

ANNEX V

Essential requirements for air operations

1. GENERAL

- 1.1. A flight must not be performed if the crew members and, as appropriate, all other operations personnel involved in its preparation and execution are not familiar with applicable laws, regulations and procedures, pertinent to the performance of their duties, prescribed for the areas to be traversed, the aerodromes planned to be used and the air navigation facilities relating thereto.
- 1.2. A flight must be performed in such a way that the operating procedures specified in the Flight Manual or, where required the Operations Manual, for the preparation and execution of the flight are followed.
- 1.3. Before every flight, the roles and duties of each crew member must be defined. The pilot in command must be responsible for the operation and safety of the aircraft and for the safety of all crew members, passengers and cargo on board.
- 1.4. Articles or substances, which are capable of posing a significant risk to health, safety, property or the environment, such as dangerous goods, weapons and ammunition, must not be carried on any aircraft, unless specific safety procedures and instructions are applied to mitigate the related risks.
- 1.5. All necessary data, documents, records and information to record the respect of the conditions specified in point 5.3 must be retained for each flight and kept available and protected against unauthorised modification for a minimum period of time compatible with the type of operation.

2. FLIGHT PREPARATION

A flight must not be commenced unless it has been ascertained by reasonable means available that all the following conditions are complied with:

- (a) adequate facilities directly required for the flight and for the safe operation of the aircraft, including communication facilities and navigation aids, are available for the execution of the flight, taking into account available Aeronautical Information Services documentation;
- (b) the crew must be familiar with and passengers informed of the location and use of relevant emergency equipment. Sufficient information, related to the operation and specific to the equipment installed, regarding emergency procedures and use of cabin safety equipment must be made available to crew and passengers;
- (c) the pilot in command must be satisfied that:
 - (i) the aircraft is airworthy as specified in point 6;
 - (ii) if required, the aircraft is duly registered and that appropriate certificates with respect thereto are aboard the aircraft;
 - (iii) instruments and equipment as specified in point 5 required for the execution of that flight are installed in the aircraft and are operative, unless waived by the applicable MEL or equivalent document;

- (iv) the mass of the aircraft and centre of gravity location are such that the flight can be conducted within limits prescribed in the airworthiness documentation;
 - (v) all cabin baggage, hold luggage and cargo is properly loaded and secured; and
 - (vi) the aircraft operating limitations as specified in point 4 will not be exceeded at any time during the flight;
- (d) information regarding meteorological conditions for departure, destination and, where applicable, alternate aerodromes, as well as en-route conditions, must be available to the flight crew. Special attention must be given to potentially hazardous atmospheric conditions;
- (e) appropriate mitigation measures or contingency plans must be in place to deal with potentially hazardous atmospheric conditions expected to be encountered in flight;
- (f) for a flight based on visual flight rules, meteorological conditions along the route to be flown must be such as to render compliance with those flight rules possible. For a flight based on instrument flight rules a destination and where applicable alternate aerodrome(s) where the aircraft can land must be selected, taking into account in particular the forecasted meteorological conditions, the availability of air navigation services, the availability of ground facilities and the instrument flight procedures approved by the State in which the destination and/or alternate aerodrome is located;
- (g) the amount of fuel/energy for propulsion and consumables on board must be sufficient to ensure that the intended flight can be completed safely, taking into account the meteorological conditions, any element affecting the performance of the aircraft and any delays that are expected in flight. In addition, a fuel/energy reserve must be carried to provide for contingencies. Procedures for in-flight fuel/energy management must be established when relevant.

3. FLIGHT OPERATIONS

With regard to flight operations, all the following conditions must be complied with:

- (a) where relevant for the type of aircraft, during take-off and landing, and whenever deemed necessary by the pilot in command in the interest of safety, each crew member must be seated at their crew station and must use the provided restraint systems;
- (b) where relevant for the type of aircraft, all flight crew members required to be on flight deck duty must be and remain at their station, with their seatbelts fastened except en-route for physiological or operational needs;
- (c) where relevant for the type of aircraft and the type of operation, before take-off and landing, during taxiing and whenever deemed necessary in the interest of safety, the pilot in command must ensure that each passenger is properly seated and secured;
- (d) a flight must be performed in such a way that appropriate separation from other aircraft is maintained and that adequate obstacle clearance is ensured, during all phases of the flight. Such separation must at least be those required by the applicable rules of the air, as appropriate to the type of operation;
- (e) a flight must not be continued unless known conditions continue to be at least equivalent to those in point 2. Furthermore, for a flight based on instrument flight

rules, an approach toward an aerodrome must not be continued below certain specified heights or beyond a certain position, if prescribed visibility criteria are not met;

- (f) in an emergency, the pilot in command must ensure that all passengers are instructed in such emergency action as may be appropriate to the circumstances;
- (g) a pilot in command must take all necessary measures so as to minimise the consequences on the flight of disruptive passenger behaviour;
- (h) an aircraft must not be taxied on the movement area of an aerodrome, or its rotor must not be turned under power, unless the person at the controls is appropriately competent;
- (i) the applicable in-flight fuel/energy management procedures must be used, when relevant.

