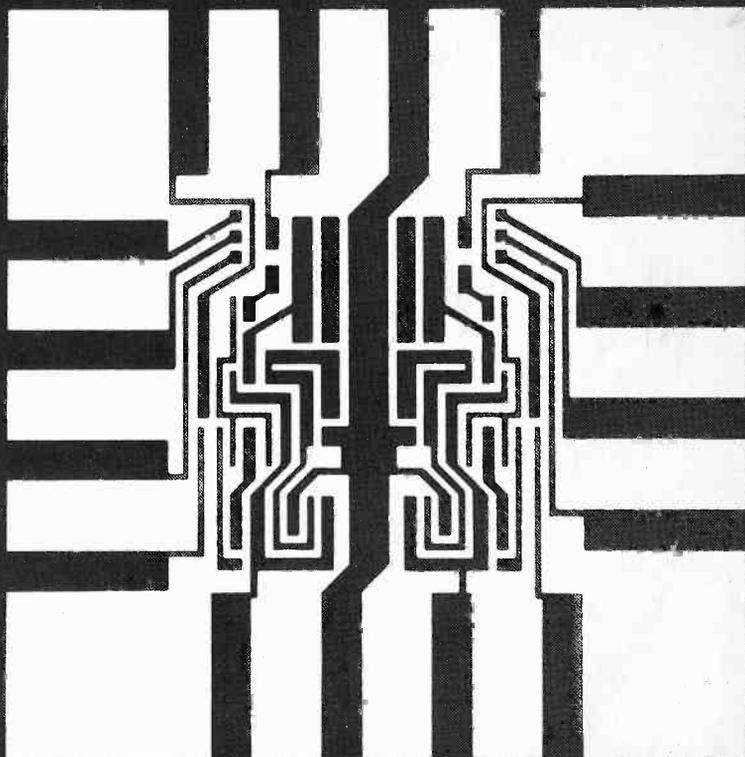




# journal

*July/August 1972*



# Alumni News



Andrew Jobbagy	President
Charles Traham	Vice-President
John Rote	Vice-President
William Simms	Vice-President
Andrew Perry	Vice-President
T. F. Nolan	Exec. Secretary

## Nominations Open For Alumni Officers For '73

We are now approaching the middle of the summer and once again the NRI Alumni Association must turn its attention to the election of officers for 1973. Although it seems early in the year, these elections take time so we must start early.

You may send in nomination suggestions for one candidate for President and four candidates for Vice-President. Nomination suggestions must be submitted by July 28. The names of the two men who receive the most nominations for President and the names of the eight men who receive the most nominations for Vice-President will then appear on the Alumni Election Ballot in the September/October issue of the NRI Journal. From that ballot you will then select your one choice for President and four choices for Vice-Presidents who are to serve the 1973 term. The final election results will be announced in the November/December issue of the NRI Journal.

Only members of the NRI Alumni Association are eligible to vote or to serve as officers of the Association. In considering whom to nominate, members should keep in mind the restrictions on the re-election of incumbent and past officers, as set forth in Article 6, Section II of the Constitution, quoted as follows:

"The President shall not be eligible for re-election until after expiration of at least eight years following his last term of office and, further, may be a candidate for Vice-President only after expiration of at least a year following his term of office as President. Vice-Presidents may not serve more than two consecutive terms; when re-elected for a second

consecutive term they shall not thereafter be candidates for Vice-President until after expiration of at least three years following their second term of office."

Of the present officers, the President, Andrew Jobbagy, is affected by two of the above restrictions. All of the Vice-Presidents for '72 are eligible for election to President of NRIAA or for re-election as Vice-President.

You may nominate any NRIAA member you wish. Below is a list of members selected geographically. They are merely suggestions. A ballot appears on Page 25.

