

## BOAT OWNERS

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Mt. Druitt

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South Pacific Divers - August/Spt./October, 1982

COMING DIVES AND ACTIVITIES

U45  
Saturday 21st August  
Sunday 22nd August

Photographic Weekend  
also

Club Dive - Details at Club Meeting

Meet at Rose Bay Ramp 8.30 am for dives going  
to North Head

- Colours
- Dunbar
- Annie M. Miller

Contact Bob Smith in regard to photographic gear, film, etc. Pointers (529 3818)

Sunday 19th September

Terrigal

meet at Boat Ramp 8.30 - 9.00 am for  
trips to the Reefs and the Galava Wreck

Saturday 2nd October  
Sunday 3rd October  
Monday 4th October

Dive - Dive - Dive with the Seals  
Montague Island

Saturday 16th October  
Sunday 17th October

Weekend away - Jervis Bay  
(Open to discussion at next Club meeting)

Sunday 31st October

Long Reef  
Meet at Boat Ramp 8.30 am for dives  
to Dee Why Ferry.  
- Birchgrove Park Wreck



South Pacific Divers - August/Spt./October, 1982

Dear Members,

Rushing to get this issue to you before the planned photographic workshop next weekend. Bob has got very interesting ideas and everybody interested should learn a great deal about the do's and don'ts in underwater photography.

As you can see we have planned quite a few dives in altogether different locations for something to do for everybody.

It is Sunday night, and I suddenly realized, tomorrow is Club meeting, so not being used to my new job as Publicity Officer, I am wracking my brain about subject to keep you informed about. So please be patient with me, I am learning. I also would like to thank Audrey for the terrific job done over the last year, which will make it a hard job to follow.

#### AUDIO - VISUAL

We had a turn-up of 650 people as exhausted waiters told Bob at the end of the 'Spectacular' and they were very happy about the rise in sales of booze. As you might have noticed, some well-known Celebrities in the dive-world - Ron and Valerie Taylor and Neville Coleman - were amongst the audience. Everything went off smoothly, even Rick seems to be getting calmer nowadays.

Behind the scene, Bob battled with jammed slides and break-downs of equipment, but I don't think anybody noticed. I also would like to thank the Hostesses, who as always did a good job in showing the people to the right tables and making sure nobody ran out of ships and cheese.

Undola Dive = 8.00 am Sunday morning saw Bob, Richard and Mark sitting around our breakfast table and me as always choked up with a cold waved them a sad bye-bye. The water got a bit too rough to continue on to the



Undola, so it was decided to dive the Tuggerah instead. Penny, Mark and Bob ankered right on top of the Tuggerah, as some disbelievers found out and a good dive was had by all who braved the cold but clear water. Terry's crew decided to dive Tumbledown. Afterwards everybody got together for a Bar-B-Que on Jibbon Beach and I didn't see my husband back until 8.00 pm - only to find out that he was helping Richard and Brenda to get their act together for their first big trip up to Yamba for the Christening of Chris and Mick's son. As we haven't heard about any new shipwrecks on the NSW coast, we assume they safely landed in Yamba and are having a good time.

