Title CESSNA 400 NAV/COM WITH GLIDESLOPE - 14 VOLT (INCLUDES BASIC ELECTRONICS)

MODELS AFFECTED          SERIALS AFFECTED
180                       18051876 & on
182                       18258506 & on
A185                      185-1301 & on
U206                      U206-0915 & on
TU206                     U206-0915 & on
P206                      P206-0420 & on
TP206                     P206-0420 & on
210                       21058937 & on
T210                      T210-0308 & on

NOTES
1. The following parts are not included in this kit and may be needed to complete the installation. Refer to the Accessory Kits Catalog and/or the Electronics Installations Manual to determine applicability or need,
   a. Omni Antenna Kit
   b. VHF Antenna Kit
   c. Transmitter and Audio Selector Switch Kit
   d. Magneto Filter Kit
   e. Radio Lights Rheostat
   f. Microphone
   g. Headset
   h. Microphone and Headset Jacks and wiring provisions
   i. Speaker
   j. Omni Antenna Coupler, Part No, ASP-547.
   k. Omni Selector Switch (Needed when dual omnis are used with autopilot).

FCC LICENSING DATA

Application for an aircraft radio station license for the Cessna 400 NAV/COM must be made on FCC Form 404. In response to Question No. 14 on Form 404, insert:

Manufacturer                     Cessna Type No.
Aircraft Radio Corporation       CC-402A
Boonton, New Jersey, U.S.A.
(Type 522A)

Complete technical information for the Cessna 400 NAV/COM is on file with the Federal Communications Commission.
## PARTS LIST:

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<td>1</td>
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<td>Circuit Breaker</td>
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<td>Mounting (Accessory Unit)</td>
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## CHANGE IN WEIGHT AND BALANCE:

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<th>182</th>
<th>206 Series</th>
<th>210-T210</th>
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Figure 1. Cessna 400 Nav/Com with Glideslope, Installed.
* THESE REQUIREMENTS ARE DEPENDENT UPON EXISTING RADIOS IN THE AIRCRAFT

Figure 2. Support Fabrication Details.
1. DESCRIPTION OF INSTALLATION.

a. (Refer to figure 1.) Installation of this kit consists of:

(1) Installation of remote units.

(2) Installation of glideslope antenna.

(3) Installation of panel units.

(4) Installation of A + filter.

(5) Installation and interconnection of wiring.

2. INSTALLATION INSTRUCTIONS.

a. Installation of Remote Units.

(1) (Refer to figure 3, sheet 1.) Models 180 & A185.

(a) Remove seats, carpets, and tailcone access panel at rear of baggage compartment. Locate tail light wire routing and remove floorboard cover plates as required for access to wire route.

(b) Compare existing radio installations, if any, with that shown on sheet 1 of figure 3. Determine if any existing support hardware may be used to mount the remote units of this installation. Fabricate additional support angles (7 & 10) as required.

(c) Locate and drill holes (9) in angles (7) to match mounts (6 & 16). Secure mounts to angles with screws and nuts (9).

(d) Locate and drill holes (13) in angle (10).

(e) Attach parts assembled in step (c) to angle (10) with nuts, spacers, and screws (11).

(f) Using parts assembled in step (e) as a pattern, drill holes (13) in bulkheads (8 & 12) and skin stiffener angle (15).

(g) Install parts assembled in step (e) with nuts, spacers, and screws (11).

(h) Starting at the instrument panel, route cable assemblies (2, 18 & 20) to remote units location following tail light wire route. Secure as required to prevent chafing of wires and obstruction of controls.

NOTE

If a VHF communications or omni antenna kit is to be installed with this radio kit, install the antennas at this time. Route antenna cable (19) and omni antenna cable (not shown) along same route as radio cables (2, 18 & 20).

(i) Cut cables (2, 18, 19 & 20) to required length and install connectors (1, 3 & 17) in accordance with wiring diagram in figure 7.

(j) Install accessory unit (4) and receiver (5). Tighten retention nuts on mounts (6 & 16) and secure with safety wire.

(k) Connect cables to accessory unit and receiver. Secure locking clips on connector (1) and jackscrews on connector (17) with safety wire.

(l) Reinstall cover plates on floorboard. Leave carpets and seats out until installation is complete.

(2) (Refer to figure 3, sheets 2 and 3.) Model 206 Series.

(a) Remove lower cowl panel for access to radio compartment below engine.
(b) Compare existing radio installations, if any, with the installations shown on sheets 2 and 3 of figure 3. Determine if any existing support hardware may be used to mount the remote units of this installation. Fabricate additional support angles (4, sheet 2) and 4 & 6, sheet 3) as required.

