

File No. 11-690/92-AI(2)

EFFECTIVE : FORTHWITH

Subject : Minimum requirements to be complied with by Operators Engaged in Scheduled/Non Scheduled operation or in Aerial work including Flying Training and Private work.

1. APPLICABILITY :

Aircraft Rule 140 requires that all aircraft owners and operators shall comply with the Engineering, Inspection and maintenance requirements and safety requirements in respect of air routes, aircraft and aircrew as may be specified by the Director General of Civil Aviation. This part of Civil Airworthiness Requirements prescribes the minimum requirements to be complied with in respect of aircraft and their maintenance, air routes and aircrew, by various class of operators.

2. SCOPE :

2.1 Maintenance of aircraft :

2.1.1 All operators, except those maintaining their aircraft under "Approved Maintenance System" shall provide for the use and guidance of its personnel, a Quality Control Cum Maintenance System Manual which will contain the following minimum information :-

- (i) Copies of all approved routine maintenance schedules, approved special inspection schedules requiring inspection after hard landing/lightening strike/propeller strike/flight through turbulence, etc.
- (ii) Safety requirements which should be followed during aircraft handling on the ground, at the time of engine starting, including propellers swinging manually, at the time of refueling or defuelling aircraft, at the time of mooring aircraft, etc.
- (iii) A list of components having approved overhaul lives.
- (iv) Procedure of keeping aircraft log books/works/work-sheets, up to date and preservation of the same and individuals authorised to certify these documents.
- (v) Procedure of recording, reporting of all defects observed during inspection or during flight and

recording of rectification work.

- (vi) Occasions when test flight would be carried out.
- (vii) Procedure of embodying mandatory modifications/ inspections.
- (viii) In case the operators are dispensing their own fuel/oil by taking bulk fuel/oil from fuel vendors, detailed quality control procedure for ensuring that only uncontaminated fuel/oil is put in the aircraft tanks.

Note :- Those private aircraft owners/operators who entrust the maintenance of their aircraft to an approved organisation shall specify such arrangements made by them in their Quality Control-cum-Maintenance System Manual. When such an arrangement is made with an approved organisation, the organisation shall reflect in their Quality Control manual, the maintenance procedure and practices to be followed by them for keeping the aircraft in an airworthy condition.

- 2.1.2 Operators maintaining their aircraft under Approval System shall prepare Quality Control Cum Maintenance System manual and Engineering Organisation Manual as detailed in CAR Series 'E'.
- 2.1.3 Copies of such Manuals shall be supplied by the operator to the concerned employees, responsible for maintaining/operating the aircraft who must familiarize themselves with the Manuals before discharging their functions.
- 2.1.4 Copies of such manuals shall also be supplied to DGCA in quantity as required by him.
- 2.1.5 These Manuals shall be revised from time to time as a result of changes in its operating/maintenance practices or based on operational experience, or as required by DGCA. Copies of the revisions shall be furnished to all the holders of the manuals.
- 2.1.6 The aircraft shall be inspected and certified as required in CAR Series 'F' Part III.
- 2.1.7 Operators shall have access to adequate organisation including qualified and trained staff together with workshop, equipment, and inspection facilities as may be considered necessary by DGCA, in case required facilities are not available within their own organisation.
- 2.1.8 The operators shall maintain records of total time in air, date of last overhaul/ installation/ inspection

in respect of entire aircraft and of "lifer" components/equipment in appropriate log books or in such other form as is acceptable to DGCA.

3. AIRCRAFT AND AIRCRAFT EQUIPMENT :

3.1 The aircraft shall be equipped with instruments and equipment as required in CAR Series 'I' Part II and it shall be the responsibility of the Pilot-in-Command to ensure before commencing any flight that it is so equipped.

3.2 Single engined aircraft shall not be utilised in Scheduled, Non-Scheduled operations for carrying passengers at night.

3.3 Single engined aircraft, with retractable undercarriage, may be utilised in scheduled or non-scheduled operations for carrying passengers during day in VFR conditions. However, for flights over water, the aircraft at no time must be away from land (suitable for making emergency landing) at a distance which may not, in the event of power plant becoming inoperative, permit a safe forced landing.

