

# Modifications to Standards: ICAO Exceptions

## The Five Ws & One H

Presented at: Workshop for the  
Implementation of Procedures  
for Initial Aerodrome  
Certification & Continuing  
Aerodrome Safety Oversight

By: Alberto Cruz, P.E., C.M.  
Federal Aviation Administration,  
Office of Airports, Western-Pacific,  
Regional Engineer

Date: Mexico City, MX  
June 27, 2018



Federal Aviation  
Administration



# Alberto Cruz P.E., C.M.

**Mr. Cruz has almost 25 years of successfully completing airport engineering projects. He has worked over 13 years working at San Francisco International Airport (SFO) and at Bob Hope Airport (BUR) as the Airport Engineer and Department Manager for Airport Engineering Design.**

**Mr. Cruz serves as the Regional Engineer for the FAA Western-Pacific Regional Airports Division, Safety and Standards Branch. In this capacity, he serves as the subject matter expert for airport design, pavement, and construction standards. He is the region's point of contact and provides guidance to the Airport District Offices (Engineers & Planners), airports and their consultants for processing Modifications to Airport Standards.**

**Mr. Cruz is a California Registered Professional Engineer, a Certified Member of the American Association of Airport Executives, and a director at-large for the local ASCE's Air Transportation Technical Group.**



# SAFETY

Organizational culture eats strategy  
for breakfast, lunch and dinner



Culture



Strategy

- Peter Drucker



# Session Objectives

**A. Background**



**B. The Five Ws and One H**

**C. Lines of Business Review**

**D. Best Practice(s)**



# Laws and Regulations

## • Airport and Airway Improvement Act:

- 49 U.S. Code § 47105 – Project Grant Applications - (b)(3) requires compliance with FAA standards.
- An application for a project grant under this subchapter may propose airport development **only** if the development complies with standards the Secretary prescribes or approves, including standards for site location, airport layout, site preparation, paving, lighting, and safety of approaches.

## • Airport Improvement Program:



# Laws and Regulations

- Airport and Airway Improvement Act:

- **Airport Improvement Program**

- **Grant Assurance No. 34** – Policies, Standards, and Specifications requires Sponsors to “*carry out the project in accordance with policies, standards, and specifications approved by the Secretary.....*”
- **Grant Assurance No. 29** – Airport Layout requires Sponsors to maintain an updated ALP. Changes to the airport that do not meet FAA standards **require FAA approval of any proposed Modification of Standards** regardless of source of funds for the project.





# Laws and Regulations

- Airport and Airway Improvement Act:

- Airport Improvement Program:

- **Passenger Facility Charge (PFC)**

- Title 14 CFR Part 158, Passenger Facility Charges, Appendix A states, “The public agency hereby **assures and certifies**, with respect to this project that:...It will carry out the project in accordance with FAA airport design, construction, and equipment standards and specifications contained in advisory circulars current on the date of project approval.”



# SPONSOR CERTIFICATION

- **Sponsor Certification of Project Plans and Specifications (FAA Form 5100-132):**
  1. The plans and specifications were prepared in accordance with applicable Federal standards and requirements, so no deviation or modification to standards ...is necessary other than those previously approved by the FAA.

**If the MOS is not approved in advance, alterations made may jeopardize FAA's ability to fund/reimburse the expenditures!**



# Session Objectives

**A. Background**

**B. The Five Ws and One H**

**C. Lines of Business Review**

**D. Best Practice(s)**



# Modification to Airport Standards...

1. **W**hat is it?
2. **W**here does it take place?
3. **W**hy should one be proposed?
4. **W**hen should one be proposed?
5. **W**ho is involved?
6. **H**ow is it proposed?



# What is it?

Any deviation from, or addition to standards, applicable to airport design, material, and construction standard, or equipment projects resulting in an acceptable level of safety, useful life, lower costs, greater efficiency, or the need to accommodate an unusual local condition on a specific project, when adopted on a case-by-case basis



# Modification to Airport Standards...

1. What is it?
2. **W**here does it take place?
3. Why should one be proposed?
4. When should one be proposed?
5. Who is involved?
6. How is it proposed?





