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Air Training Corps



Senior / Staff Cadet Training

Aircraft Handling

Revision Notes and Questions

Cadet

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.

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

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Marshalling Signals

Ensure you *definitely* know the meanings of the darker illustrations below.

Affirmative (I will comply or I understand)
Hand raised, thumb up.



Negative (not clear or I will not comply)
Arm below waist, thumb down.



This way
Arms above head, palms inwards



Proceed to next marshaller



Slow down



Turn to left



Turn to right



Move ahead



Brakes

Palms open, then close fists.



Stop



Insert chocks



Remove chocks



Ground electrical supply insert



Ground electrical supply disconnect



Start engine(s)



Slow down engine(s) on indicated side



Cut engines



Fire

Horizontal figure of eight



Lower wing flaps



Raise wing flaps



Open air/speed brakes



Close air/speed brakes



Abandon aircraft
Simulate throwing off shoulder straps



Hot brakes



Communications Failure

A pilot losing 2-way communication should set his transponder code to 7600, then continue his flight in VMC to land at the nearest suitable airfield. Where the receiver only is operative, the pilot should comply with ATC instructions.

If the pilot is in, or above cloud and unable to navigate safely he should set the transponder code to 7700. He may then elect to fly one of the following patterns to alert a ground radar station:

- If the transmitter only has failed, an equilateral triangle to the right, whilst listening out for instructions.
- If both transmitter and receiver have failed, an equilateral triangle to the left, whilst waiting for interception by a shepherd aircraft.

If a pilot has a failed transmitter only, in which direction should he fly an equilateral triangle?

- Left to right.
- To the left.
- Anticlockwise.
- To the right.

If a pilot has a failed transmitter and receiver, in which direction should he fly an equilateral triangle?

- To the left.
- Clockwise.
- To the right.
- Right to left.

CHAPTER 1 AIRCRAFT MAINTENANCE

Maintenance Policy and Objectives

The RAF's maintenance policy is based on a finely judged balance of preventive and corrective maintenance. A policy aimed too much at preventing breakdowns (i.e. 'over-maintenance') would keep the aircraft in the hangar most of the time.

The objectives of the RAF's maintenance organisation are in two main categories, 'operational' and 'maintenance'. The operational objectives are to provide aircraft to meet the RAF's varied commitments, the maintenance objectives are to balance preventive and corrective maintenance so as to minimise costs, minimise faults and find ways of improving reliability.

Preventive Maintenance

Aimed at reducing the probability of failures, restoring levels of reliability and ensuring that time and use do not affect aircraft performance, preventive maintenance comprises four types of maintenance:

Servicing (or 'flight servicing') is maintenance needed after a period of use (such as a flight), plus preparation for the next period of use.

Scheduled Maintenance is done at regular pre-determined intervals in order to keep the aircraft in sound, overall condition, minimise random faults and minimise the amount of routine day to day attention needed.

Condition-based Maintenance is undertaken when monitoring reveals a condition which requires attention. This monitoring is undertaken using non-destructive testing (NDT), such as X-rays to reveal fatigue cracks, or by Spectrum Oil Analysed Particle (SOAP) techniques.

Out-of Phase Maintenance applies to scheduled or condition-based maintenance which is needed at intervals which do not fit the normal maintenance cycle.

The RAF's maintenance policy is based on a finely-judged balance of measures. They are known as:

- Corrective and Permanent.
- Preventative and Corrective.
- Operational and Preventative.
- Operational and Corrective.

The maintenance policy aimed too much at preventing breakdowns is known as:

- Time-maintenance
- Operational maintenance.
- Over-maintenance.
- Under maintenance.

A policy of over-maintenance would:

- Ensure that aircraft were never in the hangar.
- Ensure that the aircraft were always serviceable.
- Keep the aircraft in the hangar most of the time.
- Generate the aircraft to counter a surprise attack.

