to apply as much diligence to honouring the commands on my commissioning parchment as he did. Perhaps in 1982, when the efficiency of the Service is judged by its ability to manage cost-effectively expensive high technology systems, I might be able to

make a different type of contribution to the future of the Service. The 18-week IOTC prior to commissioning has been the most physically demanding I have ever been on. Tired legs and an aching back tell me that there was too much physical exercise in the syllabus.

Pride will not let me admit that perhaps I was just a little too old to try it at my time of life. The day after, however, I am able to look at it objectively and realise that it is used to good effect to bring out latent leadership qualities in students and slowly but definitely turn them from enthusiastic amateurs into disciplined military-minded people, who will eventually be commissioned officers.

My regret is that I did not apply for a

commission a lot earlier than I did. My previous service has taken me from Belize to Hong Kong, from Benbecula to Zambia, but even the thrill of travel to exotic and not so exotic countries cannot beat the thrill of the final graduation parade. Even as a member of the support squadron on 2 previous occasions, the thrill of being on the parade is one that only very few are privileged to experience. After graduation, I am looking forward to the professional training element of the course before I take my first post as a junior engineer officer on my first unit. The chances of overseas travel now seem very remote but, wherever I am posted, I am looking forward with eager anticipation to the challenge of a new, if shorter, career as a commissioned officer.

1981 - DIOT News (2)

IMPRESSIONS OF CAMP 2 - TACTICAL LEADERSHIP CAMP (By Student Officer S E Hobson WRAF)

Having spent 4 years at college as a language student, followed by a relaxed year teaching English in the south of France, Cranwell came as rather a shock to the system, the greatest shock of all definitely being Camp 2, the tactical leadership camp. Little wonder there is no mention of it in any of the glossy publications enticing young ladies to make a career with the Royal Air Force. However, having completed Camp 2, I now intend to outline some of the aspects of the camp that made an impression on me.

During the 2 weeks before Camp 2, the RAF Regiment spent 2 or 3 days at Cranwell explaining 'O' Groups, warning orders, field signals and all the other useful information we would need. It all sounded terribly specialised and it was very difficult to imagine oneself in a position to use this information competently.

At Stanford Training Area, the RAF Regiment again gave us training in tactics, which still seemed totally confusing. I could never imagine myself following fire control orders with any effectiveness, let alone actually controlling a section by using them. As it was, the WRAF were at a disadvantage owing to the 'small problem' of not actually having anything to fire with. One tended to feel a little silly shouting 'Bang Bang' and trying to look threateningly military with a stick while all the men were brandishing self-loading rifles and machine guns, which make real battle noises. However, once the assessment phase of camp began, warning orders, O Groups, field signals and fire

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control orders all began to make sense, and there was more of a point to crawling through the undergrowth and taking up 'all-round defence' when there was a 'real' enemy.

As the camp progressed, engaging the enemy became more and more important, and each section took winning and losing battles very personally. It became a matter of section pride to win efficiently, in spite of the enemy's apparent immortality.

Both sides always seemed to be able to run-through any amount of bullets that the other pumped into them, and the ensuing arguments as to who had been killed often became quite heated, with post-mortems lasting for hours.

Probably the most important aspect of a section's effectiveness at camp was morale. In my opinion, Orange Forces' morale was exceptionally high and, in particular, my own section. Having been soaked literally to the skin, when lying spreadeagled behind a machine gun in the middle of a field during the worst storm of the camp, the troops were still laughing and joking.

Even the prospect of yet another menu D composition could not dampen morale. It was quite something to see the efforts that went into livening up the food situation. The meals, concocted from baconburgers and AB biscuits, showed just as much initiative as any field lead. No matter how tired a section became, food was always of prime importance and supper-time was the highlight of the day. There was something very comforting about the sight of a mess tin bubbling gently over a hexi-burner, with the

prospect of yet another 0200-0400 guard duty just around the corner.

At the beginning of Camp 2, guard duty and stand-to appeared to be rather meaningless. It seemed ludicrous to be standing in a trench wearing a tin helmet, respirators at the ready, waiting for exactly the same thing. It was not until the latter part of camp that one felt the enemy might not be quite so predictable.

The final battle of the camp made all the sleepless nights worthwhile, even though it was preceded by us having to sleep in a bivouac wearing full NBC kit. Prior to coming to Cranwell, I would never have thought of going to bed wearing 2 pairs of boots, 2 pairs of trousers and 2 jackets, ready to be woken at 0400 hours to fight the last life and death battle with the dreaded Blue Force.

