

MVI
19 February 1954
(PAN GEORGIA
J. H. DEINLEIN
WOTOCO - a-3 Bd)

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

Subj: Marine Board of Investigation; explosion and fire on the tanker PAN GEORGIA and fires on the tugs J. H. DEINLEIN and WOTOCO, Wilmington, Delaware, on 23 July 1953, with loss of life

1. The steam tanker PAN GEORGIA, built in 1945 of 9179 g.t., was on 23 July 1953 moored port side to pier at Wilmington, Delaware. After discharging her cargo of automobile gasoline and heating oil, all cargo tanks except those reserved for ballasting were secured. The PAN GEORGIA while ballasting was prepared for getting under way with the motor tugs J. H. DEINLEIN and WOTOCO tied up alongside. The Master ordered standby to get under way and also ordered the cessation of ballasting operations, which latter order was not carried out. At about 2220 shortly after the standby order, ballasting operations caused the expulsion of vapors from the No. 5 wing tanks which vapors diffused outward and downward and were apparently ignited by a source of ignition in way of the tugs alongside. Explosion and fire ensued involving the tanker, both tugs, and the pier. Five crew members from the J. H. DEINLEIN, two crew members from the WOTOCO, and one crew member from the PAN GEORGIA lost their lives as a result of this disaster. Damage to the PAN GEORGIA was estimated at \$200,000, the J. H. DEINLEIN at \$45,000, and the WOTOCO at \$3,000.

2. Pursuant to the provisions of Title 46 C.F.R. Part 136, 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 and is forwarded herewith.

Chief, MVI Division, to
Commandant

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3. It is recommended that the Findings of Fact, Conclusions and Recommendations of the Marine Board of Investigation convened to investigate subject casualty be approved.

(signed) Paul E. Savonis

PAUL E. SAVONIS
Acting

FIRST ENDORSEMENT ON MVI memorandum of 19 February 1954

M
24 February 1954

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

Forwarded, recommending approval

(signed) H. C. Shepherd

APPROVED: 25 FEB 1954

(signed) A. C. Richmond

A. C. RICHMOND

Rear Admiral, U. S. Coast Guard
Acting Commandant

REPORT OF A
MARINE BOARD OF INVESTIGATION
Convened at the
Marine Inspection Office, United States Coast Guard
Third Coast Guard District
Room 803 Custom House, Philadelphia, Pa.

on
27, 28, 29, 30, & 31 July; 22 September, 1953

To Inquire Into and Investigate the Circumstances Surrounding the
Reported Burning of the Tanker PAN GEORGIA and Involving
the Tug J. H. DEINLEIN, the Tug WOTOCO and the Dock
at the Sico Terminal, Wilmington, Delaware, at
the Mouth of the Christina River on
23 July, 1953

The Board arrived at the following findings, conclusions and recommendations:

FINDINGS OF FACT:

1. At 2220 EST, 23 July 1953, while moored to the Sico Company Terminal, Christina River, Wilmington, Delaware, the SS PAN GEORGIA and the two diesel tugs J. H. DEINLEIN and WOTOCO were involved in a vapor explosion, followed by fire. As a result of the fire, considerable damage was sustained by the midship house of the PAN GEORGIA. The entire superstructure of the J. H. DEINLEIN suffered fire damage above the main deck. Damage to the WOTOCO consisted principally of scorching of the superstructure on the port side. The pier where the PAN GEORGIA was moored is a wooden structure and also incurred fire damage.

2. As a result of this disaster, eight men lost their lives. One crew member of the J. H. DEINLEIN died in the hospital from burns and the bodies of four of the men from the J. H. DEINLEIN, two from the WOTOCO and one from the PAN GEORGIA were recovered from the water following the casualty. The dead are:

J. H. DEINLEIN:

James Edgar King - Mate
5352 Locust Street, Philadelphia, Pa.

Ludwig Schwarch - Cook
500 Morris Street, Gloucester, N. J.

Anton Popper - Deckhand
3024 Almond Street, Philadelphia, Pa.

Albert T. Merckx - Engineer
8478 Eden Drive, Delair, N. J.

Harry P. Boyer - Utility Man
227 Wendover Street, Philadelphia, Pa.

WOTOCO:

John Benussi - Deckhand
2619 Belgrade Street, Philadelphia, Pa.

Andrew Dobrovich - Cook
2568 Richmond Street, Philadelphia, Pa.

