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Revision Notes and Questions
HOW TO USE THIS BOOK

Only essential knowledge and key revision points have been included in this manual. You must have a thorough knowledge of its contents before the examination.

Read each page, then read the questions and underline or highlight the correct answer. Revise the questions and answers as they will constitute a high proportion of the actual examination questions (typically 23 out of the 25 questions!). It will help if you refer to the Air Strategy chart on the centre pages whilst reading chapters 3, 4 and 5.

Ensure your answers are correct before using them in your final revision.

Operations to discover an enemy's position and strength to help plan strategy are called:

a) Strengthening.  
b) Strategy.  
c) Reconnaissance.  
d) Espionage.

'Reconnaissance' involves operations designed to:

a) Photograph all enemy territory.  
b) Confuse the enemy's intelligence system.  
c) Discover an enemy's position and strength to help plan strategy.  
d) Photograph all enemy equipment and personnel.

An operational flight by one aircraft is:

a) A raid.  
b) A sortie.  
c) A sortie.  
d) A sporty.

A sortie is:

a) A method of sorting equipment.  
b) An operational flight by one aircraft.  
c) An exit point.  
d) A day's flying by one aircraft.

Strategic actions are those designed to:

a) Destroy the enemy's nuclear capability.  
b) Disorganise the enemy's economy and war-making potential.  
c) Disorganise the enemy's theatre of operations.  
d) Destroy the enemy's transport system.

Actions designed to disorganise the enemy's internal economy and war-making potential are described as:

a) Global.  
b) National.  
c) Strategic.  
d) Tactical.

Actions in support of military or naval operations in a limited theatre of operations are described as:

a) Limited.  
b) Global.  
c) Tactical.  
d) Strategic.

Tactical actions are those in support of military or naval operations in:

a) A strategic theatre of operations.  
b) A global theatre of operations.  
c) A limited theatre of operations.  
d) A world-wide theatre of operations.
GLOSSARY

AAR - Air-to-Air Refuelling

AEW - Airborne Early Warning

ALARM - Air Launched Anti-Radar Missile

ASRAAM - Advanced Short-Range Air-to-Air Missile

AWACS - Airborne Warning and Control Systems

(A) Co-ordination. (b) Intelligence.

The science of moving and maintaining all aspects of a fighting force is known as:
(a) Aerobics. (b) Statistics. (c) Logistics. (d) Air mobility.

If men and equipment are not in the right place at the right time any military operation will fail. That timely positioning is called:
(a) Tactics. (b) Training. (c) Co-ordination. (d) Intelligence.

The definition of air power recognised by the RAF is: “the ability to use platforms operating in, or passing through the air for military purposes”.

Strengths of Air Power

1. Height - Aircraft are able to observe and control activities on the ground.
2. Speed - Aircraft spend less time over their target thus reducing their exposure to hostile fire.
3. Reach - 70% of the earth is covered by water, 30% by land, but 100% is covered by air. Unlike Navy ships or Army vehicles, aircraft can fly to any part of the world.
4. Flexibility - Modern aircraft can perform a wide variety of tasks.

A measure of an aircraft's response is:
(a) Speed. (b) Stealth. (c) Flexibility. (d) Weight.

The facility to store aircraft (HAS), which is built to withstand bomb-blast is called a:
(a) Hardened Aircraft Shelter. (b) Hardened Attack Shelter. (c) Hardened Airport Shelter. (d) Hardened Aircraft Shelter.

CHAPTER 1

AIR POWER

Definition

The definition of air power recognised by the RAF is: “the ability to use platforms operating in, or passing through the air for military purposes”. In this context the word ‘platform’ means manned or unmanned aircraft (fixed and rotary wing), guided missiles and space vehicles.

