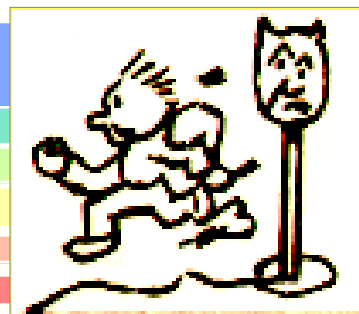




Mike Shy

Official Publication of
Society Radio Operators



Volume 71 Number 3-4

March - April 2011

Upcoming Events

Madison WI Hamfest
April 16th at the Mandt
Community Center
400 Mandt Pkwy in
Stoughton WI

DeKalb Hamfest May 1st at
the Sandwich Fairgrounds in
Sandwich IL

Details and directions can be
found on the club web site -
Hamfests

Apollo Guidance Computer



Apollo Guidance Computer and DSKY

Developed by	MIT Instrumentation Laboratory
Manufacturer	Raytheon
Produced	August 1966
Continued	July 1975
Used in	Avionics Guidance Computer
Processor	Discrete IC RTL based
Frequency	2.048 MHz

SRO Spring Auction

Edgebrook Field House
6100 N Central Ave - Chicago
Apr 13th 8:00 PM

Spring is slowly coming but should be here by the April meeting. We have had a few early hamfests and a bunch more are scheduled for June and later. In the mean time, look in your drawers and closets for things you have not used in a while. Someone may be looking to have it and use it by taking it off your hands in exchange for some money. As in the past, the SRO cut will be 10% up to \$5.00. We always have a great time so put the 13th of April on your calendar and bring a friend.



Meeting Minutes

by Jim AA9DT

Mike Shy

SRO Regular Meeting - Feb 9th at the Edgebrook Field House



SRO Notes for February 9, 2011: Digging Out on Groundhog Day

By Jim Hawes, AA9DT

TONIGHT'S MEETING. The two Mikes are outside, dragging the new computer into the field house. Apparently they previewed our presentation for tonight. The topic is the development of the computer and software for the 1969 moon landing. Although the original computer is unobtainable, our guys managed to slap together a reasonable facsimile. Mike Brost WA9FTS thinks that he can use the computer on fox hunts. Mike Leibovitz WA9EVF will plot a route around traffic to the Board of Trade.

I'm exaggerating just a little. But someone did build his own Block I AGC (Apollo Guidance Computer) - See Page 1. Working for four years, SRO member John Pultorak succeeded in reproducing the AGC. John is a software engineer. His manual for the computer makes the plans available online. Yet what would be harder than finding obsolete Fairchild RTL chips? The computer requires 4,100 of them. (The Block II AGC reduced the number to 2,800.) Actually, the chips might be the easy part. John substituted vintage TTL chips. On the other hand, just try hand-winding those core memories! Building on John's work, others offer a virtual AGC for Windows or Linux!

What guided Neil, Buzz and Apollo 11 to land on the moon was the improved AGC. The nickname for this computer is Block II. This computer weighs 70 pounds and requires 55

watts of power. (The original model of AGC debuted in 1966. NASA discontinued the AGC in 1975.) The AGC uses 16-bit words and can store 2,048 of them in RAM. Modern ROM chips weren't very developed back then. Instead, the Apollo computer stores programs in primitive core rope memory. The capacity of this core memory is 36,864 words. The device operates at 2.048 MHz, less than half the speed of an old IBM XT. Yet unlike the XT, the Apollo computer can multitask eight programs at the same time. The AGC also includes a virtual environment.

Most lunar missions had two such AGC computers aboard. One AGC was in the command module and the other was in the lunar module. Apollo 8, which didn't have a lunar module, only had one AGC. Apollo craft also included two additional onboard computers.

ONE OF THE LATEST TECHNICAL MARVELS has been stopping up pencil sharpeners for hundreds of years. Last fall, two scientists won the Nobel prize in physics. The subject of the award was their development of graphene technology. Graphene is a nanomaterial that may one day replace silicon in semiconductors.

SRO members Andre Geim and Konstantin Novosolev acquired their raw material from pencils. Using Scotch tape, they actually peeled graphite from pencils. Repeating the peeling process eventually gave them a layer that was as thin as they needed: Only one atom thick. Graphene is the name for this extremely thin layer of graphite. You might imagine that it's smooth, but actually, it forms a kind of honeycomb. The two scientists represent Manchester University in England.

