

# SAR City 2011: Communications Track

Cliff Cheng, Ph.D.,AC6C,Chair

<http://sites.google.com/site/sarcityhams/>

Neighborhood Emergency Radio Project

[www.NERP.myEweb.net](http://www.NERP.myEweb.net)

AC6C --at--ARRL -DOT-- net

## Introduction.

For SAR City 2007, the 35<sup>th</sup> anniversary of SAR City regional search and rescue school, Dr. Cliff Cheng, AC6C, Neighborhood Emergency Radio Project, [www.NERP.myEweb.net](http://www.NERP.myEweb.net) was asked to coordinate the Communications Track. At the time, this track had not been offered at SAR City since the 1990s. In 2007, we licensed 16 SAR operators with the Federal Communication Commission's (FCC) amateur radio license thus enabling them to use amateur radio as communication on SAR operations; as well as use it as a hobby if they so choose. In 2008, we licensed 11 more SAR operators. All 11 people passed in 2009. In 2010, 10 passed. For 2011, the 39<sup>th</sup> annual SAR City, we hope to license more SAR people, provide a new ham orientation and continuing education.

Dr. Cheng has brought to SAR City an experienced team of instructors and volunteer examiners (VE) from far and near. Training is provided to accommodate the different levels of experience with radio communication. Our offerings Saturday can be taken by anyone interested in SAR; people with or without a ham radio license. We will offer an opportunity to earn a FCC Technician class amateur radio license on Saturday. Sunday morning, we will orient the new licensees; people who have a license and need refresher training will benefit from these offerings. We will offer class on how to buy a handheld radio, handheld radio batteries, APRS. We will also offer a radio programming service.

Amateur radio is very useful for search and rescue! Some SAR squads are provided with police/fire/sheriff radios and find them sufficient. But some squads find they need more frequencies or the flexibility the vast options amateur radio offers them. Some squads need some form of radio communications. Please visit the Neighborhood Emergency Radio Project's free, non-profit, non-commercial, educational website for a discussion on what the different kind of radio services, besides amateur, are available - [www.NERP.myEweb.net](http://www.NERP.myEweb.net).

Fees. Starting 2011, Barstow College rental and food prices have risen. However, it is now unnecessary to sign up for SAR City through application to Barstow College. If your registration is postmarked by Sept. 24, 2011, your early-bird fee is \$100. After that it will cost \$115. Group discounts for teams of 5 or more people are \$90 (non-refundable). Even with the price increase,

SAR City is a bargain. In addition to training, four meals are provided in that fee; 3 meals on Sat. and Sun. breakfast.

Schedule - Course descriptions and Instructor Biographies follow. Room assignments will be made just prior to the start of SAR City starts. Check the bulletin board frequently for last minute changes.

## (No comm courses Friday night).

By appointment, Fri., Oct., 7, 2011 to Sun. Oct. 9, 2011 - Radio Programming - The following ham radio operators will, if requested ahead of time, bring to SAR City their laptops with software and cables to program the following radios for you. Please make an appointment with them, preferably before SAR city. Once at SAR City, these hams will be helping people who made appointments, as well as teaching, and examining. If time permits we will help walk-ins.

Some of us will get there Friday night. We will monitor 147.51 simplex (alternate FLASH 2 Repeater 147.180 pl. 151.4). You can reach us on Sat. in our licensing session classroom or Sun. in our New Ham Orientation classroom (check schedule board for location) or if you have a 2 meter radio, 147.51 simplex (alternate FLASH 2 Repeater 147.180 pl. 151.4).

You will need to prepare by:

- Bring your valid amateur radio license.
- Bring your radio, instruction booklet, power source (charged battery or power supply if it is a mobile rig).
- Bring a list of amateur radio frequencies you want programmed – get this info from your squad or type in the *(name of your town) repeaters* into a search engine. If people are waiting on us, we will only program 5 frequencies for you. If you want more, we will have you do data entry.  
*[Note - We run a legal operation. We can not program frequencies that are not legal for us to transmit on; ones outside the ham bands. If you request us to show you how to program your own radio, when you are back home using your own computer, software and cable, we urge you to only program in transmit frequencies you are legally authorized to transmit on].*
- If you have a modified radio, board banded to transmit beyond the ham bands (which is illegal unless you have an appropriate license), your radio may accept a file written to its memory. In some cases, attempts to program modified radios, may result in the radio becoming damaged.
- By asking us to program your radio, you agree we are not responsible for any damage which may be caused to your radio.

Elmer (mentor) and Radios:

Mort Arditi, NA6MA, [marditi@arrl.net](mailto:marditi@arrl.net), make appointment once at SAR City.  
Wouxun: KGUUV1D, KGUUV2D. Yaesu: FT-7900, VX3, VX7-R.

Cliff Cheng, AC6C, C e r t S p O N S o r **AT** G m a I L **-dot-** Com. Yaesu: FT-60R, FT-7800, VX-150, VX-170/FT-250, VX-177/FT-277R.

