Section XII
Avionics

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TROUBLESHOOTING CHARTS

Section XII
Avionics

12-1. REQUIREMENTS. Each customer's requirements vary so extensively that the basic helicopter does not contain avionics equipment or wiring. Equipment is optional and is available in kits. Installation data, wiring diagrams, etc. are included therein. Exceptions to this case are as follows:

12-2. VHF RADIO (KING KX-170) 206-706-326-29 (HELICOPTERS PRIOR TO 1564). (Figure 12-1.)

12-3. DESCRIPTION. The VHF radio installation is centered around the King KX-170 NAV/COM transceiver. Intercommunications is provided to the pilot and copilot positions with the relay panel. The King KX-170 provides VHF communication on 118.00 to 135.95 MHz and VHF navigation capability on 108.00 to 117.95 MHz. For additional information, refer to King Manual KPN 006-5020-00 concerning operation and maintenance procedures.

12-4. OPERATION — INTERCOMMUNICATION. Pilot/copilot intercommunication can be accomplished by the following steps:

a. Energize 28 Vdc bus voltage with battery, dc generator, or external power unit.

b. Close the VHF1 circuit breaker and energize the VHF communication receiver.

c. Listen to the pilots or copilots headset and depress the pilots or copilots ICS switch (on cyclic stick).

d. Talk into the microphone normally and note that sidetone is present in the headset.

12-5. OPERATION — VHF COMMUNICATION. VHF communication can be accomplished by the following steps:

a. Energize 28 Vdc bus voltage with the battery, dc generator, or external power unit.

b. Close the VHF 1 circuit breaker.

c. Select ON on the OFF-ON-TEST switch and set the COMM frequency dials to the desired frequency.

d. Depress the pilots or copilots radio switch to the second detent to transmit and talk normally into the microphone.

e. Listen to the pilots or copilots headset and adjust the VOL (left side of KX-170) for the desired listening level during reception.

f. Select TEST on the OFF-ON-TEST switch to confirm receiver operation by presence of background noise and to use the receiver in an unsquelched mode. When the VHF and intercommunication system is not in use, place the OFF-ON-TEST switch to OFF and open the VHF 1 circuit breaker.

12-6. OPERATION — VHF NAVIGATION. VHF NAV information can be received by accomplishing the following steps:

a. Energize 28 Vdc bus voltage with the battery, dc generator, or external power unit.

b. Close the VHF 1 circuit breaker.

c. Select ON on the OFF-ON-TEST switch and select the desired NAV frequency on the KX-170.

d. Select IDENT on the VOICE-IDENT switch for identification tone reception.

e. Select VOICE on the VOICE-IDENT switch for removal of the identification tone from the navigation receiver audio.

f. For further navigation operation instructions refer to (206-706-326-3) OMNI operation instructions.

12-7. OMNI (KING KI-201C) 206-706-326-3. (Figure 12-1.)

12-8. DESCRIPTION. The OMNI kit installation is centered around the King KI-201C VHF omni indicator as coupled with the

navigation receiver in the KX-170 unit of the VHF kit. The King KI-201C omni indicator provides visual indication of the VOR and LOC signals provided by an internal converter which is coupled to the KX-170 navigation receiver. For additional information, refer to King manual KPN 006-5020-00 concerning operation and maintenance procedures.

12-9. OPERATION — VOR/LOC. The King KX-170 navigation receiver must be used with the King KI-201C indicator for VOR/LOC operation as follows:

a. Energize the 28 Vdc bus with the battery, dc generator, or external power unit.

b. Close the VHF 1 circuit breaker for operation and select ON of the OFF-ON-TEST switch on the KX-170.

c. Select the desired frequency on the NAV dials and confirm the presence of VHF omni information in the headset with the IDENT-VOICE switch set to IDENT on the KX-170 and observe that the VOR/LOC warning flag on the KI-201C is concealed.

d. Select the desired radial on the OBS knob. Observe the TO-FROM indicator for the ambiguity of flight direction and the vertical pointer for indication of direction of selected course.

e. Select the desired NAV frequency for localizer operation and note that the VOR/LOC flag is concealed.

f. Follow the vertical pointer for indication of flight path.

12-10. VHF RADIO (KING KX-170B) 206-706-070-1/-3 (HELICOPTERS 1564 AND SUB). (Figure 12-1.)

12-11. DESCRIPTION. The VHF radio installation is centered around the King KX-170B NAV/COMM transceiver. Intercommunications is provided to the pilot and copilot positions with relays. The King KX-170B provides VHF communication on 118.00 to 135.95 MHz and VHF navigation capability on 108.00 to 117.95 MHz. For additional information, refer to King manual KPN 006-0085-00 and/or 006-5053-03 concerning operation and maintenance procedures.

12-12. OPERATION — INTERCOMMUNICATION. Pilot/copilot intercommunication can be accomplished by the following steps:

a. Energize 28 Vdc bus voltage with battery, dc generator, or external power unit.

b. Close the VHF 1 circuit breaker (CB3).

c. Listen to the pilots or copilots headset and depress the pilots or copilots ICS switch (on cyclic stick).

d. Talk into the microphone normally; observe that sidetone is present.

12-13. OPERATION — VHF COMMUNICATION. VHF communication can be accomplished by the following steps:

a. Energize 28 Vdc bus voltage with the battery, dc generator, or external power unit.

b. Close the VHF 1 circuit breaker (CB3).

c. Set the OFF-ON-TEST switch in ON, and set the COMM frequency dials to the desired frequency.

d. Depress the pilots or copilots radio switch to transmit and talk normally into the microphone.

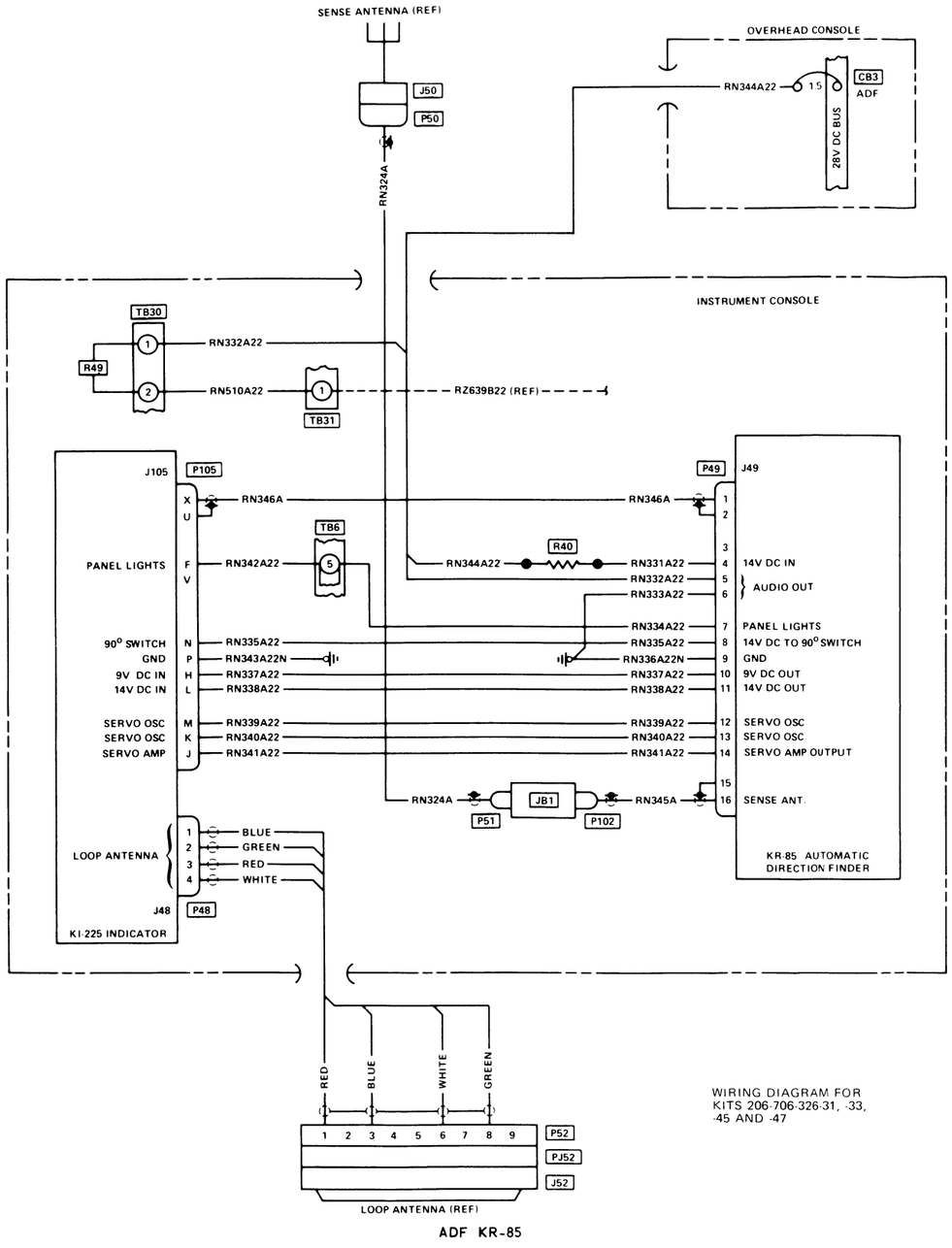
e. Listen to the pilots or copilots headset and adjust the VOL (left side of KX-170B) for the desired listening level during reception.

