Flight Line Service Manual For Rate Based Autopilots

MEGGITT AVIONICS

S-TEC

P/N 87102

List of Effective Pages

* The asterisk indicates pages changed, added, or deleted by the current change.

*Section 5 deleted in its entirety.

Record of Revisions

RETAIN THIS RECORD IN THE FRONT OF THE MANUAL. ON RECEIPT OF REVISIONS, INSERT REVISED PAGES. THEN ENTER DATE INSERTED AND INITIAL.

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SECTION 1
OVERVIEW

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1.1 Service Manual Organization

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1.2 Purpose

This manual provides flight line service information for the following S-TEC MEGGITT rate based autopilots:

System 20/30/30 ALT
System 40/50
System 55/55X/550
System 60-1/60-2
System 65
System 60 PSS

1.3 Required Test Equipment

Nomenclature	P/N
Flight Line Autopilot Tester	95101
Breakout Box	9524
Adapter Cable	39198
Adapter Cable	39199
Extender Assembly	01264

1.4 Service Philosophy

The first objective is to determine if the installed autopilot system is functioning properly on the ground. This is accomplished by performing the functional ground test for that particular system. No external test equipment is required.

The second objective is to isolate a failure to a system component. The equipment listed in section 1.3 is designed to aid in this effort. The Flight Line Autopilot Tester (P/N 95101) is used to simulate some of the major system components. It is shown in Fig. 1-1 and contains the following, each removable from a suitcase for remote use about the aircraft:

Nomenclature	P/N
Tool, Roll Centering Adjustment	95101-1
Simulator, Heading System *	95101-2
Simulator, Servo, Roll/Pitch/Trim	95101-3
Simulator, Altitude Transducer	95101-4
Simulator, Turn Coordinator	95101-5
Cable Assembly, Extension for 95101-2 (6406/52D54)	39307
Cable Assembly, Extension for 95101-2 (6443)	39308
Cable Assembly, Extension for 95101-3	39309
Cable Assembly, Extension for 95101-4	39310
Cable Assembly, Extension for 95101-5	39311
Service Manual, Flight Line	87104

* Simulates only the following Heading Systems:

Manufacturer	Type	P/N
S-TEC	DG	6406
S-TEC	HSI	6443
EDO AIRE	DG	52D54

The Breakout Box (P/N 9524), Adapter Cables (P/N 39198 & 39199), and Extender Assembly (P/N 01264) are used to measure autopilot system power, signals, and continuity. They are connected as shown in Fig. 1-2.

The third objective is to determine if the system is functioning properly in flight. This is accomplished by performing the flight procedures contained in the respective Pilot's Operating Handbook (POH). ***However, for return of aircraft to service, refer to the Aircraft Flight Manual Supplement (AFMS).***

1.5 Technical Support

PH 800-872-7832
FAX 940-325-8808

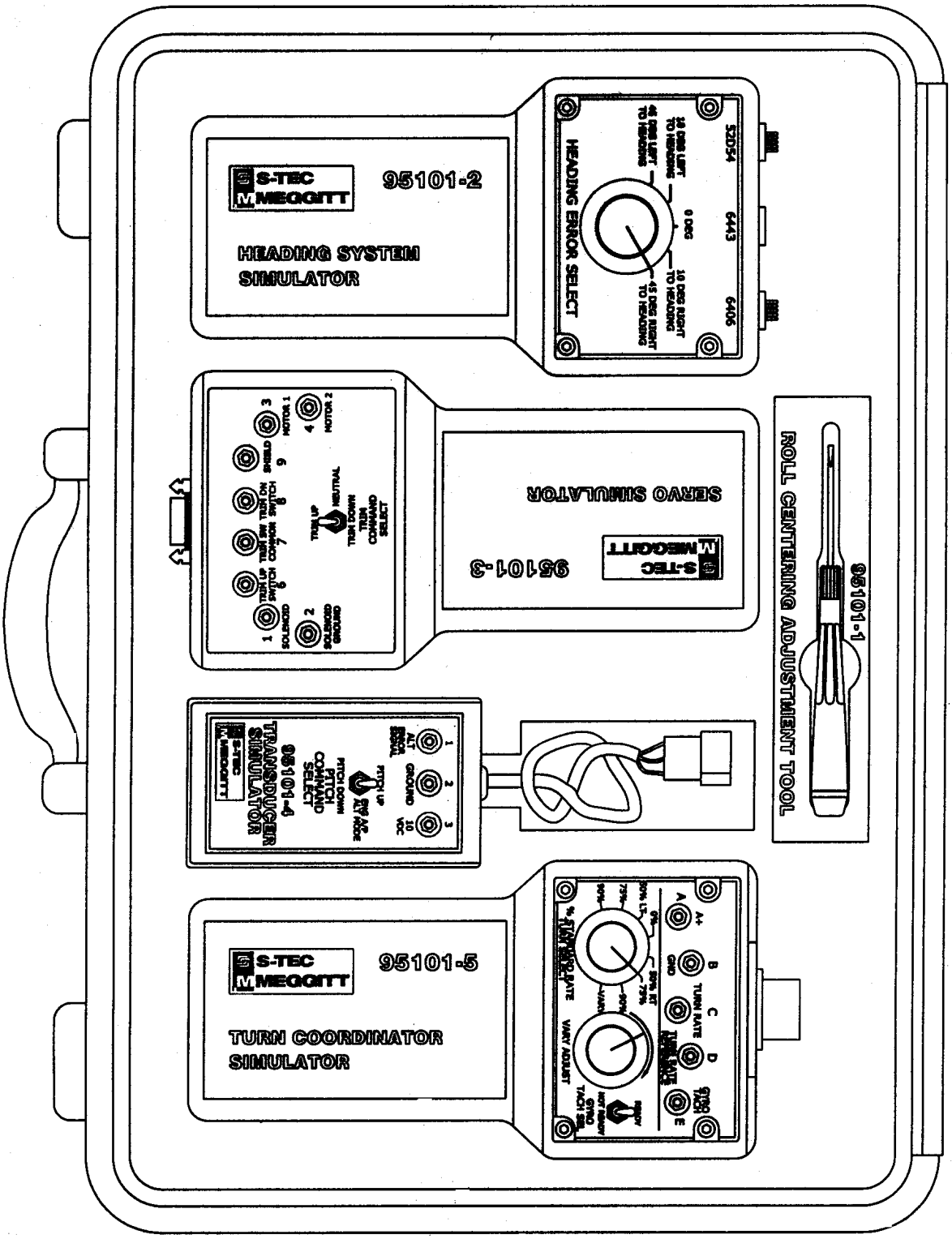
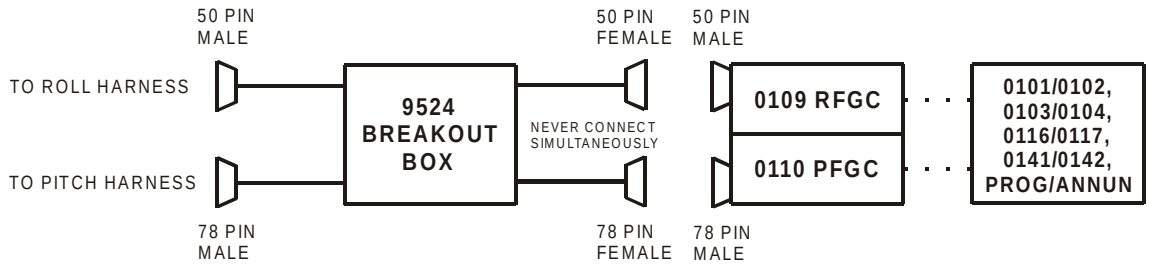
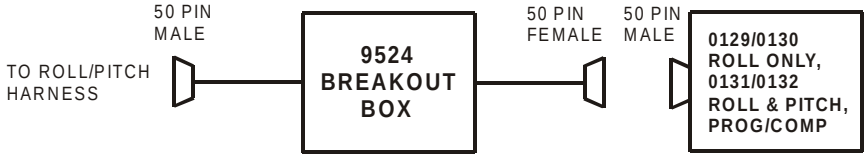


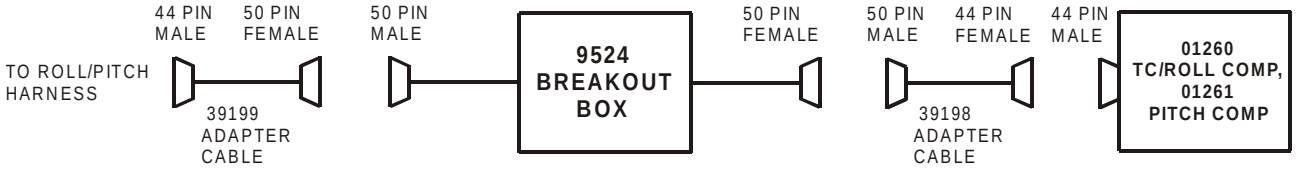
Fig. 1-1. Flight Line Autopilot Tester



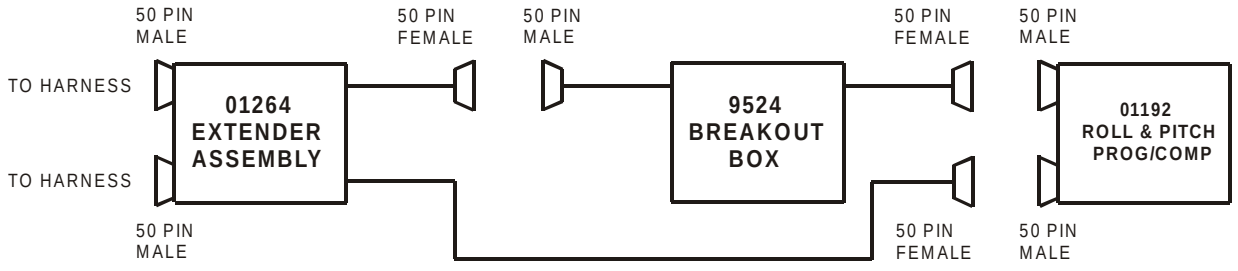
SYS 60-1/60-2/65/PSS



SYS 40/50



SYS 20/30/30 ALT



SYS 55/55X/550

Fig. 1-2. Breakout Connections

SECTION 2
ROLL CENTERING

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2.0 Roll Centering

The Roll Centering Adjustment should be performed routinely to ensure optimal A/P system performance.

2.1 Ground Roll Centering Adjustment

1. Level the A/C.
2. Set the A/P Master Switch to the ON position.
3. Wait until RDY alone becomes annunciated on the A/P display, upon completion of the power-up self-test.
4. Tune the Navigation Receiver to a non-receiving VOR frequency so that the Left/Right needle is centered.

   Note: If no heading system (DG or HSI) is installed, proceed to step 6.

5. Center the Heading Bug (DG) or Course Pointer (HSI) under the lubber line.
6. Engage the A/P NAV mode (LO TRK mode for System 20/30).
7. Insert the Roll Centering Adjustment Tool (P/N 95101-1) into the A/P bezel hole as shown in Fig. 2-1, until it makes contact with the Roll Centering Potentiometer.
8. Adjust the Roll Centering Potentiometer in small increments to null A/C control wheel movement - *allow time between adjustments for the A/P system to stabilize.*

2.2 In-Flight Roll Centering Adjustment (optional)

2.2.1 A/P is a Radio Coupler

1. Fly the A/C to smooth air and trim for level flight.
2. Set the A/P Master Switch to the ON position.
3. Wait until RDY alone becomes annunciated on the A/P display, upon completion of the power-up self-test.
4. Tune the Navigation Receiver to a VOR frequency.
5. Select the course using the OBS (DG) or Course Pointer (HSI).

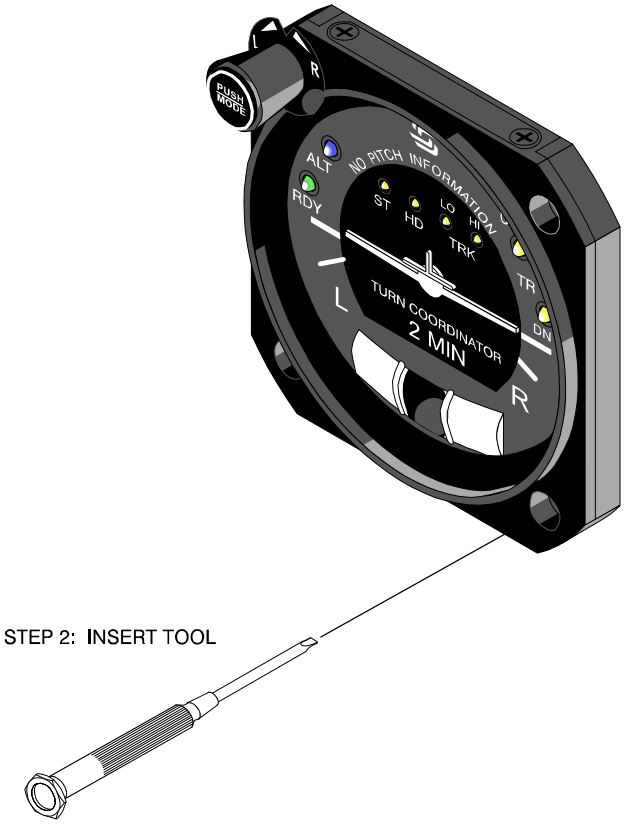
   Note: If the heading system is an HSI, proceed to step 7.

6. Set the Heading Bug to match the selected course.
7. Engage the NAV mode and wait until the A/P has intercepted the course.
8. Insert the Roll Centering Adjustment Tool (P/N 95101-1) into the A/P bezel hole as shown in Fig. 2-1, until it makes contact with the Roll Centering Potentiometer.
9. Adjust the Roll Centering Potentiometer in small increments to obtain a centered Left/Right needle - *allow time between adjustments for the A/P system to stabilize.*

2.2.2 A/P is a Radio Tracker

1. Fly the aircraft to smooth air and trim for level flight.
2. Set the A/P Master Switch to the ON position.
3. Wait until RDY alone becomes annunciated on the A/P display, upon completion of the power-up self-test.
4. Tune the Navigation Receiver to a VOR frequency.
5. Select the course using the OBS.
6. Fly the A/C onto the selected course such that the Left/Right needle is centered.
7. Engage the A/P NAV mode (LO TRK mode for System 20/30).
8. Insert the Roll Centering Adjustment Tool (P/N 95101-1) into the A/P bezel hole as shown in Fig. 1-1, until it makes contact with the Roll Centering Potentiometer.
9. Adjust the Roll Centering Potentiometer in small increments to obtain a centered Left/Right needle - *allow time between adjustments for the A/P system to stabilize.*

STEP 1: REMOVE SCREW



STEP 2: INSERT TOOL

Fig. 2-1a. System 20/30

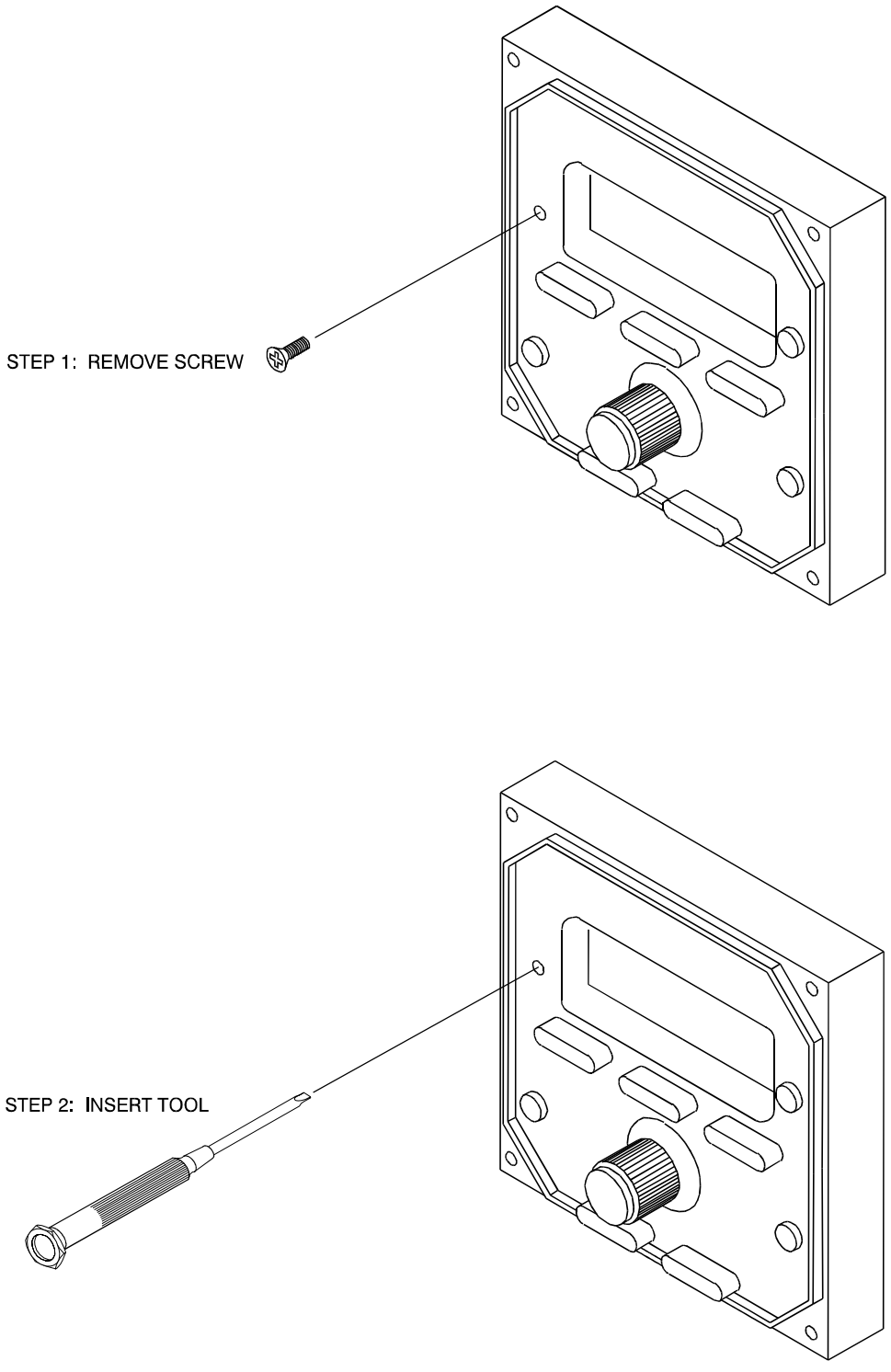


Fig. 2-1b. System 40/50/60-1/60-2

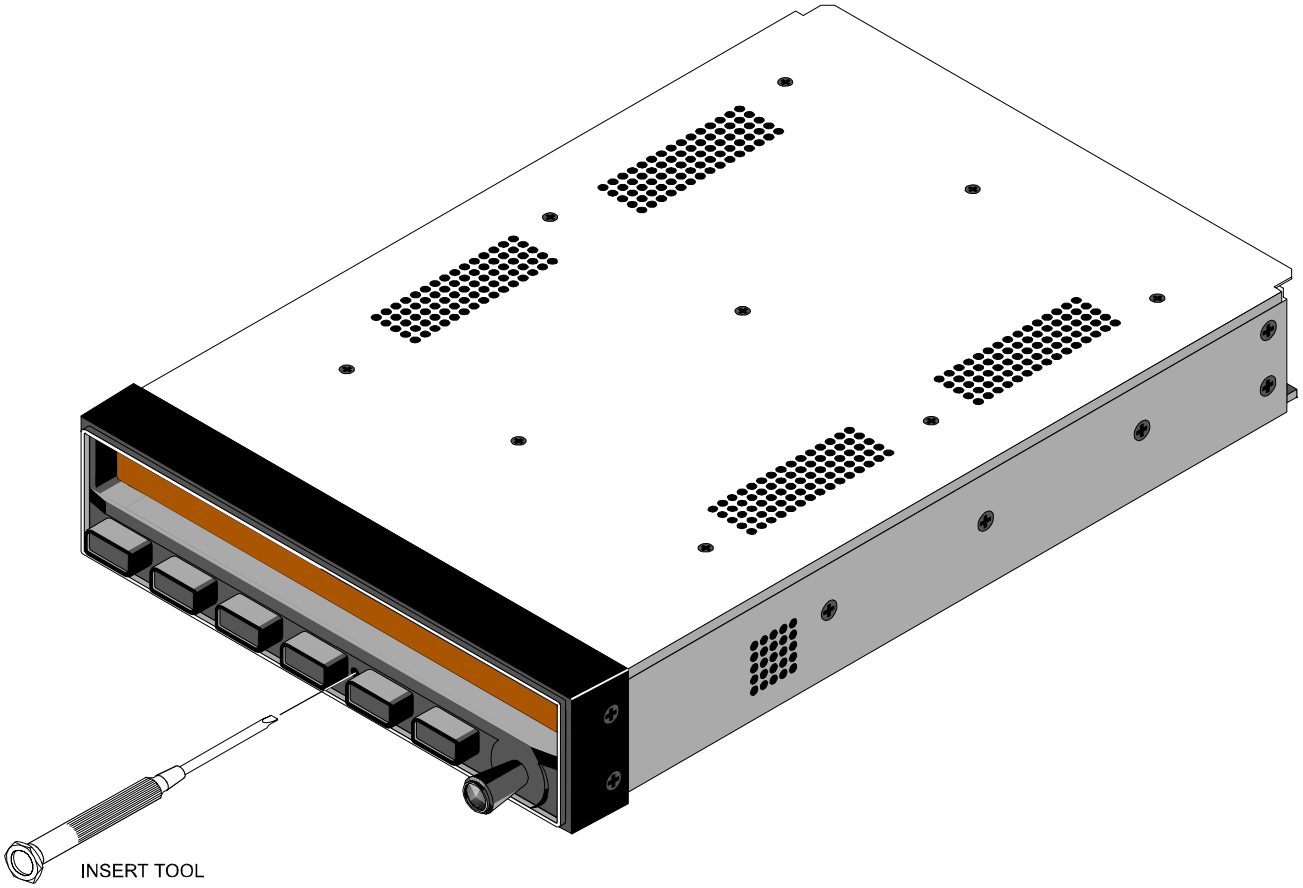


Fig. 2-1c. System 55/55X/550

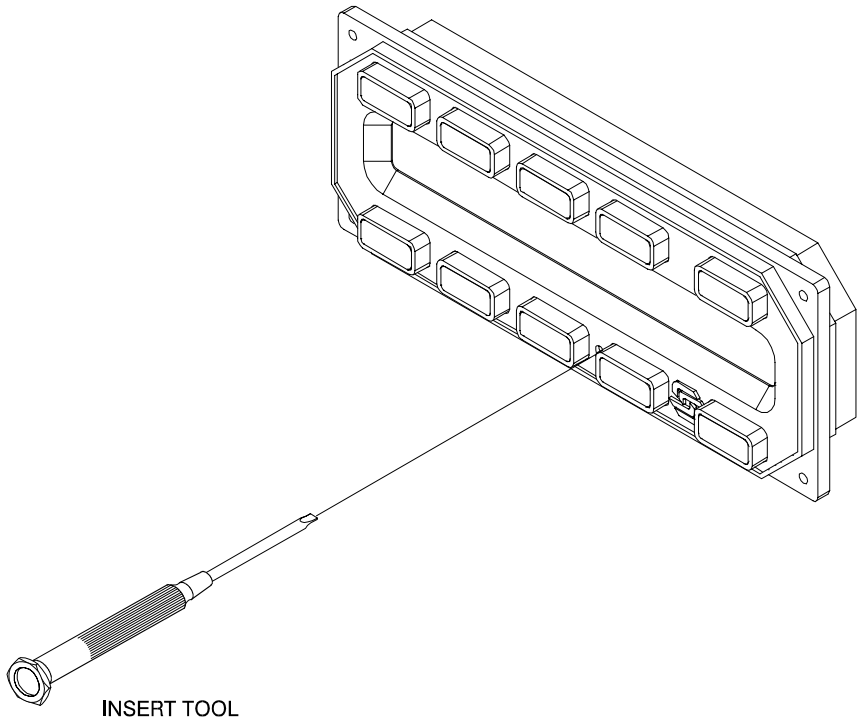


Fig. 2-1d. System 65

SECTION 3
FUNCTIONAL GROUND TESTS

Table of Contents

3.1 Functional Ground Test for System 20

Power-Up Test

1. Set the Battery Master Switch to the ON position.
2. Set the Avionics Master Switch to the ON position.
3. Set the A/P Master Switch to the ON position.
4. Verify that RDY, ST, HD, LO TRK, and HI TRK all annunciate on the A/P for 7 seconds, and then extinguish.
5. Verify that within 3 minutes RDY alone becomes annunciated on the A/P.
6. Verify that the Low Voltage Flag on the A/P is out of view.

Stabilizer Channel Test

7. Center the A/P TURN CMD knob under its index.
8. Engage the A/P ST mode.
9. Turn the A/P TURN CMD knob to the left.
10. Verify that the A/C control wheel turns to the left.
11. Center the A/P TURN CMD knob under its index.
12. Verify that the A/C control wheel stops.
13. Turn the A/P TURN CMD knob to the right.
14. Verify that the A/C control wheel turns to the right.
15. Center the A/P TURN CMD knob under its index.
16. Verify that the A/C control wheel stops.

Note: If the A/P is not equipped with a Heading System, proceed to step 34.

Heading Channel Test

17. Center the HDG bug under the lubber line.
18. Engage the A/P HDG mode.
19. Turn the HDG bug to the left.
20. Verify that the A/C control wheel turns to the left.
21. Center the HDG bug under the lubber line.
22. Verify that the A/C control wheel stops.

23. Turn the HDG bug to the right.

24. Verify that the A/C control wheel turns to the right.

25. Center the HDG bug under the lubber line.

26. Verify that the A/C control wheel stops.

Navigation Channel Test with Heading System (DG or HSI) Installed

27. Tune the Navigation Receiver to the local VOR frequency.

28. Adjust the OBS (DG) or Course Pointer (HSI) for a 100% leftward deflection of the Left/Right needle from center.

29. Engage the A/P LO TRK or HI TRK mode.

30. Verify that the A/C control wheel turns to the left.

31. Adjust the OBS (DG) or Course Pointer (HSI) for a 100% rightward deflection of the Left/Right needle from center.

32. Verify that the A/C control wheel turns to the right.

33. Adjust the OBS (DG) or Course Pointer (HSI) for a centered Left/Right needle to stop the A/C control wheel.

Note: Proceed to step 41.

Navigation Channel Test with No Heading System Installed

34. Tune the Navigation Receiver to the local VOR frequency.

35. Adjust the OBS for a 100% leftward deflection of the Left/Right needle from center.

36. Engage the A/P LO TRK or HI TRK mode.

37. Verify that the A/C control wheel turns to the left.

38. Adjust the OBS for a 100% rightward deflection of the Left/Right needle from center.

39. Verify that the A/C control wheel turns to the right.

40. Adjust the OBS for a centered Left/Right needle to stop the A/C control wheel.

A/P Disconnect Test

41. Press and hold the A/P Push Mode Switch for 3 seconds, or press the optional Remote Disconnect Switch.

42. Verify that RDY flashes on the A/P and the audible alert sounds for 5 seconds, after which RDY alone remains annunciated and the audible alert ceases.

