5-OA-4464/USQ-20(V) - Chaff Passive Angle Track Status Signal
Correction material: T-2 to NS 95711 (0967-057-1012)
1-A FA-2 NS 0967-057-1130
SERIAL: All
IDENTITY: Presence of Relay type J50E2P6AS-1 in following existing sockets 1XK1, 1XK7, 1XK15, and 1XK21.

1-OA-4755/SYA-4(U) - Same as 2-OA-3069/SYA-1(V)

2-OA-4755/SYA-4(V) - Same as 4-OA-3953/SYA-4(V)

3-OA-4755/SYA-4(V) - Same as 4-OA-3957/SYA-4(V) except
SERIAL: A1 thru A17

4-OA-4755/SYA-4(V) - Enter Height Enable Function Code Changes
Correction material: None
2-A FA-3 None
SERIAL: A2 thru A17
IDENTITY: Noting that the function code for Enter Height is octal 15 and the function code for Enable is octal 34.

5-OA-4755/SYA-4(V) - Same as 2-CV-1545/SYA-4(V) except
SERIAL: A2 thru A17

6-OA-4755/SYA-4(V) - Same as 5-OA-3957/SYA-4(V)

7-OA-4755/SYA-4(V) - Video Display Height-Size Console - Incorporation of Factory Field Bulletins as a Unit Field Change
Correction material: Incorporated in revised publication
2-A FA-1 NS None
SERIAL: All
IDENTITY: Presence of a Jumper between contacts 25 and 27 and contacts 26 and 28 on card 580656 in Deflection Control Unit area A38A18.

1-OA-7490/SYA-4(V) - Power Supply Modification
Correction material: NS 93737(A)
2-A FA-1 None
SERIAL: All
IDENTITY: Proper operation of the over-temperature alarm circuit.

1-OA-7491/SYA-4(V) - Same as 1-OA-7490/SYA-4(V)

1-OA-7549/SYA-4(V) - Same as 4-OA-3953/SYA-4(V)

2-OA-7549/SYA-4(V) - Same as 2-OA-3069/SYA-1(V)

3-OA-7549/SYA-4(V) - Same as 3-OA-3953/SYA-4(V)

4-OA-7549/SYA-4(V) - Same as 6-OA-3953/SYA-4(V)

1-OA-7550/SYA-4(V) - Same as 4-OA-3953/SYA-4(V)

2-OA-7550/SYA-4(V) - Same as 2-OA-3069/SYA-1(V)

3-OA-7550/SYA-4(V) - Same as 3-OA-3953/SYA-4(V)

4-OA-7550/SYA-4(V) - Same as 6-OA-3953/SYA-4(V)

1-OS-54/URN-3-Providing Dummy Load
Correction material: T- to NS 92778
2-A YF-1/2 NS
SERIAL: All
IDENTITY: An MX-554A/U will be attached to the front of the OS-54/URN-3 by a chain, in place of a dust cap for the vertical signal input.

1-OS-54A/URN-3-Same as 1-OS-54/URN-3

***1-PP-338/U** - Modif of power supply to provide remote high voltage control.
Correction material:
2-A FA-8 NS981201 None
SERIAL: All in use with TDE transmitters at Naval Reserve Shore installations.
IDENTITY:

1-PP-388/U - Ckt breakers K101 & 102, repl
Correction material: T-1 to NS 91137
A FA1½ NS98207 F6130-549-0823
SERIAL: All
IDENTITY: New circuit breakers, K-101 and K-102, are mounted on adaptor plates made to fit front panel mounting holes.

1-PP-765/U - VX-103, Wiring, correct
Correction material: T-3 to NS 91557
2-A FA-1 NS98594 F6130-325-7495
SERIAL: 1-483
IDENTITY: Pin 1 of tube socket XV-103 tied directly to ground

1-PP-765A/U - Same as 1-PP-765/U - except
SERIAL: 1-100

1-PP-782A/SAR-4 - Adj resistor in pwr supply, add
Correction Material: T-1 to NS 92413
A FA-¼ N S98670 None
SERIAL: 2056-2065, 2067-2068, 2072, 2073, 2077-2079, 2085-2102, 2552-2555
IDENTITY: Unit must be disassembled to identify. R-201, 2500 ohm ww, mounted near input filter X-201. When removing panel fromhousing lift panel straight up to avoid damage to P-204.

1-PP-1092/U – Installation of Thermal Time Delay Relay in Primary Circuit of T-2
Correction material: None
2-A FA-2 NS981679 None
SERIAL: Equipments when installed for use with AN/ARC-1, -1A
IDENTITY: Presence of a thermal time delay relay installed on the bottom of the power supply chassis adjacent to C-4.

1-PP-1211/U – Correcting safety hazard which exists in Power Supply PP-1211/U when connected to Radio Telegraph Transmitting Equipment TBL-12 and TBL-13.
Correction material:
2-A FA-8 NS981198 None
SERIAL: Combinations of Power Supply PP-1211/U and Radio Telegraph Transmitting Equipment TBL-12 and TBL-13.
IDENTITY: Terminal board TB-101 has the word "SWITCH" in place of 115 VAC.

1-PU-383A/M – Improved Engine Speed Control and Shutdown
1-A YF-8 NS 0969-010-4020
SERIAL: Navy owned equipments
IDENTITY: New solenoid valve attached to governor.

1-PU-390/G – Improved Engine Speed Control and Shutdown
Correction material: NS93308
1-A YF-8 NS981496 None
SERIAL: 60 (All Navy owned)
IDENTITY: New solenoid valve attached to governor

1-R-274B/FRR - Ant input receptacle
2-A FA-½ None
IDENTITY: Presence of coaxial ant input receptacle.

2-R-274B/FRR-Addition of Crystal Ovens to improve the Receiver Frequency Stability
Correction material: T-1 to NS91661
2-A FA-6 NS981661 None
SERIAL: Equipments used for SSB operation
IDENTITY: Existence of the bracket assembly for the crystal oven on the crystal control unit (T-34) indicates accomplishment.

***1-R-390/URR** – Eliminate spurious radiation.
Correction Material:
2-A FA-½ NS981194 F5820-078-5074
SERIAL: All
IDENTITY: Soldered jumper lead connected between pins 2 and 7 of tube socket SV603.

2-R-390/URR–Modification of RF and IF Subchassis
Correction material: Complementary Tech. Manual NS 95807
2-C FA-8 NS981746 None
SERIAL: All designated for operation in the bandwidth specified in purpose
IDENTITY: Field change accomplishment is recorded on field change record plate installed adjacent to receiver nameplate.

***1-R-390A/URR** – Same as 1-R-390/URR

2-R-390A/URR – Increase audio output level on line output terminals.
Correction material: T-1 to TM-11-856A
2-A FA-½ NS981261 None
SERIAL: All
IDENTITY: Presence of two soldered jumper leads on terminal board TB-101.

3-R-390A/URR – Changes Electrical Access from Terminal Strips to "AN" Type Connectors
Correction material: T-1 to NS93053.42A. T-1 to NS93053
1-A FA-2 NS981693
SERIAL: All
IDENTITY: An aluminum connector channel, containing three "AN" type receptacles J-901, and J-903, covers both TB-102 and TB-103 on the rear panel fo the receiver. Also, a power cord is no longer used.

4-R-390A/URR – Installation Diode Load Test Jack
Correction material: NS 93053
2-A FA-1 None
SERIAL: All installed aboard ship
IDENTITY: Presence of a green diode load test jack located on the front panel to the right of the PHONES Jack.

5-R-390A/URR – Modification of Antenna Input Connections
Correction material: NS 93053
2-A FA-1 None
SERIAL: All installed aboard ship
IDENTITY: Presence of shorting plug connected to J104 on rear panel of receiver.

1-R-1051/URR—Strengthing of R-1051/URR Radio Receiver Shock and Vibration Mount MT-3114/UR
Correction material: None
1-A FA-1/2 NS 981802 None
SERIAL: A1 thru A28 and B-1 thru
IDENTITY: All Mt-3114/UR shock and vibration mounts modified per change or corresponding production change may be identified by the presence of the neoprene reinforcement bands on the lower portion of the cylindrical elastomer columns of all four shock isolators.

2-R-1051/URR – Same as 3-AN/WRC-1

1-R-1052/FRR – Insulation of Audio Jacks from Ground
Correction material:
2-A FA-1.5 None
SERIAL: All
IDENTITY: Presence of Bush type insulator

2-R-1052/FRR - Replacement of Jacks J-2 and J-5 of Receiver R-1052/FRR with Coaxial Switch DK Part No. 317-010202-6 and Minor Alterations to Receiver Wiring
Correction material: T-1 to NS 94448(A)
3-A FA-1 NS981740
SERIAL: All
IDENTITY: Mounting hole for J-3 empty

1-R-1053/FRR – Same as 1-R-1052/FRR

2-R-1053/FRR - Same as 2-R-1052/FRR

1-RAK – Not applicable

2-RAK – Pwr supply res, R-202, 203, 204, replace
Correction material: See NS 98729
A FA-2 NS98729 None
SERIAL: All
IDENTITY: Resistors R-202, R-203, and R-204 are changed from 2 watt to 4 watt.

3-RAK – Fusing equipment
Correction material: See NS 98729
A FA-2 NS98729 None
SERIAL: All
IDENTITY: Switch on front of 20131 power unit turns receiver off

4-RAK – Not applicable

1-RAK-1 – Not applicable

2-RAK-1 – Same as 2-RAK

3-RAK-1 – Same as 3-RAK

4-RAK-1 – Not applicable

1-RAK-2 – Not applicable

2-RAK-2 – Same as 2-RAK

3-RAK-2 – Same as 3-RAK

4-RAK-2 – Not applicable

1-RAK-3 – Not applicable

2-RAK-3 – Same as 2-RAK

3-RAK-3 – Same as 3-RAK

4-RAK-3 – Not applicable

1-RAK-4 – Not applicable

2-RAK-4 – Same as 2-RAK

3-RAK-4 – Same as 3-RAK

4-RAK-4 – Not applicable

1-RAK-5 – Not applicable
2-RAK-5 – Same as 2-RAK

3-RAK-5 – Same as 3-RAK

4-RAK-5 – Not applicable

1-RAK-6 – Concentric ant. jack, provide
Correction material: See NS 98729
B YF-3 NS98729 F5820-311-2513
SERIAL: All
IDENTITY: Jack installed for use with standard antenna patch cords

2-RAK-6 – Same as 2-RAK

3-RAK-6 – Same as 3-RAK

4-RAK-6 – Modif for use w/NT66097 loop ant.
Correction material: None
B YF-8 NS98053 F5820-311-2413
SERIAL: All aboard subs
IDENTITY: Presence of loop ant. NT66097.

1-RAK-7 – through **2-RAK-7** – Not applicable

3-RAK-7 – Same as 3-RAK
4-RAK-7 – Same as 4-RAK-6

1-RAK-8 through **2-RAK-8** – Not applicable

3-RAK-8 – Same as 3-RAK

4-RAK-8 – Same as 4-RAK-6

1-RAL – Not applicable

2-RAL – Pwr supply res, R-202, 203, 204, repl
A FA-2 NS98729 None
SERIAL: All
IDENTITY: Resistors R-202, R-203, and R-204 are changed from 2 watt to 4 watt.

3-RAL – Fusing equipment
Correction material: See NS 98729
-A FA-2 NS98729 None
SERIAL: All
IDENTITY: Switch on front of 20131 power unit turns receiver off

1-RAL-1 – Not applicable

2-RAL-1 – Same as 2-RAL

3-RAL-1 – Same as 3-RAL

1-RAL-2 – Not applicable

2-RAL-2 – Same as 2-RAL

3-RAL-2 – Same as 3-RAL

1-RAL-3 – Not applicable

2-RAL-3 – Same as 2-RAL

3-RAL-3 – Same as 3-RAL

1-RAL-4 – Not applicable

2-RAL-4 – Same as 2-RAL

3-RAL-4 – Same as 3-RAL

1-RAL-5 – Not applicable

2-RAL-5 – Same as 2-RAL

3-RAL-5 – Same as 3-RAL

1-RAL-6 – Concentric ant. jack, provide
Correction material: See NS 98729
B YF-3 NS98729 F5820-311-2552
SERIAL: All
IDENTITY: Jack installed for use with standard antenna patch cords.

2-RAL-6 – Same as 2-RAL

3-RAL-6 – Same as 3-RAL

1-RAL-7 through **2-RAL-7** – Not applicable

3-RAL-7 – Same as 3-RAL

1-RAL-8 through **2-RAL-8** – Not applicable

3-RAL-8 – Same as 3-RAL

1-RAO-9 – HF osc ckt outlet jack, provide
Correction material: T-1 to NS 900,356
A FA-2 NS98193 F5820-501-2585
SERIAL: All used with rem dual panoramic adapter
IDENTITY: Two jacks on rear of chassis

1-RBA – NT-49509 plug adapter, install
Correction material: See NS 98730
A FA-2 NS98730 None
SERIAL: All
IDENTITY: Installs right angle connector on audio output cable.

2-RBA – Pwr supply filter choke, invert
A FA-1 NS98730 None
SERIAL: Receivers with pwr supplies N.T. 20130 having serial numbers: 1-2008, 2012-2016, 2018-2021, 2025, 2028-2033, 2038, 2041, 2050-2051, 2058, 2062, 2069, 2071-2075, 2078-2079, 2172, 2213, 2338, 2241, 2245-2246, 2249, 2251-2253, 2255-2257, 2261-2263, 2289, 2293, 2295-2296, 2298-2299, 2303-2305, 2307, 2309-2310, 2313-2314, 2316-2317, 2320-2321, 2323-2326, 2328-2336, 2340-2341, 2345, 2347-2351, 2353, 2355-2399, 2400-2402, 2404-2416, 2419, 2471, 2473-2499, 2500-2527, 2529-2548, 2550-2589, 2591-2600.
IDENTITY: Filter chokes are mounted upside down.

3-RBA – Rng extension
A FA-12 NS98265 F5820-311-2819
SERIAL: All
IDENTITY: On front panel of receivers, lower center, two new switches are installed. One labeled "reception": the other labeled "band extension on-off"

1-RBA-1 – Same as 1-RBA

2-RBA-1 - Same as 2-RBA

3-RBA-1 - Same as 3-RBA

1-RBA-2 - Same as 1-RBA

2-RBA-2 - Same as 2-RBA

3-RBA-2 - Same as 3-RBA

1-RBA-3 - Same as 1-RBA

2-RBA-3 - Same as 2-RBA

3-RBA-3 - Same as 3-RBA

1-RBA-5 - Same as 1-RBA

2-RBA-5 - Same as 2-RBA

3-RBA-5 - Same as 3-RBA

1-RBA-6 - Same as 1-RBA

2-RBA-6 - Same as 2-RBA

3-RBA-6 - Same as 3-RBA

1-RBA-7 - Not applicable

2-RBA-7 - Not applicable

3-RBA-7 - Same as 3-RBA

1-RBB - NT-49509 plug-adapter, install

A	FA-2	NS98731 NS98732	F5820-311-2768

SERIAL: All
IDENTITY: Right angle connector installed on audio output cable

2-RBB - Pwr supply filter choke, invert

A	FA-1	NS98731 NS98732	None

SERIAL: Receivers with pwr supplies N.T. 20130 having serial numbers: 1-2008, 2012-2016, 2018-2021, 2025, 2028-2033, 2038, 2041, 2050-2051, 2058, 2062, 2069, 2071-2075, 2078-2079, 2172, 2213, 2338, 2241, 2245-2246, 2249, 2251-2253, 2255-2257, 2261-2263, 2265, 2268-2270, 2272-2274, 2276-2279, 2281, 2286, 2289, 2293, 2295-2296, 2298-2299, 2303-2305, 2307, 2309-2310, 2313-2314, 2316-2317, 2320-2321, 2323-2326, 2328-2336, 2340-2341, 2345, 2347-2351, 2353, 2355-2399, 2400-2402, 2404-2416, 2419, 2471, 2473-2499, 2500-2527, 2529-2548, 2550-2589, 2591-2600
IDENTITY: Filter chokes are mounted upside down in power supply.

3-RBB - Band sw, improve

A	FA-3	NS98731 NS98732	None

SERIAL: All
IDENTITY: Stops removed from switch, bandswitching now continuous.

1-RBB-1 - Same as 1-RBB

2-RBB-1 - Same as 2-RBB

3-RBB-1 - Same as 3-RBB

1-RBB-2 - Same as 1-RBB

2-RBB-2 - Same as 2-RBB

3-RBB-2 - Not applicable

1-RBC - Same as 1-RBB

2-RBC - Same as 2-RBB

3-RBC - Same as 3-RBB

1-RBC-1 - Same as 1-RBB

2-RBC-1 - Same as 2-RBB

3-RBC-1 - Same as 3-RBB - except
SERIAL: 1-1000

1-RBC-2 - Same as 1-RBB

2-RBC-2 - Same as 2-RBB

3-RBC-2 - Not applicable

1-RBC-3 through 3-RBC - Not applicable

1-RBC-4 through 3-RBC-4 - Not applicable

1-RBM - Not applicable

1-RBM-1 - Not applicable

1-RBM-2 - Not applicable

1-RBM-3 - Not applicable

1-RBM-4 - Shock-mounting
B YF-6 NS98066 F5820-311-2460
SERIAL: All on ships
IDENTITY: Receiver shock-mounted. NT-49120 receptacle for antenna. Type PC3F amphenol receptacle installed in rear of receiver for audio output.

1-RBM-5 - Same as 1-RBM-4

1-RBO - Superseded by F.C.#3

2-RBO - Power Xfmr & rect tubes, repl
Correction material: See NS 98049
A FA-2 NS98049 F5820-699-5475
SERIAL: 1-3799
IDENTITY: 6X5 rectifier is replaced by a 5Y3GT

3-RBO - Balanced line speaker connection
Correction material: See NS 98745
A FA-3 NS98745 F5820-311-2537
SERIAL: All
IDENTITY: Check for insulating washer around earphone jack.

1-RBO-1 - Superseded by F.C. #3

2-RBO-1 - Not applicable

3-RBO-1 - Same as 3-RBO

1-RBO-2 - Superseded by F.C. #3

2-RBO-2 - Not applicable

3-RBO-2 - Same as 3-RBO

1-RBS - Cancelled

1-RCK - Tuning set-up system, add
A FA-2 NS98733 None
SERIAL: All
IDENTITY: R-110 changed to 47K. Installation of a toggle switch on the side brace behind front panel and marked "setting up" and "operating". Switch is connected to ground and junction of R-109 and R-110 at terminal 14 on TB E-104.

2-RCK - Noise suppressor wiring correction
A FA-1 NS98733 None
SERIAL: All
IDENTITY: Orange wire from screen of V-209 to the moving arm of R-240. The black ground wires should go to the right outside terminal of R-240 (when looking at the back of R-240 with the lugs down). The orange wire from R-266 should go to the left outside terminal of R-240 (when looking at the back of R-240 with the lugs down).

3-RCK - NT-49509 plug adapter, install
A FA-2 NS98733 F5820-642-6986
SERIAL: All
IDENTITY: NT-49059 plug used for audio lead (3 pin right angle leading plug).

4-RCK - Audio BW increase for CLL service
A FA-½ NS98733 F5820-318-3876
SERIAL: All in CCL service
IDENTITY: Replace C-233, 700 mmf, across 2nd det. V(206A) with a 200 mmfd, 600v, capacitor. 1,000 mmfd. 600v capacitor added between plate of V-211 and ground

1-RD-110/U - Auto. tape feed model AT-2, install
Correction material: None
A FA-1 NS98340 F5835-642-6995
SERIAL: 1-150 charged to supp activity
IDENTITY: Automatic tape feed of back of recorder panel

2-RD-110/U - Modif tape recorder to take 8½" tape
A FA-½ None
SERIAL: All
IDENTITY:

1-RD-230/USQ-20(V) - Signal Data Recorder Reproducer (Flexowriter) - Incorporation of Factory Field Service Orders as a Unit Field Change
Correction material: Incorporated in revised publication
2-A NA None
SERIAL: 1 thru 8
IDENTITY: Change number stamped on the Field Change Accomplished plate.

1-RD-231/USQ-20(V) - Signal Data Recorder-Producer, (Paper Tape Unit) - Incorporation of Factory Field Service Orders as a Unit Field Change
2-A NA None
SERIAL: 1 thru 28
IDENTITY: Change number stamped on the Field Change Accomplished plate.

2-RD-231/USQ-20(V) - Signal Recorder-Reproducer (Paper Tape Unit) Correction of Marginal Operation of Clutch and Brake Electromagnets
Correction material: NS 94085A
2-A FA-3 None
SERIAL: 1 thru 16 and A1 thru A32
IDENTITY: Change number stamped on Field change Accomplished plate.

