

MEETINGS, NETS and SERVICES**Club Station:** VK4WIS**Club Repeaters:**

Maleny: VK4RSC on 146.850 MHz & 438.075 MHz.

Peregian Beach: VK4RMB on 146.825 MHz & 438.175 MHz.

Gympie: VK4RGY on 146.625 MHz & 438.825 MHz.

Bli Bli: VK4RSN on 53.700 MHz

General Meeting: Monthly on the first Tuesday at 7:30 pm in the Club House, old Toll Plaza building, 85 Godfreys Road, Bli Bli.

Visitors are welcome to attend.

Weekday Meeting: Weekly at 10:00 am on Wednesday.**80 m Net:** Weekly at 7:30 pm Thursday on 3580 kHz.

Conducted by club station VK4WIS.

Good Morning Net: Daily at 8.15 am at VK4RSC on 146.850 MHz.

Conducted by various club members.

Tech Net: Weekly at 8:30 pm Sunday at VK4RSC on 146.850 MHz.

Check in, raise topics and ask your technical questions.

6 m Net: Weekly at 7.30 pm Friday at VK4RSN on 53.700 MHz.**QNEWS:** Relayed Sunday at 9:00 am at VK4RSC on 146.850 MHz.

After the broadcast a callback is conducted by VK4WIS.

Internet: www.vk4wis.org

This website provides previous issues of Pelican Droppings in full colour in pdf format which can be downloaded.

The current issue can be had by subscribing to the email edition in pdf format. Apply to SCARC.

EchoLink: Available on VK4RSC 146.850 MHz.

The Internet station is VK4AKA-R and the node is #195107.

Third Sunday of the month Open DayThe Open Day and BBQ for September was held at the clubhouse on the 18th.

Harvey VK4AHW reports that it went well with 15 people present.

NEXT ISSUE

China Odyssey—Part 2, with more stories.

Production Staff

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Copy deadline: 2nd Tuesday of the month preceding GM issue.

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Pelican Droppings

Newsletter of the Sunshine Coast Amateur Radio Club Inc.

Issue No.80

October-November 2005

Stories from a China Odyssey
by June Sim VK4SJ
begin on page 4



Pedicabs in the Hutong area of Old Beijing

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Address: The President, Sunshine Coast Amateur Radio Club Inc.
 85 Godfreys Road Bli Bli Qld 4560



Presidential Preamble

We need to promote our hobby . We should tell everyone just how much Amateur Radio assisted during the recent New Orleans tragedy. Remember if you have any ideas on promoting amateur radio please advise any of our committee members. The revised licence levels will be introduced in the near future and this includes the new Foundation Licence. This licence level is available to us but we must take advantage of it by bringing new people into the hobby.

During the monthly meetings it has been suggested that we have small practical demonstrations for the nights when we don't have a speaker. Anyone interested in giving a 20 minute demonstration on their favourite topic please advise the writer.

Sunfest seemed to be enjoyed by all and, thanks to Ron and other members, all seemed to run smoothly. Some hams were seen leaving with their bargains and it was pleasing to me to watch the number of people sitting chatting in the lower hall. To me, the social aspect is the most important part of hamfests.

Clubroom activity continues:

The South Yarra store is still evolving. Lots of goodies were sold at Sunfest and more items gained. The workshop area still needs to have bench space created for working on projects. Fitting more shelves above the main workbench for small test gear would help create this space. Maybe we can have a shadow board or slotted screwdriver rack donated. We cannot increase the floor area but we can go up higher.

In the library, Max is still working hard at sorting more newly donated books and magazines. If anyone can find or donate more bookcases the library needs them. Some magazines have been placed in the room near the workshop door. Our library contains so much useful technical data which the members could use more...

The Sunday meetings at the clubrooms are continuing with about one dozen people attending. Remember the next Sunday meeting will be held on the 23rd of October starting at 9:00am. BYO BBQ.

