



THE COMMUNICATOR



Volume 5, Issue 12

December 2005

RESULTS ARE IN

The SARC ELECTIONS took place at the November 2005 meeting.

The following members are the SARC Officers and Board.

President	Mike Swiader, KA9E
Vice President	Harold Newman, KD7VK
Secretary	Akiva Smith, KE7DAB
Treasurer	Dianne Hoffman, KD7DJE

Board Nominations

Terry Cross, NK7T
Gene Wilson, WA8TSG
Jonathan Simmonds, KD7VCF
Jim Hoggard, K7MY
Steve Gurley, KY7W

W7ASC ADAW Column

The No-Code Tech class at Mesa Community College is almost over. Testing will be at the Superstition ARC Hamfest Saturday December 3rd. So far two of our students took the test at Devry 11/5 and passed! Congratulations to Gena, KE7FJH, and Thomas, KE7FJJ. The next Tech License class will start Saturday February 25th 2006.

The W7ASC antennas are back up with the exception of the "South" Sloper where we will have to replace it. The antenna traps and insulators were thoroughly hosed when the roof work was done last Spring. The satellite antennas are now aligned. Next is to get the automatic computer tracking software set up. The CARL Board will replace the CCD camera in the shack with a new one. The old CCD camera could be fixed but would only work marginally (the color is way off). We also discussed possible changes in the shift hours for one shift 10AM to 2PM. Unfortunately this will not do much to help get volunteers for the weekends. If there are any changes in hours it will occur after Thanksgiving.

One additional item from the CARL meeting was a discussion on a possible W7ASC "Hamfest" for early 2006. More on that later.

The annual CARL meeting for all Volunteers will be held at the Science Center Saturday January 28th 2006. Door prize is a \$50 HRO gift certificate.

Even though the "Snow Birds" are coming back we continue to be VERY sort on volunteers for W7ASC! Spread the word at your Ham Club. Call Bob at 480-961-1109 and volunteer now. A Volunteer sign-up page is available at www.w7asc.org

-73 de KG7QJ Bob B.
kg7qj@cox.net 480-961-1109

SARC HAMFEST

This weekend

DEC 3 at MCC

6:00AM to 2:00PM

SARC CHRISTMAS

GET TOGATHER

DEC 10 at 6:00PM

Bishop's Family Dining

SUPERSTITUTION AMATEUR RADIO CLUB
Board Meeting Minutes
November 8, 2005

Opening

The regular meeting of the SARC Governing Board was called to order at 6:30 PM on November 8, 2005 in Village Inn at Power Road and Main Street in Mesa, Arizona by Mike Swiader.

Present

Mike Swiader, Terry and Myrna Cross, Art and Dianne Hoffman, Harold Newman, Ron McKee, Jim Hoggard, Shawn Shroyer, Akiva Smith, Gene and Jo Wilson, Jonathan and Mary Simmonds, Stu, Bob Burleson, Steve Gurley, Rodney Bevill

Open Issues

Dianne Hoffman
Provide the financial report in the absence of Ron Hedtke.

General Fund	\$1920.33
Repeater Fund	\$3849.17
HAM Fest	\$3355.44
Petty cash	\$ 100.00

Ron motioned to accept report and seconded by Akiva.

Old Business

None reported

New Business

Ron McKee
HAMFEST activities are progressing. The door prizes are on hand and under the control of Mike. All members are encouraged to talk up the event on all repeaters. The food committee still needs some help. Ticket sells and food sells are the biggest jobs and provide the cash flow need to keep event alive each year. Ron needs help to get equipment from the club trailer to the event. Permits are in the mail and should arrive shortly. Costs breakdown are as follows (currently):

MCC	498.48	(needed now)
Port A Potty	307.34	(needed Dec 2)
Roll of tickets		
AZ Rental	248.59	
Generators		
Tables		
Coffee pots		

Steve will check to see the club needs vendor tickets.
Marriott Courtyard has set a \$10 discount for up to 10 rooms.
Ron Hedtke will provide wash station.
Lastly, event is in need of hourly prizes.

