UNITED STATES COAST GUARD

REPORT OF INVESTIGATION INTO THE CIRCUMSTANCES SURROUNDING THE INCIDENT INVOLVING

EXPLOSION ON THE CLASSED FPV GALAXY

ON 10/20/2002

MISLE ACTIVITY NUMBER: 1995704
ORIGINATING UNIT: DISTRICT 17 (DP)
MISLE ACTIVITY OWNER: COMMANDANT (CG-385)
MISLE ACTIVITY CONTROLLER: COMMANDANT (CG-385)
MISLE CASE NUMBER: 95035

I. INCIDENT BRIEF

On October 20, 2002, the fish processing vessel (FPV) GALAXY, a freezer longliner, was proceeding at 11 knots on a heading of 270 degrees, approximately 30-35 miles Southwest of St. Paul Island to retrieve long line gear in the Bering Sea. The winds were out of the North-Northeast at 20 - 30 knots and the seas were 15 - 20 feet. The air temperature was 35 degrees Fahrenheit (F) and the water temperature was 43F degrees. At approximately 1622 local time, crew members sighted smoke on multiple decks within the vessel's superstructure and the vessel's captain, was immediately notified. He activated the fire alarm and the vessel's fire teams responded to the starboard side upper engine room hatch, from where black smoke was pouring. Non-essential crew members evacuated to the aft top deck and the forward main deck while the fire team remained on scene.

The vessel's Chief Mate and a fire team leader, believing the vessel's fixed carbon dioxide system had been discharged, ordered several crew members to open multiple exterior watertight hatches to ventilate the smoke from the space in which he and the remaining fire team members were standing. Approximately one minute following this action, a large backdraft explosion occurred, causing the 180-foot vessel to shudder violently. The pressure from the explosion ejected the fire team through the gear setting hatch and into the water.

As a result, 5 persons were injured, 2 kllled and 1 is missing and presumed dead.

II. EXECUTIVE SUMMARY

Incident Summary

On October 20, 2002, the fish processing vessel (FPV) GALAXY, a freezer longliner, was proceeding at 11 knots on a heading of 270 degrees, approximately 30-35 miles Southwest of St. Paul Island to retrieve long line gear in the Bering Sea. The winds were out of the North-Northeast at 20 - 30 knots and the seas were 15 - 20 feet. The air temperature was 35 degrees Fahrenheit (F) and the water temperature was 43F degrees. At approximately 1622 local time, crew members sighted smoke on multiple decks within the vessel's superstructure and the vessel's captain, was immediately notified. He activated the fire alarm and the vessel's fire teams responded to the starboard side upper engine room hatch, from where black smoke was pouring. Non-essential crew members evacuated to the aft top deck and the forward main deck while the fire team remained on scene.

The vessel's Chief Mate and a fire team leader, believing the vessel's fixed carbon dioxide system had been discharged, ordered several crew members to open multiple exterior watertight hatches to ventilate the smoke from the space in which he and the remaining fire team members were standing. Approximately one minute following this action, a large backdraft explosion occurred, causing the 180-foot vessel to shudder violently. The pressure from the explosion ejected the fire team through the gear setting hatch and into the water.

As a result, 5 persons were injured, 2 kllled and 1 is missing and presumed dead.

Incident Involved: Marine Casualty, Reportable

Level of Investigation: Formal
IMO Classification: Routine
USCG Classification: Major Marine Casualty
Was this a Serious Marine Incident? Yes
Was a Marine Board Convened by Commandant? No

Personnel Casualty Summary

Total Missing = 1
Total Dead = 2
Total Injured = 4
Total at Risk, Not Injured = 20
Total People at Risk = 26
Other Personnel (Not at Risk) = 0

Vessel(s) Status Summary

Actual Total Loss(es) = 1
Total Constructive Loss, Salvaged = 0
Total Constructive Loss, Unsalvaged = 0
Damaged = 0
Undamaged = 3

Property Damage Summary/Total Damage

Vessel(s) = $14000000*
Cargo = $
Facility(s) = $
Other = $

* Includes estimates

Waterway Mobility Summary

Vessel Delays (including speed restrictions): None

III. ACTIONS IN RESPONSE TO THIS REPORT

Actions on Recommendations

Safety Recommendation #5778: 06. Dissemination of Final Investigation Report

Copies of the Formal Investigation Report should be provided to the owner of the FPV GALAXY, Captain [redacted], [redacted], the families of the deceased/presumed deceased, the Commercial Fishing Industry Safety Advisory Committee, and the Executive Director of the North Pacific Fishery Management Council.

Date Created: 02/27/2004
Current Owner Unit: District 17 (dp)
Date Last Modified: 03/15/2004 7:21:59 PM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M
>TIME: 03/15/2004 15:12
>STATUS: --->Final Agency Action
>NEW OWNER: 17M
I concur with this recommendation.

MSO Anchorage: I concur with this recommendation and will ensure that copies are provided to all named parties.

>USER: [redacted]17M
>TIME: 03/15/2004 15:14
>STATUS: Final Agency Action--->Forward
>NEW OWNER: 17M
Final Action.

>USER: [redacted]./17M
>TIME: 03/15/2004 15:21
>STATUS: Forward--->Final Agency Action
>NEW OWNER: 17M
Concur.

Final Agency Action:

Concur- Acceptable Action

Required Actions:

Proposed Start Date: 02/27/2004 Actual Start Date: 02/27/2004
Proposed Completion Date: 02/27/2004 Actual Completion Date: 02/27/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5779: 07. Dissemination of Report

This report should be given wide dissemination throughout the North Pacific commercial fishing industry including the National Marine Fisheries Service observer program,

various fishery news organizations, the North Pacific Fishing Vessel Owner's Association, the Alaska Marine Safety Education Association, the Groundfish Forum, and the North Pacific Longline Assocation.

