

Nov/Dec 2014



CANADIAN VINTAGE RADIO

Canadian Vintage Radios

Nice
radios!



Christmas 2014 Issue

THIS ISSUE
18 PAGES

A Thing of Beauty—

Bill West-Sells

Bruce wanted me to make a knob. I made one of Pacific Yew, a rare North Island species. But I insisted that there could be other things wrong such as leaky capacitors, so he brought the whole set. Note the badly mismatched knob! (photo right).

I was able to copy the rough shape, but the design on the face I have left to the owner to attempt. From here I moved on to the technical things such as caps, but someone had already been in and done that.

However, the radio needed a “Face Lift.” – meaning that the tuning capacitor buffers have aged and sagged to the point that the tuning control shaft is almost rubbing on wood. Usually I can manage this with silicone glue, but in this case I used ‘ensulate’,

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An Unexpected Windfall: My Gaucho in the Kitchen —The Newbie

You won't believe my good fortune this past month. A personal windfall in relationships. A true milestone in the annals of antique radio collection and marital bliss.

You may recall that I have taken up the challenge to encourage my Dear Wife to more fully appreciate the inner beauty of our hobby. Purely for her own enjoyment, you understand. Who doesn't appreciate an eclectic collection of dusty old relics in a newly renovated home? Yet despite my well laid plans, the dream of a beautiful display case in our living room, artfully disguised as furniture, and placed prominently in front of the new couch, has yet to gain much traction. Or so I thought.

A recent move from Alberta to BC temporarily slowed down my restoration projects. I don't have a workbench in our new digs and all my tools are still in boxes. But to my surprise, the move resulted in unexpected progress on the home front. Have a look at the picture above, right.

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Editorial — Gerry O'Hara



Wow, I cannot believe that it is over 7 years since I penned my first Canadian Vintage Radios Editorial and edited the Fall, 2007 issue—time flies by and waits for **no one. That's some 35 Newsletters**, which have increased in size from 8 pages to 16 or more pages over that period and that contain many excellent articles, hints, tips and Chapter News features, all contributed by CVRS members—well done all those authors!

During that time the CVRS membership has also expanded and the new website and Forum came online, and in this issue the fledgling **Vancouver Island Chapter gains 'official' status by holding a place in 'Chapter News'** with Lorne Bohn as the Local Representative—exciting stuff!

So, what will the next seven year bring? - additional new Chapters?, enhancements to the

Local Representatives

BC Lower Mainland Chapter — Ken Patenaude

BC Chapter—Bill West-Sells

Vancouver Island Chapter—Lorne Bohn

Alberta Chapter — Rick Williams

Local groups or chapters of the CVRS can represent a small group, whether geographically-based or otherwise. Thus we can have the BC Lower Mainland Chapter, the Alberta Chapter, or even the Philco Special Interest Group or the Rogers Historical Group—as long as a member of the CVRS wishes to run it and wants it to be represented within the CVRS. So come on members, think locally, regionally or even by manufacturer or other topic—based, we want to hear from you!



website? New features in the Newsletter (or even further expansion of the Newsletter?), publications?, projects?

- any one or a combination of these are possible, however, it needs participation by members. So, come on, please step up and contact myself, Don White or a Local Chapter Representative today to become involved!! Merry Christmas and thanks to all...

Cont. from Page 1

you know, the pad that comes in a roll you take backpacking to sleep on (pgoto, top of next page). **It's really tough and is a better cushion than rubber.** I had to add a brass strip to mount one of them, in order to prop up a corner. The toothpick is a shim.

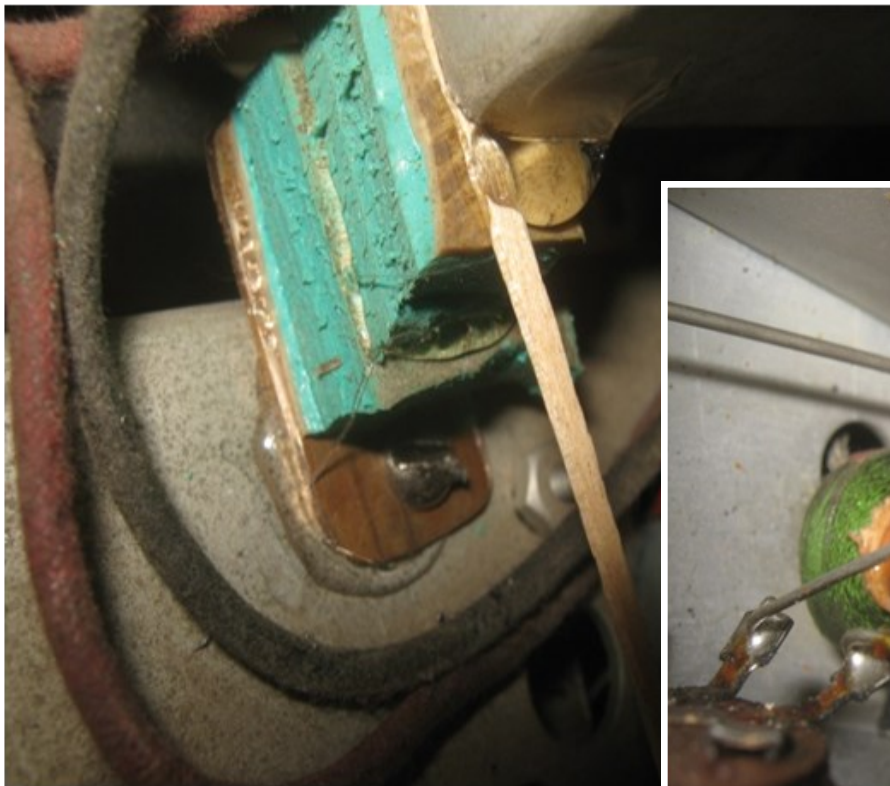


I worked on the lazy tuning: the dial works slipped. Contact cleaner loosened up a dry bearing on the log indicator, and then it worked well.

One tube was a little weak, the 6F6, but no matter.

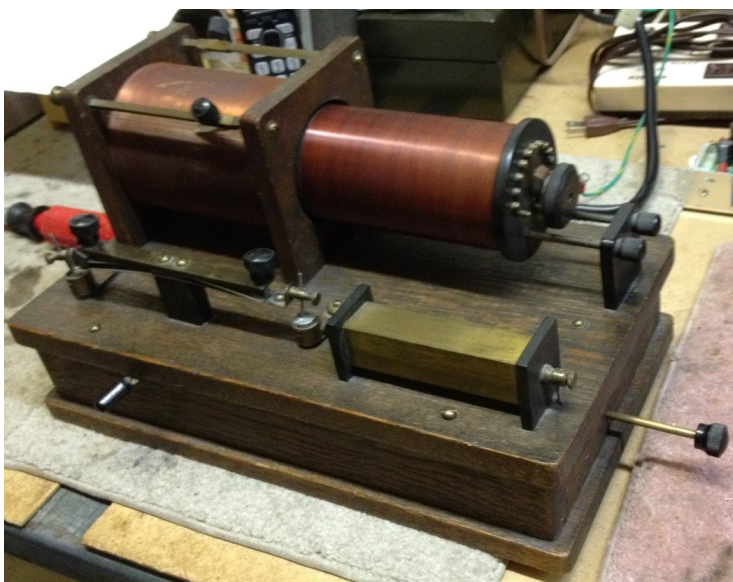
While I was inspecting things I noticed a careless error on **someone's part**—a large gob of solder dropped on the coil (circled in photo, next page), not mine, but I can't say I've never done that. That can certainly detune a coil and rob it of signal strength.





BC Lower Mainland Chapter - Gerry O'Hara

The Lower Mainland Chapter held the first vintage radio fleamarket of the season on November 16, 2014 at Charles Rummel Hall in Burnaby. The fleamarket was well-attended and there were some excellent bargains to be had! I took along two tables of 'goodies', including a very nice National NC-46 and a great Hammarlund HQ-140, a couple of 'Pye' table-tops and a range of test equipment, including a working HP audio oscillator (the type they used in 'Fantasia') - made HP famous! One of the best bargains was a very early crystal set sold by Bob Murray—see photo—a real museum piece.



