
THE PROPAGATOR

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO SOCIETY

PO BOX 1838 WOLLONGONG NSW 2500

VOLUME 84, NUMBER 10

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MEETINGS ARE HELD ON THE SECOND TUESDAY OF EACH MONTH (EXCEPT JANUARY) AT 7.30 P.M.
AT THE STATE EMERGENCY SERVICES BUILDING, MONTAGUE STREET, NORTH WOLLONGONG.
VISITORS ARE WELCOME TO ATTEND MEETINGS.

LAST MONTH'S MEETING: A roll-up of some 40 members was a bit down on the usual at the I.A.R.S. meeting held on 11th September, 1984 in the S.E.S. Building, Montague St., and the many apologies brought the remark that there were more members away than had turned up. There were however several visitors, including some from the St. George and the Fisher's Ghost (Campbelltown) amateur radio societies.

President Dave VK2DFL opened the meeting, and told us of the offer from Dick Smith Electronics to sell VHF kits at a special price of \$179 for a minimum of 5 kits. This is not a Club arrangement, but if you're interested you can arrange privately with Robert VK2JRC.

A letter was read from the director of the Hongkong firm Delta Radio Communications offering assistance to visitors to Hongkong.

Ray VK2PHD brought our attention to the sets of ex-military morse key, headphones and mike on sale in the Club Store at \$6.

Licensed auctioneer Denis VK2DMR then conducted a mini-auction. As has been the case at club auctions recently, bidding was very slow reflecting the depressed state of the Illawarra region at present, and items such as Philips videos and computer terminals went for just a few dollars.

Mike VK2DFK then showed a video taken off-air during a visit by himself and Lyle VK2ALU to the ATV Station VK2BUN of the Gladesville Amateur Radio Society, showing the transmission put to air on August 29th. Although the picture quality was very good, it was unfortunate that the microphone's sensitivity is such that the ambient noise at the Gladesville meeting almost drowned out the voices of the speakers. This video was followed by one on radio astronomy called 'Radio Sky', and following the usual cup of tea or coffee and bikkies, further videos were shown. These videos had all been made available through the ATV group.

NOTICE OF MEETING: The next meeting of the I.A.R.S. will be held on Tuesday, October 9th, in the S.E.S. Building. As from this meeting we will be resuming the monthly raffle, first prize this month being an electric kettle, with a coffee set consisting of 4 cups and coffee pot for second prize.

The guest speaker this month will be Roger Harrison VK2ZTB, who will ask the question, "Will Amateur Radio Exist Beyond The Year 2000?" Don't miss this talk as I know it is very entertaining...

NOW FOR A LAUGH

The following quotes are actual statements as found on insurance forms where car drivers attempted to summarise the details of an accident in the fewest words possible. The instances of faulty writing serve to confirm that even incompetent writing may be highly entertaining.

"Coming home, I drove into the wrong house and collided with a tree I don't have."

"The other car collided with mine without giving warning of its intentions."

"I thought my window was down, but I found it was up when I put my hand through it."

"I collided with a stationary truck coming the other way."

"A truck backed through my windshield into my wife's face."

"A pedestrian hit me and went under my car."

"The guy was all over the road, I had to swerve a number of times before I hit him."

"As I approached the intersection a sign suddenly appeared in a place where no stop sign had ever appeared before, I was unable to stop in time to avoid the accident."

"To avoid hitting the bumper of the car in front, I struck the pedestrian."

"My car was legally parked as it backed into the other vehicle."

"I told the police that I was not injured, but on removing my hat, I found that I had a fractured skull."

"The direct cause of this accident was a little guy in a small car with a big mouth."

"An invisible car came out of nowhere, struck my vehicle and vanished."

"I saw a slow-moving, sad faced old gentleman as he bounced off the hood of my car."

"I was sure the old fellow would never make it to the other side of the road when I struck him."

"I was thrown from my car as it left the road. I was later found in a ditch by some stray cows."

"The telephone pole was approaching. I was attempting to swerve out of its way when it struck my front end."

"I had been driving for forty years when I fell asleep at the wheel and had an accident."

"I was on my way to the doctor with rear end trouble when my universal joint gave way causing me to have an accident."

"In my attempt to hit a fly, I drove into a telephone pole."

REPEATER REPORT

MT. MURRAY

----- 6850 IS NOW BACK TO NORMAL AGAIN AFTER A MONTH RUNNING ON EMERGENCY POWER FROM BATTERIES WITH A 20 SECOND TIME-OUT AND ON LOW POWER.

THE MANUFACTURER OF THE WIND GENERATOR HAS BEEN VERY CO-OPERATIVE IN HELPING US TO GET GOING AGAIN AFTER WIND DAMAGED THE GENERATOR TWICE WITHIN A COUPLE OF WEEKS. AS A RESULT WE ARE BACK TO NORMAL WITH FULL POWER AND 4 MINUTE TIME-OUT.