Date Created: 02/27/2004
Current Owner Unit: District 17 (dp)
Date Last Modified: 03/15/2004 7:18:29 PM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M
>TIME: 03/15/2004 15:17
>STATUS: --->Final Agency Action
>NEW OWNER: 17M
Concur with MSO Anchorage Action.

MSO Anchorage: I concur with this recommendation and will ensure that copies are provided to all named parties.

Final Agency Action:

Concur- Acceptable Action

Required Actions:

Proposed Start Date: 02/27/2004 Actual Start Date: 02/27/2004
Proposed Completion Date: 02/27/2004 Actual Completion Date: 02/27/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5785: 05. Development of Task Force

Marine Safety Office Anchorage, along with the North Pacific Fishing Vessel Owners Association, should develop a Task Force to address existing compliance problems in the safety training, instruction and drills for the head and gut fleets of Alaska and Washington.

Date Created: 03/12/2004
Current Owner Unit: District 17 (dp)
Date Last Modified: 04/26/2004 1:27:25 PM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M
>TIME: 04/12/2004 11:01
>STATUS: --->Final Agency Action
>NEW OWNER: 17M
MSO Anchorage: I concur with this recommendation. In January 2004 Marine Safety Office Anchorage had initiated a comprehensive training and drill enforcement program targeting the head and gut processing fleet operating in the BSAI / GOA groundfish fisheries. The concept of operations for this program has been provided as an enclosure to the unit action memo. To date, fully one third of the fleet has been required to demonstrate full compliance with the provisions of 46 CFR 28.270. A full report of this operation will be completed and submitted to the Seventeenth Coast Guard District no later than July 15, 2004.

D17: Concur with the unit's action.

Final Agency Action:

Concur- Acceptable Action

Required Actions:

Proposed Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004
Actual Start Date: 03/12/2004
Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status: In Process- Active
Action Commentary:

Safety Recommendation #5786: 08. Develop Policy Guidance

The Seventeenth Coast Guard District, along with Caost Guard Headquarters, and representatives from ABS and DNV, should initiate and develop policy guidance to address and clarify existing requirements for manning and watchkeeping on board head and gut vessels, fishing vessels and fish processing vessels less than 1600 GT. This policy should include, but not be limited to, clearly defining the terms "manned engine space" and "periodically unattended machinery space." Any new policy guidance should compliment the statutory and regulatory language defining the term "Watch" as found in 46 USC Chapter 81 and 46 CFR Part 15.

Date Created: 03/12/2004
Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/02/2006 10:42:38 AM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M

>TIME: 04/13/2004 09:21
>STATUS: --->Forward
>NEW OWNER: GMOA
Concur with the intent of this recommendation. Existing compliance problems need to be first addressed internally before going out to the industry. While we agree a problem does exist, the first step should be for G-MOC to coordinate a CG wide Fishing Vessel Coordinator conference to discuss this issue along with other issues and develop a consistent plan of attach on a national level.

>USER: [redacted]COMDT MOA
>TIME: 03/02/2006 10:20
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA
The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Concur- Alternate Acceptable Action
>[redacted]COMDT MOA
>03/02/2006 10:42:

We concur with the intent of this recommendation. While some of these terms and policies are already defined, we agree that there is a need for further action to clarify them and make their application more consistent nationwide. We will move forward with discussions with the Coast Guard's Fishing Vessel Safety Coordinators to develop a plan to improve the consistent application of terms and policies associated with manning and watch keeping on head and gut vessels and fish processing vessels less than 1600 gross tons.

[redacted]
By direction

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5789: 11. Develop Safety Alerts

The Seventeenth Coast Guard District should develop multiple safety alerts for the lifesaving, fire detection, and fire team response issues which were documented in this investigation.

Date Created: 03/12/2004
Current Owner Unit: District 17 (dp)
Date Last Modified: 05/04/2004 12:46:54 PM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M
>TIME: 04/14/2004 10:00
>STATUS: --->Forward
>NEW OWNER: ANCMS
Concur with this recommendation. Further recommend MSO Anchorage draft safety alerts, coordinating with the unit Fishing Vessel Examiner and forward to D17 Commercial Fishing Vessel Coordinator for approval and dissemination to the industry.

>USER: [redacted]ANCMS
>TIME: 05/03/2004 14:49
>STATUS: Forward--->Forward
>NEW OWNER: 17M
Transferred back to D17m per LT [redacted] email dated April 22,2004.

>USER: [redacted]17M
>TIME: 05/04/2004 08:46
>STATUS: Forward--->Final Agency Action
>NEW OWNER: 17M
Have provided MSO Anchorage with copy of D17 Action Memo, which in parts details the requirement for MSO to draft safety alerts and provide to D17 Commercial Fishing Vessel Coordinator for approval and dissemination.

Final Agency Action:

Concur- Alternate Acceptable Action

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5790: 12. Carrying Automatic External Defribillators

The Seventeenth Coast Guard District Office of Search and Rescue (OSR) should direct all rotary wing aircraft with a qualified SAR aircrew on board and all underway major cutters, patrol boats and buoy tenders to carry automatic external defibrillators.