The Green Room now has an Officer in Charge, congratulations to VK4XZ Bill. The new " Green " bench on wheels has been completed and the room is well set up. We need to complete the installation of three poles to install the 80 metre loop.

The next general meeting is on Tuesday 4th of October 7:30pm 2005 at the clubrooms.

I hope all those feeling unwell improve soon.

73 all, Ray

Famous Personalities : Lee De Forest

De Forest was born in Iowa USA in 1873. Although he had a degree in mechanical engineering from Yale University, his lasting interest was in radio communication. He was a prolific inventor with over 300 patents to his name, the most important being for the audion which he invented in 1906. (We now know the audion as a triode valve.) He based his design on the diode valve invented a few years earlier by Fleming and the triode proved to be a most important milestone in the development of radio communication. Fleming later successfully challenged De Forest's patent, claiming that the triode was merely a type of diode. Thirty seven years later that judgement was reversed, not that this helped De Forest much at the time - he was in dire financial straits and was forced to sell the patent for his audion to the American Telephone and Telegraph Company (AT&T).

Later, as vice president of the De Forest Wireless Telegraph Company, which became the De Forest Radio Company, he made and lost four fortunes. Much of his money was spent paying lawyers in legal battles against the General Electric Company and against Edwin Armstrong, disputing invention of various circuits and devices. Both Armstrong and De Forest claimed to have invented regeneration (positive feedback). De Forest was eventually awarded the patent after 21 years of legal struggle, but today Armstrong is generally credited with the invention anyway. (Armstrong also invented the superheterodyne receiver and FM.)

De Forest eventually retired to a private research laboratory in California where he stayed until his death in 1961. End

Coaching for the Foundation Licence

Harvey Wickes VK4AHW is currently providing pre-exam coaching for those undertaking the radio amateur Foundation Licence.

It is taking place at 7:30 pm each Monday evening in his home:

14 Edenvale Court, North Buderim

Those interested in this coaching should ring him at home on 5476 5209.

Computer Tips for Windows® XP

1. To minimise all open windows, press the Windows key and the M (for minimise) key at the same time. To reverse the effect, press Shift + Windows + M.
2. To change between different applications which are open, press Alt +

River Boats in Malaysia

By Geoff Combes VK4GWC

Last week I returned from a two week trip to Malaysia visiting national parks. To get to the biggest and oldest park of Taman Negara (translates to park-national) the itinerary said we would reach the resort the fun-way by boating up-river for 2.5 hours, rather than going by road all the way in a bus.

I expected a ferry of some sort, as there were 12 people in the group plus luggage. When we arrived at the jetty I was surprised to find that the boats were like those shown below in one of my travel drawings. They are long, narrow wooden boats, seating two abreast and powered by an outboard motor. The actual boats we used had a sunshade for the passengers made from timber and aluminium sarking. The river was flowing but low and shallow in September. Consequently the boat had to negotiate several rapids, and we soon learnt why there was a man stationed at the bow end with a stout pole.

The two-man crew were competent and so confident that they did not bother to ask us to wear the old and well-worn life jackets provided. End



ORDER YOUR SCARC TEE-SHIRT NOW

Here is what you do

David Robertson VK4JMR has undertaken the job of ordering SCARC shirts and will liaise with shirt suppliers and embroiderers. He has about 7 or 8 orders so far.

To order contact Harvey VK4AHW at the clubhouse or on 54765209, giving him the following information:

- Shirt size (see measurements below)
- Name and call-sign
- Quantity required

Shirt sizes and measurements in cm:

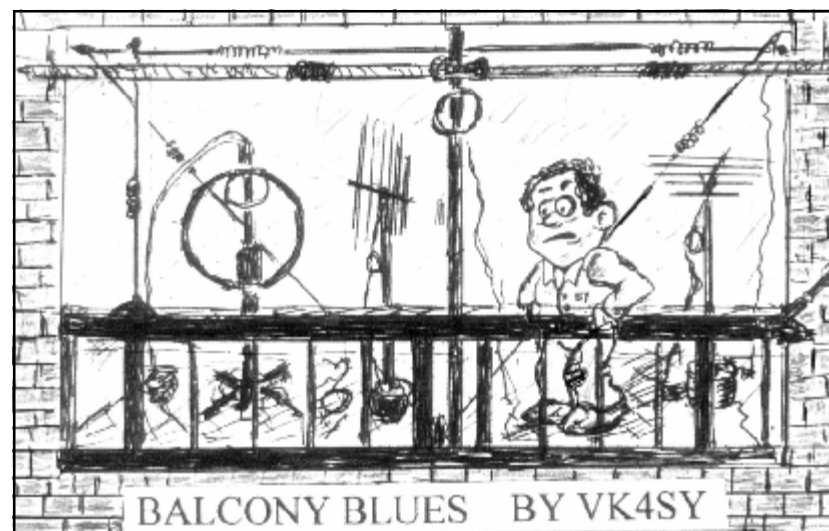
| Size | S | M | L | XL | 2XL | 3XL |
|-----------|------|------|------|------|------|------|
| Chest | 53.5 | 56 | 58.5 | 61 | 63.5 | 66 |
| CB Length | 69 | 71.5 | 74 | 76.5 | 79 | 81.5 |

Note: The chest measurement is from armpit seam to armpit seam across the chest (not the full circumference).



Shirt colour is SCARC bright yellow.

What do you mean—"Tuck it in a bit"?"



China Odyssey—Part 1

By June Sim VK4SJ

Preface

In this and following issues we will publish selected excerpts from June's trip around China. Her account is over 16,000 words long. It's a fascinating read but too long to record in this newsletter. To edit it so as to cover every part of the trip would be extremely arduous, certainly unsuccessful and a travesty. Rather we will do the sensible thing and publish parts of it, each part being all of day's experience. This way you will have the pleasure of reading June's narrative in full, not an edited version. So, after an introduction to set the scene, here are some of her stories:

The journey through China

My trip to China began at Brisbane airport on 17th May 2005 when I boarded a Singapore Airlines Boeing 777-200 for the 8-hour flight to Singapore, and then for an overnight flight to China's capital city, Beijing (latitude 40 N). After visiting Beijing the tour moved south west to the major cities of Luoyang and Xi'an on the Yellow River. We then boarded a one hour flight to the western city of Chongqing on the upper reaches of the Yangtze River. We then followed the Yangtze downstream to Wuhan, then west again stopping at Changsha, Xiangtan, Kaili and Guiyang. The final leg was a flight to Shanghai where the China Odyssey ended.

Day 1—Beijing

Flying into Beijing, I noticed what I later learnt to be the new China's national bird, the Orange or Yellow Crane: the construction crane. There were hundreds to be seen when coming in to land and the skyline in most of the major cities were punctuated by these steel structures as modern buildings rose higher and higher. China has a Communist government that is now embracing western type commercialism with both arms. Both government and private enterprise is evident, with billions being spent on a variety of projects. The new Beijing International Airport is typical of this. A neon sign in the arrival hall reads, "Tomorrow of Beijing will be better and better". I think this sums up the present attitude of the progressive Chinese, even though the English could have been better put.

Once we had cleared customs and collected our luggage, we were introduced to our National Guide, a young fellow by the name of Hu Lin or "Tom", although he preferred to be called Hu. We were then shown to our bus and driven into Beijing to check into the Hua Da Hotel in the Chaoyang district, quite near the Australian and Canadian Embassies. One striking feature of the roads leading into Beijing was the multi lane highways and elevated road systems. Beijing is surrounded by four ring roads and a fifth

They may be used with no additional external components, but by adding one or two components the regulator may be used to provide an adjustable output voltage or current, or as a constant current supply. A typical circuit is shown in Fig.2.

