UNITED STATES COAST GUARD

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

MVI
(SANTA ROSA - VALCHEM
a-3 Bd)
4 NOV 1959

Commandant's Action

on

Marine Board of Investigation; collision between the SS SANTA ROSA and the SS VALCHEM, off the coast of New Jersey, 26 March 1959, with loss of life

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

2. At 0301 EST, 26 March 1959 the United States passenger liner SS SANTA ROSA collided in dense fog with the United States tank vessel SS VALCHEM off the coast of New Jersey in position 39°24'N, 73°59'W. Three crew members from the VALCHEM died, one is missing and several others on both vessels were injured to varying degrees including passengers on the SANTA ROSA. In addition, one crew member on the SANTA ROSA suffered a fatal heart attack.

3. Early on the morning of 26 March the SANTA ROSA en route Port Everglades, Florida, to New York with 247 passengers was proceeding in patchy fog at 21 knots on a course of 010 True off the New Jersey coast. The radar was on and targets were being plotted. At 0251 with the radar on the 6 mile scale the watch officer observed a target off the starboard bow and reported to the master who was also on the bridge. At 0252 the assistant watch officer plotted the target on a bearing of 018°T, 4.9 mile distant. Because the target could not be seen visually engines were placed on standby, manual fog signals were begun and the course changed 1 degree to the left to 009°T. Three minutes later the radar target was again observed, this time bearing 020°, 3 miles. By plotting on a maneuvering board the closest point of approach was calculated to be .3 of a mile to starboard. Upon receiving this report at 0256 the master ordered the course changed to 005°T. The vessel steadied briefly on this heading when the course was again changed to 000°T at 0257. Visibility at this time was estimated at 1-1/4 miles and closing. In the meantime the watch officer estimated the target's course and speed to be 202.5°T, 16.3 knots, advised the master, then received a telephone report from the bow lookout of a fog signal off the starboard bow. Immediately after receiving this call he personally heard a one or two blast signal and passed this information to the master also. The master checked the radar and noticed that the target had apparently altered course and would pass closer than .3 of a mile. He immediately ordered full left, the time being 0259 plus. Stepping to the port wing he heard a fog signal forward of his starboard beam and 30 seconds later saw the VALCHEM appear out of the fog 1/4 of a mile away 1/2 to 2 points on the starboard bow heading from right to left.

Hoping to clear the stern of the VALCHEM the master ordered hard right and the watch officer, on his own motion, rang full astern on the engine order telegraph. At 0301, with still about 21 knots of way on and with the bow still swinging left despite hard right rudder, the SANTA ROSA struck the VALCHEM on the port side at about a 90 degree angle and penetrated the VALCHEM's boiler room spaces.

4. The VALCHEM, empty but not gas-free, was en route from New York to Baytown, Texas, and was also encountering patchy fog. The radar was on but targets were not being plotted. Aside from the helmsman the watch officer was alone on the bridge. Fog signals were placed on automatic at 0200. At 0248 while proceeding full ahead on course 194°T at about 16 knots the radar target later identified as the SANTA ROSA was observed one to two degrees on the starboard bow about 8 miles away. Visibility was estimated at that time to be 2 miles. Sometime after 0252 the helmsman was ordered to come right and at 0255 the vessel was steadied on 210°T. At this time the SANTA ROSA bore 15° on the port bow. Less than a minute later course was altered to either 215° or 220° but before the vessel was steady another 10° to right was ordered. Still the radar bearing did not appear to change and there followed a series of course changes to the right in 10 degree increments. While in this turn the lookout on the bow sounded the bell twice, indicating something to port. The watch officer could see nothing and as he proceeded to the engine order telegraph he heard the fog signal of another vessel on the port beam. Stop was rung on the engine order telegraph and the fog signal taken off automatic. The time was 0259. Two prolonged blasts were sounded and the helmsman advised that the ship was heading 255. The watch officer ordered 260 and in the meantime the master arrived on the bridge. Glancing at the radar he observed the target extremely close just abaft the port beam. After the watch officer sounded another two prolonged blast signal the lights of the SANTA ROSA appeared abaft the port beam about 100 yards away. Seconds later with the VALCHEM still coming right 257° and making between 13 and 14 knots, the collision occurred.

5. On the VALCHEM the engineering spaces were flooded and all power was lost. There was no explosion and no fires of any consequence. On the SANTA ROSA a fire broke out in the forward paint locker and among some miscellaneous gear stowed in the anchor windlass room. At 0457 after it was determined that the VALCHEM would not sink the SANTA ROSA backed out of the VALCHEM's side taking with it the VALCHEM's stack. The fire on the SANTA ROSA resisted firefighting efforts and was not completely extinguished until 1016.

6. During the course of the firefighting six fire hoses on the SANTA ROSA burst under normal pressure. Subsequent tests disclosed that the cause was due to failure of the rayon filler yarns.

7. After the casualty the SANTA ROSA proceeded under her own power to New York and the VALCHEM was towed into Brooklyn.

REMARKS

1. Although the testimony of the VALCHEM witnesses would indicate that the collision occurred later than 0301 and that the VALCHEM was dead in the water or nearly so at the time of collision, the Board's reconstruction of the VALCHEM's navigation as set forth in the Findings of Fact is amply supported in the record and is considered to be the more accurate account.

2. As determined by the Board the principal cause of this collision was the failure of both vessels to slow to a moderate speed when conditions of reduced visibility and fog were encountered.

3. Misinterpretation of radar on the part of both vessels was also a factor in this case. On the SANTA ROSA the two ranges and bearings which were plotted were insufficient to reveal the VALCHEM's gradual turn to the right and served only to provide a course and speed made good. This was erroneously regarded as the VALCHEM's actual track and in turn resulted in the false conclusion that the VALCHEM would pass clear. On the VALCHEM an almost identical situation obtained with the exception that no attempt was made to calculate the SANTA ROSA's course and speed by plotting. Although timely detection of the other's turn would undoubtedly have been facilitated by a more moderate speed on the part of both vessels, accurate determinations on which to safely predicate evasive maneuvers could only have been obtained in this instance by nearly continuous plotting.

