BENDIX/KING KTA-870 TRAFFIC ADVISORY SYSTEM - ADJUSTMENT/TEST

1. General

A. This section gives the adjustment and test procedures for the Bendix/King KTA-870 Traffic Advisory System. For a general overview of the KTA-870 traffic advisory system refer to Bendix/King KTA-870 Traffic Advisory System - Description and Operation.

2. Bendix/King KTA-870 Traffic Advisory System Operational Check

A. Tools and Equipment

NOTE: For the supplier publication part number and manufacturer data, refer to the Introduction - Supplier Publication List.

(1) Tools and Equipment

- An IBM compatible laptop computer with a Windows 3.1 or higher operating system
- The laptop must have KTADIAG software installed and an available COM port
- A RS232C serial data interconnect cable
- IFR 6000 Ramp Test Set.

(2) Special Consumables

- None.

(3) Reference Material

- Bendix/King KTA-870 Traffic Advisory System - Description and Operation
- Bendix/King KCM-805 TAS Configuration Module - Adjustment/Test
- Garmin G1000 Integrated Avionics System - Adjustment/Test.

B. Prepare the Airplane

(1) Make sure that the switches that follow are in the OFF position:

(a) BATTERY switch.

(b) EXTERNAL POWER switch.

(c) AVIONICS 1 and 2 switches.

(2) Connect external electrical power to the airplane.

(a) Adjust the ground power unit (GPU) to 28Vdc, +0.5 or -0.5 Vdc.

(3) Make sure that all the circuit breakers on the Avionics circuit breaker panel are engaged.

(4) Put the switches that follow in the positions given:

(a) External POWER switch to the BUS position.

(b) BATTERY switch to the ON position.

(c) Avionics 1 and 2 switches to the ON position.

(5) After the Garmin G1000 system is fully initiated refer to Garmin G1000 Integrated Avionics System - Adjustment/Test and do the steps that follow:

(a) Do the Architecture Verification check and make sure all systems are serviceable.

(b) Make sure that the correct software and configuration has been installed.

C. KTA-870 TAS Self Test and Standby Mode Check

(1) On the GMA 1347 Audio Panel, push the SPKR button to allow audio through the overhead speaker.

(2) Use the range knob on the multifunction display (MFD) to set the range to 6nm.

(3) Push the STANDBY softkey to put the system in Standby mode and make sure that:

(a) Operating indication in the upper left hand side of the map is replaced by Standby.

(b) Standby is displayed over the center of the map.

(4) Push the NORMAL softkey to return the system to its default Operating mode.

(5) Press the Test softkey and make sure that:

(a) The Cyan STANDBY message is replaced with TEST.

(b) The Test Mode message is shown above the Traffic map on the MFD.

(c) The TRAFFIC CAS Message is displayed to the left of the Altitude tape on each of the two primary flight displays (PFD)'s.

(d) The TAS test pattern consisting of three intruders appears on the MFD.

(e) At the conclusion of the test, the aural message “TAS System Test OK” is heard over the overhead speakers.

D. KTA-870 TAS Antenna Operational Test

(1) Push the OPERATE Softkey to put the system in Operate mode.

NOTE: The KTA-870 TAS must be in the operating mode before setting the system in the ramp test mode with the diagnostics computer.

(2) Power on the laptop.

(3) Use the RS232C serial data interconnect cable to connect the laptop to the TAS diagnostic disconnect (JI700), found on the lower- right instrument panel.

(4) Start the KTADIAG program.

NOTE: When the KTADIAG program begins, it will automatically establish communications and the red circle in the upper right hand corner of screen will turn green once connection is established.

(5) Click on the File tab and select Ramp Test from the pull-down menu.

NOTE: This overrides the air data input to the TAS Processor and sets the altitude to 50,000 feet.

(6) Click on Intruder Data and select Overwrite View from the pull-down menu

(7) You must configure the KTA-870 TAS to ignore the radar altimeter input to the TAS system. Refer to Bendix/King KCM-805 TAS Configuration Module - Adjustment/Test.

NOTE: This step is only required if the KRA 405B option is installed on the airplane.

(8) On the IFR 6000 test set, push the SETUP key until the SETUP-TCAS page is shown.

(9) Configure the IFR 6000 as given in Table 501.

Table 501. IFR 6000 TCAS Test Setup

PARAMETER NAME	VALUE
RF PORT:	ANTENNA
ANT RANGE:	20 ft
ANT HEIGHT:	8 ft
UUT ADDRESS:	AUTO
MANUAL AA:	N/A
ANT CABLE LOSS:	0.1 dB
ANT GAIN (dBi):	
1.03 GHz:	7.1
1.09 GHz:	6.1
SQUITTERS: ON	1.03 GHz: 7.1
ALT REPORTING: ON	1.09 GHz: 6.1
DISPLAYED ALT:	RELATIVE
TEST SET AA:	A92493

(10) Press the TCAS key on the IFR 6000 Test Set repeatedly as necessary to display the TCAS page.

(11) Change the test set parameters as given in Table 502.

PARAMETER NAME	VALUE
TCAS TYPE:	TCAS 1

% REPLY:	100
RANGE START:	12.00 nm
(RANGE) STOP:	0.35 nm
RANGE RATE:	100 knts
ALT START:	6000 ft (NOTE 1)
(ALT) STOP:	6000 ft (NOTE 1)
ALT RATE :	0 fpm
CONVERG:	OFF
ALT DETECT:	OFF
UUT ALT:	50000 FT

It is permissible to use any value between 0 feet and 6000 feet.

(12) Put the active transponder in the STBY mode.

(13) Select the MAP – TRAFFIC MAP page to show on the MFD.

(a) Select the 12 nm range on the traffic display.

(b) Make sure that the MFD map orientation is HDG UP.

(14) Put the IFR 6000 test set approximately 45° left, relative to the centerline of the airplane, at a distance of approximately 20 feet from the top TAS antenna.

(15) On the IFR 6000, push the RUN TEST button.

(a) Make sure that the intruder shown on the MFD appears in the left forward quadrant.

(b) Make sure that the indicated bearing of the intruder is between -90° and 0.

NOTE: The intruder bearing is also shown on the intruder data page on the maintenance computer.

(c) Make sure that on the IFR 6000 test set shows FREQ = 1030.000, +1.000 MHz or -1.000Mhz.

1 This can take several minutes to show the correct frequency.

(16) On the IFR 6000, push the STOP TEST button.

(17) Put the IFR 6000 test set approximately 45° right , relative to the centerline of the airplane, at a distance of approximately 20 feet from the top TAS antenna.

(18) On the IFR 6000, push the RUN TEST button.

(a) Make sure that the intruder shown on the MFD appears in the right forward quadrant.

(b) Make sure that the indicated bearing of the intruder is between -90° and 0.

NOTE: The intruder bearing is also shown on the intruder data page on the maintenance computer.

(c) Make sure that on the IFR 6000 test set shows FREQ = 1030.000 +1.000 MHz or -1.000Mhz.

1 This can take several minutes to show the correct frequency.

(19) On the laptop:

(a) Stop the ramp test in TASDIAG.

(b) Stop the TASDIAG session.

(c) Disconnect the RS232C serial data interconnect cable from the TAS diagnostic disconnect (JI700).

(d) Remove laptop and associated equipment from the airplane.

(20) You must configure the KTA-870 TAS to accept the radar altimeter input to the TAS system. Refer to Bendix/King KCM-805 TAS Configuration Module - Adjustment/Test.

NOTE: This step is only required if the KRA 405B option is installed on the airplane.

E. Put the Airplane Back to its Initial Condition.

(1) None.