



RADIO-ACTIVE!

August 15, 2022, Volume 1, Issue 5



Practicing Portable Deployments for Emergencies

Roberta, AJ6KN and Gary, K6PDL



San Mateo Sheriff's Emergency Communications Unit

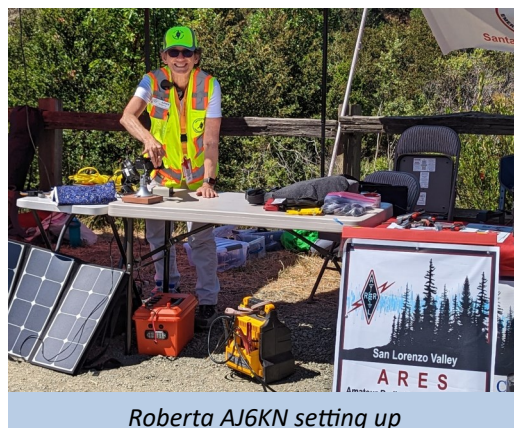
On 8/7/22 SLV ARES was invited to participate in the South Skyline Emergency Preparedness Day up at Skyline Ridge Open Space Preserve. Gary, K6PDL, and I, set up portable stations – our objective was to meet our northern neighbors, share ideas, practice our set up, and interface with the public who might be attending. I provided the Winlink station setup and Gary did the

voice. I learned a lot just sitting and soaking up knowledge from Gary. I do believe that I brought way too much gear, but I never know what I might need, so I just kept putting stuff in the car. The trick, I found, was to be able to access anything needed quickly – I did have bins labeled, but it still proved to be a challenge to locate some obscure items.

I was able to send and receive a few messages, but this was challenging, since the local Winlink RMS was not working up in the Skyline area (W6SCF-10), and I ended up having to use a station at Delaveaga (W6TUW-10) via a digipeater on Loma Prieta (LPRC2). Connections were intermittent, and I was struck by how important maintaining our repeaters, digipeaters, etc. is. I am grateful to our local folks who work so hard to keep our equipment working!

So. Skyline had a number of Emergency Communications Units that were quite interesting as well. We were able to make new friends and renew acquaintances with old friends. There were even a few SLV residents in attendance who took information on our upcoming Technician Class and were very interested in ARES.

You, too, can practice setting up portable – I did a dry run in my front yard a few days prior, which was most helpful. It's fun to invite a few friends and set up outside (Covid permitting) and learn from each other. I highly encourage portable practice for everyone!



Roberta AJ6KN setting up

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Upcoming events

Sunday, August 21, 2022:
Race through the Redwoods at Roaring Camp Railroads. We will be using hand tally counters to keep track of runners. The race is being promoted by the Felton Business and Community Association. Proceeds from the race are used to fund community events in Felton .

ARES Activities

Our season of events continue. The Santa Cruz Mountains Challenge Bike Ride occurred on Saturday July 23. It was the 22nd iteration of the event after a two year hiatus due to the COVID pandemic.

There were 4 routes a rider could undertake — 45 Miles (43.6 miles) with about 2,900 feet of climbing, Metric Century (62.6 miles) with 6,500 feet of climbing, Century (101.5 miles) with about 9,830 feet of climbing and Double Metric Century (125 miles) with 11,990 feet of climbing. One of our members did partake as a rider, Roxy, WE1C.

Twenty radio volunteers supported the event. In addition to Net Control at UCSC, we were positioned at eight rest / water/ lunch stops places along the courses. Also we had two ride along in SAG wagons and a videography team. See page 5 for additional information about the SAG experience. We used the two repeaters of WB6ECE and K6FB. SLV 1 was used as part of a Cross band repeat function to extend some of the communications in parts of Bonny Doon.



