



OXTALES

First published 1980

Newsletter of the Oxley Region Amateur Radio Club Inc.

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Club e-mail address: vk2bor@orarc.org

Club Website: www.orarc.org

ORARC's Forty-second Anniversary Year

Club Nets on VK2RPM
146.700MHz
(CTCSS 91.5Hz)
Every Sunday at 0830
Every Thursday at 1930

March 2013

Compiled by VK2TT & VK2AYQ

PRESIDENT: Henry Lundell VK2ZHE 6582.0534
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President's Report

Due to the heavy storm rain and wind over the weekend of 23rd and 24th of February this year only a few of our members attend the 2013 Central Coast Field Day at Wyong on Sunday the 25th of February. A special thank to



those intrepid souls who made it. David Pilley VK2AYD who did attend, reported that the day was still a great success. Thank you to Gary Ryan VK2ZKT from Radio Supply of Bellingen for permitting ORARC to include in Oxtales some of the photographs he took of this year's event. Gary had to return to Bellingen via Armidale because the Pacific Highway was still cut by floodwaters at Clybucca. On Tuesday the 26th of February I met David Tavener VK4ICE who was staying in Port Macquarie while waiting for the Pacific Highway north of Port Macquarie to re-open so that he could continue on his way back to Brisbane after the Wyong weekend. Both Gary and David reported that their respective trade stands did particularly brisk business at Wyong this year. No doubt, weather permitting, the usual large contingent of club members will make the pilgrimage to Wyong for next year's field day.

The next Amateur Radio event is the John Moyle Memorial Field Day which commences at noon on
(Continued page 3)

ORARC VHF/UHF Repeaters

MIDDLE BROTHER
VK2RPM 2 metre (Voice - CTCSS 91.5Hz)
O/P 146.700MHz -I/P 146.100MHz

VK2RPM 70 cm (Voice - CTCSS 123Hz)
O/P 438.525MHz -I/P 433.525MHz

VK2RPM-1 (APRS Digipeater)
SX 145.175MHz 1200bps

TELEGRAPH POINT
VK2RCN 2 metre (Voice)
O/P 147.000 MHz - I/P 146.400 MHz

VK2RCN 70 cm (Voice - CTCSS 123 Hz)
O/P 438.425MHz - I/P 433.425MHz

VK2RCN-1 (APRS Digipeater)
SX 145.175MHz 1200bps

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Don't forget to join
or renew your WIA
membership.

<http://www.wia.org.au/>



Down The Coax

Monthly meetings held in the S.E.S. Building Central Road, Port Macquarie.

Monthly Meeting

Saturday 2 March 2013 2:00 pm

Friday Night Get-Together
Friday 15 March 7.00 pm

John Moyle Memorial Field Day
Saturday 16 Sunday 17 March 2013

Urunga Convention

Saturday 30 and Sunday 31 March 2013

Monthly Meeting

Saturday 6 April 2013 2:00 pm

WIA National Field Day
Saturday 13 and Sunday 14 April 2013

Friday Night Get-Together
Friday 19 April 7.00 pm

Monthly General Meeting
Saturday 4 May 2013 2:00 pm

Friday Night Get-Together
Friday 17 May 7.00 pm

ORAC Field Day
June 7, 8, 9.

Net Controllers' Roster

Nets on Voice Repeater VK2RPM 146.700 MHz

Sundays
(0830 Local)

Thursdays
(1930 Local)

March 2013

VK2CHC	Mar - 03	VK2ZHE	Mar - 07
VK2TT	Mar - 10	VK2EM	Mar - 14
VK2OA	Mar - 17	VK2ATM	Mar - 21
VK2CHC	Mar - 24	VK2ZHE	Mar - 28
VK2TT	Mar - 31		

April 2013

VK2OA	Apr - 07	VK2EM	Apr - 04
VK2CHC	Apr - 14	VK2ATM	Apr - 11
VK2TT	Apr - 21	VK2ZHE	Apr - 18
VK2OA	Apr - 28	VK2EM	Apr - 25

May 2013

VK2CHC	May - 05	VK2ATM	May - 02
VK2TT	May - 12	VK2ZHE	May - 09
VK2OA	May - 19	VK2EM	May - 16
VK2CHC	May - 26	VK2ATM	May - 23
		Vk2ZHE	May - 30

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Saturday the 16th of March and finishes at one minute to noon on Sunday the 17th of March 2013.