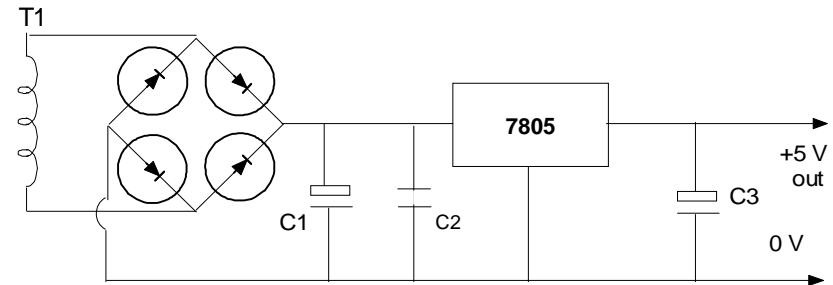


Fig.2 7805 Voltage Regulator circuit

The input voltage to the regulator should be at least 2 volts higher than the output. C1, the main supply filter capacitor, should be large to give a long discharge time constant and to keep the amplitude of the ripple low. Although the 78xx regulators can operate with a maximum input voltage of 35 volts, a sensible input / output voltage differential should be chosen. Otherwise, with only moderate current the regulator will have to dissipate too much power, the maximum junction temperature of 150 degrees C will be exceeded and the regulator will automatically go into thermal shutdown.

If the regulator is located more than about 5 cm from C1, a supply bypass capacitor C2 (100 to 200 nF ceramic disc) is desirable to prevent any pickup on the input lead from influencing the regulator's operation. Capacitor C3 (25 mF electrolytic) is not absolutely necessary, but gives improved transient response and noise rejection.

A 7805 (or 78xx) can be used as a constant current source – I use one very successfully for charging NiCad batteries. A simple circuit is shown in Fig.3. End

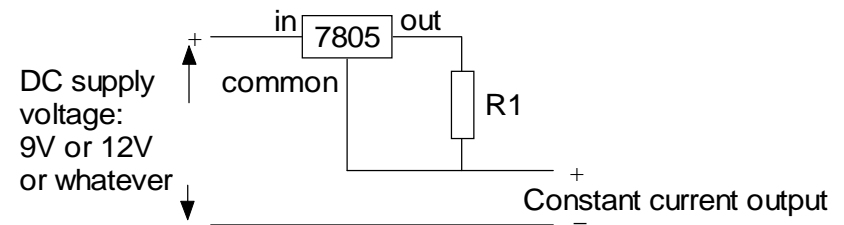


Fig.3 7805 Constant current source

78xx Three-terminal Power Supply Regulators

A Pelican Droppings Tech Review

Before the invention of the modern IC Three-terminal regulator, it was usual to provide power to a machine or electronic device from a single, high power regulator which was costly, bulky and inefficient. IC regulators are small, inexpensive and efficient and are available in both positive and negative output voltage versions with fixed or adjustable output voltages. Negative output regulators are generally used in dual complementary power supplies where voltages of say +5V / 0 / -5V are required for an op-amp or similar. Several regulators of the same or different voltages may be used in one device to eliminate noise, decoupling or distribution problems.

Probably the most common of the fixed output voltage ICs are the 78xx series where xx represents the output voltage, eg 7805, 7809, 7812... The full type number (eg LM7805CT) tells us more: LM = linear monolithic, 78 = basic part number, 05 = output voltage, C = standard accuracy [AC = improved accuracy], T = TO-220 case [also available in TO-3 case and surface mount versions].

