

Don Lancaster's

RESOURCE BIN

number eighty

Locating elusive test equipment manuals.

Our usual reminder here that the *Resource Bin* is now a two-way column. You can get tech help, consultant referrals and off-the-wall networking on nearly any electronic, *tinaja* questing, personal publishing, money machine, or computer topic by calling me at (520) 428-4073 weekdays 8-5 Mountain Standard Time.

I'm now in the process of setting up my new *Guru's Lair* web site you'll find at (where else?) www.tinaja.com This is the place you'll go for instant tech answers. Among the many files in our library, you will find complete reprint sets for all of the *Resource Bin* and other columns. Plus a brand new **Research InfoPack Service**.

You will get the best results if you have both *Netscape Communicator* and *Acrobat Reader 3.0* installed.

Service Manuals and Schematics

It is infinitely easier to calibrate test equipment or fix consumer electronics whenever you have the exact service literature available. A lot of this info can be hard to pin down. Especially older gear from companies who have folded or merged. But there's all sorts of oddball insider sources when you know just where to look.

An obvious starting point can be all those manual and service lit ads right here in *Nuts & Volts Magazine*. Other places to check are *Electronic Servicing*, *Computer Service and Repair*, *Antique Radio Classified*, *Recharger*, and *CompuMart*. Web newsgroups include...

fido.7.mo.hardw-repair
misc.industry.electronics
sci.electronics.design
sci.electronics.equipment
sci.electronics.misc
sci.electronics.repair
sci.electronics.test

The actual manufacturer's often are not that great a place to go for service

info. They only go back so far and do tend to have outrageous charges for useful info. But you always might want to try *Tektronix*, *Hewlett-Packard*, *B & K*, *Fluke*, and other test equipment sources on your first attempt.

A list of some used test equipment sources appears in [MUSE129.PDF](#) on my www.tinaja.com. Many times, these folks will have just the manual you need. Note that it is not unusual for the service manual for a piece of used test equipment to cost *much more* than the gear itself.

Let's look at three unique electronic service sites, followed by a rundown of the major and minor players in the repair and schematics field...

Sci.Electronics.Repair FAQ

This great place to start off is run by the leading *Usenet* newsgroup on electronic repairs. Pages on *Sources for*

NEXT MONTH: Don reveals major new opportunities in mil surplus electronics.

Manuals/Schematics and their *Sources for Obsolete IC's/Parts* are enormously useful. Their main url is www.repairfaq.org/REPAIR/F_Repair.html

Notes on TV Repair & Diagnosis

Do check out this really informative site you should be able to link to at www.eng.usm.my/~musa/html/tv.html Besides all those detailed manual and service info source listings, they have dozens of pages on everything from tv troubleshooting to color balance to instant-on to pincushion adjustments to setup menus.

Their pages on *Repair Information & Parts Sources* and *Service Manuals for Really Old TV's* are quite useful.

These pages are most worthwhile.

Radio Era Archives

This exceptionally impressive web site is up at www.electrosys.com/rea.htm

They have dedicated themselves to preserving the past age of great old radio books by republishing them on CD ROM. There's over 5000 old book resources, plus ham and test manuals, stories on repair and restoration, and bunches more.

Such as the radio schematics in two volumes from 1915 to 1945 and 1946 to 1963. Lots of original ham and other manuals are stocked. Along with the links to other old radio sites.

By the Numbers

Here's most the rest of the gang...

Antique Audio- They do carry older factory manuals for Zenith, RCA, and others. Also Beitman's and Sams. The costs start at \$5 per schematic or docs to eight pages, fifty cents beyond.

Antique Electronics Supply- Sells pre-1960's service manuals for electronics and ham receivers. Prices start at \$4.50 and increase for longer docs.

Alton Bowman- This eclectic source has everything from garage doors to electronic organs. They specialize in the 1920 to 1970 era. Typical schematic reprints are \$5 and up.

Ardco Electronics- The Hallicrafter's manual source run by the son of their service manager out of Illinois. Prices range from \$7 to \$20.

Diverse Devices- British outfit which targets used test gear, schematics, and pinouts. Jolly good show.

Fair Radio Sales- Still at their same old stall after all these years. They handle all WWII and newer military surplus. Often, full manuals, partial manuals, and a few reprints may be available at reasonable prices. But inventory is catch-as-catch-can.

