

THE PROPAGATOR

ILLAWARRA AMATEUR RADIO.SOC.INC.

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO. SOC. INC.
 VOLUME - 88 , NUMBER : 9
 REGISTERED BY AUSTRALIA POST PUBLICATION NUMBER : NBH - 1491.
 MEETINGS ARE HELD ON THE SECOND TUESDAY OF EACH MONTH ,
 (EXCEPT JANUARY) AT 7.30.PM. AT THE STATE EMERGENCY SERVICES ,
 BUILDING , IN MONTAGUE STREET , NORTH WOLLONGONG .
 VISITORS ARE MOST WELCOME TO ATTEND THE MEETING'S .

REPEATER REPORT

Well another month has flown by with all of the beasts in their mountain-top dens more or less behaving themselves. As mentioned before the working bee for last month had to be cancelled due to the bad Wx and will be re-scheduled for a later time.

My flat and mode of transport is rapidly starting to look like a repeater site with egg insulators, cavities, nuts and bolts, spare antennae and other sundry bits.

Wonder what the ordinary people keep in their back rooms and laundries????

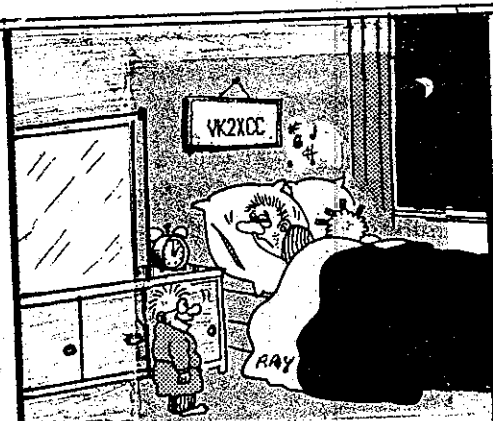
I wonder if any other members have given thought to the fact that this Club has four operational repeaters with the fifth one awaiting its cavities to be resonated.

How many other Amateur Radio Clubs in NSW, in fact Australia have five repeaters???

I hear a rumour of

a sixth! All this from the first installation of VK2RAW on 14/09/75. Well that's all for now, keep an eye on the RTTY B/cast for future updates. Cheers,

John de VK2XGJ.



"Grand Pa" what time is it when the big hand is on .---- and the little hand is on .---- ?"

S.E.S. DEMO

SES Packet Demo. On Wednesday 21/9/88 a demonstration of the latest in data moving was given to the local SES and other local government rescue agencies.

After showing the RTTY mode in RX only, a connection to VK2EXN for a quick chat and then to VK2EMV for a file xfer.

Later a simulated SITREP was sent to the SES. After a question and answer period where some thoughts on how, when, where etc, on the possible use of the mode, one of the lookers -on asked, "How can we

get one?"

The Demonstration seemed to show what the Amateur Radio Op is doing today and we will be awaiting feedback on this.

Special thanks to the Operators who came along to help. VK2KHE, VK2FCP and VK2DYU for the use of the antenna. The system consisted of an Apple Comp. using an RS232c card, a TNC220 and an FT2700 running into a J-Pole at 5 Watts, and we were still able to access VK2RAW from Montague St.

73 de VK2XGJ.

New Satellite Facility For Search And Rescue.

Australia will use international satellite technology in future to speed the search for victims of maritime disasters.

Under the plan the government will fund a new satellite ground station capable of direct monitoring of radio beacon distress signals over a huge area of Australia and international waters.

The new facility will cut the time and cost of searches and reduce loss of life, a DoTC spokesman said recently.

The government will spend 1.24 million dollars in 1988-89 on equipment purchases, installation and operational costs to acquire the new facility known as a "Local User Terminal" or LUT.

Installation, operation and equipment purchases will cost a further 0.89 million dollars in 1989-90, 0.87 million in 1990-91 and 0.09 million in 1991-92.

The spokesman said the new LUT would provide the Federal Sea Safety Centre in Canberra with almost immediate notification of mishap at sea.

Under the new arrangements polar orbiting satellites in the

COSPAS/SARSAT system will pick up a distress signal emitted by an Emergency Position Indicating Radio Beacon (EPIRB) and flash it to the LUT. In turn this facility will pinpoint the EPIRB's location and relay it to the Sea Safety Centre.

Accurate location of the vessel in distress will enable the Sea Safety Centre to get rescuers to the scene much faster than under existing arrangements.

At present the Sea Safety Centre relies on high-flying aircraft on commercial air routes to detect EPIRB signals.

Any reported transmissions require further air searches and homings to determine the precise location. The DoTC spokesman said the LUT would be installed at Alice Springs because this central location would provide coverage of Australia and the surrounding sea to about 850 nautical miles offshore.

Land coverage was important because aircraft also carry Emergency Location Transmitters (ELT's) whose signals are capable of being picked up by the orbiting satellites and relayed to the LUT.

