

# The Special Events Communication Manual

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## Chapter 1 – Special Events

"Special event" is a term coined by radio amateurs that refers to activities where the public is in attendance as observers and/or participants. They include sporting events such as marathons, bikeathons, and boat races; fund-raisers such as walkathons; celebrations such as parades; and exhibits at fairs, malls and museums. These are all affairs of a preplanned, non-emergency nature. Hams are, of course, well known for their communications support of relief agencies in disaster and post-disaster situations. They also provide a plethora of communication services on a "preventive medicine" basis to the public during special events and put on Amateur Radio demonstrations and displays, beneficial to Amateur Radio's public image.

Special events are normally held for the enjoyment of the public and often draw large crowds. They provide golden public relations opportunities for radio amateurs who provide support communications on a complimentary basis. They make our activities visible to non-amateurs. They sharpen our operating skills, and help justify our existence. And besides, operating special events is just plain fun!

The purpose of this manual is to give you some tips, and suggestions to assist you in planning your special-event communications efforts. Hopefully, it will help you provide dependable and effective Amateur Radio communications for the public, and win some important brownie points for Amateur Radio in your community. Some chapters present specific kinds of special events and how to go about handling them properly, based on information obtained from expert amateur groups throughout the country.

Additionally, we have included chapters on the regulatory aspects, and working with event sponsors, public safety officials and, of course, the volunteers, the cornerstone of any special event operation. Most chapters are spiced with appropriate articles depicting actual communications activities. A *QST* bibliography closes the manual with a list of related articles from the past few years of *QST*. We hope that the practical information presented in this manual will make your communications efforts during any special event a complete success!

### ***Acknowledgments***

This booklet would not be possible if were not for the efforts of dedicated League volunteers and staff: past ARRL President George S. Wilson III, W4OYI; Steve Mendelsohn, W2ML; Mike Riley, KX1B; Rick Palm, K1CE; and Jerry Boyd, K6BZ.

A tip of the hat to these fine public service communicators!

## Chapter 2 – Working With Event Sponsors and Public Safety Officials

Public service communications rendered by amateurs is based on a series of factors. Specifically, we must be accepted by event sponsors and once accepted, our continued ability to contribute in times of disaster is based on the efficiency and effectiveness of our performance. While acceptance, image, efficiency and effectiveness are all important to the ongoing working relationships between amateurs and event officials, it is the initial acceptance that is often difficult to achieve.

Event sponsors, police and fire officials tend to be very cautious and skeptical concerning those who are not members of the public safety professions. This posture is based primarily on experiences in which well intended but somewhat overzealous volunteers have complicated, and in some cases jeopardized, efforts in emergencies. The amateur operator or other volunteer who wishes to be of assistance must be aware of this perception.

The police have generally had their fill of groupies or hangers-on. They can ill afford to tolerate frustrated individuals who have always wanted to be police officers or firefighters, but for one reason or another have never reached that objective. There seems to be an abundance of people, especially during a crisis, who, if given any opportunity to assist in an official capacity, will quickly overstep the limits of their authority and responsibility. In their zest, such persons often inhibit the actions of trained personnel; but worse yet, they make an already dangerous situation even more so by their reckless abandon. With rare exception, Amateur Radio operators do not fall into this category. The problem is, however, that police officers in the midst of stressful operations may have extreme difficulty in distinguishing between those volunteers who are problem solvers and those who are problem makers. Those very few hams who behave emotionally, are overzealous in offering their services or in describing their abilities, or who abuse the established limits of their authority, are doing the amateur community a disservice. The typical police officer or firefighter, like the typical civilian, does not understand the vast differences among various radio services, the types of licensing involved or the high level of expertise and discipline that is characteristic of the Amateur Radio Service.

Moreover, keep in mind that state-of-the-art technology, and the capabilities that technology affords hams, are foreign to most police officers or firefighters. When a ham arrives at a scene and jumps out of a vehicle with a hand-held in each fist and two more clipped to the belt, all squawking at once, officials simply don't know how to respond. They are either overwhelmed by equipment they don't understand, or so awestruck that they try to avoid what they perceive as threatening.

How Amateur Radio volunteers are accepted depends on their establishing a track record of competent performance in important activities. And it begins with convincing officials that amateurs offer a cost-effective (otherwise known as free) substitute for functions previously paid for by the taxpayer. Local radio amateurs also must demonstrate that they are organized, disciplined and reliable, and have sincere interest in public event service. The most effective way to accomplish this is for you, as head of your communications group, to initiate the contact with public safety agencies and event sponsors in an official capacity. This is better than having individual amateurs, particularly outside an organized structure, making uncoordinated and poorly prepared contacts that often result in an impression that your group is disorganized.

Approach that first meeting with event sponsors and public safety officials well-prepared, and give a concise presentation of Amateur Radio's capabilities. Illustrate accomplishments with newspaper clippings, QST articles, etc, highlighting Amateur Radio public service. Discuss the existing Amateur Radio structure, emphasizing that a certain number of qualified operators will be able to respond to public events needs.

Demonstrate the reliability and clarity of amateur gear. Nothing is more impressive than asking for a roll call on a 2-meter repeater, using a hand-held radio in the police or fire chief's office and having amateurs respond with full-quieting signals from locations where municipal radios are normally ineffective. Such a demonstration a few years ago convinced officials in Laguna Beach, California, to ask for the assistance of the South Orange County ARES, the wisdom of which became evident a short time later when that seaside resort community was hit by a series of local emergencies.

Suggest specific ways in which amateurs can be of assistance. Indicate you are aware that police and fire radio frequencies are usually saturated with tactical or operational traffic in emergencies, and offer to provide an

administrative frequency for use in overall management and coordination of the public event effort. More important, offer to demonstrate what you are capable of doing by supplying a demonstration of your communications capabilities. It is of tremendous importance that you emphasize that the services supplied by your group will free public safety officers for other duties.

Demonstrate how easily amateurs and their equipment can interface with public safety efforts. Equipment that can be made operational quickly inside the headquarters building, in a mobile command post or in field units is ideal. Express your group's willingness to meet the needs of the sponsor or agency with which you are dealing.

Show a readiness to provide training to your membership. Offer event sponsors and public safety officials the opportunity to have their own representatives appear before your group and provide orientation and training they feel is essential.

Finally, be realistic and objective in terms of what your group promises to provide to event sponsors and public service agencies. Be fully prepared to keep all promises you make. Remember to be organized and competent. Once you have implemented these suggestions, be patient. The requests for your services will be forthcoming, perhaps in a volume you had not anticipated!