THE GENERATOR HAS BEEN MODIFIED IN SEVERAL WAYS INCLUDING A DIFFERENT TAILFIN AND A BLADE STRENGTHENING KIT WHICH WERE PROVIDED BY THE MANUFACTURER TO GIVE EXTRA RELIABILITY IN HIGH WIND AREAS. THESE MODIFICATIONS WERE RELEASED AFTER WE PURCHASED THE GENERATOR, WHICH IS WHY THEY WERE NOT DONE BEFORE. ANYWAY WE HAVE OUR FINGERS CROSSED IN THE HOPE THAT THE NEW SETUP WILL WITHSTAND THE MT. MURRAY ENVIRONMENT. THE GENERATOR MOUNTING BRACKET HAD TO BE REMOVED AND ALTERED TO SUIT, AND THIS HAS ALL BEEN ACCOMPLISHED DURING THE LAST MONTH.

THANKS FROM THE REPEATER COMMITTEE TO ALL THOSE WHO HAVE HEEDED THE ADVICE IN LAST MONTHS PROPAGATOR AND USED OTHER FREQUENCIES WHERE POSSIBLE, AND KEPT TRANSMISSION TIME THROUGH THE REPEATER TO A MINIMUM.

HOWEVER, THERE ARE A FEW AMONGST US WHO SEEM TO HAVE LITTLE REGARD FOR THOSE WHO ARE TRYING TO KEEP THE REPEATER ON THE AIR. ON SEVERAL OCCASIONS LONG CONVERSATIONS WERE HEARD THROUGH THE REPEATER IN SPITE OF THE SHORT TIME-OUT, BETWEEN PARTIES WHO WERE WELL WITHIN EITHER SIMPLEX RANGE OR WITHIN RANGE OF ANOTHER REPEATER. THESE PEOPLE PROBABLY HAVE NO IDEA OF THE AMOUNT OF WORK INVOLVED BEHIND THE SCENES IN KEEPING THE REPEATER ON THE AIR. TO THOSE PEOPLE I WOULD LIKE TO SAY..... HOW WOULD YOU LIKE TO HAVE TO TURN OUT ON A FREEZING BLEAK WINTERS DAY IN GALE FORCE WINDS TO LUG SIX 144 AMP-HOUR TRUCK BATTERIES UP A STEEP ROCKY TRACK TO THE REPEATER AND BACK DOWN AGAIN WITH THE OLD BATTERIES FOR CHARGING? NO, ITS NOT MUCH FUN ESPECIALLY WHEN ITS TO PROVIDE A CONVENIENT MEANS OF COMMUNICATION BETWEEN TWO AMATEURS WHO ARE SNUG AND WARM IN THEIR SHACKS LIVING WITHIN A FEW BLOCKS OF EACH OTHER. THESE ARE THE ONES WHO WOULD NEVER VOLUNTEER TO DO A BATTERY CHANGE THEMSELVES... THATS FOR US REPEATER COMMITTEE MEMBERS TO DO.....

IF ANY OF THOSE PEOPLE WOULD LIKE TO PUT INTO PRACTICE THEIR MANY SUGGESTIONS AS TO HOW THINGS SHOULD BE DONE, THEN THEY ARE FREE TO NOMINATE FOR THE POSITION OF REPEATER CHAIRMAN AT THE NEXT AGM. THAT JOB IS LIKELY TO BE UP FOR GRABS NEXT YEAR IF WE HAVE TO RUN THE REPEATER ON EMERGENCY POWER AGAIN AND HAVE A REPEAT PERFORMANCE OF LAST MONTH'S EFFORT.

ALL RESTRICTIONS ARE LIFTED FROM USE OF THIS REPEATER, BUT PLEASE REMEMBER THE MEANING OF THE PITCH OF THE IDENT TONE.....

HIGH FOR FULL BATTERY
LOW FOR FLAT BATTERY

DUPLEXERS

----- STAN, VK2BKS HAS DONE A MAGNIFICENT JOB IN MACHINING THE PARTS WHICH WILL GO INTO MAKING THE DUPLEXERS FOR BOTH 2 METRE REPEATERS. STAN HAS PUT MUCH OF HIS OWN TIME INTO THE WORK WHICH IS NOW COMPLETED. ITS HARD TO DESCRIBE HOW MUCH DETAIL IS INVOLVED SO WE PLAN TO BRING THE CAVITY RESONATORS INTO THE NEXT MEETING FOR ALL TO SEE WHAT PROGRESS HAS BEEN MADE SO FAR.

THE DUPLEXER PROJECT IS AN EXAMPLE OF HOW PEOPLE WITH DIFFERENT SKILLS HAVE COME FORWARD AND HELPED BY DOING ONE PARTICULAR JOB. EACH. IT IS VERY MUCH A GROUP EFFORT, AND PROBABLY HAS INVOLVED MORE PEOPLE THAN ANY ONE OTHER SINGLE REPEATER PROJECT.

WE STILL NEED MORE BNC PLUGS AND SOCKETS. THANKS TO THOSE WHO HAVE DONATED SOME TO DATE.

GRAEME VK2CAG

Moonbounce Report - October 1984.

The W6PO type receiving preamplifier was replaced by one of G3WDG design, which uses an MGR1402 GASfet transistor and has a measured noise figure of 0.4dB at 1296MHZ, on 20/9. Sun noise was 16dB and ground noise was 4.3dB above cold sky with the dish pointed at 15 degrees towards the ground. It was not possible to check echoes on the day because the moon had set.

The annual ARRL EME contest is held this year on the weekends of 22nd-23rd Sept. and 20th-21st Oct.. It attracts operation by most of the EME stations on 2 metres, 70cm. and 23cm. and provides an opportunity to contact stations which may otherwise may not be on.

