

air cadet publication ACP 31

general service training section 2 - the royal air force





Amendment List			Date
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ACP 31 GENERAL SERVICE TRAINING

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The Royal Air Force

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ISSUED 2008

THE DEFENCE MISSION

The purpose of the Ministry of Defence, and the Armed Forces, is to defend the United Kingdom, and Overseas Territories, our people and interests, and to act as a force for good by strengthening international peace and security.

THE ROYAL AIR FORCE VISION

Our vision is an aspiration for the future state of the Royal Air Force, not a statement of where we are now; it is a declaration of the kind of organisation we intend to be. We want to see:

An Air Force that, person for person and pound for pound, is second to none.

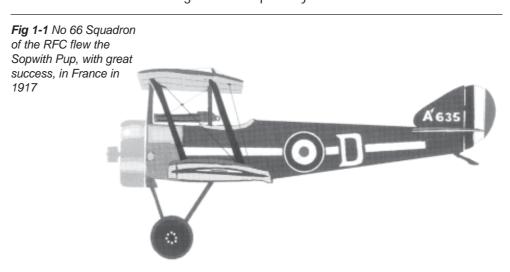
An Air Force that:

- Is trained and equipped to generate air power as a vital contribution to the security of the United Kingdom and as a force for good in the world.
- Is proud of its heritage but modern and flexible.
- Fosters professionalism and team spirit founded on commitment and self-discipline.
- Offers opportunity to all, and provides a rewarding career and skills for life.

DEVELOPMENT OF THE ROYAL AIR FORCE

The Organisation from which the Royal Air Force developed

- 1. Except for the use of balloons for reconnaissance, military aviation in the United Kingdom started in May 1912, with the formation of the Royal Flying Corps (RFC). All pilots were then trained at the central flying school at Upavon. The aircraft were unarmed and were intended to be used for reconnaissance in support of military and naval operations.
- 2. In June 1914, it was decided that the use of aircraft in support of naval operations posed special problems and the navy broke away from the RFC to form a Royal Naval Air Service (RNAS).
- 3. The aircraft were still used mainly for reconnaissance work and it was not until the Germans began to use fighter aircraft to shoot down our reconnaissance machines that we countered with our own British fighters to protect them. The introduction of fighter aircraft on both sides led to the now legendary battles over the western front in which men like Ball, McCudden, Mannock, Von Richthofen, Immelmann and Boelcke fought for air superiority.



4. By 1916, as a result of early Zeppelin raids, it was quickly realised that aircraft could also be used for bombing, and both the RFC and RNAS commenced bombing attacks against Germany. By 1917 the German Air Force used bomber aircraft to attack this country. This bombing and counter-bombing was to play a significant

The Royal Air Force is born

part in the formation of the Royal Air Force and in fact spurred the Government into action. A committee under General Smuts was set up and its recommendations resulted in the formation of the Air Council and the establishment of the Air Ministry. On the 1st April, 1918, the Royal Air Force was born through the amalgamation of the existing RFC and RNAS.

The Father of the RAF

- 5. At the end of the war in November, 1918, the RAF had 190 squadrons with 290,000 officers and men. In less than two years the strength had dropped to 30 squadrons with 25,000 officers and men, and it was then that Lord Trenchard (the father of the Royal Air Force) and Sir Winston Churchill (Secretary of State for War and Air) agreed that the force should be kept at about this operational strength so that the annual budget of about £15 million could be concentrated on building up a sound training organization. As a result of this decision the Royal Air Force Cadet College, Cranwell, (1920), the Apprentices School at RAF Halton, (1922), and the RAF Staff College at Andover, (1922) were opened. The opening of these establishments was the first major step towards the provision of the high quality of aircrew and groundcrew whom we have in the RAF today.
- 6. The Auxiliary Air Force, destined to play a major role in the air defence of Great Britain, was formed in 1925. In 1937 The Royal Navy regained independent control of shipborne aircraft by taking over full responsibility for the Fleet Air Arm a cause they had been fighting for since 1918. The responsibility for land-based maritime reconnaissance remained with the Royal Air Force.
- 7. Under the leadership of Lord Trenchard the organization of the RAF continued to grow in quality, not quantity. The capability for quick expansion was "built-in" automatically. The advantage of this policy was demonstrated towards the beginning of the Second World War when the worsening political situation in Europe led to such a rapid expansion of the RAF that it became necessary by 1936 to introduce Bomber, Fighter, Coastal and Training Commands. On this solid framework the RAF was able to expand further as war approached until, at the peak of its strength during the war, it had some 9,000 operational aircraft as well as 40,000 aircraft engaged in training and non-operational duties.

- 8. Meanwhile, the RAF was engaged on many active operations and small "wars"; in Russia; in Somaliland; in operations from Iraq and Kurdistan to Waziristan.
- 9. During the inter-war years, high speed flight was not neglected and the RAF won the Schneider Trophy in 1927, 1929 and 1931 at speeds ranging from 281-340 mph. It was from these aeroplanes that our eight-gunned fighters, the Spitfire and Hurricane, were developed. The Wellington and Whitley heavy bombers were also emerging.

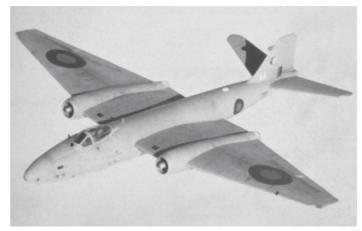
RADAR was introduced

- 10. But probably by far the most important achievement of the inter-war years was the development of radio location to detect and locate aircraft RAdio Detection And Ranging (RADAR). As a result, by the beginning of the war we had an early warning chain of 18 radar stations along the East Coast which, together with the Observer Corps, was to provide such vital assistance during later battles.
- 11. Between May and June 1940 Fighter Command flew more than 2,700 sorties to provide air superiority over the Dunkirk beaches, to cover the evacuation of the British Army from France. Then when the Germans turned their attentions on Britain, our air defences were ready Fighter and Balloon Commands, the radar chain, the Army's Anti-aircraft Command and the Observer Corps. The Battle of Britain began in July 1940. Six hundred to 700 fighters, mainly Spitfires and Hurricanes, flew daily against the Luftwaffe's force of 1,000 fighters and 1,250 bombers. The German invasion was planned for September, but the Luftwaffe failed to gain air superiority and the project was abandoned. They suffered crippling aircraft losses in combat, while shipping, assembled in the invasion ports, was decimated by Bomber Command. This difficult battle between July and October 1940 was a turning point in the war against Germany.
- 12. As in 1918, the end of hostilities again led to the contraction of the Royal Air Force. From over 1,100,000 officers and men in 1945 the RAF had been reduced to about 200,000 by 1950, and to less than 100,000 by 1970. Wartime conscription was continued after the war in the form of National Service, but this ended in 1962 and the RAF is now a regular force, supported by the Royal Auxiliary Air Force (R Aux AF) and the Royal Air Force Volunteer Reserves (RAF VR).

The RAF's first jetengined bomber

13. The re-equipment with jet-engined aircraft in the post-war years marked a revolutionary change in the Service. The Meteors and Vampires began a long line of military jet-engined aircraft, in which the Canberra became the first jet-engined

Fig 1-2 Canberra was the first jet bomber to enter RAF service. The PR9 version continues in RAF service as a photographic reconnaissance aircraft.



bomber to enter service. It was very successful and many other air forces, including the USAF, used it. A notable world's "first" for the RAF was a jet-engined transport squadron of Comet 2s in 1956.

Britain's strategic nuclear deterrent

14. Britain's decision to produce nuclear weapons and the four-engined V-bombers paved the way for the RAF to assume the task of providing the British strategic nuclear deterrent. Valiant aircraft dropped the first British atomic bomb at

Fig 1-3 Victor K2 was the standard air refueller of the RAF throughout the 1970s and early 1980s.



The Navy takes on the job of providing Britain's nuclear deterrent

Maralinga in 1956 and the first British hydrogen bomb at Christmas Island in 1957. Vulcan and Victor aircraft followed the Valiant into V-bomber service. In 1970 the Royal Navy's Polaris submarine force became operational and assumed responsibility for providing Britain's strategic nuclear deterrent and the V-bombers reverted to other roles.

- 15. In 1960 the first RAF supersonic fighter, the Mach 2 Lightning, entered service. The development of in-flight refuelling techniques and the creation of a tanker force first with Valiant and subsequently with Victor aircraft greatly improved the ability of fighters, and other combat aircraft, to rapidly reinforce overseas theatres.
- 16. In 1969 the RAF achieved another "first" when the V/STOL Harrier, the world's first fixed-wing vertical/short take-off/landing, close support aircraft entered squadron service. Other developments brought the Nimrod, the Buccaneer, the Phantom and the Hercules into Royal Air Force service. Close ties with Europe has resulted in arrangements with France for the joint development and production of the Jaguar

Fig 1-4 The Anglo-French Jaguar in 1999 currently being upgraded from GR1A to GR3A standard, with both day and night capable



and three types of helicopter, the Puma, Gazelle and Lynx. Similarly, Tornado was developed and produced in Britain, Germany and Italy, as a multirole aircraft to

Fig 1-5 Hercules C1/C3 is the 'workhorse' of the RAF transport squadrons. From 2000, 25 of the Hercules fleet will be replaced by the all new C-130J model.



provide tactical reconnaissance, strike attack and long range fighter defence for all 3 countries. The Hawk replaced the Gnat and Hunter for advanced training and was also selected by the United States Navy and other foreign air forces.