4. Also contributing to this collision was the further failure of both vessels to take timely action to stop. Aside from the statutory obligation to stop upon hearing forward of the beam the fog signal of a vessel, the position of which was not ascertained, it was manifestly evident to both vessels from radar observations that an uncertain and potentially dangerous situation was rapidly developing. On the SANTA ROSA there was the final realization two minutes before the collision that the VALCHEM had altered course and would pass closer than three-tenths of a mile. On the VALCHEM despite a continued turn to the right the relative bearing of the radar target did not change until the final minutes before collision. Under the circumstances it is considered that the principles of safe navigation dictated a more timely stopping of both vessels.

5. Hearings under the provisions of Title 46 CFR 137 into the alleged negligence of the navigation personnel on both vessels in connection with this collision have been instituted by the Officer in Charge, Marine Inspection, New York.

6. The recommendation concerning the desirability of adopting minimum specifications for fire hose on inspected vessels will be presented to the Merchant Marine Council for study.

7. Although presently required for original license and raise of grade, there is no statutory authority which would permit the Coast Guard to require licensed masters and deck officers to qualify as radar observers at the time of renewal of a license. At the forthcoming International Safety of Life at Sea Convention, 1960, a proposal will be advanced to require all licensed masters and deck officers to take approved radar training courses, which would, if adopted, provide the necessary authority to extend present requirements. In the meantime consideration is also being given to requiring every radar-equipped vessel of 300 gross tons and over, which is inspected and certificated by the Coast Guard for navigation on ocean, coastwise or Great Lakes routes, to have in its complement of deck officers, including the master, only officers who have qualified as radar observers. With respect to this case, although both watch officers on the SANTA ROSA were qualified as radar observers and it is reasonable to assume that had the watch officer of the VALCHEM been so qualified he would have been better prepared to more effectively utilize the radar, it is apparent from the record that formal training and qualification will not, in itself, completely eliminate the personal errors in judgment in the use of radar which contributed to this collision.

8. The study recommended by the Board concerning the practical and legal feasibility of establishing separate tracks for north and southbound vessels navigating along the Atlantic and Pacific Coasts of the United States does not appear to be warranted at this time. Although substantially coastal in nature, the fact that such tracks would be on the high seas would require international agreement to effect their establishment. From the practical point of view the cross traffic on both coasts does not lend itself to the establishment of north/south tracks alone and it appears that a pattern of routes would not successfully reduce collision hazards until all or nearly all vessels using such routes were equipped to navigate within fairly narrow limits during conditions of fog and low visibility.

9. The Board's recommendations for suggested standard instructions to deck watch officers and suggested standard instructions delineating masters' and deck watch officers' duties and responsibilities when both are on the bridge

are disapproved. The duties and broad responsibilities of masters and mates have long been established by law and regulation, by court interpretation, by practice and by custom. Moreover applicants for such licenses are required to show knowledge of these duties and responsibilities when undergoing examination. It is considered extremely doubtful that any standard set of written instructions could be sufficiently inclusive to cover the infinite number of situations encountered aboard ship. The promulgation of standard instructions could even curb the exercise of responsibility and sound judgment by suggesting that masters and mates would be accountable only for that which appeared in writing.

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

A. C. Richmond

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Officer in Charge,
Marine Inspection
720 Custom House
New York 4, N. Y.

A25(MMIS-015448)
1 July 1959

From: Captain W. P. Hawley, USCG Chairman
To: Commandant (C)
Via: Commander, Third Coast Guard District

Subj: Marine Board of Investigation; collision between SS SANTA ROSA and SS VALCHEM off the coast of New Jersey on 26 March 1959

FINDINGS OF FACT

1. The SS SANTA ROSA and the SS VALCHEM collided in dense fog at about 0301 EST, 26 March 1959, off the coast of New Jersey, in position 39°24'N, 73°59'W, with resultant physical damage to the SANTA ROSA in the amount of about $700,000, and to the VALCHEM in the amount of about $1,190,000. As a result of the collision, four crew members of the VALCHEM lost their lives, and twenty one crew members were injured and thriteen passengers received for the most part minor injuries. Both boilers on the VALCHEM were ruptured; a small fire broke out, but no explosion resulted. On the SANTA ROSA, a fire broke out in the forward paint locker and anchor windlass room.

2. Specific information on the two vessels involved in the collision is as follows:

a. SS SANTA ROSA

(1) Nationality	U.S.A.
(2) Type	Passenger-twin screw
(3) Official No.	276598
(4) Home Port	New York
(5) Type propulsion	Steam; 20,000 HP
(6) Built	1958; Newport News
(7) Tonnage	15371 gross; 8095 net
(8) Length-Breadth-Depth	540.3; 84.1; 29.5
(9) Place & date last inspected	Newport News, Va.; 12 June 1958
(10) Draft	22'-05"F; 24'-05"A
(11) Gyro Compass	Yes
(12) Course Recorder	Yes
(13) Loran	Yes
(14) Fathometer	Yes
(15) Radar	Sperry Mark 3
(16) Owner & Operator	Grace Lines, Inc., 3 Hanover Sq., New York City
(17) Master	Frank S. Siwik, 103 Huntington Road Garden City, L.I., New York

b. SS VALCHEM

(1) Nationality	U.S.A.
(2) Type	Tanker-Single Screw
(3) Official No.	242044
(4) Home Port	New York
(5) Type propulsion	Turbo-electric, 6000 HP
(6) Built	1942; Chester, Pa.
(7) Tonnage	10,416 gross; 6310 net
(8) Length-Breadth-Depth	504.0; 68.2; 39.2
(9) Place & date last inspected	Norfolk, Va.; 18 April 1958
(10) Draft	11'F; 21'A
(11) Gyro Compass	Yes
(12) Course Recorder	Inoperative
(13) Loran	Yes
(14) Fathometer	Yes
(15) Radar	RCA - CR 101 A
(16) Owner & Operator	Heron Steamship Co. c/o T.J. Stevenson & Co. 80 Broad St., New York 4, N. Y.
(17) Master	Louis L. Murphy 1631 Blacktown Street Lynchburg, Virginia