This year the club will again take its communications caravan to the park at the end of Clearwater Crescent, Port Macquarie. Clearwater Crescent is the road which runs East towards the water storage dam off Ocean Drive South of the Greenmeadows traffic lights on Ocean Drive. The park overlooks the Rosendahl Reservoir. It is proposed to operate on both HF and VHF on the Saturday afternoon. Bring your family and friends and enjoy a pleasant afternoon. The reserve has an electric barbeque so there will be a sausage sizzle lunch. Tea, coffee and soft drinks will be available all afternoon from the caravan. For more information on the John Moyle Memorial Field Day visit

<http://www.wia.org.au/members/contests/johnmoyle/>

On the following weekend ORARC club members were intending to provide safety communications for the Hastings Valley Sporting Car Club Bago Rally car rally on Saturday the 23rd of March 2013. Unfortunately, the rally has had to be postponed to later in the year due to the recent very heavy rain. Bruce Walker VK2HOT is co-ordinating the Amateur Radio communications. He will advise when a new date has been set for the event. Visit <http://www.hvscc.com.au/> for more information on this rally.

The Urunga Convention runs over the Easter Weekend on Saturday the 30th and Sunday the 31st of March 2013 at the Senior Citizens' Hall in Bowra Street. ORARC club members are always well represented at this event. If you are staying overnight don't forget the Field Day dinner at the Urunga Bowling Club on the Saturday evening. The fox hunting is always keenly contested but there is always plenty of opportunity for a quiet eyeball in the comfort of the hall and surrounds. Regardless of whether you are in Urunga or not, please come on air between 9 am and 9:30 am on Sunday morning to participate in the famous Urunga Scramble – any power, any frequency, any location – highest number of contacts in the 30 minutes wins! Visit <http://users.tpg.com.au/goldy2/> for the field day program and information.

The 2013 WIA National Field Day will be held on Saturday the 13th and Sunday the 14th of April 2013. A decision will be made at the club's March Monthly General Meeting whether the Club

Communications Caravan will again be set up on the Port Macquarie Town Green at the northern end of Horton Street on Sunday morning from 10am to mid afternoon. For more information on the WIA National Field Day visit

<http://www.wia.org.au/members/contests/nfd/>

If a decision is made participate in the event, please make some time available to assist in making this opportunity to showcase Amateur Radio to the public a success.

The ORARC 2013 Field Day takes place on Saturday the 8th and Sunday the 9th of June during the Queen's Birthday Weekend. The venue will be the Tacking Point Surf Life Saving Club hall in Matthew Flinders Drive, Lighthouse Beach, Port Macquarie. Please make yourself available when calls are made for assistance. It is important to make the field day a success as it is the major fund raising activity for the year. The income from the annual Field Day is very important in keeping ORARC membership subscriptions as low as possible.

On the subject of subscriptions, the Committee has had to reluctantly recommend that the annual subscription for Ordinary Membership of ORARC should rise by \$5 from the \$35 that it has been for many years to \$40 beginning with the 2013 – 2014 financial year. Unfortunately, costs have continued to rise. The major annual expenses such as ACMA amateur station licence fees and the NSW Department of Primary Industries annual Land Account charges for access to the Middle Brother repeater site are all CPI indexed annually so they continue to increase each year. The percentage is reasonably small but as it is compounded each year the overall increase over even a few years is substantial. Fortunately, our growing number of members has helped to stave off increasing membership subscriptions for quite a few years but the Treasurer's budget forecasts show that the time has come to apply a very modest increase of \$5 to ensure that the club continues to operate in the black. The \$40 rate will apply for Ordinary and Family Membership renewals after the 30th of June 2013. The rate will be formally ratified at the 2013 AGM in August. The subscriptions for the other grades of membership will remain unchanged.

