

UNITED STATES COAST GUARD

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COMMANDANT  
U. S. COAST GUARD  
HEADQUARTERS  
WASHINGTON 25, D. C.



MVI  
(MONROVIA - ROYALTON  
C-9 Bd)  
21 March 1960

Commandant's Action

on

Marine Board of Investigation; collision between the  
SS MONROVIA (Liberian) and the SS ROYALTON (Canadian),  
Lake Huron, 25 June 1959

1. The record of the Marine Board of Investigation convened to investigate subject casualty, together with its Findings of Fact, Opinions and Recommendations has been reviewed.

2. At 1357, CDST, 25 June 1959, the Liberian vessel SS MONROVIA collided in dense fog with the Canadian bulk freighter SS ROYALTON in Lake Huron 104°T from Thunder Bay Island Light, Michigan. As a result of this collision the MONROVIA sank and the ROYALTON suffered considerable bow damage. No lives were lost and no injuries were reported to either vessels' personnel. The ROYALTON was radar equipped but the MONROVIA was not.

3. The MONROVIA inbound to Chicago dropped her Canadian Pilot at the Lake Huron Lightship and took departure at 0215, 25 June 1959. A course of 353°T was set and full ahead was rung up on the engine order telegraph which gave the vessel an estimated nine miles per hour over the ground. The master was at the conn upon leaving the Lightship and remained on the bridge up until the collision. The vessel was not equipped with radar and at no time was a lookout posted on the bow. At 0340 visibility decreased and fog signals were commenced. Harbor Beach Light was passed abeam unseen, but the fog signal was heard. Course was changed to 344°T but no reduction in speed was made. At 1200 the master estimated the vessel's position off Thunder Bay based on one RDF bearing on Thunder Bay Island Light and a fathometer sounding. Course was changed to 340°T and speed was reduced to eight MPH. At 1330 after another RDF bearing on Thunder Bay Island Light and another fathometer reading the course was altered to 020°T presumably to give Thunder Bay Island Light a wide berth. Approximately five minutes later fog signals from the vessel which later proved to be the ROYALTON were heard from dead ahead to slightly on the port bow. The signals continued to be heard from the same general bearing and became increasingly louder until about 1354 when the master ordered a one blast signal as an invitation to pass port to port and ordered the vessel's rudder hard right. No reply was heard to this one blast signal but the ROYALTON's fog signals continued to be heard. Three minutes after the first one blast signal the MONROVIA,

still swinging on a hard right rudder, sounded a second one blast signal. Moments thereafter, at approximately 1357, the ROYALTON appeared out of the fog 100 feet away on the port bow heading directly toward the MONROVIA at an angle of between 60 and 90 degrees. The vessels collided at an angle of about 90° with the MONROVIA swinging to the right so as to scrape her port side across the ROYALTON's stem ultimately holing the MONROVIA just abaft the bridge.

4. The SS ROYALTON en route from Duluth, Minnesota to Montreal, Quebec with 10,670 tons of grain, took departure from Detour Reef Light at the northern end of Lake Huron at 0615, 25 June 1959 steaming full ahead at 11.4 MPH. Fog set in at 1145, fog signals were commenced and a lookout was stationed on the bow. Standby was rung up on the engine order telegraph and compliance by the engine room automatically resulted in a reduction of speed to 11.2 MPH. At 1305, while on course 161°T, Thunder Bay Island Light was observed by radar to be abeam 9.6 miles distant. This position was approximately 1.4 miles west of the westerly limit of the downbound course recommended by the Lake Carriers' Association. At this time course was changed to 159°T. At about 1320 a radar target later determined to be the MONROVIA was sighted approximately 13 miles, 2 degrees on the starboard bow. The heading was altered five degrees to the left and was maintained for 12 to 15 minutes when another alteration of five degrees to the left was made and held for 8 to 10 minutes. No radar plot was made but when the target bore 12 degrees on the starboard bow 10 miles distant the master and mate assumed the two vessels would pass starboard to starboard at least one mile off. At about 1340 with the target bearing 30 to 35 degrees on the starboard bow five miles away course was changed another 12 degrees to the left to 137°T and speed was reduced to slow ahead, about three MPH. At the same time a three blast fog signal was first heard from the MONROVIA bearing about 30° on the starboard bow. Having been previously advised of intercepted radio information that an unidentified salt water vessel was upbound on the downbound course, the master assumed that the approaching vessel was the one referred to. During the next few minutes the master made two attempts to contact this vessel by calling, "Salt water ship upbound on the downbound course," or words to that effect. No replies to these calls were received. At about 1342 or 1343 with the vessels four miles apart a two blast signal, apparently to indicate a starboard to starboard passing, was sounded by the ROYALTON. No reply was heard and when the vessels had closed to 2.5 to 3 miles a second two blast signal was sounded to which a one blast signal was heard in reply. Immediately the danger signal was sounded. Either before or after the second two blast signal the engine was rung full astern followed by double (emergency) full astern. Approximately one-half minute before the collision the bow of the MONROVIA appeared out of the fog 45° on the starboard bow

