



CLASSIFICATION TRAINING
SENIOR AND MASTER AIR CADET

AIR

POWER

CADET NOTEBOOK

NAME

SQUADRON

 **ROYAL AIR CADETS**
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Version: 2

AIR

POWER

CADET NOTEBOOK

This notebook has been designed to support cadets who want to complete the **Air Power** classification subject at **Senior** or **Master Air Cadet**.

This notebook has been written by Flt Lt Felica Doubell who is the RAFAC's Training Development Officer and was designed and edited by Flt Lt Tom Grocott who is the RAFAC's e-Learning Developer.

Thanks to all the staff and cadets who have tested this notebook before release and provided feedback.

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Version 1.0

INTRODUCTION

This notebook is for cadets who are studying **Air Power** at Senior or Master Air Cadet. It has been designed for those who are studying this topic without an instructor, but can also be used in conjunction with instructor led training sessions.

The notebook is divided into three sections, each covering one of the course's learning objectives:

- **SECTION 1** Covers Learning Objective 1: *Know applications of Air Power.*
- **SECTION 2** covers Learning Objective 2: *Know the fundamental concepts of Air Power.*
- **SECTION 3** covers Learning Objective 3: *Know how Air Power can be employed across services.*

There are two types of activities in this notebook. The dark blue **Essential Knowledge** sections help to provide you with the information you need to complete your assessment. The bright blue **Develop Understanding** sections are optional but can help you increase your interest and understanding of the topic. In some instances you will encounter activities that contain both **Essential Knowledge** and **Develop Understanding** tasks. Any optional

Develop Understanding tasks are highlighted in bright blue.

If you are completing this notebook independently then use the e-learning package provided on Ultilearn to help you fill it in. You can also use the **Air Power Subject Guide** and the internet for further information if you need it. When you have finished this notebook your instructor may wish to see it before they register you for the **Air Power** exam.

Running out of space? If you are completing this notebook electronically then most boxes will become bigger, allowing you to enter more text. If you are completing a printed version then staple additional pieces of paper to the notebook as required. Make sure you label the task you are attempting clearly on your extra notes.

If you need support answering any of the questions in this booklet then speak to other cadets completing this training first. They may be able to help. If not then your squadron staff/instructor cadets will usually be able to provide the assistance you need.



LEARNING CHECKLIST

When you have completed a section, tick it off here.

Completed every KNOW activity? Send this booklet to your instructor who will register you for the **Air Power** exam.

SECTION 1 Know applications of air power		Task(s)	✓
KNOW	P1 List Air Power principles, strengths and limitations.	1-4	
KNOW	P2 Describe the main applications of Air Power.	5-9	
KNOW	P3 Describe factors to be that need to be considered in the application of Air Power.	10	
DEVELOP	Evaluate how the four fundamental principles of air power support military operations.	11	
DEVELOP	Describe the historical development of modern warfare.	12-13	
DEVELOP	Compare advantages and disadvantages of air power applications.	12-13	

SECTION 2 Know the fundamental roles of Air Power		Task(s)	✓
KNOW	P4 Identify the four types of fundamental Air Power principles.	14	
DEVELOP	Identify the current RAF aircraft fleet.	15-19	
KNOW	P5 Identify the 3 degrees of control of the air.	20-21	
KNOW	P6 Describe the 6 divisions of Air Mobility.	22-23	
KNOW	P7 List the roles of Intelligence, Surveillance and Reconnaissance (ISR) in Air Power.	24-27	
KNOW	P8 Identify the four categories of Air Attack.	28-30	
DEVELOP	Explain how the four fundamental principles of air power support military operations.	31	
DEVELOP	Evaluate importance the four fundamental principles of air power in military strategy.	32	

SECTION 3 Know how Air Power can be employed across services		Task(s)	✓
KNOW	P9 Describe employment of air power through joint action.	33-34	
KNOW	P10 Describe how air power integrates with other types of military operations.	35	
DEVELOP	Explain the importance integrating air command and control.	36	
DEVELOP	Evaluate the effectiveness of joint operations in various military narratives.	37	

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SECTION 1

KNOW APPLICATIONS
OF AIR POWER



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ESSENTIAL KNOWLEDGE **P1** List the Principles, strengths and limitations of Air Power.