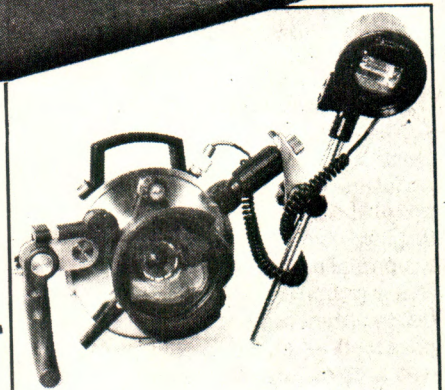
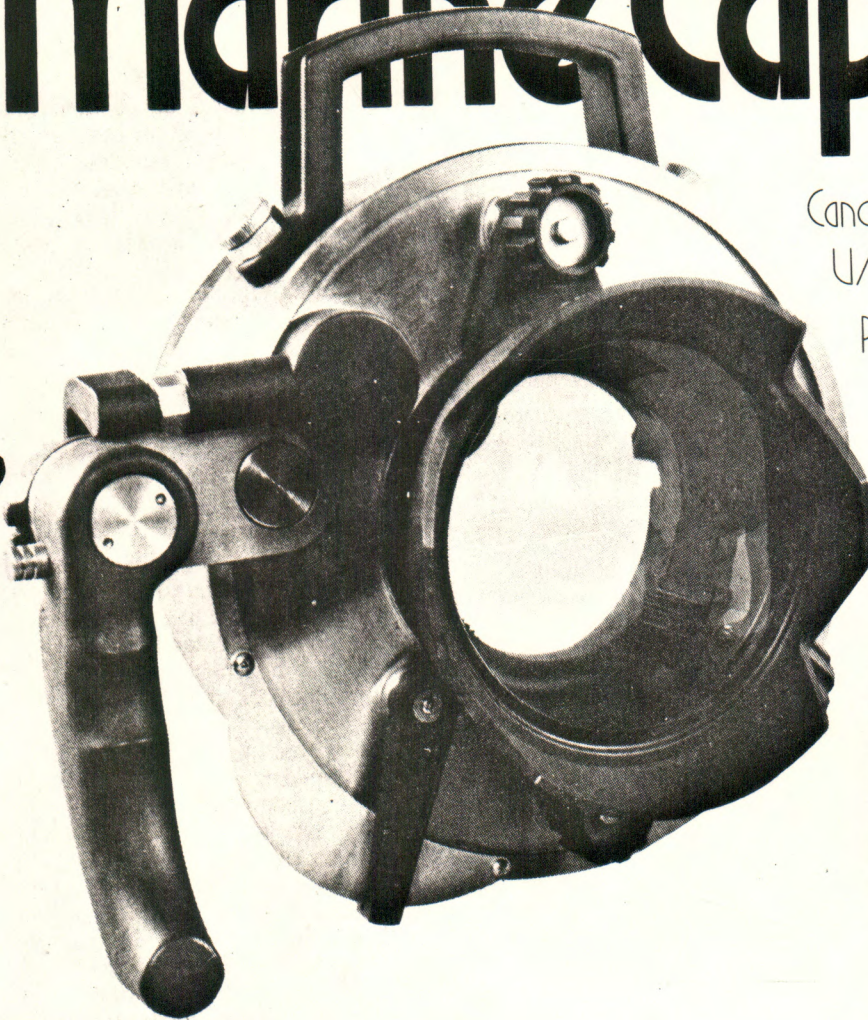
Karin



# Marine Capsule A

Canon builds a distinctly different U/W housing for the professional photographer

Text and Photography by Geri Murphy



Canon's Marine Capsule A will accept several motor drive cameras including the AE-1. It is fitted for U/W strobe attachment (Nikonos II connector).

**C**anon company of Japan recently developed an underwater camera housing which is so radical in design it has already established three precedents. First, it is the only commercially available 35 mm SLR stainless steel camera housing. Second, it is the only housing of its kind that accepts several different motor drive cameras and some 30 different lenses. Third, it is by far the most expensive 35 mm housing, with an impressive price tag of over \$2,700.

In addition, Canon's Marine Capsule A is perhaps the most rugged underwater housing currently available. It has many ingenious features never before seen on a 35 mm SLR housing.

## DESIGN

The Marine Capsule A has a circular

design: There are no seams in the housing for maximum strength at depth. The body is a neat slice of stainless steel tubing almost eight and one-half inches in diameter. There is a suitcase-type handle on the top to facilitate carrying. On the right side of the housing is a contoured hand grip which can swivel and lock in two positions 90 degrees apart so the housing can be held either horizontally or vertically. A second removable hand grip can be attached to the left side of the housing for two-handed control or for mounting a flash arm.

The back plate (rear door) of the housing is a solid piece of highly polished  $\frac{3}{4}$  inch thick molded Lexan with a built-in O-ring seal. This transparent panel allows the photographer to clearly see what is going on inside the housing and also de-



fect even the slightest leak. The rear door is secured in place by two stainless steel mounting screws which are permanently fixed to the door. When the tightening knobs are rotated in a counterclockwise direction, the mounting screws automatically lift the rear door from its seal.

A universal style mounting system inside the housing permits the Marine Capsule A to accept three different Canon cameras without any modifications. The housing will take the Canon AE-1 with electric power winder, the Canon A-1 or the Canon AT-1. All three models have electric film drive and various automatic exposure systems.