3. The speed data of both vessels is as follows:

a. SS SANTA ROSA

Telegraph	RPM	Speed (knots)
Dead slow ahead	20	3.7
Slow ahead	40	9.7
Half ahead	70	13.0
Full ahead	115-118	21.5

The Master estimated from data compiled at the Official Sea Trials held in May, 1958, that the SANTA ROSA going ahead at 118 RPM could be brought to a crash stop in slightly less than 3 minutes and 27 seconds with a head reach of about 990 yards.

b. SS VALCHEM

Telegraph	RPM	Speed (knots)
Dead slow ahead	20	3¼
Slow ahead	40	5
Half ahead	60	7
Full ahead	88-89	15

The Master was unable to supply any crash stop data for the VALCHEM. However, the SS COLINA, a T2 tanker similar to the VALCHEM, going ahead at 93 RPM, was brought to a crash stop in 4 minutes and 23 seconds with a head reach of about 1087 yards.

4. At the time of the collision, the weather was foggy, the wind was northeast, force 2, the sea was slight, and visibility was limited to about 500 yards.

5. The SANTA ROSA departed Port Everglades, Florida, on 24 March 1959 at 12.51 EST, bound for New York with 260 tons of general cargo and 247 passengers. The draft on departure was 22'-05"F and 24'-05"A. All navigational gear was tested prior to departure and worked satisfactorily.

6. At about 2330, 25 March 1959, the Master, Frank S. Siwik, left the bridge to turn in for the night. Before leaving the bridge, the Master left written night orders in addition to his written standing orders for the guidance of the watch officers. The night orders for this night provided that the Master was to be called in the event of poor visibility. In addition, prior to leaving the bridge, the Master verbally informed the watch officer that he was to be called in the event visibility was less than six miles.

7. At about midnight, 25 March 1959, Walt Welles, Second Officer, took over as watch officer with Raoul R. Pepin, Junior Officer, as assistant watch officer. At 0130 EST, 26 March 1959, a loran fix was obtained indicating the vessel's position to be 38°52.3'N, 74°03.5'W. Course of 010°T and gyro, there being no appreciable gyro error, and the speed of 118 RPM, or 21.5 knots, were continued. At this time and at the time of the collision, all navigation lights were burning bright. Before the collision, the vessel was being steered manually by the helmsman, Paul M. Crockett, Z-772951-D1, and a lookout, Armando J. Gomes, Z-939505, AB, was posted on the bow, reporting to the bridge by telephone.

8. At about 0220, 26 March 1959, Mr. Welles personally went to the Master's cabin to report that visibility was less than six miles and asked permission to put the engines on standby. Permission was granted and the engines were immediately placed on standby at this time. This standby did not affect the vessel's speed, but served merely as an alert to the engineroom. Commencing at this time, fog signals were sounded by hand. The Master without dressing immediately followed Mr. Welles to the bridge. At this time visibility was not too poor, and it improved shortly thereafter. At about 0228, the fog signal was secured, but the engines were left on standby. A vessel was then on the port quarter of the SANTA ROSA and its navigation lights were visible. A radar range at this time indicated the vessel to be 4.8 miles away. At 0245, another loran fix was obtained indicating the vessel's position to be 39°18.4'N, 73°59'W. The vessel had covered a distance of 26.5 miles between this fix and the 0130 fix, and had made good a speed of 21.2 knots. At about this time, the Master temporarily left the bridge to put on his uniform. Shortly thereafter, the SANTA ROSA passed another north bound vessel which was being overtaken, about 3/4 of a mile off her port beam.

9. The Master returned to the bridge in uniform at about 0250. At this time the vessel off the port quarter was still visible and the radar indicated it was five miles distant. Apparently the visibility ahead of the SANTA ROSA was more limited than that off the port quarter. At 0251 with visibility clearing, the engine order telegraphs were rung up full ahead, cancelling the earlier standby. The course of 010°T and the speed of 118 RPM were continued. At this time, the port door to the bridge was opened completely and the starboard door was partly opened. No windows in the forward part of the bridge were opened. Also at this time, the radar set was on the six mile scale and apparently had been so since about 0125. The radar set was equipped with range scales of 1, 2, 6, 15 and 40 miles.

10. On the SANTA ROSA, it was the practice to plot all radar targets on a maneuvering board sheet kept on a table on the bridge in close proximity to the radar set. This maneuvering board sheet, similar in makeup to H.O. 2655a, was used under a black light which does not disturb night vision. The same sheet was used for the entire watch and different color pencils were used for each target. Prior to the plot of the target which turned out to be the VALCHEM, four previous targets had been plotted on the same sheet. The speed and course of the SANTA ROSA was plotted on this sheet using a 1:3 scale. Both Mr. Welles and Mr. Pepin had been trained in radar interpretation and plotting, and both worked on the maneuvering board sheet. The Master had never been so trained, but learned about radar from practical experience.

11. At about 0251, Mr. Welles saw a target on the radarscope off the vessel's starboard bow and reported this to the Master. At about 0252, Mr. Welles observed that the target was bearing 018°T, distant 4.9 miles, and also reported this to the Master. This position of the target was plotted by Mr. Welles on the maneuvering board sheet using a 1:1 scale for the relative motion plot. The Master then trained on the bearing reported to him with binoculars and was unable to see anything. As a consequence, at about 0254, the Master ordered the engines again placed on standby, the fog signals to be sounded and the course changed one degree from 010°T to 009°T. From this time to the time of the impact, fog signals were being sounded manually by the Second Officer.

