UNITED STATES COAST GUARD

ADDRESS REPLY TO:
COMMANDANT
U. S. COAST GUARD
HEADQUARTERS
WASHINGTON 25, D. C.

MVI
(OFFSHORE DRILLING
PLATFORM 45-E a-8 Bd)
13 APR 1959

Commandant's Action

on

Marine Board of Investigation; fire on OFFSHORE DRILLING PLATFORM 45-E, West Delta Block, Gulf of Mexico, 15 October 1958, with loss of life

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

2. At 1545 CST 15 October 1958 a petroleum oil and gas flash fire broke out on the OFFSHORE DRILLING PLATFORM 45-E, West Delta Block, Gulf of Mexico. Of the 29 men aboard the structure there was one known dead and six missing. All of the survivors were hospitalized for observation and treatment of varying degrees of burns and injuries suffered as a direct result of the fire or from jumping into the water from the platform, a height of about 50 feet. Property damage was estimated to be in excess of $6,000,000.

3. The platform was a rectangular structure approximately 130 feet by 106 feet, operated by the Continental Oil Company for a group of producers made up of Continental, Atlantic, Tidewater and Cities Service Oil Companies. In addition to serving as a focal transfer point for four other platforms, seven multiple wells were being directly operated from the 45-E and preparations were being made to drill the eighth. The main deck of the platform was elevated about 50 feet above the water. Ten feet below was a partial deck called the cellar deck measuring 80 feet by 22 feet on which was located the series of valves known as "Christmas trees" atop each well head. The main deck above the cellar deck was slatted or open grill construction.

4. At the time of the fire four wells were flowing and three were shut down. On one of the shut down wells a valve was being replaced; on one of the flowing wells production tests were being made and on the proposed well a 30 inch casing was being prepared. This latter function required welding which was being accomplished on the main deck. Hot flux from the welding was falling through the main deck to the cellar deck. The lateral distance from the scene of this operation to the Christmas tree of the nearest flowing well was 15 feet.

5. The exact cause of the casualty could not be determined; however, the Board concluded that a large volume of gases and oil was released in some manner from one of the wells' manifolds or piping under pressure and that ignition was provided by the flux from the welding in progress on the main deck.

REMARKS

1. The Findings of the Marine Board are approved.

2. The Opinions of the Board are approved with the exception of those contained in paragraphs 10 and 12.

3. With respect to the Opinion in paragraph 10, it is considered doubtful that greater compliance with the regulations can be achieved by the addition of administrative penalties to existing criminal penalties.

4. While there is no question as to the need for adequate instruction in casualty control and a knowledge of the location and use of lifesaving equipment, the confusion mentioned in paragraph 12 of the Opinions is not evident in the record. Nor does there appear to be support for the conclusion that a lack of such knowledge or instruction on the part of the dead or missing men in this instance in any way contributed to their demise. The rapid spread of the fire which precluded the use of the fire fighting equipment no doubt also acted to prevent the dead and missing from helping themselves as it did for many of the survivors.

5. Recommendations 1 and 2 are accepted as meriting further consideration and accordingly will be made the subject of study by the Merchant Marine Council.

6. No action is considered necessary on recommendation 3. At the discretion of the Officer in Charge, Marine Inspection, markings for the guidance of persons on manned platforms may be required under the provisions of Title 33 CFR Section 146.05-35.

7. As set forth in recommendation 4 the necessity for a clear understanding by all concerned as to who is in the ultimate position of authority on manned platforms at any given time is concurred in. In this connection there is already pending before the Merchant Marine Council a proposal to add a new section to Title 33 CFR 146 specifically defining the person in charge under all situations.

8. Recommendation 5 is not concurred in. Under existing regulations the responsibility for conducting emergency drills is placed squarely on the owners and enforcement procedures are considered adequate. Any amendment to those regulations which might be construed to relieve the owners of their responsibility would not be in the public interest.

9. For the reasons set forth in paragraph 3 above, recommendation 6 is disapproved.

10. In accordance with recommendation 7, recognition of the commendable action on the part of the operator of the M/V SPORTSMAN, Donald R. Parsley, will be given.

11. Recommendation 8 is approved to the extent that a copy of the record in this case will be forwarded to the Department of the Interior for information.