NATO

17. To a large extent Britain's security rests in the strength of the North Atlantic Treaty Organization (NATO) alliance. It is to NATO that a large part of Britain's military force is committed. British interests and responsibilities are also world-wide and so Britain must be willing, within her means, to play her part in countering threats to peace outside Europe. This is a responsibility we share with other members

Fig 1-6 Vulcan (XH 558) was finally sold in March



The Falkland Island conflict

of the Commonwealth, with our Treaty partners and with the international community as whole. In 1982 the Falklands War provided a stern test of the RAF's ability to deploy force at extreme range. The nearest available air base was at Ascension Island, beyond normal range from the Falklands. Air-to-Air refuelling became the vital factor and the emergency conversion of tankers and receivers, together with training of crews became a top priority. During this conflict Vulcan bombers were used to carry out the longest range strategic bombing missions in the history of air power. The last Vulcan squadron was disbanded in 1984 and the last flying Vulcan aircraft, based at RAF Waddington, was sold in March 1993.

Operation Desert Storm starts

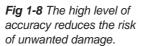
18. In 1990 Britain's ability to apply air power at long range was tested once again when Iraq invaded Kuwait and the RAF, as part of a United Nations Coalition force, played its part in liberating the country. Operation Desert Storm provided the

Fig 1-7 Tornado GR1 is the major weapon system in the overland strike/ attack/reconnaissance roles. The Tornado GR4, equipped with Sea Eagle air-to-surface missiles, undertakes the antisurface shipping role.



most demanding examination of the true capability of the Service, its people and its equipment since World War II.

- 19. It showed the value of rapid response A Tornado F3 Sqn was flying operational missions from Saudi Arabia within 50 hours of the Government's decision to deploy its forces effectively deterring further Iraqi aggression. Such a response does not allow much time for special training, but underlines the vital need for the high level of peacetime training RAF personnel receive.
- 20. Desert Storm also demonstrated the value of flexibility for many years the RAF has trained to act within NATO to counter the Soviet threat to Europe. In the event, the area of operations turned out to be quite different, fighting a different enemy and with different allies.





- 21. Another important feature of the Gulf War was the accuracy of the bombing, using laser, TV and infra-red guided bombs and rockets. An accurate bombing raid in 1943 was considered to be 90% of the bombs falling within 3 miles of the target in the Gulf, 90% of the precision guided munitions landed within 5 feet of the point of aim. This high level of accuracy enabled the RAF to attack specific targets with little risk of unwanted damage or unintentional civilian casualties. This was also demonstrated in Kosovo in 1999 with NATO air attacks.
- NATO changes its defence strategy

22. With the rapid political changes occurring in Eastern Europe in the late 1980s and early 1990s - starting with the tearing down of the Berlin Wall, the joining together of East and West Germany and the collapse of the Warsaw Pact as a military alliance - NATO had to review its defence strategy. The massive threat from the Soviet Union which had concerned the Alliance for over 40 years had effectively disappeared. The Western response to these changes was to implement a plan to reduce the size of the Alliance's Defence Forces to produce a smaller, highly flexible

and more mobile force that could respond rapidly to threats whenever they occur. In July 1990 the British Government announced its intentions to reduce UK forces by the mid 1990s, under the title 'Options for Change'. Many stations were to be closed, Squadrons were to be disbanded or moth-balled and the RAF's manpower was to be reduced to about 53,000 by 2000.

- 23. To take the RAF into the new millennium, the far-reaching Strategic Defence Review published in 1998 is intended to create modern, high-capability conventional forces.
- 24. With the onset of the new Millennium, the Joint Force 2000 concept will bring about closer harminization between existing Harrier forces, leading to a truly Joint Force for the future, and in time, to operate a common new aircraft to replace the RN Sea Harrier FA2 and the RAF Harrier GR7. The Joint Helicopter Command will create a unified force of some 400 battlefield helicopters including RAF support helicopters. In addition, the Chief of Defence Logistics organisation will combine all three Service logistics organisations to deliver support to the combat forces of all three Services. The RAF will benefit in this endeavour with a comprehensive range of new equipment including the Tornado GR4, Eurofighter, Nimrod MRA4, Hercules C-130J, Merlin HC Mk3, Chinook Mk3 support helicopters and a new strategic transport aircraft, as well as a variety of new weapons such as the Paveway III Laser Guided Bomb, Brimstone anti-armour weapon and the conventionally armed stand off missile, Storm Shadow.
- 25. In order to carry out the Government's defence policy Britain needs armed forces of sufficient quality and quantity. They must possess the high degree of skill and professionalism demanded by the conditions of modern conflict and the increasing complexity of military equipment. The Royal Air Force must continue to train, to re-equip and to redeploy if it is to play its part maintaining the strength of the Western Alliance sufficient to deter aggression and maintain peace.

Check of Understanding

- 1. The name of the organisation from which the RAF developed was:
 - a. Royal Naval Flying Corps(RNFC)
 - b. Royal Naval Air Service (RNAS)
 - c. Royal Flying Corps
 - d. Naval Flying Corps
- 2. The RAF was founded in:
 - a. 1912
 - b. 1918
 - c. 1936
 - d. 1945
- 3. Which aircraft was the first RAF jet engined bomber?
 - a. Canberra
 - b. Wellington
 - c. Meteor
 - d. Vulcan
- 4. Which aircraft type first provided Britain's strategic nuclear deterrent?
 - a. Vertical/Short Take Off and Landing (V/STOL)
 - b. Stealth Bombers
 - c. V-Bombers
 - d. Jet Bombers
- 5. The Falkland Island conflict happened in:
 - a. 1965
 - b. 1972
 - c. 1978
 - d. 1982

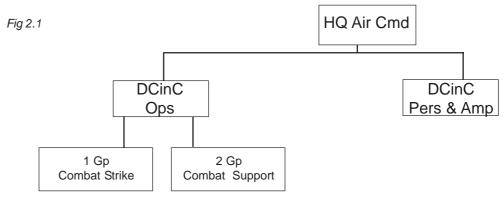
PEACETIME ORGANISATION OF THE RAF

- 1. Ultimately, everyone serving in the Armed Forces works for Her Majesty The Queen. Her authority trickles down through a long chain of command to the most junior ranking airmen and airwomen in the Air Force. A diagram showing this chain of command, and also depicting the way the RAF organises itself, is given on Page 2.
- 2. **Stations (Stns).** The fundamental 'units' on which the RAF is built are its stns. Each stn has a main role, for example:
 - a. Engineering Training is RAF Cosford's main role.
 - b. Air Defence is RAF Coningsby's main role.
 - c. Communications are RAF Digby's main role.

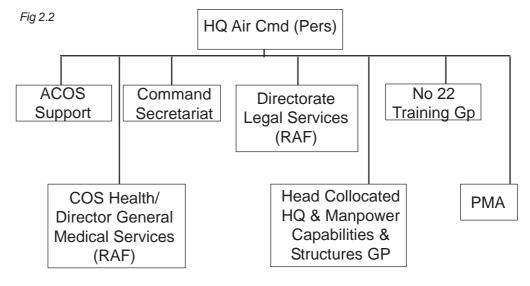
All RAF Stns are controlled by Headquarters Air Command (HQ Air Cmd) and stns with related roles are grouped together, either under HQ Air Cmd (Operations (Ops)) or HQ Air Cmd (Personnel (Pers)). For example, all stns whose main role is operational flying (fg) come under HQ Air Cmd (Ops), whereas those whose role is training come under HQ Air Cmd (Pers).

- 3. **HQ Air Cmd.** HQ Air Cmd is responsible for all aspects of the RAF's function. It is commanded by a 4-star officer of Air Chief Marshal (Air Chf Mshl) rank, who is the Air Officer Commanding in Chief (AOCinC) and is subdivided into 2 main areas, namely Ops and Pers as follows:
 - a. **HQ Air Cmd (Ops).** HQ Air Cmd (Ops) is commanded by a 3-star officer of Air Marshal (Air Mshl) rank, who is Deputy Commander in Chief (DCinC) and is responsible for all operational aspects of the RAF's function. It is organised into 3 main areas as follows:
 - (1) Central Command and Control (C2) Pillar COMMAIRSTRIKE. This comprises:
 - (a) Joint Force Air Component HQ (JFAC HQ).
 - (b) Joint Ground-based Air Defence HQ (GBAD HQ).

- (c) Combined Air Operation Centre 9 (CAOC 9).
- (d) UK Air Surveillance and Control HQ Elements.
- (e) Air Combat Service Support Units (ACSSU).
- (2) **1 Group (Gp) (Combat Strike)**. 1 Gp is responsible for all RAF Strike aircraft (ac), including Typhoon F3 and GR, and Harrier GR7/9.
- (3) **2 Gp (Combat Support).** 2 Gp is responsible for all RAF Combat Support ac, including VC10, Tristar, Hercules, C-17, BAe 125 and 146, Nimrod R1 and MR2, E-3D Sentry, ASTOR, SAR and Twin Squirrel helicopters and the RAF Regiment (RAF Regt).

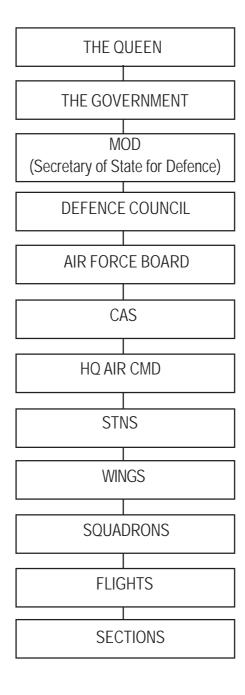


HQ Air Cmd (Pers). HQ Air Cmd (Pers) is commanded by a 3-star officer of Air Mshl rank, who is also the DCinC. He is responsible for all training, pers management and other administrative aspects of the RAF such as legal matters, medical and dental services, musical services and the chaplain's service. HQ Air Cmd (Pers) also contains the RAF Personnel Management Agency (PMA).