# (Saturday)

Sat., Oct., 8, 2011, 8am. Welcoming Remarks by Cliff Cheng, Ph.D., AC6C, Communications Track Chairman.

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Joe Schweitzer, KG6L, Orange County Sheriff's SAR, make appointment

[kg6l@arrl.net](mailto:kg6l@arrl.net). Kenwood, D7. Yaesu FT-60R, FT-7800, FT-8800, FT-8900.

Sat., Oct. 8, 2011, 8:00am to 2:30am - FCC Amateur Radio Technician Study Hall. Test preparation for FCC licensing exam to follow at 11:30am. (see course descriptions for important details). Facilitator - Mort Arditti, NA6MA, assisted by Cliff Cheng, Ph.D., AC6C and staff.

Sat., Oct., 8, 2011, 9am to 10:30am, 1.5hrs. How to Choose and Care for Walkie Talkie Batteries So They are Ready When You Need Them, Cliff Cheng, Ph.D., AC6C. This is a very practical hands-on session. Having taught how to buy a walkie-talkie (HT) at SAR City for several years, Cliff, has helped SAR operators during the year in-between SAR City weekends. He has seen many SAR operators buying and using the wrong batteries and chargers. As a result, they often have communication failures during searches. Cliff has put this class together to teach SAR operators the different battery types and chargers and what their proper use. If you can - bring your radios, batteries, chargers and owner's manuals to the session.

Sat., Oct., 8, 2011, 2pm to 3pm, 1hr. APRS for SAR: Automatic Packet Reporting System: An Overview, Joseph Schweitzer, KG6L, Orange County Sheriff's SAR. What if you never had to call in your position to the CP again? Do you get Confused between Latitude, Longitude, Northing, Easting, Zone, Degrees, Minutes, Seconds? An Automatic Position Reporting System is the answer for you. This class will introduce how your team can communicate positions without confusion, and update the CP on your progress automatically. This class is for anyone from the first time volunteer to seasoned radio experts, team leaders and search managers. A non-technical introduction will be followed by technical information on how to get a system working and a live demonstration.

Sat., Oct., 8, 2011, Approximately 2:30pm to approximately 4:30pm, FCC Amateur Radio Examination Session.

- **see course descriptions for important details.**
- If the class members are ready earlier and enough examiners are present, we will *start earlier*. If you are not in the class and want to take the exam, check with us an hour before the scheduled start time.
- All exams must be started no later than 1/2hr. After the exam starts.
- Special \$4 fee; pay at exam.
- If you have prepared for the exam and not taken out Study Hall, you are welcomed to take our exam on a space available basis.
- Volunteer Examiner Team Leader - Jock Soutar, KC6IIH, Jim Seifert, AD6WL, Norm Odette, K6UO, Jim Laage, KG6SUA, Joe Schweitzer, KG6L, and Cliff Cheng, AC6C, Examiners.
- Test takers are welcomed to leave when they finish. People who earn a a

pass certificate need to come back at the end of the session for graduation.

- Most people finish in about 20-30mins.

Sat., Oct., 8, 2011, 5pm to 6pm, 1hrs. How to Buy a Walkie Talkie, Cliff Cheng, Ph.D., AC6C. Whether you have a ham radio license or have not yet gotten one, please take advantage of this session being offered and learn how to buy a handheld transceiver ("walkie talkie"). The presentation will help new/old hams understand what the important criteria and pitfalls are to buying a handheld transceiver (HT). Many new hams make the mistake of buying a HT which is far too complicated for them. The HTs of 2011 have more capabilities and complexities than a desk full of equipment from decades past. New hams who buy radios who are too complicated likely will not use them since they can not program or operate them. They give up on ham radio. Avoid the pitfalls and come to the session. This session can save you money, grief and from having communication failures on searches.

## (Sunday)

Sun., Oct., 9, 2011, 9am-11am 2hrs. - Carl, WU6D & Cathy, K6VC Gardenias. New Ham Orientation. Mobile rigs and their installation, hands-on operating procedures exercise, hand-held radios.

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More Courses to be Added. Please Check Back!  
Check the bulletin board frequently for last minute changes.

### Detailed Information of Technician Class Study Hall and FCC Exam

Technician Study Hall. Our Technician study hall prepares participants to take exam for the Federal Communications Commission (FCC) entry level Technician class amateur radio license in the space of 7hrs. This is not a traditional lecture class. It is a study hall. Participants come and read the question pool. Every hour, there will be a 15 minute demonstration or lecture. After 7 hours of reading, the volunteer examiners (VE) will come in and give the exam.

There is *no Morse code requirement*.

The question pool is published. All the questions and answers you could possibly be asked are published . You can study (memorize) them. The pool consists of 350 questions. You will be asked 35 questions. You can miss 9 of them and still pass.

