



MAY VOL.11 No.5

KR4XR  
WR4AKV  
WB4YRW/R  
WA4KLW/R



## HONK $\equiv$ IF YOU HATE RADAR

SETTLE BACK FOR A FEW GRINS...chuckles and surprises as you read the following article ... an exclusive.. from the COLLECTOR AND EMITTER published monthly by the Central Oklahoma Radio Amateurs. The article, written by Michael Salem/N5MS is entitled..

### STREET LEGAL RADAR JAMMER OR "TOOTING YOUR OWN HORN" TO SAVE A TICKET

The story now can be told. Based upon some recent research that K5JB and I have conducted over the last several months, it appears that Police Radar may have sounded its last hurrah. Actually, the uses and abuses of police radar are steadily being documented and a recent report issued by the National Bureau of Standards has indicated that certain manufactured radar devices now in use by Police and Highway Patrols across the country are subject to a variety of unreliable operations.

.....The story can now be told in this exclusive C & E article about a simple yet effective technique for confusing the be-jabbers out of those little black boxes that sit atop the policeman's dash and earns the county considerable revenue many times in excess of the cost of the radar...

Most, if not all radars transmit unmodulated carriers. They operate on the principle of the Doppler Shift which simply stated says that if you shoot a radio signal in to the air and if it bounces off a moving object, when it comes back to you, its frequency will have been changed by an amount proportional to the speed of the moving object. The police radar works by mixing a little of the transmitted signal with the returning signal and counting the difference signal that results. This difference signal is an audio signal. After the two signals are processed, you need nothing more complicated than normal audio amplifiers and counters to display the speed result.

For those of you who want to skip the fine print, take my word that the frequency of the return signal is shifted 31.4 hertz for each mile per hour that the target vehicle is traveling. This means that 20mph

would correspond to 628 hertz, 1727 hertz is 55 mph and etc. The frequency is counted or displayed either on a meter or digital readout. Like I said previously, most of the electronics is dedicated to counting these return audio signals. It is possible that you could send a trooper with perfect musical pitch out with just a small microwave source and return receiver, and of course, his ticket book and cherry lights. (Now let me see, a middle C would be 30mph? Or is that Bb??)

Now that we have reestablished the scientific principals for the gentle reader, what can disturb those readings?? Well, actually, just about anything. I found I could get close to the microwave source (the radar head) and just whistle and see the meter move off scale. It was actually possible to whistle a particular speed (Don't trust a radar patrolman who whistles) Jangling keys in front of the transceiver would similarly take the readings to never-never land. Street lights, the cars air-conditioner, and yes, Handie Talkies would all drive the radar batty just like you would expect for any audio device.

Hmmm. How could I shift the radar signal and fool it? Well, I thought of a few ideas, but serendipity being what it usually is, I discovered a solution one day when WB5FZD drove up and I was outside playing with my radar speed detector. I pointed the Gunn source at John as he drove up in his small foreign car and watched his speed drop. He responded to this bombardment of radiation by giving me a couple of long toots from his cheap foreign automobile horn. What?? The speed meter jumped up to 25 mph. I asked him to do it again further back. Humm. Still read 25mph. I drug out a small audio amplifier and the frequency counter and measured the frequency of the horn and found it to be 785 hertz. Well, thats exactly right. I then noticed that John's horn sounded differently from pervious times I had heard it. He indicated that he had disconnected one of the horns and was producing a single tone much like a taxi cab horn.....

I sent John down the road and had him whiz by me at 40mph honking his horn. The radar unit still read 25mph. Had we stumbled on to something? Could this be one of the greatest discoveries since deep frozed Nobel Prize winners? A few more experiments confirmed the previous results. We tested a variety of speed and changed the pitch on

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# PRESIDENT'S MESSAGE



Here we are again with another month just about over. So far things have been going along pretty good and we still do have some good news coming up. We hope to have it all ready for the next meeting. So try to be there.