### **Summary**

Grass-roots action is the name of the game when it comes to achieving effective liaison. With the proper groundwork accomplished in advance, recognition among those sponsors and agencies having communications needs can be dramatically increased. It's symbiotic. These people need us, and we want to help. Now that all the necessary introductions have been made, the rest is easy, for we are indeed the experts in meeting communications requirements of every sort.

## Chapter 3 – Working With Volunteers

Volunteers are the lifeblood of special-events communications support. They are difficult to find, more difficult to keep, and at times, difficult to work with. Volunteers come in a wide variety of shapes, colors, sizes, backgrounds, skills, experience, and levels of motivation. They have their own reason for participating and their own specific needs that must be met if they are to continue to volunteer. Their needs, abilities, and accomplishments determine the ultimate success or failure of your group's work. Your task, as coordinator, is to discover and meet their needs while guiding them in the best use of their abilities, thus helping them to achieve significant accomplishments in public service.

### ***Who are Volunteers?***

Volunteers are individuals who are willing to work with others to perform a necessary task. They are human beings with human needs, goals, attitudes, abilities, strengths and weaknesses. Since volunteers will be the basic resource that you will be using in supporting special events, it will be to your advantage to get to know each of them as well as possible. Generally, volunteers will do precisely what they want to do: no more, no less. It is up to you to convince them that the assignment you have selected for them is both needed and appropriate. Having their own likes and dislikes, it may be necessary to talk the volunteers into some assignments that are important though unpopular. Volunteers don't like to be underutilized, and tend to disappear when kept cooling their heels for a significant length of time. They will work for long hours under the worst conditions as long as they can see the need for it. Most will do anything you ask as long as they're treated properly. If you mistreat or abuse them, they may not volunteer their help again.

### ***Why they Volunteer***

Volunteers generally join a group mission to satisfy a personal need. Some join to become a "big wheel." Some join simply because you asked the right question at the right time and at the right place. The majority of your volunteers, though, joined your group out of a desire to serve the public in a way they best know how: as communicators. These are the volunteers you should direct your efforts toward. Find out why your volunteers joined your group. You've got to find out what their needs are before you can attempt to satisfy them. In short, the best way to find out why your members volunteered is to ask them!

### ***What Volunteers Expect from You***

Your volunteers have a right to expect courteous, considerate, fair and impartial treatment from you. Courtesy is always in order; rudeness will cost you dearly. In addition to learning and compensating for their weaknesses and being tolerant of their faults, you must also consider their feelings. Don't forget that you are taking precious time from their families. They also have the right to expect you to make a reasonable effort to learn and apply the skills and techniques of leadership and management. You will be expected to make mistakes, admit them openly, and learn from them as you go. You will also be expected to keep them informed as to what is happening and why.

Unfortunately, some members will expect much more of you than they have a right to expect, and often more than you can do. They may expect you to change situations over which you have no control, force other volunteers to change their habits, provide them with privileged treatment or status, fire a useful assistant because they happen to dislike him, and other equally inappropriate actions. In short, they will tend to forget that you deserve the same treatment from them that they expect from you.

Each member has different job demands and family requirements, as well as other outside interests. This affects training, preparedness, and availability. Some volunteers may join your group and never be heard from again. Others will join and not find time for training, but will come out for operations. The rest will be willing to take different amounts of training, and their availability for service will change as their situations and interests change. Human traits are cyclic in nature and volunteers are no exception. Further, very few will be willing to take sufficient training to be able to lead, and even less will be willing to do the extra work. Remember that volunteers are individuals and should be treated as such.

## ***The Cadre Concept***

The "cadre concept" recognizes the variations in willingness to train for special-events communications efforts and allows you to mitigate the problem by using a small, highly trained and motivated group who will provide direction by example. The concept is simple--you provide as much training to each member as he is willing to accept and absorb. Those who take the most training will usually be willing to assist you with the job of organizing and training the rest. They become the cadre of leaders--the nucleus of your communications group. This concept works simply because it takes maximum advantage of the fact that people are going to do exactly what they want to do. It operates on the assumption that no volunteer is worthless, that one day you may need all the volunteers you can get, and, finally, that you may have some claim on an amateur who carries a membership card for your group, while you have no claim on one who does not.

## ***Keeping the Volunteer***

Your volunteers will stay members of your unit if you make a dedicated effort to ensure that:

Your training process is tailored specifically to the needs of your unit and the individuals who comprise it. Obviously your volunteers have skills that they are bringing to your group, but increasing those skills and educating your volunteers in new skills will probably keep them interested.

You provide timely information to your members. Keep them informed of activities as a group. Don't tell one or two members and expect the rest to find out "on their own."

You should be someone your members can turn to for assistance on group-related matters.

You should realize that, although some members may feel secure being given one responsibility and keeping that responsibility during their tenure with your group, some members may enjoy being given different assignments. Those members who request different challenges may be your best assistant coordinators.

You may wish to implement your own system of showing appreciation, recognition and rewarding of members for their services. Awarding certificates or having special occasions such as dinners are excellent means to reward your members for a job well done.

## ***Suggested Approaches***

First, most volunteers don't respond well to orders. They will honor requests, particularly if you have time to include information on the need for that request. An example would be: "Bill, we need a replacement operator at Mile 2. Joe has to take his son to the doctor. Can you do it?"

Second, if you desire their loyalty, you must be prepared to give them yours. The responsibility for your group's success or failure lies with you. Your loyalty must remain steadfast.

Third, do not criticize a member in public unless you absolutely must. People will respond better to criticism in private. Remember that their pride and dignity are at stake. If you must criticize a member in public, or in private, make it brief, make it positive if possible, and don't criticize the member personally - direct your criticism toward the person's actions.

Fourth, recognize that factions and cliques will develop within your group as they do with any other group. You must not become identified with any subgroup within your unit. Your impartiality will be questioned at times when it seems to members that you "always give Bill the best job."

Fifth, when a member of your group complains about another member's lack of knowledge or operating skills, keep in mind that some people simply learn quicker than others. In an emergency, you'll still want the member who is learning. You may wish to handle a problem such as this by asking the member who is upset to develop a training program in that area. Stress that his efforts will increase the effectiveness of the unit.

Sixth, never discuss a member's weaknesses, faults or limitations on the air or in public. If someone complains to you publicly about another member, handle the situation as diplomatically as possible. If the conflict can be resolved by having the two members talk to each other, follow that route. If not, offer to discuss the problem privately. Your responsibility is to solve the problem--not to take sides.



