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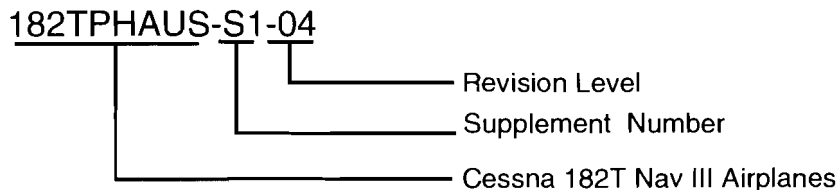
SUPPLEMENTS

INTRODUCTION

The supplements in this section contain expanded operational procedures for both standard and optional equipment installed in the airplane. Operators should refer to each supplement to ensure that all limitations and procedures appropriate for their airplane are observed.

A Log Of Approved Supplements is provided, for convenience only, beginning on page Log 1 and is a numerical list of all supplements applicable to this airplane by name, number and revision level. This log should be used as a checklist to ensure all applicable supplements have been placed in the Pilot's Operating Handbook (POH). Supplements may be removed from the POH provided the equipment is not installed on the airplane. If equipment is installed on the airplane, however, the supplement(s) must be retained and updated as revisions to each supplement are issued.

Each individual supplement contains its own Log of Effective Pages. This log lists the page number and effective date of every page in the supplement. The log also lists the dates on which revisions to the supplement occurred. Additionally, the part number of the supplement provides information on the revision level. Refer to the following example:



LOG OF APPROVED SUPPLEMENTS

NOTE

IT IS THE AIRPLANE OWNER'S RESPONSIBILITY TO MAKE SURE THAT HE OR SHE HAS THE LATEST REVISION TO EACH SUPPLEMENT OF A PILOT'S OPERATING HANDBOOK, AND THE LATEST ISSUED "LOG OF APPROVED SUPPLEMENTS". THIS "LOG OF APPROVED SUPPLEMENTS" WAS THE LATEST VERSION AS OF THE DATE IT WAS SHIPPED BY CESSNA; HOWEVER, SOME CHANGES MAY HAVE OCCURRED, AND THE OWNER SHOULD VERIFY THIS IS THE LATEST, MOST UP-TO-DATE VERSION BY CONTACTING CESSNA CUSTOMER SUPPORT AT (316) 517-5800.

Supplement Number	Name	Revision Level	Equipment Installed
1	Pointer Model 3000-11 or Model 4000-11 Emergency Locator Transmitter (ELT)	1	<u> x </u>
2	Canadian Supplement	0	<u> </u>
3	Bendix/King KAP 140 2 Axis Autopilot	1	<u> x </u>
4	L3 Communications WX-500 Stormscope®	0	<u> x </u>
5	Brazilian Certified Airplanes	1	<u> </u>
6	Reserved		<u> </u>
7	Artex C406-N Emergency Locator Transmitter (ELT)	0	<u> </u>
8	Bendix/King KR87 Automatic Direction Finder (ADF)	0	<u> </u>
9	Argentine Certified Airplanes	0	<u> </u>

**Pilot's Operating Handbook and
FAA Approved Airplane Flight Manual**

CESSNA MODEL 182T

NAV III AVIONICS OPTION



SUPPLEMENT 1

**POINTER MODEL 3000-11 OR MODEL 4000-11
EMERGENCY LOCATOR TRANSMITTER**

SERIAL NO. _____

REGISTRATION NO. _____

This supplement must be inserted into Section 9 of the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual when the Pointer Model 3000-11 or Model 4000-11 Emergency Locator Transmitter is installed. The Pointer Model 4000-11 Emergency Locator Transmitter is approved for use only in the USA, Canada, Japan and France.

APPROVED BY
FAA APPROVED UNDER FAR 21 SUBPART J
The Cessna Aircraft Co.
Delegation Option Authorization DOA-100138-02
 



DATE OF APPROVAL 03 JUNE 2004

3 JUNE 2004

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WICHITA, KANSAS, USA

REVISION 1 19 SEPTEMBER 2005

182TPHAUS-S1-01

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SUPPLEMENT 1

POINTER MODEL 3000-11 OR MODEL 4000-11 EMERGENCY LOCATOR TRANSMITTER (ELT)

Use the Log of Effective Pages to determine the current status of this supplement.

Pages affected by the current revision are indicated by an asterisk (*) preceding the page number.

<u>Supplement Status</u>	<u>Date</u>
Original Issue	3 June 2004
Revised	19 September 2005

LOG OF EFFECTIVE PAGES

Page Number	Page Status	Revision Number
* S1-1 thru S1-2	Revised	1
S1-3	Original	0
* S1-4	Revised	1
S1-5 thru S1-12	Original	0

APPROVED BY

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Michael D. Nalley DOA Administrator

DATE OF APPROVAL 09-19-05

S1-2

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182TPHAUS-S1-01

SERVICE BULLETIN CONFIGURATION LIST

The following is a list of Service Bulletins that are applicable to the operation of the airplane, and have been incorporated into this supplement. This list contains only those Service Bulletins that are currently active.

<u>Number</u>	<u>Title</u>	<u>Airplane</u> <u>Serial</u> <u>Effectivity</u>	<u>Revision</u> <u>Incorporated</u>	<u>Incorporated</u> <u>in Airplane</u>
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**POINTER MODEL 3000-11 OR 4000-11
EMERGENCY LOCATOR TRANSMITTER (ELT)**

GENERAL

This supplement provides information which must be observed when operating the Pointer Model 3000-11 or 4000-11 Emergency Locator Transmitter. The Pointer Model 4000-11 Emergency Locator Transmitter is approved for use only in the USA, Canada, Japan and France.

Both the Pointer Model 3000-11 ELT (which incorporates the English placard) and Model 4000-11 ELT (which incorporates the bilingual placard) consist of a self-contained, dual-frequency, solid-state transmitter powered by a battery pack consisting of five alkaline "C" cell batteries and is automatically activated by a deceleration sensing inertia "G" switch, which is designed to activate when the unit senses longitudinal inertia forces as required in TSO-C91A. Also, a remote switch/annunciator is installed on the top right hand side of the copilot's instrument panel for control of the ELT from the flight crew station. The annunciator, which is in the center of the rocker switch, comes on when the ELT transmitter is transmitting. The ELT emits an omni-directional signal on the international distress frequencies of 121.5 MHz and 243.0 MHz. General aviation and commercial aircraft, the FAA and CAP monitor 121.5 MHz, and 243.0 MHz is monitored by the military.

The ELT is contained in a high impact, fire retardant, fiberglass filled Lexan case with carrying handle and is mounted behind the aft cabin partition wall on the right side of the tailcone. To gain access to the unit, unfasten the turn fasteners on the aft cabin partition. The ELT is operated by a control panel at the forward facing end of the unit or by the remote switch/annunciator located on the top right hand portion of the copilot's instrument panel (refer to Figure S1-1).

Power for the transmitter is provided by an alkaline battery pack inside the transmitter case.

(Continued Next Page)

GENERAL (CONTINUED)

In accordance with FAA regulations, the ELT's battery pack must be replaced after 2 years shelf or service life or for any of the following reasons:

- a. After the transmitter has been used in an emergency situation (including any inadvertent activation of unknown duration).
- b. After the transmitter has been operated for more than one cumulative hour (e.g. time accumulated in several tests and inadvertent activation of known duration).
- c. On or before battery replacement date. Battery replacement date is marked on the battery pack and the label on the transmitter.

POINTER MODEL 3000-11 EMERGENCY LOCATOR TRANSMITTER

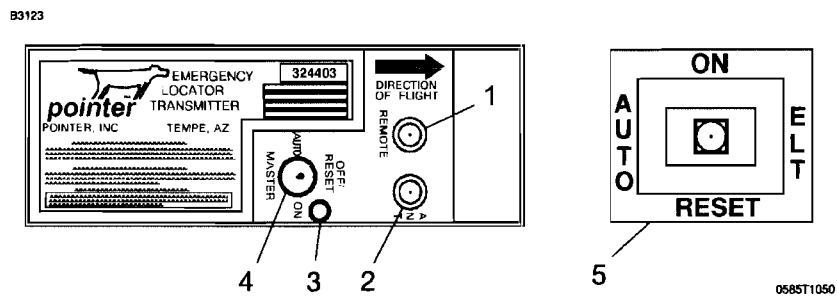


Figure S1-1

1. REMOTE CABLE JACK - Connects to ELT remote switch/annunciator located on the copilot's instrument panel.
2. ANTENNA RECEPTACLE - Connects to antenna mounted on top of tailcone.
3. TRANSMITTER ANNUNCIATOR LIGHT - comes on red to indicate the transmitter is transmitting a distress signal.

(Continued Next Page)

GENERAL (CONTINUED)

4. MASTER FUNCTION SELECTOR SWITCH (3-position toggle switch):
 - AUTO - Arms transmitter for automatic activation if "G" switch senses a predetermined deceleration level.
 - ON - Activates transmitter instantly. Used for test purposes and if "G" switch is inoperative. The ON position bypasses the automatic activation switch. (The red annunciator in the center of the remote switch/annunciator should come on).
 - OFF/
RESET - Deactivates transmitter during handling, following rescue and to reset the automatic activation function. (The red annunciator in the center of the remote switch/annunciator should go off).
5. REMOTE SWITCH/ANNUNCIATOR (3-position rocker switch):
 - ON - Remotely activates the transmitter for test or emergency situations. Red annunciator in center of rocker switch comes on to indicate that the transmitter is transmitting a distress signal.
 - AUTO - Arms transmitter for automatic activation if "G" switch senses a predetermined deceleration level.
 - RESET - Deactivates and rearms transmitter after automatic activation by the "G" switch. Red annunciator in center of rocker switch should go off.

(Continued Next Page)

GENERAL (CONTINUED)

**POINTER MODEL 4000-11
EMERGENCY LOCATOR TRANSMITTER**

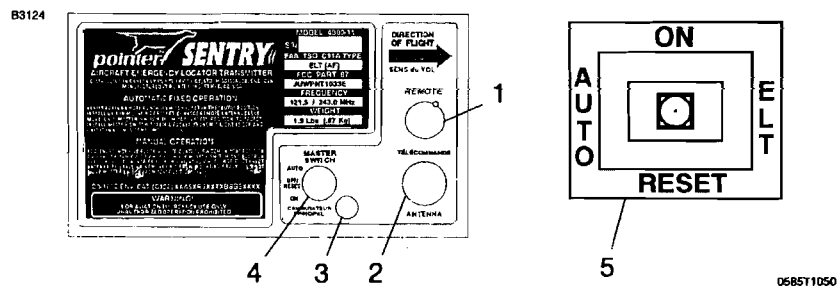


Figure S1-2

1. REMOTE CABLE JACK - Connects to ELT remote switch/annunciator located on the copilot's instrument panel.
2. ANTENNA RECEPTACLE - Connects to antenna mounted on top of tailcone.
3. TRANSMITTER ANNUNCIATOR LIGHT - comes on red to indicate the transmitter is transmitting a distress signal.
4. MASTER FUNCTION SELECTOR SWITCH (3-position toggle switch):
 - AUTO - Arms transmitter for automatic activation if "G" switch senses a predetermined deceleration level.
 - ON - Activates transmitter instantly. Used for test purposes and if "G" switch is inoperative. The ON position bypasses the automatic activation switch. (The red annunciator in the center of the remote switch/annunciator should come on).
 - OFF/
RESET - Deactivates transmitter during handling, following rescue and to reset the automatic activation function. (The red annunciator in the center of the remote switch/annunciator should go off).

(Continued Next Page)

GENERAL (CONTINUED)

5. REMOTE SWITCH/ANNUNCIATOR (3-position rocker switch):

- ON - Remotely activates the transmitter for test or emergency situations. Red annunciator in center of rocker switch comes on to indicate that the transmitter is transmitting a distress signal.
- AUTO - Arms transmitter for automatic activation if "G" switch senses a predetermined deceleration level.
- RESET - Deactivates and rearms transmitter after automatic activation by the "G" switch. Red annunciator in center of rocker switch should go off.

OPERATING LIMITATIONS

Refer to Section 2 of the Pilot's Operating Handbook and FAA Approved Flight Manual (POH/AFM).

EMERGENCY PROCEDURES

Before performing a forced landing, especially in remote and mountainous areas, activate the ELT transmitter by positioning the remote switch/annunciator to the ON position. The annunciator in center of the rocker switch should be illuminated.

Immediately after a forced landing where emergency assistance is required, the ELT should be utilized as follows:

NOTE

The ELT remote switch/annunciator system could be inoperative if damaged during a forced landing. If inoperative, the inertia "G" switch will activate automatically. However, to turn the ELT OFF and ON again requires manual switching of the master function selector switch which is located on the ELT unit.

(Continued Next Page)

EMERGENCY PROCEDURES (CONTINUED)

1. VERIFY ELT ACTIVATION:
 - a. Position remote switch/annunciator to the ON position even if annunciator light is already on.
 - b. If airplane radio is operable and can be safely used (no threat of fire or explosion), turn ON and select 121.5 MHz. If the ELT can be heard transmitting, it is working properly.
 - c. Ensure that antenna is clear of obstructions.

NOTE

When the ELT is activated, a decreasing tone will be heard before the typical warbling tone begins.

2. PRIOR TO SIGHTING RESCUE AIRCRAFT - Conserve airplane battery. Do not activate radio transceiver.
3. AFTER SIGHTING RESCUE AIRCRAFT - Position remote switch/annunciator to the RESET position and release to the AUTO position to prevent radio interference. Attempt contact with rescue aircraft with the radio transceiver set to a frequency of 121.5 MHz. If no contact is established, return the remote switch/annunciator to the ON position immediately.
4. FOLLOWING RESCUE - Position remote switch/annunciator to the AUTO position, terminating emergency transmissions.

NORMAL PROCEDURES

When the remote switch/annunciator is in the AUTO position and the ELT master function selector switch remains in the AUTO position, the ELT automatically activates when the unit senses longitudinal inertia forces as required in TSO-C91A.

After a lightning strike, or an exceptionally hard landing, the ELT may activate although no emergency exists. If the remote switch/annunciator comes on, the ELT has inadvertently activated itself. Another way to check is to select 121.5 MHz on the radio transceiver and listen for an emergency tone transmission. If the remote switch/annunciator is on or an emergency tone is heard, position the remote switch/annunciator in the RESET position and release to the AUTO position.

The ELT must be serviced in accordance with FAR Part 91.207.

INSPECTION/TEST

1. The emergency locator transmitter should be tested every 100 hours.

NOTE

Test should only be conducted within the first 5 minutes of each hour.

2. Disconnect antenna cable from ELT.
3. Set the MASTER switch BAT in the ON position.
4. Turn airplane transceiver ON and set frequency to 121.5 MHz.
5. Place remote switch/annunciator in the ON position. The annunciator should come on. Permit **only three** emergency tone transmissions, then immediately reposition the remote switch/annunciator to the RESET position and release to the AUTO position.

(Continued Next Page)

NORMAL PROCEDURES (CONTINUED)

6. Place the ELT master function selector switch in the ON position. Verify that the transmitter annunciator light on the ELT and the remote switch/annunciator on the instrument panel are on.
7. Place the ELT master function selector switch in the OFF/RESET position.
8. Reposition ELT master function selector switch to AUTO.
9. Reconnect antenna cable to ELT.

WARNING

A TEST WITH THE ANTENNA CONNECTED SHOULD BE APPROVED AND CONFIRMED BY THE NEAREST CONTROL TOWER.

NOTE

Without its antenna connected, the ELT will produce sufficient signal to reach the airplane transceiver, yet it will not disturb other communications or damage output circuitry.

After accumulated test or operation time equals 1 hour, battery pack replacement is required.

IN-FLIGHT MONITORING AND REPORTING

Pilot's are encouraged to monitor 121.5 MHz and/or 243.0 MHz while in flight to assist in identifying possible emergency ELT transmissions. On receiving a signal, report the following information to the nearest air traffic control facility:

1. Your position at the time the signal was first heard.
2. Your position at the time the signal was last heard.
3. Your position at maximum signal strength.
4. Your flight altitude and frequency on which the emergency signal was heard - 121.5 MHz or 243.0 MHz. If possible, positions should be given relative to a navigation aid. If the aircraft has homing equipment, provide the bearing to the emergency signal with each reported position.

PERFORMANCE

There is no change in airplane performance when the Pointer Model 3000-11 or 4000-11 Emergency Locator Transmitter (ELT) is installed.



**Pilot's Operating Handbook and
FAA Approved Airplane Flight Manual**

CESSNA MODEL 182T

NAV III AIRPLANES

SUPPLEMENT 2

CANADIAN

SUPPLEMENT

SERIAL NO. _____
REGISTRATION NO. _____

This supplement must be inserted into Section 9 of the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual when used for Canadian Operation.

APPROVED BY

FAA APPROVED UNDER FAR 21 SUBPART J
The Cessna Aircraft Co.
Delegation Option Authorization DOA-100129-CE

Michael D. Hickey

Executive Engineer
MDH

DATE OF APPROVAL 03 JUNE 2004



Member of GAMA

3 JUNE 2004

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SUPPLEMENT 2

CANADIAN SUPPLEMENT

Use the Log of Effective Pages to determine the current status of this supplement.

Pages affected by the current revision are indicated by an asterisk (*) preceeding the page number.

Supplement Status	Date
Original Issue	3 June 2004

LOG OF EFFECTIVE PAGES

Page Number	Page Status	Revision Number
S2-1 thru S2-4	Original	0

SERVICE BULLETIN CONFIGURATION LIST

The following is a list of Service Bulletins that are applicable to the operation of the airplane, and have been incorporated into this supplement. This list contains only those Service Bulletins that are currently active.

<u>Number</u>	<u>Title</u>	<u>Airplane Serial</u> <u>Effectivity</u>	<u>Revision</u> <u>Incorporated</u>	<u>Incorporated</u> <u>in Airplane</u>
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CANADIAN SUPPLEMENT

GENERAL

This supplement is required for Canadian operation of Cessna Model 182T With Nav III Avionics option.

NOTE

In Canada, FAA operating rules (i.e., FAR 91 and FAR 135) are not applicable. The airplane must be equipped and operated in accordance with Transport Canada.