Date Created: 03/12/2004
Current Owner Unit: District 17 (dp)
Date Last Modified: 04/14/2004 2:39:17 PM
Priority: Normal

Endorsement(s):

>USER: [redacted]./17M
>TIME: 04/14/2004 10:38
>STATUS: --->Final Agency Action
>NEW OWNER: 17M
I concur with the intent of this recommendation. An AED is carried on all Air Station Sitka HH-60s whenever a rescue swimmer is part of the crew makeup (all ready crew flights); the AED is an integral part of this unit's MEDEVAC kit. AEDs are available for use on Air Station Kodiak aircraft, but are only carried at the discretion of the rescue swimmer or corpsman, depending on the mission requirements. Both Station Ketchikan and Station Juneau have one AED each: the AED is normally carried on their 47 foot MLBs when underway with personnel qualified to operate the equipment. The 25 (RBHS) or 27 (UTM) foot boats do not normally carry an AED when underway (primarily due to storage/space constraints). All three D17 WHECs have an AED on board. All D17 patrol boats have an AED on board except for Long Island & Anacapa; D17 (osr) is working with these units to acquire AEDs at no cost through MLCPAC (k). All D17 buoy tenders have an AED on board except for the Elderberry; D17 (osr) is working with this unit to acquire an AED at no cost through MLCPAC (k).

Final Agency Action:

Concur- Acceptable Action

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5791: 13. Head and Gut Safety

In developing future fishery rationalization alternatives for the BSAI/GOA groundfish FMPs involving head and gut vessels, the North Pacific Fishery Management Council should consider utilizing the authority provided in National Standard 10 and recommend that all head and gut vessels which remain in these fisheries following rationalization meet additional safety standards as recommended by the U.S. Coast Guard.

Date Created: 03/12/2004
Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/02/2006 11:26:58 AM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M
>TIME: 04/14/2004 10:40
>STATUS: --->Forward
>NEW OWNER: GMOA
I concur with the intent of the recommendation to the North Pacific Fishery Management Council and recommend G-MOC review and provide input to the Vessel Safety Advisory Committee.

>USER: [redacted]COMDT MOA
>TIME: 03/02/2006 11:25
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA
The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Concur- Alternate Acceptable Action
>[redacted]COMDT MOA
>03/02/2006 11:26:

We concur with the intent of this recommendation. As further recommended by the District Commander, we will review the proposal and consult with the Commercial Fishing Industry Vessel Safety Advisory Committee (CFIVSAC) to determine a course of action.

[redacted]
By direction

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5792: 14. Voluntary adoption of Regs

In the absence of new regulations, all fish processing vessels and head and gut vessels should voluntarily adopt recommendations 19 - 26.

Date Created: 03/12/2004
Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/02/2006 11:34:59 AM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M
>TIME: 04/14/2004 10:43
>STATUS: --->Forward
>NEW OWNER: GMOA
I concur with the intent of the recommendations to the Commercial Fishing Industry and recommend G-MOC review and provide input to the Vessel Safety Advisory Committee.

>USER: [redacted]COMDT MOA
>TIME: 03/02/2006 11:27
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA
The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Concur- Alternate Acceptable Action
>[redacted]COMDT MOA
>03/02/2006 11:34:

We concur with the intent of this recommendation. A review and revision of Navigation and Vessel Inspection Circular (NVIC) 5-86, Voluntary Standards for U.S. Uninspected Commercial Fishing Vessels, will be conducted. As part of that review, we will consider whether those recommendations that do not result in new regulations should be included in the revised NVIC.

[redacted]
By direction

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5793: 15. Emergency responsibilities and duties

Safety training organizations approved by the U.S. Coast Guard should develop safety videos and training programs for non-English speaking commercial fishing employees to ensure that all non-English speaking crew members are familiar with their emergency responsibilities and duties.

Date Created: 03/12/2004
Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/02/2006 11:37:38 AM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M
>TIME: 04/14/2004 10:43
>STATUS: --->Forward
>NEW OWNER: GMOA
I concur with the intent of the recommendations to the Commercial Fishing Industry and recommend G-MOC review and provide input to the Vessel Safety Advisory Committee.

>USER: [redacted]COMDT MOA
>TIME: 03/02/2006 11:35
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA
The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Concur- Acceptable Action
>[redacted]COMDT MOA
>03/02/2006 11:37:

We concur with this recommendation. We have already had AMSEA prepare training videos in Spanish and Vietnamese. In addition, we will encourage other training

organizations to develop versions of their training videos and programs in languages other than English.

[redacted]
By direction

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5794: 16. Instructor training

Commercial fishing vessel owners and operators should provide drill instructor training for lead non-English speaking factory and fish processing personnel to ensure that all non-English speaking crew members are familiar with their emergency responsibilities and duties.

Date Created: 03/12/2004
Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/02/2006 11:41:01 AM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M
>TIME: 04/14/2004 10:44
>STATUS: --->Forward
>NEW OWNER: GMOA
I concur with the intent of the recommendations to the Commercial Fishing Industry and recommend G-MOC review and provide input to the Vessel Safety Advisory Committee.

>USER: [redacted]COMDT MOA
>TIME: 03/02/2006 11:38
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA
The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Concur- Alternate Acceptable Action

>[redacted]COMDT MOA
>03/02/2006 11:40:

We concur with the intent of this recommendation. We agree that adequate safety training must be provided for all fishing vessel employees, including those not conversant in English. However, since operators must also insure that emergency instructions are understood by all crewmembers, additional measures may be necessary. We will include this issue of crew members' English proficiency and its effect on training and emergency response in our upcoming regulatory project and policy review on fishing vessel safety.

[redacted]
By direction

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5795: 17. Head and Gut Vessel Safety

Commercial fishing vessel owners and fishing vessel organizations should recommend to the North Pacific Fishery Management Council and National Marine Fisheries Service that head and gut vessels remaining in any future rationalized fisheries meet additional safety standards as recommended by the U.S. Coast Guard.

Date Created: 03/12/2004
Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/02/2006 11:42:55 AM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M
>TIME: 04/14/2004 10:45
>STATUS: --->Forward
>NEW OWNER: GMOA
I concur with the intent of the recommendations to the Commercial Fishing Industry and recommend G-MOC review and provide input to the Vessel Safety Advisory Committee.

