

Annex 2

Essential requirements for air operations

1. General

- 1.a A flight must not be performed if the crew members and 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 to be used and the air navigation facilities relating thereto.
- 1.b 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. For that purpose a checklist system must be established for use, as applicable, by crew members for all phases of operation of the aircraft under normal, abnormal and emergency conditions. Procedures must be established for any reasonably foreseeable emergency situation.
- 1.c The pilot in command must have available on board the aircraft essential information concerning the search and rescue services in the areas over which the aircraft will be flown.
- 1.d 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.e 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.f Data, documents, records and information necessary to record the respect of the conditions specified in 2.a. must be retained for each flight and kept available 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 every reasonable means available that all the following conditions are complied with.

- 2.a Adequate facilities directly required for the flight and for the safe operation of the aircraft, including ground or satellite based communication facilities and navigation aids, are available for the duration of the flight.
- 2.b The crew and passengers must be made familiar with the location and use of emergency equipment. Sufficient related information regarding emergency procedures and use of cabin safety equipment must be made available to crew and passengers. Such information must be that specified in the Flight Manual or where required the Operations Manual.
- 2.c The pilot in command must be satisfied that:
 - the aircraft is airworthy as specified in chapter 6,
 - the aircraft is duly registered and that appropriate certificates with respect thereto are aboard the aircraft,
 - all instruments and equipment as specified in chapter 5 required for the execution of that flight are installed in the aircraft and are operative
 - the mass of the aircraft and centre of gravity location are such that the flight can be conducted safely,
 - all cabin baggage, hold luggage, freight and cargo is properly loaded and secured, and
 - the aircraft operating limitations as specified in chapter 4 will not be exceeded at any time during the flight.
- 2.d Information regarding meteorological conditions for departure, destination and 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
- 2.e In case of known or expected icing conditions, the aircraft must be certified, equipped and treated to cope with such conditions.
- 2.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 these flight rules possible. For a flight based on instrument flight rules a destination and/or 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 equipment, the availability of ground facilities and the instrument flight procedures approved and published by the State in which the destination and/or alternate aerodrome is located.

- 2.g The amount of fuel and oil 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 reserve must be carried to provide for contingencies. Procedures for in-flight fuel management must be established.
- 2.h Oxygen must be available to crew members and passengers, in such a way that it can be properly used by them and in sufficient quantities for all phases during that flight where a lack of oxygen might result in impairment of crew members or harmfully affect passengers.

3. Operations

During flight, all the following conditions must be complied with.

- 3.a 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.
- 3.b All flight crew members required to be on flight deck duty must be and remain at their station, with their seatbelts fastened except on route for physiological or operational needs.
- 3.c Before take-off and landing, during taxiing, during flight turbulence and whenever deemed necessary in the interest of safety, the pilot in command must ensure that each passenger occupies a seat with the safety belt properly secured.
- 3.d A flight must be performed in such a way that separation from other aircraft is maintained and that adequate obstacle clearance is insured, during all phases of the flight, as required by the applicable rules of the air.
- 3.e A flight must not be continued unless known meteorological conditions continue to be those specified in point 2.f. Furthermore, for a flight based on instrument flight rules, an approach toward an aerodrome must not be continued below

certain heights specified by the competent authority, if minimum visibility criteria are not met.

- 3.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.
- 3.g A pilot in command must take all necessary measures so as to minimise the consequences on the flight of disruptive passenger behaviour.
- 3.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 qualified.

4. Aircraft performance and operating limitations

- 4.a An aircraft must be operated in accordance with its airworthiness certification and all related operating procedures and limitations as expressed in its approved flight manual or operations manual, as the case may be. The flight manual must be available and kept up to date for each aircraft.
- 4.b The aircraft must be operated in accordance with the applicable environmental certification.
- 4.c A flight must not be commenced 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 obstacles clearances at the planned operating mass. Performance factors which significantly affect take-off, en-route and approach /landing are, particularly:
 - operating procedures;
 - pressure altitude appropriate to the elevation of the aerodrome;
 - temperature;
 - wind;
 - size, slope and condition of the take-off/ landing area;
 - the condition, including possible deterioration, of the airframe, the powerplant or the systems; and,
 - Human performance.

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 required by the type of operation.

5. Instruments and equipment

- 5.a An aircraft must be equipped with all the necessary navigation, communication and other operational equipment necessary for the intended flight, taking account of applicable air traffic regulations and rules of the air applicable at any time during any phase of this flight. All required equipment must be in an operating condition.
- 5.b An aircraft must be equipped with all necessary safety, medical 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.c All data necessary for the execution of the flight must be available on board the aircraft taking account of applicable air traffic regulations, rules of the air, flight altitudes and areas of operation.
- 5.d Areas of the fuselage suitable for break in by rescue crews in an emergency must be appropriately marked.

6. Continuing Airworthiness

- 6.a The aircraft must not be operated unless:
 - the aircraft is maintained in an airworthy condition;
 - the operational and emergency equipment necessary for the intended flight is serviceable;
 - the airworthiness certificate of the aircraft is valid; and
 - the maintenance of the aircraft is performed in accordance with its maintenance programme.
- 6.b Before each flight, the aircraft must be inspected to determine whether it is fit for the intended flight.
- 6.c The maintenance programme, must contain in particular, maintenance tasks and intervals, especially those that have been specified as mandatory in the applicable type certification.
- 6.d The aircraft must not be operated unless it is maintained and released to service by persons or organisations qualified for these tasks.
- 6.e The above release to service, must contain in particular, the basic details of the maintenance carried out, the date such maintenance was completed and the identity of the person

signing the release. It must be completed and signed to certify that the maintenance work performed has been completed satisfactorily.

