



# YAVAPAI SIGNAL



The Yavapai Amateur Radio Club • Prescott, Arizona • DM-34 • Volume 22 – No.5 • May 2007

## Amateur Radio Balloon Flight Sets Repeater Distance Record

By Jack Crabtree, W7JLC

On April 14, 2007, Arizona Near Space Research (ANSR) conducted their 37<sup>th</sup> high altitude balloon flight. ANSR-37 carried payloads from the four major Arizona universities, University of Arizona (UA), Arizona State University (ASU), Northern Arizona University (NAU) and Embry-Riddle Aeronautical University (ERAU). Payloads included scientific equipment including hydrogen fuel cells, accelerometers, magnetometers, temperature and humidity sensors, an amateur television transmitter, several GPS receivers, and communications equipment. The launch took place East of Gila Bend, AZ, and the balloon was successfully recovered 33 miles down wind near Casa Grand, AZ. The balloon reached an altitude of 92,800 feet during the flight.

The flight is part of an NASA-Arizona Space Grant Consortium sponsored educational program called ASCEND! With this program, students get hands-on experience with conditions at the edge of space. The students will present their findings at the Space Grant Symposium at ASU on April 21<sup>st</sup>. YARC member Jack Crabtree, W7JLC, served as the liaison between ANSR and AZ Space Grant.

Supporting this flight, the ANSR tracking payload carried a cross band repeater with a 2 meter input and a 70 cm output. Amateur radio operators across the region were able to make radio contacts using the repeater.

N8DEZ/6 on Pinos Peak in Southern California and N5QO, on Apache Peak in New Mexico, set a new Amateur Radio High Altitude Balloon (ARHAB) communications record of 777.34 miles. Other contacts made during the flight, spanned distances of 724 and 715 miles. Plans are already in work for the next balloon flight to make contacts greater than 800 miles.

ANSR is a non-profit group of radio amateurs who *"promote science and education through amateur radio and high altitude balloons."* See [www.ansr.org](http://www.ansr.org) for more information. ■



Launch of ANSR-37 near Gila Bend, AZ

### Welcome to the Yavapai Amateur Radio Club

The Yavapai Amateur Radio Club (YARC) is an ARRL affiliated Special Service Club. The club participates in many activities in the tri-city area by providing communications for local events, emergency communications, and promotion of the hobby throughout the community.

Membership in the YARC is open to any interested amateur or non-amateur alike. Dues are \$20.00/year (Full-time students \$15). The YARC meets at 7:00 p.m. local time on the first Thursday of every month in the Technology Room 404, at the Granite Mountain Middle School, 1800 Williamson Valley Road in Prescott. It is about ½ mile north of Iron Springs road, and all amateurs and non-amateurs as well are invited. Programs of interest are included as part of the meeting.

The weekly Net is held every Wednesday at 7:00 p.m. local time on 146.880- repeater. All amateurs are invited to participate, and visitors are always welcome.

The Yavapai County ARES/RACES Net is held on Monday nights approximately at 7:00 p.m. local time on the 145.290- repeater on Mingus Mountain. A PL of 127.3 is required.

### Club Repeater

The YARC 146.880- repeater is located on the hill above Willow Creek road and requires a PL of 100.0 Hz. If you hear a 1400 Hz pulsing tone, the repeater is on backup battery power and usage should be limited to necessary communications. Our deepest gratitude to Bill Kafka, W2YAV for allowing us to acquire this repeater. ■

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## YARC Officers for 2007

### President

Terry Pemberton, KB7TRE  
kb7tre@cableone.net

### Vice President

Dick Hughes, W6CCD  
w6ccd@arrl.net

### Secretary

Pat Oliver, K7DUC  
joliver@commspeed.net

### Treasurer

Patti Halgunseth, KD7VBG  
kd7vbg@cableone.net

### YARC Board of Directors (includes Club Officers)

John Broughton, WB9VGJ  
Ken Severance, WA6AQK  
Richard Bozeat, KE7DTR  
Walter Schumann, KF6SPS

### Newsletter Editor

Joe Oliver, AC6AA  
joliver@commspeed.net

## Minutes of April 5, 2007 Board Meeting



A Board Meeting was held at 1815 MST. Present were Terry, KB7TRE; John, WB9VGJ; Dick, W6CCD; Patti, KD7VBG; Walter,

KF6SPS; Ken, WA6AQK., and Richard, KE7DTR.

Terry had prepared a flyer for the joint swap meet with VVARA to be held on June 2, 2007. The flyer and other swap meet items were discussed.

John will speak at the general meeting on the status of HB2595.

The Club Family Cookout was briefly discussed.

The monthly programs are scheduled through June, but we need speakers for most of the following months.

Terry proposed that our club produce a 1/2 hour video about YARC activities, for Channel 13 and other uses. Facilities at Channel 13 and in GMMS's Technology studio can be used to tape the video. The Board agreed with the project and members will be asked to participate.

Bob, WB6ODR and Jack, W7JLC joined the meeting to discuss items relating to the YARC Repeater. Bob would like to get more information from Shorty, K6JSI on replacement equipment. Jack would like to move the YARC IRLP from Glassford Hill to the club's repeater site. The Board agreed that both suggestions be explored and discussed further at the general meeting.

Terry read a letter from Sun Sounds of

Arizona requesting club assistance. David Passell, K6UWV will discuss Sun Sounds of America's needs at the general meeting.

Pat, K7DUC will e-mail YARC Rosters to members every 3-4 months. Printed copies will be made available at the meeting for those unable to download copies.

