



TREASURY DEPARTMENT
UNITED STATES COAST GUARD

Address reply to:
COMMANDANT
U.S. COAST GUARD
WASHINGTON, D.C. 20226

MVI-3
5943/SANTA MARIA -
SIRRAH a-17 Bd.
9 APR 1965

Commandant's Action

on

Marine Board of Investigation; collision of the
M/V SIRRAH and the SS SANTA MARIA in Knik Arm,
off Anchorage, Alaska on 19 October 1964, with
loss of life

1. The record of the Marine Board of Investigation convened to investigate subject casualty, together with the Findings of Fact, Conclusions and Recommendations, has been reviewed.
2. At about 1600 AST, on 19 October 1964, the United States tankship SS SANTA MARIA collided with the Dutch tankship M/V SIRRAH which was in the process of weighing anchor in a position about mid-channel westward of the city dock at Anchorage, Alaska.
3. The collision occurred during daylight hours. The visibility was approximately 10 miles, and the wind was from the north at about 20 knots. At the time and location of the casualty, it was about 1 hour before high tide. The current was setting about 050° True at about 3 knots.
4. Knik Arm in the vicinity of the casualty is basically oriented ENE-WSW until east of MacKenzie Point where it gradually changes to a near NNE-SSW axis. Deep water in the Arm varies between 1 and 1-1/2 miles wide. The diurnal range of tide is about 29 feet, and the tidal currents near mid-channel attain velocities of 6 or more knots.
5. The SIRRAH was anchored with 10 shots of chain to the starboard anchor in position about mid-channel on a line between MacKenzie Point and the city docks. The channel is approximately 1 and 1/2 miles wide. The vessel was to shift from the anchorage to the off loading piers at 1600. At about 1530 with two tugs alongside to starboard, a pilot and an



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observer on board, and the engine ready for getting underway, the crew commenced weighing the anchor. The vessel was heading about 210° True with the anchor chain tending in a forward direction. The Master, Chief Officer, Helmsman, Pilot and Observer were on the bridge. At about this time the SANTA MARIA was observed standing into Knik Arm. The approach of the SANTA MARIA caused no particular concern on the SIRRAH since there was plenty of maneuvering room for the vessels. The SIRRAH continued heaving in its anchor, and witnesses testified that neither the vessel's engines nor the tug boats were used to relieve the strain on the anchor windlass caused by the flooding tidal current. The SANTA MARIA approached the SIRRAH slowly in a crab like manner and, when about 1/2 mile away, was showing her starboard side and bearing to the port of the SIRRAH. About this time, a whistle signal was heard from the SANTA MARIA but the characteristics could not be distinguished. Shortly thereafter a distinct two-blast whistle signal was heard from the SANTA MARIA, and it became apparent that the ship intended to pass to starboard of the still anchored SIRRAH. The SIRRAH sounded the danger signal; the engines were placed full astern; the tug on the starboard bow was directed to back full; and the crewmembers left the bow when collision appeared imminent. Moments later at about 1601 and 1/2, after the forward portion of the SANTA MARIA had passed across the bow of the SIRRAH, the Numbers 9 and 10 starboard wing tanks set heavily onto the bow of the SIRRAH. The collision fractured the side shell plating of the SANTA MARIA and parted the anchor chain of the SIRRAH. Gasoline leaking out of the SANTA MARIA was ignited by sparks caused by the friction of collision. The forecastle of the SIRRAH, the tug alongside the SIRRAH, and the after portion of the SANTA MARIA were in flames. After the two ships were separated, the fires on the SIRRAH and the tug were extinguished with relatively little damage to the vessels. The tug proceeded to the SANTA MARIA to rescue the crew, and the SIRRAH, after some delay, anchored near its original position.