Strengths of Air Power

Air power has a number of advantages over naval ships or land vehicles:
1. Height - Aircraft are able to observe and control activities on the ground.
2. Speed - Aircraft spend less time over their target thus reducing their exposure to hostile fire.
3. Reach - 70% of the earth is covered by water, 30% by land, but 100% is covered by air. Unlike Navy ships or Army vehicles, aircraft can fly to any part of the world.
4. Flexibility - Modern aircraft can perform a wide variety of tasks.

Aircraft have the ability to observe and control activities on the ground by virtue of their:
(a) Height. (b) Stealth. (c) Cost. (d) Response times.

The ability of an aircraft to perform a wide variety of tasks is known as:
(a) Response. (b) Feasibility. (c) Flexibility.

The ability of an aircraft to perform a wide variety of tasks is known as:
(a) Response. (b) Feasibility. (c) Flexibility.
(d) Fragility.

Aircraft spend less time over their target and therefore reduce their exposure to hostile fire by virtue of their:
(a) Speed. (b) Stealth. (c) Flexibility.
(d) Weight.

Aircraft have the ability to observe and control activities on the ground by virtue of their:
(a) Height. (b) Stealth. (c) Cost. (d) Response times.

Which of the following lists four strengths of Air Power?
(a) Speed, Response, Flexibility, Reach.
(b) Speed, Response, Flexibility, Cost.
(c) Response, Height, Cost, Speed.
(d) Fragility, Reach, Flexibility, Response.

Limitations of Air Power

There are a number of limitations to air power:

1. Airborne Time - Even with air to air refuelling, aircraft have limited airborne time.
2. Limited Payloads - The payloads that can be carried by aircraft are much smaller than those carried by ships or land vehicles.
3. Fragility - Aircraft are built to be light, so have little armour protection.

Which of the following lists three limitations of Air Power?
(a) Height, Speed, Cost.
(b) Sensitivity to technology. Dependency on bases, Flexibility.
(c) Fragility, Limited payloads, Airborne time.
(d) Cost, Flexibility, Fragility.
Aircraft operate with limited payloads which are much smaller than those carried by ships or land vehicles. For air power this is considered to be:

- A limitation.
- Demoralising.
- A secondary strength.
- An inconvenience.

Sensitivity to technology means that:

- Bad weather can make it difficult to take-off and land.
- Small advances in technology can have a large impact on the offensive operations of aircraft.
- Ideally, aircraft should carry a technician.
- Aircrew resist advances in technology.

CHAPTER 2
APPLICATIONS of AIR POWER

The rapid development of air power has meant that the number of tasks that can now be performed has increased significantly. Those who make decisions regarding security and defence now have a much wider range of options.

Preserving Peace
Air power can be used to help preserve and strengthen international security.

1. Promoting International Relations - rapid response after disasters can deliver much-needed relief.
2. Providing Reassurance - surveillance and reconnaissance can avert a possible threat to peace.

Managing International Crisis
Air power can also play a major part in managing a crisis situation.

1. Warning - Air power can be used to give prior warning of an intended act of aggression, e.g. AWACS.
2. Signalling - Air power can be used to signal your intentions e.g. by intensifying training missions.
3. Supporting Friends - Long range physical support to friends and allies.
4. International Rescue - The ability to mount rescue operations in times of crisis.
5. Inject Stability - Placing land forces into threatened regions.
6. Deterrence - Deploying air power into areas of high tension.

Air Power can be used to preserve peace. Two examples of this are:

- Providing reassurance, Punishment.
- Control by force, Promoting equipment sales.
- Promoting international relations, Providing reassurance.
- Promoting international relations, Control by force.

Which of the following best describes a peacetime application of Air Power?

a) Surveillance.
b) Deterrence.
c) Demoralisation.
d) Providing reassurance.

