



# The Worldwide TV-FM DX Association

*Serving the VHF-UHF Enthusiast*

## VHF-UHF DIGEST

E-ZINE VERSION

**MARCH 2003**

The VHF-UHF Digest is the official publication of the Worldwide TV-FM DX Association dedicated to the observation and study of the propagation of long distance television and FM broadcasting signals at VHF and UHF. The WTFDA is governed by a board of directors: TOM BRYANT, GREG CONIGLIO, BRUCE HALL, DAVE JANOWIAK AND MIKE BUGAJ.



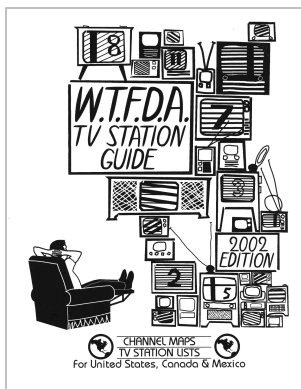
Finally! For those of you online with an email address, we now offer a quick, convenient and secure way to join or renew your membership in the WTFDA from our page at:

<http://fmdx.usclargo.com/join.html>

Dues are \$25 if paid from your account and \$26 if paid by credit card because of fees charged. And of course you can always renew by check or money order for the usual price.

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### The WTFDA TV STATION GUIDE

Start your new year with the most comprehensive listing off North American Television stations in print! Just \$23 US will get you one. Mail your check or money order today. Make it payable

to Dave Janowiak and mail it to John Ebeling, 9209 Vincent Avenue S., Bloomington, MN 55431-2157. Remember, there won't be a station guide for 2003 so get your copy now for the 2003 DX season before they're out of print.

Can anyone smell Spring yet? I, for one, can almost taste it. It has been a long, long winter. I'm looking forward to days when E-skip stays in all day long. That time isn't very far away.

You will notice some columns never made it here via email. Keith did tell me he had nothing for NFM. I don't know what happened to FM or TV News but I assume the editors had other priorities.

Instead, though, you'll find other things to keep you occupied this month. One thing you'll find for sure is plenty of reading material. All in all I think we have a good mix this month and I hope you'll enjoy it. -Mike

## WTFDA CONVENTION 2003!



WTFDA Convention 2003 will take place in Western, NY, brought to you by WTFDAers in Rochester (Scott Fybush, Rick Lucas, Jerry Bond), Buffalo (Greg Coniglio and others) and all points in between (Jim Renfrew). Look for a motel announcement (tentatively in Batavia, halfway between Rochester and Buffalo with a great shot into Canada on FM and TV) and more details soon.



# The Mailbox

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## MARCH 2003

The month of February, at least through the first half of the month, was uneventful, if not downright boring. Reports of E skip were rare. Tropo was non-existent for the most part. As we now head into the month of March, hopefully conditions will improve a little for some of us. Conditions can't get much worse.

It now appears that I stamped the envelopes of some members by mistake with that dreaded red stamp that tells you that your membership is ending and that you had better renew. That was a mistake on my part last month as I was trying to do things a little differently (and faster). It didn't work. Just be assured that the date on your mailing label is right.

## MEMBERS AND MORE

We have three new members this month. Give a big WTFDA welcome to Larry Meade in the windy city of Chicago, Roy Garrison from Chaplin, CT (which is not very far from here) and Carlos Diaz down in Alexandria, VA. If you own a computer and haven't done so yet, log on to the WTFDA reflector on Topica and enjoy yourselves.

Over on the renewal side we have another year's worth of dues from Jeff Wolf(MD), William Higgs(CA), Paul Hansen (MA), Dan Dankert N6PEQ(CA), James Brann (NC), Barry Shinall (VA), Ken Onyschuk (IL), James Nahirniak (MI), Harry Hayes (PA), Scott Hood (MA), Joseph Kureth (MD), Luke Skywalker Steele (MO), Michael Cooper (GA), Paul Mitschler (NM), Peter Oprisko (IN), Bruce Hall (ON), Burton Zacks (GA) and Brian Farnsworth (WV). Thanks to you all for hanging around another year!

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 YAMON DX FEDERATION

## WON'TCHA MARRY ME BILL?

One of my favorite songs is Wedding Bell Blues by the 5<sup>th</sup> Dimension. And I can hear Marilyn McCoo pleading for Bill to marry him. Well, Bill is getting married and I'll let him do the talking: "For those who check the Tropo Maps regularly...new maps will now be ready consistently by 1700 UTC (12 PM EST - 1 PM EDT) each day. This will help reduce frustration when trying to look if the new maps are in yet.(Actually most days they should be available by 1630 depending on the speed of the Internet). Thanks to more automation, the tropo maps will (hopefully) even be updating themselves while I am on my honeymoon in Cuba in May...so no more lengthy outages like the last two September vacations.

I'm glad to report that Kerry is very DX-friendly, is a licensed ham VE3WKL (and I'm not!), and is keen on astronomy related DX such as MS, AU and other "radio astronomy" (listening to Jupiter, etc). Watching meteors on a clear night from the car window while listening to them on the car radio are our favorite DX pastime that we can share together. She's thinks its neat to "hear" the meteors as well as see them. The fluttering of the signal gives an added dimension to them. But that's only 1 of the 3,000,000 reasons why I want to marry her. Cheers, Bill H."



## PROJECTS AND GOALS FOR 2003?

I posted this topic on the WTFDA list recently and had a couple of replies on it. My first project is to go on the roof and find out why my rotor doesn't work anymore. WTFDAer Bill Mitchell said to check the rotor cable, and I will do that as soon as the snow and ice melt so I can see it. I'll try changing the cable. If that works, fine. If that doesn't work then it's off to Rich Wertman for a new rotor. As far as DX goals go, I'm still looking for Tennessee and Georgia via tropo, and I'd still like to get Colorado via eskip. We'll see what happens this summer.

Scott Fybush posted: "My big three: 1. Improve my FM situation. The CM-1110 VHF antenna now on the roof is great for low-band V, OK for what little hi-band V is possible at 4300 feet from my locals on 8/10/13, lousy for doing any directional FM work. I'd like to put up an APS-13 if I can figure out a decent rooftop configuration. (The McVey filter work on my Denon TU680NAB opened things up dramatically for me; I never dreamed I'd be able to do so much with three B FMs and an A just 4300 feet away, but I'm regularly logging first-adjacents to all of 'em. Thanks, Tim!) 2. Along with my fellow western NY WTFDA'ers, plan a convention that can't be beat. July 11-13, Batavia NY, be there! 3. Get ready for the arrival of Baby Fybush in September. Bill Nollman's my role model on this one - if he can DX with Emmy, there's hope for me yet. And maybe a late-night feeding will give me an excuse to check for some late-season skip I might otherwise miss, right? ;-) (Oh, before I forget, congrats on the new baby, Scott and congrats to you also, Mr. H. -Mike)

Now Mr McVey chimes in: "Projects: put up a second mast & rotor with an APS-13. My old probe 9 bit the dust after serving me for 15 years. Also, the mast & rotor it was on "sprouted" VHF and UHF antennas last fall! Buy TV tuner card (maybe DTV). This will be the first year for me to actually do TV DX'ing. Send stats to Nordquist. And, yes, we have HOA but they're boneheads and i really don't give a (fill in favorite expletive here) what they think.

Targets: get first Canadians (it's insane not to have logged anything from that foreign, exotic land only 400 miles away). Oh, yeah, and not be out of town on business when the 1000 mile ducts happen. Try to get all the states I SHOULD have easily had in my log but don't: NH, GA, MI, IN. "Work all stations" in VA and MD (not counting LPFM, & translators).

Would be cool to hear my old hometown area of Memphis (how hard can it be to hear a station running 300kW?!). California is always a target here. (OK, OK, so i got carried away...) Cheers, Tim".

## MT. WASHINGTON BURNS

Scott Fybush also posted this on February 9<sup>th</sup>..."Mark Erickson of WOKQ just called me to tell me that the former WMTW building on Mount Washington NH was completely destroyed in the fire this afternoon. Only the metal entranceway survives. Everything else is simply...gone.

WPKQ 103.7 and WHOM 94.9 are off the air; WPKQ's transmitter (in the old Armstrong building) and antenna are intact; WHOM's transmitter (in the WMTW building) was destroyed and the status of its main antenna is unclear. Its backup antenna is intact.

However, the loss of the WMTW facility means no generator power on the Rock. The Observatory staff were evacuated by Sno-Cat a short time ago. Mark says they'll try to haul a generator up there tomorrow (can you imagine - in this weather?), and WPKQ could be back on the air tomorrow.

As for WHOM, its programming will shortly reappear on one of the WCYY frequencies in the Portland market (I'm guessing most likely WCYI 93.9 Lewiston), and the expectation is that a STA will soon be filed to use the WBLM 102.9 auxiliary facilities in New Gloucester as a temporary WHOM site until something can be done up on the mountain.

The DX potential here is interesting, of course; one wonders, also, if whatever started the fire would have been caught - and quickly - if channel 8 were still up there and the building were still manned 24/7. Yikes."

## LAST BUT NOT LEAST...

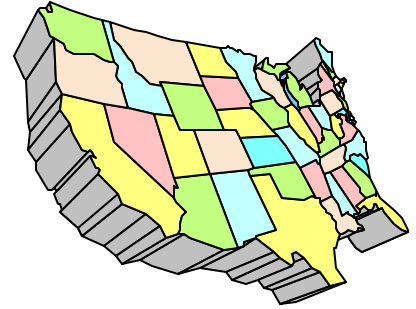
Here's a couple of quick notes. Roy Barstow writes that he has a computer now and his email address is [roybarstow@hotmail.com](mailto:roybarstow@hotmail.com). He's another one who thought his membership was ending prematurely, thanks to me.

Ken Onyschuk writes that the building he lived in was sold and now he's living in a new home on Joliett's far East Side. He also mentions a new WLMV-LP 103.9 on the air and WBVS 100.7 changing calls to WRXQ.

And that's it for me. See you all next month. Think Spring! -Mike

# Western TV DX

VICTOR FRANK  
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WOODSIDE, CA 94062-4554  
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Dennis Park Smith, 3605 San Remo Drive, Santa Barbara, CA 93105-2523 (805)687-7803

Seen in wee hours when KAZB-LP 65 Bakersfield (45/70) was off.