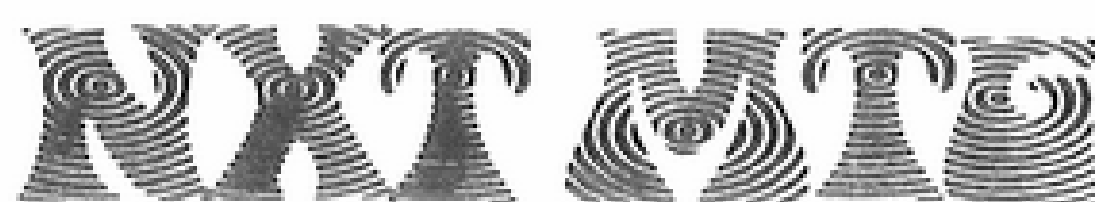
Auction plans are just about jelled and I hope all of you are looking around your OTH and elsewhere for some good things to donate for the auction. We hope to make it as good as last year, maybe better. A lot depends on each of you so let's participate and put this over in a big way.

I want to thank Mr. David Ihle from National Weather Bureau for bringing his slides on Tornadoes and Severe Weather. We enjoyed his program very much.

Be sure, if you are going north for the summer months to let us know your new address so you will still get your QSP. The Club has to pay 25¢ for each change of address the Post Office gives us.

Conrad has a good movie planned for the next meeting, which will be at the Red Cross Building, so you all bring a friend who is interested or who might be interested in Amateur Radio.

So, hope to see you at the movie!!!  
73's Mike/WB4YRW



WHEN: MAY 12, 1980.... 7:30 P.M.

WHERE: AMERICAN RED CROSS BUILDING  
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2 BLOCKS NORTH OF KENNEDY BLVD.

PROGRAM: NEW ARRL FILM: WORLD OF AMATEUR RADIO.

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BOARD OF DIRECTORS MEETING: MAY 5, 1980

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IF YOU SAW YOUR PICTURE in a recent QSP and would like a glossy to frame we have a few extra. Just speak up and tell Conrad you'd like to own one. No charge...except thank you..to Bob Hayes/WB4ASD.



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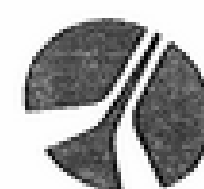
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# BOARDmeeting

# tbra MINUTES

The last Board of Directors meeting was to be held April 1st. Since several members were taking advantage of the day...there was no quorum present...so no meeting was held.

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THANKS TO THE NET CONTROL OPERATORS during the past month:

WA4VKJ - Zeb	KA4DNO - Bob
WD4APL - Tom	K4JOP - Stu

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## SPECIAL MESSAGE FROM NET CONTROL:

by WD4APL/Tom Tate

Due to conflicts with church services and HARS meetings on Wednesday nights, the TBRA net will operate from May 15th, every Thursday night at 7:00 P.M. (1900 GMT). That is the Thursday night after the monthly meeting. Notice the change in time..7 P.M. sharp. Notice also the net is one hour before the weekly TBRA six meter net.

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CLARK/WA4DLL wishes to thank the members of TBRA for the donation of the cassette tapes for the students in the Gifted Childrens Program at the University of South Florida. Dr. Dorothy Sisk is in charge of the entire program there.

Clark is instructing two classes at this time since the response to this course was greater than anticipated. With 16 kids in each class he won't turn away anyone who will help with the instructions. He says they are a good bunch of kids and are really interested in electronics. Once again-- Saturday mornings- 9:30 to 11:30AM Room 347- Arts and Letters Building--USF.

---

SARGE/WA4THT phoned the other night to give us his new address...so what better place than QSP to let him know we miss him on the repeater...at the Wednesday lunches...and at the meetings. Kinda' feel he misses his Tampa friends, too. New address is: 1417 West Maple St. Independence, Mo. 64050. For fone patches...816 252-7588.

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THANK YOU to CDR. A.R. McMullen/W4IGI for his donation of all the Ham related equipment to WA5DUF/Cliff for the Ham Radio class at the University of Florida.

