PVRC Newsletter May 2013

President's Letter – Rich NN3W

Howdy PVRC!

Work has had me literally buried at the office (my physical office was also renovated this week), so I have been under significant time constraints. So much so that I haven't once turned the radio on since WPX SSB weekend.

This weekend, however, was a fantastic time to play radio – with the Florida QSO Party in full swing. I hooked up antennas back off, reconnected the AL-811 to radio output #2 and, in between many much- neglected interior and exterior home chores, managed to make a bit over 300 QSOs. Finally managed an overall county "sweep" late this morning, with a CW mode "sweep" a couple hours later.

As a club, I know that we focus much of our attention on the big multi-day events – Sweepstakes, CQWW, ARRL DX, WPX and the like. For many hams, 36 or 48 hours is simply not in the cards as competitive operating requires nearly exclusive and full concentration – to the chagrin of home projects, work projects, the spouse, the harmonics, etc. Obviously, you operate what you can. However, I've found that these state QSO parties – especially chasing mobiles as they move from county to county – is very rewarding and very entertaining. And, as activity in certain QSO parties is quite high, missing one mobile's efforts in a particular county doesn't mean you won't work it – as another is likely to roll on through (sooner or later).

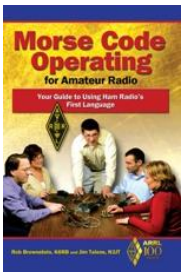
Anyhow, as we move on towards the summer months which usually result in fewer of the major contests, consider keeping your mental acuity sharp by playing in one or more of the late spring/summer QSO party events.

If you're prepared to turn your contesting brain off for a few weeks, please do bear in mind a couple things: 1) Dayton is coming up and that is indeed a good place to lose a few brain cells – hopefully they regenerate later…; 2) WPX CW is coming – the last HF event which qualifies for the Club 5M program for 2012-2013; and, 3) IARU HF is coming – I'll make a final update on the

preparations for the big W1AW/4 and NU1AW/3 competition and festivities. Anyhow….as I wrote this, I received two emails from the office. I guess I should pay them some attention.

73 Rich NN3W

***Morse Code Operating for Amateur Radio - Don't Just Learn Morse Code, Master It!*– Rob K6RB and Jim N3JT**



The ARRL has published "*Morse Code Operating for Amateur Radio - Don't Just Learn Morse Code, Master It!*" by Rob K6RB and PVRC's own Jim N3JT. You can order it here. Members of the CW Ops club can get free shipping, as well.

PVRC Officers:

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PVRC Website: http://www.pvrc.org

Dayton 2012 Pileup Contest Results – from Russ K0VXU

The KCDX Club had a bit of a delay in posting last year's results online, so here they are. The number of characters copied correctly was used as a tie-breaker when two stations had the same number of calls correct.

They'll be doing it again this year, for the 33rd time - check out Suite 525 Saturday night at the Dayton Crowne Plaza, and you can practice at the NO5W's site here.

2012 KCDX CLUB CW PILEUP RESULTS

Rank	Call	Score	Characters	Rank	Call	Score	Characters
1	K5GN	77		40	K8MR	41	201
2	W9WI	76			KB9OWD	41	201
3	VE3DZ	70	346	42	NF4A	41	196
4	N2NC	70	342	43	SP5HNK	41	195
5	K1TO	66	328	44	K9NB	40	195
6	K1VR	66	325	45	K5OT	40	194
7	K1DG	65		46	K3NA	39	188
8	9V1YC	63	314	47	K4RO	39	184
9	K1KI	63	310	48	NE9U	38	181
10	N2ZN	61		49	N2PP	38	180
11	K3TN	60		50	VE3FWA	36	
12	W5MX	58	287	51	KX9X	35	
13	VE3EY	58	286	52	K5KG	33	
14	VE3XB	57		53	N8LJ	32	155
15	W4PA	56		54	W1JR	32	153
16	K2RD	55	271	55	K2LE	32	151
17	KØBJ	55	266	56	K9KM	29	145
18	KØVBU	55	265	57	VE3RZ	29	143
19	N8NA	53	263	58	K4FT	28	
20	NØAX	53	255	59	W8KA	27	
21	W2JU	51	250	60	K9GT	26	126
	NAØN	51	250	61	KC5R	26	125
23	K1LT	51	249	62	KØLW	25	125
24	K5NZ	49	242		VA3EC	25	125
25	T6MO	49	237	64	WF7T	23	
26	K5ZM	47	227	65	N4HAI	22	
	W1VE	47	227	66	VE3UTT	31	
28	JK3GAD	46	226	67	N8XE	30	95
29	N4GN	46	222		K1KP	30	95
30	VE3KI	45		69	K2CYE	14	67
31	K1BG	44	216		VA3YU	14	67
32	WAØMHJ	44	218	71	KØTHN	13	
33	C91NW	43	217	72	W8MP	8	
34	K9WA	43	209	73	WAØWOF	2	
35	KZ5D	43	207	74	KCØBS	1	
36	W9SZ	42			K3LID	1	
37	N5JR	41	210		KDØEWB	1	
38	W1WEF	41	207		W9TOC	1	
39	KØAD	41	203				

TOTAL CALLSIGNS POSSIBLE = 110

MAX SCORE	77	MIN SCORE	1
AVERAGE	39	MEDIAN	41

I've Seen the Future, and It Is *Cool* – Pete N4ZR

For those who may have missed it, ZL2HAM's ViewProp is now available free in a public beta test. Before you yawn and dismiss ViewProp as just another propagation program, hear me out. This thing is different!