# Where does the MOS take place?

It takes place where there's an issue or challenge meeting FAA standards for:

✈ Design

✈ Construction

✈ Equipment



# MOS cannot be used for to modify:

## EXAMPLES:

- ICAO Runway Strip/RESA or its dimensions
- ICAO OLS dimensions
- Approach/Departure Surfaces

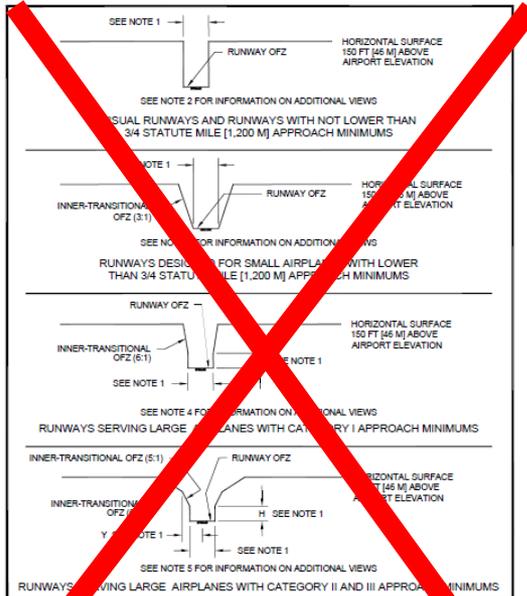


Figure 3-13. Sectional views of the OFZ

Table 3-2. Approach/departure standards table

Runway Type	DIMENSIONAL STANDARDS*				Type/OCES	
	A	B	C	D		
1	0 (0)	120 (37)	300 (91)	5,000 (1,524)	2,500 (762)	15:1
2	0 (0)	250 (76)	1,113 (338)	2,250 (686)	2,750 (838)	20:1
3	0 (0)	150 (46)	1,000 (305)	1,500 (457)	8,500 (2,591)	20:1
4	200 (61)	400 (122)	3,800 (1,158)	10,000 <sup>2</sup> (3,048)	0 (0)	20:1
5	200 (61)	800 (244)	3,800 (1,158)	10,000 <sup>2</sup> (3,048)	0 (0)	20:1
6	200 (61)	1,000 (305)	3,800 (1,158)	10,000 <sup>2</sup> (3,048)	0 (0)	20:1
7	200 (61)	800 (244)	1,113 (338)	10,000 <sup>2</sup> (3,048)	0 (0)	34:1
8 <sup>(5,6)</sup>	0 (0)	Runway width + 200 (61)	1520 (463)	10,000 <sup>2</sup> (3,048)	0 (0)	30:1
9	0 <sup>1</sup> (0)	See Figure 3-4.				15:1

The letters are keyed to those shown in Figure 3-2.





# Sponsor must submit an MOS for:

- **Design:** if cannot meet geometry or pavement design stds., NAVAID siting or other spacing requirements
- **Standards for Specifying Construction:**
  - if the available (local) materials cannot meet the requirements of the spec, or are at a significantly higher cost, or entirely new spec.
  - construction installation method and tolerances. *If proposed can show a cost savings or greater efficiency without sacrificing safety or useful life.*
  - general provisions of AC 150/5370-10G, *If the proposed changes are required to conform to local laws and regulations.*
- **Equipment standards** request. The request must show that the MOS is justified by unusual local conditions.



# Modification to Airport Standards...

1. What is it?
2. Where does it take place?
3. Why should one be proposed?
4. When should one be proposed?
5. Who is involved?
6. How is it proposed?



# Why should one be proposed?

## Should answer these basic questions:

- What are you trying to fix and why are you proposing to fix it this way?