Apart from the immediate benefit to safety, acquisition of the LUT will enhance

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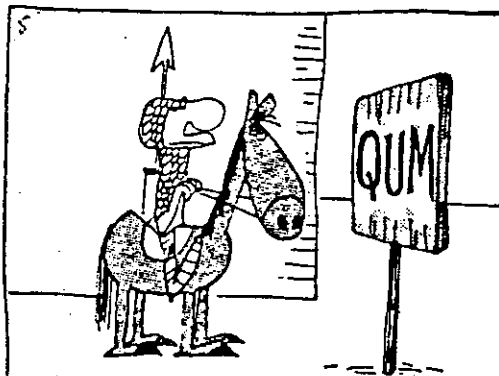
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TOW BARS TOWING

Australia's ability to meet one of its main international safety obligations by providing direct monitoring of EPIRB signals on both 406 MHz and 121.5 MHz emergency frequencies.

Smaller craft use cheaper EPIRB's which operate on 121.5 MHz. Having a much better safety service available through the LUT facility should encourage even more owners to invest in EPIRB's thus helping dramatically the cause of maritime safety.

THIS WAS TAKEN

FROM AX4TTY BES



ON THE NET

28th August. 1988

AX2DFL-Dave, Co-ordinator
VK2EMV-Morry, VK2PHD/P-
Ray, VK2XAI-Brain.

11th September 1988

VK2ENX-Tony, Co-ordinator
VK2BIT-Peter, VK2PHD-Ray
VK2AXI-Brain.

CALL/BACKS ON VK2AMW/P
11th September. 1988.
on 80 Metre, R.T.T.Y.
VK2AXI-Brain, Signall 9
VK2BIT-Peter & VK2MT-Rob
VK2KGI-Dave, VK2EMV-Morry

CALL BACKS FOR VK2AMW/P
on 2 Metre, R.T.T.Y.
VK2TPH-Phil, VK2KCV-Pat,
VK2MT/P-Rob, VK2XGJ-John

CALL/BACKS FOR VK2AMW/P
on Voice on 2 Metre are
VK2KHE-Peter, Broadcast
Officer, VK2EMV-Morry,
VK2CJH/M-Jack, VK2XGJ-
John, VK200-Ray, VK2FAW-
Bill, VK2EJH-Jim,
VK2ZBW-Bob.

VK2PZY LIVES ON

The callsign VK2PZY has
been used by Dave Capon
(now VK2KGI) since he
first came on air and is
well known on Club nets
and on 80 mx. Dave now
rejoices in a "K" call
but VK2PZY is back on
air with Daves XYL Doris
at the mike.

* "CONGRATULATIONS" *

to Doris on obtaining
your licence, it is
great to have shared
interests in the family
and to see another XYL
on air.

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TNX.

AUCTION

The annual Club
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nights fun.

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POLICE INSTALL HI-TECH DATA SYSTEM

One of the worlds most sophisticated communications systems, a result of five years research by scientists at AWA, has been installed at the new Sydney Police Centre recently. At the heart of that system is AWANET, a \$3m Intergrated Services Local Area Network which combines both voice and data in a telephone and radio system. The system links a network of telephonists and radio operators at 40 consoles in the centre to police in stations, vehicles and on foot throughout the metropolitan area. A similar system has been applied to Air Traffic Control for the RAAF Base at Tindal in the Northern Territory.

AWANET has a vast number of applications, from Air Traffic Control to Operational Control Centres, Stock Exchanges, Trading Rooms, Recording Studios and even intelligent buildings.

The new intergrated system gives the people of sydney a more co-ordinated, and rapid police response to emergencies, accidents and traffic hazards. Police can now communicate between the police

centre, suburban, regional and country stations, land, sea and air vehicles and hand-held systems, on a one-to-one basis or in conferences.

AWANET is a baseband Time Division Multiple (TDM) System which not only distributes digitised voice and data throughout the network but also controls transmission Band reception of radio over frequencies spanning HF, VHF, and UHF bands.

The system not only transmits on any frequency but can do so on a range of frequencies simultaneously.

The consoles at the Sydney Police Centre as well as their electronic systems were designed by AWA Engineers, incorporating hardware and software from a number of vendors, including Electrodata Recording Equipment, Codan HF Radio Equipment, Wang Computer Systems and Ericsson Telecommunications Equipment.

Typically, each of the consoles include two operators, a despatch telephonist who takes incoming phone calls and a radio

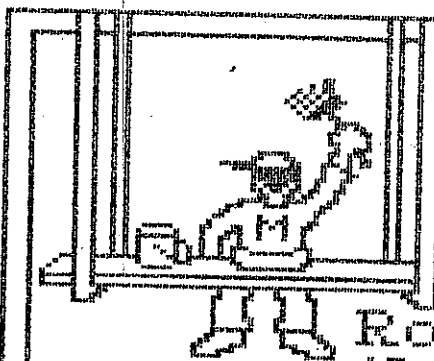
operator who communicates with police in the field. The central computer then queues the information for the radio operators, each of whom is responsible for a particular district. According to the allocated priority, the operator receives messages and acts on them through the radio system which he controls with a touch sensitive screen.

