



GENERAL AVIATION FLIGHT OPERATION

1. Introduction

The general aviation flight operation is the operation of an aircraft other than a commercial air transport operation.

The commercial air transport flight operation is the flight operation involving the transport of passengers, cargo or mail for remuneration or hire.

General aviation operation does not cover specific flights like rescue and military...

1.1. Duties of pilot-in-command

The pilot-in-command shall be responsible for the operation, safety and security of the aeroplane and the safety of all crew members, passengers and cargo on board.

2. Flight operation

The pilot-in-command shall ensure that a flight will not be commenced unless it has been ascertained by every reasonable means available that the ground (or water), including radio communication or navigation aids available are adequate for the type of operation under which the flight is to be conducted.

2.1. Aerodrome operating minima

The pilot-in-command shall not operate to or from an aerodrome using operating minima lower than those which may be established for that aerodrome by the state in which it is located (except specific approval).

2.2. Flight preparation

A flight shall not be commenced until the pilot-in-command is satisfied that:

- Aircraft is registered with the appropriate certificates (not applicable in IVAO)
- The instruments and equipment installed are appropriate taking into account the expected flight conditions
- Any necessary maintenance has been performed (not applicable in IVAO)
- The mass of the airplane and centre of gravity location are such that the flight can be conducted safely
- Any load carried is properly distributed and safely secured (not applicable in IVAO)
- The aeroplane operating limitations, contained in the flight manual, will not be exceeded.

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2.3. Flight planning

Before starting a flight, the pilot-in-command shall be familiar with all available meteorological information appropriate to the intended flight.

Preparation for a flight away from the vicinity of the place of departure, and for every flight under the instrument flight rules (IFR), shall include:

- A study of available current weather reports and forecast
- The planning of an alternative course of action to provide for the eventuality that the flight cannot be completed as planned because of weather conditions.

2.4. Weather conditions

2.4.1. Using visual flight rules

A flight to be conducted in accordance with the visual flight rules (VFR) shall not be commenced unless current meteorological reports and forecasts indicate that the meteorological conditions along the route or that part of the route to be flown under visual flight rules will be such as to render compliance with these rules possible.

2.4.2. Using instrument flight rules

A flight to be conducted in accordance with the instrument flight rules (IFR) shall not be commenced unless information is available which indicates that meteorological conditions at the aerodrome of intended landing and at least one destination alternate aerodrome (if required) will be at or above the aerodrome operating minima.

2.5. Alternate aerodrome

For a flight to be conducted in accordance with the instrument flight rules, at least one destination alternate aerodrome shall be selected and specified in the flight plan unless the following reasons apply:

- The duration of time of the flight and the meteorological conditions prevailing are such that there is reasonable certainty that, at the estimated time of arrival at the aerodrome of intended landing, and for a reasonable period before and after such time, the approach and landing may be made under visual meteorological conditions.
- The aerodrome of intended landing is isolated and there is no suitable destination alternate aerodrome and a standard instrument approach procedure is prescribed for the aerodrome of intended landing and available current meteorological information indicates that the following meteorological conditions will exist 2 hours before time of arrival.

Associated conditions: cloud base of at least 300m or 1000 ft above the minimum associated with the instrument approach procedure and visibility of at least 5.5 km or of 4 km more than the minimum visibility associated with the procedure.

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2.6. Fuel and oil supply

A flight shall not be commenced unless taking into account both meteorological conditions and any delays that are expected in flight, and the aeroplane carries sufficient fuel and oil to ensure that it can safely complete the flight.

2.6.1. Flight under visual flight rules – VFR

When the flight is conducted in accordance with the visual flight rules, the amount of fuel to be carried must permit:

- For VFR flight during day time, the flight to the aerodrome of intended landing with an additional flight time for at least 30 minutes at normal cruising altitude
- For VFR flight during night time, the flight to the aerodrome of intended landing with an additional flight time for at least 45 minutes at normal cruising altitude

2.6.2. Flight under instrument flight rules – IFR

When the flight is conducted in accordance with the instrument flight rules, the amount of fuel to be carried must permit:

- If the destination alternate aerodrome is not required, the flight to the aerodrome of intended landing with an additional flight time for at least 45 minutes at normal cruising altitude
- If the destination alternate aerodrome is required, the flight to the aerodrome of intended landing, plus the flight from aerodrome of intended landing to alternate aerodrome, with an additional flight time for at least 45 minutes at normal cruising altitude

2.7. Non applicable subjects for IVAO

The regulation also takes into account subjects like:

- Re-fuelling with passengers on board
- Oxygen supply
- Passenger safety equipment
- Incapacited flight crew members or passenger injury.

The documentation will not present those items as they are not used in the IVAO network.

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2.8. In-flight procedures

2.8.1. Aerodrome operating minima

An instrument approach shall not be continued below 300m or 1000ft above the aerodrome elevation or into the final approach segment when the reported visibility or controlling RVR is below the aerodrome operating minima.

If, after entering the final approach segment or after descending below 300m (100ft) above the aerodrome elevation, the reported visibility or controlling RVR falls below the specified minimum, the approach may be continued to DA/H or MDA/H.

2.8.2. Instrument approach procedures

An aeroplane operated in accordance with the instrument flight rules (IFR) shall comply with the instrument approach procedures published for the aerodrome of intended landing.

