

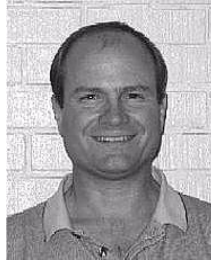
# The Ground Wire

March 2003

Volume 2003, issue 3

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**Paul Dryer KD5IVP**

This ranks and one of the strangest, most surreal times of my life. To first witness a spacecraft disintegration and then go pick up the pieces. In my wildest dreams would I come up with such a thing.

By now, we've all heard of the tragic shuttle Columbia accident and the loss of its seven brave space travelers. Within hours of the event, a massive recovery effort was staged across East Texas. NASA badly needed wreckage gathered to hopefully learn the cause of this horrible tragedy. A call went out for law enforcement, municipal employees, and skilled volunteers to help organize and execute the search. And volunteer they did, from all over the country.

The American spirit overflowed into action that week. A tragedy of this magnitude touches us all in some way. Many of us very deeply. For me, having literally grown up in our space program, closure to the loss of seven of the most courageous persons on earth and space was very dear to my

heart.

Our hobby, amateur radio, is vast and multi-faceted. One common denominator among hams is the eagerness to provide community service. We volunteer freely in times of celebration and in times of tragedy. When the call came for radio amateurs and GPS operators to aid the shuttle recovery, operators quite literally dropped their daily routines and answered the call. Many for the entire length of time the search took place, three weeks in East Texas.

Several members of our club drove down to help. Some alone, and some in groups, caravanning down in their own cars. Floyd (KC5QBC), Mitch (KD5DTQ), Stan (KD5NBW) and I, drove to Nacogdoches separately but meeting up at Mitch's deer lease, to try and lend a hand. Below are some of my observations.

Early Saturday morning, February the 10th, we made our way to the Expo Center in Nacogdoches. Every agency imaginable was there. The FBI, sheriffs and deputies, fire departments, police from cities all over the US, National Guard, Red Cross, 5 New York firefighters, and media everywhere. The hams under "RACES" (Radio Amateur Civil Emergency Service) ran all communications between all groups through several networks/repeaters set up in two command centers on the Natchitoches site.

I first checked in to the general communications repeater upon arriving and was directed to the sign up office in the Expo's huge indoor rodeo arena. The Texas highway patrol was running that office. I signed up as "ham operator, GPS, walking search". They then sent me to get my GPS unit certified by a group of SFA University surveyors with ultra precise units that measured in the millimeters. Once certified, we were then "deployed" based upon our capabilities listed at sign-up. Since all groups needed at least one ham and one GPS operator, and the ratio was about 50:1, operators were in huge demand! Stan Harmon, KD5NBW, was assigned to a Texas Highway Patrol car. He put his antenna on top, his GPS on the rear door window, and navigated the Highway Patrol officers all around the county to land owners reporting shuttle remains on their property. He actually got to go into the big FEMA radiation/contamination and shuttle collection building where the findings ended up. They filled their car trunk two days with parts and debris. The THP officers were from Abilene and were unfamiliar with the area nor would their radios work in that part of Texas. Stan became a hot commodity among the Texas Highway Patrol and could be clearly

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**March Membership Meeting Program:**

**Shuttle Columbia Debris Recovery**

**2 METER NCS Schedule Mar. 2003**

- 03-KJ5UY**
- 10-KC5MQC**
- 17-KB5TMD**
- 24-W5WB**
- 31-KC5CPO**

**Apr. 2003**

- 07-KJ5UY**
- 14-KC5MQC**
- 21-KB5TMD**
- 28-W5WB**

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heard all over the world via Echolink directing the officers!

I was assigned to the "Chireno (a town) special group". This group was headed by Roy, a very nice deputy sheriff for Nacogdoches County. After our orientation meeting, we were assembled into a big caravan of maybe 25 cars, horse trailers, four-wheeler ATV's, with our emergency lights flashing, and going way over the speed limit! The police escorted us everywhere. The going was very rough with huge tracts of pasture, all very marshy and cold. Maybe 250+ acres a tract. Sleet, snow, and rain made up the weather that weekend. East Texas had been divided into grids on the map. We were divided up into three groups, each working a grid square. Foot, all terrain vehicle, and horseback. I was in the foot group with 17 others. There were two hams with GPS units in my group, and all three groups communicated through "Doug", KD5OUG, who sat on a tall hill and coordinated through the main repeater in Nachadoches. Doug did a textbook job.



