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TMC   SPECIFICATION NO. S 518

TITLE: Alignment Procedure For Model XF-10   JOB

ALIGNMENT PROCEDURE
FOR
MODEL XF-10

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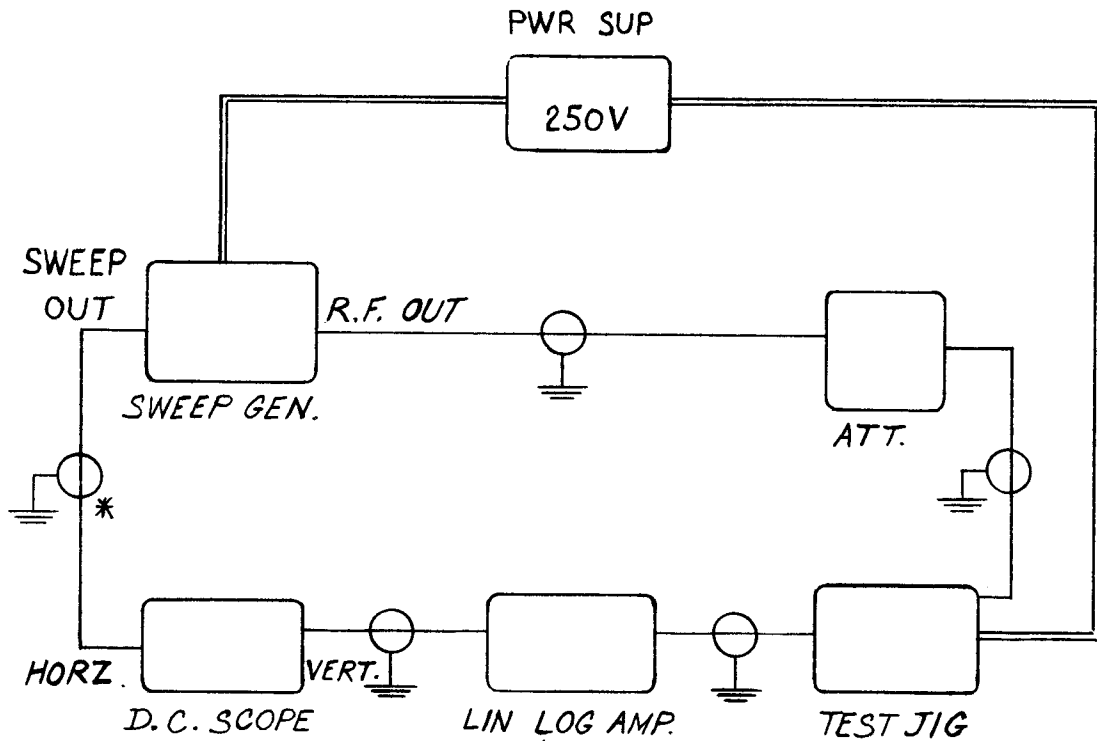TMC   SPECIFICATION NO. S 518

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1.   Equipment Required

    A.   455 KC Sweep generator
    B.   Oscilloscope (CRT type P7 or equivalent
    C.   Regulated 250 VDC power supply.
    D.   Daven attenuator
    E.   Linear Log Amplifier
    F.   Test Jig

2.   Set up equipment as shown below:

※ RG 59/U

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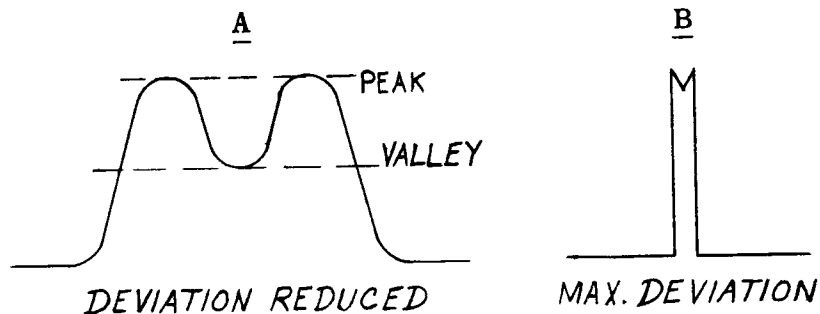COMPILED BY

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3.   Turn on all equipment.

