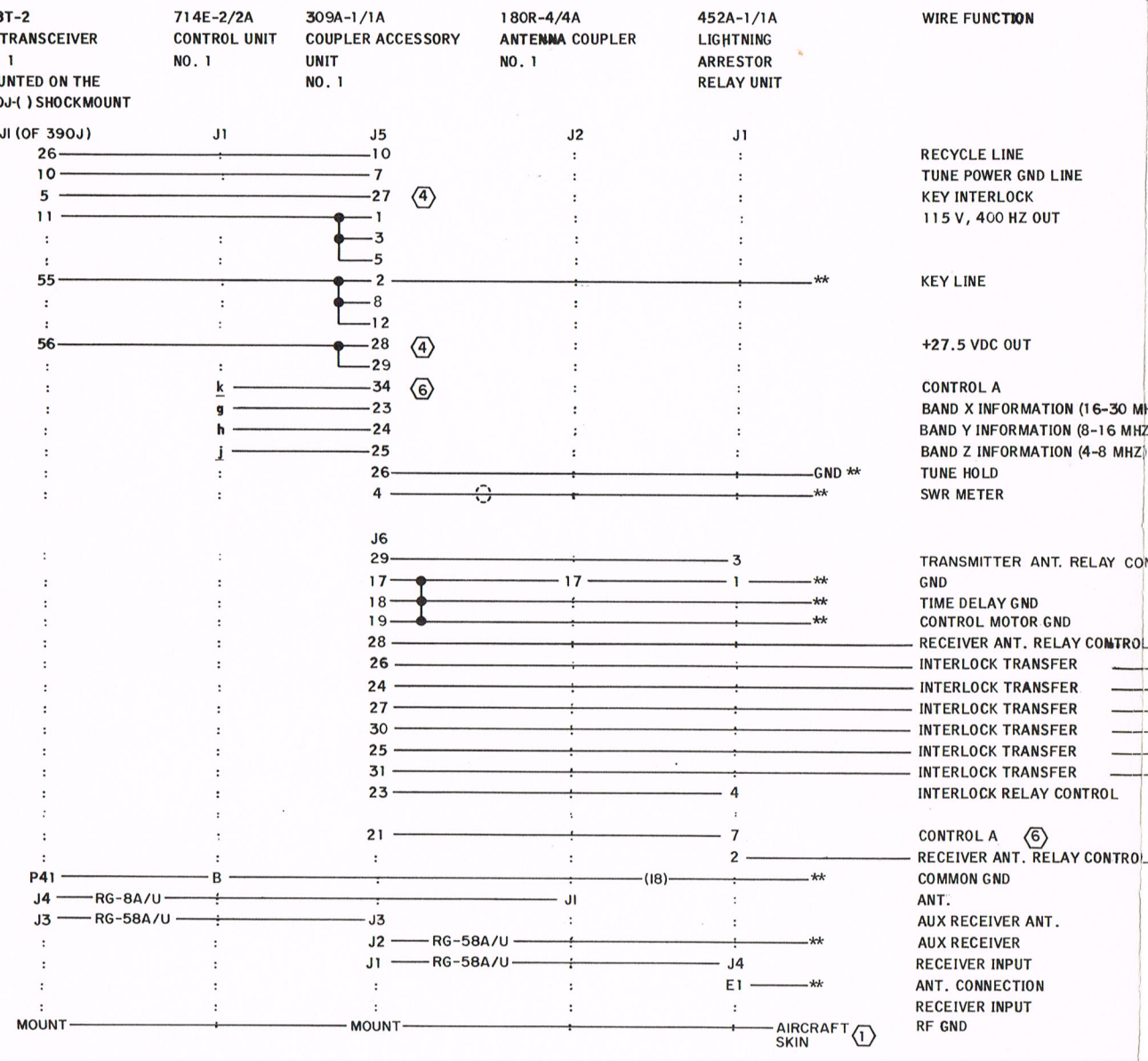
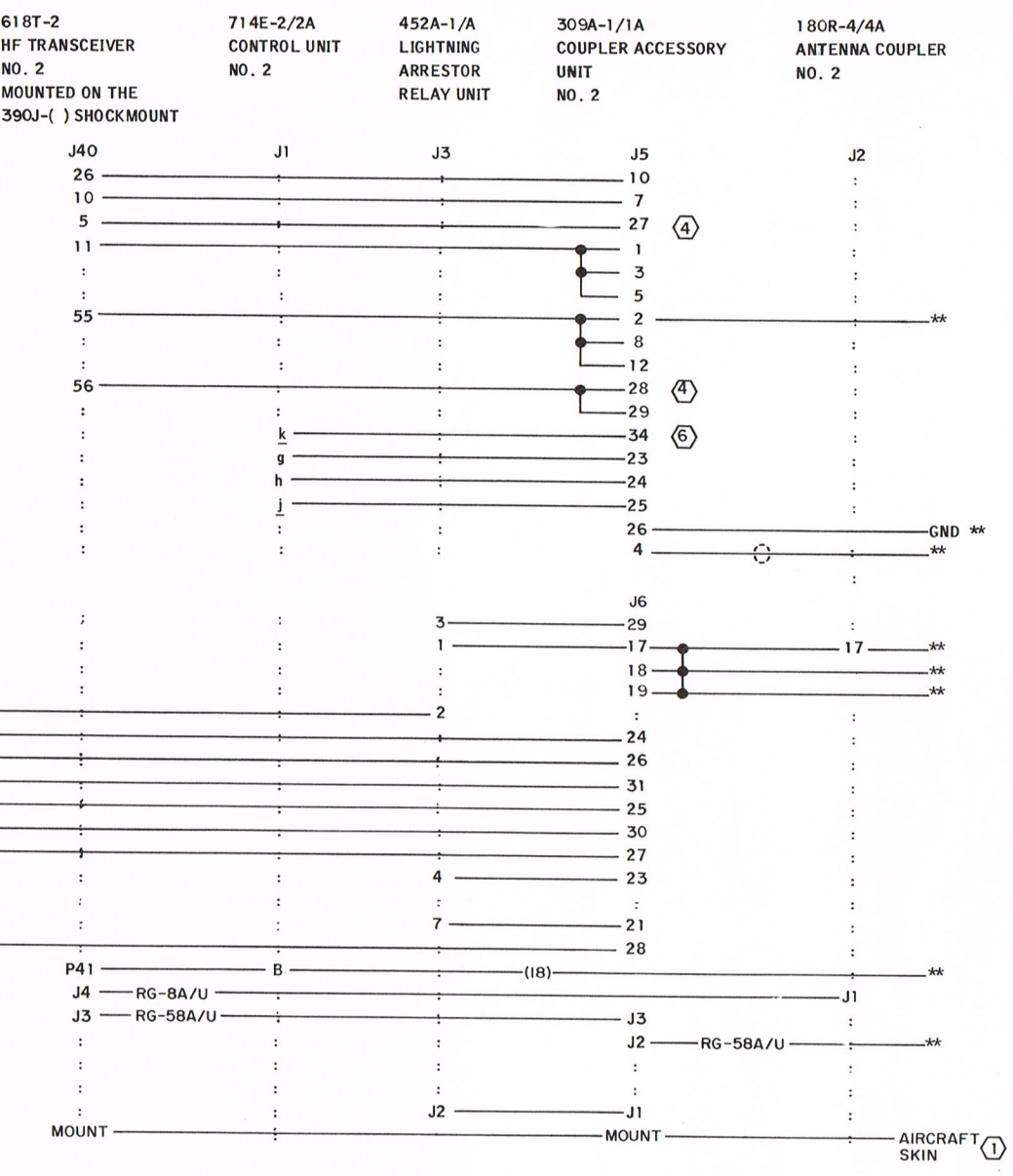
IMPORTANT: READ ALL NOTES CAREFULLY. NUMBERS IN ⬡ APPLY TO SPECIFIC NOTE.





