TREASURY DEPARTMENT
UNITED STATES COAST GUARD

COMMANDANT (MVI-3)
U.S. COAST GUARD
WASHINGTON, D.C. 20226

5943/HANSEATIC
C-3 Bd
23 SEP 1966

Commandant's Action

on

The Marine Board of Investigation convened to investigate the fire on board the German passenger vessel SS HANSEATIC on 7 September 1966 at New York, N. Y.

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 and is approved subject to the following comment:

A detailed comparison of the structural and equipment standards which were applicable to the SS HANSEATIC and those that are applicable to large ocean-going passenger vessels of the United States is being conducted by the Technical Division of the Office of Merchant Marine Safety and will be the subject of a supplemental report to this Commandant's Action.

[redacted]

W. J. SMITH
Admiral, U. S. Coast Guard
Commandant

TREASURY DEPARTMENT
UNITED STATES COAST GUARD

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5943/024065
22 September 1966

From: Marine Board of Investigation
To: Commandant (MVI)

Subj: German SS HANSEATIC, O.N. 9962; fire occurring on 7 September 1966 at New York

FINDINGS OF FACT

1. At approximately 0730 EST on 7 September 1966, while the German passenger vessel SS HANSEATIC lay at Pier 84, North River, New York, New York, a fire started in the Diesel Generator Room at B Deck level when fuel from a leaking fuel line on her No. 4 diesel generator ignited. The fire subsequently carried up an intake ventilator through seven decks above before it was finally brought under control by the New York City Fire Department at approximately 1430 the same day. There were no reportable personal injuries. As a result of the fire the vessel suffered damage estimated at approximately $1,000,000.

2. The SS HANSEATIC, O.N. 9962 is a passenger vessel 674 feet in length, 48.6 feet depth, 30,030 gross tons. The vessel was built in 1930 at Glasgow, Scotland. Her home port is Hamburg, Germany. She is a twin screw turbine vessel of 34,000 shp. Her owners are HAMBURG - ATLANTIC LINE and her local agent is Home Lines, Inc. Her Master is [redacted].

3. The weather was clear and fine and was not a factor in the casualty.

4. The SS HANSEATIC (ex SS EMPRESS OF JAPAN, ex SS EMPRESS OF SCOTLAND, ex SS SCOTLAND) upon her transfer to the German flag in 1958 underwent alterations and renovations in the passenger areas. At the time the fire occurred, the vessel was maintained in class with the American Bureau of Shipping and German Lloyds. The vessel's Home Safety Certificate expires on 15 December 1966. She was issued a Certificate of Examination for Foreign Passenger Vessels on 28 January 1966 at Miami, Florida. Her last quarterly reinspection was completed on 11 August 1966 at New York, N. Y., indicating the vessel was in compliance with the Safety Certificate required by the International Convention for the Safety of Life at Sea (SOLAS 60).

5. The vessel was constructed with eleven watertight bulkheads and six main vertical fire zones. Her machinery spaces included Boiler Room No. 1, Boiler Room No. 2, Diesel Generator Room and Main Engine (Turbine) Room. In addition to four generators in the Diesel Generator Room located forward of the Turbine Room (frame 91 - 100), the vessel also was equipped with two steam driven turbo-generators located one on either side of the Turbine Room at frame 87. The four diesel generators were rated at 1300 amperes each and the turbo-generators at 3800 amperes each. The two turbo-generators were capable of carrying the electrical load. However, it was normal operating practice to split the load between the two turbo-generators and two diesel generators. The four diesel generators were furnished air by means of a mechanical supply. The ducts, located at frame 97, started on either side of the after funnel and passed straight down through all the decks terminating in branches over each diesel engine. The blower motors were located on the Navigating Deck. Both ducts were fitted with balancing dampers at the termination of the branches over each diesel engine and with a positive closing damper at the Navigating Deck level. From the A Deck to a location between the Upper and the Promenade Decks the ducts, measuring approximately 4' by 4-1/2', passed up the outboard after corners of an escape trunk, measuring 10' by 20', located abaft the bulkhead at frame 100. At the Upper Deck level the escape trunk passed forward of frame 100 into the fidley but the vent ducts continued straight up to the Navigating Deck. The escape trunk from A Deck to the Upper Deck was insulated with sheet asbestos except on its forward bulkhead which was common to the boiler casing. The insulated areas included the inboard and forward sides of the vent ducts. The outboard and after sides of the vent ducts faced the passenger areas and were not insulated.