All the propagation prediction programs we are used to - IONCAP, VOACAP and their cousins - are based on historical understanding of propagation. They make predictions based on solar parameters and their authors quite honestly explain that their results are monthly averages, rather than predictions that reflect what you can expect today or tomorrow.

ViewProp is something new. It bases its reporting on what is happening today, on paths between your QTH and locations of interest around the world. It does this by drawing on the Reverse Beacon Network's array of hundreds of Skimmers worldwideto keep track of what is being spotted by Skimmers in your vicinity, as well as what stations in your vicinity are being spotted anywhere else. The result is a dynamic portrait of propagation from your QTH to and from wherever in the world, which bands are open and how well.

In addition to showing you a map display of the paths being reported, and on what bands, ViewProp also charts the level of activity on different bands over the course of each day in a readily-understandable format. There's much more to it, too, as you can learn by reading the Wiki with more details and a few screenshots: http://zl2ham.wikispaces.com/

I believe this is the first truly revolutionary use of the capabilities of the RBN to promote understanding of *your* HF propagation. Try it, and tell us if you agree. The only thing that Rick asks is that you join the Viewprop Yahoo group and then you can download the beta version from the group's Files section. Also, see the RBN blog here for more detail.

Try it, and tell him what you like, what you don't, and what you think should be added. I promise you, he is listening.

Voice of America Seeks Volunteers for BBQ Bash – from Eric W3DQ

The National Voice Of America Museum of Broadcasting and Bethany Relay Station AKA the VOA museum, **wants you**… to help out at their second annual Voice of America BBQ Bash — "a beer, blues and BBQ festival that will be held on museum property on May 17 and 18," a release explains.

"Individuals, teenagers in scout troops, club members and company employee groups are invited to help us monitor parking and guide cars safely in and out of parking spaces at the event," said Ken Rieser, museum board chairman. "This is a great opportunity to connect with our museum board and become a part of our museum family."

Museum volunteers and other interested parties can attend the festival and enjoy food, drink and blues music from the Cincy Blues Society. The festival will go from 6 p.m. to midnight on May 17, and from 11 a.m.to midnight on May 18.

The event is sponsored by the West Chester Rotary Club, a portion of festival proceeds will benefit the VOA museum.

To sign up individually or to enter a roster of names, go to the museum's website or contact museum board members Chris Wunnenberg of Schumacher Dugan Construction or Melinda Zemper at Oak Tree Communications.

The VOA museum is located in the historic Bethany Relay Station building at 8070 Tylersville Road in West Chester, Ohio. The museum consists of collections and exhibits from the VOA-Bethany station; Media Heritage's Greater Cincinnati Museum of Broadcast History; the Gray History of Wireless Museum; and the West Chester Amateur Radio Association control room.

Suggested donation for museum tours is $5 for adults and $1 for children under 12.

From RadioWorld

A Survey of Bandpass Filters for Contesting – Jim K9YC

This originally appeared in the March 2013 NCCC JUG Newsletter. It is reprinted here with permission of the author and NCCC, it also appears in the latest issue of NCJ. Jim reports that Bob 5B4AGN is putting together a group order for his box, contact info on QRZ.com

Introduction

Several years ago, I ordered a pair of ICE 419B filter sets for use in my future SO2R station. It took a year to get them, they arrived not very well aligned, and both of them failed due to overheating within the first year or so. Good luck smiled on me, when N6RNO, who has no home station of his own, loaned me the two sets of W3NQN-built filters he had bought for our CQP expeditions to Tehama county, and I've been using them for several years now. I wanted to have my own filter sets, and when I heard of the TXBPF bandpass filter sets that Bob Henderson, 5B4AGN, had designed and was distributing as a group purchase in kit form, I put myself on the list for the round of kits. The kits arrived this fall, and I built them over a period of about three weeks this winter.

I really enjoyed building the filters, and learned a lot in the process. Naturally, I wanted to compare what I'd built with other filter sets, and put out a request on the NCCC reflector for the loan of other filters. ND2T loaned a pair of Dunestar 600 6-band sets he'd acquired used, and N6DE loaned three single-band Dunestar filters. I opened all of them up and studied their design, construction, and component selection, and I measured all of these filters using the DG8SAQ VNWA Vector Network Analyzer. What follows is a summary of what I think I've learned.