These regulators have truly spectacular specifications: even the surface mount package can deliver up to 1.5 amps with a heat sink, they are internally current-limited, have built-in thermal shutdown, short circuit protection and output transistor safe operating area compensation. The internal circuit contains 20 transistors, 30 resistors, 2 zener diodes and 3 capacitors. Voltage regulation is typically 10 mV at load currents between 5 mA and 1.5 Amps, noise < 40 microvolts and ripple rejection 80 dB. All this for an IC costing less than \$1.00! A circuit for one of these is shown in Fig.1

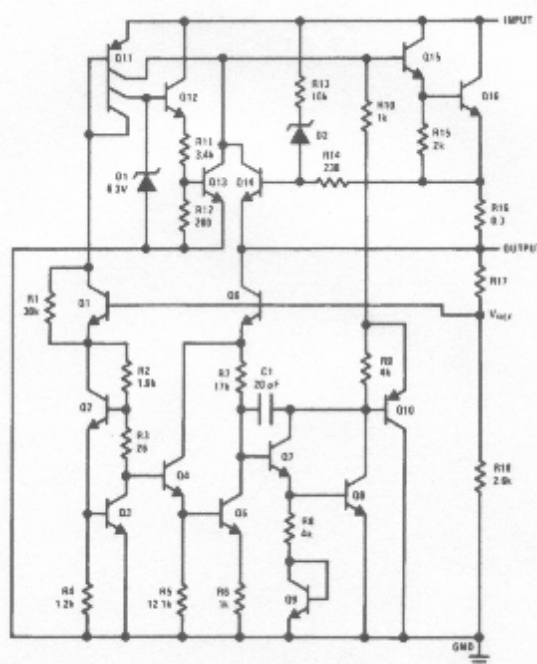


Fig. 1 78XX Schematic



Tiananmen Square, Mao's portrait, and the Forbidden Palace behind

will be completed before the 2008 Olympic Games.

After a quick freshen-up we had lunch, Chinese style, attended an orientation meeting outlining the activities for the next 24 days and had a chance to become acquainted with our fellow companions and our tour leader and guide. We then boarded our bus for the first tour to Tiananmen Square. Again, we were amazed by the road system. The roads around Tiananmen Square were ten and twelve lanes wide. The traffic was, to us, chaotic, with vehicles barging through every which way; but the locals seemed to sort themselves out with horns blaring and lights flashing. Our big bus barged through with an "I'm bigger than you" mentality.

Tiananmen Square is a huge open area dominated by the walls of the Forbidden City at one end with a huge portrait of Chairman Mao Zedong. Even though Chairman Mao died in 1976, he is still revered by the masses; his portrait flanked by huge red flags. It seems that he has assumed an almost god-like status, even though his crimes against humanity would put him in the same league as Hitler and Stalin. The street hawkers still try to sell to tourists copies of his book of quotes called The Little Red Book and Chairman Mao wristwatches.

At the other end of Tiananmen Square there is a huge city gate called the Zhengyang Men. Part of this city wall and gate dates back to the 15th century. Dotted around the square are other monuments and Mao's Mausoleum. The Square was full of people flying kites; others were watching Red Guards marching up and down and there were hordes of post card sellers,

\$10 Rolex watch sellers and beggars. The beggars became a fact of life in the larger cities, as were the street hawkers who would not let up or take no for an answer.

From Tiananmen Square, it was back to the hotel for the second Chinese meal of the day. This set the pattern for each day we were on tour: There were two Chinese meals a day, each comprising many courses, the largest being an eighteen course banquet. There were several days when the breakfast's were also Chinese; as when we were in ethnic minority areas, or where the locals had not been exposed to we "Long Nose-Round Eyes", as Westerners are called.

Day 6 - Luoyang and Shaolin Monastery

Today we headed for the Shaolin Area with the first stop at the Shaolin Monastery Wushu Institute Togou. This institute is where 6000 students from ages 4 to 17 live in for 51 weeks of the year. They study all forms of martial arts. Two thousand of the students are girls and many foreign students come from all over the world to study here. After graduation, many of the students get work as movie stunt men, policemen and women, security guards or bodyguards, and many become physical education teachers.