1- RD-237/USQ-20(V) - Signal Data Recorder Reproducer (Flexowriter) - Incorporation of Factory Field Service Orders as a Unit Field Change
Correction material: Incorporated in revised publications
2-A NA None
SERIAL: 1
IDENTITY: Change number stamped on the Field Change Accomplished plate.

2-RD-237/USQ-20(V) - Signal Data Recorder Reproducer, (Flexowriter) - Logic Chassis Filter Addition
Correction material: NS 94086(A)
2-A FA-4 None
SERIAL: A1, A2 and #1 (NObsr-87605)
IDENTITY: Inspection of location A1A2-J24C and determine if capacity assembly 251230-00 is installed in J24C.

1-RD-243/USQ-20(V) - Incorporation of Factory Field Service Orders as a Unit Field Change
Correction material: None
2-A FA-1/4 None
SERIAL: 1 thru 18
IDENTITY: Change number stamped on Field Change Accomplished plate.

2-RD-243/USQ-20(V) - Signal Data Recorder-Reproducer (Magnetic Tape Unit), Overtemperature Alarm Audible Activation Capability
Correction material: None
2-A FA-2 None
SERIAL: 1 thru 17 and A1 thru A50
IDENTITY: Appropriate markings on the Field Change Accomplished plate.

3-RD-243/USQ-20(V) - Signal Data Recorder Reproducer (Magnetic Tape Unit) - Rewind Speed Change before beginning of Tape Stop
Correction material: NS 94091(A)
2-A FA-4 None
SERIAL: All
IDENTITY: Operate the tape transport in the rewind mode and observe if a slowdown in tape rewind speed occurs prior to tape reaching the BOT stop. This test must be preformed with the upper tape sensor arm riding upon the tape.

4-RD-243/USQ-20(V) - Reproducer Noise Susceptibility Change
Correction material: Incorporated in Change 1 to NAVSHIPS 94091(A)
2-A FA-2 None
SERIAL: 1 thru 17, A1 thru A43 (Incorporated in all other units during production)
IDENTITY: Visual or continuity check between T-B2-C3, J24F-7, and J24G-13 on chassis A2A2A1.

5-RD-243/USQ-20(V) - Signal Data Recorder Reproducer (Magnetic Tape Unit) - Reduction of Noise Sensitive Lines
Correction material: Incorporated in Chg 1 to NAVSHIPS 94091(A)
2-A FA-2 None
SERIAL: 1 thru 17, A1 thru A49, A-51, A-52 and A-58
IDENTITY: Visual inspection of chassis A2A2A1 (lower right-hand drawer, left chassis) and determine if capacitor assembly (UNIVAC P/N) 7009453 00 has been installed in J 25F.

1-RDO - 28v input receptacle J-305, repl
Correction material: See NS 98736
A FA-1 NS98736 F5820-642-6916
SERIAL: All
IDENTITY: New receptacle is 2 contact, male, polarized

2-RDO - Preampl stage, insertion of
Correction material: None
A FA-6 NS98140 F5820-696-9046
SERIAL: All
IDENTITY: A 6AK5 and a 6J6 installed with associated components on a 3"x3" frame mounted above and to right of P-102 and above E-101.

3-RDO - Pulse stretcher to improve audio signal
Correction material: See NS 98134
A FA-3 NS98134 F5820-310-9265C1
SERIAL: All
IDENTITY: V-208 is changed from 6AB7 to 6SN7GT.

4-RDO - FM detector assy, install
Correction material: T-1 to NS 900,527
A FA-6 NS98213 F5820-642-7000
SERIAL: All
IDENTITY: AM-FM switch installed

1-RDR - Shockmount, Repl
Correction material: See NS 98735
B YF-1 NS98735 F5840-311-2412C1
SERIAL: All w/NT-10508 shockmounts
IDENTITY: Presence of 4 barry type C-2060 shock mounts.

2-RDR - Dynamotor noise suppressor, add
A FA-4 IB38464 F5820-311-2409
SERIAL: All
IDENTITY:

3-RDR - Danger in elect. noise suppr, elim
Correction material: None
2-A FA-½ NS98224 F5820-340-3085
SERIAL: All MAR/RDR's w/CTD-53518
IDENTITY: Presence of R-1701 across terminals 15 & 16 on Z-1701

1-RDZ - C-149, Remove
Correction material: See NS 98737
A FA-½ NS98737 None
SERIAL: 1-896
IDENTITY: C-149, 5 mmfd capacitor connected between grid and cathode pins 4 and 5 of oscillator tube V-101, is removed.

2-RDZ - Tuning inductance, adjustment
Correction material: See N S 98737
A FA-2 NS98737 F5820-310-9349C1
SERIAL: 1-500
IDENTITY: A .010" sheet brass silver plated plate is clipped over the tuning vane enclosed within L-106.

3-RDZ - Auto-tune unit bonding
Correction material: See NS 98737
A FA-½ W/KIT F5845-311-2408C1
SERIAL: 1-2348
IDENTITY: Spring steel grounding clips (for pressure contact with cover).

4-RDZ - If ampl, modif to improve stability
Correction material: See NS 98737
A FA-1/3 NS98737 F5845-311-2461
SERIAL: All
IDENTITY: Dummy load plugged into scanning jack behind recvr and metal shield over first I-F amp R-C strip inside, bottom, rear.

5-RDZ - Cancelled

6-RDZ - Improved alignment & sensit procedure
Correction material: See NS 98204
B YF-2 NS98204 F5820-346-4678
SERIAL: All
IDENTITY: The link connecting plus and minus screws of S-203 is removed and discarded and wording "Diode current" is relabeled (+) AVC (-) voltage.

7-RDZ - IF xfmr, replace
Correction material: None
A FA-4 NS98275 F5820-311-2837C1
SERIAL: All
IDENTITY: The narrow-wide band pass selector knob and shaft is removed.

1-RDZ-1 - Same as 1-RDZ - except
SERIAL: (None stated)

2-RDZ-1 - Same as 2-RDZ - except
SERIAL: (None stated)

3-RDZ-1 - Same as 3-RDZ - except
SERIAL: 1-1100

4-RDZ-1 - Same as 4-RDZ

5-RDZ-1 - Cancelled

6-RDZ-1 - Same as 6-RDZ

7-RDZ-1 - Same as 7-RDZ

1-REA - Recvr output line connect
A FA-2 NS98738 None
SERIAL: All
IDENTITY: The lines to the receiver outputs are connected to the terminals G1 and G2 for channel A and to terminals G3 and G4 for channel B on terminal panel 17 near bottom of second bay.

2-REA - AVC circuit modif
A FA-2 NS98738 None
SERIAL: All
IDENTITY: Resistor R22 and R23 two meg each replaced by one half meg; capacitors C7 and C8 four micro-farad each replaced by 16 micro-farad.

1-REA-1 - Same as 1-REA

2-REA-1 - Same as 2-REA

1-REK - Auto. Record player, install
Correction material: See NS 98739
B YF-40 NS98739 F5820-699-1366C2
SERIAL: All
IDENTITY: 1 of the single manual-change record player units replaced with automatic-change player.

1-RL-215/UG-Installation of Automatic Switch to Increase Reliability of Motor
Correction material: None
2-A FA-4 NS
SERIAL: All
IDENTITY: Presence of an automatic switch installed on the base of the paper reeling machine

1-RO-91/SSN - Repl chart drive gear and stud (shaft) MP10 and MP13
Correction material: Change 1 to NS 93264
1-A FA-1 NS981128 None
SERIAL: All
IDENTITY: Stud, shaft MP13A with groove on shoulder installed

2-RO-91/SSN - Add ground connection E-502A
1-A FA-¼ NS981137 None
SERIAL: 4 through 29; 501,502
IDENTITY: Ground lead between cover assembly and main frame

1-SA-420/URN-3 - Spacer, repl
Correction material: None
1-A FA-1 NS981040 F5820-543-1669
SERIAL: All
IDENTITY: Washer on CP6101 and DC6101 are brown bakelite

1-SA-544/GRA-4 - Spacer, repl
Correction material: None
1-A FA-1 NS981040 F5820-543-1669
SERIAL: All
IDENTITY: Washers on CP6101 and DC6101 are brown bakelite

1-SB-83/SRT - Knob locking device, install
Correction material: See NS 98370
A FA-2 NS98370 F5930-316-9389
SERIAL: Vert mtd equip.
IDENTITY: The knobs come in five colors, have locking bars mounted behind knobs.

2-SB-83/SRT - Knot locking device, install
A FA-2 NS98398 F5840-568-7816
SERIAL: Hor mtd equip.
IDENTITY: The knobs come in five colors, have locking bars mounted behind knobs.

3-SB-83/SRT - Cancelled

1-S-100 - Modif for improve of install, maintain, operation and safety features
Correction material: T-2 to NS 93127
1-A FA-64 NS981033(A) F5895-724-9679
SERIAL: All
IDENTITY: Jan type plugs and receptacles on all interchassis cabling.

2-S-100 - Modification of the Eldico S-100 for operation with Antenna Tuning Group AN/SRA-25.
Correction material:
YF-4 NS981152 F5820-665-0379
SERIAL: All
IDENTITY:

3-S-100 - Replacement of Resistor R-16
Correction material: T-4 to NS 93127
2-A FA-1/4 NS981161
SERIAL: All
IDENTITY: R-16 in R-100 chassis is 5 watt rating

1-SB-315/U - Modif to provide key adjustment, "speed key" jack, add; lamp, repl.
Correction material: T-1 to NS 92038
2-A FA-4 NS98983 None
SERIAL: All
IDENTITY: Control panel with key assy having gap and tension adjustments. Addition of key jack; incandescant type bulb assy.

1-SB-315A/U - Same as 1-SB-315/U

1-SB-1203/UG- Replacement of Calibration Resistor R-101 and Improvement of Meter Accuracy
Correction material: None
2-A FA-2 NS None
SERIAL: All - but not SB-1203A/UG and SB-1210A/UGQ
IDENTITY: Ohmmeter measurement of the resistance of meter calibration resistor R-101 in SG-1203/UG and SB-1210A/UGQ, R-102 in TT-23/SG through TT-23E/SG and R-100 in TT-23F/SG

1-SB-1210/UGQ-Same as 1-SB-1203/UG

1-SB-1299/USQ-20(V) - Prevention of overtravel of the Switch Handles on the Interconnecting Panels
Correction material: None
2-A FA-1.5 None
SERIAL: 1 thru 9
IDENTITY: Presence of physical stops installed behind and below all ten switch handles on the interconnecting panel.

2-SB-1299/USQ-20(V) - Replacement of 68 Pole Switches with 80 Pole Switches for WDS-MK11 System Compatability
Correction material: T- to NS
2-A FA-8 NS None
SERIAL: Interconnecting Panels SB #2 on DLG-28, -29, -30, -31, -32, -33, -34 and DLG(N) -35
IDENTITY: Noting the use of an 80 pole switch in lieu of a 60 pole switch in the locations specified in step 1 of this procedure.

1-SB-1622/SYA-4(V) - Communications Patching Panel - of a Factory Field Bulletin as a Unit Field Change
Correction material: Incorporated in revised publication
2-A NA None
SERIAL: All
IDENTITY: Change number stamped on the Field Change Accomplished plate.

1-SB-1623/SYA-4(V) - Radar Signal Distribution Switchboard - Incorporation of a Factory Field Bulletin as a Unit Field Change
Correction material: Incorporated in revised Technical Manual
2-A NA None
SERIAL: All
IDENTITY: Change number stamped on the Field Change Accomplished plate.

1-SB-1881(XN-1)/USQ-20(V) - Same as 2-OA-3069/SYA-1(V)

2-SB-1881(XN-1)/USQ-20(V) - Incorporation of Factory Field Bulletin as a Unit Field Change
Correction material: None
2-A FA-1/2 None
SERIAL: A1 thru A10
IDENTITY: Change number stamped on the Field Change Accomplished plate.

3-SB-1881(XN-1)/USQ-20(V) - Correct Wiring Error
Correction material: None
2-A FA-1 None
SERIAL: A1 thru A10
IDENTITY: Indicators A4DS63A(FCS 1 Ready) and A40S60A (FCS 2 Ready) light up when the equipment is set up in both the "End Around Test" mode and the "Casualty" mode, and the respective pushbuttons A4A83S1(FCS 1 Destruct) and A4A82S1(FCS 2 Destruct) are depressed.

5-SB-1881(XN-1)/USQ-20(V) - Interchange Lamp Filters
Correction material: T- to NS
2-A FA-1/10 NS None
SERIAL: A1 thru A10
IDENTITY: Amber filter in the "Y SAFE" position and a green filter in the "Y READY" position.

5-SB-1881(XN-1)/USQ-20(V) - Same as 5-SB-1881/USQ-20(V) except SERIAL: A1

6-SB-1881(XN-1)/USQ-20(V) - Weapons Control Panel Changes
Correction material: T- to NS
2-A FA-2 NS None
SERIAL: All
IDENTITY: By checking that the FCS Ready Lamp will illuminate when the NORMAL/Casualty Switch is in normal position.

1-SB-1881/USQ-20(V) - Same as 2-OA-3069/SYA-1(V)

2-SB-1881/USQ-20(V) - Same as 2-SB-1881(XN-1)/USQ-20(V)

3-SB-1881/USQ-20(V) - Same as 3-SB-1881(XN-1)/USQ-20(V) except
SERIAL: 1

4-SB-1881/USQ-20(V) - Incorporation of Univac Field Change Orders
2-A FA-8 NS 0967-057-6100
SERIAL: A1 thru A8
IDENTITY: Change number stamped on the Field Change Accomplished plate.

6-SB-1881/USQ-20(V) - Same as 6-SB-1881(XN-1)/USQ-20(V)

1-SM-319/SYA-4(V) - Video Signals Simulator - Incorporation of Factory Field Bulletins as a Unit Field Change
Correction material: None
2-A NA None
SERIAL: All
IDENTITY: Change number stamped on the Field Change Accomplished plate.

2-SM-319/SYA-4(V) - Reduction in Loading of Signal W80
Correction material: NS 94641
2-A FA-2 None
SERIAL: A1 thru A3
IDENTITY: Removing lower access panels on the front and rear of the simulator and checking for the presence of wiring changes as specified in field change.

3-SM-319/SYA-4(V) - Video Signals Simulator Gate Unloading
2-A FA-1½ None
SERIAL: A1 thru A3
IDENTITY: Checking for incorporation of wiring changes as specified in procedures of field change.

4-SM-319/SYA-4(V) - Simulation of 1.5 Degree Band Width
2-A FA-4 None
SERIAL: A1 thru A3
IDENTITY: Presence of 8 jumpers between pins on connector J-142.

5-SM-319/SYA-4(V) - Same as 3-AM-3377/SYA-4(V) except
SERIAL: 1 thru 3

6-SM-319/SYA-4(V) - Range Counter Modification
Correction material: None
2-A FA-2 NS None
SERIAL: A1 thru A3
IDENTITY: Checking for presence of 580722 Card Mode and wiring changes as specified in this field change.

1-SM-319A/SYA-4(V) - Same as 2-SM-319/SYA-4(V) except
SERIAL: A1 thru A13

2-SM-319A/SYA-4(V) - Same as 3-SM-319/SYA-4(V) except
SERIAL: 1 thru 7

3-SM-319A/SYA-4(V) - Same as 4-SM-319/SYA-4(V) except
SERIAL: A1 thru A23

4-SM-319A/SYA-4(V) - Same as 3-AM-3377/SYA-4(V) except
SERIAL: 1 thru 3

5-SM-319A/SYA-4(V) - Same as 6-SM-319/SYA-4(V)
except SERIAL: A1 thru A20

1-SSB-1 - Modif to enable operation from standard naval radio remote sys.
Correction material: T-1 to NS 92917
2-A FA-24 NS98982 None
SERIAL: All
IDENTITY: "Local-remote" cont sw added to front panel, additional xfmrs for pwr supply (lower chassis)

2-SSB-1 - Modif for operation with antenna tuning group AN/SRA-20
Correction materiol: T-2 to NS 92917
2-A YF-8 NS981008 None
SERIAL: Nos. 5601 and above U/N AN/SRA-20
IDENTITY: Plate current meter on front ponel. AN/SRA-20 installed.

3-SSB-1 - AGC circuit, add
Correction material: T-3 to NS 92917
2-A FA-16 NS981009 None
SERIAL: All
IDENTITY: Addition of front panel sw marked "On-Off Automatic Gain Control"

4-SSB-1 - Modif to provide safety features to equip which present hazards to personnel
Correction material: T-4 to NS 92917
2-A FA-48 NS981019 None
SERIAL: All
IDENTITY: Plastic safety shields installed over transistor coils, plate caps on P.A. tubes

5-SSB-1 - Plate current meter in sub install, add
Correction material: T-5 to NS 92917
2-A FA-2 NS981088 None
SERIAL: All installed on submarines
IDENTITY: Plate current meter on front panel

6-SSB-1-Addition of shorting wafers to switch.
Correction material: T-6 to NS92917
2-A FA-8 NS981304 None
SERIAL: All below 5700.
IDENTITY:

1-TAB-6 - 600 ohm balance line with TN-199A/FRT,
Correction material: Supplement to TM for TAB-6,-7; NS 900,379-1
provide
B YF-40 NS98919 F5820-536-2019
SERIAL: When CAY-52273 is available
IDENTITY: Output of trans connects into a 2 wire transmission line which feeds a remote ant tuner.

1-TAB-7 - 600 ohm balanced line output CKT w/remote ant. tuning unit, modify
Correction material: See NS 98248
B YF-40 NS98248 F5805-301-9162
SERIAL: All
IDENTITY: Remote antenna tuning unit, add

2-TAB-7 - 600 ohm balanced line with TN-199A/FRT, provided
B YF-40 NS98919 F5820-536-2019
SERIAL: When CAY-52273 is available
IDENTITY: Output of trans connects into a 2 wire transmission line which feeds a remote ant tuner.

1-TAJ-2 - Not applicable

1-TAJ-3 - Not applicable

1-TAJ-4 - Not applicable

1-TAJ-5 - Protective cover for 3½" plate meter, add
A FA-1 NS981104 None
SERIAL: All
IDENTITY: Presence of protective cover

1-TAJ-6 - Same as 1-TAJ-5

1-TAJ-8 - Same as 1-TAJ-5

1-TAJ-9 - Same as 1-TAJ-5

1-TAJ-10 - Same as 1-TAJ-5

1-TAJ-14 - Same as 1-TAJ-5
1-TAJ-15 - Same as 1-TAJ-5

1-TAJ-18 - Same as 1-TAJ-5

1-TAJ-19 - Same as 1-TAJ-5

1-TAQ-5 - Protective cover for 3½' plate meter, add
A FA-1 NS981104 None
SERIAL: All
IDENTITY: Presence of protective cover

1-TAQ-6 - Same as 1-TAQ-5

1-TAQ-9 - Same as 1-TAQ-5

1-TAQ-10 - Same as 1-TAQ-5

1-TBA - through **3-TBA** - Not applicable

4-TBA - 0-5/FR exciter unit, modif
Correction material: See NS 98740
A FA-2 NS98740 None
SERIAL: All w/0-5/FR-units
IDENTITY: FSK unit is used.

1-TBA-1 through **3-TBA-1** - Not applicable

4-TBA-1 - Same as 4-TBA

1-TBA-2 - Not applicable

2-TBA-2 - Not applicable

3-TBA-2 - High-speed keying
Correction material: See NS 98740
A FA-3 NS98740 None
SERIAL:
IDENTITY: TBA-2, an adjustable 22.5 volt keying line is brought in to pin 1 of 6SL7/GT through a 2.5 mh choke. TBA-6, former ground is removed from junction of R-125 and another resistor, 2000 ohm, and a capacitor, .001mfd, is added from junction to ground.

4-TBA-2 - Same as 4-TBA

1-TBA-3 - Not applicable

2-TBA-3 - Balanced output operation
Correction material: See NS 98740
A FA-5 NS98740 None
SERIAL: All w/dbl end ant.
IDENTITY: C-105, C-143, and M-110 are removed. Antenna coupling unit, NT50118 is added.

3-TBA-3 - Not applicable

4-TBA-3 - Same as 4-TBA

1-TBA-4 - Not applicable

2-TBA-4 - Not applicable

3-TBA-4 - Not applicable

4-TBA-4 - Same as 4-TBA

1-TBA-5 through **3-TBA-5** - Not applicable

4-TBA-5 - Same as 4-TBA

1-TBA-6 - M-111 by-pass circuit, modif
Correction material: See NS 98740
A FA-1 NS98740 None
SERIAL: All
IDENTITY: The low side of C-149 from the junction of M-111 and R-145 is grounded at the junction of C-148, C-151, M-109, and M-111.

