

UNITED STATES COAST GUARD
Washington, D.C.

MVI
19 March, 1952
(MV SACHEM a-9 Bd)

From: Chief, Merchant Vessel Inspection Division
To: Commandant
Via: Chief, Office of Merchant Marine Safety

Subj: Marine Board of Investigation; tug MV SACHEM, foundering
59,000 ft. 036° true from Dunkirk Light, on or about 18
December 1950, with loss of life

1. Pursuant to the provisions of Title 46 C.F.R., Part 126, the record of the Marine Board convened to investigate subject casualty, together with its Findings of Fact, Conclusions and Recommendations, has been reviewed and is forwarded herewith.

2. At or about 0600 on 18 December, 1950, the MV SACHEM of 85 GT, length 71 ft., breadth 20 ft., built in 1907, with 12 persons on board, departed from Buffalo for Dunkirk, N.Y., and was last sighted at or about 0710 on this date. On this voyage the MV SACHEM disappeared with all persons on board. The weather conditions on the date of the accident were - wind, NNW 14 miles, intermittent snow squalls and temperature 23° Fahrenheit. The MV SACHEM was located in a sunken condition 59,000 ft. 036° true from Dunkirk Light. On 22 October 1951, the MV SACHEM was raised and found in a seaworthy condition from the standpoint of material and was towed into Dunkirk, N.Y. The 12 persons on board the MV SACHEM on the day of her departure from Buffalo, N.Y. lost their lives as a result of this casualty.

3. The Board made the following Findings of Fact:

"1. The M/V SACHEM, Official No. 204106, is a diesel driven towing tug of 85 gross tons, owned and operated by Dunbar & Sullivan Tredging Company, Buffalo, New York.

"2. The weather on the day of the accident was as follows: wind NNW., 14 miles, intermittent snow squalls, amount of sea unknown, temperature 23°.

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"3. On 18 December, 1950, the M/V SACHEM departed Buffalo, New York for Dunkirk, New York. Exact time of departure is unknown but is presumed to be shortly after 0600 EST. The vessel was last seen, so far as is known, at about 0710 EST, by the Master of the SS VENUS, about one mile west of Waverly Shoal Buoy, Lake Erie. The tug sank, with all hands, 59,000 feet from Dunkirk light on 036° true bearing. It is assumed and there is no reason to doubt, that the following persons were aboard the vessel:

<u>Name</u>	<u>Address</u>
BOICE, Thomas	[REDACTED] Buffalo, New York
BURNS, George	[REDACTED] River Rouge, Mich.
[REDACTED]	[REDACTED] Lincoln Pk, Mich.
DUGGAN, Francis	[REDACTED] Detroit, Mich.
[REDACTED]	[REDACTED] Buffalo, N.Y.
GRAFF, Laverne C.	[REDACTED] Tonawanda, New York
McKINNEY, Russel	[REDACTED] Soo, Michigan
[REDACTED]	[REDACTED] Hopkins, Minnesota
[REDACTED]	[REDACTED] Detroit, Mich.
RYAN, Daniel	[REDACTED] Clinton, Ohio
SHINE, Thomas	[REDACTED] Buffalo, New York
VON FRANKENSTEIN, Hans	[REDACTED]
	[REDACTED] Waukegon, Illinois

"4. The bodies so far found, and their respective dates were:

RYAN, Daniel	5 January, 1951
BURNS, George	5 " "
GRAFF, Laverne C.	22 " "
DUGGAN, Francis	22 " "
BOICE, Thomas	1 August "
McKINNEY, Russel	22 September "
SHINE, Thomas	23 " "
VON FRANKENSTEIN, Hans	23 " "

All of the aforementioned were found on the south shore of Lake Erie, in the vicinity of the casualty, with the exception of Russel McKinney, whose body was found in the Niagara River, near Niagara Falls, New York. The cause of death in all cases, after medical examination, was given as drowning.

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"5. On 6 January, 1951, the M/V SACHEM was located and identified in about 85 feet of water resting right side up on the bottom of Lake Erie. Inclement weather prevented salvage operation at the time, however, on 22 October, 1951, the owners successfully raised the sunken tug and towed it to Dunkirk, New York. The bodies of the four missing men were not in the tug.