We drove through to the grounds of the Stone Pagoda Forest where 246 pagodas contain the remains of leading monks from the monastery. Many of these pagodas have been built by the monks years before they die, this being so that they would know their final resting places. Some build bigger and better than their neighbours in a bid to outdo each other.

From there, we went to have another multi-course lunch before going on to the Worrier Monk Shaolin college of martial arts where we were invited to witness a demonstration of the skills of the students aged from 5 to 18. The young folk were wonderful and it was a fast and furious show, showing how skilful they were. Students from this college have won awards throughout the world in Kung Fu and many other aspects of the martial arts.

After this stirring demonstration we drove to Baim, to see the White Horse Temple. The narrow road wound through some spectacular scenery, past hills flanked with lime kilns and cave houses. The White Horse Temple was founded in the 1st century AD and it was the first Buddhist temple built on Chinese soil. Ming and Qin structures now stand on the site of the original temple. The story goes that two monks travelled to Afghanistan where they met two Indian monks, and together the four monks returned to Louyang with the Buddhist scriptures and statues carried on the back of two white horses. In due course, the temple was built and named after the two horses.

June's China Odyssey continues next issue.

End



The bi-conical rotor of the wind-powered generator invented by the Fins

Secrets of a Wind-powered Generator

by Harvey Wickes VK4AHW

Recently smuggled out of Finland by Jan OH6GYO is the following information about a revolutionary wind-powered generator. The inventors of this device are reluctant to part with engineering details, as they want to keep it to themselves, all under wraps. It seems that the main secret relates to the special design of the bi-conical rotor, which is efficient at low wind speeds, but becomes highly inefficient in strong winds, thus preventing over-revving. It is understood that no mechanical feathering takes place. A photograph of the bi-conical rotor is shown opposite.

I have been told that it took a dedicated bunch of Finnish home-brew mechanics several years and many man-hours of trial and error were required to perfect this device. We now know what at least some of those guys get up to during the long, cold winter nights in sub-arctic Finland. Huddled away in what passes for the local Mechanics Institute, groups of handy tinkerers compete with each other to come up with the most efficient design for a wind generator. It had to be cheap, durable and within the engineering capabilities of the local experimenters.

Does it keep working at -30°C ? I am not sure. I only saw them operating during spring and summer. Many Fins use these generators to provide power for their summer houses, which are usually rustic log cabins overlooking a lake, and surrounded by lush Scandinavian forest. Mains power is often not available, but the wind is reasonably constant.

The details: The actual generator device is a permanent magnet DC motor, salvaged from an unknown brand of Italian washing machine. The locally available Fisher and Paykel Smartdrive motors are suitable, with some slight re-wiring modifications. (See 'Build Yourself a Windmill Generator', Silicon Chip magazine, January, 2005) The washing machine bearings and pulley wheels are also removed for use in the generator.

The drive belts found to be most efficient were smooth and flat, with a 4:1 or 6:1 ratio. Vee belts and toothed belts were found to have too much friction. The bi-conical rotor blades are made of fibre glass, and here you are on your own, as the moulds are not available to the general public. With careful observation of the photos the actual shape and rough dimensions of these rotors may be approximated.

Naturally, a reasonable breeze is required to get usable amounts of power from these generators. A wind speed of 5 m/s, or 18 km/h is a figure quoted to produce a power levels of 300 W. Because the output voltage tends to rise with rotor speed, some form of electronic voltage regulator is required to maintain 13.8 volts output.

End

Four 5/8 Wave Phased Vertical Array for Two metres

by Harvey Wickes VK4AHW

I recently came across this old home brew antenna project, which I suspect was contributed to Electronics Australia some time back in the late 70s or early 80s. The writer is not identified, but he refers to being inspired by an earlier article about two stacked 5/8 antennas, written by Ian Pogson, (VK2AXN/T) for EA August, 1978.