At SAR City 2007, 16 people took the Technician exam and 15 passed. In booth 2007 and 2008, 13 people took the Technician exam each year and 11 passed. All 11 people passed in 2009. 10 passed in 2010. Over the years, of the few people who failed one had failed multiple times at locations prior to SAR City. Another person kept saying "I'm going to fail, I'm going to fail." That person failed. Another person failed for they came in late and only read  $\frac{1}{4}$  of the questions. One person who failed the first time, re-tested immediately and passed.

*To improve your chances of passage, we ask participants to come having studied the question pool and to the point they are passing on-line practice tests. You can download the question pool for free at:*

<http://bb.qualitymatrix.com/viewtopic.php?f=4&t=30>. Please download, print out and study; and bring with you to our SAR City Study Hall. Bring your questions. Please visit: [www.NERP.myEweb.net](http://www.NERP.myEweb.net), click Ham Exams. Take practice Technician exams. These tests are from the same questions as the exams we give. If you pass a few on-line tests, you can easily pass the exam at SAR City.

People who have not done this preparatory work may still take part in the study hall *but may not have as strong a chance to pass* as those who prepared. Again the passage rate is typically in the high 90<sup>th</sup> percentile. If you can pass a driver's license test you can pass a code-free Technician test. Of course to pass a driver's license test, we had to study.

Technician Exam at SAR City. A team of Volunteer Examiners (VE) will give the Federal Communication Commission's amateur radio licensing examination.

*The exams need to be prepared ahead of time.* We get them from our Volunteer Examiner Coordinator (VEC). We need enough time to order the exams, for the VEC to make and send them to us. Please pre-register for the Technician exam. If you wish to take the General or Extra exams, we are happy to accommodate you. We will not have these exams with us unless they are requested ahead of time. To be sure we have one for you, please let us know you need one at least one full week ahead of time that you need one. Note, the Technician study hall prepares people for only the Technician exam. It does not prepare people for the General or Extra exams.

If you pass your Tech. you are welcomed to take the General exam at no additional fee, if there is sufficient time left in the session. Some hams say since you are already at the exam, why not try the higher exam? You might pass. If you pass you are welcome, providing there is enough time in the session to take the Extra. If you do not pass, you will get experience and which will help you pass the next time.

If you do not pass your Tech. and there is time left in the session, you are welcome to re-take it. We however are required to charge you another \$4. And, you will need to fill out another form.

[Note - While we want you to pass, please note we run a legal and ethical examination].

Pre-Exam Administrative Details - Its been our experience that those who come having taken care of two administrative details are more relaxed, better able to concentrate on studying and the passing the exam, and get their license faster. Please download and fill-out GLAARG application Form 605X and bring it to the session at SAR City: <http://glaarg.org/forms.htm>. Please get your Federal Registration Number (FRN) and use it for Item #4 on the application by going to the FCC website ahead of time at <https://fjallfoss.fcc.gov/coresWeb/publicHome.do> or and click on FRN Registration on the left side of the screen.

Two forms of government issued ID are required to take the exam. *We need to ask for your contact information in case there is a problem with your application.*

A calculator is unnecessary on the Technician exam. If you would like to bring one, you can so long as it is a simple calculator with no memory. Using cellphone, PDA or calculators or your computer is not allowed. The exam is closed book (of course you already had the benefit of having studied the actual question pool).

The test fee will only be \$4. Pay at the exam. None of the Volunteer Examiners (VE), even the ones who have traveled from far away to get to SAR City at their own expense will receive any compensation or even reimbursement for their expenses. The \$4 fee will go solely to administrative costs of the Volunteer Examiner Coordinator (VEC), Greater Los Angeles Amateur Radio Group (GLAARG). *GLAARG is the only VEC still charging only \$4, the original fee when the VE program was started in 1984.* The other VECs are charging the full \$19 fee the FCC authorizes! GLAARG also tends to be quicker in processing exams which means your license will be issued faster. Licenses will typically be granted by the FCC by the end of the week.

Once You Get Your License. Once you received your call sign you can enjoy your newly acquired privileges! We are happy to help you once you get your license. Please email Dr. Cliff Cheng, AC6C, ac6c at arrl dot net and tell him you have received your license and what your callsign is. He will help you find a local amateur radio club where you can get help program your radio. He can also give you contact information for your local amateur radio emergency communication organization; if you want to be in communication during an emergency, you will need someone on the other end to talk to.

Please do attend your new ham orientation classes at this SAR City or you are welcome to do it the next time you come to SAR City. We want you to get your license, if this is what you desire and you can pass the test. A caveat is appropriate here. The entry level Technician license standard has been reduced to a fraction of their former requirements. Most people get licenses by mere memorization. With the license and our new ham orientation, most people will be able with some practice, to use their radio as an “appliance operator” - someone who uses ham radio as if it were an appliance like a cell phone, toaster or refrigerator. Appliance operators have little or no understanding how their radio works let alone the ability to independently get on the air and establish an emergency communications link after a major disaster damages the communications infrastructure. Such a ham is dependent on ham radio stores and old school hams to help them. These resources may not be available to you after when you are responding to an emergency or after a major disaster has occurred. We are happy to refer you to resources in your area which can help you further train and practice.

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