6. The SANTA MARIA was proceeding from Kodiak, Alaska, to Anchorage, Alaska, with a mixed cargo of gasoline, diesel fuel and stove oil. Information was received by radio telephone that a tanker anchored off Anchorage, Alaska, would shift to the petroleum dock at 1600. The Master and Pilot of the SANTA MARIA made plans to arrive after 1600 and anchor. The SANTA MARIA passed Point Woronzof at 1525 on a course of about 065° True. Shortly thereafter, the Master came to the bridge, and a vessel later identified as the SIRRAH was observed dead ahead at a reported radar range of 4 miles. The engines of the SANTA MARIA were used only as necessary to maintain steerage-way in the 3 knot flooding tidal current and alternated

between stop and slow ahead. As the ship passed MacKenzie Point, it was observed that there were two smaller vessels in the vicinity of the SIRRAN. When the vessels were about 1 and 1/4 miles apart, witnesses testified that the SIRRAN had an anchor day signal displayed; was on an approximate opposite heading; and that her starboard anchor chain was visible and appeared to be tending aft along her starboard side. They further testified that the SIRRAN was underway, dragging her starboard anchor and turning to starboard. As the vessels closed the intervening distance, left rudder was ordered with the intention of passing the SIRRAN starboard to starboard, but the relative bearings between the vessels did not change. A two-blast whistle signal was sounded; and later another two-blast signal was sounded, but witnesses testified that an answering signal was not heard from the SIRRAN. At 1556 more left rudder was ordered and the engines were placed on half ahead. At 1557 the rudder was ordered hard left, and the engines were placed on full ahead. At 1558 the engines were placed at emergency full ahead. Seconds later with collision imminent, the rudder was placed hard right in an effort to swing the stern to port in an attempt to clear the SIRRAN. Collision followed almost immediately and resulted in a fierce and uncontrolled fire which engulfed the after deckhouse of the SANTA MARIA. After the vessels separated, the steam smothering system was activated, and a 2-1/2" fire hose was used to fight the fire with little effect. The starboard anchor was dropped and secured with about 2-1/2 shots of chain out, and the order was given to abandon ship. Seven members of the crew left the vessel in the forward port lifeboat, and 26 boarded the tug which had been assisting the SIRRAN. Later, it was learned that one crewmember was unaccounted for. The following day, after the gasoline fire died out, the vessel was searched but no sign of the missing crewmember was found. On 21 October 1964, the remaining fire in the after deckhouse was finally extinguished. Although the SANTA MARIA was severely damaged in the way of the starboard quarter and the after deckhouse, the cargo of all tanks except Numbers 9 and 10 starboard appeared to be undamaged.

REMARKS

1. Concurring with the Marine Board, it is considered that the SANTA MARIA was set down on the SIRRAN by the tidal current.
2. Further concurring with the Board, it is considered that there is evidence of negligence on the part of the Master and Pilot of the SS SANTA MARIA with regard to the navigation

of the vessel. The Board's recommendation for further investigation under the Suspension and Revocation Proceedings has been initiated.

3. The Board's conclusion that [REDACTED] crewmember of the SS SANTA MARIA, probably perished in the cold waters of Knik Arm in attempting to abandon the burning vessel is concurred in.

4. The occasional obvious conflict in testimony of personnel on the respective vessels, though not uncommon in incidents of this nature is, nevertheless, striking in this case. In this regard, since the Board observed the scene of the casualty and was in the best position to assess credibility, it is considered that its Findings of Fact and Conclusions are a reasonable evaluation of the evidence and are adequately supported by the record of the proceedings.

5. The Report of the Marine Board of Investigation is approved.

[REDACTED]
E. J. ROLAND
Admiral, U. S. Coast Guard
Commandant

TREASURY DEPARTMENT
UNITED STATES COAST GUARD

ADDRESS REPLY TO:
COMMANDER
17TH COAST GUARD DISTRICT
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JUNEAU, ALASKA



5943/SANTA MARIA-
SIRRAH A-17 Bd

5 JAN 1965

From: Marine Board of Investigation
To: Commandant (MVI)
Via: Commander Seventeenth CG District

Subj: Collision between the MV SIRRAH and the SS SANTA MARIA
in Knik Arm, off Anchorage, Alaska 19 October 1964 with
resultant fire and loss of life

FINDINGS OF FACT

1. The U. S. Tanker SS SANTA MARIA, and the Dutch Tanker MV SIRRAH, collided in Knik Arm, approximately 1 1/2 miles off the City Dock, Anchorage, Alaska about 1600 AST 19 October 1964. In the resulting fire, one crewmember of the SANTA MARIA is missing. Three other crewmembers of the SANTA MARIA were injured. Both vessels were extensively damaged.