The next Lower Mainland Chapter will be on Sunday, January XX 2015—same venue. See you there!

Vancouver Island (VI) Chapter - Don White

Our biggest news off the top: VI Chapter members have opted to make Vancouver Island, BC, not only the home of the latest local chapter of the CVRS, but also the first online chapter!

Given the region's geographical size (it extends from Victoria in the south to Cape Scott in the north), a "virtual" chapter was deemed to be the best way to facilitate the connection and sharing of practical information between members.

So we tweaked our chapter concept, just a bit. Our vision is still to provide opportunities for enthusiasts to buy/sell, problem-solve, communicate, and learn about the restoration and preservation of vintage radio. We are still

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Non-CVRS Organization News

News and events from other (non-CVRS) vintage radio groups and organizations.

Prairie Vintage Radio Society — Nothing reported from the boys on the Prairies for this issue.

Puget Sound — the CVRS always receives a copy of 'Horn of Plenty', the newsletter of the Puget Sound Antique Radio Association. This is a great publication with many interesting article in every issue.



Ontario Vintage Radio Association — for information visit <http://www.ovra.ca/ovra-abt.php>

Ottawa Vintage Radio Club—for information contact Lea Barker at barker@ca.inter.net

Quebec — The SQCRA has 90 members mostly from Quebec, and also members in Ontario, California and France, with great website! www.sqcra.org. SQCRA organize an international restoration competition for vintage radio organizations and would like to invite the members of CVRS from any chapter to represent the club, contact Serge Hainault at sireno@live.ca.

Antique Radio Classified — this is a great source of information and news on the vintage radio scene—always contains many adverts for vintage radios, parts and services (www.antiqueradio.com).

Victoria Radio Group—has been around for around 4 years and has over 50 members, many local, but some as far away as Halifax. Membership is free—join online at <http://groups.yahoo.com/group/VicRadioGroup/>. Monthly meetings in Victoria on 3rd Wednesday of each Month 7pm-8:30pm (except December) at Pluto's 1150 Cook Street Victoria. Contact: Lee (atlelee@gmail.com).

SPARC Radio Museum, Coquitlam — Well-known vintage radio museum based in Coquitlam, BC. Visit their website at www3.telus.net/radiomuseum/.

SPARC usually has a selection of vintage radios (consoles and table top) and items of test equipment on 'silent auction' to the public—call by and take a look at what they have for sale.



Wanted/For Sale



For Sale: 1% Precision tolerance 500V silver mica capacitors and 1% Precision 630V tubular axial PSA polystyrene film capacitors. Also for sale are 1000 Volt silver mica capacitors available in many different pF sizes. All capacitors are new production.

For price list and product info, please contact Dave Cantelon, 6 Ferncrest Gate, Scarborough, Ontario, Canada, M1W 1C2 ; phone 416-502-

9128; Email: justradios@yahoo.com or visit WebSite: www.justradios.com

For Sale - Tubes at reasonable prices, also large number of radio books. Contact Roger Gould at [1-509-784-1845](tel:1-509-784-1845) or see <http://www.vacuumtubes.biz>.



Antique Wireless Association - Bob Murray

The 2015 Annual Convention of the AWA will feature the Voice of America (VOA) as a theme. The VOA was established during the Second World War as an HF broadcasting service to counter the propaganda originating in Germany and Japan with propaganda from the USA. At the convention, radio collectors are expected to submit exhibits of artifacts related to the theme. In the case of the VOA, this may be a bit challenging. Perhaps the organizers know something that I do not.

The VOA was featured in a well-written article in the **AWA Review**, volume 21 in 2008, by author James O'Neal.

The concept of the VOA arose in US government policy in 1942. Three HF broadcasting stations were developed, and sited in Bethany, OH, Delano, CA, and Dixon, CA. The federal government contract for the stations specified 200 kW transmitters, and no such transmitters existed at the time. At the same time the Crosley broadcasting station WLW was developing a 700 kW superpower transmitter for the broadcast band. There was some engineering spillover from that project to the VOA one. The contracts to build the three VOA transmitters were awarded to CBS, Crosley, and RCA.

Western Europe was to be covered by the Crosley facility in Bethany, OH. Asia was reached by the new HF stations in Delano and Dixon, CA. At about the time the transmitters were under development, a French engineer Henri Busignies escaped from German occupation of his homeland and arrived in the US with plans for a new high power vacuum tube that it was hoped would prove useful in the HF portion of the spectrum. Busignies supplied this design to Federal where he was employed, and it was designated the F134.

The Bethany station is partially shown in the photo, right. It contained six 200 kW transmitters. The room containing the six transmitters was 75 ft. by 175 ft., and the ceiling was 24 ft. high. The stations went into operation in the Fall of 1944. Hitler himself referred to the Bethany station as "The Cincinnati Liars". After the war, the VOA stations continued to be busy with traffic aimed at the Cold War. The transmitters were upgraded to Collins 821-A1 "autotune" 250 kW rigs in the 1960's. Service was no longer available for the originals and parts were difficult to find. It is one of these Collins rigs that has recently been moved to the AWA Museum, coincident with the demolition of the old VOA stations. It is presumably responsible for the theme of next year's conference.



HiFi Tuners (Part 10) — Audi-

oman

Introduction

In Part 8 of this series I covered the QUAD 'FM1' tuner, part of the famous QUAD range of high-quality tube audio products from the 1950's. In this part I look at another component in the 1950's/early-1960's QUAD range, the QUAD AM2 tuner—a real bumper 'Christmas Special' expose on this baby!

Background

Well, serendipity struck for me (it occasionally does), when I was discussing my QUAD equipment with a friend at the SPARC radio museum in Coquitlam, BC. Turned out that he bought a QUAD AMII tuner back in the 60's and still had it – hardly-used, and complete with mint-condition manual. A deal was struck and I became the proud owner of a QUAD AMII tuner (Serial No. 8846) in 2014.

It may seem a bit odd that a company specializing in HiFi components would produce an AM tuner. The explanation lies in the fact that when FM radio was



Quad AMII Tuner. Price: £24 plus £9 P.T.
The Acoustical Manufacturing Co. Ltd.,
Huntingdon, Hunts.

Makers' Specification:

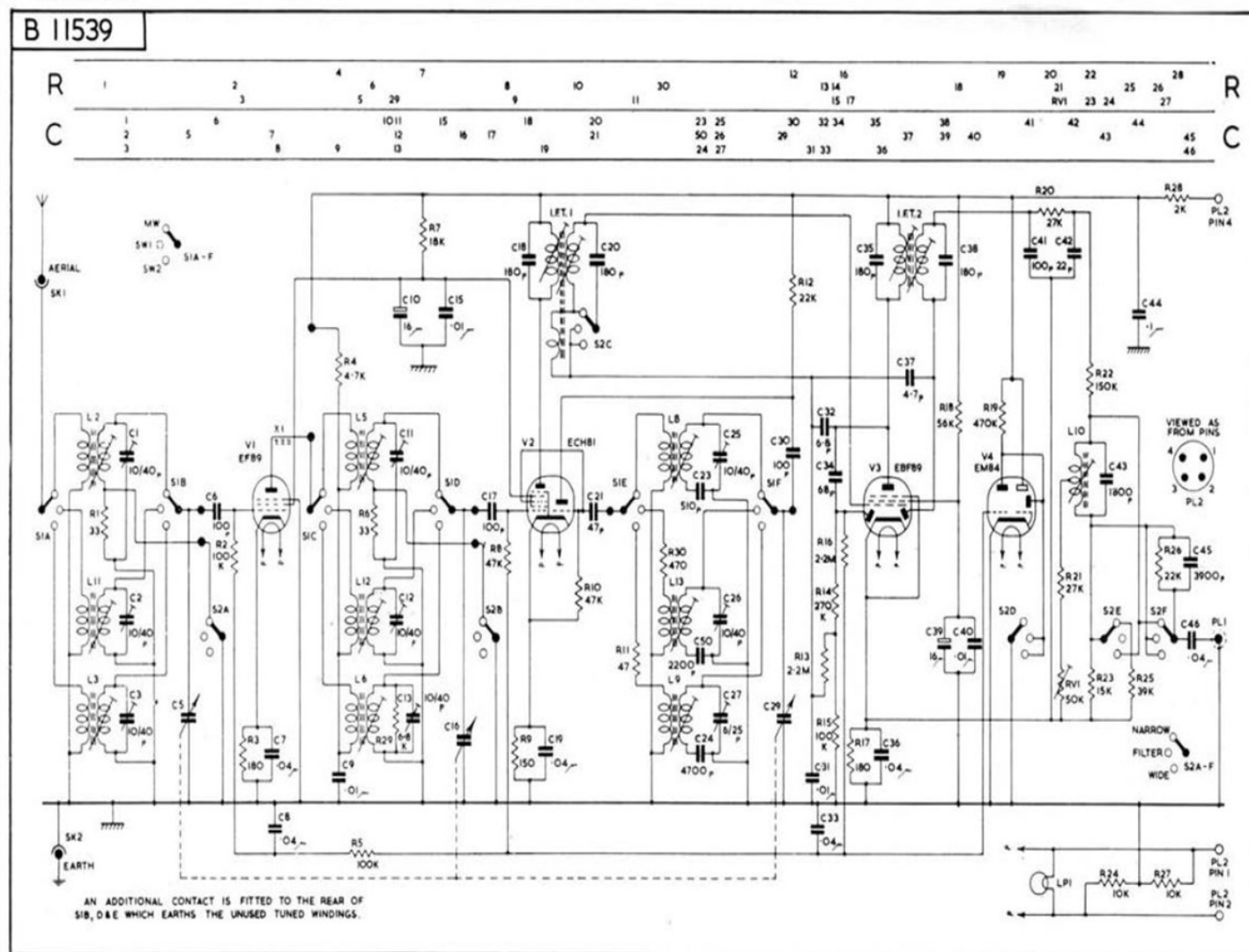
Tuning Range: A.M.11/European. Long wave: 2070-800 metres. Medium wave: 588-185 metres. Short wave: 5.8-18.5 mc/s.
A.M.11/Overseas. Medium wave: 510-1620 kc/s. Short wave 1: 2.2-6.6 mc/s. Short wave 2: 5.8-18.5 mc/s.
Output level: 100mV (Nominal for 30% modulation).
Output resistance: 15,000 ohms.
Filter rejection frequency: A.M.11/European: 9kc/s. A.M.11/Overseas: 10kc/s.
Power requirement: HT 35 mA at 330V. LT 1.2 A at 6.3V.
Power and Signal cable lengths: 40 in. (1m).
Valve complement: EF89, ECH81, EBF89, EM84.
Front panel: Silvered Fawn.
Knobs: Matt Brown.
Dimensions: 10½ in. by 3½ in. by 6 in. (267 by 89 by 153 mm).
Weight: 6 lbs. 2.7 Kg.).

introduced in the UK in the mid-50's, coverage was very 'spotty' and many HiFi enthusiasts could not receive a good (or any) FM signal to feed to their tuner. Tuners were a very popular sound source at that time, as BBC broadcasts were of very good quality and program content included popular concerts and other music shows. Given this situation, it was natural that QUAD supplemented their range with a high-quality AM tuner, giving access to the programming material at a lesser, though acceptable, sound quality for many – the AMII manual states *"With the selectivity switch in the Wide position the IF amplifier allows an overall response to over 10kc/s and the RF amplifier ensures a very low level of receiver background noise. When reception conditions are suitable the quality of reproduction is comparable with that provided by a VHF-FM service"*. QUAD produced four AM tuner models over a period of some 24 years. The AMII described here was

introduced in 1960 and discontinued in 1969, being replaced by the AM3, basically the same tuner with a modernized case and dial, itself produced until 1973. Around 10,000 AMII's were manufactured.

On Arrival

As noted above, the full provenance of this particular AMII tuner is known, with only one owner from new in 1968. The former owner noted that it had not seen much use, though the four pin power plug had been removed such that he could supply the needed filament and HT voltages without having the requisite QUAD QC22 control unit.



Luckily I had the correct type of plug in my 'junk box' and this was fitted.

Cosmetically the case paintwork is in perfect condition, as are the tuning knob and other controls. The only issue being the problem with the gold paint departing from parts of the rear of the acrylic tuning dial. As in the FM2 tuner.

The chassis was exceptionally clean – looking like it had just left the factory a few weeks before – no dust, grease or tarnish present.

Circuit and Construction

The circuit of the 'export model' is reproduced above. The aerial transformer is coupled by a variable- μ RF amplifier pentode (EF89), the anode circuit of which is transformer-coupled to the mixer grid. Both the grid circuits are tuned on all wave-bands, and the Q of the medium wave (Broadcast band) circuits is reduced when switched to select a wide-band response.

A triode-heptode (ECH81) is used as the local oscillator and mixer. The oscillator anode circuit is tuned, and is tracked by high stability, close-tolerance capacitors.

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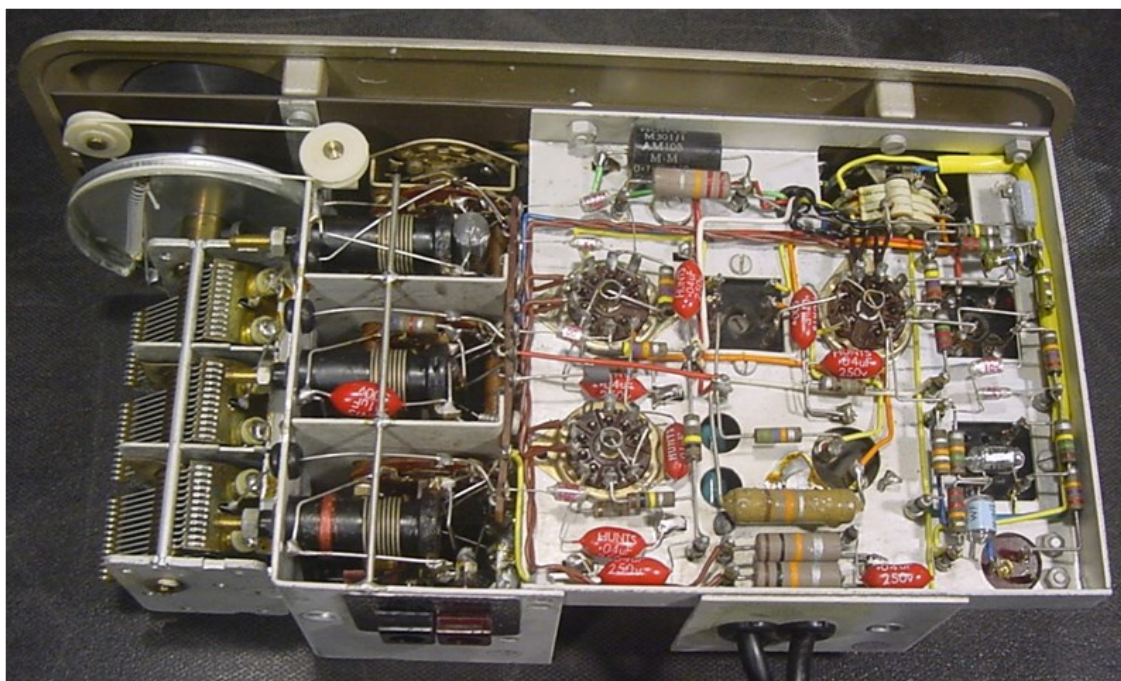
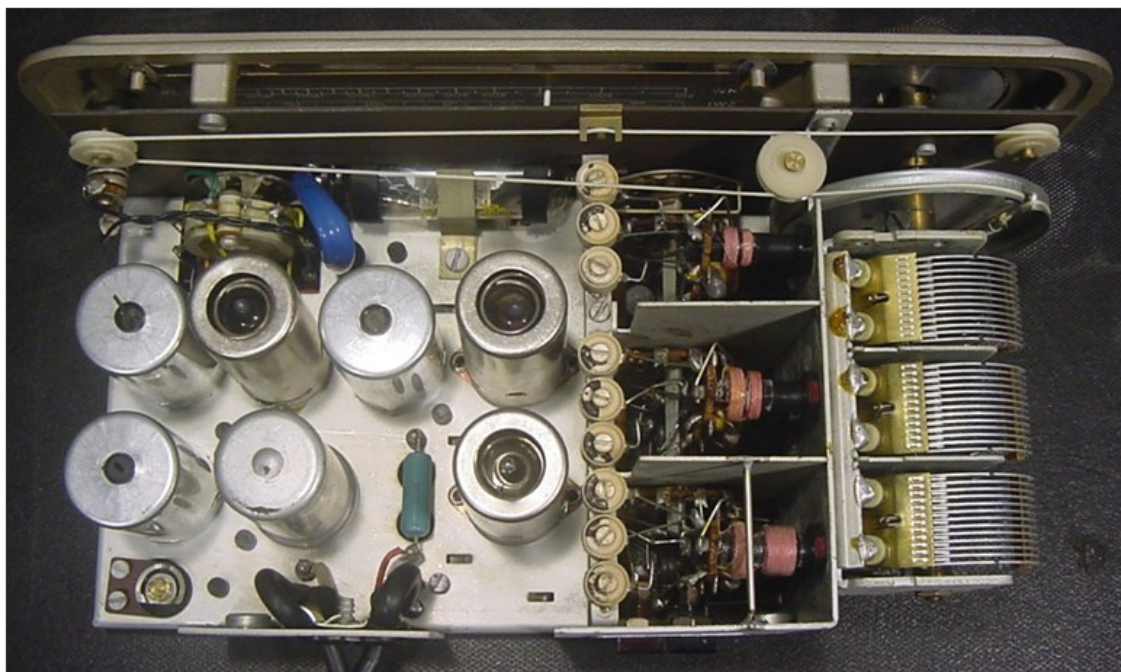
The 470kHz output from the mixer anode is transformer-coupled to the IF amplifier. The coupling is critical ($Q_k=1$) in the narrow band condition. In the wide band condition, the coupling is increased ($Q_k=4$) by including a tertiary winding; this method ensures that the response remains symmetrical about the centre frequency.

