

Coxswain & Crew Radio Operations
Division VI 8th Eastern Region
Revised 16 March 2009
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(Ref. COMDTPUB P16794.32B)

The objective of this document is to put into the hands of all Division coxswains and crewpersons the information they need for professional on the air conduct and on equipment and procedural issues which they need to know. **It is now the template for a training document to be distributed in the Auxiliary**

“Do what you can, with what you have, where you are”

Teddy Roosevelt

THE “PAPERWORK”

What follows below is the SOP published for Coxswain’s guidance. I am adding much additional practical advice as Attachment 3 and in the Addendum provided by Bill Kessler as to what actually happens. Please read it.

- **Coxswains must make two mandatory (cell) phone calls; one departing on patrol from the dock, and one when returning and terminating your patrol. These reports must go to Sector Ohio Valley. Sector will expect the coxswains to provide the following information on the first call:**
 - **Call 1-800-217-4420 your call will be answered by a voice message instructing you to press 1 for all matters pertaining to patrols. You will be expected to provide the following information on your departure:**
 - **Coast Guard Order Number**
 - **The USCG Auxiliary boat number that has been assigned to your facility. Recite it in full. An Ohio registry number for your facility is not acceptable.**
 - **Name the lake onto which you are departing on patrol and identify it’s SAR Zone from the following list**

- 6A. Caesar Creek
- 6B. Rocky Fork
- 6C. Indian Lake
- 6D. Paint Creek

6E. Lake St. Mary
6F. Ohio River
(Flotilla 6-10 East or West)
6G. Lakengren Lake
6H Great Miami River

- Identify the Coxswain by name
- State the number of persons on board (POB)-no names
- State your estimated time of departure and return and report in to Sector on your return as well as on your departure. These calls are mandatory. Inform your shoreside watch-stander as well.

RADIO ISSUES

Coxswains and crew on small vessels are not required to keep a written radio log. That is the responsibility of the watch-stander operating your shoreside radio facility.

If your facility is ever involved in an actual emergency situation where life, limb or property are involved, start keeping an on-board log of date, time and details. This is a very stringent mandatory requirement. Furthermore any log kept under these circumstances should be kept in ink. If a mistake is made draw a line through it, initial it and continue. Do not use pencil because that kind of log is not acceptable in court. Keep your shoreside watch-stander in the loop as often as circumstances permit.

- Please do not fail to notify your shore-side radio facility of your departure on patrol and your stand down from patrol
- If for any reason you need data on your shore-side radio facility the owner/operator is R. E. van Patten, 1220817, Cell: (937)- 317- 4441. Home: 937-848-4069
- When initially on site at an event call 611Mobile on Channel 83A to have this phone turned on and the number is given as contact for SOHV
- The facility identification number is NM8EZCA and the Auxiliary Callsign is "Coast Guard Auxiliary 0611 Mobile" ON THE AIR, THE CALLSIGN IS 611MOBILE

ON THE AIR TRAFFIC

All operational traffic will be passed on Channel 83A unless otherwise stated on site.

Your facility tactical call sign is your USCG facility number's last 4 characters, for example:

Facility number 23456E will use the tactical callsign 456ECHO

When spelling out information use only the NATO Phonetic Alphabet (Attachment 1)

Situation Reports

Situation Reports (sitreps) are required hourly unless weather or other operational conditions are unfavorable. In that case sitreps are required as the situation warrants; every 15 minutes or half hour. Remember that if a situation is deteriorating you must deal with that first and send your sitrep as soon as your radio operator can be spared from the emergency.

Sitreps must contain:

your GPS coordinates North and West in degrees, minutes, seconds. If there are decimals in this traffic note the proper pro-word usage below in Speaking Numbers and Decimals.

If your position is also at a named place (e.g.: Wellman Meadows ramp) include that following your lat/long data.

If your situation is normal, simply say so.

If it is not please briefly amplify (problems with facility, weather, crew, distressed vessel etc.)

