

## **OUSD Plan**

1) This Operator Use Suitability Demonstration (OUSD) plan contains direction and guidance to be utilized by ABC Airlines, Inc. personnel responsible for conducting and managing demonstrations required for FAA issuance of operations specification (OpSpec) C060 authorizing Category II and III operations for B737-700 aircraft .

a) The Director of Operations (DO) is responsible for implementation of all operational procedures required by this OUSD plan. The Director of Maintenance (DOM) is responsible for implementation of all maintenance procedures required by this OUSD plan. They are jointly responsible for providing routine and regular updates and feedback to ABC Inc.'s principal operations inspector (POI), principal maintenance inspector (PMI), and principal avionics inspector (PAI). Operational use suitability demonstrations will be completed as described in Advisory Circular (AC) 120-118, Criteria for Approval/Authorization of All Weather Operations (AWO) for Takeoff, Landing, and Rollout. The purpose of these operational demonstrations is to validate the use and effectiveness of the applicable aircraft flight guidance systems, training, flightcrew procedures, maintenance program, and manuals applicable to the program being approved. ABC's B-737-700 FAA-approved Aircraft Flight Manual (AFM) references AC 120-29A as the criteria used as the basis for CAT II and AC 120-28D as the criteria used as the basis for CAT III airworthiness demonstrations; therefore our B-737-700 fleet is already considered to meet the provisions of AC 120-118 Paragraph 8-6.a. This OUSD plan is designed to address provisions of 8-6.b., requiring verification of OUSD for initial CAT II and III approval.

b) Per AC 120-118 Para 8-7, ABC Airlines, Inc. is an operator with CAT I experience and our B737-700 fleet constitutes a new aircraft. Therefore, the OUSD will consist of the events prescribed in

table 8-1 as illustrated below:

**TABLE 8-1. OPERATOR USE SUITABILITY DEMONSTRATION REQUIREMENTS**

Requesting CAT II Authorization					
Operator Experience	Aircraft	Required Landings/Minima	OUSD Validation Phase 1 RVR Mins/Mos	OUSD Validation Phase 2 RVR Mins/Mos	Authorized RVR Minimums
CAT I	New	100/Cat I	1600/6 or 1200/6 <sup>6</sup>	N/A	1200 or 1000 <sup>1</sup>
CAT II	New	50/Cat I			
	New Equipment Only	25/Cat I/3		1600/3 or 1200/3 <sup>6</sup>	
CAT III	New	50/Cat I	1600/6 or 1200/6 <sup>6</sup>	N/A	
Requesting Cat III Authorization					
Operator Experience	Aircraft	Required Landings/Minima	OUSD Validation Phase 1 RVR Mins/Mos	OUSD Validation Phase 2 RVR Mins/Mos	Authorized RVR Minimums
CAT I	New	100/Cat I	1200/6 <sup>7</sup>	700 <sup>3</sup> or 600/6	400 or 300 <sup>2</sup>
CAT II	Existing	25/Current Cat II mins/3 <sup>4</sup>		700 <sup>3</sup> or 600/3 <sup>5</sup>	
	New Equipment Only	50/Cat I	1000 <sup>1</sup> /6	700 <sup>3</sup> or 600/6	
	New				
CAT III	New	25/Current Cat II mins/3 <sup>4</sup>		700 <sup>3</sup> or 600/3 <sup>5</sup>	
	New equipment only				
<sup>1</sup> 1000 RVR authorization requires use of Autoland or FP HUD via OpSpec/MSpec/LOA					
<sup>2</sup> 300 RVR authorization via OpSpec/MSpec/LOA requires a Fail Operational Rollout System					
<sup>3</sup> 700 RVR authorization based on CAT IIIa approval via AC 120-28C or earlier criteria					
<sup>4</sup> Landing phase and OUSD Validation Phase 1 may run concurrently					
<sup>5</sup> Validation Phase 2 and all reporting requirements apply even if operator is not seeking RVR 400/300 mins					
<sup>6</sup> CAT II minima of 1200 RVR may be authorized for operators seeking CAT II 1000 RVR minima in accordance with Note 1					
<sup>7</sup> CAT II minima of 1000 RVR in accordance with Note 1 may be authorized in conjunction with initial CAT III authorization after completion of OUSD Validation Phase 1					

1. The OUSD landing phase will consist of at least 100 landings in line operations using the autoland system in CAT I or better weather conditions.

