

ORDER

8400.8

Date: 9/10/80

Initiated

by: AFO-210

Subject: PROCEDURES FOR THE APPROVAL OF FACILITIES FOR
FAR PART 121 AND PART 135 CAT III OPERATIONS

1. PURPOSE. This order informs agency personnel of minimum requirements for approval of CAT IIIa operations at various facilities. Three types of facilities are defined to facilitate handling of CAT IIIa approvals. Appendix 4 of this order catalogs U.S. facilities which meet ICAO CAT III requirements and which meet alternative domestic criteria for CAT IIIa operations. It also lists foreign facilities which can be and are approved for CAT IIIa operations for Part 135 and Part 121 air carriers.

2. DISTRIBUTION. This order is distributed to all addressees on special listing ZFS-843.

3. BACKGROUND. AC 120-28B, Criteria for Approval of Category IIIa Landing Weather Minima, permits certain aircraft with fail-operational or fail-passive automatic landing systems to operate to CAT IIIa minima on ILS facilities previously limited to CAT II use in the U.S. A number of operators are now requesting CAT IIIa approvals as a result of the increased availability of these fail-operational automatic landing systems. AC 20-57A, Automatic Landing Systems, and AC 120-28B contain airworthiness certification standards used to determine aircraft suitability for CAT IIIa operations. AC 120-28B contains approval requirements for the airborne equipment and crew training. As of this writing, no CAT IIIa operational approvals have been granted to aircraft equipped with a fail-passive automatic landing system.

4. DEFINITIONS.

a. The term "type" is used in this order to differentiate the ground guidance facility from the type of flight operation (i.e., Type II ILS facility as opposed to CAT II operations or CAT IIIa instrument approach minimums). This distinction should eliminate existing confusion between facility establishment criteria and criteria for approval of CAT I, CAT II, or CAT IIIa flight operations. It acknowledges that certain ground facility requirements are needed to support CAT I, CAT II, and CAT IIIa operations. However, it clarifies the concept that dependent upon aircraft type, airborne equipment, crew training, or other factors these ground facility requirements may vary, from an operational point of view, subject to the capability of the airborne equipment, operational needs, and aircraft characteristics.

b. Type I Facility. A Type I facility is defined as all localizer and glide slope facilities not meeting the definition of Type II or Type III and which have a published straight-in course coincident with the centerline of the runway or an offset localizer which is not offset in excess of 3 degrees from the centerline of the runway.

c. Type II Facility. A U.S. Type II facility is defined as an AN/GRN-27 (modified) ILS, or equivalent ILS system, as designated by Airway Facilities Service. A U.S. Type II facility meets or exceeds all requirements for an ICAO "facility performance CAT II ILS" as specified in Annex 10, Chapter 3 (Note: These facilities have been referred to in the U.S. as CAT II facilities). U.S. Type II facilities, in certain cases, may also meet some or most requirements of the ICAO Annex 10, Chapter 3, Facility Performance CAT III ILS. However, since the U.S. does not specifically apply the Annex 10 criteria or advertise these facilities as meeting the ICAO standard for CAT III, they are not considered for, or listed as, CAT III for international use in the U.S. Aeronautical Information Publication. (Tampa R/W-36L ILS and Oklahoma R/W-35R ILS, although not AN/GRN-27 equipment, are considered Type II facilities with "Grandfathers' Rights," since they will eventually be upgraded to meet the U.S. standard.)

d. Type III Facility. A U.S. Type III facility is defined as a facility which meets all ICAO criteria as specified in ICAO Annex 10, Chapter 3, and is identified as "CAT III" in standards, recommended practices, or guidance material, and is one of the following types of ILS: STAN 37/38, Wilcox ILS-FAA Type 9760 Series, Texas Instruments Mark III ILS or an AN/GRN-27 modified, or equivalent, as designated by Airway Facilities Service.

e. Controlling Region. The FAA region which is responsible for the regular inspection of airports which are to be used or are being used by U.S. Parts 121 and 135 air carriers. For the purpose of this order, the FAA Europe, Africa and Middle East Office (EAMEO) is included.

5. EXPLANATION OF APPENDICES.

a. Appendix 1 presents the general criteria for acceptance of Type II facilities for approval of CAT IIIa operations.

b. Appendix 2 presents the administrative procedures by which facility acceptance is established for CAT IIIa operations for:

(1) Airports which have Type III facilities and meet ICAO CAT III requirements.