400 feet away apparently swinging to a hard right rudder. At 1357 the two vessels collided as previously described with the ROYALTON estimated to be dead in the water or nearly so, swinging to the right past a heading of 160°T due to the engine going astern.

5. After contact the ROYALTON stopped and stood by but lost sight of the MONROVIA in the fog. Her damage was confined to the extreme bow with flooding of the forepeak compartment but no assistance was required.

6. Immediately following the impact the master of the MONROVIA ordered the engineers to start pumping No. 2 hold. The engineer on watch opened the ballast suction line valves to No. 2 and No. 3 holds but before he could start the pumps he was called on deck to abandon ship. The ballast suction line valves were left open. None of the other officers entered the lower engine room following the accident although there appears to have been ample time before the vessel sank to have appraised the damages and the possibility of saving the ship. Some confusion resulted when attempts were made to lower the lifeboats due, apparently, to the crew's unfamiliarity with the equipment. In this connection the Board found that no lifeboat drills had been held during the voyage. Within an hour after the collision the crew of the MONROVIA had successfully abandoned ship and were taken on board the American bulk carrier SS NORMAN W. FOY which was also standing by. The master and some of the crew then reboarded the MONROVIA to determine whether the flooding could be controlled. At this time the vessel was found to be making water in No. 2 and No. 3 holds and the machinery spaces and it was decided that no action could be taken to save the vessel. After removing some personal gear to the FOY the group returned to the MONROVIA a second time for additional gear. Navigation records were apparently left on board. At 0010, EST, 26 June 1959 the MONROVIA sank in 21 fathoms of water.

#### REMARKS

1. The principal cause of this collision was the failure of the MONROVIA to reduce her speed to bare steerageway and navigate with caution upon hearing, apparently not more than four points from right ahead, the fog signal of the other vessel.

2. The failure of both vessels to follow the tracks recommended by the Lake Carriers' Association and the Dominion Marine Corporation for vessels navigating the Great Lakes was a factor in this case since had they been adhered to the resultant separation would have precluded collision.

It is noted, however, that the easterly limits of the upbound course between Middle Island Light and Thunder Bay Island Light are drawn so that an upbound vessel is forced to pass close to or cross the 22 foot shoal marked by Thunder Bay Island Shoal Lighted Bell Buoy. Considering the MONROVIA's draft of 19'3" aft, coupled with the fact that her navigation was by the uncertain method of RDF bearing and fathometer readings, her departure from the recommended track and change of course to 020°T at about 1320 or 1325 is understandable. In this connection the Board's opinion No. 10 and the inference in opinion No. 2 that the lack of a pilot aboard the MONROVIA contributed to this collision, is not concurred in. Even if a pilot were at the conn the master, being solely responsible for the navigation of his vessel, could properly have ordered that Thunder Bay Island Shoal Lighted Bell Buoy be given a wide berth despite the course recommendations by the Lake Carriers' Association and the Dominion Marine Corporation. It should also be noted that the master of the ROYALTON with over 20 years' experience on the Great Lakes did not comply with these recommendations and did in fact navigate his vessel to the westward of the westerly limit of the downbound course.

