

UNITED STATES COAST GUARD
WASHINGTON, D. C.

MVI
12 January 1953
(BARANOF - TRITON -
a-13 Bd)

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

Subj: Marine Board of Investigation; collision SS BARANOF and
SS TRITON 2 miles off entrance to Nanaimo, British Columbia,
26 July 1952, with 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 forwarded herewith.

2. The SS BARANOF, a passenger vessel of 4,990 g.t. en route from Seattle to Alaska while proceeding through Georgia Strait, sighted an approaching vessel, the SS TRITON (Greek), a freighter of 7,176 g.t. The weather was fair and the visibility good. The pilot on the BARANOF sighted the TRITON on the radar and made course alterations to avoid collision. Seemingly, due to the TRITON's dim navigation lights, failure to fully comprehend the course and speed of the TRITON, either visually or by radar and other misunderstandings on the part of both vessels, a collision resulted at 0021, 26 July 1952, approximately two miles off Entrance Island Light. The BARANOF sustained damage estimated at \$100,000 and while the damage sustained by the TRITON is unknown, two seamen on board the latter vessel were killed.

3. The Board made the following Findings of Fact:

"1. That at approximately 0021, 26 July 1952, the SS BARANOF collided with the SS TRITON in approximate position Longitude 123° 45' W., Latitude 49° 13' 30" N., Entrance Island Light bearing 256° T., 2.1 miles distant. All times given in this report are Pacific Standard Time.

"2. The SS BARANOF, registry 218,128, is a U. S. inspected steam screw passenger vessel, home port, Seattle, Washington, grossing 4990 tons, built of steel in 1919, owned and operated by the Alaska Steamship Company, Pier 42, Seattle, Washington; and at the time of the casualty in command of [REDACTED]

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"3. The SS TRITON, formerly the IDA M. TARBELL, is a Liberty type vessel of Greek registry, grossing 7,176 tons, built of steel in 1944, home port, Ithaca, Greece, owned by George D. Gratsos Shipping Company, Ltd. Information concerning the TRITON's characteristics was obtained from the Lloyd's Register of Shipping.

"4. On 25 July 1952, the BARANOF departed Seattle, Washington, for Ketchikan, Alaska. The vessel proceeded through Georgia Strait at full speed, 79.8 rpm's, approximately 12.5 knots. At 2348, 25 July 1952, Thrasher Rock Light was abeam to port, bearing 221° T., 1.3 miles distant. From this point the BARANOF proceeded on course 301° T. At about 2350, the bridge watch was relieved. Personnel taking over the watch were Ernst J. Landstrom, pilot, Roland R. Flaherty, third mate, [REDACTED], quartermaster and [REDACTED] lookout. As the BARANOF approached Entrance Island Light the third mate prepared to take a four point bearing on the light. When Entrance Island Light lacked about five degrees of bearing four points on the port bow, or at about 0007, 26 July 1952, the third mate observed a change of course to the right by the BARANOF which brought Entrance Island Light past four points on the port bow. This change of course was ordered by the pilot who was in the wheelhouse. Throughout the watch the mate made all his observations of the TRITON visually and the pilot made all his observations by radar. At about 0005, 26 July, the pilot observed a vessel by radar about three miles distant bearing 005° relative. The pilot observed the distance by the range circle on the radar and the bearing was established by visual estimate. When the distance between the two vessels was reduced to 1.5 miles the pilot looked out the wheelhouse window but did not visually sight the vessel appearing on the radar scope. The testimony of the pilot concerning the bearing of the TRITON is contradictory in that he stated that it had not changed, that it had changed to the right, and that it had changed to the left, nevertheless, he ordered a ten degree course change to the right. This order was followed by further course changes to the right and finally an order of full right rudder. At 0020½, the engines were ordered full astern. At 0021, the collision occurred. The BARANOF sounded no whistle signals from 2350 until 0021, nor had it made any reduction in speed until 0020½.

"5. The third mate first sighted the range and masthead lights of the TRITON at about 0008. At that time he estimated the bearing of the TRITON to be approximately two points on the port bow, and he stated that the distance was around three or four miles. Exhibit "1", Sketch of the relative position of the TRITON-BARANOF, indicates

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that the situation thus created between the two vessels was a crossing situation. The mate used binoculars in observing the TRITON and at approximately 0017, informed the pilot that the TRITON's green side light was visible. At no time did the mate take any action to notify the master or attempt to reconcile his evaluation of the situation with the action taken by the pilot.