(2) Airports which have Type II facilities and were formerly limited to CAT II, but which may now be approved for CAT IIIa for FAA Part 121 and Part 135 air carriers.

(3) Foreign facilities which may be approved for CAT IIIa for FAA Part 121 and Part 135 air carriers.

c. Appendix 3 is provided as a recommended checklist to serve as a guideline for FSDO's, ACDO's, and GADO's in coordination with flight inspection and procedures personnel when evaluating airport and ground facilities for CAT IIIa ILS operations approval at airports which have Type II facilities.

d. Appendix 4 is a consolidated master list of all domestic and foreign airports which are approved or approvable for CAT IIIa operations. The publication of this list will facilitate operator approvals as the number of CAT IIIa applications increase.

6. RESPONSIBILITIES. The CAT III responsibilities of controlling regions for particular operators and the specific criteria as outlined in AC 120-28B continue to apply. It is incumbent upon the Flight Standards office within the region to apply the guidelines set forth in AC 120-28B and this order to ensure proper compatibility of facilities and operations for CAT IIIa. Flight Standards offices can evaluate a Type II facility of their own volition or at the request of an air carrier seeking operational approval to conduct CAT III operations. Evaluation results, in either case, will be forwarded to AFO-200. AFO-200 will maintain, revise, and disseminate a list of those facilities approved or approvable for CAT IIIa.

/s/ KENNETH S. HUNT
Director of Flight Operations

APPENDIX 1. GENERAL CRITERIA FOR ACCEPTANCE OF A TYPE II FACILITY FOR CAT IIIA OPERATIONS

1. Although an aircraft normally may be certified and operated for CAT IIIa only on the ICAO CAT III defined facilities, U.S. manufacturers may seek additional credit for CAT IIIa airworthiness approvals or operators may desire to seek approval for use of additional facilities. The following criteria specify acceptable characteristics for a U.S. Type II ILS facility to be considered for airworthiness and operations approval for CAT IIIa.

2. CAT IIIa airworthiness and operational certification on Type II ILS facilities is based on ILS facility characteristics which are described in Advisory Circular 20-57A (Advisory Circular 20-57A is based on ICAO Annex 10, Volume 1, Chapter 3, Facilities Performance Category II - ILS) with the following exceptions:

a. Course alignment accuracy shall be maintained within + or - 15 feet of runway centerline (2-sigma), as measured at the runway threshold.

b. Total period of radiation outside of performance limits stated in ICAO Annex 10 shall not exceed 2 seconds in the event of a transfer from the main to the standby localizer or glide slope transmitters.

c. Localizer automatic monitor shall cause radiation to cease if the mean course line shifts more than 25 feet from the runway centerline.

3. These criteria and the following general criteria should be used by field offices as a preliminary guide when determining the suitability of Type II ILS facilities for CAT IIIa operations.

a. As a general rule, "waveguide" glide slope transmitters are not acceptable for CAT III operations. Any request to approve a facility having a "waveguide" glide slope must be reviewed by AFO-200 and AFO-700 to ensure the facility meets established zone three glide slope tolerances.

b. There should not be any waivers in effect which would compromise safe CAT IIIa operations, i.e., waivers which affect: glidepath critical areas, localizer critical areas, or waivers related to restricted facility performance.

c. Single frequency localizers are not acceptable, i.e., Oklahoma City, Oklahoma; Tampa, Florida.

d. Unrestricted CAT II approach minima of 100-foot Decision Height/1200 RVR must be available for the facility.

e. The facility may not have restrictive notes on the approach plate or NOTAMS outstanding which restrict use of autoland or coupled approaches.

f. Underlying approach terrain should permit proper radio/radar altimeter and autopilot operation. If terrain is such that CAT II Decision Height identification is required by means other than radio/radar altimeter, or if there is doubt regarding the possible effects of underlying terrain variation on aircraft system performance, the facility should be identified as requiring special aircraft type evaluation prior to any CAT IIIa operations approval.

g. Three transmissometers are required unless two can be shown to satisfy operational requirements of a particular runway. Runways having two transmissometers which need such approval are identified in Appendix 4. Runways may be carried in the Appendix 4 list if they meet all other requirements.

4. Following region assessment and recommendations, facilities approvable for all CAT IIIa operations are additionally reviewed and specifically designated by the Air Transportation Division, AFO-200.