Radio Equipment

Coast guard regulations require that when your vhf fm marine band radio is turned on it must also monitor channel 16 at all times as well as the operational channel in use.

If you are planning to buy a radio make sure it has the capability to monitor the 83A 16 and 9 channels in continual scan. Be aware that DSC

capability is a function your built-in radio should have. A provision for GPS inputs is a plus.

Always use the 25 watt setting on your transmitter. This is critical in Division VI operations south of 40°N (approximately Dayton).

If you have trouble with hearing other stations you may have an inadequate antenna. Likewise if they do not answer you make certain your transmitter is on high power and if it is not switch to it. The HI-LO power switch will be on the front panel or on the microphone.

Your antenna should be at the least a half wave antenna. A 5/8ths wavelength antenna is even better. An antenna with higher gain than that is OK for inland waters but probably not warranted for offshore work in rough water. Money spent on a good antenna is never wasted unless used improperly.

If you must use a handheld transceiver buy one with at least a 5 watt output setting and use it, and put the best antenna on it you can find.

If you can install a good antenna permanently on your facility it is recommended that you contact your radio dealer about supplying an antenna coaxial cable with connectors compatible with an adequate and permanently mounted boat antenna on one end and compatible with your handheld on the other. This will do much to alleviate the problems with low wattage transmitters. An alternative is to equip your handheld with a 5/8ths wavelength whip (about 12 inches long). See information on 1/2 and 5/8ths wavelength whips for handhelds in Attachment 2.

A good boat antenna will make the most of your 5 watts. If your radio dealer cannot supply a custom cable contact a business such as R&L Electronics in Hamilton, OH.

Never transmit without an antenna connected to the transmitter. If you do this it will probably be costly and take you out of the comms loop.

Please keep in mind that Sector Ohio Valley Standard Operating Procedure notes that a portable radio may be used on a patrol facility “if it is appropriate to the facility’s mission” Using a handheld may well require your mission to maintain an unobstructed line-of-sight to the nearest facility which has a 25 watt transmitter.

Also keep in mind that SOHV SOP also states that the Director may require you to take measures to enhance the performance of your handheld by obtaining a good antenna, or modifying power. This latter option is a

non- starter since Auxiliarists are forbidden to do anything to the as-built circuits of their radios.

Correct Procedures Pro-words

ROGER: means that you have received and understood the current transmission. *Do not use ROGER THAT, or I COPY THAT*

WILCO: indicates that you have fully received and understood instructions just given and commits you to complying with them. *Do not use ROGER-WILCO.* It is redundant.

OVER: indicates that you have had your say and are standing by for a reply. *Do not use the phrase GO AHEAD.*

OUT: indicates that you are finished with your traffic and have nothing more to say and that you do not expect a response...but listen because there might be one.

NEVER SAY OVER AND OUT. That's Hollywood, not Coast Guard.

WAIT: indicates that you cannot immediately respond to a transmission just received and that you must go off the air for a short time.

WAIT Out: indicates that you must go off the air for an extended period

SAY: used to ask for a specific piece of information from the station receiving it. Example:

456Echo this is 611Mobile. Say fuel state. Over

611Mobile this is 456Echo. Fuel state one half tank. Out

SAY AGAIN: this phrase is used to ask for a repeat of the last message addressed to you when it has been blocked or garbled. Do not use the word REPEAT.

BREAK: this new pro-word is intended to separate the text of a formal message from the other components of the message. Do not use it as if it was a punctuation.

SIGNAL STRENGTH REPORTS

When requested to provide a signal strength report (How do you hear me?) do not use “I read you five by five” That is an old military radio TV style report based on the readability and signal strength of your signal in which the best report for intelligibility & signal strength is 5.

The word “read” should not be used either since in its own setting it is a value read off of an S (signal strength) meter.

Proper way to ask for a signal report takes the form:

This is 456ECHO to any station on this channel. How do you hear me? Over.