We began finding material immediately. My group spread out about 25 yards apart and began walking. When a piece was found, the finder would call out "GPS!", and we would run or be hauled over by an ATV to provide a GPS fix, spray paint a circle around the impact point, bag the part, and mark the bag with the finder's name and Lat/Lon coordinates.

Day one, the Chireno team found 308 pieces of shuttle Columbia. I found something like 30 artifacts but got to examine most finds since I was a GPS/ham operator.

Day two was very cold and rainy. Stan and I were two of the four hams for our team that day. Teams one and two were aborted at lunch (graciously provided by the Red Cross and Cherino Baptist Church) due to several members suffering from hypothermia. The Chireno team only lost 3 members and one ham so we continued the search into the afternoon. We found, in my estimation, over 80 parts in our little group alone. It was very swampy and prickly going.

Something called 'wild rose' was everywhere and we were cut to shreds. Horses were unable to penetrate the brush. This is the bramble that grows under and around the pine



trees in East Texas. The FBI was called in if we found any boxes marked "secret". The military had their top secret encryption radios on board the shuttle which is standard. According to "Dave" our NASA pyrotechnics/cryogenics launch pad supervisor, who walked with us, no boxes of any kind made it to the ground, so far. Dave was there to identify explosive bolts that failed to detonate from re-entry heat, along with any cryogenic tanks that might contain hydrazine or other compressed gasses or liquids. We did find a 3 ft. kevlar helium tank that survived the fall and re-entry heat. We found a letter. Paper seemed to survive very well. The letter contained flight data and some personal thoughts, in only three pieces. Manuals, and other documents were found on past days. I found a very large chunk of possibly landing gear door just laying out in a field. Re-entry tiles were missing off one side and structure was blown away and melted on the other. Computer hard drives and circuit boards were very common, with most of the components desoldered and yet some in pretty good shape, but scorched. Only one possible human remain artifact, uncertified, was found by our team. The FBI had to be called in to remove it and determine if it was human or not.

I was amazed by the total destruction. Huge bolts, rivets, structure, tiles, all blasted and charred into little fragments, before contacting the ground. And some hardly damaged at all. Three fragments of phenolic seat back, we think, all no bigger than 6". A window that was ejected by explosive bolts was found, but the glass didn't survive, only the frame. Only foot long sections of the 5000+ feet of wiring harness survived so far and that was usually dangling from a connector. I found about 4 feet of coaxial cable with the center conductor ripped out but the dielectric still intact. The insulation was completely stripped away and looked to have connected to a bulkhead antenna. The most interesting

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piece I personally found, I literally tripped over as the sheriff Roy and I were making our way back to the cars. 1/2 inch of 1/2" thick piece of aluminum was sticking out of the grass. It wouldn't budge when I pulled on it. We got a shovel from the squad car and dug out a 15 lb. flying surface actuator gimble, fasteners still on the attach bolt threads, but no shaft. I believe the shafts and bearing blocks were found about a mile away by other parts of our team. The dynamics of a mach 15 breakup into 3000 degree friction induced heat is very difficult to comprehend or imagine.

Once again I have to question why we are called 'amateur' radio operators. The professionalism displayed by our ranks was outstanding and commendable. Without a ham operator along, search teams would shut down. Hams simply were the primary dependable communications for the operation and were held in high respect by those observing our skills. The radio operators were generally the best prepared volunteers on site. Horrific events like 9-11, weather disasters, and the shuttle Columbia tragedy are not predictable nor are they desirable. We hope and pray they don't happen. But they do happen, and radio operators will dive right into the fray.

That is a very good thing!

73,  
Paul, KD5IVP

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## Columbia Shuttle Debris Recovery

by Ron Erhart, KB5RON

After receiving information from the Dallas County Races Training net Sunday, 2 February, I left early Monday morning to go to Nacogdoches to help with the effort. After a couple hours wait (normal organizational confusion) I and several others from the Dallas area were sent to report to the command post at San Augustine. During my four days in the area I was a little disappointed at how some hams were wanting to help but did not seem to know what to do and were poorly equipped for doing much more than sitting in their car talking. So I thought it would be a good idea to write an article on some of the experiences of the people in the search area and what was expected of them.

The original response of the Amateur Radio community to the shuttle debris search effort was outstanding and the majority of the hams very capable and equipped for about any eventuality. Persons I talked to were from the FBI, DPS, Texas Rangers, National Guard, and the various county emergency coordinators of Nacogdoches and San Augustine. All of the

agencies were very appreciative of having the Amateurs available.