Those who listen to the two metre band will have noticed that the large amount of sustained activity on the national APRS (Automatic Position Reporting System) frequency of 145.175 MHz. To learn more about APRS visit <http://www.aprs.net.au/>. *(Continued Page 4)*

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The club's VK2RPM-1 Middle Brother and VK2RCN-1 Telegraph Point digipeaters continue to handle an increasing amount of traffic. To view the many local APRS tracks simply open the APRS Google map at <http://aprs.fi/>

A large and growing number of ORARC members are experimenting with Software Defined Radio (SDR) techniques which is an excellent marriage of radio and computers. There are lots of DVB-T USB TV dongles and a few FUNcube Pro + USB SDR dongles in operation. The practical demonstrations at the January and February 2013 monthly general meetings and Friday night get togethers have been extremely popular. The information in the previous edition of Oxtales published in January 2013 contains some useful information on getting started.

This time last year I reported on severe storms in our part of the coast that occurred in February 2012. This year a prolonged dry spell leading to bushfires was broken by very heavy cyclonic rain in late January 2013. A similar event over the weekend of 23rd and 24th of February 2013 brought some of the worst flooding for 25 years to the Hastings valley and to the rivers north to the border and into Queensland. As I write this report on Tuesday the 26th of February the Pacific Highway is still cut by flood waters at Clybucca north of Kempsey. Over the weekend the Hastings River flooded to 1.72 metres which resulted in evacuation of people from inundated areas and a great deal of sandbagging in an attempt to keep flood water from entering buildings. This was compounded by storm damage from the strong winds accompanying the rain. SES was very busy up and down the coast. ORARC members who are also SES members had a very busy period over four days of intensive 24 hour a day operation. Those who manned shifts at Port Macquarie SES included Michael Ward VK2FMDW, Stuart Melville VK2KSM, David Hogan VK2FRAB, Richard Court VK2CHC, Arthur Monck VK2ATM, Jim Neil VK2VIV, David Newey VK2DFN, David Pilley VK2AYD, John McLean VK2KC, Henry Lundell VK2ZHE.

It is very pleasing to see the good attendance at the classes for the Standard Amateur Radio Licence. Larry Lindsay VK2CLL and Ross Boyd VK2RR are running the classes which commenced on Friday the 15th of February 2013 and will run each Friday night until the assessments in 6 months,

after which we will look forward to hearing some new callsigns on the air.

Thank you to Ross Boyd VK2RR for taking over as Webmaster of the VK2BOR web site. The previous Webmaster, Joshua Holmes VK2FJDH, stepped down as he is moving to VK4 to undertake tertiary studies. Thank you Joshua, and best wishes for your studies.

Gary Ryan VK2ZKT of Radio Supply and David Tavener VK4ICE have both indicated that they will be at the Club's field day on 7, 8, 9 June.

Henry Lundell VK2ZHE
President



Wyong Field Day

Gary Ryan VK2ZKT of Radio Supply, one of our club's long standing trade supporters was able to get to the field day and took photographs which he has kindly given us permission to use. Gary had an interesting trip home via the New England Highway as the Pacific Highway was cut by flood waters at Clybucca. David Pilley VK2AYD was one of the few club members that were able to attend the Wyong Field Day this year.



Radio Supply table doing the business.

The crowd at Wyong was as large as usual this year so people weren't deterred by the weather. There was strong interest in the Traders. Andrews Communications did a roaring trade as can be seen in the photos. Gary said Radio Supply had sold out nearly everything he had taken.



Business was often hectic.

Fettell Communications had a very large trailer load of coax, antennas, mounting hardware and filters and they had sold the lot by 11.00am!

Jaycar had 3 truck loads this year and it all went!

Henry VK2ZHE met David Tavener VK4ICE was also able to get down to Wyong. David is staying in Port Macquarie until the Pacific Highway re-opens to Brisbane. David said that he had conducted very brisk business also at the Wyong Field Day.



Not a quiet moment.



Empty boxes at the end of the day



AEGIS little companion Kitset, AWA First Personal Portable and military radio on display

HISTORY OF THE CAR RADIO.

Seems like cars have always had radios, but they didn't. Here's the true story:



William Lear



Elmer Wavering

One evening, in 1929, two young men named William Lear and Elmer Wavering drove their girlfriends to a lookout point high above the Mississippi River town of Quincy, Illinois to watch the sunset. It was a romantic night to be sure, but one of the women observed that it would be even nicer if they could listen to music in the car.

Lear and Wavering liked the idea. Both men had tinkered with radios (Lear had served as a radio operator in the U.S. Navy during World War I) and it wasn't long before they were taking apart a home radio and trying to get it to work in a car. But it wasn't as easy as it sounds: automobiles have ignition switches, generators, spark plugs, and other electrical equipment that generate noisy static interference, making it nearly impossible to listen to the radio when the engine was running.

