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**QST Issue:** Jan 1988

**Title:** Tandem Match Corrections

**Author:** John Grebenkemper, KI6WX

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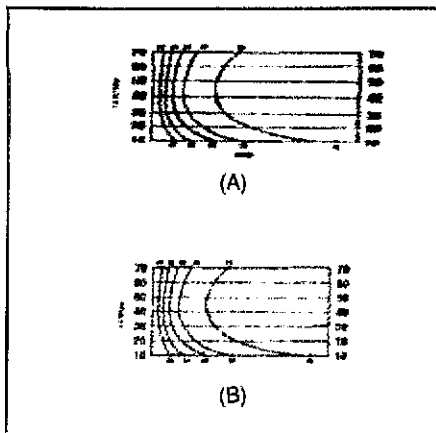


Fig 5—A comparison of picture sections made with the Sueker interface (A) and the simple interface (B).

gram to allow the use of the simpler interface.) These two picture samples were taken at noon to minimize multipath smear. The condensed mode, incidentally, is more readable than the full-width mode even though it is smaller. (The difference is comparable to that of NLQ v draft printing.) I do, however, occasionally have to use a magnifying glass to read the map. The condensed mode uses paper at half the rate of the full-width mode, and each map has a convenient note space next to it.

An automatic synchronizing code measures the black-dot count per line to detect the repeated 95% black lines during the sync period. The code then actuates the left edge of the picture just as a white tick occurs.

The scheduling program simply uses the computer's clock to turn the copying program on and off at whatever times you enter. A TUNE program is included to set up the receiver tuning before each copying period. This program also directly measures the clipper asymmetry so you can adjust the audio level for best results.

All of the accompanying pictures were made with an 8-dot, IBM-compatible printer using the Cardco + G printer interface with the C64. (The Xetec printer interface should also be compatible.) As is, the program should work with any printer using the 960-dot line command: CHR\$(27);"L";CHR\$(n1);CHR\$(n2), and the command CHR\$(27);"J";CHR\$(n) to advance the printer platen by n/216 inch. You can POKE in your own printer commands by merely adding a program line to the BASIC program used to control the whole operation.

Because a lot of folks still have 7-dot printers and may be interested in using the simple interface of Fig 4, I developed a program to accommodate them. Of course, the condensed mode and gray shades require an 8-dot NLQ printer, so are not available with the 7-dot program. (A good medium-resolution screen display program

is included on the disk.)

I'll be on a sailing cruise when this information is published, so I've arranged for the New Bern Amateur Radio Club to provide disks to interested readers; their fee is \$10 per disk. Be sure to specify which printer you're using (7- or 8-dot), and which interface (Sueker or simpler clipper) you plan to use. You can obtain the disks by contacting the New Bern ARC, PO Box 2483, New Bern, NC 28561.—Ben Vester, K3BC, 4921 Bonnie Branch Rd, Ellicott City, MD 21043

### TANDEM MATCH CORRECTIONS

□ There are six errors in the schematic diagram of "The Tandem Match—An Accurate Directional Wattmeter," Jan 1987 QST, pp 18-26. These errors are all located in the signal-processing portion of the circuit (p 23) and occurred from my incorrect tracing of the maze of wires on the original breadboard. The corrections include:

- The 330-k $\Omega$  resistor should be connected between the  $\sim 2.5$  V supply and the cathode of D14 (TP 9), not pin 6 of U4B.

- Change the diagram to show pins 4 and 7 of U7 to the 2.2-k $\Omega$  resistor attached to pin 1 of U3A; pin 8 of U7 connected to pin 2 of U3A.

- Insert a 1N914 diode in the line between the collector of Q4 and the circuitry associated with U3D and U7. The anode of the diode is connected to the collector of Q4, the diode cathode attaches to pin 13 of U3D.

- The 1-k $\Omega$  resistor and D10 connected between U4A pin 1 and the two 100-k $\Omega$  resistors should be eliminated and replaced by a direct connection between these two points.

- The jacks on the right-hand side of the diagram (p 23) labeled J1 and J2 should be labeled J3 and J4, respectively.

- On p 20, Fig 5, the 57- $\Omega$  resistor should be labeled 50- $\Omega$ .

Radio Shack no longer lists ICs U1-U4 numbered 276-1749 and 276-1750. Some stores may still have them in stock, however. There are other sources of supply for various items. The TLC27L2, TLC27L4 and CA3146 ICs can be purchased from Newark Electronics, 4801 N Ravenswood St, Chicago, IL 60640, tel 312-784-5100. The 1N5711 diodes are available from Surplus Sales, 2412 Chandler Rd, Bellevue, NE 68005, tel 402-733-9190. The LM334, LM336, 1% tolerance resistors and trimmer potentiometers are carried by Digi-Key Corporation, 701 Brooks Ave South, PO Box 677, Thief River Falls, MN 56701, tel 800-344-4539.

I've received many inquiries concerning the T-50-3 toroid material used for transformers T1 and T2 mentioned on p 24; the number is correct. Type 3 material is required to obtain sufficient inductance for the transformers to work on 160 meters.

If Type 2 or 6 material is used, the directional coupler will not work on 160 meters, and may not work on 80 meters. Type 3 material works fine through 50 MHz, and at 50 MHz, the difference in performance between Type 3 and Type 6 material cannot be measured.

On p 26, the date in note 8 should be corrected to read 1964.

My thanks to Dick Green, KA1LBW, who spent much time and effort working with me to locate the errors, and who provided the list of parts vendors. Lastly, please make note of my new address. —John Grebenkemper, KI6WX (ex-KA3BLO), 19490 Miller Ct, Saratoga, CA 95070

[Editor's Note: Photocopies of the corrected schematic diagram (p 23) for The Tandem Match are available free of charge from the Technical Department Secretary, ARRL, 225 Main St, Newington, CT 06111. Please identify your request as Corrected Tandem Match Schematic Diagram, QS-01/87.]

**Note:** All correspondence addressed to this column should bear the name, call sign and complete address of the sender. Please include a daytime telephone number at which you may be reached if necessary.

## Feedback

□ In "Amateur Radio and the Blind, Part 1," Oct 1987 QST, please make this change to the sidebar on p 28, left-hand column, fifth entry. The correct spelling of Bill's last name is Gerrey, and his call sign is WA6NPC. (Tnx to Ricardo J. Alfano II, W6FWX, for this information.)

□ Author Steve Stuntz provides us with the following corrections to his article, "A Packet Terminal for Atari Computers," Nov 1987 QST, p 17, Fig 4. On the DB-25 connector, the TRANSMIT DATA line should be shown connected to pin 2 (not pin 1); the RECEIVE DATA line connects to pin 3 (not pin 2).

## Strays

### I would like to get in touch with...

□ anyone with a schematic/parts list for a Knight KG663 regulated power supply. Lyle Seehorn, W7YKA, 3625 SW 328th St, Federal Way, WA 98023.

□ anyone with a schematic and parts list for a Midland Model 13-500 2-meter rig. Harold McCullen, K8LNR, 2215 N Charles St, Saginaw, MI 48602.