

OPERATIONAL PROCEDURES 1

GROUND
SCHOOL



LECTURE ONE: ALTIMETERS, AERODROMES

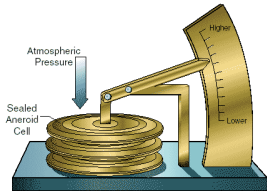
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1. Altimeter Setting Procedures
2. Aerodromes: Approach and Definitions
3. Aerodromes: Signals and Markings



ALTIMETER SETTING PROCEDURES: BASICS

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As an aircraft gains altitude the atmospheric pressure it is subjected to **DECREASES**

The altimeter senses pressure and converts it to a scale displayed as feet

An altimeter is only as accurate as the setting that has been selected

A subscale knob allows the pilot to select a datum above which a vertical displacement is shown



ALTIMETER SETTING PROCEDURES

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The UK has 20 altimeter setting regions

"Regional Pressure Setting" (RPS) is used rather than airfield pressure settings

Leads to better conformity of aircraft altimeter settings and reduces pilot workload

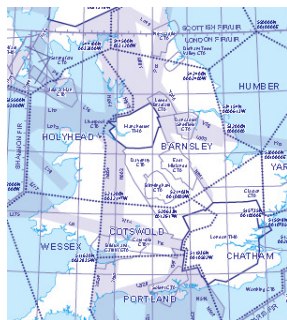
The actual QNH will always make the aircraft indicate higher than it is – this is on the safe side

The RPS is updated every hour



ALTIMETER SETTING REGIONS

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The chart of the UK Regional Pressure Setting Regions can be found in the UK AIP En-route Section

If things are going really badly and you are really lost there is one final option – the colour code option



ALTIMETER SETTING REGIONS

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TERRAIN CLEARANCE TABLE									
ASRls	WESSEX	Scillies	Colswold	Portland	Chatham	Yarmouth	TYNE	RAF	RAF
High Altitude	2900ft	1378ft	2900ft	1900ft	1310ft	1380ft	2900ft	2900ft	2900ft
Minimum Altitude	4300ft	2400ft	4300ft	3000ft	2400ft	2400ft	4300ft	4300ft	4300ft
REGIONAL QNH	GREEN						BLUE		
1032 or Above	FL40	FL20	FL35	FL25	FL20	FL20	FL40	FL40	FL40
1034-1031	FL45	FL25	FL40	FL30	FL25	FL25	FL45	FL45	FL45
996-1013	FL50	FL30	FL45	FL35	FL30	FL30	FL50	FL50	FL50
977-994	FL55	FL35	FL50	FL40	FL35	FL35	FL55	FL55	FL55
959-976	FL60	FL40	FL55	FL45	FL40	FL40	FL60	FL60	FL60
941-958	FL65	FL45	FL60	FL50	FL45	FL45	FL65	FL65	FL65
927-940	FL70	FL50	FL65	FL55	FL50	FL50	FL70	FL70	FL70
IMPORTANT - SET 1033mb ON THE ALTIMETER SUB-SCALE TO FLY AT A FLIGHT LEVEL									
ASRls	PORTREE	Orkney	Shetland	HOLYHEAD	Barnsley	Humber			
High Altitude	4400ft	3791ft	1421ft	1478ft	3900ft	3160ft	473ft		
Minimum Altitude	5800ft	5100ft	2800ft	2800ft	4900ft	4900ft	1500ft		
REGIONAL QNH	RED			YELLOW					
1032 or Above	FL65	FL60	FL25	FL25	FL45	FL40	FL15		
1034-1031	FL70	FL65	FL30	FL30	FL50	FL45	FL20		
996-1013	FL75	FL70	FL35	FL35	FL55	FL50	FL25		
977-994	FL80	FL75	FL40	FL40	FL60	FL55	FL30		
959-976	FL85	FL80	FL45	FL45	FL65	FL60	FL35		
941-958	FL90	FL85	FL50	FL50	FL70	FL65	FL40		
927-940	FL95	FL90	FL55	FL55	FL75	FL70	FL45		

- REMEMBER: Although you use the Regional QNH to obtain the Terrain Clearance Flight Level you must set 1013mb on the altimeter sub-scale to fly at that Flight Level.
- Geographical information and QNH has been adjusted to 100ft to allow for uncharted obstacles.
- IMPORTANT: When lost or uncertain of your position always call the Domes and Direction call on 024 581016 at the earliest opportunity.
- For information on how to use this table refer to AIC.