3.4 Multi-engined aircraft:

3.4.1 The aircraft when loaded to the maximum gross weight permitted by its Certificate of Airworthiness shall be capable of maintaining level flight with one engine inoperative at an altitude of not less than 1,000 feet above the valley level at the highest point on the air route or, if flown over water at altitude of not less than 3,000 feet above the water.

3.4.2 All jet aircraft certified in normal (passenger) category for scheduled/non-scheduled operations in India shall be certified for take off and landing from airfields upto 12,000 feet pressure altitude. All necessary modifications should be incorporated to enable the aircraft operations to and from airfields at this altitude. The take-off/landing performance at this altitude should be duly reflected in the aircraft Flight Manual.

3.5 The aircraft shall be operated within approved operating limitations contained in the Certificate of Airworthiness/Flight Manual or other appropriate and relevant documents.

4. OPERATIONS MANUAL :

4.1 All aircraft operators, except private operators, shall prepare Operations Manual, for the guidance of their staff. Operators shall ensure that the contents of the operations manual are strictly in accordance with the manufacturers' requirements and the same shall be kept updated at all times. Any deviation from the manufacturers requirements shall be reflected in the manual with the prior concurrence

of the DGCA only.

4.2 The Operations Manual shall contain at least the following information :-

- (a) Instructions outlining the responsibilities of operating personnel, pertaining to the conduct of flight operations;
- (b) The flight crew for each type of operation or stage of operation to be conducted, including the designation of the succession of command;
- (c) Operational procedures and techniques and method of recording defects;
- (d) The maximum flight time and flight duty periods of flight crew members;
- (e) The in-flight and the emergency flight procedures including the in-flight and the emergency duties assigned to each crew member;
- (f) The method of determining minimum flight altitudes (only required for non-scheduled operation);
- (g) The minimum flight altitude for each route (only required for scheduled operations);
- (h) The operating minima for each of the aerodromes, regular or alternate on the routes to be flown (only required for scheduled operations).
- (i) The circumstances in which a radio listening watch is to be maintained ;
- (j) A list of the navigational equipment to be carried;
- (k) Specific instructions for the computation of the quantities of fuel and oil to be carried having regard to all circumstances of the operation including the possibility of the failure of one or more power plants while enroute ;
- (l) The procedure for refuelling the aircraft ;
- (m) Information which will enable the Pilot-in-Command to determine whether the flight may be continued should any instrument, equipment or system become inoperative, or aircraft suffers damage on account of hard landing/flight through turbulence ;
- (n) Instructions which will ensure that the Pilot-in-Command will have detailed information for each flight, in respect of communication facilities, navigational aids, aerodromes, and such other information as the operator may deem necessary;

- (o) The conditions under which oxygen shall be used ;
- (p) Procedures to be followed in the event of an accident ;
- (q) Routes on which carriage of life jackets/life rafts is necessary ;
- (r) Check list of emergency and safety equipment and instructions for its use.

4.3 All scheduled aircraft operators of such type of transport category aircraft for which the manufacturer has prepared an Operations Manual or Flight Crew Operations Manual, for the guidance of operating crew by way of facilitating flight planning, shall carry on board the aircraft, a copy of this document, in addition to the Airplane Flight Manual and the operations manual prescribed in para 4.2 above. The manual shall be kept updated all the time by the operator, and will be in tune with limitations, procedures and practices detailed in Airplane Flight Manual. In the event of conflict between the contents of this manual and Flight Manual, those contained in Flight Manual shall have precedence over those in this manual. The manual shall be kept in prominent place in aircraft to enable the Flight crew to use it when required.

5. AIR ROUTES AND AERODROMES :

5.1 Day operation :

5.1.1 Aerodromes - The terminal and intermediate scheduled aerodromes shall be licensed or approved and shall be equipped with approved refuelling apparatus and storage facility, appropriate fire fighting equipments for emergencies, telephone communication with city authorities, and (in the case of passenger air service) satisfactory passenger shelter and conveniences with adequate personnel and equipment for the control of passengers and the public in the interest of their safety.