OPERATING LIMITATIONS

The following placard must be installed.

1. Near the fuel tank filler cap:

<p>FUEL 100LL/100 MIN. GRADE AVIATION GASOLINE CAP. 3.5 U.S. GAL. (164 LITERS) USABLE CAP. 37 U.S. GAL. (140 LITERS) USABLE TO LINE OF HOLES INSIDE FILLER INDICATOR TAB. CAP. 32 U.S. GAL. (121 LITERS) USABLE TO BOTTOM OF FILLER INDICATOR TAB.</p>

EMERGENCY PROCEDURES

There is no change to the airplane emergency procedures when used for Canadian operation.

NORMAL PROCEDURES

There is no change to the airplane normal procedures when used for Canadian operation.

PERFORMANCE

There is no change to the airplane performance when used for Canadian operation.

**Pilot's Operating Handbook and
FAA Approved Airplane Flight Manual**

**CESSNA MODEL 182T
NAV III AVIONICS OPTION**

SUPPLEMENT 3

**BENDIX/KING KAP 140
2 AXIS AUTOPILOT**

SERIAL NO. _____
REGISTRATION NO. _____

This supplement must be inserted into Section 9 of the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual when the KAP 140 2 Axis Autopilot System is installed.

APPROVED BY

FAA APPROVED UNDER FAR 21 SUBPART J
The Cessna Aircraft Co.
Delegation Option Authorization DCA-18012B-CE

Michael W. Hickey Executive Director

DATE OF APPROVAL 06-16-04



Member of GAMA

16 JUNE 2004

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WICHITA, KANSAS, USA

182TPHAUS-S3-01

REVISION 1

24 JUNE 2004

S3-1

SUPPLEMENT 3

BENDIX/KING KAP 140 2 AXIS AUTOPILOT

Use the Log of Effective Pages to determine the current status of this supplement.

Pages affected by the current revision are indicated by an asterisk (*) preceeding the page number.

Supplement Status	Date
Original	16 June 2004
Revision 1	24 June 2004

LOG OF EFFECTIVE PAGES

Page Number	Page Status	Revision Number
* S3-1 thru S3-2	Revised	1
S3-3 thru S3-32	Original	0
* S3-33	Revised	1
S3-34 thru S3-37	Original	0
* S3-38	Revised	1
S3-39	Original	0
* S3-40 thru S3-44	Revised	1

APPROVED BY

FAA APPROVED UNDER FAR 21 SUBPART J
The Cessna Aircraft Co.
Delegation Option Authorization DOW-100128-CE

William N. Hickey Executive Engineer

DATE OF APPROVAL

24 JUNE 2004

S3-2 U.S.

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SERVICE BULLETIN CONFIGURATION LIST

The following is a list of Service Bulletins that are applicable to the operation of the airplane, and have been incorporated into this supplement. This list contains only those Service Bulletins that are currently active.

<u>Number</u>	<u>Title</u>	<u>Airplane Serial</u> <u>Effectivity</u>	<u>Revision</u> <u>Incorporated</u>	<u>Incorporated</u> <u>in Airplane</u>
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BENDIX/KING KAP 140 2 AXIS AUTOPILOT

GENERAL

The Bendix/King KAP 140 2-Axis Autopilot provides the following modes of operation:

1. Roll (ROL) mode - keeps the wings level,
2. Vertical Speed (VS) mode - holds the climb or descent rate at the moment the autopilot is engaged or a manually-set climb or descent rate. Controlled using the UP and DN buttons.

NOTE

The autopilot can hold a set vertical speed only if engine power and airplane weight will let it. If the vertical speed set on the autopilot is more than the airplane can supply and airspeed decreases sufficiently, the airplane can be made to stall. Make sure that the vertical speed set on the autopilot results in airplane performance that stays in the operating limitations of both the autopilot and the airplane.

3. Altitude Hold (ALT) mode - holds a set altitude using combined engine power, pitch and pitch trim control.
4. Heading (HDG) mode - holds the magnetic heading set using the HDG bug on the G1000 Primary Flight Display (PFD) HSI.
5. Navigation (NAV) mode - locks on a course set using the CRS knob when a valid VHF navigation source (NAV 1 or NAV 2) is shown on the G1000 HSI, when GPS is set as the HSI navigation source and the GPS is operating in OBS mode, or when the course is set automatically using GPS direct-to or flight plan (FPL) navigation and GPS is shown on the G1000 HSI.

(Continued Next Page)

GENERAL (Continued)

6. Approach (APR) mode - locks on-course with greater sensitivity than NAV mode. APR mode is used to lock on the final approach course (to the Final Approach Fix) to start the final approach segment of the procedure. While operating on an intercept heading or course in either HDG or NAV mode, APR mode is set or "armed" (ARM) to lock on to the final approach course. APR mode will work for VOR, LOC and ILS approaches using either the NAV 1 or NAV 2 VHF navigation radios with the correct signal, the applicable radio set as the navigation source on the HSI and the correct course (CRS) set on the HSI. APR mode will automatically lock on the glideslope (GS) using vertical speed mode during ILS approaches. APR supplies vertical guidance only for ILS approaches, and then only when established on the localizer before glideslope intercept. This mode also works for GPS or RNAV/GPS approaches when GPS is set as the navigation source on the HSI.

The KAP 140 Autopilot gives the pilot Altitude Preselect and Altitude Alert functions. The Altitude Preselect function lets the pilot set a limit or "target" altitude before starting a climb or descent. The KAP 140 will climb or descend, as applicable, at the set vertical speed and will return to level flight at the altitude selection. The autopilot will supply an Altitude Alert (an electronic sound or "tone") at 1000 feet before the altitude selection or when altitude changes more than 200 feet from the altitude selection.

The KAP 140 Autopilot Elevator Trim System supplies automatic adjustment of elevator trim during autopilot operation and, when the autopilot is not engaged, gives the pilot a manual electric elevator trim (MET) function (using the DN-UP Switches on the Control Wheel). The Elevator Trim system is designed to fail to a safe condition (fail-safe) for any single trim system malfunction during flight. Trim system malfunctions produce warning annunciations on the face of the autopilot and on the G1000 PFD.

(Continued Next Page)

GENERAL (Continued)

A locking device prevents the autopilot or MET from engaging until the autopilot computer has completed the preflight self-test sequence and finds that the system is not defective. The preflight self-test starts when the AVIONICS BUS 2 Switch is set to the ON position.

The KAP 140 Autopilot will disengage if any of the following conditions occur:

1. Internal Autopilot System malfunction.
2. Autopilot Computer Monitor detects either R (roll axis) or P (pitch axis) malfunction annunciation.
3. Pitch accelerations larger than + 1.4g or - 0.6g caused by a servomotor unit malfunction. The pilot cannot maneuver the airplane and cause the autopilot to disengage, although some turbulence can.
4. DC Electric Turn Coordinator malfunction.
5. The A/P DISC/TRIM INT Switch on the LH Control Wheel is pushed.

The AVIONICS BUS 2 Switch supplies electrical power to the AUTO PILOT Circuit Breaker from AVN BUS 2. The AVIONICS BUS 2 Switch can also de-energize the Autopilot or MET system in an emergency.

(Continued Next Page)

GENERAL (Continued)

The following circuit breakers energize and supply protection for the KAP 140 Autopilot:

<u>LABEL</u>	<u>FUNCTIONS</u>
AUTO PILOT	A pull-to-open type circuit breaker on AVN BUS 2 that energizes the KAP 140 Autopilot computer and the roll, pitch and pitch trim servomotor units.
WARN	A pull-to-open type circuit breaker on the X-FEED BUS that supplies power for the PITCH TRIM annunciation on the G1000 PFD.

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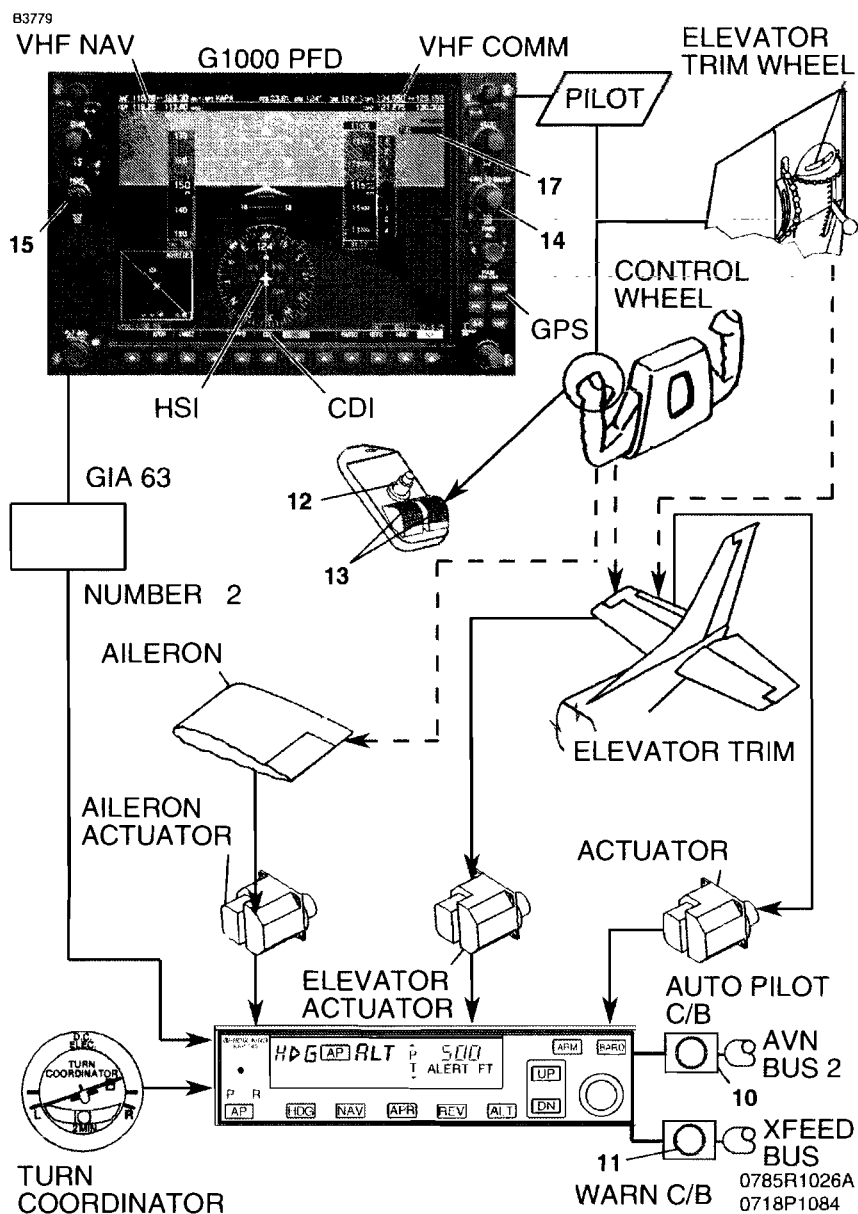


Figure S3-1

GENERAL (Continued)

BENDIX/KING KAP 140 2 AXIS AUTOPILOT WITH ALTITUDE PRESELECT, OPERATING CONTROLS AND INDICATORS

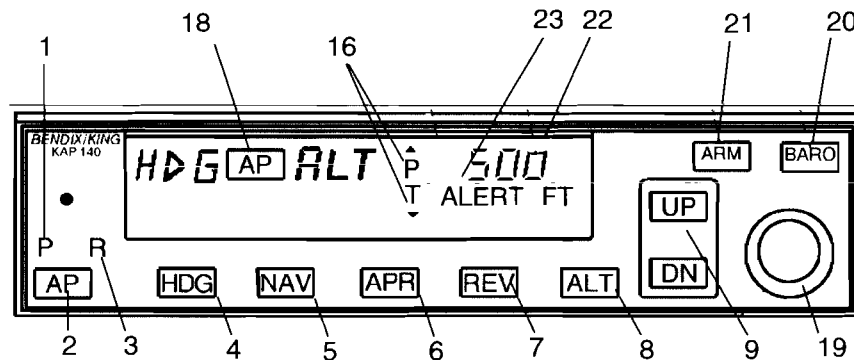


Figure S3-2

KAP 140 WITH ALTITUDE PRESELECT

1. PITCH AXIS (P) ANNUNCIATOR - When illuminated, indicates failure of pitch axis and will either disengage the autopilot or not allow engagement of the pitch axis. In turbulent air, will illuminate during abnormal vertical/accelerations.
2. AUTOPILOT ENGAGE/DISENGAGE (AP) BUTTON - When pressed and held (approx. 0.25 seconds), engages autopilot if all preflight self-test conditions are met. The autopilot will engage in the basic roll (ROL) mode which functions as a wing leveler and the pitch axis vertical speed (VS) mode. The commanded vertical speed will be displayed in the upper right corner of autopilot display area. The captured VS will be the vertical speed present at the moment the AP button is pressed. The button may also be used to disengage the autopilot.
3. ROLL AXIS (R) ANNUNCIATOR - When illuminated, indicates failure of the roll axis and disengages the autopilot.

(Continued Next Page)

GENERAL (Continued)

4. **HEADING (HDG) MODE SELECTOR BUTTON** - When pushed, will select the Heading mode, which commands the airplane to turn to and maintain the heading selected by the heading bug on the HSI. A new heading may be selected at any time and will result in the airplane turning to the new heading. The button can also be used to change between HDG and ROL modes.
5. **NAVIGATION (NAV) MODE SELECTOR BUTTON** - When pushed, will select the Navigation mode. This mode provides automatic beam capture and tracking of VOR, LOC, or GPS signals as set on the HSI. NAV mode is recommended for enroute navigation tracking.
6. **APPROACH (APR) MODE SELECTOR BUTTON** - When pushed, will select the Approach mode. This mode provides automatic beam capture and tracking of VOR, GPS, LOC and Glideslope (GS) on an ILS, as set on the HSI. APR mode tracking sensitivity is recommended for instrument approaches.
7. **BACK COURSE APPROACH (REV) MODE BUTTON** - This button is active only when the coupled navigation receiver is tuned to a LOC/ILS frequency. When pushed will select the Back Course approach mode. This mode functions identically to the approach mode except that the autopilot response to LOC signals is reversed. Glideslope is locked out with REV mode.
8. **ALTITUDE HOLD (ALT) MODE SELECT BUTTON** - When pushed, will select the altitude hold mode. This mode provides capture and tracking of the selected altitude. The selected altitude is the airplane altitude at the moment the ALT button is pressed. If the ALT button is pressed with an established VS rate present, there will be about a 10% (of VS rate) overshoot. The airplane will return positively to the selected altitude.

(Continued Next Page)

GENERAL (Continued)

9. VERTICAL SPEED (UP/DN) MODE BUTTONS - The action of these buttons depends on the vertical mode selection when pressed. If VS mode is active (AP plus any lateral mode) and the UP button is pressed, the autopilot will modify the displayed VS command (FPM) in the up direction. Single momentary cycles on either the UP or DN button will increment the VS command by 100 FPM per cycle. When either button is continuously held in, it will modify the vertical speed command by 300 fpm per second.

If ALT mode is active, pressing the UP/DN buttons will modify the captured altitude by 20 feet per cycle, or if held continuously will command the airplane up or down at the rate of 500 FPM, synchronizing the ALT reference to the actual airplane altitude upon button release.
10. AUTO PILOT CIRCUIT BREAKER - A 5-amp pull-off circuit breaker supplies 28 VDC to the KAP 140 system.
11. WARN C/B - Power to the autopilot disconnect horn and the annunciator (PITCH TRIM).
12. AUTOPILOT DISCONNECT (A/P DISC/TRIM INT) SWITCH - When depressed will disengage the autopilot and interrupt manual electric trim (MET) power. An autopilot disconnect will be annunciated by a continuous 2 second tone accompanied by flashing "AP" annunciations on the autopilot computer display.
13. MANUAL ELECTRIC TRIM (MET) SWITCHES - When both switches are pressed in the same direction, the trim system will provide pitch trim in the selected direction. Use of manual electric trim during autopilot operation will disengage the autopilot.

(Continued Next Page)

GENERAL (Continued)

14. COURSE SELECT (CRS) KNOB - Selects the desired magnetic course to be tracked by the autopilot. (Note: The HDG bug must also be positioned to the proper course to capture and track the selected radial or desired track).
15. HEADING SELECT KNOB (HDG) - Positions the heading pointer ("bug") on the HSI compass card. Note that the position of the heading bug also provides heading datum to the autopilot when armed for course capture is in NAV, APR, or REV (BC) modes. This is in addition to its use in the HDG mode.
16. PITCH TRIM (PT) Annunciator - Indicates the direction of pitch trim motion. The annunciation will flash if auto trim has not satisfied the request for trim for a period of 10 seconds. A solid $\frac{P}{T}$ without an arrowhead is an indication of a pitch trim fault. Refer to the EMERGENCY PROCEDURES for proper response to a pitch trim fault.
17. PITCH TRIM Annunciation - Displayed in the PFD, Illuminates whenever the automated preflight self test detects a pitch trim fault or the continuous monitoring system detects a pitch trim fault in flight. Refer to the EMERGENCY PROCEDURES for proper response to a pitch trim fault.
18. AUTOPILOT ENGAGE AP Annunciation - Comes on whenever the autopilot is engaged. Flashes during pilot initiated or automatic disengagement.

(Continued Next Page)

GENERAL (Continued)

19. ROTARY KNOBS - Used to set the altitude alerter reference altitude; or may be used immediately after pressing the BARO button, to adjust the autopilot baro setting to match that of the airplane's altimeter when manual adjustment is required.
20. BARO SET (**BARO**) BUTTON - When pushed and released, will change the display from the altitude alerter selected altitude to the baro setting display (either in. HG or HPA) for 3 seconds. If pushed and held for 2 seconds, will change the baro setting display from in. HG to HPA or vice versa. Once the baro setting display is visible the rotary knobs may be used to adjust the baro setting.
21. ALTITUDE ARM (**ARM**) BUTTON - When pushed, will change the altitude arming function between on or off. When ALT ARM is annunciated, the autopilot will capture the altitude alerter displayed altitude (provided the airplane is climbing or descending in VS to the displayed altitude). ALT hold arming when the autopilot is engaged is automatic upon altitude alerter altitude selection via the rotary knobs. Note that the alerter functions are independent of the arming process thus providing full time alerting, even when the autopilot is disengaged.
22. ALTITUDE ALERTER/VERTICAL SPEED/BARO SETTING DISPLAY - Normally displays the altitude alerter selected altitude. If the UP or DN button is pushed while in VS hold, the display changes to the command reference for the VS mode in FPM for 3 seconds. If the BARO button is pushed, the display changes to the autopilot baro setting in either in. HG or HPA for 3 seconds.