A success rate of 90% or better must be achieved and at least 10 percent will be observed by an appropriately qualified FAA operations inspector.

If an excessive number of failures (e.g., unsatisfactory landings, erroneous automated callouts, or system disconnects) occur during the OUSD landing phase, a determination will be made for the need for additional demonstration landings, or for consideration of other remedial action (e.g., procedures adjustment, wind constraints or system modifications).

At the successful completion of the OUSD landing phase, CAT II minima of 100' DH/RVR 1200 may be authorized.

2. Because the ABC fleet of B737-700 aircraft is certified for Fail Passive CAT III operations IAW AC 120-28D, ABC Airlines is seeking CAT II minima of 100' DH/RVR 1000 and CAT III minima of 50' DH/RVR 600. Therefore, there will be a single OUSD validation phase.

The OUSD validation phase will be 6 months in duration with CAT II minima of 100' DH/RVR 1200.

The purpose of the OUSD validation phase is to validate that the ABC Airlines' proposed maintenance and operational procedures are suitable to CAT II/III operations. Due to the importance of this maintenance tracking during the OUSD validation phase, special emphasis will be placed on AC 120-118 Chapter 7 maintenance reporting and procedures.

If ABC Airlines is not aware of current CAT II/III operations at a particular runway by some other operator and similar aircraft type, ABC will conduct at least one approach and landing using the CAT III system to each such runway intended for CAT II/III operations. These operations will be conducted in CAT I or better weather during line operations, training flights, or aircraft type or route proving runs.

ABC Airlines will conduct CAT III landing demonstrations on U.S. facilities that have published part 97 CAT II or CAT III instrument approach procedures (IAP), approved foreign facilities listed on the Flight Operations Branch website at [http://www.faa.gov/about/office\\_org/headquarters\\_offices/avs/offices/afx/afs/afs400/afs410/cat\\_ils\\_info/](http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afx/afs/afs400/afs410/cat_ils_info/), or U.S. Type I facilities IAW ABC's OpSpec C061. When using CAT I facilities for demonstration, there is a greater chance to end in an unsuccessful landing which could prolong the OUSD process. Sufficient information will be collected and investigated to determine the cause of any unsatisfactory performance (e.g., critical area was not protected, etc.).

At the successful completion of the OUSD validation phase, the requested CAT II and CAT III minima may be authorized.

c) ABC monitors aircraft maintenance performance trends through the Continuous Analysis and Surveillance Program (CASP). CASP is designed to assist in detection and correction of recurring problems in the B-737-700 fleet. CASP action is predicated on the inbound Boeing Airlines for America (A4A) codes entered in the logbook. Should any A4A code be entered in the logbook three times or more in any 20-day period, the item will be flagged and analyzed for systemic corrective action by the

engineering department. Therefore, it is extremely important for crewmembers to enter the correct A4A code when making logbook entries, particularly when related to the aircraft autoflight system and autoland performance. Flightcrews will use form ABC OUSD-1 (sample below) to record all unsatisfactory autoland approaches. A logbook entry is also required for any unsatisfactory autoland. Forms ABC OUSD-1 will be left with the aircraft logbook for scanning into the maintenance tracking system (retained for 1 year). This information will also be retrieved by the CASP and published monthly in the Fleet Maintenance CASP Report. All autoflight system history is also available in the maintenance tracking system by the applicable A4A chapter.

**NOTE:** The crew is responsible to notify dispatch of all autolands by Aircraft Communications Addressing and Reporting System (ACARS) message at the end of each flight. Dispatch will ensure that maintenance control is notified of all autolands in a timely manner so that appropriate recordkeeping and maintenance action can be taken. In the event of an unsuccessful autoland, the crew shall submit an Autoland Discrepancy Form in addition to the ACARS report. If ACARS is inoperative or not installed, the flightcrew must submit an Autoland Discrepancy Form to the chief pilot.

