

UNITED STATES COAST GUARD

ADDRESS REPLY TO:
COMMANDANT
U.S. COAST GUARD
HEADQUARTERS
WASHINGTON 25, D.C.

23 January, 1950
FILE: MVI (CG-MIN-MB
13K180 HALCYON a-5)

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

Subj: Marine Board of Investigation; Explosion and fire on board Motorboat
13K180 (HALCYON) on 10 July, 1949, resulting in loss of life.

1. Pursuant to the provisions of Title 46 C.F.R. Part 136, the record of the Marine Board convened to investigate subject casualty, together with its Findings of Fact, Opinions and Recommendations, has been reviewed and is herewith forwarded.

2. The motorboat 13K180 (HALCYON), built in 1930, 37 feet in length propelled by one gasoline engine with guests on board in preparation for a days cruise was fueled at the gas dock, Corinthian Yacht Club, Washington, D. C. At about 1350 on 10 July, 1949, approximately 20 minutes after fueling, upon activating the electrical propulsion engine starter, an explosion occurred causing the vessel to disintegrate, burn and sink. The weather conditions at the time of this casualty were excellent.

3. As a result of this casualty, the following two guests aboard the 13K180 (HALCYON) lost their lives.

Maj. Gen. Vernon E. Prichard, Fort Myer, Virginia
Mr. Wilfred L. Painter, Athens, Greece

4. The Board made the following Findings of Fact:

"(1) At about 1350 on 10 July, 1949, an explosion and fire occurred aboard the MB HALCYON at the fueling dock of the Corinthian Yacht Club, Washington, D. C., causing the death of Major General Vernon E. Prichard, USA, and Wilfred L. Painter, and serious injuries to Captain Sergius N. Ferris Luboshes, USNR, and Johannes Johannesen.

(2) The vessel involved is:

The MB HALCYON, 13K180, a 37 foot Wheeler Trunk Cabin Cruiser, with a single bulkhead separating the forward cabin from the engine and gasoline compartment, decking over engine and gasoline compartment approximately 36 inches above keelson, built

in 1930, V shaped hull, propelled by a 95 HP gasoline driven motor, owned by Bolling R. Powell, Jr., Box 416, Vienna, Virginia.

(3) Henry A. Dudley, Jr., with the permission of Bolling R. Powell, Jr., owner of the HALCYON, arranged for a pleasure cruise on 10 July down the Potomac River and invited seven of their mutual friends to make the trip.

(4) Mr. Dudley, the host, Captain Luboshez and Mr. Painter were the first to arrive aboard the HALCYON. They were followed by the other guests, General and Mrs. Prichard, Colonel and Mrs. Anthony J. Drexel Biddle, and Mrs. Leslie Williams.

(5) Upon boarding the HALCYON Dudley discovered the starter battery was low, so he started a gasoline charging unit located in the after cockpit. He then went to the Yacht Club steward, Mr. Johannes Johannesen, and requested his assistance in starting the engine. He also inquired as to the whereabouts of Thomas Miller whom he had engaged for the day to pilot the HALCYON. Johannesen agreed to help start the engine after he had finished with his present duties.

(6) Mr. Miller arrived aboard the HALCYON at about 1110 and was informed by Mr. Dudley the engine would not start due to a low battery, and that the charging unit was in operation charging the 6 volt starter battery. Johannesen came aboard and after several unsuccessful attempts to start the engine suggested to Mr. Dudley that he get a fully charged battery. Miller procured a fully charged battery and Johannesen hooked it up in a jumper fashion, directly to the magnetic starter switch terminals. After starting the engine, the borrowed battery was disconnected by Johannesen and left in the engine space bilge. The leads were spread apart, one forward, and the other aft, to prevent sparking. At Dudley's request Johannesen then brought the HALCYON around from her berth at the west dock and moored her, starboard side to, abreast of the fuel pumps.

(7) After warning the guests aboard the HALCYON not to smoke while fueling, Johannesen started filling the starboard gas tank. He personally filled the starboard gas tank, and then handed the hose to Thomas Miller who filled the port tank. No spillage or overflow was noted by either Johannesen or Miller during the fueling; however, Mr. Dudley stated he observed water or gasoline

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around the starboard filling line cap after fueling.

(8) Immediately after fueling the three ventilating fans were turned on by Miller, and were in continuous operation some twenty minutes prior to the explosion. Before starting the engine, Miller lifted the center hatch to see if he could detect gas fumes. Miller reported to Johannesen that he got a whiff of gasoline fumes. Johannesen told Miller to let things stand awhile to air out the bilges. Miller rechecked for gas fumes about twenty minutes later and told Johannesen he didn't smell anything, so he pushed the starter switch several times, and the engines just rocked and would not turn over. Miller then asked Johannesen to come aboard to see if he could start the engine. Johannesen came aboard, looked into the engine space and told Miller to push the starter switch. The results were the same as before. Johannesen then told Miller to try again. It was at this activation of the starter that the explosion occurred. None of the witnesses were able to state definitely whether or not the engine actually started at the time of the explosion.