2-TBA-6 - Same as 2-TBA-3

3-TBA-6 - Same as 3-TBA-2 - except
SERIAL: All using Hi speed keying

4-TBA-6 - Same as 4-TBA

1-TBA-7 through **3-TBA-7** - Not applicable

4-TBA-7 - Same as 4-TBA

1-TBA-8 through **3-TBA-8** - Not applicable

4-TBA-8 - Same as 4-TBA

1-TBA-9 through **3-TBA-9** - Not applicable

4-TBA-9 - Same as 4-TBA

1-TBA-10 - Same as 1-TBA-6

2-TBA-10 - Same as 2-TBA-3

3-TBA-10 - Not applicable

4-TBA-10 - Same as 4-TBA

1-TBA-11 - Same as 1-TBA-6

2-TBA-11 - through **3-TBA-11** - Not applicable

4-TBA-11 - Same as 4-TBA

1-TBA-12 through **3-TBA-12** - Not applicable

4-TBA-12 - Same as 4-TBA

1-TBA-13 through **3-TBA-13** - Not applicable

4-TBA-13 - Same as 4-TBA

1-TBK - Not applicable

2-TBK - Paralleled high-speed keying
Correction material: See NS 98741
A FA-3 NS98741 None
SERIAL: All w/hi speed keying
IDENTITY: A keyer unit is mounted on lowermost shelf, left side, directly below mo unit.

3-TBK - 0-5/FR exciter unit, modif
Correction material: See NS 98741
A FA-2 NS98741 None
SERIAL: All w/0-5/FR units
IDENTITY: Presence of 0-5/FR exciter unit

4-TBK - Not applicable

1-TBK-1 - Not applicable

2-TBK-1 - Same as 2-TBK

3-TBK-1 - Same as 3-TBK

4-TBK-1 - Not applicable

1-TBK-2 - Not applicable

2-TBK-2 - Same as 2-TBK

3-TBK-2 - Same as 3-TBK

4-TBK-2 - Not applicable

1-TBK-3 - Not applicable

2-TBK-3 - Same as 2-TBK

3-TBK-3 - Same as 3-TBK

4-TBK-3 - Not applicable

1-TBK-4 - Not applicable

2-TBK-4 - Same as 2-TBK

3-TBK-4 - Same as 3-TBK

4-TBK-4 - Not applicable

1-TBK-5 - Not applicable

2-TBK-5 - Same as 2-TBK

3-TBK-5 - Same as 3-TBK

4-TBK-5 - Not applicable

1-TBK-6 - Not applicable

2-TBK-6 - Same as 2-TBK

3-TBK-6 - Same as 3-TBK

4-TBK-6 - Not applicable

1-TBK-7 - Not applicable

2-TBK-7 - Same as 2-TBK

3-TBK-7 - Same as 3-TBK

4-TBK-7 - Not applicable

1-TBK-8 - Not applicable

2-TBK-8 - Same as 2-TBK

3-TBK-8 - Same as 3-TBK

4-TBK-8 - Protective cover for 3½" meter, add
A FA-1 NS981104 None
SERIAL:
IDENTITY: Presence of protective cover

1-TBK-9 - Not applicable

2-TBK-9 - Same as 2-TBK

3-TBK-9 - Same as 3-TBK

4-TBK-9 - Same as 4-TBK-8

1-TBK-10 - Not applicable

2-TBK-10 - Same as 2-TBK

3-TBK-10 - Same as 3-TBK

4-TBK-10 - Same as 4-TBK-8

5-TBK-10 - Installation of Radio Set Group (SSB) AN/WRA-1.
Correction material:
2-A FA-20 NS981241 None
SERIAL:
IDENTITY:

6-TBK-10-Cancelled

1-TBK-11 - Not applicable

2-TBK-11 - Same as 2-TBK

3-TBK-11 - Same as 3-TBK - except
SERIAL: All

4-TBK-11 - Same as 4-TBK-8

1-TBK-12 - Not applicable

2-TBK-12 - Same as 2-TBK

3-TBK-12 - Same as 3-TBK - except
SERIAL: All

4-TBK-12 - Not applicable
5-TBK-12 - Same as 5-TBK-10

1-TBK-13 - Not applicable

2-TBK-13 - Same as 2-TBK

3-TBK-13 - Same as 3-TBK - except
SERIAL: All

4-TBK-13 - Same as 4-TBK-8

5-TBK-13 - Modif for operation with antenna tuning group AN/SRA-18
Correction material: T-1 to NS 900,388; T-5 to NS 92540(A)
1-B YF-20 NS981034 None
SERIAL: All
IDENTITY: Coaxial receptacle installed; cabling to control unit C-1360( )/SRT

6-TBK-13 - Same as 5-TBK-10

1-TBK-14 - Not applicable

2-TBK-14 - Same as 2-TBK

3-TBK-14 - Same as 3-TBK - except
SERIAL: All

4-TBK-14 - Not applicable

5-TBK-14 - Same as 5-TBK-10

1-TBK-15 - Not applicable

2-TBK-15 - Same as 2-TBK
3-TBK-15 - Same as 3-TBK - except
SERIAL: All

4-TBK-15 - Same as 4-TBK-8 - except
SERIAL: All

1-TBK-16 - Not applicable

2-TBK-16 - Same as 2-TBK

3-TBK-16 - Same as 3-TBK - except
SERIAL: All

4-TBK-16 - Same as 4-TBK-8 - except
SERIAL: All

5-TBK-16 - Same as 5-TBK-10

6-TBK-16-Cancelled

1-TBK-17 - Meter M-107 erroneous label
Correction moterial: See NS 98741
A FA-1 NS98741 None
SERIAL: All under cont, NXSS 28616
IDENTITY: Meter M-107 is relabeled "power ampl. plate current" replacing "first ampl. plate current."

2-TBK-17 - Same as 2-TBK
3-TBK-17 - Same as 3-TBK- except
SERIAL: All

4-TBK-17 - Same as 4-TBK-8 - except
SERIAL: All

5-TBK-17 - Same as 5-TBK-10

1-TBK-18 - Same as 1-TBK-17

2-TBK-18 - Same as 2-TBK

3-TBK-18 - Same as 3-TBK - except
SERIAL: All

4-TBK-18 - Same as 4-TBK-8 - except
SERIAL: All

5-TBK-18 – Same as 5-TBK-13

6-TBK-18 – Same as 5-TBK-10

1-TBK-19 – Same as 1-TBK-17

2-TBK-19 – Same as 2-TBK

3-TBK-19 – Same as 3-TBK - except
SERIAL: All

4-TBK-19 – Same as 4-TBK-8 - except
SERIAL: All

5-TBK-19 – Same as 5-TBK-10

1-TBK-20 – Same as 1-TBK-17

2-TBK-20 – Same as 2-TBK

3-TBK-20 – Same as 3-TBK - except
SERIAL: All

4-TBK-20 – Same as 4-TBK-8 - except
SERIAL: All

5-TBK-20 – Same as 5-TBK-13

6-TBK-20 – Same as 5-TBK-10

1-TBL – through **2-TBL** – Not applicable

3-TBL – CU-1281/U ant cont install
Correction material: None
B FA-5 NS98387 F5820-302-1206
SERIAL: All aboard subs
IDENTITY: Installation of C-1281/U on top transmitter

4-TBL – Cancelled

1-TBL-1 - through 2-TBL-1 - Not applicable
3-TBL-1 – Same as 3-TBL

4-TBL-1 – Keying and output ckt mod to operate ant. cont. C-1670/UR
Correction material: TM for C-1670/U, NS 92566
B YF-7 NS98632 F5820-325-6347
SERIAL: All
IDENTITY: Installation of C-1670/U on top transmitter

5-TBL-1 – Cancelled

1-TBL-2 – through **2-TBL-2** – Not applicable

3-TBL-2 – Same as 3-TBL

4-TBL-2 – Same as 4-TBL-1

5-TBL-2 – Cancelled

1-TBL-3 – through **2-TBL-3** – Not applicable

3-TBL-3 – Same as 3-TBL

4-TBL-3 – Same as 4-TBL-1

5-TBL-3 – Cancelled

1-TBL-4 – through **2-TBL-4** – Not applicable

3-TBL-4 - Freq. shift coupling adapter, add
Correction material: See NS 98341
A FA-4 NS98341 F5820-665-3553
SERIAL: All
IDENTITY: Presence of MX-1262/URT

4-TBL-4 – Protective meter cover, add
A FA-1 NS981104 None
SERIAL: All
IDENTTITY: Presence of protective cover

5-TBL-4 – SSB adapter kit
Correction material:
YF-20 NS981043 F5840-543-1764
SERIAL: All
IDENTITY:

6-TBL-4 – Modif to permit operation with Antenna Tuning Group AN/SRA-18 or AN/SRA-18A.
Correction material: T-1 to NS 900,373
2-A FA-8 NS981200 None
SERIAL: Radio Transmitters CRV-52180, 52181, 52178 and 52179
IDENTITY: Antenna Tuning Group AN/SRA-18 or AN/SRA-18A is installed and used with transmitter.

1-TBL-5 - Not applicable

2-TBL-5 – Not applicable

3-TBL-3 – Same as 3-TBL-4

4-TBL-5 – Same as 3-TBL

5-TBL-5 – Same as 4-TBL-1

6-TBL-5 – Same as 5-TBL-4

7-TBL-5 – Modif to permit operation with antenna tuning group AN/SRA-18, AN/BRA-3 or AN/BRA-5
Correction material: T-2 to NS 900,381; T-6 to NS 92540(A)
2-A FA-8 NS981060 None
SERIAL: Equip where use of an AN antenna tuner is desired or required.
IDENTITY: Coaxial receptacle installed; cabling to control unit C-1360( )/SRT

8-TBL-5–Cancelled

1-TBL-6 - Band chg sw labeling, modif
Co.rection material: See NS 98742
A FA-½ NS98742 None
SERIAL:
IDENTITY:

2-TBL-6 – Not applicable

3-TBL-6 – Same as 3-TBL-4

4-TBL-6 - Same as 3-TBL

5-TBL-6 – Same as 4-TBL-1

6-TBL-6 – Same as 5-TBL-4

7-TBL-6 - Same as 7-TBL-5

8-TBL-6–Cancelled

1-TBL-7 – Same as 1-TBL-6

2-TBL-7 – Not applicable

3-TBL-7 – Same as 3-TBL-4

4-TBL-7 - Same as 3-TBL

5-TBL-7 – Same as 4-TBL-1

6-TBL-7 – Same as 5-TBL-4

7-TBL-7 – Same as 7-TBL-5

8-TBL-7–Cancelled

1-TBL-8 – Not applicable

2-TBL-8 – Audio output J101, correct wiring
Correction material: See NS 98742
A FA-1 NS98742 None
SERIAL: All
IDENTITY: If wires are connected to top and bottom contacts, F.C, is not applicable.

3-TBL-8 – Same as 3-TBL-4

4-TBL-8 – Same as 4-TBL-4

5-TBL-8 – Same as 5-TBL-4

6-TBL-8 – Same as 6-TBL-4

1-TBL-9 – Not applicable

2-TBL-9 – Same as 2-TBL-8

3-TBL-9 – Same as 3-TBL-4

4-TBL-9 – Same as 4-TBL-4

5-TBL-9 – Same as 5-TBL-4

6-TBL-9 – Same as 6-TBL-4

1-TBL-10 - through **2-TBL-10** - Not applicable

3-TBL-10 - Same as 3-TBL-4

4-TBL-10 - Same as 3-TBL

5-TBL-10 - Same as 4-TBL-1

6-TBL-10 – Same as 5-TBL-4

1-TBL-11 through **2-TBL-11** - Not applicable

3-TBL-11 - Same as 3-TBL-4

4-TBL-11 - Same as 3-TBL

5-TBL-11 - Same as 4-TBL-1

6-TBL-11 – Same as 5-TBL-4

1-TBL-12 through **2-TBL-12** - Not applicable

3-TBL-12 - Same as3-TBL-4

4-TBL-12 - Same as 3-TBL

5-TBL-12 - Same as 4-TBL-1

6-TBL-12 - Same as 5-TBL-4

7-TBL-12 - Same as 7-TBL-5

8-TBL-12 - Correcting safety hazard which exists in Power Supply PP-1211/U when connected to Radio Telegraph Transmitting Equipment TBL-12 and TBL-13.
Correction material:
2-A FA-8 NS981198 None
SERIAL: Combinations of Power Supply PP-1211/U and Radio Telegraph Transmitting Equipment TBL-12 and TBL-13.
IDENTITY: Terminal board TB-101 has the word "SWITCH" in place of 115 VAC.

9-TBL-12—Cancelled

1-TBL-13 through **2-TBL-13** - Not applicable

3-TBL-13 - Same as 3-TBL-4

4-TBL-13 - Same as 3-TBL

5-TBL-13 - Same as 4-TBL-1

6-TBL-13 - Same as 5-TBL-4

7-TBL-13 - Same as 7-TBL-5

8-TBL-13 - Same as 8-TBL-12

9-TBL-13—Cancelled

1-TBM - Not applicable

2-TBM - Paralleled high-speed keying
Correction material: See NS 98748
A FA-3 NS98743 None
SERIAL: All w/ parallel & hi speed keying
IDENTITY: Electronic keying unit added below the M.O. unit

3-TBM - O-5/FR exciter unit, modif
Correction material: See NS 98748
A FA-2 NS98743 None
SERIAL: All w/O-5/FR units
IDENTITY: FSK installed

1-TBM-1 - Not applicable

2-TBM-1 - Same as 2-TBM

3-TBM-1 - Same as 3-TBM

1-TBM-2 - Not applicable

2-TBM-2 - Same as 2-TBM

3-TBM-2 - Same as 3-TBM

1-TBM-3 - Not applicable

2-TBM-3 - Same as 2-TBM

3-TBM-3 - Same as 3-TBM

1-TBM-4 - Thyrite peak limiting units, install
Correction material: See NS 98748
A FA-3 NS98743 F5820-311-2733
SERIAL: All
IDENTITY: Installation of peak limiting thyrite units

2-TBM-4 - Same as 2-TBM

3-TBM-4 - Same as 3-TBM

1-TBM-5 - Same as 1-TBM-4

2-TBM-5 - Same as 2-TBM

3-TBM-5 - Same as 3-TBM

4-TBM-5 - Protective meter cover, add
A FA-1 NS981104 None
SERIAL: All
IDENTITY: Presence of protective cover

5-TBM-5 - Modif for operation with antenna tuning group AN/SRA-18
Correction aterial: T-1 to NS 900,388; T-5 to NS 92540(A)
1-B YF-20 NS981034 None
SERIAL: All
IDENTITY: Coaxial receptacle installed; cabling to control unit C-1360( )/SRT

1-TBM-6 - Same as 1-TBM-4

2-TBM-6 - Same as 2-TBM

3-TBM-6 - Same as 3-TBM

4-TBM-6 - Same as 4-TBM-5

1-TBM-7 - Same as 1-TBM-4

2-TBM-7 - Same as 2-TBM

3-TBM-7 - Same as 3-TBM

4-TBM-7 - Same as 4-TBM-5

5-TBM-7 - Same as 5-TBM-5

6-TBM-7 - Installation of Radio Set Group (SSB) AN/WRA-1.
Correction material:
2-A FA- NS981241 None
SERIAL:
IDENTITY.

1-TBM-8 - Same as 1-TBM-4

2-TBM-8 - Same as 2-TBM

3-TBM-8 - Same as 3-TBM

4-TBM-8 - Same as 4-TBM-5

1-TBM-9 - Same as 1-TBM-4

2-TBM-9 - Same as 2-TBM

3-TBM-9 - Same as 3-TBM

4-TBM-9 - Same as 4-TBM-5

5-TBM-9 - Same as 5-TBM-5

6-TBM-9 - Same as 6-TBM-7

1-TBM-10 - Same as 1-TBM-4

2-TBM-10 - Same as 2-TBM

3-TBM-10 - Same as 3-TBM

4-TBM-10 - Same as 4-TBM-5

5-TBM-10—Cancelled

1-TBM-11 - Same as 1-TBM-4

2-TBM-11 - Same as 2-TBM

3-TBM-11 - Same as 3-TBM

4-TBM-11 - Same as 4-TBM-5

5-TBM-11 - Same as 5-TBM-5

1-TBM-12 - Not applicable

2-TBM-12 - Same as 2-TBM

3-TBM-12 - Same as 3-TBM

4-TBM-12 - Same as 4-TBM-5

1-TBS - Providing standby circuit
Correction material: None
1-A FA-2 NS98744 F
SERIAL: All
IDENTITY:

2-TBS - Install transmission line filter CHW-53155.
Correction material: None
YF-3 NS98744 None
SERIAL: All
IDENTITY:

3-TBS - Improve reliability of relay K-101.
Correction material:
2-A FA-2 NS98744 None
SERIAL: All
IDENTITY:

1-TBS-1 - Same as 1-TBS

2-TBS-1 - Same as 2-TBS

3-TBS-1 - Same as 3-TBS

1-TBS-2 - Same as 1-TBS
2-TBS-2 - Same as 2-TBS

3-TBS-2 - Same as 3-TBS

1-TBS-3 - Same as 1-TBS

2-TBS-3 - Same as 2-TBS

3-TBS-3 - Same as 3-TBS

1-TBS-4 - Same as 1-TBS

2-TBS-4 - Same as 2-TBS
3-TBS-4 - Same as 3-TBS

1-TBS-5 - Same as 1-TBS

2-TBS-5 - Same as 2-TBS

3-TBS-5 - Same as 3-TBS

1-TBS-6 - Same as 1-TBS

2-TBS-6 - Same as 2-TBS

3-TBS-6 - Same as 3-TBS

1-TBS-7 - Same as 1-TBS

2-TBS-7 - Same as 2-TBS

3-TBS-7 - Same as 3-TBS

1-TCK - Brush replacement kit
Correction material: See NS 98764
A FA-½ NS98764 None
SERIAL: All
IDENTITY: Replace brushes on 12V M/G set when worn.

2-TCK - Not applicable

1-TCK-1 - Same as 1-TCK
2-TCK-1 through **3-TCK-1** - Not applicable

1-TCK-2 - Same as 1-TCK

2-TCK-2 through **3-TCK-2** - Not applicable

1-TCK-3 - Same as 1-TCK

2-TCK-3 - Not applicable

3-TCK-3-Addition of protective meter cover.
Correction material:
2-A FA-1 NS981104 None
SERIAL: All
IDENTITY: Presence of protective cover.

1-TCK-4 - Same as 1-TCK

2-TCK-4 - Fil xfer, repl
Correction material: See NS 98764
A FA-4 NS98764 None
SERIAL: All before 6-24-44
IDENTITY: Filament transformer, T-303, NT CG-301111 replaced

3-TCK-4 - Not applicable

1-TCK-5 - Same as 1-TCK

2-TCK-5 - Not applicable

3-TCK-5-Same as 3-TCK-3

1-TCK-6 - Not applicable

2-TCK-6 - Same as 2-TCK-4
3-TCK-6 - Not applicable

1-TCK-7 - Same as 1-TCK

2-TCK-7 - Not applicable

3-TCK-7-Same as 3-TCK-3

1-TCS - Relay circuit, modif
Correction material: See NS 98761
A FA-1 NS98761 None
SERIAL: All
IDENTITY: A jumper is connected across two outside bottom contacts of K-101.

2-TCS - Tap sw, modif
Correction material: See NS 98761
A FA-2 NS98761 None
SERIAL: All
IDENTITY: Plugs are placed in blank holes in wafers on switches S-101, S-102, S-103, and S-104.

3-TCS - Loading coils, modif
Correction material: See NS 98761
A FA-1 NS98761 None
SERIAL: All
IDENTITY: Drop of solder placed at each end of roller coil

4-TCS - Not applicable
5-TCS - Superceded by F.C. 9

6-TCS - Noise limiter, type-50159
Correction material: See NS 98761
B YF-3 NS98761 None
SERIAL: All
IDENTITY: Coupling unit (noise limiter) added in 2nd det. stage in place of 12SQ7. Function sw, with "NL" position, and nameplate added in place of recvr "on-off" switch.

7-TCS - Cancelled

8-TCS - R-303 and R-304, repl
Correction material: See NS 98761
A FA-1 NS98761 None
SERIAL: All
IDENTITY: R-303 and R-304 are changed from 12.5K, 12 watt, to 12K, 40 watt, resistors.

9-TCS - Radio intfer elim kit, install
A FA-3 NS F5820-301-7657
SERIAL: All
IDENTITY: Filter, CAYH-10597, is installed in 12V DC power line to dynamotor power supply.

