

NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Air Traffic Organization Policy

N JO 6330.57

Effective Date:
01/21/2009

Cancellation Date:
01/21/2010

SUBJ: ASDE-X SMR3 IF Detector Alignment Interim Procedure

1. Purpose. This notice describes a required change to the video offset and intermediate frequency (IF) gain section of Order JO 6330.36, Maintenance of Airport Surface Detection Equipment Model X (ASDE-X Facilities) in the radar receiver section of the airport surface detection equipment, model -X with surface movement radar (SMR3) antenna-transmitter-receiver subsystem. The interim procedure will help standardize the receiver performance.

2. Distribution. This document requires actions by the Airway Transportation System Specialist (ATSS) at operational facilities with Facility, Service, and Equipment Profile (FSEP) equipment: ASDE-X.

a. The ATSS and all administrative personnel must subscribe to the Auto-Notifications Services for electronic library release notifications at <http://technet.faa.gov/>. Administrative offices can print these documents for local use as required.

b. For electronic copies, use the Technical Library website at <http://nas.amc.faa.gov/>.

c. The ATSS must keep accurate FSEP records and Logistics Inventory System (LIS) addresses to receive printed copies. Printed copies are mailed to the ATSS at operational facilities with an accurate FSEP record using the LIS mailing address per Order 6000.5D, Facility, Service, and Equipment Profile (FSEP) and Order 1720.30C, Distribution of Airway Facilities Technical Directives.

d. To update LIS, contact the LIS point of contact for your service area. To update FSEP information, visit this link: https://intranet.faa.gov/faaemployees/org/linebusiness/ato/operations/technical_operations/ajw162/fsep/contacts/.

3. Cancellation. None.

4. Action. This notice applies only to FSEP classes N, S, T, W, X, Y, and Z (any ASDE-X systems with SMR3). Prior to implementation, the interim procedure in this notice requires coordination through Surface Radar Systems, AJW-148. A new adaptation may be required if the radar receiver sensitivity changes significantly. See Table 1, Interim Procedure Replacement Paragraphs.

Table 1. Interim Procedure Replacement Paragraphs

Systems without SSM-ASDE-3-010 (Megabucket)	Systems with SSM-ASDE-3-010 (Megabucket)
Refer to Order JO 6330.36 paragraph 536 d (13)	Refer to Order JO 6330.36 paragraph 536A d (15)
<p>Note: Use the following interim procedures below in place of the steps listed above until a permanent change of the handbook is distributed.</p> <p>(a) Using a low loss SMA-to-SMA coaxial cable, connect the RF signal generator to the -50 dB port of the directional coupler on top of the T/R cabinet. Set the RF signal generator to inject continuous wave RF at the measured center frequency (Order JO 6330.36, paragraph 534 or 534A as applicable) with amplitude setting of coaxial -12 dBm less cable loss. For example, the cable between RF signal generator and directional coupler is 3.2 dB loss cable @ 15.95 GHz, the RF signal should be set to an amplitude of -12 dBm + 3.2 dB = -8.8 dBm.</p> <p>(b) Using an RG58 coaxial cable and SMA-to-BNC adapter, connect the oscilloscope to output of IF Detector at J3. Ensure this channel of the oscilloscope is set as follows: terminated to 50 ohms, DC coupling, and 0.5 V per division vertical. Connect another channel of the oscilloscope to the BNC jack on the T/R panel labeled AZ CNT and use this channel for triggering the oscilloscope. Set the oscilloscope to 10 µsec per division horizontal.</p> <p>(c) The oscilloscope should now display the receiver response which includes the RFSTC. The actual curve shape may vary because the RFSTC profile is site-dependent. Adjust the gain of the IF Detector until the peak voltage (total amplitude from baseline of -1V) obtained is 1.5 V +0.2 V, -0 V.</p> <p>(d) Resume the remainder of the alignment procedure at Order JO 6330.36, paragraph 536 d (14) or paragraph 536A d (16) as applicable.</p> <p>Post-receiver alignment notes:</p> <p><u>1</u> If the nominal noise setting is not in the range of 40 to 100, the receiver must be checked to determine the source of excessive noise.</p> <p><u>2</u> If the RFTT level is adjusted too high, the result can be a large amount of noise detected by the receiver. This can adversely affect the MDS measurement and cause the AGC control to saturate to code 0.</p>	

5. Background.

a. The alignment procedure in Order JO 6330.36 currently adjusts the gain of the IF detector based upon the idle noise of the receiver, which does not produce consistent receiver performance from one transmitter/receiver cabinet to the next. This can result in poor radar video performance. The new procedure sets the receiver gain using an injected RF (radio frequency) signal of known amplitude to ensure the gain of the entire receiver meets the minimum gain level defined by the original equipment manufacturer.

b. Permanent changes to Order JO 6330.36 will be distributed by the second quarter of fiscal year 2010.



for Vaughn A. Turner
Director, Safety and Operations Support