One by one, Lear and Wavering identified and eliminated each source of electrical interference. When they finally got their radio to work, they took it to a radio convention in Chicago. There they met Paul Galvin, owner of Galvin Manufacturing Corporation. He made a product called a "battery eliminator" a device that allowed battery-powered radios to run on household AC current.

Paul Galvin



But as more homes were wired for electricity more radio manufacturers made AC-powered radios. Galvin needed a new product to manufacture. When he met Lear and Wavering at the radio convention, he found it.

He believed that mass-produced, affordable car radios had the potential to become a huge business. Lear and Wavering set up shop in Galvin's factory, and when they perfected their first radio, they installed it in his Studebaker. Then Galvin went to a local banker to apply for a loan. Thinking it might sweeten the deal, he had his men install a radio in the banker's Packard. Good idea, but it didn't work. Half an hour after the installation, the banker's Packard caught on fire. (They didn't get the loan.)

Galvin didn't give up. He drove his Studebaker nearly 800 miles to Atlantic City to show off the radio at the 1930 Radio Manufacturers Association convention. Too broke to afford a booth, he parked the car outside the convention hall and cranked up the radio so that passing conventioners could hear it. That idea worked. He got enough orders to put the radio into production.



First production model 5T71. Note that control head was usually mounted on Steering column.

What's in a name?

That first production model was called the 5T71. Galvin decided he needed to come up with something a little catchier. In those days many companies in the phonograph and radio businesses used the suffix "ola" for their names -

Radiola, Columbiola, and Victrola were three of the biggest. Galvin decided to do the same thing, and
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since his radio was intended for use in a motor vehicle, he decided to call it the Motorola.

But even with the name change, the radio still had problems: When Motorola went on sale in 1930, it cost about \$110 uninstalled, at a time when you could buy a brand-new car for \$650, and the country was sliding into the Great Depression. (By that measure, a radio for a new car would cost about \$3,000 today.)

In 1930 it took two men several days to put in a car radio. The dashboard had to be taken apart so that the receiver and a single speaker could be installed, and the ceiling had to be cut open to install the antenna.

These early radios ran on their own batteries, not on the car battery, so holes had to be cut into the floorboard to accommodate them.

The installation manual had eight complete diagrams and 28 pages of instructions. Selling complicated car radios that cost 20 per cent of the price of a brand-new car wouldn't have been easy in the best of times, let alone during the Great Depression. Galvin lost money in 1930 and struggled for a couple of years after that. But things picked up in 1933 when Ford began offering Motorola's pre-installed at the factory.

In 1934 they got another boost when Galvin struck a deal with B.F. Goodrich tire company to sell and install them in its chain of tire stores. By then the price of the radio, installation included, had dropped to \$55. The Motorola car radio was off and running.

(The name of the company would be officially changed from Galvin Manufacturing to "Motorola" in 1947.)

In the meantime, Galvin continued to develop new uses for car radios. In 1936, the same year that it introduced push-button tuning, it also introduced the Motorola Police Cruiser, a standard car radio that was factory pre-set to a single frequency to pick up police broadcasts. In 1940 he developed with the first handheld two-way radio, The Handie-Talkie -- for the U. S. Army.

A lot of the communications technologies that we take for granted today were born in Motorola labs in the years that followed World War II.

In 1947 they came out with the first television to

sell under \$200.

In 1956 the company introduced the world's first pager;

in 1969 it supplied the radio and television equipment that was used to televise Neil Armstrong's first steps on the Moon.

In 1973 it invented the world's first handheld cellular phone.

Today Motorola is one of the largest cell phone manufacturer in the world

And it all started with the car radio!

Whatever happened to the two men who installed the first radio in Paul Galvin's car?

Elmer Wavering and William Lear, ended up taking very different paths in life. Wavering stayed with Motorola. In the 1950s he helped change the automobile experience again when he developed the first automotive alternator, replacing inefficient and unreliable generators. The invention lead to such luxuries as power windows, power seats, and, eventually, air-conditioning.

Lear also continued inventing.