10-TCS - Aluminum cabinet for steel, substitute
Correction material: See NS 98524
A FA-2 NS98524 F5820-302-4641
SERIAL: As directed by BUSHIPS
IDENTITY: Aluminum cabinets installed

1-TCS-1 - Same as 1-TCS

2-TCS-1 - Same as 2-TCS

3-TCS-1 - Same as 3-TCS

4-TCS-1 - Not applicable

5-TCS-1 - Superceded by F.C.9

6-TCS-1 - Same as 6-TCS

7-TCS-1 - Cancelled

8-TCS-1 - Same as 8-TCS

9-TCS-1 - Same as 9-TCS

10-TCS-1 - Same as 10-TCS

1-TCS-2 - Same as 1-TCS

2-TCS-2 - Same as 2-TCS

3-TCS-2 - Same as 3-TCS

4-TCS-2 - Not applicable

5-TCS-2 - Superceded by F.C. 9

6-TCS-2 - Same as 6-TCS

7-TCS-2 - Cancelled

8-TCS-2 - Same as 8-TCS

9-TCS-2 - Same as 9-TCS

10-TCS-2 - Same as 10-TCS

1-TCS-3 - Same as 1-TCS

2-TCS-3 - Same as 2-TCS

3-TCS-3 - Same as 3-TCS

4-TCS-3 - Not applicable

5-TCS-3 - Superceded by F.C. 9

6-TCS-3 - Same as 6-TCS
7-TCS-3 - Cancelled

8-TCS-3 - Same as 8-TCS

9-TCS-3 - Same as 9-TCS

10-TCS-3 - Same as 10-TCS

1-TCS-4 - Same as 1-TCS

2-TCS-4 - Same as 2-TCS

3-TCS-4 - Same as 3-TCS

4-TCS-4 - Not applicable

5-TCS-4 - Superceded by F.C. 9

6-TCS-4 - Same as 6-TCS

7-TCS-4 - Cancelled

8-TCS-4 - Same as 8-TCS

9-TCS-4 - Same as 9-TCS

10-TCS-4 - Same as 10-TCS

1-TCS-5 - Same as 1-TCS

2-TCS-5 - Same as 2-TCS

3-TCS-5 - Same as 3-TCS

4-TCS-5 - Not applicable

5-TCS-5 - Superceded by F.C. 9

6-TCS-5 - Same as 6-TCS

7-TCS-5 - Cancelled

8-TCS-5 - Same as 8-TCS

9-TCS-5 - Same as 9-TCS

10-TCS-5 - Same as 10-TCS

1-TCS-6 - Same as 1-TCS

2-TCS-6 - Same as 2-TCS

3-TCS-6 - Same as 3-TCS

4-TCS-6 - Not applicable

5-TCS-6 - Superceded by F.C. 9

6-TCS-6 - Same as 6-TCS

7-TCS-6 - Cancelled

8-TCS-6 - Same as 8-TCS

9-TCS-6 - Same as 9-TCS

10-TCS-6 - Same as 10-TCS

1-TCS-7 - Same as 1-TCS

2-TCS-7 - same as 2-TCS

3-TCS-7 - Same as 3-TCS

4-TCS-7 - Not applicable

5-TCS-7 - Superceded by F.C. 9

6-TCS-7 - Same as 6-TCS

7-TCS-7 - Cancelled

8-TCS-7 - Same as 8-TCS

9-TCS-7 - Same as 9-TCS

10-TCS-7 - Same as 10-TCS

1-TCS-8 - Same as 1-TCS

2-TCS-8 - Same as 2-TCS

3-TCS-8 - Same as 3-TCS

4-TCS-8 - Not applicable

5-TCS-8 - Superceded by F. C. 9

6-TCS-8 - Same as 6-TCS

7-TCS-8 - Cancelled

8-TCS-8 - Same as 8-TCS

9-TCS-8 - Same as 9-TCS

10-TCS-8 - Same as 10-TCS

1-TCS-9 - Same as 1-TCS

2-TCS-9 - Same as 2-TCS

3-TCS-9 - Same as 3-TCS

4-TCS-9 - Cancelled

5-TCS-9 - Superceded by F. C. 9

6-TCS-9 - Same as 6-TCS

7-TCS-9 - Cancelled

8-TCS-9 - Same as 8-TCS

9-TCS-9 - Same as 9-TCS

10-TCS-9 - Same as 10-TCS

1-TCS-10 - Same as 1-TCS

2-TCS-10 - Same as 2-TCS

3-TCS-10 - Same as 3-TCS

4-TCS-10 - Cancelled

5-TCS-10 - Superceded by F.C. 9

6-TCS-10 - Same as 6-TCS

7-TCS-10 - Cancelled

8-TCS-10 - Same as 8-TCS

9-TCS-10 - Same as 9-TCS

10-TCS-10 - Same as 10-TCS

1-TCS-11 - Same as 1-TCS

2-TCS-11 - Same as 2-TCS

3-TCS-11 - Same as 3-TCS

4-TCS-11 - Cancelled

5-TCS-11 - Superceded by F.C. 9

6-TCS-11 - Same as 6-TCS

7-TCS-11 - Cancelled

8-TCS-11 - Same as 8-TCS

9-TCS-11 - Same as 9-TCS

10-TCS-11 - Same as 10-TCS

1-TCS-12 - Not applicable

2-TCS-12 - Same as 2-TCS

3-TCS-12 - Same as 3-TCS

4-TCS-12 - Motors & gen repl
A FA-3 NS98761 None
SERIAL: 2632-2766, 3497-3511, 3912-4311, 5504-5703, 6554-6853
IDENTITY: High voltage generator, motors mfg type 230 0001 00 and 230 0002 00 are replaced

5-TCS-12 - Superceded by F.C. 9

6-TCS-12 - Same as 6-TCS

7-TCS-12 - Cancelled

8-TCS-12 - Same as 8-TCS

9-TCS-12 - Same as 9-TCS

10-TCS-12 - Same as 10-TCS

1-TCS-13 - Not applicable

2-TCS-13 - Same as 2-TCS

3-TCS-13 - Same as 3-TCS

4-TCS-13 - Not applicable

5-TCS-13 - Superceded by F.C. 9

6-TCS-13 - Same as 6-TCS

7-TCS-13 - Cancelled

8-TCS-13 - Same as 8-TCS

9-TCS-13 - Same as 9-TCS

10-TCS-13 - Same as 10-TCS

1-TCS-14 - Not applicable
2-TCS-14 - Same as 2-TCS

3-TCS-14 - Same as 3-TCS

4-TCS-14 - Cancelled

5-TCS-14 - Superceded by F.C. 9

6-TCS-14 - Same as 6-TCS

7-TCS-14 - Not applicable

8-TCS-14 - Same as 8-TCS

9-TCS-14 - Same as 9-TCS

10-TCS-14 - Same as 10-TCS

1-TCS-15 - Not applicable

2-TCS-15 - Same as 2-TCS

3-TCS-15 - Same as 3-TCS

4-TCS-15 - Not applicable

5-TCS-15 - Superceded by F.C. 9

6-TCS-15 - Same as 6-TCS

7-TCS-15 - Cancelled

8-TCS-15 - Same as 8-TCS

9-TCS-15 - Same as 9-TCS

10-TCS-15 - Same as 10-TCS

1-TCS-16 - Not applicable

2-TCS-16 - Same as 2-TCS

3-TCS-16 - Same as 3-TCS
4-TCS-16 - Not applicable

5-TCS-16 - Superceded by F.C. 9

6-TCS-16 - Same as 6-TCS

7-TCS-16 - Cancelled

8-TCS-16 - Same as 8-TCS

9-TCS-16 - Same as 9-TCS

10-TCS-16 - Same as 10-TCS

1-TCZ - 28V gen brushes, repl
Correction material: None
A FA-½ NS98765 F5820-310-9353C2
SERIAL: All w/21101 AC pwr units
IDENTITY: New brushes are stamped 113 into the side of the metal spring tab.

2-TCZ - Col-23410 remote cont, remove grd
Correction material: None
A FA-½ NS98765 None
SERIAL: All u/w std Navy rcvrs
IDENTITY: Removal of the ground from the input transformer in the remote control unit.

1-TCZ-1 - Same as 1-TCZ - except
SERIAL: All

2-TCZ-1 - Same as 2-TCZ

1-TCZ-2 - Not applicable

2-TCZ-2 - Same as 2-TCZ

1-TDE - Mike modif kit
B FA-2 F5840-311-2585C1
SERIAL: 1-256, 393-441, 448-611, 612-880, 993-1124, 1183-1248, 1250, 1293-1471, 1475
IDENTITY: Local microphone jack is installed in front panel

2-TDE - Fil warm-up circuit, install
B FA-3 NS98766 None
SERIAL: All
IDENTITY: Warm-up circuit indicated by switch and filament power on indicating light on front panel of power supply section.

3-TDE - Improved mg sw, S-370B, install
A FA-2 NS98766 F5820-311-2547
SERIAL: All
IDENTITY: Section "B" of switch S-307 (HFPA range selector switch) is replaced with section of newer type, section "A" of same switch.

4 – TDE – Modif to permit operation w/Ant Tuning Group AN/SRA–18
2–A FA–8 NS981154 None
SERIAL: Radio xmtrs 52267, 52267A
IDENTITY: Ant tuning group is installed and connected to xmtr.

1-TDE-1 - Not applicable

2-TDE-1 - Same as 2-TDE

3-TDE-1 - Same as 3-TDE
4-TDE-1 - Same as 4-TDE

1-TDE-2 - Not applicable

2-TDE-2 - Same as 2-TDE

3-TDE-2 - Same as 3-TDE - except
SERIAL: 1-340, 372, 835, 1046-1351

4 – TDE–2 – Same as 4 –TDE

1-TDE-3 - Not applicable

2-TDE-3 - Same as 2-TDE

3-TDE-3 - Not applicable
4-TDE-3 - Same as 4-TDE

1-TDH - Oscillator, assy, transfer
Correction material: See NS 98181
A FA-3 NS98181 F5820-310-9263
SERIAL: All
IDENTITY: Master oscillator replaced with one having 700 series component part nos.

***2-TDH** – Modif. switch S111.
Correction material: None
2-A FA-2 NS981193 None
SERIAL: All
IDENTITY: Presence of spiral springs on contact fingers in the output network unit.

***1-TDH-2** – Same as 2-TDH

***1-TDH-3** – Same as 2-TDH

***1-TDH-4** – Same as 2-TDH

1-TDN - Not applicable

2-TDN - Safety convert
A FA-1 NS900709 F5820-642-7917
SERIAL: All
IDENTITY:

3-TDN - Not applicable

1-TDN-1 - Not applicable

2-TDN-1 - Same as 2-TDN

3-TDN-1 - Not applicable

1-TDN-2 – Freq shift keying, convert
A FA-10 NS900709 F5820-642-6350
SERIAL: 1-20
IDENTITY:

2-TDN-2 – Same as 2-TDN

3-TDN-2 – TDN-2 to TDN-4, convert
A FA-40 NS900709 F5820-642-6942
SERIAL: 1-20
IDENTITY:

1-TDN-3 – Same as 1-TDN-2 - except
SERIAL: 1-15

2-TDN-3 – Same as 2-TDN
3-TDN-3 – Not applicable

1-TDN-4 – Same as 1-TDN-2

2-TDN-4 – Same as 2-TDN
3-TDN-4 – Not applicable

1-TDO – Oscillator assy, transfer
Correction material: See NS 98181
A FA-3 NS98181 F5820-310-9263
SERIAL: All
IDENTITY: New master oscillator. Collins 520 273400 or 520 273800.

1-TDQ – Overload relay K-303, chg
Correction material: None
A FA-1 None
SERIAL: All
IDENTITY: The mounting holes in the bakelite base of K-303 are elongated to permit repositioning.

2-TDQ – Model TDQ xmission line filter type CRV-53232
Correction material: None
A FA-2 None
SERIAL: 1-2881
IDENTITY: Transmission line filter 53232 is installed in antenna output line and is mounted in top center of transmitter.

3-TDQ – Caution nameplates for TDQ xmtr
Correction material: None
A FA-1/3 F5820-311-2538
SERIAL: All
IDENTITY: Presence of caution plate

4-TDQ – Provide extended audio rng communication cont link service
A FA-1 None
SERIAL: Anywhere necessary
IDENTITY: Capacitors C-216, C-217, and C-218 disconnected from circuit but are left mounted in position. Equipment is then designated "TDQ-A"

1-TDT – Send-receive relay, add
A FA-6 NS98768 None
SERIAL: All
IDENTITY: Ant relay added on top of wire 36 on term X-4

2-TDT – Volt surges on rect. tubes, reduce
A FA-2 NS98768 None
SERIAL: All
IDENTITY: Wire no 36 on X-4 term having wire no. 20

3-TDT – R-10, -11 and -13, repl
A FA-1 NS98768 F5820-334-8784C1
SERIAL: All
IDENTITY: R10 8K, 40W; R11 10K, 50W; R13, 10K, 90W

4-TDT – Blower motor reactor, install
A FA-1 NS98768 None
SERIAL: All
IDENTITY: 50-ohm reactor installed in series with motor TN-Fr43R

1-TDT-1 – Same as 1-TDT

2-TDT-1 – Same as 2-TDT

3-TDT-1 – Same as 3-TDT

4-TDT-1 – Same as 4-TDT

1-TDT-2 – Same as 1-TDT

2-TDT-2 – Same as 2-TDT

3-TDT-2 – Same as 3-TDT

4-TDT-2 – Same as 4-TDT

1-TDT-3 – Same as 1-TDT
2-TDT-3 – Same as 2-TDT

3-TDT-3 – Same as 3-TDT

4-TDT-3 – Same as 4-TDT

1-TDY – Addition of Stop-Start resistor
Correction material:
FA-1 NS None
SERIAL: All
IDENTITY:

2-TDY – Cancelled

3-TDY – Cancelled

4-TDY – Modernization kit
Correction material:
YF-12 NS
SERIAL: All
IDENTITY:

5-TDY – Conversion of TDY to TDYa and TDY-1 to TDY-1a
Correction material:
YF-112 NS98911
SERIAL: As directed by Buships.
IDENTITY:

6-TDY – Simplification of monitor system
Correction material:
FA-6 NS
SERIAL: All
IDENTITY:

7-TDY – Tube injector modification
Correction material:
FA-4 NS
SERIAL: All
IDENTITY:

8-TDY – Replacement of reflectors in antenna system
Correction material:
YF-16 NS
SERIAL: All
IDENTITY:

9-TDY through **11-TDY** – Cancelled

12-TDY – Addition of second magnetron seal blower.
Correction material:
YF-5 NS98911
SERIAL: 1-150 (using 35ABL oscillators)
IDENTITY:

13-TDY through **14-TDY** – Cancelled

15-TDY – Not applicable

16-TDY – Improved conversion of TDY to TDY-a and TDY-1 to TDY-1a.
Correction material:
YF-112 NS98911
SERIAL: As directed by Buships
IDENTITY:

17-TDY – Cancelled

1-TDY-1 through **4-TDY-1** – Not applicable

5-TDY-1 – Same as 5-TDY

6-TDY-1 – Same as 6-TDY

7-TDY-1 – Same as 7-TDY

8-TDY-1 – Same as 8-TDY

9-TDY-1 through **11-TDY-1** – Cancelled

12-TDY-1 – Same as 12-TDY

13-TDY-1 through **14-TDY-1** – Cancelled

15-TDY-1 – Replacement of pump seal assembly.
Correction material:
YF-2 NS98911
SERIAL: 1-134
IDENTITY:

16-TDY-1 – Same as 16-TDY

17-TDY-1 – Cancelled

1-TDZ – Auto tuning and drawer mechanism, modif
Correction material: Change 1 to NS 900,809
B YF-60 NS98167 F5840-311-2490
SERIAL: 1-100, 107-109, 111, 113-124, 128-134, 136-137, 140
IDENTITY: Neoprene snubbers added at rear of drawers. Adds extra springs to contacts at rear of drawers.

2-TDZ – Allowance of tender spare parts, modif
Correction material: Change 1 to NS 900,809
B YF-1 NS98168 None
SERIAL: 1T, 2T-4T, and 10T
IDENTITY: Snubber neoprene 2428-S added to tender spares

3-TDZ – Installation of protective guard on telephone type dial
Correction material: None
A FA-1 NS98169 F5840-311-2492
SERIAL: 1-1000
IDENTITY: Guard is installed

4-TDZ – Drawer fasteners to equipment spare parts, add
A FA-YF-1 NS98170 F5840-311-2495
SERIAL: 1-1000
IDENTITY: Drawer fasteners are in spares

5-TDZ – Dial cranks, provide
Correction material: See NS 98100
A FA-YF-½ NS98100 F5820-311-2617
SERIAL: 1-3540
IDENTITY: Crank to place over tuning knobs as aid in fast tuning.

6-TDZ – Noise reduction filter, provide
Correction material: NS 98180
A FA-YF-3 NS98180 F5820-310-9379
SERIAL: All
IDENTITY: New filter unit mounted on underside relay bathtub located in right rear corner of lower chassis, consists of 4" square board on which various resistors are mounted.

7-TDZ – Auto opr/CU-255/UR ant. cplr, modif for
Correction material: T-2 to NS 900,809
2-B YF-4 NS98321
SERIAL: All
IDENTITY: Coupler is usually mounted adjacent to TDZ, bulkhead mounted

8-TDZ – Dial lock for cont's B&C, improved
Correction material: T-3 to NS 900,809
A FA-YF-½ NS98377 F5820-311-3161
SERIAL: All
IDENTITY: Toggle dial lock will be installed on B and C controls

1-TEB – IPA band change, repl
A FA-2 None
SERIAL: All
IDENTITY: IPA sw bears stk no. N16-S-14010-2

1-TEC – 3KV plate contactor K-1122, chg
Correction material: None
A FA-2 NS98770 None
SERIAL: All
IDENTITY: Jan type 29678 contacts on relay K-1122

1-TED – Thermal protective switch, ant relay and hi volt.
Correction material: See NS 98630
Transient suppr, add
B YF-4 NS98630 F5820-346-4680
SERIAL: All
IDENTITY: Presence of two connectors in the "blower motor to filter power cable" (in the blower motor compartment) and installation of a thermal relay in the transmitter adjacent to the selenium rectifier indicate accomplishment.

2-TED – Metal cal nameplates, apply
A FA-1/5 NS98815 F5820-505-2500
SERIAL: All
IDENTITY: Appearance of nameplate on capacitor C-139 and C-187 on right-hand access door

3-TED – Cooling, improve
Correction material: See NS 98930
B YF-8 NS98930 F5820-536-2413
SERIAL: Shore Station Only
IDENTITY:

4 – TED – Improved cooling and adaptation for use as part of AN/FRN-24
1-B YF-16 NS981020 None
SERIAL: Shore installed equip used as VHF homing beacon.
IDENTITY:

***5-TED** – Improvement of operation
Correction material: Change 3 to NS91357
1-B FA-4 NS981164 F4140-691-2207
SERIAL: All
IDENTITY: Presence of aluminum retaining plate on high voltage caps.

6-TED–Application of warning and caution instruction plates.
Correction material: None
2-A FA-½ NS981423 None
SERIAL: All
IDENTITY:

7-TED–Improvement of operation.
Correction material: T-2 to NS91357
1-B FA-4 NS981339 F5820-893-2625
SERIAL: All
IDENTITY: Presence of thermal relay K-105.