2. The following vessels were involved:

a. The SANTA MARIA of Wilmington, Delaware, O.M. 263 781, a Steam powered steel tankship owned by the FIGUEROA Tanker Corporation of Delaware. She is 11,291 gross tons, 6,831 net tons, her registered dimensions in feet are, length 529.4, beam 68.3 and depth 37.5. The vessel was built in 1952 at Sparrows Point, Md. The Pacific Coast Transport Co., of Wilmington, California was her operator. The vessel is radar equipped. Captain Austin P. Tomter was her master.

b. The SIRRAH of Rotterdam, Netherland, O.N. 9066, a diesel powered steel tank vessel, built in 1953. She is 12,463 gross tons, 7,089.80 net tons and has registered length of 163.72 meters. The vessel is owned by NIEVELT GOUDRIAAN of Rotterdam, Netherlands. The vessel is radar equipped. Captain [REDACTED] was her master.

c. The WESTWIND of Juneau, Alaska, O.N. 284 374, a diesel powered steel towing vessel of 1,800 HP, owned and operated by the Cook Inlet Tug and Barge Co., Anchorage, Alaska. She was built in 1944 at Neponset, Mass. She is 170 gross tons, 90 net tons, her registered dimensions in feet are, length 152.4, beam 23.3 and depth 11.3. [REDACTED] was her master.

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d. The ARCTIC WIND of Juneau, Alaska, O.N. 282 506, a diesel powered steel towing vessel of 350 HP, owned and operated by the Cook Inlet Tug and Barge Co., Anchorage, Alaska. She was built as a landing craft in 1944 at Oakland, California. She is 35 gross tons, 24 net tons, her registered dimensions in feet are, length 51.9, beam 14.1 and depth 5.8. [REDACTED] was her master.

3. The following crewmember of the SS SANTA MARIA is missing as a result of the casualty:

[REDACTED] [REDACTED] Portland, Oregon.
USMMD [REDACTED] serving as fireman-watertender.

4. The following crewmembers of the SS SANTA MARIA were reported injured as a result of the casualty:

[REDACTED], [REDACTED] Wilmington, California.
[REDACTED] serving as deck maintenance man.

[REDACTED], Long Beach, California.
[REDACTED] serving as fireman-watertender.

[REDACTED] SUP, San Francisco, California. USMMD
[REDACTED] D-3 serving as 2nd cook and baker.

5. The weather at the time of the casualty, taken from the reports of marine casualty submitted was: partly cloudy, visibility good (10 miles), wind northerly at about 20 knots, the sea was calm.

At the time and location of the casualty it was one hour before high tide. The flooding tidal current was about 050° true at about 3 knots.

6. Aboard the MV SIRRAH:

At approximately 0430 AST 19 October 1964 the SIRRAH anchored off the City of Anchorage, Alaska to wait her turn at the petroleum dock. Her cargo consisted of 17,300 long tons of petroleum products. At that time Pt. MacKenzie was bearing 270° true at a range of 1.9 miles, by radar. The starboard anchor and ten shots of chain were in the water and the fathometer indicated there was 60 feet of water under the vessel's keel. The anchor day signal was rigged. At that time the vessel's engine room was put on 10 minutes standby, later changed to 30 minute standby.

At about 1520 AST 19 October 1964 the tug WESTWIND arrived at the SIRRAH with a pilot, Captain [REDACTED], and an observer, [REDACTED]. The vessel's position had not changed materially since anchoring earlier in the day. The starboard anchor and ten shots of chain were still in the water.