The front of the Marine Capsule can be fitted with one of three ports, thus allowing the usage of a wide range of Canon lenses. Over 30 different lenses, from the

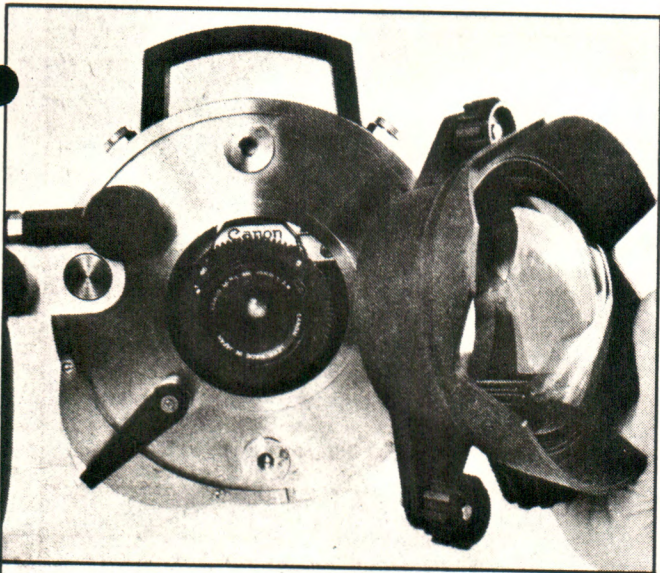
f4 macro to the 200 mm f4 telephoto. The FE port is an extremely short dome which fits close to the housing and is designed specifically for use with the 15 mm f2.8 fisheye lens. There is a wide selection of eight different focusing gear rings and three different aperture gear rings for fitting all 30 of the lenses that can be used with this housing. The lens versatility of the Marine Capsule A is virtually unequaled in the world of underwater housings.

A special negative magnifier eyepiece has been designed for use with the Marine Capsule A, thus enabling the photographer to view the entire picture field while wearing a facemask. This unique optical device slides over the normal eyepiece at the rear of the camera and is held in place by a shoe mount.

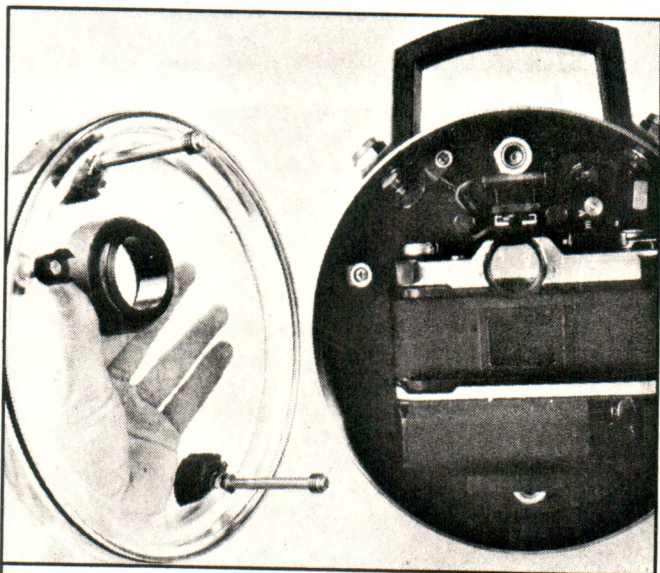
## CONSTRUCTION

The main body of the Marine Capsule A is extremely unique as it does not contain any joints. It appears to be a spun stainless steel cylinder complete with a heavy duty front rib and seamless front flange. The wall of this portion of the housing appears to be 1/16 inch stainless steel, and the manufacturer guarantees trouble-free operation to a depth of 200 feet. The front lens port assembly is a high impact plastic and contains the focus knob and gearing, as well as an optical grade glass dome.

All external handles, control knobs, control levers and other accessories are corrosion resistant high impact plastic. All screws, bolts, nuts and washers are high grade corrosion resistant stainless steel. All control shafts which go through



**The optical glass dome port will accept 24 different lenses. It is interchangeable with two other specialized ports.**



**The back plate (rear door) of the housing is a solid piece of 3/4 inch molded Lexan. It has a built-in O-ring seal.**

15 mm fisheye to the 200 mm telephoto and several macro models will fit this housing.

