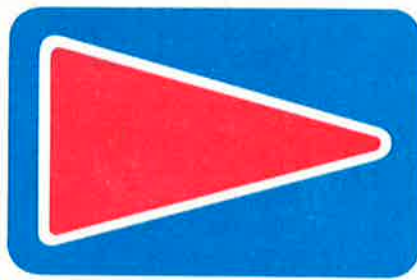


SMALL CRAFT ADVISORY



Vol. 1 No. 9

National Association of State Boating Law Administrators

June 1986



President's Corner

by Carroll Henneke

The issue of alcohol abuse and watercraft operation on our nation's waterways has probably received as much attention and media hype as our continuing efforts to attain a permanently based federal revenue share for boating safety.

In this instance, we owe the media a debt of gratitude for its spectacular coverage of what, on most occasions, amounted to gruesome accounts of tragic accidents and fatalities. This scenario usually involved the traditional boater who was unfortunately placed in a high risk situation requiring immediate decision making but, because of the effects of a higher than acceptable blood alcohol content, logic and rational thought absented the operator.

Recreational boating by its very nature is almost always a series of potentially high

risk situations requiring immediate decision making. While it would be inappropriate to characterize recreational boating as a hazardous pastime, it would be unprofessional to suggest the presence of boat operators under the influence of alcohol are anything other than dangerous.

Implied consent laws drafted to curtail such illegal activity and the mass media campaigns attendant to the passage of such legislation have a cerebral effect on the boating public. As with the deluge of more severe drunk driving laws across the nation, implied consent laws for boat operators kindle an awareness in the average boater who simply takes the cooler along on each trip.

No amount of law enforcement or educational effort will dissuade the minority problem drinker, but well publicized

implied consent laws and vigorous application will gain compliance from the average weekend social drinker who plies our waterways.

NASBLA heartily endorses the implied consent law for watercraft operators. Our Law Enforcement and Uniform Boat Laws Committees invested over three years effort before finally adopting a national guideline in 1984. It should be noted, however, true implied consent requires a penalty section for refusal to submit to a blood alcohol content analysis test. States, territories and provinces anticipating such legislative efforts should be mindful of this priority. If your laws are diluted by the absence of a penalty for refusal, most court jurisdictions will not take seriously a law the legislative body failed to see a grave issue. ▶

Observations

by Bill Ladd

As I am sure you have noticed, this month's *Small Craft Advisory* is bigger. To provide additional space to cover this month's important theme, we have gone to 24 pages.

Alcohol and recreational boating was the theme for both the National Boating Education Seminar and National Safe Boating Week in 1984 and 1985. It's an important issue, and depending on who you talk to, could be the cause of the majority of boating accidents and fatalities.

A number of states have new legislation to address operating under the influence. In other states, many changes in enforcement policies and procedures are occurring.

This month's feature article was based on information presented at the 1984 and 1985 National Boating Education Seminars by a number of experts. The information they provided may shed new light on the problem and change your methods of educating the public or enforcing OUI laws.

Of particular interest to me was the specialized training being given in a number of states and the Maryland State's Attorney's opinion concerning testing for blood alcohol content. The training is important because it is difficult, at best, to detect many operators who are legally intoxicated. If not detected when stopped, they feel their drinking is approved. The Maryland State's Attorney's advice to

withdraw a bill to provide for "Implied Consent" was based on a U.S. Supreme Court decision all law enforcement personnel should be familiar with.

I hope the information provided in this expanded issue will be put to good use. ▶

Looking Ahead

July 9-11

Western States
Boating Administrators Conference
Stapleton Plaza Hotel
and Athletic Center
Denver, Colorado

August 5-8

North Central International Association
of Boating Administrators Conference
Westbury Hotel
Toronto, Ontario

September 18-21

U.S. Power Squadrons
Fall governing board
MGM Hotel
Reno, Nevada

September 28-October 1

National Association of State
Boating Law Administrators
National Conference
Holiday Inn Georgetown
Washington, D.C.

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Henneke, pres.; Larry Williford, v.p.; Nancy
Jamerson, sec./treas., and Kim Elverum,
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SSBLAA opposes Fed titling bill

The Southern States Boating Law Administrators Association held its annual meeting in San Juan, P.R. May 6-8. During the meeting HR 4731, a bill currently before the U.S. House of Representatives, was discussed.

The bill requires that all states have a boat titling law in the next five years. Beginning in fiscal year 1992, states with no boat titling law would lose 10 percent of the federal funds allocated to the state boating programs. Each year thereafter, they would continue to lose 10 percent of the allocated funds until they had a boat titling law.

The bill also addresses the organization of the National Boating Safety Advisory Council. It would change the categories of membership and reduce the number of state boating law administrators represented on the council from seven to five.

After discussion of the bill, SSBLA unanimously passed a resolution entitled, *Opposition to Federal Mandates on Boat Titling and to Reducing the Number of BLAs on BSAC*:

"Whereas, of primary concern and interest to the member states of this association is the safety of recreational boaters; and

"Whereas, boat titling is not directly related to boating safety; and

"Whereas, the National Association of State Boating Law Administrators is on record with a model titling act; and

"Whereas, this association feels that enactment of titling laws should be left to

the discretion of the individual states; and

"Whereas, the safety and welfare of the general boating public has been and continues to be served well by the present makeup of the Boating Safety Advisory Council; and

"Whereas, this association feels that reducing the number of state boating law administrators on the Boating Safety Advisory Council would not be in the best interest of the recreational boating public;

"Now, therefore, be it resolved, that the Southern States Boating Law Administrators meeting in San Juan, Puerto Rico, this 8th day of May, 1986, do hereby express our strong opposition to a federal mandate on boat titling and to reducing the number of state boating law administrators on the Boating Safety Advisory Council. We urge the administration and Congress to resist any efforts to pass any such legislation; and

"Be it further resolved, that copies of this resolution be sent to the Honorable Walter B. Jones, chairman, Merchant Marine and Fisheries Committee; the Honorable Gerry E. Studds, chairman, Coast Guard and Navigation Subcommittee; each member of the House Merchant Marine and Fisheries Committee; the Honorable Elizabeth Dole, Secretary Department of Transportation; Admiral James S. Gracey, Commandant U. S. Coast Guard, and Major Carroll Henneke, president, National Association of State Boating Law Administrators. ►

Boaters reminded to sound signals

Operators of small boats are reminded to sound the proper signals while underway or at anchor during periods of limited visibility. Poor visibility is usually caused by fog, mist, falling snow or heavy rainstorms.

In March of 1985 a charter fishing vessel was rammed by a crewboat in the Gulf of Mexico in a fog with visibility of about one quarter mile. Three people from the fishing boat were thrown into the water. Two people were rescued, the third is missing and presumed dead. The fishing vessel flooded and sank.

As a result of the tragedy, the National Transportation Safety Board is asking that people be reminded of the rules of conduct for vessels operating in reduced visibility.

A vessel at anchor in an area of limited visibility must ring a bell rapidly for five seconds at one minute intervals. Motorboats underway must sound one prolonged blast every two minutes and sailboats, one prolonged blast plus two short blasts every two minutes. Vessels towing and underway sound one prolonged blast followed by two short blasts every two minutes. The towed vessel must sound one prolonged plus three short blasts every two minutes immediately after the signal is made by the towing vessel.

The NTSB reminds operators that sounding proper signals is particularly important in areas of high vessel traffic density. ►

In Brief

OUI reg published

Advance notice of proposed rulemaking (ANPR) to prohibit recreational boaters from operating while intoxicated was published in the federal register May 23.

The rule, establishing a federal regulation against operating a boat while intoxicated, would give the U.S. Coast Guard enforcement capabilities, set standards of intoxication and establish acceptable field sobriety tests.

The ANPR is a trial balloon sent up to help the Coast Guard develop an acceptable regulation. After a 90-day public comment period, the Coast Guard will incorporate the comments received and make modifications that will be published next as a notice of proposed rulemaking.

For further information, contact Carlton Perry, Commandant (G-BBS), U.S. Coast Guard, Washington, DC 20593.

SSBLA elects officers

The Southern States Boating Law Administrators named new officers during its annual meeting in San Juan, P.R. in May.

Serving as the new president is Joel M. Brown, Georgia; vice president, Charles Clark, Louisiana; secretary/treasurer, Jack Reynolds, Missouri; and members at large, W.F. (Bill) Hailey, Arkansas, and Jose Garcia, Puerto Rico.

Next year the annual meeting will be held in Virginia during the last week of April.

Call for photos

Small Craft Advisory is always on the lookout for good photos of small boats. Now that everyone is out on the water, opportunities for photos abound. We would particularly like to see photos of patrol boats at work.

If we use your photo, we'll send a gift, such as a rod and reel, buck knife or Coleman lantern. Send color transparencies or prints to *Small Craft Advisory*, P.O. Box C-19000, Seattle, WA 98109.

For prompt return of photos, include a self-addressed stamped envelope.

Cover photo courtesy Easy Rider Boat Co., Seattle, WA

Pennsylvania offers boating pleasure on varied waters

By Gene Spurl

Pennsylvania offers some of the most varied boating in the East. From wilderness canoeing along her rivers and streams to deep water boating in Lake Erie, whatever your boating pleasure—Pennsylvania has it. The Pennsylvania Fish Commission, charged to protect these waterways, owns or controls 250 access areas and 54 lakes. Under its watchful eye are the 99,000 acres of lakes and 4,500 miles of rivers in the public domain.

The Bureau of Waterways is responsible for the enforcement of fishing and boating laws, registration of boats, boating safety education, and the management and promotion of recreational boating.

Pennsylvania's laws and regulations are continuously reviewed. Recent changes were enacted into law pertaining to the operation of watercraft while under the influence of alcohol or controlled substances and homicide by watercraft while under the influence.

The Boat Registration Section is on a real time computer system. Some 228,000 boats were registered during 1985, an increase of 11,000 over 1984, continuing a pattern of a five percent annual increase.

Education is the "keystone" to boating fun. The commission's program, *Implementing Boating—A Practical Approach to Instructional Methods*, is endorsed by the Department of Education and taught in schools, universities and to scout troops, youth groups and boat clubs.

A water rescue course was developed three years ago to meet a serious need for training local fire and rescue personnel. Three rescues this past year were attributed to skills attained in this program.