(Continued Next Page)

GENERAL (Continued)

23. ALTITUDE ALERT (**ALERT**) ANNUNCIATION - Illuminates continuously in the region of 200 to 1000 feet from the selected altitude if the airplane was previously outside of this region. Flashes (1) for two seconds the first time the airplane crossed the selected altitude and (2) continuously in the 200 to 1000 feet region if the airplane was previously inside of this region (i.e. at the selected altitude). Associated with the visual alerting is an aural alert (5 short tones) which occurs 1000 feet from the selected altitude upon approaching the altitude and 200 feet from the selected altitude on leaving the altitude.

OPERATING LIMITATIONS

The following autopilot limitations must be obeyed:

1. The entire Preflight procedure given in the Normal Procedures section of this Supplement must be satisfactorily completed prior to each flight. Use of the autopilot or manual electric trim system is prohibited before the satisfactory completion of the Preflight procedure.
2. The autopilot must be OFF during takeoff and landing.
3. During autopilot operation, a pilot must be seated in the left front seat with their seat belt fastened.
4. The system is approved for Category I operation only (Approach mode selected).
5. Autopilot maximum airspeed limitation - 160 KIAS.
Autopilot minimum airspeed limitation - 80 KIAS.

(Continued Next Page)

OPERATING LIMITATIONS (Continued)

6. Maximum flap extension - 10°.
7. Maximum lateral fuel imbalance with autopilot engaged - 90 lbs.
8. The autopilot must be disengaged below 200 feet AGL during approach operations and below 800 feet AGL for all other phases of flight.
9. Manually overriding the autopilot to change pitch or roll attitude is prohibited. (Disengage the autopilot before moving the control wheel manually).
10. If the red "PITCH TRIM" warning annunciator (shown on the PFD) comes on during flight, do the Recovery Procedure shown in Emergency Procedures. The electric trim and autopilot systems will be de-energized when the AUTO PILOT circuit breaker is open.
11. Operation of the KAP 140 Autopilot is prohibited when the GMA 1347 Audio Panel is inoperative (no warning tone will be supplied when the Autopilot disengages).

EMERGENCY PROCEDURES

The four-step recovery procedure (steps 1 thru 4) listed below should be committed to memory. It is important that the pilot be proficient in accomplishing all four steps without reference to this manual.

RECOVERY PROCEDURE

1. In case of Autopilot, Autopilot Trim, or Manual Electric Trim malfunction (accomplish Items a and b simultaneously):
 - a. Airplane Control Wheel - **GRASP FIRMLY** and regain control of aircraft.
 - b. **AP DISC/TRIM INT** Switch --- **PUSH** and **HOLD** throughout recovery.

(Continued Next Page)

EMERGENCY PROCEDURES (Continued)

- c. AIRCRAFT - **TRIM** manually as needed.
- d. AUTO PILOT Circuit Breaker - **OPEN** (pull out).

WARNING

FOLLOWING AN AUTOPILOT, AUTOTRIM OR MANUAL ELECTRIC TRIM SYSTEM MALFUNCTION, DO NOT ENGAGE THE AUTOPILOT UNTIL THE CAUSE OF THE MALFUNCTION HAS BEEN CORRECTED.

NOTE

The AVIONICS BUS 2 switch may be used to de-energize the autopilot and electric trim systems. If necessary, do steps a thru c above, set the AVIONICS BUS 2 switch to the OFF position then locate and open (pull) the AUTO PILOT circuit breaker. Then the AVIONICS BUS 2 switch can be set to the ON position to restore power to the other avionics equipment on AVN BUS 2. Primary attitude, airspeed, directional compass, and altitude instruments will continue to operate when the AVIONICS BUS 2 switch is OFF.

Maximum Altitude losses due to autopilot malfunction:

CONFIGURATION	ALTITUDE LOSS (feet)
Cruise, Climb or Descent	650 feet
Maneuvering	100 feet
Approach	100 feet

AMPLIFIED EMERGENCY PROCEDURES

The following paragraphs provide additional information for more complete understanding of the recommended course(s) of action in emergency situations.

(Continued Next Page)

EMERGENCY PROCEDURES (Continued)

1. An autopilot or autotrim malfunction occurs when there is an uncommanded deviation in the airplane flight path or when there is abnormal control wheel or trim wheel motion. In some cases, (especially for autopilot trim), there may be little to no airplane motion, but the PITCH TRIM annunciator (RH side of PDF) may come on.
2. The primary concern in reacting to an autopilot or autopilot trim system malfunction, or to an automatic disconnect of the autopilot, is to keep control of the airplane. Immediately grasp the control wheel and push and hold the A/P DISC/TRIM INT switch throughout the recovery. Manipulate the controls as required to safely keep the airplane within all of its operating limitations. Elevator trim should be used manually as needed to relieve control forces. Locate and open (pull) the AUTO PILOT circuit breaker on the lower right hand corner of the circuit breaker panel to completely disable the autopilot system.
3. A manual electric trim system malfunction (without pilot actuation of the manual electric trim switches) may be recognized by the PITCH TRIM annunciator coming on or by unusual trim wheel motions with the autopilot not engaged. As with an autopilot malfunction, the first concern following a manual electric trim system malfunction is to keep the airplane in control. Grasp the control wheel firmly and push and hold down the A/P DISC/TRIM INT switch. Locate and pull the AUTO PILOT circuit breaker on the lower right hand corner of the circuit breaker panel (AVN BUS 2).

Trim system voice messages will be provided for the following flight conditions:

1. "TRIM IN MOTION" - Elevator trim runs for more than 5 seconds, message repeats every 5 seconds.

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EMERGENCY PROCEDURES (Continued)

2. CHECK PITCH TRIM - An out of trim condition has existed for approximately 20 seconds, take immediate corrective action:
 - a. Airplane Control Wheel - GRASP FIRMLY and keep aircraft in control.
 - b. A/P DISC/TRIM INT Switch - PUSH and HOLD throughout recovery.
 - c. AIRPLANE - RETRIM Manually as Needed.
 - d. AUTO PILOT Circuit Breaker - OPEN (PULL).

NOTE

Emergency Procedures for any malfunction are essentially the same: immediately grasp the control wheel and regain airplane control while pushing and holding the A/P DISC/TRIM INT switch, then trim the airplane as needed. After these steps have been accomplished, secure the autopilot electric trim system by pulling the AUTO PILOT circuit breaker. As with any airplane emergency procedure, it is important that the 4 steps of the Recovery Procedure be committed to memory.

3. The AVIONICS BUS 2 switch may be used to remove all electric power from the autopilot and electric trim systems while the AUTO PILOT circuit breaker is located and opened. When the AVIONICS BUS 2 switch is OFF, the autopilot and electric trim systems will not operate. After opening the AUTO PILOT circuit breaker, set the AVIONICS BUS 2 switch to the ON position to return power to the other equipment on AVN BUS 2.
4. It is important that all portions of the autopilot and electric trim system are tested prior to each flight in accordance with the procedures published herein in order to assure their integrity and continued safe operation during flight.

(Continued Next Page)

EMERGENCY PROCEDURES (Continued)

WARNING

**FOLLOWING AN AUTOPILOT, AUTOTRIM OR
MANUAL ELECTRIC TRIM SYSTEM MALFUNCTION,
DO NOT ENGAGE THE AUTOPILOT UNTIL THE
CAUSE OF THE MALFUNCTION HAS BEEN
CORRECTED.**

A flashing auto trim annunciation on the face of the autopilot indicates a failure in the pitch trim system. The pitch trim (autotrim) system has not reduced the load on the pitch servomotor sufficiently quickly. This condition should be temporary.

1. FLASHING $\frac{P}{T}$ ANNUNCIATION - OBSERVE airplane pitch behavior. If pitch behavior is satisfactory, wait 5 to 10 seconds for the annunciation to go off.
2. If $\frac{P}{T}$ annunciation continues, CONTROL WHEEL - GRASP FIRMLY, DISENGAGE the autopilot and CHECK for out of trim condition in pitch. Manually trim to reduce control forces.
3. AUTOPILOT OPERATION - CONTINUE, if satisfied that the pitch trim malfunction indication was temporary. DISCONTINUE if failure of autotrim.

If a red P or R is shown on the face of the autopilot:

1. A red P indicates that the pitch axis system of the autopilot has been disabled and cannot be engaged.

WARNING

**DO NOT ENGAGE THE AUTOPILOT IF ONLY THE
ROLL AXIS IS OPERATING.**

(Continued Next Page)

EMERGENCY PROCEDURES (Continued)

NOTE

If the red **P** lamp comes on because of abnormal acceleration of the airplane (due to turbulence), the lamp should go off within approximately one minute and normal operation of the autopilot will begin again.

2. A red **R** means that the autopilot roll axis system has been disabled and cannot be engaged. The autopilot cannot be engaged again.

If a flashing mode annunciation is shown on the face of the autopilot:

1. HDG flashing - Shows a failed heading input. PUSH the HDG button to change to ROL mode. ROL will be shown on the face of the autopilot.
2. NAV, APR or REV flashing - Shows that the autopilot navigation source is not working correctly (flag). The navigation signal may have been lost or the navigation source may have been switched at the PFD.

NOTE

NAV, APR or REV flashing can also be caused by a failed heading input (during course capture).

3. GS flashing - Shows a failed glideslope signal or input (GS will ARM again if a good glideslope signal comes back).

NOTE

- If the approach is continued using the localizer only, make sure to obey the minimum descent altitude (MDA) for the non-precision approach procedure. Use ALT or VS mode as necessary to control altitude.

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EMERGENCY PROCEDURES (Continued)

- When the mode annunciator starts to flash, the autopilot has changed to a default mode of operation: ROL for lateral control and/or VS for vertical control. The autopilot may be engaged in the previous mode again as soon as the correct navigation, glideslope or heading signal or source is available.
- The HDG annunciation will flash for 5 seconds on the selection of NAV, APR or REV mode to tell the pilot to set the HDG bug (HSI) to the desired course.

Effects of equipment failure on autopilot operation:

1. Failure of Attitude Indicator - No effect on autopilot.
2. Failure of AHRS - The autopilot will function only in ROL mode.
3. Failure of DC Turn Coordinator - Autopilot will disengage or will not engage.
4. Failure of HSI - If HSI fails to function correctly, no heading signal will be available, so the autopilot HDG, NAV, APR and REV modes will not function correctly. Only ROL mode will function correctly.
5. Failure of the Transponder Pressure Altitude Encoder - The Altitude Alert and Altitude Preselect functions will not operate correctly (gray code signal not available).
6. Failure of the No. 2 GIA 63 Integrated Avionics Unit: If the No. 2 GIA 63 unit fails, the autopilot will function only in ROL mode.
7. Failure of the GMA 1347 Audio Panel - No aural annunciator (Electronic sound or tone) will be heard when the autopilot disengages.

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NORMAL PROCEDURES

PREFLIGHT (PERFORM BEFORE EACH FLIGHT):

1. MASTER Switch (BAT) - ON.
2. AVIONICS Switch BUS 2 - ON.
3. POWER APPLICATION and SELF-TEST - The autopilot tests itself when power is first made available. The test is a sequence of internal checks before starting normal system operation. The test sequence is shown on the face of the autopilot as "PFT X". "X" is the test sequence step number. Successful completion of the self-test is shown by all autopilot display elements coming on (Display Test), the PITCH TRIM annunciator on the PFD coming on and the operation of the autopilot disengagement tone.

WARNING

IF THE RED P STAYS ON, THE AUTOPILOT HAS FAILED THE PREFLIGHT TEST. OPEN (PULL) THE AUTO PILOT CIRCUIT BREAKER TO MAKE SURE THAT THE AUTOPILOT AND MANUAL ELECTRIC TRIM SYSTEM WILL NOT OPERATE.

NOTE

When power is first supplied to the autopilot, the red P (pitch trim) lamp on the face of the autopilot may come on to show that the pitch system cannot be engaged. This condition should last approximately 30 seconds. The P will go off and the autopilot pitch trim system will function correctly.

(Continued Next Page)

NORMAL PROCEDURES (Continued)

4. MANUAL ELECTRIC TRIM (MET) SYSTEM - TEST (Using the DN - UP Switches on the outboard side of the LH control wheel):
 - a. LH Switch - PUSH FORWARD to DN position and hold. MONITOR elevator trim wheel for movement. If elevator trim wheel moves, MET system has failed. Release switch to center OFF position.

NOTE

Any movement of the elevator trim wheel during the check of either the LH or RH Switch means that the Manual Electric Trim System has failed. The airplane may be flown if the AUTO PILOT Circuit Breaker is secured in the open position so that the autopilot is disconnected from electrical power and will not operate until it is repaired.

- b. LH SWITCH - PULL AFT to UP position and hold. Make sure that the elevator trim wheel does not move. Release switch to center OFF position.
 - c. RH Switch - PUSH FORWARD to DN position and hold. Make sure that the elevator trim wheel does not move. Make sure the red ^P_T light on the face of autopilot comes on. Release switch to center OFF position.

NOTE

If red ^P_T light is not shown on the face of the autopilot after the RH Switch is held in the DN position for 5 seconds, the Trim Monitor System has failed. The airplane may be flown if the AUTO PILOT Circuit Breaker is secured in the open position so the autopilot is disconnected from electrical power and will not operate until it is repaired.

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NORMAL PROCEDURES (Continued)

- d. RH SWITCH - PULL AFT to UP position and hold. Make sure that the elevator trim wheel does not move. Make sure the red $\frac{P}{T}$ light on the face of the autopilot comes on. Release switch to center OFF position.
- e. LH and RH Switch - PUSH BOTH FORWARD (DN position) at same time and hold. Make sure that the elevator trim wheel moves in the nose-down direction. While holding both LH and RH Switches forward, PUSH and HOLD the A/P DISC/TRIM INT Switch, make sure that the elevator trim wheel does not move while the A/P DISC/TRIM INT Switch is held. Continue to hold the LH and RH Switches forward and RELEASE the A/P DISC/TRIM INT Switch. Make sure that the elevator trim wheel moves in nose-down direction. Release the LH and RH Switches to the center OFF position.

NOTE

Make sure that the elevator Trim Tab moves up with nose down elevator trim (LH & RH Switches held in the DN position) movement. If the elevator trim wheel moves while the A/P DISC/TRIM INT Switch is pushed and held, the Manual Electric Trim System has failed. The airplane may be flown if the AUTO PILOT Circuit Breaker is secured in the open position so that the autopilot is disconnected from electrical power and will not operate until it is repaired.

- f. LH and RH Switch - PUSH BOTH AFT (UP position) at same time and hold. Make sure that the elevator trim wheel moves in the nose-up direction. While holding both LH and RH Switches in the aft position, PUSH and HOLD the A/P DISC/TRIM INT Switch, make sure that the elevator trim wheel does not move while the A/P DISC/TRIM INT Switch is held. Continue to hold the LH and RH Switches aft and RELEASE the A/P DISC/TRIM INT Switch. Make sure that the elevator trim wheel moves in nose-up direction. Release the LH and RH Switches to the center OFF position.

(Continued Next Page)

NORMAL PROCEDURES (Continued)

NOTE

Make sure that the elevator Trim Tab moves down with nose up elevator trim (LH & RH Switches held in the UP position) movement. If the elevator trim wheel moves while the A/P DISC/TRIM INT Switch is pushed and held, the Manual Electric Trim System has failed. The airplane may be flown if the AUTO PILOT Circuit Breaker is secured in the open position so that the autopilot is disconnected from electrical power and will not operate until it is repaired.

4. BARO Setting flashing - SET current local barometer (atmospheric pressure) using knobs or push BARO button to accept the present setting.
5. AUTOPILOT - ENGAGE (push and hold AP button for 1 second).
6. FLIGHT CONTROLS - MOVE. Make sure that the autopilot can be overpowered in both pitch axis and roll axis.
7. A/P DISC/TRIM INT Switch - PUSH. Make sure that the autopilot disengages. Make sure that the disengagement warning sound is heard.

(Continued Next Page)

NORMAL PROCEDURES (Continued)

8. ELEVATOR TRIM WHEEL - SET pointer to takeoff position.

WARNING

- WHEN THE AUTOPILOT IS ENGAGED, THE PILOT-IN-COMMAND MUST CONTINUOUSLY MONITOR AND BE READY TO DISENGAGE THE AUTOPILOT AS NOTED ABOVE. DO THE EMERGENCY RECOVERY PROCEDURE IF AUTOPILOT OPERATION IS ERRATIC OR DOES NOT CORRECTLY CONTROL THE AIRPLANE.
- DURING AUTOPILOT OPERATIONS, THE PILOT-IN-COMMAND MUST SET THE AUTOPILOT VS (VERTICAL SPEED) RATE AND ENGINE POWER TO MAKE SURE THAT AIRSPEED STAYS BETWEEN 80 KIAS AND 160 KIAS AND DOES NOT EXCEED ANY OTHER AIRPLANE OPERATING LIMITATION.

NOTE

Autopilot tracking performance will not be as good as usual in turbulence.

9. AVIONICS BUS 2 Switch - OFF
10. MASTER Switch (BAT) - OFF

BEFORE TAKEOFF

1. A/P DISC/TRIM INT Switch - PUSH.

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NORMAL PROCEDURES (Continued)

2. BARO - SET.

CAUTION

CONTINUE TO SET BARO THROUGHOUT THE FLIGHT WHEN THE ALTIMETER SETTING CHANGES. NO FLASHING BARO SETTING WILL BE SHOWN TO REMIND THE PILOT.