12. At this time, Mr. Wirbickas, the Second Assistant Engineer, who was on watch in the engineroom, answered the standby on the telegraphs. Mr. Wirbickas then proceeded to open the astern guardian valves and the throttle bypass valves on the starboard and port engines. The vessel's speed of about 118 RPM remained unchanged. Mr. Wirbickas then called the Chief Engineer on the phone and informed him that the engines had been placed on standby. It was standard procedure for the Chief Engineer or the First Assistant Engineer to report to the engineroom when the engines were placed on standby. In this instance, the Chief Engineer did not reach the engineroom until shortly after the collision.

13. At about 0255, at a time noted by Mr. Welles to be just three minutes after the first range and bearing of the target, Mr. Pepin, upon being given the time by Mr. Welles, observed the radarscope and reported the target to be bearing 020°T, distant 3 miles. Mr. Welles plotted this information on

the maneuvering board sheet, drew a line between the two plotted positions of the target, and extended this relative motion line past the center of the maneuvering board sheet. In this manner, Mr. Welles determined that the closest point of approach of the target would be .3 of a mile, on the starboard beam of the SANTA ROSA. This information was immediately reported to the Master by Mr. Welles.

14. At about 0256, immediately upon receiving this report from the Second Officer, the Master ordered the course changed to 005°T. The vessel was steadied briefly on this course, as indicated by the course recorder, when at or about 0257, the Master ordered a further course change to 000°T. The helmsman on receiving this course change, applied 20 degrees left rudder and the ship's head swung left to about 357°T, where it steadied briefly. At about this time, the Master estimated the visibility to be about 1½ miles and closing in all the time.

15. In the meantime, after informing the Master of the CPA of the target, Mr. Welles, without actually drawing the speed triangle on his maneuvering board sheet, estimated the target's speed as 16.3 knots and course as 202.5°T. This information he reported to the Master. After finishing his work on the maneuvering board sheet, Mr. Welles started for the starboard wing. On his way to the wing, he heard the phone ring and answered it. The bow lookout reported hearing a fog signal off the starboard bow. Almost immediately thereafter, Mr. Welles heard either a one or two blast fog signal of another vessel and, at about 0257, shortly after the course change to due north, reported to the Master that both he and the lookout had heard a fog signal off the starboard bow. Although the Master had not personally heard the fog signals, he heard and understood the report given to him by the Second Officer.

16. After receiving this report from Mr. Welles, the Master started out to the port wing. On his way, Captain Siwik looked at the radarscope and noticed that the target had apparently altered course and that the CPA would be closer than .3 of a mile. At this time, at about 0259 plus, the Master ordered full left rudder. Captain Siwik then proceeded to the port wing and at this time, he estimated the visibility to be between ⅓ to ¼ of a mile. Shortly after arriving on the port wing, the Master heard a fog signal of the other vessel forward of his own starboard beam. At this time, Mr. Welles and Mr. Pepin were out on the starboard wing of the bridge.

17. About 30 seconds after hearing the fog signal, the VALCHEM was sighted looming out of the fog about ¼ of a mile distant and bearing ⅓ to 2 points on the SANTA ROSA's starboard bow. The Master immediately left the port wing, stepped into the wheelhouse and stood in front of the forward windows. At about 0300½, the Master, hoping to clear the VALCHEM's stern, ordered the rudder shifted to right full. At about the same time, Mr. Welles having just sighted the VALCHEM, dashed into the wheelhouse from the starboard wing and, without any order from the Master, rang up full astern on the engine order telegraphs. At this time, the engines were still going full ahead at about 118 RPM.

18. In the engineroom, the full astern order was immediately answered on the telegraphs. Mr. Wirbickas then proceeded to close the steam valve to the ahead element of the port engine and commenced to open the valve to the astern element. While doing this, the collision occurred. At this time, the port engine was turning about 40 RPM astern and climbing. Mr. Wirbickas then completely opened the valve and after a short while, the astern revolutions on the port engine climbed past 60 RPM. He then immediately proceeded to the starboard engine and noticed that the oiler, Marques, had already closed the valve to the ahead element and had the valve to the astern element about one half open. At this time, the port engine was turning astern approximately 30 to 35 RPM and climbing. Mr. Wirbickas opened the astern throttle completely and the revolutions astern on the starboard engine built up to about 60 RPM.

19. At about 0201, the bow of the SANTA ROSA struck the VALCHEM on the port side aft in the way of the boiler room at about right angles to her fore and aft line. At this time, the SANTA ROSA was still swinging to the left and heading about 347°T, although the rudder was right full. Also, at this time, the SANTA ROSA was still moving ahead at about 21 knots, although the engines were in the process of being maneuvered from ahead to astern. The general alarm was sounded immediately after the collision. Immediately after the impact, the course recorder indicates that the bow of the SANTA ROSA swung violently to the left to 285°T before it commenced swinging to the right. Less than a minute after the collision, the rudder was ordered amidships.

20. The VALCHEM completed the discharge of a cargo of No. 2 heating oil in Tankport, New Jersey, at about 1700, 25 March 1959. The vessel was not gas freed, but water ballast was taken in Nos. 3, 5 and 7 tanks. At about 2115, the VALCHEM left the dock bound for Baytown, Texas, drawing 11'F and 21'A. All navigational gear was tested prior to departure and worked satisfactorily, except the course recorder which had been inoperative for at least a month prior to departure.

21. At 2300, 25 March 1959, after discharging the pilot, the VALCHEM took departure from Scotland Light Vessel. Course of 180°m and gyro, there being no gyro error, and the speed of 85 RPM, or about 16 knots, were then set. At 2323, Shrewsbury Rocks Lighted Bell Buoy 1 was abeam to starboard, distant 2.6 miles. Course and speed were continued. At about midnight, the Second Officer, Clyde St. Clair Lupton, relieved the Chief Officer as watch officer. A few minutes after midnight, the Master left the bridge to retire to his quarters. At this time, the Master estimated the visibility to be between 6 to 8 miles. The Master prior to leaving the bridge did not leave any written or verbal night orders with the watch officer. However, his written general orders required his watch officers to pass other vessels at least ¼ mile away and instructed them to call him whenever they were in doubt or whenever they noted anything out of normal. Prior to sailing, the Master had received weather reports indicating the possibility of fog patches.