- Does what your proposing provide an acceptable level of safety, economy, greater efficiency, or necessary to accommodate local conditions?

- IF Applicable:

What mitigations/procedures are you willing to implement and/or accept as a result to address the sub-standard condition?



# Modification to Airport Standards...

1. What is it?
2. Where does it take place?
3. Why should one be proposed?
4. When should one be proposed?
5. Who is involved?
6. How is it proposed?



# When should one be proposed?

- **At the earliest time possible:**
  - Project Planning and Programming
    - ICAO Master Planning
  - Airport funding request meetings
  - Project Design



# Modification to Airport Standards...

1. What is it?
2. Where does it take place?
3. Why should one be proposed?
4. When should one be proposed?
5. Who is involved?
6. How is it proposed?



# Who is involved?

- Aerodrome operators (with consultant, if any)
- (CAA) Agency Engineers & Planners
- Regional Office
  - SMS specialist, Cert Inspector, Regional Engineer
- Lines of Businesses (LOB)
- FAA Headquarters





# Modification to Airport Standards...

1. What is it?
2. Where does it take place?
3. Why should one be proposed?
4. When should one be proposed?
5. Who is involved?
6. **How is it proposed?**



# How is the MOS proposed?

## FAA Western Pacific Region Modification of Airport Standards

1. AIRPORT NAME:	2. AIRPORT LOCATION (CITY,STATE):	3. LOCID:
4. AFFECTED RUNWAY/TAXIWAY:	5. APPROACH (EACH RUNWAY): <input type="checkbox"/> PIR <input type="checkbox"/> NPI <input type="checkbox"/> VISUAL	6. AIRPORT REF. CODE (ARC):
7. DESIGN AIRCRAFT (EACH RUNWAY/TAXIWAY):		

Where is project on airport,?  
RW / TW / Apron /Other

## Modification of Standards

8. TITLE OF STANDARD BEING MODIFIED (CITE REFERENCE DOCUMENT):
9. STANDARD/REQUIREMENT:
10. PROPOSED:
11. EXPLAIN WHY STANDARD CANNOT BE MET (FAA ORDER 5300.1F):
12. DISCUSS VIABLE ALTERNATIVES (FAA ORDER 5300.1F):

Brief description of MOS, Attach copy of proposed specification using 'tracked changes' and other supporting documents so that it is clear what you want to change

Thoroughly Explain why the standard can not be met



# Session Objectives

A. Background

B. The Five Ws and One H

**C. Lines of Business Review**

D. Best Practice(s)



# FAA - Lines Of Businesses'

- Operates Control Towers, TRACONS, Centers
- Develops Flight Procedures and impacts during construction
- Technical standards to ensure safe flight procedures
- Installs and maintains FAA communications, navigation and surveillance equipment
- Manages system-wide traffic flow management during good and bad weather days, and construction
- Construction safety and airport certification
- Gateway to the ATO, including integration with capital planning and reimbursable agreements for NAVAIDs implementation

ATS: Air Traffic Services

AJV: Mission Support,  
Flight Procedures Team

AFS: Flight Standards

AJW: Technical Operations

AJR: System Operations

ARP: Airport District Office

AJV: NAS Planning  
and Integration



# How do we manage Coordination?



Federal Aviation Administration

OE/AAA

ASN: 2017-AWP-676-NRA

Click on the division for response details.

