CHAPTER 9

JOINT FORCE EMPLOYMENT 3

Force Protection

It is easier and more effective to destroy the enemy’s aerial power by destroying his nests and eggs on the ground than to hunt his flying birds in the air.

General Giulio Douhet

Every airfield should be a stronghold of fighting air-groundmen, and not the abode of uniformed civilians in the prime of life protected by detachments of soldiers. It must be clearly understood by all ranks that they are expected to fight and die in the defence of their airfields.

Winston S Churchill

Introduction

Air power depends on the effectiveness of a number of component elements. These elements can include platforms, weapons, bases, logistics, command and control assets, people, sustainability, training and morale. Degradation of any of these elements may reduce the effective application of air power. Force protection means preventing an enemy from attacking successfully, or minimising the effects of a successful attack on vital air assets, to enable the continued and effective prosecution or resumption of air operations with the minimum of degradation or delay. Force protection elements include the protection of air assets whilst in the air. Ground force protection components are combat-related activities required to defend and protect forces from the threat posed by potential enemies. Although primarily focused upon airfields and air bases, similar considerations apply to air power operating from aircraft carriers or army aviation assets operating from deployed locations. This chapter examines the elements of force protection which underpin the doctrine of air power joint force employment.

Threat to Deployed Forces

The proliferation of actors across the spectrum of conflict covered in Chapter 1 has led to the likelihood of western forces being faced by asymmetric challenges. The fundamental requirement to protect deployed forces has, therefore, developed from the physical protection of aircraft and airfields in what was termed Combat Service Support, to encompass protection of people and information, widening the concept into the term Force Protection.
The passive threat could be covert observation and reporting. Active threats may employ stand-off techniques such as target designation, SAM attacks, missile attacks against soft and vulnerable targets and mortar or heavy calibre sniper attack. The offensive threat could be further complicated by the proliferation of ballistic and cruise missiles, and chemical or biological agents. There could also be a threat from indigenous or third party extremists, ranging from terrorist action (politically or criminally motivated) to civil disturbance.

The Components of Force Protection

The components of force protection can include elements of ground combat support, ground combat service support and damage control. They include survive-to-operate functions such as active ground defence, passive ground and air defence, recuperation and defence against a possible nuclear, chemical or biological threat. Support activities are designed to ensure that air assets can operate both efficiently and effectively despite the level of threat posed. A fundamental element of force protection is the defence of airfields. The defence requirements for aircraft carriers are contained in British Maritime Doctrine (BR1806) and Royal Navy Fighting Instructions. Defence of organic army aviation operating locations is outlined in Army Field Manuals.

Airfield Characteristics

The role of an airfield is to generate and recover air power missions. There are three major functions performed by airfields:

- **Operations Support.** Operations support includes ATC, air defence, ground defence and security, base or wing level command and control, intelligence exploitation facilities, fire-fighting and rescue services.

- **Logistics.** Logistics can include first and second line maintenance, flight-line and air movement facilities, fuel and storage facilities, motor transport, accommodation and catering facilities.

- **Administration.** Administration includes personnel, resource and financial management facilities, medical infrastructure and training facilities.

Damage or destruction of airbase facilities, which degrades the ability of a base to carry on with any of these functions, would affect the conduct of air operations. The key vulnerabilities are, therefore, as follows:
Operations Support - Air Traffic Control

- Aircrew.
- Aircraft.
- Main operating surfaces.
- Fuel installations.
- Munitions areas.
- Logistics areas.
- Command and control centres.
- Navigation, sensor and communications sites.
- Personnel accommodation.
The Threat to Airfields

Air and surface attacks on deployed forces could drastically reduce the effectiveness of air power operations by destroying high value assets or disrupting sortie generation. Equally, missile or terrorist attacks on mounting and deployment airfields could create strategic impact to weaken resolve. Threats to fixed installations arise from a number of sources as follows:

- **Hostile Surveillance and Reconnaissance.** Surveillance and reconnaissance could involve ground, air or space-based operations.

