

ORDER

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

6750.43

9/18/79

SUBJ: IMPLEMENTATION OF PATH INTEGRAL MONITORING OF IMAGE GLIDE
SLOPE SYSTEMS

1. PURPOSE. This order provides for implementing path integral monitoring as the standard means of monitoring National Airspace System **image-type** glide slope systems. It also establishes implementation and scheduling criteria.
2. DISTRIBUTION. This directive is distributed to selected offices and services in Washington headquarters, **NAFEC** and the Aeronautical Center; to branch level in the office of the Associate Administrator for Airports in Washington headquarters to regional Airway Facilities divisions; branch level in regional Air Traffic, Flight Standards and Airport Services; and selected Airway Facilities field offices having instrument landing system glide slopes.
3. BACKGROUND. Integral monitoring of null reference glide slope width was initiated in 1970 by Chapter 150 of **AF P 6750.1**, Navigational Aids Facilities and Equipment Modification Handbook - **ILS**. This policy has resulted in an approximate 50 percent reduction in weather-caused outages. The provision for path integral monitoring is needed to further reduce outages especially during snow conditions. Studies made by the Systems Research and Development Service (**SRDS**) on the subject and Airway Facilities Service observation of FAA operating facilities have shown the near field path detector is overly sensitive to ground conditions and is often the cause of unnecessary shutdowns. These shutdowns reduce availability to the user, often at a time when the glide slope is needed most. In addition, the current maintenance handbook policy requires expensive snow clearing efforts. **SRDS** has made extensive data collection, studies, and tests during the past decade supporting full integral monitoring of image-type glide slopes. Such a monitor system will be more representative of the signal received by aircraft and will be more reliable during snow and other weather conditions. Availability will be increased and the need for snow clearing will be reduced.
4. DESCRIPTION OF FULL INTEGRAL MONITORING. The updated path monitor system will provide a sampling of the radiated signals that appropriately represent the far field on-course signals received by the aircraft. It will complement and operate in a similar manner to existing path width integral monitoring. **The alarm limits will be specified for individual equipment types by their respective modification directives.** Maintenance handbook procedures will be revised to include full integral operation, plus those procedures required during snow conditions, Snow clearing directives will be revised to reduce the amount of removal required. The near-field

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monitor shall be retained for other use.

5. IMPLEMENTATION POLICY, The concept of integral path monitoring for image-type glide slopes is hereby incorporated in the National Airspace System, pursuant to Section **307(b)** of the Federal Aviation Act. Modification of equipment will be accomplished in three phases, as determined by the Director, Airway Facilities Service. The general schedule for equipment conversion will be as follows:

a. Null reference type facilities, beginning with Mark ID and **TI AN/GRN-27** types which have full integral equipment capability.

b. Capture effect facilities following issuance of appropriate directives.

c. Sideband reference facilities following issuance of appropriate directives.

for Claude F. Cook

JAMES BISPO

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