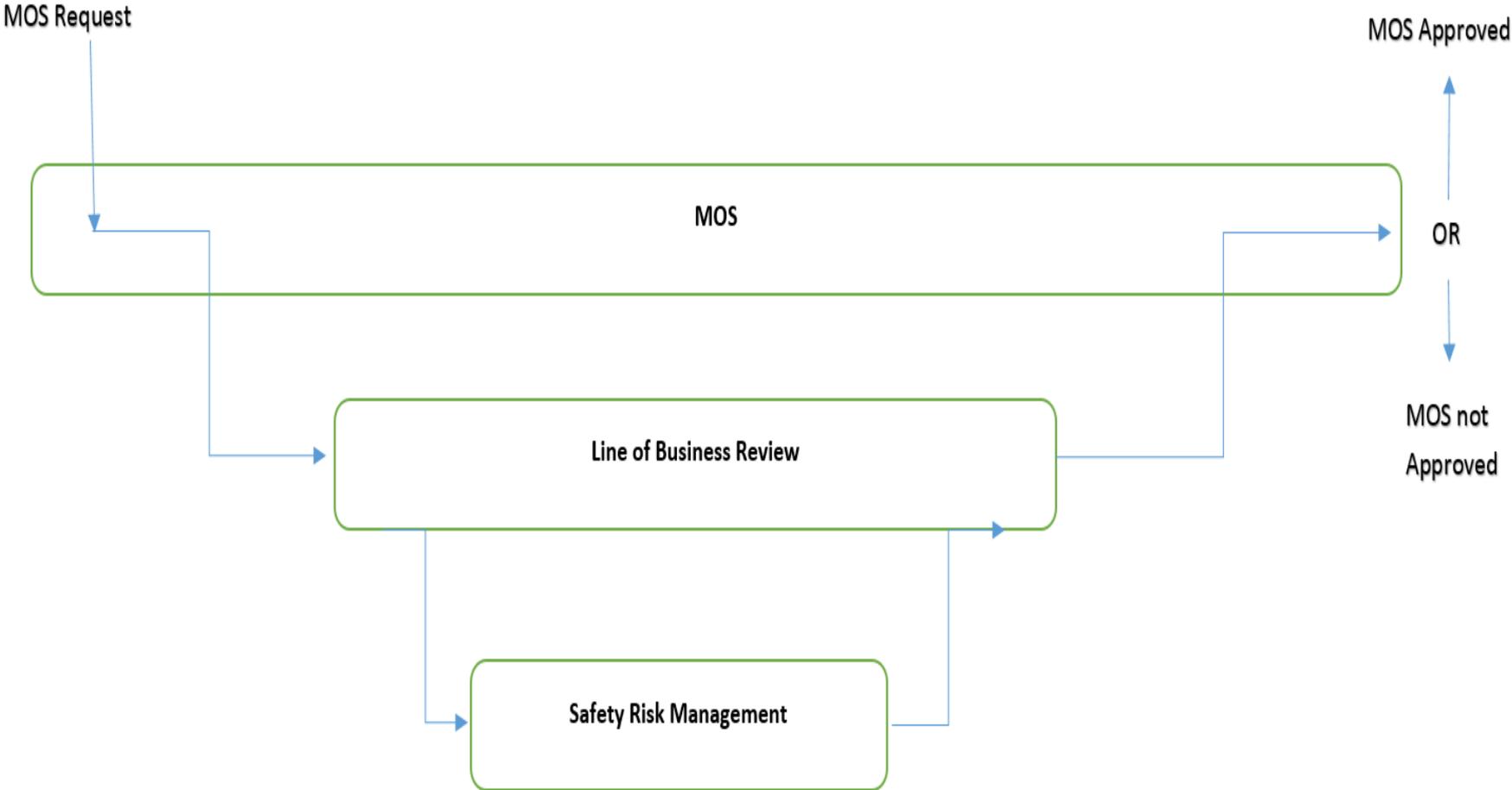
<input type="checkbox"/> SBG Not Sent	<input type="checkbox"/> FP No IFR Effect	<input type="checkbox"/> FS No Objection	<input type="checkbox"/> USAF Auto Screen	<input type="checkbox"/> AP No Objection	<input type="checkbox"/> Tech Ops No Objection	<input type="checkbox"/> USN Auto Screen	<input type="checkbox"/> USA Auto Screen	<input type="checkbox"/> FM Auto Screen	<input type="checkbox"/> AT-OEG No Objection	<input type="checkbox"/> DHS Auto Screen	<input type="checkbox"/> AP(139) Auto Screen	<input type="checkbox"/> AT-OSG No Objection with Provision	<input type="checkbox"/> ATCT No Objection with Provision
--	--	---	--	---	---	---	---	--	---	---	---	--	--

