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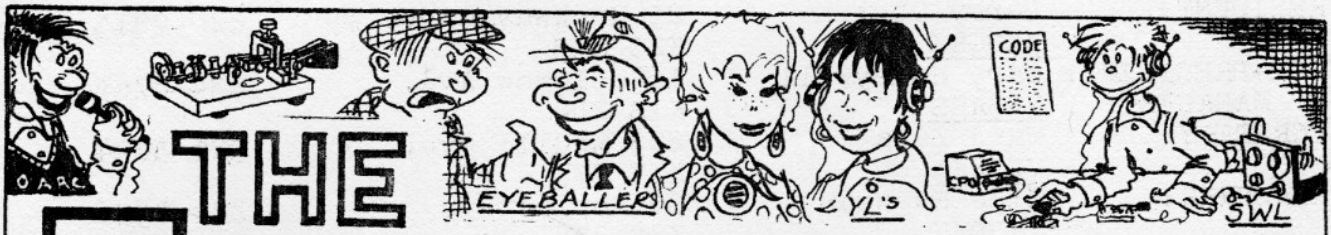

THE GROUNDWAVE

THE OFFICIAL BULLETIN OF THE OTTAWA AMATEUR RADIO CLUB
P. O. BOX 8873, OTTAWA, ONT. K1G3J2

THE OTTAWA AMATEUR RADIO CLUB, P.O.BOX 8873, OTTAWA, ONTARIO GW ~~MAR~~ APR 74 1

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add ↑

LEAVE THIS SPACE

A word from the new Editors:-This issue of the Groundwave is the result of the joint efforts of the new editors, ably assisted by Dave Parks, VE3GSA, the retiring editor, and Gord Grant VE3DY, a former editor of ~~long~~ standing. The new editors approach the task with some trepidation and you will doubtless have to overlook such unforgiveable sins as split infinitives, improper tenses, atrocious spelling and rotten punctuation. It is your bulletin so we ask your co-operation and support by submitting copy about your favourite facets of the art; anything you think would be of interest to the club members. If you are chary of writing your own stuff, just give us a dingle on the Ameche and give us all the details and we will tangle it together for you, so long as you don't mind the insertion of our very own brand of corn. No extra charge! Your comments, suggestions, and brickbats are invited! We extend to Dave VE3 GSA thanks from all the members for a fine job of editing lo these many months.

As this is written, the Marathon Ski Tour is in full swing. We hope to have a detailed report for you in the next issue.

MINUTES OF THE MEETING - FEBRUARY, 1974

The regular monthly meeting of the OARC was opened by President Larry Obrien at 2010 on Feb. 6 at NRC. He extended a welcome to the visitors VE3's DPX, FYW, EKX, and GEP. He drew the members; attention to the minutes of the last meeting. VE3HAT made a motion they be accepted; seconded by VE3CNJ; CARRIED.

Old business began with a report on the auditing of the Treasurers books by VE3HAT. We have cash of $2225.96 and equipment worth $586.91. Last year, owing to an extension of 4 months to the club year, we had a deficit of $40.43 which was covered by capital.

VE3BNO reported that the Marathon Ski Tour is well in hand but a few more bodies would be welcome. A base station for a Sparks Street location is needed (a yagi also). This is needed for Fri. night 5 to 11 local time.

The president presented plaques on behalf of the club to the outgoing executive members. All of those present thanked him.

VE3DEP reported for the membership committee. There are 195 regular members and 51 associates. He also thanked VE3CVK and VE3AMK for publishing the membership directory and designing the cover.

VE3CEZ reported for the repeater committee. He said we will have an answer on possible frequency changes by next Wed. The new equipment (solid-state) is ready when the weather permits installation. The old equipment will be used as standby hopefully eliminating trips up the hill in the winter.

The President announced that VE3GFR has volunteered to become program director and VE3UD will try to promote more HF activity within the club.