The objectives of the RAF's maintenance organisation fall into 2 main categories. They are:

- Technical and tactical.
- Operational and maintenance.
- Operational and tactical.
- Maintenance and technical.

Maintenance which is aimed to reduce the probability of failures, restore levels of reliability and ensure that time and use do not affect aircraft performance are called:

- Preventative Maintenance.
- Scheduled Maintenance.
- Corrective Maintenance.
- Phased Maintenance.

Servicing, scheduled maintenance, condition-based maintenance and out-of-phase maintenance are all types of:

- Corrective maintenance.
- Preventive maintenance.
- Contingency maintenance.
- Operational maintenance.

Maintenance performed after aircraft use, and in preparation for the next flight, is called:

- Over maintenance.
- Flight servicing.
- Corrective maintenance.
- Scheduled maintenance.

Keeping an aircraft in sound overall condition, minimising random faults and minimising the amount of routine day-to-day attention needed are all aims of:

- Corrective maintenance.
- Scheduled maintenance.
- Condition-based maintenance.
- Flight servicing.

The use of NDT and SOAP are elements of:

- Corrective maintenance.
- Condition-based maintenance.
- Out-of-phase maintenance.
- Scheduled servicing.

Scheduled or condition-based maintenance which is needed at intervals that do not fit the maintenance cycle are called:

- Scheduled condition maintenance.
- Condition-based maintenance.
- Out of Phase maintenance.
- Corrective maintenance.

Corrective Maintenance

Corrective maintenance is carried out when a fault occurs so as to make the aircraft serviceable again.

Contingency Maintenance

In war operations it may be necessary to relax maintenance standards. This can include the suspension of scheduled and condition-based maintenance.

Modifications

Modifications to aircraft are needed from time to time, for instance, to remedy a design fault that has come to light, or to incorporate new technology.

MOD Form 700

Each individual aircraft has its own MOD Form 700. This 'aircraft maintenance form' shows the current condition of the aircraft, ranging from the date its next scheduled servicing is due, to when it was last refuelled and how much fuel was put in. It is actually a whole range of forms too numerous to describe here.

Maintenance which is carried out when a fault occurs is:

- a) Corrective maintenance.
- b) Scheduled maintenance.
- c) Preventive maintenance.
- d) Flight servicing.

Corrective maintenance is carried out:

- a) At weekends.
- b) When a fault occurs.
- c) During preventive maintenance.
- d) During condition-based maintenance.

Contingency maintenance might be used in time of:

- a) Servicing.
- b) Training.
- c) War.
- d) Economies.

In wartime operations it may be necessary to relax maintenance standards, suspend scheduled and condition-based maintenance and adopt a policy of:

- a) Out-of-phase maintenance.
- b) Modifications.
- c) Scheduled servicing.
- d) Contingency maintenance.

If a design fault comes to light in a type of aircraft it might be necessary to correct the fault by introducing:

- a) Out-of-phase maintenance.
- b) A cancellation.
- c) Contingency maintenance.
- d) A modification.

A modification to an aircraft might become necessary:

- a) To alter the engineers' working programme.
- b) To change the name of an aircraft.
- c) To remedy a design fault.
- d) To prepare an aircraft in time of war.

The Aircraft Maintenance Data Form is called:

- a) MOD Form 7000
- b) MOD Form 700
- c) MID Form 70
- d) MAD Form 700

CHAPTER 6

EMERGENCY PROCEDURES

Degrees of Emergency

There are two internationally accepted degrees of aircraft emergency:

Distress - the aircraft is threatened by serious or imminent danger and is in need of immediate assistance.

Urgency - the aircraft has a very urgent message to transmit concerning the safety of an aircraft, or of persons on board or within sight.

Emergency

Urgency "Pan, Pan, Pan" + aircraft callsign (once)

Distress "Mayday, Mayday, Mayday" + aircraft callsign (three times)

Emergency Procedure

A pilot should transmit his emergency call on the ATC frequency he is currently using. If not in contact with ATC he should transmit on an emergency frequency, 243.0 MHz, 121.5 MHz, or on the HF frequency 500 KHz.