Lastly, when you find that a member is causing more harm than good to your unit, it is important that you are diplomatic in your actions while keeping the effectiveness of your unit as your primary consideration.

### **Summary**

Working with your volunteers is the most critical aspect of your job and will call for the most time and effort on your part. To work effectively with volunteers, you must first understand them and use that understanding to motivate them to do the job.

When you're leading your volunteers, you should not try to be "all things to all people." You must be a diplomat, a leader, a friend, an expert in your field, and an excellent listener. You probably won't be able to please all of the members in your group all of the time. However, you should attempt to please them whenever possible for the good of the unit. Strive to "lead" your group, not simply "manage" it.

## Chapter 4 – 'Athon and Parade Communications

### **Remember One Word: Planning**

This chapter is about communications for marathons, walkathons, other 'athons, and parades. One word, just one word, is important in the beginning: planning. Planning not only tells you what will happen during your marathon communications activity, it tells you if one is possible in the first place.

### **Should We Do This?**

Check the following criteria. Your communications project will be in trouble right from the "start" if the following criteria are not met.

The event organizers must want amateurs to be there.

The event organizers and participating amateurs **must agree on Amateur Radio's role in the operation**. Every facet of the operation must be planned.

All pitfalls and potential problems **must** be identified and defused. Everyone **must** understand and endorse the operational plan. The above objectives must be met, or the personnel in the Amateur Radio group and the organizers of the event will, at the very least, not be in sync, which can lead to an embarrassing situation. At the very worst, the operation can be stopped dead in front of hundreds or thousands of people. There is nothing worse than an Amateur Radio group botching an operation in front of the public. It makes Amateur Radio look bad, and in this day and age, that is the last thing we need!

### **Early Steps**

Planning the operation begins with two important steps. First, the amateur's part in the operation should be established. Second, the group should determine what needs to be done in order to get there. Amateurs involved in the project can draw on available resources to develop both steps. For instance, brochures, news stories about the event, and maps of the area can be very helpful.

Also, a meeting involving all concerned parties is important. More on this later.

### **Recruiting Hams**

It is best to begin recruiting more than three months before the event date. Recruiting can involve a lot of paper work. Many organizers feel that a computer/printer with filing and word-processing capabilities is necessary. The degree of usefulness, however, depends on the size of the operation.

A computer system can be very helpful in sending out letters asking for volunteers. The mailing list, and even mailing labels--if the capability for printing them exists--can be generated from the list of volunteers who have participated in previous operations.

E-mail can also be helpful provided you have up-to-date e-mail addresses.

The letters sent out will elicit responses. Once again, a computer will be helpful in keeping track of the jobs of the various volunteers. Offers from volunteers will also come in over the phone and on the air. A computer can contribute immeasurably to the event's organization. Other sources for volunteers are local clubs, hamfests, the NTS or ARES net, and the ARES roster. When all these sources have been tapped, you may have a large list that contains a great deal of information. This should include the names of the volunteers and other pertinent data, such as their call signs, phone numbers, e-mail addresses, equipment, class of license, and where they will be assigned on the marathon course or parade route. You will want to place amateurs in a lot of different areas. This, of course, will depend on the specific nature of your event, but some places might be: mile markers, half-mile markers, the 'Athon and Parade Communications starting line, the finish line, the official's area, Net Control, water stations, aid stations, medical facilities, floats, grandstands, review stands and medical command facilities.

There are many different philosophies regarding the number of amateurs that should be recruited for a particular job. The best bet is to over-recruit, because some people will inevitably drop out.

### ***Checklist***

When planning the communications for a marathon or similar event, it is always helpful to have a checklist of items requiring attention.

### ***In-Person Meeting***

There should be at least one in-person meeting, held as close to the event as possible, among participating amateurs and event officials. Representatives present will depend on the situation, but can include law enforcement officials, medical and first aid personnel, and town officials. It is very important to be as professional as possible, not only for the benefit of the event, but because professionalism is one of the best PR tools that we as amateurs can use.

### ***The Race Course or Parade Route***

It is important to go over the route of the course with marathon or parade officials. All hazardous and questionable areas on the course must be identified and assessed. These can include inadvertent detours that participants could take, and areas where traffic flow could be dangerous: sharp turns, slippery surfaces, and areas of poor visibility.

### ***Your Role***

All event officials should have a crystal clear understanding of the roles of amateurs. They should be told what we can and cannot do. Amateurs are experienced and trained communicators, and should not be used for crowd or traffic control, which is a job for the police. Also, amateurs should not be used as parking lot attendants. Participating amateurs should all be informed of frequencies to be used during the event, station identification involving tactical call signs such as "Checkpoint 5," and coordination of times that they will be on and off duty. Let's look at these in a bit more detail.

### ***An Operational Plan***

It is important to remember that an operational plan will come out of your in-person meeting, and that all groups should be aware of and agree on the plan. The finalized plan can be circulated after the meeting, or can be photocopied or printed (if funds are available) and distributed. This plan may include procedures for handling traffic, contingency plans and maps. The original map of the course may come from race officials. Amateurs may need to modify it with necessary markings indicating the locations of all communication posts, and medical and law enforcement positions on the course. The operating frequencies for the various positions can also be posted on the map.

### ***Frequencies***

Obviously, a VHF or UHF amateur band is the most practical approach for communicating, and FM is the preferred mode. The most popular bands for public service work are 144 MHz, 220 MHz and 440 MHz. While simplex frequencies are used in some cases, if the event is very large, repeaters will be necessary. Packet radio is an asset, too. PSK31 is also making inroads in Amateur Radio public service work.

### ***Visual Identification***

If amateurs are not identified, they will not be given access to restricted areas. Identification of vehicles equipped with amateur equipment is easy. Most groups have solved that problem by posting a large card in the window of each vehicle with a phrase such as "Amateur Radio Communications." This gives our radio service publicity, which certainly can never hurt. Another approach to this is to use a standard recognized symbol. Special-event credentials and name/call badges will serve to identify individual amateurs as authorized event personnel.

### ***Time Coordination and Event Start Up***

On the day of the event, it is unnecessary to keep personnel waiting for long periods before the event starts. Event officials should coordinate the times when amateurs and other radio people must be at their operating

posts, if there is more than one operating shift. A short time before the start of the event, amateurs can go to the various positions, and then a roll call can be made.