8-TED – Same as 6-AN/URT-7 except correction material: Change 5 to NS91357

1-TED-1 – Same as 1-TED

2-TED-1 – Same as 2-TED

***3-TED-1** – Same as 5-TED except
Correction material: Change 2 to NS91475

4-TED-1–Same as 6-TED

5-TED-1–Same as 7-TED except
Correction material: T-1 to 91475

6-TED-1 – Same as 6-AN/URT-7 except correction material: Change 3 to NS91475

1-TED-2 – Same as 1-TED

2-TED-2 – Same as 2-TED

***3-TED-2** – Same as 5-TED except
Correction material: Change 2 to NS91585(A)

4-TED-2–Same as 6-TED

5-TED-2–Same as 7-TED except
Correction material: T-4 to 91585(A)

6-TED-2 – Same as 6-AN/URT-7 except correction material:
Change 3 to NS91585 (A)

1-TED-3 – Same as 1-TED

2-TED-3 – Same as 2-TED

***3-TED-3** – Same as 5-TED except
Correction material: Change 2 to NS91796(A)

4-TED-3–Same as 6-TED

5-TED-3–Same as 7-TED except
Correction material: T-1 to NS91796(A)

6-TED-3 – Same as 6-AN/URT-7 except correction material:
Change 3 to NS91796 (A)

1-TED-4 – Same as 1-TED

2-TED-4 – Same as 2-TED

***3-TED-4** – Same as 5-TED except
Correction material: Change 2 to NS92118

4-TED-4–Same as 6-TED

5-TED-4–Smae as 7-TED except
Correction material: T-2 to NS92118

6-TED-4 – Same as 6-AN/URT-7 except correction material:
Change 3 to NS92118

1-TED-5 – Same as 1-TED

2-TED-5 – Same as 2-TED

3-TED-5 – Same as 5-TED

4-TED-5–Same as 6-TED

5-TED-5–Same as 7-TED except
Correction material: None

6-TED-5 – Same as 6-AN/URT-7 except correction material:
None

1-TED-6 – Same as 1-TED

2-TED-6 – Same as 2-TED

***3-TED-6** – Same as 5-TED except
Correction material: Change 1 to NS92320

4-TED-6–Same as 6-TED

5-TED-6–Same as 7-TED except
Correction material: Change 2 to NS92320

6-TED-6 – Same as 6-AN/URT-7 except correction
material: Change 3 to NS92320

***1-TED-7** – Same as 5-TED except
Correction material: Change 1 to NS92701

2-TED-7 – Same as 6-AN/URT-7 except correction material:
Change 1 to NS92701

***1-TED-8** – Same as 5-TED except
Correction material; Change 1 to NS92703

2-TED-8 – Same as 6-AN/URT-7 except correction material:
Change 1 to NS92703

1-TN-229/SRT – Replacing electromagnetic actuators B303, B3501, B3502. Replacing sliding short and guide shoe E305 and 0376. Replacing mounting screws for C-3501.
Correction material:
1-A FA-16 NS981284 None
SERIAL:
IDENTITY:

1-TN-342/WRT-2 - Same as 1-TN-345/WRT-1

1-TN-345/WRT-1 - Eliminate possibility of slipping shaft on the output coupling of Tuner Drive Assembly
2-A FA-1/2 NS None
SERIAL: All
IDENTITY: Presence of a taper pin on the output coupling of MP-3301 (two speed drive assembly).

1-TS-1453/SYA-1(V) - Electronic Circuit Plug-in Unit Tester
2-A FA-2 None
SERIAL: All
IDENTITY: Field Change number stamped on the Field Change Accomplished plate.

1-TS-1539/USQ-20(V) - Keyset Universal Tester - Incorporation of Factory Field Service Orders as a Unit Field Change
Correction material: None
2-A NA None
SERIAL: 1 thru 7
IDENTITY: Change number stamped on the Field Change Accomplished plate.

1-TS-1780/SYA-4(V) - Electronic Circuit Plug-in-Unit Test Set - Incorporation of Factory Field Bulletins as a Unit Field Change
Correction material: Incorporated in revised Technical Manual
2-A None
SERIAL: A1 thru A7 and A9 thru A12
IDENTITY: Change number stamped on the Field Change Accomplished plate.

1-TSEC/HO-5 - Revision of transmitter distributor wiring.
Correction material:
FA-1 NS98671 None
SERIAL: 13, 14, and 16
IDENTITY:

2-TSEC/HO-5 - Replacing magnetic memory units.
Correction material:
1-A FA-6 NS981316
SERIAL: 28 thru 50.
IDENTITY:

1-TSEC/KG-7 - Revision of KGS-1/TSEC.
Correction material:
FA-1 NS98693 None
SERIAL: 21 thru 66
IDENTITY:

2-TSEC/KG-7 - Revision of circuitry involving V-5102, V-5202, V-5302, and V-5402.
Correction material:
2-A FA-2 NS98915 None
SERIAL: TSEC/KG-7 component of TSEC/KO-5 procured on contract NObsr 52434 and 63116.
IDENTITY:

3-TSEC/KG-7 - Replacing magnetic memory units.
Correction material:
1-A FA-12 NS981248 None
SERIAL: 21 thru 111
IDENTITY:

1-TT-23/SG - Cancelled

2-TT-23/SG - Protective sleeves for patch cords
Correction material: T-1 to NS
2-A FA-1 NS981276 None
SERIAL: All
IDENTITY: Presence of synthetic rubber sleeves installed on each patchcord.

3-TT-23/SG - Improvement of Meter Accuracy
2-A FA- NS
SERIAL: All but not to SB-1203A/UG and SB-1210A/UGQ
IDENTITY: Ohmeter measurement of the resistance of meter calibration resistor, R101 in SB-1203/UG and SB-1210A/UGQ, R102 in TT-23/SG through TT-23E/SG and R100 in TT-23F/SG

1-TT-23A/SG - Same as 3-TT-23/SG

1-TT-23B/SG - Same as 3-TT-23/SG

1-TT-23C/SG-Same as 3-TT-23/SG

1-TT-23D/SG - Same as 3-TT-23/SG

1-TT-23E/SG - Same as 3-TT-23/SG

1-TT-23F/SG - Operational improvements
Correction material:
2-A FA-6 NS981257 None
SERIAL: All
IDENTITY: Absence of 130 ohm, 1 watt resistors on looping and set jacks.

2-TT-23F/SG - Same as 2-TT-23/SG

3-TT-23F/SG - Same as 3-TT-23/SG

1-TT-47/UG - Keyboard & type pallet set, modif
A FA-3 NS98350 F5815-302-0990
SERIAL: All in ship or shore aerological service
IDENTITY: Nomenclature change to TT-128/UG

2-TT-47/UG - Modification kit MK-599/UG provides for aerological weather service.
Correction material: T-4 to NS91393, T-4 to NS91713, T-2 to NS92361, T-3 to NS93241.
1-A FA-3 NS 981424 F 5815-893-2490
SERIAL: Any of the teletypewriters installed in a ship or at a shore station which are to be used for aerological weather service.
IDENTITY: An additional nameplate is attached to the unit when this change is accomplished.

3-TT-47/UG – Installation of Mk-698/UG Mod Kit (Converts equip. from 7.42 unit code to 7.00 unit code with synchronous pulsed transmission and 45.5, 50, 75 BAUD speeds)
Correction material: T-5 to NS91393, T-5 to NS91713, T-5 to NS93241
NS 981560A F 5815-088-6024
SERIAL: All
IDENTITY:

4-TT-47/UG - Installation of Automatic Typer TT-437/UG (Replace MX-1115/UG or MX-1115A/UG)
Correction material: T-6 to NS 91393, T-7 to 91713
1-A FA NS981769 F5815-682-7763
SERIAL: All
IDENTITY: Automatic typer TT-437/UG

5-TT-47/UG - Installation of Oscillating Rail Slide Plate
Correction material: None Required
2-A FA-1/4 NS
SERIAL: All
IDENTITY: Presence of a plate between the oscillating rail slide clamp

6-TT-47/UG - Installation of (195415) MK-810/UG Modification Kit to Provide 3-speed Gearshift for Model 28 KSR or RO Set
Correction material: T-7 to NS 91393
1-A FA- NS 981755 F5815-051-3824
SERIAL:
IDENTITY:

7-TT-47/UG–Installation of 304599 (MK-821/UG) Modification Kit to provide manual letters shift
Correction material: T- to NS 91393
1-A FA NS981770
SERIAL: All
IDENTITY:

1-TT-47A/UG – Same as 1-TT-47/UG
IDENTITY: Modifies nomenclature to TT-128A/UG

2-TT-47A/UG – Same as 2-TT-47/UG

3-TT-47A/UG – Same as 3-TT-47/UG

4-TT-47A/UG - Same as 4-TT-47/UG

5-TT-47A/UG - Same as 5-TT-47/UG

6-TT-47A/UG - Installation of Code Bar Yield Mechanism
Correction material: None
2-A FA-2 NS0285-077-9100 None
SERIAL: All containing MX-1115A Automatic Typer with Ser. 8506 and below
IDENTITY: Presence of springs on the 1, 2, and common code bar shift bars.

7-TT-47A/UG - Installation of Oscillator Shift Knee Link Parts of new Design
Correction material: None
2-A FA-3 NS0285-077-9200 None
SERIAL: All equipment containing MX-1115A Automatic Typer with Serial No. 11,500 and below
IDENTITY: Presence of a torsion spring ½ turn (hairpin shaped) in place of a torsion spring of approximately four turns to hold the knee links in their unbuckled position.

8-TT-47A/UG - Installation of Horizontal Positioning Knee Link Assemblies
Correction material: None
2-A FA-2 NS0285-077-9300 None
SERIAL: All equipment containing MX-1115A Automatic Typer No. 11,500 and below
IDENTITY: Presence of torsion springs in lieu of tension springs on the horizontal positioning knee link assemblies.

9-TT-47A/UG - Installation of Lubrication Assembly
Correction material: T-4 to NS 92361, T-8 to NS 91713
2-A FA-1/2 NS 0285-077-9400
SERIAL: All
IDENTITY: Presence of lubrication assembly mounted on selec. mechanism

10-TT-47A/UG - Installation of one-piece non-adjustable Code Bar Shift Lever Guide Bracket
Correction material: T-9 to NS91713, T-5 to NS 92361
2-A FA-3 NS 0285-007-9500 None
SERIAL: Below 61550 (Typing units)
IDENTITY: Code Bar Positioning Mechanism

11-TT-47A/UG - Provision of Type Box Mechanism Adjustment
Correction material: T-10 to NS 91713, T-6, to NS 92361
2-A FA-2 NS 0285-077-9600 None
SERIAL: Thru 16799 (Typing Unit)
IDENTITY: Type box mechanism

12-TT-47A/UG - Replacement of Range Finder Plate
Correction material: T-11 to NS 91713, T-7 to NS 92361
2-A FA-1 1/2 NS0285-077-9700 None
SERIAL: All
IDENTITY: New type range finder knob

1-TT-47B/UG – Same as 3-TT-47/UG

1-TT-47C/UG – Same as 2-TT-47/UG

2-TT-47C/UG – Same as 3-TT-47/UG

3-TT-47C/UG–Installation of 193936 (MK-764/UG) Modification Kit
Correction material: T- to NS 93241
1-A FA NS981719 F5815-066-4354
SERIAL: LP6 and up
IDENTITY:

1-TT-47D/UG–Same as 2-TT-47/UG

2-TT-47D/UG – Installation of 194029 Mod Kit (Converts equip. from 7.42 unit code to 7.00 unit code with synchronous pulsed transmission and 45.5, 50, 75 BAUD speeds)
Correction material: T-5 to NS983241
NS981560 None
SERIAL:
IDENTITY:

3-TT-47D/UG–Same as 3-TT-47C/UG

1-TT-47E/UG–Same as 2-TT-47/UG

2-TT-47E/UG – Same as 2-TT-47D/UG

3-TT-47E/UG–Same as 3-TT-47C/UG

1-TT-47F/UG–Same as 3-TT-47C/UG

1-TT-47G/UG–Same as 3-TT-47C/UG

1-TT-47H/UG - Cancelled
SERIAL:
IDENTITY:

2-TT-47H/UG - Same as 3-TT-47C/UG

1-TT-48/UG - Same as 1-TT-47/UG modifies nomenclature to TT-129A/UG

2-TT-48/UG–Same as 2-TT-47/UG

3-TT-48/UG – Same as 3-TT-47/UG

4-TT-48/UG–Same as 4-TT-47/UG

5-TT-48/UG - Same as 5-TT-47/UG

6-TT-48/UG–Same as 6-TT-47/UG

7-TT-48/UG–Same as 7-TT-47/UG

1-TT-48A/UG – Same as 1-TT-47/UG

2-TT-48A/UG - Same as 2-TT-47/UG except IDENT. change nomenclature to TT-129A/UG

3-TT-48A/UG – Same as 3-TT-47/UG

4-TT-48A/UG–Same as 4-TT-47/UG

5-TT-48A/UG - Same as 5-TT-47/UG

6-TT-48A/UG - Same as 6-TT-47A/UG

7-TT-48A/UG - Same as 7-TT-47A/UG

8-TT-48A/UG - Same as 8-TT-47A/UG

9-TT-48A/UG - Same as 9-TT-47A/UG

10-TT-48A/UG - Same as 10-TT-47A/UG

11-TT-48A/UG - Same as 11-TT-47A/UG

12-TT-48A/UG - Same as 12-TT-47A/UG

1-TT-48B/UG – Same as 2-TT-47/UG

2-TT-48B/UG – Same as 3-TT-47/UG

3-TT-48B/UG - Same as 3-TT-47C/UG

1-TT-48C/UG–Same as 2-TT-47/UG

2-TT-48C/UG – Same as 2-TT-47D/UG

3-TT-48C/UG - Same as 3-TT-47C/UG

1-TT-48D/UG - Cancelled
2-TT-48D/UG - Same as 3-TT-47C/UG

1-TT-49/UG – 1000-ohm resistor on base term. block relocate
A FA-1 NS98500 None
SERIAL: 1-125
IDENTITY: Relocation of 1000 ohm ¼w. resistor from base unit terminal block to series - parallel switch on typing unit.

1-TT-50/UG – Same as 1-TT-49/UG

1-TT-69/UG - Same as 1-TT-47/UG except
IDENTITY: Nomenclature change to TT-130/UG

2-TT-69/UG – Same as 2-TT-47/UG

3-TT-69/UG – Same as 3-TT-47/UG

4-TT-69/UG–Same as 4-TT-47/UG

5-TT-69/UG - Same as 5-TT-47/UG

6-TT-69/UG–Same as 6-TT-47/UG

7-TT-69/UG–Same as 7-TT-47/UG

1-TT-69A/UG - Same as 1-TT-47/UG
IDENTITY: Nomenclature change to TT-130A/UG

2-TT-69A/UG – Same as 2-TT-47/UG

3-TT-69A/UG – Same as 3-TT-47/UG

4-TT-69A/UG–Same as 4-TT-47/UG

5-TT-69A/UG - Same as 6-TT-47A/UG

6-TT-69A/UG - Same as 7-TT-47A/UG

7-TT-69A/UG - Same as 8-TT-47A/UG

8-TT-69A/UG - Same as 9-TT-47A/UG

9-TT-69A/UG - Same as 10-TT-47A/UG

10-TT-69A/UG - Same as 11-TT-47A/UG

11-TT-69A/UG - Same as 12-TT-47A/UG

1-TT-69B/UG – Same as 2-TT-47/UG

2-TT-69B/UG – Same as 3-TT-47/UG

3-TT-69B/UG - Same as 3-TT-47C/UG

1-TT-69C/UG - Same as 2-TT-47/UG

2-TT-69C/UG – Same as 2-TT-47D/UG

3-TT-69C/UG - Same as 3-TT-47C/UG

1-TT-69D/UG - Cancelled

2-TT-69D/UG - Same as 3-TT-47C/UG

1-TT-70/UG - Same as 1-TT-47/UG except
IDENTITY: Nomenclature changes to TT-131/OG

2-TT-70/UG – same as 2-TT-47/UG

3-TT-70/UG – Same as 3-TT-47/UG

4-TT-70/UG–Same as 4-TT-47/UG

5-TT-70/UG - Same as 5-TT-47/UG

6-TT-70/UG–Same as 6-TT-47/UG

7-TT-70/UG–Same as 7-TT-47/UG

1-TT-70A/UG - Same as 1-TT-47/UG
IDENTITY: Nomenclature changed to TT-131A/UG

2-TT-70A/UG – Same as 2-TT-47/UG

3-TT-70A/UG – Same as 3-TT-47/UG

4-TT-70A/UG - Same as 4-TT-47/UG

5-TT-70A/UG - Same as 5-TT-47/UG

6-TT-70A/UG - Same as 6-TT-47A/UG

7-TT-70A/UG - Same as 7-TT-47A/UG

8-TT-70A/UG - Same as 8-TT-47A/UG

9-TT-70A/UG - Same as 9-TT-47A/UG

10-TT-70A/UG - Same as 10-TT-47A/UG

11-TT-70A/UG - Same as 11-TT-47A/UG

12-TT-70A/UG - Same as 12-TT-47A/UG

1-TT-70B/UG – Same as 3-TT-47/UG

1-TT-70C/UG – Same as 2-TT-47/UG

2-TT-70C/UG – Same as 3-TT-47/UG

3-TT-70C/UG–Same as 3-TT-47C/UG

1-TT-70D/UG - Same as 2-TT-47/UG

2-TT-70D/UG - Same as 2-TT-47/UG

3-TT-70D/UG–Same as 3-TT-47C/UG

1-TT-128A/UG - Same as 6-TT-47A/UG

2-TT-128A/UG - Same as 7-TT-47A/UG

3-TT-128A/UG - Same as 8-TT-47A/UG

4-TT-128A/UG - Same as 9-TT-47A/UG

5-TT-128A/UG - Same as 10-TT-47A/UG

6-TT-128A/UG - Same as 11-TT-47A/UG

7-TT-128A/UG - Same as 12-TT-47A/UG

1-TT-128B/UG - Cancelled

2-TT-128B/UG - Same as 3-TT-47C/UG

1-TT-129/UG – Same as 3-TT-47/UG

1-TT-129A/UG – Same as 3-TT-47/UG

2-TT-129A/UG - Same as 6-TT-47A/UG

3-TT-129A/UG - Same as 7-TT-47A/UG

4-TT-129A/UG - Same as 8-TT-47A/UG

5-TT-129A/UG - Same as 9-TT-47A/UG

6-TT-129A/UG - Same as 10-TT-47A/UG

7-TT-129A/UG - Same as 11-TT-47A/UG

8-TT-129A/UG - Same as 12-TT-47A/UG

1-TT-130/UG – Same as 3-TT-47/UG

1-TT-130A/UG – Same as 3-TT-47/UG

2-TT-130A/UG - Same as 6-TT-47A/UG

3-TT-130A/UG - Same as 7-TT-47A/UG

4-TT-130A/UG - Same as 8-TT-47A/UG

5-TT-130A/UG - Same as 9-TT-47A/UG

6-TT-130A/UG - Same as 10-TT-47A/UG

7-TT-130A/UG - Same as 11-TT-47A/UG

8-TT-130A/UG - Same as 12-TT-47A/UG

1-TT-130B/UG – Same as 3-TT-47/UG

1-TT-130C/UG – Same as 3-TT-47/UG

1-TT-131A/UG - Same as 6-TT-47A/UG

2-TT-131A/UG - Same as 7-TT-47A/UG

3-TT-131A/UG - Same as 8-TT-47A/UG

4-TT-131A/UG - Same as 9-TT-47A/UG

5-TT-131A/UG - Same as 10-TT-47A/UG

6-TT-131A/UG - Same as 11-TT-47A/UG

7-TT-131A/UG - Same as 12-TT-47A/UG

1-TT-159/UG – Message copy holder, add
Correction material: None

A	FA-½	NS98391	F5815-333-2410

SERIAL: 1-150
IDENTITY: Copy holder fastens to teletype cover

1-TT-171/UG – Same as 2-TT-47/UG

2-TT-171/UG–Same as 4-TT-47/UG

3-TT-171/UG–Same as 7-TT-47/UG

4-TT-171/UG - Same as 6-TT-47A/UG

5-TT-171/UG - Same as 7-TT-47A/UG

6-TT-171/UG - Same as 8-TT-47A/UG

7-TT-171/UG - Same as 9-TT-47A/UG

8-TT-171/UG - Same as 10-TT-47A/UG

9-TT-171/UG - Same as 11-TT-47A/UG

10-TT-171/UG - Same as 12-TT-47A/UG

1-TT-171A/UG – Same as 2-TT-47/UG

2-TT-171A/UG - Same as 3-TT-47/UG

3-TT-171A/UG - Same as 3-TT-47C/UG

1-TT-171B/UG - Same as 3-TT-47C/UG

1-TT-176/UG–Same as 2-TT-47/UG

2-TT-176/UG – Installation of Mk-699/UG Mod Kit (Converts equip. from 7.42 unit code to 7.00 unit code with synchronous pulsed transmission and 45.5, 50, 75 BAUD speeds)
Correction material: T-3 to NS92361
SERIAL: NS981560A F-5815-008-6025
IDENTITY:

3-TT-176/UG - Same as 5-TT-47/UG

4-TT-176/UG - Same as 7-TT-47/UG

5-TT-176/UG - Same as 9-TT-47A/UG

6-TT-176/UG - Same as 10-TT-47A/UG

7-TT-176/UG - Same as 11-TT-47A/UG

8-TT-176/UG - Same as 12-TT-47A/UG

1-TT-176A/UG - Same as 2-TT-47/UG

2-TT-176A/UG - Same as 2-TT-176/UG

3-TT-176A/UG - Modification for proper break key operation
Correction material: None required
2-A FA-1/2
SERIAL: All
IDENTITY: When White/Green lead on pin 2 of the electrical service unit keyboard connector plug has been relocated to pin 1.