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The Wednesday Luncheon at the Barclay Inn still has room at the table for more members of the Ham Fraternity. From 11 AM on you'll get a big welcome in the back room and a big menu to read. Lots of radio gab to join in with the bonus of a good lookin' waitress.....

Meeting was called to order at 7:40PM by Mike/WB4YRW, April 8, 1980.

Minutes of last meeting were accepted as printed in QSP.

Engineering report on 37-97 machine indicates no problems at this time. Engineering report for 705-105 machine indicated the noise problem is being worked on and should be resolved shortly.

WA4D11 is conducting classes at Florida College and was asking for donation of blank cassette tapes for students. Motion made seconded and passed for TBRA to purchase 26- 90 minute cassettes for presentation to WA4DLL for class use.

Motion made seconded and passed to write FCC supporting Petition RM-3618 initiated by WB6JP1 and WA6KOS to relieve repeater licensee of responsibility of messages relayed by repeater.

Everyone is reminded of Auction at June meeting. All contributions will be appreciated. Contact WB4FGQ/Ed at 839-0252 advising of your items available for the auction.

May meeting will be highlighted by new ARRL film "World of Amateur Radio". Bring your friends and make it a big night. Location will be at the Red Cross Building on Howard Ave. Don't forget.

Dave Ihle/WB5MSB from NOAA gave an interesting presentation on Tornadoes and Severe Storms.

Meeting adjourned at 9:20 PM.

Respectfully Submitted,  
Donald Fisher/WA4CJG Sec'y

---

AMATEURS WOULD NEED GIVE only their own calls when signing clear with another station, under a notice of Proposed Rule Making released by the Commission Wednesday. Personal Radio Docket 80-136 would amend Part 97.04(a) of the rules to drop the present requirement, frequently ignored in contests and often overlooked at other times, that an Amateur sign clear with another station when ending a contact. With the proposed amendment, an Amateur station would need give only its own call sign at the beginning or end of each transmission or series of transmissions (and at 10 minute intervals of course), with no need to send any other stations call at any time during the contact.

International third party traffic would provide the only exception to the proposed rule relaxation. Comments on PR Docket 80-136 are due at the commission by July 16, and reply comments by Aug. 15.

HR Report- 298

# THE PSALM OF HAM RADIO

From CHARRO, Brownsville, Tx. via APNS

Radio is my hobby, I shall want no other.  
It maketh me to stay home at night.  
It leadeth me into much trouble.  
It draweth on my purse.  
I go into the paths of debt for its name-  
sake.

Yea, though I understand it perfectly, it  
will not oscillate.

The different kinds of notes, they comfort  
me.

It will not work in the presence of mine  
enemies.

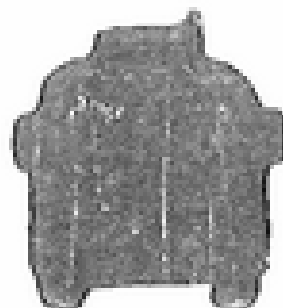
I annoint the coils with shellac, but the  
tube spilleth over.  
Surely the radio bug shall not follow me  
all the days of my life;  
For if it does I shall dwell in the house  
of poverty forever.

\*\*\*\*\*

IRANIAN CONTACTS ARE still permitted, despite the Presidents having severed relations between the U.S. and Iran. Only a formal notification to the ITU by the Government of one of the two nations would make it illegal for U.S. Amateurs to work EP's. HR Report No.298

