VOLUME II, NUMBER 6
JUNE 1976

S/1 NEWS

Please use your CALL on all correspondence. If you send only a check for payment without any correspondence, write your call somewhere on the check. We file by call sign and it makes it easier for us. Tnx!

The following subscriptions are due or past due:

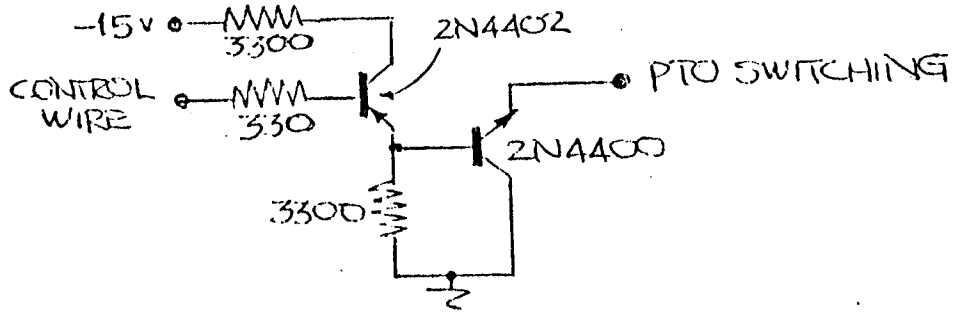
WA2IMX, WA9PZB, K8CJQ, K4HAO, W7UR, WA3AQW, K2GI, ~~W6HX~~, ~~WA6VGJ~~, W8VHY, ~~KØHHP~~, W4ZCB, W8HR, ~~WA3FOQ~~, W7JST

Bill, K2SIL, writes concerning frequency shifts exhibited when switching VFO's: "Two different items contribute to pulling VFO frequency as a function of receive VFO, transmit VFO selectors and receive/transmit mode:

1. The VFO on/off switching line is either ground or about 0.3 v in the on state (See table 3-1 in technical manual)

2. The load seen by the VFO counter output depends on which VFO is selected at the counter.

To make switching potential independent of switch states, hang the following circuit on back of each VFO (circuit is by WA7VEN):



To isolate the counter, add 4700 ohms in series with connection at pin 3 (counter output). Use a larger value if possible and if reliable counting results. Readjust C3, C20, C71 on the IF board per steps 13 - 20 of alignment procedure in manual (para. 5.3.2.f)

more...

S/1 NEWS is published monthly by Bob Sullivan, WØYVA/4, POB 6216, Arlington, Virginia, 22206. Subscription rate is $4.50 per year. Foreign by air is $11.00 per year. SASE for sample please.

Bill also notes that the following modifications do NOT completely eliminate frequency shift:

1. Breaking hard ground and using diode with pullup resistor to approximate $V_{ce\ sat}$ of receive/transmit flip flop.

2. Installation of an isolation switch in VFO for Q1 only.

3. Adding feedback from Q3 to Q2 in VFO

4. Adding a buffer amplifier for each VFO input on counter board, preceding the diode switches.

I get at least one letter per month concerning operation (accidental, of course) into a high SWR in the broadband mode! The broadband trimmers will burn up everytime! BE CAREFUL.

Many owners are still reporting poor or inadequate audio with both the CX7/CX7A and some "B" power supply boards. I hope to have a small modification package available soon (PC board and parts) for a modified audio output stage. More details in a later issue.

I would like to hear from users of various combinations of the CX7's and linear amplifiers with any advice concerning specific problems encountered. Write to the editor, please.

I recently purchased and constructed the W7BBX programmable keyer for use with my CX7A. It is really a beauty! I have attached some literature for your information to this newsletter. Howard, W7BBX, provides all required PC boards at a cost of $30 postpaid. The boards are epoxy with plated-thru holes and predrilled and well worth the price. The features of the keyer speak for themselves.

I found that all parts are easily available from various mail order houses and in fact, the very complete manual suggests sources for most parts. When I built my keyer I did find a few errors in the manual but according to Howard, the revised manual being supplied with new orders has been corrected.