The standard S port features an optical glass dome and can be used with the widest range of lenses. It is designed for 24 different lenses ranging from the 17 mm extreme wide-angle lens to the 100 mm lens. A special diopter correction lens adapter, the Close-up Lens 240, has been built by Canon for use with the S port. It helps to offset spherical aberration and neutralize the curvature of the dome front. It screws onto the threaded filter ring of the camera lens, fitting inside the front end of the housing.

The long barrel T-port features a flat front and is designed for use with four different lenses ranging from the 100 mm

The Marine Capsule A offers total control of the camera's many intricate functions including: full range of focus, full range of aperture selection from f1.4 to f22, switch-over to automatic exposure, shutter speed selection from one second to 1/1000 second, shutter release, and electronic flash. There is even a shutter release lock to prevent accidental firing.

The Marine Capsule A is designed for use with a variety of underwater strobe units, depending upon the photographer's preference. The operator can use any strobe with a Nikonos II connector — such as the Toshiba TM-1 — or, with conversion adapter a Nikonos III connector can be used; or a Nikonos II/EO adapter can be fitted to the housing for use with an EO connector.

the sides of the housing are also high grade stainless steel and are sealed by O-rings.

The internal camera mounting plate, baseplate, flash shoe mounts and hold down clamps are high impact plastic held together with stainless steel screws. The machine work on this housing is extremely high quality. Each housing is hand built.

With camera installed, the Marine Capsule weighs 9.5 pounds out of the water and 2.2 pounds underwater.

## FEATURES

In addition to its unusual construction and wide camera/lens capability, the Marine Capsule A contains a number of radical features not found in other under-



water housings. Years ahead of its contemporaries, this housing provides a few interesting clues to future design trends.

While most underwater housings feature an index finger type trigger, the Marine Capsule A has a contoured thumb release. This one inch diameter, uniquely-shaped shutter release is at the top of the hand grip and operates perfectly in either the horizontal or vertical position. The long, large surface area provides extra mechanical leverage for a smooth and effortless shutter release. The photographer's hand does not tire and this design eliminates the possibility of jerky action or camera movement.

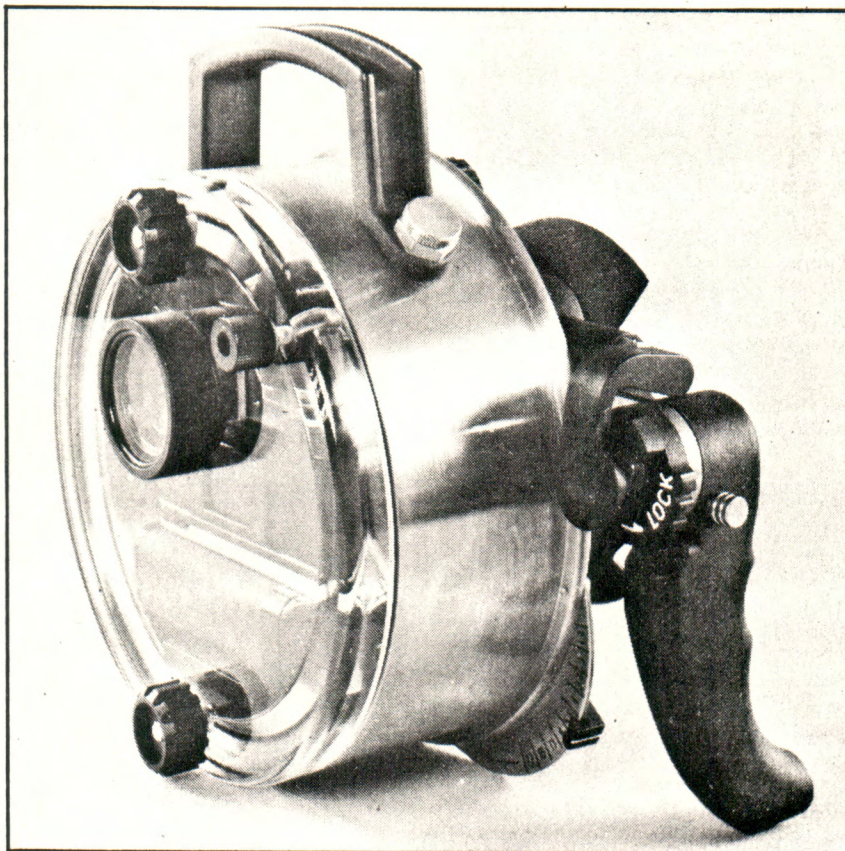
The Marine Capsule A also has an extremely unusual aperture control. In place of a rotating dial or knob, it has a three inch long swinging lever that moves across a five inch quadrant scale in a 90 degree arc, clearly picking out nine different f stops from f1.4 to f22. It is so large a scale that half f stop adjustments can be made with ease and accuracy. The scale is stainless steel with f stop and half f stop calibrations engraved into the metal plate. There is also an A position for automatic exposure.