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About 1530 the vessel's master gave the order to commence weighing anchor. By 1540 the tug WESTWIND was in position on the vessel's starboard bow and secured. Upon her arrival the ARCTIC WIND was secured at the vessel's starboard quarter. These vessels were to be used to assist the SIRRAH in docking, the shift to the petroleum dock having been scheduled for 1600 of that afternoon.

The SIRRAH was lying at anchor, heading into the flooding current at about 210°T and with the starboard anchor chain tending in a forward direction.

At 1530 the following personnel were on the bridge: The SIRRAH's Master, Captain J. H. vanKlinkenberg, his Chief Officer, [redacted] the pilot, [redacted] and observer, [redacted]. While the anchor chain was being heaved in, a helmsman came and went according to orders given him by officers on the bridge. The telegraph was on stop and the engine room terminated 30 minute standby status by reporting that the engines were ready. At this time an approaching vessel, later identified as the SANTA MARIA, was seen coming up Cook Inlet in the distance in the direction of Fire Island. It appeared the SANTA MARIA was proceeding to an anchorage. As there was plenty of sea room it appeared there was no problem.

When the vessels were about 1/2 mile apart the SANTA MARIA approached the SIRRAH slowly in a crabwise manner, showing her starboard side, and bearing to port from the SIRRAH.

About this time a whistle signal from the SANTA MARIA was heard, but the number and type of blasts were not determined. The SIRRAH's chain continued to be heaved in, with the mate on the bow indicating which shot was in by striking an appropriate number of strokes on the bell.

Captain [redacted] and [redacted] heard the SANTA MARIA's whistle and it was discussed by the various officers on the SIRRAH's bridge. Shortly afterward, a definite 2 blast signal was heard from the SANTA MARIA, indicating her desire to effect a starboard to starboard passing. Captain [redacted] expressed alarm concerning the proposed maneuver because the SANTA MARIA was close and was still bearing to port from the SIRRAH. The SANTA MARIA was turning to her port and was proceeding crabwise, or sideways, as well as forward due to the effect of the strong flood current.

Orders were given to back the SIRRAH's engine, first full astern then emergency full astern, and these orders were complied with by the SIRRAH's engineers. Also, Captain [redacted] shouted and gestured to Captain [redacted] on the WESTWIND to back the WESTWIND, and Captain [redacted] complied. Captain [redacted]

sounded a danger signal on the SIRRAH's whistle.

The SANTA MARIA's bow passed clear of the SIRRAH's bow, proceeding from the SIRRAH's port to starboard, but the two vessels were very close. Moments later, the sidewise motion of the SANTA MARIA, imparted by the flood current, caused her to set down on the stern of the SIRRAH. The locations of collision were about #9 tank on the starboard quarter of the SANTA MARIA and the stem of the SIRRAH.

The collision took place at 1601 1/2 AST. Upon impact, flames engulfed the bows of the SIRRAH and the WESTWIND, which vessels were still tied together. The SIRRAH backed clear of the flames and the WESTWIND's lines burned through and/or were cast off, permitting her to proceed independently. Fires on both the SIRRAH and WESTWIND were quickly extinguished.

Immediately after the impact, the SIRRAH's starboard anchor chain broke. It was later determined that the anchor chain had parted about 84 links from the #3 shot link in the third shot of chain. The parting of the anchor chain was accompanied by a sudden increase in propeller rpm from about 60 to over 100 in the astern direction.

The anchor chain of the SIRRAH was tending in a direction forward of the beam at all times prior to the collision. The mate on the bow, Mr. [REDACTED] was in the best position to observe the chain as it was being heaved in and he reported it to be tending in a direction of about 070° to starboard relative to the SIRRAH's bow up to the time of collision. The SIRRAH's anchor was still on the bottom at the moment of collision and her anchor ball was displayed. Her heading did not change appreciably from the time she commenced heaving her anchor chain until the moment of collision.