Mr. R. M. Matthews  
Alice, TX 78332

Mr. William J. Guenther  
North Bend, OR 97459

Mr. Andrew G. Perra  
Northfield, VT 05663

Mr. Kenneth R. Riegs  
Littleton, CO 80123

Mr. Bailey Mark  
W. Sacramento, CA 95691

Mr. Norman E. Nolte  
Dayton, OH 45426

Mr. Ricardo C. Rodriguez  
Carlsbad, NM 88220

Mr. James Smith  
Dyersburg, TN 38024

Mr. Edgar C. Gilland  
Dunkirk, IN 47336

Mr. Morris E. Anderson  
Rock Springs, WY 82901

Mr. Joel A. Holloway  
Hattiesburg, MS 39401

Mr. Ernest F. Meade  
West Logan, WV 25601

Mr. Marcel Blanchard, Sr.  
Avondale, LA 70094

Mr. John W. Olsen  
Port Richey, FL 33568

Mr. Roy L. Camp  
Charleston Heights, SC 29405

Mr. Douglas A. Drain  
Kingsfisher, OK 73750

Mr. Leo St. Denis  
East Point, GA 30344

Mr. Matthew J. Lipinski  
Philadelphia, PA 19136

Mr. Harold Turner  
Paducah, KY 42001

Mr. Russell H. Summers  
Boonsboro, MD 21713

Mr. Steve Zombar, Jr.  
Warren, OH 44484

Mr. J. J. Drake  
Wichita, KS 67216

Mr. Frank K. Schober  
East Detroit, MI 48021

Mr. Walter E. Bitner  
Haddon Heights, NJ 08035

Mr. Ward L. Foster  
St. Louis, MO 63137

Mr. LaVern E. Baker  
Paw Paw, MI 49079

Mr. Thomas F. Manning  
Buffalo, NY 14226

Mr. Neil H. Nermyr  
Cut Bank, MT 59427

Mr. Kenneth M. Shaw  
Virginia Beach, VA 23452

Mr. Jack H. Low  
Norwich, CT 06360

Mr. John Gremban  
Minneapolis, MN 55429

Mr. Ubaldo Guevara  
Rio Piedras, PR 00926

Mr. Andrew W. Hutnik  
Hopewell, NJ 08525

SSGT William R. Storm  
Macedonia, IA 51549

Mr. Stanley G. Helmsdorff  
Westwood, MA 02090

Mr. Eric Skaar  
Dewitt, NY 13214

Mr. August W. Schuelke  
Posen, IL 60469

Mr. Joseph Pimental  
South Dartmouth, MA 02748

Mr. Bobby L. Conner  
Rozel, KS 67574

Mr. Fred E. Stevens  
Fairfield, AL 35064

Capt. G. P. Hadjilias  
Miami, FL 33142

Mr. Esta L. Jordan  
Columbus, GA 31907

Mr. William F. Frazier  
Annapolis, MD 21403

Mr. Robert L. Beckett  
Akron, OH 44312

Mr. Luc Morel  
Brooklyn, NY 11225

Mr. Richard F. Eckert  
Middlesex, NJ 08846

Mr. Andrew Carrano  
New Haven, CT 06513

Mr. William Simms  
Tucson, AZ 85705

Mr. Andrew Perry  
Brooklyn, NY 11209

Mr. Charles L. Traham  
Norfolk, VA

Mr. John Rote  
Fairmont, WV 26554

## Chapters Hear Interesting Talks By Members, Guests

### DETROIT Chapter Studies Antique Radios

John Nagy continued his lecture on antique radios. He finished repairing an old three-band radio that Charlie Cope had brought in. The set was so old that he had to work without the help of a diagram. He also showed the members all kinds of troubleshooting methods.

Jim Kelly, the Chapter Chairman, is taking the NRI Color TV Servicing course. He brought in an oscilloscope and checked through some of the CONAR color circuits so that everyone could learn something from his experience.

Plans for the nomination of officers will be made at the next meeting. Also, Mr. Kelly will continue CONAR Color TV receiver demonstrations.

### FLINT (SAGINAW VALLEY) Chapter Continues Educational Programs

The Chapter has been enjoying informative lectures on troubleshooting and servicing tips.

Chairman Andrew Jobbagy explained how feedthrough capacitors are used in tuners. Steve Avetta conducted a diagnostic clinic on high voltage and explained the use of fuse wire. After a short circuit, the fuse wire may be replaced by similar wire instead of replacing a fuse. This safety measure is used in many modern TV receivers, but is often overlooked by servicemen.

At the May 17 clinic there will be more high voltage information available to the members.

## **NEW YORK Chapter Continues with Basic Color Course**

Sam Antman continued with the basic color course at the March meeting. All the members followed his discussion very closely and found it to be very interesting. Also at the March meeting Pete Carter discussed a problem he was having with a TV set, and the membership showed him how to correct it. Mr. DaSilva discussed a problem he ran into which was corrected by replacing a capacitor.

At the next meeting Sam Antman continued the color course. Using charts made by Onte Crow, he showed how the multivibrator operates.

## **NORTH JERSEY Chapter has Interesting Speakers**

Alex Reid conducted an interesting and very educational lecture and demonstration at the March meeting on the purpose and function of the triggered oscilloscope. He used the vtm and the vom along with a transistor radio demonstration board for further discussion.

Alfred C. Mould, who is active in the servicing field, was welcomed as a new member.

At the April meeting Mr. Mould gave a very interesting lecture and demonstration on troubleshooting, rejuvenation of the CRT, and alignment procedures on a color TV set furnished by Chairman George Stoll.

Final arrangements were completed for the upcoming visit of Tom Nolan, the

Executive Secretary of NRIAA, on May 26. Members and friends of the Chapter always look forward to his annual visit. The Chapter will also celebrate its ninth anniversary at this meeting.

## **PITTSBURGH Chapter Entertains Executive Secretary**

At the April 6 meeting Tom Schnader gave a lecture on convergence of color TV receivers.

The Chapter entertained Tom Nolan at the May 4 meeting. Thirteen members attended the annual steak dinner which was held in Tom's honor.

Tom presented a slide talk furnished by RCA on transistor circuit troubleshooting. He also went into troubleshooting horizontal and high voltage regulator circuits of color television receivers. The lecture was well received. Tom is a welcomed visitor every year.

## **SAN ANTONIO Chapter Holds Round Table Discussion**

At the March meeting a round table discussion was held concerning tough TV repairs, or TV "dogs" as they are known. A set was brought in and repaired. Everyone participated in the discussion.

At the April 19 meeting the Chapter entertained Tom Nolan. Tom gave a lecture on troubleshooting techniques in both solid-state and tube receivers. The lecture was well received by the members and there was a good turnout.

The following evening Tom and his wife, Janet, were entertained at Ernest



San Antonio Chapter members at their March meeting.

Hudson's home which is about 12 miles north of San Antonio. Ernie and his wife Frieda were host and hostess to a very wonderful evening.

*(Editor's Note: Janet and I would like to express our thanks for the wonderful hospitality displayed by the Chapter in general, and Ernie and his lovely wife Frieda in particular. We always look forward to our annual visit to the San Antonio Chapter.)*

### **SPRINGFIELD Chairman Reports on Zenith Demonstration**

Norman Charest, Chairman of the Springfield Chapter, attended a demonstration by Zenith and Plymouth Electric engineers on the latest solid-state Zenith which is now being field-tested all over the country. The Zenith engineer brought with him a 25" solid-state TV test model with plug-in IC's and transistors. Norm reported that the engineers started from the tuner and demonstrated and explained the circuitry all the way through to the picture tube. Norm said that in all his experience he had never seen such beautiful bright colors. The test model

operated flawlessly for three hours. Norm thinks that GE is going to put on a similar seminar next month and he suggested that the members make inquiries as to the time and place of these excellent talks.

The remainder of the evening was spent adjusting the club's Zenith color television.