Patti will request a free DVD on DXing, from the Northern California DX Foundation, which can be shown at a future meeting

The meeting was adjourned at 1855 MST.

Respectfully submitted,

Pat, K7DUC  
Secretary

## Minutes of April 5, 2007 General Meeting

Terry, KB7TRE called the meeting to order at 1900 MST. The Pledge of Allegiance was recited and members introduced themselves.

**Visitors:** Vi Hughes; Alan Elliot, KD7OEF; Lois Diddams, and Tom Garrisi, W8BNL.

**Meeting Minutes:** A motion to approve the General Meeting minutes of March 1, 2007 was made by John, WB9VGJ and seconded by Ken, WA6AQK. The General Meeting minutes were approved.

**Treasurer's Report:** Patti, KD7VBG gave the Treasurer's Report. The previous balance was \$2110.94. The balance for the end of the month in the General fund is \$2036.54. The Repeater fund has \$1062.00.

A motion to approve the report was made by Richard, KE7DTR and seconded by Mary, AB7NK. The Treasurer's Report was approved.



## Plan to Join the ARRL or Renew Membership ?

Ask our Treasurer for a special ARRL Club Membership Application or download the Application from the YARC Website. Complete the Application and return it to the Treasurer with the application fee.

There is no extra cost to you, and our club gets to retain a portion of the dues.

## Membership Count:



1st Thurs. in Mar.....104

Gain/Loss.....-1

1st Thurs. in Apr.....103

## Committee Reports:

- **ARES/RACES/Public Service:** Lloyd, WA6ZZJ reported on the Multi-Agency wildfire exercise held on March 30th at the Prescott Mines Camp. Eight members participated.

Saturday, April 14th the Wildfire Expo will be held at the courthouse square. The new ARES/RACES communications vehicle will be there.

The first Public Service event will be the Whiskey Row Marathon, on Saturday, May 5.

- **IRLP:** Due to interference problems with a group in the Valley, Jack, W7JLC proposed that our IRLP be moved from Glassford Hill to the club's 88 site. John, WB9VGJ made a motion to move the IRLP as soon as possible, which was seconded by Patti, KD7VBG. The motion was approved.

The 36th balloon flight was held last weekend and 60 students from around the State were exposed to Ham Radio. Another flight is planned next week with 24 university students.

Saturday, April 7, Jack will teach a license class at Embry-Riddle. So far, there are 27 signups. Jack emphasized the need for volunteer instructors.

- **Public Information:** Jim, N5RO reported that some club announcements were made on radio KQNA.
- **Patches/Shirts/Badges:** Patti, KD7VBG has club patches for \$3.00; Dick, W6CCD has club shirts for \$19 for all sizes, except for XXL which are \$21. Name and call sign add \$2 to each, and Bob, WB6ODR has badges for \$5.75.

Bob, WB6ODR talked about upgrading the club repeater. He will investigate suitable replacement equipment.

- **VE Testing:** Mary, AB7NK stated that testing was held on March 30 and there were 16 successful applicants -- 6 technicians, 10 upgrades, 7 Generals, and 3 Extra Class. The next VE Testing will be on Saturday, April 21 at Embry-Riddle.
- **Elmer/Technical Specialist:** Neil, KA7JAS said that everything is in order.
- **Refreshments:** Terry thanked David, K6UWV for continually providing refreshments for our group.

## Old Business:

- **Swap Meet:** Terry showed a Flyer he had prepared to advertise this event on June 2. Much discussion followed.

A motion to waive vendor fees was made by Doug, KV8TD and seconded by Bob, WA7YUL - the motion failed to pass. Another motion to charge \$10 per vendor was made by John, WB9VGJ and seconded by Patti, KD7VBG - the motion failed to pass. Another motion was made by David, K6UWV and seconded by Bob, WB6ODR to table this discussion until next meeting - the motion failed to pass. A motion to encourage a fee by donation was made by Doug, KV8TD and seconded by Bob, WA7YUL. This motion was approved. A final motion for the presidents of VVARA and YARC to work out financial arrangements on donations was made by Bob, KC8BOB and seconded by John, WB9VGJ - the motion passed.

- **Joint Field Day/BBQ:** Field Day with VVARA will take place on Mingus Mountain on June 23/24. Bob, KC8BOB reported that an application for parking has been submitted to the Forest Department.

- **HB2595:** - John, WB9VGJ related the demise of this bill. Successfully passing in the House, the bill was held up in the Senate Government Committee and is dead for this year.
- **Club Family Cookout:** - David, K6UWV has been working on this event with Fred, N7PJM and John, W5VJH. The cookout will be held on July 14th and it will run from 10:00 a.m. - 10:00 p.m. at the Watson Lake Ramada (\$2.00 entry fee).
- **Roster Update:** Rosters will be e-mailed to members every 3-4 months. Paper copies will be available at the meeting for members unable to download copies.

## New Business:

- **Sun Sounds of Arizona:** David, K6UWV discussed the needs of this organization that provides a radio reading service via FM and the Internet for the sight impaired and others.
- **Production of Ham Radio Video:** Terry proposed the club produce a half hour video of various club activities, using Channel 13 and GMMS studio facilities. Jim, N5RO volunteered, with assistance from members, to work on this project with Lee, KC7CBK.

Lloyd, WA6ZZJ was scheduled to speak on ARES/RACES, but due to the length of our meeting, he will give his presentation next month.

A motion to adjourn the meeting at 8:40 MST was made by John, WB9VGJ and seconded by Patti, KD7VBG. The motion passed.

