LANDING AIDS - DESCRIPTION AND OPERATION

1. Description

A. Garmin Marker Beacon and Glideslope Systems

(1) For Airplanes 20800500 and On and Airplanes 208B2000 and On, the marker beacon system is an integral part of the Garmin GMA 1347 Audio Panel.

(2) Airplanes equipped with the dual GMA installation have a marker beacon coupler installed to provide marker beacon transmissions to both GMA units.

(3) The marker beacon coupler is only used with dual GMA installations.

(4) The Garmin GIA 63W Integrated Avionics Unit No. 1 and No. 2 host the glideslope system functionality. For a general overview of the GIA 63W refer to, Chapter 34, Garmin GIA 63W Integrated Avionics System - Description and Operation.

B. The landing and taxiing systems provide guidance during approach, landing, and taxiing. The localizer, glide scope, and marker beacon systems are utilized for approach and landing.

C. Sperry Marker Beacon System (Model 208 Only).

(1) This system is internally incorporated in the Sperry (Type SMA-90) Audio Control Panel with an antenna mounted on the lower surface of the fuselage.

D. King Marker Beacon System.

(1) This optional system includes a crystal controlled superheterodyne marker beacon receiver with 3-light presentation incorporated in KMA-24 Audio Control Panel. The system also incorporates an external bottom mounted antenna. Refer to 208 Avionic Installations Service/Parts Manual for electrical wiring diagrams. Refer to KMA-24 Audio Control Panel with Marker Beacon Service/Parts Manual, listed in List of Publications in front of this manual, for maintenance information on this marker beacon system.

E. Allied-Signal Avionics (KR21) Beacon System.

(1) This system includes a 3-light presentation incorporated into the KR21 marker receiver. The system also incorporates an external bottom mounted antenna. Refer to 208 Avionics Installations Service/Parts Manual for electrical wiring diagrams.

F. Sperry 400 (Type R-443B) Glide Slope System (Model 208 Only).

(1) This optional system can be installed as a single or dual installation. The system consists of a remote mounted receiver coupled to an existing 300 or 400 navigation system, a panel mounted indicator, and an externally mounted antenna. Refer to 208 Avionic Installations Service/Parts Manual for installation and electrical wiring information. Refer to Sperry 400 Glide Slope Manual, listed in List of Publications in front of this manual, for maintenance information on this glide slope system.

G. King Nav/Com (Type KX-165) With Integral Glide Slope Receiver.

(1) The King Glide Slope System can be installed as a single or dual installation. The system consists of a remote mounted receiver coupled to an existing KX-165 navigation system, a panel mounted HSI, and an externally mounted antenna. Refer to 208 Avionics Installations Service/Parts Manual for wiring diagrams. Refer to King KX-165 Nav/Com With Integral Glide Slope Receiver Service Parts Manual, listed in List of Publications in front of this manual, for maintenance information on this glide slope system.

H. Sperry and King Localizers for Glide Scope and Marker Beacon Options.

(1) The Sperry and King receivers for localizer, glide scope, and marker beacon and VHF omnidirectional range (VOR) are all combined into one navigational receiver (NAV 1); also, NAV 1, when dual glidescopes are installed. Optional Sperry NAV receivers will be either 300 Nav/Com (RT-385A) or 400 Nav/Com (RT-485B) on 208 Models only. The optional King Nav receivers (KX-165 Nav/Coms) are available on 208 and 208B Passenger Models.

(2) For maintenance information on the Nav/Com radios, refer to appropriate Sperry or King Nav/Com manual, listed in List of Publications in front of this manual,

I. Marker Beacon Antenna

(1) The marker beacon system antenna is installed at LBL 2.50 and just aft of FS 415.20 (208B) or FS 367.20 (208) on the bottom of the tail section.

(2) The marker beacon antenna coupler is installed behind an access panel outboard of the copilot seat at FS 113.72

and RBL 27.11.

J. Glideslope Antenna

(1) The Glideslope system closed loop antenna is an integral part of the VHF NAV antennas installed on the vertical stabilizer.

2. Landing Aids Operation (Airplanes 20800500 and On and Airplanes 208B2000 and On)

A. Landing and Taxi Navigational Aids

(1) The marker beacon and glideslope components are used during instrument approaches to landing. The antennas receive ground-based signals in the airport environment that help the flight crew find their location in the approach to the runway. The marker beacon antenna receives signals from the inner (3000 HZ), middle (1300 HZ), and outer marker (400 HZ) broadcast stations along an instrument approach. When above these stations, the flight crew has a visual indication on the flight displays and hear audible tones to know that they have passed the related station. The audio signals are sent through the Garmin GMA 1347 Audio panel to make the necessary audible tones for the flight crew phone jacks or cockpit speaker. The GMA 1347 processor supply the OM, MM, and IM signals to the Garmin G1000 for the marker beacon visual indications that is shown on the primary flight displays (PFD)'s.

(2) The glideslope antenna and coupler are components that receive the vertical guidance part of a precision instrument approach. The glideslope system gives a constant navigational signal to the airplane when it is on approach. The glideslope shows the airplane's vertical position relative to the correct position for a given approach angle. The marker beacon and the glideslope components transmit their signals to the Garmin GIA 63W Integrated Avionics Units through coaxial cable.

(3) The GMA1347 is also the marker beacon receiver for the G1000 system. It receives the Marker beacon transmissions and processes them into visual indications that are shown on the primary flight displays (PFD)'s. The GIA63W does not contain the receiver. The GMA1347 does provide data to the GDUs (through the GIAs) to trigger the Marker Beacon displays on the GDUs.