### **TORONTO Chapter Spans 250,000 Miles in One Evening**

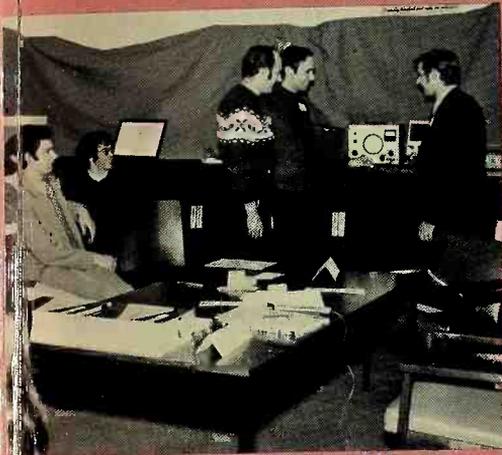
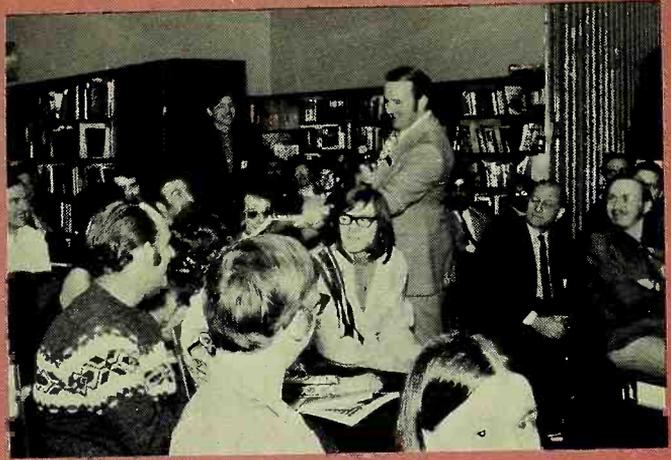
The attendance at the first meeting of 1972 was the best so far at the newest of the NRIAA Chapters.

The Chapter is grateful to CESCO Electronics for supplying a very comprehensive product display of electronic test equipment for the men, and to the 12 women who attended a fine display of home entertainment equipment.

The first of two speakers for the evening was Mr. David Oliver, an electronics specialist for CESCO Electronics. He discussed all aspects of electronic test equipment and held an informal discussion during the coffee break about the home entertainment equipment which was also on display. Mr. Oliver, at the conclusion of his speech, informed the Alumni body of the special CESCO discount card. This was previously arranged through McGraw-Hill Continuing Education Company in conjunction with CESCO Electronics, and at the end of the meeting each individual was given his own personal identification card.

The second speaker was Mr. Ivan Veg, an electronics specialist for Conway Electronics, who gave a fine talk on com-

Start Kenmuir monitors the Toronto meeting.



David Oliver, standing at the far right, and Ivan Veg, sitting at the far left, presented interesting talks at the Toronto Chapter meeting.

Comparison of price, quality, and functions of low-priced equipment versus medium-priced equipment. Sometimes for 20% more investment a piece of equipment will perform 60% more functions and last twice as long. After each speech there was a question and answer period.

The Toronto Chapter had a NASA film which showed Neil Armstrong as he stepped onto the surface of the moon and his famous statement, "One small step for man, one giant leap for mankind." This film showed the potential, through electronics, of reaching for the stars. The

Chapter also viewed an oceanography film "Sea Sorcery," which took the viewers to the depths of the ocean showing fish rarely seen before, and photographed in living color by means of very sophisticated electronic equipment. Therefore, it is quite correct to state that the Toronto meeting had a span of about a quarter of a million miles, from outer space to the depths of the ocean.

*(Editor's Note: With such great enthusiasm in Toronto, the NRIAA hopes to establish Chapters in other parts of Canada.)*

# DIRECTORY OF ALUMNI CHAPTERS

**CHAMBERSBURG (CUMBERLAND VALLEY) CHAPTER** meets 8 p.m. 2nd Tuesday of each month at Bob Erford's Radio-TV Service Shop, Chambersburg, Pa. Chairman: Gerald Strite, RR1, Chambersburg, Pa.

**DETROIT CHAPTER** meets 8 p.m., 2nd Friday of each month at St. Andrews Hall, 431 E. Congress St., Detroit. Chairman: James Kelley, 1140 Livernois, Detroit, Mich. 841-4972.

**FLINT (SAGINAW VALLEY) CHAPTER** meets 7:30 p.m., 2nd Wednesday of each month at Andy Jobaggy's shop, G-5507 S. Saginaw Rd., Flint, Mich. Chairman: Stephen Avetta, 239-0461.

**LOS ANGELES CHAPTER**, Chairman Graham D. Boyd 3117 Virginia Ave., Santa Monica, Calif. 90404. (213) 828-8129.

**NEW YORK CITY CHAPTER** meets 8:30 p.m., 1st and 3rd Thursday of each month at 218 E. 5th St., New York City. Chairman: Samuel Antman, 1669 45th St., Brooklyn, N.Y.

**NORTH JERSEY CHAPTER** meets 8 p.m., last Friday of each month at The Players Club, Washington Square. Chairman: George Stoll, 10 Jefferson Avenue, Kearney, N.J.

**PHILADELPHIA-CAMDEN CHAPTER** meets 8 p.m., 4th Monday of each month at K of C Hall, Tulip and Tyson Sts., Philadelphia. Chairman: John Pirrung, 2923 Longshore, Philadelphia, Pa.

**PITTSBURGH CHAPTER** meets 8 p.m., 1st Thursday of each month in the basement of the U.P. Church of Verona, Pa., corner of South Ave. & 2nd St. Chairman Charles Kelley.

**SAN ANTONIO (ALAMO) CHAPTER** meets 7 p.m. 4th Thurs. of each month at Alamo Heights Christian Church Scout House, 350 Primrose St., 6500 Block of N. New Braunfels St. (3 blocks north of Austin Hwy.), San Antonio. Chairman Robert E. Bonge, 222 Amador Lane, San Antonio, Tex. 78218, 655-3299.