END OF TEST

3.2 Functional Ground Test for System 30

Power-Up Test

1. Set the Battery Master Switch to the ON position.
2. Set the Avionics Master Switch to the ON position.
3. Set the A/P Master Switch to the ON position.
4. Verify that RDY, ALT, ST, HD, LO TRK, HI TRK, TRIM UP, and TRIM DN all annunciate on the A/P.
5. Verify that the TRIM UP annunciation extinguishes after 2 seconds.
6. Verify that RDY, ST, HD, LO TRK, HI TRK, and TRIM DN annunciations all extinguish after 7 seconds.
7. Verify that the ALT annunciation extinguishes after 10 seconds.
8. Verify that within 3 minutes RDY alone becomes annunciated on the A/P.
9. Verify that the Low Voltage Flag on the A/P is out of view.

Stabilizer Channel Test

10. Center the A/P TURN CMD knob under its index.
11. Engage the A/P ST mode.
12. Turn the A/P TURN CMD knob to the left.
13. Verify that the A/C control wheel turns to the left.
14. Center the A/P TURN CMD knob under its index.
15. Verify that the A/C control wheel stops.
16. Turn the A/P TURN CMD knob to the right.
17. Verify that the A/C control wheel turns to the right.
18. Center the A/P TURN CMD knob under its index.
19. Verify that the A/C control wheel stops.

Note: If the A/P is not equipped with a Heading System, proceed to step 37.

Heading Channel Test

20. Center the HDG bug under the lubber line.
21. Engage the A/P HDG mode.
22. Turn the HDG bug to the left.
23. Verify that the A/C control wheel turns to the left.

24. Center the HDG bug under the lubber line.

25. Verify that the A/C control wheel stops.

26. Turn the HDG bug to the right.

27. Verify that the A/C control wheel turns to the right.

28. Center the HDG bug under the lubber line.

29. Verify that the A/C control wheel stops.

Navigation Channel Test with Heading System (DG or HSI) Installed

30. Tune the Navigation Receiver to the local VOR frequency.

31. Adjust the OBS (DG) or Course Pointer (HSI) for a 100% leftward deflection of the Left/Right needle from center.

32. Engage the A/P LO TRK or HI TRK mode.

33. Verify that the A/C control wheel turns to the left.

34. Adjust the OBS (DG) or Course Pointer (HSI) for a 100% rightward deflection of the Left/Right needle from center.

35. Verify that the A/C control wheel turns to the right.

36. Adjust the OBS (DG) or Course Pointer (HSI) for a centered Left/Right needle to stop the A/C control wheel.

Note: Proceed to step 44.

Navigation Channel Test with No Heading System Installed

37. Tune the Navigation Receiver to the local VOR frequency.

38. Adjust the OBS for a 100% leftward deflection of the Left/Right needle from center.

39. Engage the A/P LO TRK or HI TRK mode.

40. Verify that the A/C control wheel turns to the left.

41. Adjust the OBS for a 100% rightward deflection of the Left/Right needle from center.

42. Verify that the A/C control wheel turns to the right.

43. Adjust the OBS for a centered Left/Right needle to stop the A/C control wheel.

Altitude Channel Test

44. Apply fore and aft pressure to the A/C control wheel to sense its freedom of movement.

45. Engage the A/P ALT mode.

46. Apply fore and aft pressure to the A/C control wheel to verify its reduced freedom of movement.

Trim Channel Test

47. Apply maximum aft pressure to the A/C control wheel.

48. Verify that:

    a. After 3 seconds, TRIM DN becomes annunciated on the A/P and the audible alert sounds a steady tone.

    b. After 7 seconds, TRIM DN flashes and the audible alert becomes periodic.

49. Apply maximum fore pressure to the A/C control wheel.

50. Verify that:

    a. After 3 seconds, TRIM UP becomes annunciated on the A/P and the audible alert sounds a steady tone.

    b. After 7 seconds, TRIM UP flashes and the audible alert becomes periodic.

A/P Disconnect Test

51. Press and hold the A/P PUSH MODE Switch for 3 seconds, or press the optional Remote Disconnect Switch.

52. Verify that RDY flashes on the A/P and the audible alert sounds for 5 seconds, after which RDY alone remains annunciated and the audible alert ceases.

END OF TEST

3.3 Functional Ground Test for System 30 ALT

Power-Up/Altitude Channel Tests

1. Apply fore and aft pressure to the A/C control wheel to sense its freedom of movement.

2. Push the ALT HOLD ON/OFF Switch to the ON state.

3. Verify that ON, ALT, TRIM UP, and TRIM DN all annunciate on the ALT HOLD ON/OFF Switch.

4. Verify that the TRIM UP annunciation extinguishes after 2 seconds.

5. Verify that the TRIM DN annunciation extinguishes after 7 seconds.

6. Verify that the ALT annunciation extinguishes after 10 seconds.

7. Apply fore and aft pressure to the A/C control wheel to sense its reduced freedom of movement.

Trim Channel Test

8. Apply maximum aft pressure to the A/C control wheel.

9. Verify that:

a. After 3 seconds, TRIM DN becomes annunciated on the ALT HOLD ON/OFF Switch and the audible alert sounds a steady tone.

b. After 7 seconds, TRIM DN flashes and the audible alert becomes periodic.

10. Apply maximum fore pressure to the A/C control wheel.

11. Verify that:

a. After 3 seconds, TRIM UP becomes annunciated on the ALT HOLD ON/OFF Switch and the audible alert sounds a steady tone.

b. After 7 seconds, TRIM UP flashes and the audible alert becomes periodic.

A/P Power-Down Test

12. Push the ALT HOLD ON/OFF Switch to the OFF state.

13. Verify that all annunciations on the ALT HOLD ON/OFF Switch are extinguished.

END OF TEST

3.4 Functional Ground Test for System 40

Power-Up Test

1. Set the Battery Master Switch to the ON position.

2. Set the Avionics Master Switch to the ON position.

3. Set the A/P Master Switch to the TEST position.

4. Verify that the following are all annunciated on the A/P:

STB HDG NAV

APR REV

5. Verify that the RDY lamp is illuminated on the A/P.

6. Set the A/P Master Switch to the ON position.

7. Verify that all of the annunciations and the RDY lamp are extinguished.

8. Verify that within 3 minutes the RDY lamp becomes illuminated on the A/P.

9. Verify that the Low Voltage Flag on the Turn Coordinator is out of view.

Stabilizer Channel Test

10. Center the A/P TURN CMD knob under its index.

11. Engage the A/P STB mode.

12. Turn the A/P TURN CMD knob to the left.

13. Verify that the A/C control wheel turns to the left.

14. Center the A/P TURN CMD knob under its index.

15. Verify that the A/C control wheel stops.

16. Turn the A/P TURN CMD knob to the right.

17. Verify that the A/C control wheel turns to the right.

18. Center the A/P TURN CMD knob under its index.

19. Verify that the A/C control wheel stops.

Note: If the A/P is not equipped with a Heading System, proceed to step 41.

Heading Channel Test

20. Center the HDG bug under the lubber line.

21. Engage the A/P HDG mode.

22. Turn the HDG bug to the left.

23. Verify that the A/C control wheel turns to the left.

24. Center the HDG bug under the lubber line.

25. Verify that the A/C control wheel stops.

26. Turn the HDG bug to the right.

27. Verify that the A/C control wheel turns to the right.

28. Center the HDG bug under the lubber line.

29. Verify that the A/C control wheel stops.

Navigation Channel Test with Heading System (DG or HSI) Installed

30. Tune the Navigation Receiver to the local VOR frequency.

31. Adjust the OBS (DG) or Course Pointer (HSI) for a 100% leftward deflection of the Left/Right needle from center.

32. Engage the A/P NAV mode.

33. Verify that the A/C control wheel turns to the left.

34. Adjust the OBS (DG) or Course Pointer (HSI) for a 100% rightward deflection of the Left/Right needle from center.

35. Verify that the A/C control wheel turns to the right.

36. Engage the A/P REV mode.

37. Verify that the A/C control wheel turns to the left.

38. Adjust the OBS (DG) or Course Pointer (HSI) for a 100% leftward deflection of the Left/Right needle from center.

39. Verify that the A/C control wheel turns to the right.

40. Adjust the OBS (DG) or Course Pointer (HSI) for a centered Left/Right needle to stop the A/C control wheel.

Note: Proceed to step 52.

Navigation Channel Test with No Heading System Installed

41. Tune the Navigation Receiver to the local VOR frequency.

42. Adjust the OBS for a 100% leftward deflection of the Left/Right needle from center.

43. Engage the A/P NAV mode.

44. Verify that the A/C control wheel turns to the left.

45. Adjust the OBS for a 100% rightward deflection of the Left/Right needle from center.

46. Verify that the A/C control wheel turns to the right.

47. Engage the A/P REV mode.

48. Verify that the A/C control wheel turns to the left.

49. Adjust the OBS for a 100% leftward deflection of the Left/Right needle from center.

50. Verify that the A/C control wheel turns to the right.

51. Adjust the OBS for a centered Left/Right needle to stop the A/C control wheel.

A/P Disconnect Test

52. Press the A/P ON/OFF Mode Switch, or the optional Remote Disconnect Switch.

53. Verify that:

    a. All of the annunciations are extinguished.

    b. The RDY lamp is illuminated.

END OF TEST

3.5 Functional Ground Test for System 50

Power-Up Test

1. Set the Battery Master Switch to the ON position.

2. Set the Avionics Master Switch to the ON position.

3. Set the A/P Master Switch to the TEST position.

4. Verify that the TRIM UP and TRIM DN lamps are illuminated on the A/P.

5. Verify that the TRIM UP lamp extinguishes after 2 seconds, and the re-appears after 4 seconds.

6. Verify that the TRIM DN lamp extinguishes after 7 seconds.

7. Verify that the following are all annunciated on the A/P:

   STB HDG NAV

   APR ALT REV

8. Verify that the RDY lamp is illuminated on the A/P.

9. Set the A/P Master Switch to the ON position.

10. Verify that all of the annunciations and lamps are extinguished.

11. Verify that within 3 minutes the RDY lamp becomes illuminated on the A/P.

12. Verify that the Low Voltage Flag on the Turn Coordinator is out of view.

Stabilizer Channel Test

13. Center the A/P TURN CMD knob under its index.

14. Engage the A/P STB mode.

15. Turn the A/P TURN CMD knob to the left.

16. Verify that the A/C control wheel turns to the left.

17. Center the A/P TURN CMD knob under its index.

18. Verify that the A/C control wheel stops.

19. Turn the A/P TURN CMD knob to the right.

20. Verify that the A/C control wheel turns to the right.

21. Center the A/P TURN CMD knob under its index.

22. Verify that the A/C control wheel stops.

Note: If the A/P is not equipped with a Heading System, proceed to step 44.

Heading Channel Test

23. Center the HDG bug under the lubber line.

24. Engage the A/P HDG mode.

25. Turn the HDG bug to the left.

26. Verify that the A/C control wheel turns to the left.

27. Center the HDG bug under the lubber line.

28. Verify that the A/C control wheel stops.

29. Turn the HDG bug to the right.

30. Verify that the A/C control wheel turns to the right.

31. Center the HDG bug under the lubber line.

32. Verify that the A/C control wheel stops.

Navigation Channel Test with Heading System (DG or HSI) Installed

33. Tune the Navigation Receiver to the local VOR frequency.

34. Adjust the OBS (DG) or Course Pointer (HSI) for a 100% leftward deflection of the Left/Right needle from center.

35. Engage the A/P NAV mode.

36. Verify that the A/C control wheel turns to the left.

37. Adjust the OBS (DG) or Course Pointer (HSI) for a 100% rightward deflection of the Left/Right needle from center.

38. Verify that the A/C control wheel turns to the right.

39. Engage the A/P REV mode.

40. Verify that the A/C control wheel turns to the left.

41. Adjust the OBS (DG) or Course Pointer (HSI) for a 100% leftward deflection of the Left/Right needle from center.

42. Verify that the A/C control wheel turns to the right.

43. Adjust the OBS (DG) or Course Pointer (HSI) for a centered Left/Right needle to stop the A/C control wheel.

Note: Proceed to step 55.

Navigation Channel Test with No Heading System Installed

44. Tune the Navigation Receiver to the local VOR frequency.

45. Adjust the OBS for a 100% leftward deflection of the Left/Right needle from center.

46. Engage the A/P NAV mode.

47. Verify that the A/C control wheel turns to the left.

48. Adjust the OBS for a 100% rightward deflection of the Left/Right needle from center.

49. Verify that the A/C control wheel turns to the right.

50. Engage the A/P REV mode.

51. Verify that the A/C control wheel turns to the left.

52. Adjust the OBS for a 100% leftward deflection of the Left/Right needle from center.

53. Verify that the A/C control wheel turns to the right.

54. Adjust the OBS for a centered Left/Right needle to stop the A/C control wheel.

Altitude Channel Test

55. Apply maximum fore and aft pressure to the A/C control wheel to sense its freedom of movement.

56. Engage the A/P ALT mode.

57. Apply for and aft pressure to the A/C control wheel to verify its reduced freedom of movement.

Trim Channel Test

58. Apply maximum aft pressure to the A/C control wheel.

59. Verify that:

    a. After 3 seconds, the TRIM DN lamp becomes illuminated on the A/P.

    b. After 7 seconds, the TRIM DN lamp flashes.

60. Apply fore pressure to the A/C control wheel.

61. Verify that:

    a. After 3 seconds, the TRIM UP lamp becomes illuminated on the A/P.

    b. After 7 seconds, the TRIM UP lamp flashes.

A/P Disconnect Test

62. Press the A/P ON/OFF Mode Switch, or the optional Remote Disconnect Switch.

63. Verify that:

    a. All of the annunciations are extinguished.

    b. The TRIM UP and TRIM DN lamps are extinguished.

    c. The RDY lamp is illuminated.

END OF TEST

3.6 Functional Ground Test for System 55

Power-Up Test

1. Set the Battery Master Switch to the ON position.
2. Set the Avionics Master Switch to the ON position.
3. Set the A/P Master Switch to the ON position.
4. Verify that the following all annunciate on the A/P for 10 seconds, and then extinguish:

HDG RDY NAV CWS APR FAIL REV TRIM ⬍ ALT GS VS +18

5. Verify that within 3 minutes RDY alone becomes annunciated on the A/P.
6. Verify that the Low Voltage Flag on the Turn Coordinator is out of view.

Heading Channel Test

7. Center the HDG bug under the lubber line.
8. Engage the A/P HDG mode.
9. Turn the HDG bug to the left.
10. Verify that the A/C control wheel turns to the left.
11. Center the HDG bug under the lubber line.
12. Verify that the A/C control wheel stops.
13. Turn the HDG bug to the right.
14. Verify that the A/C control wheel turns to the right.
15. Center the HDG bug under the lubber line.
16. Verify that the A/C control wheel stops.

Navigation Channel Test

Note: If the heading system is an HSI, this test cannot be performed. In that case, proceed to step 33.

17. Tune the Navigation Receiver to the local VOR frequency.
18. Adjust the OBS for a 100% leftward deflection of the Left/Right needle from center.
19. Engage the A/P NAV mode.
20. Verify that the A/C control wheel turns to the left.
21. Engage the A/P HDG mode to stop the A/C control wheel.

22. Adjust the OBS for a 100% rightward deflection of the Left/Right needle from center.
23. Engage the A/P NAV mode.
24. Verify that the A/C control wheel turns to the right.
25. Engage the A/P REV mode.
26. Verify that the A/C control wheel turns to the left.
27. Engage the A/P HDG mode to stop the A/C control wheel.
28. Adjust the OBS for a 100% leftward deflection of the Left/Right needle from center.
29. Engage the A/P REV mode.
30. Verify that the A/C control wheel turns to the right.
31. Engage the A/P HDG mode to stop the A/C control wheel.
32. Adjust the OBS for a centered Left/Right needle.

Altitude Channel Test

33. Move the A/C control wheel until the elevator is in the neutral position.
34. Engage the A/P ALT mode.
35. Command a pitch up using the A/P ALT/VS modifier knob.
36. Verify that the A/C control wheel moves in the aft direction.
37. Engage the A/P VS mode to stop the A/C control wheel.
38. Engage the A/P ALT mode.
39. Command a pitch down using the A/P ALT/VS modifier knob.
40. Verify that the A/C control wheel moves in the fore direction.
41. Engage the A/P VS mode to stop the A/C control wheel.

Vertical Speed Channel Test

42. Command a pitch up using the A/P ALT/VS modifier knob.
43. Verify that the A/C control wheel moves in the aft direction.
44. Engage the A/P ALT mode to stop the A/C control wheel.
45. Engage the A/P VS mode.
46. Command a pitch down using the A/P ALT/VS modifier knob.
47. Verify that the A/C control wheel moves in the fore direction.

48. Engage the A/P ALT mode to stop the A/C control wheel.

Trim Channel Test

Note: If the A/P is equipped with autotrim, proceed to step 53.

49. Apply maximum aft pressure to the A/C control wheel.

50. Verify that:

    a. After 3 seconds, TRIM ▼ becomes annunciated on the A/P and the audible alert sounds.

    b. After 7 seconds, TRIM ▼ flashes and the audible alert ceases.

51. Apply maximum fore pressure to the A/C control wheel.

52. Verify that:

    a. After 3 seconds, TRIM ▲ becomes annunciated on the A/P and the audible alert sounds.

    b. After 7 seconds, TRIM ▲ flashes and the audible alert ceases.

Note: Proceed to step 77.

53. Set the A/P Trim Master Switch to the ON position.

54. Apply maximum aft pressure to the A/C control wheel.

55. Verify that:

    a. After 3 seconds, the A/C trim wheel begins to run nose down with increasing speed, and TRIM ▼ becomes annunciated on the A/P.

    b. After 7 seconds, TRIM ▼ flashes.

56. Apply maximum fore pressure to the A/C control wheel.

57. Verify that:

    a. After 3 seconds, the A/C trim wheel begins to run nose up with increasing speed, and TRIM ▲ becomes annunciated on the A/P.

    b. After 7 seconds, TRIM ▲ flashes.

58. Apply aft pressure to the A/C control wheel until the A/C trim wheel stops.

59. Press either fore or aft on both segments of the A/P Manual Electric Trim Switch, and then release.

60. Verify that the A/P disconnects as follows:

    RDY flashes on the A/P and the audible alert sounds for 5 seconds, after which RDY alone remains annunciated.

61. Press aft and maintain pressure on both segments of the A/P Manual Electric Trim Switch.

62. Verify that the A/C trim wheel runs nose up at full speed and TRIM flashes.

63. Press and hold the A/P Disconnect/Trim Interrupt Switch.

64. Verify that the A/C trim wheel stops.

65. Release the A/P Disconnect/Trim Interrupt Switch.

66. Verify that the A/C trim wheel resumes running nose up at full speed.

67. Release the A/P Manual Electric Trim Switch.

68. Verify that the A/C trim wheel stops and the TRIM annunciation is extinguished.

69. Press fore and maintain pressure on both segments of the A/P Manual Electric Trim Switch.

70. Verify that the A/C trim wheel runs nose down at full speed and TRIM flashes.

71. Press and hold the A/P Disconnect/Trim Interrupt Switch.

72. Verify that the A/C trim wheel stops.

73. Release the A/P Disconnect/Trim Interrupt Switch.

74. Verify that the A/C trim wheel resumes running nose down at full speed.

75. Release the A/P Manual Electric Trim Switch.

76. Verify that the A/C trim wheel stops and the TRIM annunciation is extinguished.

END OF TEST

A/P Disconnect Test

77. Press the A/P Disconnect/Trim Interrupt Switch.

78. Verify that RDY flashes on the A/P and an audible alert sounds for 5 seconds, after which RDY alone remains annunciated and the audible alert ceases.

END OF TEST

3.7 Functional Ground Test for System 55X

Power-Up Test

1. Set the Battery Master Switch to the ON position.

2. Set the Avionics Master Switch to the ON position.

3. Set the A/P Master Switch to the ON position.

4. Verify that the following all annunciate on the A/P for 10 seconds, and then extinguish:

   HDG RDY NAV CWS APR FAIL GPSS REV TRIM ⬍ ALT GS VS +16

5. Verify that within 3 minutes RDY alone becomes annunciated on the A/P.

6. Verify that the Low Voltage Flag on the Turn Coordinator is out of view.

Heading Channel Test

7. Center the HDG bug under the lubber line.

8. Engage the A/P HDG mode.

9. Turn the HDG bug to the left.

10. Verify that the A/C control wheel turns to the left.

11. Center the HDG bug under the lubber line.

12. Verify that the A/C control wheel stops.

13. Turn the HDG bug to the right.

14. Verify that the A/C control wheel turns to the right.

15. Center the HDG bug under the lubber line.

16. Verify that the A/C control wheel stops.

Navigation Channel Test

Note: If the heading system is an HSI, this test cannot be performed. In that case, proceed to step 33.

17. Tune the Navigation Receiver to the local VOR frequency.

18. Adjust the OBS for a 100% leftward deflection of the Left/Right needle from center.

19. Engage the A/P NAV mode.

20. Verify that the A/C control wheel turns to the left.

21. Engage the A/P HDG mode to stop the A/C control wheel.

22. Adjust the OBS for a 100% rightward deflection of the Left/Right needle from center.

23. Engage the A/P NAV mode.

24. Verify that the A/C control wheel turns to the right.

25. Engage the A/P REV mode.

26. Verify that the A/C control wheel turns to the left.

27. Engage the A/P HDG mode to stop the A/C control wheel.

28. Adjust the OBS for a 100% leftward deflection of the Left/Right needle from center.

29. Engage the A/P REV mode.

30. Verify that the A/C control wheel turns to the right.

31. Engage the A/P HDG mode to stop the A/C control wheel.

32. Adjust the OBS for a centered Left/Right needle.

Altitude Channel Test

33. Move the A/C control wheel until the elevator is in the neutral position.

34. Engage the A/P ALT mode.

35. Command a pitch up using the A/P ALT/VS modifier knob.

36. Verify that the A/C control wheel moves in the aft direction.

37. Engage the A/P VS mode to stop the A/C control wheel.

38. Engage the A/P ALT mode.

39. Command a pitch down using the A/P ALT/VS modifier knob.

40. Verify that the A/C control wheel moves in the fore direction.

41. Engage the A/P VS mode to stop the A/C control wheel.

Vertical Speed Channel Test

42. Command a pitch up using the A/P ALT/VS modifier knob.

43. Verify that the A/C control wheel moves in the aft direction.

44. Engage the A/P ALT mode to stop the A/C control wheel.

45. Engage the A/P VS mode.

46. Command a pitch down using the A/P ALT/VS modifier knob.

47. Verify that the A/C control wheel moves in the fore direction.

48. Engage the A/P ALT mode to stop the A/C control wheel.

Trim Channel Test

Note: If the A/P is equipped with autotrim, proceed to step 53.

49. Apply maximum aft pressure to the A/C control wheel.

50. Verify that:

    a. After 3 seconds, TRIM ▼ becomes annunciated on the A/P and the audible alert sounds.

    b. After 7 seconds, TRIM ▼ flashes and the audible alert ceases.

51. Apply maximum fore pressure to the A/C control wheel.

52. Verify that:

    a. After 3 seconds, TRIM ▲ becomes annunciated on the A/P and the audible alert sounds.

    b. After 7 seconds, TRIM ▲ flashes and the audible alert ceases.

Note: Proceed to step 77.

53. Set the A/P Trim Master Switch to the ON position.

54. Apply maximum aft pressure to the A/C control wheel.

55. Verify that:

    a. After 3 seconds, the A/C trim wheel begins to run nose down with increasing speed, and TRIM ▼ becomes annunciated on the A/P.

    b. After 7 seconds, TRIM ▼ flashes.

56. Apply maximum fore pressure to the A/C control wheel.

57. Verify that:

    a. After 3 seconds, the A/C trim wheel begins to run nose up with increasing speed, and TRIM ▲ becomes annunciated on the A/P.

    b. After 7 seconds, TRIM ▲ flashes.

58. Apply aft pressure to the A/C control wheel until the A/C trim wheel stops.

59. Press either fore or aft on both segments of the A/P Manual Electric Trim Switch, and then release.

60. Verify that the A/P disconnects as follows:

    RDY flashes on the A/P and the audible alert sounds for 5 seconds, after which RDY alone remains annunciated.

61. Press aft and maintain pressure on both segments of the A/P Manual Electric Trim Switch.

62. Verify that the A/C trim wheel runs nose up at full speed and TRIM flashes.

63. Press and hold the A/P Disconnect/Trim Interrupt Switch.

64. Verify that the A/C trim wheel stops.

65. Release the A/P Disconnect/Trim Interrupt Switch.

66. Verify that the A/C trim wheel resumes running nose up at full speed.

67. Release the A/P Manual Electric Trim Switch.

68. Verify that the A/C trim wheel stops and the TRIM annunciation is extinguished.

69. Press fore and maintain pressure on both segments of the A/P Manual Electric Trim Switch.

70. Verify that the A/C trim wheel runs nose down at full speed and TRIM flashes.

71. Press and hold the A/P Disconnect/Trim Interrupt Switch.

72. Verify that the A/C trim wheel stops.

73. Release the A/P Disconnect/Trim Interrupt Switch.

74. Verify that the A/C trim wheel resumes running nose down at full speed.

75. Release the A/P Manual Electric Trim Switch.

76. Verify that the A/C trim wheel stops and the TRIM annunciation is extinguished.

END OF TEST

A/P Disconnect Test

77. Press the A/P Disconnect/Trim Interrupt Switch.

78. Verify that RDY flashes on the A/P and an audible alert sounds for 5 seconds, after which RDY alone remains annunciated and the audible alert ceases.

END OF TEST

3.8 Functional Ground Test for System 550

Power-Up Test

1. Set the Battery Master Switch to the ON position.

2. Set the Avionics Master Switch to the ON position.

3. Set the A/P Master Switch to the ON position.

4. Verify that the following all annunciate on the A/P for 10 seconds, and then extinguish:

   HDG RDY NAV CWS APR FAIL GPSS REV TRIM  ALT GS VS +30

5. Verify that within 3 minutes RDY alone becomes annunciated on the A/P.

6. Verify that the Low Voltage Flag on the Turn Coordinator is out of view.

Heading Channel Test

7. Center the HDG bug under the lubber line.
8. Engage the A/P HDG mode.
9. Turn the HDG bug to the left.
10. Verify that the A/C control wheel turns to the left.
11. Center the HDG bug under the lubber line.
12. Verify that the A/C control wheel stops.
13. Turn the HDG bug to the right.
14. Verify that the A/C control wheel turns to the right.
15. Center the HDG bug under the lubber line.
16. Verify that the A/C control wheel stops.

Navigation Channel Test

Note: If the heading system is an HSI, this test cannot be performed. In that case, proceed to step 33.

17. Tune the Navigation Receiver to the local VOR frequency.
18. Adjust the OBS for a 100% leftward deflection of the Left/Right needle from center.
19. Engage the A/P NAV mode.
20. Verify that the A/C control wheel turns to the left.
21. Engage the A/P HDG mode to stop the A/C control wheel.
22. Adjust the OBS for a 100% rightward deflection of the Left/Right needle from center.
23. Engage the A/P NAV mode.
24. Verify that the A/C control wheel turns to the right.
25. Engage the A/P REV mode.
26. Verify that the A/C control wheel turns to the left.
27. Engage the A/P HDG mode to stop the A/C control wheel.
28. Adjust the OBS for a 100% leftward deflection of the Left/Right needle from center.
29. Engage the A/P REV mode.
30. Verify that the A/C control wheel turns to the right.
31. Engage the A/P HDG mode to stop the A/C control wheel.