3. ALTITUDE SELECT - SET target altitude using knobs.

CAUTION

THERE IS NO CONNECTION BETWEEN THE G1000 ALT SEL FEATURE AND THE KAP 140 ALTITUDE ALERT FUNCTION.

NOTE

1000 feet before the altitude selection, an electronic sound (tone) will be supplied for the pilot. Altitude changes of more than 200 feet from the altitude selection will cause a series of short tones to alert the pilot.

AFTER TAKEOFF

1. Elevator Trim - SET to trim airplane before engaging the autopilot.

NOTE

If the autopilot is engaged when the airplane is out-of-trim, the result can be an unwanted altitude change, TRIM FAIL annunciation and autopilot disengagement.

2. Airspeed and Rate-of-Climb - STABLE.

(Continued Next Page)

NORMAL PROCEDURES (Continued)

NOTE

Only engage the autopilot during wings-level stable flight. The autopilot will come on in ROL (wings leveler) and VS (Vertical Speed) modes. The VS mode initial rate-of-climb will be the vertical speed at the time the autopilot is engaged. Do not engage the autopilot when the airplane cannot hold the climb rate because of excessive pitch attitude, low airspeed, low engine power or high airplane weight. Do not engage the autopilot when the performance or operation of the autopilot or airplane will not obey the limitations.

3. AP Button - PUSH and HOLD. Make sure that ROL and VS are shown on the face of the autopilot. If no selection of other operating modes is made, the autopilot will operate in ROL and VS modes.

NOTE

When operating in ROL mode, turbulence may result in changes to airplane heading. ROL mode only works to keep the wings level.

4. Make HDG or NAV mode selection as applicable (optional).

WARNING

- **WHEN OPERATING THE AUTOPILOT IN VS MODE WITH POWER SET FOR CLIMB AND AIRSPEED AT OR NEAR BEST RATE-OF-CLIMB, CONTINUED OPERATION IN VS MODE CAN RESULT IN A STALL. IF NECESSARY, DISENGAGE THE AUTOPILOT AND RETURN THE AIRPLANE TO STABLE CLIMB BEFORE ENGAGING THE AUTOPILOT AGAIN.**

(Continued Next Page)

NORMAL PROCEDURES (Continued)

WARNING

- **WHEN OPERATING AT OR NEAR AUTOPILOT MAXIMUM AIRSPEED, REDUCE POWER TO CONTROL THE DESIRED RATE-OF-DESCENT AND KEEP THE AIRSPEED LESS THAN THE AUTOPILOT MAXIMUM LIMIT.**
- **DO NOT MOVE THE CONTROL WHEEL WHEN THE AUTOPILOT IS ENGAGED. IF THE PILOT TRIES TO FLY THE AIRPLANE MANUALLY WHEN THE AUTOPILOT IS ENGAGED OR TRIES TO MANUALLY "HELP" THE AUTOPILOT, THE AUTOPILOT WILL ADJUST PITCH TRIM TO OPPOSE CONTROL WHEEL MOVEMENT AND CAUSE THE AIRPLANE TO GO OUT OF TRIM. THE OUT-OF-TRIM CONDITION WILL CAUSE LARGE ELEVATOR CONTROL FORCES WHEN THE AUTOPILOT IS DISENGAGED.**

CLIMB OR DESCENT

1. **BARO - SET current altimeter.**
2. **VS (Vertical Speed) Mode:**
UP or DN Buttons - **PUSH** button to set airplane vertical speed in 100 feet per minute (ft/min) increments. **PUSH** and **HOLD** the button for the KAP 140 to increase the vertical speed at approximately 300 ft/min/sec to the desired value, then **RELEASE**. The rate will be set at the time of button release.

CAUTION

THE VERTICAL SPEED MODE HAS SYSTEM LIMITS OF \pm 2000 FEET PER MINUTE. OPERATING THE MODEL 182T NEAR THESE LIMITS IS NOT RECOMMENDED

(Continued Next Page)

NORMAL PROCEDURES (Continued)

3. POWER - SET as applicable for vertical speed selection.

NOTE

The autopilot can hold a set vertical speed only if engine power and airplane weight are correct for the conditions. If the vertical speed set for the autopilot is more than the airplane can supply and airspeed decreases sufficiently, the airplane can be made to stall. Make sure that the vertical speed set for the autopilot results in airplane performance that stays in the operating limitations of both the autopilot and the airplane.

ALTITUDE PRESELECT MODE (ALTITUDE LOCK ON).

1. ALTITUDE SELECT - SET target altitude using knob on KAP 140.
2. ALTITUDE ARM - PUSH the ARM button to set the Altitude Lock On feature to the ON position (if needed). ALT ARM will show on the face of the autopilot when Altitude Lock On is set to the ON condition.

NOTE

- Minor differences between the autopilot altitude selection and the airplane altitude indication may be seen after altitude lock on. This small difference is generally due to autopilot system tolerances.
- Use of Altitude Preselect (Lock On) mode is not recommended for lock on at minimum descent altitude (MDA) during non-precision instrument approach procedures due to the possibility of altitude overshoot. Glideslope (GS) lock on during an ILS approach will prevent lock on to a preselect altitude selection.

(Continued Next Page)

NORMAL PROCEDURES (Continued)

- Use Vertical Speed mode as described previously in CLIMB or DESCENT for altitude change.

ALTITUDE HOLD

1. ALT Button - PUSH (Make sure that the ALT annunciator on the front of the autopilot comes on). The autopilot will stay at the set altitude.

NOTE

- If the ALT button is pushed while the airplane is climbing or descending, the airplane may go through the altitude selection by approximately 10% of the vertical rate (example: 500 ft/min = approximately 50 feet), but will quickly lock on and correct to the target altitude.
- In Advisory Circular AC00-24B "Thunderstorms", the FAA recommends the use of "Pitch Attitude Hold" for autopilot operation in severe turbulence. The KAP 140 does not use pitch reference, so it is recommended that the autopilot be disengaged and the airplane flown manually in severe turbulence.

CHANGING ALTITUDE

If the autopilot is engaged in ALT mode (Altitude Hold):

1. For small altitude changes (less than 100 feet), push the UP or DN button momentarily to program an increase or decrease to the altitude selection, as applicable, of 20 feet each time the button is pushed. This lets the autopilot make small corrections to the altitude selection.
2. For larger altitude changes, push and HOLD the UP or DN button, as applicable, to start a 500 ft/min altitude change. Release the button at the altitude the autopilot is to hold.

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NORMAL PROCEDURES (Continued)

If the autopilot is engaged in VS mode (Vertical Speed):

1. UP or DN Button - PUSH momentarily for 100 ft/min vertical speed increments or PUSH and HOLD for 300 ft/min/sec vertical rate change and RELEASE at the rate desired. The autopilot will climb or descend at rate selection.

NOTE

- The autopilot can hold a Vertical Speed selection only if engine power and airplane weight are correct for the conditions. If the vertical speed set for the autopilot is more than the airplane can supply and airspeed decreases sufficiently, the airplane can be made to stall. Make sure that the vertical speed set for the autopilot results in airplane performance that stays in the operating limitations of both the autopilot and the airplane.
- When operating at or near the best-rate-of-climb airspeed, with the engine set to climb power or when in Vertical Speed mode, it can be easy to slow to airspeeds where any additional reduction in airspeed will result reduced rate-of-climb. Hold sufficient airspeed during Vertical Speed mode operation to avoid a stall.

HEADING (HDG) MODE OPERATION

1. HDG knob - SET the heading pointer ("bug") on the G1000 HSI to the correct magnetic heading using the HDG knob on the PFD.
2. HDG Button - PUSH to engage HDG mode. Make sure that the HDG annunciator is shown on the face of the autopilot. The autopilot will turn the airplane at approximately standard rate (3°/sec) to lock on to the heading selection.

(Continued Next Page)

NORMAL PROCEDURES (Continued)

NAVIGATION (NAV) MODE OPERATION

The KAP 140 Autopilot will operate in NAV mode using GPS or VHF (VOR or LOC) navigation signal inputs. The G1000 HSI shows the GPS, NAV 1 or NAV 2 navigation signal being supplied to the autopilot. The navigation source selection shown on the HSI is made using the CDI softkey.

If using NAV 1 or NAV 2, make sure that the radio is adjusted to the correct frequency and is the active frequency. Make sure that NAV 1 or NAV 2, as applicable, is shown on the HSI.

WARNING

WHEN THE KAP 140 AUTOPILOT IS ENGAGED IN NAV, APR OR REV OPERATING MODE, IF THE HSI NAVIGATION SOURCE IS CHANGED FROM GPS TO NAV1, AUTOMATICALLY OR MANUALLY (USING THE CDI SOFTKEY), OR MANUALLY FROM NAV2 TO GPS, THE CHANGE WILL INTERRUPT THE SIGNAL TO THE AUTOPILOT AND CAUSE THE AUTOPILOT TO GO BACK TO ROL MODE OPERATION. NO WARNING CHIME OR PFD ANNUNCIATION WILL BE SUPPLIED. THE PREVIOUSLY-SELECTED MODE SYMBOL SHOWN ON THE FACE OF THE AUTOPILOT WILL FLASH TO SHOW THE CHANGE TO ROL MODE OPERATION. IN ROL MODE, THE AUTOPILOT WILL ONLY KEEP THE WINGS LEVEL AND WILL NOT CORRECT THE AIRPLANE HEADING OR COURSE. SET THE HDG BUG TO THE CORRECT HEADING AND SELECT THE CORRECT NAVIGATION SOURCE ON THE HSI USING THE CDI SOFTKEY BEFORE ENGAGING THE AUTOPILOT IN ANY OTHER OPERATING MODE.

(Continued Next Page)

NORMAL PROCEDURES (Continued)

CAUTION

THE G1000 HSI SHOWS A COURSE DEVIATION INDICATOR FOR THE GPS, NAV 1 OR NAV 2 NAVIGATION SOURCE SELECTION. THE G1000 HSI DOES NOT PROVIDE A WARNING "FLAG" WHEN A VALID NAVIGATION SIGNAL IS NOT BEING SUPPLIED TO THE INDICATOR. WHEN A VALID NAVIGATION SIGNAL IS NOT BEING SUPPLIED, THE COURSE DEVIATION INDICATION BAR (D-BAR) PART OF THE INDICATOR IS NOT SHOWN ON THE HSI COMPASS CARD. THE MISSING D-BAR IS CONSIDERED TO BE THE WARNING FLAG.

NOTE

When navigating using GPS, make sure that the GPS 2 unit is available on the G1000 MFD AUX - GPS STATUS page. No annunciation is provided for GPS 2 malfunction.

NAV COURSE CAPTURE (LOCK ON)

1. CRS Pointer - SET the HSI course pointer to the desired magnetic course using the CRS knob on the PFD.

NOTE

If operating GPS-Direct (Direct-to) or on an active GPS Flight Plan, the course pointer will be automatically set by the G1000.

2. HDG bug - SET the HSI heading bug to the desired course intercept heading.
3. HDG Button - PUSH to engage KAP 140 in heading mode. Make sure that the HDG annunciation is shown on the face of the autopilot.

(Continued Next Page)

NORMAL PROCEDURES (Continued)

4. NAV Button - PUSH to arm the autopilot NAV lock on function. Make sure that the autopilot is correctly engaged from the annunciation on the autopilot:
 - a. If the HSI D-Bar is less than 2 to 3 dots from center, the autopilot will go to NAV mode. The NAV annunciator will be shown on the face of the autopilot.
 - b. If the HSI D-Bar is more than 2 to 3 dots from center, the NAVARM annunciator will be shown on the face of the autopilot. When the computed intercept point is reached, the ARM annunciator will go off and lock on (capture and track) will begin automatically. The NAV annunciator will stay on the face of the autopilot.

GPS NAV AND ROLL STEERING

The KAP 140 Autopilot has DC (analog) Roll Steering capability. Roll Steering enables the Flight Guidance System (in this case, the G1000 GPS navigation computer) to control the autopilot through automatic course changes at flight plan waypoints and to lock on to the course to the next waypoint.

The GPS navigation computer uses ground speed, track and turn-rate data to calculate the bank angle required for waypoint course changes (the KAP 140 limits bank angle in the 182T to approximately 18°). The GPS Roll Steering signal will make the autopilot turn the airplane and lock on course to the next waypoint without flying directly over the current waypoint, except for designated fly-over waypoints. The flight path is approximately tangent to the inbound and outbound flight plan legs.

(Continued Next Page)

NORMAL PROCEDURES (Continued)

The distance from the waypoint to start the turn will vary with groundspeed, degrees of heading change, etc., but will usually be approximately 0.5 nautical mile from the waypoint. Flight plan sequencing to the next waypoint will occur at approximately the midpoint of the turn.

Roll Steering works only if all the following conditions are true:

1. GPS must be the navigation source shown on the G1000 HSI.
2. The GPS navigation computer must be executing an active flight plan.
3. The KAP 140 must be engaged in NAV or APR mode.
4. The GPS must not be operating in OBS mode (PFD).

HOLDING PATTERNS AND PROCEDURE TURNS:

When operating IFR on an active GPS flight plan, enroute or transitioning to the terminal environment, a holding pattern or course reversal maneuver may be necessary. The G1000 GPS does not provide course guidance through these maneuvers. The pilot must set both the G1000 and the KAP 140 to the correct operating mode and provide course guidance.

The Holding Pattern is usually shown on the MFD Navigation Map (for a published holding fix), but it is not included as a leg of the flight plan. GPS flight plan execution must be paused by entering OBS mode and using autopilot HDG or NAV modes, as applicable, to perform the maneuver.

(Continued Next Page)

NORMAL PROCEDURES (Continued)

The Procedure Turn is included as a leg in the flight plan along with the instrument approach procedure selection. Course guidance is supplied through the turn to outbound course lock on, but is discontinued after approximately 1 minute. G1000 OBS mode is not required but the KAP 140 must be set to HDG mode and the HDG bug used to provide guidance through the course reversal. When established inbound, change from HDG to APR mode for lock on to the final approach course.

For a KAP 140 that has been operating in NAV mode on an active GPS flight plan:

On arrival at the Holding Fix, set the KAP 140 in HDG mode and provide course guidance by manually adjusting the G1000 HDG bug to command turns and heading, as applicable. Pause G1000 flight plan execution during the holding pattern by using the OBS mode selection on the PFD. Set the correct inbound holding course on the HSI course pointer and NAV mode may be used for the KAP 140 on the inbound leg of the holding pattern for course guidance, but HDG mode must be used for the remainder of the holding pattern maneuver. At the end of the holding procedure, exit OBS mode to start the flight plan executing again and set NAV mode on the KAP 140 to lock on to the course. See the Garmin G1000 Cockpit Reference Guide for further information.

Arriving at the IAF (usual starting point for the Procedure Turn maneuver), the G1000 will command the autopilot to turn to the outbound course and will provide course guidance for a short time (approximately 1 minute). Unlike the Holding Pattern, the G1000 includes the Procedure Turn as a leg in the flight plan, so no OBS mode change is needed. Set the HDG bug to the Procedure Turn outbound leg heading and push the HDG button on the KAP 140 to start the turn. After the correct time flying outbound, adjust the HDG bug to make the turn to the procedure turn inbound heading. When established on the procedure turn inbound, push the APR button on the KAP 140 to lock on to the final approach course. See the Garmin G1000 Cockpit Reference Guide for further information.

(Continued Next Page)

NORMAL PROCEDURES (Continued)

APPROACH (APR) MODE OPERATION

APR mode gives more precise tracking during instrument approach procedures. It engages automatic lock on to the final approach course on most approaches and automatic capture of the glideslope on ILS approaches.

The G1000 System will automatically change from GPS to ILS at final approach course lock on (only when the procedure has been activated in the flight plan and the ILS CDI Capture feature is enabled). Automatic change to VHF navigation is only provided for ILS approaches.

WARNING

WHEN THE KAP 140 AUTOPILOT IS ENGAGED IN NAV, APR OR REV OPERATING MODE, IF THE HSI NAVIGATION SOURCE IS CHANGED FROM GPS TO NAV1, AUTOMATICALLY OR MANUALLY (USING THE CDI SOFTKEY), OR MANUALLY FROM NAV2 TO GPS, THE CHANGE WILL INTERRUPT THE SIGNAL TO THE AUTOPILOT AND CAUSE THE AUTOPILOT TO GO BACK TO ROL MODE OPERATION. NO WARNING CHIME OR PFD ANNUNCIATION WILL BE SUPPLIED. THE PREVIOUSLY-SELECTED MODE SYMBOL SHOWN ON THE FACE OF THE AUTOPILOT WILL FLASH TO SHOW THE CHANGE TO ROL MODE OPERATION. IN ROL MODE, THE AUTOPILOT WILL ONLY KEEP THE WINGS LEVEL AND WILL NOT CORRECT THE AIRPLANE HEADING OR COURSE. SET THE HDG BUG TO THE CORRECT HEADING AND SELECT THE CORRECT NAVIGATION SOURCE ON THE HSI USING THE CDI SOFTKEY BEFORE ENGAGING THE AUTOPILOT IN ANY OTHER OPERATING MODE.

(Continued Next Page)

NORMAL PROCEDURES (Continued)

NOTE

Changing from GPS to ILS includes tuning the NAV 1 active frequency to the correct LOC frequency, slewing the course pointer to the applicable final approach course magnetic heading and changing the CDI to NAV 1 while keeping the autopilot in APR mode. The G1000 will do this automatically if ILS CDI Capture is set to AUTO

Roll Steering will only operate on instrument approach procedures selected from a current GPS aeronautical database when:

1. The autopilot is engaged in NAV or APR mode.
2. GPS is shown as the navigation source on the HSI.

NOTE

- Make sure that the applicable GPS mode is set during each portion of the approach procedure selection symbol (NAV, APR or REV) flashing on the face of the autopilot.
- If either the GPS or VHF navigation signal, as applicable, fails when the autopilot is engaged in NAV, APR or REV mode, the autopilot will change back to ROL mode operation. ROL mode operation is shown by the previous mode

APPROACH (APR) CAPTURE (LOCK ON)

1. BARO - SET current local barometric pressure (altimeter).
2. CRS Pointer - SET the HSI course pointer to the desired magnetic course using the CRS knob on the PFD.

