

QRM

BULLETIN ISSUED BY THE NORTHERN ZONES OF THE
WIRELESS INSTITUTE OF AUSTRALIA TASMANIAN DIVISION

P.O. BOX 120
LAUNCESTON
TAS. 7250

AUGUST
VOL. 1 NO. 4

REGISTERED AT G.P.O. HOBART
for transmission by post as
a Periodical. CATEGORY B.

PRICE 5¢.

PAGE 1

EXPERIMENTER, OPERATOR or CONSTRUCTOR. - That is the Question!

I was tempted to let the Title be the editorial, for in itself it poses a number of questions that have a variety of valid answers.

I suggest there is a useful place for all three types of Radio Amateur (and the permutations thereof!)

Our qualification is called the Amateur Operators Certificate of Proficiency even though the regulations are slanted towards Experimenters.

A good operator is a national asset and being a good operator is deceptively difficult. It requires good procedure, articulate thinking and a lot of practise.

How many real experimenters are there in our ranks. Very few in the final count, I guess, and this avenue requires a concentrated "grind" to acquire a sound knowledge of 'basics', the need for a new device or circuit and the ability, application and tenacity to produce the end result - rare qualities!

The constructor, building an already developed piece of equipment out of a magazine is gaining skill and applying knowledge. This process of application in itself makes the theory "stick" and calls for thought, judgment and appreciation of the problems of attaining a pleasing appearance as well as good performance.

A really hard look at we amateurs as a group reveals an almost universal shortcoming. Most of us have the 'jargon' and can fluently discuss 'this and that' using technical terms, but closer examination reveals only a thin veneer of real knowledge and a sad lack of the real foundation of electronic basic theory, without which it is extremely difficult to reason or understand the 'how and why' of circuitry.

I guess in all this rambling I've tried to present two things for consideration - an appreciation of the other bloke for what he is, and to arm oneself with the 'tools of trade' of our hobby i.e. a sound understanding of basic knowledge.

73

TOM, 7FM.

COMING EVENTS

AUGUST 3rd	NORTH WEST ANNUAL GENERAL MEETING, Lakin's Hall, Ulverstone.
AUGUST 13th	NORTHERN ZONE MEETING at Room 10 Adult Education Board Rooms, <u>8 HIGH STREET</u> , Launceston.

AUGUST 14th - 15th - 16th - 17th - 18th - 19th - 20th - 21st - 22nd - 23rd - 24th - 25th - 26th - 27th - 28th - 29th - 30th - 31st

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AUGUST 13th NORTHERN ZONE MEETING at Room 10 Adult Education Board Rooms, 8 HIGH STREET, Launceston.

AUGUST 14th : COUNCIL MEETING in LAUNCESTON.

AUGUST 14th & 15th R.D. CONTEST. The Contest is not finished until you have sent your log in!

VK7 ROUND UP EVERY WEDNESDAY 7.30pm ON 3670 KHZ.

The General meeting of the Northern Zone was held on July 9th with a record attendance of 35 members.

It was a pleasure to see some old faces and new members which included Rex 7ZB, Ron 7ZRO and Bob 7MT.

Joe 7ZGJ reported that 7EX (broadcast station) has given the old 500 watt transmitter to the zone. It was suggested that members interested should meet afterwards to organise for the removal of this equipment.

Peter 7PF reported that our repeater application has been rejected due to the use of a D.C.A. frequency as an alternate method of turning it off. Peter suggested that we re-submit our application showing the switch installed on the building and also change the repeater frequency to Ch. 1.

Peter pointed out that the output frequency of Ch. 4 is identical to the input frequency of several satellite awaiting launching.

It was refreshing to see about 8 hands rise when the chairman called for volunteers to aid Reg 7KK and Kevin 7ZAH in making arrangements for this years hamfest. Present plans are for a Hall, possibly in the Evandale area with meals catered for. The date for the Hamfest has been set for the last weekend in November..

Peter 7PF, the state's Australis Co-ordinator then gave a talk entitled "What You'll Need for Australis" and demonstrated an orbit plotting device which he hopes to mass produce. The Chairman welcomed the Council Members and handed the meeting over to W.I.A. President Geoff 7ZAS.