(c) (Refer to figure 3, sheet 2). Locate and drill holes (5) in angles (4) to match mount (2).

**CAUTION**

These holes must be carefully located, as holes (3) must match existing nutplates in aircraft.

(d) Attach mount (2) to angles (4) with nuts and screws (5).

(e) Install assembled parts from step (d), on existing support angles with screws (5) as shown.

(f) Starting at the instrument panel, route cable assemblies (9 & 10) from radio panel unit location, down center of firewall to cable exit point on cabin floorboard just aft of firewall. Route through sleeveing in nose wheel well to accessory unit location in radio compartment. Secure cable as required to prevent chafing of wires or obstruction of the aircraft’s controls.

**NOTE**

If a VHF communications antenna kit is to be installed with this radio kit, install antenna at this time. Route antenna cable with radio cable (9).

(g) Cut glideslope wires of cable assembly (9) to length required and install connector (7) in accordance with wiring diagram in figure 7.

(h) Cut glideslope antenna cable assembly (10) to length required and install connector (8).

(i) Install receiver (1) in mount (2), tighten retention nut on mount, and secure with safety wire.

(j) Connect cables (9 & 10) to receiver (1) and secure jackscrews on connector (7) with safety wire.

(k) (Refer to figure 3, sheet 3). Install support angles (6) as shown. Blind rivets may be substituted for driven rivets (3) as desired to facilitate installation.

(l) Drill holes (7) in angles (4) to match mount (5).

(m) Attach mount (5) to angles (4) with screws and nuts (7).

(n) Attach assembled parts from step (m), to angles (6) with nuts and screws (2).

(o) Cut cables (8 & 9) to length required and install connectors (10 & 11) in accordance with wiring diagram in figure 7.

(p) Install accessory unit (1) on mount (5), tighten retention nut on mount, and secure with safety wire.

(q) Connect cables to accessory unit and secure locking clips on connector (10) with safety wire.

(r) Reinstall lower cowl panel.

(3) (Refer to figure 3, sheet 4.) Models 182, 210 & T210.

(a) Remove seats, carpets and cover plates as required to gain access to radio shelf area in tailcone and to wire route under floorboard.

**NOTE**

On Models 210 and T210 access to radio shelf area is obtained by removing bulkhead cover plate on aft side of main landing gear wheel well.
Figure 3. Remote Units Installation (Sheet 4 of 4)
WARNING

Before working in wheel well area, make certain the master switch is OFF and one of the cables is disconnected from the battery, to prevent possible injury to personnel by doors being inadvertently closed.

(b) Select an unused space on the standard radio shelf in the tailcone which will accommodate the remote units. Using mounts (8 & 10) as patterns, drill holes (9) and install rivnuts (9).

(c) Install mounts using screws (11).

(d) Starting at the instrument panel, route cable assemblies (4, 7 & 12) to the remote unit location following standard wire route. Secure as required to prevent chafing of wires and obstruction of controls.

NOTE

If a VHF communications or omni antenna kit is to be installed with this radio kit, install antennas at this time. Route antenna cable (13) and omni antenna cable (not shown) along with radio cables.

(e) Cut cables (4 & 13) to proper length and install connectors (2).

(f) Cut cables (7 & 12) to proper length and install connectors (1 & 6) in accordance with wiring diagram in figure 7.

(g) Install accessory unit (3) in mount (10), tighten retention nut on mount, and secure with safety wire.

(h) Connect cables (12 & 13) to accessory unit and secure locking clips on connector (1) with safety wire.

(i) Install receiver (5) in mount (8), and tighten retention nut on mount, and secure with safety wire.

(j) Connect cables (4 & 7) to receiver and secure jackscrews on connector (6) with safety wire.

b. (Refer to figure 4.) Installation of Glideslope Antenna.

(1) Locate and drill hole (4).

NOTE

MODELS 180 & A185: Use hole for existing top screw in windshield center strip.

MODELS 182, 206 & 210: Drill hole in windshield approximately 2.50 inches down from top edge of windshield and 1.00 inches to the right or left of center as required to clear compass wire.

(2) Connect cable assembly (5) to antenna (8) and attach antenna to windshield using screw (3), washers (1, 2 & 11), and nut (10). Apply a small amount of epoxy cement (12) to antenna base as shown before assembly on windshield.

(3) Secure cable assembly to forward carry-thru spar.