At San Augustine the original arrangement was to send out two hams with every search team. As there were no repeaters in the area one ham was in their vehicle relaying information from the other ham who would walk along with the search team. The mobile would locate on higher ground and talk to the command post on simplex (146.52). The best way this worked was for the walking ham to use a simplex frequency other than 146.52 to reduce some of the confusion, but some teams kept both members on 146.52 - either they were not equipped to operate on two frequencies or thought they wanted to try to hear everything going on.

The next day, Tuesday, hams from the Garland radio club brought in a portable repeater and set it up near the middle of the San Augustine search area. They had gone through the process of clearing a frequency with the repeater frequency coordinator and had a very good system that worked out well and basically doubled the hams ability to help with the searching. Two operators manned a desk in the command post near the Texas Ranger who was in effective command of the operation (the FBI was technically in charge but they left it pretty much to the Rangers to really run things). The general reason for the ham operation was back-up communications between the command post and search teams, mobile canteens, and any other unit that might end up out of cell phone or police radio contact. All teams and units with ham operators checked-in with the command post about every thirty minutes with progress reports and were also the back-up means of reporting finds of dangerous materials or biological materials that were to be normally reported by cell phone.

The search teams in the field were generally composed of a group of military, police, or other supposedly trained personnel, along with one or more DPS troopers or other full-time law enforcement person, usually a survey grade GPS unit and operator, and a Ham communicator. Except for small pieces of metal or ceramic tiles all debris was photographed by the trooper, position logged by the GPS operator then bagged in plastic bags and basically treated as crime scene evidence. Items of a possibly hazardous nature or possible human remains were treated differently. These items were reported back to the command post via cell-phone. If conditions were such that cell-phones were not available or not connecting then Ham radio was used with a code word to designate human remains or hazardous material. In either case a special team would be dispatched to the location to recover the item. In the case of human remains the recovery team consisted of a NASA astronaut, one or more FBI special agents, and a forensic specialist (usually FBI). When these types of items were discovered they were guarded by a law enforcement officer until the appropriate recovery team arrived and took

control of the item. There were naturally cases where the remains were determined to be other than human. Items collected by the search teams were turned in by the troopers to a central collection point where they were periodically loaded on trucks and transported to be returned to NASA.

Some Hams were assigned to the Red Cross or Salvation Army mobile canteens and helped coordinate meeting the search teams out in the field for meals. The meal support in the San Augustine area was very good and plenty of food, water, and soft drinks were available. There were also several ambulances stationed at different places that could be called out if needed. There was a considerable news media presence in all of the areas and they were usually given pretty much free run of the areas next to the highways but were prohibited from going with the teams into a search area.

The search areas were often densely wooded with a lot of briars and brambles which made searching very difficult. A machete or hunting knife was very useful to extricate oneself from a briar trap. The ground was usually wet and muddy and heavy boots were desirable as were heavy gloves. Heavy raincoats or parkas were needed during some of the days.

There are many good publications listing the equipment that Hams should plan on taking for various emergency or public service events so I won't list them all here but will add some thoughts that aren't always covered by the lists. A really good local source of information is on John Galvin's web site: [www.qsl.net/n5tim](http://www.qsl.net/n5tim) His site has several lists of equipment, good procedure outlines and links to other information sources. Some of the ARRL publications are fairly good also. If anyone would like a copy of my own lists that I keep handy I can email them or snail mail them. Reach me at: [ronerhart@earthlink.net](mailto:ronerhart@earthlink.net) or phone at 972-298-6923.

All of the lists include extra batteries to allow 12 hours operation but should really say plan on indefinite operation so remember to bring chargers for the radio batteries. Having an AA battery pack for the HT is a good idea as it is usually easy to get extra batteries. I personally try to carry one regular rechargeable battery pack and one AA pack anytime I'm out away from the car. If carrying a cell-phone remember an extra battery for it along with the charger if spending more than one day. Having extras of all essential equipment can prevent being put out of action.

A headset or in-the-ear earpiece is a good idea but where we were searching, the cord kept snagging on the briars so didn't work well. If working in a noisy area and not out walking a set of earphones makes it much easier to hear the radio. A speaker mic is really not a great idea because the speakers aren't all that great and it encourages the operator to keep his HT on his belt which limits his transmitting capability. Having a better antenna for the HT other than the original rubber duck type is also a good idea and not very expensive. Taking along the operators manual for all your

radios is also a good plan. It is easy to forget how to reprogram the tones, offsets, etc., and how to correct the situation when a wrong key push has locked out the ability to transmit.