6. The SS HANSEATIC arrived in New York at 1200 on 6 September 1966. She was scheduled to sail at 1130 on 7 September 1966 with embarkation of passengers to commence at 0800. At 0730 the watch-standing fourth engineer, [redacted], who was in charge of the watch in the Turbine and Diesel Generator Rooms, heard a knock in the No. 4 diesel generator located on the starboard side of the Diesel Generator Room. At this time the No. 1 and No. 4 diesel generators were on the line together with the turbo-generators. He told the two engineer aspirants (cadets) then on watch to shut down the No. 4 diesel generator. He called the switchboard room and told the watch electrician to take No. 4 diesel generator off the line. He then proceeded immediately to the Diesel Generator Room and saw that although the cadet had attempted to shut down the diesel engine it continued to run. Diesel fuel was observed to be spurting from the low pressure gravity feed fuel line above No. 5 cylinder on the No. 4 diesel generator and to suddenly ignite. [redacted] sounded the engineers' alarm and all three men attempted to extinguish the flames with the hand portable fire extinguishers immediately available in the area.

7. The engineers' alarm sounded in the engineers' office and quarters located on the Sun Deck. Staff Chief Engineer, [redacted], proceeded below and observed the fire from the Turbine Room doors aft of the Diesel Generator Room. He then went forward through the Diesel Generator Room to the door to Boiler Room No. 2 and from this position he and other crew members attempted to extinguish the fire with the semi-portable foam extinguishers obtained from the two Boiler Rooms. When he commenced using this portable equipment the fire was concentrated at the upper level and the foam was being directed on the flames from the lower level through the gratings at the engine head level. The fire continued to spread. The Staff Chief Engineer then proceeded to A Deck and together with the Chief Engineer commenced shutting off the diesel fuel and bunker oil tanks at the remote stations located in the port and starboard passageways.

8. At approximately 0745, while the Staff Chief Engineer was in the process of shutting off the fuel tanks, all power was suddenly lost on the vessel. The Staff Chief Engineer left the Chief Engineer to complete closing the remote shutoffs and proceeded to the Emergency Generator Room located aft on the Main Deck. Although the emergency generators were in operation within five minutes, the emergency lighting was not energized in the machinery spaces or any other areas forward of the Diesel Generator Room. Sometime during the morning the vessel's boilers were secured because of heavy smoke entering the ventilation system.

9. The fire was reported to the Bridge by telephone approximately 10 minutes after it started. The quartermaster on watch called the First Officer, [redacted], who in turn notified [redacted], the Staff Captain and the Master, [redacted]. Both the First Officer and the Staff Captain proceeded by different routes to the scene of the fire. The First Officer started into Boiler Room No. 2 and was proceeding towards the door of the Diesel Generator Room when the power failure occurred. He retraced his steps and met the Staff Captain in the A Deck port passage outside the switchboard room. The Staff Captain ordered the First Officer to sound the fire alarm and notify the shore-side Fire Department. Following the sounding of the alarm on the vessel's whistle the crew reported to their fire stations, securing ventilation and closing fire screen doors. Further efforts by the crew to charge the ship's fire main by means of the emergency bilge and fire pump were not made because the Fire Department preferred to use their own hose equipment. However, the emergency bilge and fire pump energized by the Emergency Diesel Generator was used later in the day to pump out the machinery space bilges.

10. The New York City Fire Department received the first alarm at 0746. At 0810 Marine Unit No. 2 arrived on the scene. An Engine Company was already on the scene stretching hose down the pier. By this time the heat was increasing in the vent ducts and in the escape trunk and the paint on the two uninsulated vent duct faces in the passenger spaces on all decks commenced to smoulder. Fire Department personnel were led to the scene of the fire and were otherwise assisted by the members of the vessel's crew who were familiar with arrangement of the vessel. As soon as the nature of the fire was known to the Fire Department it was evident quantities of foam would be required and their efforts were immediately directed to bringing the necessary foam pick-up tubes, applicators and hoses to the scene. The Chief of the 4th Battalion responded to the first alarm at 0746. By 0819 he requested another Marine Unit and at 0825 a second alarm was sounded. Shortly thereafter [redacted], Chief of the New York City Fire Department and [redacted], Deputy Assistant Chief for the Marine Division, arrived on the scene.