Mike 7ZMK informed the meeting of the advantages of E.D.P. and circulated the various cards involved.

The meeting closed at 10.15pm and supper was served.

WOULDN'T surprise me if Tim 7ZX became the Education Department's first Electronics Superintendent. He was busy demonstrating a new Electronics kit to a group when a group of 'Top Brass' walked in. Real impressed they were, apparently!

WHY does Brian 7RR persist in travelling to Launceston. He doesn't seem to get the message. A wallaby tried to resist him on one trip not so long ago. This time a concrete fence holed his radiator. Seriously, bad luck Brian!

IT does take perseverance for keen VHFing. Bob 5ZDX's gear comes on via time clock at 5am, ready for his 6am, meteor bounce contacts with VK8!

AT least Tom 7FM doesn't have this trouble - 5WI recently complained of TX trouble. Seems a dog had bitten through the coax!

THE prize for the slowest growing tower must surely go to 7JV or perhaps he is using it as a scaffolding advertisement!

HOPE these 2mx sniffers are about ready to go. There'll be some activities for them in Launceston before long!

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YOUTH Radio Club classes continue August 7th and 21st, 10am. at Kings Meadows High School, Block B, Room 38. If you know of anyone interested, send them along.

MEETINGS IN LAUNCESTON WILL NOW BE HELD IN ADULT EDUCATION ROOM 10 AT 8 HIGH STREET.

NORTH WESTERN ZONE

Our monthly meeting on July 6th was very successful and attendance was boosted by four members of the Northern Zone. They were very welcome but with poor appetites as there was supper left over. As our Treasurer 7MZ was indisposed, his place was ably taken by associate Ian who, as always, did a sterling job with equipment etc.

Brian 7ZBE displayed a new antenna, looking something like a parrot-cage, which he assured us had lots of DB gain. We hope this is so. Nice work Brian. He also gave a lecture on DB in relation to antenna gain with facts, figures and formulas. Very interesting.

We were delighted to welcome Athol 7LR to his first meeting for some time. Come again Athol, we like to see you.

Les 7LH was missing but we understand he got tangled with a dentist and came off worse for the encounter.

Tony 7AX spent a week in Hobart. When asked how he enjoyed the holiday the answer didn't seem to confirm the presumption.

We enjoyed a visit from Council on the morning of 10th July. Some queries were ironed out, equipment displayed and sold, and a very satisfactory morning all round.

Brian 7ZBE entertained the boys to lunch and no doubt his prowess as a brewer was exhibited to the satisfaction of all. Thanks Brian. Before we leave you Brian, could you pinpoint the piece of bush where you hurled the new 2 meter whip. The red may come in handy!

Ken 7KH has just enjoyed No. 60 contact with DJ3YW Germany. We saw some very interesting movies one meeting that Ken received from his DJ friend.

Sid 7SF has enjoyed a week in Melbourne. This visit is not an isolated one and we wonder what the attraction is. Sly old SUGAR FOX.

Correspondence addressed to Ken 7AI at his Somerset address has been returned. Please put us right Ken. What is your QTH now.

If you receive this QRM and wish to continue to do so make sure that you are financial with the North or North Western Zone. If in doubt see your Secretary or Treasurer. A note addressed to Box 12, East Devonport, 7310 will supply an answer.

We were all pleased to see David 7MS at both meetings. Keep watching that mail box David, you never know when A.R might turn up.

Our old DX friend Sam 7SM turned up to meeting with council. Nice to see you looking fit Sam, and keep coming.

Ulverstone area: it was your turn for supper last meeting but no rep. present. Devonport obliged so your turn next time. Please roll up.

NORTH WESTERN MEMBERS PLEASE NOTE! YOUR NEXT MEETING ON 3RD JULY IS THE ANNUAL MEETING. Please read last QRM Editorial and please come along.