Which two from the eight lists below can describe the use of Air Power in managing an international crisis?

a) Punishment, Warning, International rescue, Demoralisation.
b) Warning, Destruction, Deterrence, Demoralisation.
c) Punishment, Deterrence, Warning, International rescue.
d) Warning, Punishment, Destruction, Deterrence.
e) Demoralisation, Denial, Control by Force, Warning.
f) Denial, Control by Force, Warning, Destruction.
g) International Rescue, Warning, Punishment, Signalling Intentions.
h) Destruction, Denial, Demoralisation, Control by Force.

The use of Air Power to signal your intentions and perform international rescues are examples of:

a) International demoralisation.
b) Declaring your intentions in war.
c) Managing international crisis.
d) International search and rescue.

Passive Defence
Passive defence measures are taken to reduce the effectiveness of hostile air attack and include:

1. Dispersal - increasing the number of locations an attacker must target.
2. Deception - concealment, camouflage, tone-down techniques decoys and varying unit procedures.
3. Physical Protection - hardened aircraft shelters and bunkers.
4. Resilience - the capability to restore essential services as rapidly as possible.

Training
Whilst technology is an important factor in the effectiveness of air power, it is of little use unless the aircrew have the necessary skills to be able to use the equipment properly.

Ground branches involve highly demanding skills that can be critically important to air operations.

These skills are gained through rigorous and realistic training.

Logistics
Logistics is the science of planning and carrying out the movement and maintenance of all aspects of a fighting force. Lack of logistical capabilities may ultimately lead to defeat.

Active Air Defence is part of Ground Combat-Support and involves:

a) The protection of air bases from ground forces.
b) The protection of air defence fighters from ASRAAM.
c) The protection of air defence fighters from AAA.
d) The protection of air bases from air attack.

The creation of a ground defence area that can be patrolled, cleared of obstacles, protected and guarded is known as:

a) Passive Ground Defence.
b) Passive Air Defence.
c) Active Air Defence.
d) Active Ground Defence.

Ground Dispersal, Deception, Physical Protection and Resilience are all part of:

a) Passive Air Defence.
b) Passive Defence.
c) Active Defence.
d) Active Ground Defence.

The deployment of decoys, varying unit procedures and applying tone-down techniques are all known as:

a) Deception.
b) Resilience.
c) Camouflage.
d) Dispersal.

The ability of a base to continue operating in wartime despite disruption to essential services is called:

- Physical protection.
- Resilience.
- Persistence.
- Recovery.

When talking about passive defence, the best definition of resilience would be:

- Being able to protect personnel in hardened shelters.
- Being able to operate effectively without essential services.
- Being able to restore essential services quickly after an attack.
- Being able to withstand enemy attacks without suffering damage.

Technology is an important factor in the effectiveness of air power, but it is of little use unless the aircrew have the necessary skills to apply that technology. These skills are gained by:

- Training.
- Co-ordination.
- Intelligence.
- Tactics.
CHAPTER 5
GROUND COMBAT-SUPPORT OPERATIONS

Ground combat-support operations are non-flying operations required to provide direct support for air operations. Personnel must be trained and equipment repaired and maintained.

Active Defence

Active air defence involves the protection of air bases from attack.

Active ground defence includes creating a ground defence area that can be patrolled, cleared of obstacles and cover, protected with remote detection systems and guarded by military forces from the protection of bunkers.

When interpreting reconnaissance information, its usefulness will depend on:

a) Daylight and focus.
b) Height and speed.
c) Speed and skill of operators.
d) Weather and visibility.

Operations to locate and recover personnel in distress and crashed aircrew are known as:

a) Search and Recover.
b) Save and Rescue.
c) Search and Rescue.
d) Seek and Recover.

SAR helicopters are vulnerable to attack in wartime because:

a) They fly very low.
b) They are slow and unarmed.
c) They are very noisy.
d) They are painted yellow.

Radar reflecting strips designed to confuse an enemy radar and hide the real target are called:

a) CHAFF
b) CHAFE
c) CHUFF
d) CHIVE

Re-transmitting received radar signals to confuse enemy radar operators is part of:

a) Psychological warfare.
b) Aerospace reconnaissance operations.
c) Electronic warfare operations.
d) Chaff measures.