Training programs are offered to our Waterways Conservation Officers and their deputies. Boating safety and rescue programs are given to the Bureau of State Parks, Pennsylvania Game Commission, U.S. Army Corps of Engineers and other state and national agencies.

Over 100,000 copies of our pamphlets are distributed annually. *Boat Pennsylvania*, published specifically for recreational boaters, has won national recognition. A weekly radio program, aired to 80 stations statewide, dedicates one program a month to boating safety.

more on next page

NESBAC News

Connecticut

Connecticut's operating under the influence law is one sentence long and a difficult one to enforce. Instead, the Marine Patrol, using pamphlets it has produced, is trying to educate boaters to make them aware of the problems with alcohol and boating.

If there were an accident, and the officer made an arrest under the OUI law, there probably wouldn't be a conviction. Instead, the officer charges reckless operation.

Officials are seeing alcohol involvement in about 50 percent of the accidents. A stronger law was proposed in the last two legislative sessions, but failed both times.

Delaware

Until Delaware gets a stronger operating under the influence law, officers will stop suspected drunk operators for other violations. Currently officers have no sobriety testing equipment and must rely on personal observation. A bill with a .10 percent blood alcohol concentration as the legal limit of intoxication has passed the state's House and is awaiting Senate approval.

"We are desperately in need of the law," said George Stewart, BLA, "We're optimistic it will pass. It has a lot of support."

District of Columbia

District of Columbia has no operating under the influence law. Harbor Patrol officers charge drunk operators with negligent operation. Lt. Joe Reulas, BLA, said there doesn't seem to be much of an alcohol problem on local waters. D.C.'s biggest problem with recreational boaters is speeding.

Maine

An operating under the influence provision is written in Maine's boating law. The legal limit of intoxication is the same as in the motor vehicle law—.10 percent, a presumption of intoxication, and .05 percent, a presumption of impairment. There is no implied consent provision.

All wardens have been equipped with breathalyzers and were recently trained in their use. They will begin testing boaters for alcohol for the first time this year.

Maryland

Maryland passed a comprehensive statute on operating under the influence in July 1983. A blood alcohol concentration of .08 percent presumes impairment and .13 percent presumes intoxication. Both provide a penalty of \$500 and/or three months in jail if convicted. Subsequent offenses carry more severe penalties.

Since July, 1983, 59 cases have been made. Special enforcement operations will begin this summer to address alcohol abuse on the waterways.

A profile of the intoxicated operator has been prepared and BAC percentages of fatal boat accident victims charted. These charts will help in addressing problem areas in Maryland's attempt to reduce boating accidents, injuries and fatalities.

Massachusetts

The operating under the influence law in Massachusetts specifies no legal limit of intoxication nor does it have an implied consent provision. The law is being enforced, but with difficulty. Officers are not equipped with breathalyzers and must take the violator to the nearest police station to be tested. Most cases of arrest are charged with negligent operation.

A bill providing implied consent and blood alcohol levels has been before the legislature the past two years, but has not passed.

New Jersey

Since no legal limits of intoxication are specified in New Jersey's operating under the influence law, the marine law enforcement officers' abilities to make observations and articulate those observations in court are emphasized. A breathalyzer test is made available to the violator, but not required.

All officers are trained in enforcement of OUI. Last year 29 arrests were made statewide.

There is legislation pending that stipulates implied consent and sets .10 percent blood alcohol concentration as the legal limit of intoxication. It provides for revocation of the right to operate if convicted and would require the violator attend drug and alcohol seminars.

New York

New York has an OUI law but, with no legal limit of intoxication set, it is considered a weak one and is seldom enforced. "The judicial system recognizes a higher level of proof," said Nelson Potter, BLA, "and is loathe to prosecute allegations on just an officer's observations."

Since they can't enforce the law that is on the books, boating officials are trying to make boaters aware of the problems of alcohol and boating through education.

A bill was argued in the legislature this year. One house passed a strong law, but the other house would only agree to allowing people to be tested after a court order is secured. There may be another chance at legislation in June.

Pennsylvania

Pennsylvania's operating under the influence law sets a blood alcohol concentration of .10 percent as the legal limit of intoxication and has an implied con-

sent provision. The Bureau of Waterways has informed boaters of the law and its interpretation and conservation officers enforce it accordingly. People are not stopped for testing nor are other concerns ignored in order to enforce the OUI law.

Rhode Island

The Rhode Island operating under the influence law is a difficult one to enforce. In order to convict a person on an OUI, the courts require scientific evidence. To be tested for alcohol presence, a subject must call his own physician. Officers are presently using reckless operation laws to charge a drunk operator.

An OUI law similar to the motor vehicle law is now before the legislature.

Vermont

The operating under the influence law in Vermont sets no legal intoxication standard nor is there an implied consent provision. Officers use dexterity tests off the boat to establish probable cause or cite the violator with careless and negligent operation. Officers have hand held alcohol testing devices to use if the subject will agree to be tested.

Boating officials are seeing more accidents in which alcohol is a factor. A bill modeled after the motor vehicle driving while intoxicated law will go before the legislature again next year.

Territories

Puerto Rico

The law in Puerto Rico states if a person operates a boat under the influence, he will be fined. A blood alcohol concentration standard is not stated. When an officer stops someone for negligent operation, he will check to see if the violator is under the influence of drugs or alcohol. But if he makes an OUI arrest, he seldom gets a conviction.

Proposed legislation for a stronger law didn't pass last year. The Maritime

Bureau is working on another bill for the next legislative session.

Virgin Islands

A vague operating under the influence law in the Virgin Islands is seldom enforced. "We don't have any reason to try," said Joseph Sutton, BLA. "We can't get evidence for probable cause." The law does not provide for testing.

Legislation has been recommended to give the Virgin Islands a more enforceable law.

The Bureau's Law Enforcement Division is responsible for the enforcement of both fish and boat laws. A third and equally important duty is the enforcement of the water pollution laws. It is the commission's philosophy that clean water is vital to good boating and fishing.

The division is staffed with 85 salaried officers and 450 part-time deputies. Each of the 71 districts is staffed with a conservation officer and three to 12 deputies.

Waterways Conservation Officers undergo 14 weeks training at the commission's training facility and receive at least one week refresher training annually.

A Waterways Conservation Officer is well-rounded and busy. A typical year begins with winter training and ice-fishing patrols, then on to spring trout fishing and whitewater boating. In May, boats are fitted out for a busy boating and warmwater fishing season. Boats remain on patrol for fall fishing and duck hunting. In November, it's time to put away the boats and catch up on paperwork.

This activity resulted last year in over 50,000 boater contacts and over 150,000 angler contacts. Officers prosecuted 9,158 fish cases, 3,609 boat cases and made 418 pollution investigations.

Developing and maintaining boating access areas is the responsibility of the Bureau of Fisheries and Engineering.

Balancing expenditures from the independent fish fund and boat fund, Dingell-Johnson and Wallop/Breaux, can be a frustrating, yet rewarding experience. Without the supplementing federal programs, boat registration fees would have been increased years ago. ▶



Gene Spurl, director of the Bureau of Waterways, is Pennsylvania's boating law administrator.

Boaters have access to sea and streams in North Carolina

by Charles Fullwood

North Carolina's boating program began in earnest in 1959 when the state, following the lead of one of its senators, Herbert Bonner, father of the Federal Boating Act of 1958, passed the state version of the act. The law went beyond the minimum requirements of numbering necessary for federal approval. Except for a few changes brought about by the Federal Boat Safety Act of 1971, it remains mostly intact today.

In the first year of state numbering of motorboats (over 10 horsepower), North Carolina registered over 38,000 boats. Today, 25 years later, we have over 200,000 registered boats. This figure includes all motorboats and sailboats over 14 feet in length. Our boat registration section has tried to make registration as convenient as possible for the boat owner. We offer either a one-year (\$5.50) or three-year (\$13) registration period, a staggered system of expiration, a local boat registration agent program to renew certificates of number, and a toll free "800" number to assist in boat registrations.

One of our most popular services is the access area program. Currently 148 public boat launching areas on creeks, lakes, rivers, and sounds, from the coast to the mountains, are open 24 hours a day, 365 days a year and ensure free access to public waters.

Access area construction crews serve as waterway marking and stream clearing units. They are responsible for not only marking dangers and shifting inlet channels but also keeping hundreds of miles of streams and creeks open by clearing trees and other objects. The crews are careful to remove only those objects closing a stream or posing an immediate danger to the boating public and leave most of the habitat undisturbed.

The state's boating education program was accelerated in the 1970s and has been partly responsible for an increasing safety record on the water. Over the past quarter century, registered boats and boating activity have steadily increased while fatalities declined. In the mid-1970s, the North Carolina Wildlife Resources Com-

more on next page

SSBLA News

Alabama

Alabama has an operating under the influence law, but a legal limit of intoxication has not been set nor is there an implied consent provision. The existing law is enforced, but perhaps "not as aggressively as possible," said William B. Garner, BLA.

Court reports show there has been a high rate of convictions on cases that have passed through the court system.

An implied consent bill was introduced during the current legislative session. Its outcome is unknown at this writing.

Arkansas

An operating under the influence law has been on the books in Arkansas for a long time. A blood alcohol concentration of .05 percent presented with other evidence and .10 percent BAC alone presumes intoxication.

The OUI law is enforced in Arkansas—when drunk boating is observed, officers take appropriate action.

Florida

Florida's comprehensive OUI law became effective October 1984. It sets a blood alcohol concentration standard of .10 percent. In case of serious injury or death, a chemical test can be ordered. If there is no injury and the suspect refuses a chemical test, he can still be charged with OUI.

All personnel were trained in OUI enforcement, which included testing in a marine environment. All officers are certified to make horizontal gaze nystagmus tests.

In 1985, 50 arrests were made, half the result of accidents, the other half made on routine patrols. Several homicide and manslaughter charges were made during the year.

Georgia

A strong operating under the influence bill was signed into law in Georgia this spring. A blood alcohol concentration of between .05 percent and .10 percent can be considered with other evidence, between .10 percent and .12 percent, presumed under the influence and .12 percent or more, intoxicated. The law establishes testing procedures and implied consent provisions. The medical examiner must test BAC and for drugs in the event of a boating fatality.