Autoland messages are accessed through ACARS, page 2 of the FLT Summary page, Automatic Approach, as in the following example:

## Example: Autoland Messages on ACARS Page 2 of Flight Summary

### FLIGHT SUMMARY PAGE 2: AUTOMATIC APPROACH

(1) Enter required information as follows:

1. Select YES;
2. Enter RUNWAY used;
3. Enter reported RVR visibility in feet;
4. Enter SAT or UNSAT, as appropriate for the autoland;
5. Enter DISC ALT disconnect altitude in feet or enter 0 (zero) for full autoland; and
6. SEND when all required fields are filled.

(2) Reporting Requirements. Upon receipt of an ACARS, FLIGHT SUMMARY, AUTOMATIC APPROACH message in dispatch, maintenance control will enter all data on a CAT II OUSD tracking spreadsheet and forward the message to the following management personnel:

1. Director of Operations (DO), Captain Boe Sharp.
2. Director of Maintenance (DOM), Ken Johnson.

During each morning meeting for the duration of this OUSD, maintenance control will brief all attendees as to the current status of OUSD landings, including the following statistics:

- Autolands attempted: previous 24 hours;
- Satisfactory autolands: previous 24 hours;
- Unsatisfactory autolands with preliminary reasons;
- Total satisfactory autolands to date;
- Total unsatisfactory autolands to date; and
- FAA feedback, if any.

1. Should there be any unsatisfactory autolands reported, the DOM and the DO are jointly responsible to determine whether maintenance factors, operational factors, or some combination thereof are responsible for the unsatisfactory autoland and to develop appropriate remedial procedures.

2. Additionally, maintenance control is responsible for maintaining a current and inspectable OUSD file of all relevant email messages and B-737-700 Autoland Discrepancy Forms. This file may be maintained in electronic format or by the maintenance tracking system with scanned B-737-700 Autoland Discrepancy Forms.

Form ABC OUSD-1, B-737-700 Autoland Discrepancy Form. Flightcrews will use Form ABC OUSD-1 to record all unsatisfactory autoland approaches. An unsuccessful autoland is defined as follows:

- Aircraft fails to maintain runway track within + or – 22 feet of centerline (CL);
- Drift rate exceeds 2 feet per second;
- Aircraft does not touch down within the touchdown zone (TDZ);

- Autoflight system does not maintain the aircraft within required performance parameters when within the decision region; and
- Any other performance abnormality (e.g., early autoflight disconnect, failure to ALIGN, failure to FLARE, failure to RETARD autothrottles, or failure to rollout properly).

1. A logbook entry is required for any unsatisfactory autoland. Forms ABC OUSD-1, B-737-700 will be left with the aircraft logbook for scanning into the maintenance tracking system (retained for 1 year). This information will also be retrieved by the CASP and published monthly in the Fleet Maintenance CASP Report.

2. All autoflight system history is also available in the maintenance tracking system by the applicable A4A chapter.

<b>Sample Autoland Discrepancy Form</b>			
<b>ABC OUSD-1, B-737-700, Autoland Discrepancy Form (Front)</b>			
This form will be completed whenever an approach is attempted using the airborne low approach system, regardless of whether the approach is abandoned or concluded successfully.			
CAT II/III APPROACH EVALUATION			
CAT II <input type="checkbox"/>	CAT III <input type="checkbox"/>	Autoland Yes <input type="checkbox"/>	No <input type="checkbox"/>
Pilot in Command (PIC) _____			
Second in Command (SIC) _____			
Date _____	Registration No. _____	Airport ID _____	
Rwy _____	Wx _____	Wind _____	
APPROACH EVALUATION:			
Was the approach successful? Yes _____ No _____			
Flight control guidance system used:			
Auto-coupler _____			
Flight director _____			
Airspeed at middle marker ± at _____ 100' ± _____ from programmed speed?			
If unable to complete the approach, indicate the cause:			
Airborne equipment <input type="checkbox"/>	Ground equipment <input type="checkbox"/>	ATC (air traffic control) <input type="checkbox"/>	Other <input type="checkbox"/>

Identify and describe nature of deficiency.

