

# THE WORLDWIDE TV-FM DX ASSOCIATION

*Serving the UHF-VHF Enthusiast*

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. WTFDA IS GOVERNED BY A BOARD OF DIRECTORS: DOUG SMITH, GREG CONIGLIO, BRUCE HALL, DAVE JANOWIAK AND MIKE BUGAJ.



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**APRIL 2004**



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 to our Paypal account. But of course you can always renew by check or money order for the usual price of just \$24. Either way, it's still a bargain!

## VUDS ON A CD!

Every VUD from Jan 1980 to December 1989 is on this disk. You'll need Adobe Reader to read them. Why have a box of old VUDs taking up space when you can have this. **It's yours for just \$8.00 per disk.** Send your check or money order for \$8.00 to WTFDA, P.O. 501, Somersville, CT 06072. Make it payable to Dave Janowiak.



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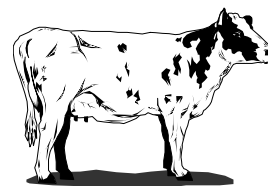
Ah YES! April! And if you look closely you'll find that FM News is back, this time edited by Adam Rivers, and it looks great!

Keith McGinnis is in the middle of a move, so FM North will return next month.

We have a recent membership list this month, so check it out for members near you.

And...the financial report. We're not doing badly at all. Good news. Enjoy this issue!

# OMAHA 2004



The WTFDA Convention July 30, 31 and August 1, 2004

<http://www.amfmdx.net/WTFDA2004/>

Mike Hawk and Matt Sittel welcome you to Omaha for the 2004 WTFDA Convention. You'll be staying at the **Park Plaza Regency Lodge** with a central Omaha location near 108th and Pacific just off of I-680. Additionally, they have promised that we can assemble antennas on-site during the convention. You can reach the hotel at (402)397-8000. Please call the hotel for rates and tell them you're with the WTFDA. Be there!



# The Mailbox

P.O. Box 501, Somersville, CT USA 06072  
MIKE BUGAJ MBUGAJ@SNET.NET

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## APRIL 2004

"I am the eye in the sky, looking at you. I can read your minds." Famous words from a song a few years back, the title of which escapes me right now but nevertheless, I know what many of you are thinking. **YOU WANT SKIP!** Well, so do I. We've had a long dry spell over the winter and right now many of us are ready to throw a brick through the nearest CRT. Well, put that brick down! The worst is over. In just a few weeks we'll be seeing reports of E skip and possibly some tropo as we shake ourselves free of winter and spring weather patterns take over. Keep watching the weather maps and check out Bill's Hepburn's internet tropo maps daily.

## MEMBERS AND MORE

Paypal yielded some surprises this month. We found a new membership from **Juan Gualda** who lives in Ft. Pierce, FL and a rejoin from fellow CT resident **John Kosinski** of Stamford. Welcome in Juan and welcome back John! Thanks for using Paypal!

We've got plenty of renewals this month. Now to take a deep breath and try to say all these names before I turn blue: **Gerard Hart (NY), Ryan Grabow (NY), Robert Fischer (AK), Harry Hayes (PA), John Broomall (GA), Nathaniel Ely (WI), David Cox (AL), Dave Nieman (NY), Barry Shinall (IA), Bill Draeb (WI), Dan Oetting (DE), Paul Crego (NY), David Legler (MN), Mike Reid (ON), Aaron Mitterling (IN), Joe Perge (OH), Andrew Mackenzie (NY), Gary Hickerson (OK), Allan Dunn (MA) and Glen Hale (KY).** Thank you everyone for hanging around and for your vote of confidence in the WTFDA.

## VUDS OF THE 1980S ON CD

We have had enough CD orders at this time to reach the "break-even" point, which means that we have our expenses covered and any monies we receive after 3/14 will go into the club treasury.

If you have been in the WTFDA a short time and never got to see what the VUDs were like in past years, this is your chance. The 1980s contained some great technical articles, some great DX and some neat construction projects. See elsewhere in this

VUD for pricing and ordering information.

## AND EVEN MORE PERKS!

Yes I know it's even harder to believe but look what we have for you! Thanks to **Jim Thomas** we are able to offer you official WTFDA window clings! Clings are the things your favorite Crazy Lube oil change place puts on the inside of your car windshield with the date of your next oil change. Stick it on and it sticks; peel it off and it's off.

The official WTFDA window cling consists of the WTFDA logo plus our website URL. It comes in red and yellow. Take one of these clings, peel off the backing and stick it on the inside of your car's rear window. Rub the air bubbles out and presto! The cling is on to stay and everyone who looks at it will know your car belongs to a WTFDA member. It also helps you find your car in a crowded parking lot if you are like me and forget where you put it.

We are offering these clings for the ridiculous low price of just **\$2.00 each**.

Stick one of these on your car and let everyone know you're a proud WTFDA member!

As usual, make your check or money order out to Dave Janowiak and send it to WTFDA, P.O. Box 501, Somersville, CT 06072.

Have more than one car? Buy one for each! Put one on the kitchen door! Stick one on your dog!

Want permanent decals instead? Permanent white decals are also available. You get two of these for \$2.00. These decals may take longer for you to receive as they will be made *as ordered*. Just remember, if you need to remove these permanent decals you'll need a putty knife and elbow grease.

If you order, please specify either removable clings or permanent decals. Don't make us guess!

## AN INTERESTING LETTER

Here's a very recent letter received from veteran DXer **Bill Draeb(WI)** to prove that this isn't called the Mailbox for nothing. Bill writes, "I just renewed for another year. I've been a member since 1/68 (Jan 1968, the 2<sup>nd</sup> issue). I dragged my feet in joining and missed the

first issue but got one later on. I still have all of them.

Looking at past issues I would like to see something different on the covers besides coverage maps. Enclosed are copies of some of the covers drawn by Harry Hayes and Wanda Prus. They were always interesting to look at and get a charge out of. Perhaps someone could do some more of those if they are artistically inclined (Bill included some samples).

The new "WX-DX" column sounds promising. What I would like to see included, though, is an address for DXers to send their reports to other than an internet website or in addition to it. Right now I don't have a computer or the internet so reporting is made more difficult if I had something to report.

I haven't sent in any reports in a while, perhaps this year.

P.S. Does the WTFDA still have boxers for sale? I could use some to store my VUDs."

Wow. I have plenty to comment on here. Let's start with coverage maps.

Bill's question about CMs made me go back and check every VUD issue I've published. As of the April 2004 VUD, I've published 32 issues. And of those 32 issues, four of them had coverage maps on the cover and one of those was a NOAA map. That's 12% of them if my math is right. So, you folks have not been looking at a huge amount of CMs on the VUD covers.

My personal preference is to see photos on VUD covers, especially now that we have the ability to do them and have them look decent for a change. I thought Jeff Lehman's antenna photo a couple of issues back was fantastic! This month's cover is almost too cool for words.

Times are changing. Kodak is leaving the 35mm market. Many of us poor folk can afford digital cameras now. Take advantage of that! Keep a camera in your car and when you're out driving and see something interesting TAKE A PHOTO of it and either mail it or email it to me. Suggestions: a tower, a building, a station's news vehicle, an FM station's van. You name it. Your only limitation is your imagination! You can do what Jeff or Paul did, helping the club and becoming famous at the same time.

I do have other coverage maps to use but I'd rather put them inside the VUD somewhere unless they are really exceptional like the WBYO CM from last month.

As far as cartoons on the front cover, well I'd rather not go there. They served their purpose back in the 70s and 80s, but with the technology now available to us I think we can do better and present a more professional product. However, if there is anyone out there who's a decent cartoonist and wants to submit something to me, go right ahead. I'd like to see it.

Regarding WX-DX, I've emailed the column's editor about your request. We will see what we will see.

As far as VUD boxers, no we don't have them. I suppose if there were some demand for it the BoD could consider it. At the moment I don't see a demand. I use cardboard boxes myself. Crude, but they work.

So much is written about the internet and email and websites that some of you folks who aren't online might feel left out. Our goal here is to make sure that you off-liners are as informed as the on-liners. You folk are just as important to us as anyone else and will always be. Don't forget that.

Thanks for taking the time to write, Bill.

### THE MAN FROM FT. PIERCE

Here's a note from our newest member, **Juan Gualda**. Juan writes: "A little about myself..married, no kids. I reside in Ft. Pierce, FL. I am the PD of WGNX-FM and WTTB-AM in Vero Beach, FL. I have DXed since I was about 10 years old. I joined the NRC when I was 12 years old and have been a member on and off since. I *really* have gotten into TV-FM DX in the past 15 or 20 years so I figured it made sense to join the WTFDA.

Besides DXing, my other hobbies are internet radio, watching Miami Hurricanes Sports and listening to Frank Sinatra. Oh, and I like to make beer (What a coincidence! I like to listen to Frank (Zappa) and I like to *drink* beer! Amazing! -mike)

My receiver is a Carver TX-11A for FM (not modified, but someday) and Win TV-D computer card and a GE TV for TV DX.

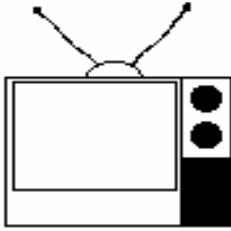
I am waiting for help putting my antenna up so I can TV DX again. By the way, thanks for the advice on the Win TV-D. I bought it new in the box for \$88 on eBay (good deal - mike). It works great except I am only using an indoor bowtie antenna now until I get my antenna on the roof replaced. I am very impressed with the Win TV-D. Thanks for the heads up." (You're welcome. Glad to help -m)

### MORE IBOC IN BOSTON

**Jeff Lehmann** reports on 3/1 "More bad news from here in the Boston area. Within the past couple days 91.9 WUMB, 92.9 WBOS, and 96.9 have turned on the IBOC. These are in addition to 93.7 WQSX and 105.7 WROR that were already running it. Keith and I are getting ready to kiss FM DXing goodbye if this continues. It was nice while it lasted. (it should be an interesting summer -mike)

### LAST BUT NOT LEASED

That just about does it for this month. Take care and see you all next month. -Mike



# TV News

Douglas E. Smith  
 1385 Old Clarksville Pike  
 Pleasant View, TN  
 37146-8098  
[w9wi@w9wi.com](mailto:w9wi@w9wi.com)  
<http://www.w9wi.com>

**April 2004**

Abbreviations:

AF	Applied For (a new station)	PG	Power change granted
Aux	Auxiliary (backup) transmitter	PR	Power change requested
CC	Callsign change	QC	Channel (?frequency??) change on the air
CL	City-of-license change	QG	Channel change granted
DE	License/permit deleted	QR	Channel change requested
FC	Programming (?format??) change	RE	Reinstated (previously-dismissed app.)
FTP	Failure to Prosecute	ROA	Request of Applicant
GA	Granted amendment (to table of channel allotments)	SI	Off the air (?silent??)
LC	License to Cover	STA	Special Temporary Authority
NS	Permit granted for new station	XC	Transmitter site changed
NW	New station on the air	XG	Transmitter site change granted
PA	Proposed Amendment	XR	Transmitter site change requested
PC	Power (and/or tower height) change on the air		

News:

(full-power analog stations in **bold face**; LPTV and translators in regular type; full-power digital stations in **bold italics**)

**Alabama:**

Birmingham 27 WBUN-CA CC fm W27CM  
 Hamilton 46 W46DF PC<10.2kw  
**Louisville 43 WGIQ PR<4180kw/262m**  
 Scottsboro 27 W27CV QG fm W64BJ, 11.1kw

**Alaska:**

**Anchorage 6 KYES-DT PR<277m, 61-20-11/149-30-47**  
 Anchorage 8 K08NS AF dismissed  
 Anchorage 21, NEW-LP AF dismissed  
 40,  
 42,  
 49,  
 69  
 Homer 4 K04JH PR>3kw dismissed  
 Hope 9 NEW-LP AF dismissed  
 Ketchikan 17 K17GX NS 6.9kw  
 Seward 40 K40HQ NS 150kw

**Arizona:**

Casas Adobes 20 K64BV QR from ch. 64, 10kw  
 Concho 12 KWSJ-LP CC from K12PR  
 Holbrook 38 K38IK NS 5kw  
 Kingman 16 K16GB NS 100w  
 Phoenix 44 KPHE-LP QG from ch. 19  
 Pinta 58 NEW-LP AF dismissed  
 Prescott 20 K20IA AF dismissed  
 St. Johns 58 NEW-LP AF dismissed  
 Tacna 45 NEW-LP AF dismissed

**Arkansas:**

Bentonville 26 K14IT QR from ch. 14, 150kw  
**El Dorado 43 KEJB NW 5000kw/530m, 33-04-41/92-13-41; UPN QG fm ch. 45,**  
**Fayetteville 9 KAFT-DT**

Fayetteville 36 KFFS-CA PR>150kw; PG  
 Fayetteville 48 KEGW-LP QR from ch. 64, 150kw; CC from K64FO  
 Hindsville 40 K59ES QR from ch. 59, 142kw  
 Hot Springs 23 K23GT QG fm K44EV, 34.9kw  
**Little Rock 11 KTHV drops DA**  
**Little Rock 44 KWBF-DT NS 1000kw/485m, 34-47-45/92-29-44**  
 Springdale 4 KJBW-CA CC fm K15DR; PR<2.1kw

**California:**

Bakersfield 36 KBFK-LP PC>150kw  
 Bakersfield 41 NEW-LP AF dismissed  
 Banning 67 K33HU QR from ch. 33, 9.97kw  
 Caliente 43 NEW-LP AF dismissed  
 Chico 28 KKPM-CA PR<129kw  
 Cloverdale 17 NEW-LP AF dismissed (3Abn)  
 Eureka 49 NEW-LP AF dismissed  
 Glen Arbor 21 K21HA AF dismissed  
 Indio 6 K06MB PR>3kw  
 Inland Empire 45 KHTV-LP QC from ch. 48  
 Los Angeles 63 KADY-1 NS 87kw; PR<50kw  
 Los Angeles 67 KNLA-LP QC from ch. 68  
 Maricopa 38 KNXT-LP QR from ch. 57, 150kw  
 Martinez 49 K49HV NS 5kw  
 National City 61 K61GH PR<70w  
 Palermo 4 K51BP QR from ch. 51, 3kw  
 Palm Desert 9 K55FI QR from ch. 55, 1.5kw  
 Palm Springs 20 K20HZ NS 1.46kw  
 Porterville 31 KVVG-LP PR<14kw; PG  
 Ridgecrest 41 K41GO QC fm K63AH, 2.38kw  
**Sacramento 21 KMAX-DT PR>850kw/581m**