PAN GEORGIA:

Roy Ott - Second Assistant Engineer; License No. 54594, Z-154247

Robert F. Mitchell, Z-209437-D2, second pumpman on the PAN GEORGIA, was critically burned but is on the way to recovery. Several other persons sustained injuries of varying extent, none serious.

3. The weather was described as warm and humid with a light NW breeze. At the New Castle County Airport five miles down river from the Sico Terminal, the weather at the time of the casualty was recorded as clear, temperature 76, dewpoint 68, wind WNW, 8 m.p.h., relative humidity 77%.

4. The SS PAN GEORGIA, O.N. 247899 is a T-2 tanker of 9,179 g.t., 467 ft. long, built in 1945 and modified in 1947. She differs from the standard T-2 in that one tank has been removed and there are five cargo tanks forward of the midship house. She is certificated for the carriage of Grade B and all lower grades of liquid cargo and is fitted with individual pressure vacuum relief valves on pipes extending approximately 4 ft. above the deck. The vessel is owned by the National Bulk Carriers, Inc. 600 Fifth Avenue, New York, N.Y. and at the time of the casualty was under the command of Morgan A. Maxey, 5240 Sixth Street, Port Arthur, Texas, acting under the authority of his CG license No. 135782.

5. The J. H. DEINLEIN, O. N. 244067 is an uninspected diesel driven tug of 146 gross tons, length 81 feet, built of steel materials in 1943. She is owned and operated by the Curtis Bay Towing Company, 12 S. 12th Street, Philadelphia, Pa., and at the time of the casualty was under the command of George J. Barnes, 2-22 Bloomfield Avenue, Drexel Hill, Pa. Captain Barnes holds First Class Pilot's License Serial No. 86860 for the Christina River, Delaware River and other waterways and at the time of the casualty had been engaged to serve as undocking pilot for the PAN GEORGIA.

6. The WOTOCO, O. N. 244836, a sister ship of the J. H. DEINLEIN, was built in 1944 and is also owned and operated by the Curtis Bay Towing Co. At the time of the casualty she was under the command of Thomas G. Ellingsworth of 1244 Crease Street, Philadelphia, Pa. Captain Ellingsworth holds First Class Pilot's License No. 980748 for various waterways between Philadelphia and Baltimore.

7. At 2130 EST, 22 July 1953, the PAN GEORGIA arrived at Wilmington, Delaware from Texas City, Texas, fully loaded with automobile gasoline and heating oil. She moored port side to, parallel to the channel, at the Sico Company pier on the south side of the Christina River, her heading approximately 290° T.

The cargo was distributed as follows:

Tanks 1, 2 and 3 - Amoco gasoline; Tanks 4, 5, 8 and 9 - House Brand gasoline and Tanks 6 and 7 contained No. 2 heating fuel.

8. The discharge of cargo was begun one hour after arrival and continued into the following day. Tanks Nos. 1 through 6 had been completely stripped and secured by 1600, 23 July, at which time the Chief Mate, Frank M. Orton, Z-266512-D1 and Second Pumpman, Robert F. Mitchell, Z-209437-D2 relieved the discharge watch. Sailing time was scheduled for 2200 and arrangements for an undocking pilot and two tugs to assist getting under way were made by the company representative. At 1805 the J. H. DEINLEIN arrived and with the permission of the master of the PAN GEORGIA tied up bow forward on the starboard side with the stern of the tug approximately 15 feet forward of the midship house. The WOTOCO arrived at 1820 and moored alongside and outboard the DEINLEIN. The discharge of cargo was completed at 2048. F. J. Davenport of the E. W. Saybolt and Co. gauged the tanks and at 2100 issued empty certificate. All tanks were secured with the exception of 3 center, 5 wings and 7 center which were lined up for ballast. On these tanks the ullage pipes were opened with the flame screens in and the hatch covers placed "on the pins" to further relieve the pressure while ballasting. At 2140, the crew was ordered to stand by and the master sent a crewmember to tell the pumpman to secure ballasting; however, this order was apparently not carried out. At 2155 Captain Barnes of the J. H. DEINLEIN came aboard to act as docking pilot, however, the departure was delayed due to an intoxicated seaman who refused to either sign on or get off the vessel. The Chief Mate was directed to telephone the local police from the dock and request the man be removed while the master and the docking pilot waited on the after end of the midship boat deck. The tugs had not yet been activated and Captain Maxey was conversing casually with Captain Barnes when suddenly a muffled explosion was heard forward of the midship house. Turning immediately, shooting flames were seen rising from the starboard side of the vessel forward of the bridge. Captain Maxey ran to the bridge and sounded the general alarm, but before he could blow the whistle, flames entered the wheelhouse. He then ran back to the after station, observed the flames had swept across the face of the midship house and down to the dock on the port side and fearing the vessel would blow up, sounded the abandon ship signal. The majority of the crew abandoned the vessel at that time, either by way of the gangway, down mooring lines or over the side. Roy Ott, Second Assistant Engineer, was one of those reported to have jumped into the river but he apparently had no life jacket on and was not seen alive again. After blowing the abandon ship signal the master ran to the steam smothering valve and met the Chief Engineer who advised he had already turned it on. The Second Pumpman, in the meantime, had entered the after deckhouse with his clothes aflame and was being assisted by the Second Mate and Chief Pumpman.