### ***Law Enforcement***

It is important to establish liaison and rapport with law enforcement people. If police frequencies are not available for event communications, each officer can be assigned an amateur. Another approach to this is to have the amateur control station and the police command post (if there is one) pass information between each other. It is prudent to coordinate with law enforcement people about road blocks or traffic control.

### ***The Medical Role***

If emergency medical vehicles are part of the operation, it is best to locate them as close to central locations as possible. Also, it is probably best to have an amateur with a handie-talkie stay with the medical people. Be sure the amateur has backup battery packs and a second H-T, if possible. It is desirable to have a separate medical frequency so the net control station can monitor the status of all the medical positions. It is also very effective and desirable to use a repeater for this, because an ambulance racing to a hospital with an amateur on board will quite likely go out of simplex range.

### ***The Organizer's Role***

The organizer of the Amateur Radio operation should prearrange as much as possible and should plan for every important possibility. It will be necessary to name reliable amateurs to key assignments so the organizer can step back to oversee the operation and not get involved in the actual work details. Alternate plans, backup gear and operators will be needed, but it is important not to complicate the plan by having too many backups. The amount of backup operators/plans required is debatable, and will depend on the operation. For starters, the organizer should have backup plans for critical objectives, and only enough standby operators and backup equipment at necessary points as required. Expansion beyond that is up to the organizers, but remember that it does add overhead to the entire operation.

### ***Event Wrap-Up***

At the end of the event, there will be many loose ends to clear up. This is the best time to ask for suggestions and constructive criticism from the people involved in the operation. Your people may also have suggestions relative to the event itself, which can be passed on to the event organizers. The Amateur Radio organizers should be generous when thanking the participating amateurs. This will increase the chances for getting a large group of amateurs for the next event. The prompt mailing of individual letters with a reference to each person's contribution, if possible, is a very good approach.

### ***Conclusion***

No two marathon operations are going to be the same. Your operational plan will depend on the requirements and your resources. Amateur Radio is a hobby activity, but if we exercise professionalism we will show the public that Amateur Radio is something special, which is what it's all about.

## Chapter 5 – Boat Racing Communications

If you're new to providing communications for boat races, remember that the size of the boats involved or the number of entrants should not affect your attitude towards safety. Although many different sizes and shapes of boats are involved in professional racing, the unlimited hydroplane is one of the most awe-inspiring and dangerous boats to race. The following may give you some idea of what to expect if you provide communications for unlimiteds, and on a smaller scale-other boats:

Imagine yourself and three other people crammed into a small boat similar to a johnboat. Along with you and your new acquaintances, the boat is stuffed with a first aid litter, medical equipment, wetsuits, scuba tanks, rope, flares, a large red flag and a cooler full of cold drinks and rapidly melting ice. It's 3:00 on a hot summer afternoon.

You've been sitting in the boat since 7:00 AM. Your feet have been asleep for several minutes, your clothes are soaked with sweat and you hope that your "lobster red" sunburn won't be very painful. Occasionally you lower a towel into the water, wring it dry, throw it over your head and put your baseball cap back on. A few of the unlimited hydroplanes have been taking trial laps on the course today. The roar of their engines is deafening.

Communications have been running smoothly all day. The last boat of the day is finishing up on the course. In the blink of an eye, the hydroplane begins sliding sideways toward the inside of the course. You can easily see the driver fighting the steering wheel as he and the boat get closer. The left sponson of the boat breaks free and begins careening through the air behind the boat. The rest of the hydroplane--including the frantically fighting driver--is sliding through the water toward you. Fifty feet from your boat, the hydroplane flips upside down and skids to a halt. You take a deep breath and scan the water for any sign of the driver. Nothing. The fun and games are over. Your "hobby" has just turned into a life-or-death situation. Your words and actions in the next few minutes may save a life.

### ***Preparation is Key***

The more completely one prepares for a public service event, the easier the job becomes. Boat racing is no different. It does, however, present a mix of extraordinary hazards. Unlimited boats approach 6000 pounds. Speeds commonly exceed 175 MPH. People and machines are being pushed to their limits. Speed and water is a dangerous mix. Tension is high among drivers, pit crews, race officials, local officials and media representatives. As everywhere in life, good communications eases tensions, and decreased tension makes everything safer. Good communications depends on a good communications system. That's your job. You must plan it, organize it, and see that it happens. Be in early on the planning. Find out, guiding the decision if necessary, just where your group fits in. There are at least five totally separate communications functions. It is doubtful that any ham group in the country can muster enough operators and equipment to fill all the communications needs. Some needs are best met by other than radio, and some functions by other than ham radio.

### ***Race Sponsor***

A boat race is put on by the "sanctioning body." The local organization (the "Race Sponsor") merely provides a framework and an environment within which the race is run. Make no mistake: The local organization in no sense "puts on" the race. From the time the first hull is wet, everything that occurs on the water is under the supervision and control of the officials of the sanctioning body. Because they may not hit town until a few days before the race itself, it is important to understand and prepare for what they will expect of you. The sanctioning body ultimately speaks on all race operations through its Referee. In planning your group's part in the overall event, avoid overcommitment and refuse, well in advance, those functions you are either unsuited to perform or which you lack the resources to perform.

### ***Event Functions***

#### **General Event Administration**

This is an entirely land-based function, and does not involve intense contact with the sanctioning body's officials. There will be very low radio traffic density, but a very large number of operators could be required. This function may include linking first aid stations in the spectator area with each other and with medical

facilities (e.g., "we need more ice at Station 2," or "we have three heat exhaustion cases at Station 3"). It may also involve shadowing local officials to help solve administrative details. Time is rarely vital, great operator skill is not required, interlinking of functions is not often needed, and the short distances (rarely over a half-mile) do not require high quality equipment.

## **Race Administration**

This generally involves extremely high traffic density between two fixed points, the Judges' Stand and the Pit Boat Racing Area. These may be a half-mile apart or just beyond shouting distance. Normally only one designated official in the Pit Area may call the Referee on the Judges' Stand. The Referee is at the other end of the circuit, and usually he permits only himself use of the link to the Pits. But those two talk long, frequently, and often heatedly. Frankly, no radio link is up to the task.

Guide your local sponsoring organization toward making some sort of wire communications provisions for this. Best would be one of Ma Bell's "ring down circuits" where when one of the two telephones is picked up, the other rings without dialing. Alternatives might include a pair of GI field phones. This single link does not exhaust all the need for administrative communications, however. A radio backup (ham is fine) between the two points for spillover traffic is most useful when the phone is busy or someone other than the Referee needs to get with someone other than the Pit Chief. Also, the Referee will usually send one or two "Course Judges" out onto the course to watch for rule violations.