7. Aboard the SS SANTA MARIA:

About 1400 AST 19 October 1964 the SS SANTA MARIA was proceeding from Kodiak, Alaska toward Anchorage, Alaska with 14,500 long tons of petroleum products as cargo. This cargo consisted of diesel, Royal 76 gas, Regular 76 gas, Alaska stove oil, 115 Oct gas, 100 Oct gas and 80 Oct gas. Captain Austin P. Tomter was her master and Captain Robert P. Kamdron was her pilot. At that time the vessel was advised by radiotelephone that there was a tanker anchored off Anchorage, Alaska which was scheduled to shift to the petroleum dock about 1600 that afternoon. Without specific anchorage instructions it was decided to proceed slowly so as to arrive Anchorage, Alaska after 1600 and anchor.

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At 1525 the SANTA MARIA passed Pt. Woronzof, heading about 065° true. Shortly before 1530 Captain Tomter arrived on the bridge. The following officers were also on the bridge: Robert Kamdron, pilot conning the vessel, and [REDACTED] 2nd mate, the mate on watch.

At 1530 arrival at Anchorage, Alaska was logged, although the vessel was still underway.

A vessel was observed dead ahead on the radar scope, range 4 miles. This vessel was later identified as the tanker MV SIRRAH. As the SANTA MARIA passed Pt. MacKenzie the SIRRAH's range was observed to be 2 1/2 miles, by radar. At this time two small boats were observed in the vicinity of the SIRRAH by radar. Observation through binoculars confirmed there were two boats on the starboard side of the SIRRAH. When the vessels were about 1 1/4 miles apart the SIRRAH was observed to have her anchor day signal rigged and to be on an opposite heading. Her starboard anchor chain was visible and appeared to be tending aft along her starboard side.

The bridge personnel of the SANTA MARIA testified that the SIRRAH was under way, dragging her starboard anchor, and turning to her starboard. Captain Tomter could see no one on the bridge of the SIRRAH, using binoculars.

Captain Tomter ordered left rudder, but the relative bearing between the vessels did not change. A two blast passing signal was sounded; later, another two blast signal was sounded by the SANTA MARIA. No answering signal for either of the above two whistle signals was heard from the SIRRAH. At 1556 Captain Tomter ordered more left rudder and put the engines on half ahead. A collision between the two vessels seemed likely. At 1557 he ordered hard left and put the engines on full ahead. At 1558 the engines were put on emergency full ahead. Seconds later, a collision imminent, he ordered the rudder hard right in an effort to swing the SANTA MARIA's stern to port, and gave a series of 4 or more short blasts (danger signal) on his whistle. The collision took place seconds later.

On impact the bow of the SIRRAH and the starboard quarter of the SANTA MARIA made a sliding contact in a shower of sparks rupturing numbers 9 & 10 starboard wing tanks, loaded with regular gasoline, below the waterline. At this time, the angle of intersection of the fore and aft centerlines of the two vessels was about 45°. Immediately the floating gasoline ignited. Right at impact the bow of the SIRRAH appeared to raise noticeable.

8. Almost immediately after the collision, flames engulfed the starboard quarter of the SANTA MARIA, the bow of the SIRRAH, and the bow of the WESTWIND. Gasoline from the ruptured tanks of

the SANTA MARIA spilled into the water and ignited. The SIRRAH and WESTWIND backed clear of these flames and shortly thereafter the fires on both vessels were extinguished. The fire damage to the SIRRAH was not severe, and on the WESTWIND the fire was mostly confined to the bow fender. The SIRRAH and WESTWIND parted when lines were burned through and/or cast off. The SIRRAH proceeded a safe distance away, took necessary damage control procedures to assure the safety of the vessel, and then anchored again very near the location of her original anchorage prior to the collision.