NOTE

If operating GPS-Direct (Direct-to) or on an active GPS Flight Plan, the course pointer will be automatically set by the G1000.

(Continued Next Page)

NORMAL PROCEDURES (Continued)

3. HDG bug - SET the HSI heading bug to the desired course intercept heading.
4. HDG Button - PUSH to engage autopilot HDG mode. Make sure that HDG is shown on the face of the autopilot
5. APR Button - PUSH to arm the autopilot APR lock on function. Make sure that the autopilot is correctly engaged from the annunciation on the autopilot:
 - a. If the HSI D-Bar is less than 2 to 3 dots from center, the autopilot will go to APR mode. The APR annunciator will be shown on the face of the autopilot.
 - b. If the HSI D-Bar is more than 2 to 3 dots from center, the APR_{ARM} annunciator will be shown on the face of the autopilot. When the computed intercept point is reached, the ARM annunciator will go off and lock on (capture and track) will begin automatically. The APR annunciator will stay on the face of the autopilot.

(Continued Next Page)

NORMAL PROCEDURES (Continued)

WARNING

WHEN THE KAP 140 AUTOPILOT IS ENGAGED IN NAV, APR OR REV OPERATING MODE, IF THE HSI NAVIGATION SOURCE IS CHANGED FROM GPS TO NAV1, AUTOMATICALLY OR MANUALLY (USING THE CDI SOFTKEY), OR MANUALLY FROM NAV2 TO GPS, THE CHANGE WILL INTERRUPT THE SIGNAL TO THE AUTOPILOT AND CAUSE THE AUTOPILOT TO GO BACK TO ROL MODE OPERATION. NO WARNING CHIME OR PFD ANNUNCIATION WILL BE SUPPLIED. THE PREVIOUSLY-SELECTED MODE SYMBOL SHOWN ON THE FACE OF THE AUTOPILOT WILL FLASH TO SHOW THE CHANGE TO ROL MODE OPERATION. IN ROL MODE, THE AUTOPILOT WILL ONLY KEEP THE WINGS LEVEL AND WILL NOT CORRECT THE AIRPLANE HEADING OR COURSE. SET THE HDG BUG TO THE CORRECT HEADING AND SELECT THE CORRECT NAVIGATION SOURCE ON THE HSI USING THE CDI SOFTKEY BEFORE ENGAGING THE AUTOPILOT IN ANY OTHER OPERATING MODE.

6. Airspeed - HOLD 100 KIAS minimum (recommended) during approaches when the autopilot is engaged.

GLIDESLOPE ENGAGEMENT & LOCK-ON

1. APR Mode - ENGAGED. Make sure that GSARM is shown on the face of the autopilot.

NOTE

The glideslope cannot lock-on when the autopilot is engaged in NAV or REV modes. Engaged in APR mode, with NAV 1 or NAV 2 set to the correct ILS frequency, and shown as the related HSI navigation source, the glideslope becomes armed at localizer lock-on.

(Continued Next Page)

NORMAL PROCEDURES (Continued)

2. Glideslope Indicator - CENTERED. Make sure that the ARM annunciator goes out and the GS annunciator stays on.

NOTE

The KAP 140 can lock on the glideslope from above or below. Capturing the glideslope from above is not recommended.

3. Airspeed - HOLD 100 KIAS minimum (recommended) during approaches when the autopilot is engaged.

BACK COURSE (REV) MODE OPERATION

This mode provides reverse sensing for the autopilot navigation course on Back Course-type Localizer approaches.

1. BARO - SET current local barometric pressure (altimeter).
2. CRS Pointer - SET the HSI course pointer to the ILS front course inbound heading using the CRS knob on the PFD.
3. HDG bug - SET the HSI heading bug to the desired course intercept heading.
4. HDG Button - PUSH to engage HDG mode. Make sure that HDG is shown on the face of the autopilot.
5. REV Button - PUSH to arm the autopilot REV lock-on function. Make sure that the autopilot is correctly engaged from the annunciation on the autopilot:
 - a. If the HSI D-Bar is less than 2 to 3 dots from center, the autopilot will go to REV mode. The REV annunciator will be shown on the face of the autopilot.
 - b. If the HSI D-Bar is more than 2 to 3 dots from center, the REV_{ARM} annunciator will be shown on the face of the autopilot. When the computed intercept point is reached, the ARM annunciator will go off and lock on (capture and track) will begin automatically. The REV annunciator will stay on.

(Continued Next Page)

NORMAL PROCEDURES (Continued)

6. Airspeed - HOLD 100 KIAS minimum (recommended) during approaches when the autopilot is engaged.

MISSED APPROACH

1. A/P DISC/TRIM INT Switch - PUSH to disengage the autopilot.
2. Missed Approach Procedure - EXECUTE.
3. If autopilot is to be engaged:
 - a. Elevator Trim - SET.
 - b. Airspeed and Rate-of-Climb - STABILIZED.

WARNING

THE G1000 WILL ENTER SUSP MODE (STOP THE FLIGHT PLAN) AT THE MISSED APPROACH POINT (MAP) AND WILL NOT SUPPLY A NAVIGATION SIGNAL TO THE KAP 140. IF THE G1000 IS TO BE USED FOR COURSE GUIDANCE TO THE MISSED APPROACH HOLDING POINT (MAHP), PUSH THE SUSP SOFTKEY TO START THE FLIGHT PLAN AND NAVIGATION SIGNAL AGAIN BEFORE ENGAGING THE KAP 140.

NOTE

- Only engage the autopilot during wings-level stable flight. The autopilot will come on in ROL (wings leveler) and VS (Vertical Speed) modes. The VS mode initial rate-of-climb will be the vertical speed at the time the autopilot is engaged. Do not engage the autopilot when the airplane cannot hold the climb rate because of excessive pitch attitude, low airspeed, low engine power or high airplane weight. Do not engage the autopilot when the performance or operation of the autopilot or airplane would not obey the limitations.

(Continued Next Page)

NORMAL PROCEDURES (Continued)

- The autopilot can hold a Vertical Speed selection only if engine power and airplane weight are correct for the conditions. If the vertical speed set for the autopilot is more than the airplane can supply and airspeed decreases sufficiently, the airplane can be made to stall. Make sure that the vertical speed set for the autopilot results in airplane performance that stays in the operating limitations of both the autopilot and the airplane.
 - When operating at or near the best-rate-of-climb airspeed, with the engine set to climb power or when in Vertical Speed mode, it can be easy to slow to airspeeds where any additional reduction in airspeed will result reduced rate-of-climb. Hold sufficient airspeed during Vertical Speed mode operation to avoid a stall.
- c. AP Button - PUSH and HOLD to engage the autopilot. Make sure that ROL and VS are shown on the face of the autopilot. If no selection of other operating modes is made, the autopilot will operate in ROL and VS modes.

NOTE

When operating in ROL mode, turbulence may result in changes to airplane heading. ROL mode only works to keep the wings level. When tracking the ILS course outbound on the missed approach procedure, use NAV mode to prevent unwanted GS coupling.

BEFORE LANDING

1. A/P DISC/TRIM INT Switch - PUSH to disengage the autopilot.

PERFORMANCE

There is no change in airplane performance when the KAP 140 Autopilot is installed. See Section 2 for Limitations that can have an effect on airplane performance.

**Pilot's Operating Handbook and
FAA Approved Airplane Flight Manual**

CESSNA MODEL 182T

NAV III AIRPLANES

SUPPLEMENT 4

**L3 COMMUNICATIONS
WX-500 STORMSCOPE®**

SERIAL NO. _____

REGISTRATION NO. _____

This supplement must be inserted into Section 9 of the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual when the L3 Communications WX-500 Stormscope® is installed.

APPROVED BY

FAA APPROVED UNDER FAR 21 SUBPART J
The Cessna Aircraft Co.
Delegation Option Authorization DOA-100129-CE

Michael D. Hickey

Executive Engineer
JD

DATE OF APPROVAL 03 JUNE 2004



Member of GAMA

3 JUNE 2004

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WICHITA, KANSAS, USA

182TPHAUS-S4-00

U.S. S4-1

SUPPLEMENT 4

L3 COMMUNICATIONS WX-500 STORMSCOPE®

Use the Log of Effective Pages to determine the current status of this supplement.

Pages affected by the current revision are indicated by an asterisk (*) preceding the page number.

Supplement Status	Date
Original Issue	3 June 2004

LOG OF EFFECTIVE PAGES

Page Number	Page Status	Revision Number
S4-1 thru S4-7/S4-8	Original	0

SERVICE BULLETIN CONFIGURATION LIST

The following is a list of Service Bulletins that are applicable to the operation of the airplane, and have been incorporated into this supplement. This list contains only those Service Bulletins that are currently active.

<u>Number</u>	<u>Title</u>	<u>Airplane Serial</u> <u>Effectivity</u>	<u>Revision</u> <u>Incorporated</u>	<u>Incorporated</u> <u>in Airplane</u>
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L3 COMMUNICATIONS WX-500 STORMSCOPE®

GENERAL

The L3 Communications WX-500 Stormscope® Series II Weather Mapping Sensor is a "black-box" type weather sensor/processor that uses an external controller/display unit for control input and output display functions. In this aircraft, the WX-500 is integrated with the Garmin G1000 Integrated Cockpit System Multifunction Display (MFD) for the control and display of all Stormscope® functions. See the G1000 Cockpit Reference Guide for more information regarding operation of the G1000 Multifunction Display.

CAUTION

THE L3 Communications WX-500 STORMSCOPE®
IS APPROVED FOR USE ONLY IN AVOIDING
HAZARDOUS WEATHER (THUNDERSTORMS);
USE OF THE WX-500 TO PENETRATE
HAZARDOUS WEATHER IS PROHIBITED.

The L3 Communications WX-500 Stormscope® sensor detects electrical discharge (lightning) activity through a dedicated antenna mounted on the bottom of the airplane. The Stormscope® processor continuously acquires electrical discharge data and performs self-test functions to ensure that the data presented to the pilot is always current and reliable when displayed. The system is heading-stabilized, so that the proper orientation of displayed data relative to the airplane position during maneuvering is maintained.

The Stormscope® maps electrical discharge activity at ranges up to 200 nautical miles (nm) and displays that activity map to the flight crew, either centered on the airplane position (360° view) or ahead of the airplane position through 60° on either side of the airplane heading (120° view).

(Continued Next Page)

GENERAL (Continued)

No dedicated external power control for the WX-500 Stormscope® is provided. The WX-500 is powered through the AVIONICS BUS 1 switch and is current-protected by the STORM SCOPE circuit breaker. At startup, the WX-500 will perform self-tests and provide error messages, if necessary, through the G1000 Primary Flight Display (PFD) ALERTS window and MFD MAP-WEATHER MAP page. See the WX-500 User's Guide for recommended actions if an error message appears.

WX-500 weather data can be displayed on the MFD MAP-WEATHER MAP page or may be displayed (overlaid) on the MAP-NAVIGATION MAP page and/or the PFD INSET MAP display. From the MFD MAP-WEATHER MAP page, the user may select the desired view (360° or 120°) by pressing the VIEW softkey. The range (25 to 200 nautical miles) may be set by rotating the RNG control knob on the MFD bezel. The user may also choose between Strike or Cell display modes using the MODE softkey. See the WX-500 User's Guide for information regarding Strike and Cell mode display differences.

(Continued Next Page)

GENERAL (Continued)

To overlay weather data on the MFD MAP-NAVIGATION MAP page, select the MAP softkey, then select the LTNG softkey and finally select the BACK softkey to return to the map. Availability will be shown by a lightning bolt icon in the lower RH corner of the map page (grouped with icons for TRAFFIC, TOPO and TERRAIN, if selected ON). Lightning strikes will be depicted on the Map Mode display as yellow lightning bolts. The Stormscope® display mode (Strike or Cell) will be as selected on the MAP-WEATHER MAP page. The View setting will be 120° ARC and the Range setting will match the NAVIGATION MAP range selection to 200 nm.

NOTE

In evaluating lightning strike data, it may be useful to clear the accumulated strike points on the display from time to time and then monitoring the reappearance of strike activity on the cleared display.

OPERATING LIMITATIONS

The L3 Communications WX-500 Stormscope® is approved only as an aid to hazardous weather (thunderstorm) avoidance; use for hazardous weather penetration is prohibited.

The Honeywell Bendix/King® KMD 550 Multi-Function Display Pilot's Guide must be available to the flight crew when operating the WX-500 Stormscope®.

The WX-500 Stormscope® Series II Weather Mapping Sensor User's Guide must be available to the flight crew when operating the WX-500 Stormscope®.

EMERGENCY PROCEDURES

There is no change to the airplane emergency procedures when the L3 Communications WX-500 Stormscope® is installed.

NORMAL PROCEDURES

Static discharge from the static wicks on the tail may cause false indications of lightning strikes at the 6 o'clock position with the 200 nm range selected.

Refer to the WX-500 User's Guide under "Error Message Recommended Actions" for discontinuing use of the Stormscope® if a Stormscope® error message appears.

PERFORMANCE

There is no change to the airplane performance when the L3 Communications WX-500 Stormscope® is installed.

**Pilot's Operating Handbook and
FAA Approved Airplane Flight Manual**

**CESSNA MODEL 182T
NAV III AVIONICS OPTION**

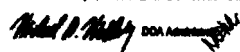
**SUPPLEMENT 5
BRAZILIAN CERTIFIED AIRPLANES**

SERIAL NO. _____
REGISTRATION NO. _____

This supplement must be inserted into Section 9 of the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual when used for Brazilian Certified Airplanes and is approved by the U.S. Federal Aviation Administration (FAA) on behalf of the Brazilian Centro Tecnico Aeroespacial (CTA).

APPROVED BY

FAA APPROVED UNDER 14 CFR PART 21 SUBPART J
Cessna Aircraft Co.
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 DOA Administrator



Member of GAMA

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10-28-04

28 OCTOBER 2004

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30 JANUARY 2006

SUPPLEMENT 5

BRAZILIAN CERTIFIED AIRPLANES

Use the Log of Effective Pages to determine the current status of this supplement.

Pages affected by the current revision are indicated by an asterisk (*) preceding the page number.

<u>Supplement Status</u>	<u>Date</u>
Original Issue	28 October 2004
Revision 1	30 January 2006

LOG OF EFFECTIVE PAGES

Page Number	Page Status	Revision Number
* S5-1 thru S5-2	Revised	1
S5-3 thru S5-4	Original	0
* S5-5/S5-6	Revised	1

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Ted E. Hoff Administrator *veg*

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30 JANUARY 2006

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SERVICE BULLETIN CONFIGURATION LIST

The following is a list of Service Bulletins that are applicable to the operation of the airplane, and have been incorporated into this supplement. This list contains only those Service Bulletins that are currently active.

<u>Number</u>	<u>Title</u>	<u>Airplane Serial</u>	<u>Revision</u>	<u>Incorporated</u>
		<u>Effectivity</u>	<u>Incorporated</u>	<u>in Airplane</u>

GENERAL

This supplement is required for Brazilian operation of Cessna Model 182T With Nav III Avionics option.

OPERATING LIMITATIONS

There is no change to the airplane operating limitations when used for Brazilian operation.

EMERGENCY PROCEDURES

There is no change to the airplane emergency procedures when used for Brazilian operation.

NORMAL PROCEDURES

There is no change to the airplane normal procedures when used for Brazilian operation.

PERFORMANCE

There is no change to the airplane performance when used for Brazilian operation.

LOG OF CTA APPROVED SUPPLEMENTS

The following list contains CTA accepted supplements. Refer to Log of Approved Supplements in the basic Pilot's Operating Handbook and FAA Approved Airplane Flight Manual for revision status.

Supplement Number	Name	Equipment Installed
1	Pointer Model 3000-11 Or Model 4000-11 Emergency Locator Transmitter (ELT)	_____
2	Reserved	
3	Bendix/King KAP 140 2 Axis Autopilot	_____
4	L3 Communications WX-500 Stormscope	_____
5	Brazilian Certified Airplanes	_____
6	Reserved	
7	Reserved	
8	Bendix/King KR 87 Automatic Direction Finder (ADF)	_____
9	Reserved	

**Pilot's Operating Handbook and
FAA Approved Airplane Flight Manual**

**CESSNA MODEL 182T
NAV III AVIONICS OPTION**

**SUPPLEMENT 7
ARTEX C406-N
EMERGENCY LOCATOR TRANSMITTER (ELT)**

SERIAL NO. _____
REGISTRATION NO. _____

This supplement must be inserted into Section 9 of the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual when the Artex C406-N Emergency Locator Transmitter (ELT) is installed.

APPROVED BY

FAA APPROVED UNDER 14 CFR PART 21 SUBPART J
Cessna Aircraft Co.
Delegation Order Authorization DCA-25394-CE

John E. [Signature] Administrator



Member of GAMA

DATE OF APPROVAL 14 FEBRUARY 2006

14 FEBRUARY 2006

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S7-1

SUPPLEMENT 7

**ARTEX C406-N EMERGENCY LOCATOR TRANSMITTER
(ELT)**

Use the Log of Effective Pages to determine the current status of this supplement.

Pages affected by the current revision are indicated by an asterisk (*) preceding the page number.

<u>Supplement Status</u>	<u>Date</u>
Original Issue	14 February 2006

LOG OF EFFECTIVE PAGES

Page Number	Page Status	Revision Number
S7-1 thru S7-6	Original	0

S7-2 U.S.

FAA APPROVED
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SERVICE BULLETIN CONFIGURATION LIST

The following is a list of Service Bulletins that are applicable to the operation of the airplane, and have been incorporated into this supplement. This list contains only those Service Bulletins that are currently active.

<u>Number</u>	<u>Title</u>	<u>Airplane Serial</u> <u>Effectivity</u>	<u>Revision</u> <u>Incorporated</u>	<u>Incorporated</u> <u>in Airplane</u>
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ARTEX C406-N EMERGENCY LOCATOR TRANSMITTER (ELT)

GENERAL

The Artex C406-N Emergency Locator Transmitter (ELT) installation uses a solid-state 3-frequency transmitter powered by an internal lithium battery, with an instrument panel-mounted ELT control switch assembly that includes a red warning light and an external antenna mounted on the top of the tailcone. The ELT control switch assembly is installed along the top right side of the instrument panel and controls ELT operating modes from the flight crew station. When the ELT control switch is set to the ARM position, the transmitter is energized only when the internal "G-switch" senses longitudinal inertia forces per TSO-C91a/TSO-C126. When the ELT control switch is set to the ON position, the transmitter is immediately energized.

