

**Docket No. SA-540**

**Exhibit No. 1-J**

**NATIONAL TRANSPORTATION SAFETY BOARD**

**Washington, D.C.**


Honeywell KGP 560 Flight Manual Supplement

(20 Pages)

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**FAA APPROVED  
AIRPLANE FLIGHT MANUAL SUPPLEMENT  
FOR THE BENDIX/KING  
KGP560 GA-ENHANCED GROUND  
PROXIMITY WARNING SYSTEM**

This supplement must be attached to the FAA approved Airplane Flight Manual when the aircraft is modified by the installation of the Bendix/King Enhanced Ground Proximity Warning System as specified on FAA Form 337 Dated: 21 FEBRUARY 2010. The information contained in this document supplements or supercedes the basic manual only in those areas listed herein. For the limitations, procedures, and performance information not contained in this supplement, consult the basic FAA approved Airplane Flight Manual.

FAA APPROVED:   
Aviation Safety Inspector (Avionics)  
Anchorage Flight Standards District Office  
300 West 36th Avenue Ste 101  
Anchorage, Alaska 99503

DATE: 2/2/2010

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### **SECTION 1 - GENERAL**

Refer to the KGP 560 General Aviation Enhanced Ground Proximity Warning System Pilot's Guide, Honeywell part number 006-18254-0001, Rev. 7 dated October, 2005, or later revision for the information regarding the specific operating details of the KGP 560 GA-EGPWS.

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## SECTION 2 - LIMITATIONS

- A. Navigation must not be predicated upon the use of TAWS.
- B. In order to avoid giving un-wanted alerts, the TAWS must be inhibited when landing at an airport that is not included in the airport database.
- C. The use of the terrain awareness warning and terrain display functions is prohibited during QFE (atmospheric pressure at airport elevation) operations.
- D. The Bendix/King Model KGP 560 TAWS Pilot's Guide, P/N 006-18254-0001, Rev. 7 dated October, 2005 (or later approved version) must be immediately available to the flight crew. The software status stated in the pilots guide should match that displayed on the equipment.
- E. Pilots are authorized to deviate from their current ATC clearance to the extent necessary to comply with TAWS warnings.
- F. This system is equipped with a North America Database.
- G. This TAWS system is connected for speaker and/or phone selection. When not using headset(s), the switch must be in the speaker position.

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### **SECTION 3 - EMERGENCY PROCEDURES**

For ditching or other off-airport landings, inhibit the Terrain Awareness Alerting and Display (TAAD) and Terrain Clearance Floor (TCF) functions by selecting the **TERR INHB** switch (**ON** or **TERR INHB** annunciated).



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## SECTION 4 - NORMAL PROCEDURES

### A. PREAMBLE

The operating procedures contained in this supplement have been developed and recommended by the manufacturer and approved by the FAA for use in the operation for this system. These procedures are for guidance only in identifying acceptable operating procedures.

### B. SYSTEM ACTIVATION

The GA-EGPWS is active when electrical power is supplied, the amber **TERR N/A** annunciator is extinguished and the following systems are operational:

Enhanced Ground Proximity Warning Computer (EGPWC)

Encoding Altimeter

If the aircraft horizontal position derived from the integral GPS receiver is invalid, the GA-EGPWS will not be available.

The integral GPS may take several minutes to warm up and acquire data for valid position information. A functional EGPWC and valid position information will allow the **TERR N/A** annunciator to extinguish.

**Perform a system self test on the ground prior to every flight to verify proper operation of the KGP 560 GA-EGPWS. (see page 7)**

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#### **SECTION 4 - NORMAL PROCEDURES (Continued)**

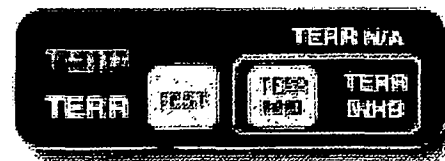
##### **C. GA-EGPWS INDICATORS AND CONTROLS**

The following annunciator is associated with the GA-EGPWS. The annunciation colors are described in Table-1 The Mid-Continent Instrument Company MD41-1208 Terrain Awareness Annunciation Control Unit (shown on the following page) is used. This unit incorporates all of the terrain annunciations and control functions into a single panel mounted unit. The push buttons are black legends on white switches. These switches are dimmed via the unit's internal photocell.