Having a good hand-held GPS unit can be an advantage although in heavy woods under rainy conditions the GPS systems, even the professional ones, were often unable to get sufficiently clear reception. Another nice to have item is a topographical map of the area in which you will be working. Surprisingly there did not seem to be any of these available except posted on the wall in the command posts. An ID name tag of some sort is helpful as is some form of RACES, Skywarn, or other more or less official ID that can be put on the car or on the dashboard. A copy of your radio license should be kept with you as it may be asked for by law enforcement personnel. If out walking, a hunting or photographers vest with pockets for batteries, note pad, pen or pencils, small tools, a compass, band-aids, sun-block, small flashlight, and other desired items is very useful. So-called "cargo" pants with the extra pockets are also helpful. If walking through wooded areas a very secure belt pouch for the radio can prevent loss of the radio. Keeping the radio in a pants or vest pocket is more secure than the normal belt clip that comes with the radios.

When responding to an incident it should be remembered that things are usually not completely organized and the initial instructions and plans are more than likely going to change so plans should be made accordingly. Taking any equipment that might possibly be useful, and clothing and footwear for any possible weather eventuality is a good idea. If going longer than a day trip, extra clothing should be planned to replace wet or torn clothing. If taking your personal vehicle plan to keep the gas tank near full before arriving at the destination, keep jumper cables in the vehicle, along with some tools, tire changing equipment and a tow cable or rope.

Every one that I came across during this trip was trying their best to do as much as they could. The Hams came through as well or better than a lot of the so-called professionals. The DPS troopers that I worked with were told to wear their regular uniforms so they were very poorly equipped for the work and ruined lots of high quality wool pants and shiny gun belts and boots. The National Guard troops did not have adequate gloves for what we were walking through and their radios were good for only short range communications between the team leaders and their batteries ran down. Cell phones worked in some places but not others. Some National Guard units got confused as to where they were in the search areas so some areas were missed and others searched more than once.

These types of events, tragic as they are, help show the advantages of Amateur Radio to the public in general and to the many different official organizations and go a long way towards keeping our frequencies from being taken for other

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uses. So we should all try to participate when ever we are able and try to accomplish our assignments in the most professional way possible.

73 Ron Erhart KB5RON

**Editors Note:**

*The brother of Astronaut Laurel Clark , Dan Salton is a fellow employee of mine at SBC in Wisconsin. The following is an email she sent to Dan and his group at work the Friday before the shuttle accident. I received a copy via company email and was moved by her enjoyment in what she was doing. I asked through Dan's Supervisor if it was alright to pass the email on to others. Here is his reply "Your request is not the first I have received and I have discussed this with Dan and he with his family. They would like the letter to be shared with their only request being that nothing is changed in the text. The family wishes for everyone to know what a great person and wonderful spokesperson Laurel was and could think of no greater way to communicate it than her elegant words 150 NM above the earth."*

*Laurel Clark of Racine, Wis., was a submarine doctor with the U.S. Navy before joining NASA in 1996, traveling to the depths of the oceans before soaring above as a mission specialist helping with science experiments on the space shuttle Columbia. The mother of an 8-year-old son, she was on her first shuttle mission when Columbia disintegrated over Texas. The day before she died, she sent an e-mail home to family and friends:*

**Here is the email sent by Astronaut Laurel Clark**

"Hello from above our magnificent planet Earth. The perspective is truly awe-inspiring. This is a terrific mission and we are very busy doing science round the clock. Just getting a moment to type e-mail is precious so this will be short, and distributed to many who I know and love.

I have seen some incredible sights: lightning spreading over the Pacific, the Aurora Australis lighting up the entire visible horizon with the city glow of Australia below, the crescent moon setting over the limb of the Earth, the vast plains of Africa and the dunes on Cape Horn, rivers breaking through tall mountain passes, the scars of humanity, the continuous line of life extending from North America, through Central America and into South America, a crescent moon setting over the limb of our blue planet. Mount Fuji looks like a small bump from up here, but it does stand out as a very distinct landmark.

Magically, the very first day we flew over Lake Michigan and I saw Wind Point (Wis.) clearly. Haven't been so lucky since. Every orbit we go over a slightly different part of the Earth. Of course, much of the time I'm working back in Spacehab and don't see any of it. Whenever I do get to look out, it is glorious. Even the stars have a special brightness.