5.1.2 Emergency landing grounds - for single-engined aircraft operation, there shall be emergency landing grounds at intervals of not more than 150 miles (240 kilometers).

5.1.3 Radio and Navigational Equipment :

5.1.3.1 Aircraft on IFR flight or flying during night, shall be equipped with suitable Radio/Navigation equipment appropriate to the route to be flown, in accordance with CAR Series 'I' Part II.

5.1.3.2 On flights necessitating landing in IMC, an aircraft shall be provided with the Radio equipment capable of receiving signals providing

guidance to a point from which a visual landing can be effected. The equipment shall be capable of providing such guidance at each aerodrome at which it is intended to land in instrument meteorological conditions and at any designated alternate aerodromes.

5.1.3.3 Aircraft on VFR flights, when operated in controlled airspace may be required to be equipped with suitable Radio equipment capable of conducting two-way communication with the appropriate ATC Unit.

5.2 Night Operation :

5.2.1 The intended aerodrome of arrival/departure be equipped with appropriate lighting system. The obstructions in the area associated with the instrument approach to land are suitably lighted.

6. AIRCREW :

6.1 No aircraft may be flown on a licensed air transport service without the full number of members of crew required for its safe operation as designated in the C of A/Flight Manual. Each member of the crew shall be in possession of the appropriate licence issued or rendered valid in accordance with the provisions of Part V and Schedule II of Aircraft Rules, 1937 and in addition shall fulfill and comply with the requirements and conditions for the operation in scheduled air transport services of aircraft of the classes defined and in the conditions defined in this CAR.

6.2 All pilots shall demonstrate to a Check Pilot or Inspector or Examiner approved by the Director General that they are familiar with the aircraft, its instruments, equipment, fuel and other installations, and its loading and operation in the conditions peculiar to the air route.

6.3 All pilots shall demonstrate to an Examiner appointed or approved by the Director General that they are familiar with all air navigation facilities and procedures, air traffic control system; and aircraft distress procedures currently in use.

6.4 The first pilot shall have made at least two flights either as first pilot without passengers or as second pilot along the route over which he is required to fly in conditions permitting visual contact flying and shall himself have landed and taken off at each of the scheduled aerodromes on the route.

6.5 All pilots while engaged on a licensed air transport service shall undergo a local proficiency check twice during a year. These checks shall be carried out in either actual flight or

in actual flight and on an approved simulator alternatively. The checks shall be carried out at intervals of not less than 4 months and not more than 8 months or as specified by DGCA. They shall also undergo an Instrument Rating check every year either in actual flight or on a Simulator. The checks shall be carried out by an Examiner (Check Pilot) approved by the Director General. The checks shall include:

- (a) 180 deg. turns with 30 deg. bank to port and starboard, variation in height not to exceed 200 feet;
- (b) let-down procedure applicable to the aerodrome in use ;
- (c) recovery from unusual altitude.

6.6 All pilots before flying as Pilot-in-Command of an aircraft with two or more engines in a licenced air transport service shall demonstrate to an Examiner approved or appointed by the Director general their proficiency in the performance of the following flight tests on the type of aircraft to be operated namely :-

(1) For operation by day -

- (a) Six take-offs, circuits, and landings, at varying degrees of load to include one take off at maximum landing weight.
- (b) Stalls, to the point of warning, with wheels and flaps up and down during normal and asymmetric flight.
- (c) Asymmetric flight including landings, using alternate engine(s) and emergency action with simulated failure of one or more engines during take off.
- (d) One approach at too low a height and one approach at too great a height with one or more engines inoperative.
- (e) A check in instrument flying in actual flight, comprising -
 - (i) recovery from unusual attitudes, loss in height not to exceed 1,000 feet.
 - (ii) Asymmetric flight to include 180 deg. turns with an against inoperative engine(s), loss in height not to exceed 200 feet.
 - (iii) Let down procedure applicable to the aerodrome in use, variation in speed during descent not to exceed 5 MPH above or below the stipulated speed.

(2) For operation by night :-

Night Flying tests -

(a) As in (a), (b), (c) and (d) above for operation by day.