As the fire was extinguished on his clothes, the Second Pumpman was moved to a med. table where salves and vegetable oils were applied to his burns. Since the catwalk from the pier to the shore appeared to be cut off by fire, the master, together with the Second Mate and Third Mate lowered the No. 3 lifeboat and directed an able seaman and the Chief Pumpman to get the injured man ashore. Lowering of the boat was delayed slightly when the two burning tugs drifted by on the ebb tide. The fire pump had been turned on when the general alarm was sounded and with the officers and men voluntarily remaining aboard, three hoses were run out to combat the fire. In addition, other deck hydrants were cracked to cool the decks. The entire midship superstructure was ablaze at that time and fire was also raging on the dock. The fire fighting was well under way when a sudden flash of light occurred on the dock in way of the midship house. Believing it to be an exploding tank the master ordered the crew aft and the engine room secured, preparatory to abandoning the vessel. While the engine room was being secured, however, the fire did not appear to get worse and fire fighting was resumed. The flash of light was later traced to a photographer's flash bulb on the dock.

9. Fire-fighting efforts were proving successful when the U. S. Corps of Engineers Tug DELAND arrived on the scene shortly after midnight and directed a stream of water on the forward side of the midship house which heretofore could not be reached. The City of Wilmington Fire Department had hoses aboard a few minutes later and by 0130 EST 24 July, the fire was well under control. All fires were out at 0330, however, the pumps were kept in operation until 0900.

10. According to the master, those remaining aboard the PAN GEORGIA during the emergency were:

- Chief Engineer - William F. Thompson - Bk. - 206349
- Second Mate - Marvin W. Weakley, Jr. - Z-331748
- Third Mate - James F. Radle - Bk. - 173953
- First Asst. Engineer - Levi Gillikin - Z-115357
- Third Asst. Engineer - Albert A. Robideaux - Z-387186
- Jr. Third Asst. Engineer - Cyril Hall - Z577745-D2
- Oiler - Harry Overdick - ("Z" number unknown)
- Oiler - Ricardo Villarreal-Z-135325-D1
- Oiler - Leslie King - Z-260683 R

The Chief Pumpman, Clifford T. Nettles, Z-559805, after transferring the second pumpman to a small motorboat, secured the lifeboat to the sea wall astern of the ship and returned aboard to fight the fire.

11. The engineering department was in all respects ready for sea with First Assistant Engineer Levi Gillikin in charge of the watch when at 2220 the general alarm was heard. The three main cargo pumps in use for ballasting were secured and the fire pumps were immediately turned on. Chief Engineer William F. Thompson appeared shortly thereafter, advised the steam smothering had been turned on and ordered the main engine and the starboard boiler secured. For the next hour Thompson divided his time between the engine room and the deck where he assisted the fire fighting. When the flash believed to be an explosion was observed on the deck, he was ordered by the master to secure the plant and again returned to the engine room. The plant was secured at 2325 and the emergency generator turned on to keep the fire pump in operation. The master in the meantime passed the word the fire appeared to be under control and at 2340 attempts were made to relight the boilers but due to insufficient steam remaining, the feed pumps could not be operated.