f. Select TEST, with the OFF-ON-TEST switch, to confirm receiver operation by presence of background noise and to use the receiver in an unsquelched mode. When the VHF and intercommunication system is not in use, place the OFF-ON-TEST switch in OFF.

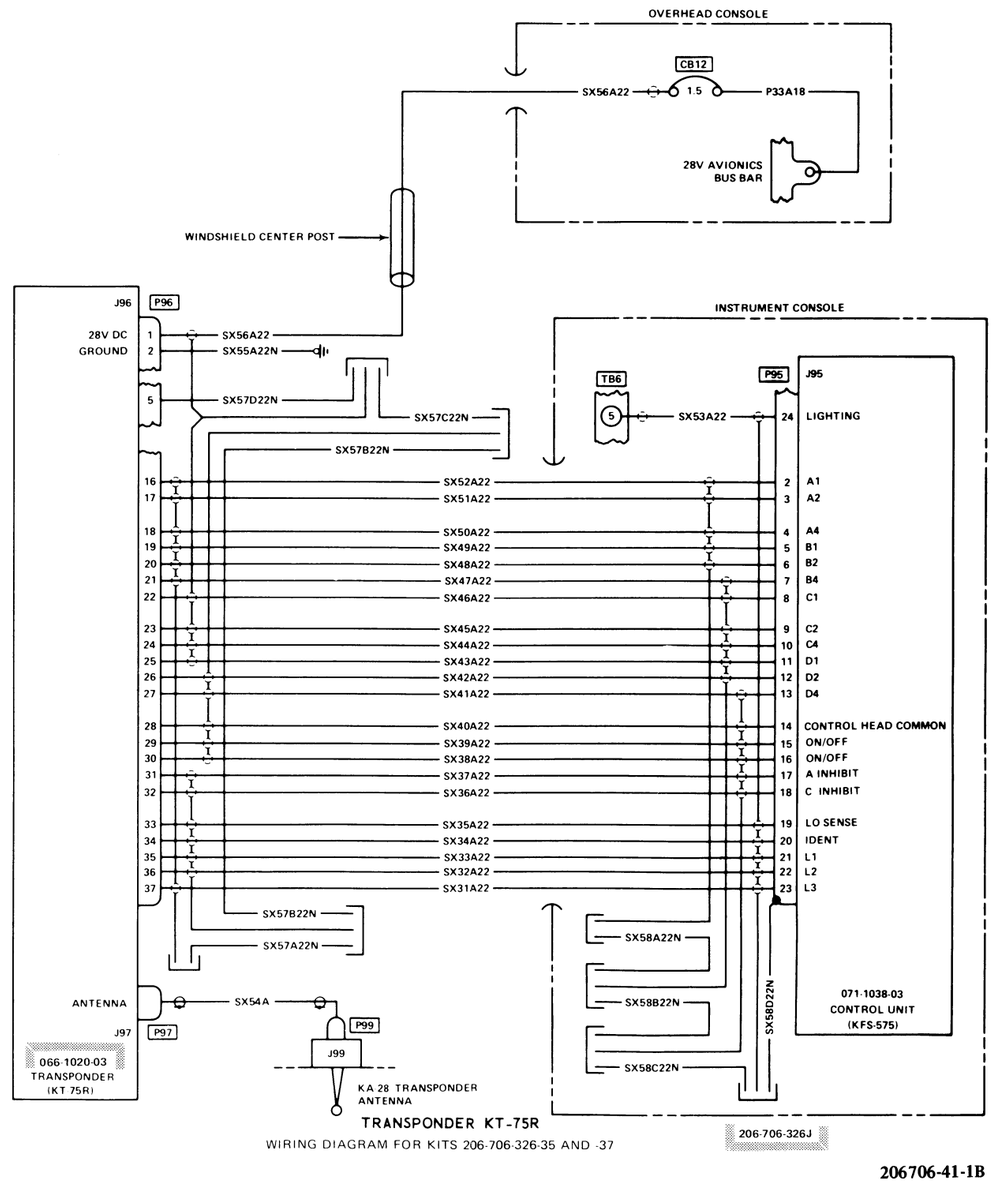
12-14. OPERATION — VHF NAVIGATION. VHF NAV information can be received by accomplishing the following steps:

a. Energize 28 Vdc bus voltage with the battery, dc generator, or external power unit.

b. Close the VHF 1 circuit breaker.



WIRING DIAGRAM FOR KITS 206-706-326-31, -33, -45 AND -47



WIRING DIAGRAM FOR KITS 206-706-326-35 AND -37

206706-41-1B

Figure 12–1. Auxiliary Wiring Diagram — ADF (King KR–85) and Transponder (King KT–75R) (Helicopters through 1563) (if installed) (Sheet 1 of 4)