I have seen my 'friend' Orion several times. Taking photos of the earth is a real challenge, but a steep learning curve. I think I have finally gotten some beautiful shots the last 2 days. Keeping my fingers crossed that they're in sharp focus.

My near vision has gotten a little worse up here so you may have seen pics/video of me wearing glasses. I feel blessed to be here representing our country and carrying out the research of scientists around the world. All of the experiments have accomplished most of their goals despite the inevitable hiccups that occur when such a complicated undertaking is undertaken. Some experiments have even done extra science. A few are finished and one is just getting started today.

The food is great and I am feeling very comfortable in this new, totally different environment. It still takes a while to eat as gravity doesn't help pull food down your esophagus. It is also a constant challenge to stay adequately hydrated. Since our body fluids are shifted toward our heads our sense of thirst is almost non-existent.

Thanks to many of you who have supported me and my adventures throughout the years. This was definitely one to beat all. I hope you could feel the positive energy that beamed to the whole planet as we glided over our shared planet.

Love to all, Laurel."

## Veep Beeps

Bernie McPartland

This will take a while to soak in. Being voted Vice President of this club is an incredible honor. It seems only a short time and not three years ago I accepted one of the Director's slots and began watching this club take on new life. I have, for the most part, kept quiet in board meetings. Learning how the club works. How processes work. How ideas from members are integrated. How much pizza one can devour, even on a skimpy buffet table. It has been a great ride. I hope I can apply some of that experience in this new role. Ideally, I would like this to be an input screen, of sorts. Making sure that every member knows that the leadership is open to your ideas. Our president, Paul Dryer (KD5IVP), thrives on seeing new ideas come into the club. Committees get formed. Things happen. Our club get dynamic. Our hobby get noticed. Just a quick word now about the VP slot. A new role has already been assigned here. The role of Public Relations officer. Its my job now to make sure we have media time for any event we intend to invite prospective members to. Listing backwards, this would include Field Day. It would include club wide events like cookouts and foxhunts. Star parties and campouts. Classes to prepare for VE testing and even our open membership meetings. I've just printed this article to keep it on my wall to remember the list.

Finally, again, I thank you for the honor. I look forward to the year.

73

Bernie McPartland  
KC5MQC

### BOARD MEETINGS

First Tuesday 6:30 PM

Luna y Sol Restaurant

1615 N. Hampton

DeSoto

### MEMBERSHIP MEETINGS

Third Tuesday 6:30 PM

**Buffet @ 5:30 PM**

Luna y Sol Restaurant

1615 N. Hampton

DeSoto

## February Board of Directors Meeting

President, Paul Dryer at 6:30 pm on February 4, 2003, called the Board of Directors to order. Board members present included Bernie McPartland, Rick Ellis, Johnny Roberson, Todd Huovinen and Danny Cromaz. Guests included Rebecca Ellis, Pat Roberson, Drena Cromaz, Donna Dees, Neal Palmquist, Russ Thompson, Aaron McCarthy, and Floyd Rodgers. The minutes of the previous meeting were approved. Johnny Roberson reported that additional membership checks have been received and dues were continuing to come in. Johnny also reported that unlicensed operators have been heard on our repeater and should be ignored.

**COMMITTEES:** Todd Huovinen reported 20 check-ins on the 2 meter net. Bernie McPartland reported that the CW net had a check in on one including himself. Rick Ellis reported that George Guthrie KD5TKM and Tony Guthrie KD5TKN memberships had been approved. Rebecca Ellis reported on Activities/Special Events that the Valentine flowers had been delivered and she would soon have the final results of the fundraiser. Future activities include an Easter Egg/Transmitted combined hunt sometime in April. Any suggestions are appreciated regarding things anyone would like to see the club do. Paul Dryer reported that there was no VE testing. Danny Cromaz reported on the Groundwire stating that articles were appreciated. Danny Cromaz also reported that he has been working on a new club web page and it should be ready to be put into operation in late February. There will be a "Dits & Dah's" section, which can include technical information such as instructions regarding antenna building, robotics, etc.

**OLD BUSINESS:** Ted Black & Floyd Rodgers volunteered to run the elections at the February membership meeting. Johnny Roberson will provide them with an up-to-date paid membership list of eligible voters. Aaron McCarthy reported on Homeland Security for Dallas County Support and read a letter asking for our club's participation and will be read to the general membership at the February meeting.