He holds more than 150 patents. Remember eight-track tape players? Lear invented that. But what he's really famous for are his contributions to the field of aviation. He invented radio direction finders for planes, aided in the invention of the autopilot, designed the first fully automatic aircraft landing system, and in 1963 introduced his most famous invention of all, the Lear Jet, the world's first mass-produced, affordable business jet. (Not bad for a guy who dropped out of school after the eighth grade.)



Motorola ad for portable radio receiver and transmitter. Handie Talkie later called walkie talkie in popular use except in the USA.

Australian Radio Amateurs May Lose the 2300 – 2302 MHz Band

Date : 14 / 02 / 2013

Author : Phil Wait - VK2ASD

The ACMA has informed the WIA of proposed changes to spectrum usage in the 2300 – 2302 MHz band, which will result in Advanced Licensees losing access to that spectrum.

The ACMA proposes to acquire the spectrum for LTE radio purposes. LTE, or long-term evolution, (marketed as 4G LTE), is a wireless standard for high-speed data over mobile phones and data terminals.

The change will give LTE services the full 100MHz segment from 2300 – 2400MHz, or twenty 5MHz LTE channels, and naturally the government revenue from any resulting spectrum auction would be very significant.

Losing any spectrum is always a great concern to radio amateurs, and this secondary allocation spectrum is the only viable option for Earth-Moon-Earth (EME) contacts to Region II (where the EME activity is on 2304 MHz) or Region I (which uses 2320 MHz). Australian radio amateur EME activity would then be confined to 2400 MHz and above, where ISM and Wi-Fi equipment is likely to cause interference to local EME stations.

The ACMA plans to recommend the change to the Minister for Broadband, Communications and the Digital Economy, and make the changes under section 153B of the Radiocommunications Act 1992. If the Minister approves the change radio amateurs will probably lose access to the spectrum in 2015.

Before making such a recommendation to the Minister the ACMA is required to undertake extensive consultation with stakeholders, and has prepared the consultation paper (see below) with the draft recommendation at Attachment A. The ACMA will also be writing to all Advanced Amateur Radio Operators (who are affected by this proposal) to provide them with a copy of the notice and inviting their comments.

Radio amateurs are encouraged to forward their comments to the ACMA by Wednesday 27th March 2013, to the address in the paper.

Excerpt from WIA web site <http://www.wia.org.au/newsevents/news/2013/20130214-1/index.php>

Phil Wait VK2ASD President, Wireless Institute of Australia

The following is the same story as seen through the ARRL eyes.



Australian Amateurs May Lose 2300-2302 MHz

The Australian Communications and Media Authority ([ACMA](#)) -- that country's equivalent to the FCC -- has proposed changes to spectrum usage in the 2300-2302 MHz band that will make it off-limits to Australian amateurs as of 2015. The ACMA wants to re-allocate the spectrum to LTE (Long-Term Evolution) wireless data systems, the kind popularly used for mobile broadband applications. The proposed change would give LTE services 100 MHz between 2300 and 2400 MHz.

According to the Wireless Institute of Australia ([WIA](#)), this secondary Amateur Radio allocation is the only viable option for Earth-Moon-Earth (EME) contacts between Australia and IARU Region 2 (where the EME activity is on 2304 MHz) or Region 1 (which uses 2320 MHz). If the reallocation goes through, Australian EME activity would then be confined to 2400 MHz and above, where ISM and Wi-Fi equipment are likely to cause interference.

"Amateurs in the United States are in no immediate danger of losing 2300-2305 MHz because the use of the 2300-2400 MHz band by various radio services in this country is quite different from most of the world," explained ARRL Chief Executive Officer David Sumner, K1ZZ. "Unfortunately, our colleagues in many other countries are facing the same challenge as in Australia, as the pressure grows for commercial mobile broadband services."

Thanks to Phil Wait, VK2ASD, and the Wireless Institute of Australia for the information

Extract from the ARRL Letter 21 February 2013

Feedlines

A basic explanation from the ARRL web site.

Regardless of whether you are operating at HF, VHF or UHF, the quality of your feed line is critical to your station. The feed line (also called the *transmission line*) is the RF power conduit between your radio and your antenna. All the energy you generate travels to the antenna through the feed line. By the same token, all the signals picked up by your antenna must reach your radio through the same feed line.

The problem with any feed line is that it isn't perfect—it always loses a certain amount of the energy. To complicate matters, all feed lines are not created equal. The amount of loss at any frequency will vary considerably from one type of feed line to another.