NOTES:

⬡1 PROVIDE GOOD RF GROUND CIRCUIT TO AIRCRAFT BULKHEAD. USE FLEXIBLE SOLID COPPER OR ALUMINUM STRAP OR VIBRATOR ISOLATOR BYPASS STRAP COLLINS PART NO. 548-1264-002.

⬡2 WIRE SIZE NUMBER 22 AWG UNLESS OTHERWISE SPECIFIED BY A NUMBER IN PARENTHESES ( ).

⬡3 TERMINAL STRIPS ARE PROVIDED IN THE 390J SHOCKMOUNT TO BE USED FOR TIEPOINTS. SEE 618T/390J PRIMARY POWER DIAGRAMS FOR PARTICULARS.

⬡4 IF BENCH OPERATION WITHOUT AN ANTENNA TUNING UNIT IS DESIRED, PINS 5 AND 56 ON THE 618T-2 MUST BE CONNECTED TOGETHER TO COMPLETE THE KEY INTERLOCK CIRCUIT. DO NOT CONNECT PINS 5 OR 56 TO AN EXTERNAL DC POWER SOURCE.

⬡5 SYMBOLS USED ON THIS DRAWING ARE AS FOLLOWS:

** CONNECTIONS EXTERNAL TO THE HF SYSTEM

⬡6 USED IN AT 102-A SYSTEM ONLY.

⬡7 REFER TO THE 618T-( ) AND 180R-4/309A-1 UNIVERSAL DRAWING AND 618T/390J PRIMARY POWER DIAGRAM FOR THE REMAINING SYSTEM CONNECTIONS.

TPI-7332-014

618T-2, 714E-2, 180R-4/4A, and 309A-1/1A Dual System,
Interconnecting Wiring Diagram
Figure 423

618T-( ), 714E-2, 180R-6, and 309A-2D
Interconnecting Wiring Diagram
Figure 424

IMPORTANT: READ ALL NOTES CAREFULLY. NUMBERS IN ⬡ APPLY TO A SPECIFIC NOTE.

618T-( ) HF TRANSCEIVER 390J-( ) SHOCKMOUNT	714E-2 CONTROL UNIT	WIRE FUNCTION	309A-2D COUPLER ACCESSORY UNIT	180R-6 ANTENNA COUPLER
J1 (OF 390J)	J1		J5	J3
:	A	PANEL LIGHT CONTROL	:	: **
11	:	115 V, 400 HZ OUT	a	:
:	:	NO. 1 RECEIVER CPLR POWER	c	:
26	:	RECYCLE PULSE	T	:
10	:	TUNE POWER GND LINE	W	:
④⑥ 5	:	KEY INTERLOCK	E	:
⑥ 56	:	+27.5 VDC OUT	L	:
:	:	VOX KEY	V	:
55	:	KEY LINE	R	:
:	:	KEY	:	: **
:	:	AUX RECEIVER NO. 3-115 V, 400 HZ POWER	b	: **
:	:	AUX RECEIVER NO. 2-115 V, 400 HZ POWER	Y	: **
:	:	SWR METER	Z	: **
:	:	ON - OFF	S	: **
:	:	TUNE HOLD	A	: **
:	:	GND	G	: **
:	j	BAND INFO Z (CONTROL B)	B	:
:	h	BAND INFO Y (CONTROL C)	C	:
:	g	BAND INFO X (CONTROL D)	D	:

			J20	
:	:	TAP LIMIT SWITCH	Z	Z
:	:	CAPACITOR HOME	K	K
:	:	AC POWER	H	H
:	:	CONTROL D	N	N
:	:	DISCRIMINATOR UNBAL	E	E
:	:	SWR METER	T	T
:	:	TRANSMITTER KEY	j	j
:	:	COIL LIMIT SWITCH	J	J
:	:	CAPACITOR MOTOR	e	e
:	:	CONTROL C	M	M
:	:	CONTROL B	L	L
:	:	TAP HOME	P	P
:	:	COIL HOME	S	S
:	:	COIL RATE	f	f
:	:	TAP RATE	g	g
:	:	TRANSFER RELAY	R	R
:	:	TRANSMITTER DISABLE	h	h
:	:	SERVO POWER KEYED	d	d
:	:	TAP A	a	a
:	:	TAP B	b	b
:	:	COIL A	c	c
:	:	COIL B	Y	Y
:	:	PHASE DISCRIMINATOR	A	A
:	:	LOADING DISCRIMINATOR	C	C
:	:	SERVO GND	D	D
:	:	GND	G	G **

:	B	DC GND	:	:	**
J4 — RG-8A/U	:	ANT	:	J1	
:	:	ANT FEED WIRE	:	P6	** ANT
J3 — RG-58C/U	:	AUX RCVR ANT.	J2 ⑦	:	
MOUNT	:	RF GND		MOUNT	AIRCRAFT SKIN ①
:	:	COAX CABLE	J1 — RG-62A/U	J2 ⑦	
:	:	TO AUX RCVR NO. 2	J3 — RG-58C/U	:	**
:	:	TO AUX RCVR NO. 3	J4 — RG-58C/U	:	**

NOTES:

① PROVIDE GOOD RF GROUND CIRCUIT TO AIRCRAFT BULKHEAD. USE FLEXIBLE SOLID COPPER OR ALUMINUM STRAP OR VIBRATOR BYPASS STRAP COLLINS PART NUMBER 548-1264-002.

② WIRE SIZE NUMBER 22 AWG UNLESS OTHERWISE SPECIFIED BY A NUMBER IN PARENTHESES ( ).