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#### SECTION 4 - NORMAL PROCEDURES (Continued)

MD41-1208 Terrain Awareness Annunciation Control Unit



INDICATOR/ CONTROL	COLOR	FUNCTION
TERR LAMP	RED	Indicates Terrain Warnings
TERR LAMP	AMBER	Indicates Terrain Cautions
TERR N/A LAMP	AMBER	Indicates GA-EGPWS inoperative
TEST switch	-	Provides press-to-test function for the GA-EGPWS
TERR INHIB lamp / switch	WHITE	Inhibits all GA-EGPWS alerting functions when pressed

Table 1 Annunciation Colors

Aural Annunciation is controlled by a switch located next to the TAWS Annunciator Control Unit. Phone [PHN] / Speaker [SPKR] switch operation:

- 1) Phone [PHN] selected – Phone only
- 2) Speaker [SPKR] selected – Phone and Speaker

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#### SECTION 4 - NORMAL PROCEDURES (Continued)

##### D. SYSTEM SELF TEST

Proper operation of the Enhanced Ground Proximity Warning System can be verified when the aircraft is on the ground as follows:

Ensure that the **TERR INHB** switch is NOT ENGAGED, and momentarily push the test switch:

The amber **TERR N/A** light illuminates.  
The red **TERR** light illuminates.

An aural "EGPWS SYSTEM OK" message is annunciated over the cockpit speaker and/or the pilot's phone.

The red **TERR** light extinguishes.

The amber **TERR** light illuminates.

The amber **TERR** light extinguishes.

The amber **TERR N/A** light extinguishes.

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#### **SECTION 4 - NORMAL PROCEDURES (Continued)**

##### **E. RESPONSE TO GROUND PROXIMITY WARNINGS (MODES 1 & 3)**

Respond to Ground Proximity warnings as follows:

When an aural "*PULL UP*" warning occurs, the following procedure should be followed:

1. Level the wings, simultaneously adding maximum power.
2. Smoothly pitch up at a rate of 2 to 3 degrees per second towards an initial target pitch attitude of **15 degrees** nose up.
3. Adjust pitch attitude to ensure terrain clearance while respecting stall warning. If flaps are extended, retract flaps to the UP position.
4. Continue climb at best angle of climb speed ( $V_x$ ) until terrain clearance is assured.

Only vertical maneuvers are recommended unless operating in VMC or the pilot determines, using all available information and instruments, that a turn, in addition to the vertical escape maneuver, is the safest course of action.

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**SECTION 4 - NORMAL PROCEDURES (Continued)**

**E. RESPONSE TO GROUND PROXIMITY WARNINGS  
(MODES 1 & 3) (Continued)**

**Pilots are authorized to deviate from their current air traffic control (ATC) clearance to the extent necessary to comply with an EGPWS warning.**

When an aural warning other than "PULL UP" occurs, initiate corrective action to remove the cause of the warning. The following aural warnings can occur:

Mode 1: "SINK RATE"

Mode 3: "DON'T SINK"

**NOTE**

During operations at certain locations, warning thresholds may be exceeded due to specific terrain or operating procedures. During day VFR, these expected warnings may be considered as cautionary and the approach continued.

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#### **SECTION 4 - NORMAL PROCEDURES (Continued)**

##### **F. ADVISORY CALLOUTS (MODE 6)**

The following advisory callouts are provided in this installation:

*"FIVE HUNDRED"* ('Smart' callout) Occurs at 500 feet AGL.

##### **G. RESPONSE TO TERRAIN/OBSTACLE AWARENESS ALERTS**

###### **1. CAUTION ALERT**

When an aural *"CAUTION TERRAIN"* or a *"CAUTION OBSTACLE"* alert occurs, take positive corrective action until the alert ceases. Stop descending, or initiate a climb and/ or turn as necessary, based on analysis of all available instruments and information.

###### **2. WARNING ALERT**

When an aural *"TERRAIN TERRAIN, PULL UP"* or a *"OBSTACLE OBSTACLE, PULL UP"* warning occurs, follow the procedure described for a *"PULL UP"* warning in paragraph E.

##### **H. SYSTEM CONSTRAINTS**

###### **1. This installation includes a North American Database.**

If there is no terrain data in the database for a particular area, then terrain/obstacle awareness alerting is not available for that area.

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**SECTION 5 - PERFORMANCE**

No Change.



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### **SECTION 6 - WEIGHT AND BALANCE**

This installation of Bendix/King KGP560 General Aviation Enhanced Ground Proximity Warning System is reflected in the aircraft records.

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**SECTION 7 - AIRPLANE & SYSTEMS DESCRIPTIONS**

No Change.

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### **SECTION 8 - HANDLING, SERVICE & MAINTENANCE**

Normal maintenance activities performed on the KGP560 should follow standard industry maintenance practices. System maintenance practices may include updating the Terrain, Obstacle and Runway database(s). Other maintenance practices such as re-programming the Configuration Module are addressed in the KGP560 System Installation Manual. Database load procedure and database update cards are exclusively supplied by Bendix/King Avionics.

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**SECTION 9 - SUPPLEMENTS**

**KGP560 GA-EGPWS FMS** inserted into AFM/POH Section 9.