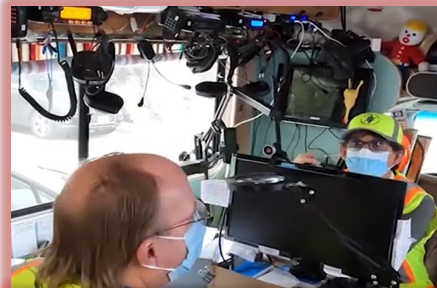
Roxy, WE1C riding in Mountain Challenge

Equipment available to loan

Go Pro Hero cameras and supporting accessories to enable event participants to record content all of which can be edited to a viewable video. Contact Neil, KN6JOI at KN6JOI@slvares.org.



Al, AI6GL at the Jamison Creek Water Stop



Phil, KE6UWH and Robert, AJ6KN as Net Control in Sophie

First time volunteers with their elmers



Safety tips for deployment in rugged areas

Stephen, KM6NEP, ARES Safety Officer

Test your knowledge

What precaution should you take whenever you adjust or repair an antenna?

- A. Ensure that you and the antenna structure are grounded
- B. Turn off the transmitter and disconnect the feed line
- C. Wear a radiation badge
- D. All of these choices are correct

We are currently preparing for the Race through the Redwoods event. As you prepare for any deployment think about these 3 things:

- ▶ **Know you:** Your physical and mental status about performing the particular deployment.
- ▶ **Know your equipment:** radio, car, backpack/go bag, shoes/clothing, and food/water.
- ▶ **Know your environment:** the weather; your route and traffic conditions to the deployment/briefing rendezvous point; the situation of the zone surrounding the deployment site; and at the deployment site.

Deployment in a rugged area such as the trails at Henry Cowell has a different set of hazards than being deployed at an evacuation center, a ride-a-long with Equine Evac, or stationed to monitor a weather front for debris flow.

Know you.

Be aware of your physical limits. Volunteer for positions that do not over task you to get there. Be aware you have to spend the same energy in getting back. When I ran long distances, the moment I felt good with my pace was the time to turnaround.

Know your equipment.

Although we have had warm weeks: sturdy hiking shoes, long pants, long sleeves, hat and sunglasses is best to protect from the hazards of the environment as discussed below.

Bring water and snacks, and a compass and a whistle. Have familiarity with the trails and carry a trail map. Know the radio channels that will be used. Keep your antenna away from others and if possible operate with hand mic to keep your head away from the HT antenna.

Know your environment.

Traffic conditions in the county for that day should be normal.

As you approach the rendezvous point, be aware of increased traffic to the location, and with runners jogging about warming up.

After the briefing before the event, take care to go safely to your deployment position.

Be aware of: Trip hazards; Yellow Jackets and Wasps; Poison Oak; Changing weather; and Branch/Tree falls (I've seen tree falls in the park).

Post your position away from the direct path of the runners, making sure you're not causing a choke point. Being drought conditions the trails will be dry and dusty, but in the morning the pavement maybe slick.



Programming your radio with a computer or tablet using CHIRP

Jim, N6EWP



Weather Radios Allow Customized Alerts

Inexpensive NOAA weather broadcast receivers are now available with user-changeable alert alarms. Called S.A.M.E. for *Specific Area Message Encoder*, this feature allows the radio to sit quietly until an alert code for a specific county and type of emergency is received. Want alarm notifications for Santa Cruz County wildfires, but not for wandering Alzheimer patients? It's easy to set. See <https://www.weather.gov/fwd/sameweatherradios>. One inexpensive model is the Midland WR120B which costs about \$30. It's easy to set up and receives several local NOAA stations well.

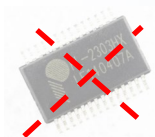
CHIRP is a cooperative effort among volunteers, mainly hams, to create and maintain a program and database for programming all kinds of 2-way radios and scanners. The CHIRP program is **free to download and use**. If your radio is not yet supported, you can request that a volunteer do the necessary development and testing. Usually that means either supplying a radio to test or even signing up to do the development if you have programming skills. (RT Systems is the commercial equivalent of CHIRP.)