③ TERMINAL STRIPS ARE PROVIDED IN THE 390J SHOCKMOUNT TO BE USED FOR TIEPOINTS. SEE 618T/390J PRIMARY POWER DIAGRAMS FOR PARTICULARS.

④ IF BENCH OPERATION WITHOUT AN ANTENNA TUNING UNIT IS DESIRED, PINS 5 AND 56 ON THE 618T-2 MUST BE CONNECTED TOGETHER TO COMPLETE THE KEY INTERLOCK CIRCUIT. DO NOT CONNECT PINS 5 OR 56 TO AN EXTERNAL DC POWER SOURCE.

⑤ THE FOLLOWING SYMBOL(S) ARE USED ON THIS DRAWING:
** CONNECTIONS EXTERNAL TO THE HF SYSTEM

⑥ THIS JUMPER TO BE USED WITH 309A-2D UNITS WITH SERIAL NUMBER 16 AND ABOVE. THE CONNECTION MUST NOT BE USED WITH 309A-2D UNITS BELOW SERIAL NUMBER 16 UNLESS THE UNITS ARE MODIFIED TO REMOVE THE INTERNAL 28 VDC SUPPLY.

⑦ WHEN 309A-2D IS OPERATED WITHOUT 156G-1 COUPLERS, DELETE THE CABLE SHOWN FROM J2 OF 180R-6 TO J1 OF THE 309A-2D UNIT. CONNECT THE RG-58C/U CABLE FROM THE 618T-2 AUXILIARY RECEIVER ANTENNA JACK DIRECTLY TO J2 ON THE 180R-6 INSTEAD OF TO J2 ON THE 309A-2D UNIT.

⑧ REFER TO THE 618T-( ) UNIVERSAL DRAWING AND 618T/390J PRIMARY POWER DIAGRAM FOR THE REMAINING 618T CONNECTIONS.

IMPORTANT: READ ALL NOTES CAREFULLY. NUMBERS IN ⟨ ⟩ APPLY TO A SPECIFIC NOTE.

618T-( ) HF TRANSCEIVER MOUNTED ON ⟨3⟩ 390J-( ) SHOCKMOUNT J1(OF 390J)	714E-3/3( ) RADIO SET CONTROL J1	WIRE FUNCTION	309A-17 ANT. COUPLER CONTROL J1B	180R-17 ANT. COUPLER P2
25 —	V — (20) —	SB/AM SELECTOR	— 15 ⟨12⟩	:
30 —	Z	RF SENSITIVITY/SQUELCH	:	:
31 —	P	CW KEY LINE	:	:
26 —	:	RECYCLE PULSE	— 3 ⟨8⟩	:
10 —	: — (20) —	TUNE POWER GND LINE	— 26	:
⟨5⟩ 5 —	:	KEY INTERLOCK	— 4 ⟨8⟩	:
⟨5⟩ 56 —	: — (20) —	POWER CONTROL	— 25	:
55 —	9 —	KEY LINE	— 19 ⟨8⟩	:
:	:	CODED SEQUENCE WIRE B	⟨8⟩ 31 —	C
:	:	CODED SEQUENCE WIRE A	⟨8⟩ 16 —	L
:	:	+27.5 VDC	⟨7⟩ 7 —	P
:	:	AC GND	:	H — (18) — **
:	:	COUPLER READY	⟨8⟩ 8 —	W
:	:	FWD POWER PRESENCE	⟨8⟩ 24 —	S
:	:	+5 VDC	⟨7⟩ 6 —	V
:	:	REFL POWER PRESENCE	32 — (20) —	T
:	:	CODED SEQUENCE WIRE C	21 — (20) —	K
:	:	PRESSURE FAULT	⟨7⟩ 5 —	X
:	:	115 V, 400 HZ IN (PH1 FOR 747, PH2 FOR 707)	28 —	(18) — **
:	:	115 V, 400 HZ IN (PH1)	:	D — (18) — **
:	:	DC GND	:	U — (20) — **
:	:	AC COMMON	:	F — (18) — **
27 —	:	AC AIRCRAFT GND	— 20	(20) — **
:	:	AIRCRAFT INTLK	⟨15⟩ 12	
:	:	TUNE TONE ⟨14⟩	1 —	**
:	:	CHASSIS GND	2	:
:	:	RECEIVE ONLY	⟨10⟩ 23 —	(20) — **
:	:	VISUAL TUNE	⟨8⟩ ⟨11⟩ 11 —	**
:	:	CUTOFF (NO TUNE)	18	:
			J1A	
:	:	CUTOFF (NO TUNE)	12	:
:	:	CUTOFF (NO TUNE)	17	:
:	:	PATCHING	20	:
:	:	PATCHING	32	:
:	:	PATCHING	15	:
:	:	PATCHING	16	:
:	:	PATCHING	21	:
:	:	PATCHING	30	:
:	:	PATCHING	31	:
:	:	PATCHING	25	:
:	:	PATCHING	10	:
:	:	PATCHING	6	:
:	:	PATCHING	14	:
:	:	PATCHING	13	:
:	:	PATCHING	28	:
:	k	AIRCRAFT CW KEY LINE	:	: **
:	⟨4⟩ m	AIRCRAFT KEY LINE	:	: **
:	r	DC GND	:	: **
J4 —	:	ANT.	— P4	
J3	:	AUX RCVR ANT.	:	
:	:	RF	⟨13⟩ P1 —	P1
:	:	RF TO ANT./LIGHTNING ARRESTOR	:	J3 — ** ANT.
⟨1⟩ MOUNT —	:	RF GND	— MOUNT	— CASE — AIRCRAFT SKIN