This report is for January 2003. There was almost no good coastal tropo DX this time (TV-FM to San Diego/Tijuana, 200mi/320km), and only a little bit of up-to-poor conditions now and then. Much of the month had unsettled weather.

Also in Wasco on the same dates and tropo as above, the following were seen only as offset CCI (most likely probabilities) under stronger signals.

- Jan 1-2 am: None (Continuing from Dec 28)
- Jan 2 eve-5: Variably poor (Warming 3-7, 80° F)
- Jan 6 – 12: None (Strong Santa Ana wind S of here. Jan 8 sneaky low pressure, cooling. Continued unsettled thru Jan 10)
- Jan 13 am-15 am: Foggy, shallow inversion  
High pressure, some warming.
- Jan 15 eve-17 am: None (inversion gone)
- Jan 17 eve-18 am: Fair to poor
- Jan 18 am-20aft: Out of town, in Wasco
- Jan 20 aft-21: None (Low pressure, unstable)
- Jan 22-23: Poor
- Jan 24-27 aft: None
- Jan 27 eve-28 am: Poor
- Jan 28 eve-29 am: Fair (High pressure, stable, more warming)
- Jan 29 eve: Good
- Jan 30: Fair (Some cooling)
- Jan 31: None

- KMPH-LPt 17 Merced u/ KGET 17 Bkrsfld 145/230
- KBSVt 23 Ceres u/ KERO 23 Bkrsfld 160/255
- KNVnt 24 Chico u/ KSEE 24 Fresno 375/700
- K27GZt 27 Mariposa u/ new 27 Bkrsfld 175/280
- KEXT-CAt 27 Modesto u/new 27 Bkrsfld 175/280
- KSPXt 29 Sacramento u/KBAK-29235/375
- KCSO-LPt 33 Sacramento u/KJOH-LP 33 240/385
- KMMW-LPt 47 Stockton u/KGPE-47 Fres. 200/320
- K49Eot 49 Stockton u/KMXT-49 Visalia 200/320
- KAKK-LPt 52 Porterville u/KSUV-LP-52 70?/110?
- KQCA 58 Stockton u/KBFX-LP-52 215/345

I have not yet seen lds or even programming in Wasco on any of these CCIs, except KQCA 58 before. Except for KQCA, all have been noted as CCI-only before, including now new possible KAKK-LP 52. All of these offset signals were on the weak side with nothing particularly intense this time. Therefore, almost all would be new loggings if I could be absolutely sure with IDs/programs.

## Wasco Report

Receiver: Somewhat oldish Panasonic 23" color  
Antennas: 4-bay UHF conical at 16 feet AG.  
1-bay VHF conical at 10 feet AG,  
armstrong rotatable.

On Jan. 18 drive to Wasco, another logging of interest was on State High 33/166 coming down of the mountains into the south end of the San Joaquin Valley near Maricopa. A flat boundary of fog could be seen below with clear air above at aprox 1000 feet elevation. At the Grocer Summit stop at aprox 1500 feet, K15ET Merced/Fresno (KFTL-64 Stockton translator) was noted on my battery TV at aprox 200 mi/320 km, but in Wasco (at 325 feet ASL), there was no sign of it at this time at 145 mi/230 km, so it may still be on reduced power unlike before, making the summit observation all the more interesting (although the Station Guide has shown authorized ERP all along as only 320 Watts).

I was in Wasco for a few days during the Central Valley's winter fog season, hoping for some intense "Tule-fog tropo DX," a stable, between-storms in California's 400mi/640 km-long San Joaquin/Sacramento Valley. It was fairly good, though not as intense this time as hoped. Some FM was also noted; see report in Southern FM-DX.

Best of DX to All. Dennis

- Jan 18-20 tr all California mi/km
- KCRA 3 Sacramento NBC poor 215/345
- KVIE 6 Sacramento PBS poor 215/345
- KXTV 10 Sacramento ABC fair 215/345

- Seen in wee hours when new local KERO-DT 10 Bakersfield (45/70) was off
- KOVR 13 Stockton CBS fair 215/345
- KAZV-LP 14 Modesto local pgms poor 175/280
- KUVS 19 Modesto Uni excellent 175/280

- This was the best yet seen—snowfree at times
- KMAX 31 Sacramento UPN good 215/345
- KTXL 40 Sacramento Fox vy good 215/345
- Quite steady the entire time.
- KKPX 65 San Jose Pax vy poor 175/280

Marvin Shults, RR1, Toulon, IL 61483

- August 2002 CDT
- 8 tr 2055 KARE 11 MN
- 2055 9,11 MN
- 2056 KSAX 42 MN

- October 2002
- 6 Es 2053 WPBT 2 FL
- 2053 WEDU 3 FL

- November 2002 CST
- 30 Es 1730 WWAY 3 NC
- WCBD 2 SC

1800 WPBTt 2 FL  
 1934 KBEQ 2 TX  
 1956 WPBT 2 FL  
 2005 WEDU 3 FL  
 2059 WESH 2 FL  
 2124 ICR 2 Cuba  
 December 2002  
 28 Es 0500 CICT 2 AB  
 MS 0515 CKCK 2 SK CTV TP  
 January 2003  
 6 tr 2130 KARE 11 MN  
 2130 KMEG 14 IA  
 21 Es 1859 WPBT 2 FL

Jeff Kruszka, 5024 S. Braxton Ave., Baton Rouge, LA 70817

November 2002 CST  
 8 tr 0649 KXAN 36 TX 395  
 9 tr 1730 XHAB 7 TA 505  
 1828 KEYE 42 TX 395  
 KXAN 36 TX 395  
 2026 KEDT 16 TX 425  
 2028 KVEO 23 TX 500  
 2030 KNVA 54 TX 395  
 2111 KTBC 7 TX 395  
 2138 KLRU 18 TX 395  
 2141 KXAM 14 TX 445  
 21 tr 0650 WBXS-CA 50 LA 205  
 0656 KADO-LPt 40 LA  
 K42FEt 42 LA  
 22 Es 2228 unid 2 SS floating o/WBRZ  
 30 Es 1548 unids 3,5  
 2133 WSAZ 3 WV 740

December 2002  
 2 Es 1941 unid 4 SS  
 6 GW 2201 WLFT-CA 30 LA moved from  
 52, incr. power 10  
 7 Es 1944 unids 3-5 SS  
 1950 XHG 4 JAL "e4"1020  
 15 tr 2051 KTMD 47 moved from ch.  
 48  
 16 tr 0705 unid 66 ESE  
 21 tr 0009 KXAN 36 TX 395  
 KEYE 42 TX 395  
 KNVA 54 TX 395  
 0025 KUIL-LPt 64 TX very low

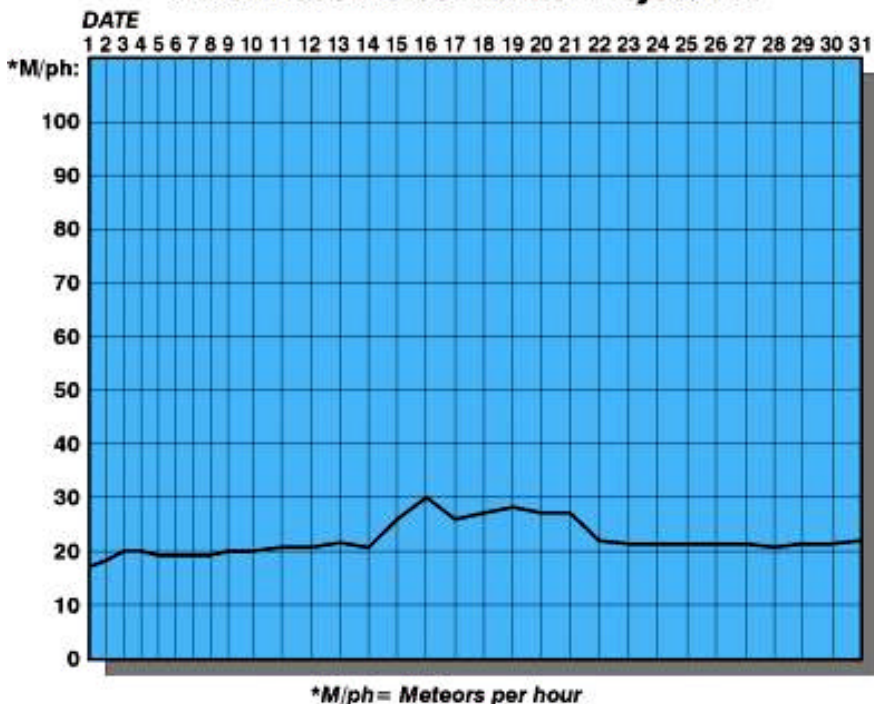
audio

January 2003  
 5 Es 1955 unid 3, 4  
 14 GW 0647 K -CA 41 LA "WBTR"  
 move from ch. 19 10  
 20 tr 2213 KXAN 36 TX 395  
 2225 KXAM 14 TX 445  
 2228 KNVA 54 TX 395  
 21 Es 1838 unids 3-5 SS  
 1840 XHAB 7 TA 505  
 30 tr 1712 KLRT 16 AR 305  
 1714 KTHV 11 AR 305  
 1813 KATV 7 AR 305  
 1950 KASN 38 AR 270  
 2224 KVTH 26 AR 295  
 2250 WZTV 17 TN 465  
 2255 WHNT 19 AL 400  
 2307 WHDF 15 AL 360  
 2315 WPGD 50 TN 480  
 2316 WZDX 54 AL 400  
 2318 WXTX 54 GA 358  
 2321 WTJP 60 AL 390  
 2324 WDSI 61 TN 465  
 2332 WJFB 66 TN 485  
 2339 WFIQ 36 AL 360  
 2354 WSTR 64 OH "WB 64,"  
 area code  
 513  
 705  
 31 tr 0008 WKOIt 43 IN TBN  
 0013 WTCI 45 TN calls in bug  
 lower right 465

The new local on 30 has got to be stronger than the listed 50 kW, because it's obliterating everything 2 channels on either side except in the strongest of tropo openings. I can get DX over LPTVs on chs. 19 and 21, and they're listed at 150 kW. Even new ch. 41 doesn't appear to be as strong and it's supposedly also 50 kW. At least with "WBTR" moving from 19 to 41, the new owners apparently reduced the power on 19, because now I can DX through it again (as evidenced by reception of WHNT).