Preston	42	K42GN	NS 1.8kw	Alexandria	26	KLPA-DT	NW 76kw/413m
Soda Springs	30	NEW-LP	AF dismissed	Baton Rouge	48	K48IT	QG x K58GB, 12.9kw
Soda Springs	35	K35HD	NS 1.135kw				
Swan Valley	40	K40HN	NS 49kw	De Ridder	39	NEW-LP	AF dismissed
Twin Falls	53	K53IL	AF dismissed	<b>Hammond</b>	<b>42</b>	<b>NEW-DT</b>	<b>NS 1000kw, 29-58-41/ 89-56-26</b>
<b>Illinois:</b>							
<b>Champaign</b>	15	WICD	FC to ABC	Haynesville	69	K69HO	CL from El Dorado, AR
Chana	46	WBKM-LP	CC x W46DN				
<b>Chicago</b>	<b>31</b>	<b>WFLD-DT</b>	<b>PR&gt;690kw, drop DA; PG NW 150kw/ 474m (aux)</b>	<b>Lake Charles</b>	<b>7</b>	<b>KPLC</b>	<b>XC 30-23-46/ 93-00-03</b>
<b>Chicago</b>	<b>47</b>	<b>WTTW-DT</b>	<b>FC to NBC PR&gt;100kw/176</b>	Lake Charles	45	K45HY	NS 4kw
<b>Decatur</b>	<b>17</b>	<b>WAND</b>	<b>FC to NBC</b>	Lake Charles	69	K69IX	NS 50.61kw
<b>Freeport</b>	<b>41</b>	<b>WIFR-DT</b>	<b>FC: Daystar</b>	<b>Monroe</b>	<b>7</b>	<b>KNOE-DT</b>	<b>NW 1kw/518m</b>
<b>Mt Vernon</b>	<b>13</b>	<b>WPXS</b>	NS 2kw	Monroe	22	KMNO-LP	PC>18.2kw
Quincy	26	W26DA	AF dismissed	New Iberia	19	K19FR	QG x K49DE, 40.6kw
Rochelle	21	NEW-LP	CC x WGNW				
Rochelle	25	WMKB-LP	NS 300w; PR>150kw; PG; PR<25kw	New Iberia	8	W08DT	PR>3kw; CL from Orange Lake, FL
Rochelle	40	W40BW	PR<80kw;PG; then PG<50kw				
Rochelle	55	W55DF	PR>150kw	New Orleans	21	WHNO-DT	NW 17kw/254m
Rochelle	61	W61DT	<b>NW 196kw/ 201</b>	New Orleans	28	K28IL	QG x K59DG, 150kw
<b>Rockford</b>	<b>16</b>	<b>WTVO-DT</b>	<b>FC to ABC drops DA</b>	<b>New Orleans</b>	<b>49</b>	<b>WPXL</b>	<b>PG&gt;5000kw/28 8</b>
<b>Springfield</b>	<b>20</b>	<b>WICS</b>		Shreveport	31	K31HO	QG x K59GO, 50kw
<b>Springfield</b>	<b>55</b>	<b>WRSP-TV</b>		Tullos	44	K44HN	NS 1kw (KEJB-43)
<b>Indiana:</b>				<b>Maryland:</b>			
Columbia	27	W27CT	PR>148kw	<b>Hagerstown</b>	<b>16</b>	<b>WJAL-DT</b>	<b>PA to Silver Spring denied</b>
Evansville	36	W36DF	QG fm W56DN, 13.5kw	Salisbury	23	NEW-LP	AF dismissed
Evansville	41	WTSN-LP	QG from ch. 63, 13.2kw	<b>Massachusetts:</b>			
Fairbanks	32	WKMF-LP	CC x W32CW	<b>Boston</b>	<b>32</b>	<b>WBPX-DT</b>	<b>NS 300kw/ 292, 42-18-27/ 71-13-27</b>
Fort Wayne	43	W43CF	QC from ch. 66, 4.4kw	<b>Pittsfield</b>	<b>4</b>	<b>WNYA-DT</b>	<b>AF 4.15kw/ 397, 42-37-31/ 74-00-38</b>
<b>Gary</b>	<b>56</b>	<b>WYIN</b>	<b>PR&gt;5000kw/46 8 41-52-44/ 87-38-08 dismissed</b>	<b>Springfield</b>	<b>11</b>	<b>WWLP-DT</b>	<b>PR&gt;10kw</b>
<b>Indianapolis</b>	<b>46</b>	<b>WTHR-DT</b>	<b>PG&lt;265m</b>	Springfield	34	WESA-LP	QG fm W12CL, CL from Granby CT, 45kw
Terre Haute	34	W34DD	PR>100kw; PG	<b>Michigan:</b>			
<b>Iowa:</b>				<b>Bay City</b>	<b>46</b>	<b>960710KZ</b>	<b>PR&lt;1600kw/30 6 43-28-24/ 83-50-41</b>
<b>Cedar Rapids</b>	<b>52</b>	<b>KCRG-DT</b>	<b>PG&lt;350kw</b>	Gladstone	51	W51DP	AF dismissed & reinstated
Spencer	52	K52IZ	NS 2.8kw (KPTH-44)	Ironwood	32	W32CV	NW 15.9kw (KQDS-21)
Storm Lake	40	K40CO	QC x K47FZ	Marquette	17	W17CS	PG<8.9kw
Storm Lake	57	K57JL	NS 20kw (KPTH-44)	Muskegon	52	W52DB	QC x W58CU, 21.7kw; CL x Big Rapids
<b>Kansas:</b>				<b>Sault Ste. Marie</b>	<b>8</b>	<b>WGTQ</b>	<b>PC&lt;288m, DA</b>
Chanute	40	K40HR	NS 8kw(TBN)	<b>Minnesota:</b>			
Dodge City	41	K41II	AF dismissed & reinstated	Albert Lea	56	NEW-LP	AF dismissed
Emporia	54	K54JC	AF dismissed	Alexandria	44	K44GH	PG>1.2kw
Garden City	43	NEW-LP	AF dismissed	Geneva	44	K44HE	NS 8kw (3Abn)
Great Bend	27	K27HW	AF dismissed	Mankato	47	K47IV	NS 10kw; then dismissed; then reinstated...
<b>Lawrence</b>	<b>38</b>	<b>KMCI</b>	<b>PC&lt;326m, 38-58-42/ 94-21-02</b>	St. James	32	NEW-LP	AF dismissed
Pittsburg	33	K33HZ	NS 1.5kw (TBN)	Willmar	34	K34HO	QG from K52GK
Pittsburg	36	K36HB	NS 4kw	Willmar	50	K50HZ	QG from K54GG
Topeka	55	K55JZ	QG x K21AP, 49.9kw	<b>Mississippi:</b>			
Wichita	5	KCTU-LP	QC from ch. 55, 3kw				
<b>Kentucky:</b>							
Jamestown	2, 11	NEW-LP	AF dismissed				
<b>Paducah</b>	<b>32</b>	<b>WPSD-DT</b>	<b>NW 906kw/ 492</b>				
<b>Louisiana:</b>							
Alexandria	21	K21EL	PG>150kw				

Grenada	28	W28BP	PG>150kw	Sidney	52	K52IV	AF dismissed
Jackson	10	WBMS-CA	PR>3kw	Thedford	59	K59IF	AF dismissed
Marten	55	NEW-LP	AF dismissed	Valentine	31	K31HM	NS 20kw
Meridian	13	NEW-LP	AF dismissed	Whitman	52	NEW-LP	AF dismissed
Natchez	44	W44CE	FC; sold to KEJB-43	<b><u>Nevada:</u></b>			
Prairie	55,	NEW-LP	AF dismissed	Carson City	32	K57CV	QR from ch. 57, 15kw
	56			<b>Las Vegas</b>	<b>2</b>	<b>KVBC-DT</b>	<b>NW 27.7kw/ 384</b>
Starkville	24	W24CY	NS 2kw (TBN)	<b>Las Vegas</b>	<b>13</b>	<b>KTNV</b>	<b>NS 67.6kw/ 568m (aux)</b>
Starkville	32	W32DB	AF dismissed & reinstated	Las Vegas	23	K23GX	QG x K67GB, 87kw
Tupelo	24,	NEW-LP	AF dismissed	Nixon	56	K56IG	NS 18.7kw (KRXI-11)
	40			Pahrump	67	NEW-LP	AF dismissed
Tupelo	68	K68GQ	NS 15kw (TBN)	Verdi	30	K30HY	QG x K15CT, 800w
<b><u>Missouri:</u></b>				Winnemucca	5	K05LR	NS 3kw
Chillicothe	46	K46HP	AF dismissed & reinstated	<b><u>New Hampshire:</u></b>			
Columbia	11	KZOU-LP	CC x K11SN	Concord	17	W17CV	NS 5.6kw
Columbia	58	NEW-LP	AF dismissed	<b>Concord</b>	<b>33</b>	<b>WPXG-DT</b>	<b>NW 100kw/ 344</b>
Hannibal	23	K23GU	NS 1kw	<b>Merrimack</b>	<b>60</b>	<b>WNEU</b>	<b>PC&gt;5000kw</b>
Jefferson	34	K34HP	NS 4kw	Nashua	13	WYCN-LP	PG>120w
Kirksville	48	K48IR	AF dismissed	<b><u>New Jersey:</u></b>			
Moberly	46	NEW-LP	AF dismissed	Newark	13	WNET	PR 123kw/ 405, 40-44-54/ 73-59-10
New	30	K30HT	NS 630w	<b>Secaucus</b>	<b>9</b>	<b>WWOR-TV</b>	<b>AF 180kw/ 360, 40-44-54/ 73-59-10 (aux); PR 121kw/ 407m for main</b>
Bloomfield				<b><u>New Mexico:</u></b>			
<b>Osage Beach</b>	<b>49</b>	<b>NEW</b>	<b>GA</b>	Albuquerque	38	K38IM	QG x K17DD, 45.4kw
Rolla	16	K16FE	PG<9.8kw	Black Lake	6	K06MS	PG>80w
<b>Springfield</b>	<b>27</b>	<b>KDEB-TV</b>	<b>PC&lt;4575kw/51 7 37-13-08/ 92-56-56</b>	Buchanan	53,	NEW-LP	AF dismissed
				54			
<b>St. Joseph</b>	<b>21</b>	<b>KTAJ-DT</b>	<b>PR&gt;1000kw/31 7 dismissed</b>	Clovis	22	K22GZ	NS 10kw
St. Louis	16	K64DT	QR x ch. 64 but dismissed	Clovis	31	NEW-LP	AF dismissed
<b>St. Louis</b>	<b>40</b>	<b>K40FF</b>	<b>FC: Daystar</b>	Crownpoint	44	K44GD	QC x K67FP
<b><u>Montana:</u></b>				Hobbs	45	K47CF	QR x ch. 47, 16.7kw
Arminton	58	NEW-LP	AF dismissed	Las Cruces	48	K46DH	QC x ch. 46, 150kw
Big Sky	46	NEW-LP	AF dismissed & reinstated	Las Vegas	28	K28IR	NS 6.7kw
Billings	7	NEW-LP	AF dismissed	Lordsburg	36	K36GA	QC x K59CM
Billings	23	NEW-LP	AF dismissed	Pensaco	18	K18HA	QG x ch. 6, 8kw
Billings	48	K48IQ	NS 7.08kw	Reserve	34	K34HS	NS 908w (KRWG-22)
Bozeman	13	NEW-LP	AF dismissed	<b>Roswell</b>	<b>27</b>	<b>KRPV</b>	<b>PR&lt;397kw/28 m, 33-21-44/ 104-31-25</b>
Bozeman	34	K34FI	PR>7.8kw; PG	Roswell	45	K45HX	NS 1kw
Bozeman	36	K36HC	NS 1kw	Sheep	52	NEW-LP	AF dismissed
Bozeman	47	K47IW	NS 5kw	Springs	58	K58HX	NS 1kw
Columbus	52	NEW-LP	AF dismissed	Sheep	58	K58HX	NS 1kw
Fallon	56	NEW-LP	AF dismissed	Springs	58	K58HX	NS 1kw
Great Falls	7	NEW-LP	AF dismissed	Socorro	46	K46HY	NS 2.23kw (KRWG-22)
Great Falls	43	NEW-LP	NS 150kw petition to revoke	Taos	30	K30HS	NS 16.6kw
Havre	7	NEW-LP	AF dismissed	<b><u>New York:</u></b>			
Helena	34	K34HL	NS 1kw	Albany	7	WXXA-DT	GA from ch. 4 over objections of WABC & WWNY
Kalispell	38	NEW-LP	AF dismissed	Albany	26	WTEN-DT	PR<700kw
Lakeside	15	K56DJ	QR from ch. 56, 1.32kw; CL from Polson	Bethel	20	W20CJ	AF dismissed
Lewistown	4	NEW-LP	AF dismissed				
Polson	30	K06MQ	QR x ch 6, 250w; CL fm Finley Point				
Poplar	31	K31HX	NS 940w				
Sidney	52	K52JJ	NS 10w				
Van Morman	56	NEW-LP	AF dismissed				
<b><u>Nebraska:</u></b>							
<b>Alliance</b>	<b>24</b>	<b>KTNE-DT</b>	<b>NW 287kw/ 440</b>				
Bassett	30	K30HQ	AF dismissed				
Broken Bow	52	K52IW	AF dismissed				
Mullen	44	K44HP	NS 12kw				
North Platte	30	K30HV	NS 8kw (TBN)				
Scottsbluff	38,	NEW-LP	AF dismissed				
	40						

Binghamton	6	W06CC	NS 16w	Bridgeport	28	WVTX-CA	PR<37kw; CC
Cobleskill	41	W41CV	NS 900w				x WDBW-CA
Cobleskill	57	W57DS	NS 10kw	<b>Cleveland</b>	<b>8</b>	<b>WJW</b>	<b>PC 236kw/ 333</b>
Easton	15	WNYA-CA	PR>150kw	<b>Cleveland</b>	<b>31</b>	<b>WJW-DT</b>	<b>NW 625kw/</b>
Elmira	6	W06CD	NS 250w				<b>317</b>
Elmira	30	W30AA	FC; sold to	<b>Dayton</b>	<b>2</b>	<b>WDTN</b>	<b>FC to NBC</b>
			Clear Channel	<b>Dayton</b>	<b>22</b>	<b>WKEF</b>	<b>FC to ABC</b>
			(to WIVT	<b>Dayton</b>	<b>50</b>	<b>WDTN-DT</b>	<b>PG&gt;1000kw/32</b>
			ABC?)				<b>3</b>
Endicott	53	W53CR	NS 690w	<b>Toledo</b>	<b>19</b>	<b>WTVG-DT</b>	<b>PG&gt;795kw;</b>
Gouverneur	9	NEW-LP	AF dismissed				<b>NW</b>
			(Canadian	<b>Oklahoma:</b>			
			objection)	Ardmore	53	KCYH-LP	NW 3kw; CC
<b>Ithaca</b>	<b>52</b>	<b>WNYI</b>	<b>NW 26kw/-94m</b>				from K53IH
			<b>42-25-47/</b>	Ardmore	64	NEW-LP	AF dismissed
			<b>76-29-49</b>	Elk City	31	K31HJ	QG x K54CM,
<b>New York</b>	<b>5</b>	<b>WNYW</b>	<b>PR 30kw/</b>				9.98kw
			<b>439m,</b>	Lawton	25	K25IC	NS 250w
			<b>40-44-54/</b>	<b>Muskogee</b>	<b>20</b>	<b>KWBT-DT</b>	<b>PA dismissed</b>
			<b>73-59-10; AF</b>	Tulsa	45	KLOT-LP	QR from ch. 25,
			<b>50kw/ 367m</b>				25kw
			<b>(aux)</b>	<b>Oregon:</b>			
<b>New York</b>	<b>7</b>	<b>WABC-TV</b>	<b>PR 123kw/</b>	Ashland	63	KFBI-LP	PR>1.3kw; PG
			<b>405,</b>	<b>Bend</b>	<b>51</b>	<b>NEW</b>	<b>GA</b>
			<b>40-44-54/</b>	<b>Eugene</b>	<b>28</b>	<b>KEPB-TV</b>	<b>PG&gt;340kw/403</b>
			<b>73-59-10</b>				<b>44-00-07/</b>
<b>New York</b>	<b>11</b>	<b>WPIX</b>	<b>PR 123kw/</b>				<b>123-06-53</b>
			<b>405,</b>	Lakeview	7	K07NR	PC>1.11kw
			<b>40-44-54/</b>	Madras/	30	K56BV	QR from ch. 56,
			<b>73-59-10</b>	Culver			2kw
New York	65	WNYX-LP	QG x ch. 23,	Madras/	32	K58BK	QR from ch. 58,
			10kw	Culver			2kw
<b>Plattsbrgh</b>	<b>38</b>	<b>WCFE-DT</b>	<b>PR&lt;60kw/</b>	Madras/	38	K63CC	QR from ch. 63,
			<b>737m</b>	Culver			2kw
Port Jervis	26	W26DB	NS 100w (10w	Madras/	45	K69BI	QR from ch. 69,
	32	W32DC	on ch. 32);	Culver			1.7kw
	34	W34DI	PR>150kw on	Medford	18	K18GB	PR>12.6kw;
	42	W42CX	channels 42 &				PG
	46	W46DQ	59	Merlin	33	K33GJ	PR ?? (Public
	52	W52DW					Notice says
	55	W55DK					1492kw?)
	59	W59EA		Pendleton	16	KORX-CA	PG>84.8kw
Poughkeepsie	42	W42AE	PC>19.3kw	Portland	54	KPXG-LP	PR>105kw; PG
Rochester	36	WBXO-LP	QC from ch. 15,	Rainier	21	K21HG	NS 2.2kw
			16kw	<b>Pennsylvania:</b>			
<b>Rochester</b>	<b>61</b>	<b>960228KF</b>	<b>AF dismissed</b>	<b>Bethlehem</b>	<b>9</b>	<b>WBPH-DT</b>	<b>NS 3.2kw/</b>
			<b>(WXXI-21)</b>				<b>284m</b>
Troy	35	WNGN-LP	PG<38kw	<b>Clearfield</b>	<b>3</b>	<b>WPSX-TV</b>	<b>PC 42.4kw/</b>
Utica	27	WVVC-LP	CC x W27BJ				<b>395</b>
<b>Utica</b>	<b>30</b>	<b>WUTR-DT</b>	<b>NW 50kw/</b>	<b>Erie</b>	<b>22</b>	<b>WFXP-DT</b>	<b>NS 850kw/ 276</b>
			<b>227m</b>	<b>Erie</b>	<b>35</b>	<b>WSEE-TV</b>	<b>PC&gt;291m,</b>
							<b>42-02-16/</b>
<b>North Carolina:</b>							<b>80-03-44</b>
Asheville	44	WJVV-LP	QG from ch.	<b>Johnstown</b>	<b>34</b>	<b>WJAC-DT</b>	<b>PR&gt;1000kw/38</b>
			25, 95.9kw				<b>6</b>
Buxton	50	NEW-LP	AF 1kw	Mansfield	43	W43CJ	NS 1kw (TBN)
			reinstated	Mt. Pocono	20	NEW-LP	AF dismissed
Buxton	50	W50DC	AF dismissed	<b>Phila.</b>	<b>67</b>	<b>WCAU-DT</b>	<b>NW 560kw/</b>
Goldsboro	67	WHFL-LP	QG x ch. 56				<b>377,</b>
<b>Hickory</b>	<b>14</b>	<b>WHKY-TV</b>	<b>PC&gt;1285kw/40</b>				<b>40-02-30/</b>
Manteo	59	K59ID	NS 10.8kw				<b>75-14-11</b>
Raleigh	41	WWIW-LP	QG from ch.	<b>Pittsburgh</b>	<b>16</b>	<b>WQEX</b>	<b>granted</b>
			66, 64kw				<b>permission to</b>
<b>Raleigh</b>	<b>5</b>	<b>WRAL-TV</b>	<b>NW (aux,</b>				<b>drop DA</b>
			<b>facilities not</b>	<b>Pittsburgh</b>	<b>43</b>	<b>WPGH-DT</b>	<b>PG&lt;303m</b>
			<b>listed)</b>	Pittsburgh	47	W47VC	QG x W65CG,
Reidsville	39	WXIV-LP	QR from ch. 14,				11.3kw
			7kw	<b>Pittsburgh</b>	<b>48</b>	<b>WPXI-DT</b>	<b>PR&gt;1000kw</b>
<b>North Dakota:</b>				<b>York</b>	<b>47</b>	<b>WPMT-DT</b>	<b>NW 933kw/</b>
Bismarck	28	NEW-LP	AF dismissed				<b>385</b>
Grand Forks	54	NEW-LP	AF dismissed	<b>Rhode Island:</b>			
<b>Minot</b>	<b>15</b>	<b>KMCY-DT</b>	<b>NS 500kw/</b>	<b>Providence</b>	<b>21</b>	<b>WSBE-DT</b>	<b>PG&gt;268m</b>
			<b>216; requests</b>	<b>South Carolina:</b>			
			<b>DA</b>	<b>Charleston</b>	<b>49</b>	<b>WITV-DT</b>	<b>NW 400kw/</b>
Minot	40	NEW-LP	AF dismissed				<b>521</b>
<b>Ohio:</b>							





