| DATE 11/14/63 | TMC SPECIFICATION NO. S-796 | A |
|---|---|---|
| SHEET 1 OF 8 | | |
| 16 aa COMPILED / aa CHECKED | TITLE: GPT-10K & 40K UNSYNTHESIZED TO SYNTHESIZED | |
| APPROVED | MODIFICATION KIT (TMC NO. KIT-156) | |

GPT-10K & 40K UNSYNTHESIZED TO SYNTHESIZED

MODIFICATION KIT

TMC NO. KIT-156

For Spare Parts Use Only

SUPERSEDED

REPLACED BY

KIT-156-1

S1119

OGILVIE PRESS, INC., BROOKLYN 17, N. Y. STOCK NO. 439M

| DATE 11/14/63 SHEET 2 OF 8 | TMC SPECIFICATION NO. S-796 | A |
|---|---|---|
| COMPILED / CHECKED | TITLE: GPT-10K & GPT-40K UNSYNTHESIZED TO SYNTHESIZED | |
| APPROVED | MODIFICATION KIT (TMC NO. KIT-156) | |

I. EQUIPMENT AFFECTED

A. GPT-10K Transmitter Set Radio

B. GPT-40K Transmitter Set Radio

II. PURPOSE

A. To replace existing Exciter with a synthesized Exciter to provide a large number of highly stable frequency controlled outputs.

III. MATERIALS SUPPLIED

| ITEM | QUANTITY | TMC PART NO. | DESCRIPTION |
|---|---|---|---|
| 1 | one | APP-3 | Auxilary Power Panel Complete with CA-569-1 AC Cable |
| 2 | one | CBE-1 | Sideband Exciter |
| 3 | one | CHG-2 | Frequency Amplifier |
| 4 | one | CHL-1 | Divider Chain |
| 5 | one | CLL-1 | Controlled Oscillator |
| 6 | one | CMO-1 | Controlled Master Oscillator |
| 7 | one | CPP-2 | Main Power Supply Complete with CA-555-1 AC Cable |
| 8 | one | CPP-5 | Power Supply (CHG-2) Complete with CA-555-1 AC Cable |
| 9 | one | CSS-1A | Frequency Standard Complete with CA-555-1 AC Cable |
| 10 | one | TIS-3 | Tone Intelligence System Complete with CA-581-1 AC Cable |
| 11 | one | A-2410 | Cable and Center Shield Assembly |
| 12 | one | CA-551-5 | Power Cable, Yellow (For CLL-1) |
| 13 | one | CA-551-4 | Power Cable, Black (For CHL-1) |
| 14 | one | CK-506 | Wiring Diagram |
| 15 | one | ID-277 | Installation Details |
| 16 | two | IN-258 | Instruction Manual, SBG-1 |
| 17 | one | S-796 | Installation Procedure |
| 18 | one | NP-362-19 | Nameplate modification |

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| DATE 11/14/63 SHEET 3 OF 8 | TMC SPECIFICATION NO. S-796 | A |
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| APPROVED | MODIFICATION KIT (TMC NO. KIT-156) | |

| ITEM | QUANTITY | TMC PART NO. | DESCRIPTION | |
|---|---|---|---|---|
| 19 | one set | TK-105-14S | Track, Stationary Section | FOR CPP-5 |
| 20 | one set | TK-105-14G | Track, Intermediate Section | |
| 21 | one | TK-106-18SL | Track, Stationary Section Left | FOR CPP-2 |
| 22 | one | TK-106-18SR | Track, Stationary Section Right | |
| 23 | one | TK-106-18GL | Track, Intermediate Section Left | |
| 24 | one | TK-106-18GR | Track, Intermediate Section Right | |
| 25 | two sets | TK-107-18S | Track, Stationary Section | FOR CHG-2 CMO-1 |
| 26 | two sets | TK-107-18G | Track, Intermediate Section | |
| 27 | four sets | TK-108-18S | Track, Stationary Section | FOR CHL-1 CSS-1A CLL-1 TIS-3 |
| 28 | four sets | TK-108-18G | Track, Intermediate Section | |
| 29 | One Bag Containing: | | | |
| | A. Two | MS-2482 | Bracket, Extention, Rear | Track Mtg. CPP-5 |
| | B. Sixteen | SCHH1032BN8 | Screw, Machine | |
| | C. Sixteen | LWS10MRN | Washer, Lock, Split | |
| | D. Six | TK-105-NB | Nut, Bar | |
| 30 | Two Bags Each Containing: | | | |
| | A. Two | MS-2458 | Bracket, Extention, Rear Track | Track Mtg. CHG-2 CMO-1 |
| | B. Sixteen | SCHH1032BN8 | Screw, Machine | |
| | C. Sixteen | LWS10MRN | Washer, Lock, Split | |
| | D. Six | TK-107-NB | Nut, Bar | |