ALTIMETER SETTING PROCEDURES: DEFINITIONS

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QNH
"Nautical Height"
Mean Sea Level Pressure
Altimeter reads Altitude

QFE
"Field Elevation"
Aerodrome Surface Pressure
Altimeter reads Height (above that particular airfield)

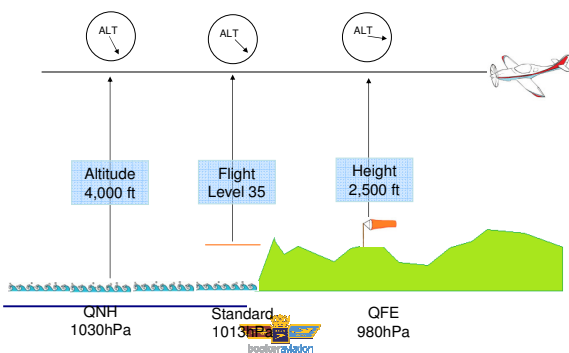
Standard Pressure
1013.2 hPa Pressure Level
Used when terrain clearance is no longer an issue
Altimeter reads Flight Level (FL)



ALTIMETER SETTING PROCEDURES: EXAMPLE

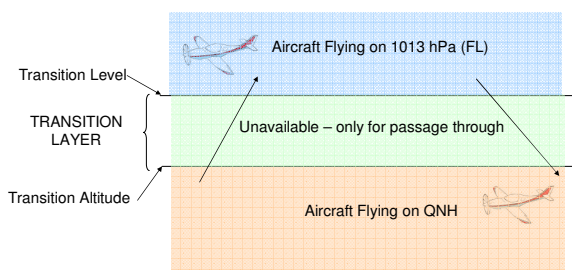
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Different altimeter settings / readings but consistent level



ALTIMETER SETTING PROCEDURES: TRANSITION ALTITUDE

GROUND
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Transition Altitude is variable across the UK and is published in the UK AIP (AD Section)

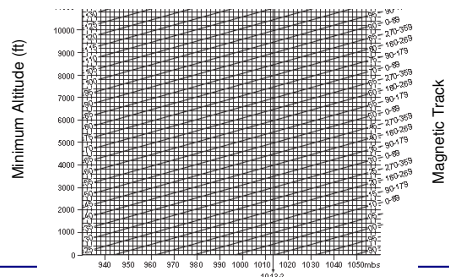


ALTIMETER SETTING PROCEDURES: FLIGHT LEVEL GRAPH

GROUND SCHOOL

Step 1 – Draw a vertical line up from the QNH until it meets a slanted FL line

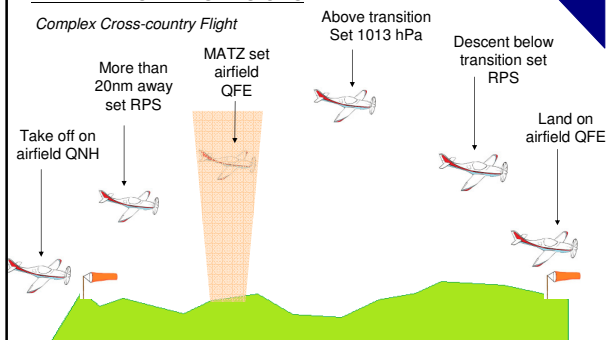
Step 2 – Read horizontally across to the equivalent altitude



ALTIMETER SETTING REGIONS

GROUND SCHOOL

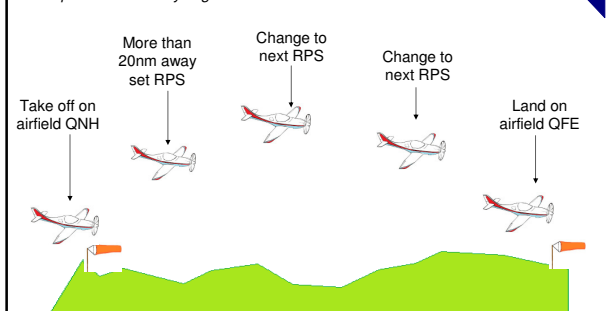
Complex Cross-country Flight



ALTIMETER SETTING REGIONS

GROUND SCHOOL

Simple Cross-country Flight




GROUND SCHOOL

PRACTICE QUESTION!