**SOUTHEASTERN MASSACHUSETTS CHAPTER** meets 8 p.m., last Wednesday of each month at the home of Chairman John Alves, 57 Allen Boulevard, Swansea, Massachusetts.

**SPRINGFIELD (MASS.) CHAPTER** meets 7 p.m., 2nd and 4th Saturday of each month at the shop of Chairman Norman Charest, 74 Redfern Dr., Springfield, Conn.

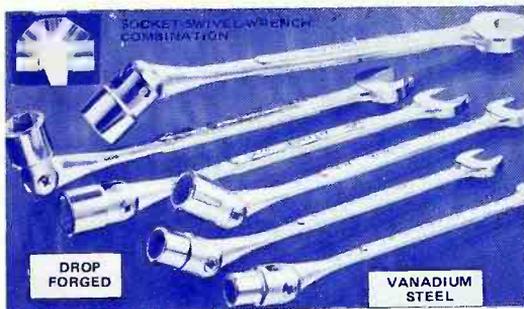
**TORONTO CHAPTER** meets at McGraw-Hill building, 330 Progress Ave., Scarborough, Ontario, Canada. Chairman: Branko Lebar. For information contact Stewart J. Kenmuir, 416 293-1911.

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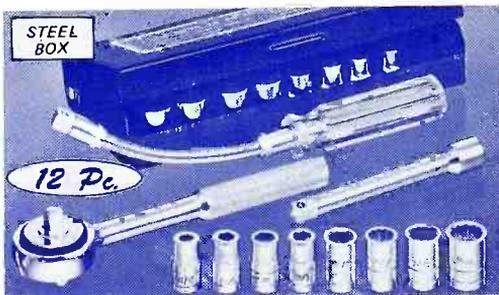
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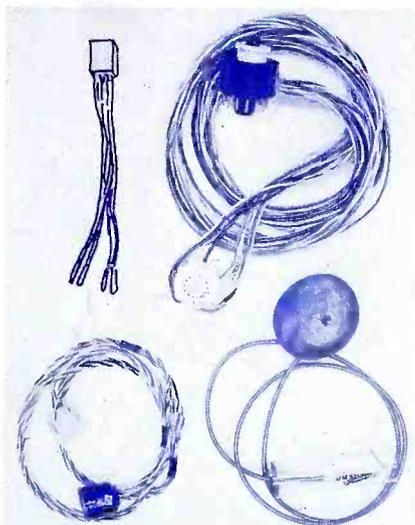
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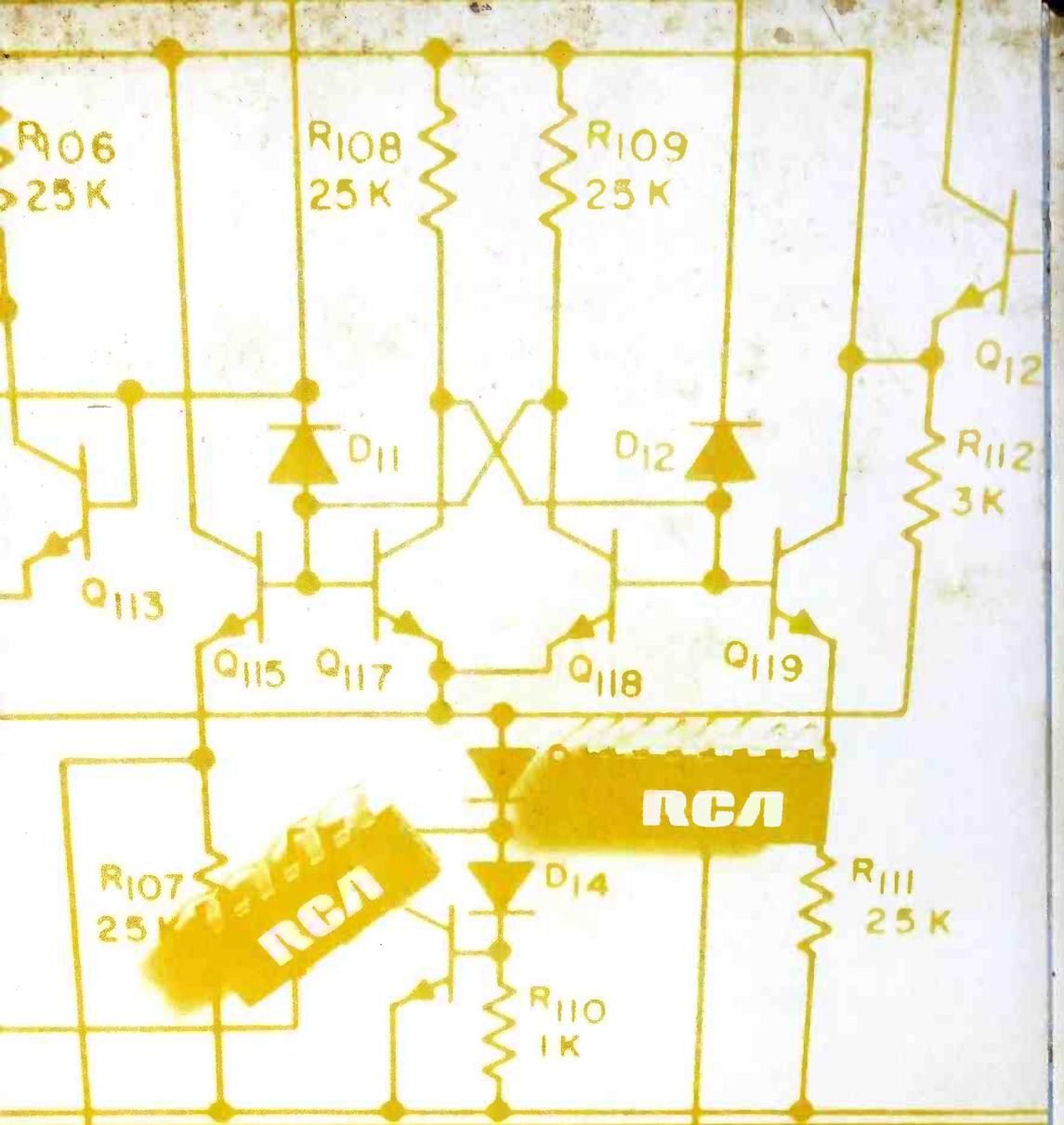
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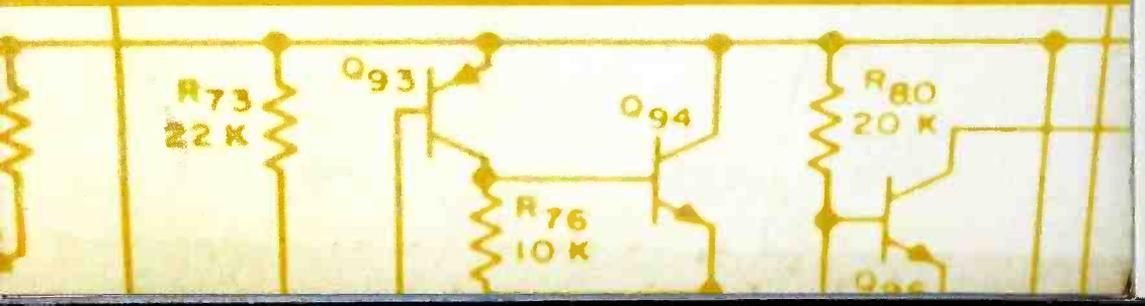
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# journal