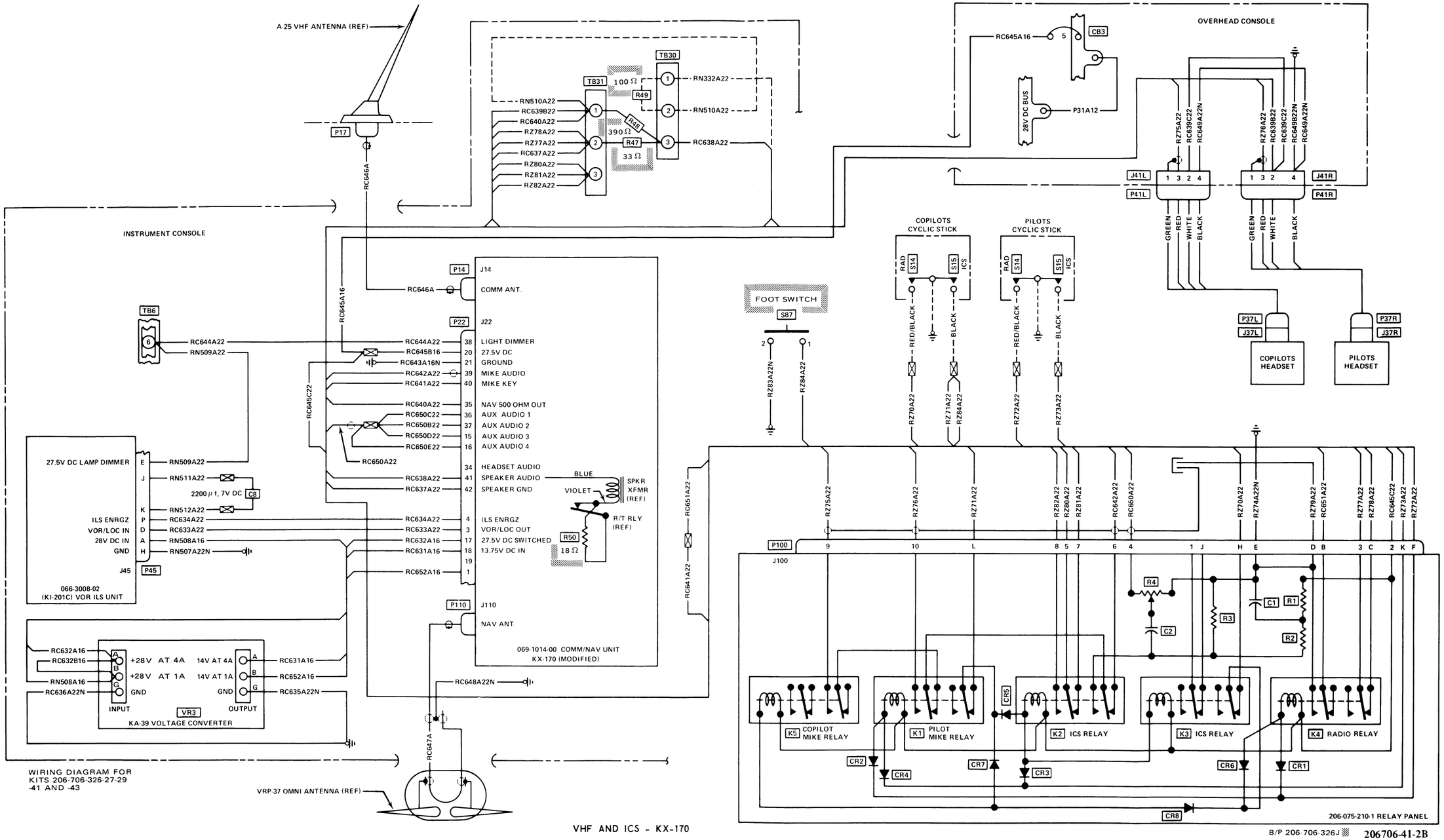


Figure 12–1. Auxiliary Wiring Diagram — VHF and ICS (King KX–170) (Helicopters through 1563 and 2157 and Sub) (if installed) (Sheet 2 of 4)

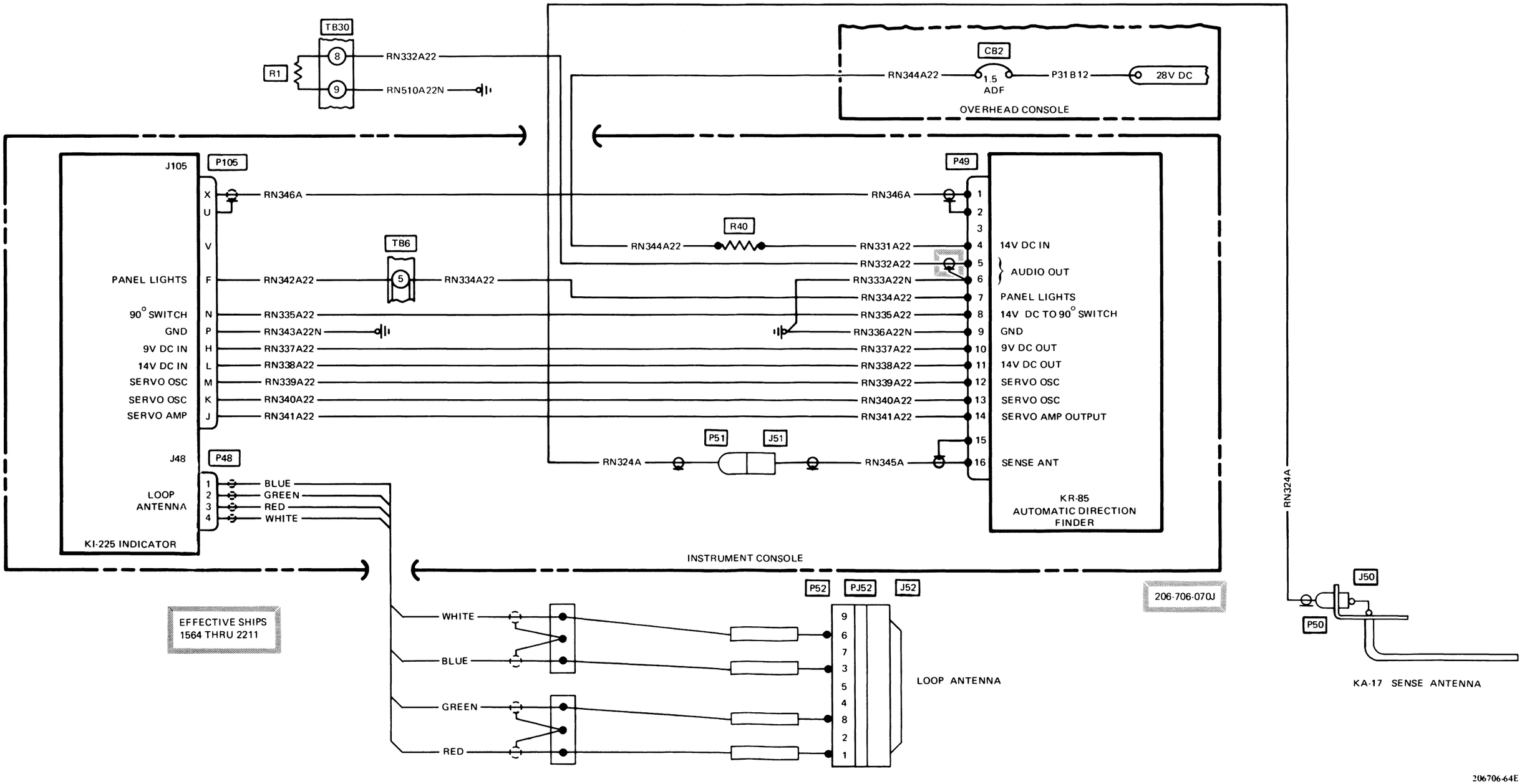
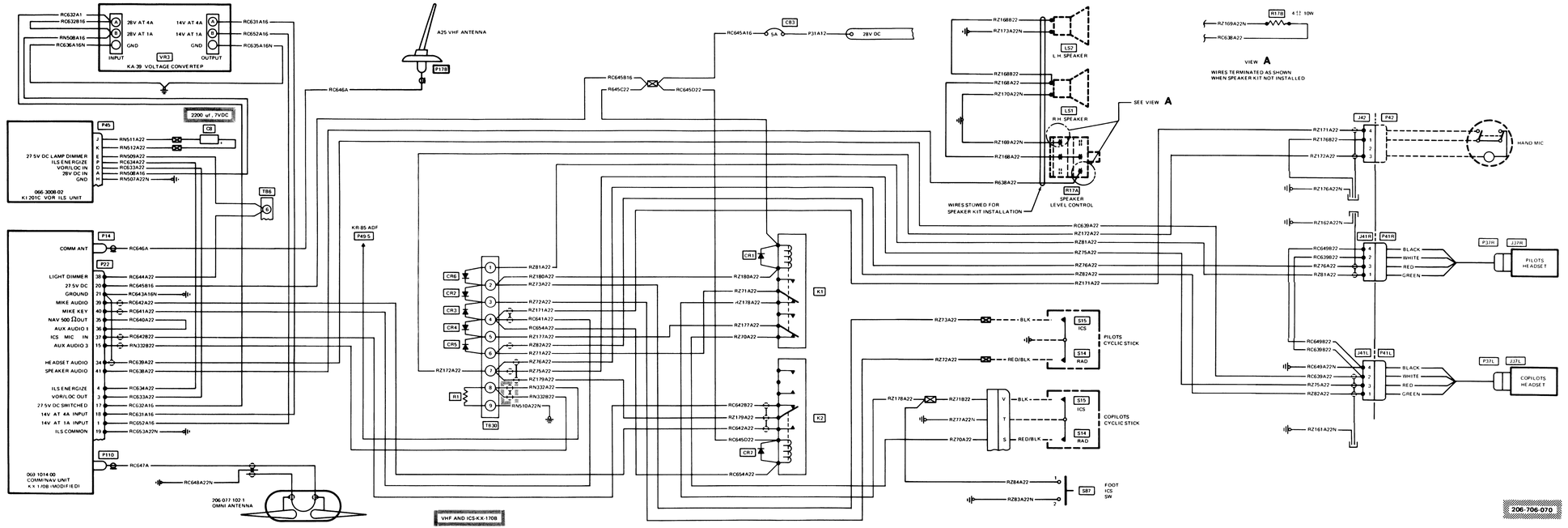


Figure 12-1. Auxiliary Equipment Wiring Diagram — ADF (King KR-85) (Helicopters 1564 thru 2211) (If Installed) (Sheet 3 of 4)



206706-65D

Figure 12-1. Auxiliary Equipment Wiring Diagram — VHF NAV/COMM and ICS (King KX-170B) (Helicopters 2564 thru 2166) (Sheet 4 of 4)

All data on pages 12-10A/12-10B and 12-10C/12-10D, including figure 12-1A, deleted.

c. Set the OFF-ON-TEST switch in ON, and select the desired NAV frequency on the KX-170B.

d. Set the VOICE-IDENT switch in IDENT for identification tone reception.

e. Set the VOICE-IDENT switch in VOICE for removal of the identification tone from the navigation receiver audio.

f. For further navigation operation instructions refer to the 206-706-070-17 OMNI operation instructions below.