The C406-N transmitter unit is located in the tailcone along the right side behind the baggage compartment aft panel. An ON/OFF switch is built into the front case of the C406-N transmitter unit.

The ELT installation uses two different warnings to tell the pilot when the ELT is energized. The aural warning is an unusual sound that is easily heard by the pilot. The visual warning is a flashing red light directly above the ELT control switch that shows the pilot that the ELT has been activated.

The C406-N transmits the standard 3-scan per second signal on the international VHF and UHF distress frequencies of 121.5 MHz and 243.0 MHz. General aviation, commercial aircraft and government agencies monitor 121.5 MHz, while 243.0 MHz is monitored by the military. When energized, the C406-N will continue to transmit on 121.5 MHz and 243.0 MHz until the unit has exhausted the lithium battery, which will take at least 72 hours.

When the C406-N is energized, digital data will also be transmitted at 50 second intervals on 406.028 MHz for detection by the Cospas/Sarsat satellite system. The data includes the Airplane ID and GPS position coordinates. The coordinates can locate the transmitter to within 100 meters. When energized, the 406.028 MHz transmitter will operate for 24 hours, and then de-energize automatically.

OPERATING LIMITATIONS

There are no additional airplane operating limitations when the Artex C406-N ELT is installed.

The airplane owner or operator must register the C406-N ELT with the applicable civil aviation authority before use to make sure that the identification code transmitted by the ELT is in the Copas/Sarsat database. Refer to www.copas-sarsat.com for registration information.

Refer to 14 CFR 91.207 for ELT inspection requirements. The C406-N must be inspected and tested by an approved technician using the correct test equipment with the ELT either connected to a dummy load antenna or in a radio frequency shielded enclosure. Do not use the ON position of the ELT control switch to check transmitter output.

EMERGENCY PROCEDURES

If a forced landing is necessary, set the ELT control switch to the ON position before landing. This is very important in remote or mountainous terrain. The red warning light above the ELT control switch will flash and the aural warning will be heard.

After a landing when search and rescue aid is needed, use the ELT as follows:

1. MAKE SURE THE ELT IS ENERGIZED:
 - a. If the red warning light above the ELT control switch is not flashing, set the ELT control switch to the ON position.
 - b. Listen for the aural warning. If the COM radio(s) operate and can be energized safely (no threat of fire or explosion), energize a COM radio and set the frequency to 121.5 MHz. The ELT tone should be heard on the COM radio if the ELT is working correctly. When done, de-energize the COM radio(s) to conserve the airplane battery power.
 - c. Make sure that nothing is touching or blocking the ELT antenna.
2. AFTER RESCUE - Set the ELT control switch to the ARM position to de-energize the ELT. If the ELT control switch does not function, set the switch on the C406-N (in the tailcone) to the OFF position.

NORMAL PROCEDURES

When operating in a remote area or over hazardous terrain, it is recommended that the ELT be inspected by an approved technician more frequently than required by 14 CFR 91.207.

NORMAL OPERATION

1. Check that the ELT control switch (on the right instrument panel) is set to the ARM position.

Normal operation of the C406-N from the flight crew station is only to de-energize and arm the ELT after it has been accidentally energized (no emergency).

The ELT can be energized by a lightning strike or hard landing. If the red light above the ELT control switch is flashing and the aural warning is heard, the ELT is energized. Check for the emergency signal on a COM radio set to 121.5 MHz. To stop the transmissions, set the ELT control switch to the ON position momentarily and then set to the ARM position. Tell the nearest Air Traffic Control facility about the accidental transmissions as soon as possible to hold search and rescue work to a minimum.

PERFORMANCE

There is no change to the airplane performance when the Artex C406-N ELT is installed.

**Pilot's Operating Handbook and
FAA Approved Airplane Flight Manual**

CESSNA MODEL 182T

NAV III AVIONICS OPTION

SUPPLEMENT 8

**BENDIX/KING KR87
AUTOMATIC DIRECTION FINDER (ADF)**

SERIAL NO. _____
REGISTRATION NO. _____

This supplement must be inserted into Section 9 of the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual when the Bendix/King KR 87 Automatic Direction Finder (ADF) is installed.

APPROVED BY

FAA APPROVED UNDER 14 CFR PART 21 SUBPART J
Cessna Aircraft Co.
Delegation Option Authorization DCA-428894-CE

Thomas E. Hoff Administrator *Veg*



Member of GAMA

DATE OF APPROVAL 22 DECEMBER 2005

22 DECEMBER 2005

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WICHITA, KANSAS, USA

182TPHAUS-S8-00

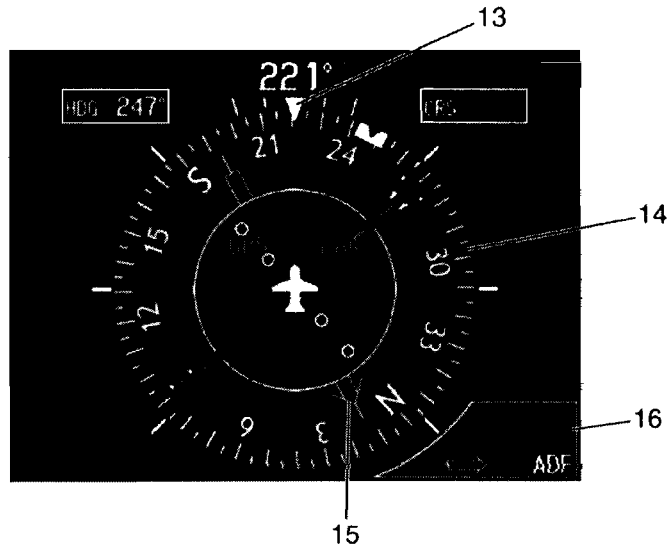
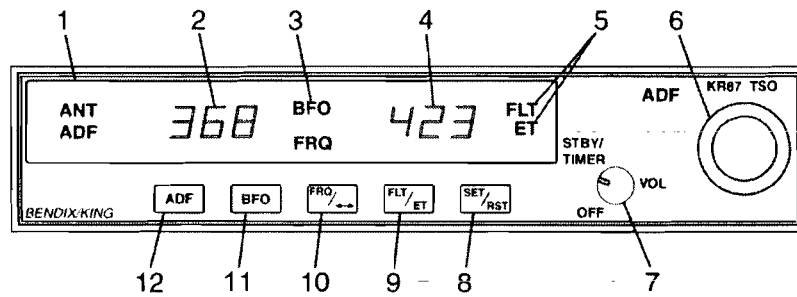
U.S. S8-1

SERVICE BULLETIN CONFIGURATION LIST

The following is a list of Service Bulletins that are applicable to the operation of the airplane, and have been incorporated into this supplement. This list contains only those Service Bulletins that are currently active.

<u>Number</u>	<u>Title</u>	<u>Airplane Serial</u> <u>Effectivity</u>	<u>Revision</u> <u>Incorporated</u>	<u>Incorporated</u> <u>in Airplane</u>
---------------	--------------	--	--	---

BENDIX/KING KR87 AUTOMATIC DIRECTION FINDER (ADF)



0585T1043
0585T1065

Figure S8-1

GENERAL (CONTINUED)

1. ANT/ADF MODE ANNUNCIATOR - Antenna (ANT) is selected when the ADF button is in the OUT position. This mode improves the audio reception and is usually used for station identification. The bearing pointer is deactivated and will park in the 90° relative position. Automatic Direction Finder (ADF) mode is selected by pushing the ADF button. This mode activates the bearing pointer and will point in the direction of the station relative to the aircraft heading.
2. ACTIVE FREQUENCY DISPLAY - The frequency to which the ADF is tuned is displayed here. The active ADF frequency can be changed directly when either of the timer functions is selected.
3. BFO (Beat Frequency Oscillator) ANNUNCIATOR - The BFO mode is activated and annunciated by pushing the BFO button. When BFO mode is active, the carrier wave and its morse code identifier can be heard.

NOTE

CW signals (Morse Code) are unmodulated and no audio will be heard without use of BFO. This type of signal is not used in the United States air navigation. It is used in some foreign countries and marine beacons.

4. STANDBY FREQUENCY/FLIGHT TIME OR ELAPSED TIME DISPLAY - When FRQ is shown, the STANDBY frequency is shown in the right display. The STANDBY frequency is selected using the frequency select knobs. The selected STANDBY frequency is put into the active frequency window by pushing the frequency transfer button. Either the standby frequency, the flight timer, or the elapsed time is shown in this position. The flight timer and elapsed timer replace the standby frequency which goes into blind memory to be called back at any time by pushing the FRQ button. Flight time or elapsed time are shown and annunciated by depressing the FLT/ET button.
5. FLIGHT TIMER AND ELAPSED TIMER MODE ANNUNCIATION - Either the elapsed time (ET) or flight time (FLT) mode is annunciated here.

(Continued Next Page)

GENERAL (CONTINUED)

6. **FREQUENCY SELECT KNOBS** - Selects the standby frequency when FRQ is displayed and directly selects the active frequency whenever either of the time functions is selected. The frequency selector knobs may be turned either clockwise or counterclockwise. The small knob is pulled out to tune the 1's. The small knob is pushed in to tune the 10's. The outer knob tunes the 100's with rollover into the 1000's up to 1799. These knobs are also used to set the desired time when the elapsed timer is used in the countdown mode.
7. **ON/OFF/VOLUME CONTROL SWITCH (ON/OFF/VOL)** - Controls power and audio output level. Turn the control switch clockwise from the OFF position to energize the receiver and increase audio volume. The KR87 has audio muting which causes the audio output to be muted unless the receiver is locked on a valid station.
8. **SET/RESET ELAPSED TIMER BUTTON (SET/RST)** - The SET/RST button resets the elapsed timer whether it is being displayed or not.
9. **FLIGHT TIMER/ELAPSED TIMER MODE SELECTOR BUTTON (FLT/ET)** -- The FLT/ET button selects either Flight Timer mode or Elapsed Timer mode when pushed.
10. **FREQUENCY TRANSFER BUTTON (FRQ)** - The FRQ transfer button interchanges the active and standby frequencies when pushed.
11. **BFO (Beat Frequency Oscillator) BUTTON** - The BFO button selects the BFO mode when pushed in. (See note under item 3).
12. **ADF BUTTON** - The ADF button selects either the ANT mode or the ADF mode. The ANT mode is selected when the ADF button is in the out position. The ADF mode is selected when the ADF button is pushed in.
13. **LUBBER LINE** - Indicates magnetic heading of the airplane.
14. **ROTATING COMPASS ROSE (HSI COMPASS CARD)** - The rotating compass rose turns as the heading of the airplane changes. The magnetic heading of the airplane is under the lubber line.
15. **BEARING POINTER** - Shows magnetic bearing to the station.
16. **BEARING INFORMATION WINDOW** - Shows the type of pointer that is being used as the ADF bearing pointer. If ADF is not shown, push the BRG1 or BRG2 softkey until ADF is shown.

OPERATING LIMITATIONS

Refer to Section 2 of the Pilot's Operating Handbook and FAA Approved Flight Manual (POH/AFM).

EMERGENCY PROCEDURES

There is no change to the airplane emergency procedures when the Bendix/King KR 87 Automatic Direction Finder (ADF) is installed.

NORMAL PROCEDURES

TO OPERATE AS AN AUTOMATIC DIRECTION FINDER:

1. OFF/VOL Control - ON
2. Frequency Selector Knobs - SELECT desired frequency in the standby frequency display.
3. FRQ Button - PUSH to move the desired frequency from the standby to the active position.
4. ADF Selector Switch (on audio control panel) - SELECT as desired.
5. OFF/VOL Control - SET to desired volume level and identify that desired station is being received.
6. PFD Softkey (on PFD) - PUSH to show BRG1 and BRG2 softkeys.
7. BRG1 or BRG2 Softkey (on PFD) - PUSH to show ADF in Bearing Information Window.
8. ADF Button - SELECT ADF mode and note magnetic bearing on HSI.

(Continued Next Page)

NORMAL PROCEDURES (CONTINUED)

ADF TEST (PREFLIGHT or IN FLIGHT):

1. ADF Button - SELECT ANT mode and note pointer moves to 90° position.
2. ADF Button - SELECT ADF mode and note the pointer moves without hesitation to the station bearing. Excessive pointer sluggishness, wavering or reversals indicate a signal that is too weak or a system malfunction.

TO OPERATE BFO:

1. OFF/VOL Control - ON
2. BFO Button - PRESS ON
3. ADF Selector Buttons (on audio control panel) - SET to desired mode.
4. VOL Control - ADJUST to desired listening level.

NOTE

A 1000-Hz tone and Morse Code identifier is heard in the audio output when a CW signal is received.

TO OPERATE FLIGHT TIMER:

1. OFF/VOL Control - ON
2. FLT/ET Mode Button - PRESS (once or twice) until FLT is annunciated. Timer will already be counting since it is activated by turning the unit on.
3. OFF/VOL Control - OFF and then ON if it is desired to reset the flight timer.

TO OPERATE AS A COMMUNICATIONS RECEIVER ONLY:

1. OFF/VOL Control - ON
2. ADF Button - SELECT ANT mode
3. Frequency Selector Knobs - SELECT desired frequency in the standby frequency display.
4. FRQ Button - PRESS to move the desired frequency from the standby to the active position.
5. ADF Selector Buttons (on audio control panel) - SET to desired mode.
6. VOL Control - ADJUST to desired listening level.

(Continued Next Page)

NORMAL PROCEDURES (CONTINUED)

TO OPERATE ELAPSED TIME TIMER-COUNT UP MODE:

1. OFF/VOL Control - ON
2. FLT/ET Mode Button - PRESS (once or twice) until ET is annunciated.
3. SET/RST Button - PRESS momentarily to reset elapsed timer to zero.

NOTE

The Standby Frequency which is in memory while Flight Time or Elapsed Time modes are being displayed may be called back by pushing the FRQ button, then transferred to active by pushing the FRQ button again.

TO OPERATE ELAPSED TIME TIMER COUNT DOWN MODE:

1. OFF/VOL Control - ON
2. FLT/ET Mode Button - PRESS (once or twice) until ET is annunciated.
3. SET/RST Button - PRESS until the ET annunciation begins to flash.
4. FREQUENCY SELECTOR KNOBS - SET desired time in the elapsed time display. The small knob is pulled out to tune the 1's. The small knob is pushed in to tune the 10's. The outer knob tunes minutes up to 59 minutes.

NOTE

Selector knobs remain in the time set mode for 15 seconds after the last entry or until the SET/RST, FLT/ET or FRQ button is pressed.

5. SET/RST Button - PRESS to start countdown. When the timer reaches 0, it will start to count up as display flashes for 15 seconds.

NOTE

While FLT or ET are displayed, the active frequency on the left side of the window may be changed, by using the frequency selector knobs, without any effect on the stored standby frequency or the other modes.

(Continued Next Page)

NORMAL PROCEDURES (CONTINUED)

ADF OPERATION NOTES:

ERRONEOUS ADF BEARING DUE TO RADIO FREQUENCY PHENOMENA:

In the U.S., the FCC, which assigns AM radio frequencies, occasionally will assign the same frequency to more than one station in an area. Certain conditions, such as Night Effect, may cause signals from such stations to overlap. This should be taken into consideration when using AM broadcast stations for navigation.

Sunspots and atmospheric phenomena may occasionally distort reception so that signals from two stations on the same frequency will overlap. For this reason, it is always wise to make positive identification of the station being tuned, by switching the function selector to ANT and listening for station call letters.

ELECTRICAL STORMS:

In the vicinity of electrical storms, an ADF indicator pointer tends to swing from the station tuned toward the center of the storm.

NIGHT EFFECT:

This is a disturbance particularly strong just after sunset and just after dawn. An ADF indicator pointer may swing erratically at these times. If possible, tune to the most powerful station at the lowest frequency. If this is not possible, take the average of pointer oscillations to determine station bearing.

MOUNTAIN EFFECT:

Radio waves reflecting from the surface of mountains may cause the pointer to fluctuate or show an erroneous bearing. This should be taken into account when taking bearings over mountainous terrain.

COASTAL REFRACTION:

Radio waves may be refracted when passing from land to sea or when moving parallel to the coastline. This also should be taken into account.

PERFORMANCE

There is no change in airplane performance when the Bendix/King KR 87 Automatic Direction Finder (ADF) is installed. However, the installation of an externally mounted antenna or related external antennas, will result in a minor reduction in cruise performance.



**Pilot's Operating Handbook
and
FAA Approved Airplane Flight Manual**

**CESSNA MODEL 182T
NAV III AVIONICS OPTION**

SUPPLEMENT 9

ARGENTINE CERTIFIED AIRPLANES

SERIAL NO. _____
REGISTRATION NO. _____

This supplement must be inserted into Section 9 of the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual when used for Argentine Certified Airplanes. This Airplane Flight Manual Supplement is approved in accordance with Section 21.29 of DNAR 21 for Argentine registered airplanes and is approved by the US Federal Aviation Administration (FAA) on behalf of the Dirección Nacional de Aeronavegabilidad (D.N.A.).



Member of GAMA

APPROVED BY

FAA APPROVED UNDER 14 CFR PART 21 SUBPART J
Cessna Aircraft Co.
Delegation Option Authorization DOA-230884-CE

Richard D. Melling DOA Administrator
07-28-05

DATE OF APPROVAL

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CESSNA AIRCRAFT COMPANY
WICHITA, KANSAS, USA

182TPHAUS-S9-00

28 JULY 2005

U.S. S9-1

SUPPLEMENT 9

ARGENTINE CERTIFIED AIRPLANES

Use the Log of Effective Pages to determine the current status of this supplement.

Pages affected by the current revision are indicated by an asterisk (*) preceding the page number.