>USER: [redacted]COMDT MOA
>TIME: 03/02/2006 11:41
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA

The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Concur- Alternate Acceptable Action
>[redacted]./COMDT MOA
>03/02/2006 11:42:

We concur with the intent of this recommendation. As further recommended by the District Commander, we will review the proposal and consult with the Commercial Fishing Industry Vessel Safety Advisory Committee (CFIVSAC) to determine a course of action.

[redacted]
By direction

Required Actions:

Proposed Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004
Actual Start Date: 03/12/2004
Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5796: 18. CO2 discharge communication

For vessels where it is the policy to notify the master of the vessel prior to discharging the vessel's CO2 system, vessel owners should install an independantly powered emergency communication system between the wheelhouse and the CO2 room, to allow immediate emergency notification communication to the wheelhouse.

Date Created: 03/12/2004
Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/02/2006 11:48:26 AM
Priority: Normal

Endorsement(s):

>USER: [redacted]./17M
>TIME: 04/14/2004 10:45
>STATUS: --->Forward
>NEW OWNER: GMOA
I concur with the intent of the recommendations to the Commercial Fishing Industry and recommend G-MOC review and provide input to the Vessel Safety Advisory Committee.

>USER: [redacted]COMDT MOA
>TIME: 03/02/2006 11:46
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA
The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Concur- Alternate Acceptable Action
>[redacted]COMDT MOA
>03/02/2006 11:48:

We concur with the intent of this recommendation. We agree that rapid communication during an emergency is necessary; however, this proposal exceeds current standards for inspected vessels. We agree that owners should provide a reliable means of communication between the CO2 room and the wheelhouse.

[redacted]
By direction

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5797: 19. Liferaft launching arrangements

The U.S. Coast Guard should develop regulations, under the provisions of 46 USC 4502(b)(2)(G), for all fishing vessels where an individual liferaft weighs 200 pounds or more, to install liferaft launching arrangements where that raft can be launched by a single person.

Date Created: 03/12/2004
Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/02/2006 12:13:37 PM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M
>TIME: 04/15/2004 08:18

>STATUS: --->Forward
>NEW OWNER: GMOA
I concur with the intent of the recommendations to U.S. Coast Guard Headquarters and recommend G-MOC review for further action.

>USER: [redacted]./COMDT MOA
>TIME: 03/02/2006 11:48
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA
The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Concur- Alternate Acceptable Action
>[redacted]COMDT MOA
>03/02/2006 12:13:

We concur with the intent of this recommendation. Stowage and launching arrangements for large liferafts on fishing vessels should allow easy launching. Generally, large liferafts should be stowed so as not to require significant lifting unless mechanical devices are installed to assist in their launch. We will evaluate the feasibility of implementing such requirements for uninspected fishing vessels during our upcoming regulatory project and policy review on fishing vessel safety.

[redacted]
By direction

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5798: 20. Engine room fire detection equipment

The U.S. Coast Guard should develop regulations, under the provisions of 46 USC 4502(b)(2)(G), to require engine room fire detection and monitoring equipment on all new and existing fish processing vessels and head and gut vessels. These detection systems should have monitors or alarms installed in both the wheelhouse and engine room monitoring stations and should be tested monthly.

Date Created: 03/12/2004

Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/02/2006 12:16:12 PM
Priority: Normal

Endorsement(s):

>USER: [redacted]./17M
>TIME: 04/15/2004 08:30
>STATUS: --->Forward
>NEW OWNER: GMOA
Concur with the intent of the recommendation to U.S. Coast Guard Headquarters and recommend G-MOC review for further action.

>USER: [redacted]COMDT MOA
>TIME: 03/02/2006 12:14
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA
The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Concur- Alternate Acceptable Action
>[redacted]COMDT MOA
>03/02/2006 12:16:

We partially concur with this recommendation. We agree that fire detection systems should be required for periodically unattended machinery spaces on certain fish processing vessels and head and gut vessels. However, we do not agree that such a requirement should be applied to all existing vessels. We intend to propose regulations to implement this recommendation for new and existing vessels that must comply with 46 CFR 28, Subpart D.

[redacted]
By direction

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5799: 21. Embarkation ladders

The U.S. Coast Guard should develop regulations, under the provisions of 46 USC 4502 (b)(2)(G), to require that vessels be equipped with embarkation ladders for each survival craft on board. This is recommended for high-sided head and gut vessels and fish processing vessels where the survival craft or embarking station is located at heights greater than 15 feet above the waterline.

Date Created: 03/12/2004
Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/02/2006 12:19:11 PM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M
>TIME: 04/15/2004 08:31
>STATUS: --->Forward
>NEW OWNER: GMOA
Concur with the intent of the recommendation to U.S. Coast Guard Headquarters and recommend G-MOC review for further action.

>USER: [redacted]COMDT MOA
>TIME: 03/02/2006 12:16
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA
The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Concur- Alternate Acceptable Action
>[redacted]COMDT MOA
>03/02/2006 12:19:

We concur with the intent of this recommendation. We agree that vessel that have high freeboard where the survival craft or embarkation stations are located at heights greater than 15 feet above the waterline need to have arrangements to ensure the safe boarding of survival craft. We note that other regulations require an embarkation ladder where the embarkation station is 10 feet above the waterline. We will further consider this issue during our upcoming regulatory project and policy review on fishing vessel safety.

[redacted]
By direction

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5800: 22. Strobe PMLs

The U.S. Coast Guard should develop regulations, under the provisions of 46 USC 4502(b)(2)(G), to require that all personal marker lights for survival suits be of the strobe variety and be designed so that the user may activate the light with one hand. This recommendation is for all commercial fishing vessels operating in cold waters.

Date Created: 03/12/2004
Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/02/2006 12:27:03 PM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M
>TIME: 04/15/2004 08:31
>STATUS: --->Forward
>NEW OWNER: GMOA
Concur with the intent of the recommendation to U.S. Coast Guard Headquarters and recommend G-MOC review for further action.