All personnel will be trained in procedures for enforcing the law and implementing the testing before the Fourth of July holiday.

Kentucky

In Kentucky the operating under the influence law is only citable, a violator cannot be arrested. To remove a drunk operator from the water, Water Patrol officers use the public intoxication law. They are aggressively enforcing that law with good results and support from the courts. The public intoxication law has been effective enough that there is currently no move toward getting another OUI law for boats.

Louisiana

Louisiana's operating under the influence law sets a blood alcohol concentration of .10 percent as the legal limit of intoxication. Persons must submit to a chemical test in cases of accidents resulting in serious injury or death. Officers are enforcing the OUI law, but not stopping and checking boats. If an accident occurs and the officer believes alcohol is a factor, the subject will be given a sobriety test.

Because of the implied consent provision in the event of injury or death, three cases of negligent homicide were made last year. One was prosecuted, two are pending.

Mississippi

Mississippi law states that no vessel shall be operated within the state while the operator is under the influence of intoxicating liquor or narcotics. A legal limit of intoxication has not been set, nor is there an implied consent provision.

"We'll try next year to have legislation passed," said Liz Raymond, BLA.

Missouri

The driving while intoxicated law for boats in Missouri sets a blood alcohol concentration standard at .10 percent. The Water Patrol's aggressive enforcement of the law includes the use of boat blocks and sobriety checkpoints randomly selected on the state's waterways. Boats are also stopped as the result of officers' observations.

Last year the number of arrests was up 24 percent over 1984's arrests and the conviction rate was over 92 percent.

North Carolina

North Carolina has a new operating under the influence law that sets a .10 percent blood alcohol concentration as the legal limit of intoxication. Officers will check people in the event of an accident or if they are operating their boats in a dangerous manner that is a threat to life, but they will not be stopping people for spot checks.

Because it is a new law, people appear to be more aware of charges that could result if operating under the influence. It seems to have restricted some boaters.

Oklahoma

Oklahoma has had an operating under the influence law for years. There is no standard set for the legal limit of intoxication nor is there an implied consent provision.

Officers don't go out looking for drunks. Since drunk operators are so hard to detect, enforcing drunk boater laws is different from enforcing drunk driving laws for motor vehicles.

South Carolina

South Carolina's operating under the influence law works well. No standard is set for a legal limit of intoxication but officers' observation is acceptable. Although officers are not out looking for drunks, they enforce the law as needed.

At this time no other legislation is being sought, but it has been recommended that the penalty for operating under the influence and negligent operation be doubled.

Tennessee

Tennessee's operating under the influence law does not set a blood alcohol concentration standard for a legal limit of intoxication. The Wildlife Resources Agency is working on a field sobriety test that will be acceptable in court. Currently, drunk operators are cited for reckless operation.

A law on implied consent for boaters is pending in the legislature.

Texas

Texas has a statute prohibiting the operation of a boat while intoxicated. Game wardens actively enforce the current statutes with reasonable success.

Improvements in the law will be sought in the future.

Virginia

Virginia's operating under the influence law sets no legal limit of intoxication, it just states being under the influence. Enforcement of the law is marginally successful. Detection of the drunk boater is difficult and it takes an inordinate amount of time to get him to shore for tests. Once a drunk boater is arrested, there is little trouble getting a conviction.

Attempts at getting more comprehensive legislation have so far been unsuccessful.

mission in cooperation with the State Medical Examiner's Office began a comprehensive study of alcohol and boating accidents—a theme now commonplace in state and federal programs.

A programmed text boating education program, which drew heavily from the New York and Illinois boating courses, enables the state to offer boating education training to approximately 80,000 students annually. A survey conducted a few years ago estimates that eight out of every 10 students graduating from high school take the boating education course. By giving the course text to the students to take home, we are exposing another two people to the material.

While we feel education has made a positive impact on safety on the water, we believe the best influence for safe boat operation is the actual on water presence of a boating law enforcement officer. It is this element of a state's boating program that is the front line of boating safety. Since the Coast Guard's departure in this area, North Carolina has placed much of its resources and efforts on boating law enforcement, utilizing 200 officers and boats and four spotter aircraft to patrol the state's inland and coastal waters.

The goal of North Carolina's boating program is to return to the boat operator the fees he pays for boat registration and for fuel taxes in the form of services that will make his sport safer and more enjoyable for all. ▶



Charles Fullwood, executive director of the North Carolina Wildlife Resources Commission, is the state's boating law administrator.

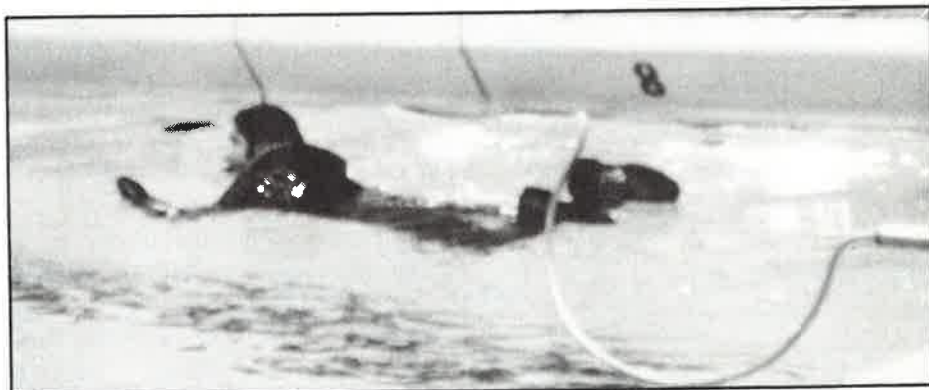
Water survival techniques taught in Michigan

If a person falls into the water with heavy clothes on, he needn't panic nor should he struggle to get out of his clothes. He needs only to take it easy and do a slow dog paddle back to the boat or the bank from which he fell.

That's what thousands of people in Michigan have learned over the years through a water survival program developed by the Michigan Department of Natural Resources. It is a demonstration and student participation program designed to teach people survival techniques when they fall into the water.

Whether they fall from a boat or off a bank, most people will be fully clothed. A variety of outdoor clothing—jackets, jeans, sweat shirts, snowmobile outfits, hip boots and waders—are arrayed at the pool to be worn in the water during the instruction.

Personal flotation devices are demonstrated to show the capabilities of each



During a water survival training program, Jim Martindale, of the Michigan Department of Natural Resources, paddles around the pool in his clothes to demonstrate the buoyancy of outdoor clothing when it gets wet.

type and to encourage people to wear them.

But if they don't have on a PFD when they fall into the water, participants are shown they can survive. Most nylon and wool clothing gets wet only on the surface

of the fabric, trapping air and giving the clothing buoyancy. If a person swims calmly, he won't lose the air. The clothes also provide warmth, slowing the onset of hypothermia.

"Most cases of drowning are within 15 feet of safety— either a boat, bank or shallow spot," said Jim Martindale, of the Law Enforcement Division and a developer of the program. "Why should people struggle to get out of their clothes when they could struggle those 15 feet to safety by doing a simple dog paddle?"

After taking the water survival program around the state to over 10,000 people in the mid '70s, the DNR developed the program for the schools and encouraged them to get the equipment and teach the techniques themselves. As many as 20 school systems are now teaching water survival.

Montana field wardens teach water survival to state workers

During the winter, field wardens from the Montana Department of Fish, Wildlife and Parks taught water survival skills to employees of Montana Power Company and personnel from the state's fisheries agency. These people work around the water and are required by the state Department of Labor to know water safety techniques.

Working in pools, the wardens used a variety of flotation devices to demonstrate the proper and improper use of PFDs. Falling out of a canoe, a warden grabbed a flotation cushion and put it on his back. The cushion brought the warden to the surface, but his head was held under water. When he righted himself, the warden showed the proper way to use the cushion.

Another warden fell into the pool wearing a PFD that was too large. The jacket floated to the surface; the warden remained on the bottom.

Elmer Davis, Montana's boating law administrator, went into the pool wearing waders to demonstrate that if a person crouches in waders, knees up, air is trapped, creating buoyancy. People have drowned trying to remove their waders under water, he said.

Participants saw how long it took to remove a PFD strapped to an overturned canoe and put it on. They learned that, in cold water, it probably couldn't be done.

In other demonstrations, the participants were shown how to safely remove a weighted back pack and waders while lying on the bottom of the pool.

The wardens will continue to give water survival programs to power company employees and personnel from agencies that work around the water.

"Giving safety classes in the community adds to the wardens' public image," Davis said. "We're doing something other than giving out tickets." ►

***"Most cases
of drowning
are within
15 feet of safety"
—Jim Martindale***

The DNR still gives the program when asked. Agencies, such as fire and police departments and others whose personnel work around the water, have participated. For these people, the program is altered to include basic information on non-swimming rescues and to sharpen skills with line throwing bags.

All conservation officers in Michigan have had the training. ►

Alcohol and Boating



SMALL CRAFT ADVISORY



Maryland withdraws implied consent bill

A bill adding an implied consent provision to the existing operating under the influence law was withdrawn from this year's Maryland legislature upon the advice of the Maryland State's Attorney's Office.

The State's Attorneys Association had advised that the state might be better off relying on a U.S. Supreme Court decision, *Schmerber vs. California*, than being restricted by specific statutory procedures of an implied consent law.

In *Schmerber vs. California*, the Supreme Court stated that to require an individual to submit to a chemical test is not in violation of his fourth or fifth amendment rights. A number of state courts, relying on *Schmerber vs. California*, have ruled that police may seize a blood sample from a defendant without consent where there is probable cause to support an arrest and the evidence sought would be lost if not seized immediately.

In Maryland, operating under the influence is a criminal misdemeanor and rules of evidence apply. The State's Attorneys Association

is of the opinion *Schmerber vs. California* would apply to boating and that law enforcement officials would have better success getting chemical tests if the suspect were told that tests were required than if restricted by an implied consent law.

Under the new policy, when a boater is stopped and, if upon observation, a Natural Resources Police Officer has probable cause to believe he is under the influence, he will be told he must take a breath or blood test, said Capt. Frank Wood.

Officers have preliminary breath testers on board patrol boats and are certified to give horizontal gaze nystagmus tests. They could also require a breathalyzer or blood test.