September/October 1972

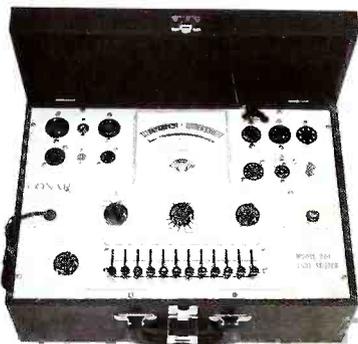


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# journal

September/October 1972  
Volume 29, No. 5

*The NRI Journal is published bimonthly by the National Radio Institute, 3939 Wisconsin Avenue, Washington, D.C. 20016. Subscription price is two dollars yearly or 35 cents per single copy. Second-class postage is paid at Washington, D.C.*

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Cover Illustration: RCA's quad in-line (left) and dual in-line (right) integrated circuits.

The lessons are written clearly in a manner easily understood by the novice who is just becoming interested in cars, yet they still contain the technical information needed by the master mechanic. The courses can benefit people from all walks of life who enjoy the satisfaction of accomplishing something with their own hands. This includes the hobbyist who does his own car maintenance on the weekends for enjoyment and to save money. And, you would be surprised at the number of women who have enrolled, and are making exceptional grades. Ages of our students range from 16 to 68 years.

For those students who intend to make automotive servicing a career, the Master Technician course will prepare them to pass the written test for any certification program now in use. For those who want to go into business for themselves, the course contains some tips (and the pitfalls) of starting a new small business. As we stated earlier, these courses are comprehensive and up-to-date and should satisfy the training needs of anyone interested in any area of automotive servicing.

Future automotive articles in the NRI Journal will include new developments in the field, service tips, discussions of new innovations that continually come out of Detroit, and any other information of interest to the automotive enthusiast. We will also discuss the legislation concerning emission control and safety laws, and the manufacturer's solutions to these laws.

The continuation of this series of articles in the NRI Journal will depend entirely on the reader's interest. I will be personally interested in your comments and suggestions for subjects for future articles.

Please do not expect an individual response to your comments or suggestions. But, rest assured that all comments and/or suggestions will be given careful consideration and will determine the path this series will follow in the future. Address your comments to:

E. D. Cochran  
NRI Automotive Training  
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Do not write in this space

Now let's take a look at the amateurs we've heard from who are students and graduates of our Course for Amateur Licenses:

Knobby	WN1PXA	N	New Bedford, MA
Tom	WN2ACW	N	Clifton, NJ
Neil	WB2BYU*	A	Cherry Hill, NJ
Howard	WN2EON	N	Delmar, NY
Doc	WN4NVG	N	Lake Park, FL
Ed	WB4AYB*	G	Savannah, GA
Al	WN4WBI	N	Cocoa, FL
Roger	WN5GJX	N	Tuttle, OK
Wayne	WA5YHM	G	Palestine, TX
Eleno	WB6IXS*	G	Huron, CA
Fay	WN6RNK	N	Hayward, CA
Leland	WN7RUT	N	Ontario, OR
Howard	WN7TEN	N	Sun City, AZ
Terry	WN8KLI	N	Kankakee, IL
Elmer	WNØEXY	N	Perryville, MD

\*Just upgraded — congratulations!

WB2BYU was listed in an earlier Journal as one of our youngest amateurs. Now at 13 Neil may possibly be our youngest Advanced Class holder. He passed both the General and Advanced tests back in April and gives a lot of credit to NRI for his success. Thanks, Neil.

And having already mentioned antennas, Neil wants to know if anyone could give him some information on towers and how to erect them. He's trying to put up a tri-band quad and an inverted vee. The best advice I can give is to consult the ARRL Antenna Manual and then go around and *look* at some installations in your area. I'm sure there must be some in the Cherry Hill area. For this kind of effort there is no substitute for real look-see to supplement some "book-learning."

Well, well, things certainly do get around. WN4NVG sent Tom Nolan (NRI Alumni Association Executive Secretary) a letter enclosing ten copies of the WNØBEK crystal filter we mentioned a year or so ago for the CONAR 500 receiver. So we now have a supply in case anyone is interested. Thanks, Doc.

In the same letter, Doc set out a QRRR. He recently suffered a severe stroke and is having difficulty pursuing his studies in order to get out of the Novice ranks. If there is anyone in the Lake Park, Florida area who could help Doc, write him at: E. S. Bagley, 3630 Catalina Rd., Lake Park, FL, 33403. That area is my old stomping grounds and is in the Palm Beach, West Palm Beach area so I *know* there will be someone there who could give Doc a hand.

mile. Give the reading to your navigator so it can be recorded. Now simply drive to the next marker and as you pass again note the mileage reading. While you're driving, don't worry about the speed or how steady it is. We are checking odometer error first which will, in turn, give us a double check on the mph calibration later.