Often in boats, but sometimes in a helicopter, they need to talk occasionally with the Referee. The sanctioning body may bring its own VHF radios for this, but hams can provide the service. If you do it, be sure to put the race administration net (including Judge's Stand, Pit back-up, and Course Judges) on an entirely separate frequency using radios dedicated for that purpose and no other. A rig should never be switched back and forth between the administrative and safety channels or sooner or later it will miss a vital call.

## **Course Survey and Buoy Control**

This is entirely a local responsibility, coordinated with the Referee on race day. Several days ahead of race time, the buoys marking the course are surveyed with a high degree of accuracy. People on shore with transits and radios guide a boat with the buoy anchor to the precise spot to drop it. Wind and currents complicate the problem and an hour or more to correctly place a buoy is not uncommon. This function is death on hand-held battery packs, so any rig used for this cannot be recommitted until it has an opportunity to be recharged. During racing, and sometimes testing, racing boats occasionally wipe out a buoy. When this happens on race day, all the prior precision vanishes and the new one is merely "eyeballed" into place. A boat (a pontoon boat is ideal) involved in this function, however, must be on the Course Safety control frequency. After the initial setting, traffic density is low and a well-briefed but inexperienced ham can get good experience in this assignment.

## **Race Course Protection or Perimeter Patrol**

This involves keeping spectator boats out of the way. Typically, the Coast Guard or other governmental body having police responsibility close the body of water for the period of racing and testing. Often the Coast Guard, Coast Guard Auxiliary, or police will patrol the perimeter and use their own radios for communication. If this is done, it is mandatory to have some point at which there can be liaison with the Course Safety net. If hams handle perimeter control, an operator and rig are required in each patrol boat. There is far too much traffic on this net to mix with any other function, and there would be a positive danger in putting these boats on the same frequency as the Safety net. In the event of a crash, spectator boats might try to move in, necessitating communications on this channel just when the Rescue Boats need it most.

## **Course Safety**

This is the biggie. It is ideally suited to ham VHF/FM communication. Life itself is often dependent on the skill of the operators and reliability of the equipment used. Do it, but do it right. Cool, disciplined operators are vital. An operator and rig are needed in each Safety Boat plus at several other points. These Safety Boats are placed as required in the Rule Book, mostly in the "infield" inside the racing oval. In addition to the Safety Control point, stations for a fully manned Unlimited Hydroplane race might include: Rescue Boats, Fire Boats, Tow Boats, Buoy Boat, Flag Boat, Perimeter Control Point, Utility Boat, Pit Area, Buoy storage area, and Ambulance Pier with the Course Doctor.

Handhelds can be used at all of these locations except probably at the Perimeter Control Point and possibly in the Boat Racing Pit Area. There is very little transmitting at any of these stations as a matter of net discipline. Net discipline is a must and should be enforced rigorously (albeit politely), even to the point of relieving an operator who can't help keep his mouth shut. Earphones or plugs are indispensable at all points. The ambient noise level is so high during a race that a hand-held cannot be reliably copied even when held against the ear at full volume.

### ***The Safety Control Point ("Tower")***

Here's where it all comes together. There should be a rig on the Perimeter Control frequency (of whatever service is used) and another on the race administration net. A single operator can handle both. There should be two rigs on the Course Safety net with an operator on each. These should each have plenty of power and a good antenna. Earphones are a must. One rig serves only as a backup transmitter in case the main rig fails, but the backup operator continues to monitor everything on the second rig.

He has a larger function than this, however. Because the Control Point is on or near the Judges' Stand, which is near the center of the course, one operator can watch for trouble each way. If the backup operator sees trouble, however, he tells the prime operator who handles it. These are high stress positions and the operators can alternate racing heats. Also, the backup operator can be the one who talks to the Referee if he needs something and then tell the prime operator what he really needs to hear when it's suitable for him to hear it. The degree of control of the Safety Boats varies widely. At some race courses, the Safety Boats carry out their tasks without any direction from the Tower at all, using their radios only to clear up overlapping responsibilities. At other courses, there is very tight control and the Safety Boats move and act only on dispatch from the Tower.

### ***Operator selection***

Cool, mature, unflappable heads are needed in the Tower. In the situation where the Tower Operator handles dispatch, a ham-pilot is often useful. He's used to crisp, controlling communications. He should have enough tact to get along with the Referee under stress (not always easy).

Operators in boats should be in good health. Long hours in the sun are debilitating. The Rescue Boats are crowded. They carry all sorts of flags, a stretcher, smoke flares, sometimes extra fire extinguishers, coolers of water, a driver, a medic, two drivers and their gear, and sometimes another man all in addition to the operator and radio. If there's an accident, the divers are in the water, and the radioman should be able to help hoist a big, unconscious race boat driver in a litter aboard. It's helpful if the operator can also be the boat's medic in addition to his radio duties. This saves boat space. It's nice but not essential if the fireboat operator can have some experience as a firefighter.

Tow, buoy and utility boat radio operators may be the younger and less experienced hams if they have reasonably mature judgment. A pit operator must have tact and enough maturity to resist pressure from pit crews to tie up the radio when there's an accident. Things get testy there quickly.

### ***Operation In Course Safety Nets***

Never transmit when there is a racing boat on the course, even if he's out for a practice run, unless it just has to be said and involves an immediate safety problem. You can go all day with never making a transmission except to answer a roll call every hour or two.

Earlier it was pointed out that the government agency with supervisory authority over the water in effect turns it over to the local organization to have a race. The local organization, through its Safety Chairman satisfies himself his crews are all ready and "gives" it to the Referee to run his race. Then an accident happens.

The rules differ for different classes of boats as to what happens next. In races for smaller boats, the nearest Rescue Boat goes (or is sent) right on out in the race course, rescues the driver and either brings him ashore for medical treatment while a second boat retrieves the wreckage, or retrieves the wreckage itself if the driver is okay. This boat is protected from being hit by other racers only by holding aloft a specified flag (usually yellow). When larger boats race (Unlimiteds or Gran Prix), an accident that puts a driver in the water is followed by all safety boats displaying red flags and lighting red smoke flares. The race is immediately stopped. This is because these larger boats go so fast there is a high risk of serious injury or death.