>USER: [redacted]./COMDT MOA
>TIME: 03/02/2006 12:23
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA
The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Do Not Concur- No Action Necessary
>[redacted]COMDT MOA
>03/02/2006 12:26:

We do not concur with this recommendation. There is no international consensus that strobe lights are more effective than steady lights in all conditions. Both types have long been equally accepted internationally for use on all types of vessels. Strobe lights can cause disorientation and vertigo in dark, and therefore are required to have manual switches. Steady lights are not required to have manual switches. While the switches

must be operable by immersion-suit-gloved hands, there is no requirement that any lights be capable of activation with one hand. We will publish the results of this investigation for light manufacturers to consider in the development of improvement of their products.

[redacted]
By direction

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5801: 23. Man overboard recovery devices

The U.S. Coast Guard should develop regulations, under the provisions of 46 USC 4502(b)(2)(G), to require that man overboard recovery devices (in addition to liferings) be required on all documented commercial fishing vessels operating beyond the boundary line.

Date Created: 03/12/2004
Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/02/2006 12:29:48 PM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M
>TIME: 04/15/2004 08:32
>STATUS: --->Forward
>NEW OWNER: GMOA
Concur with the intent of the recommendation to U.S. Coast Guard Headquarters and recommend G-MOC review for further action.

>USER: [redacted]COMDT MOA
>TIME: 03/02/2006 12:27
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA
The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Do Not Concur- No Action Necessary
>[redacted]./COMDT MOA
>03/02/2006 12:29:

We do not concur with this recommendation. The Coast Guard does not require dedicated man overboard recovery devices other than rescue boats on any commercial vessels. Presently available man overboard recovery devices depend on maneuvering the vessel alongside the person in the water to allow the use of a fixed davit, net, ladder, or other equipment, and likely would have been ineffective under the circumstances of this casualty.

[redacted]
By direction

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5802: 24. Drill Instructor training

The U.S. Coast Guard should develop regulations to require that more than one person on board a commercial fishing vessel be trained as a drill instructor in accordance with 46 CFR 28.270 for crews greater than sixteen people.

Date Created: 03/12/2004
Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/02/2006 12:32:18 PM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M
>TIME: 04/15/2004 08:33
>STATUS: --->Forward
>NEW OWNER: GMOA
Concur with the intent of the recommendation to U.S. Coast Guard Headquarters and recommend G-MOC review for further action.

>USER: [redacted]COMDT MOA
>TIME: 03/02/2006 12:30
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA

The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Concur- Acceptable Action
>[redacted]COMDT MOA
>03/02/2006 12:32:

We concur with this recommendation. We agree that there needs to be more than one drill conductor when the number of persons on board a fishing vessel exceeds sixteen. We intend to propose regulations that will require one drill instructor for every sixteen, or fraction thereof, persons on board.

[redacted]
By direction

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5803: 25. SCBA requirements

The U.S. Coast Guard should develop additional safety training practices, guidelines, and recommendations for fire team members on commercial fishing vessels equipped with SCBAs and fireman outfits and for commercial fishing vessels which utilize rescue swimmers.

Date Created: 03/12/2004
Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/02/2006 12:53:33 PM
Priority: Normal

Endorsement(s):

>USER: [redacted]./17M
>TIME: 04/15/2004 08:34
>STATUS: --->Forward
>NEW OWNER: GMOA
Concur with the intent of the recommendation to U.S. Coast Guard Headquarters and recommend G-MOC review for further action.

>USER: [redacted]./COMDT MOA
>TIME: 03/02/2006 12:32
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA
The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Concur- Acceptable Action
>[redacted]COMDT MOA
>03/02/2006 12:35:

We concur with this recommendation. A review and revision of Navigation and Vessel Inspection Circular (NVIC) 5-86, Voluntary Standards for U.S. Uninspected Commercial Fishing Vessels, will be conducted. As part of that review, we will consider additional safety training practices, guidelines, and recommendations for fire team members on commercial fishing vessels equipped with SCBAs and firemen outfits and for commercial fishing vessels which utilize rescue swimmers.

[redacted]
By direction

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5804: 26. Naval architect requirement

The U.S. Coast Guard should develop regulations requiring vessel owners and naval architects to report significant alterations and major conversions on commercial fishing industry vessels to the U.S. Coast Guard.

Date Created: 03/12/2004
Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/02/2006 12:58:31 PM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M

>TIME: 04/15/2004 08:36
>STATUS: --->Forward
>NEW OWNER: GMOA
Concur with the intent of the recommendation to U.S. Coast Guard Headquarters and recommend G-MOC review for further action.

>USER: [redacted]COMDT MOA
>TIME: 03/02/2006 12:53
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA
The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Concur- Alternate Acceptable Action
>[redacted]./COMDT MOA
>03/02/2006 12:58:

We concur with the intent of this recommendation. Existing requirements for notifying the Coast Guard of repairs, alterations or conversions of inspected vessels enable the Coast Guard to determine the appropriate regulations to apply to the vessel and to ensure that the vessel can be safely operated in the service in which it is employed. In most cases, inspections must be conducted. Since commercial fishing industry vessels are uninspected, it is questionable whether a requirement to report significant alterations and major conversions to the Coast Guard would result in an increase in safety, as we lack the authority to require vessels to submit to an inspection by the Coast Guard to determine what regulations might apply or whether the vessel can be safely operated following the changes. However, current regulations for commercial fishing industry vessels do address alterations and conversions and how they may affect the applicability of certain regulations. We will further consider this issue during our upcoming regulatory project and policy review on fishing vessel safety.

[redacted]
By direction

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5805: 27. Liferaft paddles

The U.S. Coast Guard, through the International Maritime Organization, should develop regulations to require that liferaft paddles in SOLAS A and SOLAS B rafts be designed of a material suitable for use in life threatening and emergency situations.