If the person refuses, he can still be arrested and the refusal will be used as evidence in court.

Capt. Wood said since officers started requiring people to take tests, there have been no refusals. Last year, when officers requested suspects to take tests, only 40 percent consented. ►

California officer advises Oregon students

Every year, beginning with spring break, college students from Oregon leave their campuses on weekends, Memorial Day and after graduation and crowd onto Lake Shasta, Calif. Rented houseboats are filled with food and beer and a college houseparty is on. Every year students from Oregon are hurt or killed on Lake Shasta.

After two Oregon State students were killed last year, the innocent victims of an alcohol related accident, officials from the two state universities contacted the Shasta County Sheriff's Office and asked what could be done.

Responding to the schools' interest in tackling the problem, Sgt. Ron Richardson traveled to the campuses of University of Oregon and Oregon State University in May and met with members of the faculty and representatives from the student bodies and fraternities. They discussed responsibility—the responsibility of the visiting students and that of law enforcement officials.

Sgt. Richardson talked to them about student behavior on the water and what could be expected if sheriff's officers caught them doing anything wrong.

He suggested students police themselves by placing a responsible person in charge to curb drunkenness and rowdiness and prevent kids from falling overboard.

Noise and rowdiness had become a problem for the locals this spring. Sgt. Richardson told the college representatives the person in charge of a houseboat would be hauled in along with the violator if a law was broken. He recommended to the students areas of the lake they could go that would have less impact on the locals.

"I wanted to make them aware of California boating laws," Sgt. Richardson said, "and what kind of activity would and would not be tolerated."

Last year over 700 students piled onto 70 Lake Shasta houseboats on Memorial Day Weekend. Since houseboat weekends have grown in popularity, a greater number was expected this year. ►

NWSC Alcohol and Boating Resolution

The National Water Safety Congress, held its annual conference April 21-23. During the meeting, the congress decided to take a position to create a national emphasis and focus attention on the problem of alcohol and boating and passed the following resolution:

Be it resolved that in an effort to reduce the needless losses attributed to alcohol use by recreational boaters that the National Water Safety Congress undertake the development of a national awareness program to include:

- Uniformly prepared requests for governmental agencies and appropriate

elements of the private sector to join in this resolution and development of programs.

- Encouragement of statutes concerning limitations on alcohol use and recreational boating and the reduction of disparities in such laws.

- Appropriate public relations through each regional vice president to provide stimulus and continuity for the program.

- Request for a presidential proclamation encouraging alcohol free recreational boating. ►

The party crasher on the cover of the Special Section was photographed by Gus Lagerstrom, park ranger with the National Park Service, Lake Mead, NV. The boat in the field on the back cover of this section was photographed on the morning after near Deep Creek Lake in western Maryland by Officer Walter K. May II of the Maryland Natural Resources Police. Both officers report alcohol use contributed to these mishaps.

A Boating Dilemma— Alcohol

Alcohol is a legal, popular supermarket drug in western societies. Adults can, in most circumstances, purchase and drink as much as their personal finances and desires dictate. Drinking is a socially acceptable activity and an estimated 75 percent of the U.S. population consumes alcohol to some degree.

Alcohol effectively alters consciousness. The euphoria produced in the early stages of drinking is a powerful reinforcer, thus it is not surprising to routinely find alcohol in a recreational setting. Drinking for pleasure and boating for pleasure are a natural association.

Beverage alcohol is ethyl alcohol (ethanol) which depresses the central nervous system. Its principal effect on performance is in slowing the brain's ability to process information. This begins at any level of blood alcohol concentration (BAC) above zero. As the brain's ability slows, less information from the eyes, ears and other senses is assimilated. An alcohol user operating a boat is at risk because his ability to respond in a timely manner is reduced.

The principal action of alcohol is *central*, effecting the information processing abilities. Simple reaction time, visual acuity and other peripheral processes are not effected at low-to-moderate BACs.

In the laboratory, a subject who has consumed alcohol can perform single non-demanding tasks (pressing a key when the light comes on) quite well until high BACs have been reached. If the same subject were required to perform more complex tasks (choosing one of several responses while monitoring several items) response time would be slowed and many errors would occur. In the

The problem of alcohol and boating was studied at great length during the National Boating Education Seminars of 1984 and 1985. Many experts from the law enforcement, medical and communications communities presented the results of studies that were pertinent to the problems of boating and drinking.

Continued

first case, the subject simply responds with little thought. In the second, the subject has to process information and make a conscious decision.

An experienced drinker can function without obvious impairment even at fairly high BAC levels *if* the environment is simple and the need to process information is low. If the demands are high and choices must be made, errors will occur.

It is difficult to convince the public that alcohol consumption is hazardous, especially at low BAC levels. Most people have, a number of times, driven their cars or gone on the water while drinking alcohol — *and nothing happened*. They were probably in a familiar setting, everything went well, and few demands were placed on their decision making.

Each time a person operates a car or boat while drinking alcohol and nothing happens, a perception of safety and control is reinforced. However, when the first emergency occurs, tragedy could result and it would be too late for that person to understand the effects of alcohol.

Changing beliefs

Convincing those people who have always gone boating with a cooler of beer on board and *nothing happened* that the drinking operator can be a problem, has not been easy. A great deal of research has been conducted over the years to find ways to change attitudes and behavior through mass media campaigns. This research has shown mass media campaigns to have a minimal immediate effect. They can, however, provide a positive influence over a period of time.

The major result of a campaign is problem recognition. Although people may not react immediately to the message as presented, they will become aware of the problem. Media experts call this the agenda setting function. People need to have something to *think about* rather than being told *what to think*.

The effect of an alcohol and boating campaign can help people begin to realize a problem exists. It will probably not lead to significant changes in the short term, but it is extremely important, when combined with other programs, to change behavior in the long run.

Detering the drunk boater

The question of deterring the alcohol impaired boater is complicated both by the nature of alcohol and human nature.

In most states, the legal limit for intoxication is .10 percent BAC. In the laboratory, it has been proven that significant impairment of virtually all subjects is reached at much lower levels (.035 percent to .08 percent BAC). It is important to note both the *legal levels* and *impaired levels* in discussions of deterrence. The principal impairing action is central (brain), but the symptoms are peripheral (loss of balance, poor coordination, slurred speech) and intoxication may not be evident until high BAC levels are reached. This is confirmed in highway arrests where the average person stopped because of erratic behavior has a BAC of .18 percent, nearly double the legal limit.

To have an effective deterrence program, the three "Es", education, enforcement and engineering, are applied. The first step is to educate the public on the problems alcohol can cause. Education could begin with mass media campaigns to make the public aware the problem exists. It would continue in schools and in boating classes, classes that include sportsmen and fishing groups.

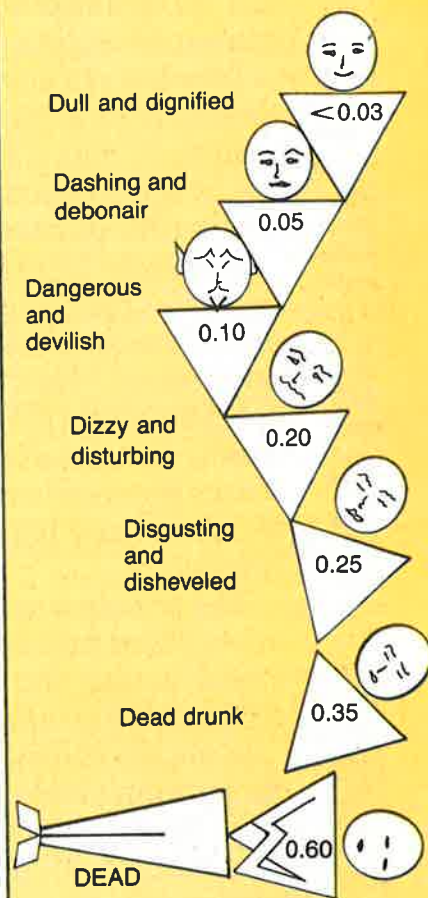
Law enforcement personnel must also be educated. As mentioned earlier, recognizing an alcohol impaired operator is difficult. A couple of years ago, when Coast Guard search and rescue personnel in Southern California and New England were asked to record when alcohol was involved in cases they responded to, under 40 cases were noted out of the thousands of SAR responses made.

The second "E" is enforcement. For enforcement to be effective, boaters must believe they will be caught if they operate a boat while drunk. Training of enforcement personnel is particularly important. On a routine stop on the water, if the officer does not recognize or check for an impaired operator when empty cans or other indications of drinking are present, the operator will believe his drinking is acceptable. The attitude that operating a boat while under the influence is safe and acceptable will once again be reinforced.

A number of studies conducted in this country and around the world show that public perception of strong enforcement may be the most important factor in a program. If the boating public perceives the risk of being stopped for drunk boating is non-existent, there is no deterrence. Increasing the penalty has no effect if the perception of being caught remains low.

A public awareness campaign is needed to let the public know the law is being actively and aggressively enforced. In Florida, 245 billboards have been placed throughout the state to let boaters know the Marine Patrol is serious. "Don't make us your last chaser" is a message everyone can understand.