12-15. OMNI (KING KI-201C) 206-706-070-17. (Figure 12-1.)

12-16. DESCRIPTION. The OMNI kit installation is centered around the King KI-201C VHF omni indicator as coupled with the navigation receiver in KX-170B unit of the VHF kit. The King KI-201C omni indicator provides visual indication of the VOR and LOC signals provided by an internal converter which is coupled to the KX-170B navigation receiver. For additional information, refer to King manual KPN 006-0092-00 and/or 006-5052-01 concerning operation and maintenance procedures.

12-17. OPERATION — VOR/LOC. The King KX-170B navigation receiver must be used with the King KI-201C indicator for VOR/LOC operation as follows:

a. Energize the 28 Vdc bus with the battery, dc generator, or external power unit.

b. Close the VHF 1 circuit breaker for operation and select ON of the OFF-ON-TEST switch on the KX-170B.

c. Select the desired frequency on the NAV dials and confirm the presence of VHF omni information in the headset with the IDENT-VOICE switch set to IDENT on KX-170B and observe that the VOR/LOC warning flag on the KI-201C is concealed.

d. Select the desired radial on the OBS knob. Observe the TO-FROM indicator for the ambiguity of flight direction and the vertical pointer for indication of direction of selected course.

e. Select the desired NAV frequency for localizer operation and note that the VOR/LOC flag is concealed.

f. Observe the vertical pointer for indication of flight path.

12-18. ADF (KING KR-85 AND KI-225) 206-706-326-33 (HELICOPTERS PRIOR TO 1564). (Figure 12-1.)

12-19. DESCRIPTION. The ADF kit installation is centered around the King KR-85 digital tuned ADF with the KI-225 complementary indicator. The King KR-85 ADF provides receiver capability from 200 to 1699 KHz in 1 KHz steps for direction finding purposes. For additional information, refer to the King installation manual, KPN 006-0043-00.

12-20. OPERATION — ADF. The ADF operation may be accomplished by the following steps:

a. Energize 28 Vdc bus voltage with the battery, dc generator, or external power unit.

b. Close the ADF circuit breaker.

c. Place the OFF-ADF-ANT-BFO switch to ADF and select the desired station frequency on the two large concentric knobs.

d. Set the desired compass card heading into the KI-225 indicator with the HDG knob and observe the direction to the tuned station on the KI-225 indicator pointer.

e. Headset audio may be obtained by adjustment of the VOL control. Speaker audio is available if the cabin speaker kit is installed.

12-21. OPERATION — ANT/BFO. After completing the steps listed for ADF operation, select ANT or BFO on the OFF-ADF-ANT-BFO switch and note that the KI-225 pointer seeks a direction of 90 degrees. Note that the cabin speaker kit must be installed and operative to obtain speaker audio from the KR-85 ADF audio output as stated under ADF operation.

12-22. ADF (KING KR-85 AND KI-225) 206-706-070-5/-11 (HELICOPTERS 1564 AND SUB).

12-23. DESCRIPTION. The ADF kit installation is centered around the King KR-85 digital tuned ADF with the KI-225 complementary

indicator. The King KR-85 ADF provides receiver capability from 200 to 1699 KHz in 1 KHz steps for direction finder purposes. For additional information, refer to the King installation manual, KPN 006-0043-04 and/or 006-5023-03.

12-24. OPERATION — ADF. The ADF operation may be accomplished by the following steps:

a. Energize 28 Vdc bus voltage with the battery, dc generator, or external power unit.

b. Close the ADF circuit breaker (CB2).

c. Place the OFF-ADF-ANT-BFO switch to ADF and select the desired station frequency on the two large concentric knobs.

d. Set the desired compass card heading into the KI-225 indicator with the HDG knob and observe the direction to the tuned station on the KI-225 indicator pointer.

Note

Speaker kit must be installed and operative to obtain speaker audio from the KR-85 ADF audio output.

e. Headset audio may be obtained by adjustment of the VOL control. Speaker audio is available if the cabin speaker kit is installed.

12-25. OPERATION — ANT/BFO. Select ANT on the OFF-ADF-ANT-BFO switch and observe that the KI-225 pointer seeks a direction of 090 degrees.

a. Set the OFF-ADF-ANT-BFO function select switch at BFO and ascertain that 1.0 KHz is audible.

12-26. TRANSPONDER (KING KT-75R AND KFS-575) 206-706-326-37. (Figure 12-1.)

12-27. DESCRIPTION. The transponder kit installation is centered around the King KT-75R remote ATC transponder. The KT-75R ATC transponder provides ATC radar information for control of general aviation in high density areas with an availability of 4,096 codes. For additional information, refer to the King installation manual, KPN 006-0041-00.

12-28. OPERATION — TRANSPONDER. The transponder operation may be accomplished by the following steps:

a. Energize 28 Vdc bus voltage with the battery, dc generator, or external power unit.

b. Close the XPNDR circuit breaker and select SBY on the OFF-SBY-ON-LO switch

Note

FAA designated codes: 0000-never used, 1200-VFR below 10,000 feet, 1400-VFR above 10,000 feet, 4000-restricted and warning area, 7600-lost communications; and 7700-emergency (MAYDAY) should ONLY be used in an emergency situation.

c. Select the desired code on the code dials; then allow 45 seconds for an internal delay circuit (allows for transmitter tube warmup).