Bob, WA7YUL won \$19.50 in the 50/50 drawing.

Respectfully Submitted,

Pat, K7DUC  
Secretary



By Lloyd, WA6ZZJ

### ARES/RACES....

The April 14<sup>th</sup> Wildfire Expo in Prescott was the first public outing for our new Mobile ARES/RACES Communications vehicle (MARC). It drew attention even though we did not have the graphics on the side to identify the organization. There were three dual band transceivers installed at that time and more equipment is on the way. Lee, KC7CBK, did an excellent job of setting up and having equipment used in emergency communications on display.

Lee, KC7CBK, passes on the following to all who were involved:

I want to express my thanks to all who participated in the Wildfire Expo held at the County Court House on Saturday, April 14<sup>th</sup>. Without you it wouldn't have been a success

and I think for the first event with the new MARC, in my estimation, it was a success. These people made it a success: the ladies Patti (KD7VBG), Erika (KI7JZ) thanks Erika for the Lemon bread, Ray (W1OTH) and his son Dan for the help on setup, Ken (WA6AQK), John (WB9VGJ), Richard (KE7DTR), and Lloyd (WA6ZZJ). And for those that came by just to look, I'm glad you came and I hope you have some suggestions.

### TRAINING....

The next ARES/RACES training meeting is scheduled for Saturday, May 19<sup>th</sup> and will be held simultaneously in Prescott and Cottonwood. The plan is to use packet with the associated programs covered in the last training meeting to transmit messages to and from the locations. Packet set up and operation will be covered. This will be an important meeting so please plan to attend. All amateur radio operators are welcome.

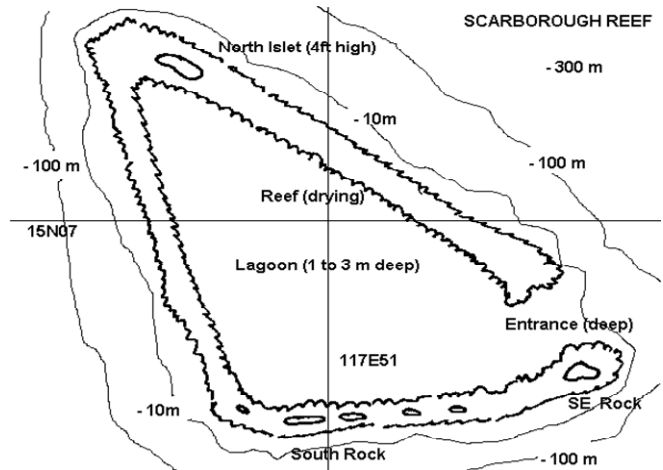
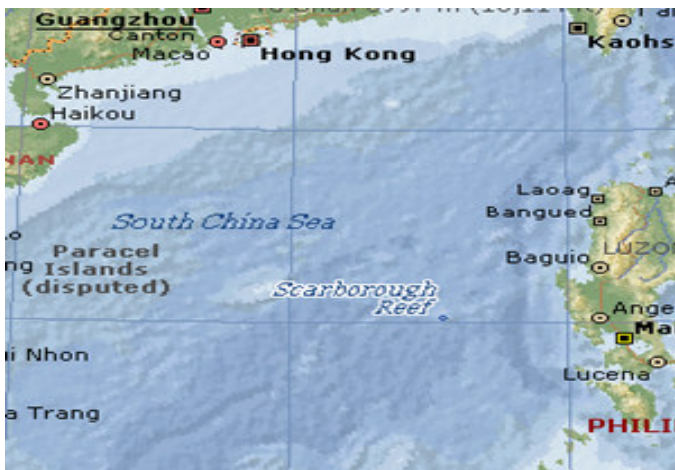
### PUBLIC SERVICE COMMUNICATIONS....

The Whiskey Row Marathon is our next public service communications event. It will be held on Saturday, May 5<sup>th</sup>.

*See ARES/RACES, Page 5*

## CQ DX de YARC – May 2007

By Dick Diddams, W7QHE



**Huang Yan Dao (Scarborough Reef)**, BS7 is number 1 on the 100 Most Wanted DXCC, list! It cannot support human life and is difficult to reach. Once on the shoal, scaffolding has to be erected, to keep dry, operate, sleep and eat.

The shoal forms a triangle shaped chain of reefs and islands 55 kilometers around with an area of 150 square kilometers and a 130 km<sup>2</sup> lagoon within that has a depth of 10-20 meters. Several of the islands are 1/2m to 3m high and many of the reefs are just below water at high tide. Near the mouth of the lagoon are the ruins of an iron tower, 8.3m high which were constructed by the Philippine Navy in 1965; who raised the Philippine flag there

The reef is claimed by the Philippines, mainland China, and Taiwan. Fishers from all three areas regularly fish the reef. However, the unclear ownership and lack of regulation exacerbate competition for the resources. Fishers use blasting devices and cyanide to fish the reef in short, destructive trips. The reef is a major site for shark fishing with gill nets and for the capture of large fish. Ships load their holds with coral to sell as decorations for store windows and aquariums.

DX operations for May is located in NG3K Amateur Radio Contest/DX Page at: <http://www.ng3k.com/Misc/adxo.html>

## This Month's Featured Ham

By Pat Oliver, K7DUC



Jeff Hanna, WB7RFY

Jeff got his Novice license in 1977, and now has his Advanced ticket as he continues to enjoy ham radio, mostly working on 15 and 17 meters. He also enjoys 2 meters SSB, FM, and is challenging himself with CW.