Alcohol Effects

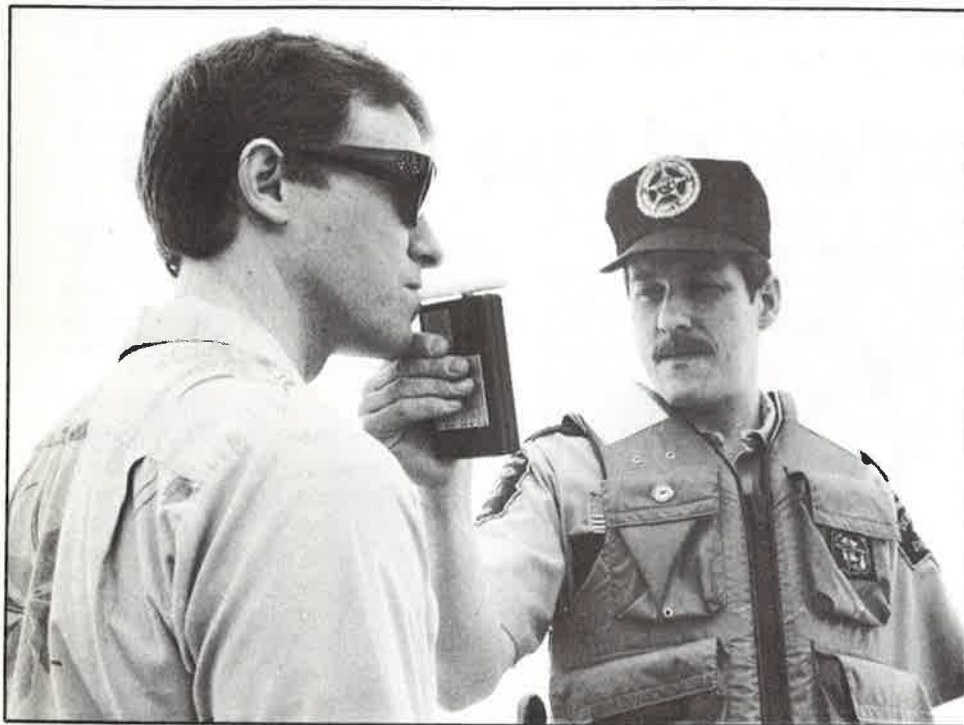


*Percent blood alcohol concentration

Enforcing operating under the influence laws

Enforcing the law on the water introduces many problems. Water is a hostile environment and changing weather conditions can make it an unstable, threatening environment in which to work.

Coast Guard studies show that the motion, vibration, glare and noise associated with boating can be fatiguing. Fatigue reduces reflexes and coordination to a point that many people appear intoxicated without having taken a drink. Fatigue, combined with alcohol, can produce an accumulative effect that will impair an operator's abilities at very low BAC levels.



Recognizing the impaired operator is, at best, difficult. In one study, a field sobriety check point was set up beyond a station where officers had attempted to visually detect intoxicated drivers. After people were tested at the checkpoint on a breathalyzer, it was found that officers had detected only one out of four of the persons who were legally intoxicated. This test was conducted on the highway; on the water it's that much more difficult to spot the drunk operator.

There are a number of testing procedures that don't depend on a stationary platform. They include a hand pat test, with the suspect counting while patting his hands; a manual dexterity test; a seated finger to nose test; tracing a drawing, and the horizontal gaze nystagmus test. Tests such as these are used in addition to written comments of the arresting officer.

A local agency in Florida uses video tape to record the suspect. They report that after the suspect and his lawyer review the tape, the only decision they have to make is the type community service they need to plan on and when to schedule a visit to the alcohol rehabilitation facility.

If further testing is required, the subject can be transported to a dock area for the more traditional balance tests. This, however, presents new problems. An intoxicated person shouldn't be operating his boat, but the boat can't be left in the middle of the lake. Procedures and guidelines must be established to handle this situation.

It is here the third "E", engineering, can be valuable. New equipment has been developed that will check BAC out on the water.

If a suspect is arrested and must be transported to shore, not only is his boat a problem, but the suspect himself could present problems. If he is unruly, he may have to be restrained. But this is on the water. He must be gotten into a life jacket and, if he is handcuffed, he shouldn't be restrained to any part of the boat.

When chemical testing is done later on shore, the BAC level can be backtracked to establish the level at the time of arrest.

More on next page

Blood Alcohol Content Chart										
Body Weight In Pounds	Number of Drinks In a Two Hour Period									
	12 oz. beer = 5 oz. wine = 1 oz. 80 proof liquor									
100	1	2	3	4	5	6	7	8	9	
120	1	2	3	4	5	6	7	8	9	
140	1	2	3	4	5	6	7	8	9	
160	1	2	3	4	5	6	7	8	9	
180	1	2	3	4	5	6	7	8	9	
200	1	2	3	4	5	6	7	8	9	
220	1	2	3	4	5	6	7	8	9	
240	1	2	3	4	5	6	7	8	9	
BAC to .05%	Be Careful —Loss of judgment and coordination									
BAC .05% to .09%	Abilities Impaired —Chance of accident increased									
BAC .10% and over	Do Not Operate a Boat —High risk of accident									

William Chandler of the Hennepin (Minn.) County Sheriff's Department tests Jim Konrad, a Minnesota Department of Natural Resources Conservation Officer, on the preliminary breath tester, a piece of alcohol testing equipment that can be used on boats. Photo by Tim Smalley, Minnesota DNR.

Continued

Alcohol is processed at a fairly constant rate.

Addressing alcohol and boating is a many faceted, complex issue. Most impaired operators are difficult to recognize. Many have operated for years in an impaired condition with few problems and their belief that it can be done safely is constantly reinforced.

For even the trained officer, recognition of impairment is difficult until high BAC levels have been reached.

Mass media campaigns on alcohol and boating are important in the long term, but immediate results can't be expected.

Law enforcement is effective only if the public perceives that the drunk operator will be caught. Enforcement on the water presents many difficult problems.

A recent California study shows alcohol was a factor in 59 percent of all fatal motorboat accidents. A Maryland study in 1984 found 75 percent of all boating accidents involved alcohol. Combating the problem will take the concerted effort of law

enforcement officials, state legislators, the media and an informed public. ►

These articles were written from presentations given at the 1984 and 1985 National Boating Education Seminars. Studies referred to were presented by Dr. Marcelline Burns, research psychologist and director of Southern California Research Institute; Capt. Frank Wood, Maryland Natural Resources Police; Col. Don Ellison, Florida Marine Patrol; James Onder, Professional Management Association, and Dr. Laurence Ross, University of New Mexico.

States tell boaters of new OUI laws

A few states will be going into this year's boating season with new, more comprehensive operating under the influence laws. Before their boating seasons got underway these states made an effort to inform the public of the new laws and their penalties and of the intent to enforce them.

"The first step in law enforcement is public awareness," said Jim Getz, deputy chief of law enforcement for the Illinois Department of Conservation. "Our primary concern this year will be public awareness."

Illinois

As soon as the Illinois law became effective the first of this year, a news release was issued. An article on the law appeared in a recent issue of the department's monthly publication. Posters appealing to boaters to boat without the bottle and pamphlets on alcohol and boating that spell out what the boater can and can't do under the new law have been distributed to all field personnel.

During the legislative session, Michael B. Witte, director of the Department of Conservation, held a news conference to talk about boating and alcohol in Illinois to as many members of the press as could be gathered.

Radio and television stations around the state invited Getz and others from the administrative staff to appear on news programs and discuss the law.

Minnesota

On May 15, a tough implied consent provision in Minnesota's OUI law went into effect. The Department of Natural Resources issued a news release and pro-



Posters were distributed to all Illinois Conservation Officers who were responsible for displaying them in places that would be seen by the state's boaters.

duced a public service announcement to inform the public of the new provision and of the penalties for not complying.

Georgia

After Georgia's new law was signed in early April, the Department of Natural Resources sent a news release to papers around the state and the articles that followed generated many calls from the media and the public.

Boating safety is the topic of programs given to civic clubs, sports clubs and recreation groups in Georgia. Officers, who reach several thousand people each month through these programs, will discuss the new law.

A public service announcement will be released prior to the Fourth of July holiday. Standing beside a lake, Joel Brown, Georgia's boating law administrator, speaks of the tragedy of boating accidents, of alcohol's role in accidents and assures viewers the new law will be enforced.

The public awareness campaign will continue next year. Arrests made under the new law will be publicized. Using some of this year's federal funds, the department will produce several PSAs and posters. Brochures will be printed and sent to boaters with their boat registrations.

Idaho

In Idaho, the press gave extensive coverage to the passage of the new OUI law. Idaho's Department of Parks and Recreation plans additional publicity on the law during National Safe Boating Week.

Florida

This is the second year of Florida's comprehensive boating under the influence law and a public awareness campaign continues. By this summer, 245 billboards carrying Florida Marine Patrol's message, "Don't make us your last chaser," will have been installed beside highways around the state. The billboards are a followup to news that has appeared in the media during the past year and to PSAs that are still being aired. ►

Many state officer training programs emphasize OUI enforcement, field testing

Enforcing the drunk operator laws on the water presents a unique set of problems. Just recognizing the drunk operator takes special knowledge and experience—there are many unsteady flushed people on the water who are not necessarily intoxicated. Giving sobriety tests in a small rocking boat is different from giving tests alongside the road. And handling a drunk in the marine environment requires skill and good judgment.

A few states have new operating under the influence laws, others are beefing up enforcement of existing laws. Many of these states are emphasizing officer training prior to their enforcement efforts.

For example, conservation officers in Georgia are attending a special training session this month to become familiar with a new law that was signed this spring. They will train on the sobriety testing equipment and learn to give horizontal gaze nystagmus tests.

A comprehensive OUI law became effective in January in Illinois. During the winter, conservation officers received special training to prepare them for the enforcement of the law.

For the past two or three years, conservation officers in Wisconsin have received training to keep up with changes in testing techniques. They've learned to identify the drunk on the water and to use a battery of tests that are safe to give in a boat.

Minnesota has a new implied consent law and officer training this year included becoming familiar with the law and giving tests.

This is the second year of comprehensive OUI laws in Florida and Indiana. Both states have trained officers to recognize OUIs and certify on electronic field testing units.

This year all officers in Maine were trained to use breathalyzers in preparation for increased alcohol enforcement.

In New Jersey, where there is no legal limit of intoxication set for boating, officers are trained to make observations and articulate these observations in court during training in the enforcement of the OUI law.

Colorado has an ongoing training program for all officers in detecting the drunk boater, handling him and getting him into custody. They are also trained to give horizontal gaze nystagmus tests. Colorado has no legal limit of intoxication set for boating.

In Nevada, officers were trained on policy, on confronting the drunk operator and giving sobriety tests. The Department of Wildlife is trying to determine the incidence of alcohol and boating, whether there is a need to go to the legislature for a new law.

In Oregon, an old law has proved quite effective. This month

32 sheriff's officers and state police attended a training session on alcohol detection and enforcement where they learned to give field sobriety tests and horizontal gaze nystagmus tests.

In Washington, additional OUI training for officers this year included a seminar and placing DWI squad members in boats to give training.

A few wardens in Montana will receive horizontal gaze nystagmus training from state police.