FOR SALE

- 1, Valve and transistor tester. As described in "Radio Television and Hobbies", 1960 \$10.
- 1, RF and AF Signal Tracer, Valve type mains operated Tunes from 170 K/C to 1400 K/C. \$3.
- 1, 6 meter transmitter-receiver. TX, switched Xtal osc. 5763 final. RX, tunes 6 meter band using a Xtal locked converter, with mike and 2 crystals but less power supply. \$25.
- 1, 6 meter coaxial dipole antenna on 30ft. telescopic mast. \$7.
- 1, TCA 1674 FM TX Switched for two channels and with automatic

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| 1, 6 meter coaxial dipole antenna on 30ft. telescopic mast. | \$7. |
| 1, TCA 1674 FM TX. Switched for two channels and with crystals for CHS. A, B, & 4. | \$35. |

J. Oliver, 73 Normanstone Rd., Launceston, Phone 443314.

Q. R. M.

BULLETIN OF NORTHERN ZONES W. I. A. AUGUST, 1971.

PAGE 4

IT'S R. D. TIME AGAIN

The contest this year should be a real beaut. The ZL's are joining for the first time and this should liven the bands up considerably.

Can YOU work the full 24 hours. If so, good, you can be in the TOP SIX LOGS for the State. However there will be some stiff competition.

If you cannot spare all of the 24 hours, come on anyway. Even if you spare only 15 minutes your log means a bigger score for the State, and your log is important NOT your score.

ONLY 5 CONTACTS ARE REQUIRED FOR A VALID LOG.

Don't think that you are just giving points away to the other States. Just imagine if every Ham thought like this there would be no R.D.

YOU DO NOT HAVE TO BE A W.I.A. MEMBER TO PARTICIPATE IN THIS CONTEST!!

We'll talk about membership at a later date!

THE NEWCOMER.

If you have never been in a R.D. Contest THIS IS FOR YOU.

On August the 14th and 15th there is to be the BIG Contest of the year. THE REMEMBRANCE DAY CONTEST. This contest is to remember those Hams who gave their lives for their (your) Country. More over it is designed to get hams ON THE AIR. Come on if you can and see how good you are. Don't be afraid to call C.Q.R.D. or — . — . — . — . — . — . — . — .

Someone will come back and give you a signal report and number. For further details look in your July issue of Amateur Radio. If you don't have this issue use your rig and ask someone that has.

Don't hang back, VK7 needs YOUR LOG!

Contact 5 or more stations and put in your log.

DO YOU HAVE A CALL?

DO YOU HAVE A RIG?

HAVE YOU USED IT LATELY?

WHY NOT COME ON FOR THE R.D.?

Make your plans now! Blow out the cobwebs and GET ON THE AIR!

HERE IS A SPECIAL OFFER

If you have come on specially just to work 10 or 20 stations for your quota, the "STAFF" and helpers of Q.R.M. will write out your log for you and pass it to the Federal Contest Manager in VK4. Give us the information and your declaration and we'll do the rest. This offer is only intended for those that would not normally have come on the air.

VK7 wants to win the trophy! However, participation is the thing - "Win or Lose".

TIM 7ZX.

TO THE EDITOR,

Dear OM,

Many thanks for putting me on your mailing list to a very informative paper which I might add has revived my interest in Amateur Radio.

Enclosed is my Zone Fee and a donation to 'Australis'.

I hope to be able to get along to the next meeting on Friday next. At present I am not set up in any way but hope to have that situation rectified soon.

Further to the appeal for donations to 'Australis'. My main business is wholesaling automotive parts and accessories and if any licensed Ham wishes to, he or she may obtain automotive parts or accessories they require at wholesale price and I will donate 10% of the sale to the appeal. I will be pleased to supply you with my catalogue at your request.

Please do not consider this as a gimmick but a genuine offer on my behalf to the club.

If you can't spare all of the 24 hours, come on anyway. Even if you spare only 15 minutes your log means a bigger score for the State, and your log is important NOT your score.

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Ed, VK7HE,
43 Faulkner Road,
LAUNCESTON.

EQUIPMENT STORE NORTHERN ZONE

Trading in the Northern Zone Store is still quite brisk. This month we will not publish a complete list of parts in stock but only amendments to the list in July Q.R.M.

Early last month we obtained a small quantity of Audio amp. kits built around the TAA300 i.c. chip and already these have been sold. We would like to have some idea of how many of these are required. The price is \$4.50.