When the race is stopped, the local organization, through its safety chairman on the Tower, again "owns" the water until the mess is cleaned up and the water is turned back over to the Referee for the next heat. Tactical call signs are more useful than ham calls. "Rescue One" is always supposed to be near Turn One. It doesn't matter who the operator is that day. Make your FCC ID between heats in a roll call (eg, "Rescue One?" "Rescue One, WB0XYZ"). Once the rescued driver is plucked from the briny, the medic aboard the Rescue Boat should report his condition to the Course Doctor. It is the responsibility of the operator at the ambulance pier to keep up with the doctor (not always easy) and stick the radio in his ear when the medic starts to report. If there's an accident on the course, once the Rescue Boats have been dispatched to the scene, absolutely nobody talks about anything until the rescue is complete and the doctor and boat medic are finished with the frequency.

### ***A Few Tips***

- Re  
Pkg Find out who the Referee is to be weeks before the race. Then find out about him: his likes, his dislikes, how excitable he is, etc, from other people in the know on the race circuit. Meet him well before race day. Discuss what he expects of you and what you expect of him.
- Re  
Pkg After discussion with the Referee, stake out your space on the Judges' Stand and defend it against all comers. You should be to the Referee's immediate right (a location also coveted by the press).
- Re  
Pkg **Rigs and batteries.** Be sure you have some spares ready on hand. You can send one out between heats in the Utility Boat.
- Re  
Pkg One of the most effective internal morale boosters the local organization can provide is some sort of a lasting moment of your gang's participation. Patches to sew on a jacket are appreciated, but one of the most useful and appreciated at a cost of a few bucks each, is a billed cap with a patch. These can be color coded to the recipient's job, which can help in locating people on shore. Be sure all your people have the necessary credentials to enter all authorized areas on race day.
- Re  
Pkg Never turn away an operator who volunteers. You might need him next year, or when the big earthquake hits, and he won't be around. If he's truly extra, let him understudy someone; but try to find him a job, even if it's liaison with the refueling dock.
- Re  
Pkg Have some sort of way to contact the local police and hospital, even if it's via autopatch on the local repeater.
- Re  
Pkg Use simplex. It matters not how good your repeater is; simplex should do fine considering the ranges involved, and you can't afford to have the whole event depending on a single piece of gear.
- Re  
Pkg A meeting of operators and all other Course Safety personnel (divers, medics, drivers, etc) is required by the rule book. Sometimes this is done by the Referee gathering all around him early race day morning. The far better practice is to schedule such a meeting a couple of nights before race day, and invite the Course Doctor, the Referee and a race driver or two to speak to the entire group.
- Re  
Pkg Job assignments are best handled carefully by a small group, and not handed out until the safety meeting. The air of expectation on "what did I draw" seems to lend excitement and involvement. Keep two or three of your very best people in reserve. They can go anywhere, anytime. In case someone gets sick at the last minute you don't have to redo your whole assignment roster.
- Re  
Pkg It's probably not wise to give permission to the media to tape or re-broadcast your communications, nor to release details on injuries. Let the Referee determine what he wants them to know.

### ***After the Race***

Critique it carefully. Be kind, but ferret out all the errors so they can be corrected next year. Be sure the correct name and address of each operator is given to the local race chairman so an appropriate letter of thanks or certificate can be sent.

And, finally, wait at least two weeks to rest before you vow, "never again."



## Chapter 6 – "Is It Legal?"

Yes!

Thanks to the FCC Rules that took effect in September 1993, it is now perfectly clear that it is legal for radio amateurs to provide public-service communications.

Why were new rules needed? FCC licensees, amateur or otherwise, are supposed to serve "the public interest, convenience, and necessity." In Section 97.1 of the Commission's Rules, the basis and purpose of the Amateur Radio Service is spelled out quite clearly. Surely, public service and educational activities are to be actively encouraged; how could there be any question about their being legal?

To make a long story short, around 1970 there were concerns about possible abuses of Amateur Radio by non-amateur and business interests. These concerns led to a ban on amateur communications "to facilitate the business or commercial affairs of any party" or "as an alternative to other authorized radio services." Over time, the interpretations of these rules became progressively more literal until they had a chilling effect even on meritorious public service activities. By 1991, it was obvious that something had to be done to put things back on track.

On September 13, 1993, following a rulemaking proceeding, the old "no business" language was dropped, and replaced with a prohibition on communications for compensation, on behalf of one's employer, or in which the amateur has a pecuniary interest [97.113(a)(2),(3)]. In place of the flat prohibition on providing an alternative to other radio services is a less restrictive one, against doing so on a regular basis (97.113(a)(5)).

These rule changes mean a lot to public service-oriented amateurs. They remove the ambiguities that have plagued amateur public-service communications for the past two decades, and have generated endless hair-splitting discussions about whether particular communications were permitted. The focus is no longer on the content of the communication; rather, it is on whether the amateur, or his or her employer, stands to benefit financially [97.113(a)(2),(3)]. If so, then the communication is still prohibited. If not, then the remaining question is whether the communications need is one that ought to be met by some other radio service. Here, the rule of reason applies. A need that arises on a regular basis, and for which other communications services are reasonably available, should not be met by Amateur Radio. The FCC declined to define "regular," but this shouldn't pose much of a problem for us since abuses will tend to be self-limiting; volunteers don't like being taken advantage of, and if they are they should just say no.

The Commission doesn't want to hear questions about whether such-and-such is permitted. The Report and Order says, in part, that "...any amateur-to-amateur communication is permitted unless specifically prohibited, or unless transmitted for compensation, or unless done for the pecuniary benefit of the station control operator or his or her employer" [97.113(a)(1)].

The rules do not represent a philosophical departure from our "roots." They provide latitude in our operating and especially in our public-service communications, just as we had for decades before the onset of over-regulation in the early '70s. Seldom do we get to herald a return to the "good old days." This is one of those rare times.

Is it legal to use "tactical" call signs when engaged in public-service communications? Yes. Amateurs may use such "tactical" call signs as "Unit One" or "Checkpoint Charlie" to promote efficiency and coordination in public-service communication activities. For example, during a running race, names like "finish line," "Mile 1," "Mile 2," "First Aid 1," and "watertruck" quickly identify each function and eliminate confusion when working with other agencies, such as a fire department, where amateur call signs are meaningless.

However, these types of identifiers are not substitutes for station call signs when fulfilling the identification requirements of the FCC Rules. Amateurs must always identify their station's operation with its FCC-assigned call sign.