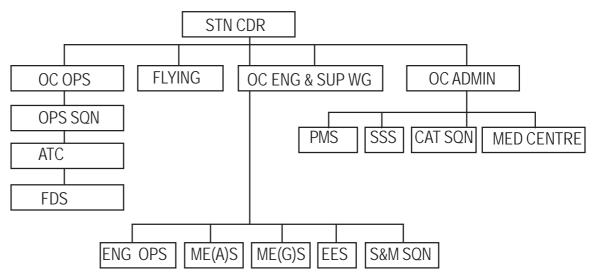
- 4. HQ Air Cmd is commanded by an Air Officer Commanding in Chief (AOCinC) who is an Air Chf Mshl, a 4-star officer. The HQ subdivisions are commanded as follows:
 - a. DCinC Ops Air Mshl, a 3-star officer.
 - b. DCinC Pers Air Mshl, a 3-star officer.
 - c. Air Officer Commanding (AOC) 1 Gp Air Vice Marshal (AVM).
 - d. AOC 2 Gp AVM.
- 5. Additionally the RAF is also involved in 4 tri-Service Cmd organisations which are:
 - a. **Joint Helicopter Cmd.** The Joint Helicopter Cmd, based at Wilton, comprises the Army Air Corps helicopters, RAF Support helicopters (SH) and RN Commando (Cdo) helicopters.
 - b. **Defence Logistics Organisation (DLO)**. The DLO is responsible for delivering to the front line better quality equipment support on time for less money. The DLO HQ is in Bath but the organisation has 3 environmental equipment support pillars as follows:
 - (1) Land equipment based at Andover.
 - (2) Air equipment based at RAF Wyton.
 - (3) Maritime equipment based at Bath and Bristol.
 - c. Joint Chemical, Biological, Radiological, Nuclear Regt (Jt CBRN Regt). The Jt CBRN Regt, based at RAF Honington, comprises 27 Sqn RAF Regt and the Royal Tank Regt (RTR).
 - d. **Joint Ground Based Air Defence (Jt GBAD)**. The Jt GBAD organisation, based at RAF Honington, currently comprises Nos 15 and 16 Sqns RAF Regt and elements of the Royal Artillery (RA). By end of 2007 Jt GBAD will exclusively transfer to the RA.
- 6. HQ Air Cmd is where a large number of Service pers work on the central business of the RAF; a tour for a commissioned officer (offr) at an HQ is called a 'staff tour'.
- 7. All AOCinCs report to the most senior offr in the RAF, the Chief of the Air Staff (CAS) who is an Air Chf Mshl and who is located at the Ministry of Defence (MOD). HQ Air Cmd's Central C2 Pillar COMMAIRSTRIKE, is commanded by an Air Mshl, who is also the Deputy CinC Air (Dep CinC Air). 1 Gp and 2 Gp are commanded by an AOC who is a 2-star officer of AVM rank.

THE HIERARCHY OF THE RAF



RAF STN ORGANISATION

- 8. Every stn is commanded by a Station Commander (Stn Cdr), normally a Group Captain (Gp Capt) in rank, but this will vary with the size of the stn. The Stn Cdr is responsible to the Cmd for the maintenance of discipline, and for the efficient and proper administration of the stn. To help him accomplish these 3 tasks, his pers are organised into a recognised chain of command, through which he delegates much of the day-to-day running of the stn.
- 9. Historically, stns have been organised according to the 3-Pillar 'Binbrook model' (see diagram below). However, since Apr 06, plans for the migration to a new stn structure, to be known as the 2-Pillar 'Trenchard model' have started to be introduced and are expected to be finally in place across STC by 2009.
- 10. The 3-Pillar 'Binbrook' Stn Model. PTC stns are still organised along the 3-Pillar 'Binbrook model' lines and generically have 2 wgs as follows:
 - a. Ops Wg.
 - b. Engineering and Supply Wing (Eng & Sup Wg).
 - c. Administrative Wing (Admin Wg).



Notes:

- 1. Full explanations of all abbreviations used are given in the text.
- 2. Stn organisation does vary according to the role of the stn. This example is a basic pattern around which most HQ Air Cmd (Pers) stns are organised.
- 3. Each sqn is subdivided into flts. Details of these further divisions are in the text.

- 11. The Officer Commanding Ops Wg (OC Ops Wg) is responsible to the Stn Cdr for the provision of fg ops on the stn. (The rank of Wg Cdr equates to the NATO grade Staff Offr 1 (SO1), Sqn Ldr equated to SO2 and Flt Lt equates to SO3). Ops Wg includes Intelligence (Int), Air Traffic Control (ATC) and Flight Safety and is usually broken down into 3 sqns, as follows:
 - a. Ops Sqn. OC Ops Sqn is responsible to OC Ops Wg for flight planning, day-to-day management of Flt Ops, Int and Meteorology (Met) information, which is supplied by members of the Met Office, stationed on most large RAF fg bases. His sqn is split into various sections, including Air Ops, Fire (on some stns), and Mission Support, which will produce Int and Weapons (Wpns) information, essential for a successful mission.
 - b. **ATC.** The Senior Air Traffic Control Officer (SATCO) is responsible to OC Ops Wg for all aspects of ac control in the air and on the ground. He is also responsible for ensuring that the airfield is cleared of any obstructions when ac wish to sue the runway and perimeter track, and so he controls all traffic movements in these areas and the Bird Control Unit.
 - c. **Fg Sqns**. Typically, a fg stn is organised as follows:
 - (1) OC of the sqn (Wg Cdr) has overall cmd of all pers on his sqn.
 - (2) The aircrew are usually split between a number of flt cdrs (Sqn Ldrs) for supervision and reporting.
 - (3) Historically all eng pers answered to the Senior Eng Offr (SEngO) with at least one Junior Eng Offr (JEngO) working under him. However, as PTC training ac tend not to be deployed out-of-area, they are today more likely to be engineered by civilian contracted pers working for companies such as SERCO or Babcock. In such cases, the ac engineering requirements are overseen by civilian Engineering and Contract Managers, working in partnership with the RAF.

ENG & SUP WG (FWD SUPPORT WG)

- 12. The OC Eng and Sup Wg is a Wg Cdr who is responsible to the Stn Cdr for all aspects of eng and sup support on the stn. The largest wg in terms of overall manpower and equipment/real-estate, it is usually divided into a number of sqns which, in order of precedence, are:
 - a. **Eng Ops Sqn (EOS).** OC EOS is the most senior Sqn Ldr and often acts as OC ESW's Executive Offr (XO) deputising for him and being delegated many planning and coordination tasks.

- (1) Eng Plans and Records Flt (EP&R Flt). Scheduled maintenance planning, Stats Section, Stn Engineering Management Aid (SEMA) Database Manager, Documentation Support and Technical Instructions Cell, ac Archives, Coding Cell.
- (2) Eng Wg HQ FIt. Eng Wg Registry, Adjt, Quality Assurance Control (QAC), Manning Cell, Coord Cell.
- b. Mechanical Eng (Air) Sqn (ME(A)S):
 - (1) Ac Maintenance FIt (AMF). Schedules maintenance and rectification of all the Stn's ac.
 - (2) **Propulsion Flt (Prop Flt).** Schedules maintenance of engine modules and ancillaries.
 - (3) Mech Components FIt (MCF). Schedules maintenance categorisation and rectification of ac components various structures bay, hydraulics bay, tank bay, pipe bay, lox bay, wheel and tyre bay.
- c. Electrical Eng Sqn (EES):
 - (1) **Avionics Flt.** Test and rectification of electronic systems radar, computers, Joint Tactical Information Distribution System (JTIDS).
 - (2) Ac Electrical Support FIt (AESF). Test and rectification of ac electrical systems, including air and ground photo sections.
 - (3) Communication and Information Systems Eng FIt (CIS Eng FIt). Maintenance of Ground Radar facilities, telephone and computer systems on stn.
- d. Mech Eng (Ground) Sqn (ME(G)S):
 - (1) Armament Eng Flt (AEF). Schedules maintenance of wpn systems and AAES. Includes Stn Armoury and EOD Cell.
 - (2) General Eng Flt (GEF). Maintenance of Ground Support Equipment (GSE), Stn Workshops (including manufacture of ac parts panels etc.), painters and finishers, lifting tackle bay, Carpenters Shop.

- e. **Sup and Movement Sqn (S&M Sqn).** OC S&M Sqn is responsible to OC Eng Wg for the provision of all domestic and technical items required by the stn, and for all aspects of sup accounting. He demands, receives, stores and issues material required by the stn to perform his tasks. The Sqn has to provide the right equipment, in the right quantities, in a serviceable condition, in the right place, at the right time, and account for it at all times. The way in which it is organised may be varied to suit the role of a particular stn. The Sqn can be divided into flts, as follows:
 - (1) Sup Control and Accounting FIt (SCAF). SCAF maintains stock records, and vets and approves sup requests. It prepares vouchers and maintains the stock records of the items not on the computer. It processes these vouchers and keeps inventory records.
 - (2) Technical (Tech) Sup Flt (TSF). Normally controlled by a jnr offr or Warrant Offr (WO), TSF includes:
 - (a) Receipts and Dispatches (R&D), which handles all external receipts and dispatches.
 - (b) Forward Delivery Sections (FWDS), which delivers and collects equipment from the user sections using a fleet of vehicles established for that purpose.
 - (c) TSF Stockholding Group, which receives, stores and issues all tech equipment.
 - (d) Petroleum, Oil and Lubricants (POL), which stores and issues petrol, oil and lubricants, and also stores compressed gases and dangerous substances.
 - (e) Electronic Sup Gp (ESG), which is responsible for the sup of ac parts and replacement units, and the rapid turn round of spares of an electronic nature; ESG is found on larger stns only, often being a flt in its own right.

- (3) **Mech Transport Flt (MT Flt)**. Vehicle ops, maintenance and allocation.
- (4) **Domestic Sup Flt (DSF).** DSF is also controlled by a jnr offr or WO who is responsible to OC Sup Sqn for local contracts. It is divided into 2 sections:
 - (a) Clothing stores, which is usually established with a civilian Leading Storeman in charge, receives, stores and issues clothing accourtements.
 - (b) Barrack Stores, run by the Stn Warden, a civilian of equal status to a Flight Sergeant (FS), who supervises the storage and issue of all barrack equipment and solid fuel. In addition, he arranges for the repair of barrack equipment and carries out various inspections of the equipment in use in accommodation (accn) and the furnishing of married quarters.