He first got his license, since ham radio seemed to fit in with his many and varied interests. He got his flying license around this time and was interested in electronics. Jeff has many certifications which he proudly displays.

Jeff hasn't contested for a while, but is looking forward to Field Day, where he can participate in some quick QSOs.

His most memorable contact was on VHF-simplex from Mt. Grand (near Safford) to Phoenix, which is 250 miles away.

Jeff has built many things, but likes the RDF best that he built from a kit from Australia. He also has an idea for an antenna around his property.

His most memorable radio-related mail was handed to him around 1990 by Barry Goldwater in his ham shack.

The main equipment that he uses is a Kenwood TS-450 and for VHF, a Kenwood TR-7400. He also has a number of HT's.

Jeff's only ham-related activity at present is with YARC. In the past, he has been active with the Explorer Scouts and their radio group. He also was active with

ARCA for 10 years and served both as a Secretary and Treasurer.

Jeff's family moved here in 1963, and one sister still lives in Chandler. Jeff and his big dog Yang are comparatively recent arrivals in the tri-city area.

Jeff's work background was mainly through radio. He is semi-retired at present, coming from a 100 hour work week job to consulting currently. He worked for the FAA for a while as a traffic controller and also worked at Travel Page USA. He has a broadcast license, which he obtained while in college. His flight training was done in this area.

He feels that the club is on a good track.. We have good attendance at our meetings and good participation in activities, with a lot of interest shown.

Jeff is a very valued member of YARC, with a lot of varied and important experience. We are fortunate to have him in YARC. ■



### • ARES/RACES (Continued from Page 4)

Anyone who has not already signed up, please do so before the May YARC meeting. I plan to have the assignments and information packets available at that meeting. If you are unable to attend the meeting the packets may be picked up at the net control position on the morning of the race. Some positions are manned as early as 0515 in the morning and all should be manned before 0600. Public service communications is an important part of amateur radio and is excellent training for emergency communications. It would be nice to see some new faces involved this year. Come on out and help. The Prescott YMCA is counting on us.

**REMEMBER, AMATEUR RADIO IS THE HOBBY,  
EMERGENCY COMMUNICATIONS IS A COMMIT-  
MENT.**

Lloyd, WA6ZZJ

In your shacks you must all get around  
And be sure your antenna is to ground  
Or a shock, be aware,  
Could curl up your hair  
And the radio soon heaven bound.

# Treasurer's Financial Reporting Sheet



Club / Group Name: YARC By Patti Halgunseth, KD7VBG  
 Reporting Date: APR '07 Treasurer

| Members Name            | Dues Paid      | Repeater Fund | Donations      | Prize Money Paid Out | Net Cash In per Member |
|-------------------------|----------------|---------------|----------------|----------------------|------------------------|
| Richard Bozeat/R-KE7DTR | \$18.00        | \$2.00        |                |                      | \$20.00                |
| Lee Cunningham/R-KC7CBK | \$18.00        | \$2.00        |                |                      | \$20.00                |
| Gene Bockman/R-AE7TV    | \$18.00        | \$2.00        |                |                      | \$20.00                |
| Richard Diddams/R-W7QHE | \$18.00        | \$2.00        |                |                      | \$20.00                |
| 1 Patch                 |                |               | \$3.00         |                      | \$3.00                 |
| 50 / 50                 |                |               | \$39.00        |                      | \$39.00                |
| Bob Ower - WA7YUL       |                |               |                | \$19.50              | (\$19.50)              |
|                         |                |               |                |                      | \$0.00                 |
| <b>Total:</b>           | <b>\$72.00</b> | <b>\$8.00</b> | <b>\$42.00</b> | <b>\$19.50</b>       | <b>\$102.50</b>        |

| Miscellaneous Club Expenses | Cash Out        | Check Number | Club Funds Summary | Totals     |
|-----------------------------|-----------------|--------------|--------------------|------------|
| AZ Corp Commision           | \$10.00         | 933          |                    |            |
| David Passell/Refreshment   | \$13.74         | 934          | Starting Balance   | \$2,036.54 |
| Insty Prints/Newsletter     | \$27.38         | 935          | Net Expenses       | \$406.12   |
| Seabury&Smith/Insurance     | \$347.00        | 936          | Net Income         | \$102.50   |
| Repeater Fund               | \$8.00          | Cash         |                    | \$1,732.92 |
| <b>Total:</b>               | <b>\$406.12</b> |              | Repeater Fund      | \$1,070.00 |
|                             |                 |              | Cash Flow (-)      | (\$303.62) |

## Upcoming Events

- ➔ **May 5, 2007 - Whiskey Row Marathon - Prescott**
- ➔ **May 19, 2007 - ARES/RACES Training**
- ➔ **June 2, 2007- Joint Swap Meet with VVARA - Granite Mountain Middle School Parking Lot. VE Testing from 9:00 - 11:00 a.m.**
- ➔ **June 23/24, 2007 - Joint Field Day/BBQ with VVARA on Mingus Mountain.**
- ➔ **July 14, 2007 - Club Family Cook-out at Watson Lake Ramada.**



Students from UA, ASU, NAU, and ERAU participated in NASA-Space Grant balloon flight on April 14, 2007, East of Gila Bend, AZ.

# Early Personal Computing

By Dick Hughes – W6CCD

I got into the computer game a little late compared to my peers. When my friends were learning the Digital Equipment Corp's PDP-11, I was only reading about the possibility of personal computers. It was not until 1978 that I became interested enough to purchase an Apple II+ computer, and I was on my way.