Amateurs may also append special suffixes to their call signs, to aid in identification needs connected with the public event. The rules say, "An indicator may be included with the call sign. It must be separated from the call

sign by a slant mark or by any suitable word that denotes the slant mark. If the indicator is self-assigned, it must be included after the call sign and must not conflict with any other indicator specified by the FCC Rules or with any pre-fix assigned to another country." [Section 97.119(c)].

## Chapter 7 – Public Displays and Demonstrations

Amateur Radio demonstrations are more important today than they have ever been. We are living in an interactive electronic world where audio and video communications are routine. In order to make our hobby stand out, we *must* bring it to the people. Young people, in particular, are the most important target for our recruitment efforts. In addition, the Amateur Radio demonstration *must* be followed by a publicized licensing class, for the maximum return from the operation.

This chapter will outline the components of two kinds of demonstrations:

- (1) Demonstrations for the general public in a widely traveled place such as a mall, museum or fair; and
- (2) Demonstrations for young people to be given at a school or meeting place.

### **Three Objectives**

Right up front, there are three things to keep in mind when planning an Amateur Radio exhibit:

1. You should have a working exhibit station, even if it is just on VHF FM. You *must* be able to make contacts, or you will have shown the audience that Amateur Radio doesn't work.
2. Visuals, or displays, are very helpful. They can lure people to the exhibit and portray information. Visuals standing alone, however, will not make visitors stay very long.
3. Participation by the visitor, even in a very small way, can work wonders. If the visitor can tune a receiver, or speak into a mike, or participate in an ATV contact, or send a radiogram, or learn their name in Morse code, that person may be hooked. Experience has shown that ATV and packet stations are very well attended at Amateur Radio exhibits. (Do not force someone to participate. Gentle encouragement is the key.) So remember, a working station, visuals, and some kind of participation by the visitors are all things to aim for. More on all of these later.

### **Public Demonstrations**

*Early Decisions.* First, your group should agree to commit itself to the project of putting on an Amateur Radio display/demonstration. This may seem like a very obvious first step, but how often have you witnessed a good proposal go down the drain because interest faded into the noise? Make sure your group is *committed*.

### **Pick Your Demonstration Site**

Picking a suitable site for your demonstration occurs in conjunction with the decision to commit. You must find a place to have the demo. Amateur Radio exhibits can occur at malls, shopping centers, public fairs, and even museums. It will be necessary to contact whoever is in charge of the "target area." The initial contact can occur by letter or by telephone.

The decision to employ one approach over the other will probably depend on the existence of a "contact" in the mall or shopping center. It is a natural tendency to offer to have a demo in a place where a person in your group has a contact. It will also be necessary to agree upon the date(s) of the demo and the amount of space with the owners-operators of the establishment. You might have to be concerned with *two* separate areas; the station location *and* the antenna location.

Your club should assign one or two people who are talented in management to communicate with the owners. It may be necessary to give the owners a presentation in order to convince them that your hams are capable of following through on the project. This presentation can list the projects that local radio amateurs have successfully completed in the past.

Once the target is established and everyone is committed, your Amateur Radio club may need funds, depending on how large the project will be and how much is in the club treasury. One New England group managed this by making and selling repeater maps. There are undoubtedly many variations on this.

## Preparation

*The Site Visit.* Now it is time to visit the site and plan where the gear will be placed, where the coax (and any rotator cables) will be run, and how to get AC. Make sketches and diagrams of the area and the station components.

Make sure that power, and whatever tables and chairs you need will be available the day of the demo. This can best be assured by talking with the appropriate contact in the target area. Look for antenna supports. Very important: check for safety hazards! Are there any high voltage lines that could be accidentally contacted? If the demo is going to be located in a heavily traveled area, you might plan to rope off your station's area to route visitors accordingly.

## Band and Antenna Selection

Which bands will the exhibit station(s) use? In making your decision, keep in mind what antennas are practical at the location. VHF-FM will work almost anywhere so those bands should be relatively easy. If HF is practical, remember that 40 meters is probably the safest bet during the day, and 75 meters will work best at night. If dipoles (or small beams) are not practical, a random wire fed by a transmatch will solve a lot of problems, especially if the HF antenna has to be *in the room in which the exhibit station is located! If the antennas are far away from the operating positions, remember that the feed lines will have to be very long. Measure or estimate the feed-line distance during the site visit.*

Once you have determined what gear and antennas will be needed for the demonstration, it will be necessary to obtain all of it. Individuals in the club can lend out gear. A New England group borrowed antennas from a major manufacturer for an exhibit. Depending on the size of the exhibit, it may be necessary to install the antennas/gear before the date of the demo. If this is not the case, be sure you arrive early **on the same day.**

## Equipment Considerations

As mentioned before, the Amateur Radio equipment in a demo should be capable of making contacts. This may seem obvious, but occasionally, a well meaning soul will haul an HF station off to a classroom or a scout troop. This person will find (too late) that there is only room for a 10 - or 15 meter dipole.

The antenna will go up, and the particular band will yield no response to any CQs. Weak stations will be heard, but won't be raised. Amateur Radio is supposed to get through when all other forms of communications fail, so we can't afford to leave the audience with the impression that it doesn't work.

Therefore it is best to aim for an HF and a VHF station. On VHF, there should be people on "the other end" that are ready to make contacts with the exhibit station. Remember also, how impressive a handie-talkie can be to a person who has never seen one. If you demonstrate the autopatch function, make it very clear that autopatch is not a substitute for mobile or cellular telephone. In addition to the regular HF gear, if there is room, you may wish to have an inexpensive HF station on display, such as an older used transceiver, or a transmitter-receiver pair.

If you talk the price of this type of gear down, this will help squelch the myth that Amateur Radio has to be expensive. It doesn't have to be. When you set up the gear, don't be afraid to have extra wire and coax on hand, and be sure to bring three conductor AC cords with two prong adapters that have ground wires.

Once again, mention must be made of packet and ATV equipment for the exhibit station. These modes are very attractive to the public because people can identify with computers and video. Also, these modes are a very clear indication of how different Amateur Radio is from CB. Granted, ATV equipment is still rare in most areas of the country, but packet gear is fairly plentiful and easily transported.

## Visitor Participation

If a visitor has participated in some small way in an Amateur Radio exhibit, you will have brought our hobby over to that person's "side of the street." Granted, there are limitations to visitor participation, but here are some successful approaches that clubs have used: If there is an amateur receiver in the booth that the person can tune, he/ she will have a better idea of what Amateur Radio is about. If a transceiver is used for this, make sure that it cannot transmit. We have mentioned ATV before: a visitor can be part of an ATV contact with a distant station. In one recent Amateur Radio exhibit, the ATV booth was among several stations -- it was never empty --and was the

best attended booth in the exhibit. Packet radio is a natural for many visitors as well, as our population is quite familiar with computers.