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| DATE 11/14/63 SHEET 4 OF 8 | TMC SPECIFICATION NO. S-796 | A |
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| APPROVED | MODIFICATION KIT (TMC NO. KIT-156) | |

| ITEM | QUANTITY | TMC PART NO. | DESCRIPTION | |
|---|---|---|---|---|
| 31 | One Bag Containing: | | | |
| | A. Two | MS-2458 | Bracket, Extention, Rear | Track Mtg. CPP-2 |
| | B. Sixteen | SCHH1032BN8 | Screw, Machine | |
| | C. Sixteen | LWS10MRN | Washer, Lock, Split | |
| | D. Six | TK-106-NB | Nut, Bar | |
| 32 | Four Bags Each Containing: | | | |
| | A. Two | MS-2457 | Bracket, Extention, Rear | Track Mtg. CHL-1 CLL-1 TIS-3 CSS-1A |
| | B. Sixteen | SCHH1032BN8 | Screw, Machine | |
| | C. Sixteen | LWS10MRN | Washer, Lock, Split | |
| | D. Six | TK-108-NB | Nut, Bar | |
| 33 | One Bag Containing: | | | |
| | A. One | A-2048 | Attenuator Assembly | |
| | B. Two | SCBP1032BN8 | Screw, Machine | |
| | C. Two | LWE10MRN | Washer, Lock, External | |
| | D. Two | NTH1032BN12 | Nut, Hexagon | |
| 34 | Two Bags Each Containing: | | | |
| | A. One | SP-137-1 | Spring, Retracting | |
| | B. One | MS-2470 | Bracket, Spring Mtg. | |
| | C. Two | SCBP1032BN8 | Screw, Machine | |
| | D. Two | SCBP1024BN6 | Screw, Machine | |
| | E. One | SCBP0540BN6 | Screw, Machine | |
| | F. One | LWE06MRN | Washer, Lock, External | |
| | G. Four | LWE10MRN | Washer, Lock, External | |
| | H. Two | NTH1032BN12 | Nut, Hexagon | |

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| DATE 11/14/63 SHEET 5 OF 8 | TMC SPECIFICATION NO. S-796 | A |
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| APPROVED | MODIFICATION KIT (TMC NO. KIT-156) | |

| ITEM | QUANTITY | TMC PART NO. | DESCRIPTION | |
|---|---|---|---|---|
| 35 | One Bag Containing: | | | |
| | A. One | CU-130-9 | Clamp, Cable | |
| | B. Three | CU-131-5 | Clamp, Cable | |
| | C. Four | SCBP1032BN8 | Screw, Machine | |
| | D. Four | FW10HBN | Washer, Flat | |
| | E. Four | LWE10MRN | Washer, Lock, External | |
| | F. Four | NTH1032BN12 | Nut, Hexagon | |
| 36 | One Bag Containing: | | | |
| | A. Twelve | SCBP1032BN10 | Screw, Machine | Cable Clamp Mtg. |
| | B. Twelve | FW10HBN | Washer, Flat | |
| | C. Twelve | LWE10MRN | Washer, Lock, External | |
| | D. Twelve | NTH1032BN12 | Nut, Hexagon | |
| | E. One | SCBP0832BN12 | Screw, Machine | |
| | F. One | FW08HBN | Washer, Flat | |
| | G. One | LWE08MRN | Washer, Lock, External | |
| | H. One | NTH0832BN10 | Nut, Hexagon | |
| 37 | One Bag Containing: | | | |
| | A. Forty-eight | SCBP1032BN8 | Screw, Machine | SBC Units Mtg. |
| | B. Forty-eight | WA-101-11 | Washer, Fiber | |
| 38 | One Bag Containing: | | | |
| | A. Two | SCBP1032BN12 | Screw, Machine | Center Shield Mtg. (A-2410) |
| | B. Two | FW10HBN | Washer, Flat | |
| | C. Two | LWE10MRN | Washer, Lock, External | |
| | D. Two | NTH1032BN12 | Nut, Hexagon | |