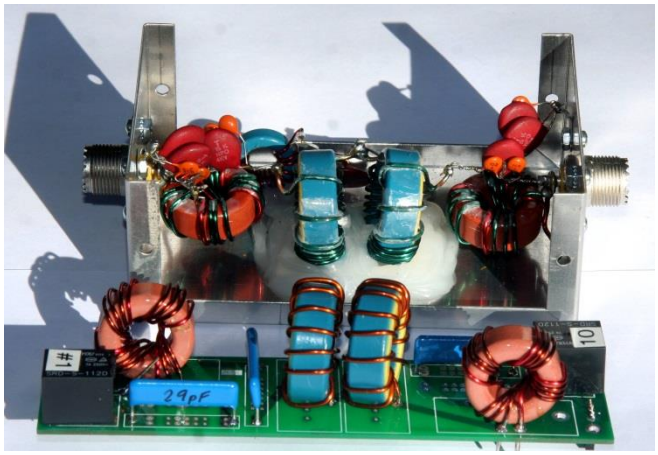


Figure 1
W3NQN filter (top) and TXBPF filter (lower)

Construction: The W3NQN 6-band sets are built as individual band filters, connected between transceiver and power amplifier by an Array Solutions FM-6 switching matrix, one for each rig, with LMR240 jumpers between the filters and the FM-6.

The TXBPF 6-band filter set is built with plug-in modules that fit onto a motherboard, and all elements of the signal path utilize very well implemented microstrip wiring. Filters are switched onto the bus, one at a time, so that only the loss associated with one pair of relays is present at any time.

Figure 2 – Dunestar 600 6-band filter set

The Dunestar 6-band set has individual filters permanently mounted to a motherboard with miniature RG-174-size coax between the filters and the relay-controlled bandswitch matrix. Cable shields are carried between filters and relays, but not between the relay matrix and chassis-mounted SO239 connectors.

The ICE 419B has six filters mounted to a single board, and the signal path is carried in series through relays that either bypass or switch the filter into the circuit.

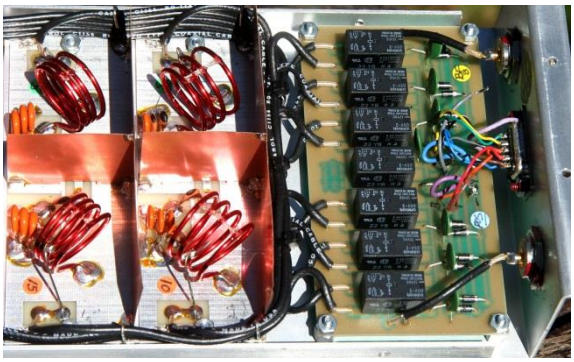


Figure 3 – Dunestar 600 RF Switchin

One of my two ICE 419B filter sets had a bad relay for the 80M filter that failed to make good contact until hit with TX power; after hitting it with TX power it passed signal on receive. Anecdotal reports from users noted that the ICE owner (now SK) advised drilling a hole in the cover of the relay and spraying the relay with DeOxit, and my 419Bs came with that hole drilled. I did that with the 80M relay, and when I tried to measure that box, learned that all of the relays were flaky, and ended up spraying all of them. Even after multiple sprayings, operation remains erratic.