9. The fire on the SANTA MARIA was fierce and uncontrolled. A wind from about the starboard bow blew the flames aft and to port, engulfing the after deckhouse. The fire emergency signal was sounded on the general alarm and the crew commenced fire fighting efforts. The Chief Mate ordered the steam smothering turned on for the tanks in way of the fire, with some beneficial effect. An attempt was made to use fire hoses but there was considerable delay because the hoses were not connected and the hydrants were open. This had been done to drain the system in anticipation of freezing weather. To activate the fire hoses, it was necessary to re-connect the hoses which were stretched out and to close the unconnected fire hydrants, after which water pressure could be turned on. Finally, the Chief Mate brought a 2 1/2" hose to play on the fire but this effort was ineffectual. The nozzle used was a combination solid-stream-or-fog, and the Chief Mate mostly used the solid stream. Shortly thereafter, the Chief Mate heard the order to abandon ship and no further effort was made to fight the fire. Throughout the period that fire fighting efforts were taking place, the flames continued to be blown aft and to port by the wind, causing the after deckhouse to be engulfed in flames.

10. A crewmember of the SANTA MARIA, [REDACTED] was still on the bow and, on orders from the bridge, he dropped the starboard anchor. However, he lost communication with the bridge and no instructions went forward concerning the amount of chain to let out. [REDACTED] let out about 2 1/2 shots, secured the chain, and joined the other crewmembers in abandoning ship.

11. A short time after the collision, when fire fighting efforts proved ineffectual, Captain Tomter gave the order to abandon ship. Efforts were made to lower the forward port and starboard lifeboats. Captain [REDACTED] had already brought the WESTWIND to a position alongside the starboard bow of the SANTA MARIA to assist in taking crewmembers off. The port forward lifeboat was successfully lowered, but attempts to lower the starboard forward lifeboat were abandoned by the crew in favor of leaving the SANTA MARIA via the WESTWIND. A total of 31 crewmembers left the SANTA MARIA via the WESTWIND. Six men were in the port forward lifeboat when she was launched. Captain Tomter, the 7th man in the port boat, departed the vessel by sliding down the painter and into

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the port forward lifeboat while it was in the water, and he was then believed to have been the last person to abandon the SANTA MARIA. A crew check later showed that a fireman-watertender, [REDACTED], was unaccounted for.

12. The SANTA MARIA continued to burn fiercely and uncontrollably. As the tide turned she dragged her anchor, fetching up on the rocks off Pt. MacKenzie. During the evening of 19 October and the early morning hours of 20 October the gasoline fire from numbers 9 & 10 starboard wing tanks died out, leaving the after house smoldering.

On the next high tide, in the early hours of 20 October, the vessel refloated herself. She was then anchored off Fire Island, by a Foss Launch & Tug Company vessel.

On 21 October 1964, with the assistance of a damage control party from the USCGC STORIS, the remaining fire, smoldering in the insulation of the SANTA MARIA's meat box, was extinguished.

13. On 20 October 1964, after the burning gasoline had died out, the Master and some of the SANTA MARIA's crew returned to her to make a search of the vessel. No sign of the missing crewmember HUGHES was found, nor was his wallet, while the wallets of all remaining crewmembers were accounted for. A port hole in HUGHES' quarters, that was known to have been previously secured, was found open.

The cargo of all tanks except for numbers 9 & 10 starboard appeared to be undamaged.

In the salvage operation that followed approximately 105,000 bbls. of cargo was salvaged, with little or no contamination.

The vessel's cargo tank vent system was properly equipped with PV valves and flame arrestors.

14. The missing fireman, [REDACTED], was on watch in the fireroom at the time of the collision. When the order was received to abandon ship, [REDACTED] the 4-8 oiler, saw [REDACTED] go up the port engine room ladder and come back down saying, "You can't get out that way." [REDACTED] was last seen by [REDACTED] going up the starboard engine room ladder. [REDACTED] headed up the port engine room ladder and ultimately abandoned the vessel safely.