11. Sometime during the first hour after the second alarm responsible fire department personnel became aware that the Diesel Generator Room was equipped with a fixed CO_2 extinguishing system and that the system had not yet been utilized. All doors to the Diesel Generator Room were then closed after personnel were evacuated, and at approximately 0940, after the CO_2 manifold valve in the cross alleyway on A Deck at frame 100 had been opened, one of the vessel's fire patrolmen entered the CO_2 cylinder room on the Sun Deck and pulled the release cable serving the main bank of cylinders. This failed to extinguish the fire.

12. Although up to this time the primary fire was contained within the machinery spaces by the steel bulkheads of the escape trunk and the vent ducts extending vertically above the Diesel Generator Room, secondary fires and smoke were generated in the passenger and service areas on all decks due to direct conduction of heat through the steel bulkheads. As previously stated, the vent ducts at frame 100 passed through all the decks and were not insulated on the two boundaries contiguous with the passenger spaces. The joiner construction consisted of wood furring bolted directly to the bare steel of the bulkhead. Plywood and pressed-wood paneling providing the interior decor, was attached to the furring. Similarly a plywood false ceiling was attached to wood furring suspended below the steel overhead. There was direct communication between the concealed spaces behind the bulkhead paneling and the hanging ceiling.

13. The smoke on all the decks had become very dense and it was necessary for persons remaining in the interior passageways to work with breathing apparatus. The Fire Department was equipped with Scott "Back-Pak" units

which they used. By now the furring strips commenced to smoulder in those areas where they butted against the uninsulated faces of the vent ducts. On R Deck, in way of the vent duct at frame 97, the crackling of fire was heard behind the plywood panels. The paneling in this area was ripped off the bulkhead and the overhead and water was directed on the burning wood extinguishing the fire. This was the most serious outbreak of fire reported outside of the machinery space. By this time conditions on all other decks were generally the same; heavy smoke, smouldering furring strips, and blistering paint. On each deck a number of firemen were employed to remove the combustible ceiling and linings. For this purpose they used their own equipment in addition to the tools available aboard the vessel.

14. Although a sprinkler system was installed throughout the accommodation and service areas it was activated only in the starboard passageway on A Deck, frames 90 to 100. In other areas the sprinkler did not release because the heat and fire was contained in the overhead above the sprinkler or was otherwise screened from the sprinkler heads by the wood paneling. The sprinkler discharge ceased when the gravity storage tank was exhausted. The automatic pump did not start because of the power failure. Subsequently, when a water supply was available from fire boats, the Fire Department requested the sprinkler system not be activated as its use might hamper other fire fighting efforts.

15. Eventually the Fire Department had three foam lines in service attempting to smother the fire in the Diesel Generator Room. With sufficient personnel on all decks to cool the hot bulkheads the Fire Department opened the dampers at the top of the vent ducts to permit the heat to dissipate upwards thereby reducing the horizontal heat spread and allowing personnel manning the hoses in the Turbine Room to approach closer to the seat of the fire. By 1430 the fire was extinguished although the residual heat on all decks and in the Diesel Generator Room remained intense.

16. During most of the morning the Fire Department had approximately 15 hoses leading aboard the vessel from three fire boats and two land units. However, the use of water was generally limited to cooling hot bulkheads and extinguishing small blazes and smouldering woodwork. As a consequence fire fighting water did not rise above the door sills in the upper decks in the fire area or above the floor plates in the machinery spaces. During the course of the fire there was no appreciable change in the vessel's draft or trim and the list never exceeded 1-1/2°. Water was furnished by the New York City Fire Department fire boats through their own hoses and connections and the international shore connection was not used.

17. The Fire Department had on the scene at various times, 30 engine companies, 11 ladder companies, 3 fire boats, and other units furnishing illumination, foam, and replenishment cylinders for fresh air breathing devices. In extinguishing the fire the Department expended 300 gallons of 3% foam concentrate and 127 cylinders for fresh air breathing devices.