TASK 1 WHAT IS AIR POWER?

Complete the table below with the correct definition for each of the words.

Air Power	
Air Capability	
State Actors	
Non-State Actors	
Course of Events	

TASK 2 ENABLING AIR POWER

Fill in the first column with the four factors that enable Air Power. Write one or two sentences describing each of these factors in the second column. Use the optional third column to write about real world examples where this factor has been demonstrated within the RAF or wider armed forces.

Factor	Description	Example

TASK 3 ADVANTAGES OF AIR POWER

Fill in the first column with the five advantages of Air Power. Write one or two sentences describing each advantage in the second column. Use the optional third column to write about real world examples where a advantage has been demonstrated within the RAF or wider armed forces.

Advantage	Description	Example

TASK 4 LIMITATIONS OF AIR POWER

Fill in the first column with the three limitations of Air Power. Write one or two sentences describing each limitation in the second column. Use the optional third column to write about things that can be done to reduce the impact of these limitations.

Limitation	Description	How to Reduce the Impact

ESSENTIAL KNOWLEDGE

P2 Describe the main applications of Air Power.

TASK 5 AIR POWER AND NATIONAL SECURITY

Complete the sentences about the role of Air Power in national security.

The two roles of air power as a military instrument is to...

In response to national security objectives, air power offers the UK Government...

How do the Royal Navy and Army contribute to Air Power?

TASK 6 NATIONAL SECURITY STRATEGY

As part of the National Security Strategy, there are three objectives to enable the provision of a 'secure and prosperous United Kingdom with global reach and influence'. Fill in the first column of the table with the three headings for these objectives and the second column with a short description of each objective.

Objective	Description

How did Operation Odyssey Dawn maintain the security of the United Kingdom?

TASK 7 TYPES OF CONFLICT

Fill in the first column with a type of conflict. Write one or two sentences describing each conflict in the second column. Use the optional third column to write about real world examples of a conflict the RAF has been involved with.

Conflict	Description	Example

TASK 8 LEVELS OF WARFARE

Throughout conflicts, there are various levels of warfare depending on decision making that is required, the size of the theatre and numbers of actors in the theatre.

Fill in the table below to describe the three levels of warfare:

Strategic Level	
Operational Level	
Tactical Level	

TASK 9 TYPES OF OPERATIONS

Match the type of operation to its definition with a number. The first one has been completed as an example.

Type of Operation		Definition	
1	Post Conflict and Peace Building		Prevents the fighting following a conflict from resuming. Does not address the root cause of the problem or seek to create change.
2	Peace Keeping		Ensuring peaceful situation is maintained by use of a military force to compel the peace during a conflict, without consent from the participants in the conflict.
3	Peace Enforcement		Usually a short-term material and logistical aid to people who are in need. Usually in the case of natural disaster or man-made disaster.
4	Preventative Diplomacy		Where foreign policy objectives are used to establish peace as defence resources and capabilities are employed.
5	Conflict Prevention and Defence Diplomacy	1	Reduces the risk of lapsing into conflict by strengthening and lays the foundations for sustainable peace development.
6	Peace Support Operations		Specific assets of an opponent are destroyed in order to inhibit behaviour, prevent a threat or achieve an advantage.
7	Humanitarian Operations		Where military personnel and equipment is deployed into an area with permission to facilitate the support of a situation.
8	Deterrence		A tactical approach where a specific operation of the opponent is disrupted, causing a delay or prevention of planned operations.
9	Deployment with consent		Where disputes are prevented to stop the potential escalation to conflict or reduce the spread of a conflict already occurring.
10	Coercion		A threat provided to prevent an attack from an adversary. A common example is the threat of nuclear power.
11	Destruction		Where the behaviour of an opponent can be changed by use of a threat.
12	Denial		The support to a certain state to maintain peace. Usually through support in public order, policing, mentoring security forces and infrastructure reconstruction.
13	Disruption		A defensive strategical approach to make it difficult for an opponent to achieve an objective by use of military intelligence techniques.