ADMIN WG (BASE SUP WG)

- 13. The OC Admin Wg is responsible to the Stn Cdr for the provision of sup facilities on the Stn that are directly concerned with pers. In recent years Admin Wg has been affected by civilianisation to a much greater degree than the other 2 wgs. As a result, the way Admin Wg is organised varies quite widely from stn to stn. However, Admin Wgs can comprise the following sqns and flts:
 - a. **Personnel Management Sqn (PMS)**. Personnel Services Flight (PSF) and Accounts Flt (Accts Flt) usually come under the cmd of OC PMS. Details are given in the Personnel notes.
 - b. **Stn Services Sqn (SSS)**. OC SSS is responsible to OC Admin Wg for the discipline of Stn Services pers and the allocation of duties through the Stn Adjt and the Stn WO (SWO). The Sqn is usually divided into an accn cell responsible for the allocation of single accn; the General Duties Flt (GD Flt), which controls the Central Registry, the Main Guardroom (MGR) and the SWO, and the Police and Security Flt (Pol & Sy Flt).

- (1) **GD FIt.** The Stn Adjt, is responsible to OC SSS for the command, control and administration of the GD Flt, which can comprise 5 Sections: the MGR, the Bedding Store, the Stn Work Force, the Central Registry and the Post Room. He is usually Secretary of the Services' Institute, and may take over some of OC SSS' duties when OC SSS is on leave. The GD Flt is mainly involved with the maintenance of discipline and the production of orders and duty rosters. Stn discipline and the general cleanliness of the Stn are usually delegated to the SWO. The Stn Adjt has to produce various rosters, including those for Stn Duty Offr (SDO) and Stn Orderly Offr (SOO). He also reviews and, if necessary, rewrites the orders for these duties and the Stn Standing Orders (SSOs). Once a week he produces Stn Routine Orders (SROs), which are used to aid the smooth running of the Stn on a day-to-day basis. Within the Central Registry, the Stn Adjt's responsibilities are to ensure that the staff perform their duties to a satisfactory standard. He is responsible for the distribution of all signals (via the Stn Communications Centre (COMCEN)), the efficient delivery of both internal and external mail, and the supervision of the Secret and Confidential File Registry. This includes personally maintaining the register of Secret files and regular checks on classified records. The Post Room is found within the Central Registry, and the Stn Adjt has to ensure its efficient running and undertake the role of Stn Postal Offr. This includes a quarterly inspection of postal arrangements and the maintenance of the Postal Imprest.
- (2) **SWO**. The SWO takes over much of the basic running of the Stn from the Stn Adjt. He is there to guide and train non-commissioned offrs (NCOs) and inr offrs in their responsibilities, and advise all stn pers on matters of dress and deportment. He controls and coordinates pers, equipment and facilities for a variety of stn commitments. As the supervisor of airmen's single accn, he compiles the statistics for weekly returns to PSF. In addition, he is responsible for the cleanliness of the Stn. When the Stn Cdr has an Orderly Room, the SWO will prepare the room for the accused, and administer the hearing of the charge. He will do likewise for any Court Martials which may take place on the Stn. The SWO has direct responsibility for the MGR and its staff. He will issue them with Terms of Reference (TORs) and be responsible for overseeing their duties. He has a major input into the organisation of ceremonials, both training of Stn pers and the Stn's preparations for a parade (eg a Royal Visit, an inspection by the (AOC), a funeral service or a Church Parade).

- (3) The MGR. The MGR is the first point of contact for anyone visiting a stn for the first time, be they Service pers or civilians. As such, its staff play a major role in maintaining the security of the Stn. They control and register all vehicles entering the Stn, issuing temporary identification passes as appropriate. They also control the Stn's keys (those to the outside of buildings), and maintain the books, registers, alarms, duty boards and Air Publications (APs) held in the Guardroom. Allocation of jnr ranks' accn is controlled by the Guardroom, as is transit accn and the issue of bedding. Some crash equipment may be controlled through the Guardroom, as is the Stn tannoy system, and the staff are required to respond to emergency and alarm situations.
- (4) Pol & Sy Flt. Pol & Sy Flt is responsible for ensuring the security of the Stn. They often have a dog section and carries out night time patrols as well as being required to investigate offences committed on Stn, under Air Force Law.
- c. Catering Squadron (Cat Sqn). OC Cat Sqn is responsible to OC Admin Wg for the separate catering facilities within the 3 messes on the stn. On smaller units, the Cat Sqn may be a flt It reporting to OC SSS. Some stns will have Sqn Feeders kitchens at or near the Sqn's locations where aircrew, and sometimes ground crew, will eat. Field kitchens will be provided for stn exercises and detachments to the field. Increasingly, catering services on RAF stns are being provided by civilian contracted pers working for companies such as SERCO.
- d. **Medical and Dental Centres**. Stns have their own medical centres which provide primary medical care for Service pers and sometimes for dependants. The Senior Medical Offr (SMO) can be a Sqn Ldr, Wg Cdr or on a large unit even a Gp Capt. The Dental Centre provides primary dental care for Service pers and the Senior Dental Offr (S Dent O) will also be a Sqn Ldr, Wg Cdr or Gp Capt, depending on the size of the stn.
- e. **Stn Chaplains.** Stns will have 2 or 3 Chaplains of different denominations. The Chaplains serve the spiritual needs of stn pers and also have a practical welfare role.
- f. Others. Other individuals who work for OC Admin Wg will be the Stn Health and Safety Offr (SFSO), the Stn Energy Offr, the Budget Manager and the Soldiers, Sailors, Air Force Association (SSAFA) Help Social Work Assistant.
- g. **Defence Housing Executive (DHE).** Accn for families on stns is now controlled by the DHE, an organisation separate from the RAF. OC Admin Wg liaises with the Stn's local DHE office through OC SSS.

- h. Force Development Sqn (FDS). The OC FDS is responsible to OC Admin Wg for those flts which are primarily concerned with training and development. These can include the Training Development Flt (TDF), Stn Regiment Flt (Regt Flt), the Physical Education Flt (PEd Flt) and the Stn Learning Centre (SLC) as follows:
 - (1) Training Development Flt. The TDF is commanded by the Stn Training Development Offr (STDO), who is responsible to OC FDS and is concerned with all training which improves the efficiency and effectiveness of RAF pers, assists them to advance their careers, and helps them to reach the qualifying standard for entry to formal courses.
 - (2) Regt Flt. The Regt Flt is commanded by the Stn Regt Offr, who is responsible to OC FDS for ensuring that stn pers are conversant with Survive to Operate measures, including the handling of personal wpns, first aid, CBRN matters, and the Stn's organisation of war. It achieves this by running arrival courses and annual refresher courses. On smaller stns, it might also be responsible for the security of the Stn and its fire services.
 - (3) PEd FIt. The PEd FIt is commanded by the Stn Physical Education Offr (PEdO), who is responsible to OC FDS for the administration and organisation of formal sports on the stn and, at a higher level, the maintenance of sports' facilities and the encouragement of stn pers to participate in fitness training. He is responsible (via his staff) for conducting the formal annual fitness testing of all Service pers, recording the results and conducting any remedial training as required, including the preparation of specialist training programmes to overcome injury or obesity. He sometimes supervises and leads expedition activities and is responsible for the administration of the Joint Services Adventurous Training Scheme undertaken on the Stn.
 - (4) **SLC**. The SLC is run by a civilian Personnel Learning Advisor (PLA) who is responsible to the STDO for the administration and provision of in-service further education courses and the resettlement of those leaving the Service.

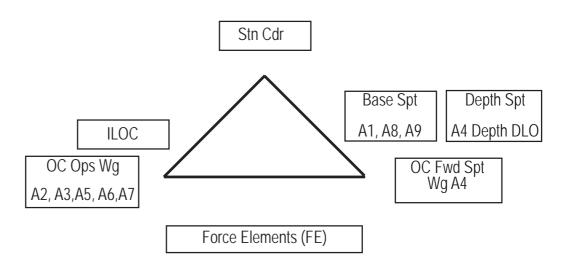
NEW STATION STRUCTURES

14. In World War 2 the RAF utilised 'Expeditionary Air Wings' (EAW), that were very clearly defined 'packages' of 'Air Power' (AP) deployed overseas with a clear task (effect) to achieve. Since the end of the 'Cold War' the RAF has again increasingly been required to operate 'out-of-area' and as such, must further refine its expeditionary capability and adopt more appropriate structures, to move closer to being a truly expeditionary air force.

- 15. In Feb 06 the CinC STC announced that, "applying the EAW concept to the 21st Century, it is intended that from 1 Apr 06, the RAF will deploy as distinct units, which will better enable understanding of the RAF's capabilities by Ministers, the MOD and our Sister Services, helping to determine the best capability to deliver the right effect. In the future, rather than deploying a number of Force Elements (FE), enablers, command elements and diverse support pers to Forward Operating Bases (FOB), we will deploy as a Wg with Main Operating Bases (MOB) providing the core of Individual Air Wgs".
- 16. To achieve the CinC's aim, the RAF structures are to be reorganised, to better focus them on delivering their operational outputs and supporting expeditionary capability. The intention is for RAF MOBs in the UK to mirror our overseas DOBs.
- 17. The 2-Pillar 'Trenchard' Stn Model. Fig 2.3 The new stn structure is to be known as the 2-Pillar 'Trenchard' Stn Model: ops and forward support. This will form the deployable (pepeditionary) element of the stn, led by the Stn Cdr as appropriate. The example is based on a typical FJ stn that includes the Depth Hub and the Integrated Logistics Operations Centre (ILOC), but the principles will apply to most large stns in Air Cmd. It also shows how the deployable elements will 'unplug' from the MOB and 'plug-in and play' at the DOB, leaving the stn to stand down on its own.
- 18. The Base Support Wg (Base Spt Wg) component is set to undergo a fundamental overhaul in the near future, just as Logistics Transformation has achieved for Eng & Sup. This modernisation will allow a unified support organisation to discharge all tasks currently the responsibility of OC Admin Wg and OC Forward Support Wg (Fwd Spt Wg).
- 19. To ensure that the operational outputs can be met, a third Wg Cdr (OC Base Spt Wg) will be retained, where justified, to sustain support to the Stn Cdr pending effective delivery of the other initiatives. Eventually the post of OC Fwd Spt Wg will become OC Spt Wg and, ultimately, the aim is to have the OC Spt Wg post filled by any GD Wg Cdr (irrespective of branch specialisation).