4-TT-176A/UG - Same as 3-TT-47C/UG

1-TT-176B/UG - Cancelled

2-TT-176B/UG - Same as 3-TT-47C/UG

1-TT-187/UG – Installation of 194031 Mod Kit (Converts equip. from 7.42 unit code to 7.00 unit code with synchronous pulsed transmission and 45.5, 50, 75 BAUD speeds)
Correction material: T–2 to NS92733 (A)
NS981560(A) F5815-008-3250
SERIAL:
IDENTITY:

2-TT-187/UG–Installation of 195442 (MK-811/UG) and Modification Kits To Provide 3-Speed Gearshift for Model 28 Transmitter Dist. Bases (LXD)
Correction material: T-3 to NS 92733 (A)
1-A FA NS 981756 F5815-051-3823
SERIAL:
IDENTITY:

1-TT-187A/UG – Same as 1-TT-187/UG

1-TT-187B/UG - Installation of 199913 Mod Kit (Converts equip. from 7.00 unit code to 7.42 unit code 60, 75, 100 WPM speeds)
Correction material: T-1 to NS92733 (A)
NS981562(A) F5815-073-9422
SERIAL:
IDENTITY:

1-TT-192/UG – Installation of 194032 Mod Kit (Converts equip. from 7.42 unit code to 7.00 unit code with synchronous pulsed transmission and 45.5, 50, 75 BAUD speeds)
Correction material: T– to NS
NS981560(A) F5815-008-3252
SERIAL:
IDENTITY:

2-TT-192/UG - Installation of Improved Main Shaft and Function Clutch Bearings
Correction material: T-5 to NS 93534 and T-1 to NS 94456
2-A FA- NS981707 None
SERIAL: Equipments prior to Serial number 12,000 and 2,800
IDENTITY: Field Change accomplishment tab installed adjacent to modified unit name plate.

1-TT-192A/UG – Same as 1-TT-192/UG

2-TT-192A/UG - Cancelled

1-TT-234/SGA-3 – Same as 2-TT-47/UG

2-TT-234/SGA-3 – Same as 2-TT-47D/UG

1-TT-252/UG - Same as 2-TT-192/UG

1-TT-253/UG – Installation of modification kit 174235.
Correction material:
1-A FA- NS981334 F
SERIAL:
IDENTITY:

2-TT-253/UG – Installation of 194030 Mod Kit (Converts equip. from 7.42 unit code to 7.00 unit code with synchronous pulsed transmission and 45.5, 50, 75 BAUD speeds)
Correction material: T- to NS
NS981560(A) F5815-981-3251
SERIAL:
IDENTITY:

1-TT-252/UG - Same as 2-TT-192/UG
3-TT-253/UG - Same as 2-TT-192/UG

1-TT-253A/UG - Cancelled

1-TT-261/UG–Same as 3-TT-47C/UG

2-TT-261/UG–Same as 7-TT-47/UG

1-TT-265/UG - Same as 2-TT-192/UG

1-TT-266/UG - Same as 2-TT-192/UG except
SERIAL: Equipments prior to 2800

1-TT-267/UG - Same as 2-TT-192/UG except
SERIAL: Equipments prior to 2800.

1-TT-268/UG – Increasing value of spike suppression resistors.
Correction material: T-1 to NS93454
2-A FA-1 NS981429 None
SERIAL: All
IDENTITY: Substitution of the 1K-ohm resistor with a resistor of 2K-ohm value.

1-TT-273/UG – Same as 1-TT-187/UG

1-TT-275/UG–Same as 7-TT-47/UG

1-TT-283/UG–Same as 7-TT-47/UG

1-TT-299A/UG - Addition of Guard and Lock Lever Assembly on Keyboard
Correction material:
1-A FA-2 F5815-788-5780
SERIAL: 70 Equipments (all)
IDENTITY:

2-TT-299A/UG - Incorporation of new redesigned Production Parts
Correction material: T- to NS
1-A FA-2
SERIAL: All
IDENTITY: Decal containing notification of compliance affixed to the right side of the front cover just above the WARNING plate.

1-TZU - Provide add circuit and equipment protection
1-B YF-16 NS981061 None
SERIAL: All
IDENTITY: F1 and F2 are 25 amp fuses, F7 is .037 amp fuse.

1-UN – Not applicable

2-UN – Demad nt cw-50124 & cw-50124A
Correction material: See NS 98295
A FA- NS98295 None
SERIAL: All
IDENTITY: R8 is 200K

1-UP – Teletype channels, twinning
Correction material: None
A FA-2 NS98773 None
SERIAL: All
IDENTITY: "snd lp bat" sw on front of marking detectors

2-UP – Tel. Term. ckt 2 to 4 wire, switching
Correction material: See NS 98166
A FA-40-72 NS98166 None
SERIAL: All
IDENTITY: Tel term ckt can be sw'd from 2 to 4 wire oper.

1-UQ – Wavemeter reading adj (R260) in xmtr on type T-410/FRC, add
Correction material: Change 1 to NS 91845
A FA-1 NS98561 F5820-325-7469
SERIAL: 1-68 (OA-501/FRC) 1-68 (OA-502/FRC)
IDENTITY: Resistor R260 added on back of meter panel

2-UQ – Grd strap on mod & mixer shaper mtg NUS-1420B to prevent spurious pulse gen
Correction material: Change 1 to NS 91845
A FA-¼ NS98567 F5820-325-7471C
SERIAL: All
IDENTITY: Jumper: Term F & A of J202 (spare channel modulator).

3-UQ – Xtal cal ckt & intfer red. in OS-38/FRC, add
A FA-1 NS98666 F6625-643-1896
SERIAL: 1-53
IDENTITY:

4-UQ – C506 & 508 from 10mfd 1 kv to 6 mfd, 1.5 kv
1-A FA-1 NS98764 None
SERIAL: All
IDENTITY:

5-UQ – Pre IF ampl NUS-3179 for rcvr and type R-563/FRC (NUS-1415), install & modif rcvr out ckt to red. noise out
Correction material: Chnage 3 to NS 91845
A FA-3 NS98828 F5820-568-1963
SERIAL: All CNO & BUAER equity
IDENTITY:

6-UQ – Accuracy of fading margin checks, increase
Correction material: Change 4 to NS 91845
A FA-1 NS98832 F5820-568-2090
SERIAL: All
IDENTITY:

1-YE-1 - Installation of matching transformer type CRV-47194.
Correction material:
FA-3 NS None
SERIAL: All
IDENTITY:

2-YE-1 - Modification to antenna assembly drive unit heater circuit.
Correction material:
FA-1 NS None
SERIAL: All
IDENTITY:

3-YE-1 - Addition of capacitors to gyroseslyn system
Correction material:
YF-2 NS None
SERIAL: All
IDENTITY:

4-YE-1 - Sharting of interlock switch S-114.
Correction material:
FA-1 NS None
SERIAL: All
IDENTITY:

5-YE-1 - Change in value of resistor R-503.
Correction material:
FA-1 NS None
SERIAL: All
IDENTITY:

6-YE-1 - Elimination of interference in radio and radar equipments.
Correction material:
FA-1 NS None
SERIAL: All
IDENTITY:

7-YE-1 - Modification of motor generator.
Correction material:
YF-96 NS98556 F
SERIAL: All installed on submarines if operating on 230 volt DC.
IDENTITY:

8-YE-1 - Antenna modifications
Correction material:
FA-5 NS98593 F
SERIAL: All
IDENTITY:

1-YE-2 - Same as 1-YE-1

2-YE-2 - Same as 2-YE-1

3-YE-2 - Same as 3-YE-1

4-YE-2 - Same as 4-YE-1

5-YE-2 - Same as 5-YE-1

6-YE-2 - Same as 6-YE-1

7-YE-2 - Same as 7-YE-1

8-YE-2 - Same as 8-YE-1

1-YE-3 - Same as 1-YE-1

2-YE-3 - Same as 2-YE-1

3-YE-3 - Same as 3-YE-1

4-YE-3 - Same as 4-YE-1

5-YE-3 - Same as 5-YE-1

6-YE-3 - Same as 6-YE-1

7-YE-3 - Same as 7-YE-1

8-YE-3 - Same as 8-YE-1

1-YG - Change in Over-the-Bow keying circuit.
Correction material:
FA-1 NS98835 None
SERIAL: All
IDENTITY:

2-YG - Hood for Barco joint
Correction material:
YF-3 NS98835
SERIAL: All
IDENTITY:

3-YG - Cancelled

4-YG - Elimination of keying relay K-101.
Correction material:
FA-3 NS98835 None
SERIAL: All
IDENTITY:

5-YG - Addition of true bearing control unit CAIH-23408.
Correction material:
YF-8 NS98835
SERIAL: All
IDENTITY:

6-YG - Improved insulation for resistors R-109 to R-112
Correction material:
FA-1 NS98835 None
SERIAL: 1-30
IDENTITY:

1-YG-1 - Same as 1-YG

2-YG-1 through **4-YG-1** - Not applicable

5-YG-1 - Same as 5-YG

6-YG-1 - Not applicable

1-23211 – Variable muting for associated loudspeaker & handset, provide
Correction material: None
A FA-1 NS98354 F5820-311-3080C1
SERIAL: All
IDENTITY: R-209, a variable 5000 ohm, 2 watt pot, is mounted behind front panel

1-23211-A – Same as 1-23211

1-23211-B – Same as 1-23211

1-23496 – Audio feedback, eliminate
Correction material: T-1 to NS 95006
A FA-1 NS98928 None
SERIAL: All
IDENTITY: Presence of R-405 and filing of trailing edge of impulse cam.

1-23497 – Wiring of pwr to ant. coupler CU-255/UR, add
Correction material: T-1 to NS 900,777
B FA-1 NS98322 None
SERIAL: All
IDENTITY: Connect white and red wire between pin D of J-101 and term 19 of term board E-101, and white and black wire between pin F and term 18 reviewed from rear of unit.

1-23500 - Cancelled

2-23500 – Audio feedback, eliminate
Correction material: T-2 to NS 95393
A FA-1 NS98857 None
SERIAL: All
IDENTITY: Presence of R-205 and K-202.

1-NT-23524–Wiring Change
Correction material: T-1 to NS 91791
2-A FA-2 NS None
SERIAL: All TCS Adapter Units NT-23524
IDENTITY: When Audio Pad R603 has been properly connected and terminals 7 of TB602 and 8 of TB603 have been reversed.

1-N,T, 51007A– Cancelled

2-N.T. 51007A – Conversion to dynamic microphone and receiver and addition of noise cancelling adapter.
Correction Material:
2-A FA-1/4 NS None
SERIAL: All
IDENTITY: Removed parts, all black, replaced by light gray parts.

1-NT-66046 – Modification to Installation Mounting Bolt
Correction material: None
2-A FA-4 None
SERIAL: All
IDENTITY: Visual inspection will determine if this change has been accomplished.

1-NT-66047 – Same as 1-C-66046

1-NT-66143–Modification to Ground Plate Radials
Correction Material: None
2-A FA-4 NS None
SERIAL: All
IDENTITY: Presence of safety wire installed on all four ground plane radials of the antenna.

4-1. PURPOSE

The purpose of this section is to provide technical personnel a convenient source of installation, operation, and maintenance notes peculiar to specific types of communications equipment.

4-2. DOCUMENTATION

The information contained in these service notes is based on data obtained from Navy publications such as the Electronics Information Bulletin (EIB), Bureau of Ships Journal, and from other approved publications.

4-3. COMMUNICATIONS EQUIPMENT SERVICE NOTES

The following service notes pages are numbered in alphanumeric order by communications equipment nomenclature. However, the service notes for specific equipment are arranged in functional order. For example, the first page for Audio-Frequency Amplifier AM-215/U service notes is designated AM-215/U:1. The second page of notes for this equipment is designated AM-215/U:2, and the third page would be designated AM-215/U:3. This method of page numbering provides for future addition of service notes without renumbering all the other pages of this section.

NOTE

Pages 1-SN-1 through 1-SN-51 immediately following this page and preceding the service notes for specific equipment, contain general service notes which are not peculiar to one type of equipment. No attempt has been made to renumber pages 1-SN-1 through 1-SN-51 in proper sequence. Correct numbering will be accomplished only when complete revision of these pages is justified.

ASSEMBLY INSTRUCTIONS FOR RADIATION RESISTANT CONNECTOR UG-1320/U

A sizeable quantity of UG-1320/U connectors have appeared in the field without adequate cable assembly in-instructions. The following procedures provide step by step instructions for the proper assembly of these connectors.

1. Cable Dressing.

a. Cut back jacket and core in accordance with figure 1.

b. Comb out braid over core and trim to 1/8-inch length as shown.

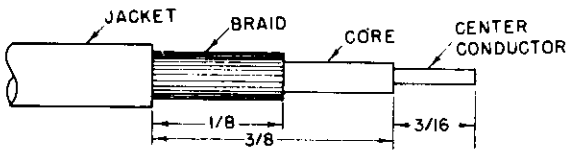


Figure 1

2. Connector Assembly.

a. Pass the indicated parts over the cable jacket from the depressed end of the cable in the following order (figure 2):

(1) Nut, piece 6
(2) Washer, piece 8
(3) O'ring, piece 13
(4) O-ring retainer, piece 9 with O-ring, piece 7 resting in the groove provided.

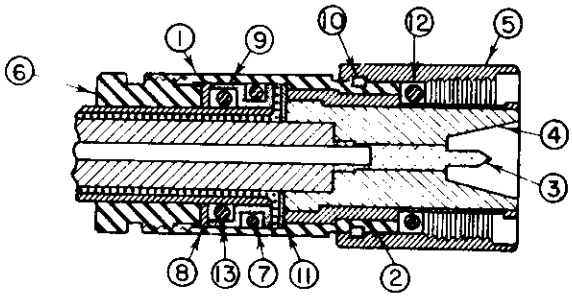


Figure 2

b. Fan out braid as shown in figure 3 and pass washer, (piece 11), over core until it rests flatly against braid.

c. Insert center conductor into contact (piece 3) and push contact back to cable core. Solder contact to center conductor.

d. Push insulator (piece 4) over contact and core until it rests against thefront end of the washer.

e. Push O-ring retainer (piece 9) over jacket until it rests flatly against braid.

f. Carefully push O-ring (piece 13) into groove in O-ring retainer.

g. Push washer (piece 8) and nut (piece 13) tightly against O-ring retainer. If the O-ring has been properly seated, a metal-to-metal contact between pieces 8 and 13 will be evidenced.

h. Apply silicone grease generously (see Note 1) to O-ring (piece 7) and to the threads of the body (piece 1).

i. Carefully push the body over the assembled parts on the cable. During this operation, all of the parts assembled to the cable must be kept intact. After the O-ring has been pushed into the body, and the nut is resting against the back-end of the body, the assembly procedure is resumed by screwing the nut into the body, at the same tine forcing the assembled parts further into the body. Resistance to further tightening indicates assembly is complete.

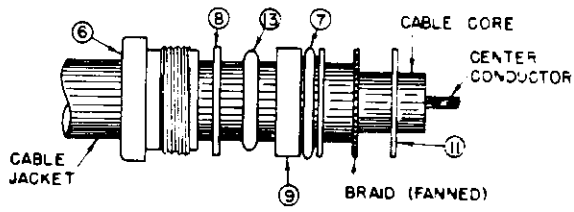


Figure 3

NOTES:

1. Use Dow Cofning 4 silicone grease, or equivalent, to insert O-ring into body.

2. Discard the O-rings whenever the connector is disassembled, and use new O-rings when reassembling. Use O-rings AN/6227-8 and AN/6227-10.

CARE AND STORAGE OF MAGNETIC RECORDING TAPE

Magnetic recording tape has undergone many technical improvements since its introduction into the electronics field. It is manufactured under the most exacting conditions of temperature, humidity, and dust control. In fact, the critical process of applying the magnetic coating to the plastic base of the tape is accomplished in an environment closely resembling a hospital operating room in cleanliness.

As mentioned, magnetic recording tape consists of two layers: a base and a magnetic coating. The base, or backing, is made of a nonmagnetic plastic material such as cellulose acetate or Mylar (Mylar is the Dupont Company trade name for polyester film). It is this base material that is largely responsible for the physical strength of the tape and keeps to a minimum, or completely eliminates, the dimensional changes caused by normal operating conditions such as temperature, humidity, tension, and so on. The other layer of the tape consists of a coating of dispersed iron particles, which have been reduced to a magnetic form suitable for recording purposes. The magnetic coating governs the quality of the recording tape. However, regardless of the recording, or the strength of the base material, the usefulness and life of the recording tape depends on the care it is given. Carelessness in handling or storing the tape can result in the loss of a valuable recording or the complete destruction of the tape. For this reason, basic rules which must be observed by operating and maintenance personnel in order to preserve recordings and to ensure good service and long life are given as follows:

1. When the tape is received, it is packaged in suitable containers; it should be stored in these containers until issued for use.
2. Do not store the tape in a horizontal position. Reels must not be stored flat or at such an angle that the weight is placed on the flange of the reel.
3. Do not store or place tape within or near a magnetic field such as that produced by electronic equipments, electric motors, or generators; if this precaution is not observed, partial or complete erasure of recorded data can result.
4. Do not store tape in an environment where the relative humidity is above the defined humidity limit. The humidity limit for acetate-base tape is from 40 to 50 percent; however, Mylar recording tape can exceed this limit.
5. Do not store tape in an environment where the ambient temperature is above 85 degrees F or below 35 degrees F.
6. Keep all tapes clean; do not permit dust or other other contaminants to accumulate on the tape surfaces.
7. Keep the recording heads clean. Accumulations of dust or oxide coatings on the recording head can cause the tape to be lifted away from the head during recording, thereby causing a momentary interruption, or "dropout," in the recording process.
8. When the tape reels are in place on the recording device, do not turn or position the reels by placing a finger against a reel spoke. This practice often causes serious damage to the tape. Tape reels must be turned by use of the controls provided for that purpose.
9. Always use reels of the proper size. Do not, for example, use 7-inch reels on a recording device that is designed for 10-1/2-inch reels without making the correct tape tension adjustments. It should be noted that newer-type recording tapes are extremely thin, and may be stretched or broken if the mechanical adjustments of the recording device are not correct. For this reason, maintenance personnel must take extreme care in maintaining the proper braking and release adjustments if damage to the tape is to be avoided.

TELETYPEWRITER OPERATION

The maintenance and operation of teletypewriters can be improved by using good quality nylon ribbons rather than the usual cotton typewriter ribbons. Cotton ribbons fray and spatter ink, which introduces debris into working parts. This condition is especially serious in compact teletypewriter series TT-299. It also is a problem with Model 28 teletypewriters when ribbons are not replaced frequently.

It is recommended that good quality nylon ribbons be given universal application in shipboard page printers and typing reperforators. Federal Stock Number 1N5815-975-9676 is one such ribbon. The slight additional cost of nylon ribbons is justified by reduced contamination of the equipment.

IDENTIFICATION LABELS FOR RF TRANSMISSION LINES

In order to reduce damage to radio frequency transmission lines in Naval ships, and to avoid the destructive and disabling effects from mechanical impacts, all waveguide and rigid transmission line installations, that may be subjected to damage by mechanical impacts, should be identified with an identification marking system. Black polyethylene jacketed semirigid transmission lines (such as RD-254/U) which are used for shipboard installations need not be labeled or painted.

This identification marking system, reading "WAVE-GUIDE-DO NOT STRIKE" or "DO NOT STRIKE-WAVE-GUIDE", (Similar marking systems may be made for rigid lines) on pressure-sensitive, adhesive-backed decals, yellow background with printed black lettering shall be affixed to the transmission line itself or posted in a conspicous place in close proximity to installed waveguide runs in the ship. The labels may be sprayed with Krylon (or equal) for added protection. Crystal clear Krylon under Federal stock number 8010-566-3756 is available in pressurized 16 oz. cans. In this manner, waveguides that may at times be inadvertently subjected to mechanical impacts during the removal or stripping of paint from the compartment area or mast (Where their identity has been lost) will be protected from this type of damage.

Figure 1 illustrates two suggested approaches as typical examples of identification labels that should be affixed to the waveguide itself or in close proximity to waveguide

runs. The material to be used for this application should be of the adhesive-backed, pressure-sensitive type that bonds to any surface without the use of screws, pins, rivets, or other fastner communications devices, and on the surface of which the proper identification can be typewritten.

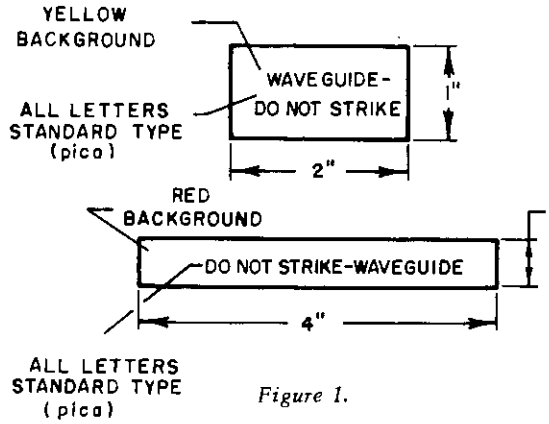


Figure 1.