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

A. C. Richmond

A. C. RICHMOND
Vice Admiral, U. S. Coast Guard
Commandant

UNITED STATES COAST GUARD

ADDRESS REPLY TO

Commander
Eighth CG District
New Orleans, Louisiana

4 December 1958

From: Marine Board of Investigation
To: Commandant (MVI)
Via: Commander, 8th Coast Guard District

Subj: Offshore Drilling Platform 45-E, West Delta Block, Gulf of Mexico; fire, with loss of life; 15 October, 1958

Findings of Fact:

1. At about 1545 CST on 15 October, 1958, a fire occurred on the offshore platform 45-E of the West Delta Block, Gulf of Mexico, with a resultant loss of life of one known dead and six missing, presumed dead.

2. Property damage, exclusive of loss to petroleum products and costs of extinguishing the fire, is estimated at six million dollars.

3. At the time of the fire there was a light wind from between North and Northeast with a swell of about four feet from the East.

4. The deceased and missing are:

Thomas F. Butler Liberty, Mississippi	Known dead
Edward A. Butler Liberty, Mississippi	Missing
Ben N. Puyear Livingston, Texas	"
Dan J. Hogan Harvey, Louisiana	"
Arthur Johnson Ellinger, Texas	"
George J. Kidd Beaumont, Texas	"
Wallace A. Simmons Houston, Texas	"

5. All survivors were hospitalized for observation and treatment of varying degrees of burns and injuries. Many men received injuries from jumping into the water from a height of fifty or more feet.

6. Platform 45-E was operated by the Continental Oil Company for a group of producers known as CATC (Continental, Atlantic, Tidewater and Cities Service). On the platform was the drilling rig of the Nicklos Drilling Company, known as "Nicklos 19." The platform was located at 29° 06' 24.53" N, 89° 38' 16.25 W, 8.8 miles from the nearest land, Pelican Island. Block 45 is also known as Continental 108, and, for geological survey purposes, as part of Block 30 Field. The platform was a "key" platform, from which nineteen wells were directly operated and which served as a focal transfer point for four other platforms. 45-E was a "manned" platform.

7. The platform was a steel structure. The main deck of the platform was a rectangle approximately 130 feet (North-South) by 106 feet (East-West). The main deck was of wood and elevated about fifty feet above the water. About ten feet below the main deck, on the north end and running East-West was the cellar deck, a rectangle about 80' x 22', on which the "Christmas trees" were situated. The Christmas trees in each of the two lines were about seven and one-half feet apart. The completed wells were E-1 (dual) E-2 (triple), E-3 (triple), E-4 (dual) E-5 (triple), E-6 (dual), and E-7 (quadruple). The locations of the Christmas trees are indicated in the plan of the platform (EXHIBIT 1).

8. The steel quarters buildings at the south end of the structure were raised about five feet above the main deck.

9. Below the cellar deck, on the west end of the north side, was a personnel landing. Another such landing was at the south end of the east side.

10. There were two access ladders from the main deck to the cellar deck, and one from the cellar deck to the landing below it. The other landing was connected to the main deck by two ladders, each covering half the distance with a catwalk connecting. Locations of all ladders appear in EXHIBIT 1.

11. On 15 October 1958, at the time of the casualty, the following persons (29 in all) were on the structure:

NAME AND POSITION	EMPLOYER
Edward Hillburn, Senior Drilling Foreman	Continental Oil Co.
Robert Henderson, Production Engineer	" " "
Rufus Leo Evans, Pumpman	" " "
William N. Mooty, Pumpman	" " "

NAME AND POSITION	EMPLOYER
Evar C. Swenson, Tool Pusher	Nicklos Drilling Co.
Charles E. Moseley, Driller	" " "
Edward A. Butler, Driller	" " "
Ben H. Puyear, Welder	" " "
Scotty Moss, Roughneck	" " "
William Whitsitt, Roughneck	" " "
Charles Hinze, Derrickman	" " "
Raymond Hatler, Roughneck	" " "
Houston Bazare, Roughneck	" " "
Paul Eggert, Electrician	" " "
Thanase Miller, Roughneck	" " "
Amy Lavergne, Roughneck	" " "
George J. Kidd, Derrickman	" " "
Wallace Simmons, Crane Operator	" " "
Thomas P. Butler, Motorman	" " "
Arthur Johnson, Roughneck	" " "
Gerald Crayon, Roustabout	Service Contracting Co.
Joseph C. Purl, Jr., Roustabout	" " "
Dan J. Hogan, Welder	A-1 Boiler & Machine Works
Frank G. DeSalvo, Welder's Helper	" " "
Charles E. Davis, Relief Steward	General Marine Corpn.
Karl W. Stier, Utility	" " "
Dan Martin, Utility	" " "
Claude F. Etheridge, Utility	" " "
Joe F. Bates, Utility	" " "

12. At the time of the fire wells E-1, E-2 and E-6 were shut in. E-3, E-4, E-5 and E-7 were flowing.

13. Four operations of special significance were taking place on the structure on 15 October 1958. At E-1 difficulties resulting from sanding required attention. At E-7 a new well had been brought in. At position E-8, preparations were being made for drilling a new hole. About ten feet from E-1 a water pipe was being installed.