To use CHIRP you will first need to download it. Use the link below and follow the instructions. CHIRP is currently available for Mac, Windows and Linux. The latest Mac and Windows OS versions may introduce some issues which have not yet been addressed by volunteers. All Linux flavors seem to use CHIRP with no problems.

Next you will want to download the latest SCC ARES frequency list from xczcomm.com using the link below. This CHIRP version makes it easier for you to program without having to do more format conversions.

Finally you will need a cable to connect your computer's USB port to your radio. These can be found on Amazon or E-bay, but care is needed. Cables that use a Prolific chip for level conversion may not work correctly because many cables are made with counterfeit chips. Linux can use those cables, but Mac and Windows drivers usually will not work properly with them. Cables that use FTDI chips will work properly with CHIRP unless they are made for RT Systems. In most cases RT Systems requires its own cables to be used for their own software. You can get cables that are guaranteed to work and also software advice for your radio from a local source in Silicon Valley, BlueMax49ers KJ6CWL, at the link below.



At the meeting we will take a quick onscreen look at one or two examples of CHIRP programming and then open up for Q&A.

CHIRP

<https://chirp.danplanet.com/projects/chirp/wiki/Home>

XCZcomm (SCC ARES) frequency list

<https://xczcomm.com/index.php/frequency-list/#CHIRP>

Settings	Loc	Frequency	Name	Tone Mode	Tone	ToneSel	DTCS Code	DTCS Rx Code	DTCS Pol	Cross Mode	Duplex	Offset	Mode	Power	Skip
0		0.000000	(None)	(None)							(None)		FM		
1		441.300000	ECE 70	Tone	100.0						-	5.000000	FM	High	
2		440.550000	AB6VU	Tone	94.8						-	5.000000	FM	High	
3		146.835000	A68KE	Tone	94.8						-	0.600000	FM	High	
4		146.745000	W6JWS	Tone	94.8						-	0.600000	FM	High	
5		147.120000	WR6AOK	Tone	94.8						+	0.600000	FM	High	
6		146.790000	K68J2M	Tone	94.8						-	0.600000	FM	High	
7		440.925000	K68J70	Tone	123.0						+	5.000000	FM	High	
8		147.945000	KJ6FFP	Tone	94.8						-	0.600000	FM	High	

BlueMax49ers programming cables etc.

<https://bluemax49ers.com/>

Photo reminders

Next time you participate in a radio related activity, take a picture or two of yourself, your friends, your equipment, or your environment (preferably a combination of these factors) and send it to KM6RMN@SLVARES.org and KN6IAB@SLVARES.org.

With your permission, Allison will use the material to make creative Facebook posts. Extra points for natural action poses, equipment still-life, or well-framed presentations. Even a funny or awkward moment is useful. If your shots involve other people, try to get permission or identifying information so Allison can make sure it is all right to use their appearance in her posts.



Diary of a SAG Volunteer

JoMarie, KM6URE

ARES volunteers support many bicycle events throughout the year. This includes the Strawberry Fields Forever Bike Ride, Santa Cruz Mountain Challenge and the Santa Cruz Triathlon. These events have large numbers of participants and are spread out many miles of the county.

There are many strategically placed stops throughout to help provide fluids, nourishment and rest for the riders of the events. But what happens if a rider, in between those stops, has a mechanical breakdown or becomes too exhausted to continue? SAG to the rescue!



What is SAG, you ask? For bicycle events it does not mean Screen Actors Guild or that skin condition we all experience as we age. SAG stands for Support and Gear. It is a vehicle that drives around full of tools, food, first aid, and even replacement bikes. It can also be used to pick up those who have/want/need to drop out and return to the

start. SAG's role is to keep everyone safe, provide tools and bike support, and help shepherd the ride. The best SAG volunteers also encourage riders and help instill a positive attitude, but the primary role is to maintain rider health and safety.