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| DATE 11/14/63 SHEET 6 OF 8 | TMC SPECIFICATION NO. S-796 | A |
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| APPROVED | MODIFICATION KIT (TMC NO. KIT-156) | |

| ITEM | QUANTITY | TMC PART NO. | DESCRIPTION | |
|---|---|---|---|---|
| 39 | One Bag Containing | | | |
| | A. Four | SCBP0632BN10 | Screw, Machine | Circuit Breaker Mtg. |
| | B. Four | LWE06MRN | Washer, Lock, External | |
| 40 | One Bag Containing | | | |
| | A. Two | SCBP0832BN8 | Screw, Machine | Cap.& Receptacle Bracket Mtg. |
| | B. Two | LWE08MRN | Washer, Lock, External | |
| 41 | One Bag Containing | | | AC Strip Connection |
| | A. Two | NT-121-71B | Wire, Nut | |
| 42 | One each | PM-688 | Two Part Catch | Handle |
| 43 | One each | HA-114-(Dwg.Only) | Drawing | Modification |
| 44 | One Bag Containing | | | Misc. Use |
| | A. Six each | TMC No. TE-120-2 Lugs | | |
| 45 | Two each | TMC No. NT-121-71B Wire, Nut | | → Meter Box Modif. |
| 46 | One foot | TMC No. MWC16(19)B0 Wire | | → Misc. Use |

IV. TOOLS REQUIRED

To be provided bythe installing activity

1. Pliers, 6 inch longnose
2. Pliers, 6 inch diagonal cutting
3. Screwdriver, 4 inch
4. Screwdriver, 4 inch Phillips #2
5. Wrench, open end, 3/8 inch - 7/16 inch
6. Wrench, open end, 1/4 inch - 5/16 inch
7. Wrench, crescent 10 inch
8. Portable Drill, 1/4 inch chuck
9. Soldering Iron, 75 watt

V. PROCEDURE (REFERENCE, ID-277, ITEM 15)

1. Remove all power from the unit (GPT-10K or GPT-40K which ever applies).

2. Remove the two vertical trim strips from the auxiliary frame section, also remove the trim strip across the bottom of the transmitter, Fig. 1.

3. Remove all the following units from the transmitter (SLM, FSA, SBE, MCP, VOX, XFK, TTG, SBE Power Supply, APP, also on the rear of the Exciter frame remove the AK-100 and the FSA Power Supply), Fig. 1.

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4. Remove all of the tracks and slide sets from the auxiliary frame, Fig. 2.

5. Remove the connections on terminal E3033 for the Red Transmitter light and then remove the light, Fig. 1.

6. **Deleted**

7. Remove the bottom plate, Fig. 2, on the AC-plug strips and disconnect the two wires coming from the main cable. Be sure to save the screw for remounting, Fig. 2.

8. Remove the cable coming from the fan and remove the capacitor mounting bracket, Fig. 2.

9. Unsolder the two leads on the fan receptacle from the terminals, A & B, but leave the two leads that connect the capacitor and put the bracket aside for remounting.

10. Unsolder the alarm cable from the feed-thrus #6 and #7 on the center shield, Fig. 2.

11. Unsolder the wires from the ten feed-thrus and disconnect the RF connectors & fanning strip on the rear of the center shield. Completely remove this cable(CA-430) that connects the Aux. Frame center shield to the Main Frame side connectors, Aux. Frame contactor coils, timer, bottom fan, etc., making sure to keep a record of which color wires go to the Timer, contactor, contactor coils, contactor microwsitches, & Fan. This will be necessary for installing new cable in Step 16. The removed cable should be discarded.