(9) Johannesen was standing in the main cabin looking into the open hatch directly over the engine when the explosion occurred. Miller was at the steering station standing by the wheel located on the port side of the after part of the forward cabin bulkhead. Miller was blown overboard to port and swam ashore. Johannesen was apparently blown upward and struck the top of the main deck house. He sustained serious back and shoulder injuries and was badly burned about the body. He managed to crawl to the gunwale and let himself fall into the water, and was subsequently rescued. Major General Prichard and Mr. Painter, who were seated forward of the transom on a thwartship settee, were killed. Captain Luboshez, last seen seated in the after cockpit forward of Prichard and Painter, had his leg caught in the wreckage and was pulled clear by Colonel Biddle and Mr. Dudley. Luboshez sustained serious leg injuries. Colonel and Mrs. Biddle, and Mrs. Prichard were in the forward cockpit and managed to jump clear of the HALCYON. Mrs. Killisms seated on top of the forward cabin directly behind the hatchway leading to the forward cockpit jumped overboard and swam ashore. The host, Mr. Dudley, was standing on deck abreast of the main deck house holding the HALCYON alongside the dock as the stern line had been cast off in preparation to leaving.

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- (10) While loading gasoline all the hatches were in place. The hatches over the engine space were raised for inspection after fuelling. The hatch in the after cockpit leading to the fuel tank compartment was not lifted for detection of gas fumes either prior or subsequent to loading gasoline.
- (11) The fuel tanks were installed in a forward and aft position in the wings under the after cockpit floor beams. The filling line was a 1-1/2" galvanized iron pipe that protruded about 1-1/2" above the deck outside of the cockpit coaming and was covered with a conventional bronze pipe cap.
- (12) The engine space had both natural and mechanical means of ventilation. There were four cowl ventilators, two on each side of the main deck house piped into the engine space wings forward and aft of the engine. The gasoline compartment was directly under the after cockpit and had three cowl ventilators that passed through the transom.
- (13) The mechanical ventilation was a combination of the plenum and exhaust systems. One fan was located on the center line about 6 to 8 inches above the keelson that directed the flow of air towards the engine. Another fan was located aft of the engine about one foot above the keelson that directed the flow of air towards an exhauster type fan attached to an air duct that passed through the transom and discharged over the stern.
- (14) The HALCYON's propulsion unit was a 95 horsepower Gray Marine Engine equipped with a backfire flame arrester and a starting motor of explosion proof design.
- (15) An examination of the HALCYON on the marine railway at the Corinthian Yacht Club on 14 July revealed only her box and bottom sections above the bottom planking to be intact. The entire after section above the ribs from the forward cabin bulkhead was completely demolished primarily by the explosion. The port gasoline tank was blown clear of the boat while the starboard tank although torn from its fastenings was lying in the starboard bilge abreast of the engine.
- (16) A vent line fitting removed by the District of Columbia Fire Department from the starboard gasoline tank that was fractured in the explosion disclosed a latent defect in the side wall of the bend.

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(17) The HALCYON was a total loss. Her estimated value is reported to be about \$11,000."

5. The Board expressed the following Opinions:

"(1) It is believed that the starboard gasoline tank overflowed as evidenced by Mr. Dudley's testimony, page 32, and that gasoline did run into the boat through the opening between the filling line and the deck plates. A second possible source of gasoline entering the inclosed compartment was from the defective vent line fitting attached to the top of the starboard gasoline tank.

(2) The method used to detect gas fumes was not adequate under the circumstances, especially since there was evidence of explosive vapors when the hatch over the engine was first opened. Gasoline vapors being heavier than air will not escape from low lying pockets, and cannot be detected normally by merely opening a hatch. There is no evidence that anyone actually went into the engine space, nor is there evidence that anyone raised the hatch in the after cockpit for examination of gasoline storage tank compartment.

(3) After a careful review of the assembled evidence in this case, the Board is of the opinion that the explosion was caused by the igniting of the explosive vapors that accumulated in the engine and gasoline storage compartment during the fueling operation.

(4) With regard to the igniting of the explosive vapors, the Board is of the opinion it was caused by a spark in the high voltage ignition system, either from the coils, distributor, or from a brush arc in the starting motor. The fact that the HALCYON was in operation prior to fueling does not preclude the theory that the ignition system was not faulty, as there was no evidence of explosive vapors in the inclosed engine compartment prior to fueling.

(5) Another possible source of ignition could have been the bare ends of the terminal leads to the borrowed battery making contact with the engine casing or other conductor. It is to be noted that after this battery was used to start the engine prior to leaving the West Dock for the Fueling Dock, it was disconnected and left lying in the bilge abreast of the engine.

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(6) It appears from the record that the HALCYON was in close conformity with the recommended practices for the care and safe operation of motorboats.

(7) The record does not reflect evidence of culpable or criminal fault on the part of any person or persons aboard the MB HALCYON."

6. The Board made the following Recommendation:

"(1) It is recommended that this case be closed without further action, and that the record of proceedings together with the Findings of Fact, Opinions, and Recommendations of the Board be forwarded to the Commandant for his consideration."

REMARKS

7. Contrary to paragraph 6 of the Board's Opinions, a review of the record of subject casualty does not establish the conclusion that the motorboat 13K180 (HALCYON) was in close conformity with the "Recommended practices for the care and safe operation of motorcraft" as appended to the "Motorboat Regulations".

/s/ P. A. Ovenden
P. A. OVENDEN
Acting

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

Forwarded, recommending approval.

/s/ H. C. Shepherd
H. C. SHEPHEARD

APPROVED.

JAN 26, 1950

/s/ Merlin O'Neill
MERLIN O'NEILL
Vice Admiral, U. S. Coast Guard
Commandant