A discussion of the future of the Groundwave was held in view of the high turnover of staff. Most people felt the GW was a useful paper and the discussion yielded two people willing to take over as co-editors. Cheers to VE3DQ and VE3HAT.

A chairman is also needed for the beginners classes in the fall. This is our source of new members and amateurs so lets see some action.

VE3CDC has more of the 220 MHz gear available at a good price, lets get busy and use that band.

The program was presented by VE3BBM and was a most interesting talk and demonstration on computer terminals both portable and non-portable.

The meeting adjourned on a motion by VE3BVH, seconded by VE3ARJ at 2120. Coffee and ragchew followed.

Secretary,
Marj Zuba VE3HAL

MARCH MEETING

TIME AND PLACE: Wednesday, March 6, 8 p.m.
National Research Council, Sussex Drive

PROGRAM: A talk by Brian Brooks, President of the Ottawa Valley General Radio Service Club on GRS Activities, Programs, and Objectives.

APRIL GROUNDWAVE: The deadline for submission of articles will be: Tuesday, March 19th

CU at the meeting.

Program Announcement

While you are mulling over the above, you might take a gander at the CARF News Service bulletin, concerning yet another proposed raid on Amateur frequencies, that appears below.

OTTAWA, Feb. 4 (CARF News Service) Here is the text of the letter sent to R.B. Hoodspith, Director General of Telecommunications Services, DOC, by the Canadian Amateur Radio Federation:

"The Canadian Amateur Radio Federation, representing nine provincial Amateur organizations and, in this matter, we are quite sure, by Radio Amateurs du Quebec Inc., is seriously concerned about the recent proposal made by the Federal Communications Commission of the United States. I refer to FCC Docket 19880 a proposal of rule-making to allot a segment of the 420-450 MHz Amateur band for Emergency Medical Service and deny this portion to the operations of the U.S. Amateur Radio Service.

The Amateurs of Canada are concerned on two counts. First, the effect on Canadian Amateur operation in areas bordering the U.S.A. Secondly, the possibility that the Department may, at some future time, follow the U.S. lead in this matter.

Enclosed is the copy for an article to appear in the February issue of The Canadian Amateur, the publication of the national Federation.

The Federation has been informed that a Medical Services system operating in Washington, D.C., using an ERP of 2500 watts but not on U.S. Amateur radio frequencies, is causing an interference problem to mobile telephone users in that area. It is estimated that operation of this type and power on Canadian Amateur frequencies in border areas will have a serious effect on Canadian operation within the range of the system.

Conversely, Canadian Amateur operation in border areas will also cause interference to the Medical service proposed.

The national Federation, therefore, requests that the Department make representation to the FCC noting the problems that will arise in border areas if the proposals outlined in Docket 19880 are implemented. The Federation would also appreciate assurance that, as per international regulations, a minimum of interference is caused to Canadian operations."

Sincerely
(signed) Arthur E. Blick,
VE3AHU, Pres.

TCA FEB ISSUE

U.S. EMERGENCY MEDICAL SERVICE COMMUNICATIONS WANT PART OF 450 MHz BAND

A recent editorial in the Toronto FM bulletin commented on the apathy of Amateurs, especially VHF enthusiasts, to the threatened loss of some of our frequencies. This is very real...already the FCC is considering apportioning a segment (224-225 MHz) of the 220 band to the Citizens Radio Service in the United States. (see November 1973 issue of the Canadian Amateur).

The FCC have now published Docket 19880 proposing a further allocation of our frequencies to other services. This time it is 450 MHz with the Emergency Medical Service seeking frequencies in that portion of the 450 band which the Texas Frequency Plan has set aside for two metre Repeater Command Control function.

This new service is telemetry between public service ambulances and hospitals and will result in a shifting to lower channels for most repeater command functions already established on 450 MHz. Secondly, this intrusion into our 75 cm band may be the thin edge of the wedge to usurp more and more of the frequency spectrum assigned, by international agreement, to the Amateur Experimental Service.