4. AIRCRAFT PERFORMANCE AND OPERATING LIMITATIONS

- 4.1. An aircraft must be operated in accordance with its airworthiness documentation and all related operating procedures and limitations as expressed in its approved flight manual or equivalent documentation, as the case may be. The flight manual or equivalent documentation must be available to the crew and kept up to date for each aircraft.
- 4.2. Notwithstanding point 4.1, for operations with helicopters a momentary flight through the limiting height velocity envelope may be permitted, provided that safety is ensured.
- 4.3. The aircraft must be operated in accordance with the applicable environmental documentation.
- 4.4. A flight must not be commenced or continued unless the aircraft's scheduled performance, considering all factors which significantly affect its performance level, allows all phases of flight to be executed within the applicable distances/areas and obstacle clearances at the planned operating mass. Performance factors which significantly affect take-off, en-route and approach/landing are, particularly:
 - (a) operating procedures;
 - (b) pressure altitude of the aerodrome;
 - (c) weather conditions (temperature, wind, precipitation and visual range);
 - (d) size, slope and condition of the take-off/landing area; and
 - (e) the condition of the airframe, the power plant or the systems, taking into account possible deterioration.
- 4.5. Such factors must be taken into account directly as operational parameters or indirectly by means of allowances or margins, which may be provided in the scheduling of performance data, as appropriate to the type of operation.

5. INSTRUMENTS, DATA AND EQUIPMENT

- 5.1. An aircraft must be equipped with all navigation, communication and other equipment necessary for the intended flight, taking account of air traffic regulations and rules of the air applicable during any phase of the flight.
- 5.2. When relevant, an aircraft must be equipped with all necessary safety, medical, evacuation and survival equipment, taking account of the risks associated to the areas of operation, the routes to be flown, the flight altitude and the duration of the flight.

5.3. All data necessary for the execution of the flight by the crew must be updated and available on board the aircraft taking account of applicable air traffic regulations, rules of the air, flight altitudes and areas of operation.

6. CONTINUING AIRWORTHINESS AND ENVIRONMENTAL COMPATIBILITY OF PRODUCTS

6.1. The aircraft must not be operated unless:

- (a) the aircraft is airworthy and in a condition for safe and environmentally compatible operation;
- (b) the operational and emergency equipment necessary for the intended flight is serviceable;
- (c) the airworthiness document and, if applicable, the noise certificate of the aircraft is valid; and
- (d) the maintenance of the aircraft is performed in accordance with the applicable requirements.

6.2. Before each flight or a series of consecutive flights, the aircraft must be inspected, through a pre-flight check, to determine whether it is fit for the intended flight.

6.3. The aircraft must not be operated unless it is released to service by qualified persons or organisations, after maintenance. The signed release to service must contain in particular, the basic details of the maintenance carried out.

6.4. Records necessary to demonstrate the airworthiness and environmental compatibility status of the aircraft must be kept, and protected against, unauthorised modification for the period of time corresponding to the applicable continuing airworthiness requirements, until the information contained has been superseded by new information equivalent in scope and detail but in any event not less than 24 months.

6.5. All modifications and repairs must comply with the essential requirements for airworthiness and, if applicable, the environmental compatibility of products. The substantiating data supporting compliance with the airworthiness requirements and requirements for the environmental compatibility of products must be retained and protected against unauthorised modification.

6.6. It is the responsibility of the aircraft operator to ensure that a third party performing the maintenance complies with the operator's safety and security requirements.

7. CREW MEMBERS

7.1. The number and composition of the crew must be determined taking into account:

- (a) the certification limitations of the aircraft, including if applicable, the relevant emergency evacuation demonstration;
- (b) the aircraft configuration; and
- (c) the type and duration of operations.

7.2. The pilot in command must have the authority to give all commands and take any appropriate actions for the purpose of securing the operation and the safety of the aircraft and of persons and/or property carried therein.