That Apple II+ was an amazing machine for its time. I paid extra for the 48K of memory for it (That's kilobytes, not megabytes.) There were no floppy drives yet available, and for a monitor you used a spare television set with an RF modulator from the Apple to the TV. One huge advantage of the II+ was that the operating system (Applesoft) came in a ROM on the motherboard. Prior to that, when you wanted to use your computer, you first had to load the operating system, then whatever program you wanted to run.

There were actually two operating systems. Applesoft and Integer Basic. For integer basic, you had to buy a plug-in card. It was possible to switch between the two from the keyboard. Loading programs was something most of today's computer users would find to be extremely tedious. Not having a floppy disk drive (Hard drives were only a dream) meant that you had to load everything from a cassette tape using a regular cassette tape recorder plugged into the Apple. It took a lot of luck and some skill to get the program to load. You would move the volume and tone controls back and forth until you found the "sweet spot" where the Apple would accept the program. Then you would wait for the tape to finish and you would finally be able to use the computer. For just that one program, you understand. If you wanted to try another program, you had to load another cassette tape in the recorder and start the voodoo dance all over again. Times have sure changed.

To give you a brief understanding of the development of the personal computer, including the Apple II, I have provided a summarized time-line of events for the primary years. Take a stroll down memory lane with me.

1969 – Intel designs the 4004 microprocessor, and MITS begins to manufacture hand calculators. The Department of Defense's Advanced Research Project Agency funds ARPANet, which came to be known as the Internet.

1971 – Steve Wozniak and his friend Bill Hernandez build a computer out of discarded parts. Wozniak and Steve Jobs begin a business adventure selling Blue Boxes capable of making "free" long distance calls. Intel begins work on the 8008 microprocessor.

1972 – Paul Allen convinces Bill Gates to join him in writing a BASIC interpreter for the new 8008 processor. They design a machine to use it called, "Traf-O-Data." Intel introduces the 8008, which runs at 200 kHz and sells for \$360.

Xerox's research center develops the Alto computer using a pointing device called a mouse, and icons to represent documents. Cost \$15,000 to build, and only 1,200 were ever produced, but the Alto and the later Xerox Star were the inspirations in the next decade for the Lisa and Macintosh.

1974 – Motorola introduced the 6800 microprocessor. Intel introduced the 8080 microprocessor. Steve Jobs begins work at Atari. Radio Electronics magazine introduces the Mark-8 computer kit using the 8008.

1975 – MITS completes design work on the Altair 8800, introduced in the January issue of Popular Electronics. Bill Gates and Paul Allen begin writing the first BASIC to run on a personal computer, the new Altair. Zilog announces the Z-80 microprocessor. Similar to the 8080, but with additional features. Gates and Allen change the name of their company from Traf-O-Data to Micro-Soft. Their new BASIC ships on paper tape for the Altair. MOS Technology introduces the 6501 and 6502 microprocessors. The IMSAI 8080 is released, which was the first major competitor to the Altair.

1976 – Shugart introduces the first 5.25 inch floppy disk drive. Wozniak and Jobs form the Apple Computer Company on April Fool's day. Wozniak's 6502 computer, later known as the Apple I, is introduced to the Homebrew Computer Club in Palo Alto. Zilog's Z-80 is released. Microsoft begins working on its own versions of BASIC. Processor Technology introduces the Sol, an Altair compatible 8080 computer. Apple I introduced at PC '76 in Atlantic City. Lots of interest, but no orders. Wozniak completes prototype of the Apple II. Wozniak leaves HP to work at Apple full-time. Commodore International buys MOS Technology, the company that created the 6502.

1977 – Horizon by North Star Computers introduced. H-8 computer introduced by Heathkit as a kit with an 8080 processor. Apple incorporates and hires Mike Markula as first Chairman.

See **Personal Computing, Page 8**

## ● Personal Computing (Continued from Page 7)

Mike helps them get venture capital. Apple II introduced at the First West Coast Computer Faire. Commodore PET introduced. First Apple II systems ship. TRS-80 introduced by Radio Shack. Applesoft, a 6502 version of BASIC, is purchased from Microsoft and released on cassette. Parallel printer card released for the Apple II. Wozniak begins work on a floppy disk drive and controller.

1978 – Exidy sells the Sorcerer with a Z-80. Epson releases the MX-80 dot matrix printer. An internet protocol (IP) is added to the previous TCP concept. It's called TCP/IP.

1979 – Orange Computer, first of the Apple II clones appears at Computer Faire. Altair 400 and 800 ships. TI-99/4 by Texas Instruments introduced. Hayes Microcomputer begins selling the Micromodem 100. Apple II+ introduced. DOS 3.2.1 released. Compuserve makes its network available for evening and weekend use as an online service by personal computers with a modem. Visicalc released by Personal Software.

1980 – Sinclair Research introduces the ZX80 with a Z-80 processor. Later sold as the Timex-Sinclair. Radio Shack introduces the TRS-80. Word Perfect announced for Data General computers. Apple III introduced with 6502B processor. Apple goes public. Commodore introduces the VIC-20 with a 6502A processor. Sold for \$299.

1981 – Steve Wozniak and fiancé injured in plane crash. Begins leave of absence. Apple has first million-dollar shipping day in March. Steve Jobs becomes chairman of Apple Computer. Central Point Software releases Copy II Plus. IBM PC introduced. Apple introduces the Profile 5 MB hard disk for Apple III for \$3,499.

1982 – Franklin Computer releases the Franklin Ace 1000, a copy of the Apple II+. Apple makes the Fortune Double 500 list.