Never make this request of a shore-side USCG station

Typical signal strength and intelligibility responses are:

I hear you loud and clear
I hear you poor and faint
I hear you garbled and loud

Good manners require that you Roger the report, thank the responding station and sign OUT.

Speaking Figures and Decimals

The proper pronunciation of numbers is the NATO form which is in Attachment 1.

In transmitting a message in which you must use numbers you must precede them with the statement “FIGURES”. If the numbers include decimals the word DECIMAL is also used: Example:

This is 456 Echo. I am underway making FIGURES Niner DECIMAL fife knots on heading FIGURES tree fow-er zeero. Over.

When reporting your position everyone understands that you will be reporting latitude and longitude in degrees, minutes and seconds and the use of the pro-word FIGURES would be cumbersome.

**Attachment 1
NATO Phonetic Alphabet and
Numbers**

Substitute the following words for each letter of the word. Note the specific pronunciations.

A	Alpha	Al-fah
B	Bravo	Brah-voh
C	Charlie	Char-lee
D	Delta	Dell-tah
E	Echo	Eck-oh
F	Foxtrot	Foks-trot
G	Golf	Golf
H	Hotel	Hoh-tel
I	India	In-dee-ah
J	Juliet	Jew-lee-et
K	Kilo	Key-loh
L	Lima	Lee-mah
M	Mike	Mike
N	November	No-vem-ber
O	Oscar	Oss-car
P	Papa	Pah-pah
Q	Quebec	Keh-beck
R	Romeo	Row-me-oh
S	Sierra	See-air-rah
T	Tango	Tang-go
U	Uniform	Yoo-nih-form
V	Victor	Vik-tore
W	Whiskey	Wiss-key
X	Xray	Ecks-ray
Y	Yankee	Yang-key
Z	Zulu	Zoo-loo
1	One	Wun
2	Two	Too

3	Three	Tree
4	Four	Fow-er
5	Five	Fife
6	Six	six
7	Seven	Sev-en
8	Eight	Ait
9	Niner	Nin-er
0	Zero	Zee-ro

Attachment 2 5/8ths wavelength Hand Held whip antennas

An alternative to obtaining a custom-made coaxial cable to connect your handheld to a permanently-installed boat antenna is an off-the-shelf 1/2 or 5/8ths wavelength “rubber duck” whip antenna for the handheld. The details of a source for such an antenna, priced at \$20, are provided below **without any endorsement**. Keep in mind that when using this antenna you need to keep the antenna as close to the vertical as you can comfortably manage. Think of the radiation pattern of this whip as a pancake surrounding it. You do not want one side of the pancake pointing at the water and the other pointing at the sky.

Before contacting this vendor be certain you know the exact type of connector with which the antenna will have to mate on your HH. If in doubt consult the HH manual or contact the manufacturer. You will need to know that channel 16 is at 156.8 megahertz and channel 83A is at 157.175 megahertz and that the antenna will be used in that Marine VHF-FM spectrum.

“Smiley Antenna 5/8 Slim Duck 3 to 7 db gain flexible base loaded antenna, manufactured to be tough enough for the military and aesthetically pleasing for the consumer. “

“Available in VHF and UHF frequencies, utilizing the Tuned Antenna's one piece MPQ-2000 Space Age covering system. Available in MURS, GMRS, VHF, UHF and Business Band. The 5/8 wave rubber duck antenna has a coil that gives maximum gain for a rubber duck. All Smiley Antenna's have less than 1.3 SWR (standing wave ratio) Which gives you all the gain your radio puts out.”

For a custom frequency call 1-800-527-5439 or email sales@smileyantenna.com

Attachment 3
practical information on checking-in
With SOHV on departure and termination
By: Bill Kessler Coxswain 6-1

When I contact the coast guard at the commencement of a patrol I say "This is Auxiliarist Kessler commencing patrol." The person then tells me to wait a moment. I assume that he or she is looking up the POMS sheet. Usually they ask for the number of people on board, my cell phone number my watch stander cell phone number and then remind me to call in when the boat is secured. That is all the information that is expected.