NOTES:

⟨1⟩ PROVIDE GOOD RF GND CIRCUIT TO AIRCRAFT BULKHEAD. USE FLEXIBLE SOLID COPPER OR ALUMINUM STRAP OR VIBRATOR ISOLATOR BYPASS STRAP COLLINS PART NUMBER 548-1264-002.

⟨2⟩ WIRE SIZE NUMBER 22 AWG UNLESS OTHERWISE SPECIFIED BY A NUMBER IN PARENTHESES ( ).

⟨3⟩ TERMINAL STRIPS ARE PROVIDED IN THE 390J SHOCKMOUNT TO BE USED FOR TIEPOINTS. SEE 618T/390J PRIMRY POWER DIAGRAM FOR PARTICULARS.

⟨4⟩ IF A SEPARATE CW KEY LINE IS NOT PROVIDED IN THE AIRCRAFT, 714E-3 PINS k AND m MUST BE JUMPERED TOGETHER BY AIRCRAFT WIRING FOR CW OPERATION.

⟨5⟩ IF BENCH OPERATION WITHOUT AN ANT. TUNING UNIT IS DESIRED, PINS 5 AND 56 ON THE 618T-( ) MUST BE CONNECTED TOGETHER TO COMPLETE THE KEY INTERLOCK CIRCUIT. DO NOT CONNECT PINS 5 OR 56 TO AN EXTERNAL DC POWER SOURCE.

⟨6⟩ SYMBOLS USED ON THIS DRAWING ARE AS FOLLOWS:
** CONNECTIONS EXTERNAL TO THE HF SYSTEM.

⟨7⟩ MINIMUM AWG SIZE FOR RETROFIT AIRCRAFT IS NUMBER 20, AND NUMBER 18 FOR THE BOEING 747.

⟨8⟩ MINIMUM AWG SIZE FOR RETROFIT AIRCRAFT IS NUMBER 22, AND NUMBER 20 FOR THE BOEING 747.

⟨9⟩ WIRE TO AIRCRAFT INTERCOMM; SUPPLIES 6.3 V, 400 HZ, INTO 150 OHM LOAD DURING TUNE.

⟨10⟩ GROUND SUPPLIED BY PILOT'S CONTROL, EXCEPT ON RADIO SILENCE FREQUENCIES.

⟨11⟩ TO FLIGHT DECK FOR VISUAL TUNE INDICATION. +28 VDC IS ON WIRE EXCEPT WHEN AT-107 IS IN STANDBY, OR IN OPERATE WITH NO FAULT.