22. At about 0056, 26 March 1959, the Second Officer estimated that the visibility had decreased to about two miles. At this time, although no targets were on the radarscope, the Second Officer rang up standby on the engine order telegraph and commenced sounding fog signals automatically.

Apparently, it was standard practice on the vessel to reduce speed to 80 RPM on ringing up standby in the open sea. However, this practice had never been promulgated in writing. Furthermore, Richard Wiseltier, the Third Assistant Engineer, who was on watch in the engineroom and who joined the vessel on 21 January 1959, had never been informed of this practice. Therefore, at this time, although the Second Officer intended a reduction in speed from 88 to 80 RPM, the speed was not in fact reduced. The Second Officer assuming that speed was reduced to 80 RPM did not observe the tachometer on the bridge, nor did he phone the engineroom to check that the speed was reduced.

23. After ringing up standby and placing the fog signal on automatic, the Second Officer phoned the Master in his quarters and informed him of the situation. The Master told the watch officer that he would dress and come to the bridge. At 0132, Barnegat Light Vessel, as determined by radar, was abeam to starboard, distant 2.6 miles. The vessel had covered a distance of 34.5 miles from this fix and the 2323 fix off Shrewsbury Rocks Lighted Bell Buoy 1, and had made good a speed of 16.05 knots. Barnegat Light Vessel was not sighted visually, but its fog signal was heard. The courses laid down on Chart No. 1108 prior to departure provided for a course change from 180°T to 194°T when abeam of Barnegat Light Vessel. However, at 0132, the radar indicated several targets off the VALCHEM's starboard bow, and the Second Officer deemed it inadvisable to alter course at that time. Accordingly, the course of 180°T, and the speed of 88 RPM were continued.

24. The Master arrived on the bridge shortly after 0132. At that time, the fog signal of the Light Vessel could still be heard. The Master using binoculars was unable to sight the Light Vessel and concluded that visibility was about two miles. The VALCHEM was still sounding fog signals automatically at this time. The Master concurred in the Second Officer's decision to delay altering course to 194°T because of the presence of targets on the starboard bow. At about 0137, a fog signal of another vessel, not then in visual sight, was heard forward of the VALCHEM's starboard bow and the engines were stopped. At about 0140, visibility had improved to an estimated 3 to 4 miles. At this time, the fog signal was secured, the engines were rung up full ahead, and then immediately placed on standby. Again the Second Officer, as well as the Master who was on the bridge, were under the impression that the engineroom would make 80 RPM. However, neither officer checked with the eigineer on watch or observed the tachometer on the bridge. In fact, Mr. Wiseltier in the engineroom responded to these signals with about 88 RPM. At about 0150, the Master left the bridge and returned to his room. At this time, he estimated visibility to be about 5 to 6 miles.

25. At about 0200 with no targets on the radarscope, the Second Officer ordered the course changed to 194°T with the speed unchanged. The vessel was being steered automatically at this time, and the helmsman after bringing the vessel to the new course, resumed automatic steering. At about the same time, visibility decreased to an estimated two miles, and the fog signal was again placed on automatic. Mr. Lupton did not report these facts to the Master.

26. At this time and at the time of the collision, Gene Paschall, Z-828975-D1, AB, was stationed on the bow as lookout, reporting to the bridge by striking a bell, one bell for an object seen or heard on the starboard side, two bells for one on the port side, and three bells for an object sighted or heard dead ahead. Also, at these times, Charles V. Tyler, Z-572433-D1, AB, was the helmsman, and Elmir D. Baker, Z-1023596-D1, O.S., was the standby seaman stationed in the crew's messhall located in the after part of the vessel. Also, at these times, the VALCHEM was displaying the regular navigation lights, the starboard door to the bridge was open, the port door was closed, and a large port in the forward part of the wheelhouse on the port side was open.

27. Mr. Lupton, the watch officer, had never received any formal instruction or training in radar observation or plotting. However, he had gained experience by serving on radar equipped vessels. It was not the practice on the VALCHEM to plot radar targets either on the face of the radarscope or on a maneuvering board sheet. Mr. Lupton kept the radar on the eight mile range scale during the entire watch in question. As indicated, he did not plot any radar targets.

28. At about 0247, Mr. Lupton observed a target on the radarscope distant about 8 miles and bearing about 1 to 2 degrees on his starboard bow. Less than a minute thereafter, the Second Officer observed on his scope a second target about ½ mile behind the first target on practically the same bearing. The two targets were then between about seven to eight miles distant from the VALCHEM. Subsequently, the two pips appeared to Mr. Lupton to merge, and thereafter, he noticed only one target on the radarscope. Mr. Lupton was under the impression that the second target, which he described as fast moving, passed the first target on the latter's port side. Visibility at this time was estimated by the Second Officer to be about 2 miles.

29. Sometime after 0252 and before 0255, the Second Officer ordered the helmsman to resume hand steering and to alter course 15 degrees to the right of the base course of 194°T. The helmsman applied about 15 degrees right rudder and the vessel responded almost immediately. After the vessel commenced to swing to the right, the helmsman eased the rudder to about 10 degrees right. When the ship's head was about midway to the new course, the Second Officer ordered the helmsman to steady on course 210°. On receiving this order, the helmsman further eased the rudder and finally steadied up on course 210°T.

30. About the time that the VALCHEM steadied up on course 210°T, which was about 0255, the Second Officer placed the cursor line on the target which then was bearing about 15 degrees relative on his port bow. After the VALCHEM was steady on course 210°T for less than a minute, Mr. Lupton ordered a further course change to either 215 or 220 degrees. However, before the helmsman was able to steady the vessel up on the new course, the Second Officer ordered another course change of about 10 degrees to the right. During this time, Mr. Lupton was looking at the radarscope from time to time and the target, closing range steadily, appeared to be coming right down

the cursor line. There followed a series of course changes to the right in about 10 degree increments, all given prior to the time that the helmsman was able to steady up on the prior course. In executing these course changes, the helmsman never used more than 15 degrees right rudder and usually employed about 10 degrees right rudder, although possibly using small amounts of left rudder from time to time.