Wichita Falls 40 K40HZ NS 1kw  
Wichita Falls 5 NEW-LP AF dismissed  
Wickett 13 K13YT NS 3kw  
**Wolfforth 22 KUPT PR>142kw/256**

**Utah:**  
Brian Head 35 K35HG NS 75w  
Bullfrog 15 K15GN NS 600w (KUED-7)  
Cedar City 16 K16FZ NS 3.79kw  
Cedar City 17 K17GS NS rescinded  
Delta 45 K45GE QC fm K68BQ, 2.6kw  
Hanna 3 K03HM NS 5.2w  
Heber/Midway 39 NEW-LP AF dismissed  
Helper 31 K31HL NS 1.73kw  
Henrieville 22 K22GP NW 10w  
Huntsville 43 K43IY NS 6kw  
Hurricane 21 K21GW NS 340w (KUED-7)  
Logan 68 K68GP AF dismissed  
Mount 22 K57HK QC from ch. 57, 1.8kw  
Pleasant Park City 23 K23GP PR>95kw; PG  
**Price 3 KUTF-DT NS 9.4kw/658m**  
Price 23 K23GW NS 1.73kw  
Roosevelt 45 K45GN QC fm K06DY, 1.12kw  
Rural Summit 22 K22DM PG>990w; already on  
County  
Salina 24 K24GK NS 143w (KUWB-30)  
Samak 31 K31HH NS 140w  
Santa Clara 48 NEW-LP AF dismissed  
Ticaboo 9 K09XT NW 80w (KULC-9)  
Tooele 63 K20ER QR from ch. 20, 1.13kw  
Vernal 33 NEW-LP AF dismissed

**Vermont:**  
Burlington 30 W30BL PR>30kw  
Burlington 39 WBVT-LP PR<60kw  
**Hartford 31 WNNE PC<1820kw/684**

Manchester 2 WVBK-CA PR<5w; PG  
Monkton 19 W19BR PR>60kw  
St. Albans 49 W52CD QR from ch. 52, 30kw

**Virginia:**  
Charlottesville 13 W13DD AF dismissed  
**Charlottesville 19 860410KP PR>326m, 37-59-03/78-28-52**

Hampton 51 W51DO QC fm W21AQ, 50kw  
Norfolk 45 WNLO-CA PC>139kw  
**Richmond 57 WCVW PR<50kw/293m**

**Washington:**  
Longview 17 K17GV NS 2.2kw  
Longview 28, NEW-LP AF 2.2kw dismissed but reinstated  
31  
Longview 41 K41IP NS 2.2kw  
Longview 44 K44HM NS 2.2kw  
Ocean Park 51 K51HW NS 10kw  
Pullman 46 K46HV NS 22kw (TBN)  
Richland 36 KBWU-LP QR from ch. 66, 50kw  
**Seattle 39 KIRO-DT PR>1000kw**  
Seattle 40 K40HW QR from K68DL dismissed

**West Virginia:**  
Bluefield 12 NEW-LP AF dismissed

**Huntington 13 WOWK-TV PC 114.8kw/414m, 38-30-21/82-12-33**

**Huntington 34 WPBY-DT NW 60.1kw/378**

**Lewisburg 8 WVNS-DT QG from ch. 48, 3.68kw/577m**

**Morgantown 33 WNPB-DT NW 108kw/441**

**Wisconsin:**  
Arpin 57 W57DR NS 14kw (WFXS-55)  
Coloma 48 W48DB QC fm W64AU, 11.8kw  
Eau Claire 23 K23HC NS 1kw  
**Janesville 32 WBUW-DT PG>387m, 43-03-03/89-29-13**

**Kenosha 40 WPXE-DT NW 830kw/358, 43-05-44/87-54-17**

**Madison 15 WMTV PR 891kw/415m**

**Madison 19 WMTV-DT PR>56kw/387m**

River Falls 47 W47CW QG fm W55AP, 1kw  
Washington 18 W18CU QC fm W55AO, 1.64kw; CL from Sister Bay NS 250w

Wausau 14 K14MB  
**Wyoming:**  
**Casper 13 KCWY PC>10.25kw/534m**  
Casper 24 NEW-LP AF dismissed  
Cheyenne 13 K13YR QC fm K08NK, 3kw  
Cheyenne 40 K40HP NS 10kw  
Cheyenne 44 K44HF NS 9.1kw  
Cheyenne 47 K47IU NS 20kw  
Cheyenne 50 K50HX NS 5kw  
Cody 43 K43IZ NS 405w (KULR-8)  
Cody 52 NEW-LP AF dismissed  
Gillette 19 NEW-LP AF dismissed  
Gillette 45 K45IB NS 1kw  
Laramie 25 NEW-LP AF dismissed  
Laramie 48 K48IN NS 50kw  
Rock Springs 41 K41IJ NS 7kw  
Teton Village 25 K04NR QR from ch. 4, 300w but already dismissed

Torrington 52 NEW-LP AF dismissed



**Guam:**  
Tamuning 26 KTKB-LP CC x K26HK



**Puerto Rico:**  
**Aguadilla 32 WELU PG 7.1kw/317m**  
**Aguadilla 34 WELU-DT PR<605m, 18-09-06/66-59-23**

Mayaguez 26 NEW-LP AF dismissed  
**Ponce 14 WTIN FC to relay WAPA-4**

Ycamuy 45 NEW-LP AF dismissed



& reinstated

**Canada:**

**Alberta:**

Jasper 5 CBXT-4 PG<50w/  
-55m, XG

**Ontario:**

**Toronto**

44 CJMT-DT AF  
15kw/304m,  
43-38-56/  
79-22-55

**Toronto**

64 CFMT-DT AF  
15kw/304m,  
43-38-56/  
79-22-55

**Toronto**

69 CJMT-TV QC from ch.  
44

**Quebec:**

**Montreal**

17 CIVM-TV PG<889.5kw

**Trois-**

45 CIVC-TV PG<651.8kw

**Rivieres**

Thanks to Eric Bueneman, Jeff Kruszka, K.M. Richards, and Saul Chernos for information appearing elsewhere in this month's column.

My apologies for the extreme abbreviation this month. There was a lot of FCC activity, and the length of the column was getting out of hand. Hopefully the LPTV coordinates will be back next month, though I have a bad feeling the high levels of LPTV activity will continue for awhile.

I'm pretty sure "Ycamuy", Puerto Rico is a typo. There is a town of "Camuy" on the island, and I'm sure that's where this LPTV station plans to operate.

The five change requests in the New York City area (WNYW-5, WABC-7, WWOR-9, WPIX-11, and WNET-13) reflect the permanent moves of these stations to the Empire State

Building. They had been operating there under special temporary authority, since the 9/11 attacks.

KUTF-3 is already operating an analog facility on the same site and channel. Note two new channels added to the DTV assignment table, in Missouri and Oregon.

The KPLC-7 towers collapsed in March. The new tower was immediately adjacent to the old one, and when the old tower collapsed it took the new one with it. Luckily (amazingly!) nobody was hurt. The station has returned to the air temporarily from a short tower at the studio. Presumably the tower site change listed in this month's column is moot, if said tower no longer exists...

There's a fair amount of low-band 3,000-watt LPTV activity this month. A station in Kansas has moved from channel 55 to 5; one in Florida has received permission to move from 65 to 6; another on channel 4 in Florida has been granted a power increase from 40 watts to 3,000; and a permit has been issued for a new 3-kw station on channel 5 in Nevada. Additionally, a channel 51 station in California has requested a move to channel 4 with 3kw.

There's also a new DTV station on the air on channel 2 in Las Vegas; and new station WNYA-51 in western Massachusetts has applied for a 4kw DTV facility on channel 4.

We're approaching the E-skip season – and all of this new low-band activity will be Es-DX-able. Good luck!

(if I ever see the term "Es-DX-able" in print again, I'll never forgive myself<grin>!)

## This Month's Cover

You must admit this one is a little different. It began with a renewal by Paul Mitschler, now living in Albuquerque. The renewal had a letter done in glossy photo paper with the image behind the print. Cool, I thought. Not only was the TV on the cover, it was also on the envelope.

A short time later an envelope arrived with a bunch of pictures. I picked one, scanned it and made it into a cover.

What you see is a 1939 B&W television. I have no idea how Paul got the WTFDA address to look as it does. It actually looks like it's on the CRT. Thanks Paul!



TELECUBANACAN  
SANTA CLARA CITY, CUBA, CHANNEL 5  
Thanks to Jesus Perez for this photo.



**FM News**  
**APRIL '04**

Email: redsoxdxer417@hotmail.com

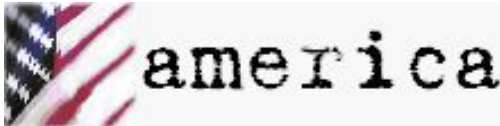


**Adam Rivers**  
 37 Carlton Ave.  
 Chicopee, MA 01020

**ABBREVIATIONS:**

AFA: American Family Association  
 CC: call letter change  
 CL: city of license change  
 CX: a construction permit has been cancelled  
 C1, C2, etc.: a change in status to that FM license class  
 DA: directional antenna  
 DE: station has been deleted  
 FC: format change  
 GA: granted amendment to the table of FM allocations  
 GE: granted extension of construction permit  
 GX: granted replacement of expired permit  
 LC: license to cover filed (ready to come on the air)  
 MC: multiple-city ID  
 NC: no change yet on a reported change or permit  
 ND: non directional antenna  
 NO: not on the air

NS: new station granted  
 NW: new station signs on  
 OSA: one step application granted for change  
 PA: proposed amendment change to FM allocation table  
 PC: power change on the air (> = increase, < = decrease)  
 PG: power change granted (> = increase, < = decrease)  
 QC: frequency changed occurred  
 QG: frequency change granted  
 RA: silent stations returns to the air  
 RE: station requests an extension on permit  
 RX: station requests replacement of expired permit  
 SC: slogan change or update  
 SI: station is silent  
 SOA: signed on air  
 XA: dismissed amendment to FM allocations  
 XC: transmitter site change occurred  
 XG: transmitter site change granted



**ALABAMA:**

Arab: WAFN-FM 92.7, PC>1.45kw  
 Dadeville: WZLM 100.3, OG from 97.3, 2.2kw/167m  
 Gardendale: WODL 97.3, PG>6.2kw/404m, 33-29-04/86-48-25; CL from Homewood  
 Goodwater: WSSY-FM 97.5, PG 5.1kw/108m, 33-01-42/85-59-23; CL from Talladega  
 Jemison: WEZZ-FM 97.7, PG>3.1kw/140m, 32-58-12/86-43-04; CL from Clanton  
 Muscle Shoals: WVNA-FM 105.5, PC 4.4kw/118m, 34-40-27/87-42-48  
 Pelham: WXMT-LP 105.5, calls for new station  
 Thomaston: WAYI 97.7, PG>3.7kw/129m, 32-26-33/87-46-04



**ALASKA:**

Anchorage: KASH-FM 107.5, PC>299m, 61-20-11/149-30-48  
 Kasilof: KWMD 90.7, QR from 90.5, 6kw-V/1m, 60-31-58/151-04-52  
 Kasilof: KWVK 88.9, QR from 89.5, 6kw-V/1m, 60-31-58/151-04-52

**ARIZONA:**

Bacavi: KBWV-LP 101.5, NW ?w/384m, 35-15-19/110-39-35  
 Bisbee: KBRP-LP 96.1, call for new station  
 Cottonwood: KZGL 95.9, PG>21kw/799m, 34-41-11/112-07-02  
 Green Valley: KTZR 97.1, CC from KWFM  
 Oro Valley: KCMT 102.1, PR>81m  
 Parker: KVEZ 99.3, CX, DE (off air over 12 months)  
 Tucson: KPTY-LP 100.3, calls for new station

**ARKANSAS:**

Heber Springs: KAWW 100.7, FC to AC "Diamond 100.7"  
 Jonesboro: KPHW-LP 97.9, calls for new station  
 Marianna: KAKJ 105.3, PR 6kw/100m, 34-47-20/90-47-08  
 Mena: KENA 102.1, PC 12.5kw/143m, 34-32-42/94-18-21  
 Mena: KRMN-LP 101.1, NW ?w/7m, 34-36-42/94-13-44  
 Pangburn: KSMD 99.1, FC to news-talk  
 Rogers: KDUA-LP 96.5, calls for new station

**CALIFORNIA:**

Cambria: KOTR 94.9, CC to KPYG, FC to AAA // KPIG 107.5 "The Pig"

Carlsbad: KOCL 95.7, CC to KUSS, FC to country "US95.7"  
 Chowchilla: KNT0 93.3, PR>4.6kw/114m, 36-59-14/120-12-21  
 Clovis: KZFO 92.1, flips to regional Mexican "Que Onda", CC to KOND  
 Cochalla: KPSH 90.9, SOA with religious  
 Essex: KWHY 98.9, PR>9kw/348m  
 Grass Valley: KCEE 103.3, PG>530w/336m  
 Hollister: KBTU 93.5, CC to KOTR  
 Laytonville: KJCU 89.9, NW 130w/110m, 39-26-35/123-43-58  
 Laytonville: KHKL 91.9, PG 110w/689m, 39-41-38/123-34-43  
 Lenwood: KHDR 96.9, PG>244m  
 Los Angeles: KXOL-FM 96.3, PG 27.5kw/204m, 34-09-50/118-11-46  
 Merced: KIBG 106.3, CC to KHPO, FC to classic rock "The Hippo"  
 Merced: KGDM-LP 107.5, calls for new station  
 Modesto: KEJC 93.9, FC to regional Mexican as "Que Buena", PR>3.95kw/123m, 37-39-00/121-01-24  
 Nevada City: KYRR-LP 93.3, PG 109m, 39-18-57/120-56-29  
 Palanda: KHTN 104.7, CL from Los Banos  
 Paradise: KRGR-LP 107.1, calls for new station  
 Placerville: KZSA 92.1, CC to KRLL  
 Roseville: KXOA 93.7, SC to "Howard 93.7" (yes, after Howard Stern), CC to KHWD



Salinas: KEBV 97.9, FC to oldies  
 San Diego (Tijuana): XHHCR 99.3 FC to oldies "Kool 99.3"  
 San Diego (Tijuana): XHMORE 98.9 FC to R&B "98.9 More FM"  
 San Francisco: KISQ 98.1, PC 75kw/310m  
 Shafter: KRFR 93.1, PC 4kw/123m, 35-28-21/119-01-40  
 Shafter: KQZO 89.5, calls for new station  
 Sonoma: KSVY 91.3, calls for new station  
 Yuba City: KXCL 103.9, RA with 80s oldies  
 Yucca Valley: KYOR 106.9, CC to KDGL, FC to classic hits "The Eagle"

**COLORADO:**

Aspen: KSPN 103.1, PR>2.7kw/547m, 39-27-14/106-55-21



Brighton: KAMV-LP 101.9, calls for new station

Canon City: KSTY 104.5, PR>25kw

Durango: KMZG-LP 96.1, calls for new station

Eagle: KEAE-LP 107.9, calls for new station

Eaton: KLCQ 88.9, SOA with K-Love contemporary Christian

Glenwood Springs: KKCH 92.7, PG>55.2kw

Granby: KRKM-FM1 106.3, NW 400w, 40-02-24/105-56-11

Grand Junction: KPRN 89.5, PG>20kw/402m

Greeley: KUNC-FM 91.5, PC 81kw/211m, 40-38-31/104-49-03

Gypsum: KLRY 91.3, SOA with K-Love cont. Christian

Longwood: KCDC 90.7, CC to KGUD "K-Good"

Meeker: KAYW 98.1, PR>379m, 40-11-45/107-56-00

Norwood: KRYD 104.9, PR>24kw/510m, 38-18-57/108-11-47

Parachute: KPCT-LP 106.7, NW ?w/-302m, 39-26-12/108-04-06

Rocky Ford: KJQY 95.5, PR>224m, 37-54-08/104-16-00

Timnath: KKHI-FM 105.5, PR>58kw/371m, 40-37-03/105-19-40

**DELAWARE:**

Milford: WXPZ 101.3, CC to WNCL, FC to oldies as "Kool 101.3"

**FLORIDA:**

Apopka: WPYO 95.3, FC to R&B "Power 95.3" (Orlando), PG>12kw/144m, 28-34-27/81-27-46; CL to Maitland

Brooksville: WRRR-LP 102.7, NW ?w/26m, 28-32-08/82-28-30

Callaway: WMXP 103.5, CC to WAKT-FM

Cocoa Beach: WFKS 104.1, PG<96kw

Dade City: WTMP 96.1, FC to rhythmic oldies "Jammin Oldies 96.1"

Gainesville: WERF-LP 95.7, PR<26.2m

Gracefill: WTOT 101.7, FC to talk "Lets Talk 101.7"

Immokalee: WCTI-LP 107.9, CC to WCIW-LP

Key Largo: WORZ-LP 104.3, calls for new station

Key West: WAVQ 88.3, PR>37kw-H/100kw-V/83m, 24-39-34/81-32-19

Lafayette: WEGT 99.9, PC 5.5kw/90m, 30-29-42/84-13-51

Live Oak: WMLO-LP 97.1, NW ?w/23m, 30-16-00/82-59-14

Madison: WXHT 102.7, PC>19kw/115m, 30-38-23/83-26-52

Merritt Island: WCPL-LP 95.5, calls for new station

Miami: WDNA 88.9, PR>6.28kw/349m, 25-32-24/80-28-07

Monticello: WFRF 105.7, RA simulcasting WFRF-AM, contemporary Christian

New Port Richey: WLPJ 91.5, PC 16.5kw/93m, 28-16-58/82-42-43

Ocala: WITG-LP 104.7, NW ?w/37m, 29-11-31/82-04-27

Orlando: WSHE 100.3, CC to WEBG, SC to "Big 100", PG>100kw

Panama City: WJTF 89.9, NW 100kw/32m, 30-10-05/85-40-30

Panama City: WLHR 107.9, PG<98.5kw, CC to WPFM-FM



Pensacola: WBG 98.7, FC to country "Cat Country", CC to WYCT

St. Augustine: WSOS-FM 94.1, PR 25kw/92m, 29-57-57/81-28-36

St. Catherine: WKFA 89.3, PR>90m, 28-32-23/82-04-48

St. Petersburg: WBBY 107.3, CC to WXGL, SC to "The Eagle"