Date Created: 03/12/2004
Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/08/2006 10:11:43 AM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M
>TIME: 04/15/2004 08:36
>STATUS: --->Forward
>NEW OWNER: GMOA
Concur with the intent of the recommendation to U.S. Coast Guard Headquarters and recommend G-MOC review for further action.

>USER: [redacted]COMDT MOA
>TIME: 03/08/2006 10:07
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA
The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Concur- Acceptable Action
>[redacted]COMDT MOA
>03/08/2006 10:11:

We concur with this recommendation. At present, the only specific International Maritime Organization (IMO) requirement for paddles provided in a liferaft is a demonstration that they can be used to maneuver the liferaft a short distance in calm water. We will pursue improvements at the next opportunity to review the IMO requirements for liferafts. In addition, the International Organization for Standardization (ISO) is currently developing an international standard for survival equipment carried in lifeboats, liferafts, and rescue boats. We will propose that the requirements for paddles in this standard take into account use in a seaway and in adverse climatic conditions. In the meantime, we will also share the results of this investigation with suppliers of liferafts and paddles so that they are aware of the difficulties and failures exhibited in this casualty.

[redacted]
By direction

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5806: 28. Technical corrections to CFRs

The U.S. Coast Guard should make technical corrections to 46 CFR 28.265, 46 CFR 28.270 and 46 CFR 28.275 to further clarify and simplify the existing requirements for safety instructions, training and emergency drills.

Date Created: 03/12/2004
Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/08/2006 10:13:02 AM
Priority: Normal

Endorsement(s):

>USER: [redacted]./17M
>TIME: 04/15/2004 08:38
>STATUS: --->Forward
>NEW OWNER: GMOA
Concur with the intent of the recommendation to U.S. Coast Guard Headquarters and recommend G-MOC review for further action.

>USER: [redacted]COMDT MOA
>TIME: 03/08/2006 10:11
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA
The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Concur- Alternate Acceptable Action
>[redacted]COMDT MOA
>03/08/2006 10:12:

We concur with the intent of this recommendation. We will further consider this recommendation during our upcoming regulatory project and policy review on fishing vessel safety.

[redacted]
By direction

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5807: 29. Definition "Head & Gut Vesselsl"

The U.S. Coast Guard should seek legislative authority to provide a new and seperate definition of "head and gut fish processing vessel" in accordance with 46 USC 2101 (11). This new definition should include fishing vessels currently engaged in head and gut processing operations with more than 16 people on board.

Date Created: 03/12/2004
Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/08/2006 10:15:19 AM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M
>TIME: 04/15/2004 08:40
>STATUS: --->Forward
>NEW OWNER: GMOA
I concur with the intent of the recommendation to U.S. Coast Guard Headquarters and recommend G-MOC review for further action. Any change of definition/classification of a fishing vessel should be based on the number of persons on board (POB)/lives at risk and not on the type of operation the vessel performs (i.e. removing tails, fins, heads, etc.). The definition/ classification should take into account that as the number of POB increases so does the consequences of a casualty increase. A classification based on the number of POB is already in practice as seen with passenger vessels; having increased safety standards for those vessels carrying more passengers - “UPVs”, “T-Boats”, “K-boats”, and “H-boats”.

>USER: [redacted]COMDT MOA
>TIME: 03/08/2006 10:13
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA
The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Concur- Alternate Acceptable Action
>[redacted]COMDT MOA
>03/08/2006 10:15:

We concur with the intent of this recommendation. We agree that changes in the statutory definitions of fishing vessels could be made to improve safety. We also agree with the comments of the District Commander that the focus should be on the number of persons on board instead of the specific type of operation being conducted. Therefore, we will initiate a legislative and/or regulatory proposal to define and classify vessels based on the number of persons on board.

[redacted]
By direction

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5808: 30. New fish processing vessels

The vessels affected by Recommendation 29 should have additional modest regulations developed to improve standards for evacuation of crew members, fire detection and monitoring eqiupment, training of crew members, and watertight integrity.

Date Created: 03/12/2004
Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/08/2006 10:16:51 AM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M
>TIME: 04/15/2004 08:41
>STATUS: --->Forward
>NEW OWNER: GMOA
I concur with the intent of the recommendation to U.S. Coast Guard Headquarters and recommend G-MOC review for further action. Any change of definition/classification of a fishing vessel should be based on the number of persons on board (POB)/lives at risk and not on the type of operation the vessel performs (i.e. removing tails, fins, heads, etc.). The definition/ classification should take into account that as the number of POB increases so does the consequences of a casualty increase. A classification based on the

number of POB is already in practice as seen with passenger vessels; having increased safety standards for those vessels carrying more passengers - “UPVs”, “T-Boats”, “K-boats”, and “H-boats”.

>USER: [redacted]./COMDT MOA
>TIME: 03/08/2006 10:15
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA
The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Concur- Alternate Acceptable Action
>[redacted]./COMDT MOA
>03/08/2006 10:16:

We concur with the intent of this recommendation. We believe that the current and planned initiatives describe in our responses to the preceding recommendations satisfy the intent of this recommendation.

[redacted]
By direction

Required Actions:

Proposed Start Date: 03/12/2004 Actual Start Date: 03/12/2004
Proposed Completion Date: 03/12/2004 Actual Completion Date: 03/12/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Recommendation #5871: D17-01 - Guidance for 46 CFR 28.270(c)

"As I have stated in my comments on Casualty Analysis, I can understand the confusion of interpreting 46 CFR 28.27(c) and recommend G-MOC provide further guidance and interpretation of this regulation which better defines "proper training".