18. The vessel's fixed fire smothering system consisted of a central supply of about 3300 pounds of carbon dioxide gas and a piping system connecting this supply to the forward holds, No. 1 Boiler Room, No. 2 Boiler Room, the Diesel Generator Room, and the after holds. Valves, located in three manifolds on A Deck, controlled the distribution of all or part of the supply to any of these spaces. The CO_2 room was located on the Sun Deck. Two manually operated release mechanisms were provided, either of which could activate the system. One was located on a bulkhead directly outside the CO_2 room; the other was located at one of the distribution manifolds. The system was not used in the initial fire fighting effort because it was believed to be a bilge flooding system and the seat of the conflagration was several feet above the bilge. Later the cylinders were triggered by pulling the release cable within the CO_2 room instead of at one of the release stations. Subsequent examination of the system indicated that all of the 50 cylinders had not been discharged. Also, a subsequent determination of the approximate volume of the diesel generator room indicated that about one half of the CO_2 available would have been sufficient for the total flooding of this space.

19. Following the casualty, members of the Board visited the vessel. Examination of the electrical circuits revealed the following: The main feed cable from the starboard turbo-generator passed straight up to A Deck and thence forward into the Switchboard Room located immediately over the Diesel Generator Room. The main feed cable from the port turbo-generator passed across the Turbine Room to the vessel's centerline. It then passed forward to a point over the forward end of No. 3 diesel generator and thence vertically through the deck into the Switchboard Room. The fire, which originated approximately 10 feet away from the point where the cables passed through the deck apparently melted these cables within 10 to 15 minutes from the time the fire started. This caused a dead short in the port turbo-generator. The loss of this generator together with No. 1 and No. 4 diesel generators after their fuel was shut off at approximately 0745 overloaded the starboard generator, tripping it and causing the power failure. Further investigation revealed that some of the circuits from the emergency generator passed through the Diesel Generator Room enroute to the main switchboard and these were destroyed, also.

20. All mechanical and electrical equipment in the Diesel Generator Room was exposed to extreme heat and flame and suffered unknown damage. Examination of the fuel system revealed that the diesel fuel gravitated from the day tanks to a horizontal fuel line running along the engine head. At each of the six cylinder heads a branch line fed a high pressure pump which discharged into each injector. These branch lines were connected by means of a union at each end. Some of the branch connections were metallic and some were flexible rubber hose. The two tanks located at the A Deck level at the top of the Diesel Generator Room were each fitted with a gage glass. Tank soundings taken on arrival indicated the port tank contained 4.1 tons and the starboard tank contained 1.7 tons. After the fire it was noted that the gage glasses were destroyed and tank soundings revealed both tanks to be empty.

21. Total damage to the vessel was estimated at $1,000,000. In addition to the fire damage to the machinery and equipment in the Diesel Generator Room, the steel bulkhead between Boiler Room No. 2 and the escape trunk (frame 100) was buckled at the A Deck and the Restaurant Deck levels. The damage by fire in the accommodation and service areas on all decks was limited to an area within a few feet of the ventilation ducts to the Diesel Generator Room and consisted primarily of charred and burned furring strips and plywood. Fire fighting efforts resulted in additional damage to the ceilings and linings on all decks, broken glass in windows and port lights, and general damage due to smoke and water. The vessel departed under tow for Germany on 22 September 1966, and her ultimate disposition is not known.

CONCLUSIONS

1. That the fire originated in the vicinity of the No. 5 cylinder head pump on the No. 4 diesel generator when a low pressure feed pipe failed, spraying diesel oil directly onto the engine head and exhaust manifold.

2. That due to subsequent fire damage the cause of the failure of the fuel line could not be determined. However, the probable cause is ascribed to either or both of the following:

   a. Malfunction of No. 4 diesel generator immediately prior to the fire set up excessive vibration which caused the failure of the fuel line.

   b. Failure of one of the fuel lines fabricated of rubber hose due to deterioration and/or embrittlement.

3. That the flames and heat of the initial fire cracked the gage glasses on the diesel oil tanks located immediately forward and above the diesel generators. This leaking oil fed the fire with approximately 5-1/2 tons of liquid fuel causing the fire to spread throughout the bilges of the Diesel Generator Room and to continue to burn until this fuel supply was largely consumed.

4. That the primary fire passed vertically through the ship from the bilges to the Navigation Deck. However, it was contained within the steel bulkheads forming the boundaries of the vent ducts and the escape trunk extending above the Diesel Generator Room.