Division	Responded By	Responded Date	Response Type	Response	Duration (Days)
AT - ATCT/Facilities	<a href="#">jeff cunningham</a> (310) 342-4905	03/27/2017	No Objection with Provision	LAX Tower agrees with the change to prohibit ADG-VI aircraft from using Taxiway H between Taxiways T and U. LAX Tower agrees with the MOS to use Taxiway H between Taxiways T and U for ADG-V and smaller aircraft. We don't think it should be renamed as a "Taxilane" just to meet ADG-V standards.	6
AT-OSG	<a href="#">Mark Griffin</a> (206) 231-2240	04/07/2017	No Objection with Provision	Concur with ATCT	15
Air Force	<a href="#">SYSTEM OEAAA</a> (202) 580-7500	03/16/2017	Auto Screen	No Conflict with USAF Conflux Program	0
Air Traffic Obstruction Evaluation Group	<a href="#">Karen McDonald</a> (310) 725-6557	03/17/2017	No Objection		0
Airports	<a href="#">Mark Guan</a> (310) 725-3626	05/09/2017	No Objection		37
Airports Part 139 Inspectors	<a href="#">SYSTEM OEAAA</a> (202) 580-7500	03/16/2017	Auto Screen	Autoscreened for AP(139) - Not ALP or CSPP Proposal	0
Army	<a href="#">SYSTEM OEAAA</a> (202) 580-7500	03/16/2017	Auto Screen	No Conflict with USA Conflux Program	0
Department of Homeland Security	<a href="#">SYSTEM OEAAA</a> (202) 580-7500	03/16/2017	Auto Screen	No conflict with DHS radar or airport obstruction screening	0
Flight Procedures	<a href="#">Kyle Thompson</a> (206) 231-2275	04/07/2017	No IFR Effect		15
Flight Standards	<a href="#">Christopher Harris</a> (310) 725-7229	04/05/2017	No Objection		13
Frequency Management	<a href="#">SYSTEM OEAAA</a> (202) 580-7500	03/16/2017	Auto Screen	Autoscreened for FM- No frequencies	0
Navy	<a href="#">SYSTEM OEAAA</a> (202) 580-7500	03/16/2017	Auto Screen	No Conflict with USN Conflux Program	0
Tech Ops	<a href="#">Terry Herson</a> (206) 231-2541	03/31/2017	No Objection		10



Federal Aviation Administration

# MOS PROCESS



# MOS Process

## BEST PRACTICE(s)

**Coordinate with  
the Various  
LOBs FIRST!**

**Show them the  
DRAFT MOS**

**Ask for their  
Comments  
and Resolve  
them!**

**Modeling might  
be needed to  
support/alleviate  
the concern**

**Operational  
Mitigations may  
be needed**

**Air Traffic  
Control Tower  
may need  
Letter of  
Agreement to  
memorialize  
the mitigations**

**Air Traffic  
Control Tower  
may need to  
create/  
implement  
Standard  
Operating  
Procedures**

**Depending on  
complexity,  
Airport might  
need to  
prepare for an  
SRM Panel**



# Duration of an MOS Approval:

1. Associated with Design standards expire no later than 5 yrs. from approved date. If you need the MOS extended, must **re-submit** the MOS;
2. All MOS associated with design standards must be reviewed whenever there is an opportunity to meet standards, when situations change, or if an MOS is no longer required.

***An approved MOS cannot be modified. A new MOS is required if changes are needed.***



# SUMMARY

- ANY change to FAA Standards require an MOS approval
- Five Ws and One H
- Line of Business Coordination
- Best Practice(s)



# Discussion



Federal Aviation  
Administration