"In the vicinity of an airfield, what pressure setting should be on the altimeter"

Airfield QNH



GROUND SCHOOL

FLIGHT IN THE VICINITY OF AN AERODROME
(Rules of the Air Regulations 2007, regulations 12, 13)


An aircraft shall conform to, or keep clear of, the circuit pattern

All turns to the left unless otherwise indicated

ATC nominated landing order shall be followed


An aircraft on final approach has right of way over other airborne or ground-based aircraft

Emergency traffic always has right of way and any previous clearances are cancelled



GROUND SCHOOL

AERODROME APPROACH




When arriving at an airfield you should make RT contact and comply with instructions given

The normal method of joining a circuit is the "standard overhead join" – more of which later

Other methods of joining are:
downwind join, base leg join, long final approach

In the USA joining procedures are very different – make sure you understand the procedures for the country you are flying in and for the airfield you are approaching

Information is available direct from each airfield, or use an airfield guide such as Pooleys



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AERODROME APPROACH

The Standard Overhead Join

Notes: A standard 1000 foot standard pattern for practice

GROUND SCHOOL

NOTIFICATION OF ARRIVAL OR DEPARTURE

(Rules of the Air Regulations 2007, regulation 17)

If an aerodrome knows you are on your way and you change your mind or are going to be more than 45 minutes late you **MUST** inform them of this – whatever the reason

You must tell your departure airfield where you intend landing

If you are exiting UK airspace you must file a flight plan

GROUND SCHOOL

RUNWAY SURFACE CONDITIONS

DAMP
Change in colour due to moisture

WET
Surface soaked but no standing water

WATER PATCHES
Significant standing water visible
Runway is considered **"contaminated"**

FLOODED
Extensive standing water visible
Runway is considered **"contaminated"**

RUNWAY SURFACE CONDITIONS

GROUND
SCHOOL



Operations from contaminated runways should be **avoided** wherever possible for all types of aircraft



PRACTICE QUESTION!

GROUND
SCHOOL

"What does 'WET' mean when applied to a runway's condition?"

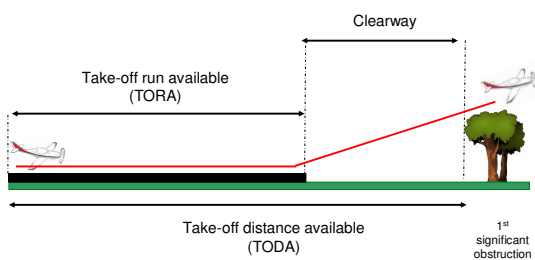
The surface is soaked but there is no standing water

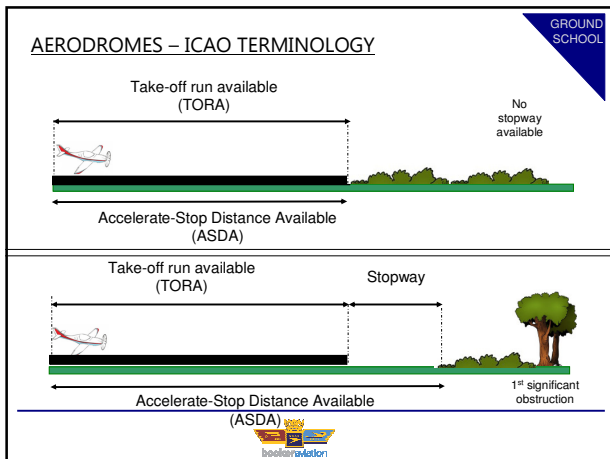


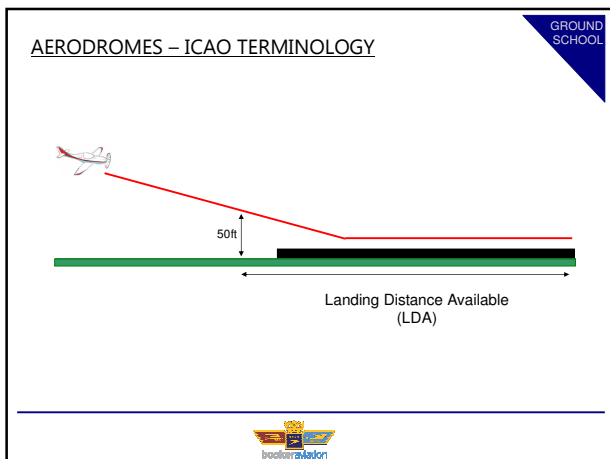
AERODROMES – ICAO TERMINOLOGY

GROUND
SCHOOL

TORA, TODA, Clearway







AERODROMES – ICAO TERMINOLOGY

GROUND SCHOOL

PRACTICE QUESTION!

"What is the take-off run available plus the clearway also known as?"

Take-off distance available

book aviation

SIGNALS SQUARE

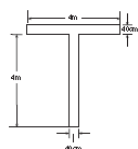
These are becoming rarer each year but this is what you are looking for!