32. Adjust the OBS for a centered Left/Right needle.

Altitude Channel Test

33. Move the A/C control wheel until the elevator is in the neutral position.

34. Engage the A/P ALT mode.

35. Command a pitch up using the A/P ALT/VS modifier knob.

36. Verify that the A/C control wheel moves in the aft direction.

37. Engage the A/P VS mode to stop the A/C control wheel.

38. Engage the A/P ALT mode.

39. Command a pitch down using the A/P ALT/VS modifier knob.

40. Verify that the A/C control wheel moves in the fore direction.

41. Engage the A/P VS mode to stop the A/C control wheel.

Vertical Speed Channel Test

42. Command a pitch up using the A/P ALT/VS modifier knob.

43. Verify that the A/C control wheel moves in the aft direction.

44. Engage the A/P ALT mode to stop the A/C control wheel.

45. Engage the A/P VS mode.

46. Command a pitch down using the A/P ALT/VS modifier knob.

47. Verify that the A/C control wheel moves in the fore direction.

48. Engage the A/P ALT mode to stop the A/C control wheel.

Trim Channel Test

Note: If the A/P is equipped with autotrim, proceed to step 53.

49. Apply maximum aft pressure to the A/C control wheel.

50. Verify that:

    a. After 3 seconds, TRIM ▼ becomes annunciated on the A/P and the audible alert sounds.

    b. After 7 seconds, TRIM ▼ flashes and the audible alert ceases.

51. Apply maximum fore pressure to the A/C control wheel.

52. Verify that:

    a. After 3 seconds, TRIM ▲ becomes annunciated on the A/P and the audible alert sounds.

    b. After 7 seconds, TRIM ▲ flashes and the audible alert ceases.

Note: Proceed to step 77.

53. Set the A/P Trim Master Switch to the ON position.

54. Apply maximum aft pressure to the A/C control wheel.

55. Verify that:

    a. After 3 seconds, the A/C trim wheel begins to run nose down with increasing speed, and TRIM ▼ becomes annunciated on the A/P.

    b. After 7 seconds, TRIM ▼ flashes.

56. Apply maximum fore pressure to the A/C control wheel.

57. Verify that:

    a. After 3 seconds, the A/C trim wheel begins to run nose up with increasing speed, and TRIM ▲ becomes annunciated on the A/P.

    b. After 7 seconds, TRIM ▲ flashes.

58. Apply aft pressure to the A/C control wheel until the A/C trim wheel stops.

59. Press either fore or aft on both segments of the A/P Manual Electric Trim Switch, and then release.

60. Verify that the A/P disconnects as follows:

    RDY flashes on the A/P and the audible alert sounds for 5 seconds, after which RDY alone remains annunciated.

61. Press aft and maintain pressure on both segments of the A/P Manual Electric Trim Switch.

62. Verify that the A/C trim wheel runs nose up at full speed and TRIM flashes.

63. Press and hold the A/P Disconnect/Trim Interrupt Switch.

64. Verify that the A/C trim wheel stops.

65. Release the A/P Disconnect/Trim Interrupt Switch.

66. Verify that the A/C trim wheel resumes running nose up at full speed.

67. Release the A/P Manual Electric Trim Switch.

68. Verify that the A/C trim wheel stops and the TRIM annunciation is extinguished.

69. Press fore and maintain pressure on both segments on the A/P Manual Electric Trim Switch.

70. Verify that the A/C trim wheel runs nose down at full speed and TRIM flashes.

71. Press and hold the A/P Disconnect/Trim Interrupt Switch.

72. Verify that the A/C trim wheel stops.

73. Release the A/P Disconnect/Trim Interrupt Switch.

74. Verify that the A/C trim wheel resumes running nose down at full speed.

75. Release the A/P Manual Electric Trim Switch.

76. Verify that the A/C trim wheel stops and the TRIM annunciation is extinguished.

END OF TEST

A/P Disconnect Test

77. Press the A/P Disconnect/Trim Interrupt Switch.

78. Verify that RDY flashes on the A/P and an audible alert sounds for 5 seconds, after which RDY alone remains annunciated and the audible alert ceases.

END OF TEST

3.9 Functional Ground Test for System 60-1

Power-Up Test

1. Set the Battery Master Switch to the ON position.

2. Set the Avionics Master Switch to the ON position.

3. Set the A/P Master Switch to the TEST position.

4. Verify that the following are all annunciated on the A/P:

RDY		REV
HDG	NAV	APR
	CAP	
FAIL	SOFT	

5. Set the A/P Master Switch to the ON position.

6. Verify that all of the annunciations are extinguished.

7. Verify that within 3 minutes RDY alone becomes annunciated on the A/P.

8. Verify that the Low Voltage Flag on the Turn Coordinator is out of view.

Heading Channel Test

9. Center the HDG bug under the lubber line.
10. Engage the A/P HDG mode.
11. Turn the HDG bug to the left.
12. Verify that the A/C control wheel turns to the left.
13. Center the HDG bug under the lubber line.
14. Verify that the A/C control wheel stops.
15. Turn the HDG bug to the right.
16. Verify that the A/C control wheel turns to the right.
17. Center the HDG bug under the lubber line.
18. Verify that the A/C control wheel stops.

Navigation Channel Test

Note: If the heading system is an HSI, this test cannot be performed. In that case, proceed to step 35.

19. Tune the Navigation Receiver to the local VOR frequency.
20. Adjust the OBS for a 100% leftward deflection of the Left/Right needle from center.
21. Engage the A/P NAV mode.
22. Verify that the A/C control wheel turns to the left.
23. Engage the A/P HDG mode to stop the A/C control wheel.
24. Adjust the OBS for a 100% rightward deflection of the Left/Right needle from center.
25. Engage the A/P NAV mode.
26. Verify that the A/C control wheel turns to the right.
27. Engage the A/P REV mode.
28. Verify that the A/C control wheel turns to the left.
29. Engage the A/P HDG mode to stop the A/C control wheel.
30. Adjust the OBS for a 100% leftward deflection of the Left/Right needle from center.
31. Engage the A/P REV mode.
32. Verify that the A/C control wheel turns to the right.
33. Engage the A/P HDG mode to stop the A/C control wheel.

34. Adjust the OBS for a centered Left/Right needle.

A/P Disconnect Test

35. Press the A/P Disconnect Switch.

36. Verify that the A/P disconnects as follows:

    RDY flashes on the A/P for 5 seconds, and then it alone remains annunciated.

3.10 Functional Ground Test for System 60-2

Manual Excessive G-Force Test

1. Set the Battery Master Switch to the ON position.

2. Set the Avionics Master Switch to the ON position.

3. Set the A/P Master Switch to the TEST position.

4. Verify that the following are all annunciated on the A/P:

    RDY FD REV

    HDG NAV APR

    VS ALT GS

    SEL CAP DSABL

    FAIL SOFT TRIM

5. Verify that the UP and DN Switches on the A/P are both illuminated.

6. Center the HDG bug under the lubber line.

7. Engage the A/P HDG mode.

8. Apply fore and aft pressure to the A/C control wheel to sense its freedom of movement.

9. Engage the A/P ALT mode.

10. Apply fore and aft pressure to the A/C control wheel to verify its reduced freedom of movement.

11. Press and hold the A/P UP Switch while maintaining a grasp on the A/C control wheel.

12. Verify that the pitch servo disengages after 1/2 second, by sensing the increased freedom of A/C control wheel movement in the fore and aft directions.

13. Release the A/P UP Switch.

14. Verify that the pitch servo immediately re-engages, by sensing the reduced freedom of A/C control wheel movement in the fore and aft directions.

15. Press and hold the A/P DN Switch while maintaining a grasp on the A/C control wheel.

16. Verify that the pitch servo disengages after 1/2 second, by sensing the increased freedom of A/C control wheel movement in the fore and aft directions.

17. Release the A/P DN Switch.

18. Verify that the pitch servo immediately re-engages, by sensing the reduced freedom of A/C control wheel movement in the fore and aft directions.

Power-Up Test

19. Set the A/P Master Switch to the ON position.

20. Verify that all of the annunciations and illuminations are extinguished.

21. Verify that within 3 minutes RDY alone becomes annunciated on the A/P.

22. Verify that the Low Voltage Flag on the Turn Coordinator is out of view.

Heading Channel Test

23. Engage the A/P HDG mode.

24. Turn the HDG bug to the left.

25. Verify that the A/C control wheel turns to the left.

26. Center the HDG bug under the lubber line.

27. Verify that the A/C control wheel stops.

28. Turn the HDG bug to the right.

29. Verify that the A/C control wheel turns to the right.

30. Center the HDG bug under the lubber line.

31. Verify that the A/C control wheel stops.

Navigation Channel Test

Note: If the heading system is an HSI, this test cannot be performed. In that case, proceed to step 48.

32. Tune the Navigation Receiver to the local VOR frequency.

33. Adjust the OBS for a 100% leftward deflection of the Left/Right needle from center.

34. Engage the A/P NAV mode.

35. Verify that the A/C control wheel turns to the left.

36. Engage the A/P HDG mode to stop the A/C control wheel.

37. Adjust the OBS for a 100% rightward deflection of the Left/Right needle from center.

38. Engage the A/P NAV mode.

39. Verify that the A/C control wheel turns to the right.

40. Engage the A/P REV mode.

41. Verify that the A/C control wheel turns to the left.

42. Engage the A/P HDG mode to stop the A/C control wheel.

43. Adjust the OBS for a 100% leftward deflection of the Left/Right needle from center.

44. Engage the A/P REV mode.

45. Verify that the A/C control wheel turns to the right.

46. Engage the A/P HDG mode to stop the A/C control wheel.

47. Adjust the OBS for a centered Left/Right needle.

Altitude Channel Test

48. Move the A/C control wheel until the elevator is in the neutral position.

49. Engage the A/P ALT mode.

50. Press and hold the A/P UP Switch.

51. Verify that the A/C control wheel moves in the aft direction.

52. Release the A/P UP Switch.

53. Press and hold the A/P DN Switch.

54. Verify that the A/C control wheel moves in the fore direction.

Note: There will be a slight delay in this movement as the A/C control wheel decelerates aft to the null.

55. Release the A/P DN Switch.

56. Engage the A/P VS mode to stop the A/C control wheel.

Vertical Speed Channel Test

57. Press and hold the A/P UP Switch.

58. Verify that the A/C control wheel moves in the aft direction.

59. Release the A/P UP Switch.

60. Press and hold the A/P DN Switch.

61. Verify that the A/C control wheel moves in the fore direction.

Note: There will be a slight delay in this movement as the A/C control wheel decelerates aft to the null.

62. Release the A/P DN Switch.

63. Engage the A/P ALT mode to stop the A/C control wheel.

Trim Channel Test

Note: If the A/P is equipped with autotrim, proceed to step 68.

64. Apply maximum aft pressure to the A/C control wheel.

65. Verify that:

    a. After 3 seconds the A/P DN Switch illuminates, TRIM annunciates, and the audible alert sounds a steady tone.

    b. After 7 seconds the A/P DN Switch flashes, TRIM flashes, and the audible alert becomes periodic.

66. Apply maximum fore pressure to the A/C control wheel.

67. Verify that:

    a. After 3 seconds the A/P UP Switch illuminates, TRIM annunciates, and the audible alert sounds a steady tone.

    b. After 7 seconds the A/P UP Switch flashes, TRIM flashes, and the audible alert becomes periodic.

Note: Proceed to Step 92.

68. Set the A/P Trim Master Switch to the ON position.

69. Apply maximum aft pressure to the A/C control wheel.

70. Verify that after 3 seconds the A/C trim wheel begins to run nose down with increasing speed.

71. Apply maximum fore pressure to the A/C control wheel.

72. Verify that after 3 seconds the A/C trim wheel begins to run nose up with increasing speed.

73. Apply aft pressure to the A/C control wheel until the A/C trim wheel stops.

74. Press either fore or aft on both segments of the A/P Manual Electric Trim Switch, and then release.

75. Verify that the A/P disconnects as follows:

    RDY flashes on the A/P for 5 seconds, and then it alone remains annunciated.

76. Press aft and maintain pressure on both segments of the A/P Manual Electric Trim Switch.

77. Verify that the A/C trim wheel runs nose up at full speed and TRIM flashes.

78. Press and hold the A/P Disconnect/Trim Interrupt Switch.

79. Verify that the A/C trim wheel stops.

80. Release the A/P Disconnect/Trim Interrupt Switch.

81. Verify that the A/C trim wheel resumes running nose up at full speed.

82. Release the A/P Manual Electric Trim Switch.

83. Verify that the A/C trim wheel stops and the TRIM annunciation is extinguished.

84. Press fore and maintain pressure on both segments of the A/P Manual Electric Trim Switch.

85. Verify that the A/C trim wheel runs nose down at full speed and TRIM flashes.

86. Press and hold the A/P Disconnect/Trim Interrupt Switch.

87. Verify that the A/C trim wheel stops.

88. Release the A/P Disconnect/Trim Interrupt Switch.

89. Verify that the A/C trim wheel resumes running nose down at full speed.

90. Release the A/P Manual Electric Trim Switch.

91. Verify that the A/C trim wheel stops and the TRIM annunciation is extinguished.

END OF TEST

A/P Disconnect Test

92. Press the A/P Disconnect/Trim Interrupt Switch.

93. Verify that the A/P disconnects as follows:

    RDY flashes on the A/P for 5 seconds, and then it alone remains annunciated.

END OF TEST

3.11 Functional Ground Test for System 65

Manual Excessive G-Force Test

1. Set the Battery Master Switch to the ON position.

2. Set the Avionics Master Switch to the ON position.

3. Apply fore and aft pressure to the A/C control wheel to sense its freedom of movement.

4. Press and hold the A/P UP Switch while maintaining a grasp on A/C control wheel.

5. Verify that the pitch servo engages by sensing the reduced freedom of A/C control wheel movement in the fore and aft directions.

6. Release the A/P UP Switch.

7. Verify that the pitch servo disengages by sensing the increased freedom of A/C control wheel movement in the fore and aft directions.

8. Press and hold the A/P DN Switch while maintaining a grasp on A/C control wheel.

9. Verify that the pitch servo engages by sensing the reduced freedom of A/C control wheel movement in the fore and aft directions.

10. Release the A/P DN Switch.

11. Verify that the pitch servo disengages by sensing the increased freedom of A/C control wheel movement in the fore and aft directions.

Power-Up Test

12. Verify that within 3 minutes RDY becomes annunciated on the A/P Remote Annunciator.

13. Verify that the Low Voltage Flag on the Turn Coordinator is out of view.

14. Press the FD/AP Switch on the A/P Control Head to turn ON the A/P.

Heading Channel Test

15. Center the HDG bug under the lubber line.

16. Engage the A/P HDG mode.

17. Turn the HDG bug to the left.

18. Verify that the A/C control wheel turns to the left.

19. Center the HDG bug under the lubber line.

20. Verify that the A/C control wheel stops.

21. Turn the HDG bug to the right.

22. Verify that the A/C control wheel turns to the right.

23. Center the HDG bug under the lubber line.

24. Verify that the A/C control wheel stops.

Navigation Channel Test

Note: If the heading system is an HSI, this test cannot be performed. In that case, proceed to step 41.

25. Tune the Navigation Receiver to the local VOR frequency.

26. Adjust the OBS for a 100% leftward deflection of the Left/Right needle from center.

27. Engage the A/P NAV mode.

28. Verify that the A/C control wheel turns to the left.

29. Engage the A/P HDG mode to stop the A/C control wheel.

30. Adjust the OBS for a 100% rightward deflection of the Left/Right needle from center.

31. Engage the A/P NAV mode.

32. Verify that the A/C control wheel turns to the right.

33. Engage the A/P REV mode.

34. Verify that the A/C control wheel turns to the left.

35. Engage the A/P HDG mode to stop the A/C control wheel.

36. Adjust the OBS for a 100% leftward deflection of the Left/Right needle from center.

37. Engage the A/P REV mode.

38. Verify that the A/C control wheel turns to the right.

39. Engage the A/P HDG mode to stop the A/C control wheel.

40. Adjust the OBS for a centered Left/Right needle.

Altitude Channel Test

41. Move the A/C control wheel until the elevator is in the neutral position.

42. Engage the A/P ALT mode.

43. Press and hold the A/P UP Switch.

44. Verify that the A/C control wheel moves in the aft direction.

45. Release the A/P UP Switch.

46. Press and hold the A/P DN Switch.

47. Verify that the A/C control wheel moves in the fore direction.

Note: There will be a slight delay in this movement as the A/C control wheel decelerates aft to the null.

48. Release the A/P DN Switch.

49. Engage the A/P VS mode to stop the A/C control wheel.

Vertical Speed Channel Test

50. Press and hold the A/P UP Switch.

51. Verify that the A/C control wheel moves in the aft direction.

52. Release the A/P UP Switch.

53. Press and hold the A/P DN Switch.

54. Verify that the A/C control wheel moves in the fore direction.

Note: There will be a slight delay in this movement as the A/C control wheel decelerates aft to the null.

55. Release the A/P DN Switch.

56. Engage the A/P ALT mode to stop the A/C control wheel.

Trim Channel Test

Note: If the A/P is equipped with autotrim, proceed to step 61.

57. Apply maximum aft pressure to the A/C control wheel.

58. Verify that:

    a. After 3 seconds both TRIM and DN annunciate on the A/P Control Head, and the audible alert sounds a steady tone.

    b. After 7 seconds both TRIM and DN flash, and the audible alert becomes periodic.

59. Apply maximum fore pressure to the A/C control wheel.

60. Verify that:

    a. After 3 seconds both TRIM and UP annunciate on the A/P Control Head, and the audible alert sounds a steady tone.

    b. After 7 seconds both TRIM and UP flash, and the audible alert becomes periodic.

Note: Proceed to step 85.

61. Set the A/P Trim Master Switch to the ON position.

62. Apply maximum aft pressure to the A/C control wheel.

63. Verify that after 3 seconds the A/C trim wheel begins to run nose down with increasing speed.

64. Apply maximum fore pressure to the A/C control wheel.

65. Verify that after 3 seconds the A/C trim wheel begins to run nose up with increasing speed.

66. Apply aft pressure to the A/C control wheel until the A/C trim wheel stops.

67. Press either fore or aft on both segments of the A/P Manual Electric Trim Switch, and then release.

68. Verify that the A/P disconnects as follows:

    a. RDY flashes on the A/P Remote Annunciator for 5 seconds, and then it alone remains annunciated.

    b. ON alone remains annunciated on the A/P Control Head.

69. Press aft and maintain pressure on both segments of the A/P Manual Electric Trim Switch.

70. Verify that the A/C trim wheel runs nose up at full speed and TRIM flashes on the A/P Control Head.

71. Press and hold the A/P Disconnect/Trim Interrupt Switch.

72. Verify that the A/C trim wheel stops.

73. Release the A/P Disconnect/Trim Interrupt Switch.

74. Verify that the A/C trim wheel resumes running nose up at full speed.

75. Release the A/P Manual Electric Trim Switch.

76. Verify that the A/C trim wheel stops and the TRIM annunciation is extinguished.

77. Press fore and maintain pressure on both segments of the A/P Manual Electric Trim Switch.

78. Verify that the A/C trim wheel runs nose down at full speed and TRIM flashes on the A/P Control Head.

79. Press and hold the A/P Disconnect/Trim Interrupt Switch.

80. Verify that the A/C trim wheel stops.

81. Release the A/P Disconnect/Trim Interrupt Switch.

82. Verify that the A/C trim wheel resumes running nose down at full speed.

83. Release the A/P Manual Electric Trim Switch.

84. Verify that the A/C trim wheel stops and the TRIM annunciation is extinguished.

END OF TEST

A/P Disconnect Test

85. Press the A/P Disconnect/Trim Interrupt Switch.

86. Verify that the A/P disconnects as follows:

    a. RDY flashes on the A/P Remote Annunciator for 5 seconds, and then it alone remains annunciated.

    b. ON alone remains annunciated on the A/P Control Head.

END OF TEST

3.12 Functional Ground Test for System 60 PSS

Manual Excessive G-Force Test

1. Set the Battery Master Switch to the ON position.

2. Set the Avionics Master Switch to the ON position.

3. Set the A/P Master Switch to the TEST position.

4. Verify that the following are all annunciated on the A/P:

   VS ALT GS TRIM

5. Verify that the UP and DN Switches on the A/P are both illuminated.

6. Apply fore and aft pressure to the A/C control wheel to sense its freedom of movement.

7. Engage the A/P ALT mode.

8. Apply fore and aft pressure to the A/C control wheel to verify its reduced freedom of movement.

9. Press and hold the A/P UP Switch while maintaining a grasp on the A/C control wheel.

10. Verify that the pitch servo disengages after 1/2 second, by sensing the increased freedom of A/C control wheel movement in the fore and aft directions.

11. Release the A/P UP Switch.

12. Verify that the pitch servo immediately re-engages, by sensing the reduced freedom of A/C control wheel movement in the fore and aft directions.

13. Press and hold the A/P DN Switch while maintaining a grasp on the A/C control wheel.

14. Verify that the pitch servo disengages after 1/2 second, by sensing the increased freedom of A/C control wheel movement in the fore and aft directions.

15. Release the A/P DN Switch.

16. Verify that the pitch servo immediately re-engages, by sensing the reduced freedom of A/C control wheel movement in the fore and aft directions.

Power-Up Test

17. Set the A/P Master Switch to the ON position.

18. Verify that all of the annunciations and illuminations are extinguished.

Altitude Channel Test

19. Move the A/C control wheel until the elevator is in the neutral position.

20. Engage the A/P ALT mode.

21. Press and hold the A/P UP Switch.

22. Verify that the A/C control wheel moves in the aft direction.

23. Release the A/P UP Switch.

24. Press and hold the A/P DN Switch.

25. Verify that the A/C control wheel moves in the fore direction.

Note: There will be a slight delay in this movement as the A/C control wheel decelerates aft to the null.

26. Release the A/P DN Switch.

27. Engage the A/P VS mode to stop the A/C control wheel.

Vertical Speed Channel Test

28. Press and hold the A/P UP Switch.

29. Verify that the A/C control wheel moves in the aft direction.

30. Release the A/P UP Switch.

31. Press and hold the A/P DN Switch.

32. Verify that the A/C control wheel moves in the fore direction.

Note: There will be a slight delay in this movement as the A/C control wheel decelerates aft to the null.

33. Release the A/P DN Switch.

34. Engage the A/P ALT mode to stop the A/C control wheel.

Trim Channel Test

Note: If the A/P is equipped with autotrim, proceed to step 39.

35. Apply maximum aft pressure to the A/C control wheel.

36. Verify that:

    a. After 3 seconds the A/P DN Switch illuminates, TRIM annunciates, and the audible alert sounds a steady tone.

    b. After 7 seconds the A/P DN Switch flashes, TRIM flashes, and the audible alert becomes periodic.

37. Apply maximum fore pressure to the A/C control wheel.

38. Verify that:

    a. After 3 seconds the A/P UP Switch illuminates, TRIM annunciates, and the audible alert sounds a steady tone.

    b. After 7 seconds the A/P UP Switch flashes, TRIM flashes, and the audible alert becomes periodic.

Note: Proceed to Step 63.

39. Set the A/P Trim Master Switch to the ON position.

40. Apply maximum aft pressure to the A/C control wheel.

41. Verify that after 3 seconds the A/C trim wheel begins to run nose down with increasing speed.

42. Apply maximum fore pressure to the A/C control wheel.

43. Verify that after 3 seconds the A/C trim wheel begins to run nose up with increasing speed.

44. Apply aft pressure to the A/C control wheel until the A/C trim wheel stops.

45. Press either fore or aft on both segments of the A/P Manual Electric Trim Switch, and then release.

46. Verify that the A/P disconnects as follows:

    All annunciations are extinguished.

47. Press aft and maintain pressure on both segments of the A/P Manual Electric Trim Switch.

48. Verify that the A/C trim wheel runs nose up at full speed.

49. Press and hold the Pitch Disconnect/Trim Interrupt Switch.
50. Verify that the A/C trim wheel stops.
51. Release the Pitch Disconnect/Trim Interrupt Switch.
52. Verify that the A/C trim wheel resumes running nose up at full speed.
53. Release the A/P Manual Electric Trim Switch.
54. Verify that the A/C trim wheel stops.
55. Press fore and maintain pressure on both segments of the A/P Manual Electric Trim Switch.
56. Verify that the A/C trim wheel runs nose down at full speed.
57. Press and hold the Pitch Disconnect/Trim Interrupt Switch.
58. Verify that the A/C trim wheel stops.
59. Release the Pitch Disconnect/Trim Interrupt Switch.
60. Verify that the A/C trim wheel resumes running nose down at full speed.
61. Release the A/P Manual Electric Trim Switch.
62. Verify that the A/C trim wheel stops.

END OF TEST

A/P Disconnect Test

63. Press the A/P OFF Switch.
64. Verify that all annunciations are extinguished.

END OF TEST

SECTION 4
SIMULATOR OPERATION

Table of Contents

4.1 Operating Procedure for Heading System Simulator (P/N 95101-2)

This procedure applies to the following Heading Systems:

MFG	TYPE	P/N
S-TEC	DG	6406
S-TEC	HSI	6443
EDO AIRE	DG	52D54

1. Set the A/P Master Switch to the OFF position.
2. Set the Avionics Master Switch to the OFF position.
3. Set the Battery Master Switch to the OFF position.
4. Disconnect the A/P cable harness from the Heading System.

   Note: For the 6443 HSI, only the topmost DB-25 connector needs to be disconnected.

5. Identify which one of the following Extender Cables is to be used:

   P/N 39307 (for use with 6406/52D54)
   P/N 39308 (for use with 6443)

6. Plug the proper end of the Extender Cable into the A/P cable harness, in place of the actual Heading System.
7. Plug the other end of the Extender Cable into the proper Heading System Simulator connector (6406, 6443, or 52D54).
8. Connect the black lead Pin Plug from the Heading System Simulator to Airframe Ground.

   Note: This Pin Plug may be inserted into an Airframe Ground Pin Jack on S-TEC Breakout Box P/N 9524, if used. Otherwise, rely on the Pin Jack Alligator Clip supplied.

9. Set the Heading Error Selector Switch on the Heading System Simulator to 0°.
10. Turn the A/C control wheel until the ailerons are in the neutral position.
11. Center the HDG bug under the lubber line.
12. Set the Battery Master Switch to the ON position.
13. Set the Avionics Master Switch to the ON position.
14. Set the A/P Master Switch to the ON position.
15. Wait until RDY alone becomes annunciated on the A/P display, upon completion of the power-up self-test.
16. Engage the A/P HDG mode.
17. Adjust the A/P roll centering as required to null any lateral A/C control wheel movement.
18. Turn the A/C control wheel until the ailerons are in the neutral position.
19. Set the Heading Error Selector Switch on the Heading System Simulator to the 10° RT TO HDG position.

20. Verify that the A/C control wheel turns to the right.

21. Set the Heading Error Selector Switch on the Heading System Simulator back to the 0° position.

22. Verify that the A/C control wheel stops.

23. Set the Heading Error Selector Switch on the Heading System Simulator to the 10° LT TO HDG position.

24. Verify that the A/C control wheel turns to the left.

25. Set the Heading Error Selector Switch on the Heading System Simulator back to the 0° position.

26. Verify that the A/C control wheel stops.

Note: 45° may be selected instead of 10° in steps 19 and 23.

