

Safety Communique

Beech
Hawker

NOVEMBER 2001

TO: ALL OWNERS AND OPERATORS, RAYTHEON AVIATION CENTERS, CHIEF PILOTS, DIRECTORS OF OPERATIONS, DIRECTORS OF MAINTENANCE AND ALL RAYTHEON AIRCRAFT AUTHORIZED SERVICE CENTERS, AND INTERNATIONAL DISTRIBUTORS AND DEALERS.

MODELS: RAYTHEON AIRCRAFT MODEL A36 BONANZA, SERIALS E-3157, E-3200, E-3218 THROUGH E-3347, E-3349 THROUGH E-3382, E-3385, E-3388, E-3389, E-3392, E-3401, AND E-3402; B36TC BONANZA, SERIALS EA-611, EA-620, EA-629 THROUGH EA-671, AND EA-674; MODEL 58 BARON, SERIALS TH-1841, TH-1870, TH-1884 THROUGH TH-1981, TH-1986, TH-1988, TH-1989, TH-1995, TH-2005, TH-2009, AND TH-2011.

SUBJECT: KFC-225 AUTOMATIC FLIGHT CONTROL SYSTEM (AFCS)

Raytheon Aircraft Company (RAC) is issuing this safety communiqué to inform owners and operators of a condition that may exist on the KFC-225 Automatic Flight Control System (AFCS) installed on some Bonanza and Baron model airplanes listed in the effectivity. Honeywell has notified RAC that a condition with the KFC-225 trim monitoring system may allow an un-commanded trim operation to go undetected. The only indication to the pilot is eventual airplane deviation from the selected altitude and/or autopilot disconnect. Upon disconnect of the autopilot, the control column forces may exceed prescribed limits. Although the autotrim monitor is adequately tested during Preflight Test (PFT), later operation at lower ambient cockpit temperatures can cause the above described trim condition to go undetected.

For the condition described above to occur, it requires multiple anomalies within the Autopilot Trim system. A single event will not cause this condition. Honeywell has issued Installation Bulletin IB # 480 Alert, Rev 1, which provides guidance as to the mod configurations and serial number units susceptible to this condition and the actions to be taken. (See attached Installation Bulletin "IB # 480 Alert, Rev 1").

Since it is not possible for the pilot to determine the mod configuration status of the KC-225 computer or the serial number of the unit installed, RAC recommends that owner/operators contact an appropriately rated Honeywell Service Center to schedule their aircraft for inspection in accordance with Installation Bulletin IB # 480 Alert, Rev 1. If, after inspection, the KC-225 computer is found to be one of the affected units, the unit shall be tested, modified or exchanged in accordance with Alert Bulletin IB # 480 Alert, Rev 1 or later. If Installation Bulletin IB # 480 Alert, Rev 1 or later is not accomplished within the period allotted, RAC concurs with Honeywell's recommendation that further flight with the KFC-225 AFCS coupled be prohibited in accordance with the following procedure until the attached Installation Bulletin has been accomplished.

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Pursuant to FAR 91.213, deactivate the KFC-225 AFCS by pulling and banding the Computer and the Servo Power Circuit Breaker located on the copilot subpanel circuit breaker panel. Further, the KFC-225 autopilot should be placarded "Inoperative". This will prevent operation and engagement of the KFC-225 during flight.

NOTE

Approved personnel at an appropriate maintenance facility must determine the mod status of the KC-225 Computer. If the Mod Status Tag reflects no mod or the serial number of the KC-225 is 1744 or above the restrictions described in the bulletin do not apply. If the KC-225 computer has a serial number 1743 or lower and Mod 4 has been performed then Honeywell Installation Bulletin # 480, Alert, Rev. 1 or later must be accomplished.

Installation Bulletin

BULLETIN NO: 480 ALERT

APPLICABLE TO: KC 225 Flight Control Computer (FCC)

SUBJECT: Restrictions on the Operation of the KFC 225 Automatic Flight Control System (AFCS)

Effectivity:

KC 225 Flight Control Computers, P/N 065-00183-0101, -0201, -0301, -0401, -0501, -0601, -2501, -2601, -2701, -2801, -2901, -3001, S/N 1743 and below with Mod 4 installed.

The restrictions described in this bulletin do not apply to units with serial numbers 1744 and above or to units that do not have Mod 4 installed.

Problem Description:

Honeywell has determined that a condition exists in the above-listed KC 225 units. The Erasable Programmable Logic Device (EPLD) U1022, which was changed in Mod 4 (described in SB KC 225-4), is susceptible to spurious noise. This condition can cause improper operation of the autotrim monitor during its full range of operating temperatures, and can result in the failure of PFT (Pre-Flight Test) step 4, and the generation of error code 69 and occasionally 71. Although the autotrim monitor is adequately tested during PFT at start-up, later operation at lower temperatures can prevent the autotrim monitor from functioning properly.

