AMATEUR PRODUCTS S-LINE

32S-1 TRANSMITTER (522-1169-000)
KWM-2 TRANSCEIVER (522-1611-000)

SERVICE INFORMATION LETTER 1-75

OVERCOME INSTABILITY CAUSED BY AGING

On 27 July 1971, Amateur Product Line Information Letter No 28 was issued which contained the following information:

Some 32S-1 Transmitters and early KWM-2 Transceivers are beginning to exhibit various forms of instability that fails to respond to usual corrective efforts.

A common cause is capacitor C56 in the 32S-1 and C123 in the KWM-2. These are axial-lead ceramic feed-through capacitors which are mounted immediately to the right of the 6CL6 driver tube in the PA cage. As they age, they become frequency sensitive.

At one time the typical symptom of a defective capacitor was for the transmitter to operate properly on all bands except for 15 meters, where it would oscillate. More recent reports include almost any set of instability symptoms you might describe.

The conclusion is, that if an older unit comes in for servicing that shows instabilities, this capacitor should be changed before other repair efforts are made. For a number of years a mica feed-through capacitor (912-5232-000) has been used in the 32S-3 and KWM-2 with complete success. The hole will have to be enlarged to accommodate the new capacitor.

Another problem that is difficult to determine involves instability and eventually oscillation appearing first on the 80 meter band, and then including 40, etc. This is caused by the fact that over a period of time aluminum will become covered with oxide. In spite of finger-stock between the shield cans over the rf coils and bandswitch wafers, the cans eventually become floating which allows feedback to occur.

Correction is simple. Merely loosen the hex nuts that lie under the slug rack, shift the position of the shield cans, and retighten the nuts. This regrounds the shields and usually the instability disappears.

AMATEUR PRODUCTS S-LINE

KWM-2/2A TRANSCEIVERS (522-1611-000/522-1792-000)
32S-1/2/3/3A TRANSMITTERS (522-1169-000/522-1488-000/
522-2955-000/522-2958-000)
75S-1/2/3/3A/3B/3C RECEIVERS (522-1168-000/522-1489-000/
522-2562-000/522-2664-000/522-3316-000/
522-3317-000)

SERVICE INFORMATION LETTER 2-75

EXTENDED OPERATING RANGE

The region between 5.0 and 6.5 MHz has always been defined as unsuitable for operation with the S-Line and KWM-2A equipments due to spurious signals inherent in the equipment. Many requirements for operation in that frequency segment have caused a complete study and resulted in the following list of acceptable operations in that range.

DIAL ZERO	ACCEPTABLE OPERATION	HF CRYSTAL MHz	COLLINS CRYSTAL PART NUMBER
5.0 MHz	5.0 - 5.2 MHz	8.155	290-9017-000
5.1 MHz	5.1 - 5.3 MHz	8.255	290-9227-000
5.2 MHz	5.2 - 5.4 MHz	8.355	290-9018-000
5.3 MHz	5.3 - 5.5 MHz	8.455	None
5.4 MHz	5.4 - 5.6 MHz	8.555	290-9019-000
5.5 MHz	5.5 - 5.7 MHz	8.655	None
5.6 MHz	5.6 - 5.770 MHz	8.755	290-9020-000
5.7 MHz	5.7 - 5.830 MHz	8.855	None
5.8 MHz	5.8 - 5.9 MHz	8.955	290-9021-000
5.9 MHz	5.9 - 5.970 MHz	9.055	None
6.0 MHz	6.0 - 6.035 MHz	9.155	290-9022-000
6.0 MHz	6.165 - 6.2 MHz	9.155	290-9022-000
6.1 MHz	6.230 - 6.3 MHz	9.255	None
6.2 MHz	6.3 - 6.4 MHz	9.355	290-9023-000
6.3 MHz	6.370 - 6.5 MHz	9.455	None
6.4 MHz	6.430 - 6.6 MHz	9.555	290-9024-000

Frequency bands of non operation are:

5.970 to 6.0 MHz
6.035 to 6.165 MHz
6.2 to 6.230 MHz

The lowest operating frequency can be extended below 3.4 MHz to at least 3.32 MHz and usually as low as 3.3 MHz.

DIAL ZERO	OPERATING RANGE	HF CRYSTAL MHZ	CRYSTAL PART NUMBER
3.3 MHz	3.3 - 3.5 MHz	6.455	290-9229-000
3.2 MHz	3.3 - 3.4 MHz	6.355	290-9178-000

To order crystals directly from crystal manufacturers: Specify: The hf crystal MHz frequency, and crystal type CR-18/U per MIL-C-3098B except temperature range 0° to +60° inclusive.