Summerfield: WJRN-LP 95.9, calls for new station

Summerland Key: WPIK 102.5, FC to hot AC//WAVK

Tallahassee: WBZE 98.9, PC<99.2kw

Trenton: WDJY 101.7, CC to WDVH-FM

Wakulla County: WHTR-LP 96.9, calls for new station

Yankeetown: WXOF 96.3, FC to classic hits

**GEORGIA:**

Blackshear: WKUB 105.1, PG>50kw

Bowdoin (Atlanta): WMAX 105.3, FC to talk "Real Radio 105.3"



Buford: WLKQ 102.3, FC to classic hits

Dawson: WMRZ 98.1, PA from class A to C3

Elberton: WWRK 92.1, CC to WSGC-FM

Folkston: WOKF 92.5, FC to rhythmic oldies "Jammin Oldies 92-5", CC to WFJO (Jacksonville)

Glennville: WCGN 106.3, CC to WOA, FC to R&B

Meigs: WQLI 92.3, granted CL from Pelham

Pavo: WWSG 90.5, CC to WNKL

Pinehurst: WQXZ 98.3, PA from Cordele

Quitman: WSTI-FM 105.3, PG>25kw/97m

Ringgold: WSGC 101.9, CC to WTUN

Valdosta: WWRQ-FM 107.9, PC>50kw/82m

Valdosta: WWET 91.7, PG 430w-V/26m

Yates: WWBM 89.7, NW 1kw/98m, 33-27-47/84-53-35

**HAWAII:**

Keaau: KIH 105.1, CC to KBGX

**IDAHO:**

Driggs: KCHQ 102.1, RA with country "Go Country", PC>4kw-H/579m, 43-42-42/111-20-56

Idaho Falls: KPLV 105.5, CC to KTHK, FC to country "The Hawk"

Kamiah: KMEI-LP 97.3, PC>-79m, 46-12-46/115-59-19

Rigby: KKL 89.5, CC to KLRU

Rupert: KKMV 106.1, QR from 92.5, 25kw/761m, 42-20-06/113-36-15

**ILLINOIS:**

Chicago: WDRV 97.1, PR<8.3kw

Chicago: WNUA 95.5, NS 3.1kw/482m, 41-52-44/87-38-08 (aux)



Clinton: WHOW-FM 95.9, RA with AC

Eureka: WRVP 98.5, CC to WPIA

Glasford: WPPY 101.1, CC to WVLE-FM

Godfrey: WLCA 89.9, PR>1.5kw/120m, 38-56-57/90-11-47

Highland: WVIV-FM

103.1, PG 3.4kw/135m

Jerseyville: WMLL 104.1, CC to WRDA, FC to standards "Red @ 104.1"

Joliet: WLLI 96.7, FC to AC "Star 96.7", CC to WSSR

Lake Villa: WCLV-LP 101.5, CC to WLGS-LP

Marion: WDDD-FM 107.3, CL to Johnson City denied

Morris: WBEO 90.7, PG 1.45kw/143m, 41-17-09/88-25-49, signs on //WBEZ 91.5 Chicago

Morris: WYXX 103.1, FC to standards, CC to WCSJ-FM, PG>6kw

Pekin: WPIA 98.5, FC to Christian hits "Hope 98.5"

Round Lake Heights: WRLR-LP 101.5, calls for new station

Shelbyville: WHBW-LP 93.7, calls for new station

St. Joseph: WGNJ 89.3, PG 50kw/140m, 40-05-16/87-53-42

Streator: WYYS 106.1, PR>6kw

Urbana: WRFU-LP 104.5, calls for new station

**INDIANA:**

Brazil: WSDM-FM 92.7, GA from 97.7

Boonville: WYXY 107.1, FC to contemporary Christian

Charlestown (Louisville KY): WEGK 104.3, FC to classic country "Eagle 104.3"

Cloverdale: WSPM 89.1, FC to religious (Indianapolis)

Columbia City: WSHI 106.3, FC to soft AC "Sunny 106.3"

Evansville: WNIN-FM 88.3, PC 16kw/263m, 37-59-01/87-16-13

Evansville: WNIN-FM 88.3, NS 21.5kw/225m (aux)

Greencastle: WSPV 90.5, signs on with contemporary Christian, NW 15kw-V/133m, 39-41-19/86-42-03, CC to WIKL

Huntington: WXKE 102.9, FC to standards "The River" (Fort Wayne)

Jasper: WKJR 91.7, PR 2.6kw/84m, 38-25-23/86-49-47

Seymour: WQKC 93.7, NW 1.85kw/65m, 38-58-33/85-53-21 (aux)

South Bend: WUBS 89.7, PR>1.3kw/89m, 41-40-36/86-15-08

Spencer: WSKT 97.7, GA from 92.7

**IOWA:**

Adel: KIH8 88.9, PG<500w/63m, 41-36-09/94-02-55  
Asbury: WJOD 103.3, PR<8.7kw/123m, 42-30-10/90-42-24  
Boone: KBGG-FM 98.3, AF 28kw/114m, 41-49-51/93-43-53 (aux)  
Council Bluffs (Omaha NE): KQKQ 98.5, shifts to Modern CHR with heavy emphasis on 90s hits, "Q98-5"  
DeWitt: KGYS-LP 92.5, calls for new station  
Emmetsburg: KEMB-LP 94.1, calls for new station  
Fairfield: KLIK 95.9, FC to Hot AC "Hot 96 FM"  
Madrid: KLRX 96.1, CC to KNWM  
Osceola: KJJC 106.9, CC to KNWI  
Pleasantville: KPBC-LP 94.1, calls for new station  
Stuart: KKRF 107.9, PC<94.kw/150m, 41-27-43/94-29-19  
Waterloo: KFMW 107.9, XC 42-24-02/91-50-36

**KANSAS:**

Dodge City: KVPC-LP 100.5, calls for new station  
Enterprise: KBMP 90.5, PG 35kw/109m, 39-10-02/97-23-59



Medicine Lodge: KSNS 91.5, PC>48kw  
Wichita: KEYN-FM 103.7, PC>98kw

**KENTUCKY:**

Bowling Green: WGGC 95.1, PA from Glasgow

Frankfort: WKYW 104.9, FC to country "Classic Country"  
Georgetown: WRVG-FM 89.9, FC to contemporary Christian "K-Love", sold to K-Love network  
Hopkinsville: WHOP-FM 98.7, PR>189m, 36-55-41/87-32-50  
Lawrenceburg: WKYL 102.1, PC>6kw  
Madisonville: WKTG 93.9, AF 5.5kw/100m, 37-21-31/87-29-45 (aux)  
Somerset: WKII 102.3, CC to WHMJ  
Valley Station: WRVI 105.9, AF 890w/141m, 38-07-09/85-56-20 (aux)  
Williamsburg: WEZJ-FM 104.3, PC>6.2kw/200m

**LOUISIANA:**

Alexandria: KOUZ 89.9, CC to KLXA  
Alexandria: KZMZ 96.9, FC to classic rock "96-9 Rocks"  
Baker: WJNH 107.3, FC to classic country "Country Legends 107-3"  
Benton: KSYR 92.1, FC to AC "Sunny 92.1"  
Franklin: KFMV 105.5, PR>6kw/93m  
Hammond: WBBE 103.3, NW 50kw/273m, 30-24-03/90-50-40 (aux)  
Lake Arthur: KVEE 107.3, CC to KJMH  
Monroe: KOUS-LP 96.3, PG>31m, 32-26-04/92-06-17  
Oil City: KVMA-FM 107.9, PR<24.5kw/163m, 32-29-36/93-45-55; CL from Magnolia AR  
Shreveport: KRUF 94.5, PG 100kw/508m, 32-39-57/93-55-58

**MAINE:**



Fairfield: WCTB 93.5, FC to classic hits "The River"  
Rumford: WLOB 96.3, PG<36kw/443m, 44-15-06/70-25-24  
Searsport: WFZX 101.7, simulcasting WNSX's new format

Winter Harbor: WNSX 97.7, FC to classic rock "The Fox"

**MARYLAND:**

Crisfield: WBEY 96.9, PR 1.4kw/113m, 38-01-45/75-45-05  
Frederick: WYPF 88.1, now simulcasting WYPR 88.1  
Ocean City: WEES-LP 107.9, NW ?w/75m, 38-24-59/75-03-24  
Prince Frederick: WVSJ-LP 99.9, calls for new station

**MASSACHUSETTS:**

Amherst: WMUA 91.1, PC 450w/39m, 42-23-37/72-31-21  
Boston: WERS 88.9, PR>5.3kw dismissed  
Boston: WJMN 94.5, PC 9.2kw/353m  
Easthampton: WBEC-FM 105.5, PA from Pittsfield  
Fairhaven: WFHN 107.1, PC 5.4kw/105m, 41-38-25/70-55-03  
Great Barrington: WBCR-LP 97.7, calls for new station  
Nantucket: WNAN 91.1, PC>2.3kw/64m  
S. Yarmouth: WOCN 103.9, PC>5.5kw/104m, 41-41-26/70-11-21



Westborough: WAAF 107.3, PR<3.8kw/243m, 42-23-02/71-29-37; CL from Worcester

**MICHIGAN:**

Bay City: WHNN 96.1, PR>451m, 43-33-11/83-41-28 dismissed  
Benton Harbor: WVBH-LP 88.3, calls for new station  
Carrollton: WTCF 100.5, CC to WXQL, FC to rhythmic oldies "Kool 100.5"  
Cass City: WIDL 92.1, PR>17.5kw/119m, 43-39-59/83-04-29; CL from Caro  
Charlevoix: WWCZ 90.9, CC to WTCK



Eagle: WJOM 88.5, PR>10kw-V/88m, 42-48-32/84-47-06  
Good Hart: WJOG 91.3, PR 5.45kw-V/203m, 45-30-29/85-02-10  
Grand Rapids: WOOD-FM 105.7, AF

99kw/177m, 42-44-14/85-37-16 (aux)  
Manistique: WPIQ 99.9, NW 6kw/46m, 45-58-13/86-11-06  
Mt. Pleasant: WQOS-LP 98.9, calls for new station  
Newberry: WNBY-FM 93.7, PR>50kw/141m, 46-21-32/85-10-30  
Norton Shores: WMBC-LP 100.9, NW ?w/38m, 43-09-52/86-17-30  
Rogers Heights: WAQQ 88.1, calls for new station  
Sault Ste. Marie: WYSS 99.5, PG>100kw/77m  
Sault Ste. Marie: WSUE 101.3, PR<100kw/67m, 46-26-16/84-22-42

**MINNESOTA:**

Austin: KNSE 90.1, signs on //KNOW 91.1  
Bemidji: KKBK-FM 103.7, PC>146m  
Breckenridge: KLTA 105.1, flips to AC "FM 105.1" (Fargo ND)



Duluth: KDAL-FM 95.7, PG<221m, 46-47-15/92-07-21  
Fergus Falls: KCMF 89.7, NW 2.7kw/66m, 46-19-12/96-05-32  
Glenwood: KMGK 107.1, PR>25kw/100m, 45-44-39/95-08-05  
Hibbing: WTBX 93.9, PR<162m, 47-22-24/93-00-48  
Moorhead: KXBQ-LP 95.9, calls for new station  
Park Rapids: KDKK 97.5, PR>194m, 46-55-51/95-00-27  
Springfield: KNSG 94.7, FC to AC  
St. Louis Park: KUOM-FM 106.5 and KDXL 106.5 (share-time), PG>77m, 44-56-46/93-19-27  
Willmar: KKLW 90.9, signs on with K-Love cont. Christian

**MISSISSIPPI:**

Brookhaven: WBKN 92.1, PR 3.4kw/92m, 31-33-49/90-26-27  
Collins: WKNZ 107.1, FC to modern AC "The Zone" (Hattiesburg)  
Hattiesburg: WUSW 103.7, FC to rock "103.7 The Fox"  
Jackson: WDBT 95.5, CC to WHLH  
Jackson: WUSJ 96.3, PR>391m



Kosciusko: WJTA 91.7, FC to AFR  
Okolona: WACR-FM 103.9, PR<120m, 34-12-18/88-41-49; CL from Columbus  
Picayune: WKSJ 106.1, PR 28kw/201m, 30-31-17/90-01-12  
Pickens: WYJS 105.9, FC to black gospel "Praise 105.9", CC to WOAD  
West Point: WKBB 100.9, FC to news-talk, PG 10kw/157m, 33-40-43/88-48-18

**MISSOURI:**

Bowling Green: KPCR 94.1, CC to KPVR  
Centralia: KSDC-LP 94.9, NW ?w/31m, 39-14-45/92-12-38  
Cuba: KNLQ 91.9, NW 5kw/76m, 38-02-14/91-23-04, signs on with southern gospel  
DeSoto: KDJR 100.1, PC<2kw/106m  
Garden City: KFME-FM 105.1, NW 69kw/349m, 39-05-26/94-28-18



Houston: KUNQ 99.3, RA with classic country  
 Ironton: KYLS-FM 95.9, PC<3.1kw/198m  
 Monroe City: KWBZ 107.5, FC to classic hits, PC>10kw/100m  
 Salem: KCVX 91.7, signs on with contemporary Christian, NW 40kw/64m, 37-36-16/91-32-46

**MONTANA:**

Belgrade: KSCY 96.7, CC to KISN  
 Big Sky: KBZM 104.5, PG 5kw/1017m, 45-16-41/111-26-57  
 Bozeman: KGLT 91.9, PC>12kw/261m, 45-57-25/111-22-11  
 Great Falls: KEHT 100.3, CC to KLSK  
 Great Falls: KGFC 88.9, PR 5.7kw/84m  
 Plentywood: KZLP-LP 104.1, calls for new station  
 Sidney: KGCX 93.1, PR>100kw/110m, 47-51-51/103-57-27

**NEBRASKA:**

Bennington: KRQC 93.3, FC to classic country "US 93-3"  
 Cozad: KAMI 104.5, CC to KCVN  
 Crete: KSLI 104.1, dropped "Kiss format", new format coming  
 Grand Island: KXLJ 88.3, CC to KKLK  
 Holdrege: KMTY 97.7, PC<77m, 40-26-26/99-23-59  
 Imperial: KADL 102.9, PG 300w/68m, 40-30-45/101-38-39  
 Omaha: KGBI-FM 100.7, PR>368m, 41-03-01/96-11-33  
 Ord: KNLV-FM 103.9, PG>30kw/194m, 41-34-17/98-55-21  
 Plattsmouth: KCTY 106.9, FC to 80s/90s hits "Retro 106.9" (Omaha)

**NEVADA:**

Carson City: KWNZ 97.3, CC to KZTO; FC to rock  
 Fallon: KAVS-LP 93.9, calls for new station  
 Garderville-Minden: KGVM 99.1, PR>25kw  
 Moapa Valley: KBHQ 104.7, simulcasting KDOX 1280 Las Vegas  
 Reno: KNHK 92.9, CC to KURK  
 Sun Valley: KYWD 93.7, CC to KWNZ, FC to rhythmic CHR



**NEW HAMPSHIRE:**

Dublin: WFCB-LP 100.3, calls for new station  
 Hillsboro: WTPL 107.7, PG>1.25kw/217m, 43-09-17/71-47-44  
 Jackson: WEVJ 99.5, NW 4.7kw/52m, 44-10-30/71-10-07  
 Lebanon: WVFA 90.5, signs on with religion  
 Londonderry: WLLQ-LP 102.9, NW ?w/12m, 42-55-08/71-23-51

**NEW JERSEY:**

Bridgeton: WSNJ 107.7, signs off air, to reappear at 107.9  
 Canton: WJKS 101.7, PR 800w/155m  
 Eatontown: WHTG 106.3, PC 1.1kw/161m, 40-16-41/74-04-51  
 Newark: WHTZ 100.3, NS 13.5kw/281m, 40-45-22/73-59-12 (aux)  
 Union Township: WKNJ 90.3, PG>20w/48m, 40-41-35/74-15-44



**NEW MEXICO:**

Albuquerque: KFLO 91.5, PR<20kw/1232m  
 Belen: KVLK 90.9, NW 10kw-V/49m, 34-23-44/107-00-42  
 Cloudcroft: KNMB 96.7, AF 190w/22m, 33-23-06/105-39-41 (aux)  
 Grants: KXXQ 100.7, signs on with country  
 Grants: KDSK 92.7, PR 1kw/820m, 35-15-11/107-35-46  
 Hobbs: KROZ-LP 105.9, calls for new station  
 Mesquite: KELP-FM 89.3, NW 3kw/56m, 32-05-05/106-44-01  
 Tatum: KTUM 107.1, signs on with classic rock //KIDX

**NEW YORK:**

Brighton: WZNE 94.1, AF 1kw/120m, 43-09-17/77-36-10 (aux)

Brockport: WMJQ 105.5, FC to K-Love contemporary Christian, PR>6kw/100m, 43-09-51/77-47-02  
 Cape Vincent: WBDR 102.7, FC to country "Kix 102.7", targeting Kingston ON