Operation by VK2AMW on 22/9 was prevented because I was involved in giving a talk on EME at the WIA Symposium in Sydney. We were operational for a period on 23/9. The moon was not visible and we did not hear any signals or echoes. The transmitter driver stage tube then developed an internal short circuit. VK2AMW is thus non operational on EME until a good quality replacement 2C39A/7289/3CX100A type tube can be located at the right price.

Calibration of the dish tracking computer is almost completed, following modification of interface circuits.

Satellite Jottings.

Oscar 10 continues to provide many contacts for those interested in satellite operation. Callsigns heard over the last few days include OH,DJ,UA,UB,JA,VS,FK,ZL,W,KH and VE. The Mode B transponder is now on for longer periods and provides some hours of operation on most days for approx. three weeks out of four.

Lyle VK2ALU.

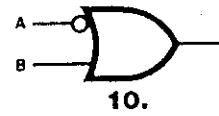
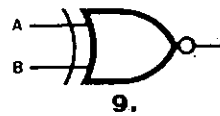
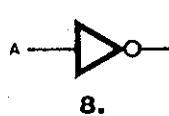
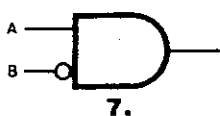
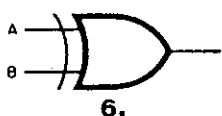
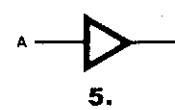
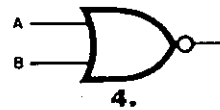
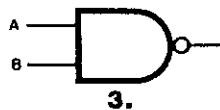
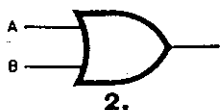
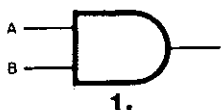
LEARNING QUIZZES

FOR ELECTRONICS

BY FREDRICK W. HUGHES

Digital Logic Quiz

Boolean expressions help to explain the operation of digital logic gates. Match each of the following logic symbols to its proper Boolean expression.



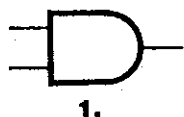
Choices: a. $A \cdot \bar{B}$ b. $A+B$ c. $A \cdot B$ d. \bar{A} e. $A+B$ f. $AB+\bar{A}B$ g. A h. $A+B$ i. $\bar{A}\bar{B}+\bar{A}B$ j. AB

Answers: 1. c, 2. b, 3. j, 4. h, 5. g, 6. i, 7. a, 8. d, 9. i, 10. e.

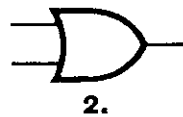
Digital Logic Quiz

Digital logic gates turn on with various input conditions. For the input pulses shown, select the proper output for each gate. Be sure to check the input to output time relationships.

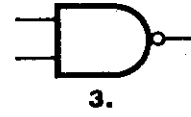
T ₀	T ₁	T ₂	T ₃	T ₄	T ₅



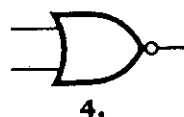
T ₀	T ₁	T ₂	T ₃	T ₄	T ₅



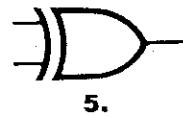
T ₀	T ₁	T ₂	T ₃	T ₄	T ₅



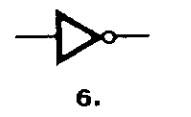
T ₀	T ₁	T ₂	T ₃	T ₄	T ₅



T ₀	T ₁	T ₂	T ₃	T ₄	T ₅



T ₀	T ₁	T ₂	T ₃	T ₄	T ₅



Choices:

T ₀	T ₁	T ₂	T ₃	T ₄	T ₅

a.

T ₀	T ₁	T ₂	T ₃	T ₄	T ₅

b.

T ₀	T ₁	T ₂	T ₃	T ₄	T ₅

c.

T ₀	T ₁	T ₂	T ₃	T ₄	T ₅

d.

T ₀	T ₁	T ₂	T ₃	T ₄	T ₅

e.

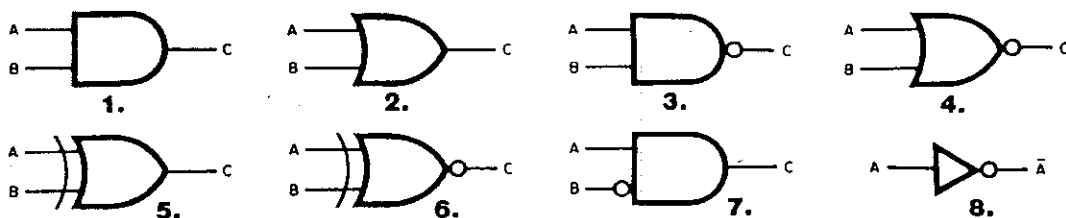
T ₀	T ₁	T ₂	T ₃	T ₄	T ₅

f.

Answers: 1. d (NAND gate, all inputs high to get a high output.) 2. c (OR gate, any input high to get a high output.) 3. e (NAND gate, any input low to get a high output.) 4. b (NOR gate, all inputs low to get a high output.) 5. f (Exclusive-OR gate, either input high, but not both, to get a high output.) 6. a (INVERTER, the output is the opposite of the input.)

Digital Logic Quiz

A truth table shows the resulting output condition of a logic gate for all possible input logic conditions. Match each logic gate with its proper truth table.