The possibility of spurious, harmonic and intermodulation interference, which we attempt to confine within our own bands cannot be overlooked if this proposed intrusion into the Amateur spectrum becomes a reality.

In Canada, frequencies have been requested for use in the Emergency Medical Service, but in the 450 - 470 MHz band. It does seem inconceivable that this service can be carried out satisfactorily in the commercially assigned UHF band in Canada but cannot be accommodated in the U.S. without abrogating internatinnal agreements.

The Canadian Amateur Radio Federation seeks our support through its members provincial societies to provide data on why we should not give up our frequencies. Yourco-operation in making your views known to the provincial organizations or to CARF will ensure a positive representation to the Department of Communications on behalf of the Amateurs of Canada.

We are indeed fortunate to have such agencies acting as watchdog over our privileges.

VE3BBW George Davis
Chairman
RSO VHF Committee

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A NEW SERIES OF ARTICLES

Most hams are catching on to the NPN's and PNP's of transistors, but if you are not in the electronics field, you may feel that you are missing some basic understanding of what makes transistors work. So, over the next few months, the Groundwave will run a column called, How Does a Transistor Transist? We will try to answer your questions and develop the transistor at the same time. In other words, we will answer the easy questions first.

Here is a sample Question and Answer:

QUESTION: Why do you use the term semiconductor to describe a crystal of germanium or silicon?

ANSWER: A crystal refers to the geometric structure that results from a large number of Si and Ge atoms combining to form a solid piece of material. The material displays interesting thermal characteristics.
At very low temperatures, the crystal has a small number of free electrons and thus it looks like an insulator.
At high temperatures, the material finds that it has so many electrons that will flow if you place a small potential difference across it, that you must call it a conductor.
This, by the way, proves that crystals act quite differently when they get hot too.
At temperatures around what we consider normal, Si and Ge are just about in between an insulator and a conductor.
It is an "almost" or "semiconductor"!
Well, that's just about why you call a family of materials semiconductors.

Later on, we will try to explain what you must do to pure or intrinsic semiconductors to make them useful in making them NPN's, PNP's, IC's, and rice burners.

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GLEANED FROM THE MEMBERSHIP FORMS

The membership forms for 1974 have produced a number of comments with regard to what the club should do in 1974. Here are some of the comments

- Involve itself in P.R. work to advance the hobby among the young;
- Set up a booth or min-exhibit to publicize Amateur Radio; Note - What about at a shopping center for a week.
- More field trips - visit NRC or DOT stations;
- Have a mobile rally;
- Have a "Hints & Kinks" in the Groundwave
- More down to earth projects e.g. PWR/SWR meters.
- Have a club crest designed so as not to conflict with local GRS club;
- Distinctive QSL cards with club crest to be sold at the cost to club members, possibly in lots of 100. Possibly the Ottawa Tourist Bureau or Regional Council could be persuaded to assist;
- Sponsor a QRP field day or a field day in October;
- More social activities e.g. dances, hamfests;
- Sponsor seminars to sit around and discuss specific subjects with a group leader - such as Good operating practices (Repeater), linear amplifiers, pre-amps, antennae, feed lines, matching, etc., VFO's Freq. measurement, SWR, voltage, current, etc. satellite operations, traffic handling & synthesizers;
- Visits to electronics installations in Ottawa area;
- Lectures and demonstrations of trouble-shooting rigs;
- Description of glitches and gremlins (Murphy's Law).

As you can see, the names of the comment producers are not mentioned to protect the innocent. As you can see, the comments are very interesting and I'm sure the Executive would certainly appreciate anybody who would wish to put some of these comments into action. So what say fellows and gals?

Vic VE3DEP

AMATEUR RADIO DOES IT AGAIN - A Job Well Done!