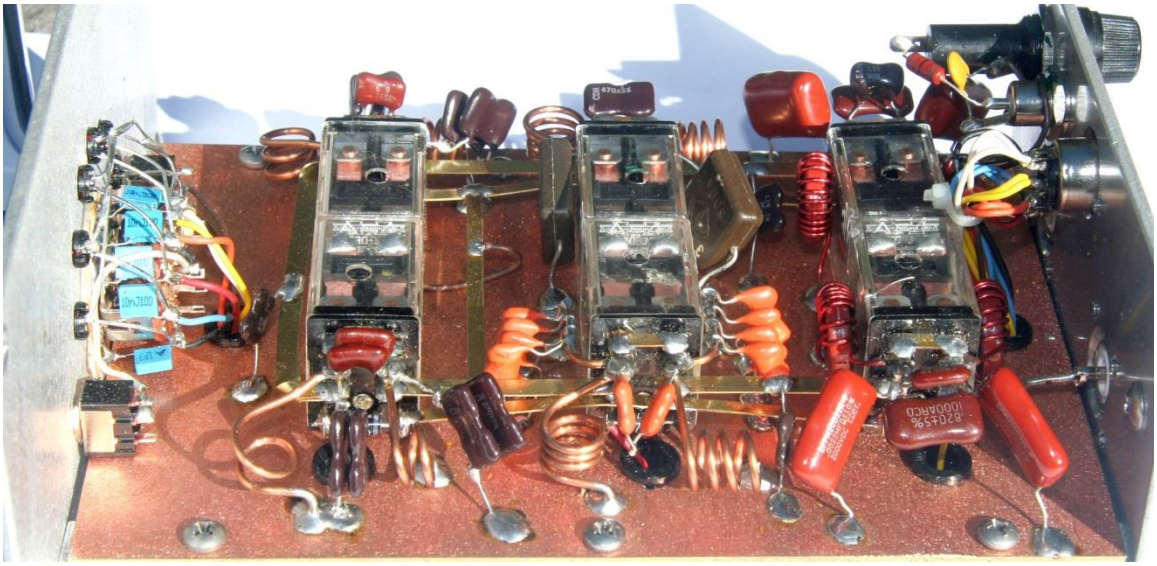
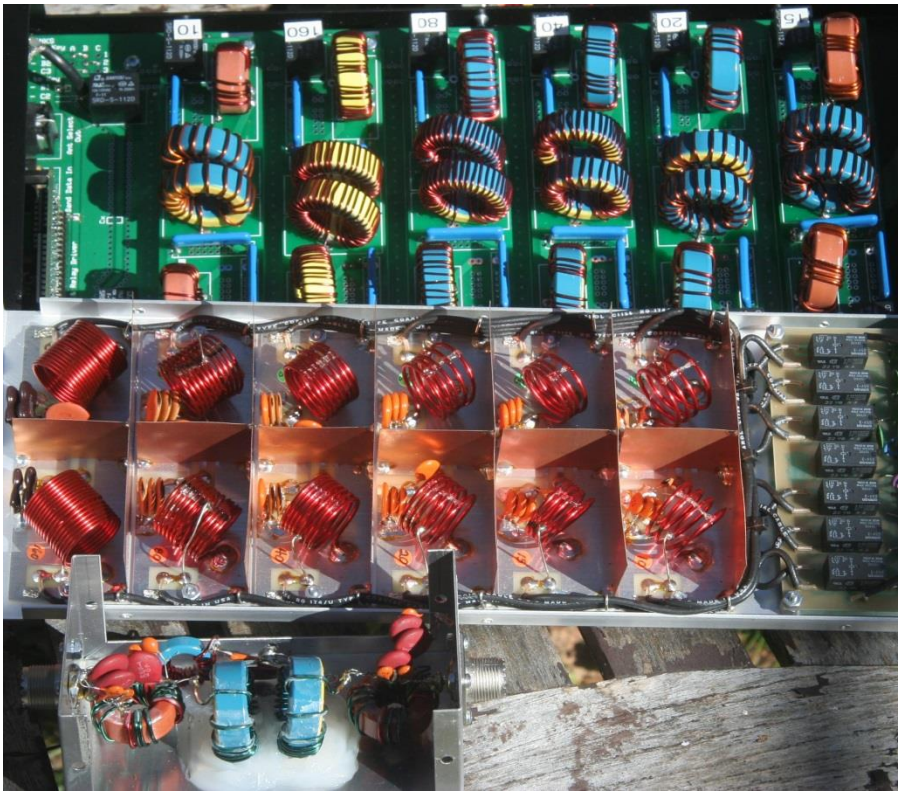


Figure 4 – ICE 419B 6-band Filter Set

Bypass Mode: If, like me, you operate 6M using a SteppIR, you might be concerned with how the switching matrix behaves in bypass mode. Performance is shown in the table.

Filter Set	50 MHz Attenuation	50 MHz VSWR
Array Solutions FM6	-0.3 dB	1.29:1
Dunestar 600	-0.17 dB	1.09:1
TXBPF	-0.08 dB	1.16:1
ICE 419B	Too erratic to measure (see text)	



The TXBPF filter set, (at right), has individual filter modules that plug onto a motherboard. Black rectangles near the left side of the photo are the bypass relays; the signal path between them is microstrip, and RG58, both center and shield, are wired to Amphenol flange-mount SO239 connectors. The result is excellent bypass performance on 6M, the best of all packages measured. A band decoder and buffered relay drivers to switch external antenna relays is on a daughterboard mounted vertically behind the rear panel (at left in the photo).

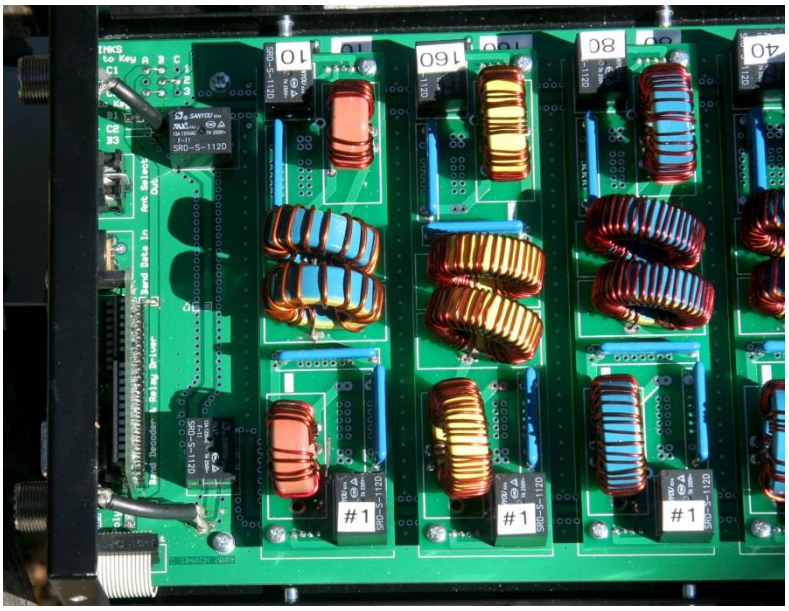


Figure 5 – TXBPF Filter Set

Figure 6 (top) – TXBPF (above), Dunestar 600 (center), 10M W3NQN-built filter (below)

Note: The photos of Figures 6 and 7 were intentionally taken with the filter sets very close together so that their relative sizes, and the sizes of their components, can be compared.