GROUND
SCHOOL

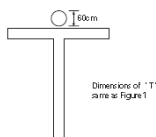
AERODROME SIGNALS AND MARKINGS – SIGNALS SQUARE

(Rules of the Air Regulations 2007, regulations 56-60)



White Signals "T"

Signifies landing direction – land towards the cross arm parallel to the long section



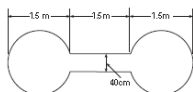
White Signals "T" with white ball

Take-off and Landing directions are not necessarily the same



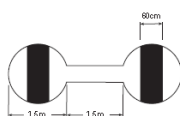
GROUND
SCHOOL

AERODROME SIGNALS AND MARKINGS



WHITE DUMBELL

Movement of aircraft shall be confined to paved, metallised or hard surfaced areas



WHITE DUMBELL WITH BLACK STRIPES

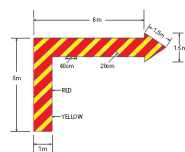
Landing on a runway but other movement of aircraft shall NOT be confined to paved, metallised or hard surfaced areas



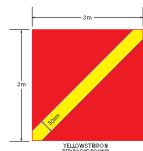
GROUND
SCHOOL

AERODROME SIGNALS AND MARKINGS

GROUND
SCHOOL



RED AND YELLOW ARROW
Signifies a right hand circuit is in force

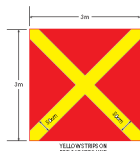


RED SQUARE, YELLOW DIAGONAL
Signifies the state of the manoeuvring area is poor and pilots should take precautions

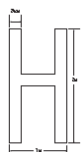


AERODROME SIGNALS AND MARKINGS

GROUND
SCHOOL



RED SQUARE, YELLOW CROSS
Signifies aerodrome is unsafe. Landing prohibited.

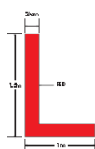


WHITE "H"
Helicopters must only land within the area specified

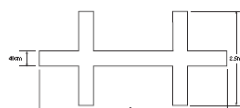


AERODROME SIGNALS AND MARKINGS

GROUND
SCHOOL



RED "L"
Light aircraft may land on the runway or on another (specified) area

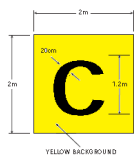


WHITE DOUBLE-CROSS
Gliding is in progress



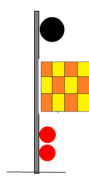
AERODROME SIGNALS AND MARKINGS

GROUND
SCHOOL



BLACK "C" ON YELLOW BACKGROUND

Indicates where the person in charge of the aerodrome and/or ATC can be found. This is where you go to book in/out of an airfield and to pay landing fees



BLACK BALL ON MAST

Direction of Landing and take off may not coincide

RED / YELLOW CHEQUERED FLAG

Traffic may only move with permission of ATC

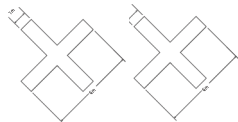
DOUBLE RED BALL

Glider flying is in progress



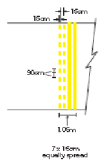
AERODROME SIGNALS AND MARKINGS – TAXIWAY

GROUND
SCHOOL



DOUBLE WHITE CROSSES (or more)

Section of runway or taxiway marked is unavailable



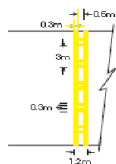
DOUBLE YELLOW SOLID, DOUBLE YELLOW BROKEN LINES

Signify a runway entrance / exit. Do not cross the solid lines without permission. Can cross broken line to exit runway without permission.



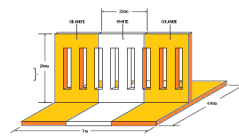
AERODROME SIGNALS AND MARKINGS – TAXIWAY

GROUND
SCHOOL



YELLOW "LADDER"

A holding point that requires permission from ATC to cross



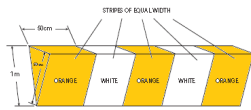
ORANGE AND WHITE FENCES

Signifies the edge of the usable area. Beyond this area is unfit for the movement of aircraft

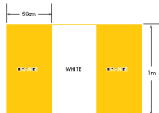


AERODROME SIGNALS AND MARKINGS – TAXIWAY

GROUND
SCHOOL



ORANGE AND WHITE MARKERS
Signifies the edge of the usable area.
Beyond this area is unfit for the movement
of aircraft. Used on unpaved areas.