With the touch of a finger, the operator can call up police car radios, portable walkie-talkies or any other electronic communications in the network. While each police radio operator is allocated a specific district, AWANET can allow him to over-ride district boundaries.

Rather than change operators as the cars move across Sydney, the operator can stay with the police cars throughout, conferencing with sepatate area operators as his cars pass through their districts.

He can also include walkie-talkies and police helicopters in the conference. An instant

CONTINUED PAGE 5



WANTED: AM CB.
Transceivers using Cybernet boards. Working or not. For Club 10 metre FM Repeater project. Contact Rob-UK2MT or Peter-UK2BIT on (042) 84-7889 & (042) 83-3743.

SEMI CONDUCTOR THEORY PART 5

We continue this month with the operation of transistors.

If the emitter forward bias voltage is increased, making the emitter more negative with respect to the base, more electrons enter the base and diffuse across it to the collector and thereby increase the collector current.

If the emitter bias is decreased, the emitter current decreases and the collector current will also decrease. Therefore, the collector current depends on variations in the emitter current.

These variations are brought about by varying the signal between the emitter and base connections.

Current flow in a transistor can also be explained in terms of potentials at the junctions. Fig 9 shows the potentials for an unbiased NPN transistor.

At each junction the potential hill is of such height that the current due to thermally generated charge carriers just balances the current due to the diffusion of majority charge carriers. Fig 10 shows the effect of adding bias supply voltages. The forward bias Vee across the emitter junction lowers the potential hill at that

junction so that many more electrons can climb the hill and diffuse across the base to the collector. The reverse

bias Vcc across the collector junction makes the potential hill at that junction higher.

Electrons attempting to diffuse from the collector to the base are stopped by this high potential hill, but electrons diffusing across the base to the collector easily spill down the potential hill to the collector.

This means that electrons can diffuse easily across the base allowing a large current to flow in the col-

lector.

The action described for an NPN transistor applies also to a PNP transistor, except that the bias polarities are reversed.

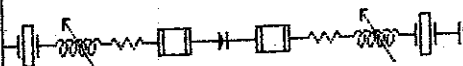
INPUT AND OUTPUT CIRCUITS

An operating transistor may be thought of as being an element between two circuits, an input circuit and an output circuit. This is shown in Fig 11. Note in this example that the base is common to both circuits. The part of the transistor to which the signal source is connected is called the input and appears to the signal source as a load.

The part of the transistor working into a load is called the output. To the load the transistor looks like a

CONTINUED NEXT PAGE

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POLICE INSTALL CONTINUED

call recorder in the system also makes a tape of every incoming call.

If a caller hangs up before the telephonist is sure of an address, the call can be replayed immediately.

AWANET also controls time-of-day display at all consoles to record the exact time of critical messages. The control system in AWANET also features sophisticated fault monitoring facilities which can pin-point most faults with extreme accuracy, to the level of isolating a circuit board.

taken from AX4 BBS.

SPREAD SPECTRUM

OR HOW IS YOUR 70 CENTIMETRE TRANSCEIVER WORKING?

IT HAS BEEN NOTED THAT A CERTAIN TEACHING COMMERCIAL ORGANISATION IN SYDNEY HAS BEEN DEVELOPING A RADIO DIRECTION FINDING / POSITION REPORTING SYSTEM OF GREAT ACCURACY USING SPREAD SPECTRUM TECHNIQUES, BASED ON THE THREE TRANSMITTER RECEIVER PRINCIPLE, WHICH ARE CLOCK REFERENCED TO BAND.

THE PERSONS CONDUCTING THE INVESTIGATION OF THE SYSTEM IN THE AMATEUR BAND ARE KNOWN, AS IS THE ORGANISATION. ONE OF THE PERSONS INVOLVED IS AN AMATEUR.

THE MATTER HAS BEEN REPORTED TO D.O.T.C. WHO HAVE STATED THAT SUITABLE ACTION WILL BE TAKEN TO REMOVE THE INTRUDER OUT OF THE AMATEUR 70CM BAND. THAT TAKES CARE OF N.S.W. BUT WHAT ABOUT W.A.? OR ANY OTHER PLACE WHERE HIS SYSTEM HAS

ONE OF THE LOCAL BROADCAST STATIONS.

SYSTEM HAS THE ACKNOWLEDGED PROBLEM OF THE 'NEAR FIELD EFFECT', THAT IS, THE CLOSE PROXIMITY OF THE TRANSMITTER TO A RECEIVER WILL CAUSE IT TO BE DESENSED BY A LARGE AMOUNT OF PSEUDO RANDOM WHITE OR PINK NOISE, WHEREAS AT A DISTANCE THE BASE NOISE OF THE RECEIVER WILL ONLY BE INCREASED SLIGHTLY.