14. At E-1, Leo Evans, pumpman, discovered at about 0330 that excessive sanding had caused the ceramic in the choke to blow completely out, allowing the well to spring. All wells on the platform were shut down for about an hour and a half. A new choke was installed but sanding continued during the morning, necessitating cleaning of the choke. However, E-3, E-4, E-5 and E-7 were not shut down again after 0500. At about 1400, because of the sanding, Evans ordered Purl to replace a wing valve at this Christmas tree. Evans himself shut down E-1, securing the master valve hand tight, then

applying a 36" Stillson wrench. The line was also shut down at the manifold on the other side of the cellar deck. Purl commenced the disassembly necessary to remove the wing valve. At about 1430 Purl was joined by Crayon. The section of line including the choke and automatic shut-off valve was disconnected and suspended on line from overhead to enable it to be brought back into place with minimum effort. At this time only two bolts held the wing valve in place on the Christmas tree. No escaping oil or gas had been noted nor was there any apparent pressure. As the last nuts were removed, Crayon and Purl reached up to head height or above to lift the valve down. At about 1545 the men were in the process of placing the valve on the deck, with Crayon facing in the general direction of east, along the line of Christmas trees, having E-1 to his left. Crayon felt a blast of flame or heat strike him in the face. Purl heard an explosion.

15. At E-7, four new wells had been brought in and production tests were being run under the supervision of Henderson. E-7, E-7-D and E-7-T had been tested. At about 1400 E-7-Q was undergoing the test, which consisted of flowing the fluid through steel pipe to a test separator located on the north side of the main deck. This was an automatic process normally requiring no personal attendance. E-7, E-7-D and E-7-T, being in production, were subjected to "shake-out" tests. These tests, which required bleeding of oil from each well through a half-inch valve, were being performed on the cellar deck at the E-7 Christmas tree by Arthur Johnson. This work was in progress at 1545.

16. At the E-8 location, the drilling crew was preparing a thirty inch casing for a new operation. This crew was under the immediate supervision of Charles Moseley. Some time between 1300 and 1400 a section of the thirty inch was placed on the cellar deck. This involved welding which was done by Puyear. By 1415 this part of the job was done and the crew moved to the main deck to place another length of casing. Welding was actually in progress at 1545 and hot flux was falling through the main deck to the cellar deck. The lateral distance from E-7 to E-8 was fifteen feet.

17. On the northwest corner of the cellar deck, about ten feet from E-1, Hogan and DeSalvo were engaged in installing a two-inch water line intended to run between the main deck and the cellar deck. Hogan did some welding, but at some time between 1300 and 1400 he was instructed by Evans not to do any further welding until later in the day. It appears that no welding was done at least after 1500 and that none was in progress at this location at 1545.

18. As to this last point, there is evidence to the contrary. Purl (R-280) declares that Hogan had been welding "just about a minute" before he heard an explosion. However, this is contradicted by DeSalvo. It is noted that Purl believed that Puyear was also welding on the cellar deck at this time (R-280), but it seems conclusively established that Puyear was on the main deck with the driller, Moseley.

19. On the main deck at the south side, i.e. not over the cellar deck, Eggert, the electrician, started a Buda Diesel engine some time within five minutes of 1545. This engine exhausted at a point about seven feet below the main deck. After starting the engine, Eggert walked out and went between the fuel tanks and the generator building. He had passed the building about three feet and was looking at the drillers when the fire started.

20. With the exception of Simmons who was operating the crane for the drilling crew, all other persons on the structure were at this time working in the office and quarters buildings or asleep in their rooms.

21. As already noted, at about 1545 an explosive noise was heard by some persons and fire and smoke were discerned by all who were outdoors on the structure. All persons on the main deck locate the noise and the original fire as emanating from below, with most adding that the source appeared to be the cellar deck. Hatler and Whitsitt stated that flame and smoke coming up on the main deck from the cellar deck appeared to travel from West to East. Some describe the noise as simply "an explosion." Others describe it as a big "whoosh."

22. Of the men working on the cellar deck, DeSalvo first saw the fire at the E-7 Christmas tree; Purl heard an explosion from the East then saw fire first coming from that direction; Crayon, who was stooping and facing E-7, to the East, felt flame hit him squarely in the face.