When using secondary surveillance radar (SSR) the transponder code can be set to 7700 to indicate an emergency, or 7600 to indicate a total radio failure.

UHF Emergency Fixer Service

Within the UK a network of stations provide an emergency fixer service on 243 MHz. Transmissions from the aircraft enable the controller to get an instant 'fix' on the aircraft.

SARSAT

SARSAT stands for Search And Rescue Satellite Aided Tracking. It is an alert and location system detecting transmissions on any of the emergency frequencies.

How many degrees of aircraft emergency are accepted internationally?

- a) 1
- b) 2
- c) 3
- d) 4

What are the degrees of aircraft emergency which are accepted internationally (list all answers)?

- a) Panic.
- b) Emergency.
- c) Urgency.
- d) Distress.

In an aircraft urgency message, what is the pro-word used?

- a) PAN, PAN, PAN.
- b) MAYDAY, MAYDAY, MAYDAY.
- c) SOS, SOS, SOS.
- d) MAN, MAN, MAN.

In an aircraft distress message, what is the pro-word used?

- a) PAN, PAN, PAN.
- b) MAYDAY, MAYDAY, MAYDAY.
- c) SOS, SOS, SOS.
- d) XXX, XXX, XXX.

When using secondary surveillance radar, what code indicates a total radio failure?

- a) 7607
- b) 7700
- c) 7060
- d) 7600

The frequency 243 MHz is used within the UK to provide:

- a) An SSR emergency frequency.
- b) An HF fixer service.
- c) A UHF fixer service.
- d) A VHF fixer service.

Within the UK, on what frequency is the UHF emergency fixer service provided?

- a) 342 MHz.
- b) 423 MHz.
- c) 243 MHz.
- d) 234 MHz.

In the UK a satellite-aided system is used for search and rescue. It is known as:

- a) SARTAS
- b) SARSAT
- c) SATRAS
- d) RASTAT

What is the meaning of SARSAT?

- a) Search and Recovery Satellite Aided Tracking.
- b) Search and Rescue System and Technology.
- c) Search and Recovery Search and Tracking.
- d) Search and Rescue Satellite Aided Tracking.

Formation Flying

A formation is defined as an ordered arrangement of two or more aircraft proceeding together as an element.

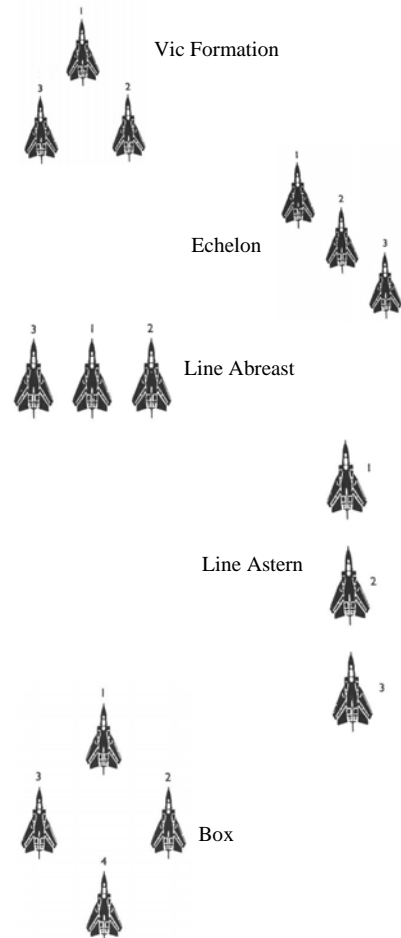
There are two categories of formation flying:

Close formation - take-offs, landings, cloud penetration plus air display and show purposes.

Tactical formation - used for tactical fighter purposes (gives the best mutual fire support).