12. Remove the main cable from the front section of the Auxiliary frame, Fig. 2; discard.

14. Drill two 3/16" holes in the center partition of the auxiliary frame according to Fig. 4.

15. Mount the attenuator assembly, A-2048, in the drilled holes. (Item 33)

16. Mount the new cable and center shield assembly, A-2410 (Item 11) using the cable clamps supplied and mounted in the approximate positions shown in Fig. 3. Mount the center shield with the two center holes only as the four groups of three holes will be used to mount tracks in later steps (Use mounting hardware & clamps supplied, items 38,35 & 36)
Install the new rear cable, CA-571, hanging from the rear of the new center shield assembly, to the same points that were recorded in Step 11 when the old similar cable was removed.

17. Mount the two cables, CA-551-4 and CA-551-5 as shown in Fig. 3. Also, be sure to mount the cable, CA-551-6 that is part of the cable assembly, A-2410. (Cables Supplied, Items 12 & 13)

18. Remount the circuit breaker on the new center shield, Fig. 2.
(Hardware supplied, Item 39)

19. Reconnect, with the wire nuts NT-121-7[illegible] the two sets of wires at the bottom of the AC plug strip with one wire from the incoming BX cable, one wire from the AC strip and one wire from the main cable assembly tied together. (W

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20. Solder the wires in the new cable to terminals A and B of the receptacle for the fan connection that was removed previously, Fig3(Step8,9)) Make sure that the wire from the fuse on the center shield goes to terminal B on the receptacle as marked on the wire label. Remount the bracket,& plug-in the Fan Cable. (Hardware Supplied, item 40).

21. Solder the alarm cable to the feed-thrus #6 and #7 on the new center shield, Fig. 3.

22. Resolder the wires to the feed-thrus on the rear of the new center shield in the proper position as marked in step 11 above.

22.1 In Aux. Frame Meter Box, Relocate Ballast Xfmr-(T3001) to Rear of Box, using wire nuts, item 45, supplied.

23. Solder the wires to the proper position of the rear of the meter panel box as indicated by the labels on the wires. ie. Wire marked C3016 is to be soldered to capacitor feed-thru #C3016.

24. Mount the tracks and slide sets in the auxiliary frame as shown in Fig. 4. Hand tighten them only. Also mount the two brackets MS-2470 and springs SP-137-2. (Supplied as items 19 thru 32 & 34)

25. Connect the cables as shown by their labels and using the wiring diagram CK-506 and mount the units not requiring slides in the positions shown in Fig. 4. (ie. The APP-3 and the CBE-1). The APP-3 is mounted in the first and sixth holes from the bottom of the frame and the CBE-1 is mounted with the bottom of the panel 55-3/4" from the bottom hole.

26. Next mount each unit in its tracks and adjust the tracks vertically for proper clearance of the unit below. Start with the bottom units and work up to the top, as per Fig. 4. Be sure to securely tighten the track in the frame after making any adjustments. (Units supplied, items 1 thru 7,9 & 10)

27. As each unit is put in connect the cables to the rear of each unit as per the wiring diagram CK-506 (item 14) and the cable labels.

28. The CPP-5 is mounted individually on the rear of the transmitter and no adjustment need be made when mounting it. (CPP-5, item8)

29. Fasten the units in place with the fiber washers and the screws that are supplied. This step may be done after checking the system. (Supplied as item 37)

30. Replace the trim strips on the bottom of the transmitter and the sides of the auxiliary frame.

31. Mount the modification nameplate, NP-362-19 (item 18) on the relay panel cover in the Main Frame.

32. Turn on the power and refer to the SBG Manual, IN-258, for proper operating instructions. (Manual, item 16)

33. Modify auxiliary frame front door handle as indicated on HA-114-. Dwg. Omit hardware and use PM-688 cam. (Items 42 & 43 supplied)

*NOTE: After a short warm-up, preliminary tests can be made on the system, but for proper frequency stability a 24 hour warm-up is required.

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# REVISION SHEET

THE TECHNICAL MATERIEL CORP.
MAMARONECK NEW YORK

S796
LIST NO.

| DATE | REV. | SHEET | EMN # | DESCRIPTION | APP. |
|---|---|---|---|---|---|
| 7/12/66 | A | all | 16537 | Revised per EMN | |

TMC FORM MLR-1 2-65—AINS.