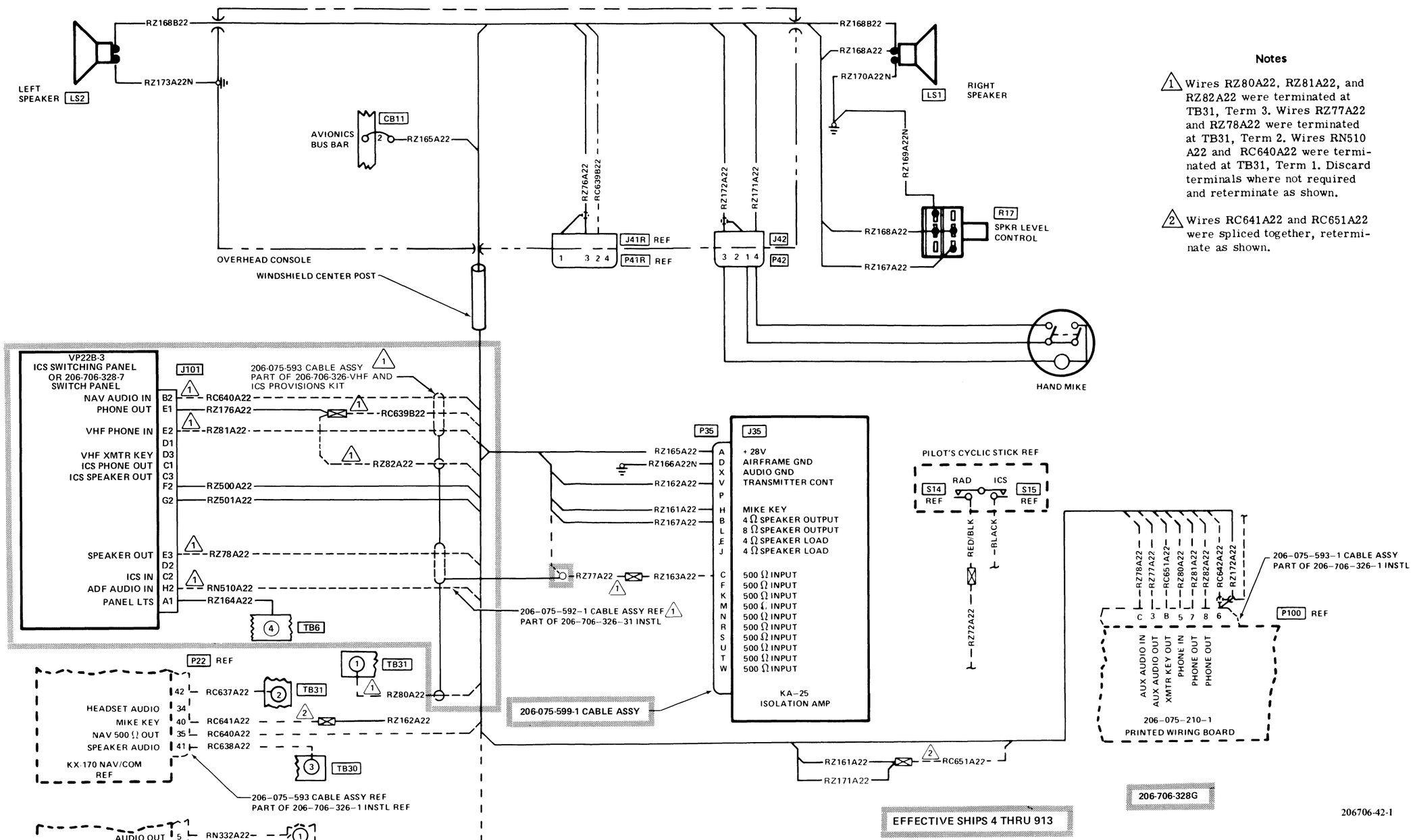
Note

The position of the MODE switch is immaterial unless an altitude reporting altimeter is installed, operative, and requested by the controller.

d. The LO sensitivity position may be requested by a controller when interrogation overloads the receiver causing erroneous pulse information to be transmitted.

12-29. TRANSPONDER (KING KT-76) 206-706-326-49/-51 OR (KING KT-76A) 206-706-070-25/27. (Figure 12-3 and 12-4 .)

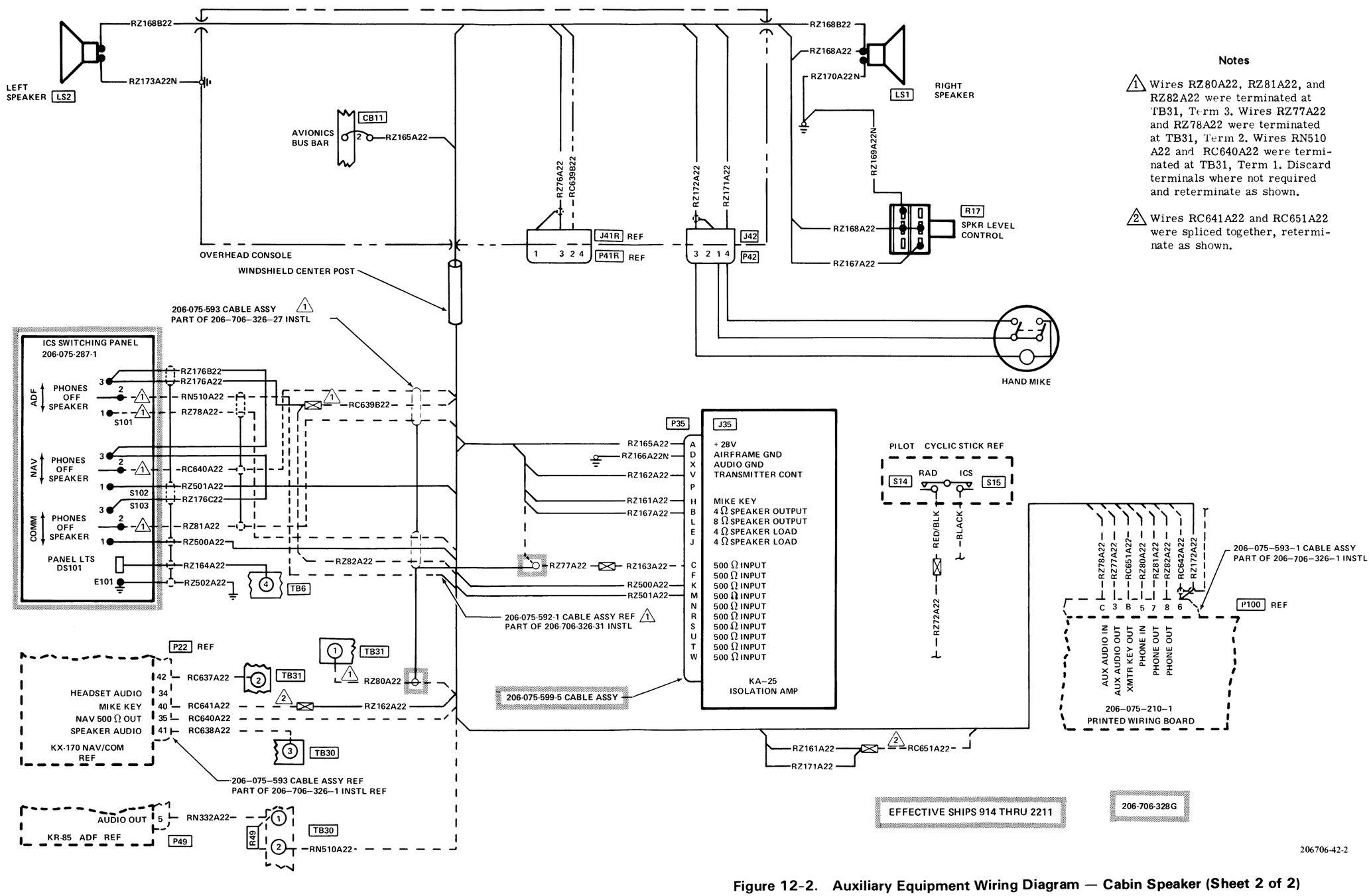
12-30. DESCRIPTION (KING KT-76 OR KT-76A). The King KT-76 or KT-76A transponder is designed to fulfill the role of the airborne beacon



Notes

1. Wires RZ80A22, RZ81A22, and RZ82A22 were terminated at TB31, Term 3. Wires RZ77A22 and RZ78A22 were terminated at TB31, Term 2. Wires RN510 A22 and RC640A22 were terminated at TB31, Term 1. Discard terminals where not required and reterminate as shown.
2. Wires RC641A22 and RC651A22 were spliced together, reterminate as shown.

Figure 12-2. Auxiliary Equipment Wiring Diagram — Cabin Speaker (Helicopters prior to 914) (Sheet 1 of 2)



206706-42-2

Figure 12-2. Auxiliary Equipment Wiring Diagram — Cabin Speaker (Sheet 2 of 2)

Notes

1. Wires RZ80A22, RZ81A22, and RZ82A22 were terminated at TB31, Term 3. Wires RZ77A22 and RZ78A22 were terminated at TB31, Term 2. Wires RN510 A22 and RC640A22 were terminated at TB31, Term 1. Discard terminals where not required and reterminate as shown.
2. Wires RC641A22 and RC651A22 were spliced together, reterminate as shown.