Terry Cross

Presented a list of individuals currently running for office.

Officer Nominations:

President	Mike Swiader, KA9E
Vice President	Bob Burleson, KG7QJ
	Harold Newman, KD7VK
Secretary	Akiva Smith, KE7DAB
Treasurer	Dianne Hoffman, KD7DJE

Board Nominations:

Terry Cross, NK7T
Gene Wilson, WA8TSG
Jonathan Simmonds, KD7VCF
Jim Hoggard, K7MY
Jo Wilson
Shawn Shroyer, KE7BVI
Larry Griffin, AD7GL
Steve Gurley, KY7W
Mary Simmonds, KD7ZBC

Mike Swiader

By-laws need to be changed/updated, activity may start in January.
Next meeting will be annual junque auction.
Dues for all members will be due in January and will be delinquent the 1st of February.

Harold Newman

Lost Dutchman Days event is progressing. A sample of the QSL card was circulated for everyone to see. Updated information for the card is need; i.e., current mail address, etc. Steve volunteered to help with updating the cards. Operators will be provided with information to give the contacts about the Lost Dutchman. The total expenses should be close to zero. Ron McKee stated he would look into getting the scouts antenna trailer for use at the event. It was brought up that log sheets will be needed to record all the contacts. Currently 10, 15, and 20 meters are planned but will probably be expanded. Also additional location may operate under the event call sign on other bands.

Jo Wilson

Christmas party is progressing. Jo stated she needs the 501c3 number in order to get donations for gifts and prizes. Event will be a Bishop's Family Restaurant on December 10 at 6:00PM.

Art Hoffman

Picnic is set. Event will be a potluck and will be located at Red Mountain Park on February 11. A radio station is planned for the event.

Adjournment

Meeting was adjourned at 7:15 PM by Steve.

Fixing errors in calculator programs

Editor's note: In this third and final installment, Ted KC7ZEO finishes up his beginner's guide to programming computers with some error-checking techniques and a program for a swamped CE amplifier.

Ted Roubal / KC7ZEO
Relay Correspondent

Having finished our first program last month, let's look at some mistake-correcting tactics that you can use now—or even before this point during inputting program instructions.

Should you make a mistake when entering instructions, you can make corrections in several ways.

If, after pressing a key, you realize that it was the wrong key, you can fix this in a hurry simply by backspacing one space (pressing ◀ once) and pressing the right key. This will replace the wrong key entry with the right one.

Should you find that you made several mistakes in a line of instructions, you can delete an entire line at a time by first pressing prgm, then ▶ to select EDIT, then press ENTER.

This will display your entire program and you can scroll down to the line in question, press CLEAR and the entire line is deleted. Then you can enter the correct line of instructions, followed by ENTER.

If you left out an entire line as you went through the programming process, you can insert it by scrolling to the location where it should appear and press 2nd INS (insert). Then enter the line in question, followed by ENTER.

However, when you press ENTER, another empty line will open up and you must remove it by pressing 2nd DEL (delete). If after all of this you are still not satisfied—that is, the program will not work—your best recourse is to delete the entire program and re-enter it. Check first to be sure that the program is written correctly.

To delete a program, press 2nd MEM (memory). Press 2 (MEM MGNT / DEL). Then press 7 to display Program Editor and press ▼ and ▲ to move the cursor next

to the program you wish to delete, then press DEL.

The calculator wants you to verify your intent to delete the program and it will display:

"Are you sure?"

1. No
2. Yes"

So press 2, then ENTER and CLEAR. The program you specified is now deleted from memory.

Before proceeding, this is a good place to pause a moment and say a few more words on programming protocol. Because the calculator requires that all instructions be strung out in an orderly arrangement line by line, you always see instructions written in the form:

$A \div b + C$, or $C \div X$ or $U \div \sqrt{r}$, etc.

And not:

$$\frac{A}{b+C} \text{ or } \frac{C}{X} \text{ or } \frac{U}{\sqrt{r}}$$

However, you will encounter situations which appear to require on first encounter that you enter the instructions in this manner. An example of this is:

R // B // C // D.