AS WELL AS THE LOCAL OPERATIONS, IT IS BELIEVED THAT THE WESTERN AUSTRALIAN POLICE ARE ALSO INTERESTED IN USING THE SYSTEM ON THE SAME FREQUENCY AS THE SYDNEY SYSTEM.

NOW HERE IS THE CRUNCH. CERTAIN STATIONS IN THE SOUTHERN AND WESTERN AREAS OF SYDNEY HAVE SUDDENLY FOUND THAT THEIR 70CM RECEIVERS ARE DEVELOPING A LARGE AMOUNT OF NOISE OR HISS ON THE AMATEUR

BEEN SET UP FOR TESTING? THE AMATEUR BANDS ARE NOT FOR COMMERCIAL USE, IF YOUR 70CM GEAR SUD- DENLY MAKES A LOUD HISSING NOISE, CHECK WITH D.O.T.C., AS THEY MAY HAVE ALREADY BEEN INSTRUCTED TO ACT ON THE MATTER.

TAKEN FROM A.N.A.R.T.S.
11/9/88.

Fig 9.

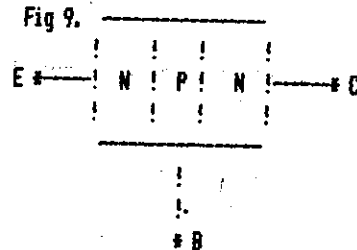


Fig 10.

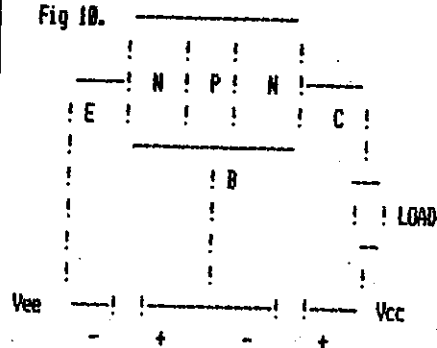
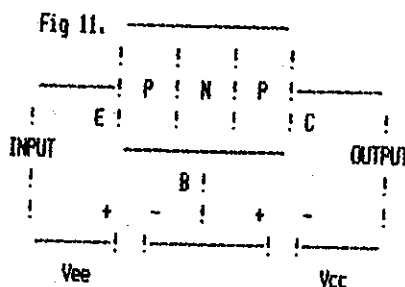


Fig 11.



SEMI CONDUCTOR PART 5 CONTINUED

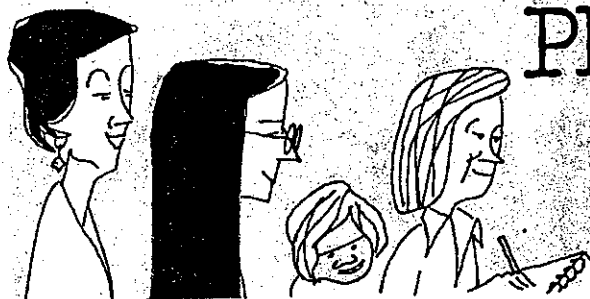
signal source.

This source seen by the load, is a current source in parallel with a high internal resistance. (The collector is a reverse biased diode which has a high resistance.)

This internal resistance is called the output resistance of the transistor.

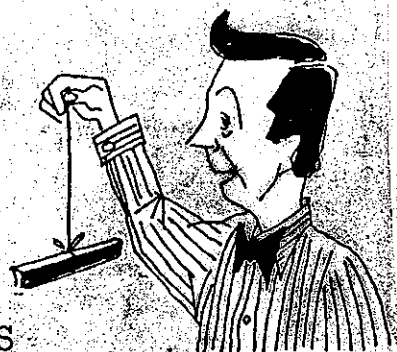
The load presented by the transistor input is called the input resistance of the transistor. It is a relatively low value because the emitter is a forward biased diode and thus has a low resistance.

To be continued...
73's DE Peter, VK2KHE.



Physics is FUN!

By Derrick DAINES



MAGNETIC INDUCTION

Obtain a piece of wood about 25mm thick and drive a steel nail through it, so that the nail protrudes on either side of the wood, Fig. 1. Stand it up and bring one pole of the magnet close to it but *not actually touching*. The other end of the nail will be found to be magnetic and pins will cling to it. Removing the magnet will cause the bulk of the pins to drop off, but not all. This odd behaviour goes under the resounding title of magnetic induction.

Magnetism can be induced in a piece of iron.

Notice that not all of the pins or filings drop off the iron nail immediately; some remain for quite a while. Obviously, the nail is still slightly magnetic and while we're dealing with classy names, you may as well know that we call this residual magnetism or, more often, remanence.