The ARES volunteer maybe the driver of the SAG vehicle or be a second person in the vehicle. This is a key question one must have answered when volunteering for the role. I have only been the second person in a vehicle and appreciate those who have been the drivers—a lot more to think about.

A few days before the event I like to find out who I am riding with and the location we will meet up at. One should not assume it will be at ride headquarters. For the Santa Cruz Triathlon I met the driver at a cross street that is away from the race because of a limited race parking situation. It was at dawn, not in a location I was familiar with and I was unfamiliar with the person [Isn't that a start of a Stephen King novel?].

Also a few days before I prepare my equipment. There are many considerations for this. But the primary consideration is what is the terrain I will be going through? I review maps of the courses. So far, my 50-watt Yaesu dual band radio has been my primary selection. I also bring two charged HTs as my radio back-ups (one can be used for APRs), two cell phones (one is for APRs), mag mount antenna and a Jackery Power Station. All fit into a backpack that weighs 25—30 lbs. I once used a SAG driver's cigarette lighter for my power source and I encountered two issues. One issue was that the car had to be running the entire time for me to have power. And the second issue was that the fuse blew about 60 minutes into the event. Thankfully I had a backup power brick with me at the time and the car still ran.

After I meet up with the SAG driver, exchange pleasantries (one was a Project Manager of a Software company and the other a newly retired estate lawyer) and I set up my equipment such as my mag mount and connect to the radio and power. I always ask permission regarding attaching my mag mount and so far no issues. (continued on page 9)

Reminders

- ▶ AECs submit articles for newsletter by the Sunday before the meeting to KM6URE@slvares.org
- ▶ Net Control sign-ups will be taken during the monthly meeting. Everyone is encouraged to take this on this role.



Calling all party planners

If anyone is interested in helping plan the next party in October please contact Lisa at KN6IAB@slvares.org

Disclaimers

This newsletter is made of news items provided by many of the Leadership and AECs of the ARES membership. Clarifications can be asked at the monthly ARES meeting.

EC Bob's Thoughts

Hi everyone!

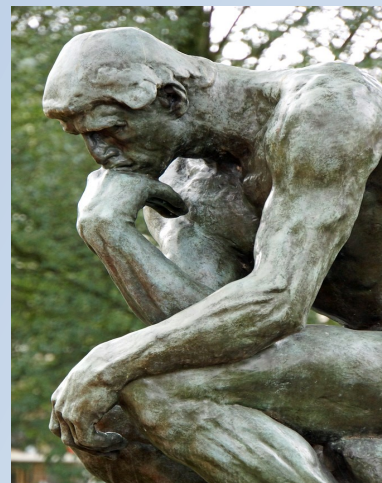
First off, I want to thank you for your caring and willingness to volunteer when you can. All of us have very busy lives. Everyone has something going on in their lives. We are all very important for our communities. Every little bit helps, and really does make a difference.

We have a lot going on in our ARES group!

Events are in full swing. We have wonderful members who are volunteering for these. If any of you have some time to donate to help with events or have any questions, please contact Dan N6RJX or myself. If you are nervous about volunteering for events, please reach out to your Elmer or me. Dan sends out event notices as well. If being out in an events is not your "Thing", then background support is critical as well. With anything we do, you can be part of it.

Classes will be starting up in the fall for the next Technician class. We will be releasing dates very soon, so keep an eye out for that and please share with friends, co-workers and any folks you think might be interested.

As everyone should know by now, our monthly ARES meetings are now hybrid with both attendance options of in-person or Zoom. I really like this so that everyone can be with us. We want you with us please. We just bought outright the video and audio bar for the meetings. I got good feedback from those who talked to me about it. Thank you for letting me know! Woot!! Please join us for the monthly meetings so we can all be on the same page so to speak, and all of us can be together. :-}



I have noticed that we have little groups of people in our membership who share things and experience things together in ham radio and in ARES. This is wonderful! We open the floor at the Monthly ARES meeting for all members to share. Even if someone in your small group would be willing to give a short report of what is going on, that would be great!