4.2 Operating Procedure for Servo Simulator (P/N 95101-3)

4.2.1 Roll Servo

4.2.1.1 Heading System Installed

1. Set the A/P Master Switch to the OFF position.

2. Set the Avionics Master Switch to the OFF position.

3. Set the Battery Master Switch to the OFF position.

4. Disconnect the A/P cable harness from the Roll Servo.

5. Plug the proper end of Extender Cable P/N 39309 into the A/P cable harness, in place of the actual Roll Servo.

6. Plug the other end of the Extender Cable into the Servo Simulator connector.

7. Center the HDG bug under the lubber line.

8. Set the Battery Master Switch to the ON position.

9. Set the Avionics Master Switch to the ON position.

10. Set the A/P Master Switch to the ON position.

11. Wait until RDY alone becomes annunciated on the A/P display, upon completion of the power-up self-test.

12. Engage the A/P HDG mode.

13. Verify that the voltage at the Servo Simulator SOL jack relative to the SOL GND jack is approximately:

    12 VDC (A+ = 14VDC)
    24 VDC (A+ = 28 VDC)

14. Verify that the voltage at the Servo Simulator MOTOR 1 jack relative to the MOTOR 2 jack is approximately 0 VDC.

15. Turn the HDG bug to the right.

16. Verify that the voltage at the Servo Simulator MOTOR 1 jack relative to the MOTOR 2 jack is positive.

17. Center the HDG bug under the lubber line.

18. Turn the HDG bug to the left.

19. Verify that the voltage at the Servo Simulator MOTOR 1 jack relative to the MOTOR 2 jack is negative.

4.2.1.2 No Heading System Installed and A/P with STB Mode

1. Set the A/P Master Switch to the OFF position.

2. Set the Avionics Master Switch to the OFF position.

3. Set the Battery Master Switch to the OFF position.

4. Disconnect the A/P cable harness from the Roll Servo.

5. Plug the proper end of Extender Cable P/N 39309 into the A/P cable harness, in place of the actual Roll Servo.

6. Plug the other end of the Extender Cable into the Servo Simulator connector.

7. Center the A/P TURN CMD knob under its index.

8. Set the Battery Master Switch to the ON position.

9. Set the Avionics Master Switch to the ON position.

10. Set the A/P Master Switch to the ON position.

11. Wait until RDY alone becomes annunciated on the A/P display, upon completion of the power-up self-test.

12. Engage the A/P STB mode.

13. Verify that the voltage at the Servo Simulator SOL jack relative to the SOL GND jack is approximately:

    12 VDC (A+ = 14VDC)
    24 VDC (A+ = 28 VDC)

14. Verify that the voltage at the Servo Simulator MOTOR 1 jack relative to the MOTOR 2 jack is approximately 0 VDC.

15. Turn the A/P TURN CMD knob to the right.

16. Verify that the voltage at the Servo Simulator MOTOR 1 jack relative to the MOTOR 2 jack is positive.

17. Center the A/P TURN CMD knob under its index.

18. Turn the A/P TURN CMD knob to the left.

19. Verify that the voltage at the Servo Simulator MOTOR 1 jack relative to the MOTOR 2 jack is negative.

4.2.2 Pitch Servo

4.2.2.1 Heading System Installed

1. Set the A/P Master Switch to the OFF position.
2. Set the Avionics Master Switch to the OFF position.
3. Set the Battery Master Switch to the OFF position.
4. Disconnect the A/P cable harness from the Altitude Transducer.
5. Plug the proper end of Extender Cable P/N 39310 into the A/P cable harness, in place of the actual Altitude Transducer.
6. Plug the other end of the Extender Cable into the Altitude Transducer Simulator connector.
7. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the ENG A/P ALT MODE position.
8. Disconnect the A/P cable harness from the Pitch Servo.
9. Plug the proper end of Extender Cable P/N 39309 into the A/P cable harness, in place of the actual Pitch Servo.
10. Plug the other end of the Extender Cable into the Servo Simulator connector.
11. Set the Trim Command Selector Switch on the Servo Simulator to the NEUTRAL position.
12. Set the Battery Master Switch to the ON position.
13. Set the Avionics Master Switch to the ON position.
14. Set the A/P Master Switch to the ON position.
15. Wait until RDY alone becomes annunciated on the A/P display, upon completion of the power-up self-test.
16. Engage the A/P HDG mode.
17. Center the HDG bug under the lubber line to null lateral movement of the A/C control wheel.
18. Engage the A/P ALT mode.
19. Verify that the voltage at the Servo Simulator SOL jack relative to the SOL GND jack is approximately:

    12 VDC (A+ = 14VDC)
    24 VDC (A+ = 28 VDC)

20. Verify that the voltage at the Servo Simulator MOTOR 1 jack relative to the MOTOR 2 jack is approximately 0 VDC.
21. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the PITCH UP position.
22. Verify that the voltage at the Servo Simulator MOTOR 1 jack relative to the MOTOR 2 jack is positive.
23. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the PITCH DN position.

24. Verify that the voltage at the Servo Simulator MOTOR 1 jack relative to the MOTOR 2 jack is negative.

25. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the ENG A/P ALT MODE position.

26. Set the Trim Command Selector Switch on the Servo Simulator to the TRIM UP position.

27. Verify that after a 3 second delay, the A/P annunciates TRIM UP.

28. Set the Trim Command Selector Switch on the Servo Simulator to the NEUTRAL position.

29. Verify that the TRIM UP annunciation is extinguished.

30. Set the Trim Command Selector Switch on the Servo Simulator to the TRIM DN position.

31. Verify that after a 3 second delay, the A/P annunciates TRIM DN.

32. Set the Trim Command Selector Switch on the Servo Simulator to the NEUTRAL position.

33. Verify that the TRIM DN annunciation is extinguished.

4.2.2.2 No Heading System Installed and A/P with STB Mode

1. Set the A/P Master Switch to the OFF position.

2. Set the Avionics Master Switch to the OFF position.

3. Set the Battery Master Switch to the OFF position.

4. Disconnect the A/P cable harness from the Altitude Transducer.

5. Plug the proper end of Extender Cable P/N 39310 into the A/P cable harness, in place of the actual Altitude Transducer.

6. Plug the other end of the Extender Cable into the Altitude Transducer Simulator connector.

7. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the ENG A/P ALT MODE position.

8. Disconnect the A/P cable harness from the Pitch Servo.

9. Plug the proper end of Extender Cable P/N 39309 into the A/P cable harness, in place of the actual Pitch Servo.

10. Plug the other end of the Extender Cable into the Servo Simulator connector.

11. Set the Trim Command Selector Switch on the Servo Simulator to the NEUTRAL position.

12. Set the Battery Master Switch to the ON position.

13. Set the Avionics Master Switch to the ON position.

14. Set the A/P Master Switch to the ON position.

15. Wait until RDY alone becomes annunciated on the A/P display, upon completion of the power-up self-test.

16. Engage the A/P STB mode.

17. Center the A/P TURN CMD knob under its index to null lateral movement of the A/C control wheel.

18. Engage the A/P ALT mode.

19. Verify that the voltage at the Servo Simulator SOL jack relative to the SOL GND jack is approximately:

    12 VDC (A+ = 14VDC)
    24 VDC (A+ = 28 VDC)

20. Verify that the voltage at the Servo Simulator MOTOR 1 jack relative to the MOTOR 2 jack is approximately 0 VDC.

21. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the PITCH UP position.

22. Verify that the voltage at the Servo Simulator MOTOR 1 jack relative to the MOTOR 2 jack is positive.

23. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the PITCH DN position.

24. Verify that the voltage at the Servo Simulator MOTOR 1 jack relative to the MOTOR 2 jack is negative.

25. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the ENG A/P ALT MODE position.

26. Set the Trim Command Selector Switch on the Servo Simulator to the TRIM UP position.

27. Verify that after a 3 second delay, the A/P annunciates TRIM UP.

28. Set the Trim Command Selector Switch on the Servo Simulator to the NEUTRAL position.

29. Verify that the TRIM UP annunciation is extinguished.

30. Set the Trim Command Selector Switch on the Servo Simulator to the TRIM DN position.

31. Verify that after a 3 second delay, the A/P annunciates TRIM DN.

32. Set the Trim Command Selector Switch on the Servo Simulator to the NEUTRAL position.

33. Verify that the TRIM DN annunciation is extinguished.

4.2.2.3 Pitch Only A/P

1. Set the A/P Master Switch to the OFF position.

2. Set the Avionics Master Switch to the OFF position.

3. Set the Battery Master Switch to the OFF position.

4. Disconnect the A/P cable harness from the Altitude Transducer.

5. Plug the proper end of Extender Cable P/N 39310 into the A/P cable harness, in place of the actual Altitude Transducer.

6. Plug the other end of the Extender Cable into the Altitude Transducer Simulator connector.

7. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the ENG A/P ALT MODE position.

8. Disconnect the A/P cable harness from the Pitch Servo.

9. Plug the proper end of Extender Cable P/N 39309 into the A/P cable harness, in place of the actual Pitch Servo.

10. Plug the other end of the Extender Cable into the Servo Simulator connector.

11. Set the Trim Command Selector Switch on the Servo Simulator to the NEUTRAL position.

12. Set the Battery Master Switch to the ON position.

13. Set the Avionics Master Switch to the ON position.

14. Set the A/P Master Switch to the ON position.

15. Wait until the A/P has completed its power-up self-test.

16. Engage the A/P ALT mode.

17. Verify that the voltage at the Servo Simulator SOL jack relative to the SOL GND jack is approximately:

    12 VDC (A+ = 14VDC)
    24 VDC (A+ = 28 VDC)

18. Verify that the voltage at the Servo Simulator MOTOR 1 jack relative to the MOTOR 2 jack is approximately 0 VDC.

19. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the PITCH UP position.

20. Verify that the voltage at the Servo Simulator MOTOR 1 jack relative to the MOTOR 2 jack is positive.

21. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the PITCH DN position.

22. Verify that the voltage at the Servo Simulator MOTOR 1 jack relative to the MOTOR 2 jack is negative.

23. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the ENG A/P ALT MODE position.

24. Set the Trim Command Selector Switch on the Servo Simulator to the TRIM UP position.

25. Verify that after a 3 second delay, the A/P annunciates TRIM UP.

26. Set the Trim Command Selector Switch on the Servo Simulator to the NEUTRAL position.

27. Verify that the TRIM UP annunciation is extinguished.

28. Set the Trim Command Selector Switch on the Servo Simulator to the TRIM DN position.

29. Verify that after a 3 second delay, the A/P annunciates TRIM DN.

30. Set the Trim Command Selector Switch on the Servo Simulator to the NEUTRAL position.

31. Verify that the TRIM DN annunciation is extinguished.

4.2.3 Trim Servo

1. Set the A/P Master Switch to the OFF position.
2. Set the Avionics Master Switch to the OFF position.
3. Set the Battery Master Switch to the OFF position.
4. Disconnect the A/P cable harness from the Trim Servo.
5. Plug the proper end of Extender Cable P/N 39309 into the A/P cable harness, in place of the actual Trim Servo.
6. Plug the other end of the Extender Cable into the Servo Simulator connector.
7. Set the Battery Master Switch to the ON position.
8. Set the Avionics Master Switch to the ON position.
9. Set the A/P Master Switch to the ON position.
10. Wait until RDY alone becomes annunciated on the A/P display, upon completion of the power-up self-test.
11. Verify that the voltage at the Servo Simulator MOTOR 1 jack relative to the MOTOR 2 jack is approximately 0 VDC.
12. Press AFT and hold the Manual Electric Trim Switch to command TRIM UP.
13. Verify that the voltage at the Servo Simulator SOL jack relative to the SOL GND jack is approximately:

    12 VDC (A+ = 14VDC)
    24 VDC (A+ = 28 VDC)

14. Verify that the voltage at the Servo Simulator MOTOR 1 jack relative to the MOTOR 2 jack is approximately:

    12 VDC (A+ = 14VDC)
    24 VDC (A+ = 28 VDC)

15. Release the Manual Electric Trim Switch.
16. Press FORE and hold the Manual Electric Trim Switch to command TRIM DN.
17. Verify that the voltage at the Servo Simulator MOTOR 1 jack relative to the MOTOR 2 jack is approximately:

    -12 VDC (A+ = 14VDC)
    -24 VDC (A+ = 28 VDC)

4.3 Operating Procedure for Altitude Transducer Simulator (P/N 95101-4)

4.3.1 Heading System Installed

1. Set the A/P Master Switch to the OFF position.
2. Set the Avionics Master Switch to the OFF position.

3. Set the Battery Master Switch to the OFF position.

4. Disconnect the A/P cable harness from the Altitude Transducer.

5. Plug the proper end of Extender Cable P/N 39310 into the A/P cable harness, in place of the actual Altitude Transducer.

6. Plug the other end of the Extender Cable into the Altitude Transducer Simulator connector.

7. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the ENG A/P ALT MODE position.

8. Set the Battery Master Switch to the ON position.

9. Set the Avionics Master Switch to the ON position.

10. Set the A/P Master Switch to the ON position.

11. Wait until RDY alone becomes annunciated on the A/P display, upon completion of the power-up self-test.

12. Engage the A/P HDG mode.

13. Center the HDG bug under the lubber line to null lateral movement of the A/C control wheel.

14. Engage the A/P ALT mode.

15. Move the A/C control wheel until the elevator is in the neutral position.

16. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the PITCH DN position.

17. Verify that the A/C control wheel moves in the FORE direction.

18. Set the Pitch Command Selector Switch on the Altitude Transducer back to the ENG A/P ALT MODE position.

19. Verify that the A/C control wheel stops.

20. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the PITCH UP position.

21. Verify that the A/C control wheel moves in the AFT direction.

22. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the ENG A/P ALT MODE position.

23. Verify that the A/C control wheel stops.

4.3.2 No Heading System Installed and A/P with STB Mode

1. Set the A/P Master Switch to the OFF position.

2. Set the Avionics Master Switch to the OFF position.

3. Set the Battery Master Switch to the OFF position.

4. Disconnect the A/P cable harness from the Altitude Transducer.

5. Plug the proper end of Extender Cable P/N 39310 into the A/P cable harness, in place of the actual Altitude Transducer.

6. Plug the other end of the Extender Cable into the Altitude Transducer Simulator connector.

7. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the ENG A/P ALT MODE position.

8. Set the Battery Master Switch to the ON position.

9. Set the Avionics Master Switch to the ON position.

10. Set the A/P Master Switch to the ON position.

11. Wait until RDY alone becomes annunciated on the A/P display, upon completion of the power-up self-test.

12. Engage the A/P STB mode.

13. Center the A/P TURN CMD knob under its index to null lateral movement of the A/C control wheel.

14. Engage the A/P ALT mode.

15. Move the A/C control wheel until the elevator is in the neutral position.

16. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the PITCH DN position.

17. Verify that the A/C control wheel moves in the FORE direction.

18. Set the Pitch Command Selector Switch on the Altitude Transducer to the ENG A/P ALT MODE position.

19. Verify that the A/C control wheel stops.

20. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the PITCH UP position.

21. Verify that the A/C control wheel moves in the AFT direction.

22. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the ENG A/P ALT MODE position.

23. Verify that the A/C control wheel stops.

4.3.3 Pitch Only A/P

1. Set the A/P Master Switch to the OFF position.

2. Set the Avionics Master Switch to the OFF position.

3. Set the Battery Master Switch to the OFF position.

4. Disconnect the A/P cable harness from the Altitude Transducer.

5. Plug the proper end of Extender Cable P/N 39310 into the A/P cable harness, in place of the actual Altitude Transducer.

6. Plug the other end of the Extender Cable into the Altitude Transducer Simulator connector.

7. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the ENG A/P ALT MODE position.

8. Set the Battery Master Switch to the ON position.

9. Set the Avionics Master Switch to the ON position.

10. Set the A/P Master Switch to the ON position.

11. Wait until the A/P has completed its power-up self-test.

12. Engage the A/P ALT mode.

13. Move the A/C control wheel until the elevator is in the neutral position.

14. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the PITCH DN position.

15. Verify that the A/C control wheel moves in the FORE direction.

16. Set the Pitch Command Selector Switch on the Altitude Transducer to the ENG A/P ALT MODE position.

17. Verify that the A/C control wheel stops.

18. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the PITCH UP position.

19. Verify that the A/C control wheel moves in the AFT direction.

20. Set the Pitch Command Selector Switch on the Altitude Transducer Simulator to the ENG A/P ALT MODE position.

21. Verify that the A/C control wheel stops.

4.4 Operating Procedure for Turn Coordinator Simulator (P/N 95101-5)

4.4.1 Heading System Installed

1. Set the A/P Master Switch to the OFF position.

2. Set the Avionics Master Switch to the OFF position.

3. Set the Battery Master Switch to the OFF position.

4. Disconnect the A/P cable harness from the Turn Coordinator.

5. Connect the proper end of Extender Cable P/N 39311 into the A/P cable harness, in place of the actual Turn Coordinator.

6. Connect the other end of the Extender Cable into the Turn Coordinator Simulator connector.

7. Set the Gyro Tach Selector Switch on the Turn Coordinator Simulator to the NOT RDY position.

8. Set the % Std Rate Turn Selector Switch on the Turn Coordinator Simulator to the 0% position.

9. Turn the A/C control wheel until the ailerons are in the neutral position.

10. Center the HDG bug under the lubber line.
11. Set the Battery Master Switch to the ON position.
12. Set the Avionics Master Switch to the ON position.
13. Set the A/P Master Switch to the ON position.
14. Wait 30 seconds for the A/P to complete its power-up self-test.
15. Set the Gyro Tach Selector Switch on the Turn Coordinator Simulator to the RDY position.
16. Verify that RDY becomes annunciated on the A/P display.
17. Set the Gyro Tach Selector Switch on the Turn Coordinator Simulator to the NOT RDY position.
18. Verify that RDY becomes extinguished on the A/P display.
19. Set the Gyro Tach Selector Switch on the Turn Coordinator Simulator to the RDY position.
20. Engage the A/P HDG mode.
21. Adjust the HDG bug slightly as required to null any A/C control wheel creep.
22. Turn the A/C control wheel until the ailerons are in the neutral position.
23. Set the % Std Rate Turn Selector Switch on the Turn Coordinator Simulator to the 50% RT position.
24. Verify that the A/C control wheel turns to the left.
25. Set the % Std Rate Turn Selector Switch on the Turn Coordinator Simulator to the 0% position.
26. Verify that the A/C control wheel stops.
27. Set the % Std Rate Turn Selector Switch on the Turn Coordinator Simulator to the 50% LT position.
28. Verify that the A/C control wheel turns to the right.
29. Set the % Std Rate Turn Selector Switch on the Turn Coordinator Simulator to the 0° position.
30. Verify that the A/C control wheel stops.

Notes:

1. ***75% or 90% may be selected instead of 50% in steps 23 and 27.***
2. ***Turning the HDG bug sufficiently to the right will cause the A/C control wheel to stop in step 24.***
3. ***Turning the HDG bug sufficiently to the left will cause the A/C control wheel to stop in step 28.***
4. ***Setting the % Std Rate Turn Selector Switch to the VARY position enables custom turn rate selection using the Vary Adjust Pot. The scale is ± 1 VDC for a std rate turn (3°/sec), as measured at the TURN RATE jack relative to the TURN RATE REF jack. The voltage polarity is negative for a right turn, and positive for a left turn.***

4.4.2 No Heading System Installed and A/P with STB Mode

1. Set the A/P Master Switch to the OFF position.
2. Set the Avionics Master Switch to the OFF position.
3. Set the Battery Master Switch to the OFF position.
4. Disconnect the A/P cable harness from the Turn Coordinator.
5. Connect the proper end of Extender Cable P/N 39311 into the A/P cable harness, in place of the actual Turn Coordinator.
6. Connect the other end of the Extender Cable into the Turn Coordinator Simulator connector.
7. Set the Gyro Tach Selector Switch on the Turn Coordinator Simulator to the NOT RDY position.
8. Set the % Std Rate Turn Selector Switch on the Turn Coordinator Simulator to the 0% position.
9. Turn the A/C control wheel until the ailerons are in the neutral position.
10. Center the A/P TURN CMD knob under its index.
11. Set the Battery Master Switch to the ON position.
12. Set the Avionics Master Switch to the ON position.
13. Set the A/P Master Switch to the ON position.
14. Wait 30 seconds for the A/P to complete its power-up self-test.
15. Set the Gyro Tach Selector Switch on the Turn Coordinator Simulator to the RDY position.
16. Verify that RDY becomes annunciated on the A/P display.
17. Set the Gyro Tach Selector Switch on the Turn Coordinator Simulator to the NOT RDY position.
18. Verify that RDY becomes extinguished on the A/P display.
19. Set the Gyro Tach Selector Switch on the Turn Coordinator Simulator to the RDY position.
20. Engage the A/P STB mode.
21. Adjust the A/P TURN CMD knob slightly as required to null any A/C control wheel creep.
22. Turn the A/C control wheel until the ailerons are in the neutral position.
23. Set the % Std Rate Turn Selector Switch on the Turn Coordinator Simulator to the 50% RT position.
24. Verify that the A/C control wheel turns to the left.
25. Set the % Std Rate Turn Selector Switch on the Turn Coordinator Simulator to the 0% position.
26. Verify that the A/C control wheel stops.

27. Set the % Std Rate Turn Selector Switch on the Turn Coordinator Simulator to the 50% LT position.

28. Verify that the A/C control wheel turns to the right.

29. Set the % Std Rate Turn Selector Switch on the Turn Coordinator Simulator to the 0° position.

30. Verify that the A/C control wheel stops.

Notes:

1. ***75% or 90% may be selected instead of 50% in steps 23 and 27.***

2. ***Turning the HDG bug sufficiently to the right will cause the A/C control wheel to stop in step 24.***

3. ***Turning the HDG bug sufficiently to the left will cause the A/C control wheel to stop in step 28.***

4. ***Setting the % Std Rate Turn Selector Switch to the VARY position enables custom turn rate selection using the Vary Adjust Pot. The scale is ± 1 VDC for a std rate turn (3°/sec), as measured at the TURN RATE jack relative to the TURN RATE REF jack. The voltage Polarity is negative for a right turn, and positive for a left turn.***

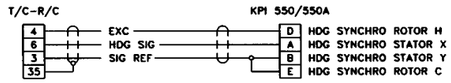
SECTION 6
HEADING INTERCONNECT DRAWINGS

Table of Contents

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
–	RELEASED PER E.O. 6099	1-6-97	W.DAVIS
A	REV. PER EO 6556	10-8-97	M. KEIRNAN
B	ADDED SN3308 INFO. PER E.O.7582	2-25-99	T. PIERSON

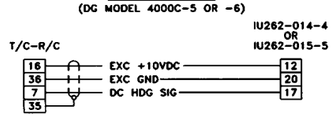
KING KCS-55/55A INTERCONNECT

KING KPI 550/550A

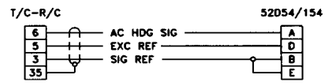


EDO 52D254

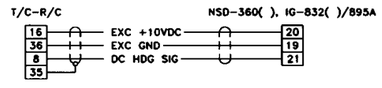
(DG MODEL 4000C-5 OR -6)



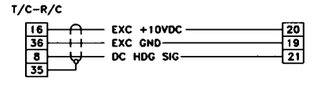
EDO 52D54 OR 52D154



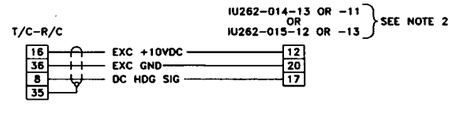
EDO NSD-360/360A, DG 360, CENTURY NSD 1000, CESSNA ARC IG 832A/IG-832C/IG-895A



SIGMA TEK IU445-004-9

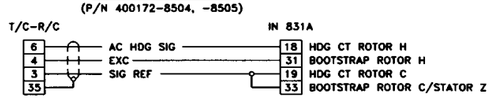


SIGMA TEK DG

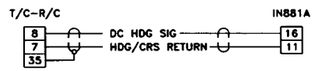


BENDIX IN 831A

(P/N 400172-8504, -8505)



BENDIX HSD 880



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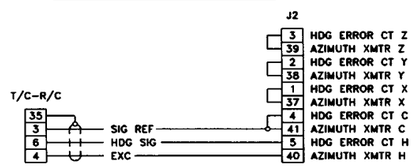

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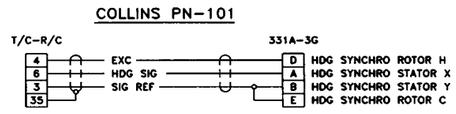
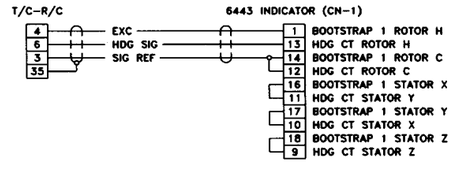
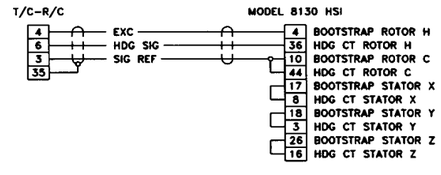


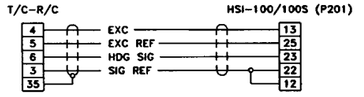
S-TEC HSI 6443 INDICATOR



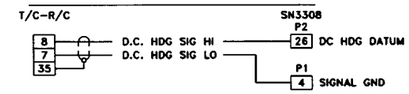
AERONETICS MODEL 8000



NARCO HSI-100/100S



SANDEL SN3308



NOTE: SANDEL INDICATOR MUST BE CONFIGURED FOR KING KCS-55/5A HEADING SYSTEM.

NOTES:

1. EXISTING A/P CABLE ASSY., MAY BE USED TO INTERCONNECT SYSTEM 30 ROLL COMPUTER TO DESIRED HEADING SYSTEM BY REMOVING D.G. CONNECTOR & CONNECTING EXISTING WIRES TO HDG INSTRUMENT. RE-PIN PROGRAMMER/ COMPUTER CONNECTOR AS REQUIRED.
2. SIGMA-TEK IU262-033-5 OR IU262-034-6; USE STANDARD AUTOPILOT CABLE ASSY. (SAME FOR S-TEC 6406 D.G.).