A few times I have been asked for the boat's call sign or the name of the boat. I assume that they are insuring that they have the correct POMS sheet. **I always have my orders in hand in case they want more info.**

My point is they do not expect for the coxswain to report all the information that is listed above because they have it in hand. The first time I called in I started to report all that info and the gentleman on the other end said "now wait a minute." He came back and asked for the abbreviated items listed above and said "be sure to check in when you are secured... have a good day."

Attachment 4
Callsign Format as of 2009

**Division 6 8th Eastern Region
Tactical Callsigns for Boats, Land Mobile,
Fixed Land, and Direction Finding Radio Facilities**

Effective 2009 all tactical callsigns will be the last 4 characters
Of your boat's USCG assigned facility number

Flotilla No.	Owner/Operator	USCG Facility No.	Tactical Callsign
06-01	Schafer, Loren C.	N3003K (Tail #)	003KILO
06-01	Hopkins, Scott W.	19820E	820ECHO
06-01	van Patten, Robert E.	NM8EZCA LMRF*	611MOBILE
06-02	Steinke, Lawrence F	18633E	633ECHO
06-02	Logan, Kenneth C.	20640E	640ECHO
06-03	Bentley, John P.	19325E	325ECHO
06-03	Neufarth, Dennis W.	24854E	854ECHO
06-03	Mallison, Thomas C.	32150E	150ECHO
06-03	Branstetter, Gary M.	18160E	160ECHO
06-03	Siler, Galen P.	36844E	844ECHO
06-03	Mallison, Thomas C.	NM8ERD LMRF	632MOBILE?
06-08	Kiel, Nicholas R.	21702E	702ECHO
06-08	Holliday, Charles E,	20796E	796ECHO
06-08	Daniel, Steven	16745E	745ECHO
06-08	Heureux, Janet	20587E	587ECHO
06-08	Johnson, Sharon L.	20453E	453ECHO
06-08	Clem, Philip E,	NF8ESD FLRF*	682MOBILE?
06-08	McNary, K. Scott	NM8E07DF RDF*	685MOBILE?
06-08	Clem, Philip E.	NM8EQM	682MOBILE?
06-10	Everhart, Charles D,	18813E	813ECHO
06-10	Clancy, Robert F.	21549E	549ECHO
06-10	Turner, Larue	32421E	421ECHO
06-10	Fries, David A.	22803E	803ECHO
06-10	Langston, Letcher P.	21785E	785ECHO
06-10	Turner, Larue	NF8EUM FLRF*	??????

***Abbreviations**

Tail #: the truncated callsign type used for aircraft

LMRF: land mobile radio facility

FLRF: fixed land radio facility-Rocky Fork Lake

RDF: radio direction finder

Notes on Procedures:

When speaking callsigns use only the NATO Phonetic Alphabet and speak each numeral followed by ECHO as in: THREE TWO FIVE ECHO – not THREE TWENTY FIVE Echo

When your vessel's radio is on remember that you are required to monitor Channel 16.

Attachment 5

Lightning—The Under-rated Killer

In the United States, there are an estimated 25 million lightning flashes each year. During the past 30 years, lightning killed an average of 62 people per year. This ties the average of 62 deaths per year caused by tornadoes. Yet because lightning usually claims only one or two victims at a time and does not cause mass destruction of property, it is underrated as a risk. While documented lightning injuries in the United States average about 300 per year, undocumented injuries are likely much higher.

