



KEY KLIX

Amateur Radio Club of Savannah

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ANNOUNCEMENTS

The next meeting of the Amateur Radio Club of Savannah will be held, Tuesday, June 12, 2007, 7:30pm, at Memorial Health University Center, in the Hoskins Building Classroom "5." The Hoskins building is on the South Side of the hospital near Parking Garage "C." Enter the Hoskins Building on the side that faces the Parking Garage "C." There will be a short program following the business portion of the meeting.

The Amateur Radio Club of Savannah Field Day will be held at the National Guard Recreation Pavilion at Travis Field June 23-24, 2007. Setup will begin around 10am Saturday. We will operate during Field Day from 2pm Saturday through 2pm Sunday. There will be a "covered dish" dinner Saturday evening.

There are several ways to get to the ARCS Field Day...

Take I-16 to Dean Forest Rd (aka Hwy 307) and head towards airport or Hwy 80 to Dean Forest Rd. (aka Hwy 307) and head towards airport. Turn right (away) from the Savannah International Airport on Darque Rd. and go to end of road to pavilion. Be ready to show valid ID if military guards are present at the checkpoint. Tell them you are with the Amateur Radio Club of Savannah Field Day Exercise.

For more information, contact Andy Blackburn, WD4AFY at (912) 238-4676, or Email: andy@g-net.net



ARCS FIELD DAY MAP

P25 DIGITAL: WHAT IS IT AND WHY DO I WANT A P25 CAPABLE SCANNER?

--Mac McCormick, KF4LMT

P25 is a common standard for land mobile radio that was developed by APCO International (Association of Public Safety Communications Officials). Essentially P25 involves the use of a common digital modulation and a reduction in channel spacing. P25 radios must be capable of transmitting and receiving both traditional analog and a common digital voice signal. The reduction in channel spacing will reduce frequency spacing from 25 kHz to 6.25 kHz.

Within that description are the two reasons why a radio hobbyist would want to get a P25 capable scanner. The first and most obvious reason is to be able to make an understandable voice signal out of the P25 digital signal. P25 capable scanners have circuitry that decodes the digital signal to voice form. An audio sample of an undecoded P25 digital voice channel can be found at: <http://www.kb9ukd.com/digital/astro-imbe.wav>. The second reason is to be able to tune the new channel spacing. Most scanners and receivers up this point would only tune down 12.5 kHz steps in the VHF/UHF ranges. The newer radios will tune the 6.25 kHz steps.

6.25 kHz spacing will eventually be the norm, so it would be better to have the capability and be prepared than it would to be left out when the change occurs. While 6.25 kHz spacing may not be in widespread use yet, there are P25 digital voice systems in the Savannah area. If you don't have a P25 capable radio, there are some communications you are missing out on. I can offer three examples of P25 digital radio systems in this area.

The first is the Fort Stewart/Hunter AAF Trunked Repeater System (TRS). The Fort Stewart/Hunter AAF TRS utilizes all P25 digital voice with 5 repeater sites to cover the Fort Stewart Post area and training areas and the Hunter AAF Post area. The Military Police, Crash/Fire Department, and EMS use this system in addition to other users such as Range Control, Forestry, Wildlife, and various military units..

The second system is the Chatham-Effingham TRS. This multi-site system covers both Chatham and Effingham counties and is used by almost every public safety agency in both counties in addition to other government users.

This system is mixed mode, which means it is both analog and digital. While it is mostly analog voice, more digital voice talkgroups are slowly showing up. Here are some examples of P25 digital voice talkgroups on the system, you can find more listed on the Radioreference.com website (see the link below).

17200 Effingham Fire/Rescue Admin 2
16752 Effingham County S.O. Channel 2
16784 Effingham County S.O. Channel 3
61488 City of Savannah Technology Department (clear and encrypted)
61520 City of Savannah Technology Department (clear and encrypted)
61616 City of Savannah Technology Department (clear and encrypted)

You can certainly look for more agencies in the area to go digital. At this point it is not a question of if, but of when.

The third system is one that I recently discovered in use by the US Fish and Wildlife Service. I first found it while searching the federal VHF band in April. It seems to be a four site conventional linked repeater system that is used by the Savannah National Wildlife Refuges National Wildlife Complex which is comprised of refuges from the Hilton Head, SC area to the Darien, GA area. The repeater outputs are on 169.825, 171.650, 172.450, and 172.650. All of the traffic has been P25 digital voice.

It is also worth noting that the FBI repeater network in our area is P25 digital, but all of the traffic I have heard on it has been encrypted.

I look forward to seeing everyone at Field Day this year. I will have my Uniden BC796 base/mobile scanner as well as my Uniden BC396 portable scanner on hand as well as an older scanner to demonstrate the P25 decoding and what the undecoded P25 signal sounds like. Next month, I'll be spotlighting the BC396, a radio that has rapidly become one of my favorites.