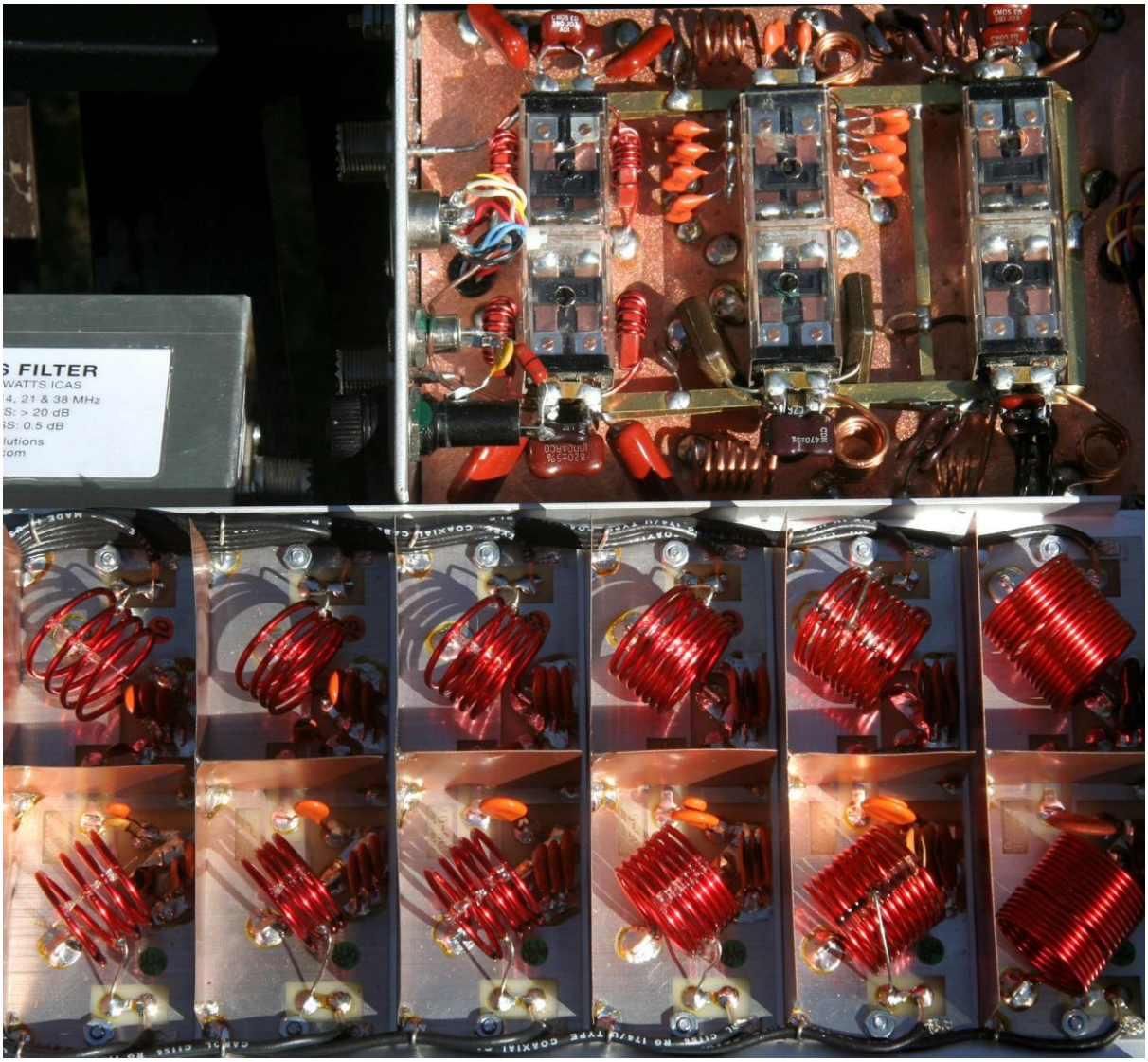


Figure 7 – ICE 419B (top) and Dunestar 600 (lower) Filter Sets

Filter Designs: The Dunestar filters are 2-pole designs, with tapped input and output resonator coils (connected as an auto transformer) to step up the filter impedance to a level where higher circuit Qs can be realized. The W3NQN-built filters and the TXBPF filters are 3-pole designs, also with tapped inductors as transformers, use of powered iron cores for most of the inductors, improving their Q, and by making those input and output windings tri-filar or quadra-filar, which improves transformer coupling. The filters in the ICE 419 are simple 2-pole filters with small, un-tapped, air core inductors.

The 5B4AGN-designed TXBPF filters stick pretty closely to the designs published by W3NQN in his QST article. But like most highly creative people, W3NQN has continued to grow, and most of the W3NQN-built filters include nice modifications to his published designs that improve rejection of adjacent bands, generally at some sacrifice to rejection on other bands. Where the TXBPF filters and W3NQN-built filters differ, this is the primary reason.