"6. The master of the BARANOF was aroused by the collision and immediately proceeded to the bridge to take over command of the vessel. The damage was examined and the passengers and crew informed of the nature of the casualty. The BARANOF sent one of its boats to the TRITON and took aboard one injured seaman off the TRITON and continued to stand by until the master was assured that further assistance would not be required. The BARANOF then proceeded to Vancouver, British Columbia, to discharge passengers, and thence proceeded to Seattle, Washington. No panic was observed among the passengers during or after the casualty, and the crew and officers of the vessel conducted themselves in an orderly and efficient manner throughout the entire event.

"7. As a result of the collision the TRITON was holed on the starboard side in way of the engine room, and the BARANOF suffered her major damages to the bow, estimated at \$100,000. The bow of the BARANOF was so damaged that all number one plates and strakes "A" through "N" inclusive, required renewal or fairing. Twelve feet of the stem iron required renewing. The "H" and "I" strakes were torn from the stem to frame twelve.

"8. Two seamen aboard the TRITON were killed as a result of the casualty and one seaman aboard the TRITON was slightly injured.

"9. On 7 August 1952, the Board proceeded to the BARANOF at Todd's Shipyard to witness the operation of the radar. The BARANOF has a Sperry Marine Radar Mk. II, Mod. 0. This radar offers a selection of five different range scales, 1, 2, 6, 15 and 30 miles."

4. The Board expressed the following Opinions:

1. That this casualty was due primarily to the pilot's lack of knowledge of the use of radar and an improper evaluation of the situation as it developed between the two vessels.

2. That the pilot's failure to reduce the speed of his vessel when he was uncertain of the course and speed of an approaching vessel was also a contributory cause of the casualty.

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- "3. That the third mate was guilty of inattention to duty when he failed to summon the master to the wheelhouse.
- "4. That Coast Guard personnel in no way contributed to the casualty.
- "5. That the pilot used radar alone to diagnose the situation as one of vessels meeting and changed course to the right before sighting the TRITON visually.
- "6. That while it is a valuable aid in obeying the rules of the road when used properly, radar does not supplant the steering and sailing rules nor in any way modify compliance with them.
- "7. That in this case the pilot's analysis of the radar observations did not and by his own description of it, could not have produced sufficiently reliable information to justify the conclusion that the situation was one of vessels meeting, with an indicated port-to-port passage.
- "8. That a plot was not made in this case and in the absence of accurate timing of the interval between observations it could not have been done with any reasonable degree of accuracy.
- "9. That the "seaman's eye" method of analysis of the movement of another vessel appearing in the radar scope is dangerously apt to lead to a false conclusion that the line of relative motion shown in the radar scope represents the actual course line of the other vessel.
- "10. That in this case the radar was used to determine only that the distance between the vessels was being reduced.
- "11. That when used in this fashion radar provides no more information than that afforded by visual observations and has the disadvantage that the radar offers no visual presentation of the other vessel's lights.
- "12. That probably because of the plan view presented by the radar, it is easy for an inexperienced operator to fall into the pitfall of mistaking the line of relative motion as the course line of the other vessel.

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"13. That it is unlikely that such a mistake would be made as a result of visual observation of another vessel, even if her side lights were not visible. When, for example, another vessel is shown by radar to be closing on a constant bearing the successive positions of the other vessel's image in the scope as the distance is reduced, tends to give the unskilled observer the impression of a 'track' which may be misinterpreted as the other vessel's course. Viewed visually the observer would be primarily conscious of the fact that the bearing was unchanging. It is most unlikely that the time honored constant compass bearing, indicating only risk of collision, could ever be mistaken by any licensed deck officer as the actual course of the observed vessel.

"14. That the situation as it actually existed before the BARANOF's first course change was a meeting situation in which a starboard to starboard passage was indicated. Proper and timely use of the radar would have given ample evidence that this was the situation long before the distance between the two vessels had been reduced to 1.5 miles.