The IF amplifier is the pentode section of a double diode pentode (EBF89). This tube has a high slope, combined with a low anode-grid capacitance. A simple fixed neutralizing circuit is used to further reduce the anode-grid capacitance. This allows a high stage gain without tilting the response within the IF pass band.

One diode of the EBF89, with a small delay voltage applied, is used to provide the AGC voltage. This voltage is applied fully to the RF and mixer stages, and partially to the IF stage. The AGC circuit provides good control and large input signals are accepted without overload.

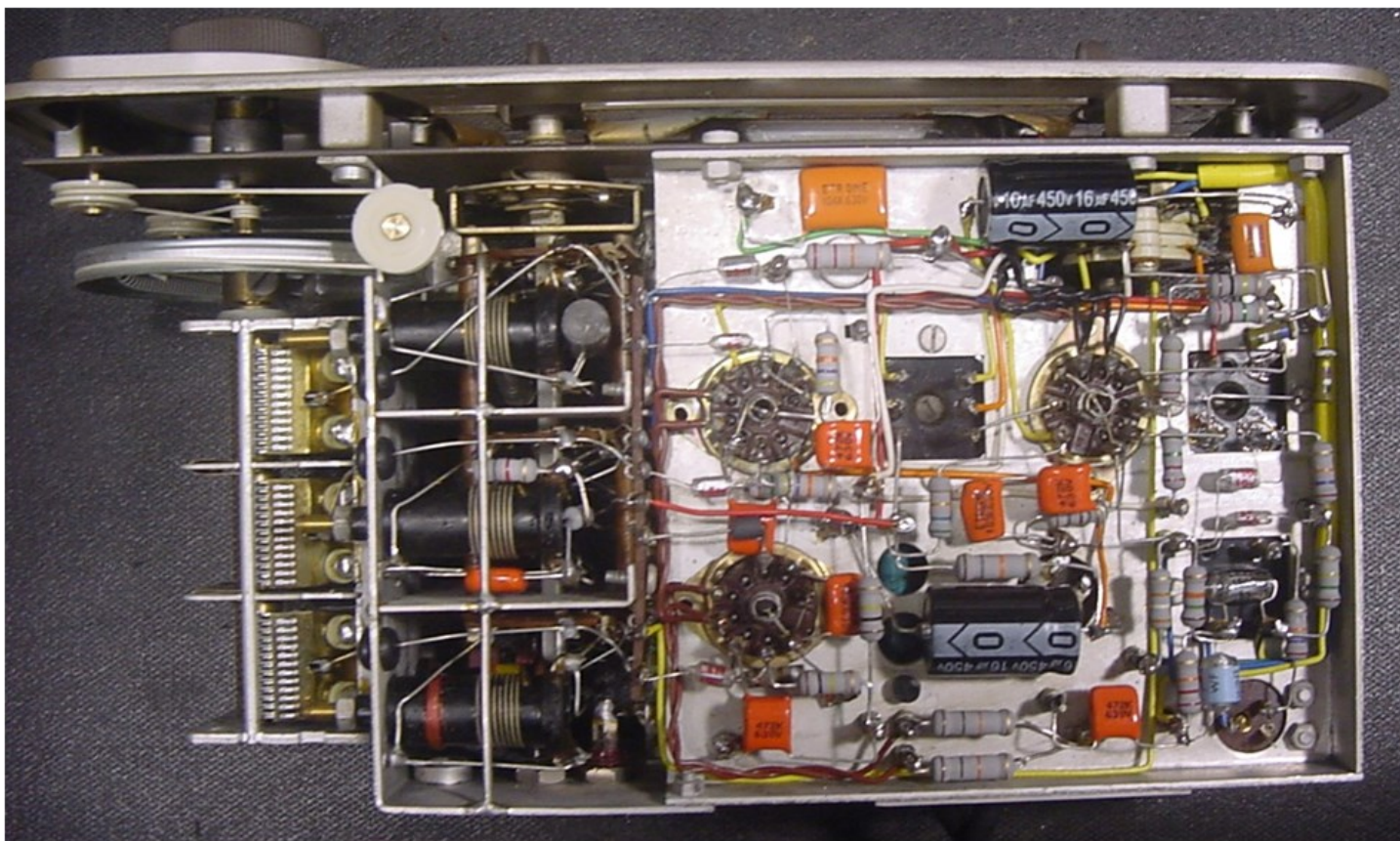
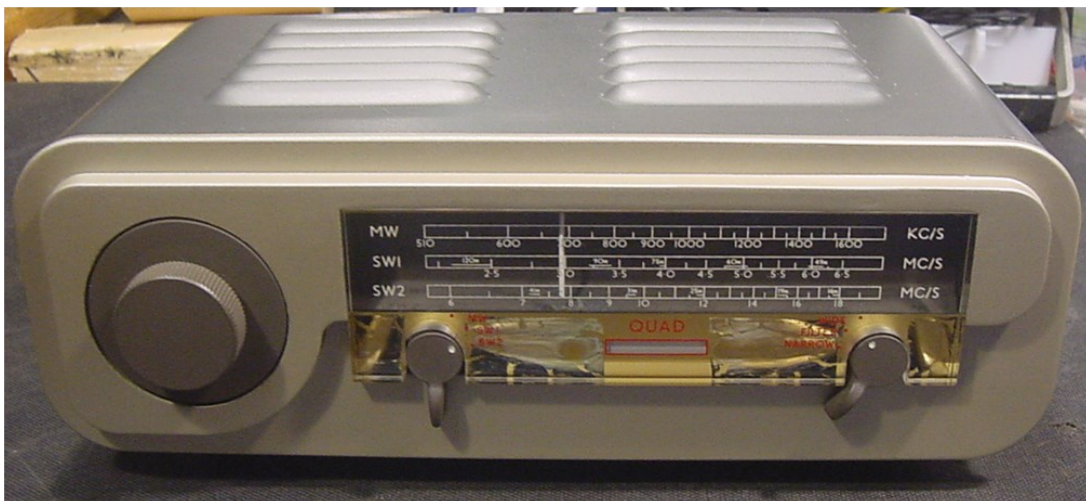
The IF amplifier anode is transformer-coupled to the diode signal rectifier. The loaded Q of this transformer is half that of the first IF transformer and the coupling is critical. In the wide-band condition, the combined IF frequency response is within ± 1 db to 12kHz, and in the narrow-band condition, it is -3db at 3.5kHz. The narrow-band frequency response is equalized to 5kHz by an audio frequency circuit. In the Filter position of the selectivity switch, an adjustable bridged-T rejection circuit tuned to the adjacent channel heterodyne (whistle) is combined with the wide-band response.