ESSENTIAL KNOWLEDGE

P3 Describe factors to be that need to be considered in the application of Air Power.

TASK 10 PROJECTING AIR POWER

Complete the table below with the correct definition for each of the words.

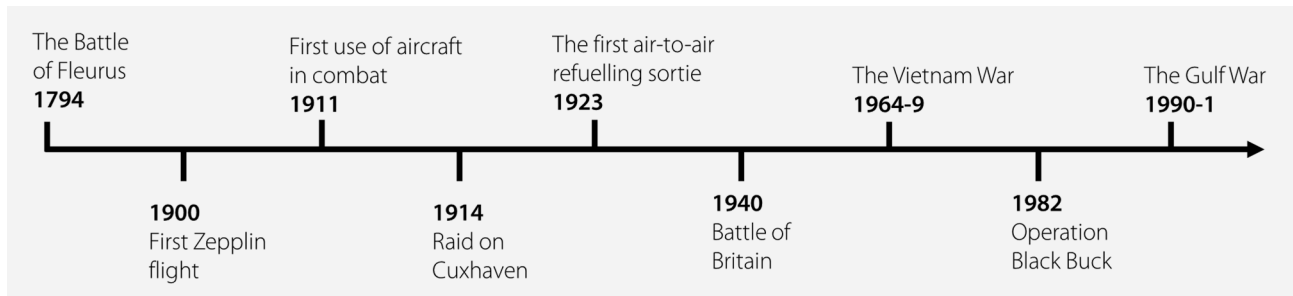
Tasking	
Coalition Capability	
Aircraft Carriers	
Airfields	
Flexibility and Versatility	
Penetration	
Perspective	

DEVELOP UNDERSTANDING Describe the historical development of modern warfare.

TASK 11 AIR POWER THROUGH HISTORY

Choose three of the dates from the timeline below and research the events that took place.

- Identify examples of the strength and/or limitations of the typical Air Power in use at the time.
- Describe how important this event was in the history of Air Power.



Event	Description and analysis of importance

DEVELOP UNDERSTANDING Compare advantages and disadvantages of air power applications.

TASK 12 AIR POWER SCENARIO 1

Take a look at the following scenario and explore the possible advantages and disadvantages of using Air Power in this way.

“An aircraft carrier holding F-35's is used to provide a staging base for a bombing campaign against a far away belligerent.”

Advantages

Disadvantages

TASK 13 AIR POWER SCENARIO 2

Take a look at the following scenario and explore the possible advantages and disadvantages of using Air Power in this way.

“An overseas base is used to project Air Power into a theatre where there is no base nearer to the theatre that aircraft can safely land.”

Advantages

Disadvantages

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SECTION 2

KNOW FUNDAMENTAL ROLES
OF AIR POWER

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ESSENTIAL KNOWLEDGE

P4 Identify the four types of fundamental Air Power principles.

TASK 14 FUNDAMENTAL ROLES OF AIR POWER

Complete the definitions about the four fundamental roles of Air Power

Control of the Air:	Air Mobility:
Intelligence, Surveillance and Reconnaissance:	Air Attack:

DEVELOP UNDERSTANDING

Identify the current RAF aircraft fleet.

Complete the tables with the correct information.


TASK 15 COMBAT AIRCRAFT


Typhoon FGR4	
	
Role:	
Capability:	
Currently based at:	

F-35B Lightning	
	
Role:	
Capability:	
Currently based at:	


TASK 16 ISTAR

Complete the table below with the correct information:

E-3D Sentry AEW1	
	
Interesting Fact:	
Additional Roles?	
Currently based at:	

Sentinel R1	
	
Interesting Fact:	
Additional Roles?	
Currently based at:	

RC-135W Rivet Joint	
	
Interesting Fact:	
Additional Roles?	
Currently based at:	

Reaper MQ-9A RPAS	
	
Interesting Fact:	
Additional Roles?	
Currently based at:	

CONTINUED >

Shadow R1



Interesting Fact:

Additional Roles?