- **Air Attack.** Historically, air attack has proved to be the most devastating method of reducing the capability of airfields or aircraft carriers. However, improvements in point air defence systems and passive ground defences have made attacks against airfields and aircraft carriers a more daunting prospect. Airbase hardening and redundancy of operating areas mean that the likely targets for an opposing force may be unprotected aircraft and infrastructure facilities.

- **Ground Attack.** A ground attack strategy offers a potential opponent a number of advantages. In the Cold War era, most western nations operated the bulk of their air assets from well-protected and hardened airfields, equipped with a full suite of airfield survival measures. However, power projection relies on deployability to, possibly, bare or austere airfields lacking such familiar infrastructure. Moreover, as the spectrum of conflict has blurred, the protection measures, which were historically mobilised only for war, must now be maintained in peace and PSO. The ability of small, well trained and highly motivated groups to inflict serious damage on air power assets on the ground has also been enhanced by the post-Cold War availability of sophisticated weaponry at very low cost, such as automatic small arms weapons and shoulder launched SAMs.

**South Vietnam 1964**

On 1 November 1964 a Viet Cong attack against Bien Hoa Air Force Base demonstrated what low technology forces could achieve if they have good intelligence, mission planning and weapon skills. The attacking forces infiltrated during the night of 31 October to pre-established firing positions only 400 metres from the perimeter and prepared their six 81mm mortars for firing. Shortly after midnight, they fired 83 rounds into the airfield, with most rounds impacting among B 57 bombers parked wing tip to wing tip. Five B 57s were destroyed, eight received major damage and seven received light damage. An entire B 57 squadron was taken out of action by a small enemy unit in a 20 minute attack. The enemy slipped away without any losses.

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1 See Nalty, B C, (Ed), The Vietnam War, Smithmark, New York, 1996.
Information Attack. Airfields are highly dependent on information systems for the conduct of operations, force protection measures, communications with higher formations and for re-supply. The possible degradation of information and C2 systems is an essential consideration for the protection of airfields.

NBC attack. NBC weapons offers an aggressor who is prepared to flout international law, a cost-effective and obtainable system which can be used to surprise, dislocate and disrupt air power, perhaps for extended periods.

Planning Factors for Force Protection

The following factors should be taken into account when planning force protection:

- In deployed operations, the defence of airfields may require the allocation of joint resources.

- Force protection measures must be in place before the deployment of aircraft. This may require the use of organic air force ground combat units to secure an airbase if it is bare or austere.

- Mounting bases in the home country cannot be considered safe from attack. Enhanced perimeter and base security measures may need to be considered.

- Resources for force protection within an airbase may require a discrete command and control organization under a single commander with the delegated authority to determine priorities at every stage of air operations.

- Battle Damage Repair teams and equipment need to be able to respond to attack.

Survive-To-Operate

Survive-To-Operate (STO) measures are those core force protection activities required on the ground to maintain the integrity of the joint force air component when under threat, or in the face of offensive opponent action. STO comprises four elements - STO-related C3I, Active Defence, Passive Defence and Recuperation - all underpinned by appropriate individual and collective training. It may be extremely difficult to achieve an effective STO capability, especially in extreme climates. However, a demonstrable will and capability to STO is fundamental to operations in general and deterrence in particular. For example, the realisation by an aggressor that even limited use of NBC weapons would cause a cessation of our operations in order to recover or evacuate, may tip the balance in favour of their use.
Active Defence

Active defence comprises the measures necessary to prevent an enemy from successfully attacking a unit. The size of bases and the variety of threats which can be posed against them, can make airbase defence a costly, complex and difficult task. The key to defence against air attack, which requires both air and ground launched systems, is an efficient and effective command and control system.

Air Defence

At the operational level, overall direction and control of defences is exercised by the JTFC through the JFACC who may be nominated as the theatre air defence commander (ADC). The JFACC would normally control operations in an area of operation (AO) through a Combined Air Operations Centre (CAOC). A CAOC can process information collected from a variety of land-based, sea-based and air-based elements as described in Chapter 4. CAOC planners would aim to intercept air attacks on bases as soon as possible, but not least before the attacking air vehicles come in range to launch stand-off weapons. Any air vehicles which are not intercepted may become targets for ground-based air defence (GBAD) elements such as SAM and AAA. To be fully effective, GBAD should be integrated into the wider air defence organization with its multi-layered command, control and communications network. It is also essential that, if possible, they have the access to, or information from, the appropriate part of the recognized air picture (RAP).

