

DATE 7-28-54SH. 1 OF 2

COMPILED BY

## TMC SPECIFICATION NO. S-195

TITLE: CFA CONVERSION FOR NARROW FREQUENCY OPERATION

JOB

APPROVED A. J. J.

## MODEL CFA-L

## FREQUENCY SHIFT CONVERTER

## (CFA CONVERSION FOR NARROW FREQUENCY OPERATION)

Small frequency shifts are most usually used in the low frequency bands as per FCC designations. It is in these regions that noise problems become most pronounced. At the same time, the low frequency shift system does not have inherent in it the FM advantages which exist at, say, 850 cps shift.

This equipment has been converted to accomodate very low shifts in installations where these problems are especially detrimental to good operation. It is, however, strongly recommended that stable receivers be used because the drift limits are accordingly reduced.

## OPERATION:

- a. Tune receivers to proper discriminator center as indicated by the monitor.
- b. Set the Mark Bias Control somewhere near the center of its range.
- c. Vary the Threshold Control until the incoming signal operates the teleprinter. Rotate this control both clockwise and counterclockwise until the teleprinter commences to make errors or ceases to print altogether. The Threshold Control should then be set near the midpoint between these extremes.
- d. A fine adjustment of the Mark Bias Control may now be made until maximum teleprinter range is obtained.

The CFA-L is now ready for operation.

DATE 7-28-54  
 SH. 2 OF 2  
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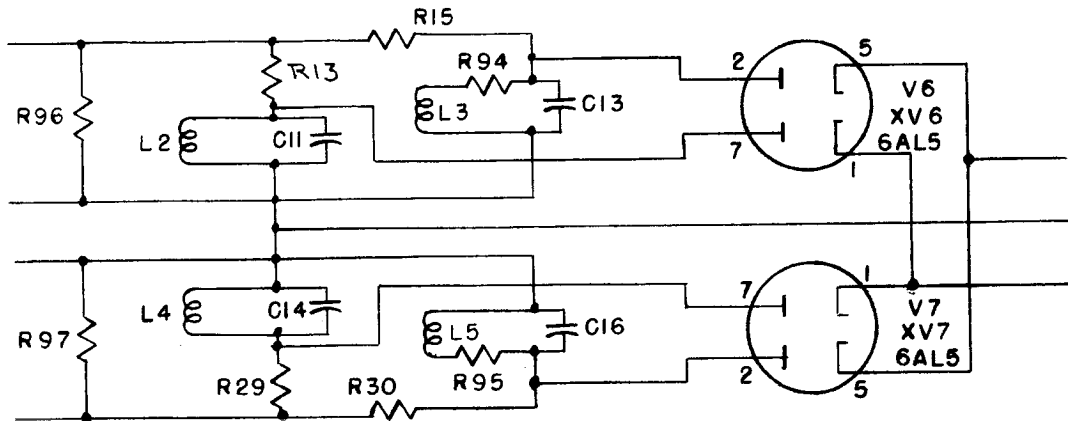
TMC SPECIFICATION NO. S-195

TITLE: NARROW SHIFT MODIFICATION GFA-L

JOB

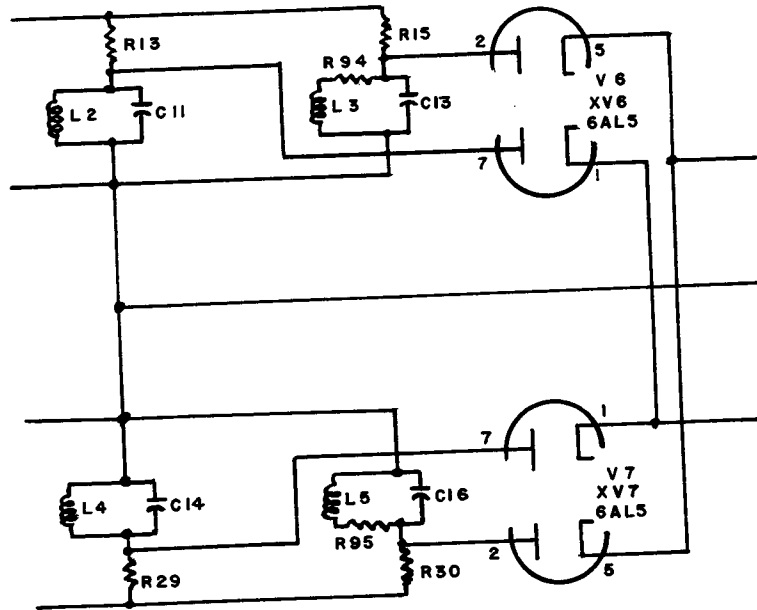
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Page Issue A