The USMMD of [REDACTED] is missing, and many of his personal effects were destroyed by the fire. A Union Oil Company representative reported that his personal effects, wages, etc., have been turned over to his next of kin. A presumptive death certificate will be forwarded when available.

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15. The SS SANTA MARIA was seriously damaged in way of the starboard quarter and after deckhouse. This was aggravated by flooding of the engineroom during the time the vessel was not under command after the crew abandoned her. The damage to the SIRRAH was confined to the forward portion, with her stem holed and smashed in and some fire damage.

16. The damage control training for the crew of the SANTA MARIA consisted of the required fire and boat drills. This was supplemented by occasional safety meetings which were attended only by the ship's officers. No other type of training was offered. No effort was made to determine the training program of the SIRRAH since she is a foreign vessel.

17. The SANTA MARIA's Customs Document was an Enrollment; therefore, the pilot was serving under the authority of his Coast Guard issued Pilot license within the statutory requirements of 46 USC 364, as well as 46 CFR 157.20-40 and 46 CFR 35.05-10.

CONCLUSIONS

1. The SS SANTA MARIA and the MV SIRRAH collided at about 1600 AST 19 October 1964 in Knik Arm off the City of Anchorage, Alaska.
2. At the time of the collision the SIRRAH was in the process of weighing anchor, preparatory to shifting to the Anchorage Petroleum Dock, with an estimated three shots of chain in the water and the anchor on the bottom.
3. The Pilot and Master of the SS SANTA MARIA intended to anchor at the anchorage occupied by the MV SIRRAH if available, or if not, at an anchorage between the MV SIRRAH and the west bank of the inlet.
4. The SS SANTA MARIA was in the process of entering the Port of Anchorage where she was to anchor and wait her turn at the petroleum dock.
5. The collision took place approximately one hour before high tide, with the flooding tidal current about 050° true at about 3 knots.
6. The tidal current caused the SS SANTA MARIA to set down on the anchored MV SIRRAH in such a way that the starboard quarter of the SANTA MARIA, in way of 9 & 10 starboard wing tanks, came in contact with the bow of the MV SIRRAH.
7. Inasmuch as no trace of the body of [REDACTED] was found upon a complete search of the SS SANTA MARIA, it is concluded that he probably perished in the cold waters of Knik Arm in attempting to abandon the burning vessel.
8. Since the intense fire aboard the SS SANTA MARIA, in way of #9 & #10 tanks, did not spread to adjacent tanks, safety devices such as PV valves and flame arrestors served their purpose. Loss of life was no doubt minimized, as was physical damage to the vessel, by these devices.
9. The prompt, courageous action of [REDACTED], Master of the WESTWIND, possibly saved the lives of many of the SS SANTA MARIA's crew. Probably the starboard forward lifeboat could have been launched, as well as the port forward lifeboat, and the crew then debarked, but the ready availability of the WESTWIND assured an early and successful debarkation from the SS SANTA MARIA.
10. There is evidence of negligence in the manner in which the SS SANTA MARIA was being navigated shortly before and up to the collision, by her Master and Pilot, Captain Austin P. Tomter and Captain Robert Kamdron, respectively.

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RECOMMENDATIONS

1. It is recommended that further investigation under RS 4450, as amended, be instituted concerning Conclusion 10, above.
2. It is further recommended that the case be closed.

[REDACTED]
R. J. FUGINA, CAPT, USCG
Chairman

[REDACTED]
DAN RAYACON, CDR, USCG
Member

[REDACTED]
R. F. HORNBECK, CDR, USCG
Member and Recorder

Enclosures:

- (1) Transcript of Proceedings (3 vols.) (2 sets)
- (2) CG 2692 from M/V SIRRAH (1 copy)
- (3) CG 2692 from S/S SANTA MARIA (1 copy)
- (4) CG 924E - Eugene L. Hughes (1 copy)
- (5) CG 924E - Harold S. Leland, Jr. (1 copy)
- (6) CG 924E - Edmond W. Oliver (1 copy)
- (7) CG 924E - Edward Z Chance (1 copy)