The audio output is taken from a small fraction of the diode load in order to minimize distortion with heavily-modulated signals.

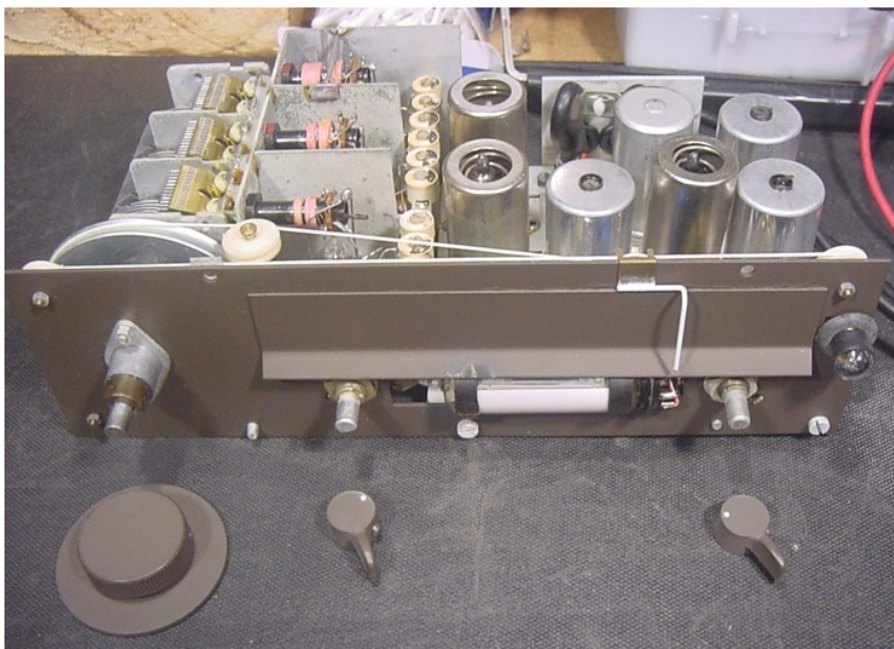


The tuning indicator (EM84) had a variable-mu characteristic and gives a clear indication of the correct tuning point over a wide range of input signal levels. The greatest accuracy of indication is given when the IF amplifier has a narrow pass band. The indicator is therefore made inoperative in the wide-band selectivity switch positions.

The tuner has an extremely compact design: the right-hand side of the very shallow chassis contains the four tubes, IF transformers and smoothing capacitor can. To the centre of the chassis is the coilpack, and to the left of this the three-gang tuning capacitor. The above chassis layout is neat, with the major components arranged in rows. Beneath the chassis the components are arranged at right-angles to each other, as is the component lead dressing, altogether providing a very visually pleasing layout, typical of QUAD construction in this period. The tuning arrangement is via a standard spring-tensioned cord, however, a neat feature is a slow-motion drive that operates over a narrow tuning range whenever the tuning dial is set to a frequency by turning the tuning knob more slowly – a very effective system, especially useful when tuning stations at the upper



ends of the Short wave bands. The front panel layout is simple and in line with other QUAD HiFi components of the period: the large tuning knob is located to the left, flanked to the right by a very clear 'sliderule' dial. Inset, immediately below the dial are the band-selector switch to the left and selectivity/filter switch to the right. There is no power on/off switch or volume control as these functions are carried out by the QCII or QC22 control unit. A single dial bulb illuminates the dial, and the EM84 magic eye is located horizontally in the lower part of the (acrylic) dial. Parts of the dial are masked by a gold paint applied from the rear and, as in the QUAD FM2 tuner I have, clear plastic tape had been applied (for no apparent reason) to this, and over the years, this tape has shrunk/ warped and peeled off the dial, taking parts of the gold paint with it, the result being rather unattractive (photo, top of Page 6). The tuner chassis is enclosed in a pressed metal enclosure that matches other QUAD HiFi components of the period (photo on page 6) – **this was really designed to be installed in a larger enclosure, as was the vogue in the 50's and 60's for this type of equipment.**



Restoration Work

The chassis contained a number of Hunts brand paper capacitors (red and black plastic encapsulated types), and a twin 16uF Hunts can type electrolytic capacitor, as well as several (clear) polythene capacitors (photo, page 8). The latter type rarely give problems (but should be treated with care during any re-work of a chassis as they tend to be very heat-sensitive). A couple of the Hunts paper capacitors were tested and were confirmed to be leaky, and so all were replaced with plastic film types. I attempted to re-form the twin electrolytic: one section reformed ok, but the other did not, so I removed it from the circuit (leaving the can in place for cosmetic reasons). I did not attempt to re-stuff the can with new parts as the ones I had in stock were physically too large (higher voltage rating than the original). **Indeed, the replacements only just fit under the chassis. I would note that a range of 'skinny caps' is available through some suppliers (they are designed for use in flat screen TVs and monitors) – such types may be used to re-stuff cans of this dimension.**

A selection of the higher-value resistors were also checked – some were well out of tolerance and many marginally so. I decided to replace all resistors with the exception of three low value ones (that tested ok anyway) in the coilpack, as these were very difficult to access without significant disturbance to the circuitry, and the 2kohm dropper resistor, which is a high-quality porcelain wire-wound type (located above the chassis for efficient heat dissipa-





Canadian Vintage Radios

Members Articles

tion). Replacement resistors are mostly 1W metal film types, with the exception of two in the heater circuitry, which were replaced with 2W metal film types. As for all my other QUAD restorations, I took great care with component orientation, lead dressing and general workmanship, such as to preserve the original extremely neat layout.

The band change switch was cleaned with Deoxit and a Q-tip, though to be honest, it did not really need it. The tuning gang roller race was cleaned and re-lubed with lithium grease and the contacts cleaned with Deoxit.

The dial was cleaned and the peeling-off tape and remnant gold paint in the peeled-off areas was removed and the edges of these areas trimmed neatly prior to applying fresh gold paint from the rear of the dial. Care was exercised in trimming the remnant gold paint as this was covering the control function lettering. The end result is not perfect, but is neat and does not detract from the appearance, especially when viewed from a short distance.

Performance

Once the above work had been undertaken and some basic resistance and continuity tests had been completed, I connected the AMII tuner to the QC22 control unit and pair of QUAD II power amplifiers, added a few feet of wire to the antenna socket and... was amazed by the quality of the audio from the setup on the Broadcast band – simply the best-sounding AM tuner I have ever heard! – especially when listening to my SSTRAN low power AM transmitter. The selectivity control and EM84 tuning indicator work very well, using the narrow selectivity setting (which engages the EM84) to tune a station and then setting the tuner to the wide selectivity setting. Shortwave performance is also good – rock steady receiving WWV on 10MHz. A great tuner, both in design – electrically and mechanically, as well as in on the air performance.

Next Issue: Well, I have finally run out of tuners in my collection to write about. So, how about something completely different? – a 'HiFi' device that was often used alongside tuners back 'in the day' – certainly by me, a reel to reel tape recorder. I have a couple in my collection, both REVOX A77's (an early MkI and a MkIV)—the classic late-1960's reel to reel that I lusted after when all I could afford was a low-cost, simple tape recorder...



Cont. from Page 1 Forget the radios for a moment – see those glass shelves? They're in my Dear Wife's new kitchen! Can you believe it? In her kitchen!!