QTY	ITEM	PART NUMBER	DESCRIPTION
	2		
	1		

LIST OF MATERIALS

	APPROVAL	DATE
DRAWN	R.TUCKER	9-17-96
CHECKED	M.KEIRNAN	1-5-97
ENGINEER	J.MOORE	1-5-98
APPROVED	E.CAMERON	1-6-97

MATERIAL: N/A

FINISH: N/A

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMAL: XXX: +/- .005
DECIMAL: XX : +/- .010
FRACTIONS: +/- 1/64
ANGLES: +/- 0 ° 30'
REMOVE BURRS
BREAK SHARP EDGES .010

N/A | BULLETIN 700
NEXT ASSY | USED ON
APPLICATION

S-TEC Corporation
One S-TEC Way
Municipal Airport - Mineral Wells, Tx. 76067-9236

TITLE: SCHEMATIC, HEADING SYSTEM INTER-CONNECT DETAIL-SYS. 20/30

SIZE D | DRAWING NO. 10114 | REV B
SCALE N/A | DO NOT SCALE DRAWING | SHEET 1 of 1

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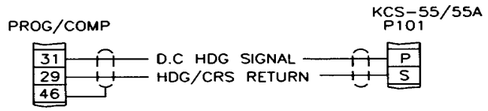
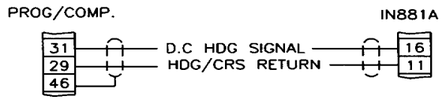
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
–	RELEASED PER EO 1035	6-1-83	G BARLOW
A	REDRAWN WITH CHANGES FECO417	9-2-83	T PIERSON
B	REV PER FECO 521	1-30-84	T PIERSON
C	REV PER EO 1527	5-3-85	T PIERSON
D	ADD 52D54/154 PER FECO 916	3-9-87	MN
E	REV PER EO 2063	11-6-87	T PIERSON
F	REV PER EO 2107	11-12-87	T PIERSON
G	REV PER EO 2385	7-31-89	PENNIE
H	REV PER EO 2424	10-18-89	T PIERSON
I	REV PER EO 2875	3-21-91	E ELLIS
J	REV PER EO 2953	8-27-91	RT
K	REV PER EO 3384	1-29-92	C WOODLAN
L	REV PER EO 4126	4-12-93	RT
M	REDRAWN PER EO 4266	10-4-93	T PIERSON
N	ADD NOTE 2 PER EO 5561	8-21-95	T PIERSON
O	REV PER EO 6555	10-9-97	MK
P	REV PER EO 7585	2-19-99	J FROST

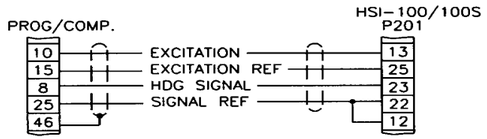
KING KCS-55/55A INTERCONNECT



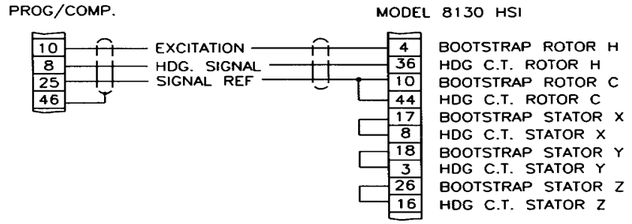
BENDIX HSD 880



NARCO HSI-100/100S



AERONETICS MODEL 8000



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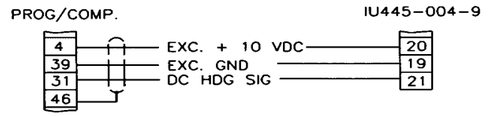
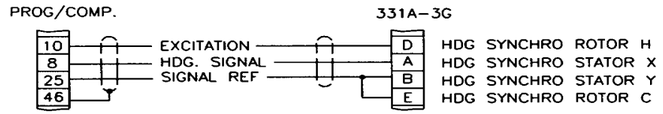


COLLINS PN-101



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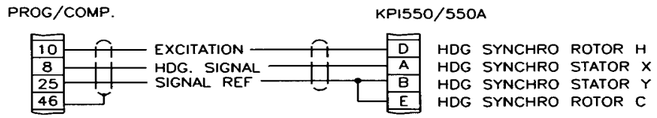
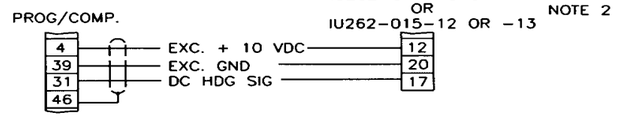
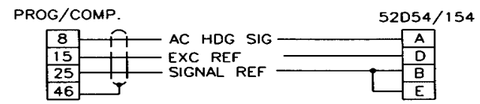


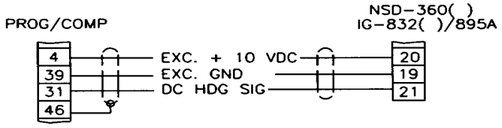
SIGMA TEK DG



EDO 52D54 OR 52D154

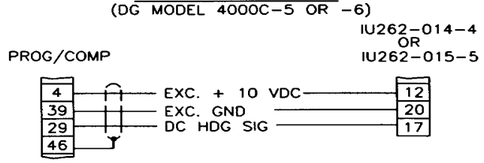


EDO NSD-360/360A, DG 360
CESSNA ARC IG 832A/IG-832C/IG-895A



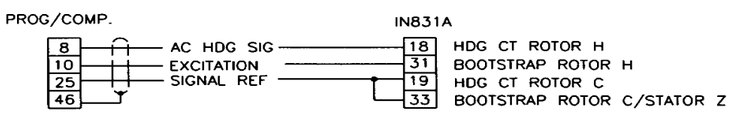
EDO 52D254

(DG MODEL 4000C-5 OR -6)



BENDIX IN 831A

(PN 400172-8504, -8505)



NOTES:

1. EXISTING AUTOPILOT CABLE ASSY., MAY BE USED TO INTERCONNECT SYSTEM 40/50 COMPUTER TO DESIRED HEADING SYSTEM BY REMOVING D.G. CONNECTOR AND CONNECTING EXISTING WIRES TO HDG INSTRUMENT. RE-PIN PROGRAMMER/COMPUTER CONNECTOR AS REQUIRED.
2. SIGMA TEK IU262-033-5 OR IU262-034-6 USE STANDARD AUTOPILOT CABLE ASSY., (SAME AS FOR S-TEC 6401 AND 6406 D.G.).

	BULLETIN 300
NEXT ASSY	USED ON
APPLICATIONS	

LIST OF MATERIALS

APPROVAL	DATE
DRAWN T PIERSON	8-29-83
CHECKED GB	8-30-83
ENGINEER EC	8-30-83
APPROVED HWH	9-1-83

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMAL: XXX: +/- .005
DECIMAL: XX : +/- .010
FRACTIONS: +/- 1/64
ANGLES: +/- 0 ° 30'
REMOVE BURRS
BREAK SHARP EDGES .010

S-TEC Corporation
One S-TEC Way
Municipal Airport – Mineral Wells, Tx. 76067-9236

TITLE
SCHEMATIC, HEADING SYSTEM INTERCONNECT DETAIL SYS. 40/50

SIZE	DRAWING NO.	REV
C	1014	P
SCALE N/A	DO NOT SCALE DRAWING	SHEET 1 of 2

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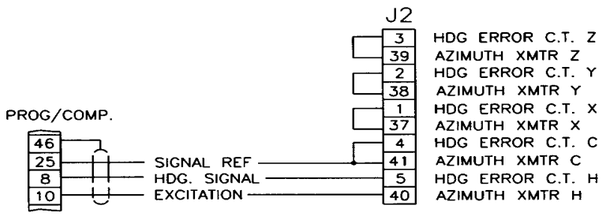
NOTES:

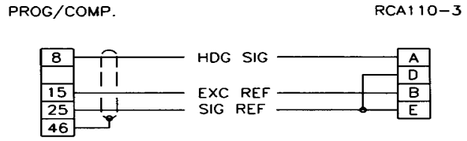
1. SANDEL INDICATOR MUST BE CONFIGURED FOR KING KCS-55/55A HEADING SYSTEM.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
–	RELEASED PER EO 2953	8-27-91	RT
A	REV PER EO 3161	1-2-92	RT
L	REV PER EO 4126	4-12-93	RT
M	REDRAWN PER EO 4266	10-4-93	T PIERSON
N	REV PER EO 5958	6-20-96	R ROGERS
O	REV PER EO 6555	10-9-97	MK
P	REV PER EO 7585	2-19-99	J FROST

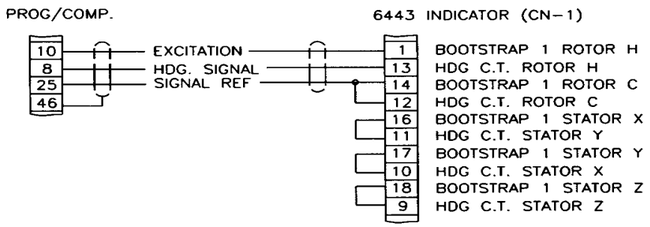
COLLINS HSI 331A-6P/6R



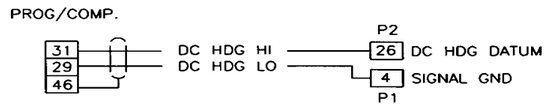
RC ALLEN DG 103-0010-01 MODEL RCA110-3



S-TEC HSI 6443 INDICATOR



SANDEL SN 3308



LIST OF MATERIALS	
	BULLETIN 300
NEXT ASSY	USED ON
APPLICATIONS	

APPROVAL	DATE
DRAWN T PIERSON	8-21-91
CHECKED EA	8-22-91
ENGINEER SH	8-23-91
APPROVED BT	8-26-91

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMAL: XXX: +/- .005
DECIMAL: XX : +/- .010
FRACTIONS: +/- 1/64
ANGLES: +/- 0 ° 30'
REMOVE BURRS
BREAK SHARP EDGES .010

S-TEC Corporation
One S-TEC Way
Municipal Airport – Mineral Wells, Tx. 76067-9236

TITLE
SCHEMATIC, HEADING SYSTEM INTERCONNECT DETAIL SYS. 40/50

SIZE	DRAWING NO.	REV
C	1014	P
SCALE N/A	DO NOT SCALE DRAWING	SHEET 2 of 2

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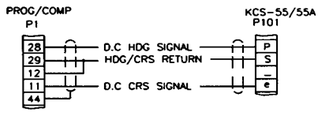
NOTES: UNLESS OTHERWISE SPECIFIED

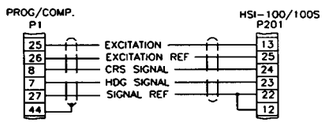
1. EXISTING AUTOPILOT CABLE ASSY., MAY BE USED TO INTERCONNECT SYSTEM 55 COMPUTER TO DESIRED HEADING SYSTEM BY REMOVING D.C. CONNECTOR AND CONNECTING EXISTING WIRES TO HDG INSTRUMENT. RE-PIN PROGRAMMER/COMPUTER CONNECTOR AS REQUIRED.
2. SIGMA TEK IU262-033-5 OR IU262-034-6 USE STANDARD AUTOPILOT CABLE ASSY., (SAME AS FOR S-TEC 6401 AND 6406 D.G.).
3. NOT APPLICABLE TO 331A-3F INDICATOR. ELIGIBLE ONLY ON 331A-3G INDICATOR. PIN. 331A-3G-001, 002, 003, 005, 006, & 007 ONLY.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
–	RELEASED PER E.O. 4257	9-21-93	B.C.L.
A	REV. PER EO 5212	9-23-94	T.PIERSON
B	ADD NOTE 2 PER EO 5559	8-21-95	T.PIERSON
C	REV. PER EO 5639	10-16-95	R.T.
D	REV. PER EO 5788	2-12-96	T.PIERSON
E	REV. PER EO 5834	3-07-96	R.ROGERS
F	REV. PER EO 5958	6-20-96	R.ROGERS
G	PER PER EO 6469	7-31-97	M.KEIRNAN
H	REV. PER EO 6553	10-08-97	M.KEIRNAN
J	ADDED SN3308 INFO. PER E.O. 7586	2-25-99	J.FROST
K	REV. PER FECO 2670	9-14-00	E.YORK

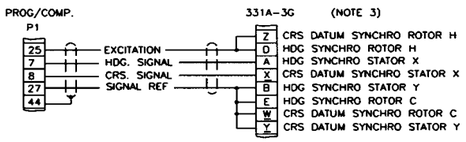
KING KCS-55/55A INTERCONNECT



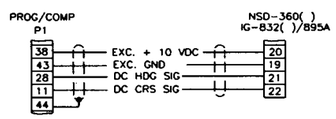
NARCO HSI-100/100S



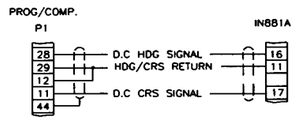
COLLINS PN-101



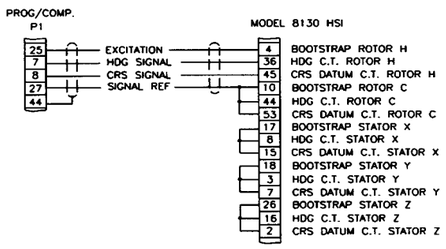
EDO NSD-360/360A, DG 360
CESSNA ARC IG 832A/IG-832C/IG-895A



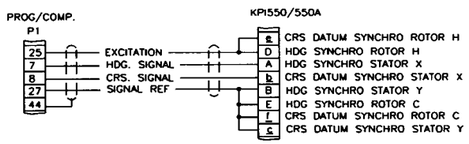
BENDIX HSD 880



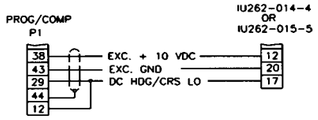
AERONETICS MODEL 8000



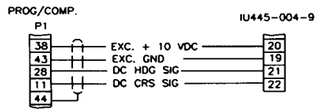
KING KPI 550/550A



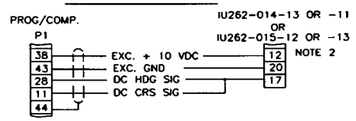
EDO 52D254
(DG MODEL 4000C-5 OR -6)



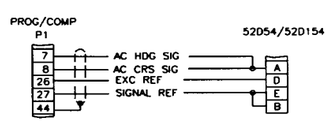
SIGMA TEK IU445-004-9



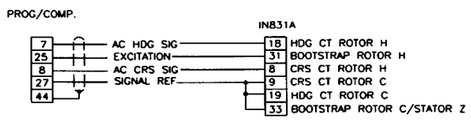
SIGMA TEK DG



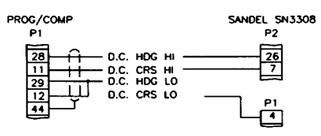
EDO 52D54 OR 52D154



BENDIX IN 831A
(PN 400172-8504, -8505)

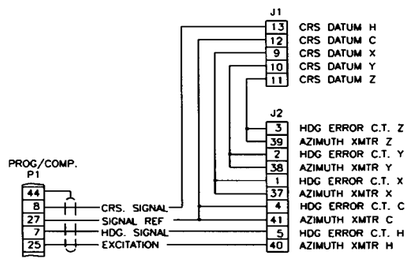


SANDEL SN3308

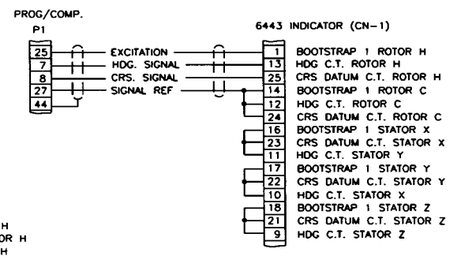


NOTE: SANDEL INDICATOR MUST BE CONFIGURED FOR KCS-55/5A HEADING SYSTEM.

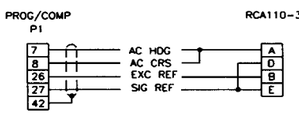
COLLINS HSI 331A-6P/6R



S-TEC HSI 6443 INDICATOR



RC ALLEN DG 103-0010-01 MODEL RCA110-3



ELECTRONIC ARCHIVE	BY	DATE

		APPROVAL	DATE
		DRAWN N.OBANNON	9-13-93
		CHECKED J.MOORE	9-14-93
		ENGINEER E.C.	9-15-93
		APPROVED B.T.	9-16-93
NEXT ASSY	BULLETIN 600	TOLERANCES UNLESS OTHERWISE SPECIFIED	
APPLICATION	USED ON	DECIMAL: XXX: ±.006 -.001 DECIMAL: XX : ±.02 ANGLES: XX : ±.5° REMOVE BURRS BREAK SHARP EDGES	

LIST OF MATERIALS

TITLE: SCHEMATIC, WIRING INTERCONNECT, SYSTEM 55/55X

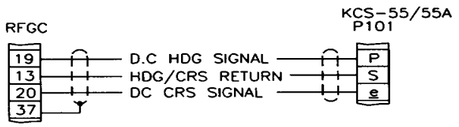
SIZE	DRAWING NO.	REV
D	1094	K

SCALE N/A | DO NOT SCALE DRAWING | SHEET 1 of 1

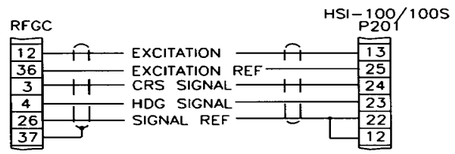
PAGE INTENTIONALLY BLANK

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
–	RELEASED PER EO 263	6-2-80	R WADE
F	REDRAWN WITH CHANGES FECO411	9-2-83	T PIERSON
G	REV PER FECO 1532	5-3-85	T PIERSON
H	REV PER EO 1598	10-15-85	AR SANCHEZ
I	REV PER EO 2063	11-6-87	T PIERSON
J	REV PER EO 2107	11-12-87	T PIERSON
K	REV PER EO 2322	4-11-89	PENNIE
L	REV PER EO 2385	7-31-89	PENNIE
M	REV PER EO 2424	10-18-89	T PIERSON
N	REV PER EO 2874	3-21-91	E ELLIS
O	REV PER EO 2953	8-27-91	RT
P	REV PER EO 3384	1-31-92	C WOODLAN
R	REDRAWN PER EO 4266	10-4-93	T PIERSON
S	REDRAWN PER 4484	4-15-94	T PIERSON
T	REV PER EO 5087	7-7-94	T PIERSON
U	ADD NOTE 3 PER EO 5560	8-21-95	T PIERSON
V	REV PER EO 6554	10-8-97	MK
W	REV PER EO 7588	2-19-99	J FROST

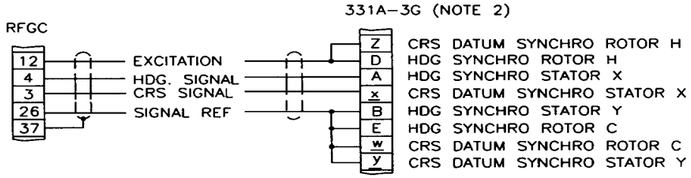
KING KCS-55/55A INTERCONNECT



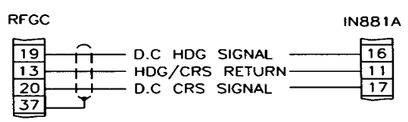
NARCO HSI-100/100S



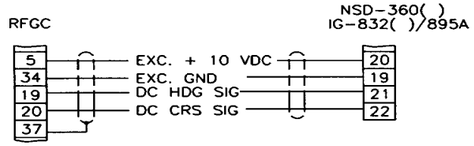
COLLINS PN-101



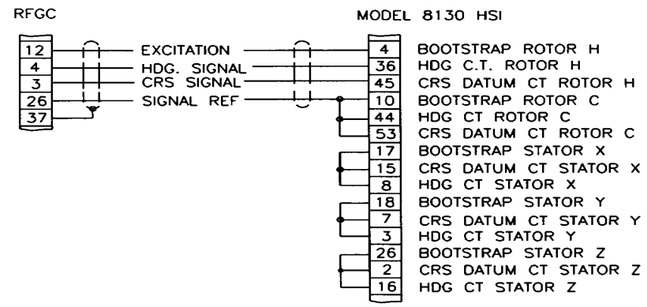
BENDIX HSD 880



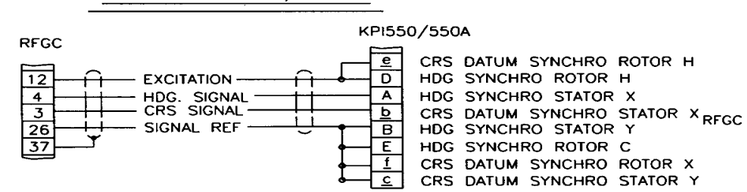
EDO NSD-360/360A, DG 360
CESSNA ARC IG 832A/IG-832C/IG-895A



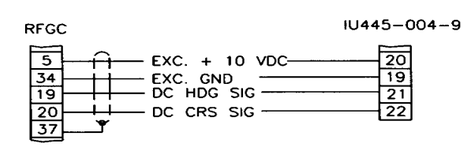
AERONETICS MODEL 8000



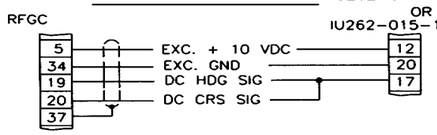
KING KPI 550/550A



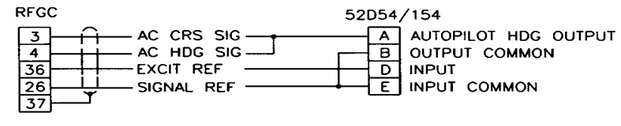
SIGMA TEK IU445-004-9



SIGMA TEK DG

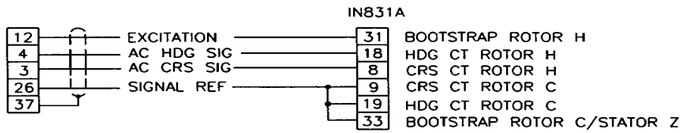


EDO 52D54 OR 52D154



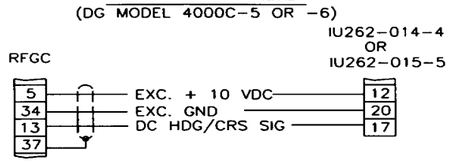
BENDIX IN 831A

(PN 400172-8504, -8505)



EDO 52D254

(DG MODEL 4000C-5 OR -6)



NOTES:

1. EXISTING AUTOPILOT CABLE ASSY., MAY BE USED TO INTERCONNECT SYSTEM 60 ROLL COMPUTER TO DESIRED HEADING SYSTEM BY REMOVING D.G. CONNECTOR AND CONNECTING EXISTING WIRES TO HDG INSTRUMENT. RE-PIN RFGC CONNECTOR AS REQUIRED.
2. NOT APPLICABLE TO 331A-3F INDICATOR. ELIGIBLE ONLY ON 331A-3G INDICATOR, P/N'S 331A-3G-001, 002, 003, 005, 006 AND 007 ONLY.
3. SIGMA TEK IU262-033-5 OR IU262-034-6 USE STAMDARD AUTOPILOT CABLE ASSY., (SAME AS FOR S-TEC 6401 AND 6406 D.G.).

N/A	BULLETIN 400
N/A	BULLETIN 100
NEXT ASSY	USED ON
APPLICATIONS	

LIST OF MATERIALS

APPROVAL	DATE
DRAWN T PIERSON	8-29-83
CHECKED GB	8-30-83
ENGINEER EC	8-30-83
APPROVED HWH	9-1-83

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMAL: XXX: +/- .005
DECIMAL: XX : +/- .010
FRACTIONS: +/- 1/64
ANGLES: +/- 0 ° 30'
REMOVE BURRS
BREAK SHARP EDGES .010

S-TEC Corporation
One S-TEC Way
Municipal Airport – Mineral Wells, Tx. 76067-9236

TITLE
SCHEMATIC, HEADING SYSTEM INTERCONNECT DETAIL SYS. 60/65

SIZE	DRAWING NO.	REV
C	1003	W
SCALE N/A	DO NOT SCALE DRAWING	SHEET 1 of 2

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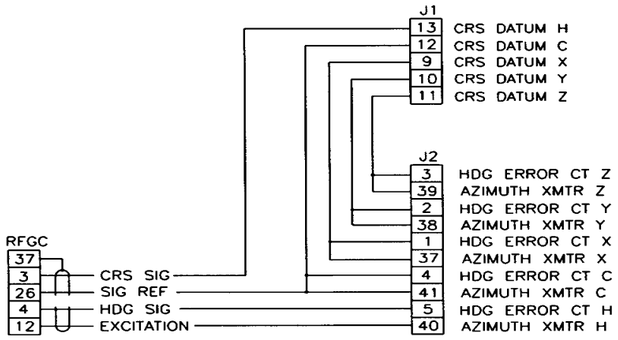
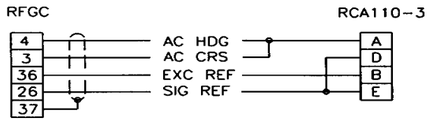
NOTES:
1. SANDEL INDICATOR MUST BE CONFIGURED FOR KING KCS-55/55A HEADING SYSTEM.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
–	RELEASED PER EO 2953	8-27-91	RT
Q	REV PER EO 4125	4-12-93	RT
R	REDRAWN PER EO 4266	10-4-93	T PIERSON
S	REV PER EO 4484	4-15-94	T PIERSON
T	REV PER EO 5958	6-20-96	R ROGERS
U	REV PER EO 6554	10-8-97	MK
V	REV PER EO 7588	2-19-99	J FROST

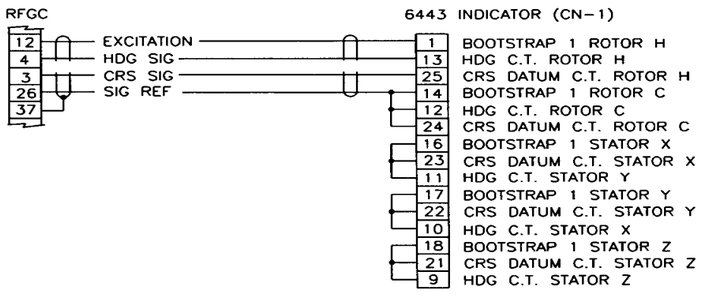
COLLINS HSI
(331A-6P/6R)



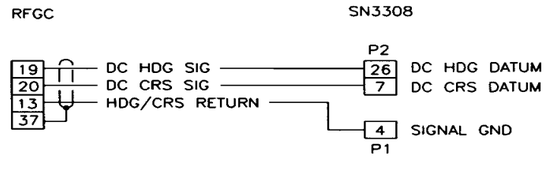
RC ALLEN DG 103-0010-01 MODEL RCA110-3



S-TEC HSI 6443 INDICATOR



SANDEL SN 3308



N/A	BULLETIN 400
N/A	BULLETIN 100
NEXT ASSY	USED ON
APPLICATIONS	

LIST OF MATERIALS

APPROVAL	DATE
DRAWN RT	8-21-91
CHECKED EA	8-22-91
ENGINEER SH	8-23-91
APPROVED BT	8-26-91

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMAL: XXX: +/- .005
DECIMAL: XX : +/- .010
FRACTIONS: +/- 1/64
ANGLES: +/- 0 ° 30'
REMOVE BURRS
BREAK SHARP EDGES .010

S-TEC Corporation
One S-TEC Way
Municipal Airport – Mineral Wells, Tx. 76067-9236