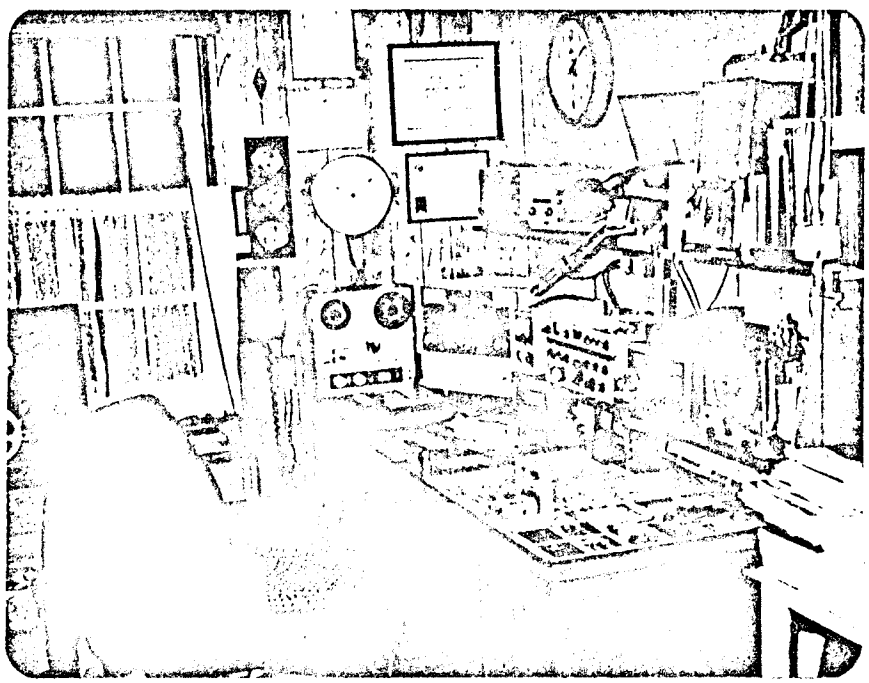
I use an A77 with my CX7A and the keyer did exhibit some RF problems. I cured the RF interference completely with three minor modifications: 1. The use of a grounded line cord, 2. The use of RG58 between the keyer and the CX7 (microphone cable did NOT work!) and 3. Bonding the cabinet chassis to the cabinet with a small piece of aluminum angle. (Howard indicated to me in a recent conversation that the updated construction manual contains these suggestions. ed.)

Heathkit HD-1410 Keyer RF Problems - Problems were experienced with this keyer at WA4TLB when operating at KW power levels into end-fed or open-wire fed antennas due to the high RF levels present in the shack. The keyer locked at power levels greater than 400 watts. The following actions cured this problem:

1. Bypass the a.c. line cord directly to ground with a .001 uf capacitor.
2. Use RG-58 coax for connecting the keyer output to the transmitter insteadof the microphone cable supplied by Heathkit.
3. Use shielded cable for connecting the keyer output from the circuit board to the phono jack on the back panel.
4. The keyer output at the transmitter end of the RG-58 was also bypassed.

FOR SALE - NIXIE TYPE COUNTER BOARDS. USED, BUT IN PERFECT WORKING CONDITION. BOARDS WITH PLUG-IN IC's $32. BOARDS WITH SOLDERED-IN IC's $22. ONE CX7 SPEAKER CABINET(NO SPEAKER OR GRILL) $49. ONE NEW POWER TRANSFORMER $115. ALL PREPAID. KØHHP.

Here is WA9LFR. I can't reproduce pictures very well but please note the good looking transceiver near the center. Jim writes that this is not a shack ....the floor is carpeted.



Got a spare picture of your station? Send it and I'll try to copy it the best I can for other S/1 owners to see. ed.

JUNE - 76

WINNER OF THE 1975 ARRL NATIONAL CONVENTION HOMEBREW DESIGN CONTEST!

PMK-1

The W7BBX Programmable Contest Keyer

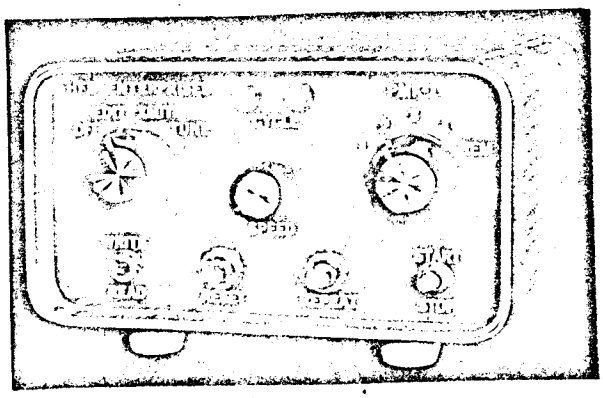
-Has virtually ALL the features required for smooth, effortless high-speed contesting!

-Is designed for high capacity, low cost, and convenient operation!

-Great for OSCAR use--keeps your hands free for satellite acquisition and tracking!

COMPARE THESE FEATURES WITH ANY OTHER KEYER!!

- "Contest-Engineered" design and layout
  - -Uncluttered, functional panel
  - -Manual, Semi-Automatic or Fully Automatic operation
  - -Programming direct from the paddle
  - -Velvet-smooth, jam-proof keying, 10-60+ WPM
  - -No-fail power supply to protect memory contents during power failure
- Immune to high RF fields
  - -N-Channel MOS RAMs
  - -Standard 7400 Series TTL logic
  - -All keying leads RF-bypassed
  - -Kilowatt-tested at 3:1 VSWR 80-10 meters
- Convenient Size: 3½"H x 5½"W x 7¼"D (LMB CO-3 cabinet)
- High capacity memory
  - -Four 512-bit programmable memories (each memory can hold "The quick brown fox jumped over the lazy dog's back")
- Quality construction
  - -Three commercial-quality PC boards, double sided construction with plated-thru holes
- 26 ICs, 8 transistors, 16 diodes
- On-the-air or off-the-air programming



SPECIFICATIONS:

Keyer Section:

Modified WB4VVF "Accu-Keyer" (QST August 1973).
Synchronous keying from paddle, 10-60+ WPM.
Iambic operation with DOT and DASH paddle memories.
Self-completing characters, perfect ratio and spacing.
External paddle, manual key or "Bug" input.
Internal sidetone oscillator & speaker with volume and pitch control (600-1200 Hz).