"6. The following persons were questioned by the board:

[REDACTED] Vice-President, Dunbar &
Sullivan Co., 2312 Buhl Building, Detroit, Michigan

[REDACTED] Superintendent, Dunbar &
Sullivan Co., 2312 Buhl Building, Detroit, Michigan

[REDACTED] Former Master of M/V SACHEM
[REDACTED] Tonawanda, New York

[REDACTED] Master, SS VENUS
[REDACTED] Buffalo, New York

[REDACTED]
[REDACTED] Buffalo, New York

[REDACTED] (Professional diver)
[REDACTED] Tonawanda, New York

[REDACTED] Superintendent, Merritt, Chapman &
Scott, 18316 East Park Drive, Cleveland, Ohio

[REDACTED] (Professional diver)
[REDACTED] Buffalo, New York

[REDACTED] (Part-time diver)
[REDACTED] Lackawanna, New York

[REDACTED] (Salvage worker)
[REDACTED] Irving, New York

[REDACTED] Tugman
[REDACTED], Buffalo, New York

[REDACTED] Tugman
[REDACTED] Buffalo, New York

[REDACTED] Tugman
[REDACTED] Buffalo, New York

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Depositions were obtained from the following
professional divers:

[REDACTED] Bronx, New York

[REDACTED]
Manhattan Beach, Maryland"

4. The Board made the following Conclusions:

"7. The M/V SACHEM is a converted steam tug. The conversion to diesel power having occurred during the early part of 1950. The vessel was last inspected as a steam tug 2 September, 1949, in the St. Ignace, Michigan zone. It commenced operation as an uninspected motor vessel the latter part of September, 1950, in the Detroit River area. In the early part of December, 1950, it was working out of Dunkirk, New York. It had towed some equipment to Buffalo, New York and was returning to Dunkirk, New York, when the sinking occurred.

"8. The exact time of departure is unknown, though it is reasonably certain it was shortly after 0600 EST, as a tug headed up the lake was seen in the vicinity of Waverly Shoal Buoy, Lake Erie, shortly after 0700 EST. The weather for that time of the year was not unseasonably cold, but it was several degrees below the freezing point of 32° Fahrenheit. There were intermittent snow flurries and though the wind was not unduly strong, a vessel 72 feet in length could be adversely affected. The Master of the SS VENUS stated in his testimony that there was no appreciable sea that day, but there again, everything is relative. A sea that had no effect on a large vessel fully loaded, could cause discomfort to a small tug. It is very likely there would be ground swells in any event.

"9. The pilot house log was recovered in the original salvage attempt and copies of the entries are included in this report. They, in themselves, do not give any hint as to the cause of the sinking. They do mention on different dates delays because of minor mechanical failures, but from 11 October, 1950 to 13 December, 1950, the date of the final entry, there is nothing of any consequence noted in the log. Personal diaries and records of Von Frankenstein and Reynolds recovered in June, were examined by the board and there was nothing of significance in these.

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"10. On 22 October, 1951, at 0930, the M/V SACHEM was raised to the surface of Lake Erie, by a salvage crew, and towed into Dunkirk, New York. The vessel was pumped out during the night and on the morning of 23 October, 1951, Board Members inspected the vessel. The engine room and engine were found in good condition, considering the time the vessel was submerged, with no outward signs of anything wrong. The engine was connected with the pilot house control, which control was in the "stop" position. Sediment, silt and rust, etc., clearly indicated that was its last position and that it had not been moved. The engine itself was securely mounted to the bedding with no signs of excessive vibration. The framing and plating on the engine room shipside were found in good condition, with no cracked paint or loose rivets or other signs indicative of excessive vibration. A four inch gate valve connected to the bilge suction was found one third open. This line led to a pump and ultimately to an overboard discharge also fitted with a valve partly open. This in itself is not significant as it would be a normal operating procedure to pump the bilge from time to time. The seacocks and all piping were found in a sound condition, with no breaks or fractures discernible.

"11. The pilot house was examined and the helm and rudder were found to be in the "hard right" position. The steering gear was the "Montgomery Elevator" type, where there is but one helm for both the electric and hand gear. Upon the failure of electric power, the hand gear is automatically engaged. The helm was moved in the Board's presence and the rudder brought back to amidships. The alarm bell switch was in the open position indicating that the alarm bells had not been sounded.

"12. Inspection of the accessible parts of the hull, forward and aft, after being alternately raised in slings, by the derrick scow, that effected the salvage job, disclosed no fractures or openings of any kind in the hull, but rather indicated the plating and riveting to be in a seaworthy condition. In any event, the M/V SACHEM is now afloat in Dunkirk Harbor and is not making any water. It is the owners' intent to tow the SACHEM to Detroit, Michigan, where the vessel will be drydocked and inspectors from the local U.S. Coast Guard Office, Marine Inspection, will examine the part of the underwater body that was inaccessible to the Board in Dunkirk, New York.