Date Created: 04/13/2004
Current Owner Unit: Commandant (CG-3PCA)
Date Last Modified: 03/08/2006 10:21:38 AM
Priority: Normal

Endorsement(s):

>USER: [redacted]17M

>TIME: 04/13/2004 09:27
>STATUS: --->Forward
>NEW OWNER: GMOA
Do not concur with MSO Anchorage's action to pursue violation investigation and recommend further guidance be developed by G-MOC.

>USER: [redacted]COMDT MOA
>TIME: 03/08/2006 10:18
>STATUS: Forward--->Final Agency Action
>NEW OWNER: COMDT MOA
The Final Agency Action has been determined and approved by [redacted] by direction of the Commandant.

Final Agency Action:

Concur- Alternate Acceptable Action
>[redacted]COMDT MOA
>03/08/2006 10:21:

We concur with the intent of the District Commander's recommendation. Although Navigation and Vessel Inspection Circular (NVIC) 7-93, Guidelines for Acceptance of "Fishing Vessel Safety Instructors" and Course Curricula for Training "Fishing Vessel Drill Conductors," provides guidance on the training that an individual must have in order to meet the requirements of 46 CFR 28.270(c), we will further consider this issue during our upcoming regulatory project and policy review on fishing vessel safety.

[redacted]
By direction

Required Actions:

Proposed Start Date: 04/13/2004 Actual Start Date: 04/13/2004
Proposed Completion Date: 04/13/2004 Actual Completion Date: 04/13/2004

Estimated Effort to Complete: 0 Staff Days
Action Status:
Action Commentary:

Safety Alerts

IV. FINDINGS OF FACT

Subjects of the Investigation

Vessels. The following vessels were subjects of this investigation. Particulars for each vessel follow.

Report of Investigation

Vessel Name:	BLUE PACIFIC
Flag:	UNITED STATES
Vessel Identification Number:	569927
Call Sign:	WCX7690
Status:	Undamaged
Role:	Transiting Vicinity of Primary Subject
Vessel Class, Type, Sub-Type:	Fishing Vessel, Fishing Catching/Processing Vessel, Longliner/Processor
Gross Tonnage(GRT):	
Net Tonnage(NRT):	
Deadweight Tons:	
Length:	
Home/Hailing Port:	
Keel Laid Date:	
Delivery Date:	12/15/1944
Place of Construction:	NEW ORLEANS, LA, UNITED STATES
Builder Name:	HIGGINS INDUSTRIES, INC.
Propulsion:	Diesel Reduction
Horsepower:	1000
Master:	
Classification Society:	
Owner:	SELDOVIA FISHERIES INC 2930 WESTLAKE AVE NORTH STE 300 SEATTLE, WA, 98109 US
	SELDOVIA FISHERIES INC 2930 WESTLAKE AVE NORTH STE 300 SEATTLE, WA, 98109 US
Operator:	SELDOVIA FISHERIES INC 2930 WESTLAKE AVE NORTH STE 300 SEATTLE, WA, 98109 US
Inspection Subchapter:	U
Most Recent Vessel Inspection Activity:	912637, 05/25/1990
Current Certificate of Inspection:	Issued on 05/25/1990, by Sector Seattle

Vessel Name:	CLIPPER EXPRESS
Flag:	UNITED STATES
Vessel Identification Number:	236979
Call Sign:	WCV9977

Status:	Undamaged
Role:	Moored/Anchored in Vicinity of Primary Subject
Vessel Class, Type, Sub-Type:	Fishing Vessel, Fishing Catching/Processing Vessel, Longliner/Processor
Gross Tonnage(GRT):	
Net Tonnage(NRT):	
Deadweight Tons:	
Length:	138.4
Home/Hailing Port:	
Keel Laid Date:	
Delivery Date:	
Place of Construction:	CHARLESTON, SC, UNITED STATES
Builder Name:	CHARLESTON SHIPBUILDING
Propulsion:	Diesel Reduction
Horsepower:	1860
Master:	
Classification Society:	
Owner:	REGAL FISH, LTD 4025 21ST AVE W SEATTLE, WA, 98199 CLIPPER EXPRESS LLC 641 WEST EWING SEATTLE, WA, 98119
Operator:	HESSAFJORD INC 4025 21ST AVE W SEATTLE, WA, 98199
Inspection Subchapter:	
Most Recent Vessel Inspection Activity:	

Vessel Name:	GALAXY
Flag:	UNITED STATES
Vessel Identification Number:	576981
Call Sign:	WYL5349
Status:	Actual Total Loss
Role:	Involved in a Marine Casualty
Vessel Class, Type, Sub-Type:	Fishing Vessel, Fishing Catching/Processing Vessel, Longliner/Processor
Gross Tonnage(GRT):	
Net Tonnage(NRT):	

Deadweight Tons:	1385
Length:	171
Home/Hailing Port:	
Keel Laid Date:	
Delivery Date:	
Place of Construction:	POINT PLEASANT WV, , UNITED STATES
Builder Name:	
Propulsion:	
Horsepower:	
Master:	
Classification Society:	
Owner:	GALAXY FISHERIES LLC SUITE 500 5470 SHILSHOLE AVE N.W. SEATTLE, WA, 98107 DUTCH HARBOR SEAFOODS LTD WA C/O DUTCH HARBOR SEAFOODS DUTCH HARBOR, AK, 99695
Operator:	GALAXY FISHERIES LLC SUITE 500 5470 SHILSHOLE AVE N.W. SEATTLE, WA, 98107
Inspection Subchapter:	
Most Recent Vessel Inspection Activity:	

Vessel Name:	GLACIER BAY
Flag:	United States of America
Vessel Identification Number:	600325
Call Sign:	
Status:	Undamaged
Role:	Transiting Vicinity of Primary Subject
Vessel Class, Type, Sub-Type:	Fishing Vessel, Fishing Catching/Processing Vessel, Longliner/Processor
Gross Tonnage(GRT):	
Net Tonnage(NRT):	
Deadweight Tons:	
Length:	
Home/Hailing Port:	
Keel Laid Date:	
Delivery Date:	
Place of Construction:	TACOMA, WA,
Builder Name:	SEATAC MARINE

Propulsion:
Horsepower:
Master:
Classification Society:
Owner: JEFFRON ENTERPRISES INC
4259 22ND AVE W

SEATTLE, WA, 98199
GLACIER BAY FISHERIES LLC
1200 WESTLAKE AVE N, SUITE 900
Seattle, WA, 98109
US

Operator: [redacted]

Inspection Subchapter:
Most Recent Vessel Inspection Activity:

Facilities. The following facilities were subjects of this investigation. Particulars for each facility follow.

