

is prohibited from carrying pocket knives and other metallic objects that might influence the sensitive instruments carried aboard the ships.

However, a Navy ship designer in Washington said it sounded to him as though that was "going overboard a bit on this non-magnetic business."

The magnetic mine is, perhaps, the most dreadful member in the family of underwater ship-killers. Unlike anchored mines that explode upon contact with a ship, the magnetic mine lurks in shallow waters on the ocean or river bottom.

Mine-Sweeping Methods

Such mines cannot be swept clear by ordinary methods. Instead they require special magnetic methods.

When the British first learned that magnetic mines were being used against them during World War II, they outfitted Wellington bombers with a large wire-filled hoop. The hoop encircled the plane's engines, nose and most of the fuselage.

A special generator carried in the plane created current that was fed into the hoop. The device then became a flying electromagnet. When the futuristic-looking aircraft flew near enough to a magnetic mine for the hoop to be effective, the mine exploded. The blast rocked the airplane and jarred the crew, already nauseated by fumes from the auxiliary engine powering the generator.

Special Cable Proposed

At that time, methods of exploding magnetic mines were discussed at length in British pubs and restaurants as well as in defense quarters.

William Dubilier, inventor of the mica condenser widely used in radios, suggested that a cable be strung across Britain's rivers. Powerful electric generators would pump surges of current into the cable periodically. The idea was to explode the magnetic mines inside the German submarine before the mines could be laid. This not only would "take care" of the mines but the sub and its crew as well.

However, since even magnetic mines are outfitted with a safety device that keeps them from becoming "armed" until desired,

it is questionable whether such a scheme would work.

Minesweepers ordinarily clean out "cabbage patches" by snipping the anchor wires of the mines. The mines leap to the surface and can be exploded by rifle fire. To cut the wires, minesweepers often work in pairs with a big loop of cable trailing between them.

A British device permitted the minesweeper to work independently. The mines were thrust aside of the ship by a cable arrangement which guided them to a clipper. The clipper snipped the mine anchor wire.

Americans watched for mines with radar. Spotted mines were reported immediately to military authorities and were charted so that other ships could look out for them.

In addition to the magnetic mine, the Nazis were reported to have a host of other special-purpose mines. One such mine was tuned to the sounds emitted by ship propellers as they beat against the water. It exploded when a vessel throbbed overhead.

A drifting mine, like a huge death-laden egg, was laid on the incoming tide. Slowly it settled into place in a harbor or river mouth, then sent down its anchor and be-

came "armed." But scientists, noting the difficulty of suspending objects in water, questioned the validity of reports describing the drifting mine.

Another vicious mine reported during World War II was called the Leon. This devilish device made waters unsafe for submarines crawling along the ocean bottom as well as for troop carriers skimming along the surface. The mine, reportedly propeller driven, slowly rose and fell like a yo-yo along an imaginary string. It was particularly hard to clear from waters because it had no anchor line.

As one side brings out new weapons against the other, it seems that an effective defense is quickly found. One answer to the menace of the magnetic mine is the non-magnetic minesweeper equipped with mine-finding instruments. When this defense becomes so effective that the magnetic mine no longer worries the enemy, then something new must be created.

The next thing for military scientists to figure out seems to be what sort of mine will supersede the murderous magnetic monster.

Science News Letter, August 22, 1953

PSYCHOLOGY

Blind Child Needs Time

► WHEN A baby is born blind, it is a great shock and grief to his parents. But the baby himself does not know what seeing is, so he does not know what he is missing. So he is as content as other babies.

By the time he realizes that he cannot see, he can have grown into a happy person able to meet life as well as any child.

Whether or not he does grow this way depends largely on how his parents handle him. Other children in the family, aunts and uncles and grandparents and friends and the neighbors all can help, too. Ways in which they can help are given in a booklet published by the U. S. Children's Bureau, called "The Preschool Child Who Is Blind" (see SNL, Aug. 15, p. 108).

The first and last lesson for the parent of the blind child, according to this booklet, is:

Believe in him and have confidence that he can have a good life. Give him love, affection, good health. See to it that he is taught the skills and has the experiences that will develop his many abilities.

Blind children are mentally about like other children. They can learn to do things such as feeding themselves, dressing themselves, helping mother with the dishes and so on, at about the same age as other children. Blind children may be slower, take longer to do and to learn. This does not necessarily mean they are less bright.

The child who can see and hear sees his mother drop a toy into a box, for example, and hears it drop in. He imitates what he sees and hears. The blind child only hears, so unless mother lets him feel what she is doing as she tells him and does it, he will be slower learning to do it.

Blind babies enjoy play and attention just like seeing babies. Pick up the blind baby often, dance him on your knee, romp with him. He will laugh and dimple and coo just like a seeing baby. Remember, however, to let him know when you are going to pick him up, because since he cannot see you come to him, he may be frightened if he does not get some warning.

Science News Letter, August 22, 1953

INVENTION

Patent Given to Ultrasonic Dishwasher

► SAMUEL BAGNO of Astoria, N. Y., has told patent office officials that he is able to cleanse dishes without hot water, soaps, or even abrasives such as ordinary scouring powders. Furthermore, he reported he could attain a "relatively high degree of sterilization even when using domestic cold water."

He was describing his ultrasonic dishwashing method, now protected by patent No. 2,647,846.

Mr. Bagno's dishwasher consists of a tank that discharges to a drain. Water is fed into the bottom of the tank through a tube running to a faucet. The water is turned off and on at a rate of 20,000 to 40,000 times a second by a special device. This sets up tiny pressure waves in the tank that snatch food away from the utensils. The dishwasher makes no noise because the water flow is interrupted so rapidly that human ears ordinarily cannot hear it.

Science News Letter, August 22, 1953

MOIS-TEC

**Reagent for Determining
Semi-Quantitatively
Low Concentrations of Water**

RAPID — SIMPLE — USEFUL

For Laboratory, Plant or Field Use

Write for Leaflet SNL-MT

R. P. CARGILLE LABORATORIES INC.
117 Liberty St. New York 6, N. Y.