While most underwater housings anchor the camera with one screw mount, the Marine Capsule A has three separate screw mounts positioned equally 120 degrees apart. A stainless steel tripod screw holds the motor drive firmly to the baseplate inside the housing. At the upper right and upper left of the camera are two rugged clamps which lock it into position. Once it is mounted inside the housing, the camera will not shift in place.

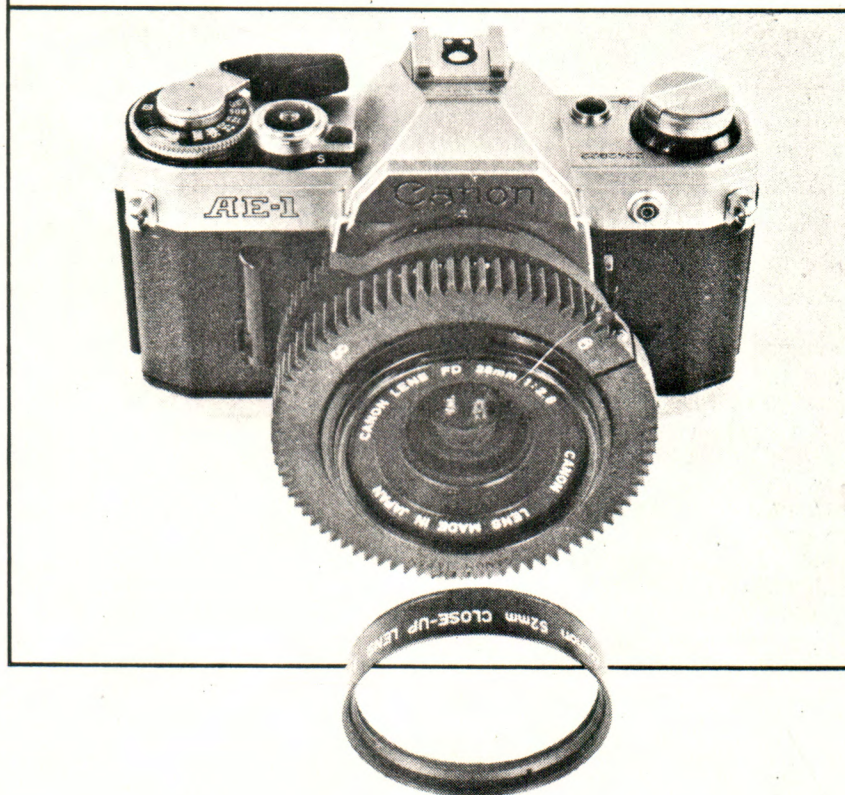
Still another clever device is the built-in mirror. Positioned at a 45 degree angle above the top of the camera, this one inch square mirror allows the underwater photographer to observe the camera's shutter speed knob and frame counter window by looking through the rear door of the housing. The mirror is a reflective metal mounted on a corrosion resistant plastic flange.

### CONCLUSION

Canon's Marine Capsule A is a most impressive underwater camera housing, as is its price. Obviously, it was not developed for the amateur but for the professional or semi-professional photographer who wants super high quality. Canon's housing is both rugged and extremely versatile.



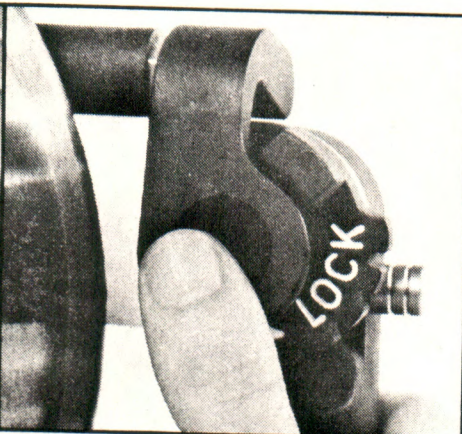
The Marine Capsule A is the only precision built stainless steel housing made for a 35 mm SLR camera. A special adapter (below) known as the Close-Up Lens 240, helps to optically match the lens and housing port.