Supplement Status	Date
Original Issue	28 JULY 2005

LOG OF EFFECTIVE PAGES

Page Number	Page Status	Revision Number
S9-1 thru S9-13/S9-14	Original	0

SERVICE BULLETIN CONFIGURATION LIST

The following is a list of Service Bulletins that are applicable to the operation of the airplane, and have been incorporated into this supplement. This list contains only those Service Bulletins that are currently active.

<u>Number</u>	<u>Title</u>	<u>Airplane Serial</u> <u>Effectivity</u>	<u>Revision</u> <u>Incorporated</u>	<u>Incorporated</u> <u>in Airplane</u>
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ARGENTINE CERTIFIED AIRPLANES

GENERAL

This supplement is part of, and must be placed in, the basic Pilot's Operating Handbook and FAA Approved Airplane Flight Manual for Argentine Registered Airplanes for operation of Cessna Model 182T equipped with the Nav III Avionics Option. The information herein supplements the information of the basic Pilot's Operating Handbook and FAA Approved Airplane Flight Manual. For limitations, procedures and performance information not contained in the supplement, consult the basic FAA Approved Airplane Airplane Flight Manual.

OPERATING LIMITATIONS

GLOBAL POSITIONING SYSTEM (G.P.S.)

The Global Positioning System (GPS) has not been approved by the D.N.A. for use as a supplementary navigation method for operations in terminals areas or during approach and landing procedures.

KINDS OF OPERATIONS LIMITS

The Argentine Certified Cessna 182T Nav III airplane is approved for DAY - NIGHT VFR operations only. Flight into known-icing conditions is prohibited.

The operator shall contact the competent operation authority to obtain authorization for the type of operation (DAY-NIGHT VFR), according to the airplane equipment list.

For DAY VFR, in addition to the indications in the table: Kinds of Operation Equipment List, a clock (displaying hours, minutes and seconds with a sweep second pointer or a digital presentation) must be provided.

For NIGHT VFR, in addition to the indications in the table: Kinds of Operation Equipment List, a variometer, a turn indicator, a clock (displaying hours, minutes and seconds with a sweep second pointer or a digital presentation and a flashlight must be provided.

PLACARDS

The following information must be displayed in the form of composite or individual placards.

1. In full view of the pilot: (The "DAY-NIGHT-VFR" entry, shown on the example below, will vary with installed equipment).

The markings and placards installed in this airplane contain operating limitations which must be complied with when operating this airplane in the Normal Category. Other operating limitations which must be complied with when operating this airplane in this category are contained in the Pilot's Operating Handbook and DNA Approved Airplane Flight Manual.

No acrobatic maneuvers, including spins, approved.

Flight into known icing conditions prohibited.

This airplane is certified for the following flight operations as of date of original airworthiness certificate:

DAY-NIGHT-VFR

Las marcas y placas instaladas en este avión contienen limitaciones operativas que deben ser cumplidas al operar este avión en la Categoría Normal. En el Manual de Operaciones del Piloto y en el Manual de Vuelo del Avión aprobado por la DNA están contenidas otras limitaciones operativas que se deben cumplir al operar el avión en esta categoría.

No están aprobadas las maniobras acrobáticas, incluidas barrenas.

Está prohibido el vuelo en condiciones conocidas de formación de hielo.

Este avión está certificado para las siguientes operaciones de vuelo a partir de la fecha del certificado de aeronavegabilidad original:

DIA - NOCHE - VFR

(Continued Next Page)

PLACARDS (Continued)

2. On control lock:

CAUTION!
CONTROL LOCK
REMOVE BEFORE STARTING ENGINE

ADVERTENCIA!
TRABA DE LOS MANDOS
DESTRABAR ANTES DE ARRANCAR EL MOTOR

(Continued Next Page)

PLACARDS (Continued)

3. On the fuel selector valve:

BOTH 87.0 GAL. TAKEOFF LANDING ALL FLIGHT ATTITUDES	
FUEL SELECTOR	
PUSH DOWN ROTATE	
LEFT 43.5 GAL. LEVEL FLIGHT ONLY	RIGHT 43.5 GAL. LEVEL FLIGHT ONLY
OFF	

AMBOS 329,46 LTS. DESPEGUE ATERRIAJE TODAS LAS ALTITUDES DE VUELO	
SELECTOR DE COMBUSTIBLE	
APRETAR GIRAR	
IZQUIERDA 164,67 LTS. VUELO HORIZONTAL SOLAMENTE	DERECHA 164,67 LTS. VUELO HORIZONTAL SOLAMENTE
CORTAR	

(Continued Next Page)

PLACARDS (Continued)

4. Near fuel tank filler cap:

<p style="text-align: center;">FUEL 100LL/100 MIN. GRADE AVIATION GASOLINE CAP. 164.66 LTS. (43.5 U.S. GAL.) USABLE CAP. 121.13 LTS. (32.0 U.S. GAL.) USABLE TO BOTTOM OF FILLER INDICATOR TAB</p>		
<p style="text-align: center;">NAFTA DE AVIACION GRADO 100LL/100 MIN. CAP. 164.66 LTS. (43.5 U.S. GALONES) CAP. UTILIZABLE 121.13 LTS. (32.0 U.S. GALONES) UTILIZABLE HASTA LA PARTE INFERIOR DE LA ALETA INDICADORA DE LLENADO.</p>		

5. On flap control indicator:

0° to 10°	140 KIAS	(Initial flap range with Dark Blue color code; mechanical detent at 10° position)
10° to 20°	120 KIAS	(Intermediate flap range with Light Blue color code; mechanical detent at 20° position)
20° to FULL	100 KIAS	(Full flap range with White color code; mechanical stop at FULL position)

0° to 10°	140 KIAS	(Alcance del movimiento inicial del flap con color Azul Oscuro; detención mecánica en la posición 10°)
10° to 20°	120 KIAS	(Alcance del movimiento intermedio del flap con código de color Azul Claro; detención mecánica en la posición 20°)
20° to FULL	100 KIAS	(Alcance del movimiento total (Full) del flap con código de color Blanco; detención mecánica en la posición FULL).

(Continued Next Page)

PLACARDS (Continued)

6. In baggage compartment:

120 POUNDS MAXIMUM BAGGAGE FORWARD OF BAGGAGE DOOR LATCH AND 80 POUNDS MAXIMUM BAGGAGE AFT OF BAGGAGE DOOR LATCH MAXIMUM 200 POUNDS COMBINED FOR ADDITIONAL LOADING INSTRUCTIONS SEE WEIGHT AND BALANCE DATA

54.43 kg. (120 LIBRAS DE EQUIPAJE MAXIMO POR DELANTE DE LA TRABA DE LA PUERTA DE EQUIPAJE Y 36.28 (80 LIBRAS) DE EQUIPAJE MAXIMO POR DETRÁS DE LA TRABA DE LA PUERTA DE EQUIPAJE MAXIMO 97.71 Kg. (200 LIBRAS) COMBINADO PARA INSTRUCCIONES ADICIONALES DE CARGA VER LOS DATOS DE PESO Y BALANCEO
--

7. A calibration card must be provided to indicate the accuracy of the magnetic compass in 30° increments.

Se debe proveer una tarjeta de calibración para indicar la exactitud de la brújula magnética en incrementos de 30°.

8. On the oil filler cap:

OIL 9 QTS

ACEITE 9 QTS

(Continued Next Page)

PLACARDS (Continued)

9. Near airspeed indicator:

MANEUVERING SPEED - 110 KIAS

VELOCIDAD DE MANIOBRA - 110 KIAS

10. On the upper right instrument panel:

SMOKING PROHIBITED

PROHIBIDO FUMAR

11. On auxiliary power plug door and second placard on battery box:

CAUTION 24 VOLTS D.C.
THIS AIRCRAFT IS EQUIPPED WITH ALTERNATOR AND A
NEGATIVE GROUND SYSTEM. OBSERVE PROPER POLARITY.
REVERSE POLARITY WILL DAMAGE ELECTRICAL
COMPONENTS.

ADVERTENCIA 24 VOLTIOS D.C.
ESTA AERONAVE ESTA EQUIPADA CON ALTERNADOR
Y UN SISTEMA DE CONEXIÓN A MASA NEGATIVO
RESPETAR LA POLARIDAD APROPIADA.
LA POLARIDAD INVERSA DAÑARA LOS
COMPONENTES ELECTRICOS.

(Continued Next Page)

PLACARDS (Continued)

12. On the upper right side of the aft cabin partition:

EMERGENCY LOCATOR TRANSMITTER
INSTALLED AFT OF THIS PARTITION
MUST BE SERVICED IN ACCORDANCE
WITH FAR PART 91.207

TRANSMISOR LOCALIZADOR DE EMERGENCIA
INSTALADO EN LA PARTE POSTERIOR DE ESTE TABIQUE
SERVICE EN CONFORMIDAD CON DNAR PARTE 91.207

13. Near the center overhead light control:

Flood Light

Luz de Techo

EMERGENCY PROCEDURES

There is no change to the airplane emergency procedures when used for Argentine operation.

NORMAL PROCEDURES

There is no change to the airplane normal procedures when used for Argentine operation.

PERFORMANCE

There is no change to the airplane performance when used for Argentine operation.

WEIGHT AND BALANCE/EQUIPMENT LIST

There is no change to the airplane weight and balance/equipment list when used for Argentine operation.

AIRPLANE AND SYSTEM DESCRIPTION

There is no change to the airplane and system description when used for Argentine operation.

LOG OF D.N.A. ACCEPTED SUPPLEMENTS

The following list contains DNA accepted supplements. Refer to Log of Approved Supplements in the basic Pilot's Operating Handbook and FAA Approved Airplane Flight Manual for revision status.

SUPP. NO.	SUPPLEMENT NAME	EQUIPMENT INSTALLED
1	Pointer Model 3000-11 Or Model 4000-11 Emergency Locator Transmitter (ELT)	_____
2	Reserved	
3	Bendix/King KAP 140 2 Axis Autopilot	_____
4	L3 Communications WX-500 Stormscope	_____
5	Reserved	
6	Reserved	
7	Reserved	
8	Reserved	
9	Argentine Certified Airplanes	_____

AMSAFE, Inc.
Inflatable Restraints Division
1043 N. 47th Avenue
Phoenix, AZ 85043
Document No.: E508810

**FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT**

to

**PILOT'S OPERATING HANDBOOK AND
FAA APPROVED AIRPLANE FLIGHT MANUAL**

for

**Cessna Aircraft Corporation
(Manual P/Ns)**

**Skyhawk Models: 172R (P/N 172RPHUS09 & 172R180PHUSXX)
172S (P/N 172SPHUS05)**

**Skylane Models: 182S (P/N 182SPHUSXX)
182T (182TPHUS01 & 182TPHAUS-01 NAV III)
T182T (P/N T182TPHAUS-00 & T182TPHUS02 NAV III)**

**Stationair Models: 206H (P/N 206HPHUS06)
T206H (P/N T206HPHUS06)**

Aircraft Reg. No. _____ Aircraft S/N: _____

This supplement must be attached to the FAA-approved Cessna Aircraft Models 172R, 172S, 182S, 182T, T182T, 206H, and T206H associated Pilot's Operating Handbook and FAA Approved Airplane Flight Manual when the Airplane is modified by the installation of AMSAFE Aviation Inflatable Restraint (AAIR[®]) System, V23 Version in accordance with STC No. SA01700LA.

The information contained herein supplements or supersedes the basic manual only in those areas listed herein. For limitations, procedures, and performance information not contained in this supplement, consult the associated Pilot's Operating Handbook and FAA Approved Airplane Flight Manual.

FAA APPROVED

**_____
Manager, Flight Test Branch, ANM-160L
Federal Aviation Administration
Los Angeles Aircraft Certification Office
Transport Airplane Directorate**

Date November 24, 2004

AMSAFE, Inc.
Inflatable Restraints Division
1043 N. 47th Avenue
Phoenix, AZ, 85043
Document No.: E508810
Revision: B

AFM Supplement for
AMSAFE Aviation Inflatable Restraint
On Cessna 172, 182, and 206
STC SA01700LA

LOG OF REVISIONS

REV NO	EFFECTED PAGES	DATE	DESCRIPTION	FAA APPROVAL
IR	Title (1)	11-24-04	Initial Release	<u>Original signed P. Power</u> Manager, Flight Test Branch, ANM-160L Federal Aviation Administration Los Angeles Aircraft Certification Office Transport Airplane Directorate Date: <u>November 24, 2004</u>
	Log Page (2)	11-24-04		
	3	11-24-04		
	4	11-24-04		
A	Log Page (2)	12-21-04	Added information in SECTION 1 and a limitation in SECTION 2. Corrected Moment Arm for system installations in all models.	<u>Original signed by P. Power</u> Manager, Flight Test Branch, ANM-160L Federal Aviation Administration Los Angeles Aircraft Certification Office Transport Airplane Directorate Date: <u>December 21, 2004</u>
	3	12-21-04		
	4	12-21-04		
B	Log Page (2) 4		Added weight and balance information summary for Models 172, 182, and 206 without rear bench seat AAIR Systems.	<u>P. Power</u> Manager, Flight Test Branch, ANM-160L Federal Aviation Administration Los Angeles Aircraft Certification Office Transport Airplane Directorate Date: <u>April 14, 2005</u>

SECTION 1 GENERAL

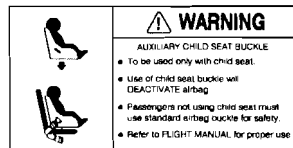
The AAIR V23 is a self-contained, modular, three-point restraint system that improves protection from serious head-impact injury during a survivable aircraft crash by inclusion of an inflatable airbag to the lapbelt portion of the three-point restraint. An unbuckled restraint airbag will not inflate.

SECTION 2 LIMITATIONS

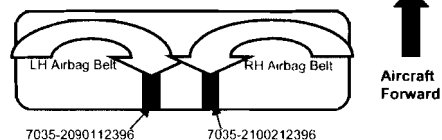
A child safety seat shall not be used with the V23 AAIR System in the front seat (co-pilot). A child safety seat may be used in the rear seat positions only by attaching the child seat with an auxiliary child seat buckle. The standard inflatable restraint buckle cannot be used to secure a child safety seat.

The Auxiliary Child Seat Buckle adapter (P/N 7035-2090112396 (LH) and 7035-2100212396 (RH)) secures a Child Safety Seat to either left or right positions of the Rear Seat for all models (see warning label below). It is typically stored under the cushion and is found in the center of the seat adjacent to the standard AAIR End-Release Buckle Assembly, identifiable by part number (above) and attaches to the Airbag Belt portion of the Seatbelt Airbag Assembly (see diagram).

The restraint in an empty co-pilot or passenger seat must not be buckled so as to prevent inflation of the lapbelt airbag in the unoccupied seat.



Rear Bench Seat for Models 172, 182, and 206



SECTION 3 EMERGENCY PROCEDURES

No Change

SECTION 4 NORMAL PROCEDURES

To activate the system, join (buckle) the three-point restraint in the same manner as any other three-point seatbelt. An empty co-pilot or passenger seat restraint must not be buckled.

SECTION 5 PERFORMANCE

No Change

SECTION 6 WEIGHT AND BALANCE/EQUIPMENT LIST

For complete information of the AAIR V23 System effect on weight and balance loading to the aircraft, please refer to AMSAFE Aviation's, Weight and Balance Information Report, Document No. E508952. Below is a summary useful for loading and Center of Gravity calculations.

Models 172R, 172S – with optional rear seat bench AAIR System

Empty Weight	Arm	Moment	
7.638	57.928	442.454	AAIR System Difference Added
1692.5 lbs		1701.138 lbs	New Empty Weight

Models 172R, 172S – without optional rear seat bench AAIR System

Empty Weight	Arm	Moment	
3.848	45.397	174.686	AAIR System Difference Added
1692.5 lbs		1696.348 lbs	New Empty Weight

Models 182S, 182T, T182T – with rear seat bench AAIR System

Empty Weight	Arm	Moment	
7.638	57.682	440.578	AAIR System Difference Added
2029 lbs		2036.638 lbs	New Empty Weight

Models 182S, 182T, T182T – without rear seat bench AAIR System

Empty Weight	Arm	Moment	
3.848	41.798	160.838	AAIR System Difference Added
2029 lbs		2032.848 lbs	New Empty Weight

Models 206H, T206H – with optional rear seat bench AAIR System

Empty Weight	Arm	Moment	
11.54	69.782	805.284	AAIR System Difference Added
2210 lbs		2221.54 lbs	New Empty Weight

Models 206H, T206H – without optional rear seat bench AAIR System

Empty Weight	Arm	Moment	
7.75	53.852	417.350	AAIR System Difference Added
2210 lbs		2217.75 lbs	New Empty Weight

For all models, the change is less than 1% of the CG range at gross weight, which is insignificant and will cause no CG issues. Refer to the above report for the exact details.



FAA APPROVED

AIRPLANE FLIGHT MANUAL SUPPLEMENT

FOR

C.A.P. SPECIAL MISSIONS EQUIPMENT

CESSNA 182T w/NAV III Avionics & Dual Audio

S/N 18281780

REG. NO. N 780 CP

This supplement must be attached to the FAA Approved Airplane Flight Manual when the airplane is modified by the installation of the CAP Special Missions Avionics in accordance with STC SA1216W1. The information contained herein supplements or supercedes the basic manual only in those areas listed herein. For limitations, procedures, and performance information not contained in this supplement, consult the basic Airplane Flight Manual.

FAA APPROVED


Margaret Kline, Manager
Wichita Aircraft Certification Office
Federal Aviation Administration
Wichita, KS 67209

DOCUMENT AFMS18201388
REV A

FAA APPROVED DATE: March 29, 2005

SECTION 1 - GENERAL

The modifications incorporated as part of the CAP Special Missions Avionics Package in a Cessna 182T w/NAV III & Dual Audio are as follows:

- SECOND GARMIN GMA-1347 AUDIO PANEL
- PAX 1 COMMUNICATIONS MODS
- BECKER SAR-DF517 DIRECTION FINDING SYSTEM
- TECHNISONIC TDFM-136 VHF/FM RADIO SYSTEM
- KGS 28-14 POWER CONVERTER SYSTEM
- Optional ARNAV RCOM 100 SATCOM
- Com 3 FM/UHF AUDIO SWITCH
- Artex 110-406 ELT System

The # 2 GMA-1347 Audio/Marker is powered from the # 2 Avionics Bus via the # 2 Audio circuit breaker. The Becker DF, Technisonic TDFM, and RCOM 100 SATCOM are powered from the # 2 Avionics Bus through the MISSION MASTER CB/Switch in the CO-PILOT Circuit Breaker Panel. The KGS Power Converter is powered from the #3 28VDC bus through a circuit breaker switch. The Pax 1 communications mods are powered from the # 2 Avionics Bus through the AUD Relay Circuit Breaker.