- 7.3. In an emergency situation, which endangers the operation or the safety of the aircraft and/or persons on board, the pilot in command must take any action he/she considers necessary in the interest of safety. When such action involves a violation of local regulations or procedures, the pilot in command must be responsible for notifying the appropriate local authority without delay.
- 7.4. Without prejudice to point 8.12, when other persons are carried on board, emergency or abnormal situations may only be simulated if those persons have been duly informed and are aware of the associated risks before boarding the flight.
- 7.5. No crew member must allow their task achievement/decision making to deteriorate to the extent that flight safety is endangered because of the effects of fatigue, taking into account, inter alia, fatigue accumulation, sleep deprivation, number of sectors flown, night duties or time zone changes. Rest periods must provide sufficient time to enable crew members to overcome the effects of the previous duties and to be well rested by the start of the following flight duty period.
- 7.6. A crew member must not perform allocated duties on board an aircraft when under the influence of psychoactive substances or alcohol or when unfit due to injury, fatigue, medication, sickness or other similar causes.
8. ADDITIONAL REQUIREMENTS FOR COMMERCIAL AIR TRANSPORT AND OTHER OPERATIONS SUBJECT TO A CERTIFICATION OR DECLARATION REQUIREMENT PERFORMED WITH AEROPLANES, HELICOPTERS OR TILT ROTOR AIRCRAFT
- 8.1. The operation must not be undertaken unless the following conditions are met:
- (a) the aircraft operator must have directly or through agreements with third parties the means necessary for the scale and scope of the operations. Those means comprise but are not limited to the following: aircraft, facilities, management structure, personnel, equipment, documentation of tasks, responsibilities and procedures, access to relevant data and record keeping;
 - (b) the aircraft operator must use only suitably qualified and trained personnel and implement and maintain training and checking programmes for the crew members and other relevant personnel that are necessary to ensure the currency of their certificates, ratings and qualifications;
 - (c) as appropriate for the type of activity undertaken and the size of the organisation, the aircraft operator must implement and maintain a management system to ensure compliance with the essential requirements set out in this Annex, manage safety risks and aim for continuous improvement of this system;
 - (d) the aircraft operator shall establish an occurrence reporting system, as part of the management system under point (c), in order to contribute to the aim of continuous improvement of the safety. The occurrence reporting system shall be compliant with applicable Union law.
- 8.2. The operation must only be undertaken in accordance with an aircraft operator's operations manual. Such manual must contain all necessary instructions, information and procedures for all aircraft operated and for operations personnel to perform their duties. Limitations applicable to flight time, flight duty periods and rest periods for crew members must be specified. The operations manual and its revisions must be compliant with the approved flight manual and be amended as necessary.

- 8.3. The aircraft operator shall establish procedures, as appropriate, so as to minimise the consequences to safe flight operations of disruptive passenger behaviour.
- 8.4. The aircraft operator must develop and maintain security programmes adapted to the aircraft and the type of operation including particularly:
- (a) security of the flight crew compartment;
 - (b) aircraft search procedure checklist;
 - (c) training programmes; and
 - (d) protection of electronic and computer systems to prevent intentional and non-intentional system interference and corruption.
- 8.5. When security measures may adversely affect the safety of operations, the risks must be assessed and appropriate procedures developed to mitigate safety risks, this may necessitate the use of specialist equipment.
- 8.6. The aircraft operator must designate one pilot amongst the flight crew as the pilot in command.
- 8.7. The prevention of fatigue must be managed through a fatigue management system. For a flight, or series of flights, such a system needs to address flight time, flight-duty periods, duty and adapted rest periods. Limitations established within the fatigue management system must take into account all relevant factors contributing to fatigue such as, in particular, number of sectors flown, time-zone crossing, sleep deprivation, disruption of circadian cycles, night hours, positioning, cumulative duty time for given periods of time, sharing of allocated tasks between crew members, and also the provision of augmented crews.
- 8.8. The aircraft operator must ensure that the tasks specified in point 6.1 and those described in points 6.4 and 6.5 are controlled by an organisation responsible for the continuing airworthiness management that must meet requirements of Annex II, point 3.1, and Annex III, points 7 and 8.
- 8.9. The aircraft operator must ensure that the release to service required by point 6.3 is issued by an organisation qualified for the maintenance of products, parts and not-installed equipment. This organisation shall meet the requirements of Annex II, point 3.1.
- 8.10. The organisation referred to in 8.8 shall establish an organisation manual providing, for use and guidance of personnel concerned, a description of all continuing airworthiness procedures of the organisation.
- 8.11. A checklist system must be available for use, as applicable, by crew members in all phases of operation of the aircraft under normal, abnormal and emergency conditions and situations. Procedures must be established for any reasonably foreseeable emergency situation.
- 8.12. Emergency or abnormal situations must not be simulated when passengers or cargo are being carried.