

# Scores Of Lighthouses Grace State's Shores

The shipping lanes of the Great Lakes waters surrounding Michigan are among the busiest in the world. Safe passage through the shoals, reefs and sand bars of this aquatic highway system is dependent on a vast network of lighthouses and other navigation aids.

With the longest freshwater coastline in the world—some

3,000 miles—Michigan has scores of lighthouses within its boundaries—from the awesome isolation of Stannard Rock light in Lake Superior to the Livingstone Memorial light on Belle Isle near the heart of metropolitan Detroit.

Large portions of most Great Lakes voyages require intricate navigation through river passages and harbor channels.

The added hazards of the storms and dense fogs that harass lakes mariners have brought about the construction of the most elaborate navigation system in the world.

TO MEET THE challenge of the lakes, a number of notable lighthouses have been built. Two of the most isolated are at

Stannard Rock and Spectacle Reef.

Stannard Rock, 23 miles out in Lake Superior off Keweenaw peninsula, is the most distant from shore of any lighthouse in United States' waters. The 110-foot concrete tower with its 150,000 candlepower light was constructed in 1877 to warn ships of the half-mile-long reef that it sits atop.

Spectacle Reef light is at the eastern end of the Straits of Mackinac, 10 miles from shore. Twin about 100-foot towers claimed several ships before the 93-foot tower was completed in 1874.

THE MOST POPULAR lighthouses with tourists are those that are located on the mainland or close enough to be seen and photographed easily. There are many such lights in Michigan, most of them still in active service though often unmanned.

Fort Gratiot light near Port Huron on Michigan's east coast has been the site of a light since 1825. The present 82-foot tower was erected in 1881, and its 150,000 candlepower beam guides shipping from a location that is one of the two oldest in the state.

Farther north on the eastern shoreline is Presque Isle, where an historic lighthouse stands near its operating successor. The "old" lighthouse, a stubby tower with three-foot thick walls, operated from 1840 until replaced by the larger lighthouse in 1870.

Another interesting light in Lake Huron waters is the black-bulleted "Huron" lightship visible from highway US-25 near Port Huron. The 13,000 candlepower light marks the western rim of the Lake Huron "vein." The present ship and its predecessors have been on duty since 1883.

THE WESTERN shoreline of Michigan is well-marked by lighthouses from the Straits of Mackinac to the Indiana border.

Interesting because of its geographical location is the Mission Point lighthouse, situated on the 45th parallel halfway between the equator and the north pole, some 15 miles north of Traverse City.

Point Betsie light, located north of the twin cities of Frankfort-Eliberta, was put into commission in 1858, and shipwrecks visible in the clear waters nearby are mute testimony to the importance of this 53-foot tower.

The name Point Betsie is derived—as are several others—from corruptions of French phrases. Point Betsie was originally Pointe Aux Becs Scies, meaning "sawed beam point."

Another example is "Skull-gallees" light that is well-known to the sailboat captains who take part in the Chicago to Mackinac yacht race. This name derives from the French "isle aux galets" or "island of pebbles."

AMONG THE TALLEST lighthouse towers in Michigan are the Big and Little Sable lights, located south of the coastal town of Pentwater.

Little Sable is the taller of the two, causing its 25,000 candlepower light from a tower 108 feet high. Little Sable was the last kerosene powered light

on the Great Lakes, having been converted to electricity in 1954.

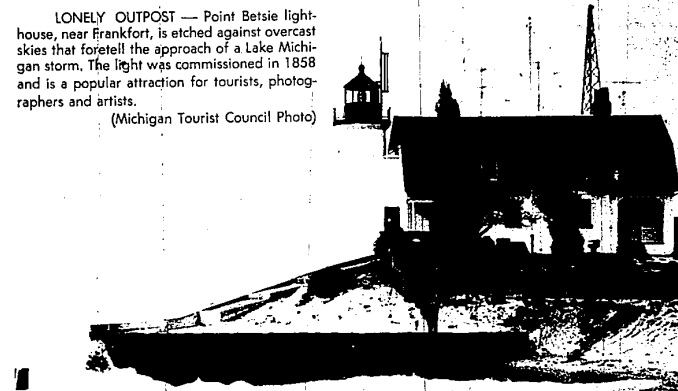
Big Sable light was commissioned in 1857—seven years before its companion—and its 106-foot tower has used whale oil lamps, coal oil, kerosene,

and incandescent oil vapor prior to being equipped with its present electric lamp.