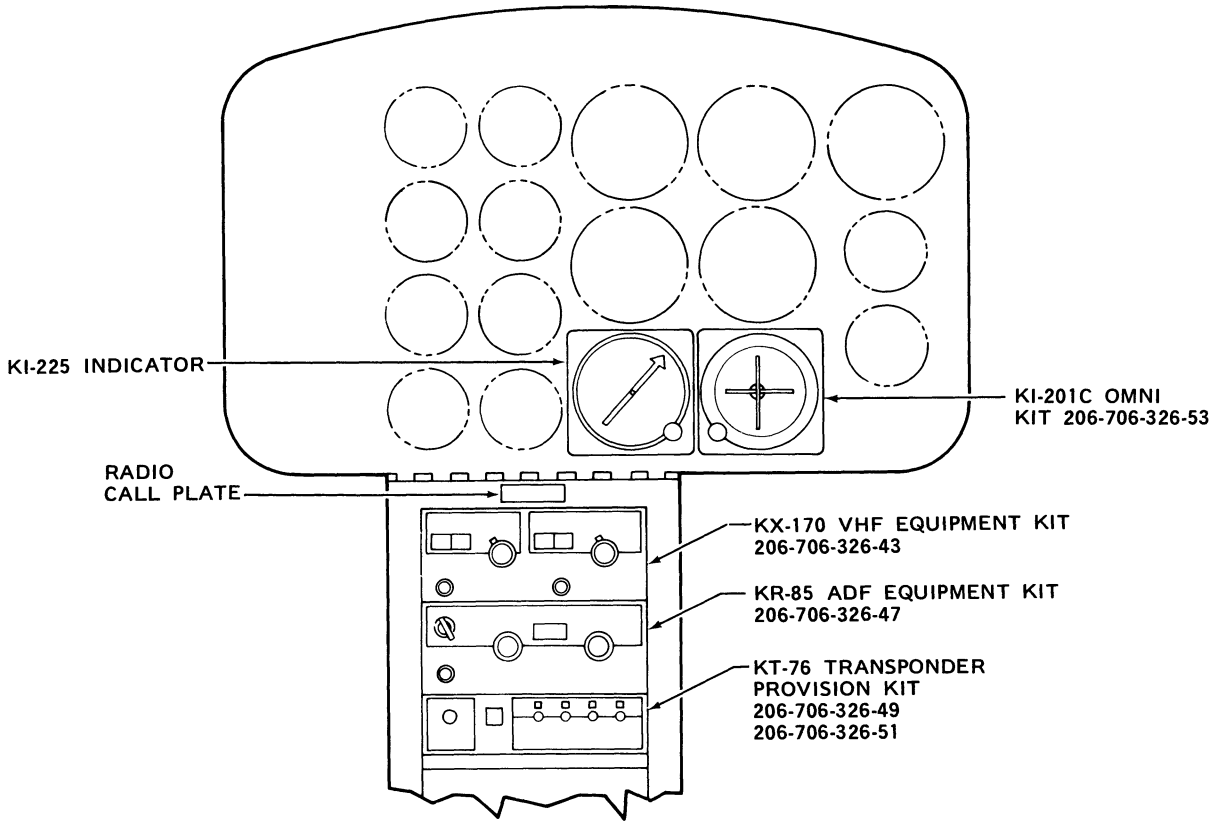


Figure 12-3. Avionics Configuration

under the requirements of the Air Traffic Control Radar Beacon System (ATCRBS).

a. The KT-76 or KT-76A transponder is capable of locating the user through the air traffic controller. Range and azimuth are established by the return from the transponder's pulsed transmitter in reply to a routine interrogation from the ground radar site.

b. The transponder reply is a set of pulses, selected in number, and positioned in time, one with respect to the other (not entirely unlike telegraphy). Information is conveyed to the ground in this manner. An identity code number, selected at the front panel by the pilot, is transmitted as a Mode A reply.

c. An additional feature of the transponder and beacon system is the S.P.I. (Special Pulse Identification). After pressing the IDENT button the transponder, when interrogated, will reply with a special pulse that will cause the associated pip on the controllers display to "bloom" to effect immediate recognition. For additional information refer to the King KT-76 Maintenance/Overhaul Manual, KPN 006-5058-00 or KPN 006-5058-02 as applicable or King KT-76 Installation Manual, KPN 006-0067-01.

12-31. OPERATION — TRANSPONDER (KING KT-76 OR KT-76A).

The transponder is turned on by rotating the function selector from the off position to any other position.

Note

The KT-76 or KT-76A should be turned off before starting aircraft engine.

a. After being turned on there is a 30 second delay before the unit becomes functional. This is to

permit the transmitter tube to warmup and stabilize. Usually the function switch will be rotated to STANDBY; however, any operative position will initiate the time delay turn on. Any time that the function switch is in ON or ALT position the transponder becomes an active part of the beacon switch. It is undesirable from a systems viewpoint to be operating (function selector in either of these positions) while on the ground, taxiing, or running up at a terminal with a collocated beacon interrogator. Attention should be paid to the code selected on the control unit. The selected code should be in accordance with instructions for IFR flight or rules applicable to transponder utilization for VFR flight.

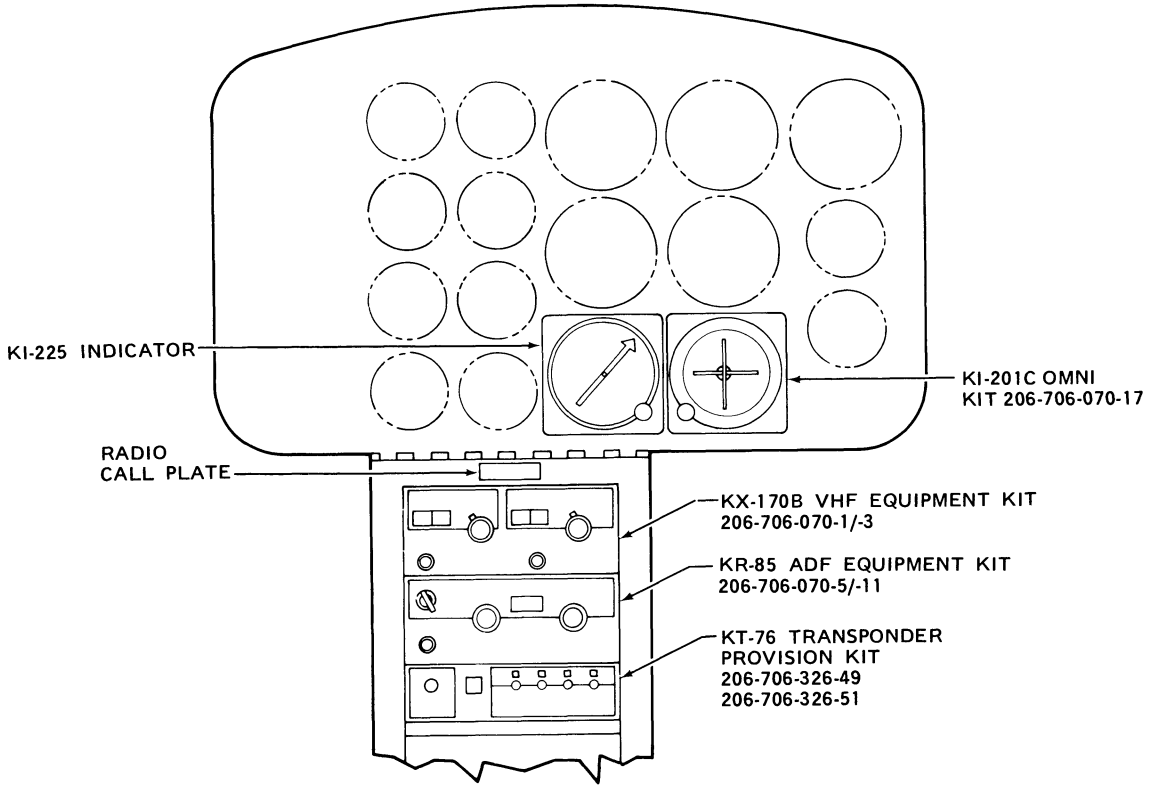
Note

FAA designated codes: 0000 and 7777-never used, 1200-VFR below 10,000 feet, 1400-VFR above 10,000 feet, 4000-restricted and warning area, 7600-lost communications; and 7700-emergency (MAYDAY) should ONLY be used during an emergency condition.

b. During normal transponder operation, a flashing lamp is an indication of a transmitted reply. An interrogation will normally be 10 to 15 seconds intervals. Lamp flashes within this interval may be from noise, a second or third interrogator, or from side lobes from interrogators without side lobe suppression.

c. ON function will be the normal mode of operation.

d. The IDENT feature is used at the request of the traffic controller. The IDENT button is depressed momentarily and then released. A memory holds the IDENT reply for an interval to assure the proper reply for at least one radar