Components and Power Ratings: All of the filter sets tested are nominally rated for CW or SSB operation at 200W PEP. Dunestar says that their filters should de-rated for RTTY operation, without saying how much, and this is good advice for all of the filters. These ratings imply low SWR at the point where the filter is inserted at the output of the transceiver – certainly under 2:1 – and dissipation within the filter can easily increase, potentially to destructive levels, with significant mismatch. Many (most?) ham power amps can be driven to full power with 50 watts of drive, so filters actually built with components to justify the 200W rating should hold up well. The greatest stress on the filter occurs during a 100W contest, when the rig drives the antenna directly, and even greater when the SWR is high. See the reliability reports, later in this report.

It's always been true that careful component selection is critical to building reliable, high quality RF gear. I first learned this working as an EE student at RL Drake. Bob Drake taught me that "if you want to build filters and radios, you've got to wind all your own coils." Bob Henderson, 5B4AGN, reports that "Alas the generic deep red mica caps, which mostly originate in India these days have a higher than desirable ESR due to the presence of iron. These are mostly realistically rated at 500V with only limited preferred values available rated at 1kV. These caps are good for many RF purposes but not so good with power." Most of the caps in the ICE filters are "deep red micas."

ICE filter sets utilize 1kV-rated capacitors for the lower frequency band filters, but only 500V caps for the higher frequency filters. Capacitors in the Dunestar filters whose ratings I could identify are 1kV-rated, and all but a few have NPO temperature stability ratings. Except for the 160M filters, all are ceramics. The W3NQN and TXBPF filters are the best built by far, very well designed, and using inductors and capacitors capable of handling the output of a 100W transceiver. They do this by using capacitors with higher voltage ratings and lower ESR (equivalent series resistance), and by winding inductors on larger cores, and on core materials best suited to the application. The TXBPF kits are shipped with excellent close tolerance, conservatively-rated SBH-series capacitors made by Tab Components in the UK, specifically intended for use in HF transmitting filter applications. They're not cheap – $90 for the 18 caps needed for one 6-filter set. http://www.tabmica.co.uk/page3.html

Reliability: W3NQN-built filters have an excellent record for reliability. About the only way to fry one is to run it on the wrong band or in a system with high SWR, perhaps due to antenna failure. Anecdotal reports, mostly solicited on the PVRC and NCCC email reflectors, indicate that Dunestar and ICE filters for the higher bands, especially 15M and 10M, are prone to failure, nearly always one of the low cost ceramic capacitors in the input and output resonator circuits. A few ICE 419 and Dunestar 600 users have reported failure of a single relay, but especially in the Dunestar unit the problem does not seem to be widespread. The poor power handling of ICE filters is well known, and, in my judgment, they should never be used in a 100W contest barefoot, or at more than the 50W needed to drive most amplifiers. Some Dunestar users suggest that the 300 and 600 filters hold up OK at 100W CW and SSB, but RTTY at this level can cause failures. Owners of these filters might do well to rebuild the higher band filters with SBH capacitors from Tab Components. It could be tricky fitting them into the available space, and some realignment would be required with any capacitor replacement.

Alignment: All of these filters are aligned by squeezing or stretching the spacing of turns on the in-ductors while watching a swept response on a spectrum analyzer or VNA. It's a learned

skill and it can be a bit tedious to get it right, but serious effort is rewarded with lower VSWR and in-band attenuation, and increased reliability.

Rejection of AM Broadcast Signals: The Dunestar, TXBPF, and W3NQN-built 160M filters all provided good rejection of AM broadcast signals, nearly as good as the dedicated ICE BCB filter, and the W3NQN and TXBPF filters for higher bands are far better. 160M filter rejection at 1 MHz was -47dB for the Dunestars, -39 dB for the ICE 419s, and -42dB for the TXBPF and W3NQN-built sets. Rejection of the ICE BCB filter is -58.5dB at 1 MHz. With any of these filters, you're far less likely to need a dedicated AM broadcast filter unless you've got a close-in neighbor above about 1300 kHz.

Insertion Loss: Insertion loss is a function of both filter design and alignment – a filter that is out of alignment will have greater insertion loss than the same filter properly tuned. Taking circuit complexity into account, filters using powdered iron cores tend to have lower insertion loss than those using air core inductors, especially on the lower HF bands. As a group, the W3NQN and TXBPF filter sets have the lowest insertion loss. Dunestar and ICE filters use air core inductors, Dunestar filters have relatively high insertion loss on lower bands and the highest insertion loss overall, but fairly good attenuation performance. The ICE filters have fairly low insertion loss (partly because they are the simplest filters), but the poorest attenuation, because they are the simplest filters.

Attenuation Performance: There are several ways to view the attenuation curves. Looking at overall attenuation outside the passband, the W3NQN filters rank first, the TXBPF set second, the Dunestar filters a notch below them, and the ICE 419B filter set a very distant fourth. But there's another important perspective – attenuation on the first adjacent bands, since that's how we contest most of the time. Studying adjacent band performance, the differences are surprising. Some filters that rate poorly for overall suppression outside the passband are superior performers on the first adjacent band! Note, for example, the superior 160M suppression of the Dunestar 80M filter, the 80M suppression of the 40M Dunestar, the 15M suppression of the 20M Dunestar, the 10M suppression of the 15M Dunestar. With few exceptions, the W3NQN-built individual band filters have the best adjacent band suppression, thanks to refinements to his designs after publication of his QST article on filters. Depending on the arrangement of your antennas and the coupling between them under various operating scenarios, you may choose one set of filters over another.