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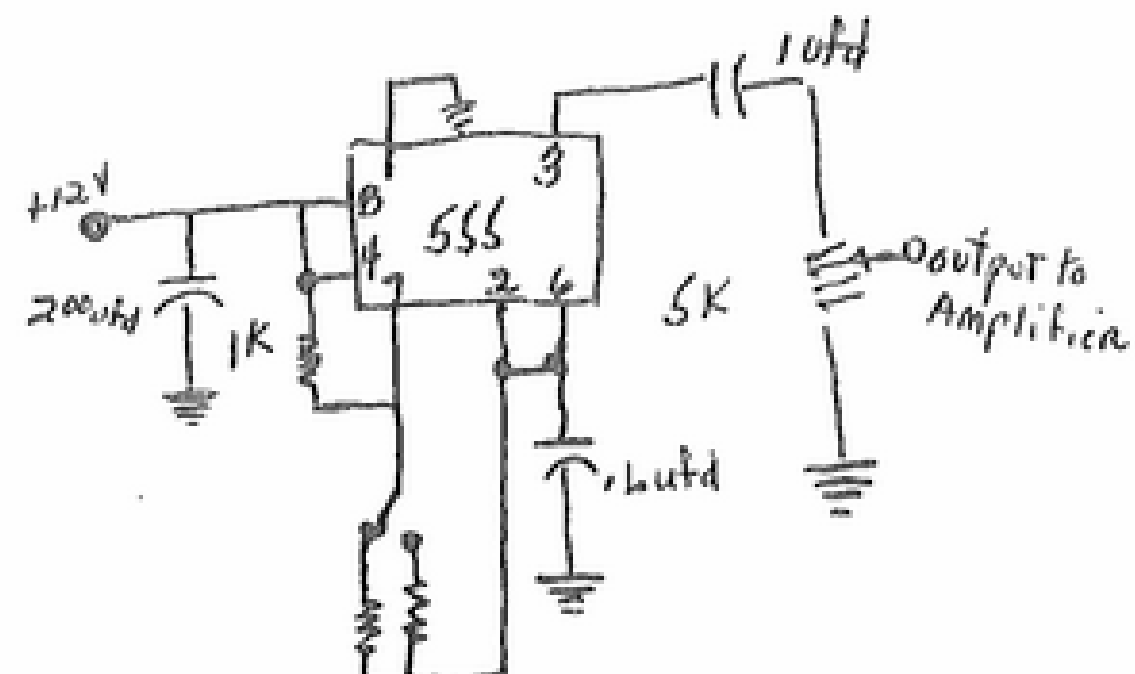
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the horn. Each test result corresponded to the Doppler formula exactly except that the radar unit was reading the horn frequency instead. John, Joe/K5JB and myself sat around and scratched our heads on this one for awhile and finally concluded that if I could whistle a pure tone and drive the radar unit insane, then perhaps the horn honk could similiarly lead us to the promised land. And, except for a possible violation of the noise ordinance in Norman (Oklahoma) and perhaps a set of worn ear-dums by the gendarme behind the radar gun, this jammer was street "legal".

John/WB5FZD spread the word among a few of his students at the University to further test our theory. We chose a select group who disabled all but one horn of their auto horns. We then scoured around Norman to find a couple of radar traps and sent our troops thru them at breakneck speed, horns ablazing. In 8 out of 10 cases they made it with no trouble. One student told of glancing in his rear view mirror and seeing the officer slam his hand into the side of unit in disgust, apparently at having just lost a choice victim.

A proper defense must, however, be accurate, 10 out of 10 times. I could not resist the temptation to experiment further. I took an old speaker cone and lined it with aluminum foil.

I then got a 20 watt mobile audio amplifier and powered it from the cigarette lighter and ran the output to the front bumper where I had mounted the aluminum cone speaker. John and I again set up our own personel speed trap and ran some tests. This time, the results were perfect. I further experimented and found that the best results came with silver painting the entire speaker cone to form a single conductive surface. I got best results with a ten inch woofer. Any thing larger represented too much of a wind load. Aluminum is much cheaper than silver paint( what with the stste of the economy), so I crudely reconed a speaker with aluminum foil. It took quite a bit of power to drive the aluminum cone speaker because of the weight of the cone and the lack of flexibility, but it seemed to work best of all. I designed up a simple 555 oscillator to drive the audio amplifier which is reproduced below:



Oscillator for the strictly "street legal" radar jammer.