Our video crew (of 2) are in full swing showing what wonderful things we are doing on the YouTube channel. The crew is covering events as well as DIY projects! I would like to thank everyone who covered the Mountain Challenge event for allowing to be interviewed. Be expecting that event to be on our YouTube channel this coming Saturday. If you do not want to be on camera while in public, please let the person recording know. They should ask you before recording anyway. Much much more to come. Expect a new video to be released once a week on Saturday mornings at 8:00.

Ok, that is all I have for this month. Again, thank you all for being in our wonderful group!!

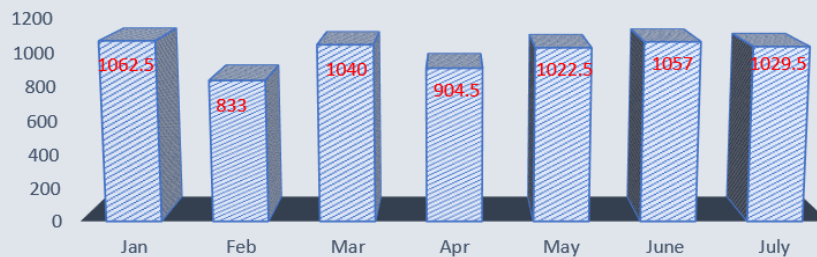
73, de Bob KO6XX

Test your knowledge from page 3 Answers: The correct answer is B. Turn off the transmitter and disconnect the feed line.

Hours Corner

Another amazing month with 1029.5 total reported volunteer hours! Keep up all the great work and thank you for volunteering. Please remember to enter your hours on the form on <https://xczcomm.com/index.php/hours-reporting/>

2022 ARES VOLUNTEER HOURS



Digital resource typing initiative

In order to facilitate effective activation of equipment and skills resources are commonly typed by minimum capabilities. So instead of knowing specific equipment it is much easier to request a unit that can setup a remote base or a unit that can handle digital communication via VHF. Between now and the meeting next month you should be receiving a survey asking you to indicate your available/ready ***digital*** equipment and ***digital*** operating skills. This will help us get a basic understanding of our unit strength in that area and help identify areas of education or investment.



The goal is to retain a database of operators and their capabilities as well as to provide material and training to expand our catalog of available deployment options. For questions or feedback please don't hesitate to reach out to Sebastian, KK6FBF (sebastian@steinhauer.info). Some more background on resource typing is available here: <https://www.fema.gov/emergency-managers/nims/components>
An example for resource typing of ARES capabilities (digital and otherwise) is available here: <https://www.collinares.net/ccares-fog>

Resources

- Website: <https://xczcomm.com/>
- Reporting volunteer hours: <https://xczcomm.com/index.php/hours-reporting/>
- Upcoming events: <https://xczcomm.com/index.php/calendar-of-events/>
- Facebook page: <https://www.facebook.com/ARES-of-Santa-Cruz-County-Ca-296232310799866>
- Facebook group: <https://www.facebook.com/groups/431308973875528>
- PIO Articles: <https://arrlsantaclaravalley.org/news/> or <https://xczcomm.com/index.php/news/>
- X CZ Comm You Tube: <https://www.youtube.com/channel/UChZH8TU5gh4SqHTPXSWolPA>
- Submitting deployment documents: **send in PDF form to** EOC.ARES@santacruzcounty.us and your appropriate EC (Bob: KO6XX@slvares.org)
- Submitting personal information such as DSW application, personal data update, education certificates: email K6PDL@ARRL.net, KM6SV@SLVARES.org, and EOC.ARES@santacruzcounty.us,