3. The Board's opinion that the situation was one of crossing vessels is not concurred in. The Board found that the ROYALTON first observed the radar target which later proved to be the MONROVIA 37 minutes before collision, 13 miles away, 2° on the starboard bow. The ROYALTON at that time was steering 159°T and had she known the MONROVIA was on the nearly reciprocal course of 340°T her assumption that the situation was one of meeting vessels (Record of Proceedings, page 153) might have been justified. Actually, since the ROYALTON did not plot the MONROVIA, did not establish radio telephone communication and knew only that there was supposed to be an upbound salt water ship somewhere in the vicinity, she could only speculate whether this upbound ship would present a meeting or crossing aspect. The ROYALTON was only a little better informed as to meeting or crossing rules than if she had had no radar and no radio telephone. In this connection it is further considered that, in the absence of any determination as to the course or intention of the MONROVIA, the course alterations to the left on the part of the ROYALTON were ill advised.

4. The Board also took notice of the MONROVIA's failure to have a lookout on the bow. Such failure may also have contributed to the casualty since a proper lookout could possibly have heard the ROYALTON's two blast signals.

5. As set forth by the Board, the failure of the MONROVIA to sound the danger signal when she received no reply to her one blast signals constituted violation of Rule 23, (33 USC 291); however, since the ROYALTON was already aware that a dangerous situation was developing and was in fact taking evasive action it is considered doubtful that this failure in any way contributed to the collision.

6. With respect to the Board's recommendation No. 1, The Agreement between the United States and Canada for the Promotion of Safety on the Great Lakes by Means of Radio applies to vessels of all countries as provided in Article 3 of that Agreement. Article 1, paragraph 3, provides further that the Regulations annexed to the Agreement are an integral part thereof and also apply to vessels of all countries.

7. The principle of separate tracks for vessels as a means of reducing the number of collisions is well recognized. To be fully effective however, such tracks must not conflict with statutory rules or otherwise be inconsistent with the established principles of prudent navigation.

8. It is considered that there is sufficient evidence to warrant citing the SS MONROVIA for failing to slow to bare steerageway when the fog signal of the other vessel was heard and for failing to sound the danger signal. The Board's recommendation No. 5 in this connection is approved to the extent that the determination as to whether a penalty should be assessed and the amount thereof is a function of the District Commander having jurisdiction.

9. Recommendation No. 6 that the ROYALTON be cited for failing to give way when burdened in a crossing situation is disapproved for the reasons set forth in paragraph three above.

10. Subject to the foregoing remarks the record of the Marine Board of Investigation is approved.



A. C. RICHMOND  
Vice Admiral, U. S. Coast Guard  
Commandant

RECORD OF PROCEEDINGS

of a

MARINE BOARD OF INVESTIGATION

convened at

Detroit, Michigan

to inquire into and investigate the  
collision between the SS ROYALTON  
(Canadian) and the SS MONROVIA (Liberian),  
with no loss of life

in Lake Huron

on 25 June 1959

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## FINDINGS OF FACT

After full and mature deliberation, the Board finds as follows:

1. The SS MONROVIA, Liberian registry, was an ocean dry-cargo freighter of "Empire" type, classed by Lloyds, of 6,674 gross tons and 4,248 net tons, with registered dimensions of 447'7" x 56'2" x 26'3". She was powered by a triple expansion, reciprocating, steam engine of 2,585 S.H.P. This vessel, built by Lithgows Ltd., Glasgow, Scotland in 1943, was owned by the Eastern Shipping Corporation of Monrovia, Liberia. The owner's agent is John Livanous & Son Ltd. of 15-17 Eldon St., London, England. Monrovia, Liberia, was her home port.
2. The SS ROYALTON, Canadian registry, is a Great Lakes bulk freighter, certificated by the Canadian Government as an Inland Steamship, Class 1 non-passenger, O.N. 151108, of 7,164 gross tons and 5,194 net tons and her registered dimensions are 536' x 58' x 31'. Her power is a triple expansion, reciprocating, steam engine of 2,800 I.H.P. This vessel, built by the Collingwood Shipbuilding Co. Ltd., Collingwood, Ontario, in 1924, is owned and operated by Scott Misener Steamships Ltd. of Port Colborne, Ontario, Canada. Toronto, Ontario, Canada is the home port.
3. The SS MONROVIA departed Montreal, Canada on 16 June 1959, en route to Chicago, Illinois and Duluth, Minnesota with a cargo of sheet and bar steel of 4,000 tons originally loaded in Antwerp, Belgium. Prior to the collision her draft was 18' forward and 19'3" aft.
4. The SS ROYALTON departed Duluth, Minnesota on 23 June 1959 at 1200R, with a load of 10,670 tons of grain bound for Montreal, Quebec. Her draft prior to the collision was 19'8" forward and 20'1" aft.
5. Both vessels continued their voyages without incident until arriving in the vicinity of Thunder Bay Island, Lake Huron, Michigan, at about 1330R, 25 June 1959.
6. The weather in the Thunder Bay area at the time of their arrival was dense fog with moderate easterly winds. It was daylight, with a smooth sea condition, and visibility ranged from 100' to 300'. The fog conditions, varying from fair to poor visibility, had been experienced over the entire area south from Thunder Bay during the early morning hours.
7. The MONROVIA dropped her Canadian pilot, who had been on board from the Welland Canal, at Lake Huron Lightship, and took departure at 0215R, 25 June 1959 from that lightship. The vessel was being navigated by the master, Stefanos Svokos, who was utilizing the radio direction finder, fathometer and taffrail log to establish his position. The vessel was equipped with a gyro compass that was also being utilized. An azimuth taken the previous day in Lake Erie disclosed no gyro error, according to the master. The vessel was not equipped with radar. All navigation and operating equipment was reported as operating satisfactorily.
8. The MONROVIA's course set from the Lightship was 353° T. Port Sanilac

Light was observed when passed, however, the time and distance off could not be established from testimony due to loss of charts and log books when the vessel sank. At 0430R the weather became foggy and the required fog signals, in accordance with Great Lakes Rules, were commenced. Harbor Beach Light was passed ahead unseen, but the fog signal was heard. The course was changed at that time to 344° T., fog signals were continued, and no change was made in engine speed that had been set on full ahead from the Lightship, 55 RPM, making approximately 9 MPH over the ground in the existing loaded condition. After passing Harbor Beach, the wireless operator was called to the bridge to commence taking RDF bearings. However, due to static, a fix on two stations could not be obtained. At 1200R the master plotted his position with one RDF bearing on Thunder Bay Light, a sounding by fathometer and taffrail log readings, and course was changed to 340° T. with a reduction of speed from 55 RPM to 50 RPM, which gave approximately 8 MPH. At 1330R an RDF bearing was again obtained on Thunder Bay Light of 269° T., and at the same time a fathometer reading of 19 fathoms was also obtained and course changed to 020° T.

9. At no time was a lookout posted in the bow of the MONROVIA but the captain, first and second officers were all on the bridge, except for a period between 0900R and 1200R, when the first officer was sent below by the master to rest.

10. The SS ROYALTON departed Detour Reef Light at 0615R, 25 June 1959, steering course 137° T and P.g.c. at full speed (60 RPM) which gave approximately 11.4 MPH over the ground. Course was changed at 1112R from 137° gyro to 161° gyro when abeam of Middle Island. This was a "time run" course change with no bearings obtained. The vessel was being navigated by the second mate, Edmond Langstaffe, who had the watch, until about 1145R when fog set in and fog signals were commenced; a standby signal was rung up on the engine telegraph, the speed was reduced to 55 RPM (11.2 MPH), the master assumed the conn and a bow lookout was posted.

11. The ROYALTON was radar equipped, with the console being located on the port side of the pilothouse near the front windows, and it was being utilized for navigation in conjunction with the RDF and echo sounder. All navigation and operating equipment was reported as operating satisfactorily.