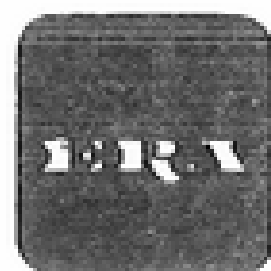
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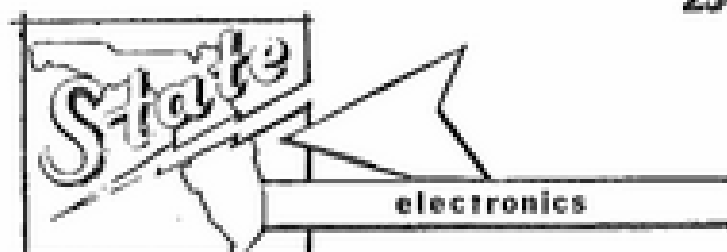
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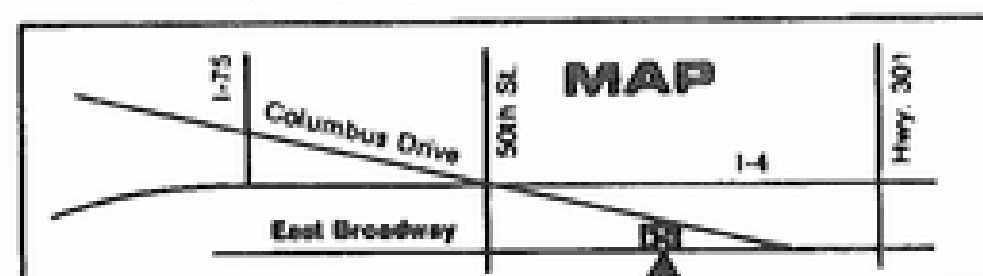
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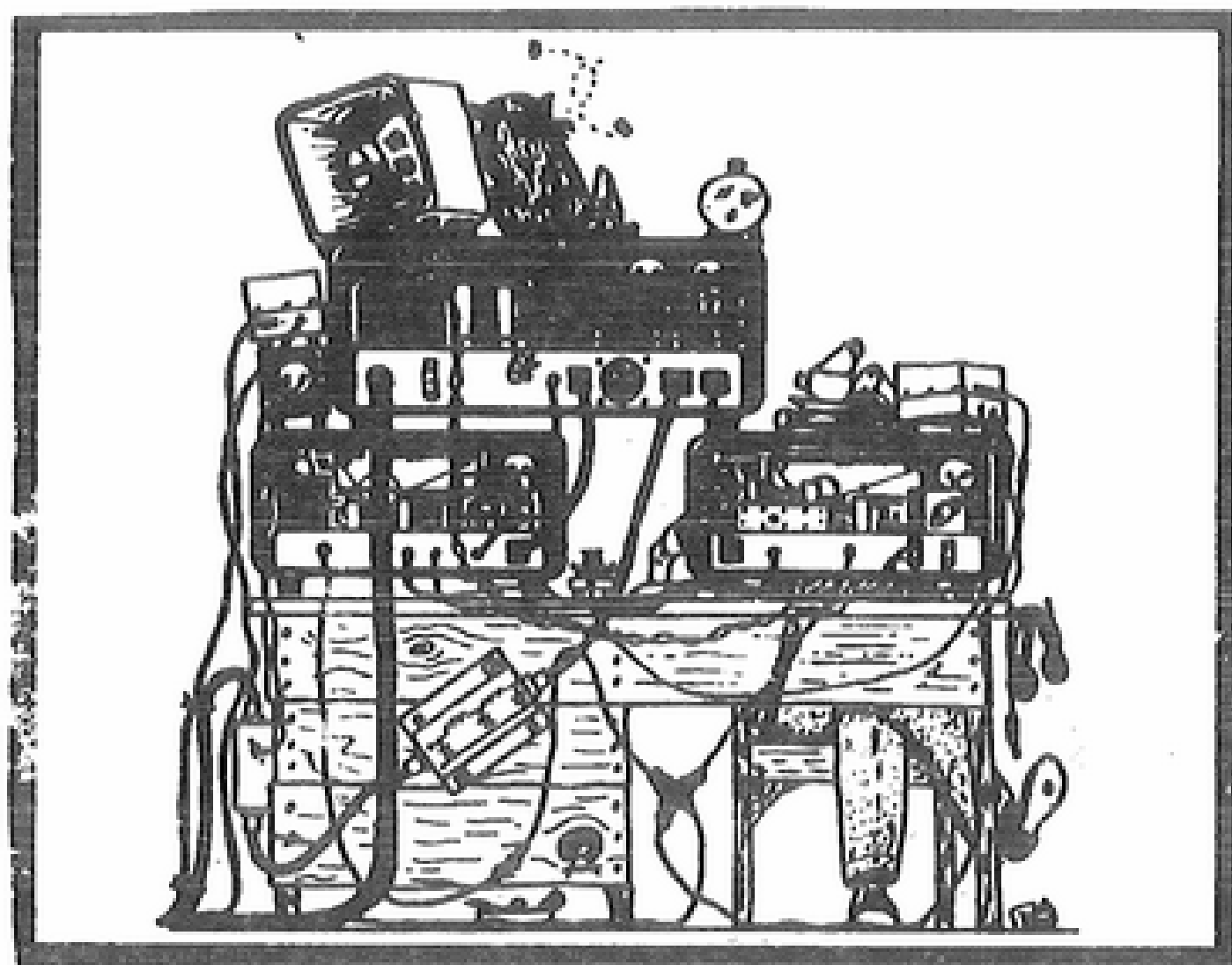
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The circuit is pretty straight forward is nothing more than a NE555 in the astable configuration. You may need to select the two resistors on the SPDT switch to conform to the speed you want to drive the speaker cone with. Remember the formula is 31.4 hertz times the speed in miles per hour.