- 6.f All records demonstrating the airworthiness of the aircraft must be kept until the information contained has been superseded by new information equivalent in scope and detail. When the aircraft is leased, all records demonstrating the airworthiness of the aircraft must be kept for the length of the lease.
- 6.g All modifications and repairs must comply with the essential requirements for airworthiness set forth in Annex I. The substantiating data supporting compliance with the airworthiness requirements must be retained.

7. Crew members

- 7.a The number and composition of the crew must be determined taking into account:
 - the certification limitations of the aircraft, including if applicable, the relevant emergency evacuation demonstration; and
 - the type and range of operations.
- 7.b Cabin crew members must:
 - be trained and checked on a regular basis to attain and maintain an adequate level of competency in order to perform their assigned duties; and
 - periodically demonstrate mental and physical fitness to safely exercise the privileges of their licence and rating. Compliance must be shown by appropriate assessment based on aeromedical best practice, taking into account mental and physical degradation due to age.
- 7.c The pilot in command must have authority to give all commands and take any appropriate actions for the purpose of securing the safety of the aircraft and of persons or property carried therein.
- 7.d In an emergency situation, which endangers the safety of the aircraft and/or persons on board, the pilot in command must take any action considered necessary in the interest of safety.
- 7.e 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 accumulation.

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.f. 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 fatigue, medication, sickness or other similar causes.

8. Operation for commercial purposes and operation of large aircraft

- 8.a The operation for commercial purposes and the operation of large aircraft must not be undertaken unless the operator meets the following conditions:

- 8.a.1 it must have directly or indirectly through contracts the means necessary for the scale and scope of the operations. These means comprise but are not limited to the following: facilities, personnel, equipment, documentation of tasks, responsibilities and procedures, access to relevant data and record keeping;
- 8.a.2 it must implement and maintain training and checking programmes for the relevant personnel;
- 8.a.3 it must establish a Minimum Equipment List (MEL), taking account of the following:
- The MEL must provide for the operation of the aircraft, under specified conditions, with particular instruments, items of equipment or functions inoperative at the commencement of the flight;
 - The MEL must be based on the Master Minimum Equipment List (MMEL), if available, and must not be less restrictive than the MMEL; and
 - The MEL must be prepared for a specific aircraft, taking account of the operator's aircraft definition and the relevant operational and maintenance conditions;
- 8.a.4 it must implement and maintain a management system to ensure compliance with these essential requirements for continuing airworthiness and aim for continuous improvement of this system; and

- 8.a.5 it must establish an occurrence reporting, which must be used by the management system in order to contribute to the aim of continuous improvement of the safety of products parts and appliances.
- 8.b The operation for commercial purposes and the operation of large aircraft must only be undertaken in accordance with an operator's Operations Manual. Such manual must contain all instructions, information and procedures covering all aircraft operated and necessary 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 must mirror the approved flight manual and its revisions and be amended as necessary.
- 8.c Procedures must be established, as appropriate, so as to minimise the consequences to safe flight operations of disruptive passenger behaviour.
- 8.d Security programmes must be developed and maintained including particularly:
- security of the flight crew compartment;
 - aircraft search procedure checklist;
 - training programmes;
 - protection of electronic and computer systems to prevent intentional system interference and corruption; and,
 - Reporting acts of unlawful interference.
- When security measures may adversely affect the safety of operations, appropriate equipment must be fitted on board and procedures developed to mitigate the related risk.
- 8.e One pilot amongst the flight crew must be designated as the pilot in command by the operator. The pilot in command is responsible for the safety of all passengers, crew members and cargo on board the aircraft.
- 8.f The prevention of fatigue must be managed through rostering limitations. For a flight, or series of flights, such limitations need to address flight time, flight duty periods, duty and adapted rest periods. The rostering limitations must take into account all relevant factors contributing to fatigue such as, in particular, number of sectors flown, sleep deprivation, disruption of circadian cycles, night hours, cumulative duty time for given periods of time, positioning, sharing of allocated tasks between crew members, and also the provision of augmented crews.

8.g The tasks specified in point 6.a. and those described in points 6.e and 6.f must be carried out by a continuing airworthiness management organisation that must meet the following conditions:

- it must have directly or indirectly through contracts the means necessary for the scope of work. These means comprise but are not limited to the following: facilities, personnel, equipment, documentation of tasks, responsibilities and procedures, access to relevant data and record keeping;
- it must be qualified for the maintenance of products parts and appliances under its responsibility or have established a contract with such a qualified organisation for these products, parts and appliances;
- it must implement and maintain a management system to ensure compliance with the applicable requirements for continuing airworthiness and aim for continuous improvement of this system;
- it must establish an occurrence reporting, which must be used by the management system in order to contribute to the aim of continuous improvement of the safety of products parts and appliances; and
- it must establish an organisation manual providing, for use and guidance of personnel concerned, a description of all continuing airworthiness procedures of the organisation including when applicable a description of administrative arrangements between the organisation and the approved maintenance organisation.