**ORANGE AND WHITE MARKINGS
ON STRUCTURES**
Signifies boundary of aerodrome

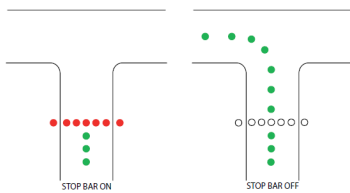


AERODROME SIGNALS AND MARKINGS – TAXIWAY

GROUND
SCHOOL

STOP BARS are lights across a taxi-way and used at aerodromes which are
licensed for low visibility operations

NEVER taxi past a red stop bar which is lit



AERODROMES - BEACONS

GROUND
SCHOOL

Civil Aerodrome beacons are **GREEN**

Military Aerodrome beacons are **RED**

They both flash in Morse code a 2-letter identifier for the airfield

For example, at Wycombe Air Park the green beacon
flashes "WP" - . - . - .

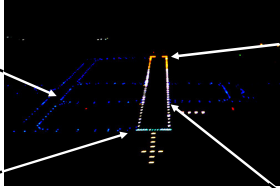


GROUND SCHOOL

AERODROME GROUND LIGHTS & MARKINGS

Surface markings are WHITE for runways and **YELLOW** for taxi-ways and aprons

Taxi-way edge lighting is **BLUE**




Runway end lights are unidirectional and **RED**

Runway start lights are unidirectional and **GREEN**

Runway side lights are **WHITE**

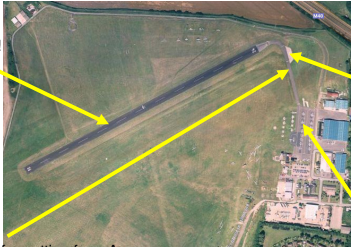
At large airfields they colour code to indicate approaching the end



GROUND SCHOOL

AERODROMES – WHAT IS EACH BIT FOR?


RUNWAY – for landing on!



HOLDING POINT – for aircraft pre-take off checks, awaiting clearances, engine runs by maintenance

TAXIWAYS – for getting from A to B (note that taxiways will not always ensure wingtip clearances)

APRON – for loading and unloading passengers and cargo, fuelling, parking and maintenance




GROUND SCHOOL

PRACTICE QUESTION!

"What colour are taxi-way markings and what colour are runway markings?"

Yellow for taxi-ways and white for runways



PRACTICE QUESTION!

"If you are taxiing your aircraft and you are unsure as to whether you have wingtip clearance, have got slightly lost (in doubt of your position) or are unsure if the surface is suitable, what should you do?"

Unless you're on a runway – stop, tell ATS that you have stopped and ask them for help

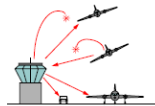


AERODROME SIGNALS – LIGHT SIGNALS

(Rules of the Air Regulations 2007, regulation 61)

Signal

Steady red light to aircraft or vehicle as indicated. Red flare from tower or aircraft.

**Meaning**

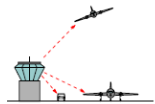
Do not land. Give way continue circling.

Immediate assistance required.

Stop.

Signal

Flashing red light to aircraft or vehicle.

**Meaning**

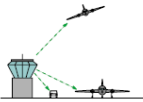
Do not land; aerodrome closed.

Move clear of landing area.



AERODROME SIGNALS – LIGHT SIGNALS**Signal**

Flashing green light to aircraft or vehicle.

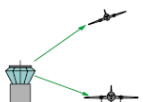
**Meaning**

Return to aerodrome await landing clearance

Cleared to taxi/move on the manoeuvring area.

Signal

Steady green light to aircraft

**Meaning**

Cleared to land.

Cleared to take-off.

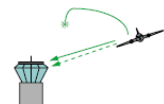


AERODROME SIGNALS – LIGHT SIGNALS

GROUND
SCHOOL

Signal

Steady or flashing green or green flare from aircraft.



Meaning

By night - may I land.
By day - may I land in a direction different from that indicated.

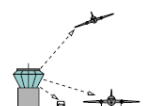


AERODROME SIGNALS – LIGHT SIGNALS

GROUND
SCHOOL

Signal

White flashes to aircraft or vehicle.



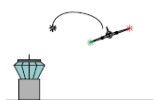
Meaning

Land here on receipt of steady green and await further instructions.

Return to starting point on the aerodrome.

Signal

White flare from aircraft or irregular switching of navigation or landing lights.



Meaning

I am compelled to land.



AERODROME SIGNALS – MARSHALLING

GROUND
SCHOOL

There are many marshalling signals used – here are the main ones...