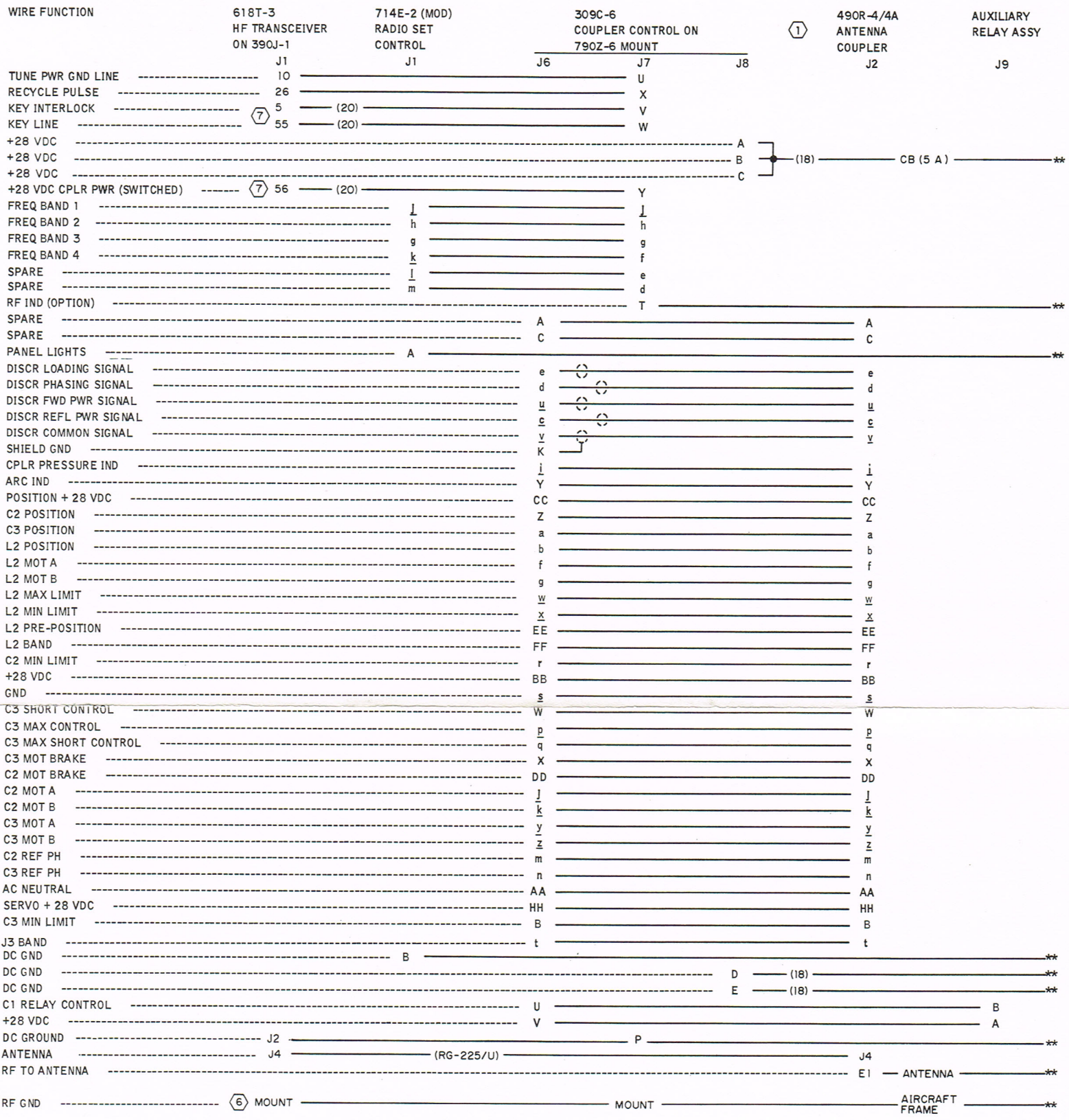
⟨12⟩ WIRE NEEDED ONLY IF AM MODE DESIRED FOR RETUNE.

⟨13⟩ USE COAX RG-8A/U, RG-214/U, BAC 6903, OR EQUIVALENT.

⟨14⟩ REFER TO 618T-( ) UNIVERSAL DRAWING AND 618T/390J PRIMARY POWER DIAGRAM FOR REMAINING SYSTEM CONNECTIONS.

⟨15⟩ TO J1B-7 VIA AIRCRAFT INTLK.

IMPORTANT: READ ALL NOTES CAREFULLY. NUMBERS IN ⬡ APPLY TO A SPECIFIC NOTE.



NOTES:

(1) INTERCONNECTING CABLE BETWEEN 790Z-6 AND 490R-4 DOUBLE SHIELDED. BOTH SHIELDS ELECTRICALLY BONDED DIRECTLY TO SHELL OF CONNECTOR AT BOTH ENDS.

(2) ALL WIRES ARE NUMBER 22 AWG UNLESS OTHERWISE SPECIFIED BY NUMBER IN PARENTHESES ( ).

(3) CABLE LENGTH FROM 390J-1 TO 790Z-6 NOT TO EXCEED 60 FEET. CABLE LENGTH FROM 790Z-6 TO 490R-4 NOT TO EXCEED 75 FEET.