Org. Positions

- DEC
John / N6QX, jfgerhardt@gmail.com
- Assistant DEC
Gary / K6PDL, K6PDL@arrl.net
- Assistant DEC and Deputy EC
Karen / KM6SV, KM6SV@slvares.org
- Operations and Events
Dan / N6RJX, N6RJX@slvares.org
- Webmaster
Nate / KM6THA, KM6THA@gmail.com
- Administration
Dawn / KM6RME, KM6RME@slvares.org
- Safety Officer
Stephen / KM6NEP, KM6NEP@slvares.org
- Public Information officer
Allison / KM6RMN, KM6RMN@slvares.org
- Net Manager
Roberta / AJ6KN, AJ6KN@slvares.org
- EC Loma Prieta
vacant
- EC Coastal and SLV
Bob / KO6XX, KO6XX@slvares.org
- AEC-Antenna Specialist
Neil / KN6JOI, KN6JOI@slvares.org
- AEC-CERT Liaison
Liz / W6LTS, W6LTS@slvares.org
- AEC-Coastal
vacant
- AEC-Education Coordinator
Bill / AJ6CQ, wtyler@gmail.com
- AEC-Logistics
{temp vacant}
- AEC- Meeting Trainer
Jim / N6EWP, N6EWP@arrl.net
- AEC-MRC Liaison
John / KN6DCA, drjohnrx54@gmail.com
- AEC-Net Trainer
Kathy / KE6VTY, KE6VTY@slvares.org
- AEC-New Member Liaison
Alex / AJ6QY, AJ6QY@slvares.org
- AEC-Packet Radio /Digital
Sebastian / KK6FBF, Sebastian@steinhauer.info
Ryan / KI6UAP, KI6UAP@gmail.com
- AEC-Photographer
Lisa / KN6IAB, KN6IAB@slvares.org
- AEC-Scribe
JoMarie / KM6URE, KM6URE@slvares.org
- AEC-SLV Safety Officer
Tom / KK6NMZ, KK6NMZ@slvares.org
- AEC-SLVEN Liaison
vacant
- AEC-Video Production Team
vacant

ASK AN ELMER Resource Offerings

Neil, KN6JOI

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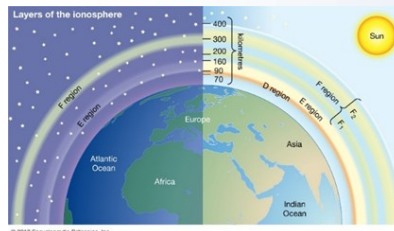
Reference Book

I have found this a good reference handbook. The contents offer solid information on many topics an operator would need to look for. Publication date is 2019. If additional, fresher information, is needed the book uses common terminology which can be used in searches.



http://www.arrl.org/files/file/Public%20Service/ARES/ARESFieldResourcesManual_rev10-2019.pdf

Solution to HF propagation Issues



The ionosphere is a high-altitude region of the Earth's atmosphere which is composed of gaseous atoms which have broken into ions. The sun is the source of the ionizing energy, so the condition of the ionosphere varies with time of day, season of the year, and the 27-day rotation of the sun.

The layers of the atmosphere that effect radio propagation are the D, E, and F layers. Three factors determine whether a radio signal will be reflected to earth and can be used by HF communications systems. They are: (1) the higher the radio frequency the more likely the signal will penetrate the ionosphere rather than be reflected by it, (2) the current ion density determined by the amount of sun light (time of day, season, solar activity) at the time communications is desired, and (3) the angle at which the radio wave contacts the ionosphere.

Other methods used to determine the magnetic field in the ionosphere (and radio propagation) are the A and K index. A and K index are measurements of magnetic field activity used in predictions and indicate the daily solar activity. These indexes are calculated on a daily average of samplings, that usually take place every 3 hours. Lower values equal to a better solar activity condition.