Calverton-Roanoke: WXXP 105.3, CC to WDRE  
 Clifton Park: WDCD 96.7, CC to WPTR  
 Cortland: WDRX-LP 100.7, calls for new station  
 Frankfort: WKLL 94.9, FC to standards, CC to WTLB-FM  
 Garden City: WLIR 92.7, CC to WZAA, FC to Spanish //WCAA 105.9  
 Hampton Bays: WBON 107.1, CC to WLIR, FC to modern rock "The Box"  
 Jamestown: WMHU 101.9, CC to WHUG  
 Kingston: WKHV-FM 103.9, calls for new station  
 Lake Luzerne: WBAR 94.7, PR>940w/253m  
 Lake Success: WKTU 103.5, NS 13.5kw/281m, 40-45-22/73-59-12 (aux)  
 Malta: WNYQ 105.7, PG 4.8kw/112m, 42-52-44/73-51-47; CL from Queensbury, PA from A to B1  
 Manilus: WAQX-FM 95.7, NW 20kw/44m, 43-00-25/76-05-38 (aux)  
 New York: WWPR 105.1, WAXQ 104.3, WLTW 106.7, all NS 13.5kw/281m, 40-45-22/73-59-12 (auxiliary TX's)  
 Oneonta: WJIH-LP 95.9, calls for new station  
 Queensbury: WCQL 95.9, PG>380w/388m, 43-25-12/73-45-39; CL from Glens Falls



Ravena: WRCZ 94.5, PR>6kw/100m, 42-33-15/73-52-07  
 Rochester: WRMM 101.3, WCMF 96.5, WPXY 97.9 all: AF 1kw/120m, 43-09-17/77-36-10 (auxiliary tx's)  
 Rome: WRBY 102.5, FC to hot AC "Mix 102.5" (Utica), CC to WUMX  
 Scotia: WKRD 93.7, CC to WEGQ, FC to classic country "The Eagle" (Albany)  
 Smithtown: WMJC 94.3, shifts toward modern rock  
 Syracuse: WLTI 105.9, NS 1.5kw/8m, 43-03-36/76-07-54 (aux)  
 Webster: WDCZ 102.7, CC to WRCI (Rochester)  
 Westhampton: WDRE 98.5, CC to WBON

**NORTH CAROLINA:**

Aurora: WFPF 104.5, PR 4.2kw/120m, 35-18-09/76-34-00  
 Calabash: WYNA 104.9, FC to hot AC "Cool 104.9 and 100.7" //WGTN, PG>50kw/53m, 33-51-23/78-36-02  
 Farmville: WGPM 94.3, CC to WWGL  
 Harrisburg: WCHH 92.7, FC to urban AC "Q92-7", CC to WQNC, picks up Tom Joyner  
 Hatteras: WYND 97.1, PC>59kw/170m  
 Kinston: WZBR 97.7, CC to WWNF  
 Marble: WPTP-LP 95.1, calls for new station  
 Moyock: WBHH 92.1, FC to soft AC "Lite FM", CC to WCDG  
 Old Fort: WKSF 99.9, granted CL from Asheville  
 Oriental: WNBR 94.1, CC to WWEA  
 Roanoke Rapids: WRTP-FM 90.1, PR>11kw/154m  
 Rocky Mount: WSAY 98.5, CC to WDWG  
 Topsail Beach: WWTB 103.9, is silent  
 Washington: WCZI 98.3, FC to soft AC, CC to WMUM  
 Williamston: WCBZ 103.7, CC to WRHD

**NORTH DAKOTA:**

Bismarck: KBFR 91.7, NW 780w/106m, 46-49-38/100-46-28  
 Harwood: KDJZ 100.1, PR>40kw/100m, LIC modified to noncommercial  
 Kindred: KFAB 92.7, PG 25kw/100m, 49-36-38/96-41-03

**OHIO:**

Ashville: WFCB 93.3, CC to WLZT, FC to soft AC "Lite"  
 Athens: WEAK-LP 106.7, NW ?w/24m, 39-18-59/82-10-02  
 Beavercreek: WXEG 103.9, NS 1.5kw/133m, 39-43-36/84-12-23 (aux)  
 Bellefontaine: WPKO 98.3, PG>1.75kw  
 Cadiz: WCDK 106.3, FC to classic rock "The River"  
 Caledonia: WYNT 95.9, GA from Upper Sandusky  
 Canton: WRQK-FM 106.9, XR 40-49-22/81-25-40  
 Dayton: WGXM 98.1, deleted



East Liverpool: WOGF 104.3, PG>23.5kw  
 Gahanna-Columbus: WCVO 104.9, SC to "The River"  
 Georgetown: WAXZ 97.7, PR>6kw/100m, 38-46-50/83-51-55  
 Greenville: WDJ0 106.5, FC to smooth jazz, CC to WDSJ  
 Huber Heights: WOXR-LP 97.1, CC to WSWO-LP  
 Lima: WNHC-LP 104.1, calls for new station  
 Miamisburg: WFCJ 93.7, NS 50kw/72m (aux)  
 Oxford: WOXY 97.7, PR>5.4kw/100m, 39-30-44/84-38-09  
 Shadyside: WEEL 95.7, FC to top 40 "Kiss", CC to WVKF  
 Toledo: WKKO 99.9, XC 41-40-05/83-27-11  
 Troy: WOKL 96.9, PG>5.9kw/98m, 39-56-49/84-11-29  
 Union City: WTGR 97.5, FC to country "The Tiger"  
 Zanesville: WJFZ-LP 104.1, calls for new station

**OKLAHOMA:**

Altus: KKVO 90.9, PR>4kw/250m, 34-58-39/99-24-35  
 Enid: KZIX-LP 101.5, calls for new station  
 Grandfield: KWKL 89.9, NW 11kw-V/152m, 34-16-19/98-25-30  
 Healdton: KICM 97.7, PR 10kw/156m, 34-20-57/97-27-24  
 Lahoma: KXLS 95.7, PR>29.4kw/131m, 36-32-13/98-00-39  
 Seminole: KXTH 89.1, NW 2.3kw-V/118m, 35-12-53/96-44-26  
 Tahlequah: KEOK 101.7, PG>25kw/87m

**OREGON:**

Astoria: KJAC 88.7, calls for new station  
 Bend: KPOV-LP 106.7, calls for new station  
 Brookings: KSEP-LP 99.9, calls for new station  
 Burns: KBWR-LP 98.1, NW ?w/-21m, 43-35-18/119-03-21  
 Canyonville: KPOL-LP 106.9, calls for new station  
 Glide: KLBG-LP 92.3, calls for new station  
 Harrisburg: KHRB-LP 92.3, NW ?w/2m, 44-16-21/123-10-15  
 John Day: KSPL-LP 98.1, calls for new station  
 Klamath Falls: KKLJ 88.9, PR>110w/667m, 42-04-06/121-58-13  
 Medford: KLDZ 103.5, PR 100kw/146m, 42-17-13/123-00-15  
 Molalla: KRKS 105.1, PC<21kw/470m, 45-31-21/122-44-45  
 Monmouth: KSND 95.1, FC to AAA



Newport: KSHY-LP 94.3, NW ?w/36m, 44-39-10/124-03-09  
 Oakridge: KMKR 88.5, calls for new station, NW 400w-H/-392m, 43-44-27/122-26-50  
 Portland: KWJJ 99.5, SC to "The Wolf"  
 Portland: KINK 101.9, AF 90kw/441m (aux)  
 Portland: KRRC 97.9, QC from 104.1, 4m

Portland: KUPL-FM 98.7, PC 11kw/362m (aux)  
 Roseburg: KRBG 88.1, CC to KMPQ  
 Roseburg: KLLF-LP 106.7, NW ?w/67m, 43-12-24/123-21-47  
 Veneta: KEUG 105.5, RA with Hot AC "105-5 Bob FM"  
 Welches: KZRI 90.3, PG 235w-V/531m 45-20-01/121-42-45

**PENNSYLVANIA:**

Bloomsburg: WFYY 106.5, SC to "Y106-5"  
 Brookville: WWJL-LP 95.9, calls for new station  
 Carbondale: WCWI 94.3, FC to standards//WNAK 730, CC to WNAK-FM  
 Carlisle: WRKZ 102.3, FC to country "Red 102.3", CC to WCAT  
 Erie: WMCE 88.5, PG>750w/152m, 42-05-25/79-56-37  
 Fairview: WUSE 93.9, PC 6kw/91m, 42-01-36/80-07-18  
 Freeland: WKRZ 98.5, CL granted from Wilkes-Barre



Harrisburg: WRVV 97.3, PG<15kw/260m  
 Hershey: WCAT 106.7, FC to Top 40 "Cool Pop 106.7", CC to WCPP  
 Hollidaysburg:

WMAJ 104.9, FC to rock "Rocky 104.9", CC to WRKY  
 Johnstown: WMTZ 96.5, NS 8.1kw/111m (aux)  
 Linesville: WMVL 101.7, PG 1.4kw/169m  
 Middletown: WZXM 88.7, calls for new station  
 Philadelphia: WLDW 96.5, CC to WRDW; SC to "Wired 96.5"  
 Philadelphia: WMMR 93.3, NS 18kw/252m (aux)  
 Philadelphia: WXTU 92.5, PR 15kw/277m  
 Pittsburgh: WJJJ 104.7, CC to WPGB

Scranton: WGGY 101.3, PC>365m  
 Starview: WHBO 92.7, CC to WSJW; FC to smooth jazz  
 Tuckhannock: WCWY 107.7, CC to WBZR, simulcasting WCOZ-103.9  
 Tyrone: WGMR 101.1, shifts to Top 40 "The Revolution"

**SOUTH CAROLINA:**

Chester: WBT-FM 99.3, PC 7.7kw/182m, 34-47-30/81-16-06  
 Columbia: WARQ 93.5, SC to "Rock 93.5"



Folly Beach: WYBB 98.1, FC to active rock '98X'  
 Gaffney: WAGI-FM 105.3, PC>374m, 35-24-52/81-46-31  
 Georgetown: WXJY 93.7, PC<96m, 33-16-05/79-17-49  
 Greenwood: WHZK-LP 97.7, calls for new station  
 Kiawah Isl. (Charleston): WCOO

105.5, FC to classic hits "The Bridge"  
 Kingstree: WWKT 99.3, FC to R&B oldies "Old School 99.3" (Sumter)  
 Murrells Inlet: WYEZ 94.5, PR 12kw/145m  
 New Ellenton: WAJY 102.7, FC to contemporary Christian "Joy FM" (Augusta GA), PC>4.3kw/118m, 33-30-49/81-38-03  
 North Myrtle Beach: WNMI-LP 98.7, NW ?w/29m, 33-52-32/78-37-09  
 Summerton: WLJI 98.3, PR 2.45kw/159m, 33-47-06/80-21-50  
 Sumter: WICI 94.7, FC to hot AC "Mix 94.7"  
 Wedgefield: WIBZ 95.5, PG>4.6kw/114m

**SOUTH DAKOTA:**

Rapid City: KLGH 88.3, calls for new station

**TENNESSEE:**

Columbia: WAYM 88.7, PC15.5kw/243m, 35-55-20/86-42-46  
 Crossville: WPBX 99.3, PR 6kw/55m  
 Elizabethton: WPJO 99.3, CC to WTZR, FC to modern rock "Z-Rock" (Tri-Cities)  
 Gainesboro: WENV-LP 97.3, calls for new station  
 Germantown: WMPS 107.5, FC to CHR/Pop "Q107.5", CC to WHBQ-FM



Jackson: WMXX-FM 103.1, PC>42kw/164m  
 Jamestown: WSAB-LP 92.5, NW ?w/120m, 36-25-51/84-58-03  
 Jasper: WJCR-LP 94.9, calls for new station  
 Lawrenceburg: WLLX 97.5, PR 2.3kw/100m, 35-15-18/87-19-30 (aux)  
 Lexington: WZLT 99.3, FC to AC  
 Lobelville: WFGZ 94.5, FC to contemporary Christian "The Dove"  
 Martin: WCMT-FM 101.7, PG 22kw/94m, 36-29-00/88-57-10  
 Vonore: WTRL-LP 106.9, NW ?w/59m, 35-34-19/84-15-23

**TEXAS:**

Abilene: KVVO-LP 94.1, calls for new station  
 Abilene: KHYS 100.7, FC to classic rock "100.7 The Eagle"  
 Allen: KESN 103.3, PC 98kw/606m, 33-32-08/96-49-54  
 Austin: KMFA 89.5, NW 32kw/287m (aux)  
 Bay City: KZBJ 89.5, PR>35kw/146m, 29-08-58/95-59-14  
 Bay City: KXGJ 101.7, PR>35kw/450m, 28-48-03/96-07-32  
 Brookshire: KQLC-LP 107.9, NW ?w/27m, 29-48-48/95-59-13  
 Brundage: KHIA-LP 97.5, calls for new station  
 Cleveland: KORGLP 105.3, NW ?w/41m, 30-20-52/95-05-20  
 Comfort: KCOR-FM 95.1, PG>100kw/282m, 29-50-26/98-49-32



Dallas: KRBV 100.3, PC>97kw/474m, 32-32-36/96-57-32  
 Dallas: KERA 90.1, PC>100kw/388m  
 Dallas: KLLI 105.3, PC

97kw/474m, 32-32-36/96-57-32  
 Devine: KSJL 92.5, FC to R&B "Hot 92-5" (San Antonio)  
 Edinburg: KBFM 104.1, FC to rhythmic CHR "Wild 104" (Brownsville)  
 El Campo: KIOX 96.9, PR>450m, 28-48-03/96-07-32  
 Elgin: KKL 92.5, PR>3.5kw/135m, 30-13-07/97-24-03



Fannett: KZFT 90.5, NW 35kw-V/110m, 29-53-33/94-08-06  
 Galveston: KOVE 106.5, NS 600w/225m, 29-45-26/95-20-19 aux  
 Gonzalez: KQQT 106.3, FC to contemporary Christian "K-Love"  
 Hillsboro: KBRO 102.5, AF 890w/144m, 31-30-51/97-11-44 (aux)  
 Hutto: KQJZ 92.1, FC to contemporary Christian "K-Love"  
 Ingleside: KCCG 107.3, CC to KRPX, FC to active rock "107-3 The X"  
 Jacksboro: KJKB 101.7, PR>100m, 33-19-43/98-16-46  
 Jasper: KWYX 102.7, PR>50kw/150m  
 Jasper: KJAS 107.3, PG>8kw  
 Laredo: KNEX 106.1, PC>54m  
 Lufkin: KLFK-LP 104.1, calls for new station, NW ?w/26m, 31-20-18/94-41-16  
 Madisonville: KMVL 100.5, FC to country  
 Marble Falls: KFGG-LP 101.9, calls for new station  
 Mercedes: KMAZ 106.3, CC to KHKZ, FC to top 40 "Kiss 106.3"  
 Midland: KCHX 106.7, FC to AC "Mix 106.7"  
 Perryton: KEYE 96.1, FC to classic hits  
 Plainview: KOLF-LP 100.7, NW ?w/29m, 34-11-41/101-42-02  
 Plainview: KBAH 90.5, PR>75kw/130m, 34-03-58/101-42-16  
 Point Comfort: KAJI 94.1, RA, simulcasting KZAM 104.7  
 San Angelo: KYZZ 100.1, PR>50kw/117m  
 San Antonio: KISS-FM 99.5, PG>453m  
 Santa Fe: KJIC 90.5, PC>7.7kw/177m  
 Stamford: KOES 106.9, CC to KLGD  
 Temple: KRYH-LP 104.7, calls for new station, ?w/52m, 31-05-56/97-21-53  
 Texarkana: KTXK 91.5, PC>100kw/93m  
 Waco: KXZY-LP 100.7, calls for new station  
 Wells: KVLL-FM 94.7, XR 31-24-32/94-50-09 dismissed

#### UTAH:

Blanding: KBDX 92.7, RA with contemporary Christian  
 Brigham City: KRAR 106.9, simul. rhythmic KUUU 92.1  
 Huntsville: KPFB 103.1, PG 89kw/647m, 40-52-16/110-59-43  
 Levan: KCFM 96.7, signs on with Spanish "La Tierra"  
 Manti: KMXU 105.1, CC to KNJU  
 Nephi: KMDG 103.9, CC to KUDE  
 N. Ogden: KNKL 88.7, signs on with K-Love cont. Christian  
 Park City: KPCW 91.9, PR>120w/647m, 40-36-34/111-28-49  
 Provo: KZHT 94.9, CC to KMXU and then KHTB, FC to modern rock "The Blaze"  
 Randolph: KWKD 102.3, CC to KMDG and then KDUT, FC to regional Mexican "La Grand"



Salt Lake City: KISN 97.1, CC to KZHT, former 94.9 format moves to 97.1 as "97.1 ZHT"  
 Vernal: KLCY-FM 105.5, PG 3.3kw/518m, 40-32-16/109-41-57

#### VERMONT:

Hyde Park: WYTC-LP 89.1, calls for new station  
 Lyndonville: WLYN-LP 106.7, calls for new station  
 Randolph: WRAN-LP 100.1, NW ?w/120m, 43-57-20/72-36-18  
 Saint Johnsbury: WKXH 105.5, PC>1.25kw  
 Warren: WMRW-LP 95.1, calls for new station

#### VIRGINIA:

Cape Charles: WROX 96.1, PR 23kw/220m  
 Charlottesville: WUMX 107.5, FC to smooth jazz, CC to WCJZ  
 Exmore: WROX-FM 96.1, CL granted from Cape Charles  
 Front Royal: WFQX 99.3, PC>6kw/100m, 39-03-56/78-22-58  
 Midlothian: WJMA-FM 98.9, PR>7.3kw/183m, 37-36-52/77-30-56; CL from Orange, simulcasting country WCUL 103.1  
 Petersburg: WARV 100.3, simulcasting oldies WBBT-107.3  
 Poquoson: WKOC 106.1, CC to WPYA, PR 1.7kw/153m, 37-04-24/76-17-33, CL from Exmore, FC to Hot AC/Classic hits hybrid "Bob FM"  
 Powhatan: WBBT 107.3, flips to oldies "Oldies 107.3"  
 Richmond: WFMC-LP 102.9, calls for new station  
 Roanoke: WMGR-FM 104.9, PG>14.5kw  
 Vinton: WZZI 101.5, FC to oldies (Roanoke)  
 VirginiaBeach: WWHV 102.1, PC>100m, 36-45-07/76-08-57



Williamsburg: WYOU-LP 103.5, calls for new station  
 Windsor: WJCD 107.7, FC to soft AC "Lite FM"//92.1  
 Moyock NC