Also in the near future we can sell a 25 watt dummy load kit for approximately \$1.20. Kits are available for most of the parts contained in Solid State FM carphone described in A.R. The price is approx. \$40 and delivery about 2 weeks.

2N3565 transistors are now priced at 50¢ each.

The following items are deleted from the list published in July Q.R.M.

FIBRE GLASS BLANKS

B/Lee ALUM PLUGS

B/Lee STANDARD SOCKETS

MPF102 F.E.T.

Regarding the Fibre Glass Blanks if the demand is sufficient more of these can be obtained.

The parts normally stocked may not be in stock depending on the demand but in general a new batch is received at least once a month.

I have received requests for the base connections of transistors & FETs so here they are

QUICK TIPS

Often an idea used by many people is unknown to a few so I make no apology to anyone if the following ideas are not original.

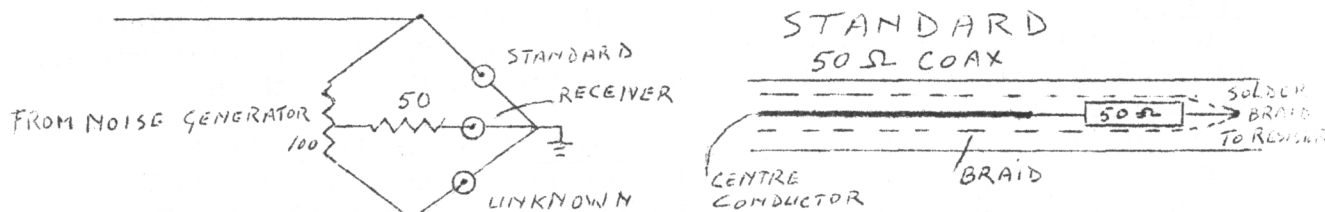
(1) An ideal heatsink:

Unbeatable as a heatsink is a pair of artery forceps (available D.H.A.) or other sources. These serve as a third hand and better than average long nose pliers as well. Just clip on and leave your hands free to do the tricky jobs.

(2) That magnetised screw driver causing frayed nerves again. Briefly short out the secondary of your scope transformer with it and presto - demagnetised. If it does not work first time simply repeat. A little hard on the 'driver' but it works wonders with the temper.

(3) Improvement to the R.F. bridge (July 1971 A.R.).

Replacing the 50 ohms bridge arm pot with a coax socket and mounting it externally as a dummy load will allow complete symmetry of the bridge layout.



This should allow removal of the two capacitors used to balance stray capacitance. If the layout almost identical to June E.A. R.F. bridge is followed balancing in this bridge should be simple.

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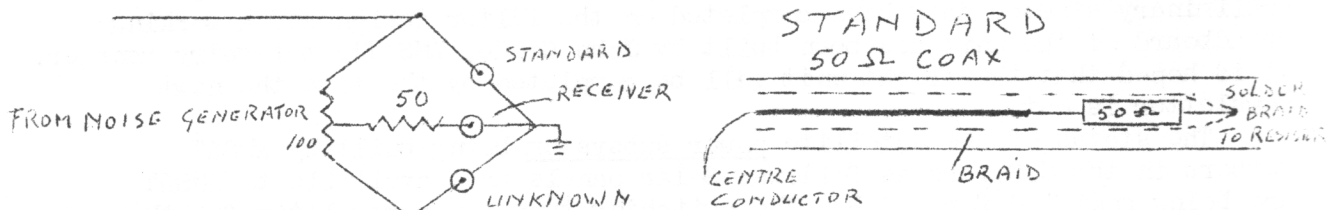
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This should allow removal of the two capacitors used to balance stray capacitance. If the layout almost identical to June E.A. R.F. bridge is followed balancing in this brute force way should not be needed as it should self balance.

I suspect that this could raise the maximum frequency to 432 MHz and eliminate those multiple paths that WB2EGZ refers to.

MALCOLM, VK7ZMS.

PROGRESS REPORT ON AMSAT-OSCAR-B

By George Kinal K2MBU

(Copy from AMSAT Newsletter)

The A-O-B satellite (which will be given an appropriate OSCAR number after launch) is being built under the direction of Jan King, W3GEY, who is the Project Manager. We are happy to report that essentially all phases of the project are proceeding satisfactorily, though with the usual amount of "Murphy's law incidents" to keep things interesting.