Members of five Amateur Radio clubs in this area combined their rigs and efforts to provide communications for the eastern end of the 22nd Annual Canadian Winter Rally sponsored by the British Empire Motor Club of Toronto. The rally cars left Toronto at 6 P.M. Friday, Feb. 8th on the first leg ending in Ottawa. The second or return leg was commenced at Ottawa at 6 P.M., Saturday, Feb. 9th ending at Toronto on Sunday. Of a field of 97 cars, 23 made it back to Toronto. The winner was Jean-Paul Perusse of Longueil in a front-wheel-drive Fiat, followed by Walter Boyce and Doug Woods of Ottawa in a Toyota, followed by Andrew Cowan of Scotland in a Dodge Colt.

Most of the communications was on VHF through the area repeaters, and simplex, using a large variety of mobile and fixed stations; however, 75 meters was used for communication between Control Stations at each end of the route and at "result control statinns." The complete radio network was divided into three areas, namely; Toronto, Belleville-Kingston and Ottawa. Bill Marsh, VE3SB acted as co-ordinator for the Ottawa area. Members of the Ottawa Amateur Radio Club, the Ottawa Valley Mobile Radio Club, inc., the Rideau Valley Radio Club, the Champlain ARC (STP Group), and the Greater Golbourne VHF Society took part in the far-flung effort in the Ottawa Area.

Harrowing tales have drifted back on the rigors of the operation, but misfortunes such as frostbite, mental and physical exhaustion, sleeplessness, raw throats, ans wifely alienation were scoffed at by the gallant crew. In some cases it was necessary for an operator to arise at 2 A.M. in order to be on station in some remote location by 4 A.M. Some operators had two hours sleep between shifts!

The entire route covered 1100 miles of the most rugged and inaccessable roads the rally people could find. Over some sections of road that officials considered a Sunday driver would "win" a wooden kimono if he exceeded 15 MPH, the rallyists rammed through at 45 MPH! A list of the "selective stages" check points will give you some idea of the terrain over which the rally was run; Middleville, Tatlock, White Mtn," Gordon Rapids, Poland, Snow Road, Oso, Clarendon, Plevna and Fernleigh.

The Ottawa rally HQ was at Holiday Inn, there was a relay station at Elphin, and a "results control station" at the intersection of Hwys. 7 and 38. The Kingston-Belleville group co-ordinated by Howard VE3RL using repeater VE3KBR and direct channels looked after check points south of Hwy 7 on the return leg of the course.

Our hats are off to the following operators who took part: VE2SD and VE3's DV, GJX, BGG, UE, GQW, GNW, KE, CPG, LJ, ENH, ACM, GYZ, DEP, BR, AVD, BMC, AAC, AMN, CGD, GCZ, AJN and SB. Our apologies if we inadvertently missed anyone.

Coverage of the Radio Amateur aspect of the event in the news media was spotty, but it was stated in several reports that the rally officials were delighted with the communications provided by "volunteer ham radio operators." The charting of the progress of competitors and the monitoring of elapsed times was so well handled by our "ham operators" that the organizers stated they will probably use the ham data for actual scoring in future events.

Many thanks for a job well done!

Bill, VE3SB

WHAT HAVE THINGS COME TO?

Do you ever get the feeling as you wait impatiently in your favourite (?) electronics store that you have patronized for years, that you are the man that isn't there? You stand there amidst the brisk exchange of commerce, while GRSs and Hi-Fi buffs, paying outrageous prices, without a whimper, for gadgets you could tangle together for a few bucks, get served with alacrity and expansive smiles, while you wait--and wait--and wait!