An improvised identification marking system can also be accomplished by cutting a stencil and stenciling the wording onto a painted yellow or other conspicuous block background of the appropriate dimensions, as shown on figure 1.

A suitable pressure-sensitive material for this application may be obtained from the following sources:

(a) Minnesota Mining & Manufacturing Co.
5698 Rising Sun Avenue
Philadelphia 20, Pennsylvania

(This material under the trade name, "Scotchcal" 3470 is available in 24 x 36 inch sheets in minimum lots of 100 sheets.)

(b) W.H. Brady Co.
727 W. Glendale Avenue
Milwaukee 9, Wisconsin

(This material is under the trade name "Quick Plates" type PSA-ZOL.)

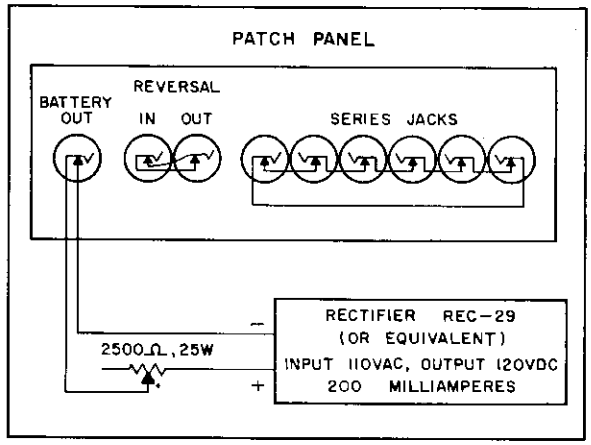
(c) Westline-E-Z Code Division
Western Lithograph Co.
600 East 2nd Street
Los Angeles 54, California
or
972 Broad Street
Newark, New Jersey

(This material is under the trade name "Scotchcal.") (660)

INSTALLATION OF "BACK-TO-BACK" TESTING ARRANGEMENT FOR CRYPTOGRAPHIC EQUIPMENT

It is recommended that shore communication stations having on-line cryptographic equipment terminated in a patch panel install a local battery, dummy loop circuit to permit back-to-back testing, as shown in figure 1. This dummy loop, however, should only be installed in the BLACK (ENCRYPTED) side of the system as a maintenance aid. The new RED/BLACK criteria (BUSHIPS Instruction 011120.12C) prohibits this type installation on RED (plain text lines into or out of a crypto device) lines.

Without back-to-back capability, not only is it impossible for operators to check their equipment, but the maintenance man is seriously hampered when making repairs and testing the equipment.



Upon completion of installation, if necessary, operators should be indoctrinated in the use of the circuit. (665)

USE OF MULTIMETER TS-297/U IN PLACE OF TEST METER TS-80/U WITH RADIO SET AN/ARC-1

There have been many requests from Naval activities concerning Test Meter TS-80/U. For proper loading and aligning of the AN/ARC-1 Transmitter-receiver, a TS-80/U or its equivalent is necessary.

Multimeter TS-297/U is a suitable meter for use in lieu of TS-80/U. Although its smallest milliampere scale is 0 to 4 milliamperes, the TS-297/U, if used as described below, will give equal or greater sensitivity for AN/ARC-1 adjustments than the TS-80/U.

TS-297/U Circuitry

When making transmitter performance checks on the AN/ARC-1, equal or greater sensitivity may be obtained by substituting Multimeter TS-297/U for the TS-80/U. No circuit changes are necessary in the TS-297/U to obtain the desired meter readings, shown in Table 1, for the AN/ARC-1 transceiver.

On the first inspection of the meter, it will be observed that the smallest milliampere scale is from 0 to 4 ma. Since the maximum current to be measured on the AN/ARC-1 performance check is only 1 milliampere, the TS-297/U would appear to be useless. However, by examining the internal circuits of the TS-297/U, some very important facts are brought out.

Directly under the meter is an OHMS-ZERO ADJUST knob, and below this knob is a selector switch for selecting OHMS, AC or DC. The meter does not have a range selector switch so the test leads must be plugged into the jacks of the desired scale to be used. On the right hand side of the meter, a common jack is used for ± VOLTS, -MA, and OHMS.

In taking readings with the TS-297/U, the zero to one hundred scale will be used. These readings are not actual values of voltage or current but only relative meter indications. Table I shows the order of magnitude obtained on the TS-297/U for the various metered stages of the AN/ARC-1.

A composite circuit diagram, Figure 1, shows all of the circuits when the selector switch is in the DC position. A series of shunt resistors are connected across the meter so that the meter will not exceed the current rating of its movement, 250 microamperes with 62.5 millivolt drop.

With the selector switch in the DC position, the red lead of the test cable inserted into the 4V jack and the black lead inserted into the ± VOLTS jack, the meter will have a full scale deflection when 4 volts is impressed across it and the circuit will draw 1 milliampere of current. Figure 2 shows the connections to be made on the front panel of the meter and the internal circuit when the above cable connections have been made. Since the circuit will draw 1 ma, it alone may be used in place of the TS-80/U. With less than 0.6 ma flowing in the circuit, the sensitivity of the TS-297/U drops so that the readings are below 25 on the 0-100 scale. Therefore the 4V jack connection should be limited to readings above 0.6 ma.

Table I.--AN/ARC-1 transmitter performance check

Meter switch	Dial head	Cycle key test switch	Dial heads	TS-80/U	TS-297/U Figure 3 4-volt jack to GND	TS-297/U Figure 4 Rx100 to GND	TS-297/U Figure 5 Rx10 to GND	TS-297/U Figure 6 Rx1 to GND
OSC I_G	None	Keyed	No adjust	0.1 to 0.2	5	20	43	45.
MIX I_G	Rec	Not keyed	Maximum current	0.3 to 0.6	7.5	25.5	73	85.
DRI I_G	Trans	Keyed	Maximum current	0.0 to 1.0	5	15	48	60.
PA I_G	Trans	Keyed	Maximum current	0.6 to 1.0	8	35	98	Off scale
PA I_K	Ant	Keyed	Tune for resonance	0.6 to 0.8	75	Off scale	Off scale	Off scale
MOD I_K	None	Keyed	No adjust	0.6 to 0.9	50	Off scale	Off scale	Off scale

Note.--On TS-297/U, the 0 to 100 scale is divided by 100 to obtain the above readings. Jack positions which give OFF SCALE readings are not used.

AN/FRT-40 AND AN/FRT-54 SERIES TRANSMITTERS-TUNING HINT FOR TMC MODEL GPT-40K

It has been determined that the output balance control of the 10-kw driver that is used to excite the 40-kilowatt transmitter has effect on the operation of the 40-kilowatt transmitter to the extent of minimizing the reactive component of drive to the final. The VSWR indication circuitry in the newer 10-and 40-kilowatt transmitters can be used to great advantage by tuning the "Output Balance" control (C916) to minimize the VSWR drive to the final.

In tuning those transmitters that do not contain the VSWR circuitry, it is suggested that the curve illustrated in figure 1 of this article be used to preposition the output balance control. This curve is an idealized curve derived as an average curve taken from readings on several transmitters and will enhance the operation of the transmitter over the total frequency range.

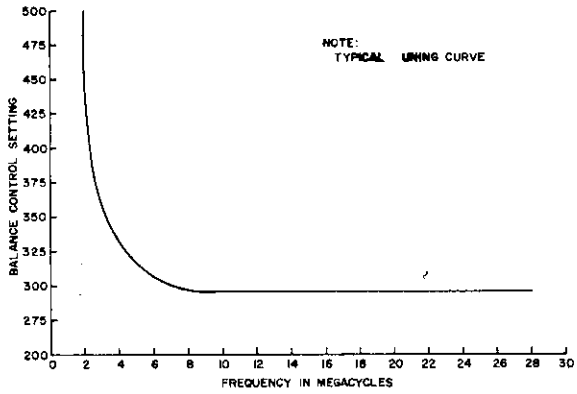


Figure 1.

AN/FRT-39( ) AND AN/FRT-40( )- MISALIGNMENT OF PLUG AND JACK, CORRECTION OF

See article in AN/FRT-40( ) section under same title.

TIME DELAY FAILURES IN AN/FRT-39 AND AN/FRT-40 SERIES TRANSMITTERS

Refer to article in AN/FRT-39 section under the same title.

RF THERMOCOUPLE FAILURES IN AN/FRT-39( ) and AN/FRT-40( ) RADIO TRANSMITTERS

Refer to article in AN/FRT-39 section under the same title.

MODIFICATION OF AN/FRT-40( ) SERIES TRANSMITTERS

Naval Communication Stations San Francisco and Guam have reported numerous failures being experienced with Pulse Transformer T-8105, a component part of the 10 KV power supply in the AN/FRT-40( ) radio transmitter. High voltage arc-over between terminal No. 1 and the transformer's mounting bracket appears to be a prime contributing cause of all failures reported.

As a preventive and corrective measure, Naval Radio Station (T) Mare Island has been enlarging the terminal clearance hole in the transformer mounting bracket by 1/4 inch in diameter, thereby increasing the arc-path between transformer terminal No. 1 and the mounting bracket. Referral of this matter to the manufacturer has resulted in the following information for dissemination to Naval shore activities:

1. Enlargement of terminal clearance hole in transformer mounting bracket is satisfactory for all AN/FRT-40( ) transmitters up to and including Serial No. 14226.

2. AN/FRT-40C transmitters beginning with Serial No. 14227, and all AN/FRT-62( ) transmitters, are equipped with a redesigned transformer having improved terminal insulation.

3. Appropriate changes were incorporated as an addendum to technical manuals accompanying equipments so modified on the production line. The AN/FRT-40C maintenance manual was subsequently updated and rewritten and bears an issue date of 15 September 1964.

4. The manufacturer's part No. TF-126 and FSN-N5950-645-2946 identifies the original failure-prone transformer. This item is no longer supplied as a spare part by the manufacturer.

5. The redesigned transformer bears the equipment manufacturer's part No. TF-256 and is electrically and mechanically interchangeable with the former TF-126. The item has been assigned stock number FSN-1N-5950-784-7764.

Modification of the T-8106 pulse transformer mounting bracket in AN/FRT-40( ) is approved as a field change pending classification and assignment of a number.

This modification is approved and recommended for early accomplishment, citing this Handbook (NAVSHIPS 900,000.1) as authority. (659)

j. Mark position of Coil Stop Assembly (index 282) on fiber plate face (index 419) so that a new coil stop assembly can be inserted in the same position as the one that was removed. Remove set screws (index 260) for Coil Stop (index 261). Remove damaged Coil Stop Assembly (index 282). Install a new stop assembly and reverse the above procedure for re-assembly.

k. Recheck potentiometer alinement.

INFORMATION ON CHANGE 3 TO TECHNICAL MANUAL FOR ANTENNA COUPLER GROUP AN/SRA-22, NAVSHIPS 93286

AN/SRA-22 technical manual, Change 3 (NAVSHIPS 93286) contains extensive revisions to update the manual and includes information on the latest production line changes. The production line changes will apply to equipments produced by the Collins Radio Co. commencing with serial number 1132. Earlier delivered equipments will be updated by normal field change process upon availability of sufficient information to prepare a field change bulletin. The production line changes include the addition of a VSWR protective device, replacement of slug 1H7 with an improved type, elimination of the humidity indicator, and the addition of an improved terminal board (TB5) protective cover.

Change 3 to the technical manual also includes extensive disassembly and reassembly information for on-board repair of AN/SRA-22 equipments. This information has been previously available in the equipments Overhaul and Repair Manual (NAVSHIPS 93286.61); however, it has now been decided to include it in the equipments general technical manual.

Particular attention is directed to the adjustments (pages 5-19). In the past, improper adjustments have caused further equipment failures.

REPAIR DAMAGE ON AN/SRA-22

Recurring reports of ships attempting replacement of coil L1 and other components in the CU-714/SRA-22 without training instructions or available step-by-step disassembly and assembly procedures have been received by the Bureau.

Equipments are being turned in by ships in a condition beyond economical repair.

It is strongly recommended that ships requisition a copy of the AN/SRA-22 Overhaul Instruction Manual, NAVSHIPS 93286.61 (including Change 1), and the equipment Technical Manual, NAVSHIPS 93286(A) (including Changes 1 and 2), to assist in any repair necessary for this unit.

INFORMATION FOR PROPER DISASSEMBLY AND REPAIR OF ANTENNA COUPLER GROUP AN/SRA -22

A number of ships have experienced difficulty in attempting to disassemble the AN/SRA-22 without the proper tools and instructions. In some cases, this practice has caused unwarranted damage, resulting in longer than average down periods, and has required the services of a shipyard or ship repair facility to restore the equipment to an operating condition.

It is recommended that the Technical Manual, NAVSHIPS 93286 (including Changes 1 and 2), and the Overhaul Instructions Manual, NAVSHIPS 93286.61 (including Change 1), be made available for reference before attempting any repairs on Antenna Coupler Group AN/SRA-22.

ANTENNA COUPLER GROUP AN/SRA-22 AND ITS USE WITH SUBMARINE EMERGENCY WHIP ANTENNA AT-774/UR

The U.S. Navy Electronics Laboratory, San Diego, has recently completed tests and measurements on Antenna Coupler Group AN/SRA-22 and its use with the submarine emergency whip antenna AT-774/UR. Results of these tests show that the equipment provides satisfactory performance over the entire frequency range from 2.0 to 25 mc. The efficiency of the coupler was approximately 40 percent from 2 to 4 mc., 60 to 80 percent from 4 to 8 mc., and 80 to 90 percent above 8 mc. No difficulty was experienced when operating with full power (500 watts) at any frequency tested.

RIBBON BREAKAGE IN AN/SRA-22

When the coil-ribbon breaks on the AN/SRA-22, it often breaks an inch or two from the end which is attached to the metal drum. It has been reported that emergency repairs have been made by shortening the ribbon by the amount that was broken off. This practice is not approved and will be discontinued, because it changes the end-stop settings and causes further damage to the unit. If a new ribbon (FSN 5960-649-7822) is not available, the two ends are to be silver-soldered and the ribbon replaced with a new one as soon as it is available.

CU-714/SRA-22 Failures in AN/SRA-22

An investigation of P and O failure reports concerning this unit indicates that a majority of the failures have been caused by miswiring of plug P-7 upon installation. Costly components are damaged beyond repair because of negligence, not verifying proper connection, wiring continuity, checks for solder shorts, and the proper sealing against salt water penetration of the completed plug after assembly. These units are in critically short supply because of funding limitations which permit the procurement of one AN/SRA-22 for each AN/URC-32. When a replacement unit is requested, its issue jeopardizes other ship installations until repair of the failed unit and return to stock can be effected.

Several ships have removed the antenna tuning-assembly section from the case and have forwarded only this unit to a repair activity. This practice has caused additional damage and further equipment shortages.

Although the black unit-nomenclature plate is attacted to the tuning unit section, the nomenclature CU-714/SRA-22 applies to the entire antenna coupler unit, including the case and blower. See figure 101 of the NAVSHIPS 93286, the technical manual for AN/SRA-22.

When shipping for repair, assure that the entire unit is sent. Additionally, when shipping the CU-714/SRA-22, the shipping labeling should include the unit stock number (FSN-F5984-789-1987) for stock identification. If the CU-714/SRA-22 and the control unit C-2698/SRA-22 are turned in, the appropriate stock number is then FSN F5985-543-1861. Pack adequately to insure against further damage caused by shipping.

Overhaul Instructions Manual

Change 1 to this manual (NAVSHIPS 93286.61) is now available and if not received, should be requisitioned. This manual is normally held by shipyards, repair activities, METU's, and tenders. This change provides additional repair instructions, disassembly-assembly information, and Alignment details.

Erratic Tuning

When experiencing erratic tuning, particularly in the 2- to 5-mc range, checks should be made for a poor or lost ground connection on the CU-714/SRA-22 unit. A GOOD ground connection MUST be made to this unit. DO NOT RELY ON THE EQUIPMENTS, MOUNTING LAG BOLTS; provide a good ground strap and clean metal-to-metal connections.

A faulty C7 vacuum capacitor will also cause erratic tuning.

CU-714/SRA-22 Tuning Slug (H7)

If failure of the tuning slug is experienced and repairs cannot be immediately made, the AN/SRA-22 can still be used at frequencies above 3 mc. Normally, the slug is only necessary at the lower frequencies. For this emergency measure, use caution in tuning and follow the tuning procedure steps.

Operator's Tuning Chart

The design of the AN/SRA-22 is primarily for use with a standard 35-foot whip and the Operators Instruction Chart (NAVSHIPS 93286.21(A), supplied with the equipment) provides for tuning this type of antenna. When tuning other types of antennas, refer to the equipment technical manual.

When tuning antennas shorter than 35 feet, the procedures are the same except when tuning frequencies in the 2- to 3.5-mc range. For this type of antenna, a new step (5a.) should be added after the "NOTE" in step 5, of tuning chart as follows:

"5. Tuning step for antennas shorter than 35 feet in the 2 to 3.5 mc range. If no dip is found, leave the COIL and TAP where they are (i.e., the COIL should be at 500 and the TAP at 100). Advance the CAPACITOR position switch one position at a time (waiting until the run light goes out between each step) while watching the reflected power for a dip. CAUTION DO NOT switch the capacitor SERIES/SHUNT at all times when this step is used." Change the NOTE in Step 5 to read "proceed to STEP 5a."

C-2698/SRA-22 Control Unit

Assure the installation of a 1-1/2 ampere fastblow (3AG) type fuse at F1. Replace fuse if other than this type is installed. The 1N1084 diodes and the helipots will not take the possible 300-percent overload that a slow-blow allows.

Stock Numbers. For information, the stock numbers for recurring failure items are:

Coil ribbon	N-5950-649-7822
Coil core	N-5950-681-6870
Coil form	N-5950-774-5164
IM116 roller	N-5820-671-1311

Water in Antenna Coupler

Penetration of water into the case of the antenna coupler has been attributed to an improperly designed gasket in the units with seial numbers 1 through 495. The contractor recently shipped replacement gaskets to all holders of these equipments. The new gaskets should be installed as soon as possible and the original gaskets returned to the contractor. When replacing this gasket, the use of a silicon compound such as DC-4 will insure a more watertight seal.

Always replace the J-9 blower motor plug before replacing the tuning unit of the CU-714/SRA-22 in its case.

Test Cable

A test cable is a valuable asset for the AN/SRA-22 for use when the CU-714/SRA-22 unit is removed from its mounting and placed near the AN/URC-32 for testing or maintenance checks. This control cable can be locally fabricated with a plug (N5935-296-8775), a suitable length of MSCA-24 or similar cable, and a plug (N5935-552-7255).

CAUTION - When testing the AN/SRA-22, insure that the output bowl insulator is terminated in a suitable load, such as shown on BUSHIPS plan RE 66C 2145B, or damage will result.

CHECK-OUT PROCEDURE FOR AN/SRA-22 ANTENNA COUPLER

See article in AN/URC-32 section under the same title.

AN/SRA-22 ANTENNA COUPLER GROUP—MAINTENANCE HINT

The purpose of this article is to advise maintenance personnel that the major cause of damage to coil 1L1 is due to heat being generated in slug 1H7. When 1L1 has to be replaced, the 1H7 slug also should be replaced.

The 1H7 slug contains iron granules in a teflon bonding material. When excessive heat is generated in 1H7 it causes the teflon bonding material to melt thereby allowing the iron granules to come in contact with each other creating more heat which eventually destroys the 1H7 slug. There is a cumulative nonreversible action. Therefore, if the 1H7 slug is not replaced along with 1L1, it will damage the new 1L1 coil more rapidly due to the 1H7's already deteriorated condition. (656)

AN/SRA-22 ANTENNA COUPLER GROUP—COOLING HINT

The purpose of this article is to advise maintenance personnel that the removal and discarding of the shrauds on CU-714/SRA-22 will result in excessive component heating. The purpose of the shrouds is to direct enclosed air through the center of coil (1L1) around slug (1H7), and through to the double wall of the case. The air is then cooled by natural radiation and convection from the case. (672)

AN/SRA-33 ANTENNA COUPLER GROUP—MAINTENANCE HINT

The AN/SRA-33 is an automatically tuned UHF multicoupler to permit use of up to four AN/SRC-20, AN/SRC-21, or AN/GRC-27 radio sets into a common antenna. This equipment will begin delivery in September 1965.

Each of the four couplers is automatically tuned to any of 19 preset frequencies per radio set, giving a total combination of 76 frequencies when four radio sets are used.

The minimum allowable frequency separation between any two radio sets is approximately 5 megacycles. If the frequency separation between any two radio sets is less than 5 megacycles, the automatic interlock protective circuitry may disable the couplers to prevent damage.