4.   Allow sufficient time for all the test
       units to warm up.

5.   Position horizontal trace so that itis
       centered, and extends about two inches
       in width across the face of the CRT.

6.   Increase D"C" horizontal width as needed
       by using the H-amplitude control.(on the scope)

7.   Adjust vertical input on Scope as follows:
   A. Vertical gain between 4 & 10.
   B. Multiplier on 1 D.C.
   C. Adjust vertical positioning so that the
       horizontal trace is about a half inch from
       the topof the C"R"T.

8.   Remove all the attenuation on the Daven
       (all the ten and smaller DB buttons down).

9.   Insert fitter into the test jig.

10.   Place switch of Lin. Log det. into the
       linear position.

11.   Adjust deviation control on the sweep OSC
       for maximum deviation(control pulley clock-
       wise).

12.   Adjust center frequency control for a pip
       in the center of the screen.

13.   Tune the coil in the .... filter for max-
       imum amplitude as shown on the Scope.(when
       Maximum amplitude exceeds the face of the CRT,
       adjust RF gain control on the Lin Log Amp.

14.   When Max. att. is achieved, reduce the de-
       viation as shown below.

<u>A</u>   <u>B</u>

PEAK

VALLEY

DEVIATION REDUCED   MAX. DEVIATION

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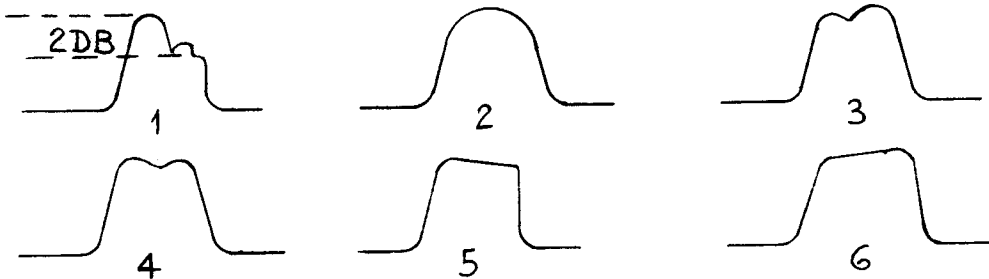
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15. A.   Notice in the illustrations "A" and "B",
          that the peak to valley ratio is very
          bad. To adjust this retune the coil in
          the filter slightly. One of the follow-
          ing patterns will appear as shown in step
          15B.

    B.   Patterns that may appear:

16.   The object is to obtain a curve similar
   to No. 2 or 4 as shown in 15B.

17.   In the event these patterns cannot be ob-
       tained, anyone will do as long as the peak
       to valley ratio is much less than 2DB.
       (shown in 15B).