This is simply a way of writing R is in parallel with B in parallel with C, etc., and means: What is the value of the four components, four resistors, for example, connected in parallel? To obtain the answer you must solve the expression:

$$\frac{1}{\frac{1}{R} + \frac{1}{B} + \frac{1}{C} + \frac{1}{D}}$$

How is it possible to enter this into your program as one line of instructions in the form ...R...B... C...D...?

Enter the value for R into the calculator and then press the x^{-1} key. Now the calculator returns the reciprocal of R, that is, 1 over R, shown as R^{-1} when needed, and uses it in all calculations.

Lets do the same for B, C and D, giving: $R^{-1} + B^{-1} + C^{-1} + D^{-1}$.

Having done that, instruct the calculator to take the answer and calculate its reciprocal. That's easy: $1 \div (R^{-1} + B^{-1} + C^{-1} + D^{-1})$ will do it.

Observe that parentheses are used often in programming. If you are bit

rusty on how to use them correctly when writing algebraic expressions, do a little reviewing on the subject. For practice, solve the following:

$$\frac{18x9x(2-3)}{5-(2-3)}$$

$$\frac{18x(9x2)-3}{5-(2-3)}$$

Did you get the same answer for both? Should you? No, you should not.

Write the first expression as a single line using parentheses. Let the numbers and operators (+ x -) remain in place where they stand and insert where required so that the answer to the following is zero:

$$6 \times 2 + 3 + 2 \times -10 -10 = 0$$

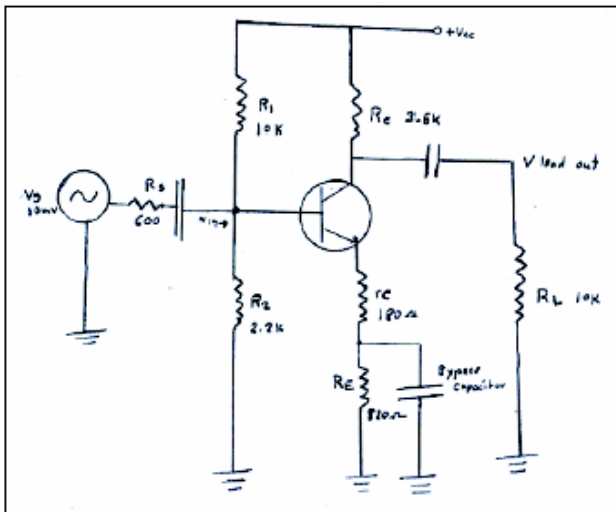


Figure 1: A swamped CE amplifier.

A swamped CE amplifier

This program, which is presented without discussion, includes z in base, z in stage, v in gain and v out load.

```
DATA A R1
      B R2
      C re
      D Beta
      E sig in
      F Rg
      G Rc
      H RL
```

```
PRGM ►► NEW ENTER
SWAMPCE ENTER
PRGM ► 2 PROMPT
```

Alpha A, alpha B, alpha C, alpha D,
alpha E, alpha F, alpha G, alpha H ENTER

Alpha A x alpha C STO alpha M ENTER

PRGM ► 3 DISPLAY 2nd alpha lock

"ZINBASE" alpha, alpha M ENTER

```
PRGM 8 PAUSE ENTER
1/ (alpha A-1 + alpha B-1 + alpha M-1)
STO alpha N ENTER
PRGM ► 3 DISPLAY 2nd alpha lock
"ZINSTAGE" alpha, alpha N ENTER
PRGM 8 PAUSE ENTER
(alpha N / (alpha F + alpha N)) x
alpha E STO alpha O ENTER
PRGM ► 3 DISPLAY 2nd alpha lock
"V IN" alpha, alpha O ENTER
((alpha H x alpha G)/(alpha G +
alpha H))/alpha C STO alpha P ENTER
PRGM ► DISPLAY 2nd alpha lock
"GAIN" alpha, alpha P ENTER
PRGM 8 PAUSE ENTER
Alpha P x alpha E STO alpha Q ENTER
PRGM ► 3 DISPLAY
"V OUT LD" alpha, alpha Q ENTER
PRGM 8 PAUSE ENTER
2nd QUIT ENTER ENTER
```

Referring to the calculator displays (Panels 1-4) and using the component values shown in the schematic (Figure 1), we see in Panel 2 that the gain is about 15 and v signal in is 7.3 mV although vg is 10 mV, showing the loading effect of a 600-ohm Rs (item F in the data).