TITLE
SCHEMATIC, HEADING SYSTEM INTERCONNECT DETAIL SYS. 60/65

SIZE	DRAWING NO.	REV
C	1003	V
SCALE N/A	DO NOT SCALE DRAWING	SHEET 2 of 2

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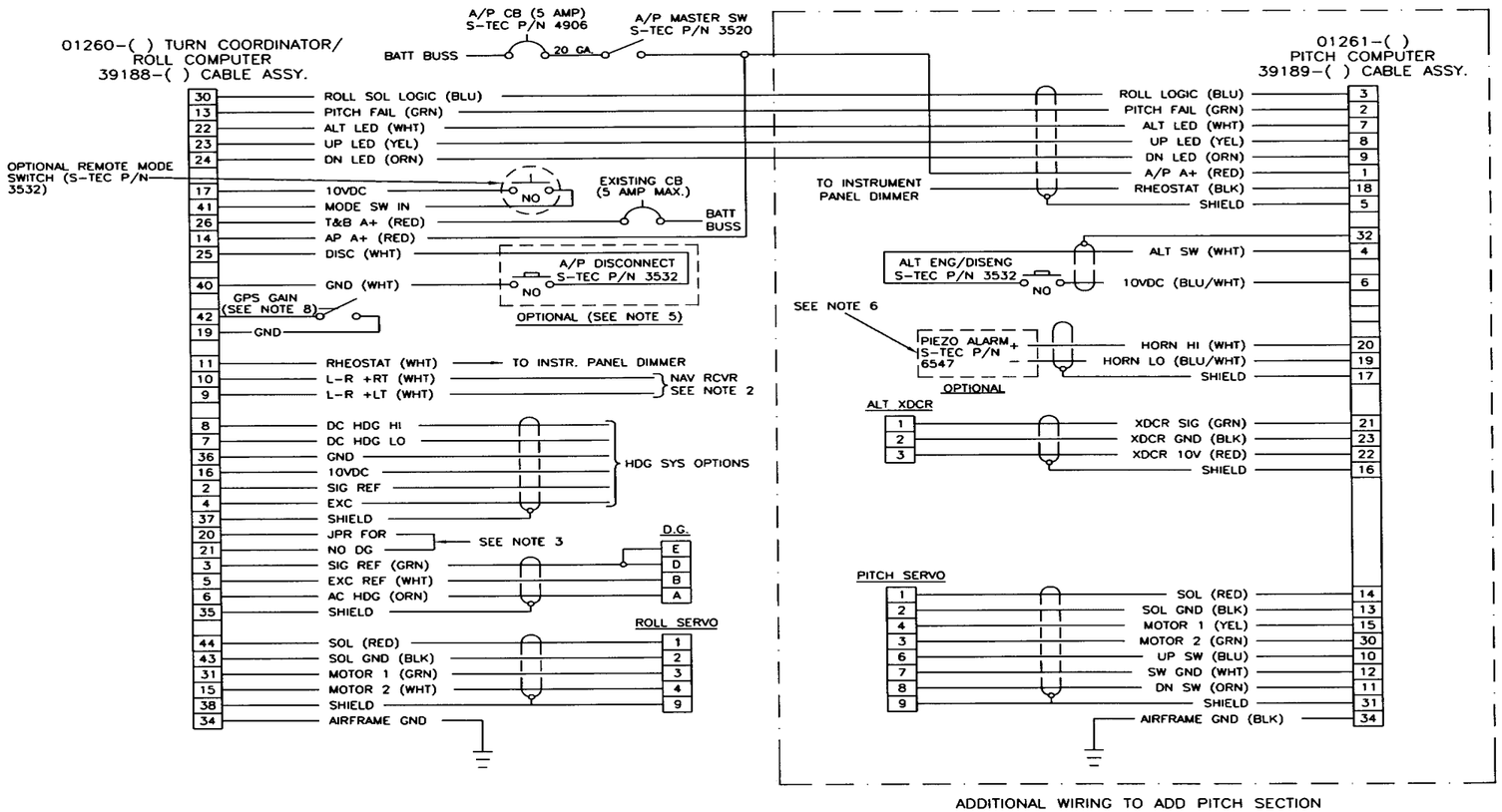
SECTION 7
SYSTEM INTERCONNECT DRAWINGS

Table of Contents

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
–	RELEASED PER E.O. 6099	1-6-97	W.DAVIS
A	REV PER EO 6384	5-6-97	M.KEIRNAN
B	REV PER EO 6444	7-21-97	M.KEIRNAN
C	REV PER EO 6548	9-30-97	M.KEIRNAN
D	REV PER EO 6692	12-23-97	J.FROST
E	REV PER EO 6780	2-20-98	M.KEIRNAN
F	REV PER EO 7506	1-20-99	J.FROST
G	REV PER EO 7572	2-24-99	T. PIERSON



NOTES:

1. FIELD FABRICATED WIRING TO BE 22 GA. MINIMUM (UNLESS OTHERWISE NOTED) AND MUST MEET OR EXCEED THE REQUIREMENTS OF MIL-W-22759/16. ALL WIRING TO BE ROUTED & SECURED IN ACCORDANCE WITH AC43.13-1A, CHAPTER 11, SECTION 7.
2. REFER TO RADIO MANUFACTURER'S SERVICE AND/OR INSTALLATION INFORMATION FOR SPECIFIC INTERCONNECT INFORMATION.
3. REMOVE JUMPER ACROSS PINS 20 & 21 OF THE TURN COORDINATOR/ROLL COMPUTER CONNECTOR WHEN OPTIONAL DIRECTIONAL GYRO OR A HEADING SYSTEM IS BEING INSTALLED.
4. WHEN A HEADING SYSTEM IS INSTALLED, REFER TO HEADING SYSTEM INTERCONNECT DETAILS (DWG. NO. 10114) & HEADING SYSTEM MANUFACTURERS SERVICE AND/OR INSTALLATION INTERCONNECT INFORMATION. REFER TO DWG. NO. 0570 FOR MODIFICATION REQUIRED TO ROLL BOARD OF TURN COORDINATOR/ROLL COMPUTER.
5. THE A/P DISCONNECT IS AN OPTIONAL COMPONENT. IF THE A/P DISCONNECT IS NOT USED CAP OFF THE ENDS OF THE WIRES MARKED "A/P DISCONNECT" & TIE BACK INTO WIRING BUNDLE.
6. A REMOTELY MOUNTED AUDIBLE ALARM (PIEZO ALARM, S-TEC P/N 6547) IS REQUIRED TO PROVIDE AN AUDIBLE "ELEVATOR OUT OF TRIM" INDICATION WHEN THE PITCH COMPUTER IS LOCATED OUTSIDE THE CABIN AREA.
7. ATTACH 5279 SOCKETS TO WIRE (WHERE APPLICABLE) USING DMC M22520/2-01 CRIMPING TOOL & DMC M22520/2-06 INSERT.
8. PIN 42 TO GND ENABLES GPS TRACK GAIN SETTING. USE ONE SET OF CONTACTS ON THE EXTERNAL AP SELECT SWITCH FOR NAV/GPS. THIS CONNECTION IS REQUIRED WHEN INTERFACING TO GPS RECEIVER.

	BULLETIN 700
NEXT ASSY	USED ON
APPLICATIONS	

LIST OF MATERIALS

APPROVAL	DATE
DRAWN R.TUCKER	9-19-96
CHECKED J.MOORE	9-19-96
ENGINEER M.KEIRNAN	1-5-97
APPROVED E.CAMERON	1-6-97

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMAL: XXX: +/- .005
DECIMAL: XX : +/- .010
FRACTIONS: +/- 1/64
ANGLES: +/- 0 ° 30'
REMOVE BURRS
BREAK SHARP EDGES .010

S-TEC Corporation
One S-TEC Way
Municipal Airport - Mineral Wells, Tx. 76067-9236

TITLE
SCHEMATIC, EXTERNAL WIRING INTERCONNECT-SYS. 20/30

SIZE	DRAWING NO.	REV
C	10113	G

SCALE	DO NOT SCALE DRAWING	SHEET
N/A		1 of 1

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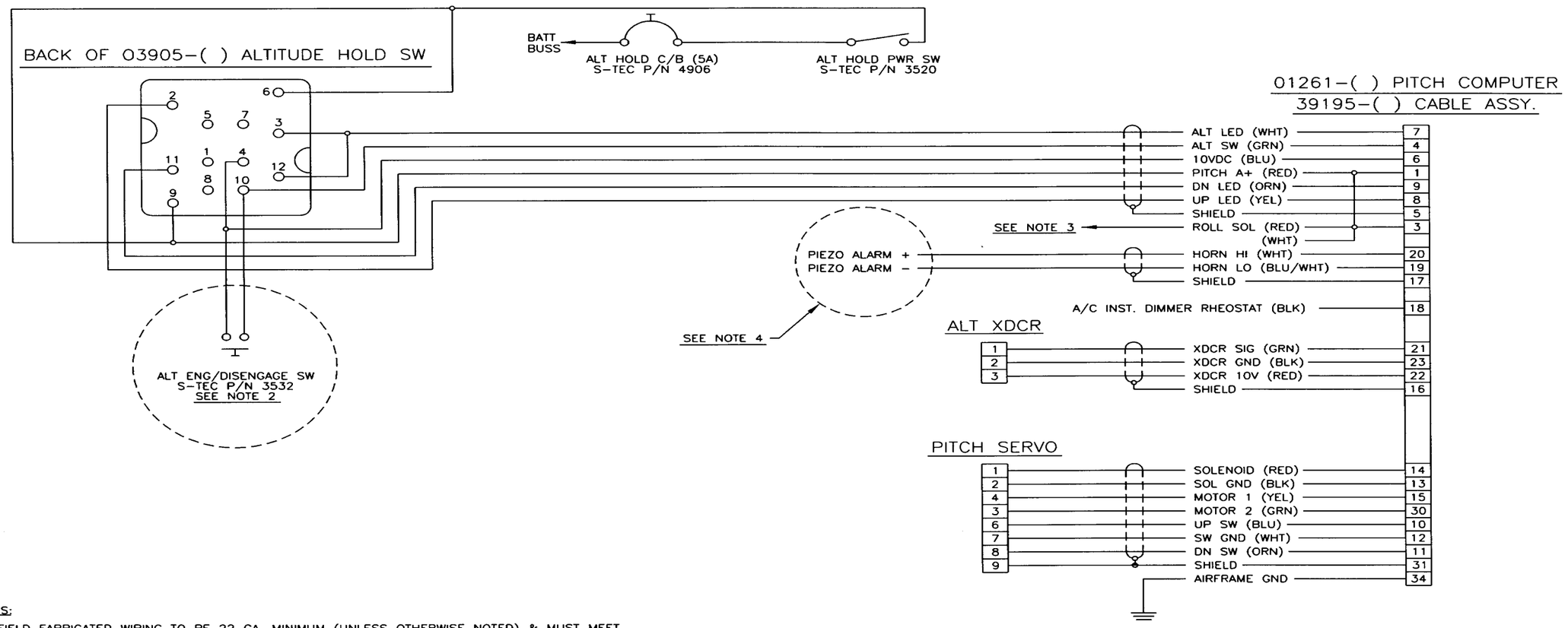
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
–	RELEASED PER E.O. 6397	5-2-97	M.KEIRNAN
A	REV PER FECO 2052	7-8-97	M.KEIRNAN
B	REV PER EO 6550	10-1-97	M.KEIRNAN
C	REV PER EO 6692	12-23-97	J.FROST
D	REV PER EO 7572	2-24-99	T. PIERSON



NOTES:

1. FIELD FABRICATED WIRING TO BE 22 GA. MINIMUM (UNLESS OTHERWISE NOTED) & MUST MEET OR EXCEED THE REQUIREMENTS OF MIL-W-22759/16. ALL WIRING TO BE ROUTED & SECURED I/A/W A.C. 43-13-1A, CHAPTER 11, SECTION 7.
2. THE ALTITUDE ENGAGE/DISENGAGE SWITCH IS AN OPTIONAL COMPONENT. CONNECT TWO 22 GA. WIRES TO PINS 4 & 10 OF THE ALTITUDE HOLD SWITCH & ROUTE TO CONTROL WHEEL. CONNECT WIRES TO 3532 SWITCH.
3. WIRES 1 & 3 ARE JUMPERED AS SHOWN. IF AN EXISTING ROLL AUTOPILOT IS INSTALLED IN THE AIRCRAFT, ROLL SOLENOID A+ MAY BE USED AS A PITCH MODE ENABLE BY PROVIDING A SWITCHED A+ TO PIN 3 OF THE PITCH COMPUTER. THIS WILL ENABLE THE ALTITUDE HOLD SYSTEM ONLY WHEN A ROLL MODE IS ENGAGED ON THE EXISTING AUTOPILOT. EXTRACT THE PIN OUT OF PIN 3 & COVER WITH WITH HEAT SHRINK. INSERT THE ROLL SOLENOID WIRE INTO PIN 3 IF THIS OPTION IS TO BE UTILIZED.
4. A REMOTELY MOUNTED AUDIBLE ALARM (PIEZO ALARM, S-TEC P/N 6547) IS REQUIRED TO PROVIDE AN AURAL ELEVATOR "OUT OF TRIM" INDICATION WHEN THE PITCH COMPUTER IS LOCATED OUTSIDE THE CABIN AREA.
5. ALL SOLDER CONNECTIONS OR SPLICES TO BE COVERED WITH HEAT SHRINK.

NEXT ASSY	USED ON
APPLICATIONS	SYS. 30 ALT

LIST OF MATERIALS

	APPROVAL	DATE
DRAWN	R.TUCKER	4-25-97
CHECKED	M.KEIRNAN	4-28-97
ENGINEER	J.MOORE	4-29-97
APPROVED	E.CAMERON	4-30-97

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMAL: XXX: +/- .005
DECIMAL: XX : +/- .010
FRACTIONS: +/- 1/64
ANGLES: +/- 0 ° 30'
REMOVE BURRS
BREAK SHARP EDGES .010

S-TEC Corporation
One S-TEC Way
Municipal Airport – Mineral Wells, Tx. 76067-9236

TITLE
SCHEMATIC, 30 ALT
WIRING INTERCONNECT

SIZE	DRAWING NO.	REV
C	10115	D

SCALE	N/A	DO NOT SCALE DRAWING	SHEET	1 of 1

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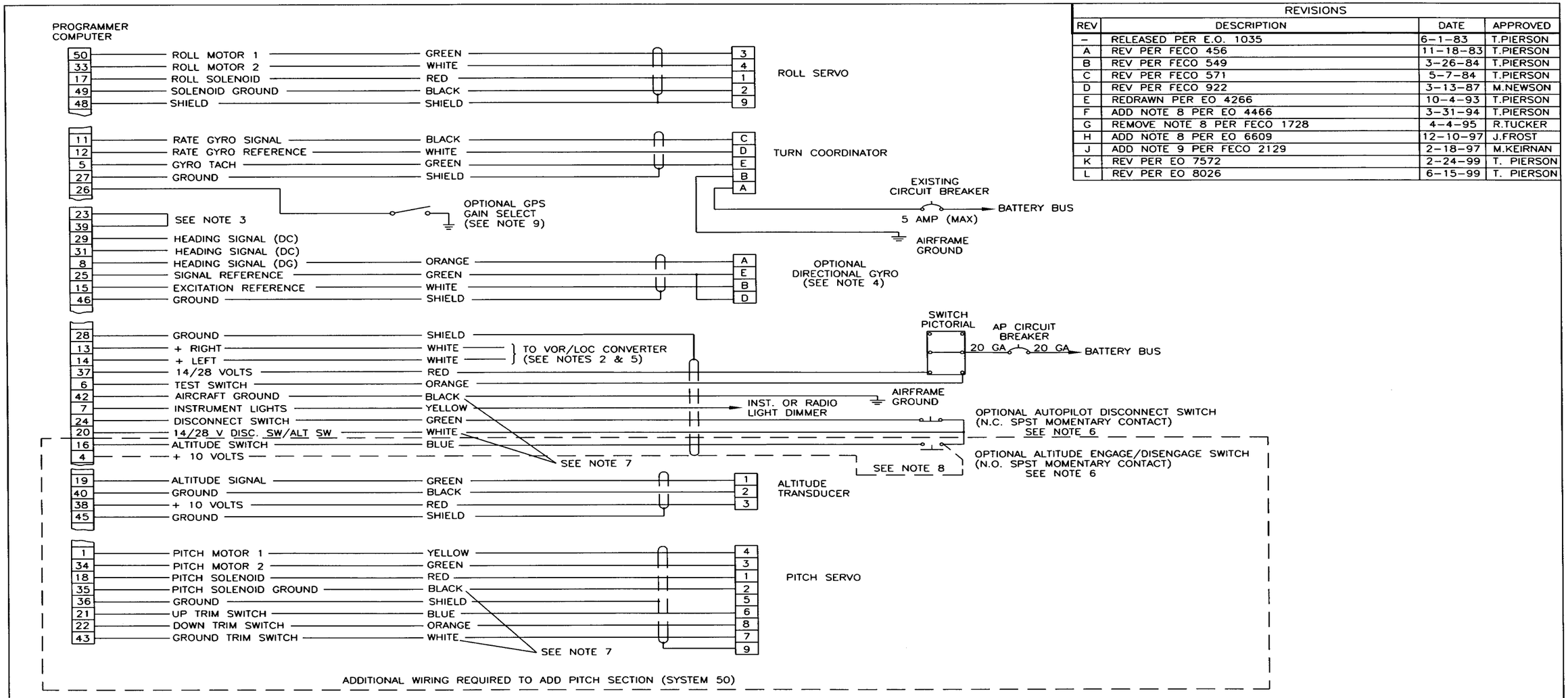
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
–	RELEASED PER E.O. 1035	6-1-83	T.PIERSON
A	REV PER FECO 456	11-18-83	T.PIERSON
B	REV PER FECO 549	3-26-84	T.PIERSON
C	REV PER FECO 571	5-7-84	T.PIERSON
D	REV PER FECO 922	3-13-87	M.NEWSON
E	REDRAWN PER EO 4266	10-4-93	T.PIERSON
F	ADD NOTE 8 PER EO 4466	3-31-94	T.PIERSON
G	REMOVE NOTE 8 PER FECO 1728	4-4-95	R.TUCKER
H	ADD NOTE 8 PER EO 6609	12-10-97	J.FROST
J	ADD NOTE 9 PER FECO 2129	2-18-97	M.KEIRNAN
K	REV PER EO 7572	2-24-99	T. PIERSON
L	REV PER EO 8026	6-15-99	T. PIERSON



NOTES:

1. FIELD FABRICATED WIRING TO BE 22 GA. MINIMUM (UNLESS OTHERWISE NOTED) AND MUST MEET OR EXCEED THE REQUIRMENTS OF MIL-W-22759/16. ALL WIRING TO BE ROUTED AND SECURED IN ACCORDANCE WITH AC43.13-1A, CHAPTER 11, SECTION 7.
2. REFER TO RADIO MANUFACTURERS SERVICE AND/OR INSTALLATION INFORMATION FOR SPECIFIC INTERCONNECT INFORMATION.
3. REMOVE JUMPER ACROSS PINS 23 & 39 OF THE PROGRAMMER/COMPUTER CONNECTOR WHEN OPTIONAL DIRECTIONAL GYRO OR A HEADING SYSTEM IS BEING INSTALLED.
4. WHEN A HEADING SYSTEM IS INSTALLED, REFER TO HEADING SYSTEM INTERCONNECT DETAILS (DWG. NO 1014) AND HEADING SYSTEM MANUFACTURERS SERVICE AND/OR INSTALLATION INFORMATION FOR INTERCONNECT INFORMATION. REFER TO DRAWING NO. 0508 FOR MODIFICATION REQUIRED TO ROLL BOARD OF PROGRAMMER/COMPUTER.
5. THESE ARE TWO 22 AWG WIRES IDENTIFIED WITH THE MARKING VOR/LOC +LT AND +RT.
6. IF AP DISCONNECT SWITCH IS NOT USED, CONNECT WHITE AND GREEN WIRES AND COVER CONNECTION WITH HEAT SHRINK TUBING OR EQUIVALENT. IF ALTITUDE ENGAGE/DISENGAGE SWITCH IS NOT USED, COVER BLUE LEAD AND TIE BACK INTO BUNDLE.
7. SOME INSTALLATIONS MAY ALTERNATELY HAVE A "BROWN" WIRE IN PLACE OF "BLACK", AND A "VIOLET" WIRE IN PLACE OF "WHITE" IN THIS 7 CONDUCTOR CABLE.
8. FOR SATLOC NAVIGATION INSTALLATIONS THE OPTIONAL ALTITUDE ENGAGE/DISENGAGE SWITCH MUST BE POWERED FROM PIN 4 (+10 VOLTS) INSTEAD OF PIN 20 (14/28 VOLTS).
9. PIN 26 SWITCHED TO GROUND ENABLES GPS TRACK GAIN SETTING ON LATER MODEL UNITS:
   SYS. 40 0129-( ) & 0130-( ) EFFECTIVE CODE "C" AND ABOVE.
   SYS. 50 0131-( ) & 0132-( ) EFFECTIVE CODE "E" AND ABOVE.
   USE ONE SET OF CONTACTS ON THE EXTERNAL NAV/GPS SELECT SWITCH. THIS CONNECTION IS RECOMMENDED WHEN INTERFACING TO GPS RECEIVER.

N/A	BULLETIN 300
NEXT ASSY	USED ON
APPLICATIONS	

QTY	ITEM	PART NUMBER	DESCRIPTION
	2		
	1		

LIST OF MATERIALS

APPROVAL	DATE
DRAWN R.WADE	5-17-83
CHECKED G.BARLOW	5-20-83
ENGINEER E.CAMERON	5-30-83
APPROVED H.W.HOLDEMAN	5-30-83

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMAL: XXX: +/- .005
DECIMAL: XX : +/- .010
FRACTIONS: +/- 1/64
ANGLES: +/- 0 ° 30'
REMOVE BURRS
BREAK SHARP EDGES .010

S-TEC Corporation
One S-TEC Way
Municipal Airport - Mineral Wells, Tx. 76067-9236

TITLE
SCHEMATIC, EXTERNAL WIRING, SYSTEM 40/50

SIZE	DRAWING NO.	REV
C	1013	L

SCALE	DO NOT SCALE DRAWING	SHEET
N/A		1 of 2

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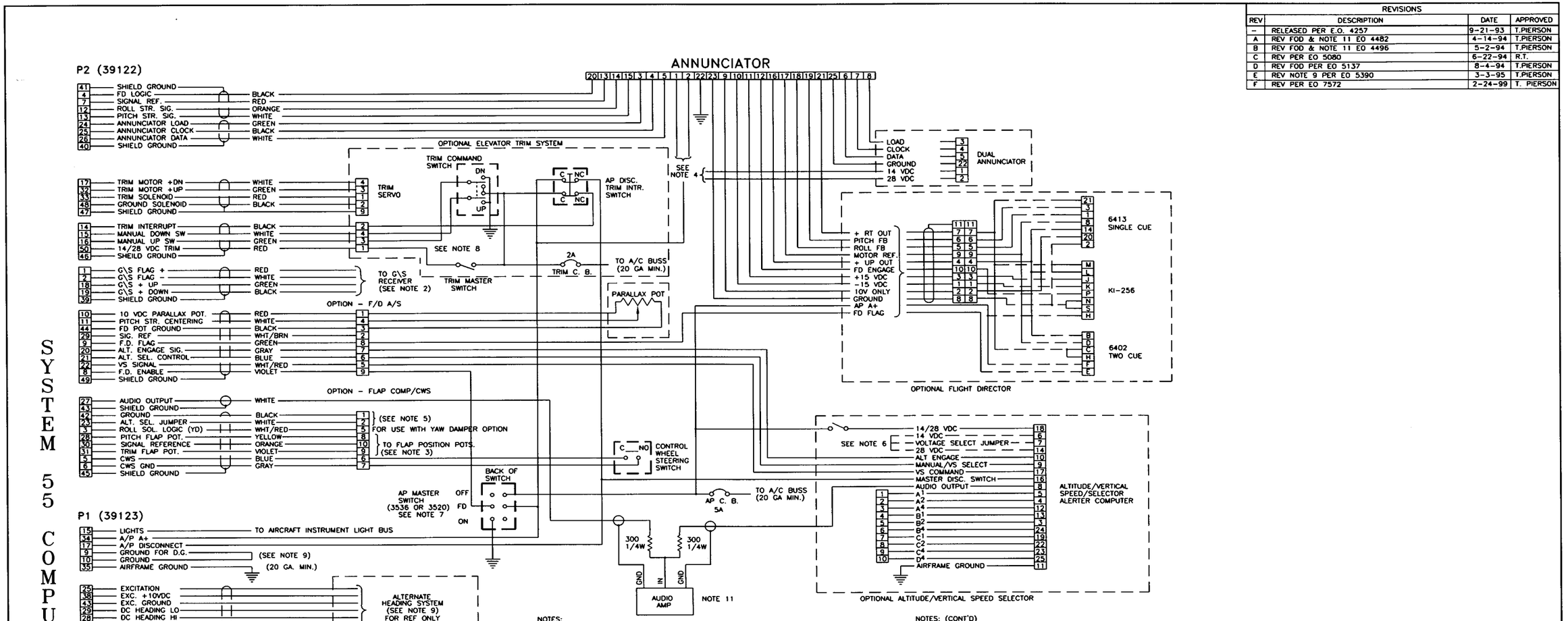
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
–	RELEASED PER E.O. 4257	9-21-93	T.PIERSON
A	REV FOD & NOTE 11 EO 4482	4-14-94	T.PIERSON
B	REV FOD & NOTE 11 EO 4496	5-2-94	T.PIERSON
C	REV PER EO 5080	6-22-94	R.T.
D	REV FOD PER EO 5137	8-4-94	T.PIERSON
E	REV NOTE 9 PER EO 5390	3-3-95	T.PIERSON
F	REV PER EO 7572	2-24-99	T. PIERSON



NOTES:

1. FIELD FABRICATED WIRING TO BE 22 GA. MINIMUM (UNLESS OTHER WISE NOTED) AND MUST MEET OR EXCEED THE REQUIREMENTS OF MIL-W-22759/16.
2. REFER TO RADIO MANUFACTURERS SERVICE AND/OR INSTALLATION MANUAL FOR SPECIFIC INTERCONNECT INFORMATION.
3. REFER TO WIRING SECTION OF SPECIFIC AIRCRAFT INSTALLATION BULLETIN FOR FLAP COMPENSATION WIRING.
4. CONNECT A/P A+ TO PIN 1 OF THE ANNUNCIATOR CONNECTOR IF A/P A+ IS 14VDC AND TO PIN 2 IF A/P A+ IS 28VDC.
5. INSERT JUMPER BETWEEN PINS 1 AND 2 OF THE "OPTIONAL/FLAP COMPENSATION" CONNECTOR IF AN ALTITUDE/ VERTIAL SPEED/SELECTOR ALERTER IS INSTALLED.
6. JUMPER BETWEEN PIN 7 AND PIN 6 FOR 14 VOLT OPERATION OR BETWEEN PIN 7 AND PIN 14 FOR 28 VOLT OPERATION.
7. USE P/N 3536 (2 POLE 3 POSITION TOGGLE SWITCH) WHEN INSTALLING A FLIGHT DIRECTOR. (A PICTORIAL IS DRAWN OF A 3536 BECAUSE OF ITS COMPLEXITY.) IF A FLIGHT DIRECTOR IS NOT INSTALLED P/N 3520 (SPDT SWITCH) MAY BE USED.
8. IF TRIM OPTION IS NOT INSTALLED PIN 50 OF P2 MUST BE CONNECTED TO THE AIRCRAFT A+ VIA ANOTHER CIRCUIT BREAKER (5 AMP MAX) OTHER THAN THE AUTOPILOT CIRCUIT BREAKER.
9. PIN CONNECTIONS SHOWN AND JUMPER BETWEEN PINS 9 & 10 OF P1 ARE FOR S-TEC D.G. 6401 OR 6406-( ). WHEN AN HSI IS INSTALLED, REMOVE THE JUMPER BETWEEN PINS 9 & 10 OF P1 AND REFER TO HEADING SYSTEM INTERCONNECT DETAILS (DWG NO. 1094) AND HSI MANUFACTURERS SERVICE/INSTALLATION MANUAL FOR INTERCONNECT INFORMATION.
10. SOME NAV CONVERTER INDICATORS DO NOT PROVIDE NAV FLAG OUTPUTS FOR AUTO PILOT USE. WHEN USED WITH THIS TYPE CONVERTER INDICATOR, THE NAV FAILURE WARNING FUNCTION OF THE AUTO PILOT MUST BE DISABLED. TO DISABLE THIS FUNCTION ADD A JUMPER BETWEEN PIN 13 (NAV FLAG +) AND PIN 33 (REG. 10V), AND ADD A JUMPER BETWEEN PIN 14 (NAV FLAG –) AND PIN 27 (SIGNAL REFERENCE).