APPENDIX 2. ADMINISTRATIVE PROCEDURES FOR OPERATIONAL APPROVALS FOR CAT IIIa OPERATIONS AT AIRPORTS WHICH HAVE U.S. TYPE II OR TYPE III FACILITIES AND AT FOREIGN FACILITIES

1. U.S. AIRPORTS.

a. Airports Having Type III Facilities. For U.S. airports

which meet all ICAO criteria for CAT III including the ILS facilities (Type III), a public use Part 97 procedure will be published as now is done for Dulles, Atlanta, San Francisco, and Denver. As new airports are equipped to meet the ICAO criteria, additional procedures will be published and the airports will be listed in Appendix 4 of this order. Both U.S. and foreign operators can routinely be approved to use these facilities as indicated by Advisory Circular 120-28B.

b. Airports Having Type II Facilities. For U.S. airports having Type II facilities to be considered for CAT IIIa operations, the region in which the airport is located should complete a checklist for each site and submit the results and a recommendation to AFO-200. AFO-200 will review the package and add the airport to Appendix 4 as appropriate. Criteria to be used are specified in the checklist (Appendix 3 of this order), Advisory Circular 20-57A, and Advisory Circular 120-28B. Since these facilities may or may not meet ICAO CAT III criteria, foreign carrier approval for operations lower than CAT II on these facilities shall not be considered by the regions. Any requests for foreign operations at these facilities should be referred to AFO-200 for consideration. Carriers approved for CAT IIIa operations utilizing Type II ILS facilities will use procedures contained in their operations specification until such time as an FAR 97 CAT IIIa public use procedure is developed and published for the facility concerned.

2. FOREIGN AIRPORTS.

a. Airports Which Meet ICAO Requirements For CAT III. For approval of CAT IIIa operations at foreign airports which are identified as meeting all ICAO Annex 10 and Annex 14 criteria and are published in the controlling country's AIP, the controlling FAA regional Flight Standards office is expected to broadly review the suitability of the declared CAT III facility to verify that it is in general conformance with ICAO standards. It is not intended that our field offices reexamine or in any way revalidate the details of the country's original approval, but they are expected to make cursory checks for gross discrepancies or any major problem areas which may not be addressed by ICAO criteria. If a review results in the approval of CAT III operations, the Flight Inspection Procedures staff of the controlling region (Chief, Flight Standards staff in the EAMEO) shall notify the other regions and AFO-200 by message that CAT III operations are authorized (this fact should be noted on the periodic CAT II/III Status Report). Upon receipt of the message, AFO-210 will then add that facility to Appendix 4 of this order. Appendix 4 will be distributed to regions and other services, and organizations as necessary. To minimize field office workload, reviews should only be conducted for those facilities at which CAT III operations have been requested, or are expected to be requested, by a U.S. operator. Once an initial facility review is made by the controlling region and approved by AFO-200, only major problems or discrepancies affecting flight safety which have not been adequately handled by the respective country's NOTAMS or AIP need be addressed by the controlling region.

b. Airports Not Meeting ICAO CAT III Criteria. Review for approval of CAT III at foreign airports which do not meet ICAO CAT III standards but which have been designated by the State as a CAT III facility (such as London, Heathrow), will be handled on a case-by-case basis by the Flight Technical Programs Branch, AFO-210, with consultation as necessary with other Washington Headquarters or regional offices. Once an approval is completed, the airport will be added to Appendix 4 of this order. The approval will describe any special action needed by the region for followup of continued CAT III suitability at the particular airport. Requests for approvals at such facilities should be forwarded to AFO-200.

APPENDIX 3. RECOMMENDED CHECKLIST FOR EVALUATING TYPE II FACILITIES FOR CAT IIIA OPERATIONS

The basis of approval for airports having Type II ILS ground systems for CAT IIIa operations is contained in the following sample checklist.

In accordance with Appendix 2, paragraph 1b, of this order, a completed checklist or the equivalent information will be forwarded with regional recommendations to AFO-200 for appropriate action. Regions only need to provide AFO-200 with information on those items preceded by a # symbol. However, when evaluating a facility, regions shall take into account all areas noted in this checklist.