Which two of the following best describe a wartime application of Air Power?

a) Providing reassurance.
b) Promoting international relations.
c) Supporting friends.
d) Destruction of enemy equipment.
e) Increasing training levels.
f) Control by force.

Air Power can be used to deny an enemy the ability to use its own air, land and sea power effectively. This is an example of the use of Air Power:

a) In wartime.
b) During periods of intense training.
c) In peacetime.
d) At night.

How many basic categories of Air Operations does the RAF recognise?

a) 2  
b) 3  
c) 4  
d) 6  

Which of the following are categories of Air Operations?

a) Strike Operations.
b) Transport Operations.
c) Combat Air Operations.
d) Air Defence Operations.
e) Combat-Support Air Operations.

AIR STRATEGY

The Royal Air Force recognises three basic categories of air operations. These will be examined in more detail in each of the following three chapters.

Combat Air Operations (Chapter 3)

Operations that use air power in combat situations to achieve specific objectives.

Combat-Support Air Operations (Chapter 4)

Non-combat flying operations which support the effective fighting capability of air, land and sea forces.

Ground Combat-Support Operations (Chapter 5)

Non-flying operations needed to support air operations.

Which two of the following best describe a wartime application of Air Power?

a) Strike Operations.
b) Transport Operations.
c) Combat Air Operations.
d) Air Defence Operations.
e) Combat-Support Air Operations.

The repair and maintenance of equipment during hostilities is part of:

a) Combat Repair Operations.
b) Supply and Maintenance Operations.
c) Ground Combat Support.
d) Ground Equipment Maintenance.

Wartime Applications

If, despite crisis management measures, the situation deteriorates into conflict, then air power can make a significant contribution.

1. Surveillance - air reconnaissance.
2. Destruction - of enemy equipment.
3. Control by Force
4. Denial - prevent the enemy from using their own forces effectively.
5. Diversion and Delay
6. Demoralisation

How many basic categories of Air Operations does the RAF recognise?

a) 2  
b) 3  
c) 4  
d) 6  

Which of the following are categories of Air Operations?

a) Strike Operations.
b) Transport Operations.
c) Combat Air Operations.
d) Air Defence Operations.
e) Combat-Support Air Operations.

Combat Air Operations can be described as:

a) Using Air Power in combat situations.
b) Using long-range air-to-air missiles.
c) Using short-range air-to-air missiles.
d) Using Air Power in non-combat situations.

g) Air Transport Operations.

Combat Air Operations can be described as:

a) Using Air Power in combat situations.
b) Using long-range air-to-air missiles.
c) Using short-range air-to-air missiles.
d) Using Air Power in non-combat situations.

g) Air Transport Operations.

Ground Combat-Support Operations can be described as:

a) Air defence operations.
b) Non-flying operations which support air operations.
c) Ground attack operations.
d) Ground defence operations.
CHAPTER 3

COMBAT AIR OPERATIONS

There are three types of combat air operations, counter-air operations, anti-surface operations and strategic air offensive operations.

Counter-Air Operations

Combat operations against the enemy’s ability to wage war in the air. It is a priority to gain a degree of control of the air. Three basic levels are recognised:

1. Favourable Air Situation - the enemy’s air forces are unlikely to prevent the successful completion of your land, sea and air operations.
2. Air Superiority - your air forces are notably more dominant than those of your enemy. Your operations will not be stopped by enemy air power.
3. Air Supremacy - opposing air forces are incapable of offering effective interference.

There are two distinct aspects to counter-air operations, offensive and defensive.

Offensive Counter-Air

1. Suppression of Enemy Air Defences - physical or electronic warfare attacks on radar installations, surface-to-air missiles and anti-aircraft artillery using weapons such as ALARM (Air-Launched Anti-Radar Missile).
2. Fighter Sweep - sweeps by fighter aircraft to seek out and destroy enemy air craft.
3. Escort - fighter protection of other aircraft during a mission.
4. Airfield Attack - attacks on airfields and their high-value targets.