**NEW BUSINESS:** Volunteers will be asked to form a Materials Committee to do an inventory. Danny Cromaz, Bernie McPartland, Floyd Rodgers, Russ Thompson and Paul Dryer have volunteered to audition prospective Field Day sights for 2003. Paul Dryer is also seeking anyone interested in being involved or chairing a special interest group. Some ideas for each group include APRS, QRP, Kit Building, Robotics, Mobile Installation, Elmering, and pedestrian mobile. Paul reported that the Mark 9 Search Dog Team would present the program at the February 18<sup>th</sup> general membership meeting.

The meeting was adjourned at 7:52 pm  
Respectfully submitted by Danny Cromaz W5WB for Donna Dees KD5LJR

## February General Membership Meeting

President, Paul Dryer at 6:33 pm on February 18, 2003 with 52 members and guests present, called the February general membership meeting to order. The meeting was held at the Luna-y-Sol Restaurant in Desoto. The minutes were approved as posted in the Groundwire.

**COMMITTEE REPORTS:** Johnny Roberson reported the treasury was in good order with only one bill for the Internet to be paid. Johnny Roberson also reported that the repeaters were "Status Quo" and still working well. Todd Huovinen advised that he was not available for Monday nights 2 meter net so Danny Cromaz, net control for the past Monday net reported 16 check ins. Bernie McPartland reported that while he could be heard on the CW net, he was unable to receive Neal Palmquist thus making the total checkins 1 ½. Rick Ellis reported that no new membership applications were processed at the last board meeting but he had received applications from Will N5TLH, Tim Raffety N5RWC, Terry Johnson KB5NSL and Travis Garth and James Kendrid KD5HMY. Rebecca Ellis reported that the Valentine flowers netted \$60.00 and that some of the money will be used to fund the upcoming Easter Egg/Transmitted hunt, which is tentatively scheduled for April 12<sup>th</sup>. Anyone with ideas for club events should contact Donna Dee, Russ Thompson, Dave Tucker or herself. Valli Toski has volunteered to help with the special event group also.

**OLD BUSINESS :** Ted Black gave a brief history of the election and election committee responsibilities as directed by the club by-laws. The slate of officers was again presented. Dave Tucker made a motion to accept the proposed slate of officers and Floyd Rogers seconded it. The motion carried and the slate of officers was elected. The new board will be listed on the website. Paul Dryer read the letter from Aaron McCarthy regarding Homeland security requesting a commitment from the club to be involved in the county (s) project. Danny Cromaz agreed to post the letter on the website and a vote will be taken by the general membership at the March meeting. Paul Dryer said the Club is needing volunteers to be on the materials committee for inventory purposes. The Field day site committee consisting of Danny Cromaz, Paul Dryer, Floyd Rogers, Russ Thompson and Bernie McPartland will get together soon to inspect prospective sites for the upcoming field day event. Danny Cromaz announced that the club's new web page should be up and running this coming weekend. Depending on which browser you use, members may need to hit the refresh. Danny will send out a broadcast message to the membership announcing that the web page is available.

**NEW BUSINESS:** Paul Dryer announced that Special Interest Groups are forming and asked for chairmen of some groups that the board of directors thought members might be interested in. These are groups that are not set in stone and the board will consider any interest group. The following are

the categories and the chairpersons: Mobile Installation-Johnny Roberson; QRP-Paul Dryer; Kit building-Bernie McPartland; Robotics and Digital -Richard Baker; Direction Finding, Transmitter Hunting-Rick Ellis; APRS- Floyd Rodgers, Dave Tucker and Neal Palmquist; Elmering-Russ Thompson; Pedestrian Mobile-Paul Dryer.

The March program will be presented by Paul Dryer on the recent Shuttle Search.

Jerry Severs-Mark-9 Search & Rescue presented the program at the February meeting. Mark-9 stands for Metro Area Rescue K-9. They are an urban search & rescue unit, which requires special training for not only the dogs but also the personnel. They handle disaster searches, wilderness searches, evidence searches and water searches. Their unit worked the Federal Building in Oklahoma City and most recently helped with the Shuttle recovery.

The meeting was adjourned at 7:52 pm  
Respectfully submitted by  
Danny Cromaz W5WB

### **NEXT SWDCARC SPECIAL EVENT**

**April 12th  
4-7 PM**

**Combination Easter Egg Hunt and  
Transmitter Hunt**

**Pot Luck Dinner to follow  
Location to be announced**

**You Don't Want To Miss It!**

**More Information Will Be  
Announced On The Club 2 Meter  
Nets @ 8 PM each Monday**