#### WASHINGTON:

Amanda Park: KOHS-LP 105.5, calls for new station  
 Basin City: KZLN 97.5, CC to KHTO



Deer Park: KAZZ 107.1, PR>25kw/100m  
 Ellensburg: KXLE 95.3, PC 51kw/129m, 47-09-49/120-47-37  
 Mabton: KLES 98.7, FC to spanish R&B, rock "Tekila"  
 Republic: KETL-LP 100.5, calls for new station  
 Seattle: KYPT 96.5, FC to classic alternative "K-Rock", CC to KRQI  
 Spokane: KYRS-LP 95.3, NW ?w/30m, 47-31-58/117-26-20  
 Tacoma: KBTC-FM 91.7, CC to KXOT

#### WEST VIRGINIA:

Benwood: WVJW-LP 94.1, LC dismissed  
 Berkeley Springs: WDTF-LP 107.9, NW ?w/47m, 39-36-18/78-13-01  
 Bethlehem: WVWF 105.5, FC to oldies, CC to WUKL  
 Buckhannon: WVPW 88.9, PC>259m  
 Charleston: WKWS 96.1, SC to "The Wolf"  
 Fairmont: WVFR-LP 99.7, calls for new station  
 Gary: WHQX 107.7, PC>8.6kw/172m, 37-08-01/81-35-42; CL from Cedar Bluff, VA  
 New Martinsville: WXCR 92.3, FC to classic rock  
 Parkersburg: WHBR-FM 103.1, PG 2.1kw/171m, 39-21-00/81-33-56  
 Parkersburg: WAUA 89.5, PR<322m  
 Salem: WVBL-LP 99.9, calls for new station  
 Summersville: WMLJ 90.5, PR>11kw/315m

#### WISCONSIN:

Ashland: WRNC-LP 97.7, calls for new station  
 Berlin: WBJZ 104.7, FC to country  
 Eau Claire: WIEC-LP 102.7, calls for new station  
 Fond Du Lac: KFIZ 107.1, CC to WFON  
 Goodman: WMVM 90.7, PC>9kw/48m, 45-46-27/88-24-28  
 Marinette: WLWR-LP 107.7, PC>31m  
 Neillsville: WPKG 92.7, signs on with Hot AC "Spankin' New 92.7 FM"  
 Sauk City: WCJZ 96.3, CC to WMAD, FC to modern rock "Mad Radio" (Madison)  
 Sturtevant: WEXT 104.7, SC to "The Wolf"  
 Sun Prairie: WMAD 92.1, CC to WXXM, FC to hot AC "Mix 92.1", PG>3.7kw/125m, 43-10-10/89-15-38  
 Wausau: WDEZ 101.9, PC>98.5kw/329m  
 Wausau: WHRM 90.9, PC>81kw/329m  
 Wausau: WYCO 107.9, CC to WLRK

#### WYOMING:

Buffalo: KSLW-LP 99.5, NW ?w/-48m, 44-20-52/106-42-10  
 Cheyenne: KRRR 104.9, PC>25.5kw/35m, 41-08-04/104-41-32  
 Evanston: KOTB 106.1, PG 89kw/649m  
 Gillette: KXXL 103.9 signs on with classic rock  
 Pine Bluffs: KREO 105.3, PC>6kw/76m  
 Teton Village: KJHR-LP 100.1, calls for new station

#### **Some news and notes:**

- Bubba The Love Sponge and Clear Channel have severed ties, and the controversial shock jock will be off the air, at least for now, at WXTB (98X/Tampa), WJRR/ Orlando, and WPLA (Planet 93.3/Jacksonville). Howard Stern has also been pulled off all Clear Channel stations.

- In Hartford, from 10pm-2am Monday-Thursday, WKSS flips to alternative as "Channel 957"

-The Harrisburg market becomes more overcrowded with mainstream music as Citadel flips WCAT-FM to CHR as "Cool Pop 106.7", while moving WCAT's country format up the dial to 102.3. WHKF, WNNK, WLAN, WYCR all play similar music in Harrisburg.



- The death of 22-year old CHR KQKQ in Omaha happened on March 11<sup>th</sup>, as "Sweet 98.5" dropped the CHR format. Another heritage CHR going down the tubes. What's wrong with CHR these days? Too much urban? It goes Modern AC as "Q98-5".

-Memphis finally gets CHR again as The Pig 107.5 flips to CHR as "Q107.5", taking the prestigious WHBQ call letters.

Welcome to the new version of FM news. I am your new editor, Adam Rivers. A big whatup to Mike for giving me this opportunity

to help out the club, most importantly to Doug Smith for helping me with all of the technical data from the FCC which I otherwise would have no clue about; and to everyone else for taking the time to read this

I am always open to contact no matter what way you have to reach me; if you'd like you can email me at redsoxdxer417@hotmail.com; IM me on AOL at XxPatsRule417xX (for the two time champion New England Patriots), or send me a snail mail at the address above. Whatever way it is, I hope to do as best as I can serving the club with FM news. I'm looking for a lot of feedback on this first issue.

A lot of stuff in this column is retroactive to the last date that the column was published, therefore we've got a lot more than usual. Like the Red 104.1 format change in St. Louis happened on January 1<sup>st</sup>, but is still in this edition of FM news.



# SATELLITE NEWS

**GEORGE W. JENSEN**  
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**SCISATMAN@AOL.COM**

*The biggest events taking place in recent months are the dropping of West Coast feeds by major programmers - at least from the analogue side.*

**AMC7** - most audio subcarriers have been dropped except WOKIE at 7>50 on XPDR 5 Satcom C4 - drop - XPDR 6 -The History Channel - West XPDR 24 - Country Music Television will move to Galaxy 10 XPDR 17 soon. Add - XPDR 101 - Starz Kids - West. XPDR 601 is now color bars only - not Bloomberg

**Galaxy 1** - XPDR 1 - Comedy Central West - DROP. XPDR 6 - SPIKE West to be dropped. Add - 157 - Starz Kids - East

**Satcom C3** - XPDR 600 - Delete Bloomberg - only color bars and tests now

**Galaxy 13** has replaced Galaxy 9 and also has a Ku Band component called Horizons 1. Add XPDR 122 and 124 - Starz HDTV E and W

**Galaxy 5** -Delete XPDR 12 - Discovery West and Audio Subcarrier 6 6.43 - Brother Staires Radio Network the Overcomer

**Galaxy 10** - XPDR 17 - Nickelodeon West will be dropped soon and be replaced by

Country Music Television. On the Ku side - The Jason Project has reappeared on XPDRs 100, 200, 300 and 400 with the Panama Project. I have never seen any programming on this venture - does anybody know what this is.

**G-Star 4** at 105 West has been replaced by new AMC 2 - have no details as yet.

**Galaxy 4** - Ku - XPDR 643 - Game Show Network noted here -still on Galaxy 11 6666XPDR 6

**Telstar 6** - XPDR 7 - now Ten Exxxstacy VC2, XPDR 7 - PBS, XPDR 14 - delete Exxxstacy VC2

**Galaxy 11** - Delete the following - XPDR 605 - KJLA and XPDR 606 - KXLA , and Crawford Communications barker on 800.

Add the following - 601 - Bloomberg and 800 Blue Highways (NO it is not a porn channel).

**AMC 2** at 85 West has moved to Galaxy 9 slot and has been replaced here by AMC 9 which is both C and Ku Band (I think).

That sums it up for this month - hope to see you in 30. Good DX and "73"s

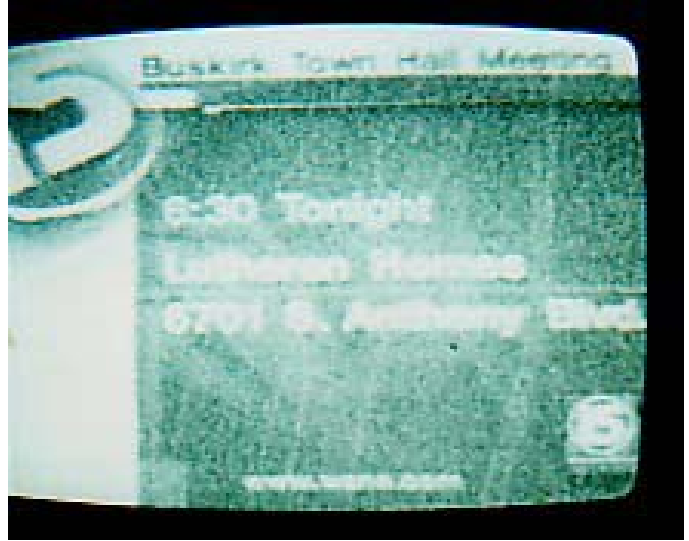
*George*

April 2004

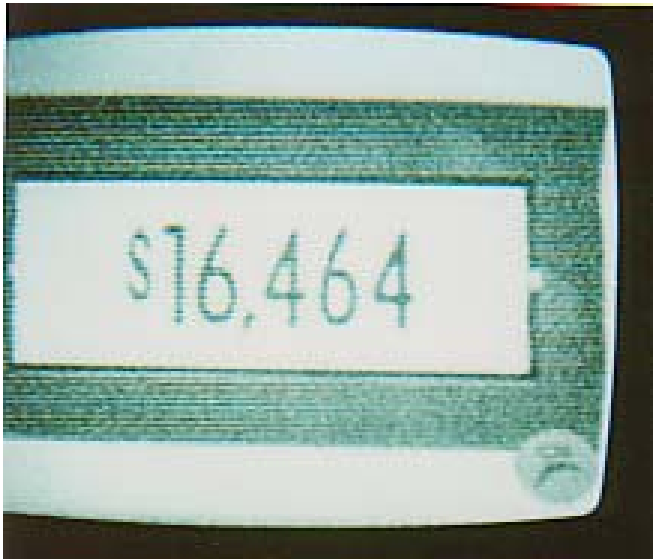
Here's some fantastic tropo photos from Roy Barstow of Teaticket, MA:



WXMI-17 Grand Rapids, MI  
 767 mi Tr seen 8/21/03  
 @0105 ET  
 "Wow! – jtk"



WANE-15 Ft. Wayne, IN  
 755 mi Tr seen 8/21/03  
 @1000 ET



CHCH2-51 London, ON  
 557 mi Tr seen 8/21/03  
 @1120 ET  
 "CH" logo lower right



WAVY-DT-31 Portsmouth, VA  
 448 mi Tr seen 6/2/03  
 @1930 ET



WTKR-DT-40 Norfolk, VA  
 441 mi Tr seen 6/2/03  
 @2345 ET



WVBT-DT-29 Virginia Beach, VA  
 443 mi Tr seen 6/2/03  
 @2250 ET



WCBB-DT-17 Augusta, ME  
 196 mi Tr seen 6/3/03  
 @0730 ET

Roy was very proud of his DX to the west on the evening of August 21, 2003 – he took 65 shots of the 3 stations printed! He even sent me a videotape. A rare event indeed, Roy! I know the feeling. I experienced the same when I received North Carolina by tropo last May.

And now one more photo, this is one of the first 7 ft. dish antennas made (circa mid-70's), owned by Roy. Roy personally screened it with regular window screen. It was on a 70 ft. Triex tower until one day, unfortunately, a storm broke the lower rotor housing and it sailed 70 feet during a winter storm. What a shame!



73's,

*JEFF*

# ATSC PRIMER Part VII

DOUG SMITH

## **Special Temporary Authority:**

As the transition table shows, a small majority (56%) of DTV stations on the air at the end of July 2003 were operating with special temporary authority. Almost always, this meant the station was operating at reduced power.<sup>1</sup> The amount of power reduction varies wildly. Just as an example, on channel 7 KOCO-DT Oklahoma City holds a STA for 10kw/35m; their full-power construction permit calls for 34kw/430m. At the same time and on the same channel, KTTW-DT Sioux Falls holds a STA for 20w/96m; their full-power CP calls for 65kw/126m. (and yes, that's 20 WATTS on the STA.) A typical STA is that held by WPSD-DT Paducah, Kentucky, which calls for 4.47kw/74m on the studio-transmitter link tower at their offices in Paducah. WPSD's permanent DTV facility will be on their existing analog tower, running 906kw/492m. Network-affiliated stations in the 30 largest markets are not allowed to take advantage of STAs. They're required to build at full-power immediately.

STAs can be much less expensive than full-power operations. A FCC review of transition quotes a letter from Harris Corp.<sup>2</sup> claiming that it could equip a small-market station with a 500-watt DTV facility for less than \$160,000. Modest power increases could run up to \$625,000. Obviously that's still a lot of money, even for a TV station!

Right now, DTV allotments are being protected from interference on the assumption that stations are running full power. For example, no station that would interfere with WPSD's 906kw coverage will be authorized – even though WPSD-DT cannot be received through much of that area due to their temporary low power.

This interference protection will not be maintained forever. Originally, a deadline of the end of 2004 was set for commercial stations to begin full-power DTV operation. Stations still operating on reduced power at that time would be protected from interference only within their actual coverage area – not the area covered by the unbuilt higher-power facilities. Non-commercial stations got another year.

In this year's review of the DTV transition, the Commission agreed to suspend this deadline. They have promised to establish a new deadline during 2004 – and in any case, this deadline will be no later than the end of transition.

## **“City-grade” signal:**

STAs must still provide a city-grade signal across the city of license. See the table below:

	<b>Channels 2-6</b>	<b>Channels 7-13</b>	<b>UHF</b>
Digital (initial)	28dBu	36dBu	41dBu
Digital (final)	35dBu	43dBu	48dBu
Analog <sup>3</sup>	74dBu	77dBu	80dBu

dBu means decibels above 1 microvolt per meter. DTV stations are required to comply with the increased “final” figures by the end of 2004 for commercial stations, the end of 2005 for non-commercial outlets.

Obviously, the definition of a “city-grade” signal is much weaker for digital than it is for analog. Some DTV stations have been built at a considerable distance from the associated analog station. WPXE-DT Kenosha, Wisconsin is located on a community tower on the north side of Milwaukee, roughly 25 miles north of their analog transmitter. WNPX-DT Cookeville,

1In a few cases STAs are for full-power operation on a different channel from the one originally allotted; temporary authority is necessary to use this channel pending its permanent assignment.

2A major manufacturer of broadcast equipment.

3To some degree these figures are “apples and oranges”. Analog coverage is determined using the “F(50,50)” curves – the signal strength a station will have at 50% of locations 50% of the time. Digital coverage uses “F(50,90)” - 50% of locations 90% of the time.

For example, consider reception of WCIQ-7 Mt. Cheaha, Alabama (316kw/610m) at a receiver 100km from the transmitter. The F(50,50) curves predict that WCIQ will deliver a 64dBu signal at this location. F(50,90) methods predict 56dBu at this location.

Tennessee transmits from a tower on the northwest side of Nashville, roughly 70 miles west of their city of license<sup>45</sup>.

**LPTV:**

LPTV stations do not get a second channel for digital. They may choose to switch to digital operation on their existing channel if they choose. To my knowledge WTHC-LP (channel 42) in Atlanta is the only LPTV to do so so far. Since there are no multiple-ownership regulations for LPTV, it is possible for a LPTV station to buy a second station and operate one as analog and the other digital. I have seen no indication that the FCC will ever ban analog operation by LPTVs. Maybe after transition, some full-power DTV stations will buy LPTVs to simulcast their signals in analog for viewers without digital sets?

While no specific date has been set, LPTV stations operating on channels 52-69 are on notice that their days are numbered. LPTV stations operating on channels to be used by full-power digital operations are also to be “bumped”. Congress' creation of a “Class A Television Service” will protect LPTV stations qualifying for this service from being “bumped” by future digital stations, but Class A stations are still secondary to the digital facilities of existing full-power stations. Thousands of these LPTV stations have already filed for permission to move to lower channels. Many of these applications have already been granted, and indeed many stations are already operating on their new channels<sup>6</sup>. A few LPTVs will not be able to find a new channel and will have to go off the air.

**Simulcast & receiver requirements:**

There are a couple of miscellaneous FCC regulations regarding transition that don't fit into any of the other categories...

Stations are required to simulcast at least 50% of their analog programming on their digital station. This requirement increases to 75% on April 1<sup>st</sup>, 2004, and to 100% on April 1<sup>st</sup>, 2005. The regulations state these requirements will be repealed when the analog station is closed.<sup>7</sup>

Transition requirements have also been imposed on TV receivers. DTV tuners are required in new TV sets according to the following schedule:

<b>Date</b>	<b>Receivers</b>
July 1 <sup>st</sup> , 2004	50% of 36” and larger receivers.
July 1 <sup>st</sup> , 2005	All 36” and larger receivers; 50% of 25”-35” sets.
July 1 <sup>st</sup> , 2006	All 25” and larger receivers.
July 1 <sup>st</sup> , 2007	All 13” and larger receivers; all “reception devices” such as VCRs.

4WNPX-DT just barely meets the 41dBu figure from this location. They're running 733kW ERP and are on top of the tower at that site – there is no way they can increase their signal by 7dB from that location. In theory they'll have to move at the end of 2004, barring changes in the rules. (which their licensee has requested)

My guess is if the rules aren't changed, they'll change the city of license. A place like Mt. Juliet, Gladeville, or Gallatin will receive an 80dBu signal from their existing analog station on channel 28 and 48dBu from their DTV transmitter in Nashville. And since there's another TV station (WCTE-22) licensed to Cookeville, the channel 28 allotment can be moved without deleting Cookeville's only service.

5The 7dB increase in city-grade signal requirements applies to STAs as well.

6Some, however, have been rather slow about it. One LPTV station in Nashville didn't file for a new channel until after a new DTV signed on on the same channel. Both stations operated simultaneously on channel 36 for a week or two before the LPTV shut down pending a move to channel 48.

7I hope so!

# Eastern TV-DX

Matthew C. Sittel  
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Bellevue, NE 68123  
mcsittel@cox.net

April, 2004

May, 2004 column deadline: Apr. 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!