NOTES: (CONT'D)

11. CONNECT PIN 27 (THROUGH LEAD MARKED "AUDIO AMP" TO ANY AVAILABLE NON-MUTED INPUT OF THE AUDIO AMPLIFIER. REFER TO AMPLIFIER MANUFACTURER'S SERVICE INFORMATION FOR PIN DESIGNATIONS. CONNECT PIN 43 (SHIELD) TO ANY CONVENIENT AIRFRAME GROUND NEAR THE AUDIO AMP CONNECTOR. AUDIO INPUTS MAY BE JOINED INTO A COMMON AUDIO AMP INPUT BY USING 300 ohm 1/4 WATT RESISTORS.

QTY	ITEM	PART NUMBER	DESCRIPTION
	2		
	1		

LIST OF MATERIALS

APPROVAL		DATE
DRAWN	N.O'BANNON	
CHECKED	B.L.M.	9-21-93
ENGINEER	R.G.	9-21-93
APPROVED	R.G.	9-21-93

UNLESS OTHERWISE SPECIFIED
DECIMAL: XXX: +/- .005
DECIMAL: XX : +/- .010
FRACTIONS: +/- 1/64
ANGLES: +/- 0 ° 30'
REMOVE BURRS
BREAK SHARP EDGES .010

NEXT ASSY	USED ON
	SYS. 55

APPLICATIONS

S-TEC Corporation
One S-TEC Way
Municipal Airport – Mineral Wells, Tx. 76067-9236

TITLE
SCHEMATIC, WIRING INTERCONNECT, SYSTEM 55

SIZE	DRAWING NO.	REV
D	1093	F

SCALE N/A DO NOT SCALE DRAWING SHEET 1 of 1

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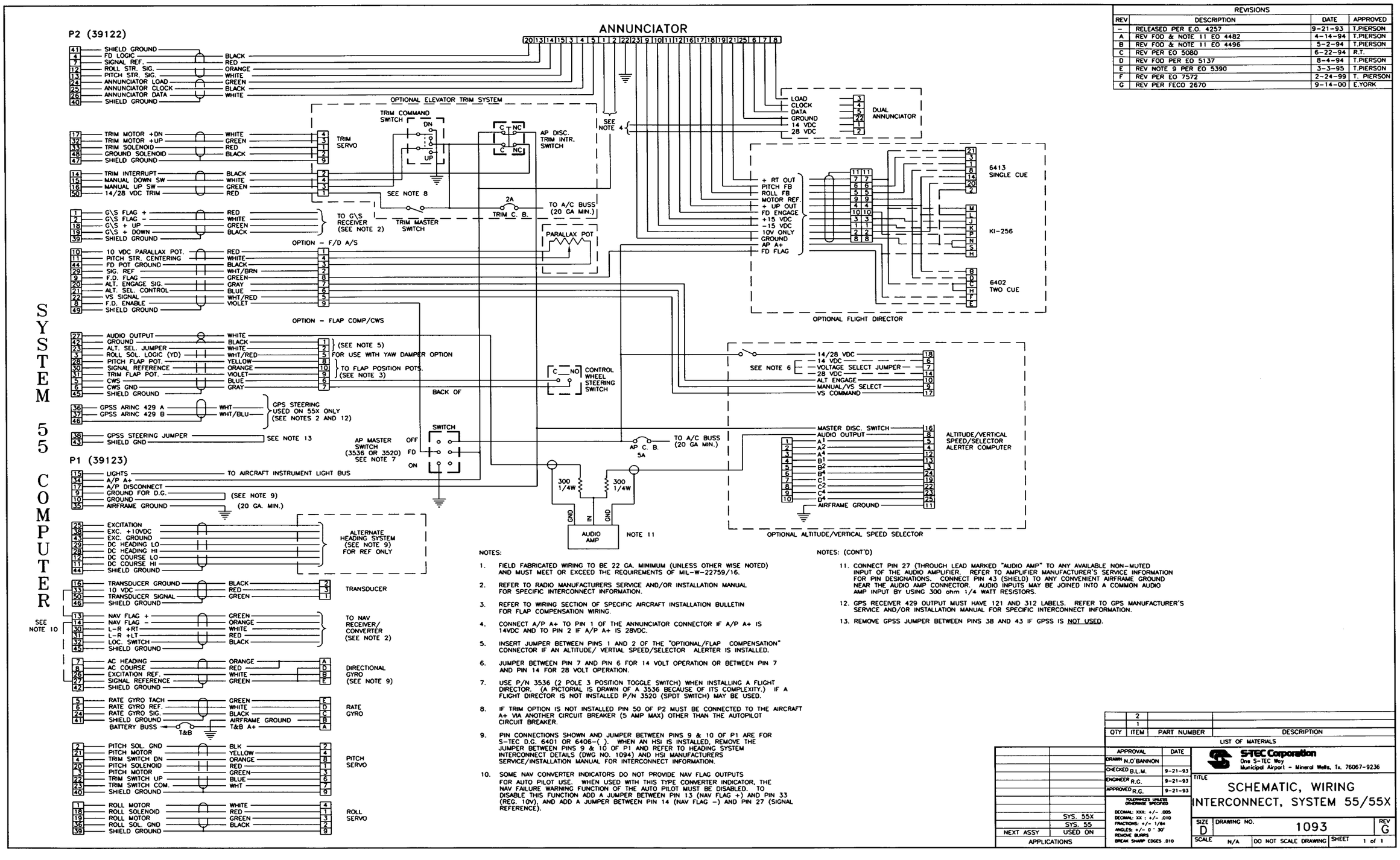
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
–	RELEASED PER E.O. 4257	9-21-93	T.PIERSON
A	REV FOD & NOTE 11 EO 4482	4-14-94	T.PIERSON
B	REV FOD & NOTE 11 EO 4496	5-2-94	T.PIERSON
C	REV PER EO 5080	6-22-94	R.T.
D	REV FOD PER EO 5137	8-4-94	T.PIERSON
E	REV NOTE 9 PER EO 5390	3-3-95	T.PIERSON
F	REV PER EO 7572	2-24-99	T. PIERSON
G	REV PER FECO 2670	9-14-00	E.YORK



NOTES:

1. FIELD FABRICATED WIRING TO BE 22 GA. MINIMUM (UNLESS OTHER WISE NOTED) AND MUST MEET OR EXCEED THE REQUIREMENTS OF MIL-W-22759/16.
2. REFER TO RADIO MANUFACTURERS SERVICE AND/OR INSTALLATION MANUAL FOR SPECIFIC INTERCONNECT INFORMATION.
3. REFER TO WIRING SECTION OF SPECIFIC AIRCRAFT INSTALLATION BULLETIN FOR FLAP COMPENSATION WIRING.
4. CONNECT A/P A+ TO PIN 1 OF THE ANNUNCIATOR CONNECTOR IF A/P A+ IS 14VDC AND TO PIN 2 IF A/P A+ IS 28VDC.
5. INSERT JUMPER BETWEEN PINS 1 AND 2 OF THE "OPTIONAL/FLAP COMPENSATION" CONNECTOR IF AN ALTITUDE/ VERTIAL SPEED/SELECTOR ALERTER IS INSTALLED.
6. JUMPER BETWEEN PIN 7 AND PIN 6 FOR 14 VOLT OPERATION OR BETWEEN PIN 7 AND PIN 14 FOR 28 VOLT OPERATION.
7. USE P/N 3536 (2 POLE 3 POSITION TOGGLE SWITCH) WHEN INSTALLING A FLIGHT DIRECTOR. (A PICTORIAL IS DRAWN OF A 3536 BECAUSE OF ITS COMPLEXITY.) IF A FLIGHT DIRECTOR IS NOT INSTALLED P/N 3520 (SPDT SWITCH) MAY BE USED.
8. IF TRIM OPTION IS NOT INSTALLED PIN 50 OF P2 MUST BE CONNECTED TO THE AIRCRAFT A+ VIA ANOTHER CIRCUIT BREAKER (5 AMP MAX) OTHER THAN THE AUTOPILOT CIRCUIT BREAKER.
9. PIN CONNECTIONS SHOWN AND JUMPER BETWEEN PINS 9 & 10 OF P1 ARE FOR S-TEC D.G. 6401 OR 6406-( ). WHEN AN HSI IS INSTALLED, REMOVE THE JUMPER BETWEEN PINS 9 & 10 OF P1 AND REFER TO HEADING SYSTEM INTERCONNECT DETAILS (DWG NO. 1094) AND HSI MANUFACTURERS SERVICE/INSTALLATION MANUAL FOR INTERCONNECT INFORMATION.
10. SOME NAV CONVERTER INDICATORS DO NOT PROVIDE NAV FLAG OUTPUTS FOR AUTO PILOT USE. WHEN USED WITH THIS TYPE CONVERTER INDICATOR, THE NAV FAILURE WARNING FUNCTION OF THE AUTO PILOT MUST BE DISABLED. TO DISABLE THIS FUNCTION ADD A JUMPER BETWEEN PIN 13 (NAV FLAG +) AND PIN 33 (REG. 10V), AND ADD A JUMPER BETWEEN PIN 14 (NAV FLAG –) AND PIN 27 (SIGNAL REFERENCE).

NOTES: (CONT'D)

11. CONNECT PIN 27 (THROUGH LEAD MARKED "AUDIO AMP" TO ANY AVAILABLE NON-MUTED INPUT OF THE AUDIO AMPLIFIER. REFER TO AMPLIFIER MANUFACTURER'S SERVICE INFORMATION FOR PIN DESIGNATIONS. CONNECT PIN 43 (SHIELD) TO ANY CONVENIENT AIRFRAME GROUND NEAR THE AUDIO AMP CONNECTOR. AUDIO INPUTS MAY BE JOINED INTO A COMMON AUDIO AMP INPUT BY USING 300 ohm 1/4 WATT RESISTORS.
12. GPS RECEIVER 429 OUTPUT MUST HAVE 121 AND 312 LABELS. REFER TO GPS MANUFACTURER'S SERVICE AND/OR INSTALLATION MANUAL FOR SPECIFIC INTERCONNECT INFORMATION.
13. REMOVE GPSS JUMPER BETWEEN PINS 38 AND 43 IF GPSS IS NOT USED.

QTY	ITEM	PART NUMBER	DESCRIPTION
2			
1			

LIST OF MATERIALS

APPROVAL	DATE
DRAWN N.O'BANNON	
CHECKED B.L.M.	9-21-93
ENGINEER R.G.	9-21-93
APPROVED R.G.	9-21-93

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMAL: XXX: +/- .005
DECIMAL: XX : +/- .010
FRACTIONS: +/- 1/64
ANGLES: +/- 0 ° 30'
REMOVE BURRS
BREAK SHARP EDGES .010

S-TEC Corporation
One S-TEC Way
Municipal Airport – Mineral Wells, Tx. 76067-9236

TITLE
SCHEMATIC, WIRING INTERCONNECT, SYSTEM 55/55X

SIZE	DRAWING NO.	REV
D	1093	G

SCALE N/A | DO NOT SCALE DRAWING | SHEET 1 of 1

NEXT ASSY	USED ON
	SYS. 55X
	SYS. 55

APPLICATIONS

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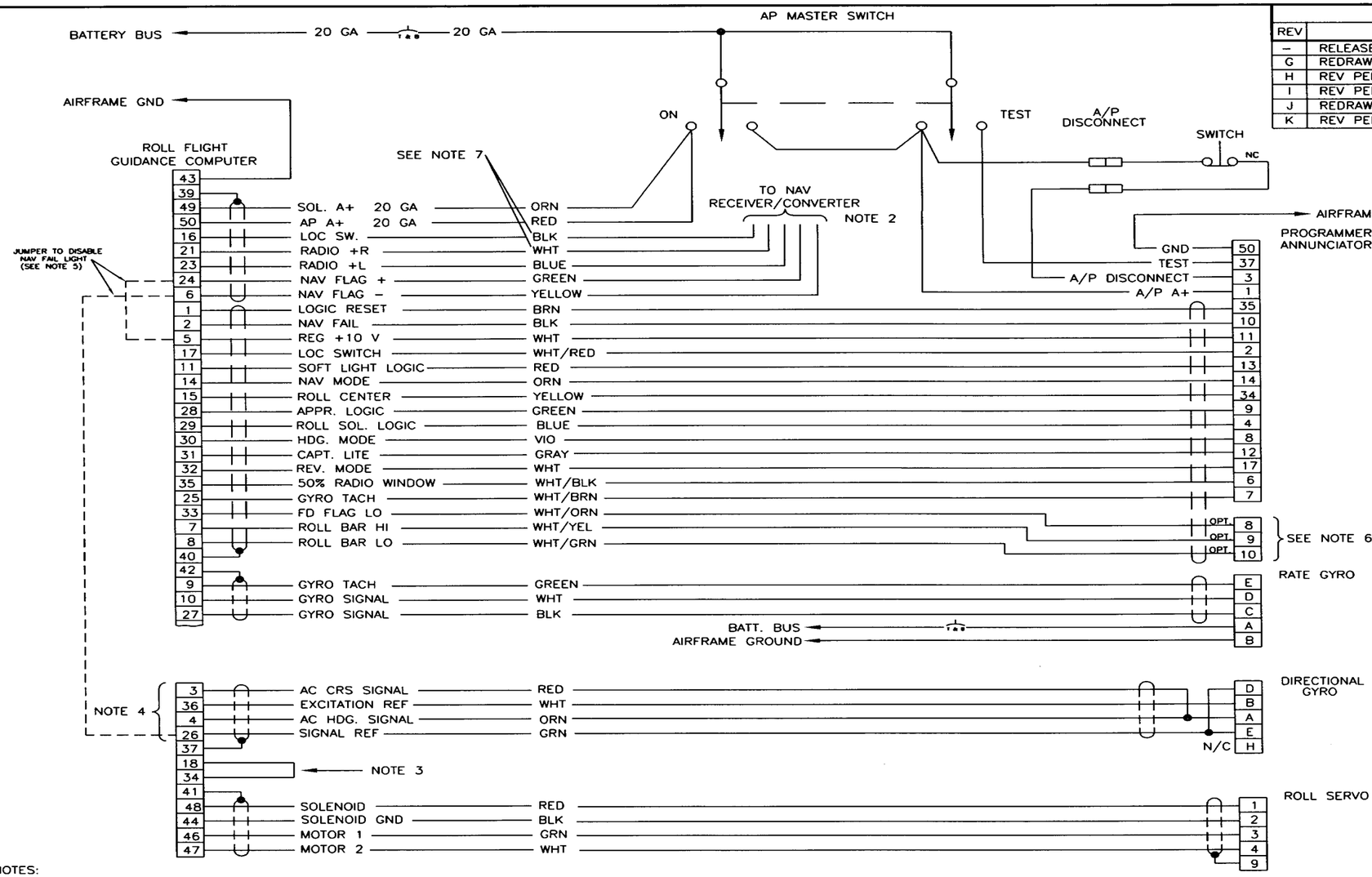
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
–	RELEASED PER E.O. 121	1-21-80	R.WADE
G	REDRAWN PER EO 1593	10-1-85	T.PIERSON
H	REV PER FECO 922	3-13-87	M.N.
I	REV PER FECO 988	1-4-88	M.N.
J	REDRAWN PER EO 4266	10-4-93	T.PIERSON
K	REV PER EO 7572	2-24-99	T. PIERSON



NOTES:

1. FIELD FABRICATED WIRING TO BE 22 GA. MIN. (UNLESS NOTED) AND MUST MEET OR EXCEED THE REQUIREMENTS OF MIL-W-22759/16.
2. REFER TO RADIO MANUFACTURERS SERVICE AND/OR INSTALLATION MANUAL FOR SPECIFIC INTERCONNECT INFORMATION.
3. REMOVE JUMPER ACROSS PINS 18 & 34 OF THE RFGC CONNECTOR WHEN AN HSI IS INSTALLED. JUMPER IS FOR D.G. ONLY.
4. PIN CONNECTIONS SHOWN ARE FOR D.G. ONLY. WHEN AN HSI IS INSTALLED, REFER TO HEADING SYSTEM INTERCONNECT DETAILS (DWG NO. 1003) AND HSI MANUFACTURERS SERVICE/INSTALLATION MANUAL FOR INTERCONNECT INFORMATION.
5. SOME NAV CONVERTER/INDICATORS DO NOT PROVIDE NAV FLAG OUTPUTS FOR AUTOPILOT USE. WHEN USED WITH THESE TYPE CONVERTER/INDICATORS, THE NAV FAILURE WARNING FUNCTION OF THE AUTOPILOT MUST BE DISABLED. THIS MAY BE ACCOMPLISHED IN THE ROLL FLIGHT GUIDANCE CONNECTOR. ADD A JUMPER BETWEEN PIN 24(NAV FLAG +) AND PIN 5 (REG +10V) AND ADD A JUMPER BETWEEN PIN 6(NAV FLAG–) AND PIN 26 (SIGNAL REFERENCE).
6. THESE WIRES ARE PROVIDED FOR USE WITH 2 AXIS FLIGHT DIRECTOR SYSTEM. REFER TO OPTIONAL FLIGHT DIRECTOR STEERING HORIZON INSTALLATION BULLETIN NO. 120 FOR WIRING INFORMATION. NOT USED WITH SINGLE AXIS SYSTEMS.
7. SOME INSTALLATIONS MAY ALTERNATELY HAVE A "BROWN" WIRE IN PLACE OF "BLACK" AND A "VIOLET" WIRE IN PLACE OF "WHITE" IN THIS 7 CONDUCTOR CABLE.

NEXT ASSY	USED ON
	ST 60-1

APPLICATIONS

LIST OF MATERIALS

APPROVAL	DATE
DRAWN R.WADE	11-6-79
CHECKED P.GOETTEL	1-18-80
ENGINEER E.CAMERON	1-18-80
APPROVED H.W.HOLDEMAN	1-19-80

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMAL: XXX: +/- .005
DECIMAL: XX : +/- .010
FRACTIONS: +/- 1/64
ANGLES: +/- 0 ° 30'
REMOVE BURRS
BREAK SHARP EDGES .010

S-TEC Corporation
One S-TEC Way
Municipal Airport – Mineral Wells, Tx. 76067-9236

TITLE
SCHEMATIC, WIRING INTERCONNECT SYSTEM 60-1

SIZE	DRAWING NO.	REV
C	1001	K

SCALE	N/A	DO NOT SCALE DRAWING	SHEET	1 of 1

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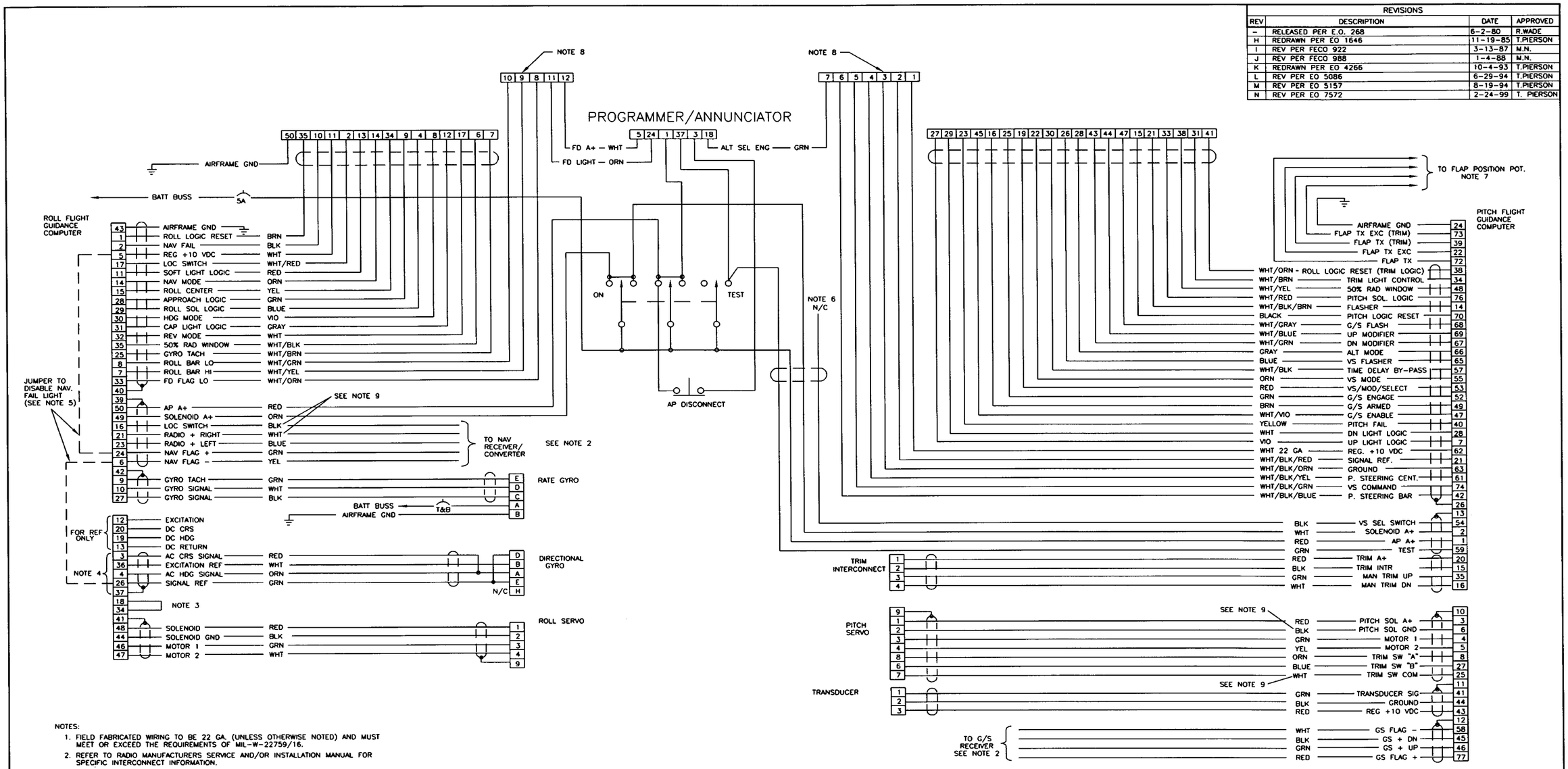
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
-	RELEASED PER E.O. 268	6-2-80	R.WADE
H	REDRAWN PER EO 1646	11-19-85	T.PIERSON
I	REV PER FECO 922	3-13-87	M.N.
J	REV PER FECO 988	1-4-88	M.N.
K	REDRAWN PER EO 4266	10-4-93	T.PIERSON
L	REV PER EO 5086	6-29-94	T.PIERSON
M	REV PER EO 5157	8-19-94	T.PIERSON
N	REV PER EO 7572	2-24-99	T. PIERSON



NOTES:

1. FIELD FABRICATED WIRING TO BE 22 GA. (UNLESS OTHERWISE NOTED) AND MUST MEET OR EXCEED THE REQUIREMENTS OF MIL-W-22759/16.
2. REFER TO RADIO MANUFACTURERS SERVICE AND/OR INSTALLATION MANUAL FOR SPECIFIC INTERCONNECT INFORMATION.
3. REMOVE JUMPER ACROSS PINS 18 & 34 OF THE RFGC CONNECTOR WHEN AN HSI IS INSTALLED. JUMPER IS FOR D.G. ONLY.
4. PIN CONNECTIONS SHOWN ARE FOR S-TEC D.G. ONLY. WHEN AN HSI OR ALTERNATE D.G. IS INSTALLED, REFER TO HEADING SYSTEM INTERCONNECT DETAILS, (DWG. NO. 1003) AND HSI MANUFACTURER'S SERVICE/INSTALLATION MANUAL FOR INTERCONNECT INFORMATION.
5. SOME NAV CONVERTER INDICATORS DO NOT PROVIDE NAV FLAG OUTPUTS FOR AUTOPILOT USE. WHEN USED WITH THESE TYPE CONVERTER/INDICATORS, THE NAV FAILURE WARNING FUNCTION OF THE AUTOPILOT MUST BE DISABLED. THIS MAY BE ACCOMPLISHED IN THE ROLL FLIGHT GUIDANCE COMPUTER CONNECTOR. ADD A JUMPER BETWEEN PIN 24 (NAV FLAG +) AND PIN 5 (REG +10 V) AND A JUMPER BETWEEN PIN 6 (NAV FLAG -) AND PIN 26 (SIGNAL REFERENCE).
6. WIRE TO PIN 54 OF THE PITCH FLIGHT GUIDANCE COMPUTER IS PROVIDED FOR INSTALLATION OF ALTITUDE/VERTICAL SPEED SELECTOR OPTION.
7. REFER TO WIRING SECTION OF SPECIFIC AIRCRAFT INSTALLATION BULLETIN FOR FLAP POSITION INDICATOR WIRING.
8. THIS CONNECTOR CONTAINS PROVISIONS FOR FLIGHT DIRECTOR STEERING HORIZON AND/OR ALTITUDE/VERTICAL SPEED SELECTOR OPTION. REFER TO SPECIFIC OPTION INSTALLATION BULLETIN FOR WIRING INFORMATION.
9. SOME INSTALLATIONS MAY ALTERNATELY HAVE A "BROWN" WIRE IN PLACE OF "BLACK" AND A "VIOLET" WIRE IN PLACE OF "WHITE" IN THIS 7 CONDUCTOR CABLE.