Therefore, operators are cautioned not to preset the frequencies between any two radio sets closer than approximately 5 megacycles. (673)

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The minimum allowable frequency separation between any two radio sets is approximately 5 megacycles. If the frequency separation between any two radio sets is less than 5 megacycles, the automatic interlock protective circuitry may disable the couplers to prevent damage.

Therefore, operators are cautioned not to preset the frequencies between any two radio sets closer than approximately 5 megacycles. (673)

AN/SRC-16(U) COMMUNICATION CENTRAL—INTERMODULATION DISTORTION MEASUREMENTS

The purpose of this article is to provide operating and maintenance personnel with information relative to the method and means of making Intermodulation Distortion tests on the AN/SRC-16(U) Transmitter and the use of these tests as a means of evaluating the performance of the transmitter. In many cases the conditions which cause excessive distortion may also cause spurious and harmonic outputs resulting in the generation of unwanted sidebands causing interference at frequencies outside the prescribed bandwidth, and an increased error rate in data transmission. The overall result being degradation and breakdown of communications.

Intermodulation Distortion measurements can be made by utilizing the built-in Radio Test Set TS-1913/SRC-16. This test set is capable of measuring third-order distortion products generated in the transmitter and receiver by feeding test tones into the transmitter and measuring the output of the receiver using the following procedure: Two equal tones, F1 and F2, are fed into one sideband of the transmitter at a +4DBM level each. This produces 125 watts average power per tone out of the 500-watt transmitter which is equal to 500 watts of Peak Envelope Power (PEP). At the output of the receiver the test set is calibrated to indicate 0 VU for the level of one tone. The distortion products 2F1-F2 and 2F2-F1 are read as DB below the level of a single tone.

The maximum allowable distortion products of the transmitter must be no greater than 35 DB below PEP. Since the test set is indicating distortion below the level of a single tone and since the level of a single tone is one-fourth, or 6DB, less than PEP, then the maximum allowable 2F1-F2 and 2F2-F1 readings on the test set must be no greater than -29DB.

The limitation of this type of test is that the distortion measured can be no better than the combined distortion being generated in the transmitter and receiver. If the distortion measured is greater than the minimum allowable, there is no indication of whether the transmitter, the receiver, or both are at fault. It is desirable that the distortion at the output of the transmitter be measured. This can be accomplished by using a spectrum analyzer such as the Panoramic Panalyzor Model SB-12B. In addition, this instrument can be used to measure sideband output levels, carrier suppression, harmonic suppression, spurious suppression, and opposite sideband rejection. A note of interest is that AN/SRC-16(U) installations are slated to receive spectrum analyzer TS-1379/U in the latter part of 1965 or early 1966.

The following discussion may be used as a guide for performing spectrum analyzer tests and for interpreting the results to establish the operating condition of a transmitter. The 500-watt PEP transmitter is used as the example. More specific step by step procedures will be written at such time as the spectrum analyzer TS-1379/U instruction manual becomes available.

The spectrum analyzer should be located near the transmitter dummy load. A means of coupling the rf signal to the analyzer is to attach one end of a wire to the analyzer input probe and loop the other end of the wire near the exposed T-connector output at the input to the dummy load.

Adjust the F1 and F2 tones from Radio Test Set TS-1913/SRC-16 separately to +4DBM into one sideband. Then position the TONE SELECT switch to BOTH so that both tones are fed into one sideband. Under these conditions the 500-watt transmitter output should be 125 watts average per tone, 250 watts average total output, and 500 watts of Peak Envelope Power (PEP). Do not rely on the rf Power Meter to read the total average power output. True average power is indicated only in the case of a single tone. A further word of caution, do not feed both tones into both sidebands at these levels because the PEP and average power ratings of the transmitter will be exceeded.

Referring to the instruction manual for the spectrum analyzer, adjust for a full-scale presentation of the two tones on the analyzer display. The amplitude of the individual tones displayed is representative of the power contained in each tone. To calibrate the display to PEP, switch in 6DB of input attenuation or reduce the gain by an equal amount. The amplitude of the individual tones will be reduced by 6DB. Any signals on the display can now be read in DB below PEP. Adjust the bandwidth of the display to a convenient presentation which will include the frequencies to be measured.

Intermodulation distortion products will appear as sidebands on either side of the two tones separated by the difference frequency of the two tones. Third-order distortion products generally are the worst and will appear as the first sidebands on each side of the two tones. This distortion must not be any greater than 35DB below PEP. However, an optimum operating transmitter may have distortion products as low as 45DB below PEP or lower. Generally, distortion is likely to be worse at the higher frequencies because of reduced gain of the Power Amplifier necessitating a greater output from the tuner to maintain the transmitter gain.

Intermodulation distortion may result from various conditions such as power supply voltages which are too high or too low, marginal tubes in the PA or tuner which can no

longer operate as linear amplifiers, improper adjustment of the PA statics, or simply just overdriving the transmitter. In this regard, the careful adjustment of the PA statics is of utmost importance.

Harmonic suppression can be read on the display at twice the operating frequency. It must be no greater than 50DB below PEP. Excessive harmonic output would most likely accompany excessive distortion and may be attributed to the same causes.

Spurious outputs must be no greater than 45DB below PEP. Excessive spurious outputs may be caused by such things as high ripple or erratic power-supply voltages or microphonic tubes. Normally, spurious outputs are much lower than 45DB below PEP.

Residual carrier output must be no greater than 45DB below PEP. It can generally be reduced as low as 60DB below PEP. A high residual carrier output indicates a fault or improper adjustment in the USB, LSB, or both balanced modulators.

Opposite sideband rejection may be measured by feeding a tone into one sideband and looking for its complement in the other sideband on the analyzer display. The level must be no greater than 50DB below the level of a single tone. A problem in this area is likely to be caused by a fault in the balanced modulator or prior to it.

The relative output of each sideband can be readily observed on the display by feeding a single tone into both sidebands. Unequal levels indicate that the balanced modulator outputs are not adjusted equally or that there exists a problem in the audio lines prior to the modulator.

AN/SRC-16(U) COMMUNICATIONS CENTRAL–OVERDRIVING THE AN/SRC-16(U) TRANSMITTER

The purpose of this article is to provide operating and maintenance personnel with method of determining the average power out of the AN/SRC-16(U) transmitter in order to avoid overdriving the transmitter during NTDS operation.

With the AN/SRC-16(U) Transmitter and AN/SSQ-29(U) Terminal Equipments adjusted correctly, the NTDS composite Peak Envelope Power (PEP) will be in the correct range for the 500-watt PEP or 5000-watt PEP transmitter used. The average power output as indicated by the rf POWER meter located on the front panel of Cabinet 1 of the AN/SRC-16(U) will read relatively low. Do not be alarmed by this reading or attempt to increase it in an effort to obtain a greater range. This will only result in overdriving the transmitter and consequent distortion of the output. This distortion will result in data errors and the generation of sidebands and harmonics outside the prescribed bandwidth. The generated sidebands and harmonics will cause increased interference at other frequencies.

The low average power indication can be explained as follows:

The AN/SSQ-29(U) has a nominal output of .178 Vrms per data tone per sideband and a Doppler tone level of .356 Vrms per sideband. Adding the average power in each of the tones results in very nearly 1 milliwatt or 0 DBM of average power per sideband. The composite level can be read as 0 VU on the OUTPUT METER of the AN/SSQ-29(U). The level into each sideband can be read on the AUDIO LEVEL meter on the front panel of cabinet 1 of the AN/SRC-16(U).

The total power input into the transmitter is the sum of both sideband inputs or nearly 2 milliwatts. The 500-watt PEP transmitter when properly adjusted has a power gain of 47 DB or 50, 000. Therefore a 2-milliwatt average power input will produce 100 watts of average power.

The rf POWER meter is a device which responds to the average of a rectified waveform. In the case of a single tone, or sinewave, the ratio of the effective (RMS) to the average is a fixed value. The meter can then be readily calibrated to indicate average power. In the case of a complex waveform, as in NTDS operation, the ratio of the effective to the average value differs; therefore, a true average power is not indicated.

Typical readings taken of a 500-watt PEP transmitter in NTDS operation are −2 DBM input per sideband on the AUDIO LEVEL meter and 60 watts output on the rf POWER meter.

As a follow-up to this article, the EMEC will publish an article in a future edition of EIB under the DATA SYSTEMS heading, on the causes of distortion in the AN/SRC-16(U) transmitter and the means of measuring it. (659)

AN/SRC-20 Radio Sets—Power Leakage Problem

It has been brought to the attention of the Bureau that the "carrier-on" light of C-1138/UR radio set controls, when used with the AN/SRC-20 radio sets, may light dimly even when the radio set is not on transmit. The current to light the "carrier-on" indicator is coming from the AC power line via the line filter. Corrective action is now under investigation by EMEC. In order to avoid a possible electrical shock, personnel are reminded to completely disconnect the equipment from the AC power line when any trouble-shooting or repairs are attempted on the interior of either the AN/SRC-20 or C-1138/UR.

AN/SRC-20 - HIGH VOLTAGE HAZARD

This article is to advise operating and maintenance personnel of the existence of a high voltage hazard in the AM-1565/URC RF Amplifier of the AN/SRC-20 Radio Set.

Personnel are cautioned to exercise extreme care when inserting a dummy load (RF Wattmeter) into Jack J-205. Adjacent to J-205 is Jack J-3, an identical type jack, which is used to furnish 1800 VDC to the plates of the 4CX250K tubes.

AN/SRC-20, AN/SRC-21—MECHANICAL ALINEMENT OF REPAIRED RF AND PA ASSEMBLY FROM NAVAL SHIPYARDS

Philadelphia Naval Shipyard has experienced slippage in a small number of frequency selector coupling half shafts. Therefore, some AN/SRC-21 sets have a slight mechanical difference between the RF and PA coupling half shaft, page 5-32, figure 5-29, symbol number 0121, of NAVSHIPS 94695A, and the frequency selector, page 5-54, figure 5-63, 01295.

This difference, however slight, will necessitate adjustment (touch up) at 399.9 MC. After installation, dial a high, a medium, and a low frequency while checking for at least 16 watts. If this cannot be accomplished, re-set dial to 399.9 MC, loosen set screw on the half shaft of frequency selector, figure 5-63, 01295, and adjust coupling shaft 0121 for maximum RF output. Tighten set screw. RF and PA unit will then be alined to track from 225 MC to 399.9 MC. (699)

AN/SRC-20, AN/SRC-21—ALIGNMENT HINTS FOR RF AND PA UNITS

Indications are that ships are having difficulty in initial adjustment of RF and PA units.

NAVSHIPS 94695A, page 5-7, step 7, shows the tuning procedure for variable capacitors C107 and C115. The transmitter must be keyed and the capacitors tuned to provide a peak negative d.-c. grid bias at J-105. These two variable capacitors can be detuned from each other and the corresponding voltage peak is so small that adjusting for a peak voltage at J-105 is very difficult or next to impossible.

A method of overcoming this tuning problem is as follows:

With the frequency dial set for 399.9 mc:

1. Tune C-107, C-115, and C-122 counterclockwise (CCW) to the stop which produces minimum capacitance.
2. Place the AN/USM-116 to the negative one-volt d-c scale and connect to J-104.
3. Key the transmitter and tune C-107 clockwise (CW) until the first voltage peak is observed on the AN/USM-116.

NOTE: The voltage peak is very small (.03 volt increase) depending on the condition of the tubes and the tracking in the frequency multiplier oscillator and the first IF amplifier.

4. Keeping the AN/USM-116 on the negative one-volt d-c scale, connect it to J-105.
5. Key the transmitter and tune C-115 CW until the first voltage peak is observed on the AN/USM-116.

NOTE: The level of this voltage reading is partially dependent on the setting of C-122 and will be in the range of -.03 to -.5 volts d-c. If unable to locate the first peak, tune C-122 CW two turns and then repeat Step 5.

6. Key the transmitter and tune C-122 CW until the first voltage peak is observed on the AN/USM-116.
7. Key the transmitter and readjust C-107, C-115, and C-122 for maximum reading on the AN/USM-116.
8. To determine that C-107, C-115, and C-122 are tuned to the correct frequency, key the transmitter and then disconnect P-302 which connects to J-101 (see NAVSHIPS 94695A, page 5-28, figure 5-22). With P-302 disconnected, the reading on the AN/USM-116 should fall approximately to zero if C-107, C-115, and C-122 are correctly alined.
9. Continue the alinement procedure as given in NAVSHIPS 94695A, page 5-9, para. i, without changing the setting of C-107, C-115, and C-122 other than for minor adjustment. (660)

AN/SRC-20 AND AN/SRC-21; VENTILATION OF

There are indications that in some AN/SRC-21 installations the ventilation covers have not been removed from the lower left and right sides of the cabinet case (CY-2959) (see figure 1-2, page 1-3, of NAVSHIPS 94695). After removal of the covers, louvered vents will be disclosed (see figure 1-1, page 1-2, of NAVSHIPS 94695A). The covers should then be mounted on the upper left and right sides of the cabinet case (CY-2959) for future use.

The intake port of the AN/SRC-20 (AM-1565) will have a sealed plate to be removed on the inside bottom of the air-filter unit and placed on the lower left hand side of the cabinet (figure 1-1, page 1-2 of NAVSHIPS 94695A).

The exhaust port is located at the top rear of the cabinet and will be turned 180° with the exhaust in a downward position. (660)

AN/SRC-20, -21—RADIO SET; SPEED INCREASER, SYMBOL NO. 0-1052, HIGH FAILURE OF

The purpose of this article is to advise maintenance technicians of the high failure rate of the Speed Increaser, Symbol No. 0-1052 in the AN/SRC-20, -21 Radio Set and

provide maintenance actions that should be taken in order to reduce failures to a minimum.

Results of an investigation conducted by the Electronics Maintenance Engineering Center reveal that the original lubricant used by the manufacturer in packing the bearing of the Speed Increaser wipes away from the bearing resulting in excessive heat, binding of the speed increaser, and eventual failure.

The Bureau of Ships is conducting tests in a group of blower motors in order to provide a suitable replacement motor which will eliminate such failures. However until such time as these replacement motors are made available the following maintenance actions must be taken to reduce failures to a minimum:

1. Speed Increaser couplers manufactured of brass, or preferably bronze stock, have proven more efficient than presently procured steel couplers. Brass or bronze couplers (regardless of how finely honed) seat with the bearing surfaces more readily; however, excessive heat and wear requires a higher-temperature MIL-G-3545 grease. A residue of particles are retained in the grease due to wear of coupler and will require a grease change after 10 days of use. At this time, thoroughly clean and fully repack coupler using MIL-G-3278 grease cleaning and repacking every 30 days thereafter.

2. Two new Speed Increasers should be obtained and held on board as operating spares.

NOTE: Prior to installing a new speed increaser, it should be cleaned of its original lubricant and fully repacked using procedure in paragraph 1. The Speed Increasers and Grease can be obtained through normal supply channels using the following Federal Stock Numbers:

Item	Fed. Stock No.	Unit of Issue
Speed Increaser	1N3030-201-6906	1 each
MIL-G-3545	9W-9150-273-2390	8 oz. tube
MIL-G-3278 (656-666)	9W-9150-261-8297	8 oz. tube

AN/SSQ-29(U) AND AN/SSQ-29(XN-2)–SINGLE STATION POFA TEST; THEORY OF OPERATION

The purpose of this article is to provide operating and maintenance personnel with a theory of operation so that they will have better understanding of what is being accomplished when performing a single station POFA test on the AN/SSQ-29(U) and AN/SSQ-29(XN-2) equipments. These equipments should have been modified to perform this test by Field Change 1 which was published in EIB 630 of 18 May 1964.

The action of the Single Station POFA switches allows six functions to be opened when a single station test is desired. The open will stimulate a logic one level into some of the inputs. However, due to the DN3 card design, the open line will eliminate an input function, but will not produce a logic one input. (This is because the DN3 needs a ground on the input to produce a logic one, due to the biasing arrangement utilized in circuit design.)

The AN/SSQ-29(U) has the following function affected by the Single Station POFA Switches. Refer to Volume II of NAVSHIPS 94718(A) the Technical Manual for the AN/SSQ-29(U) Data Terminal Set.

Switch S1A will open 1A3 A04 A16-4 (Code 440003) in the Transmit Sequence Control (Volume II page 5-49/5-50 Sheet 1 of 2). When the switch is open as for a single station test, a zero volt level (logic one) will be on the input of inverter I 12 producing a low level (logic zero) out of the inverter. The logic zero will inhibit gate G39 and a logic one will be routed to pin 6 of Toggle 10. The logic one will set the toggle and logic zero will be developed on pin 10 of gate G41, inhibiting the gate. The logic one input of gate G41 will enable gate G43. This will allow gate G43 to be controlled by the **Rx Message Level**, which will in turn allow the **Rx Message Level** to control operations of the Frame Counter Reset Enable line. Therefore the frame counter will be reset during receive data time.

Switch S1B will open 1A3A12A17-4 (Code 450006) in Control Code Recognition (Volume II, page 5-73/5-74 Sheet 2 of 4). When the switch contact is open **Tx STOP 2** will be prevented from resetting Toggle 17. This will allow a STOP SEARCH level to be maintained while a Stop Code is being transmitted.

Switch S2A will open 1A3A12A17-1 (Code 440007) in the Control Code recognition (Volume II, page 5-73/5-74 Sheet 2 of 4). When the contact is open a logic one level is produced into pin 1 of gate G91. This will not allow a CONTROL STOP (to TX Sequence Control) to be generated. In a single station test only Control Stops will be transmitted, but in a single station Round Robin Mode, a Control Stop must not be recognized; to do so would cause loss of Local Control. Therefore the switch action prevents a Control Stop from being recognized, even though one is transmitted.

Switch S2B will open 1A3A12A18-8 (Code 480017) in the Control Code Recognition (Volume II page 5-73/5-74 Sheet 2 of 4. When the switch is open pin 8 into gate G36 (DN3) is opened. Due to the design of the DN3 card this does not produce a logic one into the input. The open will eliminate the Tx MESSAGE LEVEL from the gate, therefore, a STOP LOAD will be generated during transmit time.

Switch S3A will open 1A3A12A18-1 (Code 470418) in the Control Code Recognition Unit (Volume II page 5-73/5-74 Sheet 2 of 4). When the switch is open to pin one of gate G89, the Tx ON LEVEL will be deleted. The gate (a DN3) will only be affected by the **START** level. This allows a Rx START RECOGNIZE level to be produced during transmit time.

Switch S3B will open 1A3A13A06-28 (Code 470418) in the Sideband Select Unit (Volume II, page 5-81/5-82 Sheet 1 of 3). Pin 28 of G17 (a DN3 will be opened. The Tx ON function will be removed from the gate. This allows the hamming errors, from the Hamming Detector to control gate G25 (which controls operation of the Sideband Load Pulse Counter).

The AN/SSQ-29 (XN-2) has the following functions affected by switches (S1, S2, S3). Reference is made to Technical Manual for Data Terminal Set for AN/SSQ-29 (XN-2) NAVSHIPS 94315 Volume I.

Switch S1A will open 1A3A04A16-2) Code 44003) in the Transmit Sequence Control (Volume I page 4-99/4-100 Figure 4-60). When the switch is open as for a single station test, a zero volt level (logic one) will be on the input of inverter A16-3 producing a low level (logic zone) out of the inverter. The logiz zero will inhibit gate A10-3 and a logic one will be routed to pin 3 of Toggle No. 3. The logic one will set the toggle and a logiz zero will be developed on pin 5 of gate A10-5, inhibiting the gate. The logic one output of gate A10-5 will enable gate A11-1. This will allow gate A11-1 output to be controlled by the **Rx Message Level** which will, in turn, allow the **Rx Message Level** to control operations of the Frame Counter Reset Enable line. Therefore the frame counter will be reset during receive data time.

Switch S1B will open 1A3A12A17-2 (Code 450006) in the Control Code Recognition (Volume I page 4-145/146 Figure 4-70). When the switch contact is open **Tx STOP 2** will be prevented from resetting Toggle No. 11. This allows a STOP SEARCH level to be maintained while a Stop Code is being transmitted.

Switch S2A will open 1A3A12A17-A (Code 440007) in the Control Code Recognition (Volume I page 4-145/146 Figure 4-70). When the contact is open a logic one level is produced into pin A of gate A17-7. This will not allow a CONTROL STOP (to TX Sequence Control) to be generated. In a single station test, only Control Stops will be transmitted, but in a single station Round Robin Mode a Control Stop must not be recognized; to do so would cause the loss of Local Control. Therefore the switch action prevents a Control Stop from being recognized, even though one is transmitted.

Switch S2B will open 1A3A12A18-4 (Code 480017) in the Control Code Recognition (Volume I page 4-145/146 Figure 4-70). When the switch is open, pin 4 into gate A18-7 (DN3 circuit card) is opened. Due to the design of the DN3 card, this does not produce a logic one into the input.