1983 – Radio Shack introduces the TRS-80 Model 100 and the Tandy 2000. Hewlett-Packard HP150 introduced. Microsoft Word introduced. Apple IIe and Lisa introduced. IBM PC-XT introduced. Lotus 1-2-3 replaces VisiCalc as best selling computer program in America. Radio Shack Model 100 released. Considered to be first laptop computer. Ran on AA batteries. Millionth Apple II produced, and Wozniak returns to Apple.

1984 – IBM PC-AT introduced with 80286 processor.

Commodore buys Amiga. MacIntosh introduced. Named from project designer's favorite apple (spelling changed intentionally.) The Sider introduced by First Class Peripherals. First, low-cost hard drive for Apple II. Had 10MB for \$695.

The Apple II, in all the various configurations, was in continuous production for 16 years and 7 months, longer than any other computer from a single company. It was the foundation for many companies that survive to this day.

An interesting side note to the development of the Apple II+. Steve Wozniak and Randy Wiggington wrote a spreadsheet program for the Apple II called, "The Spreadsheet." This was an incredible program that loaded almost instantly, compared to the half-minute or more for most programs in those days. Unfortunately, the program had legal problems which caused it to be recalled. But, not before about 100 copies got out to the public. Dick Hughes is one of the fortunate individuals that has one of those copies. Steve Wozniak still has a copy that he keeps in a special place.

Hope you enjoyed this little trip through the development of the personal computer. Especially that of the amazing Apple II. Those interested in the nitty-gritty of the Apple II history can go here where most of the information for this article came from. <http://apple2history.org/index.html> ■

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### *Privacy Issue?*

Looking for a reverse telephone directory? Google has implemented a feature which enables you to type a telephone number into the search bar, hit "Enter", and you will be given the person's name and address. If you then click on a "Map" link, you will get a map to the person's house.

This is a nationwide service that works on some numbers, but not on cell phone numbers and some other residential or business numbers.

If you consider this feature to be a privacy or safety issue, you may want to block Google from divulging your private information. Simply click on your telephone number and then click on the Removal Form. Removal takes 48 hours. ■

# First Annual

## YARC / VVARA AMATEUR RADIO SWAP MEET



### WHERE:

Granite Mountain Middle School  
Parking in the upper parking lot.  
Set up on the basketball court.  
Bring your own tables.  
Sellers Fee: Donations encouraged.

### WHEN:

Saturday, June 2, 2007  
Gates open at 6:00 am.  
Swap meet starts at 8:00 am  
and ends at 2:00 pm.

VE Testing from 9:00-11:00 am

### HOW:

Check our website for directions.  
W7YRC.org

### WHY:

Meet friends, make friends, swap  
stories and  
gear.

### ATTENDANCE FEE:

Leave no cash.....Leave no trash



Donuts and Coffee

Available For A

Nominal Fee



## Need a Helping Hand?

If you need assistance, we want to help you. If you are just starting out in ham radio, or just have run across something that you could use a hand with... technical assistance is available from knowledgeable club members.



Call **Neil Vince**, KA7JAS at:

(928) 775-2158 or [ka7jas@arrl.net](mailto:ka7jas@arrl.net)



## Program Speakers

**May** - Lloyd, WA6ZZJ -- "ARES/RACES"

**June** - Dick, W6CCD -- "Navajo Move Into  
The Electric Age"

**July** - Lee, KC7CBK --- "Grounding"

**August** - Bud, N7CW -- "WINLINK 2000"

### AGING

• I feel like my body has gotten totally out of shape, so I got my doctor's permission to join a fitness club and start exercising. I decided to take an aerobics class for seniors. I bent, twisted, gyrated, jumped up and down, and perspired for an hour. But, by the time I got my leotards on, the class was over.

• Reporters interviewing a 104-year old woman. "And what do you think is the best thing about being 104?" the reporter asked. She simply replied, "No peer pressure." ■