As I mentioned, my long-term mission has been to display a vintage Atwater-Kent breadboard in our living room. A kind of personal challenge, my equivalent to scaling Mt. Kilimanjaro or sailing around the world. Or perhaps having one less donut for breakfast. No matter. These challenges require personal sacrifice and intense training – **my mission at home has been no exception. I've been working up to my living room victory in carefully planned stages. The Christmas gift of capacitor earrings. The present of the Chicago World's Fair book radio. Sharing the intimate details of every radio I own. And now, out of the blue, shelves in the kitchen.**

The new kitchen in our condominium is the creation of my Dear Wife. Modern, clean, tastefully decorated. So I was bowled over when she suggested that we display a few of my old radios on shelves in her new woman-cave, on glass and stainless steel shelves no less. How cool would that be! My old beauties displayed in a contemporary **setting. Now I know she's had her eye on expensive hanging glass shelves for some time, to display a collection of cookbooks or some other kitchen trivia. And she knows that I was not so keen on such an extravagant expense. But this – what a great idea! As if I had thought of it myself! And, as my Dear Wife pointed out, there is a price break on ordering two sets of glass shelves at the same time. I'm a lucky guy to have such a thoughtful partner, always frugal with our money. Now, mind you, there isn't actually room in the kitchen for two sets of shelves, so mine have somehow moved slightly around a small corner, into the "family area", but still visible if you turn your head the right way.**

So there you have it. Six of my precious old radios will be proudly on display. And my Dear Wife complimenting **me on having such good ideas. Ah, bliss. Yet, in writing this, I've just realized that the shelves are worth considerably more than the radios sitting on them...** No matter, let me tell you a bit about the two beautiful radios in the picture.

The Old Gaucho.

On the top shelf you can see a radio I found in the San Telmo flea market in Buenos Aires, Argentina (photo, right). The poor old thing **didn't look like that when I found it, but there we were last winter, and this old boy just jumped off a table of junk into my arms. Like a puppy. To my eternal surprise, my Dear Wife, who was eyeing an expensive pair of earrings at the next table, said "Why don't you buy the radio, dear?"**

How much room do you have in your suitcase when you travel? I can tell you that by stuffing all your dirty laundry, shoes, and useless travel brochures into a carry-on sports bag,

you too can drag home a dirty, beaten-up relic from a failed dictatorship. I called it my old gaucho. In reality it's a Franklin F2145H, made by a subsidiary of Phillips in Argentina.

Line voltage in Buenos Aires is 220VAC, so I spent the plane ride home considering how to get this old cowboy to operate on 120VAC. Plug it into a 120-220VAC transformer? No, too bulky and inconvenient. Besides, I didn't have one, or enough junk to cobble something together.

Build a cute little 120-220VAC switcher inside the radio? Could be a fun project, or a nightmare. These cheap AC/DC AA5 radios have little effective rfi suppression so I'd probably spend more time getting rid of the interference than actually listening to the radio.

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Canadian Vintage Radio CVRS Membership Information

Joining the CVRS



Member Benefits

These are many, but here are some of the obvious ones:

Networking: Opportunity to network with like-minded folks—radio restorers, collectors, repairers, historians etc. — by joining local chapters, attending member-organized swap-meets and local meetings to chin-wag about radio-related topics.

Schematic Service: The CVRS offers a free copy service for Radio College of Canada (RCC) schematics to members currently in good standing. A pdf file of an RCC schematic can be obtained by emailing schematics@canadianvintageradio.com with the manufacturer and model number of a radio made in Canada between 1927

and 1980. If possible, please provide an estimated year of manufacture or the latest year of patent registration (usually given on the model tag). Members wishing a printed copy of a schematic should send a SASE (self-addressed, stamped envelope, Canadian postage) to the CVRS Membership address given below. If you wish to make sure that an RCC schematic for your radio exists before sending a SASE, send an email to the above email address.

Website: The CVRS website provides updated meeting information, membership and contact information, as well as access to radio-related information and links of interest to Members.

Forum: An active forum is available to members and non-members, however, enhanced functionality is being considered for members.

Newsletters: For prior calendar years, electronic copies of the Newsletter can be accessed (where available) and downloaded by current members in good standing. Passwords to access this section will be sent annually to those members taking out membership in the current year.



Payment of Dues

Two types of membership are available in the CVRS, based on whether you wish to receive a hard copy of the CVRS newsletter sent via Canada Post or a PDF file sent via e-mail (**the recommended option: it's faster and every issue is in full colour!**). Either way, dues may be paid by mail or by online banking. Two factors determine the amount you should submit: how you receive the newsletter, and how you pay your dues.

Paying by Cheque or Money Order: If you pay by cheque or money order and wish to receive the newsletter as a pdf file via email (recommended), annual dues are \$15. If you want a hard copy sent to you by mail, the dues are \$25. Send a cheque or money order for the appropriate amount (\$15/\$25) to: CVRS Membership, 6496 Groveland Drive, Nanaimo, BC, V9V 1V4, Canada. If you are a new member, please include the following information for our member database: name, address, phone number(s), email address, occupation, any special areas of interest in vintage radio or related topics.

Paying Online: If you pay online, you must add \$1 to the basic amount to cover transfer fees. Therefore, to receive the newsletter as a pdf file via email (recommended), the annual dues are \$16. If you want a hard copy sent to you by mail, the annual dues are \$26. Three options exist for you to submit dues electronically:

PayPal:

1. You may submit your dues by using the SEND MONEY tab. Select the "Personal" and "Other" transfer options since you are not purchasing a commodity or service. Enter the CVRS membership email address (membership@canadianvintageradio.com) as the address for PayPal to send the transfer notification.

2. If you are a new member, fill out and email the information requested above.

hyperWALLET:

hyperWALLET is a Canadian version of PayPal, but unlike PayPal, you may make payments directly to hyperWallet using the Pay Bills function of many online banking systems. To find out if your bank or credit union does allow payments to hyperWallet, follow the following instructions.

1. Log onto your online bank or credit union account.

2. Select Pay Bills & Transfer Funds.

3. Select Create/Update Payee List and/or Add a New Payee.

4. Type HYPERWALLET as the name of the payee and click search.

(If HYPERWALLET appears, carry on with Step 5; if it does not appear, you will have to switch to one of the other methods.)

5. Select HYPERWALLET and enter the account # CS347380941.

6. You can now pay/transfer money directly to the CVRS the same way you pay other bills online.

7. Send an e-mail to membership@canadianvintageradio.com with details of your payment including date, name of the bank/credit union you paid through, and any receipt/confirmation number you were given (we often get several hyperWallet deposits on the same day, and we need this information to distinguish between them). If you are a new member, include the member information requested above.

Interac Email Transfer:

1. Log on to your online bank account, go to pay bills and transfer funds, select Interac Email transfer, enter the amount and email to membership@canadianvintageradio.com.

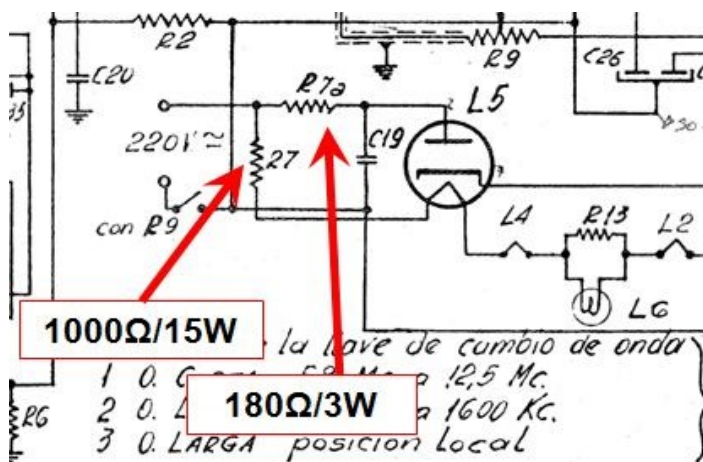
2. When you enter the amount and email address, it will ask you to suggest a question and answer. Just make a question up and submit it and the answer,

3. After you have completed the transaction, email the question and answer by separate email to membership@canadianvintageradio.com. If you are a new member include the member information requested above.

Canadian Vintage Radios

Cont. from Page 12 How about a voltage doubler? The old gaucha is an AC/DC set so should work with 220VDC, eh? This was emerging as my first choice until a member of the Argentina vintage radio club sent me a schematic of a similar set.