12. Chief Mate Orton was standing in the shack on the dock awaiting a call from the local police when he observed a flash apparently on the starboard side of the vessel. Regaining his feet after a rush of shore workers knocked him down, he saw flames rapidly spread across the front of the midship house to the port side of the vessel. On impulse he ran aft along the dock away from the fire and upon hearing the abandon ship whistle then ran forward along the catwalk towards the shore. As he passed the midship house narrow streaks of fire were observed burning downward from the small scupper slot in the fashion plate and just forward of the fashion plate on the port side of the vessel. Upon reaching the terminal he phoned the agents and requested that fireboats and other assistance be summoned. Returning, he assembled such crewmembers as were present at a safe distance from the scene, arranged for the transportation of injured persons to the hospital and believing it would be impossible to return to the vessel, arranged for quarters for the crew ashore. The Wilmington Fire Department arrived shortly thereafter and when it appeared the fire was under control he returned to the vessel.

13. Second Pumpman, Mitchell had not received the order to secure ballasting and was on the foredeck, topping off the number 5 tanks when the explosion occurred. A moment before, by shining a flashlight into the cargo hatch he had determined the ullage in No. 5 starboard tank to be an estimated five feet. The hatch for this tank is located about 10 feet forward of the starboard forward door to the shelter deck. Mitchell was standing abaft the hatch facing forward when a muffled explosion accompanied by shooting flames occurred outboard of the vessel on the starboard side abeam of No. 3 cargo tank. Instantly the flames rolled towards him and his trousers were afire as he turned and ran into the shelter deck. He stopped there for a moment

to attempt unsuccessfully to extinguish the flaming trousers, then continued back to the after deckhouse where the fire was put out by other crew members. After receiving first aid he was removed from the vessel in No. 3 lifeboat and transferred to the Delaware Hospital, Wilmington, Delaware. At the investigation Mitchell recalled that four hours prior to the casualty the trousers he was wearing had become soaked with gasoline while tightening a gland on a cargo pump.

14. When the J. H. DEINLEIN arrived off the Sico Terminal at about 1800 the master of the PAN GEORGIA was observed on deck amidships. Captain Barnes maneuvered his tug close aboard to request permission to come alongside and upon being advised it was safe to do so, the tug was tied up bow forward on the starboard side of the PAN GEORGIA with the stern of the tug about 15 feet forward of the midship house. The main engine and generator was secured and the circuits switched to battery power. After visiting a short time with Captain Maxey, Captain Barnes returned to the tug requesting he be called when the vessel was ready to get under way. At about 2120 Captain Barnes was advised the PAN GEORGIA would depart at 2200. The Mate, James E. King, was given final instructions as to the placement of the tug upon being activated and the tug was left in his charge. Captain Barnes then boarded the PAN GEORGIA at 2155 and joined Captain Maxey at the after end of the midship boat deck about on the center line of the vessel. All preparations had been made for getting under way, however, departure was being delayed due to difficulty with a crew member. The two men remained standing in the same locality until about 2220 when a sound described as a sudden expulsion of gas was heard forward. Turning towards the sound, the sky was bright with flame. Barnes ran to the starboard rail and saw fire on the side of the tanker forward of the midship house. The DEINLEIN was also afire on her port side and almost immediately became completely engulfed. The fire from the deck of the tanker appeared to be flowing downward towards the tug and flames extended aft of the tug on the water. Three puffs were heard on the PAN GEORGIA during the brief interval Barnes stood there, each accompanied by billowing flame and smoke. Realizing nothing could be done for the tugs, Barnes ran down the gangway to the dock. The dock was not yet on fire, but flames appeared to be flowing down the side of the ship to the piling under the break of the midship house.

15 Upon tying up to the DEINLEIN at 1820, the WOTOCO's engine and generator were secured and the battery power turned on. The crew gathered in the galley and began playing cards and were joined by the Chief Engineer from the DEINLEIN. The WOTOCO received final instructions from Captain Barnes before he boarded the PAN GEORGIA and the card game continued while the crew awaited the signal to get underway. While so engaged the explosion occurred which the master, Thomas G. Ellingsworth, described as a blowtorch being lighted. He rushed out the starboard door of the galley, looked up and saw the sky above the starboard side of the tanker abeam of

the tugs aglow like a roman candle with sprays of fire extending downward toward the DEINLEIN. He did not know if the DEINLEIN was afire at that time. Turning immediately he followed the chief engineer aft and stood guard at the engine room door while the engine was being started. Since the engines were on pilot house control, Ellingsworth went forward to the pilot house on the starboard side. The DEINLEIN was then in full blaze and the fire extended around the bow and the stern of the WOTOCO. Opening the starboard door to the pilothouse the compartment instantly filled with flames, causing Ellingsworth to retreat. The chief engineer in the meantime returned from the engine room and together they went over the side.