Section Formations

The standard section formations are:



"An ordered arrangement of two or more aircraft proceeding together as an element".....is the RAF's definition of:

- Aerobatics.
- Formation flying.
- Transit flying.
- Ferry flights.

In the RAF there are two types of formation flying, they are:

- Close and loose.
- Loose and tactical.
- Strategic and tactical.
- Close and tactical.

What formation is shown in this diagram?

- Box.
- Vic.
- Card.
- Diamond.



What formation is shown in this diagram?

- Box.
- Vic.
- Echelon.
- Line abreast.



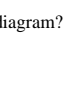
What formation is shown in this diagram?

- Box.
- Vic.
- Line Abreast.
- Line Astern.



What formation is shown in this diagram?

- Line abreast.
- Fore & aft.
- Echelon.
- Line astern.



What formation is shown in this diagram?

- Line astern.
- Line abreast.
- Echelon.
- Box.



CHAPTER 2 GROUND HANDLING

Arrivals and departures are attended by two tradesmen known as the handling team.

FOD

Aircraft marshalling and parking areas must be kept clear of objects, such as cleaning rags, small stones, discarded rivets or bolts. These can be blown by one aircraft's jet efflux into another aircraft's intake, or may damage tyres. The term FOD stands for Foreign Object Damage and is applied to these, and similar objects.

Marshalling

The aim of the marshaller is to assist the pilot in the safe manoeuvring of the aircraft on the ground by using recognised hand and arm signals. At night, marshallers carry illuminated wands. Taxiing aircraft should always have their navigation lights illuminated (red and green on the wingtips, white on the tail). Taxi lights should be used with caution to avoid dazzling the marshaller.

Danger Zones

Danger zones are areas where there is a risk of injury to personnel when aircraft are operated on the ground. They comprise the areas around engine intakes and exhausts, propellers and helicopter rotors.

Helicopter rotor blades can be especially hazardous in gusty wind conditions. The gusts can cause 'blade sailing' where the rotor blades can come much closer to the ground than their normal operating height.

Wheel and Brake Fires

Overheated brakes may cause a wheel or a brake to catch fire. If this occurs in the dispersal area, ground crew will use extinguishers to put out the fire. Because of the risk of explosion, special care is required.

The ground crew must stand forward or rearward of the wheel, depending upon the prevailing wind, but never in line with the axle, as this is the likely path of the debris if an explosion occurs. Additionally, extinguishant must never be directed straight at the wheels as this may cause an explosion due to uneven cooling of the hot metal parts. Instead, the flow must be directed at the ground about 0.3 m away from the wheels and allowed to flow onto the wheels from there.

Aircraft arrivals and departures are attended by two tradesmen known as:

- A handling team.
- A FOD team.
- A manhandling team.
- A refuelling team.

Foreign objects and such objects as discarded drinks cans, stones and old cleaning rags are known as:

- FUD.
- FOD.
- FAD.
- FOB.

The expression FOD is short for:

- Foreign Objects Discarded.
- Foreign Object Damage.
- Found Object Dropped.
- Found Object Damage.

The person who assists the pilot in the safe manoeuvring of the aircraft on the ground is:

- The Supervisor.
- The Director.
- The Refueller.
- The Marshaller.

What colours are the navigation lights on the wing-tips of an aircraft?

- Red and green.
- Red and white.
- Red and blue.
- Green and white.

What precautions should be taken when using taxi-lights?

- That the marshaller should not be dazzled.
- That the aircraft batteries are not overloaded.
- That the taxi-light bulbs are not burned out.
- That people in adjacent buildings are not dazzled.

Areas around propellers, engine intakes, exhausts, rotors etc. should always be considered to be:

- Active areas.
- Rotation areas.
- Blade sailing areas.
- Danger zones.

When a helicopter has its engines running on the ground a gust of wind can cause its blades to be closer to the ground than normal; this effect is called:

- Plain sailing.
- Blade planing.
- Blade sailing.
- Blade failing.

Where is the safest place to stand when attending an aircraft brake fire?