Compliance:

The currently installed KC 225 FCC, if found to be affected by this bulletin, shall be inspected, tested, modified or exchanged in accordance with the information provided in the 'Inspection Procedure and Corrective Action' section of this bulletin. This must be accomplished within the next 10 flight hours, but no later than December 31, 2001. Failure to do so within the period allotted will necessitate the pulling and banding of the autopilot circuit breaker(s) prior to subsequent flights to prevent further operation of the KFC 225 AFCS.

Inspection Procedure and Corrective Action:

For a KC 225 without Mod 4 or with a serial number 1744 and above: This restriction does **not** apply if the aircraft records positively confirm, or an inspection of the Unit Serial Tag (located on the rear of the unit), indicates the currently installed KC 225 FCC does not have Mod 4 installed **or** is serial number 1744 and above.

NOTE

If the unit is removed from the instrument panel, it shall be reinstalled and a static leak test and autopilot ground test performed.

For a KC 225 with Mod 4 and serial number 1743 and below: The restriction in this installation bulletin applies. The restriction may be either temporarily relieved or permanently removed by having an appropriately rated Honeywell Service Center perform either of the following options:

Option A – Temporarily relieves restrictions:

1. Remove the KC 225 FCC from the aircraft and place it in a temperature chamber, freezer or other suitable device set to 0° F (-17.8° C) or below. Allow the unit to stabilize at this temperature for a minimum of one hour.
2. Immediately reinstall the unit into the aircraft **or** connect it to a harness or fixture (see Service Aid KC 225-101, P/N 601-10170-001X, for an example) which will allow the PFT (Pre-Flight Test) sequence to be observed. Turn on power to the unit, which will automatically begin PFT. If the PFT is successful, turn the power off and then on again. Two sequential successful PFTs are required. Turn off power to the unit. Allow enough time for any condensation to dissipate and for the unit to return to normal temperature.
3. If not already done, reinstall the unit into the aircraft. Turn on power to the unit and verify that the unit passes PFT. A static leak test and autopilot ground test shall be performed.
4. Attach a locally fabricated placard, an example of which is shown below, on the aircraft instrument panel in plain view of the pilot.

**AUTOPILOT OPERATION IS PROHIBITED
WHEN CABIN TEMPERATURE IS BELOW
0 DEG. F (-17.8 DEG. C) OR
AFTER DECEMBER 31, 2002**

This type of placarded operation will not be allowed after December 31, 2002. In order to remove the placard and operational restrictions imposed, the KC 225 must be exchanged or returned to Honeywell in Olathe, Kansas, for implementation of SB KC 225-6 (Mod 6) or SB KC 225-7 (Mod 7) within this allotted period.

Option B – Permanently removes restrictions:

1. Successfully perform Mod 6 (-40° C temperature screening) as described in SB KC 225-6, P/N 600-10170-006X.
2. If the unit fails Mod 6, or if it cannot be performed locally, either return the unit to Honeywell in Olathe, Kansas, for incorporation of SB KC 225-7 (Mod 7) or contact Honeywell Product Support for a warranty replacement.

In either case, after Mod 6 or Mod 7 has been completed, the operating restrictions of this installation bulletin may be removed.

NOTE

The unit shall be reinstalled into the aircraft and a static leak test and autopilot ground test shall be performed. If the unit is exchanged or returned for Mod 6 or 7, a system alignment must also be performed.

Warranty Information:

Warranty credit or payment will be issued to an appropriately rated Honeywell Service Center for the completion of the procedures in this installation bulletin. A properly completed warranty claim for (choose one):

Three (3.0) hours labor for a KC 225 without Mod 4 or with serial number 1744 and above may be submitted if an inspection, static leak test and autopilot ground test is performed.

Four (4.0) hours labor for a KC 225 with Mod 4 or serial number 1743 and below may be submitted if an inspection, temperature test (Option A or Mod 6), static leak test and ground test is performed.

Six (6.0) hours labor for a KC 225 with Mod 4 or serial number 1743 and below may be submitted if the unit is exchanged or returned for Mod 6 or 7 (Option B), and a static leak test, system alignment and ground test is performed.

A copy of the logbook entry (indicating the method by which the unit complied with this installation bulletin) must be included with the warranty claim. For claims submitted electronically, a facsimile of the logbook entry must be sent to 913-712-1306, marked *Attention: Warranty Claim XXXXXX*.