How does it work? Well, like I said, we went 10 out of 10 in our actual road tests and have had innumerable passes by my homemade radar speed unit. I am not sure whether there is a more effective device. It seems to respond to both K and X band radar units equally well. Since the doppler shift is greater in the K band because of it's higher frequency, the radar will actually show a lower speed than with X band for a given audio modulating frequency. Drive by the local county mounty revenue agent at 55 while he reads 25 and you can be certain that he will take the unit back to the shop for recalibration.

Remember I am not encouraging anyone to break the law. Recall that the use of radar is a big money making business and millions of dollars have been appropriated by the federal government to buy the locals their very own units for local revenue sources. I know that these units are not highly engineered for minimum error. In fact a recent National Bureau of Standards report commissioned by the National Highway Safety Administration points to the fact that there is no correlation to the use of radar and saving lives.

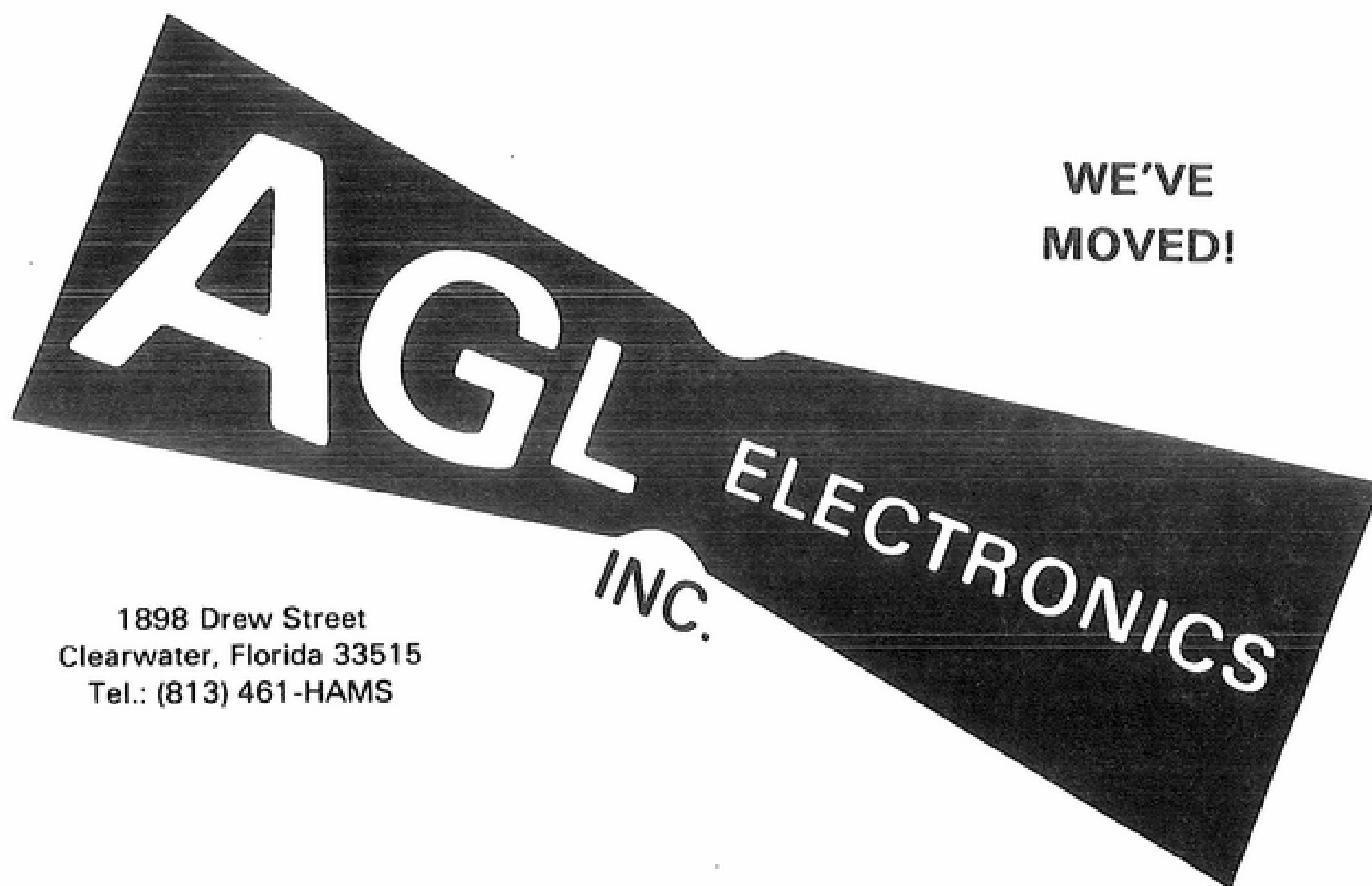