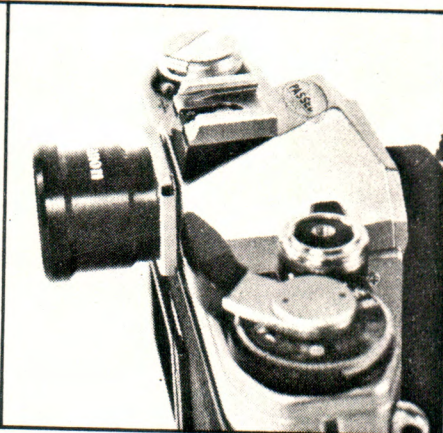




A built-in mirror, positioned above the camera, allows the photographer to view the shutter speed knob from the rear.



The Marine Capsule A features a locking, contoured thumb release for triggering the camera's shutter in a smooth motion.

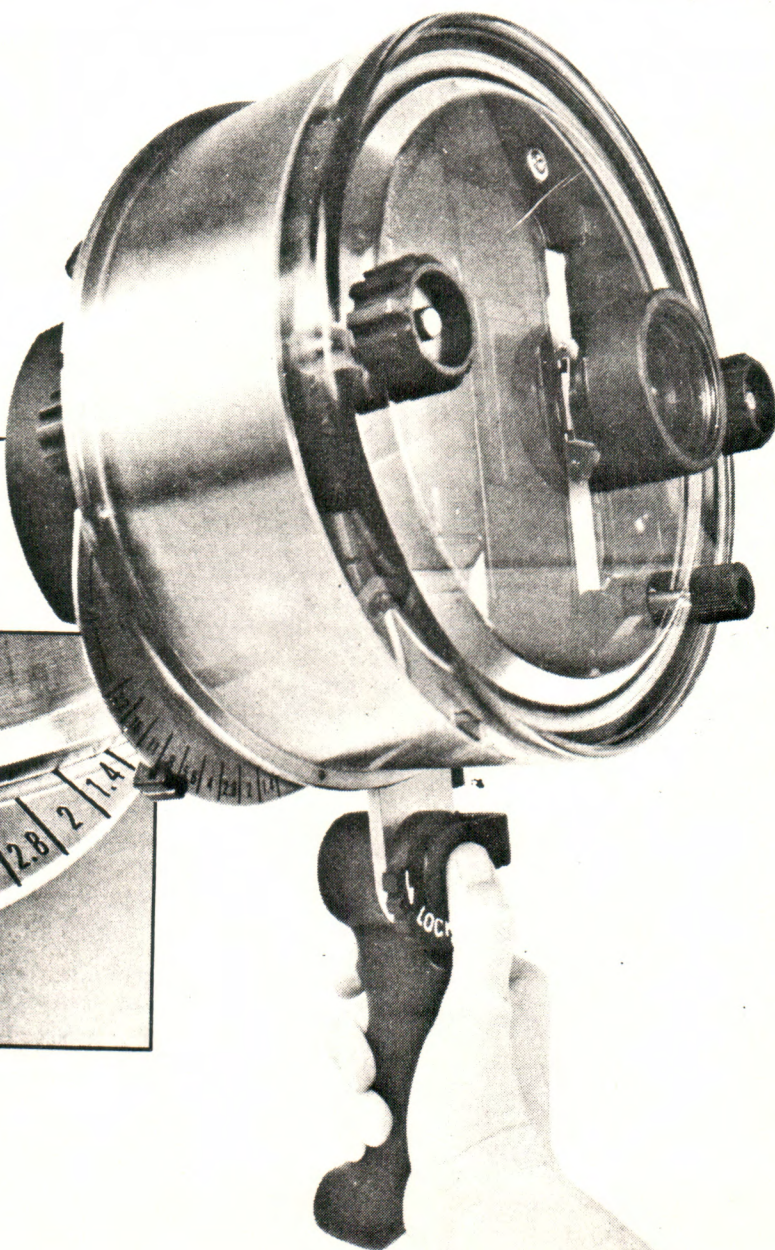
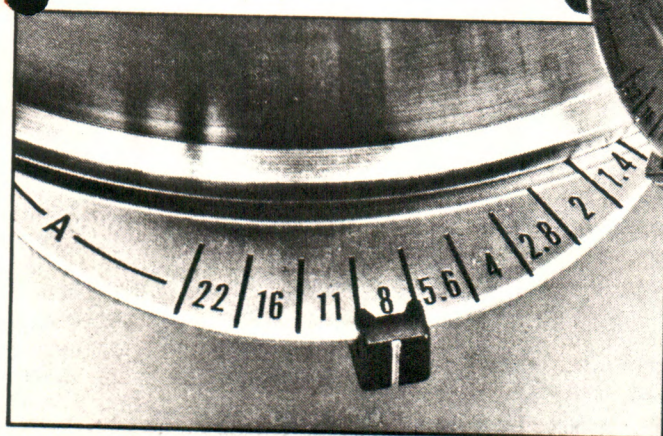