16. Chief Engineer Louis A. Acord claimed he went immediately aft on the starboard side to the engine room when the explosion occurred and all that he could recall was that there were flames in the air forward of the tanker's bridge. When he returned on deck a few minutes later and while attempting to climb up to the pilothouse from the cap rail on deck, he heard a puff and observed the DEINLEIN burning from stem to stern.

17. J. R. Rafferty, the relief mate, was getting dressed in his room on the starboard side of the WOTOCO, when he heard a muffled roar. He hesitated a moment and hearing a commotion on deck went out and saw a flash of fire in the air which appeared to be descending on the DEINLEIN with the bulk of it centered on the DEINLEIN's galley. He then jumped over the side and swam clear.

18. The oiler, Thomas H. Moronski was walking forward on the starboard side of the WOTOCO and was almost to the galley door when he heard what he described as a "swoosh" and at the same time saw flame extending downward from the deck of the tanker to the DEINLEIN which was already burning from stem to stern. He turned to follow the Chief Engineer into the engine room but upon seeing a shipmate jump overboard, did likewise.

19. Ellingsworth and Acord were rescued from the Christina River by a small unidentified pleasure craft. The WOTOCO and DEINLEIN in the meantime had broken clear of the PAN GEORGIA and still tied together drifted into the Delaware where the Corps of Engineers Dredge GOETHALS was attempting to extinguish the fire. After searching for survivors for a short time, Ellingsworth and Acord requested the boat operator to take them to the WOTOCO. When they arrived, the fire was apparently out on both tugs and the WOTOCO's engine was still running. The two men then took the WOTOCO back into the Christina and joined the search for survivors. Soon they were hailed by the GOETHALS' launch and Captain Barnes, Rafferty and Moronski came aboard. Since a number of small craft had joined the search in the river, the WOTOCO shifted attention to the DEINLEIN. During the interim, fire had again broken out on the DEINLEIN, but by the time the

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WOTOCO returned, had been completely extinguished by the Dredge GOETHALS. The GOETHALS was advised no further assistance was required and the DEIN-IEIN was towed to the Wilmington Marine Terminal.

20. Inspection of the PAN GEORGIA during the preliminary investigation disclosed that the entire midships house had been involved in the fire, although the most severe damage occurred on the port side. Burned regions on the foredeck appeared to be confined roughly to the corners formed by the midships house and the fashion plates, which extended forward from the midships house on both sides of the vessel. These two corners were connected by a burned area extending across the width of the vessel no more than two feet forward of the midships house at the center line. Paint was burned off the cargo hatches for No. 5 port and starboard wing tanks and also the ullage pipes for these tanks. There was no evidence of fire around No. 5 center tank. The starboard side of the hull was sooted over from No. 3 tank to abaft the midships house, and warped plates forward of the fashion plate on the starboard side evidenced considerable heat in that area.

21. Examination of the tugs by the Board revealed that the port side of the DEINIEIN had suffered the most severe fire damage, although the entire superstructure was affected. Compartments which had apparently been closed at the time of the casualty evidenced the least amount of damage.

CONCLUSIONS:

1. It is the conclusion of the Board that the explosion and fire were caused by the ignition of an explosive mixture formed by vapors expelled from the No. 5 wing tanks of the PAN GEORGIA during the ballasting operations. The breeze at the time, though slightly on the starboard bow, was apparently of insufficient velocity to dissipate these vapors. Although the nature of the igniting agent could not be determined, the tug DEINLEIN was deemed to be the most probable source.

2. The possibility of ignition occurring aboard the PAN GEORGIA was eliminated by the testimony of the Second Pumpman and by the fact there apparently was nothing on deck forward of No. 5 tank that could have produced a spark. The likelihood that the pumpman himself was in some way responsible for the ignition was also discounted. The fact that he suffered flash burns on his face and the exposed area of his arms appears to indicate that the initial explosion occurred some distance from him. Had the ignition occurred at or near where he was standing the burns on the upper part of his body would undoubtedly have been more severe, if, indeed, he would have survived at all. The natural tendency of a man to run from a fire rather than towards it was taken as a further indication that the initial blast occurred forward of his position at the time.