Just getting any schematic had proved to be an undertaking. Wooden cabinet restoration in Argentina is always beautiful, but there is less emphasis on restoring a



The circuit was an eye-opener for me. Under the hood the radio was basically an AA5, designed to operate on 120VAC/DC. Even the filament string added up to 120 volts! All Philips had done was to add a big, ugly 15 watt resistor in series with the filaments, to drop the excess 100 volts, and put another resistor in the B+ line (photo, above right, and schematic, above). I simply bypassed both resistors and the internal voltages were right on. But first the cabinet needed refinishing and the chassis needed an electrical restoration. Kitchen radios in Argentina, like many in Canada, were probably painted the colour of the walls. And purple was probably a popular col-

Members Articles



chassis back to its factory design. And this old gaucha's many repairs had taken him a long way from the original design.



our in Buenos Aires back in the day. Today, in my Dear Wife's new kitchen, not so much. After stripping off the paint, the natural wood was beautiful, so I finished it with clear spray lacquer, fine steel wool/lemon oil, and finally paste wax.

Returning to the inside of the old gaucha, I had read about drastic ways to clean a really dirty chassis and this seemed like a good opportunity to try extreme measures. I used a technique found on this site: <http://www.californiahistoricalradio.com/2012/03/secret-weapon-chassis-cleaning>. The procedure is shown in the photo, above.

You simply remove the speaker from the chassis, plug the holes in the IF cans, and mask any paint on the front panel. Put the chassis in a sink, get it wet, then thoroughly spray it top and bottom with Super Clean (<http://www.supercleanbrands.com/products>), available at any Canadian Tire or hardware store. The website says to dilute the Super Clean by 50%, but I've found that wetting the chassis first and spraying at full strength works just as well. Spray the components and everything, top and bottom. Wait 60 seconds and wash the cleaner off. The dirt and decades of cigarette tar literally run down the drain. Let the chassis dry for about a week and you're done. It's as easy as that. Just remember that the cleaner will dissolve paint if you leave it on too long. And the moving parts will need a bit of light machine oil and white lithium grease after the shower. I've learned not to get any on the dial cord shaft.

Bringing this old gaucho back to life was a lot of fun. Under the chassis, I had my first experience with paper capacitors encapsulated in black tar, as shown in photo, bottom of previous page. There were no markings on the outside of any of them; the cap across the power line had blown itself in half. Lucky I had that schematic to identify all the original values, and a bag of X-Y line caps to replace the suicide bomber.

I "restuffed" the electrolytic filter capacitor can and put it back on the chassis. All the resistors were within tolerance, so I just had to replace all the tar-coated paper caps and the volume control, and straighten the vanes on the mangled tuning capacitor. The radio now works as well as it probably ever did. I don't have an outdoor antenna, so its single shortwave band remains purely ornamental.

A Northern Electric lights again...

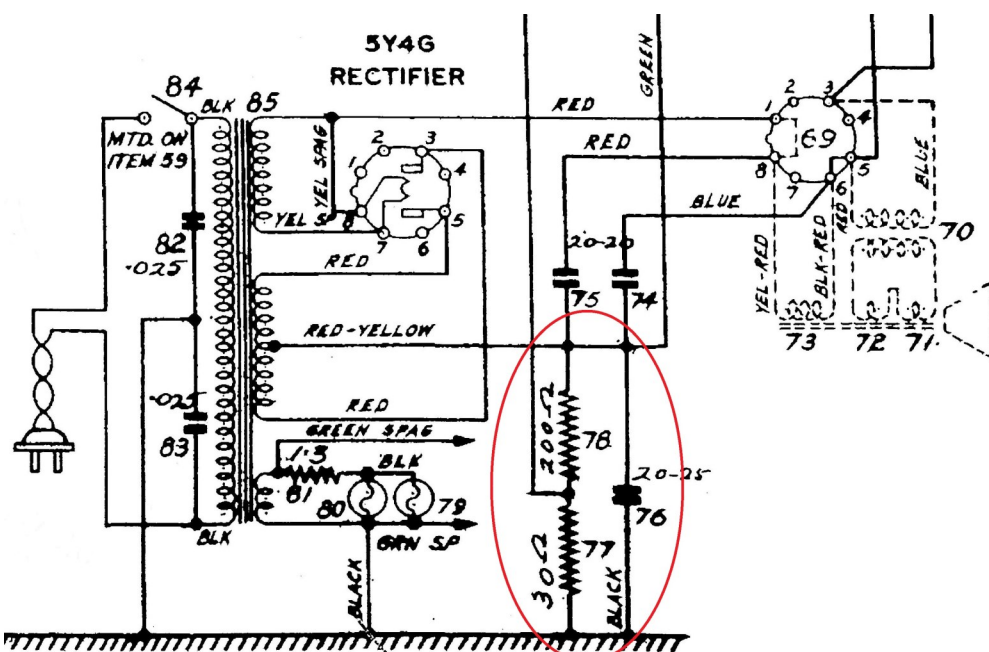
On the bottom glass victory shelf you see a 1938/39 Northern Electric Model 649-A. The wood veneer on her top had been replaced and resembled a plastic cheese pizza on display outside a Tokyo restaurant - chunky, wavy, and covered with thick, glossy varnish. It took my belt sander followed by new veneer and multiple coats of lacquer to spruce up the old doll. She had never looked better. But she still wasn't a radio...

Her bandswitch, volume and tone controls were lying in a box when I got her. All the associated wiring had been cut and thrown away. An assortment of electrolytic capacitors had been randomly scattered throughout the circuit. So, with the original schematic in hand, I dove in to rewire the chassis one stage at a time.

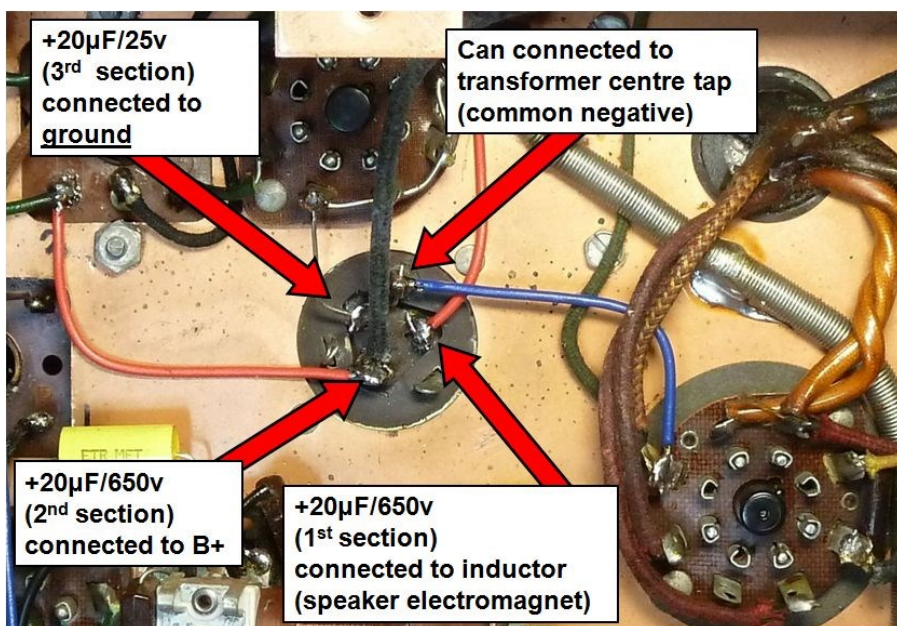
Now, I'm as game as the next guy for a challenge, but having to face the complexities of a damaged bandswitch gave me a convenient excuse to start at the other end, and after all, power supplies are easy, right?

Back as a teenager I remember reading about a technique to generate negative grid bias. The centre tap of the transformer in a full-wave rectifier circuit is connected to chassis ground through a low-value resistor. In turn, the B+ current flowing through this resistor creates a negative voltage on the centre tap. I remember being fascinated by this trick, but always a bit skeptical because I never saw a radio where it was used. Guess what? The old Northern Electric had this trick up her sleeve and then some!

The power supply schematic is shown right. You can see that the centre tap on the transformer secondary is connected to ground through a 200 ohm and a 30 ohm resistor in series. Current through these resistors results in the



tap being at about -18 volts with respect to the chassis. Negative grid bias is taken from the junction between the resistors. No big deal, except that this type of biasing has two interesting quirks. First, the electrolytic can must be insulated from the chassis because it's at a negative potential. The can is mounted with a Bake-lite insulating wafer, and the negative terminal (the can) is connected to the transformer centre tap. The second quirky thing is the wiring of the low voltage section in the filter can. Notice that the resistors from the transformer tap to ground are bypassed by a 20mfd/25V electrolytic capacitor, located in the filter can. This is the normal cathode bypass for the 6F6 output tube. But in this circuit, the positive lead of the capacitor is connected to the chassis ground, while the negative lead (the can) remains connected to B- at the transformer tap. The wiring is shown in the photo on the next page. A neat trick. Easy to get backwards when installing a new filter can.



