

DESIGN AND MAINTENANCE ANALYSIS INC.
5470 SAINT ANDREWS DRIVE
SALISBURY, MD. 21801

SERVICE BULLETIN NUMBER SB1900-31-99-1

**Subject: Flight Data Recorder Expanded Parameters,
Replacement of Roll, Pitch Trim
and Yaw Transducers with units
demonstrating longer life.**

I. PLANNING INFORMATION:

A. Aircraft Affected:

Beechcraft 1900D aircraft modified per STC SA00968NY involving the use of Roll Transducers (P/N SC1900-2-2) with Serial Number 010939 or earlier Serial Numbers, Pitch Trim Transducers (P/N SC1900-2-3) with Serial Number 010894 or earlier or Yaw Transducers (P/N SC1900-2-4) with Serial Number 010984 or earlier.

Spares Affected:

Spare Transducers P/N SC1900-2-2, SC1900-2-3 or SC1900-2-4 with the affected Serial Numbers (Roll: 010939 or earlier, Pitch Trim: 010894 or earlier, Yaw: 010984 or earlier) or uninstalled kits with Roll Transducers, P/N SC1900-2-2, Pitch Trim Transducers, P/N SC1900-2-3 or Yaw Transducers, P/N SC1900-2-4 with affected Serial Numbers (Roll: 010939 or earlier, Pitch Trim: 010894 or earlier, Yaw: 010984 or earlier)

B. Reason

One operator reported a failure of the Roll and Yaw transducer cable. Subsequent laboratory testing showed a lower than acceptable life of the cables. Additional laboratory testing has shown that transducers with a larger diameter idler pulley and a 7X19 cable improve the life significantly.

These changes have been introduced on transducers beginning with Serial Numbers: Roll: 010940, Pitch Trim: 010895, Yaw: 010985.

This Service Bulletin addresses the replacement of affected transducers with the improved units.

C. Description

The floor panel is removed to gain access to the transducers in the center wing area. The existing transducers are removed and replaced with the improved units. Appropriate testing of the replacement transducers is accomplished. The floor panels are reinstalled.

D. Compliance Schedule

Operators are encouraged to accomplish this Service Bulletin within 3 months. All Transducers returned within 6 months of the date of issue of this bulletin will be replaced at no charge to the operator.

E. Manpower

Approximately 3 man-hours will be required to accomplish this bulletin. Operators accomplishing this bulletin within 6 months of the date of issue will be reimbursed for three man hours per aircraft modified at a rate of \$45.00 US per man-hour.

F. Material- Price and Availability

Operators will be provided exchange transducers at no charge for all units returned within 6 months of the effective date of this Service Bulletin. Each aircraft or kit requiring exchange requires one each of the following:

Part Number	Qty per A/C	Description	Replaces	Interchangeability
SC1900-2-2 S/N 010940 and up	1	Roll Transducer Assy.	SC1900-2-2 S/N 010939 and under	Interchangeable, but installation of superceded parts negates the intent of this Service Bulletin.
SC1900-2-3 S/N 010895 and up	1	Pitch Trim Transducer Assy.	SC1900-2-3 S/N 010894 and under	Interchangeable, but installation of superceded parts negates the intent of this Service Bulletin.
SC1900-2-4 S/N 010985 and up	1	Yaw Transducer Assy.	SC1900-2-4 S/N 010984 and under	Interchangeable, but installation of superceded parts negates the intent of this Service Bulletin.

NOTE: All removed parts must be returned to Space Age Control Inc., 38850 20th Street East, Palmdale, California, 93550 in order to result in proper credits.

G. Tooling Required:

Installation of the replacement transducers requires the use of DFDR readout equipment or a transducer connector breakout box.

H. Weight and Balance:

Replacement of the original transducers with the improved units does not change the weight and balance data, originally recorded through the Supplemental Type Certificate.

I. Electrical Load Data:

The electrical load data is not changed by accomplishing this Service Bulletin.

J. Publications Affected:

Accomplishment of this Service Bulletin does not impact publications, beyond the changes originally addressed in the Supplemental Type Certificate.

K. Approval

The contents of this Service Bulletin have been approved by the US Federal Aviation Administration.