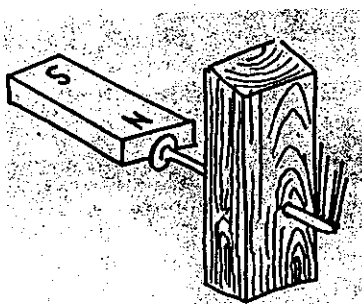


Fig. 1. Bringing a magnet near to a nail causes the pins to be attracted to the nail.

The experiment will of course work when the magnet actually touches the nail, but we particularly wanted you to experience for yourself the fact that magnetism can be induced at a distance.

Now remanence and induction have far-reaching effects in electronic circuitry. Tape recorders and computers cannot function without them, for example, whilst in other cases they are a darned nuisance. So what can we do about them in cases where they are not wanted? Last month's experiment with the tin provides the clue.

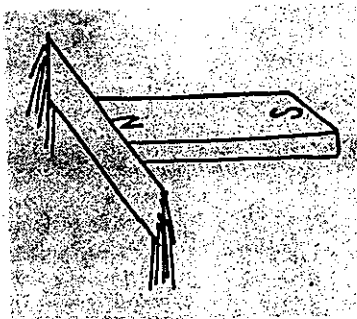


Fig. 2. Only the extremes of the tinplate attract the pins.

Cut a strip of tinplate about 25mm wide and place it across one pole of your magnet. The two ends of the tin will now pick up pins, whilst the pole will not, Fig. 2. We have, as it were, transferred the effective pole to the ends of the tin. Now the question arises, what would happen if we bend the tin round into a ring? Clearly, something odd will happen in the middle.

Try it. Cut two identical strips of tin and bend them into rings. Lay two magnets on the table, with one of the rings between them. Place a sheet of paper

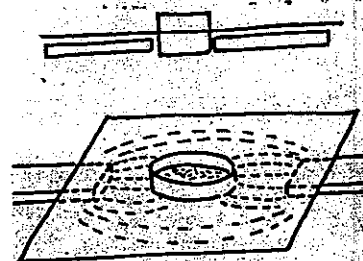


Fig. 3. The area within the ring is unaffected by the magnets indicated by random orientation of filings.

across the top and the second ring exactly over the first. Sprinkle iron filings over all, as in the first experiment. Tap gently.

As we would expect, outside the circle the filings take up their North/South orientation, but inside they remain randomly scattered. (Note: if you have a very strong magnet, the filings inside will also be orientated; remember that the field is three-dimensional. The magnetic flux is sweeping through space over the top of the rings!)

That magnetism is induced in the ring will be obvious from the way that the lines of force bend in the vicinity (Fig. 3) but the magnetism is induced to go round and round. Remember that the centre of a magnet does not attract filings!

A ring of iron or aluminium forms a shield against magnetism.

In electronics it is modern practice to put a shield round all components (such as coils) that are likely to produce magnetic fields.

SUPERCONDUCTIVITY

A BIRD'S EYE VIEW

A Bird's Eye View

In January 1986, Drs. K. Alex Mueller and J. Georg Bednorz of IBM's Zurich Research Laboratory made a discovery that would win them the 1987 Nobel Prize for Physics: they observed superconductivity in an oxide of lanthanum, barium, and copper cooled to an amazingly warm -243 deg Centigrade.

Of course, that temperature is still way below freezing point and hardly warm at all especially to Filipinos like us who survive 34 degC everyday.

But the idea here is that it was long ago theorized that electricity flows UNOBSTRUCTED at certain super cold temperature much lower than -243degC.

So, the discovery of various oxides that permits superconductivity at these higher temperatures is breally big news.

In recent months, many scientists around the world have buckled up to work to find new materials that will permit superconductivity at much higher temperatures.

In February 1987, Prof. Ching-Wu Chu of the University of Houston announced that his group attained superconductivity at -175degC in an oxittrium.

And that's not the end of it. It is expected that records will continue to be broken until such time that one of these scientists will announce to the world that:

"WE HAVE ACHIEVED SUPERCONDUCTIVITY AT ROOM TEMPERATURE."

So what's all the fuzz about superconductivity. Plainly said, superconductivity is a state in which electricity flows with no resistance at all.

Imagine all the applications: Ultra-Superfast computers - data will flow from RAM or Hard disk to the CPU and back at speed never before dreamed of. At present, the world's fastest computers made by CRAY are designed in such a way that wires and connections inside the computers are as short as possible, using gold terminals for least resistance.

Coaxial cables for radio transmitters can be as thick as RG-58 at the most since all that worries us by then is the physical strength of the cable. The power from our radios will reach the antenna 100%. No need for bulky heliax.

The cost of transporting electrical power from the power station to individual homes and factory will also be reduced since what comes out from the power station are all received by the consumers -- no loss due to heat or resistance.

Distribution transformers are no longer needed.

At this time, superconductivity can only be achieved at very low temperature. Thus, it's not practical yet as the maintenance of very low temperature requires large amount of power. However, with the discovery and development of new metallic oxides, one day will come when superconductivity might exist at room temperature.

Then, everything won't be the same again.