Allen Fulmer— A Florida site which specializes in the big three of Fluke, HP, and Tektronix. The Tek doghouse scope manuals are \$20, plugins \$5. Lots of newer stuff is available.

Don Beehler— Source for out-of-print ham manuals which includes Drake, Hammarlund, Hallicrafters, and a few others. Several mil surplus manuals. Pricing from \$2 to \$12 each.

Walter Besito— Long time source for manuals for vintage ham radio, test equipment, CB, and military stuff. His email is klrts@juno.com

Bowmarc Services— Wyoming outfit supplies reverse engineering services. A backlist includes many thousands of devices at reasonable prices. Also offers circuit tracing and analysis on a contract or custom basis.

G. Cain— Reprints the US Army tech manuals for radio equipment made from 1940 to 1979. Cost is a quarter per page. Also have master directories and surplus search info available.

Philip Carpenter— Has got ham radio operation and service manuals from Aea to Yaesu. Provides a free search service. richcarp@worldnet.att.net

Compass Electronics Supply— Stocks military surplus tech manuals.

David Crowell— Stocks hundreds of manuals and schematics.

Jim Farago— Complete sets of Rider Manuals that cover radios from 1924 to 1954 Cost is \$3 per copy.

Feitek— Buys and sells lots of used test equipment manuals.

Bob Garcia— A long retired Tektronix engineer who is very much an expert in scope repair and manuals. He also rebuilds and resells older Tek scopes on the hamfest circuit.

Marty Gasman— Marty focuses on old audio repairs and owner's manuals, along with original suppliers lit. Web site is www.tiac.net/users/mgasman He also does some closeout and odd lot computer sales. Apparently prefers to work with email only, as I could not find his address or phone number.

Stan Griffiths— Stan both authors and publishes his *Oscilloscopes - Restoring a Classic* book on early Tek scopes and is a leading authority. Especially on all the Tek vacuum tube "doghouse" series. More info on his book can be found at www.tinaja.com/amlink01.html Stan is supposed to be working on

several books for the newer Tektronix scopes and other instruments.

Grimm's Manuals on-line— Has ham radio reprints of Hallicrafters, Drake, E.F. Johnston and others. Welcomes all GIF or JPG scanned contributions. Access is via <ftp://198.28.36.115>

Ham Manuals Source of collected ham radio manuals on CD ROM.

Hammarlund Guy— Stocks Collins and Hammarlund manuals.

Heathkit— Genuine Heath manuals do remain available by way of *Heathkit Educational Systems*. These once were a superb way to scope out how things worked and how circuits operated. Much of it is now, of course, dated.

Nick Hersey Sells TM and lots of other military manuals.

Steve Hevener— Provides his WWII military radio catalog; has surplus manuals and lots of historical info.

Hi-Manuals— Commercial, radio, and ham manuals from the 1930's to the 1970's. Also resells Sams Photofacts, Heathkit manuals and RCA tube stuff. Provides data on any tube for \$5.

John Kakstys— Sells ham radio and other manuals.

Dean Kidd— A retired Tek engineer who apparently has a mountain of older and impossible-to-find parts. He also sells older Tektronix manuals. I got a transformer here for a TM series mainframe. Reasonable price and it worked like a champ.

Steve Kimber Manuals— Stocks ham radio gear manuals.

Lindsay Publications— Lindsay has all sorts of "new old" books covering everything from "lost" machine shop technology to his antique and classic radio schematics. Start off with their *Radio for the Millions* book

The Manual Man— A labor-of-love operation from Pete Markavage who has manuals for both new and older test gear. Also has amateur, audio, and radio listings.

Manual Merchant— Buys and sells used test equipment manuals.

Manuals Plus— This Utah source has thousands of service and operational manuals of all types of old test and measurement equipment from the 1950's to present. Contact here is Jack House. Covers all the majors and some of the more obscure sources.