3. While the necessary spark could easily have been provided by the action of the steel hulls rubbing together, other possibilities were also presented. Due to the weather conditions existing at the time, the ports and doors on the DEINLEIN were undoubtedly open as they were aboard the WOTOCO. During the inspection of the two tugs after the casualty, notice was taken of fans, radios, lamps and other electrical equipment located in various compartments which might reasonably have caused the ignition. The possibility of heedless smoking was also considered. If there were, in fact, any orders or policy in effect aboard the tugs with regard to smoking while lying alongside tank vessels they were ill defined and unrealistic. The apparent belief of the tug witnesses that it was safe to smoke in the quarters with only the screen doors closed, or to smoke on deck on the outboard side of the tug, reflected a lack of familiarity with the properties of petroleum vapors.

4. The board could find no fault with the master of the PAN GEORGIA for permitting the tugs to make fast alongside the foredeck after transfer operations were completed in the forward tanks; however, it appears he failed to take into account the potential hazard that would be created when ballasting was begun. As master of a tank vessel, he should have been aware that a tremendous volume of vapors would be displaced by the water ballast, and before proceeding with the ballasting should therefore have satisfied himself that every precaution had been taken to prevent

possible ignition of those vapors. While it is recognized that explosive or inflammable vapors occur only in optimum conditions of mixture and atmosphere, the great severity of casualties from this source demands that every conceivable measure be taken for their prevention. Under the circumstances, it is the opinion of the Board that the master failed to exercise the degree of caution required when he permitted ballasting to proceed while the tugs were alongside in close proximity to cargo hatches from which vapors would be expelled.

5. The last witness to appear before the Board was Second Pumpman Robert F. Mitchell whose testimony was taken at the Delaware Hospital, Wilmington, Delaware, two months after the casualty. At that time, Mitchell alleged that considerable delay was experienced in lowering No. 3 lifeboat due to the davits being frozen and in addition claimed that upon reaching the water the releasing gear failed to operate necessitating cutting of the falls. In view of the previous denial of the master that any difficulty was encountered and in the absence of any other testimony of this nature the validity of these allegations was considered doubtful. The davits in question were the Welin Boom type and with the limited number of hands available at the time, the process of lowering the boat was undoubtedly slow. In addition, the testimony of the third mate indicated that after putting Mitchell in the boat the lowering was delayed to allow the burning tugs to drift clear. The lifeboat was found to be equipped with Rottmer type releasing gear and in this connection it was noted that the Chief Pumpman was the only other person in the boat when it was lowered. Although he was later joined by an able seaman, it is conceivable that due to unfamiliarity with the gear he may have cut the falls. Since the vessel was subjected to annual inspection at Baltimore, Md., while undergoing repairs after the casualty, the OCMI, Baltimore was contacted in this regard. The Board was advised that the records of that office reflected no repairs to No. 3 lifeboat or davits with the exception of the requirement that all boat falls on the vessel be renewed. In addition, all falls, davits and releasing gear were tested and found satisfactory prior to completion of inspection on 19 August 1953. Due to the time elapsed since the casualty occurred and in the absence of any substantive evidence of faulty material or poor maintenance, no further action appeared indicated in this matter.

6. The Board also took notice of the devotion to duty of those crew members that remained aboard the PAN GEORGIA after the abandon ship signal was sounded. Had it not been for their cool courage in exposing themselves to great personal danger in an effort to save their vessel, the damage to property would conceivably have been far greater.

RECOMMENDATIONS:

Based on the foregoing facts and conclusions adduced therefrom, the Board makes the following recommendations:

1. That Captain Morgan A. Maxey be charged with inattention to duty for permitting ballasting while tugs were lying alongside in the vicinity of cargo tanks from which petroleum vapors would be expelled.
2. That consideration be given to the possible amendment of the Rules and Regulations for Tank Vessels (46 CFR 30 to 39 inclusive) to further restrict vessels from coming alongside or remaining alongside a tank vessel during any transfer operations which would tend to generate and release inflammable, combustible or explosive vapors.
3. That the widest possible publicity be given this incident, calling attention to the fact that ballasting of cargo tanks on tank vessels not gas-free creates a condition of exceptional hazard.

(signed) John H. Byrd
JOHN H. BYRD
Captain, U. S. Coast Guard

(signed) Vitus G. Niebergall
VITUS G. NIEBERGALL
Commander, U. S. Coast Guard

(signed) John H. Hawley
JOHN H. HAWLEY
LCDR, U. S. Coast Guard

At 4:30 p.m. the Board adjourned to await the action of the Convening Authority.

(signed) John H. Byrd
JOHN H. BYRD
Captain, U. S. Coast Guard
Chairman

(signed) John H. Hawley
LCDR, U. S. Coast Guard
Member and Recorder