5. That secondary fires, smoke, and fumes were generated on all decks due to direct conduction of the heat of the primary fire through the steel bulkheads of the vent ducts to the wood furring and linings which were fitted to these bulkheads.

6. That the horizontal spread of the secondary fires was restricted to the immediate vicinity of the vent ducts extending above the Diesel Generator Room for the following reasons:

   a. The prompt efforts of the New York City Fire Department in uncovering and combatting the secondary fires before they propagated from the immediate vicinity of the vent ducts.

   b. The action of the New York City Fire Department in cooling down the hot steel bulkheads and ripping off all combustibles attached directly to these bulkheads.

c. The action of the New York City Fire Department in directing the opening of the vent dampers and other closures on the Navigation Deck, directly above the primary fire, so as to permit unobstructed vertical dissipation of the heat and smoke of the primary fire.

d. The fireproof insulation, which was fitted in certain areas of the escape trunk, effectively prevented the conduction of sufficient heat to cause fire or smouldering in the combustible materials attached to the steel bulkheads in these locations.

7. That the primary fire produced sufficient heat to melt a section of the main power cables where they passed through the Diesel Generator Room. This disconnected all the generators from the main switchboard except for the starboard turbo-generator. The latter was thereby overloaded and tripped-out resulting in a total power failure approximately 15 minutes after the fire started.

8. That the power failure de-energized two of the vessel's three fire pumps. This resulted in a complete loss of pressure in the fire main throughout the vessel. The vessel's emergency bilge and fire pump was energized from the emergency generator but, due to the availability of fire fighting water from the resources of the New York City Fire Department, it was not utilized as a fire pump.

9. That the sprinkler system functioned initially both by discharging in a fire-affected area and by indicating the existence of the fire. However, due to the power failure, the sprinkler system did not continue to operate in the manner intended. Because of the circumstances this did not contribute to the severity of this casualty.

10. That the initial efforts of the vessel's crew in fighting the fire when it first started were ineffective for the following reasons:

a. The fire, being in burning liquid, was not sufficiently confined to be brought under control with portable dry chemical extinguishers.

b. The two portable foam extinguishers which were used could not distribute a cohesive blanket over the fire area because the foam stream had to be directed on the fire from underneath and through a deck grating.

c. The vessel's CO_2 system, which had sufficient capacity to totally flood the Diesel Generator Room, was not used when the fire was first discovered.

11. That the subsequent efforts of the vessel's crew in assisting the New York City Fire Department were orderly, efficient and well directed. Their performance contributed materially to the successful extinguishment of the fire.

12. That the New York City Fire Department performed in an exemplary manner in fighting and extinguishing the fire. The promptness with which the Department brought to bear a large force of fire fighters and considerable specialized equipment undoubtedly was instrumental in preventing the spread of the fire.

13. That in consideration of the following factors:

a. The construction and arrangement of the interior paneling in the vessel's accommodation and service areas,

b. The effect of the power failure on the vessel's fire fighting capability,

c. The heat and intensity of the primary fire,

it is the opinion of the Board that the vessel's crew could not have successfully combatted this fire if it had occurred while the vessel was at sea.

RECOMMENDATIONS

1. That a copy of this record of investigation be forwarded to the Government of the Federal Republic of Germany for information, study and such action as deemed appropriate looking to preventing a recurrence of such a casualty and for improving the safety of life at sea.

2. That the Commandant continue his efforts to amend the International Convention for Safety of Life at Sea, 1960, to require all signatory governments to upgrade passenger vessels which contain large amounts of combustible material in their construction to obtain an acceptable fire safety standard.

3. That the Commandant continue his efforts to obtain revision of the construction standards for new passenger vessels prescribed in the 1960 SOLAS to require the maximum use of incombustible material, as opposed to reliance on sprinklers, detecting systems and the main fire zone bulkheads.

4. That the Commandant seek to amend 1960 SOLAS to prohibit the use of gage glasses on fuel tanks, unless such gages are provided with devices which will automatically close in the event of rupture.

5. That action be taken to require passenger vessels which contain large amounts of combustible material in their construction to be provided with additional smoke masks and additional tools suitable for the removal of combustible joiner work.