12. On 28 June 1959, after the casualty occurred, both the ROYALTON's radar and gyro were checked by a Sperry service engineer in Port Colborne Harbor, Ontario, and affidavits were furnished to the effect that both pieces of equipment were satisfactory. (See Exhibits No. 11 and No. 12.) However, vessel personnel considered that the radar range rings were 10 percent short. This factor was not allowed for when ranges were logged.

13. The ROYALTON's watch, in addition to the master and second mate in the pilothouse, consisted of a wheelsman and a lookout. The lookout was posted on the forecandle head approximately 15 feet forward and 10 feet below the pilothouse. Communication between lookout and conn was by word of mouth. The front, centerline, pilothouse window was open, with the master occupying a position at that window. The engineering watch consisted of the fourth engineer, in charge, one oiler and one fireman.



14. At 1305R the ROYALTON passed abeam of Thunder Bay Light distant 9.6 miles. Course was changed to 159° gyro. At 1320R a target was picked up on radar at a range of 13 miles bearing fine on the starboard bow. At this time a course alteration to the left of 5° was made and maintained for from 12 to 15 minutes when the course was changed another 5° to the left. This was maintained for from 8 to 10 minutes. At a range of 10 miles the target was observed 12° on the starboard bow, and it was ascertained by both master and mate that the target would pass at least one mile off.

15. No plot or computations were made to determine the target's course and speed or closest point of approach. Further, the two course alterations to the left and time runs were not recorded in the log book.

16. At 1340R a check, or slow speed order, was rung up in the ROYALTON. Slow speed was established as being 3 MPH. At this time the target was observed, by radar, at five mile range bearing approximately 30 to 35 degrees on the starboard bow. A further course alteration was made to the left of 12° which put the ROYALTON on 137° gyro. This alteration was likewise not logged. A three blast fog signal was heard bearing 30° relative on the starboard bow at this time by all of the forward end personnel on watch. A two blast signal to indicate the last change of course to the left was blown twice, with two minutes between, by the ROYALTON's master. An attempt to raise the nearby vessel on voice radio, Channel 51, was also made now. The call made unsuccessfully was in words to the effect "Salt water ship upbound on the downbound course", the mate having previously advised the master about a radio telephone conversation he had heard between two other downbound ships concerning a salt water ship being upbound on the downbound course.

17. Upon hearing a one blast reply to her two blast signal the ROYALTON commenced sounding danger signals. At 1350R the ROYALTON's engine was backed full, and at 1354R double full astern was ordered. The target, now being watched almost continuously on radar by master and mate, was observed making a sharp alteration in course to the right. It was observed then visually approximately 45° relative on the starboard bow at a distance of about 400 feet. The bow of the MONROVIA was observed first, and the vessel appeared swinging on hard right rudder. At 1357R the vessels came together with the ROYALTON's bow making contact aft of the MONROVIA's bridge on the port side in way of No. 2A compartment.

18. Fog signals sounded by the ROYALTON were first heard by the master and other officers on the bridge of the MONROVIA at about 1335, and seemed to be from dead ahead to a little on the port bow. At 1345R the signals were heard on the same general bearing and louder. At about 1351R the master ordered one blast sounded, and hard right rudder. When there was no reply to the one blast signal other than the ROYALTON's fog signal, the MONROVIA repeated her one blast signal about three minutes later and continued swinging on her hard right rudder. Very shortly thereafter the ROYALTON was observed by the MONROVIA's watch looming out of the fog on the port side at an angle to the MONROVIA between 60° and 90° at a distance between 50 to 100 feet. The vessels collided at an angle of

near 90° with the MONROVIA sweeping her port side across the stem of the ROYALTON and being holed just aft of the bridge. At no time during the events leading up to the collision did the MONROVIA change speed or sound any danger signals.

19. The collision occurred at approximately 1357R in a position bearing 104° T, 13 miles distant from Thunder Bay Island Light and the MONROVIA sank there in 21 fathoms of water ten hours later.