# HF Digital modes, a lot of fun

By Bruce Randall, W1ZE

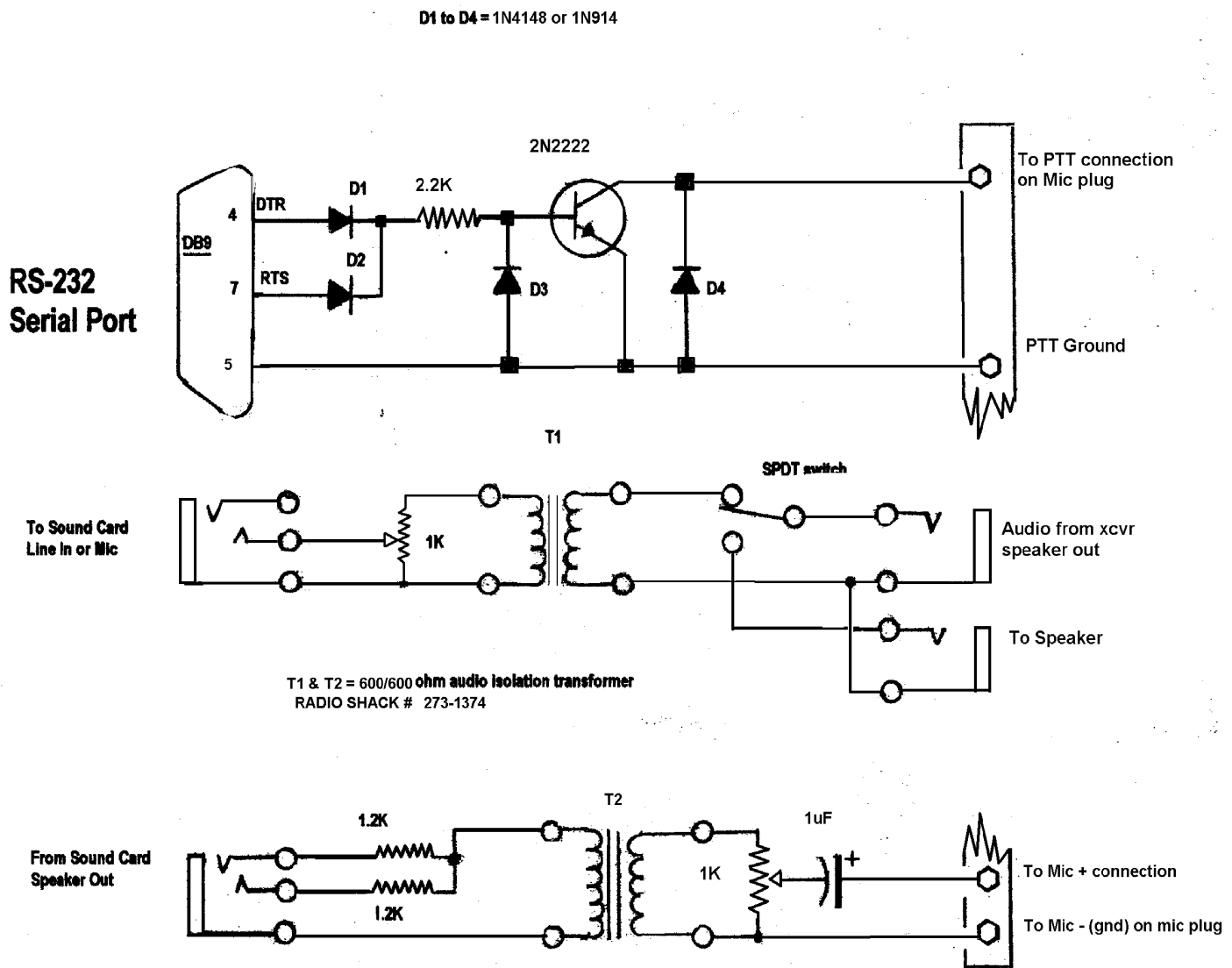
With the HF band open to those of you that will be upgrading to General or Extra class, there is a lot more to do than just SSB phone. Oh yes, there is still CW but there is a growing throng of hams using the so-called sound-card digital modes. CW is the original digital mode, but there are RTTY, PSK31, PSK63, MFSK, AMTOR, PACTOR, PACKET, and MFSK, digital FAX, SSTV and others. Almost all these modes can be done with your spiffy new HF transceiver and a PC with the aid of a little device called a sound-card interface unit between your PC sound-card and the microphone and speaker connection on your transceiver.

Now you can go out and spend another hundred dollars

plus for one from RigBlaster, MFJ or other suppliers for an interface with fancy silkscreen lettering, but you can build a simple interface unit with parts from your local Radio Shack store. I have to admit, it is starting to get more difficult to find just the right parts there, but all the parts for the following device are available at the blister-pack store.

The heart of the interface consists of two 600 to 600 ohm audio isolation transformers, 4 diodes, one transistor, a toggle switch, two variable resistors, handful of resistors and capacitors, and a few connectors. Many of the parts may already exist in your junk box. The entire unit can be housed in a small aluminum chassis box and assembled on a small printed circuit project board. No external power or battery supply is necessary. All the power necessary to run the unit comes from the signal voltages from your sound-card and the voltage that is present on your transceivers PTT line.

See HF Digital Modes, Page 11



● **HF Digital Modes** (Continued from Page 10)

**Parts List:**

- 2 ea. 600/600 isolation transformers RS# 273-1374
- 1 ea. 2N2222 transistor RS# 276-1617
- 2ea 1K ohm trim-pot RS# 271-280
- 4ea 1N914 diodes RS# 276-1122
- 1ea 1uF Cap. RS#272-996
- 1ea 2.2K res. RS#271-1121
- 2ea 1.2K res. RS#271-1120
- 1ea Aluminum Box
- 1ea RS#232 DIN-9 (Female) receptacle
- 4ea mini phone jacks
- 1ea DPST switch

If you have a couple of old junk computer sound-cards in your stash of computer parts, you can salvage the coupling transformer off the board and use it in place of the Radio Shack transformer.

After you build the interface unit you need to download the various soundcard terminal programs for the various modes. Many are freeware, but some are shareware to try out for a period of time to see if you want to buy them. These tend to be the multi-mode programs that process several modes in one program like MixW 7.0. To get you rolling there is a freeware program that works well with lots of features for PSK modes called DigiPan. Just go to your search engine and look it up and download the Zip Exe. File.

Modes like PSK and MFSK do not require a lot of power for successful communications. In fact, it is recommended that you use 50 watts or less so that your signal is very linear with very low IMD (-25db or greater). You will be amazed how well the program copies very weak signals. For over a year I used my Yaesu FT-817 5-watt QRP transceiver in digital modes and I managed to work an amazing amount of solid copy DX.

Here are some web sites that you can download various operating programs.

JE3HHT freeware:

TTY Program called MMTTY

<http://mmhamsoft.amateur-radio.ca/mmtty>

SSTV Program called MMSSTV:

<http://mmhamsoft.amateur-radio.ca/mmsstv/>

DigiPan 2.0 (for PSK31 & PSK63) can be downloaded from:

[www.digipan.net](http://www.digipan.net)

For CWget and other programs.