31. Sometime after ordering some of the above described course changes, Mr. Lupton heard the lookout bell on the bow sound twice. He immediately went to the open port in the forward part of the wheelhouse and then out to the starboard wing. Observing nothing, except that the fog was setting in thicker, he returned to the wheelhouse with the intention of stopping the engines. As he approached the telegraph, he heard the fog signal of another vessel forward of his port beam. At this time, which was about 0259, Mr. Lupton immediately rang up stop on the telegraph, took the fog signal off automatic and commenced sounding it manually. Shortly thereafter, Mr. Lupton went to the radar and noticed the target still on the cursor line and closing rapidly.

32. In the engineroom, Mr. Wiseltier was standing near the throttle when the stop bell was rung up. He immediately answered the telegraph, closed the ahead steam lever and the 70 pound extraction valve. He then waited in the vicinity of the throttle for the shaft to slow to about 35 RPM before disengaging the motor control lever. The oiler, William N. Safos, Z-767262, then returned to the engineroom from the shaft alley. Mr. Wiseltier at this time noted that the back pressure was only about 5 pounds and told the oiler to wait before closing the back pressure regulator valve. The shaft did not slow down to 35 RPM before the collision. After the collision, Mr. Wiseltier placed the motor control lever in a neutral position.

33. The Master after leaving the bridge at about 0150 returned to his room, and, although not intending to do so, dozed off on his bunk while fully clothed. He was never called by Mr. Lupton. After a time, the Master woke up and shortly thereafter, while still in his quarters, he heard a fog signal of another vessel off the port side. He immediately headed for the bridge and while proceeding through his office, heard the VALCHEM sound two prolonged blasts on the whistle. He then dashed one flight up to the bridge deck and entered the chartroom aft of the bridge. While in the chartroom, the Master heard the helmsman report the ship's head as 255° and the watch officer order the helmsman to steer 260°. At the time, the watch officer was looking out the open forward port. The Master immediately proceeded to the radar and observed a target extremely close, slightly abaft the port beam. While the Master was glancing briefly at the radarscope, Mr. Lupton sounded another 2 prolonged blasts on the whistle. The Master then without speaking to Mr. Lupton headed for the starboard wing, pausing momentarily to look out of the forward port in the wheelhouse. The Master saw nothing and continued to the wing.

34. After sounding the second of the two prolonged blasts on the ship's whistle, Mr. Lupton turned from the whistle and looking out the after port on the port side of the wheelhouse, saw the lights of the SANTA ROSA abaft his port beam and distant about 100 yards. Seconds later, at about 0301, the collision occurred as previously described. The VALCHEM was still

swinging to the right, was heading about 257°T, and was making between 13 to 14 knots at the time of the collision. The General Alarm was sounded on the VALCHEM almost simultaneously with the collision. The Master had just reached the starboard wing when the collision occurred and never saw the SANTA ROSA prior thereto.

35. On the VALCHEM, the port boiler was completely demolished by the impact and the starboard boiler was moved about 18 inches off its bed. All connecting lines to the boilers were severed and steam escaped from both boilers. All lights on the vessel were extinguished within seconds after the impact. The bulkhead between the boiler room and the engineroom was ruptured and water rose in the latter space up to about the level of the operating platform. Living quarters on the port side on the main deck level were completely demolished. No explosion resulted and there was no evidence that any serious fires broke out on the VALCHEM. However, a small fire was observed on top of the port boiler.

36. At about 0305, the engines of the SANTA ROSA were stopped before the vessel gained sternway and its bow remained in the VALCHEM's port quarter. The vessels communicated by megophone and a request was made to maintain the SANTA ROSA's bow in the VALCHEM's side until a survey of the damage could be made. On the VALCHEM, Ismael J. Romo, Fireman, who was on watch in the boiler room and was critically injured was removed from that space. A search was made for crew members occupying rooms in the area of the damage. Richard Wiseltier, the engineroom watch officer, and William N. Safos, the Oiler, made their way out of the engineroom unassisted. Oil valves leading to the boilers were secured and the CO_2 fixed system was discharged in the engineroom space. A muster of the crew disclosed that three crew members were missing. Shortly after the collision, the Chief Officer of the VALCHEM, while back aft, saw a body floating in the water between the two vessels which he believed to be Joseph A. Mora, Wiper. The Chief Officer immediately requested the SANTA ROSA to lower a boat to pick up the body. However, the body disappeared from sight before this could be accomplished and was never seen thereafter.

37. On the SANTA ROSA after the general alarm was sounded, the crew and passengers mustered at the assigned stations. Watertight doors were immediately closed from the bridge. Orders were passed over the P. A. system to lower a boat. Shortly after the collision, it was reported to the bridge that fire had broken out on the VALCHEM and the SANTA ROSA's emergency squad under the direction of Second Officer Knollman reported to the bow, broke out several fire hoses and commenced playing water into the VALCHEM's side. Later it was discovered that fire had broken out in the SANTA ROSA's forward anchor windlass room and paint locker. Water was played into these spaces through a hatch from the main deck leading down into the former space. Later all available portable CO_2 bottles were discharged into the windlass room, and the hatch which was sprung, was covered with blankets. However, the fire still smouldered. Later a Coast Guard helicopter delivered additional CO_2 bottles and breathing apparatus. The space was entered by an officer wearing the breathing apparatus and equipped with a spray nozzle and lifeline. It was discovered that line and chairs were

burning in the port after side of the windlass room and that paint was on fire in the paint locker. Later the additional CO_2 bottles were discharged through the hatch and the fire was under control at 0958.