Coaxial cable

The most common type of feed line is *coaxial cable*, or simply *coax*. It is called coaxial because there are two circular conductors positioned “co-axially” (on the same axis), one inside the other. The inner conductor is usually called the “center conductor.” It is surrounded by a solid or multistranded outer conductor commonly called a “shield.” The shield is usually surrounded by an insulating plastic jacket. There is also insulating material between the center conductor and the shield. This material can be hard plastic, foam plastic or even air.

A popular type of feed line for HF use is ladder line. In fact, at HF frequencies it is the most common feed line for random-length dipoles and other antenna designs. Ladder line consists of nothing more than two wires in parallel separated by insulating material.

Ladder line



When rating feed lines for loss, we use “decibels (dB) per 100 feet.” If you're not familiar with the decibel, don't worry. Just remember that the higher the decibel number, the greater the loss.

Feed lines also have a characteristic *impedance* value measured in *ohms*. Coaxial cable commonly used for Amateur Radio has an impedance of 50 ohms while ladder line impedances can vary from 300 to 600 ohms. Amateur Radio transceivers are designed to work with an impedance of 50 ohms, so you must use 50 ohm coax, or find a way to convert the 300 to 600 ohm impedance of ladder line to 50 ohms. If your radio “sees” anything other than 50 ohms, it will reduce its output to protect itself from the possible damage that can result in a high SWR condition.

If you are using an antenna that is designed to deliver a 50-ohm impedance, it is best to use a coaxial feed line to provide a 50-ohm antenna system impedance for your transceiver. Even these 50 ohm antennas can be a little “off” at times, so you may need to tune them by physically cutting or adjusting the antenna to the correct length, as we discussed earlier, or by adjusting a matching section at the antenna.

The other approach is to use a device called an *antenna tuner* to transform the impedance of the antenna system to 50 ohms for your radio without physically adjusting the antenna at all. An antenna tuner is a kind of adjustable impedance transformer. Some tuners operate manually; you twist the knobs until the SWR meter shows a 1:1 SWR, or something reasonably close to it. Other tuners are automatic and do all the adjustments for you.

Taking the antenna tuner approach is not a good idea when you are using coaxial cable under high (greater than 3:1) SWR conditions. The tuner may provide the 50 ohm match to your radio, but the mismatch and high SWR *still exists between the antenna tuner and the antenna!* This translates to high losses in the coaxial cable.

On the other hand, using an antenna tuner with ladder line is a good way to go — at least for HF work. At HF frequencies, the loss in ladder line is so low, you can still see good results even when the SWR is horrendous. The antenna tuner provides the 50 ohm match to your radio and you really don't care what the SWR is between the tuner and the antenna.

So which type of feed line should you use at your
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station? Fortunately, the answer is simple: You want the feed line that has the lowest loss at the highest frequency you want to operate.

As you probably guessed, low-loss feed lines are more expensive. Some of the low-loss feed lines are also rigid and hard to work with (they don't bend easily). A little planning and common sense goes a long way when it comes to selecting feed line.

In a mobile installation, you can use an inexpensive feed line such as RG-58 because you're only using a short length. As long as the SWR is low, the loss will be acceptable.

However, if you have an antenna that is 100 feet from your radio and you are operating at, say, 440 MHz, RG-58 would be an extraordinarily bad choice! For this installation you'll need to invest in something much better—probably LMR-400 or Belden 9913.

For base stations in particular, always buy the lowest-loss coax you can afford. Since you'll probably be using your feed line for several years or longer, you want something that can support your changing interests. For instance, 100 feet of LMR-400 is overkill quality for a station that only operates on the 40-meter band. But if you someday want to switch to 440 MHz, you'll be glad that you already have a low-loss feed line in place!



Reprinted from ARRL Web Site

Amateur Radio Equipment

Then and Now

By John VK2AYQ

Amateur Radio Equipment has undergone a dramatic change over the past years. I find it quite interesting looking at equipment that was used by many Radio Amateurs and simply contrasting it with the equipment on sale today.

I would ask any club members who have fond memories of various bits and pieces of equipment to submit a short article on the equipment for future editions of Oxtales.



