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## 1.0 PURPOSE.

This Advisory Circular (AC) provides guidance to the operator applying for operational approval for All Weather Operations (AWO). It contains information about standards, practices and procedures acceptable to the Authority.

## 2.0 REFERENCES

- 2.1 Civil Aviation (Air Operator Certification and Administration) Regulations as amended
- 2.2 Civil Aviation (Personnel Licensing) Regulations as amended.

## 3.0 INTRODUCTION.

3.1 All Weather Operation (AWO) is any taxi, take-off and landing operations in conditions where visual reference is limited by weather conditions.

3.2 The operational approval granted by the Authority for AWO covers such major elements such as the aircraft as a system, flight crew capabilities and flight procedures. The operational approval does not include aerodrome facilities.

3.3 The operator must take cognizance of the physical and design characteristics of the runways and taxiways, pre-threshold terrain topography and back-up services of the aerodromes of intended operation and ensure that they are certified by the State of the Aerodrome to ICAO standard specifications.

## 4.0 LOW VISIBILITY TAXI AND TAKE-OFF.

4.1 When an aerodrome visibility drops below a pre-determined level, the local ATC may declare LVP (Low Visibility Procedure) operation in effect.

4.2 Pilots are required to follow LVP procedures and use specific aerodrome taxi charts to ensure correct taxiing to the intended runway for take-off.

4.3 Low visibility take-off (RVR below 400 m or RVR as promulgated by the aerodrome authority, whichever is the higher) is predicated by the declared RVRs for the three runway zones to provide adequate visual reference for accelerate-go as well as accelerate-stop.


4.4 For LVP operation, the operator shall ensure that its pilots are trained in accordance with the policy and procedures approved by the Authority.

## 5.0 CATEGORY II AND III OPERATIONS.

5.1 Airworthiness Requirements.

5.1.1 Aeroplane equipment authorization

5.1.2 The operator shall include in his application to the Authority relevant pages of the AFM, TC, STC, TCDS and/or the aeroplane operations manual attesting that the aeroplane meets

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the relevant airworthiness requirements and performance criteria for, as applicable, Category II (CAT II) and/or Category III (CAT III) operations as well as Autoland capabilities.

5.1.3 The operator shall also include any promulgated limitations or procedures necessary for safe operation, such as:

5.1.3.1 DA/H or AOM limitations;

5.1.3.2 Minimum airborne equipment prior to commencement of the AWO approach;

5.1.3.3 Equipment operating procedures and sequences;

5.1.3.4 Aircraft performance data; and

5.1.3.5 Any factors affecting the aeroplane AWO operations.

5.1.3.6 Continuing Airworthiness Maintenance Procedures (CAMP)

5.1.3.7 The operator shall maintain the aeroplane in accordance with the approved CAMP with specific programmes for lower landing minima or low visibility take-off. The CAMP should include at least the following:

5.1.3.8 Maintenance procedures to ensure continued airworthiness relative to low visibility operations;

5.1.3.9 Procedure to revise and update the maintenance programme.

5.1.4 The operator shall also ensure that maintenance personnel are trained in accordance with training programmes approved by the Authority.

## 5.2 Flight Operations Requirements

5.2.1 Flight Crew Qualification. The operator shall ensure that flight crew training programmes for low visibility operation include structured courses covering at least the following:

(a) Ground Training should include:

(1) Characteristics, including limitations of the airborne and ground equipment, visual aids such as marking and lightings and fog, as well as capability and limitations of any other airborne systems including HUD and/or EVS;

(2) Effects of precipitation, ice accretion, LLWS (Low Level Windshear) and turbulence and specific aeroplane/system malfunctions;


(3) Use and limitations of RVR assessment systems, principle of obstacle clearance requirements;

(4) Procedures and precautions with regard to surface movements during LVP operations including take-off requirement, e.g. minimum of 200 m RVR for Category D aeroplanes;

(5) Effects of irregular terrain on radio altimeter, significance of Alert Height and Decision Height, pilots' seating and eye position: and

(6) Required qualification to obtain LVP take-off and CAT II/III operations

(b) Flight Simulator and/or Aeroplane Flight Training should include:

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- (1) Function check of equipment in air and ground, effect of known unserviceability's and use of MEL as well as limitation due to airworthiness certification;
- (2) Monitoring of auto flight status and progress including special guidance systems, action in the event of failures such as engine, electrical, hydraulic or flight control;
- (3) Effects on minima caused by changed status of airborne /ground equipment;
- (4) Significance of Alert Height (AH) and failure actions above and below;
- (5) Visual cues guidance and maximum allowable localiser or glide path deviation.

## 6.0 APPLICATION FOR APPROVAL.

6.1 The operator shall arrange to meet the Authority as soon as possible, at least 90 working days in advance of his plan to engage in all-weather operations.

6.2 The Authority's 5-step structured process is applicable and it comprises: Pre-application meeting, Formal application, Document evaluation/assessment, Flight proving/validation and Award or rejection of application.