- Forward or rearward of the wheels.
- In line with the axle.
- Downwind.
- In line with the wings.

When fighting an aircraft wheel fire, where should you aim the extinguisher jet?

- 0.3 m behind the wheels.
- 3.0 m above the wheels.
- 0.3 m away from the wheels.
- Directly onto the wheels.

Refuelling

Most RAF aircraft are refuelled after every flight. This prevents condensation inside the empty tank and reduces water contamination of the fuel.

The risk of fire is a very real one during refuelling and every precaution must be taken to prevent ignition. Sparks from static electricity are eliminated by **bonding**, linking metal parts with a conductor. The aircraft is bonded to the bowser through the refuelling hose bonding wire, and the bowser is earthed by an earthing chain.

Work on electrical or radio equipment (including R/T transmissions) must not take place within 15m of an aircraft which is being refuelled.

With pressure refuelling the fuel delivery nozzle makes a tight joint with the aircraft and the fuel is pumped into the aircraft tanks at high pressure. This dramatically reduces refuelling time.

Shut off valves in the aircraft fuel system automatically close when the pre-set fuel level is reached.

Types of Aviation Fuel

There are **four** categories of aviation fuel:

AVGAS	aviation gasoline
AVTAG	aviation widecut gasoline
AVTUR	turbine fuel (kerosene)
AVCAT	turbine fuel (used by Navy)

The majority of gas turbine engines may be run on either AVTUR or AVTAG.

Loading

Large aircraft have an air quartermaster whose responsibilities include supervising the loading and security of the cargo.

Overloading has the following detrimental effects:

- It increases the stalling speed and the landing and take-off run.
- It reduces the rate of climb.
- It reduces range and endurance.

It is also important that the aircraft's centre of gravity is maintained within limits, otherwise it may be unflyable.

To prevent condensation in fuel tanks, we refuel aircraft:

- When it is not raining.
- When they are in the hangar.
- Immediately before every flight.
- Immediately after every flight.

One of the reasons we do this is to prevent:

- Condensation in fuel tanks.
- Condensation in refuelling hoses.
- Static electricity.
- Condensation in fuel bowsers.

What is the greatest risk during open-line refuelling?

- Condensation.
- Leaks.
- Water.
- Fire.

During refuelling we link metal parts by a conductor to prevent a spark from static electricity. This is called:

- Blonding.
- Bonding.
- Binding.
- Blinding.

The reason is to eliminate the fire risk caused by:

- Static electricity.
- Condensation.
- Over-pressure.
- Leaks.

During refuelling, work on electrical or radio equipment should not be conducted within what range of an aircraft?

- 15 m
- .15 m
- 150 m
- 1.5 m

What type of aircraft refuelling can be used to dramatically reduce refuelling time?

- Pressure refuelling.
- Mobile bowser refuelling.
- Team refuelling.
- Open-line refuelling.

What are fitted to aircraft to ensure that, during refuelling, the desired fuel level is reached?

- Bonded couplings.
- Aircraft switches are set.
- Shut off valves.
- Fuel tight joints.

Fuels used by the RAF & RN fall into how many categories?

- 2
- 3
- 4
- 6

Which aviation turbine fuel is made from kerosene?

- AVGAS
- AVTUR
- AVTAG
- AVCAT

The majority of gas turbine engines run on one of which two fuels?

- AVGAS or AVTUR
- AVTUR or AVTAG
- AVTAG or AVGAS
- AVCAT or AVTUR

AVGAS and AVTAG are both types of:

- Tanker.
- Turbine fuel.
- Kerosene.
- Gasoline.

Increased stalling speed, landing run and take-off run, and reduced climb performance, range and endurance can all be the results of:

- Poor planning.
- High winds.
- Low temperatures.
- Overloading.

The aircraft load must be correctly distributed to ensure:

- The centre of gravity is within limits.
- Freight can be off-loaded in the correct order.
- Access to aircraft doors is not impaired.
- No damage is done to the load in flight.