Straight ahead



Turn Left



Turn Right



Stop



Emergency Stop



Brakes on / release



OPERATIONAL PROCEDURES 2



GROUND
SCHOOL

LECTURE TWO: HAZARDS, EMERGENCIES, LICENCES

1. Aerodrome Hazards: Windshear
2. Aerodrome Hazards: Microbursts
3. Aerodrome Hazards: Wake Turbulence
4. Emergencies: Engine Failures over Land and Sea
5. Licensing



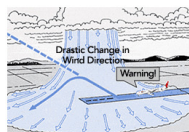
GROUND
SCHOOL

REPORTING HAZARDOUS CONDITIONS

(Rules of the Air Regulations 2007, regulation 4)

Any aircraft encountering "hazardous conditions" shall notify the nearest air traffic control unit as soon as possible

That unit is then responsible for giving the information to any other traffic that may be affected



Examples of hazardous conditions – windshear, clear air icing, un-forecasted electrical storms, etc.



GROUND
SCHOOL

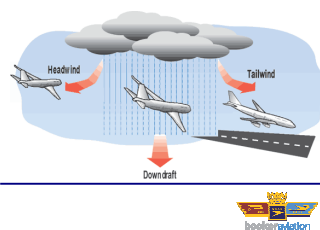
HAZARDOUS CONDITIONS: WINDSHEAR

GROUND
SCHOOL

Windshear is a sudden change of wind speed and/or direction within a fairly small distance

It is vital that if you encounter windshear that it should be reported over the radio so that other aircraft have been warned.

At Wycombe Air Park the most likely place for windshear to be encountered is at about 200-300 feet on approach to runway 24



After take off windshear giving the aircraft a tailwind will cause the rate of climb to decrease and the indicated airspeed to decrease – both are dangerous situations



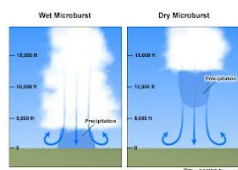
HAZARDOUS CONDITIONS: MICROBURSTS

GROUND
SCHOOL

A microburst is a rapidly sinking column of air which may last for only a couple of seconds but can last up to a few minutes.

Generally linked in the UK to thunderstorms (although it doesn't have to be raining)

After hitting the ground, the microburst extends in all directions



If on approach with a **CONSTANT** pitch and power you notice an increase in airspeed and a reduced rate of descent you may be approaching a microburst.

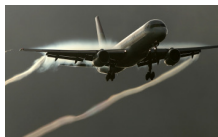
You may also receive a warning from an Air Traffic Unit (ATS) or from other pilots



HAZARDOUS CONDITIONS: WAKE TURBULENCE

GROUND
SCHOOL

Wake turbulence is caused by the induced drag and/or jetwash of an aircraft



Airflow from the lower to the upper surface of the wing causes vortices which remain for up to three minutes

Jetwash tends to dissipate much more rapidly

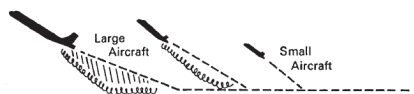
AIC Pink 001/2015 has a great deal of information and should be read!

(important stuff coming up...)

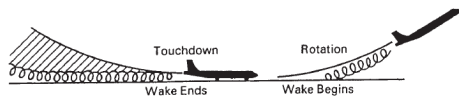


HAZARDOUS CONDITIONS: WAKE TURBULENCE

GROUND
SCHOOL



The heavier the aircraft, the bigger the wake turbulence produced



Wake turbulence is only produced when the aircraft is airborne

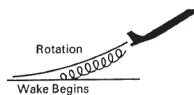


HAZARDOUS CONDITIONS: WAKE TURBULENCE

GROUND
SCHOOL



Wake turbulence is produced by both helicopters and aeroplanes



The harder an aircraft wing is working, the more the wake turbulence.

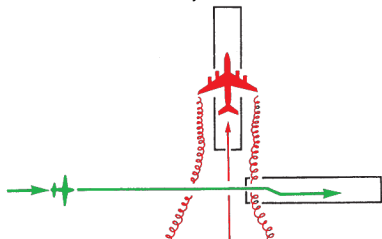
An aircraft flying slowly with flaps up produces its maximum wake
'Heavy, Slow, Clean'



HAZARDOUS CONDITIONS: WAKE TURBULENCE

GROUND
SCHOOL

Even if you're not on the same runway it can still be an issue in a light aircraft

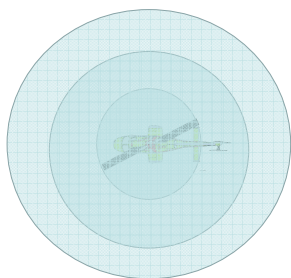


In this case the departing red heavy aircraft got airborne prior to the intersection of the two runways – the green light aircraft will experience wake vortex



HAZARDOUS CONDITIONS: WAKE TURBULENCE

GROUND
SCHOOL



Expect wake from hovering helicopters up to three rotor-diameters away

For a light aircraft this can be hazardous

(NOTE – larger helicopters hovering at November when you are trying to land on runway 24!)