| <u>SYM.</u> | <u>DESCRIPTION</u>  | <u>FUNCTION</u>         | <u>TMC PART NO.</u> |
|-------------|---|-------------------------|---------------------|
| R13         | Resistor, fixed: comp; 470,000 ohms <u>+5%</u> ; $\frac{1}{2}$ watt.  | Discriminator Resistor  | RC20GF474J          |
| R14         | Not Used (Replace by Jumper)  | -                       | -                   |
| R15         | Resistor, fixed: comp; 470,000 ohms <u>+5%</u> ; $\frac{1}{2}$ watt.  | Discriminator Resistor  | RC20GF474J          |
| R28         | Not Used (Replace by Jumper)  | -                       | -                   |
| R29         | Resistor, fixed: comp; 470,000 ohms <u>+5%</u> ; $\frac{1}{2}$ watt.  | Discriminator Resistor  | RC20GF474J          |
| R30         | Resistor, fixed: comp; 470,000 ohms <u>+5%</u> ; $\frac{1}{2}$ watt.  | Discriminator Resistor  | RC20GF474J          |
| R94         | Resistor, fixed: comp; 120 ohms <u>+5%</u> ; $\frac{1}{2}$ watt.      | Discriminator Resistor  | RC20GF121J          |
| R95         | Resistor, fixed: comp; 120 ohms <u>+5%</u> ; $\frac{1}{2}$ watt.      | Discriminator Resistor  | RC20GF121J          |
| C11         | Capacitor, fixed: mica .0056 mfd <u>+5%</u> Char.C; 500 wvdc.         | Discriminator Condenser | CM30C562J           |
| C13         | Capacitor, fixed: mica .004 mfd <u>+5%</u> Char.C; 500 wvdc.          | Discriminator Condenser | CM30C402J           |
| C14         | Capacitor, fixed: mica .0056 mfd <u>+5%</u> ; Char C; 500 wvdc.       | Discriminator Condenser | CM30C562J           |
| C16         | Capacitor, fixed: mica .004 mfd <u>+5%</u> Char.C; 500 wvdc.          | Discriminator Condenser | CM30C402J           |
| R96         | Resistor, fixed: comp. 390,000 ohms <u>+10%</u> ; $\frac{1}{2}$ watt. | Discriminator Load      | RC20GF394K          |
| R97         | Resistor, fixed: comp; 390,000 ohms <u>+10%</u> ; $\frac{1}{2}$ watt. | Discriminator Load      | RC20GF394K          |





**OBsolete**

REVISION B  
SEE S-195

| SYM | DESCRIPTION   | FUNCTION                   | MFG | PART NO.                |
|-----|---|----------------------------|-----|-------------------------|
| R13 | Resistor, fixed: comp; 470,000 ohms<br>± 5%; ½ watt         | Discriminator<br>Resistor  | ALB | EB4745                  |
| R14 | Not used (Replace by jumper)                                | —                          | —   | —                       |
| R15 | Same as R13   | Discriminator<br>Resistor  | ALB | EB4745                  |
| R28 | Not used (Replace by jumper)                                | —                          | —   | —                       |
| R29 | Same as R13   | Discriminator<br>Resistor  | ALB | EB4745                  |
| R30 | Same as R13   | "                          | ALB | EB4745                  |
| R94 | Resistor, fixed: comp; 120 ohms<br>± 5%, ½ watt             | "                          | ALB | EB <del>XXXX</del> 1215 |
| R95 | Same as R94   | "                          | ALB | EB <del>XXXX</del> 1215 |
| C11 | Capacitor, fixed: mica .0056 mfd ± 5%;<br>Char. C; 500 wvdc | Discriminator<br>Condenser | SMO | CR <del>1256</del> C5   |
| C13 | Capacitor, fixed: mica .004 mfd ± 5%;<br>Char. C; 500 wvdc  | "                          | SMO | CR1240C5                |
| C14 | Same as C11   | "                          | SMO | CR1256C5                |
| C16 | Same as C13   | "                          | SMO | CR1240C5                |

DATE 12-4-51

DRN. *A.J.J.*

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NARROW SHIFT  
MODIFICATION

CFA

THE TECHNICAL MATERIEL  
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MAMARONECK, NEW YORK

SHEET 1 OF 1 NO. AES036-A