3. Large and turbojet aeroplanes

The following operations chapter shall be dedicated to the international general aviation operation with:

- Aircraft with a maximum certificated take-off exceeding 5700kg (M>5700kg)
- Aircraft equipped with one or more turbojet engines

All information given in the previous chapter is also applicable for large and turbojet aeroplanes.

3.1. Checklists

Checklists shall be used by flight crews during all phases of operations, and in emergencies, to ensure compliance with the operating procedures contained in the aircraft operating manual.

3.2. Take-off alternate aerodrome

A take-off alternate aerodrome shall be selected and specified in the flight plan if the weather conditions at the aerodrome of departure are at or below the applicable aerodrome operating minima or it would not be possible to return to the aerodrome of departure for other reasons.

The take-off alternate aerodrome when required shall be located within the following distance from the aerodrome of departure:

- For aeroplanes having 2 engines, not more than a distance equivalent to a flight time of 1 hour at the single-engine cruise speed
- For aeroplanes having 3 or more engines, not more than a distance equivalent to a flight time of 2 hours at the one-engine inoperative cruise speed

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4. Aeroplane performance operating limitations

An aeroplane shall be operated in compliance with its certification approved documents and within the operating limitations prescribed by the certifying authority.

The pilot-in-command shall determine that aeroplane performance will permit the take-off and departure to be carried out safely.

5. Aeroplane equipment

Note that in this section, we will not describe all the inboard equipment that is not applicable for IVAO (life jackets, oxygen, flight recorders, microphone, fire extinguisher, data link recorders and emergency locator system...)

5.1. VFR flight

All aeroplanes when operating VFR shall be equipped with means of measuring and/or displaying:

- Magnetic heading
- Pressure altitude
- Indicated airspeed
- Equipment displaying time in hours, minutes and seconds
- Additional equipment which may be prescribed by local authority

Regulation recommends that VFR flights which are operated as controlled flights should be equipped in accordance with IFR operation.

5.2. IFR flight

All aeroplanes when operating IFR shall be equipped with means of measuring and/or displaying:

- Magnetic heading (standby compass)
- Pressure altitude
- Indicated airspeed with a means of preventing malfunctioning due to either condensation or icing
- Turn and slip
- Aircraft altitude
- Stabilized aircraft heading
- Supply of power to the gyroscopic instruments is adequate
- Outside air temperature
- Rate-of-climb and descent
- Equipment displaying time in hours, minutes and seconds
- Additional equipment which may be prescribed by local authority

In addition to these requirements, aircraft with a maximum certificated take-off mass exceeding 5700kg or aircraft equipped with one or more turbojet engines shall be equipped with 2 independent altitude measuring and display systems.

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5.3. Aeroplanes when operated at night

Aeroplanes when operated at night shall be equipped in accordance with IFR operation described above. In addition, aeroplanes shall be equipped with:

- The lights required in flight and on the movement area of an aerodrome
- A landing light
- Illumination for all flight instruments and equipment

5.4. Ground proximity warning systems - GPWS

All turbine-engined aeroplanes with a maximum certificated take-of mass greater than 5700kg shall be equipped with a ground proximity warning system which has a forward looking terrain avoidance function.

5.5. Emergency power supply

Aeroplanes with a maximum certificated take-off mass of over 5700kg (after 1/1/1975), shall be fitted with an emergency power supply independent of the main electrical generating system, for the purpose of operating and illuminating for a minimum period of 30 minutes, an attitude indicating instrument (artificial horizon). This emergency power system shall be automatically operative after the total failure of the main electrical generating system.

5.6. Airborne collision avoidance system (ACAS)

All turbine-engined aeroplanes with a maximum take-off mass in excess of 15000kg or authorized to carry more than 30 passengers shall be equipped with an airborne collision avoidance system (ACAS II) and airworthiness certificate is first issued after 1/1/2007.

Regulation recommends ACAS II for all turbine-engined aeroplanes greater than 5700kg.

In IVAO, the IvAp interface gives the opportunity to activate a TCAS system which can be considered like the required ACAS.

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6. Aeroplane communication and navigation equipment

6.1. Communication equipment

An aeroplane to be operated using instrument flight rules (IFR) or using visual flight rules (VFR) in controlled flights shall be provided with radio communication equipment capable of conducting two-way communication at any time during the flight with an air traffic controller.

The radio communication equipment shall also provide for communication on the aeronautical emergency frequency 121.500MHz.

In IVAO, the radio communication is given by the IvAp interface using text communication or via Teamspeak using voice communication. Only VHF frequencies are simulated including 121.500MHz (Guard frequency).

6.2. Navigation equipment

An aeroplane shall be provided with navigation equipment which will enable it to proceed:

- In accordance with the flight plan
- In accordance with the requirements of air traffic services

Navigation for flights under the visual flight rules is accomplished by visual reference to landmarks.

6.2.1. Flight in RVSM airspace

For flights where reduced vertical separation minimum (RVSM) of 300m or 1000ft is applied between FL290 and FL410 inclusive, an aeroplane shall be provided with equipment which is capable of:

- Indicating to the flight crew the flight level being flown
- Automatically maintaining a selected flight level
- Providing an alert to the flight crew when a deviation occurs. The alert threshold shall not exceed $\pm 90\text{m}$ or $\pm 300\text{ft}$.
- Automatically reporting pressure-altitude

The aircraft shall also be authorized and certified for operation in RVSM airspace.

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