CHAPTER 5

AEROBATICS & FORMATION FLYING

Aerobatics

Before starting any aerobatic exercise, the pilot must carry out the following checks, remembered using the mnemonic HASELL:

Height - sufficient for the manoeuvre.
Airframe - flaps and gear up, airbrakes in.
Security - no loose articles, seat harness secure.
Engine - temperatures and pressures normal.
Location - away from towns, controlled airspace.
Lookout - clear of aircraft and cloud.

Basic Manoeuvres

An aircraft can be manoeuvred in three planes. In aerobatics the looping and rolling planes are mainly used, sometimes separately, sometimes in combination. In only a few manoeuvres is the yawing plane used.



The three planes of movement.

The loop is the most basic manoeuvre in the pitching plane, whilst the barrel roll is the simplest manoeuvre in the rolling plane.

The stall turn is the *only* basic manoeuvre in the yawing plane.

Inverted Flight

Only a few aircraft are permitted to fly inverted for any length of time. Due to lower wing efficiency, the inverted wing will require a higher angle of attack to maintain level flight.



High angle of attack

The pilot uses a mnemonic to remember to carry out one of his checks. Complete the mnemonic: HAS_ _ _ .

- HASSEL
- HASTLE
- HASELL
- HASTEL

Before which phase of flight does a pilot carry out the checks in the previous question?

- Taxiing.
- Aerobatics.
- Take-off.
- Landing.

The arrow indicates the plane of movement for an aircraft. What is the plane called?

- Rolling plane.
- Pitching plane.
- Spinning plane.
- Yawing plane.



The arrow indicates the plane of movement for an aircraft. What is the plane called?

- Rolling plane.
- Pitching plane.
- Spinning plane.
- Yawing plane.



The arrow indicates the plane of movement for an aircraft. What is the plane called?

- Rolling plane.
- Pitching plane.
- Spinning plane.
- Yawing plane.



A loop is the simplest aerobatic manoeuvre in which plane?

- Pitching.
- Yawing.
- Rolling.
- Spinning.

What is the simplest aerobatic manoeuvre in the pitching plane?

- A loop.
- A spin.
- A stall turn.
- A barrel roll.

What is the simplest aerobatic manoeuvre in the rolling plane?

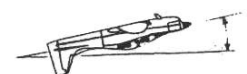
- A slow roll.
- A roll off the top.
- A swiss roll.
- A barrel roll.

The stall turn is the only basic aerobatic manoeuvre in which plane?

- Pitching.
- Yawing.
- Rolling.
- Stalling.

In the diagram what is represented by the angle shown?

- Angle of attack.
- Low dive angle.
- Angle of incidence.
- High climb angle.



Landing

Landing techniques vary from aircraft to aircraft. Consistently good landings are easier to make on aircraft with a nosewheel than on one with a tailwheel. Terms used on approach to landing are:

Final Approach - starts where the aircraft has turned into line with the runway in use.

Round-Out - the pilot changes the descending path of the approach to one level with, and just above, the ground.

Hold-Off (or Float) - the aircraft is flown parallel to the ground with increasing angle of attack and decreasing airspeed until it touches down.

Nosewheel aircraft should be landed on the main wheels with the nosewheel held off the ground. The nosewheel should be lowered before the brakes are used.

Tailwheel aircraft should touch down with all wheels at the same time with the lowest possible speed.

In the landing phase, the point where the pilot changes the descending path of the approach to one level with, and just above, the ground is called:

- a) Round-out.
- b) Hold-off.
- c) Float.
- d) Round-up.

In the landing phase the period in which the aircraft is flown parallel to the ground with increasing angle of attack and falling airspeed to the touchdown point is called:

- a) Round-up.
- b) Round-out.
- c) Hold-up or float.
- d) Hold-off or float.

When landing a nose-wheel aircraft the nose-wheel should touch the ground:

- a) Before the main-wheels.
- b) Simultaneously with the main-wheels.
- c) After the main-wheels.
- d) Behind the main-wheels.