Sources:
Project 25 Document Suite
<http://www.its.bldrdoc.gov/resources/p25/P25DocSelection.pdf>

Radioreference.com – Chatham-Effingham County System
<http://www.radioreference.com/modules.php?name=RR&sid=1441>

INERTIA IS YOUR ENEMY – A BRIEF DISCUSSION OF SHIPPING FRAGILE RADIO ITEMS

--Philip Ashley Neidlinger, KA4KOE

Here is the scenario: You have scoured the Internet, magazine advertisements, hamfests, and garage sales looking for that vintage ham radio item of your dreams. You are looking for a Super Deluxe XX-97B with patented transmogrifier circuitry. Only 200 were ever made, so it is a rare item. The 97B belongs to an old timer in Nebraska, who is auctioning the item on Ebay. You win the radio at a price that is well within your budget. The vintage piece of radio history is shipped to your domicile via one of the usual methods: let's not point fingers at any particular mass shipper. The day of delivery has arrived and the uniformed delivery person leaves the parcel with you. The box looks like its been through a war zone, and Styrofoam peanuts are bleeding out of its many rips and tears. You suspect the worst, and feel that familiar sinking feeling in your gut.



Figure 1

As you open up the package, you discover to your horror that what you know have in your possession was once a radio. It's now a pile of worthless junk. Dents are all over the case. The heavy power supply transformer has ripped loose from its moorings on the chassis and has bounced all over the inside of the cabinet like a pinball, smashing tubes and anything else that got in the way. It looks very much like some madman has taken out his frustrations on the radio with a heavy sledgehammer. You ask yourself, "How could this much damage have occurred?" You feel a great sadness overcome you as you love old tube electronics, and seeing

this carnage is akin to watching a dog get kicked by its owner. It's just not right.



Figure 2

You paid the seller with a cashiers check. The package was insured as recommended, but now you have to feel your way through the labyrinthine maze of the damage claims department of the shipper. Its not your fault the item was damaged. If your seller is a decent, honorable sort, you'll be better off. If not, its going to be rough going ahead. The shipper removes the sad remains of the unit and it is delivered to their "damage inspections department". It may be awhile before you get your hard earned money back.

What happened to the radio? Well, lets pull out our high school physics textbook. Remember Newton's First Law of Inertia? It states that

$$\text{Force} = \text{mass} \times \text{acceleration.}$$

We will not delve deeply into the physics of why packages are destroyed, and may summarize by saying that very heavy moving objects don't have to be moving all that rapidly to wreak havoc on themselves when they come to a sudden stop. That 90 lb amplifier may only have dropped 3 feet off the back of the truck, but just imagine the incredible forces at work as the motion of the unit is stopped dead cold by the hard concrete floor of the shipping dock. Remember, it's the sudden stop at the end that is the killer, as skydivers will tell you. You must design your packaging to absorb the force of impact in order to prevent it from being instantaneous. The packaging slows down the package over a definite period of time and minimizes the shock

to a certain degree. How do we accomplish this? Here are some general tips:

1. **Always** double box radios. Do not rely on shipping outlets to “professionally” pack your item. Their skills leave a lot to be desired. If you want to do it right, do it yourself. Put plenty of energy absorbing material, such as Styrofoam peanuts, between the first and second box. It is better to have the second box abused, and thereby isolate the destructive forces from the inner box.
2. Remove vacuum tubes and ship them separately. Do not roll them together in a wad. Wrap each tube individually.
3. Provide plenty of packing materials. Do not use newspaper, as it is nearly useless. I like large cell bubble wrap wound around the item in abundance. Styrofoam peanuts are not great when used as the sole means of packing. Some people use solid Styrofoam sheets to help prevent shifting of heavy components inside the double box.
4. Imagine what would happen if you were to drop your package from 3 feet. If you are uncomfortable, do more. It is not a bad idea to overdo this one project. Sure, it may cost more to ship, but headaches will be minimized.

What did you do wrong as the buyer?

1. Never buy items with cash if at all possible, either by cashiers checks or money orders. Use a credit card. In this manner, you can dispute the charge if the seller will not help you, or the insurance claim is denied by the shipper because of improper packaging on the shipper's part.
2. Never accept delivery on any package that has obvious signs of massive abuse on the exterior. If the package appears okay, but the item inside is damaged, call the shipper immediately. This is important.

This discussion is not meant as the end all for packaging delicate electronics. I would welcome your feedback. I was recently saddened by the delivery of a severely damaged radio that was due in part to poor packaging (i.e. not double-boxed) on the part of the shipper. This is the

second time I have received damaged vintage radio equipment that had to be returned. Lack of double boxing appears to be the major culprit. I hope this never happens to you, my ham friends. --Permission granted from Philip Neidlinger to reprint article © 2003 – 2007

FIRST WALKIE-TALKIE CREATED BY GALVIN MANUFACTURING COMPANY (FORE-RUNNER OF MOTOROLA)

The first radio receiver/transmitter to be nicknamed "Walkie-Talkie" was the backpacked Motorola SCR-300, created by an engineering team in 1940 at the Galvin Manufacturing Company (fore-runner of Motorola). The team consisted of Dan Noble, who conceived of the design using frequency modulation, Henryk Magnuski, who was the principal RF Engineer, Marion Bond, Lloyd Morris, and Bill Vogel.