Programming: an easy-to-follow routine

Ideally we would like Rs to be zero ohms. This is borne out when Rs is reduced to 10 ohms; v in increases to 9.94 mV (Panel 3), and V out load increases to 146 mV.

```
A=?10000 R1
B=?2200 R2
C=?180 re
D=?150 BETA
E=?10 mV generator
F=?600 Rs
G=?3600 Rc
H=?10000 RL
```

Panel 1

```
27000
ZSTG 1690.381332
VIN 7.380348889
GAIN 14.70588235
VOUTLD 108.5345425
Done
```

Panel 2

VIN	1690.381332
GAIN	9.941189663
VOUTL0	14.70588235
	146.1939656

Panel 3

VIN	1690.381332
GAIN	9.941189663
VOUTL0	19.92825827
	198.1105951

Panel 4

Panel 4 illustrates the role of output load resistance R_L on output voltage. When R_L was 10,000 ohms (panel 3), gain was 14.78. Increasing R_L to 1 meg ohm results in a gain of about 20. Gain = r_c / r_e where r_c = the parallel combination (resistance) of R_c and R_L .

Wrap-up

Programming the TI calculator is not difficult and amounts to nothing more than an easy-to follow routine. Making any necessary corrections as you go about entering a program into your TI is also easy. Programmable graphing TIs are available from Staples, Office Depot, some Bartell stores, Vernier Technology (Beaverton, Ore.), Kelley Business Machines Seattle), Radio Shack, Bi-Mart Oregon) and college bookstores. However, I recommend Staples as the place to start.

Expect to pay about \$140 to \$230 for a TI programmable graphing calculator.

Connecting your calculator to the Internet greatly extends your capabilities by allowing you to download just what you may have been looking for in the way of a certain application.

Running your TI with modules from Vernier Technology opens up a whole new realm of possibilities for your calculator. Used in conjunction with your TI, you can measure and record such variables as voltages, current, temperature, pressure, sound and light intensity, blood pressure, force, pH, and run enzyme assays.

I'd be more than pleased to assist any of you with your TI 83 / 84 series of calculators.

MEETING HOUSE

The Superstition Amateur Radio Club Meets at the Mesa Community College, at Southern and Dobson in Mesa.

Our meeting room is in the basement of the Clock Tower, center of Campus.

CALENDAR OF EVENTS

BOARD MEETING

PLACE: VILLAGE INN
POWER ROAD AND MAIN STREETS IN MESA
TIME: 6:30 PM, SECOND TUESDAY OF THE MONTH
DATE: NO MEETING IN DECEMBER

GENERAL MEETING

PLACE: MESA COMMUNITY COLLEGE AT SOUTHERN AND DOBSON STREETS
ROOM: KIVA – BASEMENT AT CLOCK TOWER
TIME: 7 PM, THIRD TUESDAY OF THE MONTH
DATE: NO MEETING IN DECEMBER

VE TESTING

PLACE: MESA UTILITIES OFFICE, 640 NORTH MESA DR.
TIME: 6:00 PM, THIRD MONDAY OF THE MONTH
DATE: 19 DECEMBER 2005

FUTURE MEETING LOCATIONS

2005 OFFICERS

President: Mike Swiader, KA9E
Cell: 480-201-1916
Email:
Vice Pres.: Bob Burleson, KG7QJ
Secretary: Rodney Bevill, K7RLB
Treasurer: Ron Hedtke, AC7MN
Directors: Terry Cross, NK7T
Jim Hoggard, K7MY
Harold Newman, KD7VK
Jonathan Simmonds, KD7VCF
Gene Wilson, WA8TSG

COMMITTEES

Amateur Radio Council of Arizona

Delegate:
Alternate: Myrna Cross, KN7M

Membership Committee

Chmn: Ron Hedtke, AC7MN

Web Site Management

Chmn: Larry Kuck, WB7CRK
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Technical Committee

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480-981-8883
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Net Control Station

Wednesdays: KG7FA, John
147.12 MHz Repeater at 8:00 PM
Thursdays: (Various)
28.47 MHz at 7:30 PM
Amateur Radio Newline both nights: Provided by
the net host

Classifieds

This space available for advertising items for sell or items wanted to purchase. Also advertise your expertise or the need for help in solving problems. This is limited to Amateur Radio needs.

