

S-TEC 40 Single Axis Autopilot
Testing & Operating Procedures

A/P Ground Pre-Flight Test:

1. Battery Or External Power - ON
2. MASTER AVIONICS Sw. - ON
3. A/P Master SW. - TEST - Observe all annunciator lights illuminate.
4. A/P Master Sw. - ON - Observe ready (RDY) light illuminates.
5. Depress ON-OFF Switch
 - A. STB annunciator Illuminates
 - B. Rotate "turn knob" right & left - Yokes should move in same direction as knob turns.
 - C. Center the turn knob.
6. Check Slaved HSI is showing proper heading with magnetic compass.
 - A. Place Heading "Bug" under Upper lubber line.
 - B. PUSH the Turn Knob to engage "HDG" Mode (Observe the "HDG" annunciator Light is on).
 - C. Move the "HDG" Bug right & left - Yokes should "turn" same direction.
 - D. PUSH "turn knob" again to revert to "STB" or basic A/P roll control.
7. "Over-power" TEST - While turning the A/P turn knob either direction, use the yoke to over-power the A/P by trying to turn the yoke in the opposite direction(s). IF unable, or erratic behavior results, do NOT use the A/P until problem(s) resolved.
8. Radio/NAV Checks -
 - A. Tune NAV 1 (Garmin 430) to a receivable station (PWA - 113.4?)
 - B. For proper A/P test & HSI display, be sure Garmin 430 is in VORLOC Mode and NOT GPS for HSI display.
 - C. Engage A/P "NAV" Mode Sw. - Move HSI OBS/Crs knob right/left for CDI Centering/deflections. Yoke should Follow the CDI needle movement
 - D. Select the "REV" (Reverse) Mode - Again, move the HSI OBS/Crs knob right/left for CDI Centering/deflections. The Yoke should move in the OPPOSITE direction as the CDI needle movement
 - E. Select the APR (Approach) Mode - Turn the HSI OBS/Crs knob right/left for CDI Centering/deflections. Yoke should follow the CDI needle movement, only with greater authority/sensitivity.
9. Hold the yoke and depress the red "EMER. Disconnect SW." on the yoke. Note that the A/P (roll servos) do release and that you have positive control of yoke movements without A/P interference/restrictions.
10. Checks are completed. Turn off A/P Switch.

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A/P INFLIGHT PROCEDURES:

1. A/P Master Power Sw. - ON
2. Check "RDY" (Ready) Light - ON
3. Trim airplane for existing flight Conditions (level, climb, etc.)
4. Check "Turn Knob" is CENTERED
5. Check "HDG Bug" is under upper Lubber line on HSI.
6. Depress "ON-OFF" Switch "STB" Light illuminates.
7. Set/turn "Turn Knob" to desired Position for turning or straight/level, As desired, OR -
8. Depress "Turn Knob" to engage A/P "HDG" mode - "HDG" annunciator Light illuminates. Airplane will now Follow the "HDG Bug" commands.

A/P MAY BE TURNED OFF BY:

1. Depressing the red switch/button on the pilot's yoke.
2. Depressing the "ON-OFF" switch on A/P control unit.
3. Moving A/P Master Sw. To "OFF" position
4. Pulling the A/P circuit breaker.

GPS/VOR/LOC/APPROACH TRACKING:

1. On the GARMIN 430, select the desired navigation system - GPS or VORLOC to Feed the HSI and A/P.
2. If in GPS - Set HSI to correct course for Proper display & guidance control.
3. If in VORLOC - tune NAV#1 & select Correct course/radial/etc.
4. Use the "Turn Knob" and/or "Hdg Bug" (I Recommend the "HDG Bug) to maneuver the airplane to the selected radial, course or localizer, to within +/- 1 needle width & Within 10 deg. Of the course (VOR) hdg.
5. Engage "NAV" Mode (switch) for VOR or GPS course tracking.
- 6 Engage "APR" (Approach) Mode for Non-Precision Localizer Approach.
 - A. For a normal LOC app., use "APR" Mode
 - B. For A B/C LOC, also engage "REV" Mode.

OPERATING LIMITATIONS:

1. A/P operation PROHIBITED above 150 MPH
2. A/P must be OFF during takeoff and landing.



S-TEC CORPORATION
 RT. 4, BLDG. 946
 WOLTERS INDUSTRIAL COMPLEX
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FAA APPROVED
 SUPPLEMENTAL FLIGHT MANUAL
 FOR

CESSNA MODEL 172M

WITH
 S-TEC SYSTEM 40 SINGLE AXIS
 AUTOMATIC FLIGHT GUIDANCE SYSTEM
 (14 VOLT SYSTEM)

REG. NO. N61571
 SER. NO. 17264648

The information in this manual is FAA Approved material which along with other approved documents is applicable to the operation of the airplane when modified by the installation of the S-TEC System 40 Autopilot Model ST-183-40 installed in accordance with STC SA5195SW-D.

SECTION I

GENERAL

This manual is to acquaint the pilot with the features and functions of the System 40 Single Axis Autopilot and to provide operating instructions for the system when installed in the above aircraft model(s). The aircraft must be operated within the limitations herein provided when the autopilot is in use.

SECTION II

OPERATING LIMITATIONS

1. Autopilot operation prohibited above 150 MPH CAS (130 KCAS).
2. Autopilot must be "OFF" during take-off and landing.

	40	50	60	70	80	90	100	110	120	130	140	150
FLAPS UP												
KIAS	48	50	60	70	80	89	99	108	118	128	138	148
KCAS	49	52	62	70	80							

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