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Antique Radio Class PO Box 802 Carlisle MA 01741 (508) 371-0512	Electronic Servicing PO Box 12487 Overland Park KS 66282 (913) 492-4857	Hevener, Steve 3583 Everett Rd Richfield OH 44286 (330) 659-3244	Manuals Plus PO Box 549 Tooele UT 84074 (801) 882-7188	Radio Era Archives 2043 Empire Central Dallas TX 75235 (214) 358-5195	Tektronix PO Box 500 Beaverton OR 97077 (800) 835-9433
Besito, Walter 140 Southmayd Rd Waterbury CT 06705 (203) 756-6376	Fair Radio PO Box 1105 Lima OH 45802 (419) 223-2196	Hewlett-Packard Manuals PO Box 1145-Mail Order Roseville CA 95678 (800) 752-0900	MECCA 1132 Conway Dr Newark OH 43055 (614) 522-4944	Recharger 4218 W Charleston Blvd Las Vegas NV 89102 (702) 438-5557	Test Equipment Manuals PO Box 390613 San Diego CA 92149 (619) 479-0225
Bowmarc Services PO Box 1113 Casper WY 82602 (307) 234-3488	Feitek 2752 Walton Rd St Louis MO 63114 (314) 423-1770	Hi-Manuals Al McMillan PO Box 802 Council Bluffs IA 51502	MI Technologies 3310 E Peterson Rd Troy OH 45373 (937) 335-4560	Sams, Howard W Co 3647 Waterfront Pkwy E Dr Indianapolis IN 46214 (800) 428-7267	Thompson, Don 20650 Prairie St Chatsworth CA 91311 (800) 423-5400 X2537
Carpenter, Philip 4 Westwood Dr Belchertown MA 01007 (413) 323-4088	Fluke PO Box 9090 Everett WA 98206 (800) 443-5853	Kakstys, John 18 Hillcrest Terrace Linden NJ 07036 (908) 486-6917	Musty Manuals 645 Wheeling Rd Wheeling IL 60090 (708) 634-6467	Sarrjo, Ray 6147 Via Serena St Alta Loma CA 91701 (800) 413-1129	Tucker Electronics 1717 Reserve St Garland TX 75042 (800) 527-4642
Compass Electronics 465 Market St Paterson NJ 07501 (973) 278-5708 FAX	Fulmer, Allen 2538 Sweetgum Way W Clearwater FL 34621 (813) 796-3424	Kidd, Deane 27270 SW Ladd Hill Rd Sherwood OR 97140 (503) 625-7363	Nowlen, Mike PO Box 1941 Herndon VA 20172 (703) 716-1363	Slep Electronics PO Box 100 Otto NC 28763 (704) 524-7519	US Army Military History Institute Carlisle Barracks PA 17013 (717) 245-3611
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Computer Service Repair 5931 S Middlefield Rd #102 Littleton CO 80123 (303) 797-8522	Griffiths, Stan 18955 SW Blanton St Aloha OR 97007 (503) 649-0837	Lindsay Pubs PO Box 538 Bradley IL 60915 (815) 935-5353	Prester, Richard 131 Ridge Rd W Milford NJ 07480 (973) 728-2454	Synergetics Box 809 Thatcher AZ 85552 (520) 428-4073	W7FG Vintage Manuals 402731 W 2155 Dr Barlesville OK 74006 (918) 333-3754
Crowell, David 40 Briarwood Rd N Scituate RI 02857 (401) 934-1845	HAManuals 29926 SE 408th St Enumclaw WA 98022 (360) 825-1167	Manual Man 27 Walling St Sayreville NJ 08872 (908) 238-8964	Probe Master 215 Denny Way El Cajon CA 92020 (800) 772-1519	Tannenbaum, AG PO Box 386 Ambler PA 19002 (215) 540-8955	Western Nebraska Elec HC-84, Box 1 Potter NE 69156 (308) 879-4552

Mecca— They stock used manuals for test equipment, ham shack stuff, and early radios. Pricing is \$5 to \$35.

MI Technologies— Call themselves the monitor and computer schematic info experts. They'll also do some reverse engineering on monitors, CPU's and power supplies. Also offer a *Monitor Wizard* software package that includes over 800 schematic diagrams.

Mike Nowlen— Trades test equipment manuals and hi-fi service info. His website is mnowlen@cw.net

Musty Manuals— Extensive collection of owners, service, and a few maint manuals, plus some early magazines. Has a nice catalog available.

Old Tyme Radio Co— uh, before Sams was Riders. These folks stock reprints of early Riders manuals for antique and classic radios. Along with RCA tube manuals and such.

Chuck Penson... Has got lots of old Heathkit manuals. Visit his web site at comped.sci.mus.mn.us

Richard Prester Sells amateur radio and other manuals.

Probemaster— These folks make low cost probes, scope and general use. They can replace more expensive Tek or HP probes and are nearly as good. A typical 10X scope probe might cost \$27, or under half that of Tek list.