EMERGENCY CONDITIONS: ENGINE FAILURE

GROUND
SCHOOL

You will be taught specific drills to undertake in the event of an engine failure at various phases of flight

In the cruise the general order of events is:

1. Fly the aircraft (establish a safe glide speed)
2. Select a landing area
3. Cause checks / restart checks
4. Mayday call
5. Shut down checks
6. Passenger Briefing

Is the fuel on / sufficient?
Select carb heat hot
Check switches
Attempt a restart - ignition

Fuel off
Mixture lean
Throttle closed
Switches off (caution C152 flaps)
Ignition off



EMERGENCY CONDITIONS: ENGINE FAILURE

GROUND
SCHOOL

Once the aircraft has landed, all occupants should evacuate as soon as possible to a safe location away from the aircraft

Remember – a SAFE forced landing is one where the aircraft has completed an unplanned landing which has been unavoidable but one where there is a reasonable expectation of NO injuries to people (either on the ground or in the aircraft)



Safe



Safe (?)



Erm....



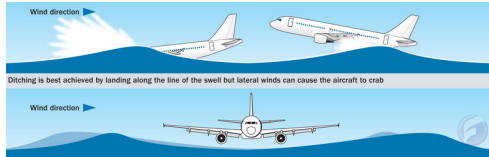
EMERGENCY CONDITIONS: ENGINE FAILURE OVER WATER

GROUND
SCHOOL

There are extra considerations if the engine failure occurs over water...

A general order of events is:

1. Mayday call and squawk 7700
2. Head towards land (or shipping lanes if no land visible)
3. Cause checks / Restart Checks
4. Plan to land parallel to the swell (not necessarily directly into wind)



EMERGENCY CONDITIONS: ENGINE FAILURE OVER WATER

GROUND
SCHOOL

For flights over water, life jackets should be worn and a dinghy should be carried if at all possible



Do NOT inflate the life jacket in the aircraft (it will seriously slow down your exit!)

Inflate the life jacket before you enter the water and definitely before you get into the dinghy

PS – how are you supposed to get out of a Cessna without entering the water first?



EMERGENCY CONDITIONS: FIRE ON ENGINE START

GROUND
SCHOOL

The most likely time an engine can catch fire is on start-up



It is VITAL that you know how to respond so that this does not happen!

1. Continue to "crank" the engine
2. Mixture fully lean
3. Fuel Off
4. Throttle fully open

This should work... if not, turn the master switch off and get out (preferably with the fire extinguisher!)

The most common cause is over-priming which causes fire in the carburettor




GROUND SCHOOL

PRACTICE QUESTION!

"What does a red square with a yellow diagonal cross in a signals area signify to an overflying aircraft?"


Use caution on the manoeuvring area



GROUND SCHOOL

STUDENT PILOTS!


EASA states that each nation's authority should "ensure that the privileges granted would not permit student pilots to constitute a hazard to aviation"!



Students must be at least 16 years of age to fly solo


Student solo flights must have been authorised by a qualified flight instructor

Students must hold a valid Class 1 or Class 2 medical in order to fly solo



GROUND SCHOOL

PRIVATE PILOT LICENCE



From driving licence to flying licence you need:

9 theoretical knowledge exams passed

45 hours total time

10 hours solo

RT practical exam passed


Flying Skill test passed


5 hours cross-country solo

150nm cross-country solo flight with 2 away landings

Previous flight time in any aircraft or other type of aircraft licence may adjust these requirements with some form of credit

You don't have to have a driving licence!





PRIVATE PILOT LICENCE

GROUND
SCHOOL



You must be at least 17 years of age and hold a Class 1 or Class 2 medical

A PPL allows the holder to act as Pilot in Command or Co-pilot of any aircraft engaged on a non-revenue flight

You will also need a Class or Type Rating that relates to the aircraft being flown

There are also currency and weather requirements – more of these later!



PRACTICE QUESTION!

GROUND
SCHOOL

"Who has ultimate responsibility for anything that occurs on a flight"

The pilot in command



GOT YOUR LICENCE – HOW DO YOU KEEP IT LEGAL?

GROUND
SCHOOL



EASA licences are valid for life

You will get your licence issued with a Single Engine Piston (Land) Rating which is valid for 2 years.