FUTURE RAF STN STRUCTURE (2-PILLAR 'TRENCHARD' MODEL)

Fig 2.3



The front rank is the 'Deployable Core' supported by those remaining behind on the MOB

Who Does What

A1 - Pers and Admin A2 - Int

A3 - Ops A4 - Logs

A5 - Contingency Planning/Plans A6 - Communication & Information Systems

A7 - Doctrine & Training A8 - Resources & Finances

A9 - Secretarial/Legal

DLO ILOC

CIVILIANS IN THE SERVICE

- 20. Since the introduction of the Management Strategy and the Government's drive to improve the efficiency of all its departments, the RAF has seen an unprecedented number of its uniformed pers replaced by civilians. The civilians employed on stns are seen by the Air Force Board as an integral part of the 'Total Force Concept' ie the means by which we deliver our role of defending the nation.
- 21. Two main types of civilian are employed on any stn: civil servants employed by the MOD and staff employed by companies contracted to do a job on the stn. Jnr offrs will have no authority over civilians working for contracted companies but they will possibly have MOD civilians working for them on their flts.

FLT CDRS' RESPONSIBILITIES

The Flt Cdr has the same responsibilities for his civilian subordinates as he does for his Service pers. It is important to understand though, that an MOD civilian's TORs are very different to those of his Service counterparts. An MOD civilian has different entitlements to leave and stand downs, a different pay system, a different appraisal system and so on. A good flt cdr will be as well acquainted with his civilians' conditions of work as he is with those for his airmen. Courses concerning the management of civilian staff are run by the MOD.

MOD CIVILIAN GRADES

23. There are many different grade systems applied to the MOD, and each relates to the type of job being done. Those most commonly encountered on stns are the instructor grades, the secretarial grades and the administrative grades, of which the administrative grades are the most widespread. The administrative grades and their roughly equivalent RAF ranks are given below:

RAF Rank	Administrative Grade
Air Cdre	Grade 6 - Band B1
Gp Capt	Grade 7 - Band B2
Wg Cdr	Senior Executive Offr (SEO) - Band C1
Sqn Ldr	Higher Executive Offr (HEO) - Band C2
Fg Off/Flt Lt	Executive Offr (EO) - Band D
FS/WO	No equivalent
Sgt/Chf Tech	Administrative Offr (AO) - Band E1
AC - Cpl	Administrative Assistant (AA) - Band E2

Once Civil Servants attain the grade of AO, they become equivalent to SNCOs, and may be offered membership of the Sgt's Mess, while EOs and above may opt for membership of the Offrs' Mess. Administrative grades in the Civil Service go very high up, and that Grade 1 and 2 AOs will almost certainly be sitting on committees alongside such people as Air Force Board members.

GRIEVANCES

Official Side

- 25. It should be possible to discuss and sort out most differences at grass root level, but a committee, known as the Whitley Committee, exists to arbitrate for MOD civilians if this does not work.
- 26. The Committee is chaired by the Stn Cdr, and has 2 'sides', the official side from the stn, and a staff side, from the workers themselves. The aim of the committee is to get management and workers together so that differences can be ironed out locally, without recourse to national union action. The Committee is the only forum for civilian employees to air grievances.

COMPOSITION OF A TYPICAL STN WHITELY COMMITTEE

STN CDR (Chairman)

Staff Side

OC PMS

Vice-Chairman

Secretary

Joint Secretary

Official Reps From:

Sqns of flts

Trade Unions

MOD Civilians' Representative

or Staff Associations

Check of Understanding

- 1. Britain's defence policy is decided upon by:
 - a. The Prime Minister and the Cabinet
 - b. The Secretary of State for Defence
 - c. The Defence Council
 - d. The Air Force Board
- 2. No 1 Group has responsibility for:
 - a. Air Defence aircraft
 - b. RAF Search and Rescue aircraft
 - c. Surface-to-Air missile squadrons
 - d. Strike/Attack aircraft
- 3. Overseas units are under the control of:
 - a. RAFSC
 - b. RAFSTC
 - c. No 11 Group HQ
 - d. No 1 Group HQ
- 4. HQAC is part of:
 - a. RAFPTC
 - b. RAFSTC
 - c. No 11 Group HQ
 - d. No 1 Group HQ
- 5. Who works in a station general office?
 - a. Catering Flight
 - b. Personnel Services Flight
 - c. Estates Flight
 - d. Supply Flight

SECURITY

1. From the moment you enrol as a cadet you have a responsibility to the RAF to guard its secrets to the best of your ability. Most cadets will learn something about the RAF which other countries would like to know. It may only be a very small piece of information, but the manner in which you safeguard that information is a test of your trustworthiness.

How important is Security

2. A few people give away information deliberately - they are traitors. There are many more who give away information unknowingly or through lack of thought. These people are not traitors in the same sense, but they do just as much harm. One of the first things you must learn as a cadet, is the meaning of Security, because the security of the RAF is now partly your responsibility, and a trust you must never betray.

What is Security?

Direct, Indirect and Terrorist attacks

- 3. In war, both sides make use of direct and indirect attack. Direct attack is a shooting war using guns, rockets, aircraft, etc. Indirect attack, although rarely as spectacular, can be equally destructive. It includes the collection of information by agents, the destruction of materials by sabotage, the lowering of the morale of the fighting Services and of the general public by the use of propaganda.
- 4. Even when not at war some extremist organisations may try to carry out violent terrorist attacks against Service personnel and property. All cadets need to be aware of the possibility of terrorist activity and should be vigilant against it at all times.

What is Security

5. The threat from indirect and terrorist attack is very real and is with us all the time. Security is our defence against this kind of attack and it is just as important as the defence against direct attack. All cadets must play their part in helping to maintain the security of the RAF, and indeed the nation.

Squadron Security

- 6. Every cadet is responsible for the security of his squadron, or detached flight. Security is mostly a matter of common sense. For example, every cadet must play his part in looking after the unit's equipment and buildings. Each unit has a lot of equipment, either its own or on loan, much of it very valuable, that it would cost money to replace whether from unit resources or ultimately the taxpayer. All cadets, therefore, must do their best to protect everything at their unit against loss, theft or damage.
- 7. Certain items need special care. Many units possess rifles, and for obvious reasons these must be looked after particularly well; and there are special rules for this.

Classified Material

Classified Material

8. Information and written material can either have a PROTECTIVE MARKING OR NOT. Material that has no protective marking has no security value at all. But special action must be taken to prevent unauthorised people gaining access to protectively marked material. Protectively marked information is graded according to its security importance:

4 levels of classification

RESTRICTED – the written material is kept in a BUFF coloured file/folder.

CONFIDENTIAL – the written material is kept in a GREEN coloured file/folder.

SECRET – the written material is kept in a PINK coloured file/folder.

TOP SECRET – the written material is kept in a RED coloured file/folder

On your arrival, you will be briefed by the RAF Police on basic security, contact telephone numbers, locations of key personnel etc. RAF stations have also adopted the policy that all forms of recognised identity (ID) are to be displayed at all times whilst outside. As a cadet you do not have the credit card style of ID that allows for it to be displayed, however, you do have your 3822 and that should be carried by you at all times and used as your ID. Please listen to your briefings carefully and don't be afraid to ask questions.

9. It is quite likely that as a cadet you will see some training manuals or handbooks that are classified **RESTRICTED**. Remember to keep the information to yourself and the Service and do not discuss it with outsiders.

Finding Secret or Top Secret material 10. When visiting an RAF station you may well see training books classified CONFIDENTIAL. They are there for those who 'need to know' and will be locked away when the room is not in use. It is extremely unlikely that you will ever see anything classified SECRET or TOP SECRET. If, however, you do come across such material, you must report it at once and take steps to ensure that no unauthorised person has access to it.

Security at RAF Stations

- 11. At RAF stations officers and airmen, because of the work they do, are aware of the need to safeguard themselves, their information and equipment. All stations have a Security Officer whose job it is to maintain a high standard of security of information, material and personnel. However, his job is possible only if all members of the station contribute equally. When you visit a station you become, in effect, a member of that station and have a part to play in achieving this high standard of security.
- 12. The best rule you should remember as a cadet is based on the "need to know" principle. When you visit an RAF station, sooner or later, you are bound to hear or see something which a foreign power would like to know for example, information about aircraft, aircraft movements or aircraft accidents. Before talking about it you should ask yourself "does the other person 'need to know'?". The answer is usually "no", but of course common sense should prevail. Should you ever see or hear anything which you think might be a threat to the security of that station, then you must report the matter to your own officer or a regular officer of the station.

Need to know principle

National Security

13. To every country, information about a possible enemy is of the greatest importance. There are several countries in the world who think that Great Britain is an enemy. Some of these countries have a lot of highly trained specialists collecting information about the Royal Air Force. The work of defending Royal Air Force personnel, information and material is the responsibility of every officer, airman and cadet.