Glad to see the return of some decent tropo on Jan. 30. Logged a new tropo state (Ohio) and almost another (IN).

### March 2003 Meteor Scatter Projections



### METEOR SHOWER GUIDE

It's another quiet month for meteors. A quick glance at the chart for March shows little unusual activity except for the period of the 16<sup>th</sup> to the 21<sup>st</sup>, which corresponds to the peaks of several minor showers.

Be aware that a density of 20 meteors per hour is normal even with the absence of a shower, so keep listening because you never know when that ID will ride in with a random meteor.

(Graph courtesy of Jim Thomas and

<http://members.cox.net/fmdxweb/thomas.html>

# Eastern TV-DX

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Bellevue, NE 68123  
mcsittel@cox.net

March, 2003

April, 2003 column deadline: Mar. 12

Eastern TV-DX is for reporters from the following states: AL, CT, DE, FL, GA, IN, KY, MA, MD, ME, MI, NC, NH, NJ, NY, OH, PA, RI, SC, TN, VA, VT and WV, plus Washington, DC. Also for reporters from the following Canadian provinces: NB, NF, NS, ON, PEI and PQ. Overseas reports welcome!

Harry Hayes, 9 Henry St., Wilkes-Barre, PA 18702

Equipment: 1991 Zenith Sentry TV, Ch. 2/5 Quad loop facing south.

11/30/2002 Es

1800 KATC-3 LA Lafayette  
1850 WEDU-3 FL Tampa

12/12 Es

1845 unID-2 PBS

12/13 Es

1825 WESH-2 FL Daytona Beach

Mucho Es so far this winter. Maybe we'll have a good summer this time. Happy New Year.

12/14 Es

2045 WBRZ-2 LA Baton Rouge

12/21 Es

1300 unID-2 "Fox-2", KTVI?

1/1/2003 Es

1935 WEDU-3

FL Tampa

1935 WESH-2

FL Daytona Beach

Roy Barstow, P.O. Box 2488, Teaticket, MA 02536

11/5/2002 MS

0230 unID-13 w/ACN to west... who?

11/12 tr

0100 WMPT-22 MD Annapolis

0130 WYNYLP-32 NY New York, from ch.

39

11/15 tr

2000 eastern Virginia 15/27/33/49

W60CX-60 NJ Atlantic City, from ch.

36

11/21 tr

0005 W24BI-24 VA Virginia Beach

WUNP-36 NC Roanoke Rapids

12/6 MS

0530 WZZM-13 MI Grand Rapids, MS

#93

12/30 Es

2250 WEDU-3 FL Tampa

2300 WESH-2 FL Daytona Beach

2300 WPBT-2 FL Miami

12/31 tr

1600 WHP-21

PA Harrisburg

WITF-33

PA Hershey

WLYH-15

PA Lancaster

1700 WHTM-27

PA Harrisburg

WBOC-16

MD Salisbury

WMGM-40

NJ Wildwood

1730 WFMZ-69

PA Allentown

1/5/2003 Es

1910 WEDU-3

FL Tampa

2150 KTVI-2

MO St. Louis

1/26 Es

2315 WTOM-4

MI Cheboygan

WWMT-3

MI Kalamazoo

KDLH-3

MN Duluth

2335 WBAY-2

WI Green Bay

This has been the worst winter for DX that I can remember. Not much snow but cold.

I sometimes use 4 VCRs to tape for MS. By putting 2 TVs close together I can review 2 tapes at once. Four 6-hour tapes can be checked in less than one hour.

This summer I am going to try for Bermuda. I believe no one has picked them up. They are low-powered on channels 7, 9 and 11. I have Boston on ch. 7 so that's out. I will try for channels 9 and 11. I have 9 and 11 New Hampshire directly off the back of the antenna, so the scenario needed is a nice big high pressure that bring in NC stations. With this high pressure out in the ocean and rain to my northeast to block New Hampshire it may be possible. Best time would be 0600 to 0900.

The ETVDX mailbox hasn't been very busy lately... from the lack of DX I suppose, and not lack of interest in reporting (I hope). Please take a moment to send in a report if you see any good DX; this column requires your support to be useful! 73s Matt.

# PHOTO-NEWS

Jeff Kruszka, Editor  
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March 2003

More photos from Bill Eckberg of Dixon, IL.

Equipment: VHF: 1997 13" Orion color TV, CM 1110 antenna @ 42'. UHF: 1990 Zenith AC-DC 9" color TV, CM 7' screened dish @ 52' w/ RDX Labs UA-903 preamp, and RG-11 cable.



K30AL Iola, KS  
 408 mi Tr seen 4/13/02  
 @1000 CDT  
 "xltr of KTWU-11"



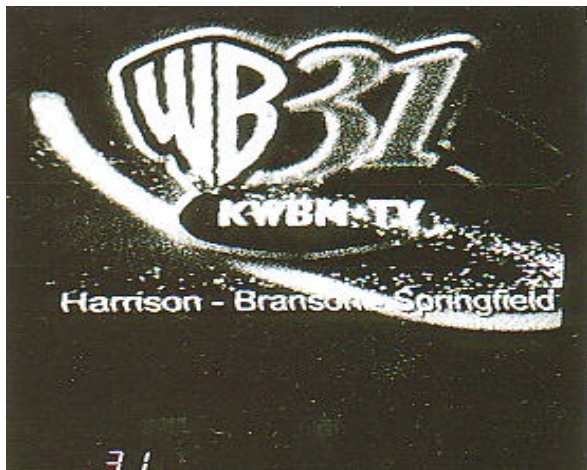
WPSX-3 Clearfield, PA  
 559 mi Es seen 6/14/02  
 @1820 CDT  
 "rarely seen anywhere"



CFCN-4 Calgary, AT  
 1293 mi Es seen 6/14/02  
 @1850 CDT



KELO-11 Sioux Falls, SD  
 388 mi Tr seen 8/1/02  
 @0130 CDT



KWBM-31 Harrison, AR  
 424 mi Tr seen 8/7/02  
 @1000 CDT



# SATELLITE NEWS

George W. Jensen  
4604 Anntana Avenue., Baltimore, MD 21206-4220  
SCISATMAN@AOL.COM

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Snow storms, winds and blizzards have limited search times on the big 16 footer, thus a small column this month. Some good stuff on AMC 7 (one not so good). FX East has been dropped from this bird and been replaced by the Fox Movie Channel in VC2 on XPDR 7. Fox Movie Channel is no longer on W3 18. Several sources have said that FX East has moved to an MPEG2 format someplace - some say Galaxy 11. I have seen no listing for it, though it may have been merged in with several of the Fox Sports Net clusters. It is NOT on AMC 7. On the good side on AMC 7 - there is a great cluster of Anchorage, Alaska stations - they are as follows:

XPDR 9H - 3880H/25200 - following is the arrangement as placed on my PanSat receiver:  
1 - KTUU - Anchorage, Alaska - Ch 2 - NBC  
2 - KTBY - Anchorage, Alaska - Ch 4 - Fox  
3 - KYES - Anchorage, Alaska - Ch 5 - UPN (see note below)  
4 - KAKM - Anchorage, Alaska - Ch 7 - PBS  
5 - KTVA - Anchorage, Alaska - Ch 11 - CBS  
6 - KIMO - Anchorage, Alaska - Ch 13 - ABC  
note for item 3 - This station has a brief silent period in the early morning hours (Alaska Time - 8 AM Eastern - at which time they run an ancient black and white old time test

pattern with the old Indian Chief head at the top of the circles. Worth a look to see this bit of nostalgia. While looking for FX on Galaxy 11 - the following was found - XPDR 21 - Outdoor Life Network - 4135H/6112 - Dr. Eugene Scotts University Network may also be moving here in MPEG2 format soon.

Hispasat1A through 1D - was visited after a long absence and the following were found - unfortunately, I did a whole satellite scan and did not get specifics on transponders/frequencies and msps #s.. There is a lot of redundancy

Here's what's there:- TVE, TVE News (24 Horas), Nostalgia, TVGalicia, Euronews Spanish, TVC1, ETB Vasco (Basque), ATEI educational, Canal E and other UnID's. On the radio side are 15 stations - again with some redundancy, they are - RNE1, RCLA, RNE3, RNE3, REE, RNE5, RGA, C.C., C.R., Eusk (Basque), REUS, and others.. THESE SATELLITES ARE AT 30 WEST AND IS KUBAND ONLY using a horizontal and vertical polarity with C and D launched in 1990 and 1992. Good luck and see you in 30. George

---

## THE HOBBY OF DXING

Bill Moser

*Although primarily an AM DXer for over fifty years, Bill Moser also DXed the FM and TV bands. The Pavek Museum of Broadcasting recently wrote a tribute to Bill, who passed away in July of 2001. Here's Bill's take on FM and TV DXing, courtesy of the Pavek Museum.*

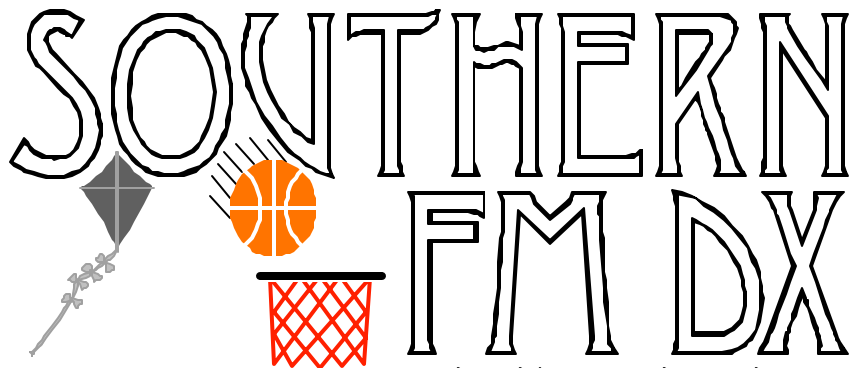
During the summer of 2001, this writer heard FM stations located in 25 states at my home in central South Dakota. Sporadic E-skip caused stations in AL, AZ, AR, CA, FL, GA, KY, LA, MS, NM, NY, NC, OH, OK, SC, TX and VA to be heard. Tropospheric refraction brought in signals from IL, IA, KS, MN, MO, NE, ND, SD and WI.