It's been a quiet start to 2004, judging from the lack of reports to this column! But skip season is just around the corner, so hopefully our screens will be filled with DX signals soon.

Doug Smith, W9WI, Pleasant View, TN

w9wi@earthlink.net  
http://www.w9wi.com

1/12 Es

0840 unIDs briefly to ch. 5, ch. 3 NBC & PBS  
former w/wx (41 degrees) and CST time

2/12 Es

1134 WFSB 3 CT Hartford, CT weather

Saul Chernos, 57 Berkeley St., Toronto, ON M5A 2W5 (416) 364-0725

schernos@sympatico.ca

10/11/2003 tr (TO-Bluffs)

0650 WNPA 19 PA Jeanette  
0655 WWPX 60 WV Martinsburg, // 64  
0655 WQPX 64 PA Scranton, // 60  
0704 WPCB 40 PA Greensburg, // 47  
0704 WKBS 47 PA Altoona, // 40  
(Cornerstone)  
0710 WVIA 44 PA Scranton, PBS

0712 WBRE 28 PA Wilkes-Barre, NBC  
0715 WOLF 56 PA Hazleton, Fox  
0720 WDCA 20 DC Washington  
0730 WPSX 3 PA Clearfield, PBS

12/28 tr (TO-Downtown)

1030 CITY2 65 ON Ottawa, // CITY-57  
1030 CFMT2 60 ON Ottawa, // CFMT  
(Omni 1)

Nice bit of tropo at the Scarborough Bluffs in eastern Toronto, to round out the year. WV is a new state for me for TV. Using various portable TVs with 5-inch screens, and a two-bay antenna that I can easily carry to the edge of the Bluffs, which overlook Lake Ontario to the south and southeast. 73s, Saul

Charles Gauthier, St-Lambert, PQ

tvfmdx@yahoo.ca

Equipment: JVC AV-20120 20" TV, JVC HR-S3800U SVHS VCR, Antennacraft 32 element VHF-UHF-FM antenna at 30' AG, CM9510A rotor, RG6 coax, Tin Lee MQ7-CH2S6P switchable notch trap for ch. 2 and 6, 20dB indoor "Provo" amplifier for UHF, Radio Shack FM trap.

11/22/2003 tr

1005 WPXG 21 NH Concord 195

11/24 tr

0000 WUTV 29 NY Buffalo 316  
0005 WCDC 19 MA North Adams 199

12/14 Es

0210 WEDU 3 FL Tampa 1309  
0230 WESH 2 FL Daytona Beach 1218

0250 WSAV 3 GA Savannah 1015  
0330 WUND 2 NC Columbia 678

12/28 tr

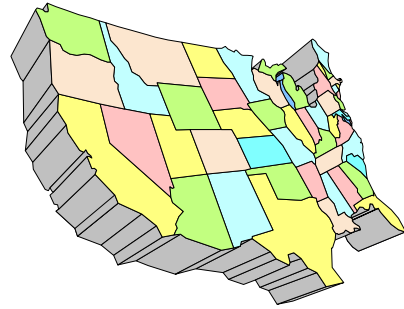
0105 WXXI 21 NY Rochester 257  
0105 WUHF 31 NY Rochester 257

2/12/2004 Es

1345 WTVY 4 AL Dothan 1201

# WESTERN TV DX

**VICTOR FRANK**  
**12450 SKYLINE BLVD.**  
**WOODSIDE, CA 94062-4554**  
**Victor.frank@sri.com**



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

This report is for Leap Year February 2004. Southern California coastal tropo conditions on TV-FM to San Diego/Tijuana (200mi/ 320km) did not exist most of the time, typical of this time of year when stormy unstable weather keeps stable air layers from forming.

Feb 1 –11: None (Feb 2 rain)  
Feb 12: Poor

Feb 13 morning None  
Feb 13 evening Poor  
Feb 14-29: None (Periods of rain)

We haven't been over to Wasco lately, but were just informed of a late-February burglary at the Wasco house, as of this writing in early March. We are about to go over there to see what is damaged and missing, so more on that next time.

Best of DX to All. Dennis

## Denon TU1500 RDP RDS Tuner



The Denon TU1500RD is my DX tuner of choice these days. RF performance is wonderful, and changing the IF filters (there are four of them) for better selectivity is very easy. It handles my high RF environment (< 5 miles from 2 100 KW FMs ) better than any receiver I've ever tested. I like this tuner so much that I sold my Onkyo T9090II.

I notice that Denon now calls this tuner the TU1500RDP. Apparently the added "P" stands for "professional." Other than the name change, I can't see any difference between it and the older TU1500RD.

When you open the TU1500RD it looks like a gutless wonder inside... That's because most

of the components are surface mounted on the "underside" of the circuit board. There are very few components mounted on the "top" of the circuit board.

The TU1500RD does not automatically switch from narrow to wide IF mode while tuning. But it does have selectable Auto / Manual tuning mode. I always run mine in manual because in auto it wants to "scan" to the next fairly strong signal it finds (which is annoying). In manual it tunes "normally" in 100 KHz steps. However, in manual mode it won't do stereo. I think that's kind of odd, but it doesn't bother me for DX work. In either auto or manual, it retains whatever IF setting (wide or narrow) that you've selected. –Girard Westerberg

(Note: This Denon tuner currently retails for about \$300 on the internet, although one WTFDA member has been able to purchase one of these tuners on eBay for slightly over \$100.)



# SOUTHERN



# FM DX

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

## April 2004

**Doug Smith** - W9WI - 1385 Old Clarksville Pike - Pleasant View, TN  
37146-8098 - w9wi@w9wi.com - www.w9wi.com

### 11/9 Gw

1855 W214BQ 90.7 TN Brentwood, ID for several other KAWZ translators 28

### date unknown Gw

WAYQ 88.3 TN Clarksville, "Way FM" sometimes // WAYM-88.7 14

### 2/12 Es

1134 WGBH 89.7 MA Boston, calls 941



**John Zondlo** – 4009 Driftwood Circle – Yukon, OK 73099 – CST – All new

Akai AT-VO4 tuner (modified w/2 110 filters), APS-9B antenna w/Channel Master 9521A rotor at 16',  
Conrad RDS Manager

### 12/29 Es

1952 WJGO 102.9 FL Tice, calls  
2008 WLLD 98.7 FL Holmes Beach, r, "Wild"  
2020 WSUN 97.1 FL Holiday, r, "97-X"  
2026 WTLT 93.7 FL Naples, local spots  
2050 WSJZ 95.9 FL Sebastian, smooth j  
2100 WNRW 98.5 FL San Carlos Park, "The News Station"

### 1/7 Es

1710 XHDNG 96.5 DU Durango, ads, "La Tremenda"  
1717 XHMZT 93.1 SN Mazatlan, baseball promo, local ads

### 1/26 Es

2034 XHSM 100.9 SN Ciudad Obregon, "Maxima FM"

### 2/1 Es

1723 XHMSL 101.3 SN Los Mochis, "Stereo Uno"

### 2/2 Es

1928 XHCLI 98.5 SN Culiacan, "La Comadre"  
1931 XHCNA 100.1 SN Culiacan, "Exitos"  
1933 XHNW 103.3 SN Culiacan  
1940 XHBL 91.9 SN Culiacan, local mentions, spots



### From the Editor

Looks like things have been pretty quiet all around this winter. The Es in February was a welcome surprise here. Trop started picking up a bit in March, but nothing spectacular. See y'all next month!



Beyond FM  
 Beyond TV  
 USA – CANADA  
 Weather Radio Monitoring

Submit weather band loggings and weather radio news to Jason Koralja at: [jkbi01@hotmail.com](mailto:jkbi01@hotmail.com) (Subject: WXDX)

April 2004

**Weather Radio Frequencies**

WX1	162.550 MHz	WX6	162.500 MHz
WX2	162.400 MHz	WX7	162.525 MHz
WX3	162.475 MHz	WX8*	161.650 MHz
WX4	162.425 MHz	WX9*	161.775 MHz
WX5	162.450 MHz	* =	Canada Only

**NEWS: Feb. 5 to Mar. 4**

**FREQUENCY CHANGE** – Dixon, MO – WNG648 has moved from 162.425mHz to 162.500mHz.

**DX LOGGINGS (Jan.18 to Feb. 15)**

No DX loggings were submitted this month. Loggings for February should be submitted before April 15<sup>th</sup>.

**COLUMN NEWS**

I want to feature YOUR TOWN as the listening site of the month! Please send me YOUR ***non-dx*** loggings before April 15 using the format below.

**LOCATION OF THE MONTH**

A monthly feature highlighting weather radio reception around the country during normal reception conditions.

**St-Lambert, QC:**

Frequency	Station	City	Quality
162.400	KIG60	Burlington, VT	Strong
162.400	XLR411	Trois-Rivieres, QC	Fair
162.425	WWG50	St-Johnsbury, VT	Good
162.450	XLM300	Montreal, QC	Strong
162.475	XLR412	Sherbrooke, QC	Fair
162.550	XLM300	Montreal, QC	Strong

(Submitted by Charles Gauthier, St-Lambert, QC)

**WEATHER RADIO LINKS**

[www.weatherradio.info](http://www.weatherradio.info)

[www.nws.noaa.gov/nwr/](http://www.nws.noaa.gov/nwr/)

**CLING TO ME!**

It won't cling to you but it will cling to glass. Stick this cling on the inside of a car window or a window in your home. Let everyone know you're a WTFDA member! Just **\$2.00 each** for a removable cling. We'll even mail it to you in your next VUD!

Send your check or money order for \$2.00/ea (payable to Dave Janowiak) to WTFDA, P.O. Box 501, Somersville, CT 06072. Specify red or yellow clings.

FINE PRINT: Permanent decals are available upon request for \$2.00 a pair (two). PLEASE SPECIFY REMOVABLE CLINGS OR PERMANENT DECALS WHEN ORDERING.



## WTFDA 2003 FINANCIAL REPORT

Opening balance on January 1, 2003 **\$6,310**

**Receipts:**

Revenue from dues, samples, guides, and miscellaneous **\$7,868**

**Expenses:**

VUD publishing, subscriptions, and PO box rental **\$7,809**

**Operating Margin (receipts minus expenses): **+\$59****

Closing Balance on 12-31-2003 **\$6,369**

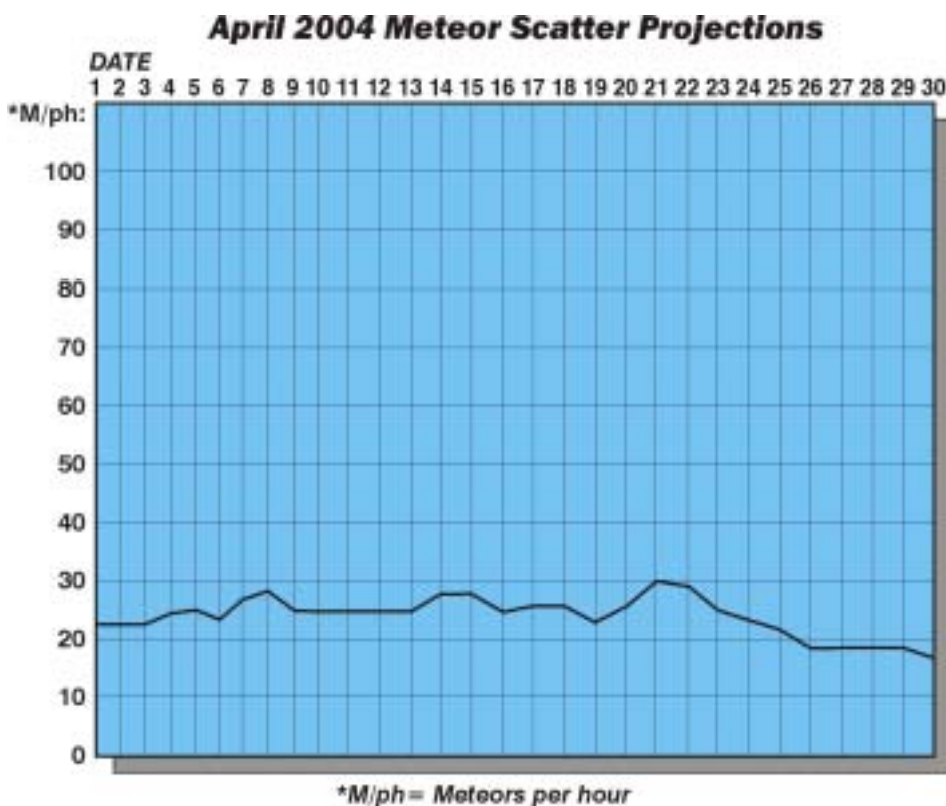
NOTE

The WTFDA realized a small profit of \$59 in 2003. This profit was less than the profit in 2002 due to larger VUDs and less income from TV station guides in 2003.

Submitted 3-1-04  
 Dave Janowiak  
 WTFDA Treasurer

## METEOR SCATTER GUIDE FOR APRIL 2004

CHART COURTESY OF JIM THOMAS



Jim says:

The only interesting item to notice this month is the Lyrids shower, peaking April 22 @ 02:45 UT.... peak of 10 per hour, with occasional bursts of up to 100 per hour. Other than that, just a slew of tiny showers through the month that will put the hourly average slightly above average.

# WTFDA MEMBERSHIP LIST

AS OF MARCH 8, 2004

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Nick	Lombardi	Atlanta	GA	7/31/2004	
James	Snow	Darien	GA	9/30/2005	
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Larry	Weil	Salem	NH	10/31/2004	KC1IH@mediaone.net
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Joseph	Fela_ Jr.	S. Plainfield	NJ	9/30/2004	pinfella@aol.com
Rick	Shaftan	Sparta	NJ	11/30/2004	shaftan@ptd.net
William	Burrows	Gloucester	NJ	6/30/2004	Wabr101@erols.com
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Membership count as of 3/8/04: 268.

Membership is defined as a person receiving either the eVUD or the paper VUD.

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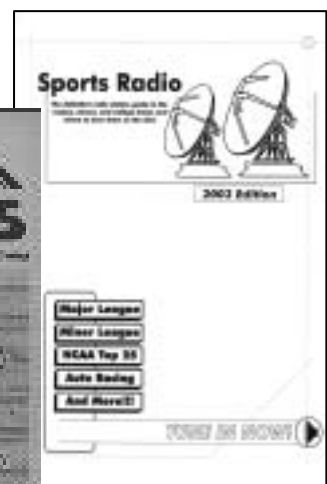
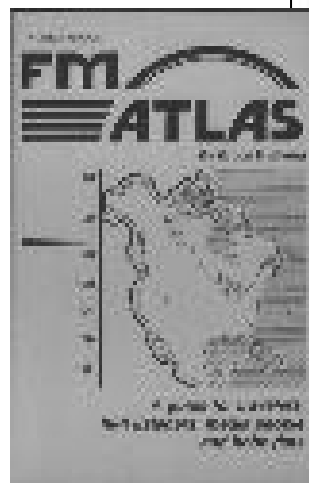
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### FM ATLAS #19

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# WEAK SIGNAL TECHNIQUES PART II

BOB COOPER

Because there is noise, external noise brought in by the antenna and internal noise generated by the receiving equipment, it is important to understand where the 'thresholds' of noise occur. Or, how weak a signal can be and still be detected on a TV set.

If we employ 'state-of-the-art' masthead pre-amplifiers in each frequency band, and properly install these mastheads directly at the output terminals of the antenna (before the downline begins), the real-world thresholds are as follows:

Band I - minus 37 dBmV/14 microvolts

Band III - minus 39 dBmV 11 inicrovolts

Bands IV/V - minus 45 dBmV: 5.6 microvolts

To achieve these threshold numbers (the signal level at which you can detect the presence of a 'frame-bar' on the screen) requires a 2.0 dB noise figure masthead at bands I and III, and a 0.5 dB noise figure unit at bands IV/V. Note these are not watchable pictures (not even TASO 6); just detectable signals. Actually measuring signal levels this weak is not possible using conventional installer signal level field strength meters. Knowing these threshold points, however, gives you a 'feel' for where you are when you are surveying a site for possible installation.

## THE MATH OF MASTHEADS

The quality of the pictures delivered to a customer depends primarily upon the ratio between the signal (the good guy) and the noise (the not-so-good guy). There is only one signal source; the (usually distant) desired transmitter (DT). Recall there are at least two families of noise in our ratio.

- 1) The noise collected, along with signal, by the antenna, and
- 2) The noise generated by the receiving system.

When electricity is applied to a circuit, electrons 'move' or flow. When this happens, a series of random pulses is created; pulses of broadband static, as it were; noise. The only way to silence this electron-agitated-pulse train is to turn off the electricity; and cool the circuit itself to a temperature of -273 C; absolute zero. A circuit with no electricity and so cold no electron movement can take place is totally quiet. It is also a very poor amplifier in this state.

If we can't shut it off, and we can't cool it down to absolute zero, well ... we just have to accept noise.

### REACHING THE REAL-WORLD NOISE THRESHOLD FLOOR

Noise generated within the receiving system (system: 'Masthead through video and audio amplifiers in receiver proper') can be reduced to the system threshold floor by careful selection and installation of a suitable masthead amplifier. Using modern pre-amplifier technology, a masthead noise figure (n/f) as low as 0.5 dB is possible. This represents an improvement of from 15 dB (at band I) to 10 dB (at UHF) over TV receiver noise figures (thresholds) normally established by the (higher noise figure) TV RF tuner stage in the receiver.

Conversely, at band I and III frequencies (4 to 230 MHz), noise originating from man-made sources (such as power lines, combustion engine ignition systems) will very rarely be lower than the equivalent of a 2.0 DB masthead noise figure at an antenna receiving site. As a practical matter, masthead amplifier noise figures lower than 2.0 dB within bands I and III are not useful since the antenna system receives a constant background noise from manmade sources equivalent to a 2 dB noise figure: or more. Only in very remote, rural areas will 'background noise' from manmade (or cosmic) sources be so low as to make a masthead pre-amplifier with a noise figure below 2 dB useful.