By now I had worked my way back to the abandoned bandswitch, which on closer inspection I discovered simply had a cracked wafer and a broken terminal. A drop of superglue gel fixed the wafer and I was able to rebuild the broken terminal with a flattened piece of solid copper wire. Note to self: keep using the superglue gel instead of JB Weld epoxy for repairs on electrical components. The JB Weld is strong because it contains metal particles – it's not a great insulator.

Another thing I'd read about is "motorboating" where some parasitic oscillation is heard as a "put-put" sound like a motorboat in the speaker. This noise is apparently caused most often by a poor choice of wiring layout. The original engineers of this old doll would have gotten the wiring layout right, but, hey, I was starting pretty much from the schematic and couldn't find a photo of the original wiring. Yep, she has a solid put-put-put at the low end of the broadcast band.

I often wonder why things we acquire often come with a lot of extra parts we don't really need. You know, the parts we usually throw away or lose as soon as we can. Say for example, a sheet of copper on the inside bottom of an old radio cabinet. We don't need it for fire protection anymore, thanks to the safety of modern components. But, it does have another purpose, to act as a ground plane. I used to know about capacitance and ground planes. Apparently, so did the old Northern Electric radio engineers. But I have forgotten, and they're not around anymore. I did wonder briefly while repairing this old radio about the wisdom of threading a long unshielded wire from the antenna terminal on the back of the chassis to the bandswitch on the front, but, hey, it used to work.

Time ran out on this project when I had to box it up for our recent move, so there's just one more little thing to do – get rid of the motorboating. Like other surprises on my learning curve, I think that fixing this little problem will be simple. I'll just redirect the antenna wire under the chassis, right?

That's my story for now. I'm feeling pretty good about the small victory of getting a few radios on display in my Dear Wife's domain. So good, in fact, that it's time to double down. Time to revisit that brilliant plan to enshrine an Atwater-Kent breadboard in our living room coffee table. I'm sure now it's just a matter of time ...

Please stay tuned.

The Newbie

(I would like to express my appreciation to all the members of the Edmonton Chapter for encouraging me to return to this fascinating hobby and for listening to all the crazy ideas. I will miss your advice and friendship. g.)

Canadian Vintage Radios

Local Groups/Chapters



Cont. from Page 4 centred in Nanaimo and still cover the entire region.

But now we're focussing on making the VI Chapter an online network and online meeting place for CVRS members living in the area (more about that in a minute).

As interest and membership allows, "real world" meetings, swap meets, educational sessions, and other social events will be arranged and held, whether formal or off the cuff. How will it work? Well, for example, in the past month while things were in development, we established the network by first using an email group - just in time for our most northern member from Sayward, Bill West-Sells, to connect with Nanaimo members, Lorne Bohn and Yen Lim for a sit-down coffee and a visit **to Lorne's radio stash, on Bill's way through Nanaimo.**

National CVRS members will be familiar with Bill

West-Sells through his frequent articles in the CVRS Newsletter. **But here is something we bet you didn't know: what Bill gets up to (pun intended) when he isn't restoring and writing about vintage radios.** Take a look at <http://kusamklimb.com>.

So the VI Chapter is off to a good start. Any CVRS member living in the region is welcome to join: he or she needs only get in touch. If you are interested in learning more and/or being a part of CVRS activities on Vancouver Island, please contact: Lorne Bohn, lbohn@shaw.ca, 250 758-5683 or — and here is the second exciting development - you can connect with us online in the CVRS Forums/Local Chapters/Vancouver Island.

The CVRS has created an area for local chapter forums on their website and the VI chapter has its own dedicated forum. It is where chapter members can chat about any topic of interest, whether they be restoration topics, general news, or simply socializing. And also a place where non-members can contact us. We decided to make the VI Chapter Forum a public group: if you are a forum participant, whether CVRS member or not, you can post in the VI Forum. And we welcome you to do so! Want to know more about us, connect with someone on the Island, or just chat? Please do so!

You can also find out more about us by visiting our home page on the CVRS website. It is located under About Us/Local Chapters/Vancouver Island Chapters.

That's it for this time around. See you all in the next issue of the Newsletter, if we don't see you online first!

All the best for the coming holidays and the new year from Vancouver Island!



Alberta Chapter — Murray Dickerson

The CVRS Alberta Chapter had its annual meeting in October and a renewed roster of Exec. members were voted into another year of service for the club; without any changes in names, but with one notable exception. Our existing treasurer, Evan Cameron, is finding it necessary to step down sometime into the New Year, but will stay on for a smooth transition over to a new treasurer. This is important since Evan has done such an excellent job in this position and has organized all things financial so well, the new treasurer will need lots of assistance to pick up where Evan will leave off.

Cont. on Page 18

Fortunately, Gerry Shand has offered to step up to the plate and it looks like the transition will be smoother than we could have hoped, since Gerry has a background in some accounting for other organizations and is a very organized person himself. How come we have been so lucky to have all this expert help? I guess we have been blessed!

Also, in October, Gary Albach gave his final presentation on TransOceanics restoration, an area he has become expert on. Everyone loved his beautifully displayed presentation and the CVRS Newsletter will have also seen this material in printed form appearing in the last issue and perhaps in updates moving forward. Gary has now moved on to Victoria and we will miss him. But, our loss is their gain, as they say. We wish him all the best in his new location.

November's meeting and presentation was provided by Gerry Shand and he provided us with all the details on one of his latest projects; which is a commercial heavy duty battery tester. Very interesting stuff. Gerry seems to be into all kinds of power supply and testing ideas, since his next presentation will be on vacuum tube radio battery eliminators using mini switching solid state supplies. Perhaps we can also encourage him to pass on the material to other CVRS Newsletter readers?

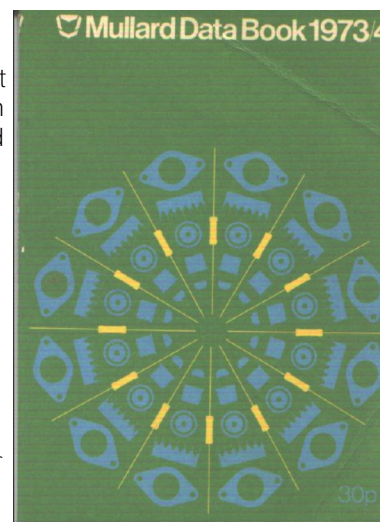
Technical Short - Gerry O'Hara

European Tube Nomenclature: every now and again we come across a European set that has its original tubes fitted. We can usually find equivalent North American tubes without too much problem, but what do those odd combinations of letters and numbers mean?

In the UK and Europe, the 'Pro-Electron' type nomenclature system was widely used, the logic behind this is as follows:

- The first letter indicates heater voltage or current (though not very logically): A is 4v, C is 200mA, D is 0.5 to 1.5v, E is 6.3v, K is 2v, G is 5v, P is 300mA, U is 100mA.
- The second and subsequent letters indicate the general class of valve: A is a single diode, B is a duo-diode, C is a triode, D is a power output triode, E is a tetrode, F is a pentode, L is a power output tetrode or pentode, H is a hexode or heptode (hexode-type), K is an octode or heptode (octode type), M is a tuning indicator, Y is a half wave rectifier and Z is a full wave rectifier.
- The first number indicates the type of base: eg. 2 is a B10B or B8G, 3 is an octal, 4 is a B8A, 5 is a B9D, 8 is a B9A (noval) and 9 is a B7G.
- Remaining numbers indicate a particular design or development.

For example, an ECC83 is a duo-triode with a 6.3v (actually 12v, centre-tapped) heater, having a B9A base, and an EC90 is a small-signal triode with a 6.3v heater and B7G base. There are many exceptions to this system, however, and some European manufacturers went their own merry way – surprise, surprise...



And finally.....

We encourage all CVRS members to submit articles or letters that relate to vintage radios or associated items. Please send any editorial mail to:

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