Sporadic E-skip occurs when patches in the E layer of the ionosphere (about 60 miles above the earth's surface) act like a mirror and reflect signals back to earth, rather than allowing them to pass into outer space. What causes this to happen is still debated but it is widely agreed that such activity seems to ebb and flow along with the 11-year sunspot cycle. The greater the sunspot activity, the greater the frequency of E-skip activity. IN SD, E-skip peaks during the month of June. May and July can also bring FM DX this way.

The troposphere is the lowest layer of the earth's atmosphere. Beginning at the earth's

(continued on page 22 )





John Zondlo  
 4009 Driftwood Circle  
 Yukon, OK 73099  
 sfm@fmdxweb.com  
 Deadline: 15th

For DXers in AL, AZ, AR, CA, CO, DE, DC, FL, GA, HI, KS, KY, LA, MD, MS, MO, NV,  
 NM, NC, OK, SC, TN, TX, UT, VA, WV, Cuba & Mexico

March 2003

Dennis Park Smith – 3605 San Remo Drive – Santa Barbara, CA 93105-2523 – (805)  
 687-7803 – PST

Report from Wasco CA (NW of Bakersfield), with equipment including a car radio (stereo FM/AM receiver) with vertical whip in a 1993 Ford Taurus Wagon and a Doug Allen-modified Pioneer TX-8500 II FM/AM tuner with a one bay VHF conical at 10' above ground.

On January 18-20 I was in Wasco on a long weekend and heard a few nice FM (and some TV) signals due to winter "tule-fog" tropo ducting, monitored on the afternoon of January 19.

1/19 Tr

KQED\* 88.5 CA San Francisco 230/370  
 KFSR\* 90.7 CA Fresno, Fresno State University 90/145  
 KLVY 91.1 CA Fairmead, ccm, "K-Love" 110/175  
 UnID 91.9 ?? ??, SS  
 KOSO 93.1 CA Patterson, "B-93" 160/255  
 KNTD 93.3 CA Chowchilla, SS 115/185  
 KEJC\* 93.9 CA Modesto, k 175/280



KHOP 95.1 CA Oakdale, "New Planet 95-1" 175/280  
 KUBB\* 96.3 CA Mariposa, k 135/215  
 KWAV\* 96.9 CA Monterey, "K-Wave" 145/230  
 KABX 97.5 CA Merced, "Oldies 97.5" 135/215  
 UnID 98.7 ?? ??, SS (KLOQ Winton?)  
 KCIV\* 99.9 CA Mt. Bullion, g 145/230  
 KTHU 100.7 CA Corning, "Thunder 100.7"  
 UnID 100.9 ?? ??, SS (KMIX Tracy)  
 KRKC\* 102.1 CA King City 115/185  
 KSFM\* 102.5 CA Woodland, urban 245/390  
 KAAT\* 103.1 CA Oakhurst, 40's mx 120/190  
 UnID 103.9 ?? ??, SS (KMYX Taft?)  
 KHTN 104.7 CA Los Banos, urban, "Hot 105" 135/215  
 KWOL 105.5 CA San Joaquin, "Real Country, the Wolf" 90/145  
 KQLBt\* 106.9 CA Los Banos, SS

Some stations were heard on both receivers. Those with asterisks were heard only on the Pioneer. The Pioneer tuner as modified is a super-selective DX machine. With so many nearby FM stations now, I wouldn't have otherwise heard some of these, including some closer-in but weak FMs such as KCNQ 102.5 Kernville (50/80), KKRK 104.5 Lake Isabella "Oldies 104.5" (50/80), and KQJZ 107.3 Grover Beach "The Rock" (75/120) just on the Pioneer. I didn't hear all call letters in the rush. From Wasco, my now farthest tropo at 315/505 is "Thunder 100.7," KTHU, with ads for Chico and Oroville (I lived in Chico/Paradise 1971-1990). My former farthest Wasco tropo for many years was 99.9 Marysville at 270/410.

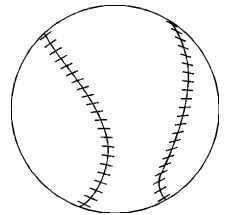
# Sports Radio!



Old West Graphics is proud to announce the release of the new book 'SPORTS RADIO'. SPORTS RADIO, a spiral-bound, 164-page book, lists everything sports, that's on the radio.

Listed by alphabetical categories, you'll find flagship radio stations and their network affiliates for the major leagues and minor leagues in Baseball, Basketball, Football, Ice Hockey, and Soccer. Also listed are the sports teams for the top 25 in each sport of baseball, basketball, and football in NCAA collegiate sports, which includes Division I, II, and III colleges. The top fifteen in Collegiate ice hockey are even included! If that's not enough sports radio coverage, SPORTS RADIO has an auto racing section, which covers CART racing, Formula One racing, Indy Motor Sports, and NASCAR. Finally, there's even a section called Sports Radio, which is aptly just that - US radio stations listed by frequency, where their programming is primarily sports news and sporting events (such as ESPN and Sporting News affiliates).

With each team listing, we first give you the basics: the name of the team, their home town and state, what conference and division they're in, if they have any affiliations with other teams, where they play their home games and capacity seating, and finally, the flagship radio station and their list of affiliate radio stations, listed alphabetically by state, then listed alphabetically by city or town, with call letters and frequency on the radio dial, whether AM or FM.



Jim Thomas, author of Sports Radio, has been involved in graphics design and publishing for 14 years. Even longer, for 31 years he has been involved in broadcast radio activities. And from a sports perspective, he is a real FAN of the game. After doing extensive research on the internet, Mr. Thomas discovered that there was not a single source that brought all sports radio activities together, whether on the internet, or in print. Thus, after compiling countless lists and culling through hundreds of e-mails from Sports Information Directors, the book, SPORTS RADIO came to birth. It will be a publication to stay. Broadcasting contracts are constantly changing, thus, an annual edition will be released, at the beginning of each year.

**If you're a FAN of the game, this book is DEFINITELY for you!!!!!!**

**If you DX, this book will help you in your search for new FM loggings!**

If you would like to get your hands on one or more copies of SPORTS RADIO, just send a check or money order for **\$12.00\*** (payable to Dave Janowiak) and mail it to:

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# Radio Stations Want Pirates To Sail Away

By Eliot Kleinberg, Palm Beach Post Staff Writer  
Monday, February 3, 2003

DELRAY BEACH -- South Florida FM radio stations are being tormented by unlicensed "pirate" stations that illegally transmit on frequencies so close they interfere with signals.

While the Federal Communications Commission won't confirm it, the stations say they have reported the pirates, and some have been shut down. But station executives and engineers complain they're up against the low cost of operating the stations, the unwieldy process of shutting them down and financial restraints that hinder the FCC's response.

"The FCC has broadcasters jumping through so many hoops" to get a license, said Barbara Marshall, station manager at Port St. Lucie station WFLM-FM 104.7. "To have somebody just buy a piece of equipment and interfere with that signal whenever they feel like it is just unbelievable."

The pirates have interfered with at least nine stations whose signals come into Palm Beach, Martin or St. Lucie counties: WFLM; WQCS-FM 88.9, Fort Pierce; WXEL-FM 90.7, Boynton Beach; WLRN-FM 91.3, Miami; WZZR-FM 94.3, Port St. Lucie; WTZA-FM 94.9, Miramar; WLDI-FM 95.5, West Palm Beach; WRMF-FM 97.9, West Palm Beach; and WHYI-FM 100.7, Hollywood.

In all, 88 of the 400 pirate radio stations the FCC has shut down nationwide since 1997 have been in South Florida. An FCC spokesman would not give the stations' base locations or say which legitimate stations are affected.

Possible reasons for South Florida's glut of pirates: the many ethnic groups that present untapped audiences, Florida's transient population and the state's reputation for attracting people who live outside the lines. Or it may simply be the region's flat terrain, which lets signals go all the way to the horizon.

Some pirates actually operate in vans or move bases to avoid detection.

"They're little transmitters that you can put up in your attic or apartment or home, and you're in business," WLRN general manager John LaBonia said. Some transmitters cost as little as \$5,000, he said.

The FCC seized equipment from three of the 88 South Florida operations shut down since

1997. Penalties can range from equipment seizure to \$11,000 in fines for a first offense. Repeat offenders face up to \$100,000 in fines and up to a year in prison. But before a pirate can be shut down, the FCC must bring in the U.S. attorney, a federal judge and, sometimes, U.S. marshals, Carr said. On top of that, the operator has to be caught transmitting.

The FCC enforcement staff is often stretched thin, said Dennis Wharton, spokesman for the National Association of Broadcasters, which represents about 7,700 licensed radio and television stations. "Unless you can get a judge that can appreciate the importance, often they slap them on the wrist and they're back on the air in days."

One operator, James R. Leger of Lake Worth, was ordered in June to pay \$10,000 for "willful and repeated operation of radio transmitting equipment without a license," an FCC order says. The agency would not discuss Leger's case nor say on which frequency he operated. Leger is unlisted and the telephone number for his attorney in the FCC case is disconnected.

Since January, WLRN has had to contend with a "hip-hop" station somewhere in Delray Beach that operates at 91.5, compared to WLRN's 91.3. The Delray Beach station transmits mostly in morning and evening "drive time," the critical time when commuters are in their cars. The strength of the transmission suggests the station is operating at 500 watts or less, up against WLRN's 100,000-watt signal.

LaBonia said WLRN has about 40,000 listeners from Boca Raton to Boynton Beach. Based on about two dozen telephone calls and e-mails from irritated listeners, the interference appears limited to the immediate Delray Beach area, LaBonia said. Interference may be minor but in some cases it drowns out WLRN altogether, he said.

"These guys are so arrogant," LaBonia said. "They're saying, 'We're going to operate. Come and get us.'"