An aside for a few obvious tips here: Be sure your scope probe gets matched to your input! Typical 10X probes expect something like a one meg input and 15 picofarads or so. Certain fancy high frequency plug-ins for premium scopes (A Tek 7A24 ferinstance) may have 50 ohm inputs instead. *A regular probe will not work with one of these!* Further, any probe will have a twist or screw adjustment that can *calibrate* or adjust its high frequency response. Calibration gets done by forcing a square wave flat across its top. *Once calibrated, scope probes must never be interchanged or swapped around!*

Continuing down our list...

Puett Electronics— Schematics for most any radio receiver at \$5 for the bare schematic and \$15 for more detailed docs. Has Rider indexes. Mostly on classic radio plus some amateur and test equipment. Also stocks antique radio parts and old radio shows.

Howard W Sams— Long the definitive source for tv repair info. Also radios, VCR's, CB sets, and some computers and manuals. Arranged in *Photofact* packets with schematics and service info. But used is cheaper.

Raymond Sarrjo— Whose website is at www.sario.com This California outfit specializes in vintage radio manuals. Web pages cover AEA to *Hammarlund*, *Hamtronics* to *Kenwood*, and *KLM* to *Zenith*. Includes some mainstream test instruments as well.

Slep Electronics— Has got service and operation manuals for amateur radio, mil surplus, commercial test gear and antique radio. A fairly impressive collection can be found here.

Steimetz Electronics– Has Riders and Beitman books on earlier radios and Sam's Photofacts. Prices start at \$3 for available schematics.

Jim Tannenbaum– This highly useful repair and service manual source also stocks used Sams Photofacts. Typical prices are \$5 for an older tv photofact, and \$7 for newer ones. Also has the original and Sams VCR manuals.

Tech Systems Electronics– Buys and sells used test equipment manuals.

Test Equipment Manuals– Used real service and operating manuals for Tek and HP. Costs are typically in the \$15 range. This one gets run by Ed Matsuda in California.

Don Thompson– Don offers superb laser printer service training and lots of repair parts, along with original laser printer service manuals from *Hewlett-Packard* and others. His videos and manuals are outstanding

Tucker Electronics– One of the higher profile refurbished test gear outfits, they can be a useful source for owner and service manuals on older test gear. An extensive list of similar firms at www.tinaja.com/glib/muse129.pdf

US Army Military History Institute– Has tech manuals for mil radio stuff.

Offers interlibrary loan. Reprints are \$6 for the first ten pages of a manual, plus a quarter per page beyond that.

US Surplus– Buys, trades, and sells electronic test equipment manuals.

Western Nebraska Electronics– Stocks complete set of early Collins radio manuals. Price is \$12.50 per reprint. Also has lots of early Collins parts.

W7FG Vintage Manuals... Site carries over 4000 manuals, mostly on ham gear test equipment, both old and new. Also a few antique radio books, components, and projects. The web site is eigen.net/w7fg Included are lots of links to other manual sites.

Some Books

Some additional useful links on these topics can be newly found at www.tinaja.com/eeweb01.html and my www.tinaja.com/dtkwb01.html I have gathered together several books on electronic servicing and related topics at www.tinaja.com/amlink01.html

This Month's Contest

Once again, I have a feeling I may have missed one or two biggies in the used manual field. Those names and websites and phone numbers also do have a way of rapidly coming and

going. So, for this month's contest, just tell me about any new electronic service manual resource that I might have missed or gotten wrong.

There should be a largish pile of my new *Incredible Secret Money Machine II* books going to the dozen or so better entries, plus an all-expense-paid (FOB Thatcher, AZ) *tinaja quest* for two that will go to the very best of all.

To be fair to everyone, all entries must be written and submitted via snailmail. Send all your *written* entries to me here at *Synergetics*, rather than to *Nuts & Volts* editorial.

Let's hear from you. ♦

Microcomputer pioneer and guru Don Lancaster is the author of 35 books and countless tech articles. Don maintains his no-charge US tech helpline found at (520) 428-4073, besides offering all of his own books, reprints, and consulting services. Don also offers a free catalog full of his unique products and resource secrets. The best calling times are 8-5 on weekdays, Mountain Standard Time.

Don is the webmaster of his Guru's Lair found at <http://www.tinaja.com>

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