DUAL GARMIN GMA-1347 AUDIO PANEL

NOTE: Refer to the G1000 Audio Panel Pilot's Guide (Garmin P/N 190-00378-00, Rev. B or later applicable version) for complete operational instructions.


The two GMA-1347 Audio Panels are designated as follows:

1. GMA # 1: Left audio panel
2. GMA # 2: Right audio panel

In dual audio configuration, the Pilot always hears the audio selected on GMA #1 and the Co-Pilot always hears the audio selected on GMA #2.

The Intercom system provides four modes of isolation: Pilot, Copilot, Crew, & All. In Pilot mode, the Pilot is isolated from all other occupants of the aircraft while the Copilot and passengers share the other intercom loop. In Copilot mode, the Copilot is in his own intercom loop while the Pilot and passengers share the other intercom loop. In Crew isolation mode, the Pilot and Copilot can communicate with each other and the passengers are isolated from the crew but able to communicate with each other. In All mode, there is no isolation and every occupant can communicate with every other occupant.

REVISIONS:

Approved By/For*	Date:	Rev	Description
Not Approved	--	(IR)	Original Release
	3/29/05	A	Added note to pg. 5 - Section 1 - General - TEL audio description & switch state table Added note to pg. 6 - Section 1 - General - Dual Garmin GMA-1347 Audio Panel

* Manager, Wichita Aircraft Certification Office
Federal Aviation Administration
Wichita, KS 67209

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SECTION 1 – GENERAL, continued

DUAL GARMIN GMA-1347 AUDIO PANEL, continued

The Pilot and Copilot (or Rear Left Seat passenger [Seat 3] when enabled) positions shall be able to independently choose which receivers to monitor, COM1, COM2, COM3 (FM or UHF when selected), NAV1, NAV2, TEL, & AUX (DF). The primary (mic selected) COM will automatically be selected along with the corresponding transmitter.

PA, DME, ADF, PLAY, & COM1/2 on both GMA #1 and GMA #2 are disabled. In this installation, pressing the PA, DME, ADF, PLAY, & COM1/2 keys on either GMA #1 or GMA #2 will not light the corresponding annunciator light.

In dual audio panel configuration the **DISPLAY BACKUP** and **SPKR** buttons operate on the pilot side only. The SPKR & red Display Backup switches on **GMA #2** are disabled.

The TEL interface is full duplex and therefore has no transmit priority. Whoever is connected to the phone will transmit whenever they speak and multiple inputs will simply be transmitted simultaneously.

The TEL interface is designed so that in conjunction with ICS Isolation every group in the airplane can either talk on the phone individually or collectively. The easiest way to remember this is:

- If TEL interface is lit (LED on) – The Pilot will hear TEL audio
- If TEL interface is not lit (LED off) – The Pilot will not hear TEL audio (others do)
- If no TEL audio is desired at all, the satellite telephone must be off

The states of these switches are:

TEL audio heard is by:	TEL selected (TEL illuminated)				TEL not selected (TEL not illuminated)			
	No ISO	Pilot ISO	Copilot ISO	Crew ISO	No ISO	Pilot ISO	Copilot ISO	Crew ISO
Pilot	Yes	Yes	Yes	Yes	No	No	No	No
Copilot	Yes	No	No	Yes	No	Yes	Yes	No
Passengers	Yes	No	Yes	No	No	Yes	No	Yes

SECTION 1 – GENERAL, continued

DUAL GARMIN GMA-1347 AUDIO PANEL, continued

NOTES:

- Interference may be observed on the receiving VHF COM transceiver during transmission on the opposite VHF COM transceiver. This effect will be more noticeable when the selected frequencies are within 2 MHz or less of each other.
- With optional UHF Transceiver, UHF transmission of frequencies between 329.150 and 335.000 MHz may interfere with glideslope navigation signals.
- With optional UHF Transceiver, UHF and VHF communication may interfere with each other when operations are conducted on or near harmonic frequency pairs (for example, 118.200 MHz VHF and 236.400 MHz UHF).

PAX 1 COMMUNICATIONS MODS

The PAX 1 communications modification allows radio transmissions from the Rear Left Passenger, (seat 3). A switch/annunciator located in the avionics sub-panel labeled "SEAT 2/3 ", and external relay are used to connect either the Passenger, or Copilot to the Copilot input on the GMA-# 2. When the Passenger is connected to the Copilot input, the Copilot will be connected to the Passenger input to keep intercom capability and receive selected radio transmissions. When Seat 3 is selected, the Copilot cannot transmit on the selected radio. The states of this switch are:

States of SEAT 2/3 SWITCH	CONNECTION TO GMA-1347 # 2
Seat 2 on Co-Pilot; Seat 3 on Passenger	Seat 2 is connected to the Co-Pilot input on GMA # 2 Seat 3 is connected to a passenger input on GMA # 2
Seat 3 on Co-Pilot; Seat 2 on Passenger	Seat 3 is connected to the Co-Pilot input on GMA # 2 Seat 2 is connected to a passenger input on GMA # 2

The Pilot will have transmit priority on Com1. The Copilot or rear left Seat Passenger (when selected) - (Seat 2 or Seat 3) will have transmit priority on Com 2. Com 3 transmit prioritization does not exist.

SECTION 1 – GENERAL, continued

BECKER SAR-DF517 DIRECTION FINDING SYSTEM

The Becker SAR-DF517 direction finding system consists of a Receiver/Antenna located on the aircraft empennage and an indicator/controller located in the Copilot's instrument panel. The System is design to point to the origin of radio signals. The audio from the unit is supplied to the audio panels and is controlled at the audio panels through the AUX switch on the audio panels.

TECHNISONIC TDFM-136 VHF/FM RADIO SYSTEM

The Technisonic TDFM-136 VHF/FM radio is located in the Copilot's instrument panel and is controlled on the Audio Panels as COM 3.

KGS 28-14 POWER CONVERTER SYSTEM

The KGS 24-14VDC power conversion system provides 14VDC to a connector at the Pax 2 seat. The system is activated through a circuit breaker switch in the Avionics Circuit Breaker Panel located in the Copilot Instrument Panel. The output of the system is regulated to 20 amps by a circuit breaker located just aft of the aft cabin wall in the avionics rack area.

ARNAV RCOM 100 SATCOM (optional)

The optional ARNAV RCOM 100 SATCOM consists of a Receiver/Transmitter located in the aft baggage area, an Antenna located on the aircraft empennage, and a PTA-12 Telephone Dialer located in the Copilot's instrument panel. The audio from the unit is supplied to the audio panels and is controlled at the audio panels through the TEL switch on the audio panels.

COM 3 FM/UHF AUDIO SWITCH

The COM 3 FM/UHF switch/annunciator is located in the avionics sub-panel and labeled "COM 3 FM/UHF". Selection of the desired radio allows control of either the TDFM-136 VHF/FM radio or optional UHF radio at the audio panels on COM 3.

ARTEX 110-406 ELT

The ARTEX 110-406 ELT equipment installed consists of the following equipment:

- ARTEX 406 MHZ ELT
- ARTEX NAVIGATION INTERFACE

SECTION 1 – GENERAL, continued

ARTEX 110-406 ELT, continued

Power for the ARTEX Nav Interface is managed through the existing # 2 Avionics Master Switch. The only circuit breaker not located on the Radio Busses is the keep-alive power for the ELT. It is connected with battery direct power. Circuit breakers for the equipment are located in the Copilot's instrument panel.

The ARTEX ELT located aft of the cabin is equipped with a remote switch in the Copilot's instrument panel for testing, status, and operation.

SECTION 3- EMERGENCY PROCEDURES, continued

3.2 EMERGENCY PROCEDURES, continued

3.2.1 Artex ELT Emergency, continued

3. If airplane radio is operable and can safely be used (no threat of fire or explosion), turn ON and select 121.5 MHz. If the ELT can be heard transmitting, it is working properly.
4. Ensure that the ELT antenna is clear of obstructions

NOTE: When the ELT is activated, a decreasing tone will be heard before the typical warbling tone begins.

5. Prior to sighting the rescue aircraft—conserve the aircraft battery. Do not activate the radio transceiver.
6. After sighting the rescue aircraft—position switch /annunciator to OFF position to prevent radio interference. Attempt contact with the rescue aircraft with the radio transceiver set to a frequency of 121.5 MHz. If no contact is established return the remote switch to the ON position immediately.
7. Following rescue—Position remote switch annunciator to the OFF position, terminating emergency transmissions.

United States of America
Department of Transportation - Federal Aviation Administration
Supplemental Type Certificate
(Continuation Sheet)

Number SA00216WJ

Date of Issuance: November 25, 2003
Date Amended: April 12, 2005

Certification Basis (continued from Page 1):

In addition to the requirements as shown in Type Certificate 3A13, with respect to the modifications of this STC, the applicant has voluntarily complied with later amendments of some regulations. For this STC, the applicant has complied with the following Sections of Title 14 of the Code of Federal Regulations, Part 23 effective February 1, 1965, as amended by Amendments stated as follows: 23.1351 (a) (1) & (2); 23.1359 (a), (b), and 23.1431 (b) (Amdt. 23-49); 23.1529 (Amdt. 23-26)

Description of Type Design Change (continued from Page 1):

Configuration 1 - CAP Special Missions Equipment interfaced to UPSAT Avionics Package

Installation Data

AFMS

Installation of CAP Special Missions Equipment interfaced to UPSAT Avionics Package in accordance with Yingling Aviation Master Drawing List, MDL2701-34351, Revision A dated September 18, 2003, or later FAA approved revision.	FAA Approved Airplane Flight Manual Supplement for CAP Special Missions Equipment, Cessna 182T, Document Number FMS2701-34351, Revision JR, signed November 25, 2003, or later FAA Approved revision.
Note: This configuration is identified as "1" (MDL2701-34351-1) in the Master Document List.	

Configuration 2 - CAP Special Missions Equipment interfaced to Cessna NAV III Avionics Package

Installation Data

AFMS

Installation of CAP Special Missions Equipment interfaced to Cessna NAV III Avionics Package (with Dual Audio) in accordance with Yingling Aviation Master Drawing List, MDL2701-34351, Revision I dated April 6, 2005, or later FAA approved revision.	FAA Approved Airplane Flight Manual Supplement for CAP Special Missions Equipment, Cessna 182T w/ NAV III Avionics & Dual Audio, Document Number AFMS182T1385, Revision A, signed March 29, 2005, or later FAA Approved revision.
Note: This configuration is identified as "2" (MDL2701-34351-2) in the Master Document List.	

-- END --

THIS SUPPLEMENTAL TYPE CERTIFICATE IS ISSUED AS A FORM OF CONFORMITY WITH THE REQUIREMENTS OF THE FEDERAL AVIATION ACT AND IS NOT VALID UNLESS IT IS USED IN CONNECTION WITH THE TYPE CERTIFICATE TO WHICH IT IS REFERRED.

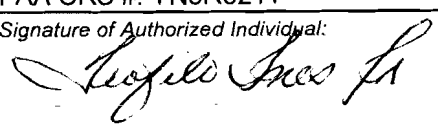
Yingling Aircraft, Inc.

P.O. Box 9248 - Wichita, KS 67277 - 316-943-3246 - Fax: 316-945-5052
 WWW.YINGLINGAVIATION.COM - FAA CRS #: YN8R621Y - JAA #: 5224

YINGLING
 AVIATION

Major Alteration Weight & Balance and Installed Equipment Data Record

Date:	Aircraft Make & Model:	Registration Number:	Serial Number:
4/12/2006	Cessna 182T	N780CP	18281780
Name:			
Address:			

Description of Action Performed	Weight	Arm	Moment
Aircraft as per Weight & Balance Dated: 3/7/2006	2,020.40	38.63	78,040.00
Removed:			
Pointer ELT p/n 3000.11 s/n 334713	1.90	151.00	286.90
			0.00
			0.00
			0.00
			0.00
			0.00
			0.00
			0.00
Installed:			
Becker SAR-DF, DCU 537 p/n 0531-0324-924 s/n 403	0.60	16.20	9.72
Becker SAR-DF, Antenna p/n 0531-316-924 s/n 403	4.41	148.00	652.68
ARTEX ELT-NAV Interface p/n 453-6500 s/n 5002	2.70	146.50	395.55
ARTEX 121.5/243 Antenna p/n 110-324	0.10	147.00	14.70
ARTEX 406 Antenna p/n 110-329	0.04	128.20	5.13
ARTEX ELT 453-5012-(366) s/n 12060	4.50	148.00	666.00
ARTEX Rmt. Sw. p/n 345-6196-04	0.06	16.50	0.99
TDFM-136 FM XCVR p/n 981087-1 s/n FD1729	3.50	13.75	48.13
CI292-3 Antenna s/n 5091438	0.50	52.50	26.25
CI292-3 Antenna s/n 5091439	0.50	52.50	26.25
RG 28 Power Converter s/n 292	1.30	146.00	189.80
Pulselight p/n 1210/2405-2A s/n J06923	0.62	5.00	3.10
GMA1347 p/n 010-00267-00 s/n 47106235	2.60	14.20	36.92
AIS200-35 s/n 11792	0.45	11.50	5.18
RCOM 100 XCVR p/n 4538050 (provisioned for)	0.00	0.00	0.00
RCOM Antenna p/n 4G1625LL-A1-XT-1F1 s/n 12784	0.40	128.20	51.28
CI509 Marker Splitter s/n 5082874	0.15	10.50	1.58
NAT Dialer p/n PTA12-000 s/n 1452	0.63	15.00	9.45
Misc. wire, hdwr., etc.	12.40	75.79	939.80
New Totals:	2,053.96	39.36	80,835.59
Gross Ramp Weight:	3,110.00	Work Order #: AVI 5291	
Gross Take Off Weight:	3,100.00	FAA CRS #: YN8R621Y	
Empty Weight:	2,053.96	Signature of Authorized Individual:	
Useful Load at Ramp:	1,056.04		
Useful Load at Take Off:	1,046.04		
C.G. (Arm):	39.36		

NOTICE
Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

8. Description of Work Accomplished

(If more space is required, attach additional sheets. Identify aircraft nationality and registration mark and date work completed.)

Cessna 182T – 18281780– N780CP –

INSTALLED SYSTEMS: Installed Precise Flight Pulselite Control unit IAW STC SA4005NM.

OPERATIONAL GROUND CHECKS: Required ground tests were performed and the equipment was found to operate normally IAW Precise Flight Installation Manual PPR-3000 Rev. 13 dated 8/98.

CONTINUED AIRWORTHINESS INSTRUCTIONS: Reference engineering Dwg. No. PPRI-2000 Rev. 13 (8/98) and No. 8076 Rev. C (7/02) for

Instructions for Continued Airworthiness.

WEIGHT & BALANCE and EQUIPMENT LIST: Revised Aircraft Weight & Balance and Equipment List. See Aircraft Weight & Balance records for

WEIGHT & BALANCE and EQUIPMENT LIST: Revised Aircraft Weight & Balance and Equipment List. See Aircraft Weight & Balance records for details.

The above installation meets the requirements for static loading in accordance with A.C.43.13-2A Chapter I par. 4 through 12. No changes were noted to the compass system. Further details are on file at C.R.S. # YN8R621Y under W.O. # AVI 5291.

>>>>>>>>>>END<<<<<<<<<<<<<<

☐ Additional Sheets Are Attached

 U.S. Department of Transportation Federal Aviation Administration		MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)			Form Approved OMB No. 2120-0020	
					For FAA Use Only	
					Office Identification	
INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. 1421). Failure to report can result in a civil penalty not to exceed \$1,000 for each such violation (Section 901 Federal Aviation Act 1958)						
1. Aircraft		Make CESSNA Serial No. 18281780		Model 182T Nationality and Registration Mark N780CP		
2. Owner		Name (As shown on registration certificate) CESSNA AIRCRAFT COMPANY		Address (As shown on registration certificate) PO BOX 7704 WICHITA, KANSAS 67277-7704		
3. For FAA Use Only						
4. Unit Identification					5. Type	
Unit	Make	Model	Serial No.	Repair	Alteration	
AIRFRAME	~~~~~(As described in item 1 above)~~~~~			<input type="checkbox"/>	<input checked="" type="checkbox"/>	
POWERPLANT				<input type="checkbox"/>	<input type="checkbox"/>	
PROPELLER				<input type="checkbox"/>	<input type="checkbox"/>	
APPLIANCE	Type			<input type="checkbox"/>	<input type="checkbox"/>	
	Manufacturer			<input type="checkbox"/>	<input type="checkbox"/>	
6. Conformity Statement						
A. Agency's Name and Address		B. Kind of Agency		C. Certificate No.		
Yingling Aircraft, Inc. 2010 Airport Road Wichita, KS 67277		<input type="checkbox"/> U.S. Certified Mechanic <input type="checkbox"/> Foreign Certified Mechanic <input checked="" type="checkbox"/> Certified Repair Station <input type="checkbox"/> Manufacturer		YN8R621Y Radio Class I, II, III		
D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.						
Date			Signature of Authorized Individual			
April 12, 2006			TEOFILO INES JR 			
7. Approval for Return to Service						
Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED						
BY	<input type="checkbox"/> FAA Filt Standards Inspector	<input type="checkbox"/> Manufacturer	<input type="checkbox"/> Inspection Authorization	Other (Specify)		
	<input type="checkbox"/> FAA Designee	<input checked="" type="checkbox"/> Repair Station	<input type="checkbox"/> Person Approved by Transport Canada Airworthiness Group			
Date of Approval or Rejection		Certificate or Designation No.		Signature of Authorized Individual		
April 12, 2006		YN8R621Y		ROBERT B. GALLOR 		