Boynton Beach-based WXEL-FM 90.7 has wrestled for three years with a station in Fort Lauderdale, operating at 90.9, that mostly interferes with the southern end of its range, in central and southern Broward County. But station manager Jerry Carr said he's heard the station bleeding into WXEL's frequency in the

station's own Congress Avenue parking lot. The station is also mostly hip-hop but appears to have switched in the last few weeks to Caribbean music. Carr said a separate pirate based in West Palm Beach operates off and on at the same spot on the dial.

The station interfering with WXEL, called "the 9-0," employs 2,500 watts, a tenth of WXEL's 25,000 watts, "but it's enough," Carr said.

Fort Pierce public station WQCS-FM 88.9 is dealing with a West Palm Beach-based pirate at 88.7, manager Jim Holmes said. "Ours is particularly blue," Holmes said. "It's 'F' this, and 'F' that. It's real hard-core street music."

Public stations may be especially vulnerable only because they are traditionally at the low end of the dial, and many of the low-power transmitters operate on low frequencies, Holmes said.

But WFLM-FM, at 104.7, has a pirate at 104.6. The station hasn't a clue where the pirate is operating. And WRMF-FM 97.9 has pirates on either side, one in Miami at 98.1 and one west of Fort Lauderdale at 97.7, engineer Rick Rieke said. The Fort Lauderdale station appears to favor Caribbean music, while the Miami one seems to be playing songs in Yiddish, he said. Rieke said he hasn't reported

the two because "They've been there so long the FCC is (already) aware of their existence."

The FCC uses "triangulation" -- selecting two known points, drawing a line between them, and mapping the angles at which a signal crosses that line -- to pinpoint the transmitter, WXEL's Carr said.

The agency frowns on stations tracking down the pirates themselves. But last year WXEL got tired of waiting and sent Director of Engineering Michael Maville hunting with his own equipment. Maville traced the signal to a Fort Lauderdale home, even spotting an antenna tied to a tree, Carr said. The FCC later told him only that the person had been shut down and did not provide the operator's name. But he said it was back on in a week.

Public station listeners, in particular, may tire of static and switch stations, sometimes during critical pledge drives. Or confused listeners believe the unseemly programming is coming from the legitimate stations.

"There's not a day that goes by," Carr said, "that we don't get a call,(saying), 'How dare you use language like that. Why are you playing rap music?'"

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## WHAT DOES YOUR LOG LOOK LIKE?

BRUCE ELVING

Like one other reporter, I had a bad experience with computers. I had my entire FM log typed into the former Data General 64 - K computer that I had done many editions of the "FM Atlas" on. After putting new sponge rubber under the keyboard to keep it working longer (doing the same with an identical second computer), they both eventually failed. No computer store could read the discs (which I still have) because they were coded with a proprietary MIC technology of NY system that went out of business. Local computer experts, including at the university, were unable to fix the computers that I finally donated to Electronics Recycling. I even contacted two other known users of the MIC Technologies system in the world, and they had quit the system before I did. They were the Clio Awards of New York City and a legal newspaper in Arizona.

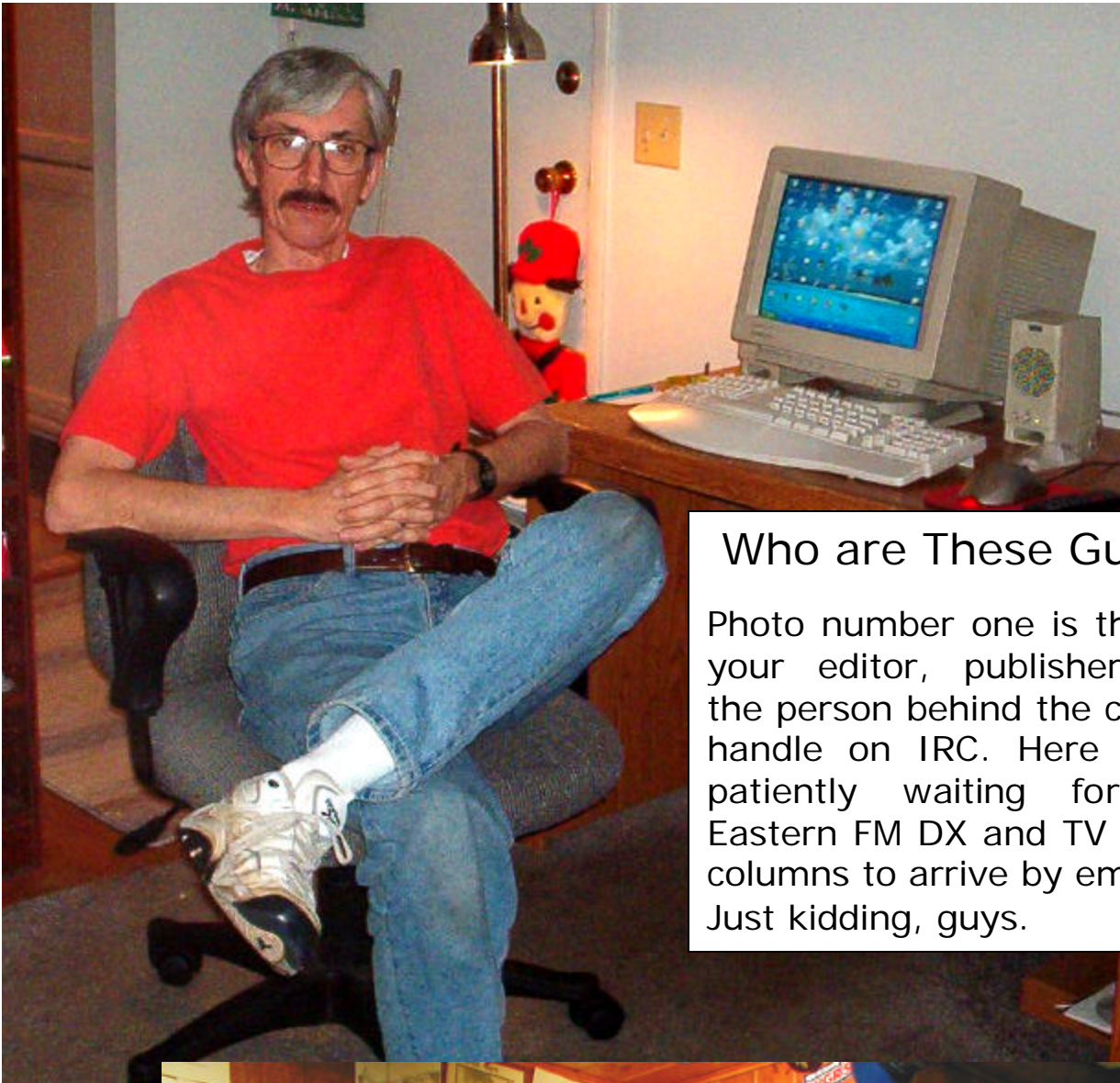
I have, however, maintained printed lists of the FM stations received in the Duluth-Esko MN area since I started DXing in 1948 as a kid. They are: FM League--stations listed in the order of when heard. I show call letters, city, state, date of reception, time of day heard, type

of reception (Es, etc.), and frequency. This is helpful in telling Fred Nordquist what I received on a certain date or during a certain opening. It does not, however, provide information on relogs. 1) FM heard by state (and country), giving call letters, city, frequency. Here I note whether or not a station has verified (QSLd). 2) FM heard by frequency, giving call letters only. When a station changes call letters, I write in the new calls on the original letter of verification, and use white out to change the listings on the various logs.

My verifications fill up four magazine type file boxes with the letters standing upright without their envelopes. They number 1,697 QSLs, arranged by state, city and call letters. Deleted stations and those sending post cards are in a smaller box. Some of these verifications date from 1949 and 1950 and have historic value. The system works well, except the typed listing by states is very crowded, with Minnesota listings scattered around a page that also includes parts of MI, MS and MO.

# MUG SHOTS!

Got a photo of yourself? Send it to me!



## Who are These Guys?

Photo number one is that of your editor, publisher and the person behind the ctMike handle on IRC. Here I am patiently waiting for the Eastern FM DX and TV News columns to arrive by email. Just kidding, guys.



## Would You Buy a Car from this Guy?

Of course not, but you do buy antennas and rotors and cable and whatever from him. It's Rich Wertman, otherwise known as [rwsvcinc@aol.com](mailto:rwsvcinc@aol.com)

# HOW LOW POWER STARTED

## LOW POWER TELEVISION...JUST HOW DID IT BEGIN?

BOB COOPER

With the "interest" in low power FCC (TV & FM) here, perhaps some would be interested to know how it all began. From "Greymarket mentality," a techno-autobiography these excerpts:

...

Another important announcement in the June (1978) CATJ. Religious telecaster Trinity, operating TV station KTBN in Fontana, California, was added to the satellite-available roster. KTBN, unlike PTL (People That Love) and CBN (Christian Broadcasting Network), was a "normal terrestrial TV station" (PTL and CBN were satellite-only packaging of programming not seen via terrestrial TV). What this meant was an entirely new class of terrestrial rebroadcasting station was about to burst onto the American TV dials. Trinity had been lobbying the FCC and Congress to gain a new ruling to permit TV stations such as itself to link via satellite to low power rebroadcasting stations scattered nationwide. Trinity saw this as an excellent, low-cost way of spreading its limited southern California reach into a national network. I am partially to blame for this as TBN had "picked my mind" incessantly throughout 1978 gleaning important insight into how their ultimate system might one day work.

Not everyone saw this one coming; almost nobody saw it for what it would ultimately become. Trinity's unique brand of religious programming featured Jan and Paul Crouch with the skills to turn normally conservative religious families into activist messengers for TBN. Somebody at TBN, perhaps Crouch himself, had the "vision" that by encouraging local groups in Tulsa, Poughkeepsie, Sneadville and Spokane to raise local money, they could turn into "TBN affiliate stations." The concept they preached was simple enough - raise \$50,000 to \$100,000 locally, let TBN guide them through the FCC licensing process, and wham-bang-thank you m'am a new TV station would come on the air (in Tulsa, etc.) carrying the Crouch-version of the word-of-God. Thousands would ultimately do so making TBN the largest single "network" in the world and by 2000 TBN would be global into such far flung locations as (the) Tonga Islands, India and Africa.

...

Which was later more extensively explained as follows:

...