PART II, ACCOMPLISHMENT INSTRUCTIONS:

1. Gain Access to the transducers by removing the seats and floor panels in the center wing area.

Remove Roll, Pitch Trim and Yaw transducers with serial numbers 010882 and under by accomplishing steps 2 through 4 on each unit.

2. Disconnect the cable-clamping block through screws to release transducer displacement cable from the control cable.
3. Disconnect the position sensor electrical harness at the connector.
4. Remove and retain the screws securing the position sensor/bracket assembly. Remove the position sensor/bracket assembly.

Install Roll Transducer Assembly P/N SC1900-2-2 with serial number 010940 or higher by accomplishing steps 5 through 14 below

5. Secure the position sensor/bracket assembly with the screws retained.
6. Connect the airframe connector to the transducer connector.
7. Install rig pins to secure the roll control system in neutral. Refer to MM 27-10-00.
8. Connect DFDR readout equipment to the DFDR or alternatively connect a DVM to fabricated breakout box (assy 1900-2-CPC1) installed between transducer connector and airframe connector.
9. Connect the position transducer displacement cable-clamping block to the roll control cable, remove temporary stop ball.
10. Utilize the position of the cable clamping block and cable clamping block adjusting screw obtain a decimal/volt reading corresponding "0 degrees" in accordance with "Check of the Roll Control parameter" IAW MM 31-30-00. Complete "Check of the Roll Control parameter" IAW MM 31-30-00.
11. Ensure that the position transducer displacement cable is correctly routed over the idler pulley on the bracket assembly.
12. Torque cable clamping block screws to 7 to 9 LBS./INS.
13. Disconnect readout equipment from the DFDR or breakout box from transducer connector.
14. Remove roll control system rigging pin.

Install pitch trim transducer assembly P/N SC1900-2-3, with serial number 010895 or higher in accordance with steps 15 through 24 below.

15. Secure the position sensor/bracket assembly with the screws retained.
16. Connect the airframe connector to the transducer connector.
17. Install rig pins to secure the pitch control system in neutral. Refer to MM 27-30-00

Streamline the pitch trim tab with the elevator.

18. Connect DFDR readout equipment to the DFDR or alternatively connect a DVM to fabricated breakout box (assy 1900-2-CPC1) installed between transducer connector and airframe connector.

19. Connect the position transducer displacement cable-clamping block to the pitch trim control cable, remove temporary stop ball.

20. Utilize the position of the cable clamping block and cable clamping block adjusting screw obtain a decimal/volt reading corresponding "0 degrees" in accordance with "Check of the Pitch Trim Control parameter" IAW MM 31-30-00. Complete "Check of the Pitch Trim Control parameter" IAW MM 31-30-00.

21. Ensure that the position transducer displacement cable is correctly routed over the idler pulley on the bracket assembly.

22. Torque cable clamping block screws to 7 to 9 LBS./INS.

23. Disconnect readout equipment from the DFDR.

24. Remove pitch control system rigging pin.

Install Yaw transducer assembly P/N SC1900-2-4 with serial number 010985 or higher by accomplishing the following steps:

25. Secure the position sensor/bracket assembly with the screws retained.

26. Connect the airframe connector to the transducer connector.

27. Install rig pins to secure the yaw control system in neutral. Refer to MM 27-20-00.

28. Connect DFDR readout equipment to the DFDR or alternatively connect a DVM to fabricated breakout box (assy 1900-2-CPC1) installed between transducer connector and airframe connector.

29. Connect the position transducer displacement cable-clamping block to the yaw control cable, remove temporary stop ball.

30. Utilize the position of the cable clamping block and cable clamping block adjusting screw obtain a decimal/volt reading corresponding "0 degrees" in accordance with "Check of the Yaw Control parameter" IAW MM 31-30-00. Complete "Check of the Yaw Control parameter" IAW MM 31-30-00.

31. Ensure that the position transducer displacement cable is correctly routed over the idler pulley on the bracket assembly.

32. Torque cable clamping block screws to 7 to 9 LBS./INS.

33. Disconnect readout equipment from the DFDR.

34. Remove yaw control system rigging pin.

35. Reinstall floor panels and seats.

36. Package the removed transducers for shipment to

Space Age Control Inc.
38850 20th Street East
Palmdale, California
93550