Currently based at:

P-8A Poseidon MRA1



Interesting Fact:

Additional Roles?

Currently based at:



TASK 17 TANKERS AND TRANSPORT

A109SP




Range:	
Capability:	
Currently based at:	

A400M Atlas C.1




Range:	
Capability:	
Currently based at:	

BAe146




Range:	
Capability:	
Currently based at:	

C-17 Globemaster



Range:	
Capability:	
Currently based at:	

C130J Hercules



Range:	
Capability:	
Currently based at:	

Voyager



Range:	
Capability:	
Currently based at:	

TASK 18 HELICOPTERS

Griffin HAR2



Facts about this helicopter:

Chinook



Facts about this helicopter:

Puma HC2




Facts about this helicopter:




TASK 19 TRAINING AIRCRAFT

Hawk T1




Role:	
Currently based at:	

Hawk T2



Role:	
Currently based at:	

Juno HT1



Role:	
Currently based at:	

Jupiter HT1





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Role:	
Currently based at:	

Phenom T1



Role:	
Currently based at:	

Prefect T1



Image by Jamie Hunter

Role:	
Currently based at:	

CONTINUED >

Texan T1



Role:

Currently based at:

Tutor T1



Role:

Currently based at:

Viking T1



Role:

Currently based at:



ESSENTIAL KNOWLEDGE

P5 Identify the 3 degrees of control of the air.

TASK 20 3 DEGREES OF CONTROL OF THE AIR

Complete the table below and describe the meaning of each degree of control of the air.

Favorable Air Situation	
Air Superiority	
Air Superemacy	

TASK 21 COUNTER AIR OPERATIONS

Compile some notes which describe each type of counter air operation.

Offensive Counter Air Missions:
Defensive Counter Air Missions:
Air Surface Operations and Supporting Ground Forces:
Strategic Offensive Weapons:

ESSENTIAL KNOWLEDGE

P6 Describe the 6 divisions of Air Mobility.

TASK 22 6 DIVISIONS OF AIR MOBILITY

Compile some notes which describe each type of counter air operation.

Hub and Spoke Operations	Aeromedical Operations
Airborne Operations	Special Forces Air Operations
Air-to-air Refuelling	Personnel Recovery

Discuss the necessity of the Viktor K2 tankers used to air-to-air refuelling for Operation Black Buck

Research Exercise Volfa as an example of how UK Joint Forces practise personnel recovery

TASK 23 AIR MOBILITY DEFINITIONS

Match the key term to its definition with a number. The first one has been completed as an example.

Key Term		Definition	
1	Hub		Requires a parachute to deliver the load whilst the aircraft is in flight.
2	Spoke		Combat recover operations are time-sensitive and occur where hostile interference is expected.
3	Inter-theatre		Bases closer to theatre.
4	Intra-theatre		Aircraft lands to deliver the load.
5	Air-land	1	Bases in the UK/Overseas Bases.
6	Air-drop		These operations occur when there is no threat posed by hostile interference.
7	Forward Aeromedical Evacuation		Between different theatres .
8	Tactical Aeromedical Evacuation		Moving injured personnel from the battlefield to medial treatment facilities elsewhere.
9	Strategic Aeromedical Evacuation		Within a theatre.
10	Peacetime recovery operations		Moving ill or injured personnel to the UK from the in-theatre medical facility.
11	Combat recovery operations		Moving patients between medical facilities in or close to theatre.

ESSENTIAL KNOWLEDGE

P7 List the roles of Intelligence, Surveillance and Reconnaissance (ISR) in Air Power.

TASK 24 ISR TERMS

Complete the table below and describe these key ISR terms.