The religious folks were even more "serious" about their TV. And the hucksters began to crawl out from beneath their pulpits. The two "cable-exclusive" programmers PTL

and CBN were doing well (CBN was the second most frequently cited "target source" cited in cable system FCC applications) and KTBN, the Fontana (California) religious broadcaster was off on its own tactical foray. KTBN recognised that if cable systems carried their service, there was an "FCC penalty." KTBN, like WTCG, was a broadcast TV station and rules limited the number of such "broadcast" services that could be carried without the cable system incurring exorbitant copyright fees. Almost no cable system was willing to trade the "general entertainment/sports" fare of a WTCG service for the full-time revival religious fervor of KTBN. It simply made no business sense.

So KTBN planned to utilize their satellite transponder to link or feed their programming to other, affiliated stations. A recent change in FCC rules allowed this to happen, lumping satellite relay into a technical category called "FM Microwave." But not everyone in the religious community thought KTBN's "brand" of religion was the best one for their community.

Enter a group based in California known as the Full Gospel's Business Men's Fellowship International (FGBMFI, or, simply Full Gospel). Cattle rancher Demos Shakarian created the weekly meeting group (sort of a Rotary for right-wing religious folks) in 1953 and by 1978, it boasted 600,000 members worldwide. In early July, Full Gospel held their 25th annual international meeting and 15,000 folks turned out to Anaheim's Convention Center. Right there, center stage as you went into the hall, was a 6 meter (USTC brand) satellite terminal and along side, a Scientific Atlanta 4.5 meter dish.

My good friend Stormy Weathers from USTC had urged me to attend and so I cut two days out of my pre-CCOS schedule and did so. All I had to do was listen and I doubt anyone noticed me, recognized me, and most certainly did not know a blabbermouth journalist was in the audience.

Shakarian caught my attention with his grand opening remarks: "We are in our last days on earth and now due in large part to the sudden development and use of a whole new technology, we have at our disposal the tools to create one last, great revival."

Stormy echoed "A-Men" and I slid my hand into a coat pocket to confirm my Radio Shack cassette recorder was humming away.

Shakarian continued with his prophesy that "within four years" some cataclysmic event was going to overtake mankind on earth. He skillfully wove this message of urgency into a gameplan to utilise satellite television delivery to bind together "as many Christians as

possible" into one "wholesome family prepared to meet their fate." I recall squirming in my seat, checking to see how many people I would have to say, "excuse me!" to, when I decided my choices including throwing up in the crowd or vacating the auditorium. Stormy was issuing "A-Mens" on cue along with the other 14,999 folks and Shakarian had their rapt attention.

Now, I would later work out Full Gospel had 10,000 chapter offices worldwide, or an average of 60 members per chapter. Stormy had alerted me in advance that a "satellite TV distribution plan" was to be announced and that had been the bait that got me to accompany him to Anaheim during a period when the last thing I needed to do was be absent from CATA and CATJ's Oklahoma City office (CCOS 78 was less than 10 days away).

On instructions from Shakarian, 15,000 people opened their meeting notebooks and turned to a specially marked segment containing a prepared booklet which described how each membership chapter would have the "opportunity" to raise \$60,000 which in turn would acquire for them a satellite receiving terminal and a 100 watt UHF (TV channel) translator; installed. Stormy, a manufacturer of 6 meter satellite reception dishes and a would be manufacturer of satellite receivers seemed to have an inside track on all of this as a prominent member and self-described "satellite professional."

At the end of this particular session of Full Gospel a table in the foyer was ready and waiting to take member's signatures on quite unwieldy contracts sitting by the box full to be signed. Two hours later the announcement - "the first 335 chapters have signed contracts for these satellite Gospel systems."

CATJ for June had reported \$37,942 as the "average cost" of a cable TV terminal during the month of May. But in fairness, the cable terminals were reception only - the cable system would be "the transmitter" - whereas Full Gospel was including a 100 watt UHF transmitter as well. On the surface, \$60,000 did not seem out of line.

I searched in vain for some signs of a satellite industry supplier or person in the crowds surrounding Stormy's 6 meter or Scientific Atlanta's 4.5 meter dishes. None to be seen. "Curious," thought I. Here are 335 systems already to spend \$60,000 each - more than \$20 million, and not a single salesman around. And Shakarian was openly predicting, "1,200 terminals within a year."

In a second session I listened to their plan for using the terminals. They had some pretty impressive "experts" on the stage; George Metcalf, a 15 year veteran of NASA who was then-responsible for NASA's globe circling satellite communications network; Patrick

Fisher, a highly skilled satellite engineer deeply involved in the LANDSAT or early terrain mapping network, and, some folks who claimed to be affiliated with such diverse organizations as GE and RCA. A layman, sitting in the audience, pumped up by Shakarian's "promise" that within four years they would all be toast, had to see what was being outlined as some last, final opportunity to "get right with God." However one spelled G O D.

Mid-way through the "expert panel" it occurred to me there were some very significant legal problems in all of this. I thought about doing something very foolish - standing during a question and answer time and raising my questions. Then I remembered my promise to Stormy to "be good, be quiet, be invisible" and decided that was better than being stoned by 15,000 people who might see me as not only a non-invited member of the press but a party-pooper for destroying their rhetorical highs.

Problem one. Shakarian's prepared booklet said, "while no final decision has been made, Full Gospel believes it will be taking the programming of PTL for distribution." Here was oil and water not mixing.

PTL was not a broadcast TV service. The satellite feed featuring Jim Bakker was only for cable and FCC rules prohibited a licensed TV station (translator) rebroadcasting programming originating from any source other than a TV station.

This was the KTBN problem in reverse. KTBN could be carried by satellite to other TV stations (translators) with no changes in the rules. But KTBN incurred copyright problems for cable systems. PTL had no copyright legacy but they could not be used directly for TV broadcast.

Problem two: KTBN. For five days KTBN provided live and tape delayed satellite coverage of many hours of Full Gospel meetings including the headliner appearance of Oral Roberts. Pointedly missing, any Full Gospel sessions dealing with their "Gospel Satellite" project. During the course of the Anaheim meeting coverage, KTBN's Paul Crouch brought into his live studio Washington attorney Jim Gammon and they talked "around" but never specifically about the Full Gospel project. Then with some fanfare (minus only a drum roll from the band), Crouch and Gammon "signed off" on four "Trinity baby sister station" applications which Gammon would hand carry to the FCC; the first four of ultimately thousands. Following the precise rules of the Commission, Trinity was making formal application for UHF translators to relay the KTBN signal carried on satellite to homes in Seattle, Oklahoma City, Denver and Houston.

The puzzle here was this. Crouch had the necessary TV broadcast station to "feed"

translators, and seemingly the smarts to do it within the existing law. Full Gospel was not belligerent towards Trinity, but they were ignoring them - as if they did not exist. And Full Gospel, with or without legal advice, was openly promising to deliver PTL to their 335 / 1,200 chapter affiliates; something the law clearly did not support.

Had I stood up to ask my questions, they would have centered around this conflict. And I probably would have been "stoned" by the crowd for suggesting that Shakarian could not deliver what he was promising.

Problem three: Cost. One of my oldest friends from the days at DXing and TV Horizons (1961) was Byron St Clair, or "Doc" as he was more commonly known. I spotted him at Anaheim and he told me that his UHF translator manufacturing company EMCEE hoped to do business with this group. We talked at length about my fears for use of PTL, he said if "certain problems are worked out" they would switch to KTBN and this would be a non-problem. Then we talked about the pricing on his 100 watt UHF translators, complete with a tower to hold the transmitting antenna and the antenna and parts. Like so many friends in the industry, we had shared many days together at various venues (including the 1961 Western Translator Conference in Salt Lake City) and he had been an overnight house guest on more than one occasion. So when we talked, it was openly, without any fear on his part that "blabbermouth Cooper" would ever write something that would hurt his business. He also knew from nearly 20 years of being associated with me that "I gave as good as I took," meaning that if anybody in the world knew the exact nature of what the latest insider information was, it was I.

He confided, "The pricing is not right." I asked, "how much not right?"

"About \$15,000 and it concerns me."

Doc was a mathematician originally (and thus the Doctor's degree) and he carried around a tiny notebook filled with equations that only made sense to his analytical mind. He once challenged me to work out even what the designators stood for ( $C=v/f \times pg/jj$ ). I failed.

"Add up the parts. Here's my list price schedule and you know the bulk pricing on satellite terminals better than anyone else in the world at this point in time. See what you get."

I did. It came to \$42,000 less only freight to Devil's Knob, ND or wherever the system might go.

"So what's \$60,000?" I asked.

He smiled. "Silly boy. Profit for Full Gospel although it is probably closer to \$15,000 than \$18,000."

An entirely new element was entering the equation; "p" for Full Gospel. Make that "P."

OK - so Shakarian was not altogether wrapped up in "one great last revival." He was also looking at slicing Doc's \$15,000 per terminal off of the top. The nearly fifty page contracts the first 335 chapters signed clearly read that the full sum was going to Full Gospel, under the guise they would "act as a buying cooperative" for the systems from "established vendors."

The PTL versus KTBN debate. PTL stood for People That Love. Jim and Tammy Bakker began their short life as religious celebrities with Paul Crouch as a major viewer draw on their packaged service. The name of Paul's program was "Praise The Lord." Crouch would make some revealing, probably heartfelt, statement or admission about his own "weaknesses" and then raise his hands and shout "Praise The Lord." In religious families, "Praise The Lord" was as well known as "And ... here's Johnny!" to late night NBC viewers. But Crouch and Bakker parted and Crouch took his "Praise The Lord" program name with him west to establish KTBN. That left Bakker in a quandry. He felt "PTL" originated within his service, that he should not simply give it up. So when the cable network was put into operation, they called the service "PTL" which now supposedly stood for "People That Love." Bakker, before his cable start-up, was also distributing "The PTL Club" through approximately 150 terrestrial TV stations. The PTL Club purchased time at bargain rates in off hour periods on less than major TV stations and had an audience reach of millions. PTL in 1978 was spending in excess of \$3,000,000 per month to create their terrestrial and satellite services. All of the funds to "crack this nut" had to come from donations; people who felt motivated by Jim, Tammy and the crew to agree to send in money to keep the service on the air.