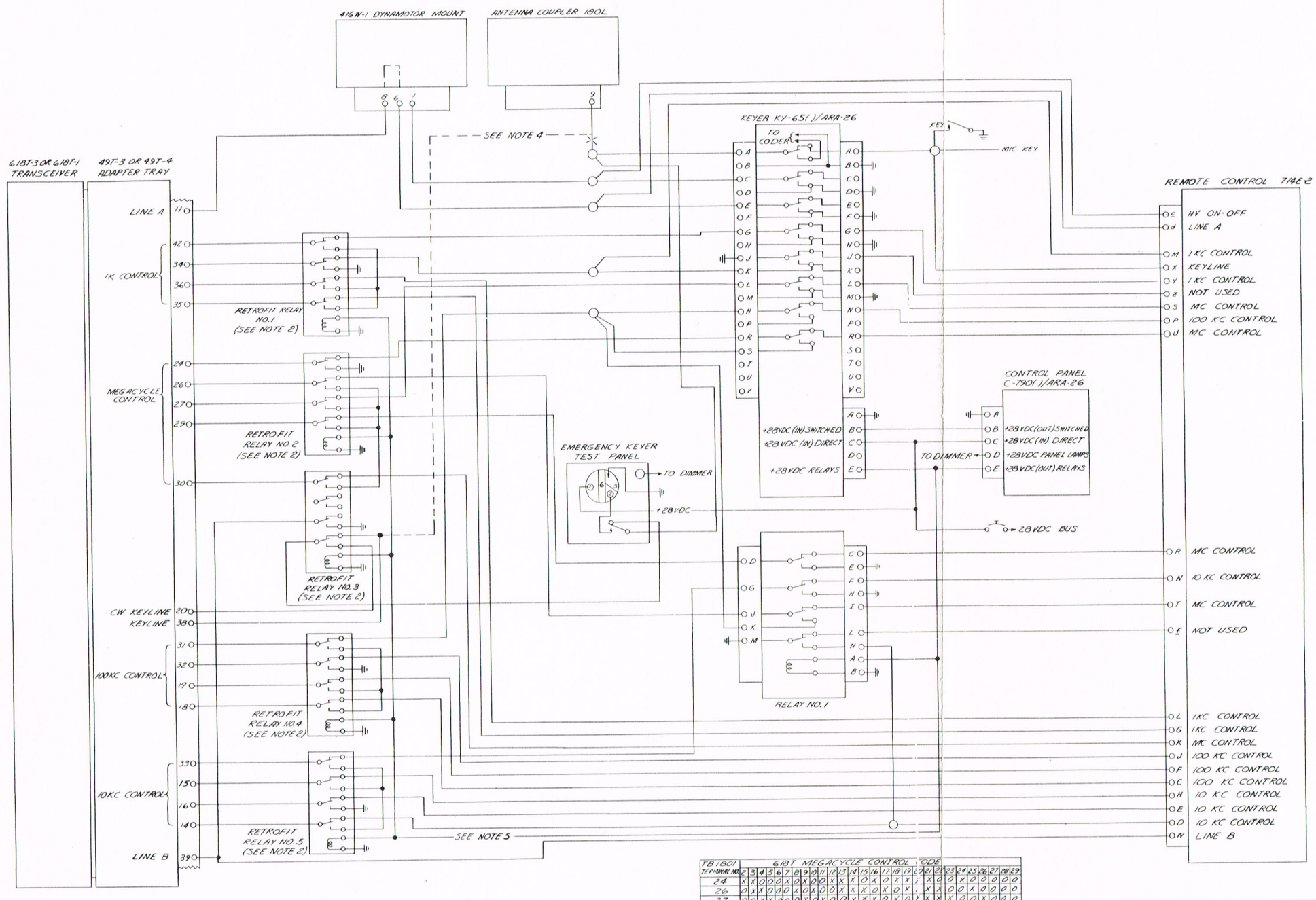
(4) SYMBOLS USED ON THIS DRAWING ARE AS FOLLOWS:
** CONNECTIONS EXTERNAL TO THE HF SYSTEM.

(5) WIRE ROUTING: WIRES MAY BE ROUTED FOR CONVENIENCE OF INSTALLATION PROVIDED ALL CONNECTIONS ARE SATISFIED.

(6) PROVIDE GOOD RF GROUND CIRCUIT TO AIRCRAFT BULKHEAD. USE FLEXIBLE SOLID COPPER OR ALUMINUM STRAP OR VIBRATOR ISOLATOR BYPASS STRAP COLLINS PART NUMBER 542-1264-002.