Choices:

A	B	C
0	0	1
0	1	1
1	0	1
1	1	0

a.

A	B	C
0	0	0
0	1	1
1	0	1
1	1	1

b.

A	B	C
0	0	1
0	1	0
1	0	0
1	1	0

c.

A	B	C
0	1	1
0	1	0
1	1	0
1	1	1

d.

A	B	C
0	0	0
0	1	0
1	0	0
1	1	1

e.

A	\bar{A}
0	1
1	0

f.

A	B	C
0	0	0
0	1	1
1	0	1
1	1	0

g.

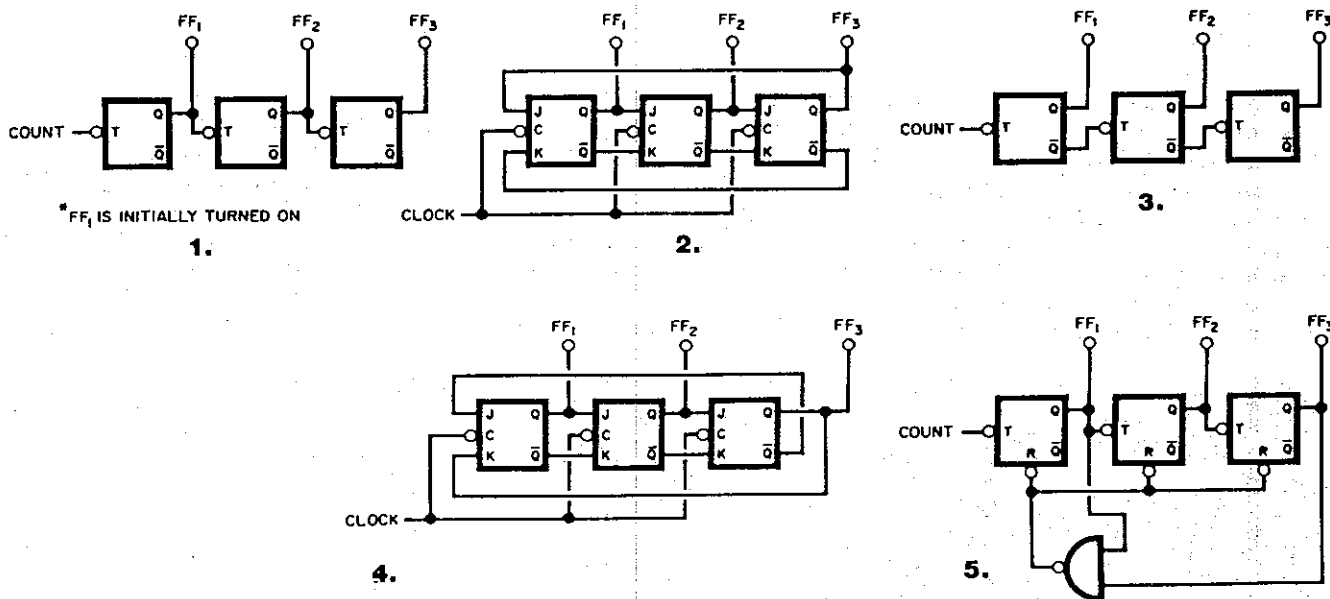
A	B	C
0	0	0
0	1	0
1	0	1
1	1	0

h.

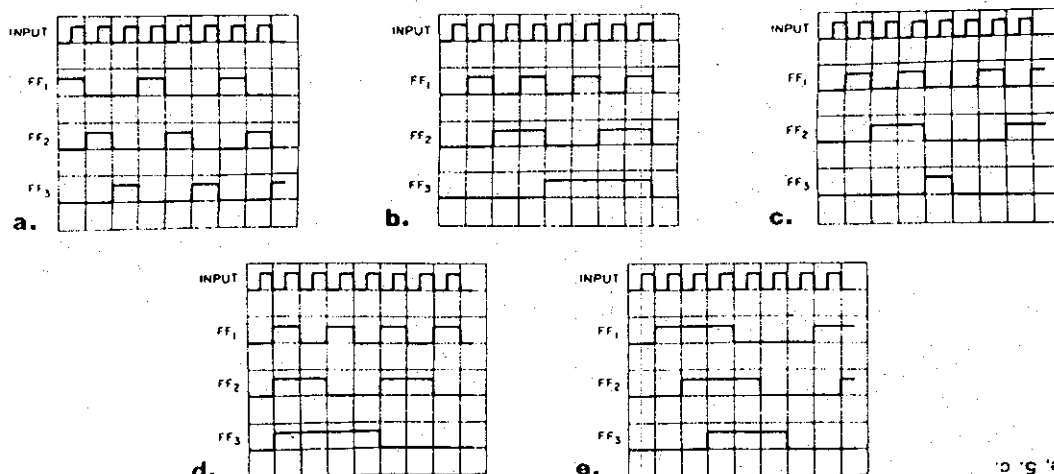
Answers: 1. e, 2. b, 3. a, 4. c, 5. g, 6. d, 7. h, 8. f.

Digital Counter Quiz

Match the correct digital counter to its proper output voltage waveform.



Choices:



Answers: 1. b, 2. a, 3. d, 4. e, 5. c.