A negative magnifier eyepiece allows viewing the entire picture area through the housing, even while wearing a mask.

It is doubtful that very many Marine Capsules will be sold to sport divers. Yet those who purchase this fine machine should be very satisfied with its performance. In fact, this unique underwater housing is likely to become a collector's item.

For more information and brochures on the Marine Capsule A and Canon cameras write to: Canon U.S.A. Inc., One Canon Plaza, Lake Success, Long Island, New York 11042.

The hand grip can be quickly rotated 90 degrees for vertical format photography. Aperture control is achieved through a unique swing lever and quadrant scale.





# Hypothermia: The Killer Who Comes In With The Cold

(Greek "hypo" meaning "under" and "thermo" meaning "heat".)

During the World War of 1939-45, heavy loss of life at sea resulted in research being initiated into the effects of immersion in cold water on the human body, and too late for countless thousands, it was found that death was frequently due to cold, rather than drowning.

When a lifejacket was worn death occurred from the effect of cold lowering the body temperature to an unacceptable level, and if no jacket was worn, drowning would follow the state of helplessness or loss of consciousness caused by this cold effect.

A third cause of death was found to be the sudden application of very cold water to the face causing a spasm and blockage of the air passage, and slowing or stoppage of the heart - as might occur in jumping from a height into very cold water.

The human body requires an optimum internal temperature in order to function normally - 37° - but it can adapt to ranges in the temperature of its immediate environment, within reasonable limits, given reasonable protection by clothing. When the environment temperature is below that of the body, there is a gradient of heat transfer from the interior of the body to the exterior. The lower the external temperature, the more rapid the rate of heat loss.

Shivering is the initial automatic body response to exposure to cold, and is in fact uncontrollable muscular contractions which produce internal heat to maintain internal body temperature; this mechanism may play an important part in recovery from mild hypothermia. To reduce loss of heat, the body's main action is to reduce the flow of blood through vessels at the body surface and this is obvious to us if we compare the pallor of skin in cold weather with the flush of hot weather.

In certain areas, large blood vessels lie close to the surface with little cover of superficial fat, and in these, the loss of heat is greatest. They have been demonstrated by infra-red scanning, and lie at the base of the neck, in the scalp, the arm pits and sides of the chest, and the groins.

A water temperature of less than approximately 25°C threatens an immersed body with hypothermia, and includes a high percentage of the Australian coastline. The average sea temperature off the coast at Sydney's latitude is 19°C. It is thus evident that hypothermia is not a hazard confined to the cold climates, but extends well into the sub-tropics.

The survival time in cold water will vary with several factors - clothing, sex, build, amount of subcutaneous fat, general physical condition, age, recent alcohol intake, exertion and vomiting.

**Clothing:** Early research suggested that at 5°C an average-sized man unclothed might be helpless from hypothermia in 30 minutes. Clothed, he might last one hour. At 15°C the figures were two and five hours. Clothing reduces heat transfer into the water by providing a layer of body-warmed,

trapped water to act as an insulator. Those who have worn a wet suit will recall the flow of warm water which is released when the suit is removed. Ideally, the outside layer of clothing should be as waterproof as possible, and wool is certainly the best material under this. A commercially available garment-type flotation jacket combining insulating and flotation properties, with particular protection of the maximum heat loss areas, is said to increase survival time four-fold.

**Sex:** The female has greater sub-cutaneous fat deposits than the male and would therefore theoretically have greater resistance to heat loss - fat being a most efficient insulator. However, this advantage is largely cancelled by the smaller body stature and lighter build, which allows for more rapid heat loss.