Check of Understanding

- 1. Security on an RAF station is the sole responsibility of:
 - a. The Security Officer.
 - b. The RAF Regiment.
 - c. The RAF Police.
 - d. Everybody on the station.
- 2. Security is the defence against:
 - a. Propaganda.
 - b. Indirect and Terrorist attack.
 - c. Direct attack.
 - d. Low morale.
- 3. The lowest grade of Classified material is:
 - a. Confidential.
 - b. Secret.
 - c. Restricted.
 - d. Top Secret.
- 4. If, whilst visiting an RAF station, you see 2 men climb over the perimeter fence and run away from the station. Would you:
 - a. Shout to frighten them away.
 - b. Run after them and try to catch them.
 - c. Report it to your Sqn Cdr on your return to the squadron.
 - d. Report the incident immediately to an officer or adult.
- 5. Make a list of your actions in the event of a fire on your squadron.



MOTROOTORO COIDE

<u>DEVELOPMENT OF THE ROYAL AIR FORCE</u>

Page 31.2.1-1 Para 1

- 1. The realisation that Britain was falling behind in the aviation race came towards the end of 1911 then the British Army and Royal Navy between them could muster approximately three airships and between four and eight aircraft with 19 competent aviators. By comparison France had over 200 aircraft and 263 aviators, whilst Germany mustered a fleet of 30 airships. Something had to be done. The Committee of Imperial Defence set up a technical sub-committee (a typical British reaction) to look into British military aviation. But this committee outperformed most of its type: its findings were speedily formulated with complete agreement, and issued in a White Paper in 1912 which set up a unified flying service called The Flying Corps. However, His Majesty the King decided that as flying, let alone fighting in the air, was a hazardous occupation, he would issue a royal warrant to grant it the title The Royal Flying Corps (RFC). This Royal Flying Corps would have a Central Flying School, a Military Wing to work with the Army, a Naval Wing to work with the Navy, a Reserve, and the Royal Aircraft Factory (RAF, at Farnborough) to build its military aircraft.
- 2. From the start, the Admiralty had no intention of allowing its air affairs to escape from under its own control, and in fact the name Royal Flying Corps, Naval Wing, never really appeared anywhere other than on a few official documents. A new title, Royal Naval Air Service (RNAS), gained rapid currency and, by the time that World War I broke out in August 1914, it had received official sanction. With only a token participation in the Central Flying School, the Admiralty carried on with its own aviation affairs, training its own aviators and ordering its own aircraft direct from the manufacturers, thereby spurning most of the products of the Royal Aircraft Factory at Farnborough.
- 3. On 19th August 1914 the RFC began its air war with two reconnaissances, one by Captain Philip Joubert de la Ferte of No 3 Squadron in a Bleriot, and the other by Lieutenant G W Mapplebeck of No 4 Squadron in a BE2. The value of aerial reconnaissance was quickly made crystal clear with the German advance and the Allies hurried withdrawal, the RFC squadrons keeping the troops posted with information on the Germans' latest strength, location and movement. Allied casualties could well have been higher without the advantage of this new method of reconnaissance.

Page 31.2.1-1 Para 3

- 1. By 1915 the war in the air was moving into a different phase the joy of simply sitting up in the air watching the land battle below had been spoilt by one or two pilots taking their revolvers aloft with them and taking pot shots at the enemy's aircraft. By October the French had already armed a Voisin with a machine-gun and shot down a German reconnaissance aircraft war in the air was on.
- 2. As early as March 1915 the assault on Neuve Chapelle benefitted from the availability of tactical maps based solely on aerial photographs. Up until now the RFC had largely been observers of the battle scene, but in that same month the BE2s and other suitable aircraft were bombed up and sent in to attack behind the enemy lines to prevent reserves from moving up to the front line.
- 3. The leisurely days of aerial warfare were soon over for ever, and the most spectacular symbol of this change was the Fokker Eindecker (monoplane). Both sides in the struggle had progressed towards scouts armed with machine-guns for the express purpose of aerial combat, but none so far had approached the effectiveness of the Fokker Monoplane. This aircraft could have fought with the British for Anthony Fokker, a Dutchman, had offered his services first to the Allies, only to be spurned. He then moved to Germany where his Monoplane was evolved being the first production aircraft successfully to solve the problem of firing the machine-gun through the propeller.



Page 31.2.1-2 Para 5

Hugh Trenchard came into the RFC after an Army career which had not shown him at his best. This was not wholly his fault, because he suffered from ill-health: but it has to be said that he was a difficult man to get on with, and was blunt to the point of rudeness with his superiors. He carried the DSO for his activities in the Boer War, in which he was badly wounded and in 1912 at the age of 39 after a severe and nearly fatal does of pneumonic type fever in Nigeria he had been found a staff job in the Army to see him through to retirement. With the advent of flying in the Army he soon arranged to qualify for his pilot's licence and move into this sphere of military activity, becoming Station Staff Officer to the embryo Central Flying School and ending up as Assistant Commandant. When war broke out most of the RFC went to France. What little was left was put under Trenchard's command to build up a training organisation and to feed out to France a growing supply of reserves of men, machines and equipment. His flair for administration enabled Trenchard to set the machinery in motion within 3 months, whereupon he was posted to France himself to command the 1st Wing, and nine months later he commanded the whole of the RFC on the Western Front. It was Trenchard who, seeing the mounting losses of British aircraft and crews, had to battle with those at home for better aircraft with which to prosecute the air war, and it was here that he began to learn the art of inter-departmental warfare. He was not naturally gifted at this, for he was a gruff man, and he had to rely on the power of his personality. It was this gruff forcefulness which acquired him the nickname 'Boom', which stuck to him throughout his career.

Page 31.2.1-2 Para 7

As the political situation in Europe deteriorated through the thirties, pressure mounted for an expansion of the RAF. In 1936 a series of specialised commands were established: Bomber, Fighter, Coastal and Training. In September 1938, after the Munich crisis, the government agreed to a large expansion of the fighter and heavy bomber programme. The seed-corn which Trenchard had so carefully preserved was now able to produce the rapid expansion the country so desperately needed. At the outbreak of war the RAF had 1,911 combat-ready aircraft to face Germany's 3,609.

Page 31.2.1-3 Para 10

British scientists were beavering away to advance the art and science of flying so as to give the RAF the edge over any opponent in the approaching war. No where was this so marked and yet so successfully secret as in the development of radar (known then as RDF, or radio-direction-finding). By September 1939 some 20 RDF stations had been set up around the coasts of the UK, able to detect aircraft at medium heights up to 100 miles (161 km) away - and a solution to the low-flying aircraft problem was under active development. A means had been found to identify hostile from friendly aircraft by means of a device called IFF (identification: friend or foe) which has since been developed into a normal civil aviation identity system. And the whole radar chain had been incorporated into Fighter Command's control system so that the information gleaned could be fed to the controllers with virtually no delay.

World War II

Page 31.2.1-3 Para 11

1. Fighter Command had won the Battle of Britain of Britain, but Bomber Command still had the task of taking the war to the enemy's homeland. Four-engined bombers - the Stirling, Halifax and Lancaster - entered service and, with the twin-engined Mosquito, provided the strategic bombing capability. In the first three years, 90,329 tons of bombs were dropped; but it needed new navigational aids, operational analysis, and new tactics through such methods as the Pathfinder Force for strategic bombing to become fully effective. Bomber Command dropped just under a million tons of bombs during the war, and the major weight of this effort was in 1944. Some 47,000 air crew were killed and 17,000 were wounded, taken prisoner or missing.



- 2. Full production required secure sea lanes so that the necessary resources could be imported. Coastal Command was engaged in the Battle of the Atlantic to reduce the potentially disastrous shipping losses to the German submarine threat. Of the 706 German submarines sunk, 195 were credited to RAF aircraft, and a further 1,500 enemy surface vessels were sunk by the RAF in the Atlantic.
- 3. When Italy entered the war, operations spread to the Middle East theatre. Thereafter, fighting in East Africa and Greece, the RAF played a major part in the desert battles, culminating in the victory of El Alamein and the drive to Tunisia. The combined RAF and US Army tactical air forces provided the air superiority for the ground forces to push back the enemy through Italy. In the Far East similar co-operation between the Army and the RAF paid dividends.
- 4. For the final assault on the continent, all the air power resources were used to provide total air supremacy over the battlefields. Troops were transported into battle by air, and precision bombing was used to great effect. By V-E Day the RAF had 55,469 aircraft of which 9,200 were front line fighters or bombers. The RAF lost 70,253 killed in action and 22,924 wounded during the Second World War.

Strategic Nuclear Deterrent

Page 31.2.1-4 Para 14

- 1. Britain's decision to produce nuclear weapons and the four-engined V-bombed meant that the RAF was to provide the British strategic nuclear deterrent. The RAF participated in the first British atomic test in the Monte Bello islands in October 1952. The Valiant the first of the V bombers, becoming operational in January 1955 dropped the first British atomic bomb at Maralinga, South Australia in October 1956 and the first British hydrogen bomb at Christmas Island, in the Pacific, in May 1957.
- 2. The Vulcan and Victor followed the Valiant into service in 1956 and 1957 respectively. The V-force grew steadily in strength and maintained a high state of alert and readiness. The American missile Thor was deployed in Bomber Commander from 1958 until 1963 to supplement the V-bombers. In 1960 it was announced that a Ballistic Missile Early Warning System base would be built at Fylingdales in Yorkshire, capable of providing at least four minutes warning of a ballistic missile attack on the United Kingdom from Russia. Techniques were developed and regularly practised for 'scrambling' dispersed detachments of four V-bombers well within this warning time.
- 3. It was planned to prolong the effective life of the V-force by the acquisition of the American air-launched Skybolt missile which was to succeed the British stand-off nuclear weapon Blue Steel. The decision by the US Government not to proceed with development of Skybolt for the USAF led to the Nassau Agreement, in which the US was to provide Polaris missiles for Royal Navy submarines. Vulcans and Victors, some equipped with Blue Steel, continued to form the British contribution to the Western strategic nuclear deterrent until the Polaris force became operational in mid-1969, when the UK based V-bombers transferred to the tactical role, remaining assigned to NATO. The Victor was taken off bombing in the mid-sixties and converted to the tanker role. Throughout the 1970s the Vulcan continued as a bomber, with one squadron specialising in maritime radar reconnaissance duties.