CHAPTER 3 PREPARATION FOR FLIGHT

The Aircraft Captain

Throughout the period of operation of an aircraft there is just one person in charge. That person is the aircraft Captain. His most important quality is his ability to lead. It is his responsibility to ensure preparations are adequate for the flight being undertaken, including all that is necessary for the safe navigation of the flight, that he and his crew are fully prepared and that the relevant order books have been read and understood.

Serviceability checks on clothing and individual safety equipment are done by the user before each flight.

Flight Planning

Flight planning requires a knowledge of:

- The weather conditions and forecast.
- Diversion airfields and restricted airspace.
- Navigation calculations and map preparation.

This preparation may take the form of 'self-briefing' where the pilot and/or navigator uses information displayed in the flight planning room.

On some units, a 'mass briefing' of all aircrew is held at the start of a day's flying.

Where passengers are carried, it is the Captain's responsibility to ensure they are fully briefed. On a transport aircraft the Captain will normally delegate this responsibility to the Air Loadmaster.

Flight Authorisation

No flight may be undertaken without formal authorisation. This is done in the Flight Authorisation Book (form 3562) by the flight or squadron commander.

In the event of an accident or breach of flying discipline, the relevant Form 3562 will be impounded by the investigating authority.

Throughout the period of operation of an aircraft, who is the person in ultimate charge of the aircraft?

- a) The Navigator.
- b) The Crew Chief.
- c) The Station Commander.
- d) The Captain.

What is the most important quality of the captain of an aircraft?

- a) Persuasiveness.
- b) Drive.
- c) Leadership.
- d) Determination.

Whose duty is it to ensure that a crew is properly prepared for a flight?

- a) The Station Commander.
- b) The Navigator.
- c) The aircraft Captain.
- d) The crew chief.

Who is responsible for ensuring that all crew are familiar with the relevant order books?

- a) The Station Commander.
- b) OC Operations Wing.
- c) The aircraft Captain.
- d) The station library.

Who is responsible for serviceability checks on personal safety equipment items?

- a) The flying clothing section.
- b) The aircraft Captain.
- c) The flight engineer.
- d) The individual.

Who is responsible for ensuring that all the information necessary for the safe navigation of an aircraft has been obtained before flight?

- a) The aircraft Captain.
- b) The navigator.
- c) The Station Navigation Officer.
- d) Station Operations.

When pilots or navigators use information displayed in the flight planning room to do their flight planning it is known as:

- a) Mass briefing.
- b) DIY briefing.
- c) Self-briefing.
- d) Solo briefing.

On many units all aircrew are briefed together at the start of a day's flying. This is known as:

- a) Mess briefing.
- b) Mass briefing.
- c) Self briefing.
- d) Combined briefing.

Who is responsible for ensuring that any passengers are briefed before a flight?

- a) The movements officer.
- b) The crew chief.
- c) The aircraft captain.
- d) The operations officer.

Who will normally brief the passengers before flight on a transport aircraft?

- a) The Movements Officer.
- b) The Captain.
- c) The Air Loadmaster.
- d) The Navigator.

What is the purpose of RAF Form F3562?

- a) Flight authorization.
- b) Defect reporting.
- c) Fatigue data sheet.
- d) Replenishment certificate.

Following an aircraft accident or breach of flying discipline, which of the following RAF Forms is impounded by the investigating authority?

- a) F1250.
- b) F3562.
- c) F1771.
- d) F252.

MOD Form 705

The captain will also sign Form 705 (one of the MOD Form 700 series) before flight to certify that all maintenance and checks have been carried out, fuel, oil and oxygen quantities are sufficient, and his inspection of the aircraft is satisfactory.

The captain will also sign Form 705 after flight, noting any items which require rectification or maintenance action.

Pre-Flight Checks

During his pre-flight checks the captain will ensure that the starter crew are in place with fire extinguishers at hand.