Who We Are

The Communicator is published monthly by the Superstition Amateur Radio Club, Inc. (SARC), and is e-mailed to all club members.

Please notify the editor if you do not receive your newsletter, have a change of address, or have found an error. Please direct all submissions to the editor.

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Club Repeater: WB7TJD/R
147.120 MHz(+), 162.2 Hz PL
449.60 MHz(-), 100.0 PL
Club Web Site: www.wb7tid.org

LINKS

[ARRL Southwestern Division](#)
[ARRL Arizona Section](#)
[Arizona Repeater Owners Frequency Coordination Committee](#)
[Tucson Amateur Packet Radio](#)

NEEDED!

We need your article for the Newsletter. Write us about your most embarrassing situation relating to Ham Radio. Send photos as well.

2005 HAM EVENTS

December 3, 2005

Superstition ARC
Mesa Community College
Mesa, AZ

February 17-19, 2006

Yuma Amateur Radio Hamfest Organization
Yuma County Fairgrounds
Yuma, AZ

September 22-24, 2006

Southwestern Division Convention
San Diego County Amateur Radio Council
Marriott Mission Valley Hotel
Camino Del Rio North
San Diego, CA

Weekly Nets

(Updated March 2005)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1800 - AZ Desert 10-10 2000 - ECOM 2100 - 2100 Net	0700 - Coffee Clutch 0900 - West Valley 1930 - Mon Swap 1930 - Smart 2100 - 2100 Net	0700 - Coffee Clutch 0900 - West Valley 1900 - Scottsdale 1900 - SKYWARN 6 1930 - AM 2-meter 2000 - Sheriff Posse 2100 - 2100 Net	0700 - Coffee Clutch 0900 - West Valley 1900 - SKYWARN 2 1900 - Thunderbird 2000 - SARC 2100 - 2100 Net	0700 - Coffee Clutch 0900 - West Valley 1930 - SARC 2100 - 2100 Net	0700 - Coffee Clutch 0900 - West Valley 2100 - 2100 Net	0815 - Mercury 2100 - 2100 Net

NET Definitions

AM 2-meter net	144.45	AM Simplex	7:30 pm MST	Vertical polarized antennas
Az. Desert 10-10	28.445		6:00 pm MST	
Coffee Clutch Net	145.350	-600	7:00 am MST	
Mon Swap Net	146.940	-600	7:30 pm MST	Linked to Smith Peak, Yuma, & San Diego
ECOM Training Net	145.51	Simplex	8:00 pm MST	
ECOM Training Net	147.06	+600	8:00 pm MST	
Mercury Net	146.72	-600	8:15 am MST	
Scottsdale ARC	147.180	+600	7:00 pm MST	
Sheriff Posse Net	448.825	-5.0	8:00 pm MST	
SKYWARN 2	442.80	+5.0	8:00 pm MST	(Sector 2)
SKYWARN 6	146.74	-600	8:00 pm MST	(Sector 6)
Smart Net	147.16	+600	7:30 pm MST	Mt. Lemmon Tucson
Superstition ARC	147.120	+600	8:00 pm MST	
Superstition ARC	28.475		7:30 pm MST	
Thunderbird ARC	146.70	-600	7:00 pm MST	Linked to 446.15
Thunderbird ARC	446.15	-5.0	7:00 pm MST	Linked to 146.70
West Valley Net	147.300	+600	9:00 am MST	
2100 Net	147.360	+600	9:00 pm MST	Mt. Ord & linked to Flagstaff