6.3 The application package should include the following items:

6.3.1 Application letter with statement on operating experience, types of aircraft and currently approved Instrument Approach Procedure (IAP);

6.3.2 AWO category applied for and with the relevant minima, LVP if applicable;

6.3.3 List of destination and alternate aerodromes with categorization approved for AWO operations;

6.3.4 Relevant pages of AFM, Operations manual stating operator operating policy and/or procedures and, training programmes; and

6.3.5 Proposed timeline, if any, for the completion of aeroplane and crew qualification.

6.4 The grant of operational approval shall depend on successful evaluation of the submitted documents, approval and validation of crew training programmes, and compliance with requirements.


## 2.0 7.0 ADDITIONAL REQUIREMENTS.

### 7.1 Operational Demonstration

7.1.1 The purpose of operational demonstration is to determine or validate the use and effectiveness of the applicable aeroplane flight guidance system (including HUDLS if any), crew procedures, training, maintenance programmes and operating policy and/or procedures applicable to CAT II/III operations.

7.1.2 Operational demonstration is applicable to the introduction and the approval of low visibility operations for new aeroplane type and the requirements are as follows:

- (a) At least 30 approaches and landings must be accomplished utilizing onboard CAT II/III system of the aeroplane type if the requested DH is 50 ft or higher;

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(b) If the DH is less than 50 ft, at least 100 approaches and landings must be accomplished;

(c) Unsuccessful approaches such as those due to unsatisfactory landings or system disconnect, shall not exceed 5% of the total. In such instance, the evaluation programme must be extended in step increments of 10 approaches and landings until over-all failure rate does not exceed 5%; and

(d) On a case-by-case basis, the Authority may consider granting credits in the form of reduction to the number of required approaches and landings based on the operator's experience gained from operating other aeroplane-type.

7.1.3 The operator shall develop a data collection method to record approach and landing performance which should include the following information:

- (a) Deficiencies relating to airborne equipment that causes inability initiate an approach;
- (b) Reasons for abandoning an approach and the altitude above the runway where the approach was discontinued or the Autoland system disengaged; and
- (c) Touchdown and/or rollout: A landing is considered satisfactory if the autopilot or pilot is able to correct, with normal control input, the lateral velocity so as to remain within the lateral confines of the runway. The data for the record should include, at touchdown, the approximate lateral and longitudinal position, indicated airspeed and the sink rate.

7.1.4 A summary of the operational demonstration data shall be made available to the Authority for evaluation.

## 7.2 Continuous monitoring

7.2.1 After initial authorization, the operator must continuously monitor the operations to detect any undesired trends. An acceptable method is by flight crew report.


7.2.2 The operator shall retain for a period of 12 months, information on:

7.2.3

- (a) Total number of satisfactory CAT II/III approaches by aeroplane-type; and
- (b) Reports of unsatisfactory approaches and/or auto lands by aerodrome and aeroplane registration on the following:
  - i. Airborne equipment faults;
  - ii. Ground facility difficulties;
  - iii. Missed approach due to ATC instruction; or
  - iv. Other reasons.

7.2.4 Additionally, the operator shall establish a procedure to monitor the performance of the Autoland system and/or HUDLS to touchdown, as appropriate, of each aeroplane.

## 7.3 Aerodromes and Runways

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7.3.1 The aeroplane-type versus the runway must be verified by successful completion of at least one landing in CAT II or better conditions prior to commencing CAT III operations;

7.3.2 Runways with irregular pre-threshold terrain or other perceived or known deficiencies must be satisfactorily verified in CAT I or better conditions before lowering in steps to CAT II followed by CAT III.

#### **7.4 Aeroplane and Crew Recency**

7.4.1 To maintain aeroplane CAT III approach and Autoland currency, the aeroplane must successfully complete an Autoland within the previous 28-day period.

7.4.2 Flight crew CAT II/III recency is maintained by a minimum number CAT II/III approaches with auto lands conducted either in flight or in an Authority-approved flight simulator. The number and the conduct of the exercise, as in the case of the use of a flight simulator, shall be approved by the Authority.

#### **7.5 Transition period**

7.5.1 Operators without previous CAT II experience may be approved for CAT II or CAT IIIA operations after having gained a minimum experience of 6 months of CAT I operations on aeroplane type.

7.5.2 A current CAT II or CAT III operator introducing a new aeroplane-type may be approved for CAT II or CAT IIIA operations for an Authority-approved transition period (normally 6 months) before being granted approval for lower category operations.

#### **8.0 WITHDRAWAL OF APPROVAL.**

8.1.1 Any unsatisfactory report shall be thoroughly investigated. To ensure safety of operation the operator shall take positive steps which may include suspending the aeroplane or crew from AWO operations.

8.1.2 Violation or failure to comply with AWO operating requirements may result in withdrawal of the approval by the Authority.



**Civil Aviation Authority**