Executive Summary and Recommendations: If cost is no object and you don't have the time or skills to build your own, the **W3NQN-built** filters distributed by Array Solutions, with the addition of one of the several switching matrices Array Solutions offers, are the best performers. The two filter sets I tested were very well built and aligned. Approximate cost of the package I tested – six filters, the FM-6 switching matrix, and Elecraft KRC2 band decoder, is about $1100 (plus tax and shipping).

The **Dunestar 600** is second best of the "ready built" filter sets, which, with a KRC2 band decoder costs about $600 (plus tax and shipping). Overall performance is a good notch below the W3NQN-built filters, at about one half the cost, but their narrower bandwidth yields excellent adjacent band suppression. Insertion loss tends to be high, especially on the lower bands, the 160M, 80M, and 10M filters cover only the lower half of those bands, and alignment of the two filter sets I tested could have been better (possibly because these filters have a lot of hours on them in a contesting station). This is important, because these filters are much narrower than all others tested.

The **TXBPF filter set**, which includes a band decoder and buffered relay driver in a package about the same size as the Dunestar set, costs about $420 (tax and shipping included), yields performance that falls between the individual W3NQN-built filters and the Dunestar 600, at about one third the cost of the W3NQN set and about $200 less than the Dunestar 600. The TXBPF's only weak spots are somewhat inferior adjacent band performance of a few higher band filters on non-harmonically related bands (for example, 15M rejection of the 20M and 10M filters, 10M rejection of the 15M filter). Count on spending about 40 hours to build and align each set of six filters. You'll be winding a lot of coils, doing a a fair amount of surface mount soldering, putting the well-designed package together, and aligning the filters. I really enjoyed this project, and learned a lot from it.

Array Solutions now offers **Filter Max III**, a ready-built package similar in concept to the Dunestar 600 at a cost of about $1,250 (including the $329 Bandmaster Band Decoder). The Elecraft KRC2 Band Decoder ($160) would work as well. One might hope for performance of the FilterMax III package to lie somewhere between the TXBPF and W3NQN-built implementations.

The **ICE 419-series** of filters are hardly worth considering. Their performance is, in general, significantly poorer than the Dunestars, cost is not a lot less, they have proved unreliable thanks in large part to their use of capacitors with voltage and dissipation ratings insufficient to the task. Another failure mode is the relays, which are difficult to repair or replace.

Single band filters built by W3NQN ($105-$125, depending on band) and Dunestar ($73) are a great option for a multi-multi station where a given operating position is always on the same band (as opposed to buying complete sets for each station). Dunestar's single band filters have the same design, component values, and layouts as their multi-band filter sets, and performance is comparable.

Just as this report was being completed, 5B4AGN sent measurements for three “high power” 4O3A Series L bandpass filters designed for use on the **output** of a power amp. At a cost of $300 each, they are an interesting alternative to stubs in filtering power amplifier harmonics. One can only guess what “high power” means to 4O3A – the product description on their website doesn't say – but their performance compares well with the 200W-rated filters. .

Stubs: All multi-transmitter stations can benefit from the use of stubs on antenna feedlines to attenuate harmonics of the transmitter, and to provide additional suppression of harmonically related transmitters below the operating frequency. See http://audiosystemsgroup.com/Coax-Stubs.pdf Stubs can add to the attenuation provided by filter sets, and they can suppress harmonics generated by the power amplifier, which these bandpass filters cannot. Good stubs typically provide more than 20dB of attenuation, which, if added to the 35 dB attenuation of a filter results in 55 dB total suppression at the stub frequency.

Plots of my measurements of most of the filters can be viewed or downloaded in pdf form at http://audiosystemsgroup.com/BandpassFilterData.htm They are worthy of your time to study them.

Thanks to 5B4AGN for a great design, for putting together the kits, for sage advice, and for the 4O3A filter measurements; AD6E for considerable help during construction, ND2T and N6DE for loaning filters, and to 5B4AGN and N6XI for their review of this report.

See original article here for attenuation and insertion loss in tabular form.

Membership News – Bud W3LL

PVRC added one new member in the Central Chapter since the last newsletter. Please welcome John K4HQK.

Chapter leaders please remember to complete the Meeting Attendance Report.

Upcoming Contests and Log Due Dates

Contests This Month

- May 4 – ARI DX
- May 11 – CQM DX
- May 11 – VOLTA RTTY
- May 18 – EA CW
- May 18 – Baltic Contest
- May 25 – WPX CW

Logs Due This Month

- May 6 – YU DX
- May 14 – JIDX
- May 14 – Yuri Gagarin
- May 14 - Manchester Mineira

See WA7BNM's Contest Calendar for more detail and the latest information.