Now we know that there is nothing illegal about driving down the street with your horn a blazing (actually, some laws forbid the use of the horn except for emergencies, but I would suggest that you smile and wave to the officer as you go past him so that he might think that you are someone he knows) or with an amplifier. I intend to do a little more study on this for another article in C & E probably next April. A couple of us are planning on printing bumper stickers consistent with our campaign that say "HONK IF YOU HATE RADAR". Could bring a whole new meaning to the expression "honk and Holler". \*\*\*

MOUNT ST. HELEN'S VOLCANIC eruption has brought out Amateurs who are providing communications for both scientists and public services. The remote country surroun surrounding the 9677-foot peak has little telephone service, so area amateurs are supplimenting heavily burdened state and local government radio links.

AN ASH GATHERING EXPERMINT has also enlisted Amateur help, to provide frequent reports of wind-blown volcanic ash distribution. National publicity for Amateur Radio' communications role was aired last weekend by NBC newsman Roy Neal, K6DUE, complete with taped 2-meter traffic. Thanks Westlink

HR Report-No.298

Not associated with AGL — Dallas

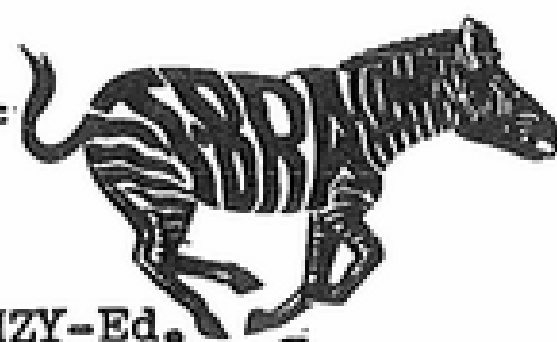


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