- **Watch for Developing Thunderstorms:** Thunderstorms are most likely to develop on spring or summer days but can occur year round. As the sun heats the air, pockets of warmer air start to rise and cumulus clouds form. Continued heating can cause these clouds to grow vertically into towering cumulus clouds, often the first sign of a developing thunderstorm.
- **In Division VI most of our weather comes out of the southwest.** In threatening conditions that is the direction from which the storm usually approaches. In any case keep a “weather eye” out. Assume that you can rely on your shore-side radio watch-stander to keep you informed of the probability of an approaching electrical storm. If he or she does not then ask for it to be done.
 - **If in doubt designate a crew member to monitor the VHF-FM weather channels regularly to receive updates.** These can be heard as follows in the Division VI area:

Wx1 162.550 MHz

Wx2 162.400 MHz

Wx3 162.475 MHz

- **An Approaching Thunderstorm: When to Seek Safe Shelter:** **Lightning can strike as far as 10 miles from area where it is raining.** That's about the maximum distance you can hear thunder. **If you can hear thunder, you are within striking distance. Get off the water immediately.** Personnel not needed to conn the boat should be seated, not standing, or sheltered in whatever cabin the facility may have.
- **Antennas must be disconnected and lowered.**

LIGHTNING PHENOMENA – TIRESOME TECHNICAL DETAILS FOR COXSWAINS & CREW

Most lightning strikes occur in the afternoon--70 percent between noon and 6:00 p.m. As the air temperatures warm, evaporation increases. This warm, moisture-laden air rises and evaporates, forming fluffy cumulus clouds. As more moisture accumulates, the clouds darken and change into cumulus nimbus clouds--thunderstorm clouds--frequently, with a flattened top or anvil shape, reaching to 40,000 feet or more.

The upper portion of the cloud develops a positive electrical charge, the lower level a negative electrical charge. The air, because it is a poor conductor of electricity, restricts the regular flow of electricity between these, attracting electrical charges.

While this phenomenon is occurring in the clouds, a similar phenomenon is occurring on the surface.

Negative charges repel negative charges and attract positive charges. So, as a thunder cloud passes overhead, a concentration of positive charges accumulates in and on all objects below the cloud. Since these positive charges are attempting to reach the negative charge of the cloud, they tend to accumulate at the top of the highest object around. On a boat that may be the radio antenna, the mast, a fishing rod, or even you! The better the contact an object has with the water, the more easily these positive charges can enter the object and race upward toward the negative charge in the bottom of the cloud.

Lightning occurs when the difference between the positive and negative charges, the electrical potential, becomes great enough to overcome the resistance of the insulating air and to overcome the resistance of the insulating air and to force a conductive path between the positive and negative charges. This potential may be as much as 100 million volts. To help you understand the magnitude of this voltage, the voltage needed in an automobile to cause a spark plug to fire is only 15 to 200 volts!

Lightning strikes represent a flow of current from negative to positive, in most cases, and may move from the bottom to the top of a cloud, from cloud to cloud, or most-feared, from cloud to ground . And when the lightning does strike, it will most often strike the highest object in the immediate area. On a body of water, that highest object is a boat. Once it strikes the boat, the electrical charge is going to take the most direct route to the water where the electrical charge will dissipate in all directions.

Let's consider a few possibilities. Lightning strikes the ungrounded radio antenna on your boat. The metal antenna carries the electrical charge to the radio, which does not have a good conductor to the water. Your hand is on the radio, or on metal connected to the radio. Your feet are on a wet surface, which is in contact with metal which extends through the hull of the boat to the water. Your body may then become the best conductor for the electrical charge. A second example is a sailboat. Lightning strikes the mast. The electrical current follows the mast or wire rope to your hands, through your body to the wet surface,

and then through the hull to the water. Or, while operating a motor boat, the lightning strikes you, passes through your body to the motor, and then to the water. Or, sitting in your aluminum or fiberglass rowboat, you are holding a graphite (a good electrical conductor) fishing rod. The rod is struck by lightning. The electrical charge passes through the rod, your body, then to the boat to the water.

In all four examples you could be seriously injured. You could be dead.

You need not even be in contact with the components of the boat struck by lightning. Unless the components of the boat which could conduct electricity are bonded together and are adequately grounded, there could be side flashes. A side flash occurs when the electrical charge jumps from one component to another seeking a better path to ground. You might be that "better path."