DUIJRB (Jess)



SHRINKING CHIP PACKAGES

Chips are now becoming so complex that their manufacturers are having to rethink ways of connecting them to the outside world.

And one of the most promising ways for connecting a packaged chip to, for instance, a printed circuit board is to dispense with external leads altogether.

Integrated circuits are typically packaged in ceramic boxes with two rows of metal leads. These dual in-line (dil)

packages are cheap and a convenient way of fitting the circuits into position.

But as chips become more complex, they need more and more leads. As the number of leads passes 40, dil's become impractical and too expensive to make.

Large numbers of connections are also responsible for comparatively large losses of power and for slowing down the switching speeds of chips.

One way around the problem is to try connecting unpackaged chips directly to printed circuit boards. This, however, proves to be too complex a task for most microelectronics manufacturers. A more promising technique is to adopt the leadless electronic package (lep) in which studs underneath the package replace leads and make direct contact with the printed circuit board.

A thin coating of solder applied to the studs holds the lep in place and, when molten, the solder's surface tension actually helps to pull the package into its correct position.

Taken from, T.S.

AMSTRAD GAINS IBM CROSS-LICENCE

Amstrad, which has notched up more than \$5.5 million in personal computer sales in Australia since it entered the marketplace last month, has announced that it has signed a patent cross licence agreement with International Business Machines Corporation (IBM).

The agreement grants Amstrad a worldwide nonexclusive licence, under all of IBM's present and future patents filed before July 1, 1993, including those pertinent to the manufacture and sale of the IBM PC and IBM PS/2 ranges of personal computer products.

The agreement also gives IBM worldwide non-exclusive rights to all Amstrad patents filed before July 1, 1993.

The agreement took

effect on July 1. Amstrad's UK Chairman, Alan Sugar, said in London: "We are delighted to have entered this agreement with IBM."

It has always been our policy to acknowledge and observe the patents rights of others, and we will continue to do so."

Amstrad's Australian Managing Director, Gary Meyer, said the agreement made it clear that Amstrad has the rights not only to produce its current range of personal computers - which are the best-selling personal computers in Britain, France and Spain, and which are now selling like hotcakes in Australia - but also to develop future computer products under the licence agreement with IBM.... Taken from T.A.

September 21st 1988.

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SEPTEMBER GENERAL MEETING

Miserable weather limited attendance to about 30 members and guests at the September monthly meeting.

General business included a letter from WIA, offering WIA members the chance to buy a new 2 metre hand held through WIA at an advantageous price.

Details are available from Secretary Phil VK22TPH. Other business included the information that DOC has moved to the new Govt building in Burelli Street, and that the Conference of Clubs hosted by I.A.R.S.inc.

will be held a week later on 12/11/88 to avoid a clash with a field day at Wagga.

Peter VK2BIT told the meeting that several members are building a 10 metre FM repeater and need DONATIONS of CB Radios. Models with cybernet boards in are the type needed, and non-working sets could be of use.

John VK2BHO was the speaker for the evening on the subject of ones and noughts and after an interesting talk the usual cuppa and biscuits was enjoyed.

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IT ALL BEGAN WITH SMOKE SIGNALS ?

John VK2BHO detailed the development of digital systems in his talk to the September meeting. John explained that by the late 1800's most of the world was linked by cable giving communication by morse telegraphy which then was hand operated by expert brass pounders.

Sounders were used to give the key clicks at the receiving stations and bipolar duplex systems were used to give extra links on the one line or pair.

The BAUDOT code still in use today was introduced by Creed and the teletype Corporation to use early telegraph machines which progressed to highspeed mechanical equipment used until the 1960's.

Multiplexing methods to extend the use of line pairs progressed from Six segment synced mechanical multiplexers to electronic multiplexers which work on 120Hz segments using F.S.K. 30Hz above and 30Hz below a centre frequency.

This gives as many channels on a pair as you can fit 120Hz segments on a carrier system.

Telex systems were manual until 1966 using the Creed and teletype machines of the day.

Since 1985 a full processor system has been in use for telex. Digital networks also EPOS systems and FAX systems, Paging systems use digital information as do Compact Discs and

almost all modern communication systems.

John then played an audio tape with Fax, Morse, (Russian CW.), RTTY, Packet, Woodpecker Loran Navaid, Slow-Scan TV, and Amtor signals and explained the audible of the signals.

The future would probably hold pressure for higher capacity links on packet and higher level data management protocol. Digital voice links are another digital form and voice transmission will probably remain the main system of social communication because people like to talk, John concluded.

SEPTEMBER COMMITTEE MEETING

Business covered at the meeting included planning for the demonstration of RTTY and PACKET on the 21st September 1988 and the October and November meetings.

The annual Club AUCTION will be held in November and the October meeting will have a Video of an expedition, to the Antarctic which should be of interest to all members.

Other items were repeater planning and Jota activities and the Conference of Clubs in November.