Chuck Zappala WA7VZR
8051 NE. 143rd Street
Bothell WA 98011

The Simplex Autopatch

— a telephone interface for everyone's two-meter rig!

Several local hams have been talking about a different kind of VHF autopatch that uses one frequency. This discussion has been going on from time to time over the past few years. We have designed many paper models of such

a machine, with nothing more than a few beers as inspiration. But, in the August, 1978, issue of *73 Magazine*, there was a report of a machine built by John Walker WA6MHF in southern California. Well, needless to say, this sparked the

discussion again, which this time actually led to construction.

For those of you who don't know what a single-frequency autopatch machine is or how one basically works, read on. Since most readers know what a

traditional autopatch repeater is, let's start by explaining that it uses two frequencies (an input and an output), a duplexer (or similar device), and some control circuitry. Once the autopatch repeater is accessed, the transmitter is always transmitting and the receiver is always listening. Thus, two frequencies are used at all times.

Using this method generally requires a duplexer to provide rf isolation between the repeater's transmitter and receiver circuits, in order to use one antenna.

The control circuitry provides the means to access the phone line, limits the length of the call, and terminates the patch.

The simplex method uses a single frequency, does not need a duplexer (unless you are in a very high rf environment), and requires slightly different control circuitry. The receiver is always listening on the simplex channel. When a signal is received and the appropriate tone command is received from the user, both the ON DIGIT and COR LINE enable a circuit to connect

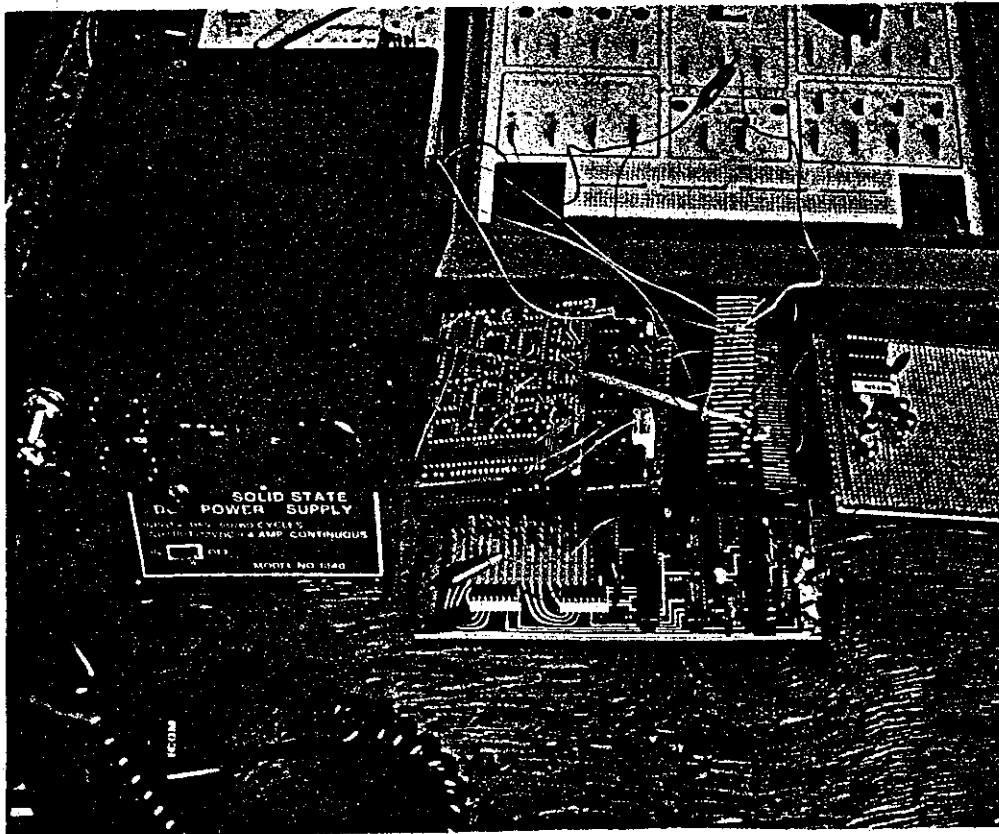


Fig. 1. Complete hardware for simplex autopatch.

the phone line to the receiver and transmitter. At the same time, the transmitter is keyed on for 1.3 seconds and then off (in the receive mode) for about 40 milliseconds. What the user hears is dial tone from the phone line that is interrupted by "clicks" or the receive window. The user then keys his transmitter, and in less than 1.3 seconds (the time until the next receive window), the patch receiver will detect his signal (COR LINE) and inhibit the transmitter. The patch receiver is now locked in, listening to the user. The user then transmits his touch-tone™ signals through the patch receiver to the phone line and on to the central office.

Local patch-control circuitry should check for local calling only and the length of the patch and dump the call if calling criteria are not met. Since this is not the purpose of this article, I will not go any further. When the user releases his transmitter button, the patch receiver responds by enabling the patch transmitter again in the same way as described previously. Thus the user can hear his call being processed (the called party's phone ringing and being answered). The user may talk to his party in a normal push-to-talk mode with the exception of the 1.3-second maximum delay and the "clicking."

Disconnecting the patch is simply a matter of the user keying his transmitter, pausing for the receive window, and signaling the disconnect code. The OFF DIGIT code also disables the patch transmitter from keying and locks the patch receiver in the receive mode.