## Morse Code

Morse code certainly has a place in exhibits. Groups have had code teaching booths where visitors learn six letters and their name in CW. Then certificates of completion are given to the participants. A message center is another way in which visitors can have a small hand in what is happening--they can generate traffic. This is a pretty big subject, so more will be said on it later. If an amateur station is being demonstrated, make sure that there are two people in the demo: one to operate the gear, and one to explain what is going on.

## Visuals

As mentioned before, visuals will attract people to the exhibit. Therefore the best visuals are attention-getters. Prerecorded SSTV contacts fascinate people. QSL cards, labeled by country, or a display of books can be attractive. Homebrew gear or telegraph keys are fun to observe. If the exhibit has an active HF station, the hams on duty can list the states and countries on a prominently displayed poster-board as they are contacted. One very visual item that attracts people is the oscilloscope. If you happen to have one at the exhibit, its explanation should not be overly technical.

Some exhibits have used the mini-theater approach. Presentations can be made with slides, movies, or videocassettes on the subject of Amateur Radio. In this day of readily accessible video equipment, the "mini-theater" is more commonly considered than it used to be. ARRL Headquarters can supply videocassettes on Amateur Radio.

## Publicity

Every once in a while a newspaper will carry an article about an Amateur Radio event that happened the same day the paper came out. This is fine, but publicity is much more useful *before* the event instead of after. There are several sources that can help here. ARRL Headquarters can supply a PR kit, a basic guide which contains media-oriented information about Amateur Radio. Newspapers will often run a feature story on an Amateur Radio event, and most radio stations provide free public service announcements for a wide range of nonprofit events.

### **Need Exhibit Kits? Brochures?**

Contact [ead@arrl.org](mailto:ead@arrl.org)

Additionally, your section's Public Information Coordinator (PIC) can supply publicity ideas. The PIC can be reached through your Section Manager; his or her address is on page 12 of *QST*. Also, it may be possible to put up signs announcing the event. You may have to check with the property owners concerning posting of signs.

## The Message Center

Amateur Radio exhibits sometimes have messages centers. If you are going to have one, it is a good idea to operate on a VHF FM band, rather than HF. The exhibit station can then easily contact designated liaisons. This approach is very impressive to any non-ham audience because they will immediately see that their traffic is being plugged into the system. Contact your Section Traffic Manager within a reasonable amount of time before the demo and ask his/her advice on setting up extra liaisons and routing schedules to avoid unnecessary delays.

When setting up a message center, you will need a large sign that indicates that "free messages" can be sent from the exhibit station. You will also need a separate person from the station operators who can help people draft their messages. Make sure visitors' messages are under 20 words, and use ARL numbered messages whenever possible. Post a few selected ARL messages prominently and encourage the message senders to use them. Give visitors easy-to-fill out blank radiogram forms, and be sure that everything is written clearly. You may want to get the visitor's name, address, and phone number in case there are any replies. The text should be checked before the signee leaves. It is best not to accept messages within easy traveling time or within the local telephone calling area. It is very important that your operators are aware of FCC and international regulations concerning third-party traffic and that the regs are obeyed. Keep ARRL's *The FCC Rule Book* on hand. It will be a big help.

## Odds and Ends

You may wish to have a person on hand to answer questions. There will be a wide range of questions from: "How do I find out more about this ham radio?" to, "Why are you guys getting into my TV set?" Arrange operator's shifts in advance. Experience shows that four hours is the optimum time for a shift.

After that operators begin to experience burn-out and lose efficiency. Remember to provide adequate lighting if the event is being held outside at night. You will probably need some signs that say "Amateur Radio" and give the name of your club. Simple signs can be made out of stencils and waterproof felt-tip pens.

## The Follow-Up

As mentioned before, an Amateur Radio demonstration should be followed with a Technician licensing class. Otherwise, except for the really good PR the demo generated, a lot of time and work will be wasted. Take down the names and addresses of all who are interested and be sure to let them know when the next class will begin. People can also walk away with handouts on Amateur Radio, provided they are available at the exhibit.

## Youth Demonstrations

Youth demos will likely be on a smaller scale than the "mall type" of exhibits mentioned above. A demo might be given at a youth meeting, which means you are committed for a much shorter time than if the exhibit was at a mall. Space will probably be less as well, and your setup will most likely occur the same day of the meeting. In some cases, a demo of this type might even be given at your own home.

### Examples of organizations to contact are:

- |                                       |  |
|---------------------------------------|--|
| ⑤ Boy Scouts of America               | ⑤ 4-H Clubs  |
| ⑤ Girl Scouts of the USA              | ⑤ YMCAs / YWCAs  |
| ⑤ Boys' Clubs/Girls' Clubs of America | ⑤ The United Way -- For listing of Youth Organizations in your area. |
| ⑤ Campfire International              |  |

When phoning a scoutmaster, for example, you will have to be somewhat aggressive and get a firm commitment on a date for the demo, rather than leaving the ball in his court and having him never call you back. Also, if he says to come down to his meeting next week, you should be ready. In other words, planning time for this kind of operation will generally be less than a "mall type" of demo.

Try not to overwhelm the kids with a lot of fancy and expensive equipment.

Do your best to talk the cost of Amateur Radio down, and stress that second-hand gear capable of world-wide communication can be obtained for less than \$150. The presentation should be short and sweet-- otherwise the audience will either be asleep or talking among themselves.

The main thing is to show what Amateur Radio can do. A roll call on a repeater with a cigarette-pack sized VHF-FM rig will impress almost anybody. If you are making HF contacts, you can call CQ and use the words "For Amateur Radio Demonstration."

Chances are that some of the audience will want to talk to whoever you contact. Gentle encouragement is the key here. A speech processor may help as well, because whatever they say will be fast, soft, brief, and perhaps high pitched. Once again, packet radio is a consideration, because so many kids can identify with computers. A computer can be decoding RTTY or CW. When plugging code, it may help to mention that CW is the *only* complete language that both humans and computers can understand. If you tune in a CW conversation, be sure it is one you can copy, because the first thing you will be asked is: "What are they saying?" Stress the international aspects of CW, how it breaks the language barrier, and how it is made up largely of abbreviations.

After the demo, plan to answer a lot of questions, and again, be sure that the demo can be followed up with a license class. ARRL HQ can provide you with informative brochures your young audience can carry home.