Detailed checks for each aircraft type are found in the Aircrew Manual for the type.

Which of the following forms does an aircraft captain sign before flight and after flight?

- a) F705
- b) F1771
- c) F252
- d) F1369

During his pre-flight checks an aircraft captain will ensure that the starter crew are in place with which of the following close at hand?

- a) Fuel.
- b) Fire extinguishers.
- c) FOD.
- d) Ear defenders.

Where would you find detailed checklists for a particular aircraft type?

- a) In the aircrew manual.
- b) In the F700
- c) In the F3562
- d) In the aircraft manual.

CHAPTER 4 GENERAL FLYING

Holding Position

Taxi-ing towards the take-off runway, the pilot stops the aircraft at the holding position, a white line across the taxiway from which he has a good view of the runway and final approach. At this point, light aircraft will normally turn about 45° into wind.

The pilot will complete his pre take-off checks (vital actions), receive take-off clearance from ATC and check that final approach is clear before entering the runway.

It is the runway controller's duty to scrutinise aircraft for signs of danger, such as loose panels or leaks. He occupies a red and white checked caravan near the holding point.

Take-Off

Take-off is made into wind. If the wind is very light, the longest runway is used.

The advantage of taking-off into wind is that an aircraft on the runway pointing into a 20kt wind already has an airspeed of 20kts before it starts moving, and so the take-off run is shorter.

The Circuit

The circuit is a racetrack pattern aligned with the landing runway. It will be designate 'left hand' or 'right hand' and that is the direction the pilot must make turns to remain in the circuit once airborne.

Once he is at circuit height (usually 1000') and flying '**downwind**' (parallel to the runway with the wind from behind) he will complete his pre-landing checks.

Aircraft arriving at the airfield must descend on the opposite side of the airfield to the circuit in order to avoid conflict with aircraft already in the circuit. The opposite side to the circuit side is known as the 'dead side'.

Approach

Jet engines respond very slowly, so care must be taken not to reduce power too much on approach.

Use of flaps will give a steeper descent for a set speed, a lower stalling speed and a better view over the nose of the aircraft.

The white line across a taxiway, from which the pilot has a good view of the runway and of the final approach is called:

- a) The dead side.
- b) Upwind.
- c) The holding position.
- d) The servicing platform.

What do light aircraft normally do at the runway holding point?

- a) Turn downwind.
- b) Stop heading along the taxiway.
- c) Turn into wind.
- d) Close down their engines.

Who occupies the caravan on the airfield close to the runway holding position?

- a) OC Operations Wing.
- b) The duty pilot.
- c) The runway controller.
- d) The Air Traffic Controller.

Take-off is normally made:

- a) In still air only.
- b) Into wind.
- c) Cross-wind.
- d) Downwind.

If an aircraft is positioned on the end of the runway ready for take-off and the headwind is 30 kts, what will be indicated on the ASI?

- a) 60 kts.
- b) 15 kts.
- c) 30 kts.
- d) Zero.

On which side of an aerodrome's circuit does a pilot perform his pre-landing checks?

- a) Downwind leg.
- b) Finals turn.
- c) Dead side.
- d) Crosswind leg.

The opposite side of an aerodrome's downwind side is known as:

- a) Live side.
- b) Finals turn.
- c) Dead side.
- d) Upwind side.

The opposite side of an aerodrome circuit's dead side is known as:

- a) Crosswind leg.
- b) Finals.
- c) Downwind side.
- d) Upwind side.

When the throttle of a jet engine is opened the engine responds:

- a) At the same speed as a piston engine.
- b) Faster if the temperature is higher.
- c) Quicker than a piston engine.
- d) Slower than a piston engine.

On the approach to a runway, what is used to give a pilot a steeper descent for a set speed, a lower stalling speed and a better view over the nose of the aircraft?

- a) Flaps.
- b) Sideslip.
- c) Power.
- d) Airbrakes.