(b) Let down procedure applicable to the aerodrome in use; variation in speed during descent not to exceed 5 MPH above or below the stipulated speed;

Provided that the Director General may exempt from any or all of the tests prescribed in this paragraph, a pilot whose experience is so long and varied as to indicate his proficiency up to the requisite standard.

6.7 All the flying tests prescribed in paragraph 6.6 must have been carried out within a period of six months immediately preceding the date of application and must have been witnessed and certified by the same Examiner.

Provided that where more than one Examiner is employed by a licensed air transport service, the flying tests may be certified jointly by two Examiners (Check Pilot) one of whom witnessed each test and provided further that a test already performed during the previous six months for the endorsement of the Commercial Pilot's licence in respect of an additional type of flying machine, in accordance with Schedule II, Section C, paragraph 2, sub-paragraph (1), clause (c), sub-clause (ii) and clause (d), sub-clause (iii) of Aircraft Rule, need not be repeated where an identical test is prescribed in paragraph 6.6 of this Civil Airworthiness Requirement.

7. GENERAL REQUIREMENTS FOR AIRCREW :

7.1 The flight crew for any flight shall include at least those specified in Certificate of Airworthiness or in the Flight Manual and they shall hold valid and appropriate licences.

7.2 The Pilot-in-Command of every aircraft shall, before commencing any flight, satisfy himself of the following :-

(a) Valid "Flight Release" is there in respect of the aircraft.

(b) Sufficient length of runway is available for safe take off and line of flight in the take-off directions is not obstructed.

(c) The aircraft is equipped with prescribed instruments and equipment (including route maps/charts for navigational purposes).

(d) The flight controls of the aircraft are working freely and in correct senses.

(e) Engines are developing correct power.

(f) The aircraft is satisfactorily loaded with respect of total load and distribution of load (C.G. location is

within approved limits) and that load is properly fastened, and secured.

- (g) View of the pilot is not interfered with by any part of the aircraft structure.
- (h) Sufficient quantity of fuel and oil of correct grade are available on board for the proposed flight.

7.3 After the pilot is satisfied about the condition laid down in para 7.2 except item 7.2(e), he shall sign a certificate to this effect. As far as item 7.2(e) is concerned pilot will ensure before take off that engine(s) is/are developing correct power.

Note :- Operators may use their own format for pilots' acceptance certificate as long as the points listed at para 7.2 are covered in the format.

7.4 Before each take-off the pilot in command in aeroplane carrying passengers shall ensure that all passengers have been briefed regarding :-

- (i) Smoking limitations.
- (ii) Occupation of seats/berths and use of safety belts/restraining belts.
- (iii) Location and means of opening the passenger entry door and emergency exits.
- (iv) Location and means of using survival equipment.

7.5 Flight Crew Member duties.

7.5.1 No scheduled transport aircraft operator shall require, nor may any flight crew member perform, any duties during a critical phase of flight except those duties required for the safe operation of the aircraft.

7.5.2 No flight crew member may engage in, nor may any pilot in command permit, any activity during a critical phase of flight which could distract any flight crew member from the performance of his or her duties or which could interfere in any way with the proper conduct of those duties.

7.5.3 For this purpose critical phase of flight includes all ground operations involving taxi, take off and landing and all other flight operations conducted below 10,000 feet, except cruise flight.

7.5.4 Duties not required for safe operations of the aircraft include company required calls made for such non safety related purposes such as ordering galley supplies and

confirming passengers connections, announcements made to passengers promoting the airline/aircraft operator or pointing out sights of interest, and filling out company payroll and related records.

- 7.5.5 Activities not required for safe operation of the aircraft include eating meals, engaging in non-essential conversations within the cockpit and non-essential communication between the cabin and cockpit crews, and reading publications not related to the proper conduct of the flight.
- 7.5.6 No pilot may carry out aerobatic "maneuver" in an aircraft (aerobatic category) unless a crash helmet or suitable headgear of approved type is worn.
- 7.5.7 The pilots wearing spectacles, must wear flying goggles over and above the spectacles or wear a helmet fitted with visors during performance of aerobatic flight.

Sd/-

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