<http://www.dxsoft.Com>

The following is the band plan for HF digital, RTTY, and SSTV:

| <u>Band</u> | <u>Digital</u> | <u>PSK31</u> | <u>SSTV</u> |
|-------------|----------------|--------------|-------------|
| 160M        | 1.800-1.810    | 1.83815      | 1.840       |
| 80M         | 3.580-3.640    | 3.58015      | 3.845       |
| 40M         | 7.060-7.099    | 7.08015      | 7.171       |
| 30M         | 10.120-10.150  | 10.14215     | -----       |
| 20M         | 14.060-14.099  | 14.07015     | 14.230      |
| 17M         | 18.100-18.110  | 18.10015     | -----       |
| 15M         | 21.060-21.099  | 21.08015     | 21.340      |
| 12M         | 24.920-24.930  | 24.92015     | -----       |
| 10M         | 28.070-28.130  | 28.12015     | 28.680      |

Most digital and TTY modes use LSB. SSTV uses SSB protocol.

If you have any questions about HF digital modes, please feel free to contact me at [WIZE@arrl.net](mailto:WIZE@arrl.net). ■



## Computer Tips

**By Jim, N5RO**

Want to know what's what in your computer system? Download this FREE program and it will run a report on all components, operating system, installed system programs, etc. which can be printed out. Quite handy if you're selling or upgrading your computer, or if you're not sure what components you have. I've been using it for years and it's one of the best utilities around.

[http://www.belarc.com/free\\_download.html](http://www.belarc.com/free_download.html)

## Weekly Breakfasts



### Tues. Morning Breakfast –

7:00 a.m. at

**Back Burner Cafe**

8400 E. Long Mesa Drive

& N. Robert Road

*Informal – all are invited.*

### Wed. Morning Breakfasts:

7:00 a.m. at

**Iron Horse Restaurant**

(Hwy 89 in Chino Valley)

(N 34°43'56.5" W112°27'15.4")\*

*informal – all are invited*

8:00 a.m.

**Masonic Lodge**

(1280 Willow Creek Road,

2<sup>nd</sup> Floor; above Bank of America)

*informal – all are invited*

\* Location data (per WGS84) provided

by Fred Zimmermann, N7PJN

## Area Repeaters

| Frequency | PL    | Location             | Owner/Club     | Auto-Patch | Rem. BaseOr Linked         | Vo IP | Notes:                        |
|-----------|-------|----------------------|----------------|------------|----------------------------|-------|-------------------------------|
| 52.560-   | 100.0 | Mt. Union            | N7NGM          |            |                            | Echo  | -500KHz Offset                |
| 53.040-   | None  | Prescott Airport     | WB7BYV         |            |                            |       | -1MHz Offset                  |
| 145.290-  | 127.3 | Mingus Mtn.          | ARES/RACES     |            |                            |       |                               |
| 146.780-  | 91.5  | Williams Mtn.        | BWARC          |            |                            | IRLP  |                               |
| 146.880-  | 100.0 | Prescott             | YARC           |            |                            |       |                               |
| 146.980-  | 162.2 | Flagstaff            | CARC           |            |                            |       |                               |
| 147.000+  | 162.2 | Mingus Mtn           | MMRG           |            |                            |       |                               |
| 147.040+  | 100.0 | Prescott Heights     | W2YAV          |            |                            |       |                               |
| 147.140+  | 162.2 | Flagstaff/-Mt. Elden | ARA            |            | Linked to Mt. Ord 147.360- |       |                               |
| 147.220+  | 162.2 | Mingus Mtn           | VVARA          |            |                            |       |                               |
| 147.260+  | 103.5 | Mt. Union            | ARES/RACES     |            |                            |       |                               |
| 442.150+  | 100.0 | Mingus Mtn           | W1OQ/Northlink |            |                            |       |                               |
| 442.350+  | 100.0 | Glassford Hill       | N7KPU          |            |                            | IRLP  |                               |
| 445.300-  | 100.0 | Prescott             | WINSYSTEM      |            | Node 3727                  | IRLP  | KB6TWC                        |
| 448.475-  | 100.0 | Flagstaff-Elden      | ARA            | Yes        |                            |       |                               |
| 448.500-  | 100.0 | Prescott             | KB6TWC         | Yes        | RB to White Tank 146.940   |       | E-mail owner for instructions |
| 448.875-  | 100.0 | Flagstaff-Elden      | Northlink      |            | Linked                     |       |                               |
| 449.175-  | 100.0 | Towers Mountain      | Northlink      |            | Linked                     |       |                               |
| 449.675-  | 88.50 | Prescott Airport     | WB7BYV         |            | Linked to P Mtn. 927.3875  |       |                               |
| 927.3875- | 151.4 | Prescott             | WB7BYV         | Yes        | Yes                        | Echo  | Be Nice                       |

### Y.A.R.C. IRLP NODE

Node Number 3182

442.350+ MHz with a  
PL of 100.0 Hz

For more Repeater Information & Listings refer to:

- [www.w7ara.org/Web/](http://www.w7ara.org/Web/)
- [www.azrepeaters.net](http://www.azrepeaters.net)
- [www.azfreqcoord.org/listings.htm](http://www.azfreqcoord.org/listings.htm)

## YAVAPAI AMATEUR RADIO CLUB

P.O. BOX 11994

PRESCOTT, AZ 86304

Visit us on the web at <http://www.w7yrc.org>

Many thanks to Bob Smith, WB6ODR, our Webmaster