Take as many mileage readings as you can at the markers. Try to get at least ten even if you have to turn around and repeat the same stretch of highway.

What you are doing is driving a known distance and using it as a standard. Then you are comparing the standard to the reading on your odometer. If your odometer is perfect, then for each mile traveled you will get a one mile increase in reading. But if your car is typical, you'll find that it reads a little high or a little low. Since it is tough to read the odometer accurately, we are taking several readings of the same distance so that we can average them later. This will give more precise results than a single reading.

Now to check speed. Since speedometer error is usually linear (straight line variation), we can check the error at one speed and assume that at all other speeds the percentage of error is the same. However, even though this is usually true, it is best to check it at two or three speeds, say at 30, at 40 and at 60 mph, just to be sure. As you drive, set the speedometer on the desired calibration speed and hold that speed as closely as possible. The instant you pass the marker sign, have your "navigator" start the stopwatch. Keep your speed perfectly constant until you reach the next mile marker, then stop the stopwatch. Record the time and the speed. Do this several times at each of several speeds so that you can average the figures later for greater accuracy.

## INTERPRETING THE DATA AND CALCULATING THE ERROR

Now, back at the house you will get all your figures together and use them in some simple calculations to determine your speedometer error. Get a cup of coffee and some sharp pencils. A slide rule or adding machine will be helpful if you have one, but it's not absolutely necessary.

Using the odometer figures first, calculate the difference between each of the mileage figures you observed when passing the one mile markers. For example, if your odometer read 12765.1 miles as you passed the first marker and 12766.2 as you passed the next one a mile later, the difference is  $12766.2 - 12765.1 = 1.1$  miles. This tells you that your odometer racked up 1.1 miles for the one mile you traveled. This means that the odometer reads .1 mile higher. If the difference between the two readings is only .98, then your odometer reads low. In other words, it is recording only .98 mile for each mile actually covered.

For greater precision in determining the odometer error, make the same calculation on all of your odometer readings. Figure out the difference between each of the successive readings and then average the results. If you have ten "difference" readings, add them together, then divide by 10 to get the average. Your total average error is found by taking the difference between your calculated

Bob is in the Coast Guard and sometimes operates the CG station WA2ZAI on 20. Most of the time, however, he hangs out on 6 meters using pulse for radio control.

WB5DBS is presented as another of those mysteries that crop up every now and then. One day there appeared in my "Ham News" box a duplicate license bearing the above call with no indication of where it had come from. Spooks, I guess.

We always like to see those Extra calls in the lists and pass along what these guys are doing and have done. Jim, WB9DFJ, got his Extra in February of this year, Advanced in January 1970 and his first ticket in 1969. In the meantime he has managed to pick up WAS on 75 meter SSB. Not bad for three years activity. Presently Jim is giving 75 and 20 SSB a run for the money. FB, Jim.

Although his name does not appear in the list this month, Charles, W2BXD, wrote to let us know that he holds an Advanced Class license which was not shown in the March/April Journal. Charley has been an active ham since 1929 (says he is 65 years *young*) and works 2, 10, 15, 20 and 75 on SSB, AM and CW. Man, that IS active! On top of all that, he has a real FB sideband rig for sale (see Ham Ads). Seems that the gear was installed in the car and used one time before the YML vetoed the mobile activity. After all, you've got to draw the line *somewhere*, Charley!

As a final item, we are reproducing a photo of WB4BDP at the operating position of HL9TO in Osan, Korea. How about that king-size QSL card? Clyde writes that now that he is finally getting used to Korea and her ways, he is about ready to head back stateside. He says it is real nice to be DX and truly enjoys rapping out a QRZ. The resulting pileup is always bed-



lam. Clyde reports that recently he contacted a US6 in Hong Kong who was also an NRI student (not identified). This, perhaps, is another first. Thanks, Clyde and we'll be looking forward to hearing from you again real soon

And that's about it for another couple of months fellas. We'll BCNU and keep those cards and letters coming in!

VY 73 Ted - K4MKX

(Ham Ads appear on page 23)

# Journal

may/june  
1971

*Harold Turner discusses Stereo/Hi-Fi Servicing*



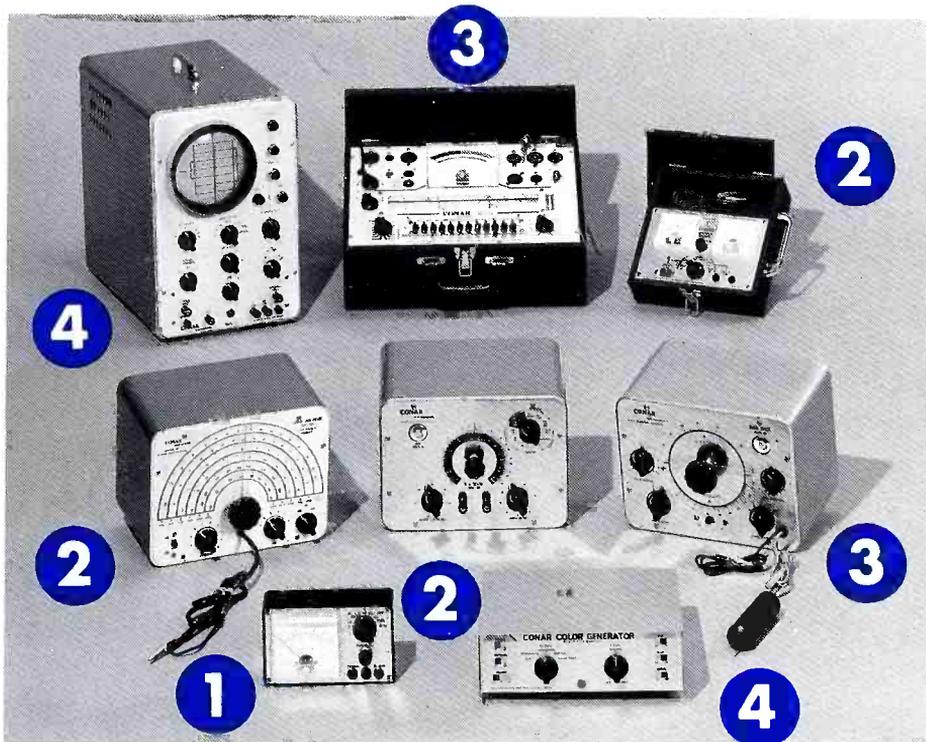
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 **journal**