To carry passengers you must have completed 3 take-offs and 3 landings in the preceding 90 days

You need to keep this rating valid to fly single engine aircraft on your licence

There are a few ways of doing this:



GOT YOUR LICENCE – HOW DO YOU KEEP IT LEGAL?

GROUND
SCHOOL

You must also keep your medical current

A Class 2 medical is valid for:
60 months if you are under 40
24 months age 40-49
12 months age 50 and over

A Class 1 medical is valid for 12 months

Details are on the CAA website



GOT YOUR LICENCE – HOW DO YOU KEEP IT LEGAL?

GROUND
SCHOOL

So your medical is current but....



Do you need to tell the CAA?

You must not exercise the privileges of your licence if you are aware of any decrease in your medical fitness which might render you unsafe. Your medical is deemed as **SUSPENDED** until you are better. Also:

You must tell the CAA (via your AME usually) if:
you are admitted into hospital for more than 12 hours
you have surgery or an invasive procedure
you are regularly using medication
you are newly needing corrective lenses
you have any illness which means you are unfit to fly for more than 21 days
it is confirmed that you are pregnant



GOT YOUR LICENCE – HOW DO YOU KEEP IT LEGAL?

GROUND
SCHOOL

Option 1

Year 1: do as much flying as you please but **NONE** of it will count towards revalidating your SEP rating

Year 2: 12 hours flight time of which 6 hours solo flight time, 12 take-offs and landings, a flight of 1 hour duration with a flight instructor

Option 2

No hour requirement – just do a Skill Test with an examiner in the second year.

This is also what you will need to do if your SEP rating expires.

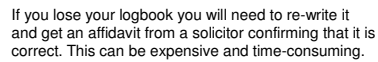
Remember to get your SEP revalidated in your licence!



GROUND
SCHOOL

You must total each page but ask an instructor how to do this – many people do it the wrong way!

You must surrender your logbook to the CAA if they request it. ALWAYS take a photocopy if you are going to send your logbook anywhere.



GROUND
SCHOOL

Date	Aircraft		Captain	Holder's Operating Capacity	Journey or Nature of Flight		Depart. (GMT)	Arrival (GMT)
	Type	Reg.			From	To		
01.01.17	C152	GWACH	A. PILOT	PUT	EGTB	EGTB	1000	1042

"Flight Time" is the total time from the moment that an aircraft first moves under its own power for the purpose of flight until it comes to rest at the end of the flight



GROUND
SCHOOL

The person who, for the time being, is in charge of piloting the aircraft without being under the direction of any other pilot in the aircraft

Used by the CAA for denoting a test flight flown with an examiner which was successful and where the examiner took no part in the control of the aircraft



LOGBOOKS!

Day or night?

Night is considered to be:

30 minutes after sunset until 30 minutes
before sunrise

Or

From the end of evening civil twilight until the beginning of morning civil
twilight on the following day



And you thought it was just
when it got dark!



GROUND
SCHOOL

CLASS RATINGS



Single Engine Piston
(Land)



Touring Motor Glider



Single Engine Piston
(Sea)



Multi Engine Piston
(Land)



Single Engine Turboprop
(Land)



Single Engine Turboprop
(Sea)



Multi Engine Piston
(Sea)



GROUND
SCHOOL

TYPE RATINGS

Type ratings are required for:

All multi-pilot aircraft

All single-pilot multi-engine turboprop / turbojet aircraft

All single-pilot single-engine turbojet aircraft

Any other aircraft considered necessary

Military, ex-military, experimental or vintage aircraft



GROUND
SCHOOL

INSTRUMENT RATINGS

GROUND
SCHOOL

EASA states that a pilot must not operate under IFR unless they hold an instrument rating (or a student flying with an instructor who holds an IR)

The UK disagrees!

In the UK on your PPL(A) you may fly under IFR outside controlled airspace as long as you are VMC

You may add an IMC rating to your licence which will allow IFR flight in IMC under certain conditions and in certain classes of airspace.
This is called IR(R).

This is all subject to change under EASA



OPERATORS' MANUALS

GROUND
SCHOOL

OPERATIONS MANUAL

procedures, instructions and guidance for use by operational personnel within an organisation

TRAINING MANUAL

details of all training courses and their content, records to be kept, standards

AIRCRAFT OPERATING MANUAL

normal, abnormal, emergency procedures, checklists, limitations, performance etc for an individual aircraft



PRACTICE QUESTION!

GROUND
SCHOOL

"What are the requirements for a PPL(A) holder to carry passengers?"

3 take-offs and landings in the preceding 90 days



Syllabus complete
Any Questions?