The Editor's Last Word – John K3TN

Well, I'm about three weeks past rotator cuff surgery, and while I don't recommend it as a hobby, it is going pretty well, given I had what they call a "massive" tear – sort of the legal limit of rotator cuff tears. I can now rest my right arm on a desk to type or send CW but not supposed to use that arm actively at all – if you notice more typos than usual in this edition, that's my excuse. By the end of spring, I should be moving on to strengthening that arm so I'm looking for an active Field Day

Another spring renewal tale: Burt W3GG posted on the reflector that after many years he was going to take down his tower, long a landmark in Derwood, MD – back in the 1980s I operated Burt's FB station in some CW Sprints and a multi or two. At just about the same time, Dick WN3R was gathering equipment and volunteers to continue to grow the Bullis Prep school ham club Dick has started up.

One venerable station comes down, while another one sprouts – how cool is that? Drop Dick a line here if you can help with the Bullis ham club.

73 John K3TN

Eyeball QSO Directions

The latest info on local club meetings and get together will always be sent out on the PVRC reflector and posted on the PVRC web site.

NW Region: Meetings are generally held on the third Tuesday of each month at the City Buffet, 1306 W. Patrick Street, Frederick, MD. (301) 360-9666. It's in a small shopping center. Most arrive about 6 PM for dinner and informal discussions. The meeting begins at 7:00 PM.

From W. Patrick Street, turn up McCain Dr. (the Mountain View Diner is on the corner), then turn right into the shopping center, then turn left and search for a parking place. The City Buffet is tucked back in the left corner of the shopping center behind the Mountain View Diner. You can't see the City Buffet from W. Patrick Street. Contact: Jim WX3B

Central Region: Meets monthly the second Monday of each month, except June, July & August). The location alternates between the below MD and VA locations. Pre-meeting dinners start at 6:00 pm and meetings start at 7:30 pm.

VA LOCATION: Anita's, 521 E. Maple Ave, Vienna, VA. Tel: 703-255-1001. Meets at this location during the months of February, April and October.
Contact: Rich NN3W

MD LOCATION: Max's Café. 2319 University Blvd W, Wheaton MD 20902. Tel: 301-949-6297 People usually begin arriving at the restaurant around 6:30. Meets at this location during the months of January, March, May, September and November. Contact: Art K3KU

The Laurel, MD Region: Bill N3XL The PVRC get-together is held at the first LARC meeting each quarter at the clubhouse.

The Annapolis Crew: Dan K2YWE Meetings are held on the 4th Wednesday of each month at Broadneck Grill in Annapolis. We gather at about 5:30 PM and order dinner about 6. We break up usually before 8 PM. E-Mail K2YWE to be put on the e-mail reminder list.

PVRC-NC: The PVRC NC-East chapter meetings are held at Manchester's Bar and Grill on the 9100 block of Leesville Rd. in North Raleigh, with "QRM" beginning at 6:00pm and the dinner meeting following shortly thereafter. The meeting is held monthly on the 1st Thursday of most months, cancellations or changes usually announced on the PVRC-NC website. The PVRC NC-West Chapter holds its meetings on the 4th Monday of each month at the Mellow Mushroom, 314 W. 4th St., Winston-Salem, NC. Ragchew at 7:00pm, dinner meeting starts at 7:30pm. All contesters and interested guests are invited!

Central Virginia Contest Club: Ed NW4V Meets the first Tuesday of the month at St. Martins Church, 9000 St. Martin Lane, Richmond VA, (between W. Broad St. and N. Parham Road). Our meeting begins at 7PM.

Over the Hill Bunch: The group meets for lunch at noon alternately in Maryland at the College Park Holiday Hotel Route 1 and the Beltway or in Virginia at the Parkview Marriot near route 50 and the Beltway. Meetings generally are held on the last Wednesday of the month and are subject to change. Meetings are announced by E-Mail. All PVRC members, non-members interested in membership and guests are welcome. For information contact Roger Stephens, K5VRX, 703-658-3991 for Virginia meetings; or Cliff Bedore W3CB or get on 147.00 for Maryland meetings.

Downtown Lunch Group: Meets on the 3rd Wednesday or Thursday of the month in the downtown area of Washington, DC. Locations occasionally change, but are always Metro accessible. Details are sent out on the PVRC reflector. Feel free to contact Eric W3DQ or Brian WV4V for details and directions.

Southwest VA Chapter: The Southwest VA group meets each Wednesday at about 8:30 AM at Hardees at 20265 Timberlake Road in Lynchburg, VA. This is an informal gathering, but normally has about 10-12 attendees..Contact Mark Sihlanick N2QT, Tel: 434-525-2921

SOMD Region Meeting: The Southern Maryland Chapter meets at 6:30PM on the first Tuesday of even numbered months. We meet in the vicinity of Charlotte Hall, MD, with the specific location (usually a local restaurant) to be announced several weeks prior to the meeting (keep an eye on the reflector). These meetings are open to all PVRCers, guests, and those interested in joining PVRC. Contact Tom AB3IC for information: e-mail: GL1800Winger@verizon.net - cell: 240-434-3811

If you'd like to add or correct a listing, contact K3TN for inclusion in the Newsletter!

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