Ground Defence

The first principle of airbase ground defence is that the ground defence commander, usually the base commander, should have the responsibility for the local tactical area of interest. Usually known as the ground defence area (GDA), it is the area from which the enemy could attack, threaten or influence air operations. Active ground defence must be all-encompassing, mutually supporting and structured in depth. It should adhere to the general principle of area defence, as airfields cannot be defended at the perimeter alone. Defending forces must be able to extend operations out to the extent of the GDA so that opposing forces would be forced to operate at ranges where their SAM, stand-off weapons, reconnaissance or laser target marking (LTM) systems are ineffective. To defend these large areas successfully, defending forces require information exploitation, rapid mobility, and the ability to locate, engage and destroy targets.
Passive Defence
Passive defence comprises the measures necessary to minimise the effects of enemy attack. These measures include:

- **Redundancy.** The ability to change to a secondary operating system when the primary system is inoperable.

- **Physical Protection.** Although the deployments in future crisis management operations may preclude the construction of concrete fortification and shelters, improvised measures such as reinforcement of vital buildings and construction of revetments could reduce the risk to air assets on the ground.

- **Dispersal of Assets.** Dispersing assets away from the main base areas has proven to be effective in the past. It is less costly than hardening measures.
Nuclear, Biological and Chemical Defence. The existence of nuclear weapons and the potential proliferation of chemical and biological weapons demands that deployed forces may need to be capable of conducting air operations from an NBC posture for an extended period. The protection measures which accompany such a posture may severely degrade the tempo of operations and can have serious implications for response times and the flexible use of air vehicles. Further information on NBC defence is contained in Joint Warfare Publication 3-61. Air operations can be conducted in a wide range of NBC environments provided an effective NBC defence strategy is instigated before a threat materialises. The essential features of such a strategy are:

- Detection, Identification and Monitoring. The NBC hazard can be defined by effective detection and recording, and the time spent in individual or collective protection minimized, thus reducing the effect on operations.

- Warning and Reporting. An effective warning and reporting system reduces the likelihood of casualties by giving time to take protective measures.

- Individual and Collective Protection Equipment. The correct and timely use of individual and collective protection equipment is necessary to reduce the risk to individuals and the impact on performance. Collective protection is necessary to give personnel additional protection over an extended period.

- NBC Hazard Management. Implementing measures to avoid contaminated areas, limiting the spread of agents and conducting prompt decontamination procedures can reduce casualties, with the attendant reduction in demand on medical support facilities.

- Medical Countermeasures. These are required to mitigate the effects of NBC weapons.

- Camouflage, Concealment and Deception (CCD). CCD measures offer some of the most cost-effective forms of passive defence as follows:
  - Camouflage uses materials and techniques such as netting, etching, colouring, contrasting and toning to conceal facilities, operations and personnel.
Concealment uses methods such as burying or disguising structures using natural vegetation for masking or using structural shapes, materials or procedures to reduce sensor signatures.

Deception aims to divert attention from high value targets by using decoys, or by disguising the function of buildings and deceiving sensors by changing the signature emitted by the target.

Recuperation
Recuperation comprises the measures necessary for the recovery of a unit from the effects of enemy attack. The elements which are necessary to allow recuperation include:

- **Post Attack Reconnaissance.** This comprises NBC, explosive ordnance and airfield damage repair reconnaissance.

- **Explosive Ordnance Disposal.** The detection, identification, evaluation, rendering safe, recovery and final disposal of unexploded ordnance.

- **Airfield Damage Repair.** The measures necessary to restore air operations, including repair of aircraft operating surfaces and restoration of essential services.

- **Fire-fighting.** Specialist and non-specialist control of fires.

- **Medical Care.** Expeditious treatment and processing of casualties.