QTY	ITEM	PART NUMBER	DESCRIPTION
	2		
	1		

LIST OF MATERIALS

APPROVAL	DATE
DRAWN R.WADE	12-17-80
CHECKED E.CAMERON	5-28-80
ENGINEER P.GOETTEL	5-30-80
APPROVED J.IRWIN	5-30-80

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMAL: XXX: +/- .005
DECIMAL: XX : +/- .010
FRACTIONS: +/- 1/64
ANGLES: +/- 0 ° 30'
REMOVE BURRS
BREAK SHARP EDGES .010

NEXT ASSY	USED ON
	ST 60-2
APPLICATIONS	

S-TEC Corporation
One S-TEC Way
Municipal Airport - Mineral Wells, Tx. 76067-9236

TITLE
SCHEMATIC, WIRING INTERCONNECT SYSTEM 60-2

SIZE	DRAWING NO.	REV
D	1002	N
SCALE N/A	DO NOT SCALE DRAWING	SHEET 1 of 1

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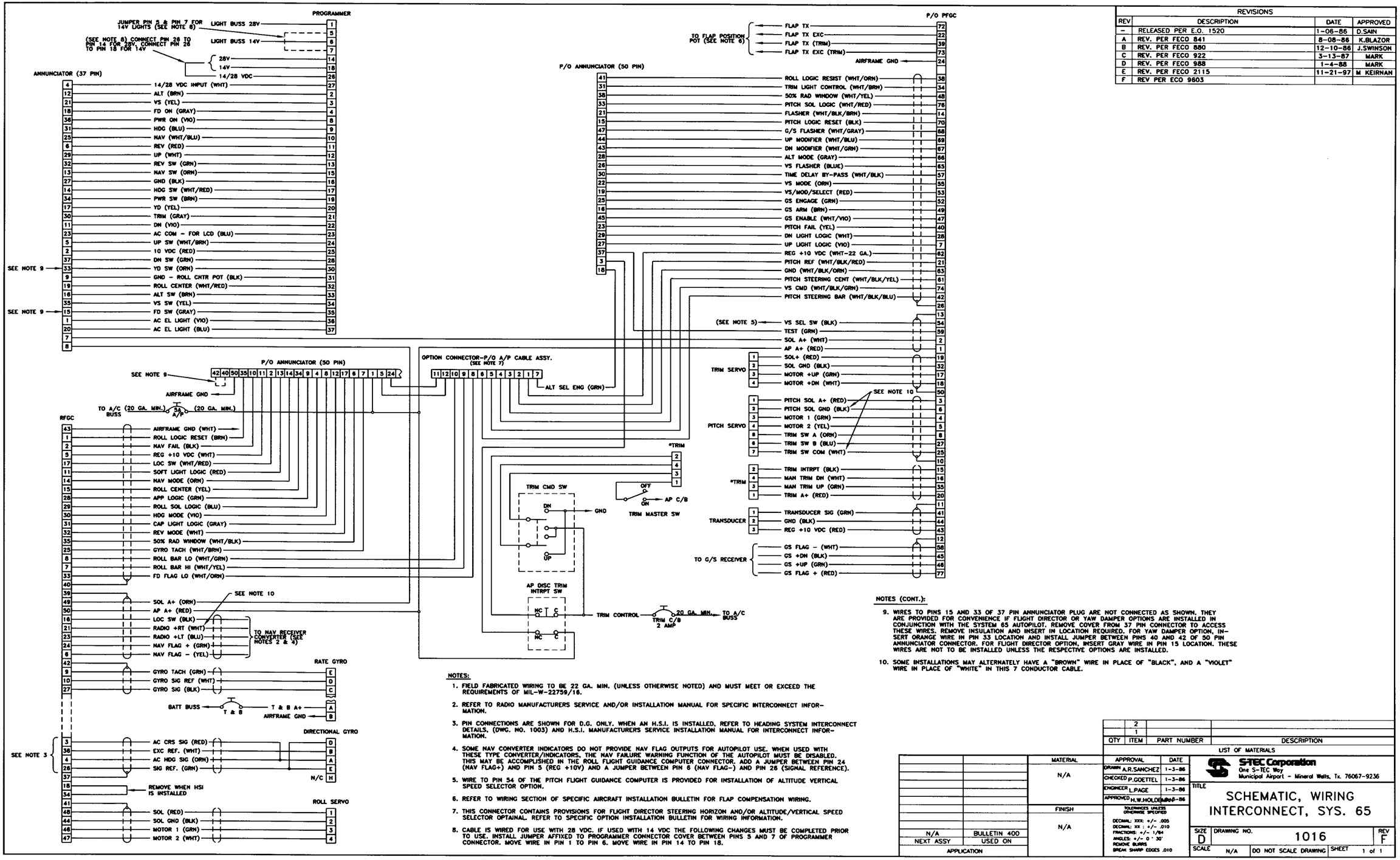
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
–	RELEASED PER E.O. 1520	1-06-86	D.SAIN
A	REV. PER FECO 841	8-08-86	K.BLAZOR
B	REV. PER FECO 880	12-10-86	J.SWINSON
C	REV. PER FECO 922	3-13-87	MARK
D	REV. PER FECO 988	1-4-88	MARK
E	REV. PER FECO 2115	11-21-97	M KEIRNAN
F	REV PER ECO 9603		



NOTES:

1. FIELD FABRICATED WIRING TO BE 22 GA. MIN. (UNLESS OTHERWISE NOTED) AND MUST MEET OR EXCEED THE REQUIREMENTS OF MIL-W-22759/16.
2. REFER TO RADIO MANUFACTURERS SERVICE AND/OR INSTALLATION MANUAL FOR SPECIFIC INTERCONNECT INFORMATION.
3. PIN CONNECTIONS ARE SHOWN FOR D.G. ONLY. WHEN AN H.S.I. IS INSTALLED, REFER TO HEADING SYSTEM INTERCONNECT DETAILS, (DWG. NO. 1003) AND H.S.I. MANUFACTURERS SERVICE INSTALLATION MANUAL FOR INTERCONNECT INFORMATION.
4. SOME NAV CONVERTER INDICATORS DO NOT PROVIDE NAV FLAG OUTPUTS FOR AUTOPILOT USE. WHEN USED WITH THESE TYPE CONVERTER/INDICATORS, THE NAV FAILURE WARNING FUNCTION OF THE AUTOPILOT MUST BE DISABLED. THIS MAY BE ACCOMPLISHED IN THE ROLL FLIGHT GUIDANCE COMPUTER CONNECTOR. ADD A JUMPER BETWEEN PIN 24 (NAV FLAG+) AND PIN 5 (REG +10V) AND A JUMPER BETWEEN PIN 6 (NAV FLAG-) AND PIN 28 (SIGNAL REFERENCE).
5. WIRE TO PIN 54 OF THE PITCH FLIGHT GUIDANCE COMPUTER IS PROVIDED FOR INSTALLATION OF ALTITUDE VERTICAL SPEED SELECTOR OPTION.
6. REFER TO WIRING SECTION OF SPECIFIC AIRCRAFT INSTALLATION BULLETIN FOR FLAP COMPENSATION WIRING.
7. THIS CONNECTOR CONTAINS PROVISIONS FOR FLIGHT DIRECTOR STEERING HORIZON AND/OR ALTITUDE/VERTICAL SPEED SELECTOR OPTAINAL. REFER TO SPECIFIC OPTION INSTALLATION BULLETIN FOR WIRING INFORMATION.
8. CABLE IS WIRED FOR USE WITH 28 VDC. IF USED WITH 14 VDC THE FOLLOWING CHANGES MUST BE COMPLETED PRIOR TO USE. INSTALL JUMPER AFFIXED TO PROGRAMMER CONNECTOR COVER BETWEEN PINS 5 AND 7 OF PROGRAMMER CONNECTOR. MOVE WIRE IN PIN 1 TO PIN 6. MOVE WIRE IN PIN 14 TO PIN 18.

NOTES (CONT.):

9. WIRES TO PINS 15 AND 33 OF 37 PIN ANNUNCIATOR PLUG ARE NOT CONNECTED AS SHOWN. THEY ARE PROVIDED FOR CONVENIENCE IF FLIGHT DIRECTOR OR YAW DAMPER OPTIONS ARE INSTALLED IN CONJUNCTION WITH THE SYSTEM 65 AUTOPILOT. REMOVE COVER FROM 37 PIN CONNECTOR TO ACCESS THESE WIRES. REMOVE INSULATION AND INSERT IN LOCATION REQUIRED. FOR YAW DAMPER OPTION, INSERT ORANGE WIRE IN PIN 33 LOCATION AND INSTALL JUMPER BETWEEN PINS 40 AND 42 OF 50 PIN ANNUNCIATOR CONNECTOR. FOR FLIGHT DIRECTOR OPTION, INSERT GRAY WIRE IN PIN 15 LOCATION. THESE WIRES ARE NOT TO BE INSTALLED UNLESS THE RESPECTIVE OPTIONS ARE INSTALLED.
10. SOME INSTALLATIONS MAY ALTERNATELY HAVE A "BROWN" WIRE IN PLACE OF "BLACK", AND A "VIOLET" WIRE IN PLACE OF "WHITE" IN THIS 7 CONDUCTOR CABLE.

QTY	ITEM	PART NUMBER	DESCRIPTION
	2		
	1		

LIST OF MATERIALS

MATERIAL	N/A
FINISH	N/A
N/A	BULLETIN 400
NEXT ASSY	USED ON
APPLICATION	

APPROVAL	DATE
DRAWN A.R.SANCHEZ	1-3-86
CHECKED P.GOETTEL	1-3-86
ENGINEER L.PAGE	1-3-86
APPROVED H.W.HOLDEMAN	1-3-86

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMAL: XXX +/- .005
DECIMAL: XX : +/- .010
FRACTIONS: +/- 1/64
ANGLES: +/- 0 ° 30'
REMOVE BURRS
BREAK SHARP EDGES .010

S-TEC Corporation
One S-TEC Way
Municipal Airport - Mineral Wells, Tx. 76067-9236

TITLE: SCHEMATIC, WIRING INTERCONNECT, SYS. 65

SIZE	DRAWING NO.	REV
D	1016	F

SCALE N/A | DO NOT SCALE DRAWING | SHEET 1 of 1

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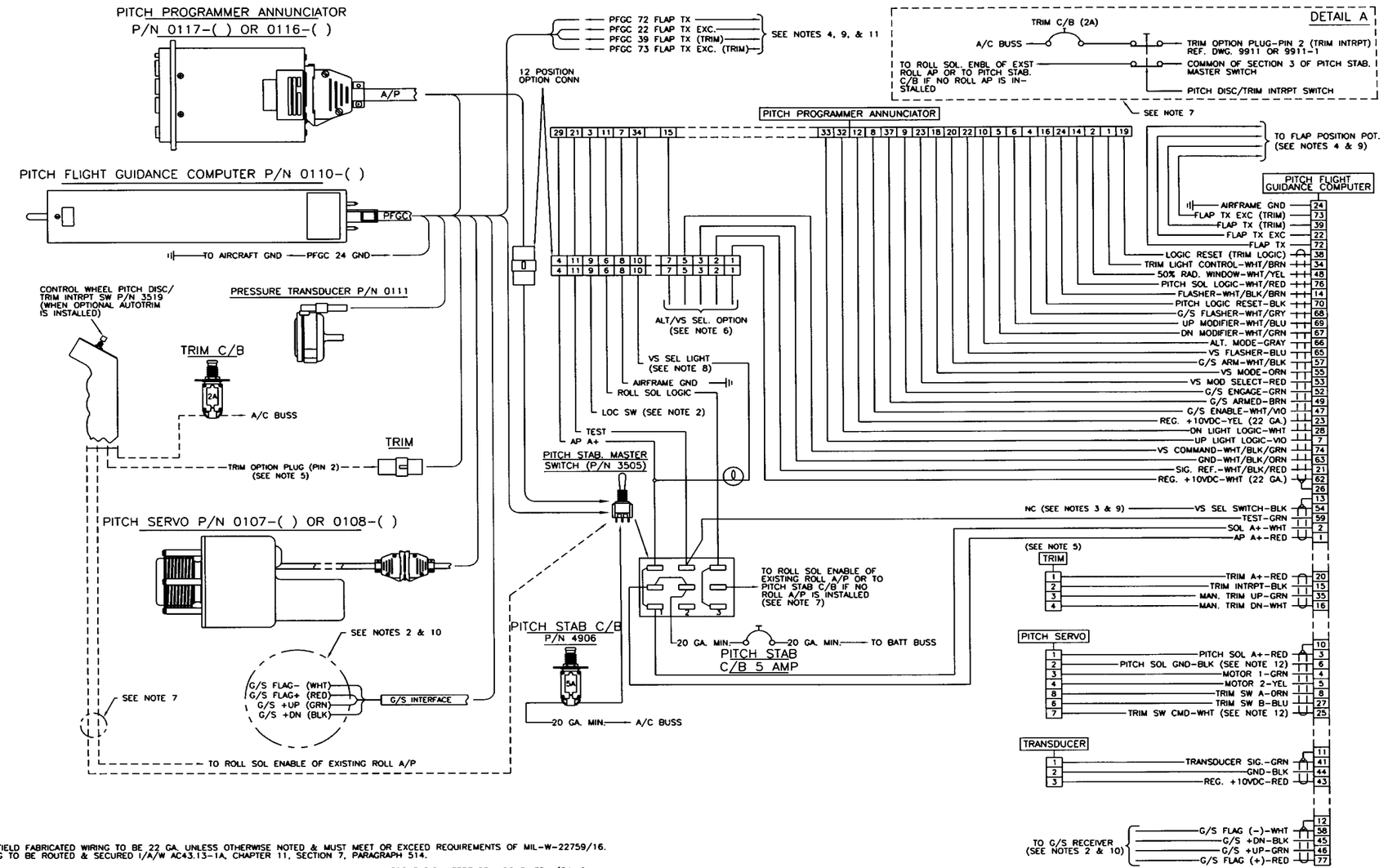
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
–	RELEASED PER EO 953	10-21-82	T PIERSON
B	REV PER EO 1565	7-1-85	T PIERSON
C	REV PER EO 1514	9-24-85	AR SANCHEZ
D	REV PER FECO 922	3-13-87	MARK
E	REV PER FECO 1237	5-13-91	RT
F	REV PER FECO 1337	3-26-92	RT
G	REV PER EO 6055	10-28-96	T. PIERSON
G	CONV. TO NEW FORMAT (NO REV) PER EO 7773		



NOTES:

1. ALL FIELD FABRICATED WIRING TO BE 22 GA. UNLESS OTHERWISE NOTED & MUST MEET OR EXCEED REQUIREMENTS OF MIL-W-22759/16. WIRING TO BE ROUTED & SECURED I/A/W AC43.13-1A, CHAPTER 11, SECTION 7, PARAGRAPH 514.
2. USE NAVIGATIONAL EQUIPMENT MANUFACTURERS INFORMATION TO DETERMINE TERMINATIONS FOR RADIO INTERFACE. LOC SWITCH (PIN 9 OF MOLEX CONNECTOR) MUST BE GROUNDED WHEN RADIO IS TUNED TO AN ILS (LOCALIZER) FREQUENCY.
3. WIRE TO PIN 54 (BLK) OF THE COMPUTER IS PROVIDED FOR INSTALLATION OF ALTITUDE/VERTICLE SPEED SELECTOR OPTION. REFER TO INSTALLATION BULLETIN NO. 119 FOR WIRING INFORMATION.
4. REFER TO FLAP COMPENSATOR INST'L. DWG. OF SPECIFIC AIRCRAFT INSTALLATION BULLETIN FOR CONNECTION INFORMATION. (NOT USED ON SOME AIRCRAFT MODELS).
5. THIS CONNECTOR IS PARTIAL PROVISION FOR AUTOMATIC PITCH TRIM SYSTEM (OPTIONAL). REFER TO AUTOTRIM SECTION OF SPECIFIC A/C INSTALLATION BULLETIN FOR CONNECTION INFORMATION.
6. IN ADDITION TO AIRCRAFT INTERFACE INFORMATION, THIS CONNECTOR CONTAINS PROVISIONS FOR ALTITUDE/VERTICLE SPEED SELECTOR OPTION. REFER TO INSTALLATION NO. 119 & BULLETIN NO. 360 FOR WIRING INFORMATION.
7. IF THE AIRCRAFT HAS AN EXISTING SINGLE AXIS (ROLL) AUTOPILOT INSTALLED, THE "COMMON" OF SECTION 3 OF THE PITCH STAB. MASTER SWITCH SHOULD BE CONNECTED TO THE ROLL SOL. ENABLE LEAD OF THE EXISTING AUTOPILOT. THIS WILL ENABLE THE PITCH STABILIZATION SYSTEM ONLY WHEN A ROLL MODE IS ENGAGED ON THE EXISTING AUTOPILOT. IF THE AIRCRAFT DOES NOT HAVE AN EXISTING ROLL AXIS A/P, THE "COMMON" OF SECTION 3 OF THE PITCH STAB. MASTER SWITCH SHOULD BE CONNECTED TO THE PITCH STAB. C/B. IF AUTOPILOT OPTION IS INSTALLED IN CONJUNCTION WITH THE PITCH STAB. SYSTEM WIRE PER DETAIL A. DASH (-----) DENOTES WIRING REQUIRED WHEN OPTIONAL TRIM SYSTEM IS INSTALLED.
8. IF ALT/VS PRESELECT OPTION IS INSTALLED, PIN 10 OF THE 12 POSITION OPTION CONNECTOR MAY, IF DESIRED, BE CONNECTED TO A PANEL MOUNTED "VS SELECT" ANNUNCIATOR LIGHT (NOT SUPPLIED). THE "VS SELECT" ANNUNCIATOR OUTPUT PROVIDES A LIGHT SENSOR CONTROLLED "LOW" WHEN IN VS SELECT MODE, 100 MILLIAMP MAX. LOAD. SELECT A LAMP (#327 FOR 28V AIRCRAFT OR #330 FOR 14V AIRCRAFT RECOM-MENDED) OF RATED VOLTAGE AND CURRENT AND CONNECT AS SHOWN.
9. ANY WIRES NOT USED SHALL BE TERMINATED WITH SUITABLE INSULATED MATERIAL.
10. IF USED WITH KING KI-211 SERIES INTEGRATED GLIDESLOPE RECEIVER/INDICATOR OR OTHER SIMILAR INTEGRATED UNIT NOT PROVIDING G/S FLAG OUTPUTS FOR AP USE, CONNECT PFGC 77 (RED WIRE) TO PIN 1 OF OPTION CONNECTOR (REG. +10VDC) AND CONNECT PIN 58 (WHT WIRE) TO PIN 2 OF OPTION CONNECTOR (SIGNAL REF).
11. ON SOME AIRCRAFT THE EXISTING FLAP TRANSMITTER IS USED TO PRODUCE INFORMATION RE-QUIRED TO CAUSE PITCH MOTOR TO DRIVE WITH FLAP ACTUATION. MAKE CONNECTIONS AS CALLED OUT IN THE WIRING INSTALLATION SECTION OF THE INSTALLATION BULLETIN.
12. SOME INSTALLATIONS MAY ALTERNATELY HAVE A "BROWN" WIRE IN PLACE OF "BLACK", AND A "VIOLET" WIRE IN PLACE OF "WHITE" IN THIS 7 CONDUCTOR CABLE.

APPLICATIONS	
	ST-308
	ST-285
NA	ST-292
NEXT ASSY	USED ON

LIST OF MATERIALS

APPROVAL	DATE
DRAWN T PIERSON	10-18-82
CHECKED E CAMERON	10-19-82
ENGINEER G BARLOW	10-19-82
APPROVED HWH	10-21-82

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMAL: XXX: +/- .005
DECIMAL: XX : +/- .010
FRACTIONS: +/- 1/64
ANGLES: +/- 0 ° 30'
REMOVE BURRS
BREAK SHARP EDGES .010

S-TEC Corporation
One S-TEC Way
Municipal Airport – Mineral Wells, Tx. 76067-9236

TITLE
SCHEMATIC, WIRING PICTORIAL PITCH STAB. SYSTEM

SIZE	DRAWING NO.	REV
D	9913-1	G

SCALE	N/A	DO NOT SCALE DRAWING	SHEET	1 of 1

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SECTION 8
SYSTEM SPECIFICATIONS

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Programmer/Computer, System 20/30

Power Required:	14/28 VDC
Weight:	2.2 lb.
Dimensions:	3.250 x 3.250 x 7.100 in.
TSO:	C9c, C3d

Programmer/Computer, System 40

Power Required:	14/28 VDC
Weight:	2.1 lb.
Dimensions:	3.340 x 3.340 x 8.200 in.
TSO:	C9c

Programmer/Computer, System 50

Power Required:	14/28 VDC
Weight:	2.8 lb.
Dimensions:	3.340 x 3.340 x 8.200 in.
TSO:	C9c

Programmer/Computer, System 55

Power Required:	14/28 VDC
Weight:	2.7 lb.
Dimensions:	6.350 x 1.500 x 9.460 in.
TSO:	C9c, C52a

Programmer/Computer, System 55X

Power Required:	14/28 VDC
Weight:	2.7 lb.
Dimensions:	6.350 x 1.500 x 9.460 in.
TSO:	C9c, C52a

Programmer/Computer, System 550

Power Required:	28 VDC
Weight:	2.7 lb.
Dimensions:	6.350 x 1.500 x 9.460 in.
TSO:	C9c, C52a

Programmer, System 60-1

Power Required:	14/28 VDC
Weight:	1.8 lb.
Dimensions:	3.343 x 3.343 x 5.200 in.
TSO:	C9c, C52a

Programmer, System 60-2

Power Required:	14/28 VDC
Weight:	1.8 lb.
Dimensions:	3.343 x 3.343 x 5.200 in.
TSO:	C9c, C52a

Programmer, System 65

Power Required:	14/28 VDC
Weight:	0.60 lb.
Dimensions:	2.00 x 2.00 x 5.124 in.
TSO:	C9c, C52a

Programmer, PSS

Power Required:	14/28 VDC
Weight:	1.1 lb.
Dimensions:	4.500 x 1.312 x 6.000 in.
TSO:	C9c, C52a

Roll Computer, System 60-1/60-2/65

Power Required:	14/28 VDC
Weight:	2.3 lb.
Dimensions:	5.250 x 2.100 x 13.33 in.
TSO:	C9c, C52a

Pitch Computer, System 30/30 ALT

Power Required:	14/28 VDC
Weight:	1.1 lb.
Dimensions:	3.250 x 1.812 x 5.800 in.
TSO:	C9c

Pitch Computer, System 60-2/65/PSS

Power Required:	14/28 VDC
Weight:	3.0 lb.
Dimensions:	5.250 x 2.100 x 13.33 in.
TSO:	C9c, C52a

RemoteAnnunciator, System 65

Power Required:	14/28 VDC
Weight:	0.90 lb.
Dimensions:	3.420 x 1.600 x 6.500 in.
TSO:	C9c, C52a

Turn Coordinator

Power Required:	14/28 VDC
Flag Voltage Detector Operating Limits:	9 VDC
Flag RPM Detector Operating Limits:	Nominal RPM less 20%
Weight:	1.8 lbs.
Dimensions:	3.250 x 3.250 x 6.550 in.
TSO:	C3b

Absolute Pressure Transducer

Power Required:	10 VDC, Supplied by Programmer/Computer
Pressure Range:	0-15 PSI Absolute
Overpressure:	150% of Operating Maximum
Weight:	0.20 lbs.
Dimensions:	3.000 x 2.430 x 1.880 in.

Roll/Trim Servo

Power Required:	14/28 VDC
Weight:	2.9 lbs.
Dimensions:	3.880 x 3.750 x 7.250 in.
TSO:	C9c

Pitch Servo

Power Required:	14/28 VDC
Weight:	2.9 lbs.
Dimensions:	3.880 x 3.750 x 7.250 in.
TSO:	C9c

Current Requirements, System 20	@14 VDC	@ 28 VDC
Average Operating Current:	1.0 Amp	0.5 Amp
Maximum Current:	3.0 Amp	2.0 Amp

Current Requirements, System 30	@14 VDC	@ 28 VDC
Average Operating Current:	1.0 Amp	0.5 Amp
Maximum Current:	5.0 Amp	3.0 Amp

Current Requirements, System 30 ALT	@14 VDC	@ 28 VDC
Average Operating Current:	1.0 Amp	0.5 Amp
Maximum Current:	3.0 Amp	2.0 Amp

Current Requirements, System 40	@14 VDC	@ 28 VDC
Average Operating Current:	1.0 Amp	0.5 Amp
Maximum Current:	3.0 Amp	2.0 Amp

Current Requirements, System 50	@14 VDC	@ 28 VDC
Average Operating Current:	1.0 Amp	0.5 Amp
Maximum Current:	5.0 Amp	3.0 Amp

Current Requirements, System 55	@14 VDC	@ 28 VDC
Average Operating Current:	1.0 Amp	0.5 Amp
Maximum Current:	5.0 Amp	3.0 Amp

Current Requirements, System 55X	@14 VDC	@ 28 VDC
Average Operating Current:	1.0 Amp	0.5 Amp
Maximum Current:	5.0 Amp	3.0 Amp

Current Requirements, System 550	@14 VDC	@ 28 VDC
Average Operating Current:	N/A	0.5 Amp
Maximum Current:	N/A	3.0 Amp

Current Requirements, System 60-1	@14 VDC	@ 28 VDC
Average Operating Current:	1.0 Amp	0.5 Amp
Maximum Current:	3.0 Amp	2.0 Amp

Current Requirements, System 60-2	@14 VDC	@ 28 VDC
Average Operating Current:	1.0 Amp	0.5 Amp
Maximum Current:	5.0 Amp	3.0 Amp

Current Requirements, System 65	@14 VDC	@ 28 VDC
Average Operating Current:	1.0 Amp	0.5 Amp
Maximum Current:	5.0 Amp	3.0 Amp

Current Requirements, PSS	@14 VDC	@ 28 VDC
Average Operating Current:	1.0 Amp	0.5 Amp
Maximum Current:	3.0 Amp	2.0 Amp

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SECTION 9
GLOSSARY

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GLOSSARY

Term	Meaning
A/C (AC)	Aircraft
A/P	Autopilot
A+	Aircraft Power (14 VDC or 28 VDC)
AC	Alternating Current
ACCEL	Acceleration
AFM	Airplane Flight Manual
AFMS	Airplane Flight Manual Supplement
ALR	Alert
ALT	Altitude
APR	Approach
ARINC	Aeronautical Radio, Incorporated
ATC	Air Traffic Control
C (CAP)	Capture Gain Condition, Course Captured
CB	Circuit Breaker
CCW	Counterclockwise
CDI	Course Deviation Indicator
CMD	Command
CON'T	Continued
CRS	Course
CS	Capture Soft Gain Condition, Tracking Course or Localizer
CTRK DEV	Cross Track Deviation
CW	Clockwise
CWS	Control Wheel Steering
DC	Direct Current
DG	Directional Gyro
DISC	Disconnect
DN	Down
DSBL	Disable
DTA	Data
DVM	Digital Volt Meter
ED	Edition
ENG	Engage
EXC	Excitation
FAA	Federal Aviation Administration
FAF	Final Approach Fix
FD	Flight Director
FPM	Feet Per Minute
GND	Ground
GPS	Global Positioning System
GPSS	Global Positioning System Steering
GS	Glideslope
HDG (HD)	Heading
Hg	Mercury
HI-TRK	High Gain Tracking
HSI	Horizontal Situation Indicator
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
IN.	Inches
JPR	Jumper
L/R	Left/Right
LBS	Pounds
LOC	Localizer
LORAN	Long Range Navigation
LO-TRK	Low Gain Tracking
LT	Left
MAN	Manual
MOD	Modify
MOT	Motor

GLOSSARY (CON'T)

Term	Meaning
N/A	Not Applicable
N/C	No Connection
NAV	Navigation
NDU	Navigational Display Unit
OBS	Omnibearing Selector
P/N	Part Number
POH	Pilot's Operating Handbook
POHS (POH/S)	Pilot's Operating Handbook Supplement
POT	Potentiometer
PSI	Pounds Per Square Inch
PSS	Pitch Stabilization System
RDY	Ready
REF	Reference
REV	Reverse
RPM	Revolutions Per Minute
RT	Right
S	Soft Gain Condition, Tracking Course
S/A	Selector Alerter
SB	Service Bulletins
SFM	Supplemental Flight Manual
SOL	Solenoid
ST (STB)	Stabilizer
TACH	Tachometer
T/C (TC)	Turn Coordinator
TSO	Technical Standard Order
UUT	Unit Under Test
VAC	Volts Alternating Current
VDC	Volts Direct Current
VFR	Visual Flight Rules
VHF	Very High Frequency
VMC	Visual Meteorological Conditions
VOR	Very High Frequency Omnidirectional Radio Range
Vpp	Volts Peak-to-Peak
VS	Vertical Speed
XDCR	Transducer
YD	Yaw Damper