Throughout Michigan there are lighthouses—both active and deserted—that are popular with visitors to the state.

LONELY OUTPOST — Point Betsie lighthouse, near Frankfort, is etched against overcast skies that foretell the approach of a Lake Michigan storm. The light was commissioned in 1858 and is a popular attraction for tourists, photographers and artists.

(Michigan Tourist Council Photo)



## Suffer That Hangover -- Good For The Ears

ANN ARBOR -- Persons who must work in noisy environments might be better off if they suffer morning headaches, and hangovers without taking aspirin.

Recent experiments at The University of Michigan's Kresge Hearing Research Institute indicate that a person's physical condition is an important factor in whether noise causes a loss in hearing ability.

The scientists have developed a new technique using a phase-contrast microscope to detect physiological changes in the inner ear. They have discovered that certain sensory areas of the ear lose red blood cells after sound stimulation.

THEY HAVE LEARNED that other factors, including salicylates (aspirin) also deplete red blood supply to the inner ear.

Scientists regard the new surface preparation technique developed by Dr. J. E. Hawkins Jr. of the institute as an important development for studying the inner ear.

THE U-M doctors have been able to photograph the vessels of the stria vascularis and the tectorial membrane in animals after sound stimulation.

In certain areas of the ear corresponding roughly to that area activated by the particular frequency of sound the red blood cells become depleted. This condition does not occur in control animals who are not stimulated by sound.

It has been shown that salicylates in sufficient dosage will produce a temporary hearing loss that may last for 24 hours. Certain dosages of salicylates produce the same kind of shutting off of the blood supply in spiral vessels as results from sound stimulation.

"THIS MEANS that the man who comes to work Monday with a hangover, who is tired and in a rundown physical condition, and takes aspirin, is likely to experience a reduction of his hearing ability," Dr. Lawrence said.

An important question for those interested in noise-induced hearing loss is whether a temporary loss after sound stimulation represents a decrease in the capacity of the sensory epithelium of the ear to function. If so, notes Dr. Lawrence, any time the ear is exposed to sound, the effect of the stimulus is superimposed upon the existing condition of the ear.

"This could be cumulative if the tissues do not have time to recover to full capacity between periods of sound stimulation. Eventually the capacity of the tissues would be reduced beyond the limit of reversibility and a permanent hearing loss would result."

The U-M researchers determined that if sounds had an effect on the blood supply to the organ of Corti they might be able to detect those changes if a suitable technique could be developed.

They developed a method whereby portions of the sensory epithelium are dissected out, placed in a

medium, and examined under the phase-contrast microscope. The technique makes it possible to observe, after tissues are mounted on a glass slide presenting a longitudinal view of the sensory areas and blood vessels, any changes in the vessels after animals have been subjected to sounds or administered drugs.

In order to study the effects of tones not intense enough to destroy the organ of Corti, guinea pigs were subjected to pure tones sufficient to depress the electrical responses of the ear by 10 to 20 decibels.

Even relatively low intensities of sound depleted red blood cells.

It appears, Dr. Lawrence said, as though temporary hearing loss may be caused by a temporary reduction of the blood supply to a certain area of the inner ear. And susceptibility to permanent hearing loss may be the result of several factors producing a sustained reduction of the blood supply.

"It does not seem reasonable to have the blood supply to the sensory areas of the ear reduced just at the time when it should increase. But the physiological situation is probably much more complicated than that, and what today seems impractical may some day be obviously advantageous."



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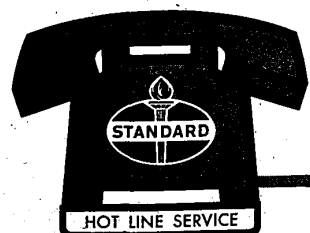
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