There is sufficient space and weight allowance in the satellite to fly three transponder (repeater) systems along with command and telemetry. The progress on these systems to date is as follows:-

(1) 2-tc-10 meter linear wideband transponder

A working prototype was completed some time ago, and two tests have been performed by carrying the unit aboard and in-flight aircraft. These test flights provided valuable technical and operational data which will be used to improve the design and to devise and publicize operating procedures.

(2) 432 to 144 MHz linear wideband transponder

A breadboard prototype of this unit built by Karl Meinzer DJ4ZC was tested in this country several months ago. The flight unit is now being completed. It is composed of three modules. The transmitter and the modulator and power regulator modules have been completed; the receiver module is under construction. One reason for delay in the latter is that the pulse blanking circuit which we feel is essential to reduce interference from radars near the uplink frequency has been re-designed.

(3) 144 to 432 MHz FM. Transponder

A single channel "Demonstrator" breadboard has been received from Australia. Electrical performance tests on this breadboard are in progress.

(4) Command decoder

An "engineering prototype" not including the final decoding matrix, was also received from Australia for testing and evaluation. This unit has been sent back for completion, and the flight unit of this subsystem is under construction.

(5) Morse code telemetry encoder

Flight units being built by John Goode W5CAY are nearing completion.

(6) RTTY telemetry encoder

The digital logic and code conversion portions of this sub-system have been completed and work properly according to Australian builders of this unit. Construction of the analog-to-digital conversion unit and the multiplexer is progressing.

(7) Code store

The design of a morse code memory unit for the A-O-B spacecraft continues. It has been decided that simple LC filters will be used to load a 640 bit static shift register using mark and space tones in a manner similar to that of an RTTY system. Five 128 bit static shift registers have been donated to AMSAT by Solid State Scientific Corp. These units along with 4 or 5 COS/MOS integrated circuits will comprise the Code Store unit. Preliminary studies have been completed on the filter design and a working breadboard of the unit has been built by John Goode, AMSAT's telemetry manager. It is hoped that the flight unit will be completed by the time the next newsletter is out.

The status of the satellite power subsystem being built by AMSAT members in the U.S., is as follows: Solar panels made available to AMSAT are being modified for A-O-B. The switching-type power regulator for the telemetry and command systems is presently under construction. The nickel-cadmium storage battery unit is completed.

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(7) Code store

The design of a morse code memory unit for the A-O-B spacecraft continues. It has been decided that simple LC filters will be used to load a 640 bit static shift register using mark and space tones in a manner similar to that of an RTTY system. Five 128 bit static shift registers have been donated to AMSAT by Solid State Scientific Corp. These units along with 4 or 5 COS/MOS integrated circuits will comprise the Code Store unit. Preliminary studies have been completed on the filter design and a working breadboard of the unit has been built by John Goode, AMSAT's telemetry manager. It is hoped that the flight unit will be completed by the time the next newsletter is out.

The status of the satellite power subsystem being built by AMSAT members in the U.S., is as follows: Solar panels made available to AMSAT are being modified for A-O-B. The switching-type power regulator for the telemetry and command systems is presently under construction. The nickel-cadmium storage battery unit is completed.

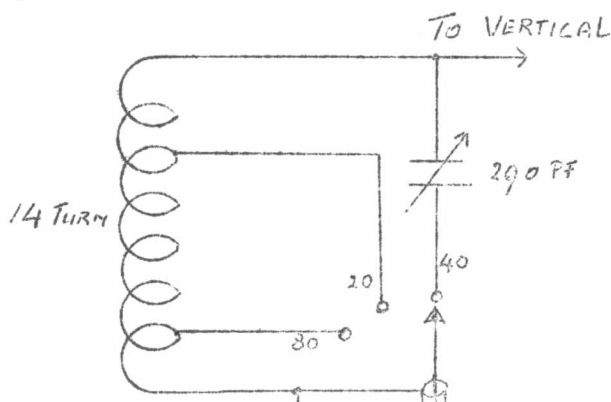
The spacecraft structural assembly has been fabricated by Bob Sprule W2QJT and his associates. All major parts are ready. However, we still need mechanical engineering assistance with design and fabrication of various small but essential components such as antenna feed-throughs, antenna deployment mechanisms, and various brackets, etc. Likewise the various antennas for the satellite have been designed but not yet fabricated. To summarize, the electronic subsystems are all progressing well, with the 2-10 meter transponder closest to completion. All telemetry and command subsystems are well along.