Defensive Counter-Air

Commonly called ‘Air Defence Operations’, includes all measures to reduce the effectiveness of hostile air action.

CHAPTER 4

COMBAT-SUPPORT AIR OPERATIONS

Combat-support air operations are non-combat flying operations designed to improve or support the effectiveness of air, surface and sub-surface forces. They fall into five main categories:

Air Transport

Scheduled services, airborne operations, special air operations, air logistic support operations and aeromedical evacuation.

Air-to-Air Refuelling (AAR)

Towline - tanker aircraft fly a set pattern in a pre-arranged position. Trail - tankers escort the receiver aircraft to their destination.

Reconnaissance Operations

The collection of information from airborne, ground and space-based sensors on the activities, forces and resources of a potential enemy. This information is vital for the planning of military operations. The usefulness of the picture built up by air reconnaissance will depend upon the speed and skill of the interpreter.

Airborne Early Warning

Airborne Early Warning (AEW) and Airborne Warning And Control (AWACS) provide information about an enemy’s potential to attack. AWACS can provide positive control and direction of offensive and defensive air operations.

Search and Rescue (SAR)

Location and rescue of personnel in distress, particularly aircrew. SAR helicopters tend to be unarmored and therefore vulnerable to attack.

Electronic Warfare (EW)

The military use of electronics to affect radio, radar and infra-red devices. Chaff consists of thousands of radar reflective strips which give strong radar reflections to confuse a missile’s radar and hide the real target. Other techniques involve re-transmitting received radar signals to confuse enemy radar operators.

Non-combat flying operations designed to improve or support the effectiveness of air, surface and sub-surface forces are called:

a) Combat-support air operations.
b) Air combat supply operations.
c) Air supply sorties.
d) Air support operations.

Which of the following is a Combat-Support Air Operation?

1. Favourable Air Situation
2. Air Superiority
3. Air Supremacy
4. A favourable Air Situation

When your air forces are notably more dominant than those of your enemy you are said to have:

a) Air Superiority.
b) Air Supremacy.
c) A favourable Air Situation.
d) Air advantage.

When air forces opposing you are incapable of offering effective interference to your operations you are said to have:

a) Air Superiority.
b) Air Supremacy.
c) A favourable Air Situation.
d) Air advantage.

Which of the following describe Offensive Counter-Air Operations?

1. Escort Missions, Fighter Sweeps, Airfield Attack.
2. Escort Missions, Fighter Sweeps, Electronic Warfare.
3. Escort Missions, Airfield Attack, AEW.
4. Escort Missions, Airfield Attack, AAR.

To suppress an enemy’s air defences a specialist weapon such as ALARM may be used. ALARM stands for:

a) Air-Land Anti-Radar Missile.
b) Air-Launched Anti-Radar Missile.
c) Airborne Land All Reaching Missile.
d) Airborne Lightweight Active Radar Missile.

Defensive Counter-Air Operations are more commonly known as:

a) Air Defence Operations.
b) Self Defence Operations.
c) Ground Attack Missions.
d) Home Defence Activities.

c) Escort Missions, Fighter Sweeps, Electronic Warfare.
d) Escort Missions, Airfield Attack, AEW.
d) Escort Missions, Airfield Attack, AAR.

d) AAR.

When a tanker aircraft flies a set pattern in a pre-arranged position it is called a:

a) Trail and tanker.
b) Bowline and trail.
c) Towline and bowline.
d) Towline and trail.

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Strategic Air Offensive

Strategic air offensive action is aimed at undermining the enemy’s ability and will to continue fighting by attacking industrial, political and economic targets rather than direct action against their military forces.