Intelligence	
Surveillance	
Reconnaissance	

TASK 25 INTELLIGENCE GATHERING

Describe these Methods of Intelligence Gathering.

SIGINT	
MASINT	
GEOINT	
OSINT	
TECHINT	
HUMINT	
FININT	

TASK 26 ISR INFORMATION GATHERING PROCESS

The chart below details the ISR information gathering process. Match the step to its definition with a number. The first one has been completed as an example.

1	Request for Information		Analyse the information and relate back to the initial aim.
2	Plan		Pass on the information to those that need to know.
3	Task/re-task		Collect the information as planned.
4	Collect		Reflect on the validity and accuracy of the information.
5	Analyse		Task the appropriate forces/personnel.
6	Disseminate		Apply information to a specific task/mission.
7	Evaluate		Create a plan to acquire the information.
8	Apply		Achieved aim!
9	Requirement Satisfied	1	Aim to gain specific information.

TASK 27 SUCCESS IN AN ISR ROLE

Name four factors for success in performing an ISR role.

ESSENTIAL KNOWLEDGE

P8 Identify the four categories of Air Attack.

TASK 28 AIR ATTACK

Answer the questions below about air attack.

Define air attack:

--

What are the three possible objectives of air attack?

What are the four categories of air attack?

What are the three factors that determine the success of an attack?

TASK 29 NETWORK ENABLED CAPABILITY

Answer the questions below about Network Enabled Capability (NEC).

What is network enabled capability (NEC)?

--

What are the three things required to enable NEC?

--

Name an advantage of NEC?

--

TASK 30 TYPES OF AIR ATTACK

Describe the types of air attack.

Strategic Attack:

Counter-land operations/force multipliers	Air interdiction
	Close air support
Strike, coordination and reconnaissance (SCAR)	Strike, coordination and reconnaissance (SCAR)

Counter-sea operations	Anti-submarine warfare
Anti-surface warfare	Anti-surface warfare

Information activities	Electronic warfare
Psychological operations	Psychological operations

DEVELOP UNDERSTANDING

Explain how the four fundamental principles of air power support military operations.

TASK 31 SUPPORT TO MILITARY OPERATIONS

Explain how the four fundamental principles of air power support military operations.

DEVELOP UNDERSTANDING

Evaluate importance the four fundamental principles of air power in military strategy.

TASK 32 THE IMPORTANCE OF AIR POWER IN MILITARY STRATEGY

Evaluate importance the four fundamental principles of air power in military strategy.

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SECTION 3

KNOW EMPLOYMENT
OF AIR POWER



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ESSENTIAL KNOWLEDGE

P9 Describe employment of Air Power through joint action.

TASK 33 AIR POWER AND JOINT ACTION TASK 1

Complete the table below with the correct definition for each of the words.

Joint Action	
Joint Operation	
Full Spectrum Approach	
UK JFAC	

TASK 34 AIR POWER AND JOINT ACTION TASK 2

Answer the questions below about Air Power and joint action.

Describe the role of air power in a joint action.
Describe the purpose of joint operations.
Name the three components of a full spectrum approach.
Describe the role of UK JFAC.

ESSENTIAL KNOWLEDGE

P10 Describe how air power integrates with other types of military operations.

TASK 35 AIR POWER AND OTHER MILITARY OPERATIONS

Describe the effectiveness of the following cross domain integrations:

Air-Land Integration (ALI):

--

Air-Maritime Integration (AMI):

--

Air-Space Integration:

--

Defensive Air-Cyber Operations:

--

Offensive Air-Cyber Operations:

--

Air-Cyber Integration

DEVELOP UNDERSTANDING Explain the importance integrating air command and control.

TASK 36 COMMAND AND CONTROL

Explain the importance integrating air command and control.

DEVELOP UNDERSTANDING Evaluate the effectiveness of joint operations in various military narratives.

TASK 37 JOINT OPERATIONS

Evaluate the effectiveness of joint operations in various military narratives.



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