A previous issue of *Small Craft Advisory*, reported on the OUI training given by Sgt. Ron Richardson, of the Shasta County, Calif. Sheriffs Department. A training manual and 45 minute video Sgt. Richardson helped develop are available, the manual through the Department of Boating and Waterways, 1629 S Street, Sacramento, CA 95814. The video can be purchased from KIXE-TV, Channel 9, 825 Industrial St. Redding, CA 96001. ▶



During training sessions this year, Illinois Conservation Officers reviewed the new OUI law and learned in-the-field testing procedures.

Agency procedure assures OUI enforcement, convictions

Colorado's Division of Parks and Outdoor Recreation is charged with enforcing the state's boating laws. Although the operating under the influence law in Colorado sets no legal limit of intoxication nor does it have an implied consent provision, it is diligently enforced and successfully prosecuted. The division has set specific agency procedures for enforcing the drunk boater law and officers have had no trouble enforcing it or getting convictions.

"The key is having a clear cut agency procedure," said Rick Storm, chief Parks enforcement officer. "The officers are trained to know what to look for, how to document what they find, and how to present it for the court."

When a person operates a boat on the lake in a manner that brings a complaint from a citizen or attracts the attention of a Parks officer, and, if there is reason to suspect criminal activity, the officer will make contact with the boater.

Parks officers have been trained to detect the drunk operator. What they might notice would be open containers in the boat or an operator with bloodshot eyes, slurred speech or an inability to understand a sim-

ple request, such as showing identification.

If these or any number of signs are present to lead the officer to suspect the boater is under the influence of alcohol or drugs, the officer makes a decision. He can request the operator to voluntarily undergo a horizontal gaze nystagmus evaluation or voluntarily go to shore for field sobriety evaluations. Storm said, at this point, most boaters will consent to one of these procedures.

If the decision has been made to go to shore and the operator is suspected of being intoxicated, the officer must either get someone else to operate the boat or he takes the keys and tows the boat. This is the time he makes sure everyone is safely fastened in a personal flotation device.

If, after the initial evaluations, the officer has probable cause to believe the operator is intoxicated, he makes a custodial arrest. The boat is turned over to a sober friend or relative with the operator's permission or it is secured to be towed to a safe location.

On the way to jail, the officer asks the suspect to voluntarily take a chemical or breath test. If he consents to a blood test,

the suspect is transported to a medical facility where two samples of blood are taken, one for the suspect, one for the officer. If he consents to a breathalyzer, the suspect is tested in jail, again giving two samples. The evidence obtained from these voluntary tests is admissible in court.

Most boaters, Storm said, will not consent to chemical or breath tests. Whether he consents or not, the boater is taken to jail, charged and booked.

Since most boaters do not submit to the chemical or breath tests, the case must be made on the officer's observations, witnesses statements and the response to either the horizontal gaze nystagmus or field sobriety evaluations.

All facts and circumstances of the initial contact with the boater and facts and circumstances of probable cause are listed in the case report and offense report. A third report, a witness report, is also filled out. The evaluation forms and witness statements are attached to the offense report.

Before court convenes, the officer checks the criminal history of the operator, looking at driving records, boating related problems and driving while intoxicated convictions. Although DWIs cannot be used as evidence, the officer informs the prosecutor of these or any related offenses. "It might help the district attorney to prosecute the case more vigorously," Storm said.

During a felony investigation, officers can get a court order to take blood, urine or breath tests in cases that involve serious damage, injury or death. Parks officers know this and know how to secure a court order quickly.

Probably 90 percent of the 75 fulltime Parks and Outdoor Recreation officers have at some time in their careers been confronted with a drunk boating problem. It is not a common occurrence, but the officers have been trained to recognize it, develop probable cause—most are now certified to give horizontal gaze nystagmus evaluations—and they have specific agency procedure to follow.

"Of all the arrests we've made," said Storm, "I don't know of any we've lost in court. In this state we can still prosecute an OUI."



SMALL CRAFT ADVISORY



A student enrolled in Washington's defensive boater program maneuvers his boat through the slalom course on American Lake. Students practice turning, stopping and other skills while operating their own boats.

Defensive boater courses begin in Washington

Boaters in Washington had the opportunity this spring to learn defensive boat handling through a course developed by the Washington State Parks and Recreation Commission. The classes included instruction in the classroom, pool and in boats on the water. The course was offered in four areas of the state.

Washington has the dubious distinction of a boating fatality rate nearly double that of the national average. Announcement of the new defensive boat operator course drew widespread attention from the media. As a result, the classes were quickly filled.

Jim French, boating law administrator, taught the first class, but volunteers, who had been trained over the winter, taught the others.

Students got six hours' classroom instruction before going into the pool and out on their boats. In the classroom, they analyzed the hidden hazards in boating—hazards in the environment, the boat and with the operator.

After they had listed hazards found in the environment—cold water, moving water, weather conditions, tides, currents, etc.—they were given techniques to defend against each one.

Among the hazards discussed that could be found in boats were stability, steering, and fuel, electrical and ventilation systems. Particular attention was paid during this course to exhaust systems because last

year six boaters in the state died of carbon monoxide poisoning.

The greatest of the hazards, the students were told, is the operator. The first line of defense against this hazard is boater education, learning and applying the rules of the road. Students were taught to maintain a proper lookout, to understand speed on the water and to determine the stopping distance of their boats. They learned to recognize when they were on a collision course and how far away from other boats they should operate. They studied techniques to handle their boat in wakes, waves and other risky water conditions.

During the classroom session, students reviewed the stressors that cause impairments—alcohol, drugs and fatigue.

They were instructed to think like a professional, to be prepared. If the hazards are understood, risks can be managed, they were told. When operating defensively, the boater is on guard for changes that bring about new hazards. He is constantly observing the risk areas—environment, boat and operator.

The Saturday following classroom instruction, students received two hours training in the pool. They went into the water in the clothes they would be wearing while boating to experience the natural flotation their clothes possess, but also to understand the difficulty they would have swimming in clothes. They tried on various

PFDs and learned the positions to take in cold water, moving water and heavy seas.

Then it was out on the water in their own boats or in small boats provided by the commission. Boat maneuvering skills were checked during steering, stopping, docking and man overboard drills. They tested just how quickly their boats would stop or turn. They tried firefighting techniques and practiced using visual distress signals. Their safety equipment was examined and a marina operator was there to talk of equipment maintenance.

The first round of classes filled up quickly with boaters eager for the hands on experience. When they returned for the pool and on-water instruction, many students brought along friends and relatives who would be boating with them.

The first classes attracted family boaters. The commission is particularly interested in reaching sports fishermen and operators of boats under 18 feet, but only a minority of the students in the first classes were from this group.

French plans to contact marina dealers and organizations like Trout Unlimited to offer defensive boater clinics similar to this course.

Once students get into the course, French has found, they are very enthusiastic. "They can't seem to get enough," he said. ►

Ohio boat officers recognized experts in river, ice rescue

by Paul Gregory

In 1959 the Division of Watercraft was organized within the Ohio Department of Natural Resources to register boats and fund capital improvement projects such as launch ramps and marinas. The popularity of recreational boating soared, and in 1972, through grants made available by the Federal Boat Safety Act of 1971, the division began enforcement and education programs. Today 45 watercraft officers, located in seven district offices throughout Ohio, are responsible for over 43,917 square miles of Lake Erie and Ohio River tributaries and 276 inland public lakes.

The role of Ohio's Watercraft Officers varies depending on the season. During the boating season, they are responsible for enforcing Ohio boating laws on the lakes and rivers. The division has 30 patrol boats of tri-hull and deep V design. A 27-foot steel boat and five 22-foot aluminum boats patrol Lake Erie. A variety of smaller boats are used on smaller lakes. Officers watch for overloaded craft, intoxicated operation, reckless operation and they investigate all fatal boating accidents.

Funds for the division's programs come primarily from gasoline taxes and from registration and title fees. All watercraft, whether propelled by machinery, wind or manually, except for sailboards and hand-powered inflatables, must be registered. Boats 14 feet or longer, except canoes and kayaks, and all outboard motors of 10 horsepower or more must be titled.

We in Ohio believe that alcohol plays a significant role in boating fatalities. The Legislature recently passed an implied consent bill for boating. If the operator of a boat is arrested for operating under the influence and refuses to submit to a chemical test, he/she will lose the privilege to operate a boat for one year. If the operator is the owner of the craft, the registration of the boat will be suspended for one year.

Watercraft officers present educational programs to civic, school and youth groups, the media, boating clubs, and at boat shows. The division is also promoting a home study course.

more on next page

NCIABLA News

Illinois

Illinois' new operating under the influence law became effective January 1. It includes an enforceable definition of being under the influence, implied consent with revocation of operation privileges for refusal to submit to tests, a .10 percent blood alcohol concentration standard, and progressive penalties accompanied by operation privilege suspension.

An active public education campaign started in January and an enforcement program aimed at awareness for marginal offenders and arrest of flagrant offenders began with the start of the boating season.

Indiana

Indiana has had a comprehensive operating under the influence law since Sept. 1, 1984. A .05 percent blood alcohol concentration presumes under the influence, .10 percent BAC, legal intoxication. There is an implied consent provision.

All field personnel received training on the law and were certified on electronic field testing units. The Department of Natural Resources acquired 30 units initially and plans to purchase more. A media campaign followed.

Since it is difficult to evaluate OUIs just by looking, officers were usually drawn to drunk operators by some other offense. Every arrest made received a conviction.

Iowa

Iowa's conservation officers are enforcing the state's current operating under the influence law. There is little information on the extent of use of alcohol while boating.

This summer the Iowa Conservation Commission will conduct research to determine the relationship of alcohol and Iowa boaters. In each of the six districts, three two-man boats will randomly stop boats to inquire about alcohol use while boating.

With no legal limit of intoxication set, officers must judge when a boater is

under the influence. The survey will attempt to determine the effect of lag time between BAC taken on an initial stop and the follow up BAC taken at a certified testing facility.

Kansas

The Kansas statute that prohibits operating while intoxicated sets no legal limit of intoxication. The limits set in the motor vehicle code can be applied.

Officers enforce the law when death or injury occur. It is difficult to enforce a law with nothing to back it, said Richard Harold, BLA.

When making accident reports, officers will note when alcohol or drugs are a contributing factor. Some of the legislators are interested in these numbers.