These operations can be divided into two basic types:

Nuclear Operations
All nuclear weapons must be considered as strategic. NATO considers nuclear weapons as last resort weapons.

Conventional Operations
All non-nuclear actions taken against an enemy.

Strategic Air Offensive

Action aimed at undermining the enemy's ability and will to continue fighting by attacking industrial, political and economic targets is called:

a) Tactical Air Offensive.
b) Strategic Air Offensive.
c) Strategic Air defensive.
d) Operations by offensive aircraft.

In the Gulf War F-117A aircraft flew hundreds of sorties against command and control centres, nuclear research and production centres and chemical and biological factories. These sorties were:

a) Passive.
b) Offensive.
c) Strategic.
d) Tactical.

Strategic Air Offensive Operations can be divided into two basic types:

a) Nuclear, Stealth.
b) Offensive, Defensive.
c) Nuclear, Conventional.
d) Active, Passive.

Anti-Surface Operations

Anti-surface operations involve the use of air power to deter, contain or defeat the enemy's land and sea forces. They include the following activities:

1. **Air Interdiction** - operations aimed at destroying an enemy’s fighting capability before it can be used against you.
2. **Battlefield Air Interdiction** - delaying and destroying enemy forces in the battle area before they have a chance to attack friendly forces.
3. **Close Air Support** - destroying enemy forces that are very close to friendly forces.
4. **Maritime Air Operations** - co-operation with naval forces to detect and attack surface and sub-surface targets (with missiles such as the Sea Eagle anti-ship weapon).

An air defence system must consist of the following elements:

a) Rockets, Missiles, Guns.
d) Aircraft, Bombs, Rockets.

Visual sightings, infra-red or acoustic monitoring, line-of-sight radars and space-based systems can all form part of:

a) A Recognition System.
b) A Weapon System.
c) A Detection System.
d) A Command, Control and Information System.

In an air defence system, one of the elements vitally links the other two. That element is:

a) The reporting system.
b) The command, control and information system.
c) The detection system.
d) The reaction system.

The use of air power to deter, contain or defeat the enemy's land and sea forces is called:

a) Air defence operations.
b) Anti-surface operations.
c) Counter ground attack.
d) Active air defence.

Operations to delay or destroy enemy forces in the battle area before they have a chance to attack friendly forces are called:

a) Battlefield Air Interdiction.
b) Battlefield Delaying Technique.
c) Delaying Actions.
d) Battlefield Air Deployments.

Close air support is similar to (the answer to the last question) but it is aimed at destroying enemy forces that are:

a) Very close to their own bases.
b) Very close to one another.
c) Advancing at high speed from their bases.
d) Very close to friendly forces.

Maritime air operations work in close co-operation with naval forces to:

a) Protect the Royal Navy.
b) Detect and attack surface and sub-surface targets.
c) Drop mines around the coast of the U.K.
d) Detect and attack opposing maritime aircraft.

The Sea Eagle missile is used by Tornado aircraft in which role?

a) Anti-ship.
b) Anti-radar.
c) Anti-air.
AIR STRATEGY

Air Operations
3 Categories

Combat Air Operations
(Chapter 3)

Counter-Air Operations

Offensive Counter-Air

Suppression of Air Defences
Fighter Sweep
Escort
Airfield Attack

Defensive Counter-Air

3 levels of control of the air:
Favourable Air Situation
Air Superiority
Air Supremacy

Anti-Surface Operations

Air Interdiction
Battlefield Air Interdiction
Close Air Support
Maritime Air Ops

Strategic Offensive

Nuclear
Conventional

Combat-Support Air Operations
(Chapter 4)

Combat-Support Air Operations

Air Transport
AAR
Reconnaissance
AEW
SAR
EW

Active Air Defence
Active Ground Defence

Active Defence

Ground Combat-Support
(Chapter 5)

Passive Defence

Dispersal
Deception
Physical Protection
Resilience

Ground Combat-Support

(Chapter 5)