NOTE

Installer has the option of securing cable by means of: Clamps and screws (6) located 3 and 12 inches left of aircraft centerline or, on aircraft equipped with upholstery retainers, a 0.25 inch slot may be cut in retainer (9) as shown to clear cable assembly so that it may be concealed behind the upholstery retainer.
Figure 4. Glideslope Antenna Installation
(4) Route cable to left doorpost and down under doorpost trim.

c. (Refer to figure 5.) Installation of Panel Units.

NOTE

If a transmitter and audio selector switch kit is to be installed with this radio kit, accomplish switches installation at this time.

(1) Locate and drill holes (6) to match dust cover (8). Note position of radio faceplate on cover when radio is installed in cover. Position holes (6) so that edge (11) of faceplate flange is even with plastic cover of panel.

(2) Attach dust cover (8) with screws (9) and nuts (7).

(3) Install indicator (3) in desired location on panel with screws (13).

(4) Attach plug (4) to indicator.

(5) Install connector (5) on omni antenna cable and attach to pendant cable on rear of dust cover.

NOTE

If dual omni radios are being installed, connect to omni antenna cable with the ASP-547 coupler.

(6) Install circuit breakers (1) in unused 'RADIO' circuit breaker location.

(7) Install radio (10) in dust cover (8).

d. (Refer to figure 6.) Installation of A+ Filter.

(1) Locate and drill holes (3) to match filter.

(2) Install filter (1) with screws and nuts (3).

NOTE

To facilitate wiring, step 2 may be postponed until the related wiring has been accomplished.

e. (Refer to figures 7, 8 & 9.) Installation and Interconnection of Wiring.

(1) Fabricate a red, 18 gage jumper wire (1), (figure 7) to connect the A+ filter ('IN') with the circuit breaker. Also, fabricate a short black, 18 gage jumper wire (2), (figure 7) to ground the A+ filter. Interconnect these wires as shown.

(2) Terminate and attach red/blue, second red wire from glideslope receiver, and red/white wires to circuit breakers as shown.

(3) Terminate and attach red/white wire to "OUT" terminal of the A+ filter as shown.

(4) Locate two yellow wires and route to "RADIO LTS DIM" rheostat. Strip, tin and solder to load side of rheostat.

(5) If this kit is being installed as the only transceiver or the first of two transceivers, interconnect the audio wiring in accordance with figure 8 using the first number in the terminal designations on figure 7.

NOTE

The two numbers on the ends of wires in figure 7 correspond to terminals on the audio terminal board shown in figures 8 and 9. For example, the first number of (28/29) denotes that terminal No. 28 is to be used if the radio is the only transceiver, or the first of two transceivers. The second number denotes that terminal No. 29 is to be used if the radio is the second of two transceivers.
Figure 5. Panel Unit Installation.
Figure 6. Filter Installation.
(6) If this kit is being installed as the second of two transceivers, interconnect the audio wiring in accordance with figure 9 using the second number in the terminal designations on figure 7.

NOTE

The gray/red and gray/green wires emerging from the indicator cable assembly are omni deviation output leads for driving the omni track function of an autopilot. These wires should be terminated and attached to the terminals shown on figures 7, 8, and 9 even if no autopilot is being installed at this time.

(7) Secure all wiring behind the instrument panel to prevent chafing of wires and obstruction of the controls.

(8) Reinstall all items previously removed to facilitate installation.

3. OPERATIONAL CHECK OUT.

a. Perform post-installation adjustments, preflight check, and flight checks in accordance with Cessna 400 Com, Nav, Nav/Com, and ADF Service Parts Manual and the Cessna 400 Glideslope Service Parts Manual.
Figure 7. Wiring Diagram, Cessna 400 Nav/Com with Glideslope
NOTE 1  PHONE OUTPUTS OF TRANSCEIVERS ARE CONNECTED TO TERMINALS 16 THRU 20.

NOTE 2  INPUTS TO AUDIO ISOLATION AMPLIFIER IN TRANSCEIVER ARE CONNECTED TO TERMINALS 11 THRU 15.
NOTE 1  PHONE OUTPUTS OF TRANSCEIVERS ARE CONNECTED TO TERMINALS 16 THRU 20.

NOTE 2  INPUTS TO AUDIO ISOLATION AMPLIFIER IN EACH TRANSCEIVER ARE CONNECTED TO TERMINALS 11 THRU 15.

Figure 9. Audio and Control Wiring - Dual Transceivers and Multiple Receivers.