Motorola also produced the hand-held AM SCR-536 radio during World War II, and it was called the "Handie Talkie" (HT).



The terms are often confused today, but the original walkie talkie referred to the back mounted model, while the handie talkie was the device which could be held entirely in the hand (but had vastly reduced performance). Both

devices ran on vacuum tubes and used high voltage dry cell batteries. Handie-Talkie became a trademark of Motorola, Inc. on May 22, 1951. The application was filed with the U.S. Patent and Trademark Office, and the trademark registration number is 71560123.

Early Handie-Talkies had tubes and ran on 4, 45-volt dry cells or 12V Nickel-Cadmium batteries.



The abbreviation "HT", derived from Motorola's "Handie Talkie" trademark, is commonly used to refer to portable handheld ham radios. Surplus Motorola Handie Talkies found their way into the hands of ham radio operators immediately following World War II. Motorola's public safety radios of the 1950s and 1960s, were loaned or donated to ham groups as part of the Civil Defense program. To avoid trademark infringement, other manufacturers use designations such as "Handie Transceiver" for their products.

Al Gross also worked on the early technology behind the walkie-talkie between 1934 and 1941, and is sometimes said to actually have invented it.

Canadian, Donald L. Hings was formally decorated for the invention of the walkie-talkie and its significance to the war effort. Hing's model C-58 "Handie Talkie" was in military service by 1942, following a secret R&D effort that began in 1940. The C-58 was in turn based on a civilian model originally developed by him in 1937.

Handie-talkies used in commercial and ham radio today have come a long way. They have more features are considerably smaller and more compact than their predecessors.

--This article was inspired by Ed Bigbie, W4MMQ. Some information gleaned from Wikipedia.

ITEMS FOR SWAP OR SALE

FOR SALE: 1. Kenwood TS-520 80 – 10m with desk and hand mics...Operation and Repair manuals.....\$200.....

2. Packet Controller MFJ 1270C / TNC-2 w/ Manuel and book by W1LOU plus other articles....Missing 3 DIN plug cables (RS has them)...\$40

Pete Cooley, K4JAC, Ph. 912 355-049 E-Mail: cooley3892@bellsouth.net

FOR SALE: 1. Yaesu FT-2400H 2 meter transceiver...\$75...MFJ 493 Super Menu driven keyer (never used).\$75.....2 position coax switch....\$10 Contact: Andy Blackburn, WD4AFY, 912 238-4676

E-mail: andy@g-net.net

STRAYS

Articles are needed for the Key Klix. Please try to submit an article periodically. If you have items for Swap or Sale, they can be posted.

HAM TRIVIA

Of ABLE, BAKER, CHARLIE, and DOG, which phonetic is actually in the ITU (ICAO) recommended list?

- A. Able
- B. Baker
- C. Charlie
- D. Dog

Answer at the bottom of the page.

That's it for this month's Key Klix. Thanks go to everyone who submitted material for this issue of Key Klix. If you have any articles, items for swap or sale, etc., to submit for the next issue, please send them to andy@g-net.net Deadline for articles is July 1.

73 de Andy Blackburn, WD4AFY, Editor

Trivia question answer: C



AMATEUR RADIO CLUB OF SAVANNAH



ARCS Elected Officers for 2007:

President: Doug Rowland, KF4EFP, (912) 826-7299, jdrowland@windstream.net

Vice President: Mac McCormick III, KF4LMT, kf4lmt@comcast.net

Secretary: Andy Blackburn, WD4AFY, (912) 238-4676, andy@g-net.net

Treasurer: David Delamater, K4DJD, k4djd@comcast.net

Activities Manager: Philip Neidlinger, KA4KOE, ka4koe@arrl.net

Trustee: Kurt Hoffman, N4CVF, n4cvf@arrl.net

The Amateur Radio Club of Savannah, was founded in 1938, and is a non-profit 501(c)(3)(a) organization dedicated to:

- (a) Recognition and enhancement of the value of the amateur service to the public as a voluntary noncommercial communication service, particularly with respect to providing emergency communications.
- (b) Continuation and extension of the amateur's proven ability to contribute to the advancement of the radio art.
- (c) Encouragement and improvement of the amateur service through rules which provide for advancing skills in both the communication and technical phases of the art.
- (d) Expansion of the existing reservoir within the amateur radio service of trained operators, technicians, and electronics experts.
- (e) Continuation and extension of the amateur's unique ability to enhance international goodwill.