Page 31.2.1-4 Para 15

Air Defence

1. Fighter Command forces were improved by the introduction of the Bloodhound Mark 1 surface-to-air missile in 1958. In 1960, the first RAF supersonic fighter the Mach 2 Lightning became operational, armed with the Firestreak - and subsequently Red Top -air-to-air missiles. In 1961 the air defence squadrons of Fighter Command were assigned to NATO. The development of in-flight refuelling techniques and the creation, within the Command, of a tanker force - first with the Valiant and subsequently with Victor aircraft - greatly enhanced the abilities of fighters and other combat aircraft to rapidly reinforce overseas theatres.

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- 2. During the 1970s the Phantom was gradually phased out of the ground attack and reconnaissance roles and converted to air defence. By the end of the decade, it had become the RAF's main air defence fighter, supplemented by the shorter-range Lightnings. From 1984 the Hawks of the Tactical Weapons Units also took on a secondary role earmarked for air defence duties in times of hostilities. In 1987 the Tornado Air Defence Variant, the F3, entered squadron service to become the mainstay of the RAF's Air Defence force.
- 3. Since WW11 the UK Air Defence Ground Environment (UKADGE) has comprised a mixture of radar, display and data link systems. With the introduction over the next two years of improved UKADGE the air defence of UK will be very significantly enhanced. The new system combines modern mobile radars, integrated computerized displays and the latest data link systems to give the UK one of the most advanced command and control systems in the world. The RAF Regiment provides Rapier surface-to-air missile defence of key installations.
- 4. Bloodhound was phased out in July 1991, and a requirement for a replacement long range SAM was announced for introduction in 1995. The Phantom was phased out by 1993, when air defence forces of the United Kingdom will be provided solely by the Tornado F3 interceptor supplemented by armed Hawks. Together with the Sentry (Boeing E3D) Airborne Early Warning aircraft, which become operational in 1992, and the support of in-flight refuelling tanker aircraft and IUKADGE, the advanced F3s will be able to detect and intercept intruders far from our shores. Development of the new European Fighter Aircraft (EFA), which is due to enter RAF service by the end of the 1990s, will further enhance the RAF's air defence capability.

Offensive Air Power

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- 1. Throughout the postwar era, the RAF has retained the capability to deliver offensive firepower over the battlefield and also deep into enemy territory. This has been provided by forces based both in the United Kingdom and in West Germany. The Canberra bombers of the 1950s and 60s gave way to Phantoms and Buccaneers. The Phantom tasks were then taken over by the Jaguars in the mid-70s to release the Phantoms for their air defence role. The Buccaneers were reallocated to an anti-shipping task, with the Tornado GR1s taking over their overland offensive role. Through the 1980s, Tornado replaced the Jaguars in Germany to provide an extremely potent modern offensive firepower force.
- 2. For close air support of army operations, the ground attack Hunters were replaced by the unique capabilities of the Harrier in the early seventies. The Harrier GR3 was the world's first fixed-wing vertical/short take-off and landing close support aircraft. In 1989/90 these were superseded by the more advanced Harrier GR5, which retains the ability to deploy into the field in support of ground forces but with considerably greater range and weapon load. The GR5s are now being progressively upgraded to GR7 standard to give them a full night operations capability.



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NATO'S New Strategic Concept

1. At their meeting in London in July 1990, NATO's Heads of State and Government agreed on the need to transform the Atlantic Alliance to reflect the new, more promising, era in Europe. Whilst reaffirming the basic principles on which the Alliance has rested since its inception, they recognised that the developments taking place in Europe would have a far-reaching impact on the way in which NATO's aims would be met in future. They therefore set in hand a fundamental review of strategy. The resultant new strategic concept was agreed at the North Atlantic Council meeting in Rome on 7 and 8 Nov 91. The key points of this concept are outlined below.

Geo-Political Changes.

2. Significant changes have taken place in both East and West. In the latter, Germany has been united and remains a full member of the Alliance and of European institutions. The fact that the countries of the European Community are working towards the goal of political union, including the development of a European security identity and the enhancement of the role of the Western European Union, are important factors for the security of Europe.

The Threat.

- 3. The historic changes that have occurred in Europe have significantly improved the security of the Allies. The monolithic, massive and potentially immediate threat which was the principal concern of the Alliance in its first forty years has disappeared. On the other hand, the future is uncertain and risks to the security of the Alliance remain. The new strategic concept anticipates a security environment in which the positive changes recently begun in the old Eastern Block come to fruition. In particular, it assumes both the completion of the planned withdrawal of Soviet military forces from Central and Eastern Europe and the full implementation by all parties of the 1990 CFE treaty. Implementation of the strategic concept will thus be kept under review in the light of the evolving security environment.
- 4. In contrast with the predominant and predictable threat of full scale attack on all fronts in the past, NATO now faces multifaceted and multidirectional risks. These are hard to predict and assess, but are less likely to result from calculated aggression against the territory of the Allies than from the adverse consequences of instabilities arising from the serious economic, social, ethnic, territorial and political difficulties faced by many countries in central and eastern Europe. Whilst such tensions need not threaten the security and territorial integrity of Alliance members, they could lead to crises inimical to European stability and even to armed conflicts involving outside powers. In addition, in the case of the Soviet Union, the risks and uncertainties that accompany the process of change cannot be seen in isolation from the fact that its conventional forces are significantly larger than those of any other European state and its large nuclear arsenal comparable only with that of the USA.
- 5. The stability and peace of the countries in the southern periphery of Europe are also important for the security of the Alliance, as the 1991 Gulf War has shown. This is all the more so because of the build-up of military power and the proliferation of weapons' technologies in the area, including weapons of mass destruction and ballistic missiles capable of reaching the territory of some member states of the Alliance, or of posing risks of a wider nature, including disruption of the flow of vital resources and actions of terrorism and sabotage. Hence, whilst the end of East-West confrontation has greatly reduced the risk of major conflicts in Europe, there is greater risk of different crises arising, which could develop quickly and require a rapid response. The preservation of stability in Europe and the security of Alliance members requires that NATO continues to be capable of responding to all such threats.



Alliance Capability.

- 6. In providing such capability, the Alliance seeks, through arms control and disarmament, to enhance security and stability at the lowest possible level of forces consistent with the requirements of defence. The maintenance of an adequate military capability and clear preparedness to act collectively in the common defence remain central to the Alliance's security objectives. Such a capability, together with political solidarity, is required in order to prevent any attempt at coercion or intimidation, and to guarantee that military aggression directed against the Alliance can never be perceived as an option with any prospect of success. Equally, it is indispensable so that dialogue and cooperation can be undertaken with confidence and achieve their desired results.
- 7. The achievement of the Alliance's objectives depends critically on the equitable sharing of roles, risks and responsibilities, as well as the benefits, of common defence. The presence of North American conventional and US nuclear forces in Europe remains vital to the security of Europe, which is inseparably linked to that of North America. As the process of developing a European security identity and defence role progresses, and is reflected in the strengthening of the European pillar within the Alliance, the European members will assume a greater degree of the responsibility for the defence of Europe. To protect peace and to prevent war or any kind of coercion, the Alliance will maintain for the foreseeable future an appropriate mix of nuclear and conventional forces based in Europe and kept up to date where necessary although at a significantly reduced level. Both elements are essential to Alliance security and cannot substitute one for the other. The Alliance will also expand in the future to include countries from the old communist block.

New Force Posture.

- 8. At the London summit, the allies concerned agreed to move away, where appropriate, from the concept of forward defence towards a reduced forward presence, and to modify the principle of flexible response to reflect a reduced reliance on nuclear weapons. The changes stemming from the new strategic environment and the altered risks now facing the Alliance enable significant modifications to be made in the missions of the Allies' military forces and their posture:
 - a. The overall size of the Allies' forces, and in many cases their readiness, will be reduced.
 - b. The maintenance of a comprehensive in-place linear defensive posture in the Central Region will no longer be required. Nonetheless, some forward deployment may be necessary, and geographical and regional differences will be taken into account, including the shorter warning times to which the Northern and Southern regions are subject, plus the potential for instability and the adjacent military capabilities in the Southern region.
 - c. To ensure that at this reduced level the Allies' forces are effective, enhanced flexibility, mobility and an assured capability for augmentation are required.
- 9. Forces will be structured to provide:
 - a. A limited, but militarily significant proportion, of ground, air and sea immediate and rapid reaction elements able to respond to a wide range of eventualities.
 - b. The ability to build up by reinforcement, by mobilising reserves, or by reconstructing forces, in proportion to potential threats to Alliance security including the possibility of a major conflict.
 - c. The organization and procedures to build, deploy and draw down forces quickly and discriminately in order to permit measured, flexible and timely responses; these arrangements must be exercised regularly in peacetime.



- 10. Air Forces will continue to be essential to the overall effectiveness of the Allies' military forces. They will be required to fulfil their fundamental roles in both independent air and combined operations counter-air, air interdiction and offensive air support, as well as to contribute to surveillance, reconnaissance and electronic warfare operations. Their role in supporting operations, on land and at sea, will require appropriate long-distance airlift and air refuelling capabilities. Air defence forces, including modern air command and control systems are required to ensure air defence environment.
- 11. The Allies will maintain adequate sub-strategic forces based in Europe which will provide an essential link with strategic nuclear forces, reinforcing the trans-Atlantic link. These consist solely of dual capable aircraft which could, if necessary, be supplemented by offshore systems. Sub-strategic nuclear weapons will, however, not be deployed in normal circumstances on surface vessels and attack submarines. There is no requirement for nuclear artillery or ground-launched short-range nuclear missiles and they will be eliminated.