EFFECTIVE HELICOPTERS 1564 AND SUB 206706-42F

Figure 12-3A. Avionics Configuration

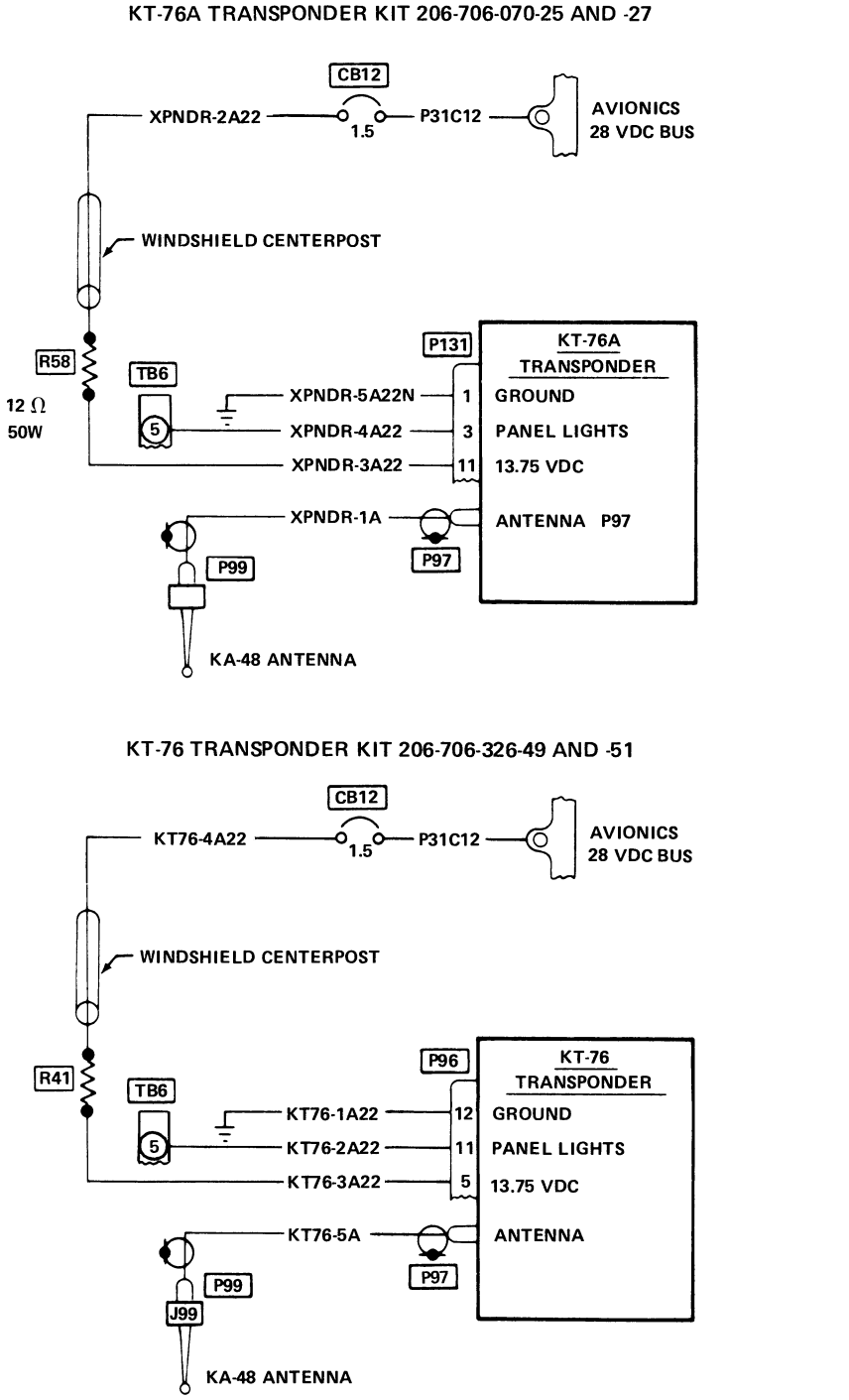


Figure 12-4. KT-76 Transponder Wiring and Equipment

sweep. This memory also turns the reply lamp on steady as an indication of the ident function.

12-32. TROUBLESHOOTING. For VHF radio (KING KX-170 or KX-170B) electrical connections, refer to circuit diagrams, figures 12-1 and 12-2.

Note

Bench check the KX-170 or KX-170B unit before proceeding with extensive checks and repairs as stated in the following troubleshooting chart.

VHF RADIO (KING KX-170) 206-706-326-29

INDICATION OF TROUBLE	PROBABLE CAUSE	CORRECTIVE ACTION
Panel lights inoperative in KX-170.	Defective panel lamps in both units.	Replace defective lamps.
	Defective wiring from TB6-6 to KX-170 plug P22-38.	Repair or replace defective wiring.
KX-170 receiver and pilot/copilot ICS inoperative.	Open or defective VHF 1 circuit breaker.	Reset or replace the circuit breaker.
	Defective wiring from VHF 1 circuit breaker to P100-2 and to KX-170 plug P22-20.	Repair or replace defective wiring.
KX-170 receiver inoperative (ICS operative).	Defective wiring from the KX-170 plug P22-17 to the KA39 terminal A (+28V).	Repair or replace defective wiring.
	Defective wiring from the KA39 terminal A (14V/4A) to the KX-170 plug P22-18.	Repair or replace defective wiring.
	Defective KA39.	Replace the KA39.
	Defective wiring from both KA39 terminal G to A/C ground.	Repair or replace defective wiring.
Pilots microphone not operative (ICS and/or transmit).	Defective pilots microphone.	Replace pilots headset.
	Defective PLT MIC relay (K1).	Replace defective relay.
	Defective PLTs ICS-RAD switch.	Replace defective switch.
	Defective diodes (CR4-ICS and/or diodes CR3-RAD).	Replace defective diodes.
	Defective relay panel (206-075-210-1) wiring.	Replace defective relay panel.
	Defective ICS relay (K2 and/or K3).	Replace defective relay.
Copilots microphone not operative (pilots operates normally).	Defective CPLT MIC relay (K5)	Replace defective relay.
	Defective copilots microphone.	Replace copilots headset.

VHF RADIO (KING KX-170) 206-706-326-29 (Cont)

INDICATION OF TROUBLE	PROBABLE CAUSE	CORRECTIVE ACTION
	Defective PLT MIC relay (K1).	Replace defective relay.
	Defective diodes (CR5 and/or CR8).	Replace defective diode.
	Defective CPLTs ICS-RAD switch.	Replace defective switch.
Pilots and copilots microphone audio low in ICS position.	Setting of R4 on the relay panel (206-075-210-1) is too low.	Increase setting of R4 as desired.
	Resistance network on the relay panel (R1, R2 and R3 on (206-075-210-1)) is defective.	Replace the defective resistors.
	Open capacitor (C2).	Replace defective capacitor.
KX-170 transmitter will not key from pilots position.	Defective diode (CR7).	Replace defective diode.
	Defective relay (K4).	Replace defective relay.
	Defective relay panel circuitry (206-075-210-1).	Replace defective panel.
	Defective wiring from P100-B to the KX-170 plug P22-40.	Repair or replace defective wiring.
KX-170 transmitter will not key from copilots position.	Defective diode (CR6).	Replace defective diode.
	Defective relay (K4).	Replace defective relay.
	Defective relay panel circuitry (206-075-210-1).	Replace defective panel.
No audio in either headset from the navigation and/or communication receiver.	Defective wiring from TB9-2 to the KX-170 plug P22-41 (HDST) or P22-35 (NAV).	Repair or replace defective wiring.
	Defective wiring from TB31-1 to J41R-2.	Repair or replace defective wiring.
	Both headsets defective.	Replace defective headsets.

VHF RADIO (KING KX-170B) 206-706-070-1, -3.

INDICATION OF TROUBLE	PROBABLE CAUSE	CORRECTIVE ACTION
Panel lights inoperative in KX-170B.	Defective panel lamps in both units.	Replace defective lamps.
	Defective wiring from TB6-6 to KX-170B plug P22-38.	Repair or replace defective wiring.
KX-170B receiver and pilot/copilot ICS inoperative.	Open or defective VHF 1 circuit breaker.	Reset or replace the circuit breaker.
	Defective wiring from VHF 1 circuit breaker to relay K2 and to KX-170B plug P22-20.	Repair or replace defective wiring.
KX-170B receiver inoperative (ICS operative).	Defective wiring from the KX-170B plug P22-17 to the KA39 terminal A INPUT.	Repair or replace defective wiring.
	Defective wiring from the KA39 terminal A (OUTPUT) to KX-170B plug P22-18.	Repair or replace defective wiring.
	Defective KA39.	Replace the KA39.
	Defective wiring from ground to KA39 terminal G (INPUT or OUTPUT).	Repair or replace defective wiring.
Pilots microphone not operative (ICS and/or transmit).	Defective pilots microphone.	Replace pilots headset.
	Defective relay K1.	Replace defective relay.
	Defective PLT ICS-RAD switch.	Replace defective switch.
	Defective diodes CR3 or CR4.	Replace defective diodes.
	Defective relay wiring.	Replace defective wiring.
Copilots microphone not operative (pilots operates normally).	Defective CPLT MIC relay K2.	Replace defective relay.
	Defective copilots microphone.	Replace copilots headset.
	Defective PLT MIC relay K1.	Replace defective relay.
	Defective CPLT ICS-RAD switch.	Replace defective switch.