In 1978, and for many years thereafter until Bakker was ultimately arrested and found guilty of various tax evasion and management mis-judgments, Bakker was always "a day late and a dollar short." In fact, he had been scheduled to appear at the Full Gospel conclave in Anaheim but a financial crisis forced him to stay in his Charlotte headquarters. Then as a backup he was going to appear on a satellite feed to address the 15,000 attendees but even that failed because of some never explained financial problem.

Thus Bakker and Crouch were at best compatriots but seldom if ever "sung from the same song book." Shakarian was the odd man out, promising to help Bakker out of his financial difficulties by expanding his direct-reach universe with a thousand or more new UHF low power (translator) TV stations. Shakarian and Bakker somehow believed that if they were "God's messengers" that any



(FCC) rules or regulations that stood in their way would "magically melt." Over the last four months of 1978, "messengers" from Full Gospel would frequently visit the FCC, and the offices of Senators and Congressmen to "preach" their gospel of "deliverance."

I revealed all of this and much more in the September issue of CATJ. Demos' son Steve Shakarian found my report "insulting" and promptly made Stormy Weathers a scapegoat. A new \$90,000 per year "administrator" for the Gospel Satellite project equally promptly threw out Stormy's "bid" for complete terminals (\$39,000 each although the Chapter price continued to be \$21,000 more) and called for a new round of bidding.

Salesmen. It was an eye opener to me that although KTBN had provided live or tape delayed coverage of the Full Gospel meeting, that SA and USTC had dishes set up there, not one single satellite terminal salesman had even a hint of what was happening until they opened and read with rapt fascination CATJ's 6 page report. Imagine that - up to 1,200 new satellite terminals and not one peddler had called on Full Gospel to that point.

Of course, clutching CATJ in their grubby hands, dozens promptly descended on the offices of Full Gospel. One group was especially irate about the \$60,000. Pete Warren and Alex Blomerth were two guys from El Paso with a religious mission statement of their own creation. I was indebted to these two guys operating as "International Christian Television" (ICT) because they had volunteered to haul their 40 foot production van to CCOS 78 to serve as our "network control center on wheels" during the infamous 20 hour uplink telecast. ICT held an FCC license for UHF channel 14 in El Paso, and slowly they were putting together the jigsaw puzzle pieces that would allow them to become operational with a

combination secular and religious 24 hour per day television format. They had plans to take their channel live to satellite as well, hoping that by mixing religion with Popeye and Leave it to Beaver they could out-Pat Mr Robertson of CBN.

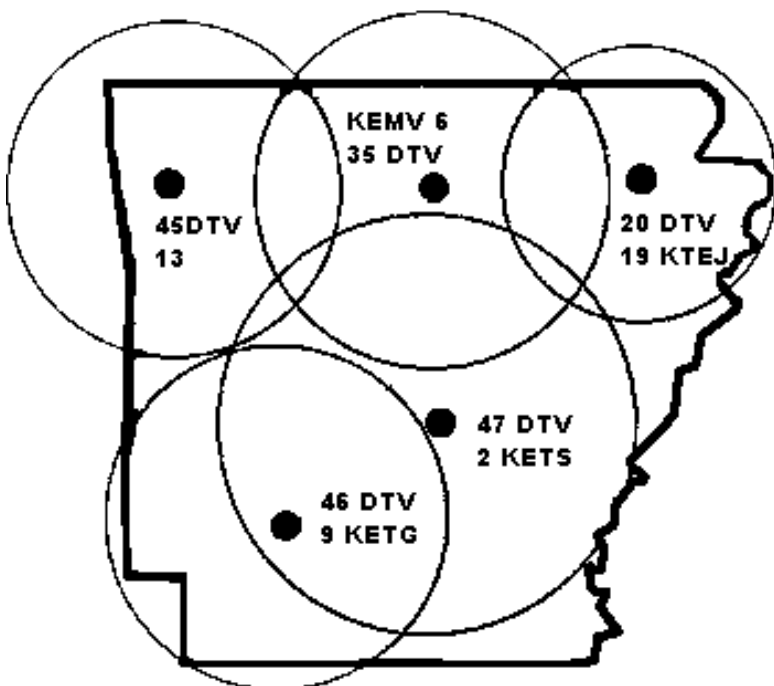
Pete and Alex were in Anaheim and we lost no time comparing notes. I had Doc St Clair's figures on a note pad and when I showed them to Alex he promptly produced his own, almost identical, set of calculations.

Pete Warren. "I showed these numbers to Sharkarian's son and he told me '\$15,000 is a engineering and administrative cost' for turning each application into a licensed translator station." He was only warming up.

"If somebody really wanted to avoid spending money unnecessarily, they would find a transmitter location with existing (unused) tower space available and existing indoor room for a new 100 watt transmitter. Where does it say you have to buy land, build a building, erect a tower to become a TV station operator? Look here" he directed to a new page on his sketch pad. "Using that type of approach, I could put these in all day long for \$22,000 with a 100 watt translator and a 4.57 meter receiving dish."

Putting their mouth where their feelings were, when I last saw Blomerth and Warren in Anaheim they were preparing to run off 15,000 letters to distribute to the attendees advising them that \$60,000 was "too much money" for the proposed stations.

G O D often works in mysterious ways. For whatever reason, while Full Gospel ultimately failed in their grand scheme, Paul Crouch at Trinity prevailed. But through the balance of 1978 and well into 1979, the FCC, Congress and the satellite industry had no way of forecasting how and where all of this would end up.



## **AETN DIGITAL TELEVISION**

**KEMV DT 35**

MOUNTAIN VIEW

**KETG DT 46**

ARKADELPHIA

**KETS DT 47**

LITTLE ROCK

**KTEJ DT 19**

JONESBORO

**KAFT DT 45**

FAYETTEVILLE

# ED HANLON ON ANTENNAS

USED WITH PERMISSION OF ED HANLON, ANTENNA PERFORMANCE SPECIALTIES

Taken from information posted on the FMTuners list on Yahoogroups

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## HOW TO MAKE A 75 OHM DIPOLE...

Take an old TV antenna and remove one of the elements from the boom. Make sure the element is one that's mounted on plastic. Take the frequency you want to cut the dipole for and divide into 5901.5, and that will give you the tip-to-tip length of the dipole in inches. Example:  $5901.5/98(\text{MHz}) = 60.2"$ . Cut the element with tin snips, which will squeeze the ends shut tight. If this type of edge is too dangerous (sharp), use a small pipe cutter and get a better, non-sharp end that way. Next get a hold of 5-10 mix 43 ferrite beads of the proper i.d. and slip around your coax. Strip the coax and connect the center conductor to one element, connect the shield to the other. Slide the beads up to but not touching the exposed shielding, and shrink tube or, if used indoors, wrap in electrical tape. You now have an FM dipole that, while not being perfect, is far better than any old skinny whip because a.) it doesn't use or need a loading coil, and b.) has a thicker diameter so therefore will have a wider bandwidth. A downside is that it will be longer than a skinny whip, but hey, you just saved \$50.00 or so. Heck, you could make 3 or 4 of these dipoles from an old TV antenna!

The same rules apply to this as to any other dipole: standing straight up it's omnidirectional, installed horizontally provides a figure 8 pattern with nulls at 90 degrees. I've built a few of these for local customers in apartments in Hartford, and they work very well. Most cut them for the educational portion of the FM band (88-92 MHz).

Enjoy!

## ANTENNA COMPARISONS...

***Ed talks about antenna specs... The BT log had the best overall response and great f/b ratios but was somewhat deficient in gain compared to the others.***

Right. That would be because of all the driven elements. They traded off maximum gain for better bandwidth and patterns.

***The Finco FM-10 had great gain on the upper half of the fm band but was offered a few DB less gain at the low end of the band-- still a good performer.***

Right again. It behaved more like an (attempted) broad band yagi, with more gain at the upper frequencies. The lower end

would have to have less gain, and the patterns couldn't be as good as the BT.

***The Jerrold QFM-9 was good across the entire band but did NOT exhibit the claimed 7DB gain. I had to stack two to get good..performance.***

I've tested this antenna, and I got the 7 dB gain easily. Nice antenna, though I don't use a passive reflector like Delhi chose to do.

***The CM 4409 was without the best of the lot with a fairly good gain of 9-10 db over the entire spectrum.***

That's high. Not as high as the ridiculous Audio antenna "review", but still high. I get 8+.

***It did have one serious problem however, the rivets were plated and would rust quickly and had to be maintained to prevent lack of signal from parts of the antenna.***

Excellent point! This is why I refer to the Probe 9 as the rusty rivet special. Performance deteriorates slowly over time. I've had buyers tell me they get an additional 5 dB gain with an APS-13, and some of that is attributed to the rivets rusting on the Probe 9. The Crossfire TV antenna line suffers from the same problem. The 4408 is also a good performer with an average gain of 7DB9 (same rivet problem). Was there a 4408 and a 4409? Was the 4409 the shorter one?

***I installed many of the Channel Master products and have the actual F/b ratio and Gain charts-- which are much lower than the magazine review.***

The magazine review was absurd, yet a Stereophile reviewer still refers to his Probe 9 as being "12.5 dBd+". LOL! That's how to build\_credibility!

Those F/B and gain plots you have are undoubtedly from Channel Master. I come up with a little less gain than their plots showed, but at least they're right there in the ballpark and close enough.

The Winegard CA-6065 was a good overall performer with slightly less gain (although not according to Winegard) with a f/b ratio of 20-22db.

Speaking of companies who juice their specs. A customer sent me copies of old literature of

Winegard's earlier FM, which was 140". When it went down in size to 120", all graphs, measurements and specs were identical! How did they do that? Of course, they couldn't have gotten "10 dBd gain" at 140" over the entire band, so what the hey, say that you can do it at a boom length of 120"!

***The Channel Master withstood very harsh weather but the Winegard just outlasted all others with heavy ice and snow.***

That would be Winegard's strength: build quality.