20. The effect of the collision to the SS ROYALTON was a badly damaged bow (See Exhibit No. 3), with resulting flooding of the forepeak compartment. The vessel did not require assistance due to the collision bulkhead not being affected. She was able to proceed on her voyage after being released from the scene at 2042R, 25 June 1959. No injuries were suffered by personnel in the ROYALTON.

21. The effect of the collision to the SS MONROVIA was the holing of No. 2A compartment, port side above and below the waterline, which resulted in progressive flooding throughout the ship causing her to list to port and sink by the head, at 0010R, 26 June 1959.

22. There were no apparent injuries to the personnel of the MONROVIA who were examined by a U. S. Public Health Service doctor while the NORMAN W. FOY was en route to Detroit with the survivors, and the master and second mate of the FOY commented that first aid was refused and no injuries were reported by any of the MONROVIA's crew.

23. It was apparent that following the collision there was little or no effort on the part of the MONROVIA's crew to save the vessel. The order to abandon ship was passed by the master upon his observance of the progressive flooding, and because of fear that the boilers would blow up. The machinery spaces were vacated almost immediately without pumps being started and without the chief engineer nor his first or second assistants ever going below to investigate what could be done. The third assistant engineer on watch had started preparations to pump the No. 2 and No. 3 compartments as ordered by the second assistant, but after he had opened the ballast suction valves he was ordered to come up on deck and he did not close these valves before departing. The machinery spaces were never re-entered following this although there appeared ample time for investigation as to why those spaces were being flooded. The engine was left turning slow ahead to relieve the steam pressure. In a period of about one hour the entire crew had departed, with some difficulty, via the starboard motor lifeboat. The difficulty encountered in lowering the lifeboat concerned releasing the gripes and clearing the falls of their canvas covers. There had been no lifeboat drills conducted during the voyage.

24. By 1500R all of the MONROVIA's 29 officers and men had reached the Steamer NORMAN W. FOY, standing by close to the scene, by means of their own starboard motor lifeboat. Most of the crew were placed aboard the FOY and the master of the MONROVIA then returned to his vessel accompanied

by the first and second officers, the chief and second assistant engineer, the boatswain and some deckhands for the purpose of controlling the flooding and salvaging personal gear. When it was found how much water had entered No. 2 and No. 3 holds and machinery spaces it was again decided that no action could be taken to save the vessel. After collecting some personal gear they again returned to the FOY, remained alongside for a short period before again returning to the MONROVIA to save the captain's log book and other gear. All compartments were observed making water at this time and it was inevitable that the ship would be lost.

25. The SS NORMAN W. FOY departed Detour at 0632R, 25 June 1959 steering course 140° T, speed 10.9 MPH bound for Conneaut, Ohio, and trailed the Steamer ROYALTON by approximately five miles to the collision area. The FOY passed abeam of Middle Island at 1154R where she changed course to 162° T, and then passed Thunder Bay Island Light at a distance off of 11.1 miles at 1327.

26. At 1343R the second mate of the FOY observed a pip of an apparent upbound ship on the radar scope. It was ahead at about 10 miles. After watching it for a few minutes it appeared to him that it was slightly to the left of the FOY's heading of 162° T whereas the ROYALTON appeared slightly to the right. Shortly thereafter the ROYALTON was observed to gradually move to the left so that now both vessels appeared slightly on the port bow of the FOY.

27. At 1345R the master of the FOY was informed of the mate's observation of the upbound ship. Upon reaching the pilothouse, Captain Gillies observed two pips on the radar screen approximately dead ahead at a range of five miles, and very close together. At 1406R Captain Gillies called the ROYALTON via radio phone to ascertain how the ROYALTON intended to pass the upbound vessel and was advised that there had been a collision. At that time the bearing of the vessels from the FOY was 162° T, range approximately five miles.

28. The FOY first saw the MONROVIA about 20 minutes after the collision at which time she had come around to a heading of 230° T and was still swinging slowly to the right with her propeller still turning ahead slowly.