A THREE BAND VERTICAL. VK7AK

The antenna to be described was a result of a fair amount of head scratching to overcome the problem of a multitude of poles guy wires and tuned feeders, coax etc., required to get three bands with the flick of a switch, so to speak. The end result is a very effective antenna not only from the electrical point of view, but from the aesthetic angle also. It is situated away from the shack fed by coax, and guyed by pretty blue nylon, thus adding a db or two. To get on with it; the "stick" is 39 feet of 2 inch Al irrigation tubing, vertical, on a telephone insulator, complete with four 60 foot radials, more would be better. It is $5/8$ wave on 20, $1/3$ on 40, and 0.16 on 80. Reference to antenna handbooks will confirm that these give good angles of radiation. Reports received certainly confirm this. Now the method of feed, this consists of a coil seven inches long, four inches inside diameter, wound from $3/8$ inch soft copper tubing, and a broadcast gang, and suitable switch or relays. I am feeding it with 75 ohm coax but there is no reason why 50 ohm cannot be used, tuning would be slightly different of course. It will pick up noise a little, because of its capture area, but it also picks up sigs. to some order. Ask any ZL how it transmits. VSWR'S at the moment of writing 20; 1-1.1, 40; 1-1.02, 80; 1-1.2. The tuning unit is located at the base of the stick, in a suitable waterproof wooden box, a plastic bucket might be worth investigating, once adjustments are made, no more fiddling, but do it with the meter at the tuning box coax entry.

80 M APPROX. 6 TURNS UP

20 M APPROX. 4 TURNS DOWN

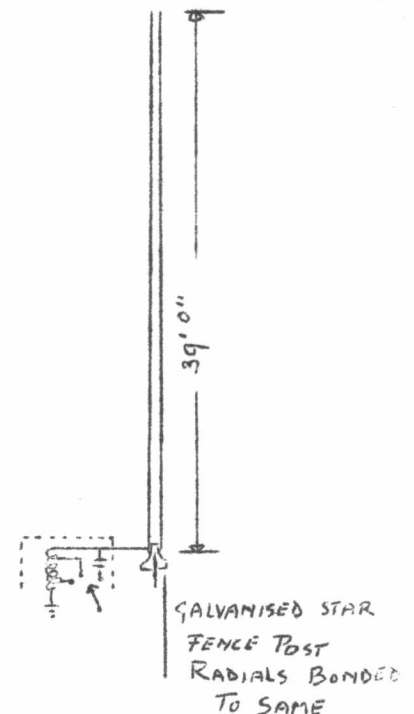
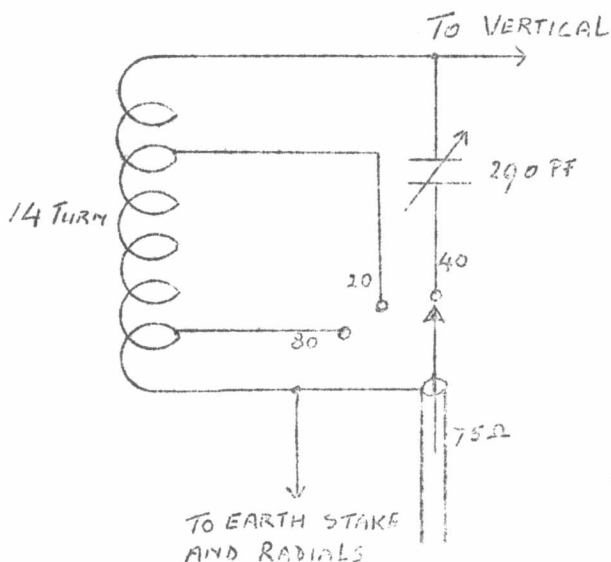


39'0"

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COIL 14 TURNS - 4 INCH DIAMETER - 7 INCH LONG -