Recommended
Category IIIa Ground Facility Checklist

Prepared by: AFO-210

Location _____

Airport _____

Runway _____

I. General Data

1. Length/Width _____ (ft.)
2. Underrun/Overrun _____ (ft.)
- # 3. Underlying Terrain (to 1000' prior to TH)

From "Approach Lights As Installed" diagram
[FIGURE NOT INCLUDED]

4. Runway Slope/Gradient

[FIGURE NOT INCLUDED]

- # 5. Runway Surface Type _____
- 6. Runway Grooving _____
- # 7. TCH Crossing Height _____

II. ILS System Remarks

(Type of Equipment Installed _____)

General - AC 120-29, Appendix 2

Standby Power - 6030.20B

Siting - 6750.16A
interference p. 7-11

Waivers - 6750.7, checklist
- 7110.65B, para 974c and d

Single Frequency ILS (both LOC and GS)

Monitoring - AFS-200 ltr to all regions
12/9/77, item d.

Flight Inspection - FINFO Sup 1, 9/10/73 and Sup 5,
10/26/76 (OA P 8200.1

Evaluate Marker Beacons

Approach Light Outages - 6850.5, p. 75

Approach Light System - ALSF-1 or 2

III. Lighting Aids on Airport

(Type of Approach & Runway Light Systems _____)

High Intensity Runway Lights -
AC 150/5340-24, p. 1.

Touchdown Zone & Centerline Lights -
AC's 150/5340-22, 150/5340-4C, para 8;
Order 8400.3A

Taxiway Turnoff Light System -
AC 150/5340-19, para 9

Reflective Markers - Order 5340.20,
p. 5 (if needed for taxiways, aprons, and ramps)

One-second power changeover available

Standby Power - 6030.20B

IV. Runway Markings

AC 150/5340-1D, procedures to advise when

covered by snow or rubber

V. RVR

(Number of Transmissometers _____)

Transmissometers - AC 97-1A, para 6a(3)(a)

Baseline - AC 97-1A, para 5e

Communication - AC 120-28B, para 4g

VI. Critical Area Marking

Placement - 6750.16A CHG 1, p. 12-13

Hold lines - AC 150/5340-1D

Localizer - 6750.16A, para 8e(4)(a), and GENOT 7/183

Glide slope - 7110.65B, para 974c and e
6750.16A, para 8e(2)

Signs - AC 150/5340-18A

VII. Obstacle Clearance

AC 120-29, Appendix 2

VIII. Communications

RVR Reporting - 7110.65B, para 1080-1082

Low Visibility Traffic -
AC 120-28B, para 4(2)(i)

Control & Critical Area Control - 7110.65B, para 401

Facility Outages - 7110.65B, para 401

Surface Control Procedures - 7110.65B,
Chapter 5, Sections 1, 5, and 22

IX. Crash/Fire/Rescue

AC 150/5210-9

X. Briefings

AFS-1 ltr to ATF-1, 12/9/77, para 5(a-d);

AFS-200 ltr to all regions, 12/9/77, para d

CAT IIIa

RECORD OF BRIEFINGS AND CONCUR/NONCONCUR

BRIEFING

HAVE BEEN BRIEFED

Initials

Local

- 1. CAT II Coordinator _____
- 2. Airway Facilities Sector _____
- 3. Chief, ATCT/TRACON, and ARTCC _____
- 4. Airports District Office _____

Regional

- 1. Airway Facilities Division _____
- 2. Air Traffic Division _____
- 3. Airports Division _____

	Concurrence	Concur	Non-Concur Comments Attached	Signature	Date
1. Flight Standards Division	_____	_____	_____	_____	_____
2. Air Carrier Branch	_____	_____	_____	_____	_____
3. Flight Procedures Staff	_____	_____	_____	_____	_____
4. Flight Inspection	_____	_____	_____	_____	_____

APPENDIX 4. FACILITIES APPROVED OR APPROVABLE FOR CAT IIIA OPERATIONS

- 1. U.S. Type III ILS facilities:

NO. OF
TRANSMISSOMETERS

LOCATION	REGION	R/W	LENGTH	COMM	/RVR	ALSF	CARRIER APPROVED	AIRCRAFT
Atlanta, GA	ASO	9R	(9,000)	11/73	3/700	II	DAL, EAL, TWA	L-1011, A-300
Denver, CO	ARM	35R	(12000x 200	11/76	3/700	II	DAL, EAL, TWA	L-1011, A-300
San Francisco, CA	AWE	28R	(11870x 200	2/76	3/700	II	DAL, EAL, TWA	L-1011, A-300

Washington, DC (Dulles)	AEA	1R	(11500)	11/65	3/700	II	DAL, EAL, TWA	L-1011, A-300
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2. U.S. Type II ILS facilities:

Anchorage, AK	AAL	6R	(10897)	4/72	3/700	II		
Baltimore, MD	AEA	10	(9450x 200)	7/74	3/700	II	TWA, EAL, DAL	L-1011, A-300
Boston, MA	ANE	4R	(8838)	3/78	3/700	II	TWA, EAL, DAL	L-1011, A-300
Chicago, IL	AGL	14R	(11600x 200)	8/69	3/700	I	TWA, EAL, DAL	L-1011, A-300
Chicago, IL	AGL	14L	(10003)	12/67	3/700	I	TWA, EAL, DAL	L-1011, A-300
Covington, KY *	ASO	36	(8600)	7/70	2/700	I		
Dallas/ Ft Worth, TX	ASW	17L	(11388x 200)	1/74	3/700	II	DAL	L-1011, A-300
Dallas/ Ft Worth, TX	ASW	17R	(11387x 200)	11/78	3/700	I	EAL	L-1011, A-300
Dayton, OH	AGL	6L	(9500)	12/71	3/700	II	TWA, DAL	L-1011
Detroit, MI	AGL	3L	(10501x 200)	10/68	3/700	II	TWA, DAL	L-1011
Fairbanks, AK	AAL	1L	(10300)	5/76	3/700	II		
Houston, TX	ASW	8	(9401)	6/69	3/700	II	EAL, DAL	L-1011, A-300
Indianapolis, IN	AGL	4L	(10000)	12/70	3/700	I	TWA, EAL	L-1011, A-300
Jacksonville, FL *	ASO	7	(8000)	10/74	2/700	I		
Kansas City, MO	ACE	19	(10800)	9/74	3/00	II	TWA, DAL	L-1011
Los Angeles, CA	AWE	24R	(8924)	8/75	3/700	I	TWA, EAL, DAL	L-1011, A-300

Memphis, TN	ASO	35L	(9300)	5/74	3/700	I		
Milwaukee, WI	AGL	1	(9690x 200)	2/68	3/700	I	EAL	L-1011, A-300
Minneapolis, MN *	AGL	29L	(10000x 200)	12/68	3/700	I		
Newark, NJ	AEA	4R	(7000)	8/73	3/700	II	TWA, EAL, DAL	L-1011, A-300
New Orleans, LA	ASW	10	(9227)	3/67	3/700	I	EAL, DAL	L-1011, A-300
New York, NY (JFK)	AEA	4R	(8400)	12/65	3/700	I	TWA, EAL DAL	L-1011 A-300
Oakland, CA *	AWE	29	(10000)	12/65	2/700	I		
Orlando, FL	ASO	36R	(10000x 200)	5/78	3/700	II	EAL, DAL, TWA	L-1011, A-300
Philadelphia, PA	AEA	9R	(10500)	2/73	3/700	II	TWA, EAL DAL	L-1011, A-300
Pittsburgh, PA *#	AEA	10L	(10500)	5/74	2/700	I		
Portland, OR	ANW	10R	(11000)	11/74	3/700	II	EAL	L-1011, A-300
Sacramento, CA	AWE	16	(8600)	6/70	3/700	I		
Salt Lake City, UT	ARM	34L	(12000)	12/74	3/700	II	EAL	L-1011, A-300
San Antonio, TX	ASW	12R	(8500)	2/71	3/700	II	EAL	L-1011, A-300
Seattle, WA #	ANW	16R	(9425)	6/73	3/700	II		
Shreveport, LA	ASW	13	(7300x 200)	7/78	3/700	I		
Windsor Locks, CT	ANE	6	(9051)	10/72	3/700	II	EAL, DAL	L-1011, A-300

3. Foreign facilities which can be/are approved for U.S. operators for CAT IIIA:

LOCATION	R/W	RVR	CARRIER	AIRCRAFT
Paris, Charles de Gaulle	7	700	TWA	L-1011

Paris, Orly	26	700	TWA	L-1011
London, Heathrow	10R/L, 28R/L	700	TWA, DAL	L-1011

* MAY BE AUTHORIZED WHEN THIRD TRANSMISSOMETER INSTALLED OR A CLIMATOLOGICAL STUDY SHOWS THAT CAT IIIA CAN BE APPROVED WITH TWO TRANSMISSOMETERS (SEE AC 120-28B, PARAGRAPH 4a(2)(f)).

Indicates that specific aircraft type evaluation required due to underlying approach terrain.