The design claims a very low angle of radiation, a gain of about 8dB and excellent performance between 146 and 147 MHz. The feed line is 50ohm co-ax which is connected to the 1/4 wave matching section by a balun (see footnote). Overall, the radiating part of the antenna measures 17 feet long (a little over 5 meters), so supporting it requires the construction of the wooden mast described below. The original article gave all measurements in feet and inches. I quote:

“The mast proper consists of two 10 ft. lengths of 3 1/2 in. square timber secured to the fence line for base support, separated by 3 in. to allow fitting the second section, 20 ft. of 2 3/4 in. square section Oregon post. This section has secured to it with bolts a 10 ft. length of 1 in. diameter dowel, close grained and straight. To this dowel is fixed the top elements of the radiator extending some 3 ft. above the dowel.”

The original writer used four 50 in. elements made from 1/4 in. OD hard drawn copper tubing. These were supported from the dowel by insulated screw eyes - the old 300 ohm TV ribbon supporting type with neoprene inserts. Heat shrink tubing was also used to further insulate the elements from the screw eyes.

The phasing stubs were made from brass brazing rods and securely soldered to the copper elements. The phasing stubs were bent and curved around the mast to approximately 6in. diameter, with the top one secured at the end of a 4in. by 1/2 in. dowel stud fixed into the mast dowel. The 1/4 wave stub and feed point was made from 1/8 in. OD brass rod and formed to fit along a 20 in. length of 1/2 in. hardwood dowel, fitted to the mast at the center point of the radiators. A co-ax balun section was attached to the end of the 1/4 wave stubs. SWR can be adjusted by varying the spacing between the two-1/4 wave stub sections. All wooden parts of the structure should be weatherproofed and sealed with several coats of suitable paint. All other construction information should be easily determined by looking over the accompanying diagrams, Fig. 1 and Fig. 2 on the next two pages.

Good luck, I will talk to you on two metres.

Editor's footnote: The balun is drawn correctly but is a little too small to read. Refer to the ARRL Antenna Handbook, Chapter 5, for full description on how to make this balun. It is an important part of the design.