AERIAL VIEW OF PORT

This aerial view over the northern shore of Port Kembla shows the Sydney Harbour Tunnel Casting Basin nearing completion (in the centre), flanked by the BHP No 2 Products Wharf (bottom left), the new bulk grain handling terminal and the bulk coal loading facility (top right).

In undertaking the excavation of the Basin, Leighton Contractors mobilised an impressive force of earthmoving equipment and skilled operators to remove up to 10,000 cubic metres of spoil daily.

A contract for construction of the immersed tube units at the Casting Basin has been awarded recently by the Sydney Harbour Tunnel Joint Venture to Transfield Pty Ltd.

SOLDERING

STATION

REQUESTED

TO RETURN

SOLDERING STATION MODEL T2000 SOLD IN ALL STATES CONSTITUTE A SAFETY RISK AS THE POWER SWITCH IN SOME UNITS HAS BEEN INCORRECTLY WIRED. THE UNITS WHICH MAY BE AFFECTED ARE FITTED WITH A METER HAVING A WHITE TRANSLUCENT BACKGROUND, AND BEAR THE LEDGEND -AUS DES REG-NUMBER 86081 ON THE FRONT NAME PLATE BELOW THE TEMPERATURE CONTROL. CUSTOMERS ARE REQUESTED TO RETURN THE PRODUCT TO THE NEAREST DICK SMITH STORE FOR IMMEDIATE ATTENTION TO THE PROBLEM. THIS WAS TAKEN FROM THE PACKET BBS.

COAST-WIDE

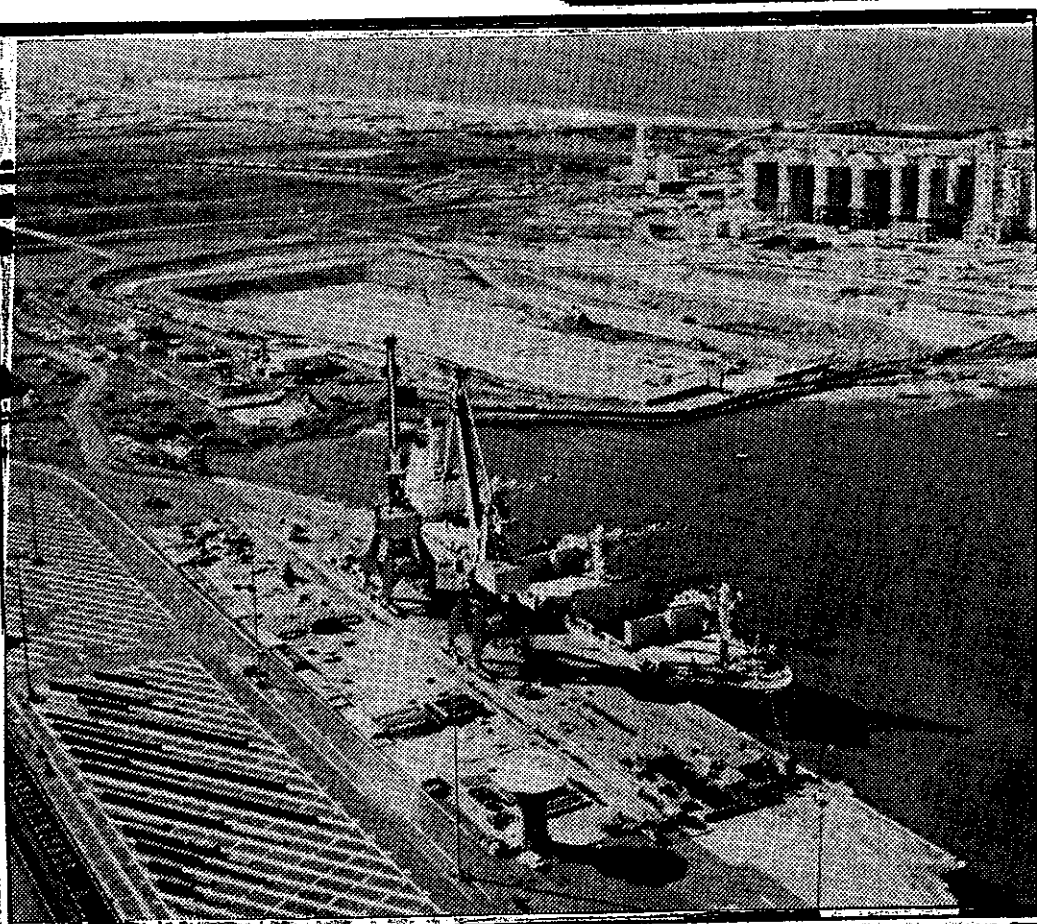
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THE ILLAWARRA AMATEUR RADIO SOCIETY. INC.

P.O. BOX 1838. WOLLONGONG. 2500. N.S.W.

MEETINGS: Are held every 2nd Tuesday of the Month except January, at 7.30.p.m. in the S.E.S. Headquarters, Montague street, North Wollongong.