may/june  
1971

*Harold Turner discusses Stereo/Hi-Fi Servicing*



MAY/JUNE 1971

VOLUME 28 NO. 3

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the NRI Journal is published  
bimonthly by National Radio Institute  
3939 Wisconsin Avenue  
Washington, D.C. 20016  
subscription price is 2 dollars yearly  
or 35 cents per single copy  
second-class postage paid at  
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50.01-60.00	4.15	5.50		
60.01-70.00	5.50	6.00	6.40	4.50
70.01-80.00	7.00	6.50	8.00	5.00
80.01-90.00	8.00	7.75	10.10	5.00
90.01-100.00	9.00	8.75	12.60	5.25
100.01-110.00	10.00	9.75	14.80	5.50
110.01-120.00	11.00	10.75	16.20	6.00
120.01-130.00	12.00	11.75	17.60	6.50
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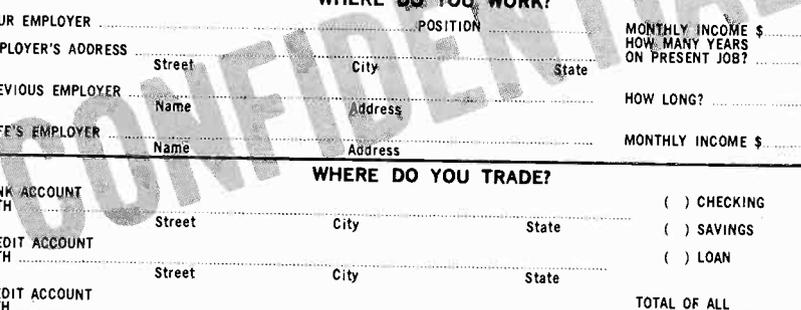
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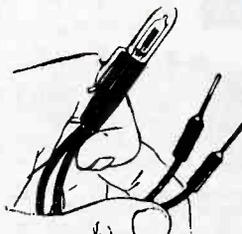
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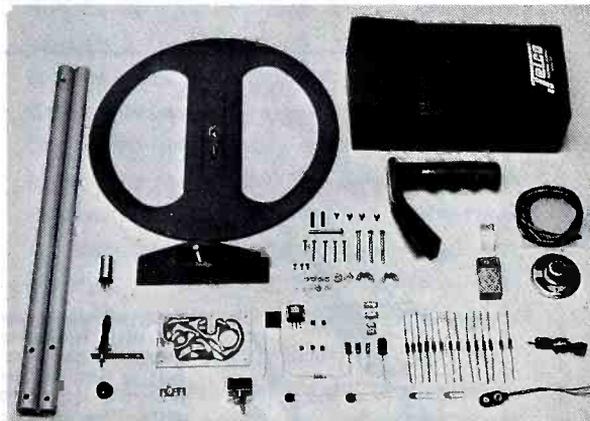
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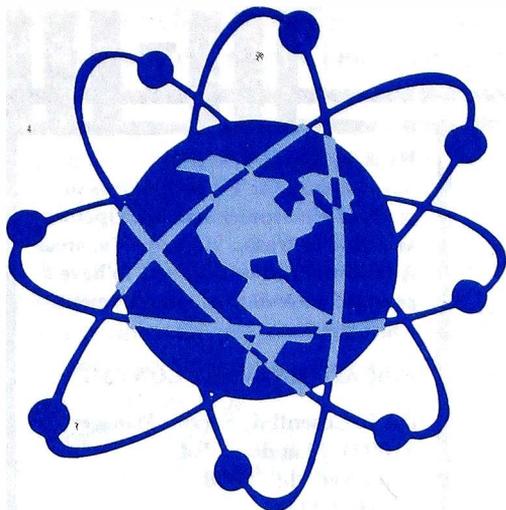
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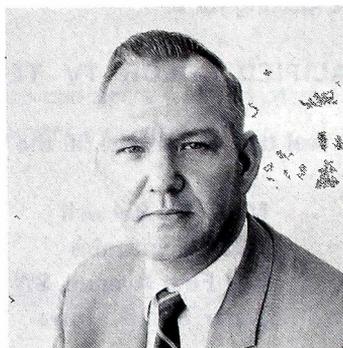
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# Ham News



**BY TED BEACH, K4MKX**

Here's a thought. Do you know how many active amateurs there are in the United States alone? A lot. How many of these hams are really technically competent? Surprisingly enough there are a lot of "appliance operators" running loose who learned enough electronics (and code) to satisfy the FCC; then out to the nearest dealer to buy a Sooper KW transceiver, beam, tower and rotator. These people I feel sorry for because they are missing a great deal of what it is to be an amateur.

They light off the rig and sit down to chew the rag for hours on end, but wouldn't know a soldering iron from a pair of diagonal cutters. What a waste. But these are usually very nice people, and, to us who happen to have learned something about electronics, from our NRI courses, they could represent an added source of income.