Output Keying Section:

Solid-state output for long life.
Compatible with cathode, sidetone/VOX-actuated and grid-block keyed transmitters. Separate key line output jacks for positive and negative keyed voltages up to ±150 volts.
"TUNE" position for steady keying during tune-up.

Memory Section (READOUT):

Single control to start memory readout.
Same control can stop message readout in mid-message; keyer automatically reverts to manual operation until restarted, then will continue memory readout from the point at which it was stopped (Semi-Automatic operation).
Message readout can be instantly interrupted merely by touching the paddle, manual key, or bug. The memory "holds" until keying stops; an adjustable delay (0.05-1 second) is automatically inserted, and readout of the memory continues from the point at which it had been interrupted (Fully Automatic operation). This can be used to insert an RST or other manually-keyed exchange into the middle of a pre-programmed message.
Automatic reset and setup at end of message readout.
Can be manually reset at any point of message readout (clock stopped & memory cycled to the beginning).
Manual message repeat capability (memory cycled to beginning, clock continues to read out memory).
Readout can be started and stopped by an external control such as a footswitch. Keeps hands free for paddle & loggin
Visual readout indicator (Green) lighted only during memory readout; indicator flashes when 87.5% of programmed message is read out.

Memory Section (PROGRAMMING):

Programs directly from the paddle.
Programming begins with the first key closure and continues for 511 bits, automatically erasing any previously stored message.
Automatic reset and setup at end of programming cycle.
Visual "write" indicator (Red) lighted when in the PROGRAM mode; indicator flashes when 87.5% of programmable capacity is reached, and returns to steady red when memory is completely programmed - reminds operator to switch to READOUT mode before again activating the paddle.
Memories can be programmed either on-the-air (your transmitter STO used), or off-the-air (internal STO used). STO can be wired to operate in both modes.

Power Supply Section:

Built-in fuse-protected AC power supply (100-130 VAC, 50-60 Hz., 6W)
Built-in trickle-charged NiCad supply (4-AA cells) protects memory contents for 2-3 hours. Saves reprogramming the memories when your Field Day generator runs out of gas.

Front Panel Controls:

FUNCTION (Off, Edit, Xmit, Tune), READ/WRITE, MESSAGE SELECT (1,2,3,4,Remote), SPEED, START/STOP, REPEAT, RESET

Rear Panel Controls:

Memory Restart Delay, STO Pitch, STO Volume, Paddle in, Manual Key or Bug in, Remote Start/Stop, Cathode Key Xmtr Line Out (positive voltage), Grid-block Key Xmtr Line Out (negative voltage).

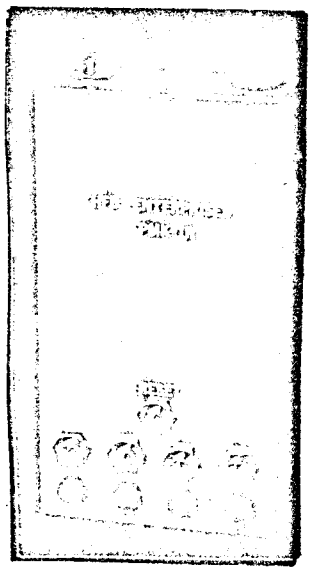
PMK-1R REMOTE OPERATING CONTROL -5- JUNE-76

For The W7BBX Programmable Contest Keyer

FOR THE ULTIMATE IN CONVENIENCE FOR HIGH-SPEED CONTEST AND DX OPERATING

NEW! In response to your requests at the 1975 ARRL National Convention

The PMK-1R Remote Operating Control can be placed right next to your paddle for maximum convenience during high-speed DX and Contesting operations. The PMK-1R is designed specifically for use with the PMK-1 W7BBX Programmable Contest Keyer and will control the message selection, reset, and repeat functions of the PMK-1 during readout. Simply choose the message you want to send by depressing one of the four bounceless message selection pushbuttons, and the PMK-1R selects that message, automatically resets the PMK-1 to the message beginning, and immediately starts message readout. Message selection is independent of the last message sent; therefore, again depressing the same pushbutton repeats that message from the beginning. Individual pilot lights indicate the message selected for quick reference. A RESET button is included to stop readout at any point in the message. Connection to the PMK-1 is made by a plug-in shielded cable to the keyer rear panel; all PMK-1 capabilities are retained whether or not the remote cable is inserted. All necessary power and logic controls are derived from the PMK-1. (5 ICs, 12 Diodes).



1½" x 3" x 5"

ORDER FORM

To: HFB Enterprises
P.O. Box 667
Herndon, VA 22070

Date_____

Please send me (postpaid in US and Canada) _____ sets of Printed Circuit Boards for the W7BBX Programmable Contest Keyer and Remote Operating Control, plus complete assembly manual, parts list, and operating instructions.

$30 per set.....____

VA residents add 4% tax...____

Call_____

Total enclosed.....____

Name_____

Address_____

City_____State____Zip_____

First heard about keyer in _____