29. This voyage of the MONROVIA was the first time that any of the officers of that vessel had been in the Great Lakes and their knowledge of the Great Lakes Pilot Rules and recommended courses consisted of what they were able to learn after picking up certain publications and charts in Montreal on 16 June 1959. Only the master and radio operator could speak, understand or read English - the latter being not very well qualified in these respects. Only the master could be considered as being able to understand and speak English sufficiently well to carry on a satisfactory radio telephone conversation. Although the radio operator was able to testify in English he was hard to understand and tended to express himself in Greek when he became excited.

30. That the regulations promulgated pursuant to the International Conference on SOLAS, 1948 do not require the isolation of the bilge and ballast piping systems nor the installation of stop-check type valves in the machinery space bilge suction manifold as is required by 46 CFR 55.10-25 for United States Cargo Vessels.

31. Coast Guard action after the casualty was as follows: (See Appendix C)

(a) The CGC MACKINAW was in her home port in Bravo 2 status. She was ordered to proceed at 1540Q, 25 June 1959 and was underway at 1650Q. At 0230Q, 26 June 1959 the MACKINAW arrived in the area.

(b) The CGC ACACIA was in her home port in Bravo 12 status. She was ordered to proceed at 1538Q, 25 June 1959 and was underway at 1606Q. At 0340Q, 26 June 1959 the ACACIA was on the scene and placed a Second Class Can Buoy on the wreck site.

(c) The Coast Guard Air Station, Traverse City, Michigan, dispatched three planes to the area; however, due to the weather conditions that prevailed, no assistance could be rendered.

(d) Various small craft from the adjacent light and lifeboat stations proceeded en route to the scene but due to there being no need for their assistance they were recalled.

## OPINIONS

1. That this collision occurred at 1357, 25 June 1959 in 21 fathoms of water, 104° T and 13 miles distant from Thunder Bay Island Light and as a result thereof the SS MONROVIA sank at 0010, 26 June 1959 in approximately the same position.
2. That prior to the collision the SS MONROVIA was proceeding upbound in Lake Huron in the vicinity of Thunder Bay. Due to lack of an adequate navigational fix since departure from Port Huron Lightship at 0215R, 25 June 1959, she followed courses that by 1345 placed her close to the track recommended by the Lake Carriers Association and Dominion Marine Association for downbound vessels.
3. That other than the captain and deck officers on the bridge of the MONROVIA there was no person stationed forward in the vessel specially charged with the sole duties of a lookout. This constituted a violation of Rule 28 of the Pilot Rules for the Great Lakes.
4. That neither the captain of the MONROVIA nor his deck officers, this being their first trip into the Great Lakes and having only at Montreal obtained a copy of the Pilot Rules and Regulations for the Great Lakes, were very familiar with the Pilot Rules and the navigation of its waters with its recommended courses.
5. That the captain of the MONROVIA, upon hearing fog signals of the ROYALTON, not more than four points from right ahead of his vessel, failed to slow or stop until the position of the ROYALTON was ascertained and she was safely passed. This constituted a violation of Rule 15 of the Pilot Rules.
6. That the captain of the MONROVIA, failing to understand the course or intention of the ROYALTON and being in doubt, failed to sound the danger signal and reduce speed. This constituted a violation of Rule 26 which required the MONROVIA to sound the danger signal and reduce her speed to bare steerageway or, if necessary, stop and reverse.
7. That after the collision the officer personnel of the MONROVIA displayed lack of organization and demonstrated a lack of concerted effort to evaluate the extent of damage and to initiate measures to minimize the effects thereof. No positive timely action was taken in an attempt to save the vessel and its cargo, except for the master's order to start the pumps which was never executed. Although the engineer on watch started to carry out this order by opening the suction valves on the ballast pump manifold this effort was abandoned in an incomplete stage because of the general confusion and lack of coordination of orders. Since no exact determination of the source of the water which eventually flooded the machinery spaces could be made, the Board feels that the failure to close these valves was largely responsible since an inoperative or non-existent non-return valve in the bilge suction piping would have permitted back-flooding.
8. That the confusion displayed by the personnel in clearing away the lifeboat was the result of insufficient lifeboat drills, and not due to malfunction of the equipment. When the gripe was released and the falls had been stripped of their canvas covers, the boat was ready for use.