Some people think that the new graphene is the world's strongest and most lightweight material. It isn't very rigid, and will allow bending or stretching into curved shapes such as cylinders. Because graphene is very dense, gases and liquids can't penetrate it. Despite its strength, over 100 times that of steel,

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Mike Shy

Meeting Attendance

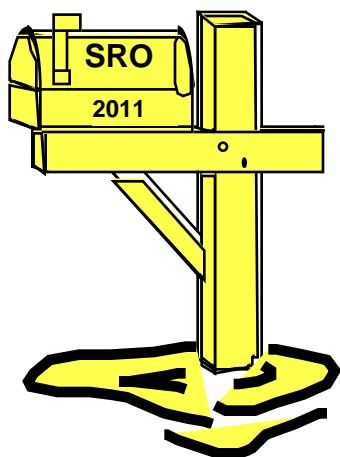


Feb 9th at the Edgebrook Field House

Mike WAEVF Jim AA9DT
 Jean KB9FXL Mike WAFTS
 Pete WVP

Chicago Marathon-2010

CFAR was one of the major repeaters used in the Chicago Marathon. It performed flawlessly during the event. As a result, the Bank of America sent money to the North Shore Radio Club to be distributed to clubs whose repeaters helped make the marathon a success. As a result, we received a check for \$300.00.



**IF YOU MOVE
 LET THE
 EDITOR KNOW
 YOUR NEW
 MAILING &
 EMAIL
 ADDRESS - IT IS
 YOUR WAY OF
 KEEPING MIKE
 SHY IN YOUR
 MAILBOX EACH
 MONTH**



Treasurer's Report

by Mike WA9FTS

Balance as of 1/1/11	\$1969.43
CFAR Contributions	\$295.00
Membership Dues	\$460.00
Misc Income	\$300.00
Total Income	\$1055.00
Annual Report	\$10.00
Postage	\$11.00
Refreshments	\$9.69
Supplies	\$11.29
Total Expenses	\$41.98
Balance as of 4/13/11	\$2982.45

Birthdays

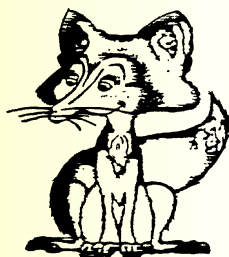
For the months of
April & May

K9GDI	Leo Hunter	May 18th
K9JQ	Jim Quinn	Apr 17th
K9YSE	Dan Galarde	May 10th
KC9BLH	Curtis Newton	May 22nd
WV9P	Peter Pfister	May 6th

Mike Shy

Foxhunt Report

by Mike WA9FTS



CFAR 2M Foxhunt
February 5th, 2010
by Mike WA9FTS

Don tried to convince the hunters he would not be in his car like he has in the past. We did not believe him. The hunters started out going south on Rt 83. Charlie KB9DIM made the right choice as he got off at 22nd and drive east to York Rd. Charlie scored quickly for the win as he found Don on top of a snow mountain in the middle of a shopping center. Tom N9CBA came

in 2nd 5 min later with Tony AA9CC and Joan KC9QQY 3rd - another 5 min later. Paul N9LXF and I arrived and circled the mound of snow and finished 4th. Matt KC9SEM, John WD9EXW ended the hunt. We met at Jason's Deli a few hundred feet away.

Results:

1. Charlie KB9DIM, Alexis N9VRA, Missy
2. Tom N9CBA
3. Tony AA9CC, Joan KC9QQY
4. Mike WA9FTS, Paul N9LXF
5. Matt KC9SEM, John WD9EXW, Patty, Janet

CFAR foxhunt is scheduled every first Saturday of the month. Hunters gather at the shopping center at Rt 83 and St Charles Rd in front of the Sears Essentials store. All are welcome to participate in finding the fox..

CFAR 2M Foxhunt
March 5th, 2010
by Tom N9CBA

Charlie KB9DIM who was the fox did not supply the foxhunt report. The following was submitted by Tom N9CBA who was one of the hunters.

Charlie KB9DIM and Alexis in car.
Various roads were closed due to accidents, so that affected available routes. Munch was at Mother's Day restaurant on 22nd Street near 9th Ave.

Results:

1. Tony AA9CC, Joan KC9QQY
2. Tom N9CBA, John WD9EXW, Janet
3. Matt KC9SEM, Adam and Chad
4. Don W9RA

CFAR 2M Foxhunt
April 2, 2011
by Tony AA9CC

We planned to hide at Matt's and Pattie's house in Montgomery, figuring anyone with a newborn would be home, but no, they were out hunting and little Jacob became the youngest fox hunter to date, 6 days old! Of course if he was born 6 hours sooner he would have had the irrevocable title of being delivered during last weeks foxhunt. We decided in the interest of public sanctitude, not to erect a 30 foot pole in their driveway and left. We spotted some hills across the wetlands but with no obvious route and without a GPS we ran out of time trying to drive there and decided to find a water tower to illuminate electromagnetically from beneath. We did so by pointing the 10 element beam straight up from the base of the tower. With some check to repeaters I thought we would have an adequate

Continued on Page 5

Foxhunt Reports

Continued from Page 4

signal, 25 miles at 60 degrees. Using the ARRL VHF propagation nomographs, the signal would have been 10 dB over noise using a 10 dB gain antenna at 30 feet and 25 watts over the distance.