The disadvantages to this method of autopatching are the "clicks" and the delay in speaking to your called party. The "clicks"

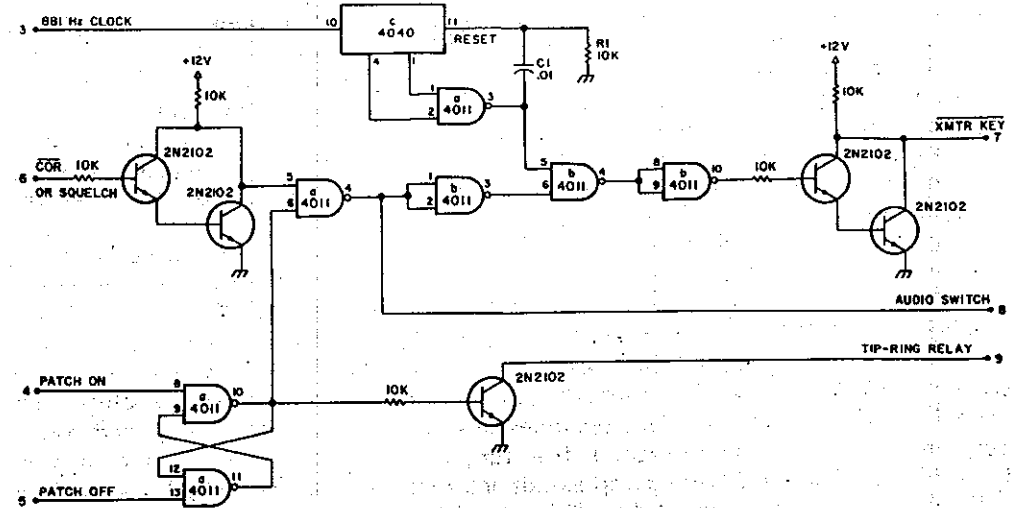


Fig. 2. Interface logic circuit.

are somewhat distracting to some and are quite tolerable by others. I found that with increasing use you can get used to the "clicking," and after experimentation, about 1.3 seconds was about the right speed to sample for a user's signal. Of course, you can set the speed to just about anything you feel is right, with-in reason. For example, trying to make the "click" shorter by narrowing the receive window less than 40 milliseconds depends on your transmitter-receiver switching time. Obviously, you should use a crystal-controlled receiver (synthesized receivers are much too slow, about 140 milliseconds). Also, the same applies for the transmitter as well. Another point is the method used to switch the antenna from receiver to transmitter. Relays are also much too slow because they add to the total switching transition. Rf detecting (diode switching) in the newer VHF radios works very well.

The advantages are cost, simplicity, portability, and frequency conservation. Since there are no duplexers or similar rf plumbing, you save about \$350 to \$400. You don't need an expensive VHF radio such as a Motorola Micor (which a

good repeater would use and costs over \$1000). I used an Icom IC-22A, which was purchased used for less than \$200. The modifications amounted to tapping the audio, the COR line, and the transmitter key. Later, I removed a 22-microfarad capacitor from the squelch dc amplifier to speed up the switching time. There are other modifications that could be made to improve the switching time, but I decided to study the present design before making any more changes. Since the VHF radio is small and can be run from a battery and there is no rf plumbing, the machine is very portable and has good emergency communications potential.

All you need is a phone line, a quarter-wave whip antenna, and a single channel assignment.

The photograph shows the second breadboard version of the machine. The first version was a real rat's nest. Come to think of it, the second version has just as many wires going in every direction, but it works quite well. Ken Koster WA7RYP is one of the locals who worked on this project with me. Ken was eager to supply some vital circuits as well as his experience to make this machine work. Ken loaned me his Teltone™ M-907 touch-tone decoder from his 450-MHz repeater. The decoder is about 4 inches long and 3 inches wide. It uses opera-

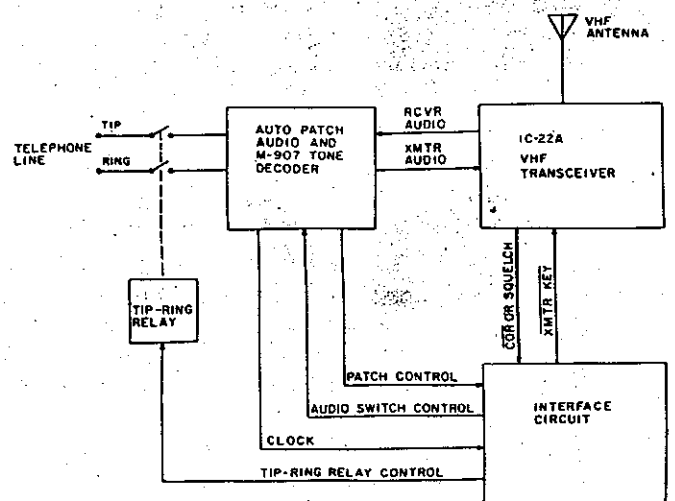


Fig. 3. Block diagram.

tional amplifiers for tone conditioning and a 40-pin LSI for tone verification, timing, digit output, and other functions. The decoder has an 881-Hz clock output which we used as a timebase to the control circuit for switching the transmitter and receiver. The unit costs about \$85 and it mounts on another one of Ken's boards piggy-back style. Ken's main board also contains the autopatch audio and telephone interface circuitry. This circuitry is shown in the photograph in front of the Heathkit Digital Designer which contains the interface and control logic for the IC-22A.