38. Six fire hoses of the SANTA ROSA burst while in use, all about three feet from the hydrant end of the fire hose. All the hose was new and part of the original equipment of the vessel when outfitted in June 1958. Portions of the burst hose were removed from the vessel and subjected to a laboratory test. It was determined that the hose failed due to a pressure burst which was caused by a failure in the filler yarns. The filler yarns in the hose were of 8 ply construction, 3 of cotton and 5 of rayon. No deterioration of the hose was evident. Tests indicate that the strength of rayon yarn varies with the wetting action of water and that its wet strength is only about 50% of its dry strength.

39. At 0311, one of the SANTA ROSA's power boats was waterborne. A search in the water for the body seen by the Chief Officer of the VALCHEM proved negative. Later this boat was used to transport eighteen crew members of the VALCHEM to the SANTA ROSA. This list of men included the injured and members of the engine and steward's departments who were no longer needed on the VALCHEM. At 0457, the engines of the SANTA ROSA were put on the slow astern to break away from the VALCHEM. Shortly thereafter, the bow of the SANTA ROSA withdrew from the VALCHEM's side taking with it the VALCHEM's stack.

40. At 0637, a Coast Guard helicopter removed Ismael J. Romo of the VALCHEM's crew from the SANTA ROSA to transport him to a hospital ashore. Mr. Romo was dead on arrival at the Atlantic City Hospital. At 0655, the SS SANTA CLARA arrived on the scene and stood by ready to render assistance to either vessel. At 0810, the CGC 83464 and CGC 83490 arrived on the scene, and conducted a search of the area for the missing body. Later the CGC YEATON and UNIMAK arrived on the scene. At 1016, the fire on the SANTA ROSA was completely extinguished and fire fighting equipment was secured. At 1107, the VALCHEM released the SANTA ROSA and shortly thereafter, the SANTA ROSA set course for New York. The vessel arrived at Pier 57, North River on the evening of 26 March 1959.

41. The SANTA ROSA's bow was heavily damaged on both the starboard and port sides from the stem aft to about frame No. 12. In addition, the port side was holed immediately aft of the collision bulkhead into No. 1 cargo hold, in the vicinity of frame No. 18, just below the B deck level, about 20 feet above the waterline. The anchor windlass was rendered inoperative. Sufficient temporary repairs were effected in New York to permit the vessel to proceed to Newport News, Virginia. There in the builder's yard a new bow section was constructed and fitted into place.

42. At 1501, 26 March 1959, the VALCHEM, a completely dead ship, was underway bound for New York in tow of the Tug CYNTHIA MORAN. The VALCHEM arrived at Todd's Erie Basin, Brooklyn, New York on the morning of 27 March 1959. After arrival, the bodies of Victor E. McKay, Jr., the Junior Assistant Engineer and that of Shirley C. Butler, Wiper, were found in the wreckage. The surface search by Coast Guard units of the scene of the collision for the missing body of Joseph A. Mora continued until darkness on the 27th of March 1959 with negative results. No subsequent reports have been received and Joseph A. Mora must be presumed dead.

* * *

CONCLUSIONS

43. At about 0301, EST, 26 March 1959, the SS SANTA ROSA and the SS VALCHEM collided in the dense fog off the coast of New Jersey in position 39°24'N, 73°59'W.

44. The collision was caused primarily by the failure of both vessels prior to the collision to proceed at speeds which were moderate in view of the restricted visibility and other attendant circumstances, and also by the failure of the SANTA ROSA to stop her engines and thereafter navigate with caution upon hearing the fog signal of the VALCHEM off the starboard bow.

45. It is generally agreed that at the time of the collision, visibility was limited to about 500 yards. Also, it appears that the collision occurred in an area of relatively heavy traffic. Until seconds before the collision when her engines were reversed on sighting the VALCHEM, the SANTA ROSA was proceeding at full ahead, a speed in excess of 21 knots. It is not considered that the vessel's use of radar justified this speed. To the contrary, the radar indicated the VALCHEM would pass dangerously close, which fact should have served to further emphasize the need for moderate speed. In the light of all the circumstances, it is considered that there is evidence that the speed of the SANTA ROSA was immoderate.

46. The fact that the SANTA ROSA apparently entered a fog patch within the last ten minutes or so prior to the collision is not considered to absolve that vessel from compliance with Rule 16(a). Despite the admitted difficulty of estimating visibility in fog at night in the open sea, the fact remains that in the light of the radar information, the failure of the SANTA ROSA to sight the VALCHEM furnished a very reliable indication of the decreased visibility.

47. About four minutes before the collision, the fog signal of the VALCHEM was first heard off the starboard bow of the SANTA ROSA. At that time the VALCHEM was not in sight, but two radar ranges and bearings of that vessel had been observed and plotted. Based on this information, calculations of the VALCHEM's CPA, course and speed were made. These calculations, unknown to the personnel aboard the SANTA ROSA, were, in the main, incorrect, due to the fact that the VALCHEM had already commenced her maneuver to starboard which continued up to the collision. Moreover, after the second range and bearing of the VALCHEM were taken, no further observations of the radarscope were made until shortly before the collision. Thus, until very shortly before the collision, it was not known aboard the SANTA ROSA that the VALCHEM was maneuvering. It is considered that the position of the VALCHEM was not ascertained by the SANTA ROSA within the meaning of the applicable Rule, and that her failure to stop and navigate with caution upon hearing the fog signals of the VALCHEM constituted evidence of negligence.

48. There is evidence to indicate that the VALCHEM was also navigating at an immoderate speed. Prior to the time her engines were stopped, the VALCHEM was proceeding at full ahead, namely about 88 RPM, and was making good a speed in excess of 16 knots. For several minutes before the collision, the VALCHEM's radar indicated that the vessel was on a collision course with the SANTA ROSA.

The VALCHEM had been navigating since about 0200 under conditions described in her log as thick fog and had sounded fog signals from that time up to the time of the collision. Her lookout indicates that thick fog existed sometime prior to the time he reported the SANTA ROSA's fog signal. It was shortly after this report was received that the engines of the VALCHEM were stopped. Further, as stated previously, the visibility at the time of collision was only about 500 yards.