MINIMIZE LIGHTNING STRIKE DAMAGE

Do not become a lightning target. Preferably stay off, and definitely get off, the water whenever weather conditions are threatening. Check the weather. The National Weather Service (NWS) provides a continuously updated weather forecasts via the VHF/FM channels listed above. Never go boating without listening to this service. Their short-term forecasts are quite accurate, but small localized storms might not be reported. Therefore, it is important that boaters learn to read the weather.

- Watch for the development of large well-defined rising cumulus clouds. Once they reach 30,000 feet the thunderstorm is generally developing. Now is the time to head for shore. As the clouds become darker and more anvil-shaped, the thunderstorm is already in progress.
- Watch for distant lighting. Listen for distant thunder. You may hear the thunder before you can see the lightning on a bright day. Seldom will you hear thunder more than five miles from its source. That thunder was caused by lightning 25 seconds earlier. The sound of thunder travels at one mile per five seconds.
- You are two miles from shore. The thunderstorm which is now five miles away is traveling in your direction at 20 miles per hour, which means it could be overhead within 15 minutes. Can you reach shore--two miles away--and seek shelter within that time? You'd better move! (Ed. Note: If you're near North Pool at Caesar Creek and your trailer is at Wellman Meadows about 6 miles away and you can make 15 knots it will take you about 22 minutes just to get to the ramp).
- Another way of judging the distance to a rainstorm – dangerously late in the game: Cold air, carried down from a thunderhead by rain, may flow forward about 3 miles in front of the storm. So a thunderstorm generally announces its approach by a rush of cold air which flows down and out over the ground ahead of the thunderstorm itself [2].

- **Activities Ashore: Minimize the Risk of Being Struck:** Most lightning deaths and injuries occur in the summer. Where outdoor activities ashore must be carried on these should be stopped at the first roar of thunder to ensure everyone time to get a large building or enclosed vehicle.
- **Activities: Things to Avoid:** Inside building, stay off corded phones, computers and other electrical equipment that put you in direct contact with electricity. Stay away from pools, indoor or outdoor, tubs, showers and other plumbing. When inside, wait 30 minutes after the last strike, before going out again.
- **Helping a Lightning Strike Victim:** If a person is struck by lightning, call 911 and get medical care immediately if possible. Cardiac arrest and irregularities, burns, and nerve damage are common in cases where people are struck by lightning. However, with proper treatment, including CPR if necessary, most victims survive a lightning strike. You are in no danger helping a **lightning** victim. The charge will not affect you.
- **Summary: With common sense**, you can greatly increase your safety and the safety of those you are with. **At the first clap of thunder when ashore, go to a large building or fully enclosed metal topped vehicle and wait 30 minutes after the last clap of thunder to go back outside.**

When Thunder Roars, Go Indoors!
(If you can)

[1] Becker William J.: Boat Lightning Protection. Published by the University of Florida

[2] Lehr, P.E., Burnett, L. W. and Zim, Herbert S.: Weather – Air Masses-Clouds-Rainfall-Storms-Weather Maps-Climate. Published by Golden Books, NY

**Addendum: Coxswain and Crew Radio Operations
Mandatory Communications with Sector Ohio Valley
SAR Incidents**

Introduction:

The following information has been provided in large part by Bill Kessler, FSO-OP and Coxswain Flotilla 6-1, Division VI Eighth Eastern Region. It is advice taken from his experience and the requirements pertain to documentation every Coxswain afloat should be prepared to execute. Always have a copy of Form-7034 and its instructions aboard at all times. (See download information following).

Every coxswain is required to communicate to Sector Ohio Valley when there is an **AUXILIARY SAR INCIDENT REPORT** to be filed. This is ANSC Form 7034 and is also known

as Department of Transportation U.S. Coast Guard CG-4612 AUX (REV 10-96). This form and the instructions for its execution are available at <http://forms.cgaux.org/archive/a7034.pdf>.

Download a hard copy of both pages because the block titles are not sufficiently informative to assure that you'll enter the data wanted.