The Kenwood TS 520 range.
From va3paw.com

The Kenwood models made from the mid to late 1970s to the early 1980s and designated TS-520, TS-530, TS-820, and TS-830 were known as Hybrids. They were Hybrids because they were a combination of semiconductors and valves.

The Hybrids were mostly semiconductor with only the driver and final unit being valves. All hybrids used the same basic valve lineup – a 12BY7 for the driver and two 6146s for the finals. Output of these radios was about 100 watts. The 6146 valves were very popular in ham radios.

Hybrids having tube finals requires tune-up before you transmit. It's not just set the VFO and go. Tune-up is really adjusting inductance and capacitance to resonate a tank circuit (inductors and capacitors) that provides the right impedance match simultaneously on a plate circuit and the antenna 50 ohm load.

All Kenwood Hybrids have the same set of 3 knobs labeled Load, Plate, and Drive that are used to resonate the tank and load circuits for the particular frequency on which you want to transmit. Change the frequency and you need to touch up the tuning. No quick QSYS on these radios. Once you understand the operational tune-up process and execute it a few times you can get tune-up in about 10 seconds.

Another distinguishing feature of these radios is that they used functional component boards that were connected together with wire-wrap. They are built out of functional component boards that can be diagnosed and swapped as a unit. For example, in the TS-520S you will find a carrier board, generator board, IF board, NB board, AF board, VFO board, and so on. All nice and neat and connected together with edge connectors, wire-wrap, and wiring harness.

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The Kenwood 520 does not have menus, memories, CPUs, or DSPs, and there is nothing the radio does, that you need in the course of operating, that you can't control from the front panel.

The TS-520 was the first of the Kenwood Hybrids. It's a very basic radio. It covers the Ham Radio bands minus WARC. It has VOX, a noise blanker, ACG fast/slow, RIT, RF gain, and Mic gain & compression. It has no internal digital display.

Compare the above with the latest Kenwood range within approximately the equivalent price range today.



TS-480SAT

All-mode HF/6m 100W + ATU transceiver

- Inbuilt automatic antenna tuner
- Tx/Rx AF DSP
- Separate LCD control panel with speaker
- Continuous Rx: 500kHz (VFO tunes down to 30kHz) to 60MHz

TX covers all amateur bands 1.8MHz to 50MHz

The above set is able to offer features that were simply not attainable with the 520.

Editors note: The Kenwood 520s was my first HF radio and represented a considerable outlay of funds at the time. Not to mention the quite considerable weight as it had an inbuilt power supply!

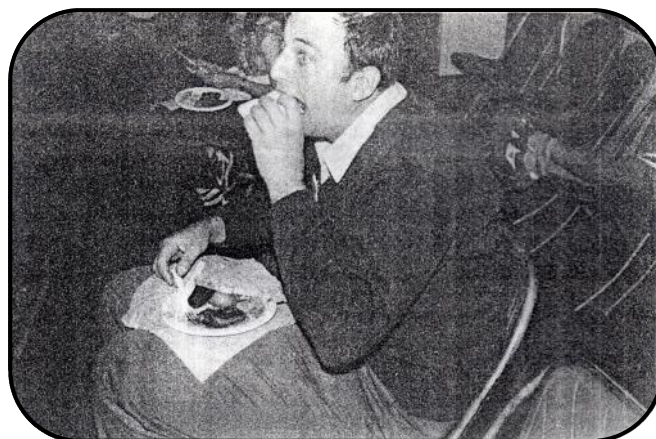
I hope that club members found the article interesting and will be able to contribute stories about their first rigs for future editions of Oxtales.

John VK2AYQ.

Oxtales From the Past

Looking through the past issues of Oxtales is a fascinating experience. There are many familiar names and faces. The activities of the club were also many and varied. I noticed that in 1982 there was a very interesting field day event which consisted of XYL's and YL's seeing how far a radio could be thrown! Perhaps this could be revived today?

The below scan was taken from the 1982 Oxtales and features a very well known club member conducting an activity that is still carried out today!



Who is this young club member? The first person to email the editor on hansenjo@ozemail.com.au will have a prize of being acknowledged in the next edition of Oxtales.



This model 15 Teletype is being offered **free** to a good, (or bad) home.

The only proviso is that it be picked up at the editors residence as its very heavy. Please contact the editor VK2AYQ if you would like this 'work of art'!

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