Pete, behind the counter there, used to know you almost as well as he knows his own brother, but his gaze slides past you without a flicker of recognition as he offers to serve a scrofulous lout in jackboots, leather jacket, and studded belt who entered the store fifteen minutes after you did. You swallow your gorge and begin to voice your resentful protest, when a callow youth, who obviously doesn't know a transistor from a button or a resistor from a pencil stub, asks you for your order. Slightly mollified, you mutter something biting about the service, and give your order for the few measley parts you just gotta have to finish that project. Your clerk, looking rather perplexed, disappears amongst the shelves. He is gone for ages, but returns eventually and tosses the parts on the counter. You notice at once that the parts are the wrong values and tolerances. With some frustration, you explain the colour codes of the values you require, write them on a scrap of paper, and he disappears again. By the time you have decided that he has probably gone for lunch and you might just as well throw in the sponge, he returns with a triumphant smile on his face. You pay the startling prices and get out of there with the vow that you will <u>never</u> darken <u>that</u> door again!

You fume all the way home, and your duodenum starts to throb. You remember how lavishly you once were welcomed in that establishment, for there was a time when they, teetering on the brink of bankruptcy, were probably saved from receivership by the loyal custom of numerous hams like yourself.

Things started to change for the worse about the time of the advent of GRS. I remember entering a radio store about that time that had just been taken over by new management. It had previously been a flourishing business and hams had always been treated with respect there. I asked the new owner if he had any co-ax. He said he had, so I asked for 40 feet.

"You got to be a ham!" he retorted, fixing me with a venomous scowl. "I got a whole spool of it in back, but I wouldn't walk all the way back there for anything less than 150 feet! You confounded hams are the worst scroungers on God's green earth! You come in here and expect me to hunt all through the shelves for forty cents worth of

condensers and fifty cents worth of resistors and..."

I didn't hear him finish, for I turned on my heel and vamoosed in the direction of another radio outlet. Deservedly I think, my reluctant salesman went bust a few months later.

Things have altered pretty sadly south of the border, too. I used to regularly receive radio catalogues from the big outfits down there, but not any more! I have sent requests to Newark, Lafayette and Olsen until I have just about run out of postage. Olsen came back with a bargain flyer, but no catalogue. From Newark and Lafayette great gobs of silence. I need a number of panel meters in various ranges that I know bro of8cm has, but I will use neon bulbs for tuning indicators 'til hell freezes over before I will spend a nickel with an outfit that won't send me a catalogue!

Occasionally though, you run across a good outfit. One time I was in Syracuse and I stumbled on a new radio store, Gordon Electronics on Erie Blvd. It was obvious from the start that they knew from nothin' about discrete radio parts. They had a box half-full of good filter condensers marked at 25 cents each. I picked up 8 of the values I wanted and carried them to the counter.

"We don't know what they are," said the clerk, "But they're sure going like hot cakes!"

He made out the bill, "8 Globs @ 25¢ ea.--$2.00" I keep the bill around for laughs. On an off chance, I asked him if he had any meters. He handed me a Calrad catalogue and asked me to underline the catalogue numbers of the meters I wanted. He was gone half an hour, but he came back with the meters.!

I got some transistors at very low prices at a place called Eastern Semi-conductors down there. They were 'way back behind Hancock Airport on East Malloy Road, in a ramshackle building, something akin to our very own "temporary" buildings that grace the environs of our fair city. The place was crammed with small electronics companies, but I didn't have time to investigate further. George, VE3EQH, tells me that a good source of "chips" is Electro-sonic in Toronto; also, he says that a good place to buy parts like capacitors and resistors at bargain prices is Addison in Montreal. Resistors at 3¢ and up, yet! If you need bottles of ancient vintage like 56's, 58's, 6AG7's, 6K8's etc, Gerry Pharand, GRS owner of Anchor Enterprises on Besserer St., has boxes of them at 50¢ each. (Incidentally, he says he has a burning ambition to become a radio amateur.) If it's antennas you're needin', Gord, VE3DY is a good source of manufactured skyhooks. If you want used gear, give a listen to VE3GX's Swap Net on the PHN and CCN.. Stan, VE3DQ

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NEWS RELEASES

Larry Kayser VE3QB who is doing very commendable work in connection with the OSCAR Satellite program, has received the 1973 ARRL Technical Merit Award in recognition of his fine work.