VHF RADIO (KING KX-170B) 206-706-070-1, -3, (Cont)

INDICATION OF TROUBLE	PROBABLE CAUSE	CORRECTIVE ACTION
Speaker (when installed), LH or RH, inoperative.	Speaker level control defective.	Replace defective control.
	Wiring, interconnecting or from speaker level control to KX-170B plug P22-41.	Repair or replace defective wiring.
KX-170B transmitter will not key from pilots position.	Defective relay K1.	Replace defective relay.
	Defective wiring from TB30-4 to the KX-170B plug P22-40.	Repair or replace defective wiring.
KX-170B transmitter will not key from copilots position.	Defective diode (CR6).	Replace defective diode.
	Defective relay K1.	Replace defective relay.
No audio present in either headset from navigation and/or communication receiver.	Defective wiring from KX-170B plug P22-41 to R17A or P22-35 (NAV).	Repair or replace defective wiring.
	Defective wiring from KX-170B plug P22-34 to J41R-2.	Repair or replace defective wiring.
	Both headsets defective.	Replace defective headsets.

OMNI (KING KI-201C) 206-706-326-3 or 206-706-070-17

INDICATION OF TROUBLE	PROBABLE CAUSE	CORRECTIVE ACTION
	Note Bench check the KI-201C before proceeding with extensive checks and repairs stated in the following troubleshooting chart.	
Panel lights in the KI-201C inoperative.	Defective panel light bulb.	Replace panel light bulbs.
	Defective wiring from TB6-6 to KI-201C plug P45-E.	Repair or replace defective wiring.
KI-201C indicator completely inoperative.	Defective wiring from VR3 terminal B (INPUT) to P45-A.	Repair or replace defective wiring.
	Defective wiring from P45-H to A/C ground.	Repair or replace defective wiring.
KI-201C indicator flag inoperative.	Defective wiring from P45-P (KI-201C) to P22-4 (VHF radio).	Repair or replace defective wiring.
KI-201C indicator operation is dead or erratic.	Defective wiring from P45-D (KI-201C) to P22-3 (VHF radio).	Repair or replace defective wiring.

ADF (KING KR-85 and KI-225) 206-706-326-33

INDICATION OF TROUBLE	PROBABLE CAUSE	CORRECTIVE ACTION
	Note Bench check all KR-85 and KI-225 units before proceeding with extensive checks and repairs called out in the following troubleshooting chart.	
Panel lights in KR-85 and KI-225 inoperative.	Defective panel lamps in both units.	Replace defective lamps as necessary.
	Defective wiring from TB6-5 to P49-7 (KR-85) and P105-F (KI-225).	Repair or replace defective wiring.
KR-85 and KI-225 inoperative with voltage indicated on the 28 Vdc bus.	Open or defective ADF circuit breaker.	Reset or replace circuit breaker.
	Defective resistor (R40).	Replace defective resistor.
	Defective wiring from the ADF circuit breaker to P49-4 (KR85 through R40).	Repair or replace defective wiring.
	Defective wiring from P49-6, -9 (KR-85) and/or P105-P to A/C ground.	Repair or replace defective wiring.
KI-225 does not seek the 090 degree position in ANT mode.	Defective wiring from P49-8 (KR-85) to P105-N (KI-225).	Repair or replace defective wiring.
No audio available in the speaker system (when installed) from the KR-85.	Defective wiring from P49-5 (KR-85) to TB31-1.	Repair or replace defective wiring.
KI-225 inoperative (KR-85 operative through speaker system in ADF mode).	Defective wiring from P49-1, -10, -11, -12, -13, and/or -14 (KR-85) to P105-H, -J, -K, -L, -M, or -X (KI-225).	Repair or replace defective wiring.

ADF (KING KR-85 and KI-225) 206-706-070-5, -11

INDICATION OF TROUBLE	PROBABLE CAUSE	CORRECTIVE ACTION
	Note Bench check all KR-85 and KI-225 units before proceeding with extensive checks and repairs called out in the following troubleshooting chart.	
Panel lights in KR-85 and KI-225 inoperative.	Defective panel lamps in both units.	Replace defective lamps as necessary.
	Defective wiring from TB6-5 to P49-7 (KR-85) and P105-F (KI-225).	Repair or replace defective wiring.
KR-85 and KI-225 inoperative with voltage indicated on the 28 Vdc bus.	Open or defective ADF circuit breaker.	Reset or replace circuit breaker.
	Defective resistor (R40).	Replace defective resistor.
	Defective wiring from the ADF circuit breaker to P49-4 (KR-85 through R40).	Repair or replace defective wiring.
	Defective wiring from P49-6, -9 (KR-85) and/or P105-P to A/C ground.	Repair or replace defective wiring as applicable.
KI-225 does not seek the 090 degree position in ANT mode.	Defective wiring from P49-8 (KR-85) to P105-N (KI-225).	Repair or replace defective wiring.
No audio available in the speaker system (when installed) from the KR-85.	Defective wiring from P49-5 (KR-85) to TB30-8.	Repair or replace defective wiring.
KI-225 inoperative (KR-85 operative through speaker system in ADF mode).	Defective wiring from P49-1, -10, -11, -12, -13, and/or -14 (KR-85) to P105-H, -J, -K, -L, -M, -X (KI-225) respectively.	Repair or replace defective wiring as applicable.

TRANSPONDER (KING KT-75R and KFS-575) 206-706-326-37

INDICATION OF TROUBLE	PROBABLE CAUSE	CORRECTIVE ACTION
	Note Bench check all KT-75R and KFS-575 units before proceeding with extensive checks and repairs stated in the following troubleshooting chart.	
KFS-575 control unit lighting inoperative.	Defective lights.	Replace defective lights.
	Defective wiring from TB6-5 to P95-24 (KFS-575).	Repair or replace defective wiring.
KT-75R is inoperative.	Open or defective XPNDR circuit breaker.	Reset or replace circuit breaker.
	Defective wiring from the XPNDR circuit breaker to P96-1 (KT-75R).	Repair or replace defective wiring.
	Defective wiring from P96-2 (KT-75R) to the A/C ground.	Repair or replace defective wiring.
	Defective wiring from P96-29, -30 (KT-75R) to P96-15, -16 (KFS-575).	Repair or replace defective wiring.
LO position is inoperative.	Defective wiring from P96-33 (KT-75R) to P96-19 (KFS-575).	Repair or replace defective wiring.
Code selection on KFS-575 not proper or inoperative.	Defective wiring from P96-16 thru -28 (KT-75R) to P95-2 thru -14 (KFS-575).	Repair or replace defective wiring.
IDENT light inoperative.	Defective wiring from P96-34 (KT-75R) to P95-20 (KFS-575).	Repair or replace defective wiring.

TRANSPONDER (KING KT-76) 206-706-326-49, -51

INDICATION OF TROUBLE	PROBABLE CAUSE	CORRECTIVE ACTION
KT-76 is inoperative.	Open or defective XPNDR circuit breaker (CB-12).	Reset or replace circuit breaker.
	Open resistor (R41).	Replace resistor.
	Defective antenna.	Replace antenna.
	Defective wiring.	Repair or replace defective wiring.

TRANSPONDER (KING KT-76A) 206-706-070-25-27

INDICATION OF TROUBLE	PROBABLE CAUSE	CORRECTIVE ACTION
KT-76A is inoperative.	Open or defective XPNDR circuit breaker (CB-12).	Reset or replace circuit breaker.
	Open resistor (R58).	Replace resistor.
	Defective antenna.	Replace antenna.
	Defective wiring.	Repair or replace defective wiring.