23. Fire and smoke spread almost instantaneously over the whole structure. No effort was made to attempt to contain the fire. By reason of the rapid spread of intense heat and billowing smoke, all persons realized that it was necessary to abandon the structure.

24. Hillburn, in the office, immediately called the shore office by voice radio. Henderson and Swenson sounded the general alarm which was heard by many men on the structure.

25. The men in the buildings chiefly took life jackets from their rooms. Some of these got out onto the main deck and either jumped or slid down the small line securing a ring buoy. Others from the inside, with life jackets on, jumped out the window of the tool pusher's room, clearing the main deck because the building had a small overhang. Evans and Mooty, the pumpmen, first ran to the cellar deck to investigate but could see nothing because flame and smoke were everywhere.

26. The survivors who had been working outside on the main deck jumped overboard from various spots.

27. Of the men on the cellar deck, Johnson was not seen after the fire started. Crayon, badly burned and with his jacket afire, went down to the landing platform and jumped in the water to put out his fire. Purl went

up to the main deck, obtained a ring buoy at the northwest corner, slipped into it and jumped, arriving in the water unhurt except for fire burns. DeSalvo and Hogan also went up to the main deck. Hogan fell, recovered, and disappeared from DeSalvo's sight in the smoke, not to be seen again. DeSalvo went overboard from the main deck.

28. All survivors were picked up by the M/B SPORTSMAN, the "production" boat working in the Continental field. The SPORTSMAN, operated by Donald R. Parsley, was en route from a rig to the east of 45-E and was between a quarter and a half mile from 45-E when the fire broke out. The SPORTSMAN maneuvered into and around the platform dropping life jackets. For about a half hour it circled picking up all those found, eventually moving away from the platform in the direction in which debris was floating in order to locate other persons, but none was found. In addition to the survivors, the SPORTSMAN also picked up Thomas F. Butler, who was in a state of shock but who was believed to be alive when brought aboard, dying shortly after.

29. Wallace Simmons, one of the missing, succeeded in getting off the structure and was seen having trouble in the water. A life jacket was passed to him by Hatler, who then ducked underwater to remove his boots. When Hatler resurfaced, Simmons had disappeared. Other than Hogan and Simmons, none of those missing was noticed by any survivors after the fire started.

30. The SPORTSMAN took the survivors to a nearby platform, whence all men were removed by helicopter to Ochsner Clinic, New Orleans. Helicopters from the Continental, California and Humble Oil Companies, and Petroleum Helicopters, helped transport the survivors and engaged in search. Search was also conducted by Coast Guard helicopter. The cooperation of the other companies was pursuant to a previously arranged disaster plan.

31. Platform 45-E was inspected by an inspector from Marine Inspection Office, New Orleans, on 13 October 1957. Deficiencies such as lacking handrails were noted. All deficiencies were reported corrected on 22 October 1957. Fire-fighting and life-saving equipment in accordance with regulations were noted on the structure. While the structure was equipped with two life floats, neither was released. An adequate number of life jackets was on the structure, all normally located in the living quarters. Some persons, both among those living on the structure and among the transients did not know where the jackets were located. A station bill (EXHIBIT 4) was posted on a bulletin board in the living quarters.

32. Fire drills were reported to the operator as having been held, as shown in EXHIBIT 6, from October 1957 through June 1958, except in January 1958. No report was received by the operators for the months after June 1958. No report of failure to hold drills was made by the operators to OCMI, New Orleans.

33. Many witnesses testified that they had never participated in emergency drills although they had worked regularly on the platform up to two years. Most witnesses could not recall a specific drill. None of the transient workers had participated in a drill on this platform. No system was followed to assure that transients knew the location and use of fire-fighting and life-saving equipment.

34. Theoretically, the drilling foreman is in charge of a platform. When the senior drilling foreman of the Continental Company is present on a platform he is in charge, whether or not the regular foreman is aboard. When no drilling foreman is on the platform the tool pusher of the drilling company is in charge. The pumpmen are in charge of production only.

35. As crews work shifts from five to ten days, the personnel on a platform may change several times a month, even among the "non-transient" workers. Since operations are in progress on all platforms in the field and the personnel from the "key" manned platform circulate from one to another during the day, the "person in charge" of a manned platform may also change several times during a day.

36. Although Leo Evans ordered Hogan not to weld near E-1 until later in the day of 15 October, no supervisory person consulted any other or gave instructions to any other with reference to the various activities carried on on platform 45-E that day.