---

---

---

---

See criteria on rear of this form

**ABC OUSD 1, B-737-700, Autoland Discrepancy Form (Back)**

**AUTOLAND CRITERIA**

An unsuccessful autoland is defined as follows:

1. Aircraft fails to maintain runway track within  $\pm 22$  feet of centerline (CL);
2. Drift rate exceeds 2 feet per second;
3. Aircraft does not touch down within the touchdown zone (TDZ);
4. Autoflight system does not maintain the aircraft within required performance parameters when within the decision region; and
5. Any other performance abnormality (e.g., early autoflight system disconnect, failure to ALIGN, failure to FLARE, failure to RETARD autothrottles, or failure to rollout properly).

A logbook entry is required for any unsatisfactory autoland.

Data Collection Requirements and Miscellaneous Considerations. Form ABC OUSD-1, B-737-700 was developed to allow the flightcrew to record unsatisfactory approach and landing performance. The resulting data and a summary of the demonstration data will be made available to the principal inspectors (PI) and regional Flight Standards division (RFSD) NextGen Branch (AXX-220) for evaluation. The data provided by Form ABC OUSD-1, B-737-700 include the following information:

1. Information regarding the inability to initiate an approach or identify deficiencies related to airborne equipment.
2. Information regarding abandoned approaches, stating the reasons the approach was abandoned and the altitude above the runway at which the approach was discontinued or at which the automatic landing system was disengaged.
3. Information regarding any system abnormalities that required manual intervention by the pilot to ensure a safe touchdown or touchdown and rollout, as appropriate.
4. Data Analysis. Unsatisfactory approaches using facilities approved for CAT II or III where landing system signal protection was provided should be fully documented. The following factors should be considered:
  - a. Air Traffic Control (ATC) Factors. ATC factors that result in unsuccessful approaches should be reported. Examples include situations in which a flight is vectored too close to the final approach fix (FAF)/Final Approach Point (FAP) for adequate Localizer (LOC) and glide slope

capture, lack of protection of ILS critical areas, or ATC requests for the flight to discontinue the approach.

b. Faulty Navigational Aid (NAVAID) Signals. NAVAID (e.g., ILS LOC) irregularities, such as those caused by other aircraft taxiing, overflying the NAVAID (antenna), or where a pattern of such faulty performance can be established should be reported.

c. Other Factors. Any other specific factors affecting the success of CAT II operations that are clearly discernible to the flightcrew should be reported. An evaluation of reports discussed above will be made to determine system suitability for authorization for CAT II operations.

5. The following precautions must be observed when conducting autolands:

a. The runway and associated instrument procedure should have no outstanding Notices to Airmen (NOTAM) or other applicable notes concerning the procedure precluding the use of the autoland system (e.g., it should not have notes such as “LOC unusable inside the threshold,” or “Glideslope unusable below xxx feet.”).

b. Suitable ILS critical area protection (or equivalent) should be requested from ATC, if applicable. Similar to precautions for a CAT II or III procedure, the crew should remain alert to detect any evidence of unsuitable system performance, whether or not critical protection is being provided.

d) ABC airlines is seeking approval for B737-700 CAT II/III operations at SEA and will incorporate the required irregular terrain assessment into this OUSD. This will be a Case III assessment IAW AC 120-118 Appendix 4 so will require 15 or more successful line landings in CAT I or better weather conditions before such an approval can be granted. ABC airlines will conduct these line landings during the OUSD landing and/or validation phases and will record the results IAW para c) above. If an unsuccessful landing is encountered during the irregular terrain assessment line landings, further assessment landings will not be accomplished until ABC airlines and the applicable Flight Standards office conduct an analysis of the unsuccessful and the cause can be determined.