49. There is testimony to the effect that the VALCHEM commenced maneuvering to the right of her base course of 194°T about 20 minutes before the collision, and that this swing to the right was continued until the collision without steadying on any course. Since the VALCHEM was heading about 257°T at impact, this testimony would indicate that the VALCHEM turned some 66 degrees in about 20 minutes, or slightly more than 3 degrees each minute. This in itself is not deemed credible. Further, the SANTA ROSA's plot indicates that the VALCHEM did not begin maneuvering to the right until sometime after 0252. There is also testimony that the engines of the VALCHEM were stopped about 8 to 10 minutes before the collision and that the vessel was dead in the water at impact. This testimony is also not deemed credible. The SANTA ROSA's plot indicates that as of 0255, the speed of the VALCHEM was undiminished. Further, the testimony of the engineering personnel of the VALCHEM, the violent swing to the left of the SANTA ROSA after impact, and a maneuvering board plot made for the BOARD, reconstructing the collision on the basis of all available evidence, all indicate that the VALCHEM was making considerable way at the time of collision.

50. The VALCHEM sounded two prolonged blasts on two occasions just prior to collision. At the time, the vessels were pretty clearly in extremis, and there is no evidence to suggest that these signals had any bearing on the collision. Nevertheless, there is evidence that these signals were improper, and not in accordance with the Rules of the Road.

51. It is also considered that the failure of Mr. Lupton to call the Master of the VALCHEM prior to the collision constituted evidence of negligence. His radar picked up the SANTA ROSA almost dead ahead some 14 minutes before the collision. Sometime thereafter, from the fairly constant bearing and the rapid closing rate, it should have been apparent to Mr. Lupton that danger of collision existed. Even if Mr. Lupton could not find time to converse with the Master on the phone, merely ringing his phone should have been sufficient to alert the Master and cause him to come to the bridge.

52. The failure of the Master of the VALCHEM to leave proper instructions with his watch officers to call him in the event of decreased visibility, and in the event other vessels passed within close proximity to his won vessel, constituted evidence of negligence. The Master prior to departure received weather reports indicating the likelihood of patch fog and was well aware that fairly heavy traffic would be encountered. On the other hand, since the Master had been aboard the VALCHEM for only about two weeks before the collision, he could not have been completely informed as to the qualifications of his watch officers.

53. It is considered that the act of Mr. Welles, the watch officer of the SANTA ROSA, in keeping his radar on the six mile scale continuously for more than an hour and a half before the collision constituted evidence of negligence. It is undisputed that the radar was functioning properly and was equipped with greater range scales.

54. It is also considered that the failure of Mr. Welles to make or to cause to be made further observations of the radarscope after 0255, when the VALCHEM was three miles distant, constituted evidence of negligence. It appears that no one observed the radar between 0255 and the time just before the collision when the Master observed it. A close observation of the radar in this critical period might well have indicated that the VALCHEM was maneuvering to starboard.

55. Even though the Master of the SANTA ROSA assumed the conn by issuing orders for three separate course changes from 010° to due north, it is considered that the failure of Mr. Welles to request permission of the Master to stop the engines after the fog signal of the VALCHEM was heard off the bow, constituted evidence of negligence.

56. The failure of the fire hose on board the SANTA ROSA was not due to deterioration, but resulted from the poor quality of the hose and its unsuitability for fire fighting service on board vessels.

57. By his own admission, Mr. Wiseltier, the engineer on watch aboard the VALCHEM, testified falsely on his first appearance before the Board when he stated that he had placed the motor control lever in a neutral position before the collision. It is significant that at this time, Mr. Wiseltier specifically denied that he had done this after the collision. On his subsequent appearance before the Board, he unequivocally admitted that this prior testimony was false, and stated that he had placed the motor control lever in a neutral position after the collision occurred.

RECOMMENDATIONS

58. It is recommended that action under R.S. 4450, as amended, be taken against the licenses and documents held by Frank S. Siwik, Master, SANTA ROSA, Louis L. Murphy, Master, VALCHEM, Clyde St. Clair Lupton, Second Officer, VALCHEM, and Walt Welles, Second Officer, SANTA ROSA, for their acts of negligence discussed in full in the conclusions.

59. It is recommended that a study be made as to the desirability of adopting minimum specifications for fire hose to be used on inspected vessels.

60. It is recommended that consideration be given to amending 46 CFR 10.05-46, so as to require every holder of a license as Master or deck officer for service on ocean, coastwise or Great Lakes' vessels of 300 gross tons or over, to demonstrate his qualifications as "radar observer" at the time of the license renewal, if he has not done so prior to that time.

61. It is recommended that a study be made of the practical and legal feasibility of establishing separate tracts for north and south bound vessels navigating along the Atlantic and Pacific Coasts of the United States. It is submitted that if such a proposal could be put into effect, it would materially assist in preventing collision in these areas. It appears that modern aids to navigation, especially loran, would make it possible for navigators to adhere to such tracks within reasonable limits under almost all conditions of sea and weather.

62. It is recommended that consideration be given to the issuance by some competent authority, for the guidance of masters of merchant vessels of the United States, of suggested standard instructions to deck watch officers setting forth the circumstances under which reports should be made to the master when conditions of restricted visibility and other vessels are encountered.

63. It is recommended that consideration be given to the issuance by some competent authority, for guidance of the masters of merchant vessels of the United States, of suggested standard instructions specifying the duties and responsibilities of the master and watch officers when both officers are on the bridge of the vessel while being navigated.

64. Since the issue of the false testimony given by Mr. Wiseltier has already been referred to the United States Attorney for the Southern District of New York, no specific recommendation is made with respect thereto.

65. It is recommended, except for the actions indicated, that the case be closed.

/s/ W. P. Hawley
W. P. HAWLEY
CAPTAIN, U. S. COAST GUARD, CHAIRMAN

/s/ M. Stockman
M. STOCKMAN
COMMANDER, U. S. COAST GUARD, MEMBER

/s/ A. S. Frevola
A. S. FREVOLA
LIEUTENANT COMMANDER, U. S. COAST GUARD
MEMBER and RECORDER