37. As this platform is located in the "disputed" area, presently the subject of litigation between the State of Louisiana and the United States, both the U. S. Department of the Interior and the Louisiana Department of Conservation issue regulations for the area. The pertinent Louisiana Statute and regulations are appended to the record. Regulations of the U. S. Geological Survey appear in 30 CFR 250.

38. On wells such as were produced from Platform 45-E, storm chokes are required by the Louisiana regulations. While exemptions have been granted by the Commission of Conservation at other fields because of excessive sanding, no exemption had been granted to this field although petition for an exemption had been made in December 1957.

39. The Continental Oil Company's order on fire prevention (EXHIBIT 3) including instructions on welding, had been published to supervisory personnel.

The Board is of the opinion:

1. That the fire was caused by the ignition of a large volume of gases and oil by the flux from the welding in progress above the E-8 position on the main deck.

2. That the concentration of gases and oil came from one of the wells, manifolds or piping under pressure.

3. That welding on the cellar deck and om the main deck above the cellar deck was an unsafe practice with wells flowing.

4. That, in spite of the fact that the drilling supervisor on the platform was accorded the status of "person in charge" by the company, no true responsibility existed for the enforcement of safety practices in operations nor for the carrying out of the regulations in 33 CFR 146.05. Drilling and production were regarded as independent operations with no recognized overall authority to coordinate activities in the interest of safety. It is noteworthy that while the pumpman instructed one welder not to work near E-1, no one was consulted by the driller Moseley to determine whether welding in connection with the work on preparing E-8 should be allowed and no one instructed him that welding would be dangerous. In this respect the stated policy of the operators was not carried out.

5. That the methods of compliance with the regulations in 33 CFR 146.05 were inadequate in that instruction was not given transients or newcomers on the platform, in that the responsibility for holding drills was not definitely determined, in that drills were in fact not held, and in that the operators did not report the failure to hold drills.

6. That the present regulations in 33 CFR 146.05-25 (Emergency Drills) calling for drills "at least once each month", with violation occurring only when no drill is held in one month, do not precisely meet the situation actually encountered on the platform. With the shifting and alternating of crews, it is entirely possible that the rule might be complied with fully, yet that one entire "permanent" group of workers should never participate month after month.

7. That, further, the assignment of duties contemplated in 33 CFR 146.05-15 does not allow for the fact that personnel living on a manned platform may at any time be away from the platform at another place of work, and that transient workers come and go as jobs require.

8. That application of the present regulations relative to safety is also made difficult by the amorphous identity of the "person in charge", and the consequent uncertainty of the placing of immediate responsibility on the platform.

9. That under the present regulations the only affirmative responsibility for the enforcement of safety regulations rests upon the corporate owner of the platform.

10. That enforcement of the regulations could be improved by the addition of civil or administrative penalties to the present possibility of criminal prosecution.

11. That the nature of the ignition and the rapid spread of fire precluded the use of the fire fighting equipment at the platform.

12. That adequate instruction in casualty control would have minimized confusion, as intended by the regulations, and better knowledge of the location and use of life-saving equipment might have saved the lives of some who were on the main deck at the time and whose fates are unknown.

13. That the unsafe practice of welding as was done here is within the scope of "other matters relating to the promotion of safety of life and property" as set forth in 33 USC 1333, and is properly the subject of regulation.

14. That the actions of Donald R. Parsley, operator of M/V SPORTSMAN, were commendable in that he risked his life and vessel and contributed to the saving of lives.

The Board recommends:

1. That 33 CFR 146 be amended to prohibit welding, burning or other hot work on any artificial island or fixed structure except when all the wells on that artificial island or fixed structure are shut in.

2. That emergency drills be required once monthly for each regular crew working on the structure.

3. That adequate signs be required at accesses indicating to all persons arriving at the structure the location of lifesaving equipment.

4. That the owners be required to designate, in writing, and on the station bill, the identity of some one person as the "person in charge" for the final responsibility of enforcing safety regulations.

5. That each manned structure be required to file a copy of the report of emergency drills directly with the cognizant OCMI in addition to that presently filed with the owner or operator.

6. That consideration be given to the possibility of obtaining legislation to authorize administrative penalties for non-compliance with safety regulations in 33 CFR 146.

7. That recognition be given to the commendable actions of Donald R. Parsley, operator of M/V SPORTSMAN, by means of a letter or other appropriate sign.

8. That the instant proceedings be referred to the Department of the Interior for study to determine which elements or practices involved in this casualty come within the scope of the Secretary's rule making powers, and for such action as he may deem appropriate.

Carl B. Olsen, RADM, USCG
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