How? Well, what happens when the

Sooper KW XCVR becomes a Sooper Pooper and fails to light up? Back to the dealer (or factory) for a nice long downtime and a lot of bucks — bucks which could go into **your** pocket if you work it right. Communications equipment is really, not difficult to service, and it doesn't take a lot of equipment. If you built or work on your own rig you should be well prepared to tackle anybody's rig. Think about it. All you need to do is let it be known at a club meeting, on the air, on the bulletin board at school, or at the wholesaler that you are capable and available to repair Ham equipment. (Don't try to take on CB or other commercial gear unless you have a First or Second Radiotelephone license.)

Most people with a dead rig would rather have work done on it locally than ship it off to the factory. If they bought the equipment new, in all likelihood they have the owner's manual with its detailed

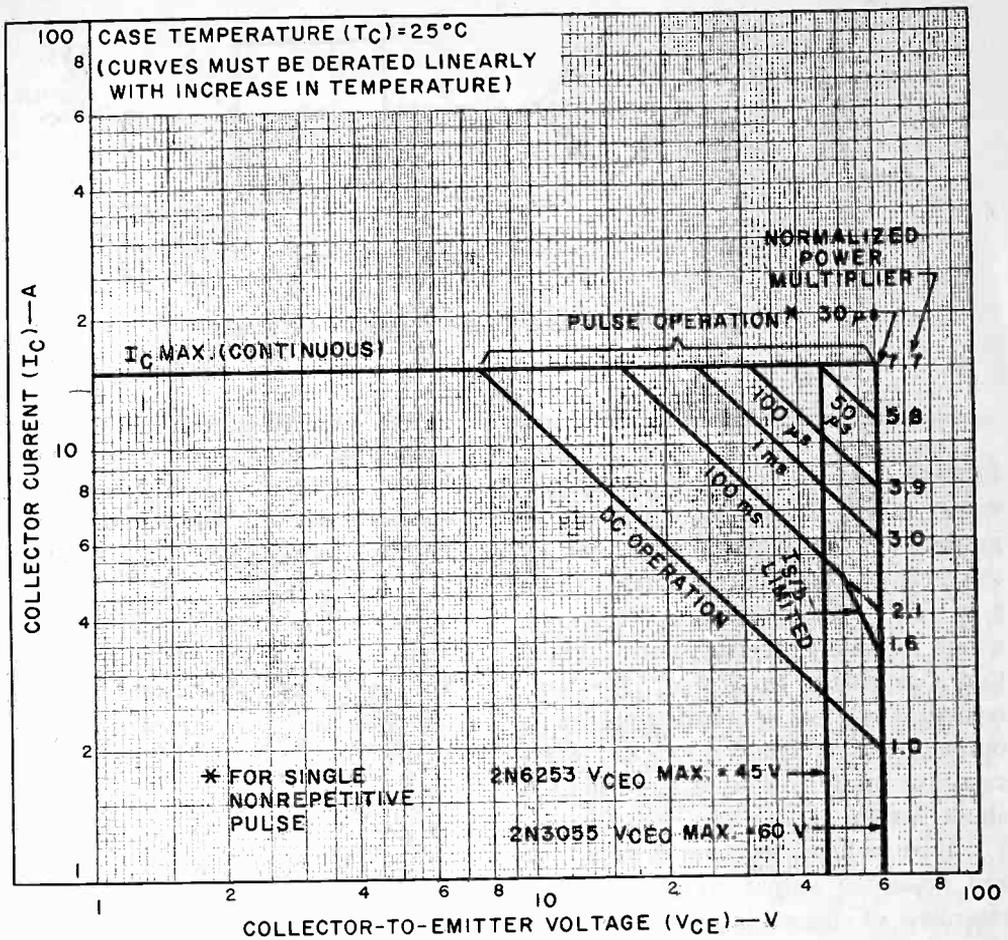


Figure 3. Typical power transistor "safe area" graph.

failure, the transistor is operated in the area to the left of the curve marked DC OPERATION.

Getting back to our 7800, we see that if the output terminal were shorted to ground, the output current would be limited by the current limiting stage to just over 1 ampere. At the same time, however, nearly the entire input voltage is being dropped across the series pass transistor, since its collector is connected to the input and its emitter is connected almost to ground. If this were allowed to

happen, the safe area of the output device would be exceeded and the chip would fail. So another protective circuit, the *safe area compensation circuit* (which is not shown in the block diagram), is incorporated to instantaneously control the amount of power dissipation in the output transistor. It does this by sensing both the voltage across the transistor and the current through it. The safe area compensation circuit then limits the base drive to a level which will allow the output transistor to operate within its safe area.

WB4HSR looks like the ideal type to take on the work mentioned at the beginning of this column. Ronie is a graduate of our Communications course, a student of our Servicing course, has built a home-brew linear for his TR4 and works in radio-TV repair. What a combination for getting into Ham servicing.

WB4PVC writes the kind of note we like to hear. Gerald just got his Advanced license and says, "Couldn't have done it without training I received from NRI." Thanks, Gerald, that makes it all worthwhile.

WA7IXG reports he has had his ticket for three years and is just now getting around to letting us know. Cryptically, Bud says he is known as the "Double Header on 7.295." Just what that means, I don't know. What gives, Bud?

WB8GOY's General class license arrived in the same mail as the NRI Journal which listed his Novice call. How about that? Anyway, Dave is another of those avid (aren't they all avid?) QRP types and would like very much to contact other NRI people with the idea of forming a QRP club. The emphasis would be on low power, low cost, and development of new QRP circuits and techniques. This sounds real interesting. Anyone interested can write Dave at:

20121 Webster  
Mt. Clemens  
MI, 48043

You might also see the last Journal for more QRP news.

WA8WDX is presently QRT at his Morocco QTH and says we statesiders should appreciate our operating privileges; there's no reciprocal licensing in Morocco.

Now — here are our first HAM-ADS:

*HAM-ADS*

**SALE** — Collins 75A1 \$125, Hallicrafters HT37 \$175 or trade for transceiver. WA5NHI Glenn Brazzel. Rt 4, Box 426, Denton, TX 76201

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That's about it for this time. See you in a couple of months.

VY 73  
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