Before the Coxswain can be given a SAR incident number he or she must communicate some of the 23 details that are listed on the SAR incident report. Each person on duty will have a different idea as to what is important so be prepared. One should be prepared by filling out the report as much as possible before contacting Sector Ohio Valley. When calling in use the same toll free number used to file your patrol departure and termination reports but do not dial the number 1 but instead just listen for the operator's instructions for a SAR incident report. Keep in mind that if at all possible before any rescue is attempted SOHV should be contacted even if all the info for the SAR report is not available. It might very helpful to have something to write with and on when you make this call.

In cases where prompt action is required the watch-stander at SOHV may instruct you to go ahead and report back when the emergency is over. At other times SOHV may call back with a SAR number and a request for more details.

At SOHV Louisville the person who takes tour information for the SAR case may not be the same one who checked you in at the start of your patrol. In this case you may be asked to provide the number on your orders and your facility number. You will then most likely be asked the nature of the case. Most important is the severity of the case. If there is imminent danger to life or property you will be told to deal with the case and then report back with the details when the situation stabilizes.

An example: "Last year a wicked thunderstorm hit us while we were out on patrol. We headed back towards the dock and encountered a boater whose engine failed to start. I immediately called SOHV and reported the situation. I was told to get my facility and crew as well as the distressed vessel and POB to safety and then report back with details."

"In my experience SOHV is not likely to ask for the data to fill in blocks 1, 4, 5, 8, 9 and 10 of the Form 7034. They may ask for 11, 12, 13 and 16 and will ask for the remainder but will give slack on 21."

The completed Form 7034 is sent to DIRAUX. Information from the form is entered into your Form 7030 Mission Activity Report which is sent to your SO-IS. The "Unit Case Number" which is obtained from SOHV is entered on both forms. Neither form will be complete without this Unit Case Number and they will be rejected. Note that the Unit Case Number is known by a different name at SOHV Louisville.

Another comment: "When monitoring two or more radio channels there are times when the operator gets confused as to which channel the contacting person is on. I spent a lot of time on lake Erie listening to the Coast Guard and they helped solve the problem by announcing the channel that they were on. SOHV does that also when they switch from 16 to 21A."

SWIMMING IN A MARINA? – THE “HOT” MARINA KILLER

(If your glasses fall in the water—write them off)

It's a hundred degrees out and the grandkids are dying to go for a swim. Tragically, that could be just the outcome if they jump into the water at your marina. According to researchers, over 20 deaths have recently been attributed to electric shock drowning, all of them occurring in fresh water marinas leaking stray alternating current into the water.

“Electric shock drowning? How come I've never heard of that,” you say. Well, until recently, most electric shock drownings were attributed to regular drowning because electric shock drowning leaves no distinctive post mortem indicators. Only when multiple drownings have occurred in the same marina, or unexplained marina drowning of experienced swimmers, does electric shock drowning even leave a clue.

In one tragic case a dog owner became paralyzed when attempting to rescue a dog in a “hot marina”. The owner's husband then attempted to rescue his wife and dog. A second dog then entered the water thinking he was joining in the fun. All four died.

Electric shock drowning results when even small stray currents of less than 10 milliamps (1/100th of an amp) causes paralysis. These stray currents, which are commonly referred to as “ground faults”, are caused by electrical code violations on docks and non compliance with American Boat and Yacht Council standards on vessels.

Ground faults can occur when: (1) current carrying wires makes direct contact with the water, (2) when any portion of a faulty power cord falls in the water, or (3) when neutral (white) wires are connected to grounding (green) wires anywhere on the dock or on a vessel. Stray currents are also possible between boats sharing power from one generator. In addition to electric shock drowning, stray currents also cause fires and current induced corrosion.

Fortunately, there is professional detection equipment soon (2009) to be on the market to detect these ground faults. But even with the best detection equipment, one should never swim in a marina. It could be the last thing you ever do.

**Source: Reprinted from the Carquinez Currents
Carquinez Sail and Power Squadron
District 25**

Respectfully Submitted by:
R. E. van Patten SO-CM
Division 6 Eighth Eastern Region
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