Noel Eaton VE3CJ for fourteen years our Canadian Division Director of ARRL has been elected President of the International Amateur Radio Union.

George Spencer VE2MS will carry put the duties of Canadian Division Director of ARRL for the remainder of the term.

R.D. (Bud) Hoodspith, former director of the DOC Ontario Regional Office, has been appointed Director-General od Telecommunications Services at DOC HQ in Ottawa. In this position, he is responsible for the management of the radio frequency spectrum in Canada, entailing the administration and enforcement of the Radio Act, including the Amateur regulations. He is a VE5 native of Carnduff, Sask. Before joining DOC, his business experience included positions with NRC, DRB and MIT's research agency and as general manager and vice-president of marketing fot ITT in Canada. He has had a long military communications career from 1935 to 1957.

W.J. (Bill) Wilson VE3NR, of thismclub, has left as Director-General of the Telecommunications Services Branch to form a unit of the DOC National Telecommunications Branch, which will develop policy for spectrum management. Bill began his engineering career with Northern Electric in Montreal, then joined the Marine Radio Service of DOT in 1947. He has represented Canada at many International radio conferences and was involved in shaping Canadian policy in the International Telecommunications Union. With the establishment of DOC in 1969, he became Director of the Telecommunications Services Branch, where his interest in Amateur matters were much appreciated by the fraternity.

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REPEATER NEWS

The date for the exchange of input frequencies between VE2CRA and VE3STP is May 4th, 1974. VE3STP input frequency will become 146.460 Mhz and VE2CRA input frequency will become 146.340 Mhz. Output freqencies will remain the same as at present.

With the adoption of 34/94 and 16/76 as standard repeater channels to conform to the new grid, the two old simplex, calling, ragchew, channels --146.94 and 146.76 Mhz--are no longer available in many areas. By general agreement, 146.52 Mhz has been adopted for this use. Many of the 2M FM sets now sold come with 52/52 crystals installed instead of 94/94.

The Canadian Repeater Advisory Group Bulletin No. 2, February, 1974 reports that the Eastern Ontario, St. Lawrence Valley, and Ottawa Valley will soon be covered by a council being organized by John Clark VE3KE, Mountain, Ont. It will probably cover Massena, Potsdam, Watertown (N.Y.) and Kingston, Cornwall, Montreal, Ottawa, Pembroke, and Chalk River areas.

VE3RPT, Toronto (46/06) has discontinued its 94 output and Belleville and Kingston have switched from 46/94 and 34/06 to the standard 34/94 and 46/06 frequencies. Toronto has adopted 52/52 for simplex.

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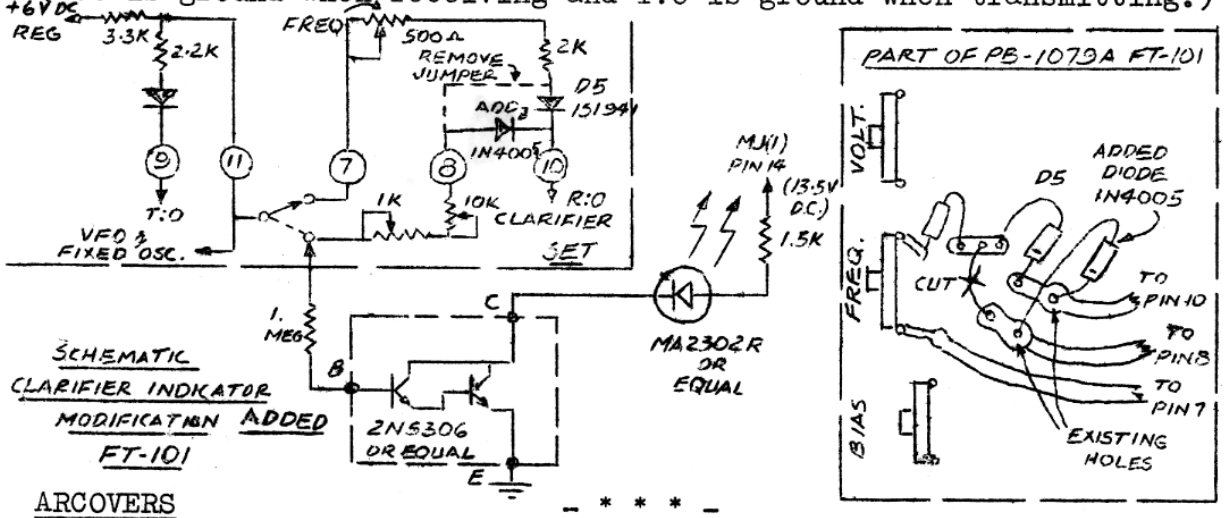
A SOLID STATE SIGNALING SYSTEM (On/Off Indicator!)
by Ken Srivens VE3LJ