At UHF (bands IV and V) frequencies, while it is possible to have background noise as great as 4 to 6 dB. it is equally possible to have antenna sites where the background noise is well below 2DB equivalency. Thus at bands IV and V. space-age GaAs-FET masthead amplifiers with noise figures in the 0.5 dB range can be beneficial.



Fortunately as technology has advanced, substances which generate less noise when used as amplifiers have been found. Gallium Arsenide or GaAs is one such substance. GaAs configured as a field-effect-transistor (FET) produces a GaAs-FET and with this as a starting point amplifier circuits which create noise figures in the 0.5 dB and under region are now commonplace through SHF (super high frequencies).

At frequencies below 300 MHz, while some GaAs-FET amplifiers are available, such uses are typically limited to very narrow bandwidth receiving systems where the noise floor can be reduced with selective receiver filtering. For a TV signal occupying a 6.105 MHz bandwidth, a GaAs-FET amplifier at 50 or even 200 MHz is much like installing a Chevy V8 in a VW Bug. You can never realize the potential of the GaAs-FET at these frequencies given the ambient noise levels of the VHF range in a 6.105 MHz bandwidth.

At frequencies above 500 MHz the antenna-induced ambient noise levels (ie., man-made and natural) have diminished to the point that installations in reasonably quiet locales can actually benefit from noise figures under 1 dB; even in a 6.105 MHz demodulated bandwidth.

Alas, whether you are attempting to use a 2 dB noise figure conventional masthead amplifier at bands I and III, or, a 0.5 dB noise figure GaAs-FET pre-amplifier at 600 MHz, there are very important procedures which must be followed.

a) Match Loss. The antenna in your system, whether a single yagi/log or a multiple-antenna-stacked array, has a nominal impedance. Your masthead amplifier also has a nominal impedance. The two must be the same (ie., matched) or the impedance mis-match will result in energy (signal voltage) loss in the antenna-to-masthead connection process.

1) Many consumer oriented antennas are 300 ohm. Virtually all properly designed masthead amplifiers are 75 ohms; input and output. The standard practice is to place a 300 ohm / 75 ohm (balanced to unbalanced) weatherproof (ie., outdoor) transformer between the antenna and the pre-amplifier.

Ask yourself how do you select your matching transformers? By their price? The packaging? Or, because they come from the same supplier as your antennas?

Most balun matching transformers are installed and seldom considered as potentially very destructive elements in an antenna system installation. Here's what you should be considering.

2) Baluns often use ferrite wound transformers to achieve the impedance adjustment between 300 and 75 ohms.

3) Especially at UHF, unbalance of the 300 ohm side is a common design flaw. When there is a bad match at the 300 ohm side of the transformer, the antenna you are connected to sees a mis-match which creates an undesirable effect known as standing waves (high VSWR) at the antenna output terminal. This mismatch reduces the transfer of energy from the 300 ohm antenna to the 75 ohm side of the matching transformer. It may also create coupling of signal voltage to the antenna support structure and the shield of the 75 ohm coaxial line. None of this is good; signal is lost (without hope of retrieval).

Let's hop to the bottom line. *An out-of-the-catalog matching transformer using ferrite winding cores will lose no less than 1 dB of signal at 600 MHz; as much as 2.* That's lost signal, as in gone forever. You can reduce this loss to less than 0.2 dB at 600 MHz by carefully sourcing the matching transformers you are forced to use in your systems.

A slightly harder problem to visualize is the physical placement of the masthead amplifier. We all know it is called 'masthead' because it goes on the mast at the head of the system. But how often does this become the bottom of the mast because you didn't think you were going to need/use a masthead, and then once you knew you needed one, well, it was far easier to insert it into the line at the roofline than at the actual antenna!

Here's the harder-to-visualize part.

Any signal loss, no matter how seemingly small, between the output connector on the antenna and the input connector on the masthead amplifier, is lost forever. You will never gain it back, no matter how much amplifier gain you stick in the system after the point of amplifier insertion. How's that true?

Isn't voltage to be lost, and re-gained, at will; with an amplifier? Voltage, yes. Except when we are dealing with a signal + noise to noise ratio (SNR), the signal voltage alone is not the determining factor in the quality of the customer's picture. SNR is a ratio, between the signal the noise. Unless carefully engineered, an amplifier raises the voltage (the 'S' in SNR) and at the same time increases the 'N' as well. Stay tuned.

The noise figure of a planned receiving system is established by the first of the system. We don't count the antenna as a stage but everything between the antenna output and the first active (voltage operated) amplifier is a stage. If we exit the (300 ohm) antenna terminals with a matching transformer and it has 2 dB conversion loss, and then go through what we would like

to think of as a short length of RG-6/U with 1 dB more loss before we plug into the active (masthead) amplifier, there is now 3 dB of signal loss between the antenna output terminals and the masthead input terminal (2 -|- 1 3).

If this is a band IV UHF system and a 0.5 dB noise figure GaAs-FET masthead amplifier has been installed, we might expect the system noise figure to be set at 0.5 dB by that 0.5 dB GaAs-FET pre-amplifier.

### Wrong.

The 2 dB matching transformer loss plus the 1 dB makes this example system a 3 dB noise figure receiving system no matter what we do from the masthead amplifier onwards. In fact, the system would produce the same quality pictures with a 2 dB or even 3 dB noise figure masthead amplifier as it will with the 0.5 dB GaAs-FET unit! By not placing the masthead amplifier directly at the antenna system output terminal, you have degraded the system noise figure (ie., threshold of sensitivity) by all of the loss between the output of the antenna and the input to the masthead.

The math behind this valid statement is lengthy but the facts solid; that is why satellite dishes install the LNA (low noise amplifier) right into the feedhorn on the dish; to eliminate all loss between the feed and the LNA (masthead).

And needless to say if you have tried to improve the picture quality on a previously installed home system by tacking on a masthead amplifier at the back of the TV set after 20 or 30 meters of RG-6U between antenna and the TV set and wondered why the improvement was disappointing ... well, now you know.

Let's restate these very important points.

1) Impedance mismatch between the antenna output and the input to the masthead amplifier is lost energy never to be regained. How serious is this? Consider the 3 dB loss in our just-cited example. 3 dB is equivalent to cutting your antenna system in half; ie., the effective gain of your antenna just went down 50% because you gave away 3 dB between the antenna output and the masthead input. Pretty sloppy.

2) Any loss, whether due to impedance mismatch or because you have placed coaxial line between the antenna output and the masthead amp input, is signal lost forever. You cannot get it back in your all-important signal noise to noise equation: the one that counts when monitored on your customer's TV screen!

And this it-should-be-obvious-but additional point. When you have two or more separate antennas to be combined into a single downline (such as separate band I and III antennas, or, a VI-IF to a UHF antenna), what do you suppose happens when you follow the antenna-combiner with a masthead amplifier?

Nothing good, rest assured. If you are installing in an area where you have plenty of margin for error (and giving away signal), continue your unpure habits. But, if you are always fighting for the last dB of signal and routinely joining (combining) antennas before masthead amplifying, change your ways. Here's why.

A two-way splitter employed as a signal combiner joining dissimilar antennas does undesirable things to the impedance seen by the masthead amp; especially if the combiner is closely followed (a meter or less of cable) by the amp. The loss in the combiner is permanent loss never to be recovered. The combined-side that will suffer the most is usually the UHF antenna; normally it will be the weaker of the two (signal) sides (although it could be the VHF side or band III side when combining band I and III antennas). Mismatch effects vary quite unpredictably.

Certainly it is desirable to bring down a single transmission line to the TV set with all signals intact. The purist way of doing this is to:

1) Employ a masthead with two separate inputs; one specifically for UHF, one for VHF (examples: the Fringe Electronics UV1228 or Kingray MHW34T where gain is required at VHF and UHF; the Fringe Electronics WB22V or Kingray MHU34T where only UI-IF gain is required). This eliminates the combiner.

2) Or, although more expensive, employ two separate mastheads (one for each antenna) with a combiner following the mastheads that passes thru-power to both amplifiers, and a power supply capable of powering two mastheads.

Note: If you have plenty of signal to burn, or only require amplified signal because of

subsequent signal splitting/ distribution, skip the masthead altogether and install a multiple-output distribution amplifier inside the house, powered directly from AC mains.

Which brings us to masthead amplifier gain. How much is enough?

The real purpose of a masthead amplifier is to improve the signal + noise to noise ratio of the received signal(s). This happens only when the noise figure of the masthead is lower than the noise figure of the TV set to follow. and when the gain of the masthead is sufficient to override the noise figure of the TV set (VCR tuner). The computation of how much gain is enough involves taking the known noise figure of the TV tuner VCR tuner, the noise figure plus gain/loss of all subsequent stages (RFTF) in the receiver to the detector, and subtracting any losses such as the loss of the transmission line between the output of the masthead and the input to the tuner. It might require 30 minutes or so to calculate one situation. We can summarize for you.

## 20DB OF GAIN

This is almost always sufficient gain to establish the noise figure of the masthead (assuming you have not placed loss between the antenna output and the input to the masthead) as the noise figure of the receiving system. There is an exception to this generalized rule; UHF when you have substantial line losses between the output of the masthead and the input to the TV tuner.

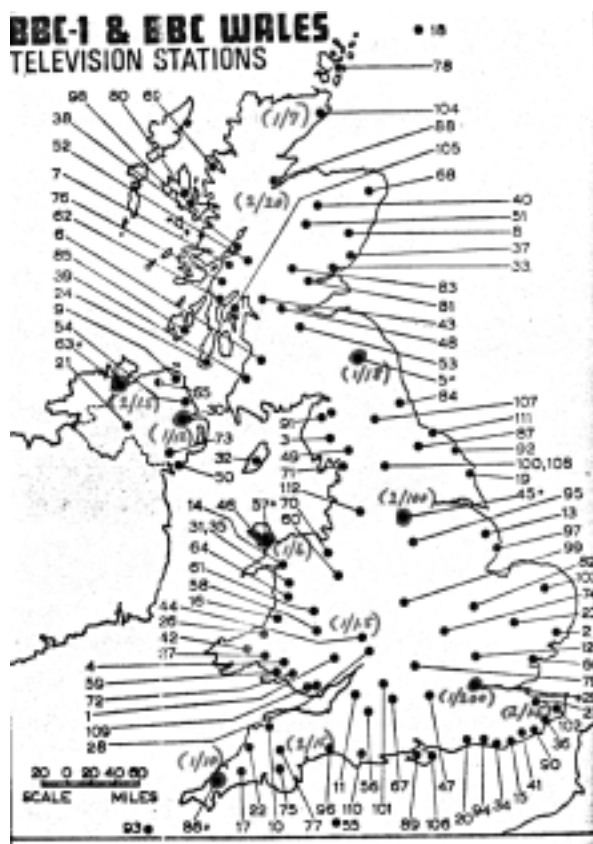
Those losses can be in the form of cable loss (10.4db per 100 metres at channel 40 when using 11 Foam series cable), splitter loss (at least 4 db – perhaps more- for each two-way splitter), or a combination of the two.

Generally speaking, the TV tuner has a noise figure. The masthead voltage gain needs to be no less than 3db greater than the noise figure of the TV tuner after losses between the masthead and the TV tuner have been subtracted.

Keep in mind the masthead voltage gain must be no less than 3db greater than the noise figure of the TV tuner after line and possible split losses between the two if you are to establish the noise figure of the masthead as the new system noise figure.

Warning! If your input signal(s) are strong, it is not advisable to use a masthead amplifier as a substitute for a distribution amplifier. The transistors chosen for masthead units are selected because of their low noise characteristics, not because of their signal handling capabilities. Using a masthead designed for pre-amplification in a medium to strong signal area (with two or more signals available through the masthead) can result in amplifier overload and cross modulation. Conversely, distribution amplifiers (typically offering two to eight bridge outputs) make poor substitutes for masthead amplifiers, lacking the necessary low noise figures and weak-signal amplifying circuits.

(to be continued)

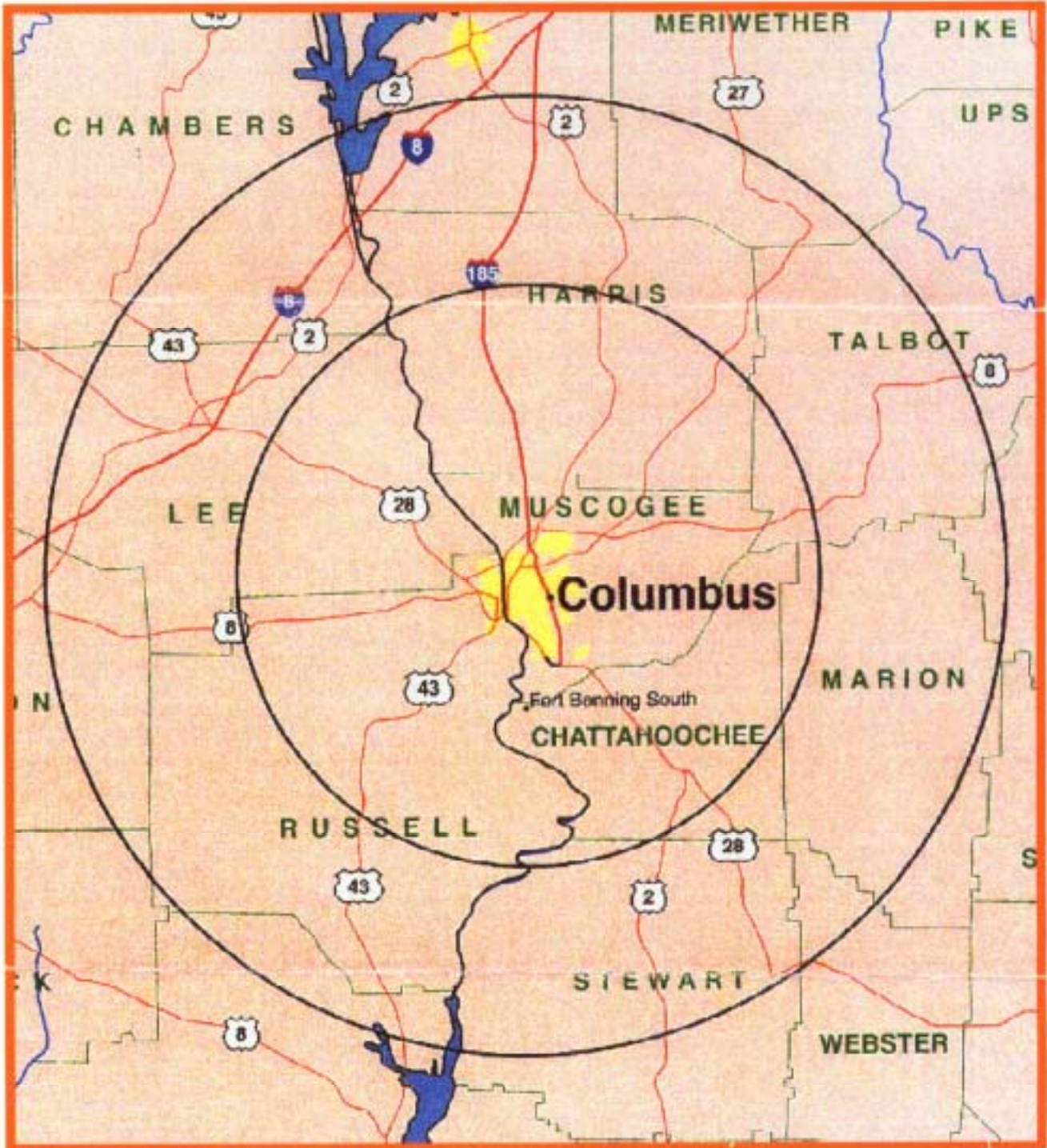


## ONCE UPON A TIME...

There were actually VHF TV stations in the United Kingdom. Yes, there were! And many of these low band VHF stations were heard here in North America by TV DXers like WTFDAer Bill Grant, who supplied this map of VHF transmitters given to him by the BBC.

What happened to them? Well, they all got pushed to UHF because of interference problems and a super source of overseas TV DX disappeared! Sad, but true. But it was true, once upon a time.

# COVERAGE MAP



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(Thanks to Dr. Bruce Elving for the coverage map.)

# Worldwide TV-FM DX Association

## 2004 Annual Convention

### Omaha, NE, July 30-August 1, 2004

Make plans now to attend the annual WTFDA convention, hosted this year by Matthew Sittel and Michael Hawk.

Our host location for the event is the Park Plaza Regency Lodge, located at 909 South 107<sup>th</sup> Avenue in Omaha, conveniently located one block east of the I-680 exit at Pacific Street. The hotel room rate for the convention is \$79/night for two doubles or one queen bed. This rate includes a complimentary hot breakfast with waffles made to order. All rooms feature a microwave, refrigerator, coffee maker, iron, in-room safe and radio with CD player. There is also a small business center with internet access. To make your reservations and receive the special rate, the hotel has asked that you call them directly at (402) 397-8000. *Be sure to mention WTFDA to get the \$79 rate; we have a block of rooms set aside for us at this rate!*

We have received permission from Park Plaza to set up antennas. Feel free to bring along your favorite DX equipment and try it out-hopefully we'll have some DX! Bring along video or audio tapes and photos of your DX to share; we'll have equipment set up to share your catches.

The registration fee for the convention is \$28, which includes the Saturday night banquet on-site at the Park Plaza. You can purchase additional banquet tickets for spouses or other guests at the rate of \$24 per additional meal.

If you plan on attending, please take a moment to fill out the form below and mail it along with check or money order for fees to **Matthew Sittel, 15013 Eureux St., Bellevue, NE 68123**. Registration deadline is June 30, 2004. If you have questions e-mail Matt at [mcsittel@cox.net](mailto:mcsittel@cox.net) or Mike at [thisisatest22@yahoo.com](mailto:thisisatest22@yahoo.com).

We hope to see YOU at WTFDA 2004 Omaha!

## CONVENTION 2004 REGISTRATION FORM

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