***One final comment, There is a broadband antenna that was originally made by Delhi- a commercial bi-conical J-283X which only exhibits 5-6 db gain across the fm band but with phenomenal f/b ratios- as high as 40db- actually measured at channel 2.. The antenna weighs 20 lbs. but is a gem for anyone who can have only one antenna for all their needs.***

The Delhi you refer to would have it's best F/B at channel 2, because that's it lowest design frequency. The rear most driven element was shorted. It was a commercial product and very expensive, and wouldn't be that hot a performer for the FM enthusiast. It's not that large, and covers all TV bands, including UHF. This antenna employed the Channel Master Vector wedge shaped live booms, which provides a little more gain than if the booms were parallel to each other (.5 to 1 dB), ala the Channel Master Quantum series. A fun antenna though.

### **ELEMENT DIAMETER AND BANDWIDTH...**

***Can a 3/8 inch dipole cover the entire FM band?***

A 3/8" dipole isn't thick enough to maintain resonance over the FM band. Why do you think those skinny whips are so bad? Bad enough so that one skinny-whip purveyor recommended they buy yet another more educated skinny whip to compensate for the first skinny-whip's shortcomings (lack of adequate bandwidth)?

### **SINGLE DRIVEN ELEMENT ANTENNAS...**

***A single driven element antenna can cover the entire FM band, can't it?***

Well, what gives you "the impression that covering a 20% bandwidth isn't a problem for even a single driven element"? Please share with us what you have there.

You can NOT have high performance in all three aspects of reception covering a 20%

bandwidth using a single DE (driven element). If you could, don't you think there would be at least ONE antenna built that way? I know how you like facts so here's a snippet from the ARRL Antenna Handbook on yagi performance optimization: "*The highest HF band, 28.0 to 29.7 MHz, represents the largest percentage bandwidth of the upper HF bands, at almost 6%. It is difficult to try to optimize, in one design, the main performance parameters of gain, worst-case front-to-rear ratio and SWR over this large a band*". 6% is a stretch, so what do you suppose 20% is? Today's yagi designers, me included, don't stray beyond 6% bandwidth. Bottom line: you can build a single or dual driven long boom yagi for FM, but SOMETHING will have to be sacrificed in at least one of the three performance parameters. I prefer my antennas not be compromised in this way.

***Am I correct in assuming that the APS-13 & APS-9 are of this "Log-Yag" design?***

Partially. My antennas don't contain a log periodic DE design, nor do any others sold in recent history by major manufacturers we've all heard of, despite the claims of others.

The Log-Yagi array provides higher gain and greater directivity than would be realized with either the LPDA or yagi array alone. The yagi array requires a long boom and wide element spacing for wide bandwidth and high gain (note: not 20% bandwidth!). This is because the Q of the yagi system increases as the number of elements is increased and/or as the spacing between adjacent elements is decreased. An increase of the Q of the yagi array means that the total bandwidth of that array is decreased, and optimum gain, front-to-back ratio and sidelobe rejection are obtainable only over small portions of the band (so true!). The Log-Yag system overcomes this difficulty by using a multiple driven element "cell". Since the multi-driven cell exhibits both gain and directivity by itself, it is a more effective radiator than a simple dipole driven element (or dual drive). The front-to-back ratio and gain of the cell can be improved with the addition of a parasitic reflector and directors. (Note: The parasitic reflector wastes boom space, so I choose to add another driven element and short it, making it a reflector).

***This last sounds like some sort of double talk, if the added element is "shorted", how can it be considered to be a "driven element"?***

It only sounds like double talk to you because you don't understand it. The element in question is electrically connected to the other

DE's, but shorted in the center. According to the late Harry Greenberg of Channel Master and Joe Reisert of Delhi fame, this element is a reflector. I'll take their word for it.

It is not necessary for the director spacings to be large with respect to wavelength as in the yagi array, since the multi-driven cell is the determining factor in the array bandwidth. In fact, spacings within the multi-driven cell may also be small with respect to wavelength without appreciable deterioration of the cell gain." Translation: more bang for the boom length.

***So, it sounds like the real story is that the "multi-driven cell" provides gain, in addition to wide bandwidth, as compared with a simple dipole which may have sufficient bandwidth to cover the FM band, but doesn't offer any gain by itself.***

You're getting closer. The DE cell provides gain, directivity and bandwidth. The single DE does none of the above, including bandwidth. A 3/8" dipole on FM frequencies would have around 6% bandwidth.

***This raises the question of why the "Log-Yag" design, if the "Yag" part is narrow band?***

The yag part is indeed narrow band, in that it's based on the highest and lowest frequencies the antenna is designed for.

***The "Yag" part obviously allows the gain over the upper part of the FM band to be bumped up, giving more impressive marketing numbers.***

You have it exactly backwards. Long boom yagis and double driven are the ones that have a large gain hump in the upper end of the band. Why? Because all those directors out in front of the driven element MUST be cut for the highest frequency, in FM's case, 108 MHz. If cut for a lower frequency, say, 106 MHz, then they become reflectors at frequencies above 106. That would make for pretty poor reception of 108 MHz, wouldn't it? The log-yag evens out the response of the antenna. If you think about it, it's self evident.

***If the "Log-Yag" design gives more "more bang for the boom length", than a straight "Yagi", why waste any boom length on the narrow band "Yag" part, and instead go all the way using a pure "Log" array?***

I do this at the back end of the antenna, where I don't use a passive reflector, but a driven element shorted. This saves boom length, since a passive reflector would have to be .15-

.25 wavelengths back of the DE at 88 MHz (20 to 33.5 inches!). Oh, and in case you doubt the validity of this, most every Channel Master, Winegard and Antennacraft antenna does the same thing. The Probe 9 and Quantum series VHF did this, though most people don't realize it ("my Probe 9 has no reflector").

To continue to use DE's out in front instead of directors isn't as efficient. Directors provide more directivity than a log periodic of the same boom length would exhibit. It's the proper combination and design that make this the superior solution for FM reception.

***It sounds like the problem is not the bandwidth of the "dual drive", or even single drive, but is the bandwidth of the "Yagi" part that provides the gain in these antennas.***

Yes, it's the "yagi part" that causes the narrow bandwidth, which is why 1 or 2 DE's is inadequate. That's where the multi-driven cell comes into play.

***My experience was that the dual drive Yagi performed every bit as well as the larger "Log-Yag" array, for reception over the paths of 120 miles or so that I was concerned with.***

Two things can occur in this situation: 1.) The narrow bandwidth properties of the dual drive antenna provide "hot spots" on the band. You may have had stations on those hot areas of the antenna. 2.) The log yag was poorly designed.

***Can you explain why it can't be 75 Ohms? As I understand it there are many factors that affect the "Ohms" of an antenna.***

It takes some knowledge of antennas and working with different designs; I can look at a design and tell you certain things about it. For example, on a wide band yagi, I can draw you the gain curve before ever measuring it, and be almost dead on. In the case of the dual drive FM antenna in question, there are two reasons to use a folded dipole: raise antenna impedance and improve bandwidth. It doesn't do much for the latter, so don't get too excited. A folded dipole's impedance is 300 ohms, and you would NOT use a folded dipole in an antenna you were attempting to design for 75 ohms! Yes, there are two of them, and they're widely spaced, another design trick used to keep impedance UP. In the yagis I design, the first director is almost right on top of the DE, which gives me the nice lowish impedance I'm looking for (50-75 ohms).

## WTFDA 2002 FINANCIAL REPORT

Opening balance on January 1, 2002 **\$5,454**

Receipts:

Revenues from:		
Dues and samples	\$6,665	
Tv station guides		\$2,495
Misc. (convention profit, etc.)		\$205
		-----
		<b>\$9,365</b>

Expenses:

VUD Publishing (Jan. 2002 - Dec 2002)	\$5,919	
Tv station guide expenses	\$2,385	
Misc. (subscriptions, PO box rental, etc.)	\$205	
		-----
		<b>\$ 8,509</b>

**Operating Margin (receipts minus expenses): +\$856**

Closing Balance on 12-31-02: **\$6,310**

### **NOTE**

Thanks to lower VUD publishing costs, stable membership, a small profit from tv station guide sales, and convention income, the WTFDA showed a profit of \$856 in 2002. The year-end balance is the highest in club history. Especially gratifying were the lower costs from Mike's publisher, offsetting slightly higher postal/mailing costs. With only a few tv station guides left to sell, we finally realized a small (\$100) profit from that item. Thanks to John Zondlo for kindly donating to the WTFDA his profit from the very well-run 2002 convention. My personal thanks go the fellow BOD members and—especially—Mike Bugaj for going the extra yard and then some as publisher. As Mike noted last month, your organization is on firm ground.

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Submitted 2-1-03  
Dave Janowiak  
WTFDA Treasurer

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### **THE HOBBY OF DXING CONTINUES FROM PAGE 9**

atmosphere. Beginning at the earth's surface, it extends outward between five miles (at the poles) and ten miles (at the equator). Weather conditions within the troposphere can cause the normal path of FM signals to be bent downward, returning them to earth at locations far away from the transmitter. Perhaps the most common example is a temperature inversion. A warm air layer above a cold air layer will often produce FM DX. In South Dakota, tropospheric refraction peaks during August. July and September can also bring FM DX in this way.

Two factors make it easy for experienced DXers to tell the difference between E skip and tropospheric reception. One is distance.

Tropospheric refraction usually brings in signals up to 600 miles away from the receiver. Sporadic E-skip usually brings in signals more than 600 miles away. For example, my farthest E-skip reception in 2001 was WLRQ in Cocoa, FL at 1550 miles; my farthest tropospheric reception in 2001 was WCBU in Peoria, IL at 600 miles. The other factor is signal stability. E-skip reception tends to be unstable, with signals frequently changing in strength and lasting for shorter periods. Tropospheric reception tends to be more stable, with signals remaining steady in strength for longer periods of time.

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City \_\_\_\_\_ State/Prov \_\_\_\_\_ Zip \_\_\_\_\_

Country \_\_\_\_\_ Interests: TV ( ) FM ( ) 30-50( ) Weather( )

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Sign me up/renew me for: 1 year ( ) 2 years ( ) More ( )

Yearly dues \$24 to US addresses, \$26 to Canada and Mexico  
\$38 to the rest of the world (payable in U.S. Funds)

**Mail your dues to: WTFDA, P.O. Box 501, Somersville, CT USA 06072**

**Make your checks/money orders payable to: DAVE JANOWIAK**

**And *thanks* for your support of the WTFDA!**

Return this form with your dues or make a copy of it and return that.

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*Send your reports and station info to these folks.*

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