Early this spring, there were three boating fatalities, all alcohol or drug related.

Michigan

The legal limit of intoxication for boaters in Michigan is .10 percent blood alcohol concentration with .07 percent set as impaired. Although there is no implied consent provision, a person's refusal to take a test can be used as evidence.

After the 1968 OUI law was revised in 1982, there was more enforcement and more arrests were made. Because of reporting procedures, alcohol involvement can be verified in only 15 percent of the accidents, but people seem more aware of the problem and accident statistics are not growing.

Minnesota

A tough implied consent provision was added in May to Minnesota's operating under the influence law. If a person refuses to take a test, there is a civil penalty of up to \$700 and/or 90 day loss of operating privilege. The state's legal limit of intoxication for boaters is .10 percent blood alcohol concentration.

Enforcement officers have had a course in the new law which applies only to motorboats and sailboats with motors.

Officers will key in on high incidence areas. They stop people for careless operation, then, if called for, run field sobriety tests. Last year 31 arrests were made on one lake.

Nebraska

Nebraska's operating under the influence law sets the legal limit of intoxication at .10 percent blood alcohol concentration. There is no implied consent provision.

Although enforcing an OUI law on the water is difficult, Andy Nielson, BLA, feels Nebraska officers don't work on it as hard as they should. There is an alcohol problem, he said, but results of enforcement of the law are minimal.

North Dakota

North Dakota has a general law prohibiting operating a vessel under the influence, but it sets no legal limit of intoxication. Conservation officers enforce the law when they have access to a chemical testing unit administered by either police or sheriffs. Conservation officers are not certified to use the equipment.

They usually cite a drunk operator for another offense, such as negligent operation, because it's easier to prove in court.

Ohio

Ohio boaters are prohibited from operating a watercraft if they have a .10 percent blood alcohol concentration. During the 1985 boating season, stricter enforcement and increased patrol hours resulted in 74 DUI arrests, a 200 percent increase over the previous year.

The Ohio legislature passed an implied consent law this spring. If arrested for DUI and refusing to submit to a chemical test, the operator of a boat loses the privilege to operate for one year. If the operator is the owner of the boat, registration will be suspended one year. Included in the new law are progressive penalties for operating under the influence.

Ontario

The operating under the influence law used in Ontario is a federal law that sets

the legal limit of intoxication at .08 percent blood alcohol concentration. It has an implied consent provision.

The Ontario Provincial Police have been aggressively enforcing the law, paying particular attention to recreational boaters. More is planned for this year.

It has been established 42 percent of boating fatalities in Ontario are alcohol related.

South Dakota

The operating under the influence law in South Dakota is weak and when officers try to enforce it, they have little success and get few convictions. The reckless and negligent operation law is easier to enforce. It is not always known if alcohol intoxication is involved in the violation.

The Department of Game, Fish and Parks is not pushing legislation. They feel it would have a better chance of passing if a bill originated from another source.

West Virginia

In West Virginia it is unlawful to operate a boat under the influence of alcohol and drugs and it is left to the officer to judge a person's impairment. The law is enforced when possible, but officers use the reckless operation law unless the operator is very drunk. They get convictions because when charges are made, violators are intoxicated enough to leave little doubt.

The use of a breathalyzer is being discussed now prior to the convening of next year's legislature.

Wisconsin

Wisconsin's operating under the influence law sets .10 percent blood alcohol concentration as the legal limit of intoxication. Although there is no implied consent provision, the law is actively enforced. Officers have been trained to give a battery of on-the-water tests—verbal, finger to nose, tracing a maze, etc. Four years ago three or four OUI arrests were made; last year, over 40.

An implied consent law failed to pass this year's legislature.

Many of the most popular courses are hands-on, skill development courses conducted in sailing, flatwater and river canoeing. Several teachers' workshops are conducted each year at state accredited universities.

This year the division awarded 33 grants for marine patrols and watercraft educational programs to assist local communities and public agencies in enforcing watercraft laws and in developing safety awareness programs.

Ohio's Division of Watercraft, widely recognized as an expert in water rescue, river rescue and ice rescue, has published manuals and conducts training courses. In 1985 three new courses were developed: Vertical Rescue Systems, River Rescue for Paddlers, and an Aquatic Victim Rescue Course for emergency medical and rescue personnel.

This marks the second year the Division will receive a grant from the Office of Litter Prevention and Recycling to clean up Ohio's shorelines and educate boaters to the hazards of littering.

Ohio ranks seventh in the nation in the number of recreational boats. Over 350,000 boats were registered in 1985. In an effort to keep pace with the growing recreational boating industry in Ohio, the ODNR and Ohio State University are engaged in a joint effort to study the practices and concerns of Ohio's boaters. Information from a questionnaire will assist in planning and development of boating facilities. ▶



Paul Gregory, Ohio's boating law administrator, is chief of the Division of Watercraft, Ohio Department of Natural Resources.

Boaters choose many activities in rainy Oregon

by Paul Donheffner

There is good news and bad news about Oregon's renowned rain. The bad news — it does rain. The good news—the rain collects to form some of the most beautiful waterways in the United States.

Boaters can choose to cruise down the scenic Willamette River, sail or ski broad, blue lakes, paddle peaceful streams or raft spectacular whitewater rivers.

Expert boaters looking for a challenge will find all they can handle in Oregon. There's our world famous whitewater rivers, the Rogue and the Snake. The Columbia River Gorge's constant winds make that area a sailboarder's mecca. Last summer's world cup events brought sailboarders from as far away as Australia and Europe. Fishermen who come to Oregon to fish for the mighty salmon encounter one of the most beautiful and sometimes hazardous coastlines in the world.

Tourists aren't the only ones taking advantage of Oregon's diverse boating opportunities. Oregonians have registered 145,000 boats, not including canoes, rafts or rowboats. In 1985, registered boat use was up 15 percent from 1982. This produced over 8 million activity occasions—nearly 60 percent, fishing.

Providing access and promoting safe and enjoyable boating has been the State Marine Board's primary task since its inception in 1959. Unlike many sister agencies across the states who are responsible for fishing and hunting, the Board's sole concern is the recreational boater.

The Marine Board developed a boating safety course for junior and senior high school students that features on-water training. For the adult boater, the Board offers a correspondence course. Safety information is provided through television, radio and newspaper releases, our safety pamphlet series and through local area information signs placed at access sites.

These programs have contributed to lowering the recreational fatality rate from an average of over 31 boaters per year in the '70s to fewer than 24 per year in the '80s.

The Marine Board contracts with 27 of the 36 county sheriffs for marine law

more on next page

WESBAA News

Arizona

In Arizona, the operating under the influence law sets .10 percent blood alcohol concentration as the legal limit of intoxication. The law has an implied consent provision and boating safety officers are actively enforcing it. Tom Alexander, BLA, believes enforcement of the OUI law is one of the factors that has contributed to the reduction of fatalities seen on five of the state's major lakes.

California

Enforcement of the operating under the influence law in California is somewhat limited due to lack of an implied consent law and a legal limit of intoxication standard. Chemical tests can be given involuntarily, however, in boating accident cases where death or serious injury has occurred.

Enforcement on the water varies from county to county depending on local policy. Arrests and convictions occur primarily when death or serious injury is involved. Sometimes there are convictions in non-fatal or non-injury cases where operators have volunteered to take a test for blood alcohol concentration.

Three bills that address alcohol and boating are currently in the legislature.

Colorado

Although Colorado's operating under the influence law does not specify a standard for legal intoxication, Park Rangers get convictions. A high standard for custodial arrest has been set and officers must prove the operators' ability to operate is impaired. All boating officers are trained to detect drunk operators, document evidence that points to probable cause and present it in court. They are certified to give tests, such as the horizontal gaze nystagmus.

An implied consent law has been drafted, but "we are not pushing it now," said Rick Storm, BLA. Enforcement and prosecution has been successful under current law.

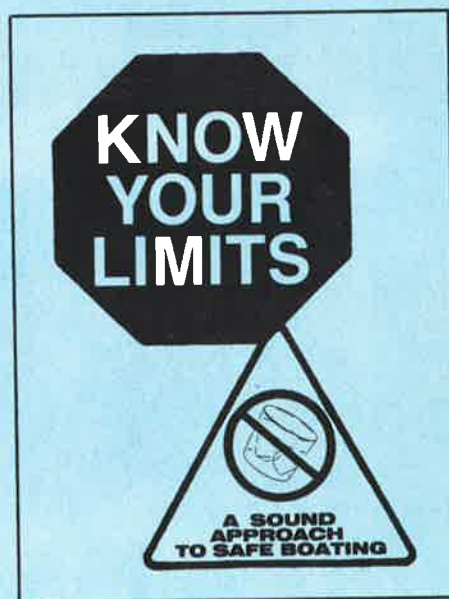
Hawaii

Hawaii's Marine Patrol is hampered in enforcing an operating under the influence administrative rule because no legal limits of intoxication for boaters have been set nor methods for testing in the field approved.

The Department of Transportation supported legislation that would set the limit of intoxication at .10 percent blood alcohol concentration and provide a procedure for testing in the field. It would increase fines and provide imprisonment for chronic offenders. No action was taken on the bill during the 1986 session, but it is anticipated the proposed legislation will be considered in the next session.

Idaho

A new operating under the influence law was passed in Idaho and became effective in May. It set .10 percent blood alcohol concentration as the legal limit of intoxication. The law applies only to motorboats over 10 horsepower and sailboats over 21 feet.



Since the law just became effective, enforcement efforts and results are not established.

Changes in the law will be sought in the future.

Montana

A vague operating under the influence law in Montana is difficult to enforce unless witnesses can be found to testify to the violators' actions. Instead of enforcing the OUI law, wardens cite violators under the reckless and negligent operation law.

Accident report forms do not include alcohol as a contributing factor. With no record of alcohol involvement in accidents, it is difficult to convince the public the law should be changed.

Nevada

Nevada's operating under the influence law, which sets no legal limit of intoxication, has not been actively enforced. Nevada game wardens are receiving training for enforcement and for determining how many people are operating boats while intoxicated.

The Department of Wildlife is trying to set policy on confronting an intoxicated person, to ask questions and give sobriety tests. They are attempting to collect data to find out if, in fact, alcohol is a problem for the state's boaters.