All the foxhunters heard the 5 watt signal, except for Mike who reported not hearing but won the hunt none the less. The signal was horizontal, but not strongly so. The winning route was 83 to North Avenue to 355 to 59 to Odgen... The slower route was Butterfield through Glenn Ellen. The signal was remarkable good, we made two receive sites, Lisle and Lake Zurich. I heard Mike at the start on the input with 5 watts and a quarter wave. I suggested humorously that the the ACL repeater be set up this way. Munches were at Fridays on Orchard in Aurora.

Results: April CFAR Foxhunt

- 1 Mike WA9FTS and Paul N9LXF 9:20
- 2 Tom N9CBA and John WD9EXW with Janet and Betsy 9:20
- 3 Don W9RA 9:30
- 4 Matt KC9SEM with Pattie and Jacob. 9:45

Continued from Page 2

graphene is nearly transparent. Better yet, graphene is a superb conductor of both heat and electricity. Electrons travel 100 times faster in graphene than in silicon. For this reason, graphene may have uses in high-speed semiconductors. IBM has already published a paper on its graphene semiconductor for radio frequencies. Other companies have displayed a graphene flat panel display and graphene conductive ink. Since graphene is a

Puns For Those With A Higher IQ

In democracy your vote counts. In feudalism your count votes.
She was engaged to a boyfriend with a wooden leg but broke it off.
A chicken crossing the road is poultry in motion. If you don't pay your exorcist, you get repossessed
With her marriage, she got a new name and a dress.
The man who fell into an upholstery machine is fully recovered.
You feel stuck with your debt if you can't budge it.
Local Area Network in Australia - the LAN down under.
Every calendar's days are numbered.
A lot of money is tainted - Taint yours and taint mine.
A boiled egg in the morning is hard to beat.
He had a photographic memory that was never developed.
A midget fortune-teller who escapes from prison is a small medium at large.
Once you've seen one shopping center, you've seen a mall.
Bakers trade bread recipes on a knead-to-know basis.
Santa's helpers are subordinate clauses.
Acupuncture is a jab well done.



nanomaterial, it might be the perfect candidate for replacing silicon in very dense integrated circuits. We need a replacement eventually, as silicon nears the limit of its capabilities. While graphene isn't ready yet, the scientists predict that it might be after 20 years. (References: Naik, Gautam. "Ultra-Thin Carbon Earns Nobel." The Wall Street Journal (Wednesday, October 6, 2010): A10. Apollo story: Wikipedia and Gizmodo.)

SRO Officers

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Mike Brost - WA9FTS

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Jon Tammen - K9IQF

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Editor/Circ. Mgr.
Mike Brost - WA9FTS
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708.457.0966 Voice

Regular Meeting Place

Edgebrook Field House second
Wednesday at 8 PM **unless otherwise indicated in Mike Shy.**

Standing Committees

Membership - K9JQ
Program - Open
Meeting Refresh. - AA9DT
Foxhunting - WA9FTS
Repeater - K9IQF
Field Day - Open
Education - WA9EVF
Mike Shy - WA9FTS
Picnic - WA9FTS
Dinner/Play - Open for 2008
Christmas / Hanukkah Party -
WA9EVF

SRO Web Site

www.w9sro.org
Mike Brost - WA9FTS

SRO Repeaters

	In	Out
CFAR (107.2) PL	147.75	147.15
TOOFAR	223.26	224.86

Repeater Personnel

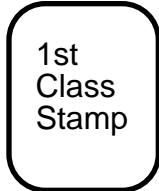
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Control Operators
K9IQF, TBD
NW Maintenance
WA9FPT
Northeast Maintenance
K9IQF & TBD
Lisle Maintenance
WA9AEK

W9EJ Exp Date May 2018

**Mike Shy is published 6 times a year by the Society Radio Operators.
Deadline is 2 weeks before the meeting.
Contributions are welcome & should be sent to the Editor.**

Mike Shy

Mike Brost - WA9FTS, Editor
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Norridge IL 60706-3245



First Class Mail

SRO Spring Auction

Edgebrook Field House
6100 N Central Ave - Chicago
April 13th 8:00 PM