CHAPTER 2



INSTRUCTORS GUIDE

ORGANISATION OF THE ROYAL AIR FORCE

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The Service Boards

The single-Service Executive Staffs in the Department concentrate on the management of their respective Services within a policy frame work of plans, programmes and resources determined centrally under the Defence Council. The management of the Services is the responsibility of the three Service Boards and their Executive Committees. The Secretary of State is Chairman of all three Boards, and all the other Defence Ministers are members. The Service Chief of Staff, Second Permanent Under Secretary (2nd PUS), the Principal Personnel Officer (PPO), the Principal Administrative Officer (PAO) and the appropriate Systems Controller (expert on procurement) are also members.

The Chiefs of Staff

The Chief of the Naval Staff (CNS), Chief of the General Staff (CGS) and Chief of the Air Staff (CAS) are the professional heads of the Navy, Army and Air Force. Each Chief of Staff is the senior adviser to the Chief of the Defence Staff (CDS), and through him to the Secretary of State(Sof S), on matters relating to the employment of his Service, and is responsible for its fighting effectiveness, morale and efficiency. All three are members, with VCDS, of the Chiefs of Staff Committee, chaired by CDS. Each Chief of Staff chairs his Service's Executive Committee. He is advised on single-Service matters by his own staff, headed by an Assistant Chief of Staff.

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Offensive Air Action. Carrying the fight to the enemy allows the attacker to seize the initiative, exploit to the full the capabilities of air power and concentrate strength against weakness. It reduces the number of offensive sorties that the enemy can mount and compels him to devote a proportion of his total air power assets to purely defensive duties. It can better exploit the three-dimensional space of the skies, the vagaries of light and weather and the masking effect of terrain, and it denies the enemy a sanctuary.

Defensive Air Action. Offensive air action may not always be possible, and some defensive counter-air action will invariably be necessary. A defensive battle allows the defender to draw upon his supporting infrastructure and bring a greater number and diversity of weapon systems into the battle. Defending aircrew who abandon their aircraft over friendly territory can frequently be fed back into the battle,, whereas aircrew who survive an abandonment over hostile territory are generally taken prisoner. Because the defender's air "fields are normally far closer to the battle area than those of the attacker, the defender is able to make more intensive use of the assets at his disposal.

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AEW/AWACS. AEW/AWACS is defined as air surveillance and control provided by airborne vehicles equipped with search and height-finding radar and communications equipment for controlling weapon systems. AEW can provide timely information about an enemy's air activity. In addition, it provides positive control, direction and integration of friendly offensive and defensive air operations. This capability may also be used to assist friendly air forces to penetrate enemy defences.

Search and Rescue Operations. Air search and rescue operations involve the use of aircraft (usually helicopters) to locate and rescue personnel in distress and, in particular, to recover aircrew who have abandoned their aircraft. Search and rescue operations contribute to the prosecution of the air campaigns by allowing aircrew who have survived abandonment to resume the fight, denying the enemy a potential source of intelligence and promoting high morale amongst aircrew.



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Air-to-Air Refuelling Operations. Air-to-air refuelling operations are those which involve the transfer of fuel from one aircraft to another in flight. They can contribute to combat-air and combat support air operations by extending the range, payload, time-on-task and flexibility of aircraft.

Close Air Support. Close air Support is defined as air action against hostile targets which are in close proximity to friendly forces and which require detailed integration of each air mission with the fire and movement of those forces. It can make an immediate and direct contribution to the land battle, especially against targets which are either inaccessible or invulnerable to available surface weapons. It is especially important as a means of offsetting shortages of surface firepower.



INSTRUCTORS GUIDE

SECURITY

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Security of Information - ACTI 112 (Extract)

Introduction

- 1. From the moment a cadet enrols in the Air Training Corps he has a responsibility to the country to guard, to the best of his ability, any classified information he may learn through his association with the Air Training Corps and the Royal Air Force.
- 2. It is the duty of all RAFVR(T) officers and instructional staff to bring this obligation to the notice of all cadets under their control.

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Visits to RAF Stations

- 3. Squadron commanders and detached flight commanders are to ensure that before any visit to a RAF station (eg under the affiliation scheme or to the annual camp), all cadets engaged on the visit are briefed on the security instructions in ACP 31 (Chapter 3 of Section 2 the Royal Air Force).
- 4. The briefing is also to include instruction that anything they may learn about Royal Air Force aircraft, aircraft movements or aircraft accidents is not to be published, printed or divulged in any form.

Security Instructions - Uniforms - ACTI 113 (Extract)

<u>Travel.</u> When travelling to and from official activities:

- a. **By public transport.** Cadets and adults should wear civilian clothes whenever practicable; otherwise, their uniform should be covered by a civilian outer garment and without head-dress.
- b. **By non-public transport.** Cadets and adults should travel in uniform covered by a civilian outer garment and without head-dress.
- c. Exceptions within the Squadron local area. At the discretion of the Squadron Commander, cadets and adults may travel in uniform openly with head-dress, or under a civilian outer garment without head-dress. However Commanders may direct that uniform is not worn on local journeys, if, in their opinion, known local circumstances warrant such action as a commonsense precaution.

Security - Wing and Squadron Headquarters - ACTI 115

- 1. There is a continuous threat of opportunist attack on unprotected transport and buildings which may be regarded by extremists as "soft" targets. Whereas there is no evidence of a direct threat against the Air Training Corps, Squadron and Wing HQs must be considered as being within this category.
- 2. The problem of ensuring maximum security in respect of a squadron HQ is fully recognised. The diversity of buildings, widely differing locations and ease of access make it difficult to lay down hard and fast rules or regulations governing acceptable standards of security. There are, however, many active commonsense measures which can be introduced to minimise the risk of injury to personnel or damage to buildings. These include:



Action Affecting Parade Nights

- a. Keys to buildings to be drawn by nominated adults only.
- b. Cadets to be forbidden to assemble within the immediate vicinity of squadron HQ until the arrival of a responsible adult.
- c. Action on arrival of responsible adult:
 - (1) Check approach roads, immediate area for parked cars.
 - (2) Check exterior for:
 - (a) Signs of entry (broken windows etc).
 - (b) Suspicious parcels or packages placed against or near buildings. UNDER NO CIRCUMSTANCES ARE SUCH OBJECTS TO BE DISTURBED OR HANDLED (SEE PARA 5).
 - (3) Look through all windows for signs of other than normal state of interior eg, doors open, furniture or fittings disturbed etc.
- d. Staff cars and civilian vehicles are to be parked away from the immediate area of buildings. They are always to be locked when left unattended.
- e. On cessation of parade:
 - (1) Before allowing cadets to leave buildings, a responsible adult is to carry out a check of the exterior for:
 - (a) Suspicious parcels or packages placed against or near buildings (see para 5).
 - (b) Strange cars parked in immediate area.
 - (2) Carry out physical check of buildings to ensure:
 - (a) Windows properly closed, shutters (if fitted) secured.
 - (b) Interior doors closed, and locked, where possible.
 - (c) Exterior doors properly locked.
 - (d) Alarm system (if installed) switched on.

Physical Security Duties - ACTI 114

- 1. These instructions apply only to cadet activities in Great Britain. Separate directions are issued by the GOC Northern Ireland for activities in the Province.
- 2. When sharing, accommodation or facilities with regular or reserve units, cadet forces will be incorporated into the overall security arrangements under the military units concerned and will be protected to the same degree as the personnel with whom they are sharing. Corps personnel are to obey all security measures imposed by the unit commander. At sites which are manned full-time by regular or reserve forces, Corps adults and cadets are not to be employed on formal security duties; however, on overnight stops, an adult supervisor is to be made responsible for the



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internal security of the cadet accommodation.

- 3. At military sites which are manned part-time by regular or reserve forces, those forces should normally be responsible for all physical security duties. Where this is not possible, uniformed Corps adults and cadets may assist by undertaking, limited security duties; however, this is not allowed for non-uniformed Corps adults. The following, instructions are to be observed in such circumstances:
 - a. Uniformed Corps adults may carry out security duties by day or night. Such duties include being a Security Duty Officer, sleeping in or near the Guardroom, and supervising control of entry to the site.
 - b. Cadets aged 16 or over may carry out the duties of Fire Picquet, in pairs, by day or night.
 - c. Cadet NCOs aged 18 or over may man gates or barriers for control of entry in daylight hours and also at night up to 2200 hrs, provided that the area is well lit, and that a uniformed Corps adult is on immediate call.
 - d. Corps adults and cadets are not to be posted specifically as guards for arms or ammunition stores; however, this does not preclude them from carrying out security duties elsewhere on the site.
 - e. Corps adults and cadets are not to be armed; this precludes the carrying of weapons of any kind, including pick-helves, truncheons, etc.
 - g. The senior Corps adult present is to brief cadets carefully on their duties and is to warn them to be on the lookout for anything suspicious, whether of people in the area of the camp, or of material left lying around; they are to report any suspicion to the Guardroom or to a Corps adult.
 - h. Before cadets or adults occupy accommodation sometimes used by regular or reserve units but not under their full-time control, the senior Corps adult present is to organise an extensive search of the building.
 - i. Where regular and reserve forces are present but in insufficient numbers to carry out security duties without the assistance of Corps adults and cadets, Corps personnel are to be employed separately and are not to form joint parties with those forces.
- 4. At non-military sites (which includes Sqn HQs not on or sharing with regular or TA units) security activities are normally to be confined to the use of common sense and vigilance by all Corps members, and to the physical checks by adults of vehicles, buildings and their surrounds before their use by cadets, as prescribed in ACP 20A, ACTI No 103.
- 5. Squadron Commanders are to promote security awareness in all cadets and adults, and instruct them on the need to report suspicious incidents swiftly up the chain of command.

GENERAL

- 1. Additional security measures which may be taken include:
 - a. Extra care to be taken with safeguarding of keys -exterior keys to be held by nominated adults only numbers to be restricted to absolute minimum.
 - b. Use of one entrance only to squadron HQ ideally this to be the door giving access on the more easily observed side of the building. Any other doors to be made fully secure from the