6. That the Commandant give consideration to directing a letter to the Commissioner of the New York City Fire Department commending the action of the Department in successfully combatting the fire. This will be the subject of separate correspondence from the Board.

MARINE BOARD OF INVESTIGATION, SS HANSEATIC

[redacted]
Rear Admiral, U. S. Coast Guard
Chairman

[redacted]
W. S. DOE
Captain, U. S. Coast Guard
Member

[redacted]
E. P. BOYLE
Commander, U. S. Coast Guard
Member

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W. B. ALVEY
Commander, U. S. Coast Guard
Member and Recorder

UNITED STATES COAST GUARD

COMMANDANT (MVI-3)
U.S. COAST GUARD
WASHINGTON, D.C.
20591

3943/HANSEATIC
C-3 Bd.
16 MAY 1967

SUPPLEMENTAL COMMANDANT'S ACTION

on

THE MARINE BOARD OF INVESTIGATION CONVENED TO INVESTIGATE THE FIRE ON BOARD THE GERMAN PASSENGER VESSEL SS HANSEATIC ON 7 SEPTEMBER 1966 AT NEW YORK, N.Y., WITH NO LOSS OF LIFE

The record of the Marine Board of Investigation convened to investigate subject casualty, together with the findings of fact, conclusions and recommendations, was approved on 23 September 1966 subject to a comparison of the structural and equipment conditions of the SS HANSEATIC and the corresponding standards applicable to large ocean-going passenger vessels of the United States.

This comparison, which is limited to the locations involved in or affected by the fire, has been undertaken in an endeavor to ascertain areas which might require improvement in vessels of the U.S. The most critical items deserving consideration are:

1. Materials within accommodation and service spaces
2. Ventilation ducts
3. Automatic sprinkler system
4. Carbon dioxide extinguishing system
5. Tubing used in fuel lines
6. Gauge glasses on diesel oil tanks
7. Routing of main turbo-generator cables
8. Emergency power and lighting system

COMPARATIVE REMARKS

1. The HANSEATIC was substantially constructed and renovated in accordance with Method II fire protection as described in the International Convention for Safety of Life at Sea (SOLAS), 1948 which permitted extensive use of combustible materials. Plywood and pressed-wood paneling for interior decor was extensively fitted. Wood joiner work was bolted directly to steel bulkheads. Essentially U.S. vessels are and have been since 1936, constructed in accordance with Method I fire protection which severely limits the use of combustible materials and requires internal divisional bulkheading capable of preventing passage of flame for extensive periods.

2. The primary fire in the HANSEATIC passed vertically from the diesel generator room via the ventilation ducts. Secondary fires, smoke, and fumes broke out on all decks. Apparently there were neither automatic fusible-link dampers in these ducts nor was insulation fitted to the ducts where contiguous with passenger spaces. A U.S. vessel of the same vintage and history would probably have ducts from machinery spaces insulated with fire resisting insulation and automatic fire dampers would likely be fitted.

3. The HANSEATIC was equipped with an automatic sprinkler system for protection of passenger accommodation and service spaces in accordance with construction standards under Method II of the 1948 SOLAS Convention. A similar vessel of the U.S. would have employed Method I standards relying on containment by incombustible fire barriers and an automatic sprinkler system would not have been fitted.

4. While the quantity of carbon dioxide protecting the auxiliary machinery space was sufficient to totally flood the space it was necessary to utilize this system as soon as the fire was discovered. The delay of more than two hours in actuating the system was critical and rendered the system ineffective. It is doubtful that systems as presently installed on U.S. vessels, if the operation had been delayed for a similar period, would have been capable of extinguishing a fire of such magnitude.

5. The type of tubing used in the fuel line that failed was evidently a short length of rubber. Most of the tubing used on the other generators for the same purpose was metallic and undamaged by the fire. Rubber tubing for this type of service is not permitted on U.S. vessels. Where short lengths of flexible non-metallic hose are permitted they must be wire reinforced and have a fire resistant cover.

6. There was no testimony as to whether or not the gauge glasses on the diesel oil tanks were constructed of heat-resistant glass or were equipped with automatic closure devices. In light of what was observed after the fire it would appear that the glass was not heat-resistant nor were there any automatic closure devices fitted to the gauge glass tank connections. Heat-resistant materials and automatic closure devices to protect against tank spillage should the gauge glass rupture are required on U.S. vessels.