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"13. It must be realized that the exact cause of the sinking can never be definitely stated, but it is reasonable to assume it was due to one of the following reasons; the temperature on the 18th December, 1950, was below freezing. It is possible the spray and sea were sufficient to build up ice coating on the cabin and pilot house so as to adversely affect the metacentric height and cause the vessel to become unstable. In this condition, if the rolling momentum reached the critical range and synchronized with a heavy swell, the vessel could have capsized. Another, and possibly a more realistic theory, is that the SACHEM would be steering approximately SW on its course to Dunkirk, New York. The wind was NNW, which put it right abeam or slightly abaft abeam on the starboard side. A particularly heavy wave, i.e., a "Seiche Wave", (a phenomenon wherein one large wave is unaccompanied by preceding or following waves of comparable size and not dependent upon strong winds for its formation.) These waves are not unknown on the Great Lakes, although recorded instances of their occurrences have been infrequent. Assuming such a wave was sighted to starboard, the pilot no doubt would attempt to head into it, hence the hard right position of the helm and rudder. It would also be natural to stop the engine momentarily to lessen the impact. This would explain the stopped position on the pilot house control. The fact that all the windows in the pilot house were found broken by the first divers to descent to the SACHEM, lends credence to the aforementioned theory. Also that the tug had a minimum of freeboard.

"14. The speed with which the SACHEM sank can only be guessed. However, there must have been a short interval as all of the crew were able to leave the vessel. The member or members normally in the engine room would have found it practically impossible to ascent the stairs and reach the landing on the main deck and force the steel doors leading outside, if the vessel was submerged. Also any crew men in the forward forecastle, if any were in there, would very likely have been trapped. One must conclude that there was at least a short interval in which possibly the lifeboat was launched, or was in the process of being launched. In any event, the lifeboat was found on the south shore of Lake Erie in the vicinity of Sunset Bay, about a week after the sinking. Board members later inspected it and it was found to be seaworthy.

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Some of the bodies found had on life preservers, while some were without any clothes or just shreds of clothing. Exposure to the elements and shore ice could account for the latter condition.

"15. To conclude this report, the evidence indicates that the vessel was swamped and sank, rather than capsized and sank. The vessel has been salvaged and towed to Detroit, Michigan, for possible reconditioning and employment again as a towing tug."

5. The Board made the following Recommendations:

"16. Since weights and location of machinery are the same now as when the vessel sank, it is recommended that before the vessel is again allowed to operate, that the owners be required to incline the vessel and also have a stability curve calculated to determine the exact criterion of stability of the M/V SACHEN.

"17. It is recommended that no further action be taken and that the case be closed."

REMARKS

6. The Board advances two theories for the foundering of the SACHEN. First, that she encountered a particularly heavy wave which caused her to swamp and sink, and second, that she iced up, capsized and sank. Since no persons survived this casualty and no evidence with respect to the conditions of operation at the time of foundering is available, neither theory for the foundering of the SACHEN is entitled to preference over the other.

7. Shortly prior to foundering the SACHEN was converted to diesel propulsion with large increase in power over that available previously when she was a steam vessel. It appears that a possible corresponding marked increase in rudder forces and in the size and proportion of bow wave may have been a contributing factor to the SACHEN's foundering.

8. Recommendation 16 of the Board states in effect that the owners be required to incline the vessel and also have a stability

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curve calculated to determine the exact criterion of stability before the MV SACHEM is again permitted to operate. The Coast Guard has no statutory authority to insist on this requirement as a condition of operation of an uninspected vessel. In this connection, the determination of the stability characteristics of the MV SACHEM has been ordered under the authority of R.S. 4450, as amended, for the purpose of determining the probable cause of her foundering. This determination, when made, will be furnished to the owners of the SACHEM for guidance and made a part of this record.

9. The following bills are now under consideration by Congress relating to the standard of safety of motor vessels:

- (a) H.R. 2317 - A bill to provide that certain vessels shall be subject to the laws relating to steam vessels, and for other purposes.
- (b) H.R. 3657 - A bill to provide that certain vessels be subject to the laws and regulations relating to the inspection, safety, and navigation of steam vessels.
- (c) H.R. 3646 - A bill to provide that certain vessels propelled by gas, fluid, naphtha, or electric motors shall be subject to certain laws relating to the inspection and personnel of steam vessels.
- (d) S. 1286 - A bill to amend the Act of June 20, 1936, so as to broaden the application of laws governing the inspection of steam vessels to vessels propelled by internal-combustion engines.
- (e) H.R. 7710 - A bill to provide that certain vessels shall be subject to the laws relating to steam vessels, and for other purposes.
- (f) S. 647 - A bill to provide that certain vessels shall be subject to the laws relating to steam vessels, and for other purposes.

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10. Subject to the foregoing remarks, it is recommended that the Findings of Fact, Conclusions and Recommendations of the Marine Board of Investigation be approved.

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25 March 1952

From: Chief, Office of Merchant Marine Safety
To: Commandant

Forwarded, recommending approval.

APPROVED: MAR 28 1951

A. C. RICHMOND
Rear Admiral, U. S. Coast Guard
Acting Commandant