After a few hours of blitz building, we had the second version ready for on-the-air tests. Using a Wilson Mark IV with a tone pad, Ken punched up the access, got the dial tone, punched up the local number, and there she was...the good ol'

time lady. We dialed up a few ham friends for reports and made a few adjustments to the audio-levels at the same time.

Later on that evening, Ken and I were talking simplex on the machine's VHF channel. I got this wild idea to call our friend Dave Miller WB5WCC in New Mexico! Ken topped it by suggesting that he dial the number from his location about 5 miles away. So I disabled the long-distance dump circuit and Ken started to dial Dave. A few seconds later, Dave was talking to Ken about our effort. A few short years ago, Dave was a local ham who was participating in our efforts for a single-frequency machine. Actually, he was surprised we finally did it. He knows that we dream a lot and that our fantasies seldom turn into connected silicon chips. During this live-on-the-air conversation,

Dave was giving his call and identifying the machine. The call lasted just a few short minutes, but when it was over, several hams who were listening in started calling the DX in New Mexico!

The schematic of the interface logic is shown in Fig. 2. An 881-Hz clock signal from the M-907 is used to clock a CMOS 4040 (a divide-by-4096 chip). The 4040 is configured to provide a receive window pulse every 1.3 seconds. By referring to a data book, you can easily change the sample rate and receive window pulse width. The output of the 4040 is NANDed and used to reset itself (the 4040). The value of R1 and C1 are not very critical. The 4011 latch gates the output of the COR Darlingston transistor pair to allow the COR line to control the output of the 4040. The COR LINE and the 4011

latch control the transmitter keying line by using some 4011 NAND gates. A few transistors are used for the receiver COR and key line. The resistor values of these circuits are not very critical either. The transistor Darlingston circuits may require some changes for the specific radio they are to interface. Fig. 3 illustrates a block diagram of the machine. The audio circuits interface the radio to the phone line and the tone decoder.

Remember, this machine is not a repeater and cannot be used to contact another ham via a downlink radio path. The machine can only transmit what it hears from the phone line and send to the phone line what the patch receiver hears. I would be interested in hearing from anyone who knows about any similar efforts or any improvements. Please, SASE letters only. ■

Faom 73

SOCIETY DOCUMENTARY...RECORDED HISTORY.

The Video put together recently by Mike VK2DFK and the boys on the Moonbounce Project has been enjoyed by Amateurs far and wide. For the sake of posterity, the efforts of Lyle VK2ALU and his team are now a matter of record.

The tape, apart from local viewing, has been seen by Lyle's contact Peter, who at the time transmitted from Zimbabwe, but is now in South Africa. The reports from Peter and his associates in the Dark Continent have added to the justification of the initial video efforts.

Our second major production is now under way, in this instance under the direction of Cecil B. de Graeme VK2CAG. As a starting point, Graeme would like all the amateur archivists to check their cupboards for photographs of either of the two, 2m Repeater sites.

From the stories heard about erection techniques not normally found in the better Engineering Journals, there must be some interesting photographic evidence around.

Would anyone having such info, or knowing the whereabouts of any, please contact Graeme. There has been talk of acknowledgement in the credits..

Murray, VK2MY.

THINGS RESISTIVE OF COLOUR CODES.....

Here are three-

Better	Bye	Black		Black	0
Buy	Bye	Boy		Brown	1
Resistors	Rosie	Runs		Red	2
Or	Off	Over		Orange	3
Your	<u>OR</u> You	<u>OR</u> Your	FOR →	Yellow	4
Grid	Go	Garden		Green	5
Bias	Bathurst	Blue		Blue	6
Values	Via	Violets		Violet	7
Go	Great	Gone		Grey	8
West	Western	West		White	9

So make your choice of Mnemonic! If you don't like mnemonics then perhaps this observation may be helpful...

"The first two and last two colours are really not colours (rainbow) at all. They are graded black, brown, grey and white. What remains in between are the rainbow colours in order, that is, red, orange, yellow, green, blue and violet".