"15. That the third mate's evaluation of the situation as a crossing situation was made after the first course change of ten degrees to the right by the BARANOF; and further course changes to the right made by the vessel aided in creating the crossing situation as indicated in the third mate's second sketch, Exhibit "2".

"16. That none of the testimony produced before the Board indicates that the situation was evaluated by either the pilot or the third mate as a meeting situation with an indicated starboard to starboard passage. Nevertheless, it is the opinion of the Board that with visibility at ten miles the TRITON should have been sighted and had the pilot made visual rather than radar observations, and had the third mate made timely use of the binoculars, certainly the true situation would have been apparent.

"17. That the testimony in this case indicates that the lights of the TRITON were dimmer than would be expected of the electric lights usually displayed by a vessel of her size and class.

"18. That the TRITON's side lights were visible for at least a distance of two miles as required by the International Rules of the Road.

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"19. That the masthead and range lights of the TRITON were visible to the mate on the BARANOF for an appreciable interval before the pilot of the BARANOF abandoned the use of the radar."

5. The Board made the following Recommendations:

"1. It is recommended that action under R. S. 4450, as amended, be taken against the license of Ernst J. Landstrom. See Seattle Case No. 628-5959.

"2. It is recommended that Roland R. Flaherty, the third mate, be admonished for his failure to summon the master to the wheelhouse. See Seattle Case No. 628-5958.

"3. While the Board fully acknowledges that radar properly used is an instrument of great potential value as an aid to navigation and as an anti-collision device, the Board is dubious of the advisability of using it at all in this case. The Board does not seek to discourage the use of radar during clear weather for training of navigating personnel. However, the Board believes that such practice should not be conducted at nighttime in pilot waters. Since the maneuvering board serves an ideal purpose as a running mate to the radar, it is recommended that Headquarters call to the attention of all shipping companies the merits of the maneuvering board form and point out its value in analyzing the relative motion as given on the radar scope so that an accurate determination may be made of a vessel's course and speed in a relatively short time.

"4. It is recommended by the Board that a section of the examination for licensed masters, mates and pilots be devoted to solutions of maneuvering board problems."

REMARKS

6. Recommendation paragraph 3 of the Board is not clear in its composition as it partakes of the nature of a Finding of Fact, Opinion, Conclusion and Recommendation and the terms therein used, such as "potential value", "pilot waters", "shipping companies" are incapable of exact determination. It is well established that radar, if properly used, is of real value in the safe navigation of vessels under any and all circumstances of vessel operation. It is also equally well

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established that the improper evaluation of the data obtained by radar or in its improper use in other respects such as in disregard of the Pilot Rules or rules of good seamanship can only lead to disaster.

7. The Board's Recommendation paragraph 3 may be interpreted as a suggestion that the Coast Guard recommend or require vessels with radar to use the maneuvering board for the determination and plotting of the course and speed of vessels sighted in the radar scope. Presumably this requirement is to apply on waters with various degrees of congestion. The maneuvering board is undoubtedly of value for navigational purposes on vessels in combined operations. It is difficult to perceive that the use of a maneuvering board in connection with radar observations is necessary as an anti-collision measure in the light of the practicalities involved in merchant vessel operation. Such a requirement, however, could well be calculated to so overburden the navigating watch that conditions would be created which would inevitably result in collisions. Accordingly, the Recommendation of the Board is not concurred with.

8. A great deal of information has been published by private interests and the government with respect to the use of radar as an aid to navigation which includes information on the use of maneuvering boards in determining and plotting of courses and speed of targets. In view of the professional interest on the subject, an article with respect to the elements in the use of a maneuvering board in determining and plotting course and speed of targets sighted on radar will again be published in the Coast Guard's "Proceedings of the Merchant Marine Council."

9. For the reasons stated above, the recommendation that maneuvering board problems be made a part of the examination of licensed deck officers is not concurred with.

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

/s/P. A. OWENSON
P. A. OWENSON

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FIRST ENDORSEMENT TO MVI memorandum of 12 January 1953

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Subj: Marine Board of Investigation; collision SS BARANOF and
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Forwarded, recommending approval.

/s/H. C. SHEPARD
H. C. SHEPARD

APPROVED: Jan 15 1953

/s/MERLIN O'NEILL

MERLIN O'NEILL
Vice Admiral, U.S. Coast Guard
Commandant