REPEATERS:

VK2RAW - 146.850. - (VOICE)	VHF Mt Murray.
VK2RAW - 147.575. - (PACKET)	VHF Mt Murray.
VK2RIL - 147.275. - (VOICE & R.T.T.Y)	VHF Sublime Point.
VK2RUW - 438.225. - (VOICE)	UHF Hill 60 Port Kembla.
VK2RIL - 438.725. - (VOICE & R.T.T.Y)	UHF Sublime Point.

BROADCAST: On Sunday evening prior to the club meeting, at 7.00.p.m. R.T.T.Y. Mode Transmitted on 147.275.VHF, and relay on 3.562.Mhz. +/- QRM. Callbacks taken immediately afterwards. The voice broadcast will be held straight after the WIA Broadcast on 146.850.Mhz < VK2RAW > and 3.562.Mhz +/- QRM.

W.I.A. RELAY: On 146.850. at 10.45.am. and at 7.15.p.m. each Sunday.

CLUB - NETS: On 3.562.Mhz. SSB +/- QRM on Sunday at 8.30.p.m.

NEWSLETTER: "THE PROPAGATOR", published Monthly to reach FINANCIAL-MEMBERS in the week preceeding the club meeting. All articles, adds etc, to the editor must be in, or try, by the 3rd Tuesday each month.

MEMBERSHIP: The Secretary, I.A.R.S. Inc, P.O.Box.1838. Wollongong. 2500. Full membership is \$12 per annum; students & pensioners concessional members \$9 per annum.

AWARDS: The Award of the Illawarra Amateur Radio Society. Inc. is the LAWRENCE-HARGRAVE-AWARD. VK stations require 10 contacts with I.A.R.S. members. Overseas stations require 5 contacts with I.A.R.S. members. A contact with VK2AMW is sufficient for the award. Band-details, date, frequency, station worked and \$2 or 2 I.R.C.'s to THE AWARD-MANAGER, I.A.R.S. Inc, P.O.Box. 1838. WOLLONGONG. 2500. No QSL-CARD is required.

STORE: The club store operates at each club meeting. by COMMITTEE-MEMBERS.

COMMITTEE:

PRESIDENT: VK2DYU- BILL CHADBURN. 45. Beltana Ave, Dapto.
VICE-PRESIDENT: VK2OB - KEITH CURLE. 24. Beach Drv, Woonona.
SECRETARY: VK2TPH- PHILL HOWCHIN. 12. Mawarra Ave, Dapto.
TREASURER: VK2DMR- DENIS McKAY. 17 Doncaster street Corrimal.

GENERAL-COMMITTEE: VK2BIT - Peter Woods, VK2XCC - Ray Ball, VK2FPN - Peter.

REPEATER - CHAIRMAN: VK2XGJ - JOHN SIMON.

REPEATER - COMMITTEE: VK2CAG - GRAEME DOWSE, *VK2EXN - IAN CALLCOTT, VK2KHE - Peter Tomlin, VK2FPN - Peter, *VK2EMV - MORRY .v.d. VORSTENBOSCH, VK2MT-ROB-McKNIGHT, VK2BIT-PETER WOODS, VK2FCP-FRED BROWN.

QSL-CARD'S OUT : VK2IU - RAFFAEL BUONO.

QSL-CARD'S IN : VK2BIT - PETER WOODS.

PUBLICITY - OFFICER: - (STILL LOOKING FOR ONE) (?)

BROADCAST - OFFICER: VK2KHE - PETER TOMLIN.

CARTOONIST : VK2AXI - BRIAN WADE.

PROPAGATOR-EDITORS : VK2JT - JOCK TAYLOR, VK2EMV - MORRY.v.d.VORSTENBOSCH, VK2KGI - DAVE CAPON.

PRINTERS : VK2DFK - MIKE KEECH. AND POSTED BY VK2BIT - PETER WOODS.

SOCIAL-DIRECTOR : VK2XCC/PHD - RAY BALL. D.O.C.LIASION VK2OB - KEITH CURLE.

CANTEEN-MANAGER : VK2DYU - BILL CHADBURN.

LIFE - MEMBERS : VK2CAG-GRAEME DOWSE. VK2OB-KEITH CURLE.VK2ALU-LYLE PATISON

SUNDAY - EVENING - CLUB-NET - ROSTER: STARTING AT 8.30.p.m.

8.30.p.m.	FIRST SUNDAY OF THE MONTH :	VK2MT - ROB McKNIGHT.
	2 nd SUNDAY OF THE MONTH :	VK2ENX - TONY MOWBRAY.
	3 rd SUNDAY OF THE MONTH :	VK2KGI - DAVE CAPON.
	4 th SUNDAY OF THE MONTH :	VK2PHD - RAY BALL.
	5 th SUNDAY OF THE MONTH :	VK2EBI - KEVIN MURPHY.

And on stand-by : VK2EMV after NOTIFICATION ONLY!