But wait You don't need a deep dive into determining, refraction, diffraction, absorption, polarization, and scattering at your antenna. I have found a

sure-fire solution to the issues with propagation. Band Condition Spray "Designed to enhance HF Propagation"

- ▶ Works for all modes ,
- ▶ Won't damage the Ionosphere,
- ▶ Work Rare DX easily,
- ▶ Helps your station be a "BIG GUN",
- ▶ Helps your station's R-S-T (Readability, Strength, and Tone),
- ▶ Licensed Amateur use Only



Santa Cruz County ARES Purpose

- We serve the public, not our egos and the best service we can render in a truly major event. To provide and distribute a corps of trained operators into the right places of the scene in that first, critical 48 hours (sometimes weeks).
- We are not Fire personnel, Police Officers, Sheriff's Officers, or any other authority. We are volunteers who care about our communities by using our emergency communication skills.
- Before volunteering we first take care of ourselves, immediate family, friends, and some of our relatives.
- We value the contributions that everyone makes, irrespective of license class, years of experience, or the price tag of your radio.

Ham Radio's Motto

"When all else fails – ham radio works". That is because, when all the normal communication systems stop working, Ham Radio is still in operation, helping people, conveying messages, and sometimes, even saving lives.

Diary of a SAG Volunteer—Continued from page 5

I have not solved for an alternative if I get a 'No' or the vehicle does not have metal. I keep the backpack under my feet to have my supplies accessible. I check-in with the net control and inform them my post has been established. The other question I ask the driver is if they want to listen to the radio traffic or not. So far, all have wanted to listen to it. There has been a few challenges for my hearing as the radio operator because of noise in the vehicle (open windows, driver cell phone calls or other persons talking).

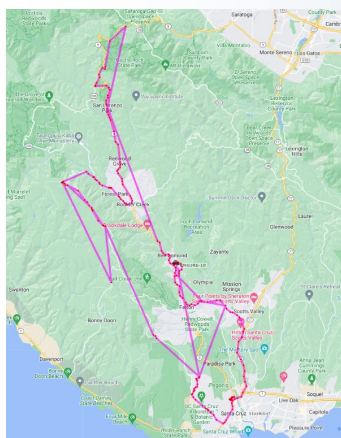
The SAG driver usually has a plan or route of activity. For the Triathlon, prior to the bike ride start we drove the route looking for impediments on the road shoulders and placing ride markers. We then sat until the first riders rode onto Highway 1. It was a good time to get to know the driver and listen to radio traffic. We would follow the first riders up to Davenport.

It is important to avoid tailing the rider/s too closely (especially in a race). It can make them feel self-conscious and disrupt their concentration. Instead, we passed the rider/s for a distance, pulled over and let rider/s catch up and repeated along the route. Played leap frog up Highway 1.

I would radio net control when the first rider/s was approaching Davenport. We would occasionally receive cell phone or radio traffic requesting SAG support to a specific location. Otherwise, we would go up and down the route looking for signs of need and repairing flat tires. There were only two SAGs on the course. I would radio all SAG stops and starts with net control. With report of the last rider out of transition (swim to bike) we began looking for the last rider into/out of Davenport and communicate this. Once the last rider was off of Highway 1, the Post was complete and I requested demobilization.

For the Mountain Challenge, we drove out to the midway point of the Double Metric Century (the longest route) observing for riders on the course. The ride had started about 3 hours earlier and it was surmised most riders would have reached the midway point. This was slightly flawed as the riders could start at any time. We then followed the route over the greatest terrain challenges.

This SAG vehicle was not for repairs but rather retrieving riders. There was a separate mechanical SAG vehicle, which was not connected via radio. We encountered one rider



*APRS tracking of SAG 2 for
Mountain Challenge*

who was cramping, administered some electrolytes and watched them continue to ride. Later when we checked into the Lunch rest stop we received word that the 'cramping' rider had stopped about half way back and was wanting a SAG. We retraced our route and found no one. We encountered two other SAGS requests through word of mouth and nothing was found. And then the shift was over with other teams taking over (without radio operators) for final sweeping of the courses.

The Mountain Challenge SAG experience was very different compared to the Triathlon. There were many more SAGs on the course/s and only two had radio operators. There was heavy reliance on cell phone and coverage was spotty.

SAG assignments are one of my favorite assignments. I hope you want to give it a try.