**Build:** Children (more especially babies) cool rapidly because of their small body size. Babies are at greater risk because of an immature heat regulating mechanism.

**Age:** The other extreme of age is at great hazard because of an impaired temperature regulating capacity, combined with a diminution in fat deposits which accompanies the aging process. Heart disease, unhappily almost the rule, also mediates against prolonged survival.

**Alcohol:** This, apart from being a depressant not a stimulant (contrary to common belief), acts on blood vessels in the body surface to increase blood flow through them, thus increasing body heat loss by some 20 per cent.

**Exertion:** This increases heat loss by increasing heat production, thus raising the gradient of loss to the surface. Slow swimming increases loss by about 30 per cent. An average-sized person, when swimming in a lifejacket will cool 34 per cent faster than when floating. In very cold water skilful swimmers have been known to vanish suddenly underwater following attempts to swim short distances. Exercising will give a sensation of greater comfort, and when combined with alcohol will assist the victim to die warmer and happier, but more quickly.

**Vomiting:** Seasickness to the point of vomiting will increase heat loss through the exertion involved and the heat of the material vomited.

Initial entry into cold water produces no sensation of which we are not all aware, unless the temperature is very low. There may be a sudden initial difficulty in breathing, which eases rapidly with relaxation.

With fall in body temperature, shivering commences as the body attempts to raise or maintain its temperature, but this process inevitably increases the rate of heat loss. In water of approximately 23°C the body loses heat more rapidly than it can produce it, and there is an inevitable continued loss of heat. The victim begins to suffer a sense of exhaustion and depression, and becomes sluggish, reluctant to make an effort, and will even reject assistance.

At a body temperature below 35°C there is clouding of consciousness with loss of consciousness at 30°C.

Below this point death can be expected, with the lower lethal limit about 25°C. There have been documented cases of revival from temperatures well below this, but these are rarities. Below an internal temperature of 30°C there is only a 50 per cent chance of recovery even with immediate removal from the water and full treatment.

## Treatment

In mild or moderate hypothermia the victim will be conscious, blue and shivering.

In severe hypothermia he will be semi-conscious and confused, or unconscious.

He may already have ceased breathing, and may be in cardiac arrest. In this case his ultimate fear may depend on whether you have taken the trouble to become proficient in Resuscitation - mouth to mouth respiration, and/or 'cardiac massage' - the combined procedure being termed 'C.P.R.' - 'cardio-pulmonary resuscitation'. In this extreme case C.P.R. is the prime action, and should be continued until results are achieved or until a qualified person indicates that it may be suspended as being of no further use.

One must always be prepared to recommence C.P.R. at any moment should the patient's condition deteriorate. Severe hypothermia is an emergency.

Otherwise, the purpose of treatment is to raise the body temperature as rapidly as possible, and every effort to do this must be made as C.P.R. is in progress. The following methods may be applied where possible:

1. Place the patient in the warmest part of the vessel, most protected from wind (which generally increases cooling).
2. Remove all clothing. Pat dry. Do not rub. The old method of 'promoting circulation' is better forgotten.
3. Do not discourage shivering - it is producing internal body heat - be thankful that the patient is capable of shivering.
4. The ideal treatment is to immerse the patient's trunk in a bath of water at approximately 40-44°C - as hot as the hand can tolerate with comfort. This may not be as impossible as it sounds, if there is a large vessel in the vicinity. Many possess facilities for this procedure, and a radio call for assistance is worth trying.
5. Failing this, or in the interim, wrap in warmed material of any kind - towels wrung out in hot water, or heated on the engine. Do not wrap in cold blankets, and *certainly not in a space blanket*. Raise the environmental temperature by opening the engine compartment and turning on the galley stove. If the environmental temperature is higher than that of the water from which the patient was taken, do not wrap him in anything until the material to be used is warmer than the environment. Heated towels are best applied to the areas of maximum heat loss - also areas of maximum heat gain.
6. Transfer heat by body contact in a huddle, and exhale warm breath near his mouth and nose.
7. If he is fully conscious and able to drink without gagging, give hot sweetened fluid. Never attempt to give anything by mouth to an unconscious person. **NO ALCOHOL.**
8. Transfer to hospital, having been underway at speed during the entire procedure.

DAVID McLEAN