7. With reference to the failure of normal power this was evidently due to the routing of the main turbo-generator cables through the forward diesel generator room, where the fire originated, and thence vertically through the deck to the switchboard room. SOLAS Convention and Coast Guard regulations are minimal governing relative positions of main generators, cable runs and their switchboards. Arrangements similar to those on the HANSEATIC may possibly be found in U.S. passenger vessels.

8. After the power failure, occurring within 15 minutes from the commencement of the fire, the emergency generators came into operation satisfactorily. Emergency power and lighting, however, were not energized in the machinery spaces or other areas forward of the diesel generator room at frame 100. Cable runs from the emergency switchboard providing electric service forward must have been routed through the diesel generator room to the boiler room and were destroyed by the fire. Additionally, it was necessary to energize the emergency lighting and power system manually. Manual systems are permissible on older U.S. passenger vessels, however, those contracted for since November 19, 1952 are equipped with a self contained power source with automatic transfer equipment or diesel generators with automatic starting and transfer equipment.

CONCLUDING REMARKS

1. Concurring with the Board's conclusions and recommendations concerning the prompt efforts and action of the New York City Fire Department, a letter was directed to the Honorable [redacted] Fire Commissioner, New York City Fire Department commending his Department in successfully combatting and extinguishing the fire. The alertness and skill so aptly demonstrated by the more than 300 firemen and officers of his Department who participated, deserve the highest praise. The Coast Guard is pleased to extend a "WELL DONE" to each of them.

2. Concurring with the Board's recommendation that the information in this investigation be forwarded to the Government of the Federal Republic of Germany, a copy of the Board's report was forwarded via the Department of State in September 1966.

3. From the comparative remarks it is apparent that most of the structural and materiel conditions which contributed to the extensive fire on board the HANSEATIC do not exist on U.S. passenger vessels. Therefore, the only action indicated is with reference to the position of main generators, cable runs and their switchboards. A regulation for new construction, calling attention to the risk of losing power during a fire, will be proposed to the Merchant Marine Council for its consideration.

4. Concurring with the recommendations of the Board the Coast Guard has been active within the international maritime community seeking to amend the fire protection provisions of the International Convention for Safety of Life at Sea (SOLAS), 1960. The following international responses are significant.

A. With reference to existing passenger vessels considerable progress has been made towards improving fire protection standards by limiting the use of combustible materials and by eliminating or reducing the effect of the so-called "grandfather" clause. Some of the principal changes would eliminate the use of wooden hulls, decks and deckhouses, reduce areas in which combustible structural components could be used, require steel fire resistant barriers and stairwell enclosures, provide improved sprinkler systems and require fire mains under pressure with immediately available water. These amendments to the 1960 SOLAS Convention are intended to ensure that all existing passenger vessels have a reasonable degree of fire safety for the remainder of their service life. The amendments have been approved by the General Assembly of the Intergovernmental Maritime Consultative Organization (IMCO) in a meaningful international response to a serious problem. It is encouraging to note that early ratification by member nations is indicated and that some have already applied the changes to existing passenger vessels without awaiting formal ratification.

B. With reference to new passenger vessel construction improvements have been discussed at great length during a series of intensive technical meetings within IMCO during the past year. Changes and additions accepted by the Maritime Safety Committee of IMCO will provide increased standards for fire protection, fire detection and fire extinction for new vessels over those presently required by the 1960 SOLAS Convention. They will require

dividing the vessel into main vertical zones using thermal and structural boundaries, separation of accommodation spaces in a similar manner, with restricted use of combustible materials. The detection, containment and extinction within the space of origin, with protective means of escape or access for fire fighting, and with readily available fire fighting appliances are other underlying basic principles for the proposed new regulations. These international proposals will be considered by the General Assembly of the Intergovernmental Maritime Consultative Organization (IMCO) in October of 1967.

5. The Coast Guard, as the agency representing the United States in international problems of Maritime Safety, will continue to participate with other member maritime nations of the Intergovernmental Maritime Consultative Organization (IMCO) toward cooperative, effective and expeditious resolution of fire protection measures in passenger vessels.

[redacted]

P. E. TRIMBLE
Vice Admiral, U. S. Coast Guard
Acting Commandant