(7) IF BENCH OPERATION WITHOUT AN ANTENNA TUNING UNIT IS DESIRED, PINS 5 AND 56 ON THE 618T-3 MUST BE CONNECTED TOGETHER TO COMPLETE THE KEY INTERLOCK CIRCUIT. DO NOT CONNECT PINS 5 OR 56 TO AN EXTERNAL DC POWER SOURCE.

(8) REFER TO 618T-( ) UNIVERSAL DRAWING AND 390J-( )/618T-( ) PRIMARY DIAGRAMS FOR REMAINING SYSTEM CONNECTIONS.



NOTES:
1. ONLY THE SYSTEM WIRING PERTAINING TO OPERATION OF THE ARA-26 EMERGENCY KEYER WITH A 618T TRANSCEIVER IS SHOWN IN THIS WIRING DIAGRAM.
2. THE RETROFIT RELAYS MUST BE ADDED TO ACCOMPLISH REQUIRED SWITCHING OF FREQUENCY CONTROL WIRES FROM 618T.
3. THE 49T-3 OR 49T-4 ADAPTER TRAY MUST BE MODIFIED BY ADDING A SIBE 22 WIRE FROM P3-31 TO P8-26.
4. THE INSTALLATION WIRING MUST BE MODIFIED TO ADD THE FIVE "RETROFIT RELAYS" AND TO CONNECT PIN 9 OF THE 180L TO TERMINAL 38 OF TB180( ) INSTEAD OF TERMINAL "A" OF THE KEYER KY-65( )/ARA-26.
5. THE MODIFIED INSTALLATION CAN BE ADAPTED FOR 618S OPERATION BY REMOVING THE JUMPER WHICH SUPPLIES 28VDC TO THE FIVE "RETROFIT RELAYS."
6. THE NORMALLY OPEN CONTACTS ON THE "RETROFIT RELAYS" MUST BE WIRED TO SELECT THE REQUIRED 618T FREQUENCY WHEN THE ARA-26 EMERGENCY KEYER IS OPERATED. USE TABLE I AND TABLE II TO DETERMINE THE REQUIRED COMBINATION OF GROUNDS AND JUMPERS. FOR CW OPERATION, THE 618T TRANSMITS AN USB SIGNAL MODULATED WITH A 1KC TONE. THE OUTPUT SIGNAL IS THEREFORE 1KC HIGHER THAN THE INDICATED FREQUENCY. TO TRANSMIT A DISTRESS FREQUENCY OF 2.182 MC, FOR EXAMPLE, THE 618T SHOULD BE SET TO 2.181 MC. THE "RETROFIT RELAYS" ABOVE ARE SHOWN WIRED TO SET THE 618T TO 2.181 MC WHEN THE ARA-26 EMERGENCY KEYER IS OPERATED.

TB180( ) TERMINAL NO.	618T MEGACYCLE CONTROL CODE																												
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
24	X	X	0	0	0	X	0	X	0	0	X	X	0	X	0	X	0	X	;	X	0	0	X	0	0	0	0	0
26	0	X	X	0	0	0	X	0	X	0	0	X	X	X	0	X	0	X	;	X	X	0	0	X	0	0	0	0	0
27	0	0	X	X	0	0	0	X	0	X	0	0	X	X	X	0	X	0	;	X	X	X	0	0	X	0	0	0	0
29	0	0	0	X	X	0	0	0	X	X	0	0	X	X	X	X	0	0	;	X	X	X	X	0	0	X	0	0	0
30	0	0	0	0	X	X	0	0	0	X	X	0	0	X	X	X	X	0	;	X	X	X	X	X	0	0	X	0	0

TABLE I

"X" INDICATES TERMINALS GROUNDED
"0" INDICATES TERMINALS CONNECTED TOGETHER AND NOT GROUNDED

TB180( ) TERMINAL NO.		618T 100KC OR 10KC OR 1KC CONTROL CODE									
100KC	10KC	1KC	0	1	2	3	4	5	6	7	8	9
31	33	32	X	0	X	X	X	0	X	0	0	0
32	15	34	0	X	0	X	X	X	0	X	0	0
17	16	36	0	0	X	0	X	X	X	0	X	0
18	14	35	0	0	0	X	0	X	X	X	0	X

TABLE II

"X" INDICATES TERMINALS GROUNDED
"0" INDICATES TERMINALS CONNECTED TOGETHER AND NOT GROUNDED

AN/ARA-26 Emergency Keyer and 618T-( ) Airborne SSB Transceiver in a 618S Retrofit Installation, Interconnecting Wiring Diagram
Figure 430