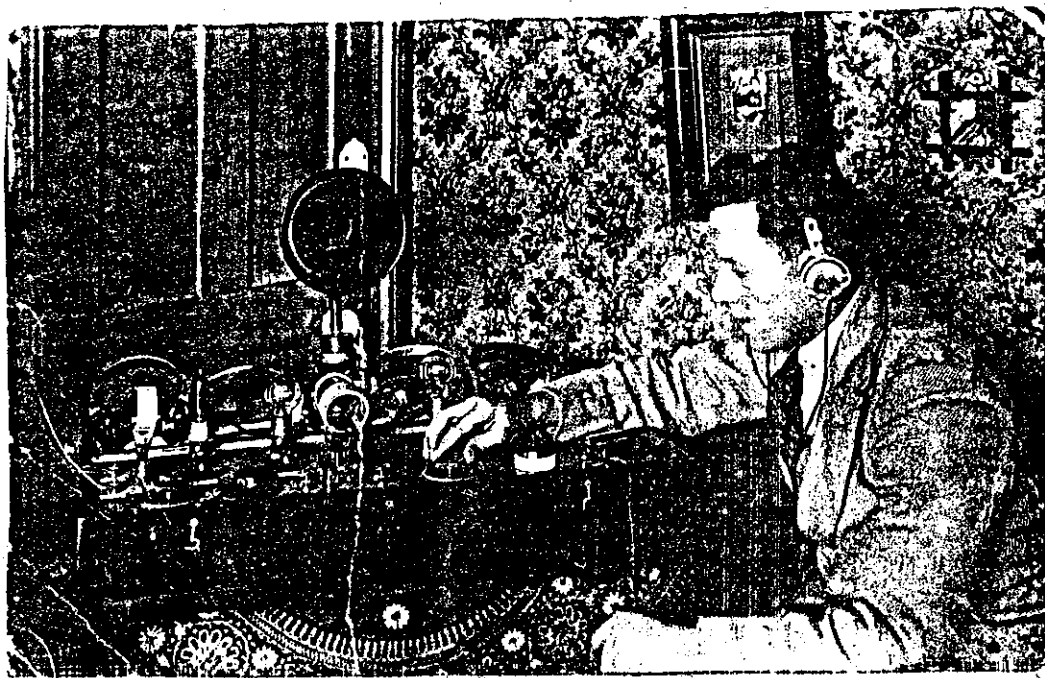
Which is OK if you're prepared to accept the idea of brown being associated with black, grey and white, and you don't quibble too much about indigo. (It is said that Newton put indigo in the list simply to make up the numbers of colours to a perfect or prime number - believe it if you will.)

from "Zero Beat"

OUT OF THE PAST

Below is a photograph lent to me by a workmate. It shows his father operating his homebrew "Home Entertainment Centre". Probably taken in the mid to late 20s.

De VK2DMR



THE ILLAWARRA AMATEUR RADIO SOCIETY - P.O. BOX 1838 WOLLONGONG 2500

Meetings: Second Tuesday of every month except January at 7.30 p.m. in the S.E.S. Headquarters, Montague Street, North Wollongong. Committee Meeting - 3rd Tuesday of each month.

Repeaters: VK2RAW - 6850 VHF Mount Murray. VK2RIL - 7275 VHF Sublime Point.

VK2RUW - 8225 UHF Hill 60 Port Kembla. VK2RIL - 8725 UHF Sublime Point.

Broadcasts: On Sunday night prior to Club Meeting - 7.00 p.m. - RTTY on 6850 and 7275 VHF

Repeaters; 7.15 p.m., Voice on 6850 VHF, 7275 VHF and by relay on 3.562 Mhz. Call backs after the WIA relay at 7.30 p.m.

W. I. A. Relay: On 6850 VHF at 11.00 a.m. and 7.30 p.m. weekly on Sunday.

Club Nets: 3562 MHZ SSB on Sunday at 8.00 p.m. and slow morse net on 28.440 Mhz on Tuesday at 8.00 p.m.

Newsletter: "The Propogator", published monthly to reach financial members in week prior to meeting. All articles, ads etc. to the editor, Dave Myers VK2DFL at 30 Highlands Pde. Bulli 2516. Telephone 84.9404. Copy deadline 3rd Tuesday each month.

Membership: The Secretary, I.A.R.S. P.O. Box 1838, Wollongong 2500. Full membership is \$10.00 per annum; students and pensioner concessional members \$5.00 per annum.

Awards: The award of the I.A.R.S. 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 or contact with the Club station VK2AMW is sufficient in itself for the award.

Band details - time, day, date, frequency, station worked + \$2.00 or 4 I.R.C.'s to Award Manager, I.A.R.S., P. O. Box 1838, Wollongong 2500. No QSL cards required.

Store: The Club store operates at each Club meeting.

Committee: President - Dave Myers VK2DFL, 30 Highlands Pde., Bulli.

Vice President - Keith Curle VK2OB, 24 Beach Drive, Woonona.

Secretary - Murray McConnell VK2MY, 62 Ramah Avenue, Mt. Pleasant.

Treasurers - Geoff Cuthbert VK2ZHU, 2 Nioka Avenue, Keiraville.

- Andrew McEwan VK2XGC, 7 Nioka Avenue; Keiraville.

General Committee: Mike Keech VK2DFK, Ian Callcott VK2EXN, Ray Ball VK2XCC, Morry Van De Vorstenbosch VK2EMV, Jim Mead VK2EJM, Gerhard Mueller VK2XGA, Jim Hayes VK2KJJ.

Repeater Chairman: Graeme Dowse VK2CAG.

Repeater Committee: Mike Keech VK2DFK, Morry Van De Vorstenbosch VK2EMV, Ian Callcott VK2EXN, Dave Colless VK2EZY, Fred Zickar VK2YSB.

EME Co-ordinator: Lyle Patison VK2ALU.

Broadcast Officer: Dave Colless VK2EZY.

QSL's IN: Mike Keech VK2DFK and OUT: Ian Callcott VK2EXN.

Propagator Editor & Staff: Dave Myers, Editor VK2DFL, Ken Frost VK2DOI, Cartoonist Brian Wade VK2AXI.

Store: Ray Ball VK2PHD/XCC

Publicity Officer: Nora Fisher, 17 Elizabeth Street, Mangerton. 2500.

Awards Manager: Jim Hayes VK2KJJ.

LifeMembers: Graeme Dowse VK2CAG, Keith Curle VK2OB

I'll
Gone over to Dick Smith - be back
at 4.00pm

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