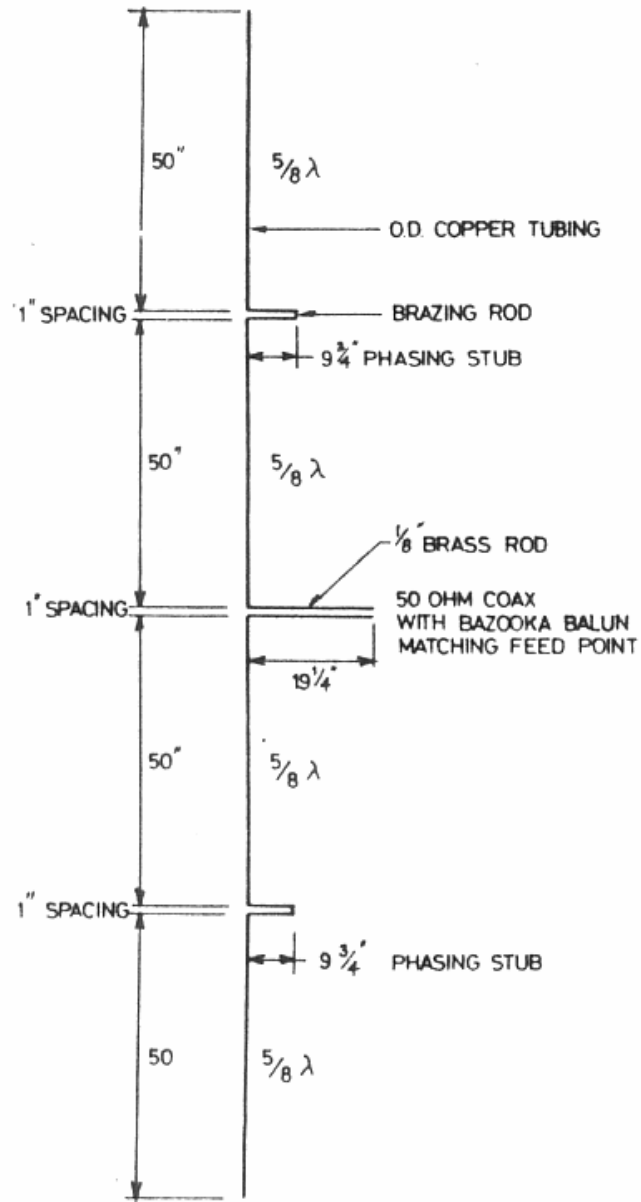


Fig.1 Two metre co-linear antenna
Element dimensions

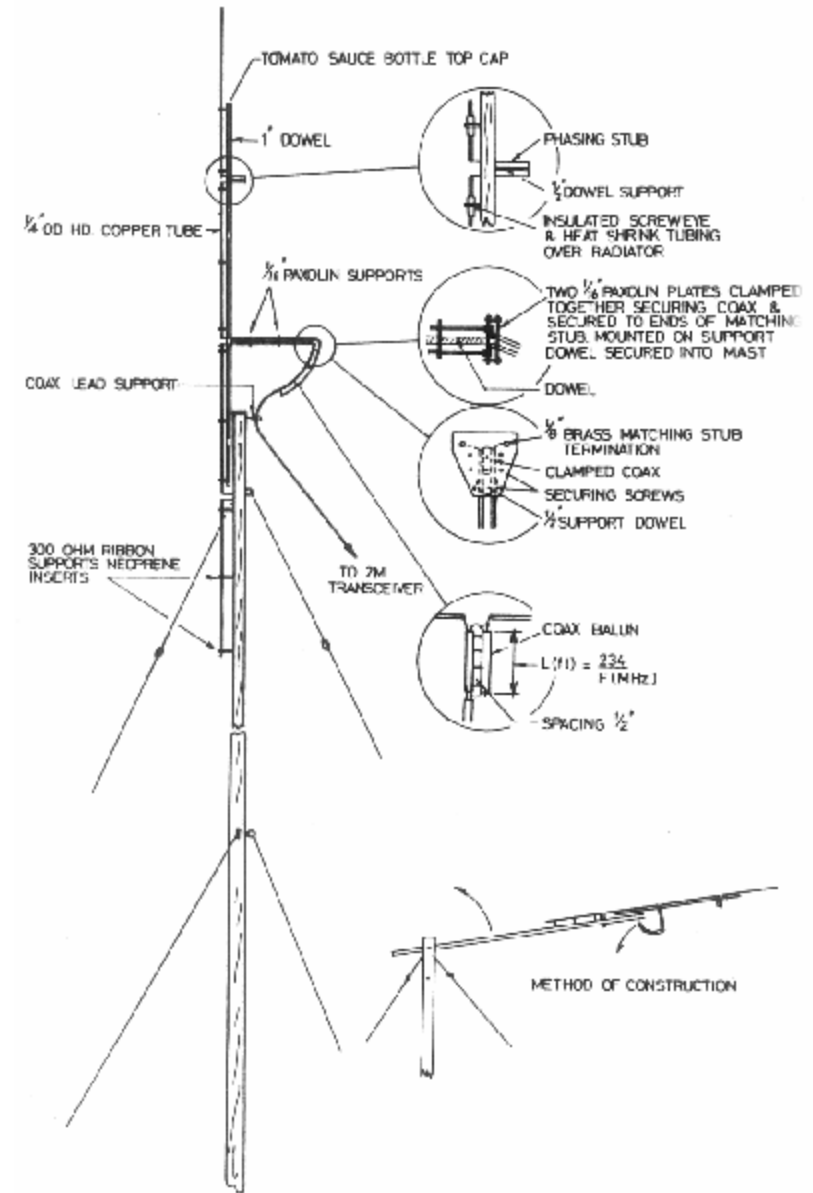


Fig.2 Two metre co-linear antenna
Mast and assembly