Although the RAF Regiment's final decision

gave Blue Forces overall victory, I think Orange felt that, all in all, we had won sufficient minor battles in the conflict to merit a fair amount of smugness, and that we could afford to be generous and let Blue Force win at least something. After all, intelligence had informed us all along of how low their morale was, and how badly they had been trained. How they must have needed that victory!

In conclusion, I would say that the impressions cadets had of the tactical leadership camp would be as varied as the cadets themselves, but, in my opinion, almost everyone enjoyed the camp and the majority came away with a sense of achievement. I feel that tactical leadership camp has been one of the most demanding and worthwhile requirements of the initial officer training course.

THE PRODUCTION OF A VIDEOTAPE FOR ENGINEERING OFFICER TRAINING

One of the most vital parts of a Flight Commander's job is assessing the abilities and qualities of his tradesmen. This is particularly true of the engineer officer flight commander who, during his career, is likely to find himself in command of large numbers of airmen. Filling out an engineering tradesman's Confidential Report (F6442) properly requires both a knowledge of the form and skill in judging people against the various performance criteria. The Department of Specialist Ground Training (DSGT) staff felt that to develop that skill in their students they needed to contrive an exercise, which reflected as closely as possible the real-life situation that junior officers would face in their first appointments. They decided that the best means of meeting the need would be to produce 'in house' a videotape portraying a few days in the lives of 2 typical engineering tradesmen, set in the typical maintenance environment of the DSGT Servicing Instruction Flight (SIF).

It took many months to prepare for actual recording. The DSGT team updated and extended an existing script which they took to the experts at the Services Kinema Corporation (SKC) for advice. They at first had strong

reservations, particularly when they realised the ambitious scale of the project and that amateur actors would be used, but eventually a date for filming was agreed. A small team from SKC arrived to survey the SIF hangar and offices a few weeks before shooting began and, after passing on a great deal of practical advice for rehearsals, they appeared ready to go ahead. A never-ending stream of rehearsals filled the 4 weeks prior to shooting, during which time the 2 man DSGT project team were hunting down props and planning schedules, which would ensure there would be no hitches when the film crew came.

The crew from SKC consisted of a technical director, producer, 2 cameramen, 2 engineers and a transport controller. Their vehicle carried a mini film studio, which was to be the focus of all that happened over the 2 weeks of recording. The SIF hangar premises were transformed into a film studio, with a sea of wires spreading from the van to all parts of the hangar. Offices were taken over completely and rearranged to suit the needs of the videotape; changing one office to make it appear as 3 separate locations was a tricky task.

A great deal of preparatory work, such as

camera sequencing, movements and scene linking, had been worked out by the producer from SKC, but the demands of the environment made constant reorganisation necessary. Throughout the filming period, while the cameras were being technically prepared (taking up to 1½ hours each morning) rehearsals for positions and words were taking place until a scene would be ready to be taped. It was soon discovered that one of the advantages of videotaping rather than filming was that scenes could be seen immediately after shooting and only necessary re-takes prepared without loss of tape. In the early stages, there appeared to be a considerable number of them but, as the 'actors' settled down, scenes were completed more quickly.

Eventually, and after only 8 working days, the last scene was in the can and the SKC team prepared to return to Chalfont St. Giles. The Director of DSGT presented the producer with a College plaque as a memento of their visit and, with a sense of some relief, the actors resumed normal life. The overriding impression left was of the professionalism of the team from SKC, their dedication in getting the best possible result from the amateurs, and their never-ending enthusiasm for the job. The amount of preparation required for a 30 second scene was tremendous and, without the SKC team expertise, the technical and acting quality of the final version would not have met the required standards.

Six weeks later, SKC called the DSGT project team to view the 'rough-cut' version of the tape. Encouraged by what they saw, they gave the go-ahead for the final version, which, in just 8 more weeks, was in their hands. The final version is a 40 minute mini 'feature-film'. Student reaction suggests that it clearly fulfils its purpose and there is no doubt that the preparation, the hard work from the 'volunteer' actors, the unmitigated help from numerous College personnel and the professionalism of the SKC team have resulted in an excellent training vehicle. Although it originally seemed a straight-forward task, the production of a videotape to support training turned out to be time-consuming and extremely complex, requiring skills not normally to be found on stations. Nevertheless, the satisfactory conclusion of the project together with the knowledge that a training need had been effectively met made it all a most worthwhile undertaking.

1981 - Engineer Training



Gp Capt Kidd in the SIF hangar with the SKC team and the 'actors' and organisers from RAF College Cranwell.