18.   Position the Lin. Log switch in the log
       position.

19.   Remove all but 40DB of attenuation in the
       Daven.

20.   Increase the deviation in the RF sweep
       Osc. until a full pattern is obtained.

21.   The following patterns may appear.
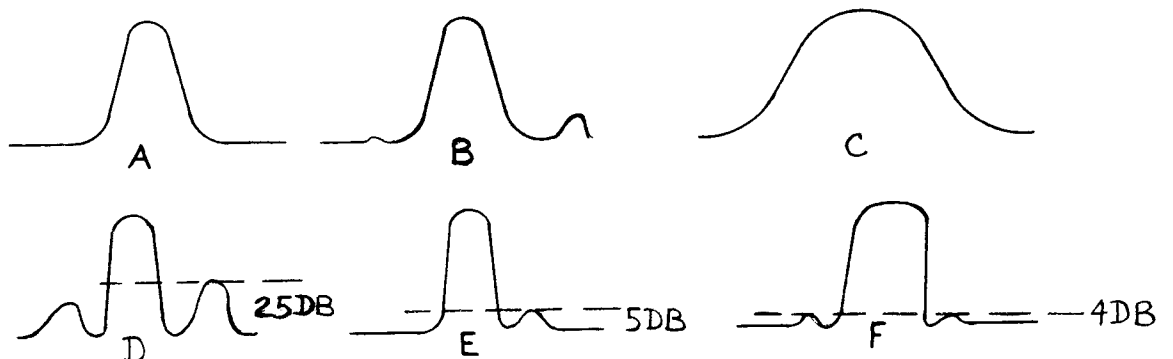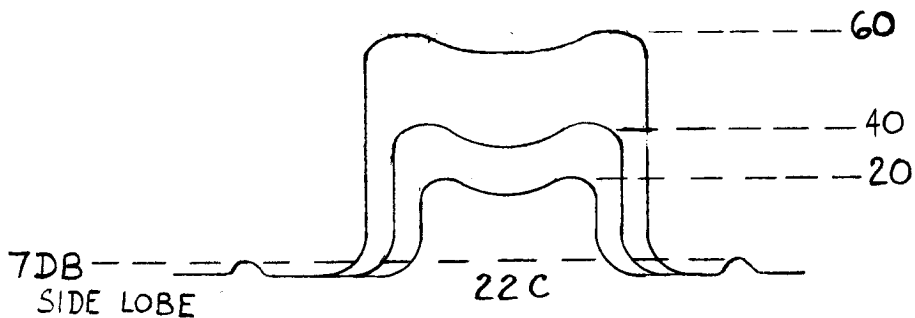
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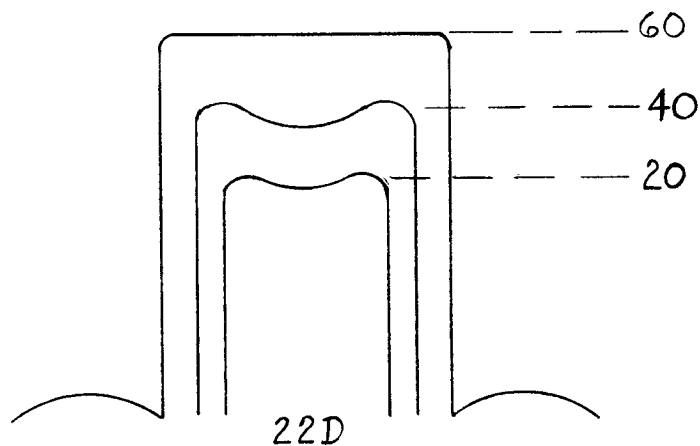TMC SPECIFICATION NO. S 518

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22...A. The above illustrations as shown in Fig. 21 (A thru F) should be adjusted for 60 DB+-2DB as shown on the Scope.

B. This is accomplished by inserting attuation in steps of 20 DB. Correct by adjusting the RF output control in the RF sweep osc.

C. When the proper amount of RF is applied to Lin. Log amplifier, the following illustration (22C) will be observed if the Log Amp. is not overloaded. Notice that the top of the pattern follows the same wave form as when the Lin. Log Amp. was in the Linear position. When this is accomplished, the oscilloscope and RF sweep oscillator should not be touched. This includes the testing of any new filters.

22C

SIDE LOBE

D. When the Log Amp. is overloaded, the following illustration (22D) will appear.

22D

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E. Notice that the top of the pattern is flat, but when 20DB of attenuation is inserted, the pattern appears to be normal. This is a positive indication that the Lin. Log Amp. is overloaded.

23. The correct pattern is illustrated in step 21E, 21F and 22C. When this cannot be obtained, adjust the gimmick wire that is across the 45516KC crystal. (The side lobes must be 6DB or less.

24. Illustrations and adjustment of side lobe: (Illustrations refer to step 21A thru F).

 (21A) Not enough coupling from gimmick.
 (21B) A little too much coupling from gimmick.
 (21C) Gimmick missing or broken.
 (21D) Too much coupling from gimmick or coil secondary in filter revised.
 (21E&A) Coupling just right; do not touch gimmick.

25. Place the test cover over filter. Through the hole on the side of the cover, adjust the coil in the filter as illustrated in step 15C (1 thru 6).

26. A. Switch the Lin Log Amp. in the Linear position.
  B. Reduce the deviation from the RF sweep osc.

27. A. Switch the Lin Log Amp. in the Log position.
  B. Increase the deviation from the RE sweep osc. and observe pattern to be sure the side lobes do not increase from the cover.

28. A. This completes the testing of the filter. *Place a new cover on the filter.
  B. When the filter cover is soldered, it should be tested again. (Make sure filter is at room temperature.)
  C. Repeat item 27.
  D. After the filter is tested it can be painted.

29. Insert new filter and repeat all the steps. Do not touch the oscilloscope or RF sweep oscillator.

* This filter contains crystals and should not be dropped or treated like a football. Handle it like you would and EGG. T.L.C.