The circuit described was developed as a clarifier (R.I.T.) off/on indicator for the "Before FT-101-B" vintage of the Yaesu FT-101 transceiver. It could prove useful as a means of adding an on/off indicator

to other circuits, where the circuit loading of an incandescent lamp or even a L.E.D. (light emitting diode) would upset the calibration or linearity of an existing function.
Of course, the simple straightforward approach would be to use unused contacts on the switch associated with the function, or to change the switch to provide an isolated indicator circuit - but this is not always possible or practical.
In the circuit shown, the voltage at the "On" terminal of the clarifier varies from 1.4 V to 4.7 V DC, approx.,with the switch in the "On" position and the current loading of the Darlington amplifier is approx. 4 uA maximum. With the collector R = 1.5 K and a supply of 13.5 V DC the L.E.D. current is approx 8 MA.
The base and collector resistors would have to be chosen to suit drive and supply voltages available in other applications.
A schematic diagram, showing the existing and added circuit of the FT-101 clarifier is shown as well as a pictorial drawing showing the mounting of an additional diode to the regulator board. Although the 0.5 V DC which is across the diode, with the clarifier "off", does not turn the indicator on, the added diode is necessary to prevent the indicator being turned on when the T/R relay is in the transmit position. (R:0 is ground when receiving and T:0 is ground when transmitting.)



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ARCOVERS

Henry VE3BR has a new Kenwood TS520 SSB Xcvr-...- Gord VE3DY is installing a trailer hitch on his bucket-of-bolts preparing for a trip to Fla. When this issue hits your mailbox, he will be down there, slapping on the sunburn lotion-...-Cary VE3ARS es Earl VE3EPP are also Fla. bound -...-Bud VE3UD taught code 'way back in '27;also operated with Ontario Forestry in the muskeg country 'way back when-...-Art VE3ZS, Mac VE3AVM es Stan VE3DQ are ex-marine brass pounders. Any others in the club?-...-ARS VE3JW is now in operation at the Museum of Science and Technology. It is equipped with an HW101 Xcvr, an SB200 linear, an SB610 monitor scope, HDP21A desk mic., HF dipoles and a Mosley MP33 tri-band rotary beam. The vintage radio exhibit at the Museum is also very interesting, showing mechanical scanner type TV rcvr, Vintage B.C. radios, es an early Amateur station-...-the Pot Lid Net is going great guns with a record call-in of 14 stns on Feb.10th-...-Mike VE3DNJ is a flyboy with an interest in a Cessna-...-Bob VE3CDG is also a pilot. He is heard often on the repeater on his forays into the country in connx with the "Four for the Road" TV series. He is doing a lot of barbershop quartetting these days-...-the Capital City Net had a call-in of 46 stns on Feb.19th .-.-.
That's all the rang-dang-doo for this time. Have a good month,
73 from VE3GUW, VE3HAT, VE3DQ

...-.-