New Mexico

In New Mexico, the motor vehicle code is used for boaters operating while intoxicated. The DWI law sets a .10 percent blood alcohol concentration as the legal limit of intoxication and has an implied consent provision. When officers see a violation, they take the violator off the lake and into jail for a breathalyzer test. Enforcement efforts have been "fair to good," said Otis Chappell, BLA.

Oregon

Although in Oregon the operating under the influence law sets no legal limit, intoxication is well defined in case law, which may be more beneficial to the field officer, said Paul Donheffner, BLA.

Until a few years ago, citations were rare, but last year the Marine Board made an effort to convince law enforcement officials to pay more attention to it. More cases were made and the courts pounced on them, sometimes with "creative sentencing." Six people were convicted. In one case, a judge revoked the boater's certificate of numbers for a year.

Since the law seems to be working well, no legislative changes will be sought.

Utah

Utah's operating under the influence law sets .08 percent blood alcohol concentration as the legal limit of intoxication, but according to Ted Wooley, BLA, the law needs revamping.

Detecting drunk boaters is difficult, but Utah's officers are enforcing the law to the best of their ability and manpower. About a dozen arrests were made last year and most received convictions.

The Division of Parks and Recreation is working towards a more comprehensive boating OUI law.

Washington

The operating under the influence law in Washington sets .10 percent blood alcohol concentration as the legal limit of intoxication. There is no implied consent provision. The law is being actively enforced in the larger municipalities and in congested areas.

Boating officers are receiving more OUI training with the help of the State Patrol. Apprehensions and prosecutions are increasing.

Wyoming

Wyoming's operating under the influence law sets no legal limit of intoxication. "It's our word against his once we get to court," said Steve Smith, BLA. The law is enforced if it is believed the case will win in court.

At the conclusion of a five-year study on alcohol and boating, the Game and Fish Department will make a recommendation to the legislature.

enforcement and with the State Police, who provide marine law enforcement in conjunction with fish and game enforcement. The county contracts range from full-time, 12 month coverage to part-time coverage during high use periods only.

County sheriff's officers who provide marine law enforcement are certified by the Marine Board. A training manual and written test is used to evaluate their knowledge and understanding of marine law and law enforcement procedures.

In 1985, the Board commenced development of a Statewide Marine Law Enforcement/Boating Safety Plan, which will evaluate, county by county, equipment requirements, patrol activity, accident reports, citations, local rules and other information relative to marine patrol needs. Once the review is completed, the Board will be able to plan future improvements locally and statewide.

The Board provides funding for public access and marine facilities through a grant program for eligible cities, counties, park districts, port districts and state agencies. Beginning in 1987, all state gasoline tax will be used to fund the program. The future outlook is very promising.

The registration and titling system features instant on-line access to the file, which assists law enforcement in accidents, recoveries and routine inquiries. It is tied to the National Crime Information Center for use in tracking boat theft. Customer service is the goal of the Registration Section, which takes pride in the five day or less turnaround time for processing registrations. ►



Paul Donheffner, Oregon's boating law administrator, has been with the Oregon State Marine Board since 1977.

Connecticut law establishes noise levels for boats on inland and coastal waters

A Connecticut law that establishes noise levels for boats was amended last year to include enforcement of the law on coastal waters. The original law, which applied only to boats on inland waters, has undergone a progression of changes since it was passed in 1978 to make it more enforceable and applicable to all areas of the state.

About eight years ago a problem with loud boats grew to the point that citizens' complaints couldn't be ignored. Operators of high speed boats with large motors found that the rivers with long stretches of impounded waters were ideal places to open throttle and go. In Connecticut, these rivers and lakes run through valleys and as the noise of the boats echoes off nearby

hills, it is magnified. People on shore and other boaters were extremely annoyed.

The legislature passed a law establishing noise levels for boats and appropriated money for the purchase of equipment to measure the noise.

"After a year of enforcement, we found the law had many loopholes," said Maj. Randy Dill, commander of the Marine Patrol. "If a violator was aware a patrol officer was on the water, he would idle the boat until the officer left. He knew we could only measure the noise of a boat in use."

Amendments to the law followed and now an officer is permitted to board a boat suspected of being too loud and order the

operator to run the boat at any number of rpms.

The maximum noise level for engines manufactured before Jan. 1, 1976 is 86 decibels; for engines manufactured between Jan. 1, 1976 and Jan. 1, 1982, 84 decibels, and for engines manufactured after Jan. 1, 1982, 82 decibels. These measurements are taken either 50 feet from the boat or 100 feet from shore.

A number of complaints are coming from people along the Connecticut River, a popular strip for offshore racing boats. After making contact with an offending boat, an officer will board the boat, have the operator put it at half throttle, then full throttle (or a safe speed) and another officer will take noise measurements from the patrol boat 50 feet away.

This is the first year the law can be enforced on Long Island Sound. An increasing number of complaints have been coming from harbor areas. Rather than go out into the sound, officers will concentrate primarily on the harbor areas where the noise is most offensive to people.

***"We haven't
seen the
worst of
it yet."***

—Maj. Randy Dill

Noise meters purchased with the appropriation from the original statute are made available by the Marine Patrol to the local municipalities.

Maj. Dill has been to dealers to inform them of the law and tell them that many boats sold are not complying with the law. Because of his contacts with dealers and calls he's receiving from people wishing to buy these boats, he predicts an even greater number of fast boats on Connecticut waters in coming years.

"We haven't seen the worst of it yet," he said. But with this law, "we have the tools to deal with it." ►

U.S. Army Corps of Engineers educational efforts reach many

The U.S. Army Corps of Engineers has seen an impressive decrease in fatalities on its projects over the past 15 years, due, it is believed, to the emphasis that has been placed on boating and water safety education.

In 1971, the Corps recorded 310 million visitor days and 475 drownings. In 1985, there were 502 million visitor days with 295 fatalities, a 30 percent increase in visitors and 60 percent decrease in fatalities.

The Corps' educational program is multi-faceted, with programs available for schools, civic clubs and for presentation around campfires. In some locations, courtesy marine examinations are given by Corps rangers.

Over 300,000 copies of *Small Craft Handling*, have been placed in display racks in the visitor centers and given to rangers for distribution and 480,000 powerline brochures have been distributed to sailboat clubs on Corps projects and to the visitor centers.

At least one person on staff at each of the Corps' 475 projects is trained to conduct

educational programs. Rangers show films to civic clubs and, if space is available, use boats to give safety demonstrations. During interpretive programs in the evenings at campgrounds, they show films and put on skits. Dressed as Freddy the Fish, rangers show slides in the elementary schools and answer children's questions. The Corps' young adult program, taken to the high schools, addresses the hazards teenagers might confront on the water.

To encourage community involvement in boating and water safety, the Corps promotes the development of water safety councils. Local agencies surrounding the projects, such as sheriff's offices, rescue squads and boating groups, discuss safety problems, educational efforts and share the safety workload.

The Corps will continue to emphasize boating and water safety education anticipating further reductions in accidents and fatalities, according to Carl Bishop, assistant chief of safety, U.S. Army Corps of Engineers. ►



An outboard jet powered boat runs upstream through rocky rapids. The intake grill on the motor extends just an inch or so below the line of the hull enabling the boat to operate in very shallow water.

Outboard jets get through shallow, rocky water

by Virgil Chambers

To go where no propeller-driven craft has gone before . . . that's the outboard jet.

The Pennsylvania Fish Commission Bureau of Waterways purchased its first outboard jet unit in 1976 and since then 27 additional units have been purchased. The outboard jet has greatly extended the ability of waterways conservation officers to patrol sections of waterways that were usually inaccessible in conventional boats.

The advantage of getting into previously inaccessible areas is useful for search and rescue, too. Last year, when three canoeists were overdue from a float trip on a stream that was rising because of heavy rain that fell the day before, two waterways conservation officers in a boat powered by a jet drive unit searched the rocky, swift, rain-swollen stream. They found the stranded canoeists unhurt. If it weren't for the capabilities of the jet drive unit on their boat, the rescue of these canoeists would have been difficult and time consuming.

The principle on which the outboard jet works is Newton's Third Law, "For every force there is an equal and opposite force of reaction." The operation of the unit depends on an impeller, driven by the engine's driveshaft drawing water into the

unit through a grill covered intake. This water is forced at high pressure through a nozzle aft of the unit. As the water "jet stream" shoots out the nozzle, it creates an opposing force that pushes the boat forward.

When the boat reaches planing speed, the "jet stream" discharge is at the surface of the water with the intake slightly below the surface continuing to draw in water. The boat skims along the water above submerged obstacles. To reverse the boat direction, a cup shaped device controlled by a lever swings into position over the jet discharge, aiming the stream in the opposite direction, creating force to propel the boat backwards. As in a propeller driven unit, reverse speed in the outboard jet has a reduction in power.

Not only is the benefit of the outboard jet in shallow water great, but the absence of a whirling propeller provides a safety factor when there is in-water activity close to the boat. In addition, the ability of the outboard jet to approach the shore without tilting the motor makes it easy to beach the craft without worry of damaging the lower unit.

Converting an existing propeller engine into a jet unit is relatively simple. It

requires no special tools or skill. The lower unit of an outboard is replaced with a jet drive unit, which in turn can be reconverted to a propeller driven unit.

The outboard jet isn't without disadvantages. There will be a reduction of horsepower and overall speed. The outboard jet is not designed to maintain a high rate of speed, but it provides a highly navigable craft for different water situations.

The optimum performance of the outboard jet unit occurs with a light craft having a shallow draft and relatively flat, wide bottom. Hulls with vee bottoms require more depth, defeating the major purpose of the outboard jet. In fast moving water with rapids, a modified bow makes for easier steering control.

The outboard jet unit fits most outboard motors from a low 18 horsepower to a high of over 200 horsepower. The speed loss is offset by the ability of the unit to operate in literally inches of water. Still, a boat operating at slow speed requires more depth than one which is at planing speed. ►

Virgil Chambers is chief of the Boating Education Section of Pennsylvania's Fish Commission. He has operated and tested outboard jet units on many kinds of boats. Adapted from an article in Boat Pennsylvania.

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Summertime and the folks are out cruisin'



Photo by Don Carey, deputy Waterways Conservation Officer, Pennsylvania Fish Commission.