Parties and Organizations. The following people and organizations were subjects of this investigation.

[redacted]

Status: At Risk, Not Injured
Role: Witness
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():
Address():
Comments:

[redacted]

Status: At Risk, Not Injured
Role: Witness
Gender: M
Age:
SSN: - -
Birth Date:
Email Address:
Phone Number():

Address(): [redacted]
Comments:

[redacted]

Status: At Risk, Not Injured
Role: Witness
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():
Address():
Comments: PROCESSOR

[redacted]

Status: At Risk, Not Injured
Role: Witness
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():
Address():
Comments: PROCESSOR

[redacted]

Status: Injured
Role: Subject of Investigation
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():
Address():
Comments: ASST COOK

[redacted]

Status: At Risk, Not Injured
Role: Witness
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():

Address():
Comments: PROCESSOR

[redacted]
Status: At Risk, Not Injured
Role: Witness
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():
Address():
Comments: Deckhand

[redacted]
Status: At Risk, Not Injured
Role: Witness
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():
Address():
Comments: PROCESSOR

[redacted]
Status: At Risk, Not Injured
Role: Witness
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():
Address():
Comments: PROCESSOR

KARN, GEORGE
Status: Dead
Role: Subject of Investigation
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():

Address():
Comments: LEAD COOK

[redacted]

Status: At Risk, Not Injured
Role: Witness
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():
Address():
Comments: Deckhand

[redacted]

Status: At Risk, Not Injured
Role: Witness
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():
Address():
Comments: ASST FACTORY MANAGER

[redacted]

Status: Injured
Role: Subject of Investigation
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():
Address():
Comments: Deck Boss

[redacted]

Status: At Risk, Not Injured
Role: Subject of Investigation
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():

Address():
Comments: Factory Manager

[redacted]

Status: At Risk, Not Injured
Role: Witness
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():
Address():
Comments: Deckhand

[redacted]

Status: At Risk, Not Injured
Role: Witness
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():
Address():
Comments: Asst Deck Boss

[redacted]

Status: At Risk, Not Injured
Role: Witness
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():
Address():
Comments: Deckhand

[redacted]

Status: At Risk, Not Injured
Role: Witness
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():

Address():
Comments: PROCESSOR

[redacted]

Status: At Risk, Not Injured
Role: Witness
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():
Address():
Comments:

RODAS, JOSE RODAS

Status: Dead
Role: Subject of Investigation
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():
Address():
Comments: PROCESSOR

[redacted]

Status: Injured
Role: Subject of Investigation
Gender: M
Age: [redacted]
SSN:
Birth Date:
Email Address:
Phone Number():
Address(Home/Primary Residence): [redacted]

[redacted]

Comments: Vessel Master

[redacted]

Status: At Risk, Not Injured
Role: Subject of Investigation
Gender:
Age: [redacted]

SSN: [redacted]
Birth Date:
Email Address:
Phone Number():
Address(Home/Primary Residence): [redacted]

Comments: Assistant Engineer

[redacted]

Status: Missing
Role: Subject of Investigation
Gender:
Age:
SSN: [redacted]
Birth Date:
Email Address:
Phone Number():
Address(Home/Primary Residence): [redacted]

Comments: Chief Mate

[redacted]

Status: At Risk, Not Injured
Role: Witness
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():
Address():
Comments: PROCESSOR

[redacted]

Status: At Risk, Not Injured
Role: Witness
Gender: M
Age:
SSN:
Birth Date:
Email Address:
Phone Number():
Address():
Comments: PROCESSOR

[redacted]

Status:	At Risk, Not Injured
Role:	Witness
Gender:	M
Age:	
SSN:	
Birth Date:	
Email Address:	
Phone Number(Contact Person):	
Address(Primary Place of Business):	[redacted]
Comments:	Chief Engineer

[redacted]

Status:	Injured
Role:	Subject of Investigation
Gender:	F
Age:	
SSN:	
Birth Date:	
Email Address:	
Phone Number():	
Address():	
Comments:	NMFS OBSERVER

GALAXY FISHERIES LLC

Status:	Not at Risk
Role:	Subject of Investigation
Email Address:	
Phone Number(Daytime Phone):	206-784-5000
Address(Managing Owner):	GALAXY FISHERIES LLC SUITE 500 5470 SHILSHORE AVE N.W. SEATTLE, WA 98107 US
Comments:	OPERATING/OWNING COMPANY OF FPV GALAXY

Drug and Alcohol Testing. The following people have been determined by the Coast Guard, Law Enforcement Personnel, and/or the Marine Employer to have been directly involved in a Serious Marine Incident as defined in 46 CFR 4.03-2:

[redacted]; Subject of Investigation
[redacted] Witness
[redacted] Witness
[redacted] Witness
[redacted] Witness

[redacted] Witness
[redacted]; Witness
[redacted] Witness
[redacted]; Witness
[redacted] Subject of Investigation
[redacted] Subject of Investigation
[redacted]; Witness
[redacted] Witness
[redacted] Witness
[redacted] Witness
[redacted]; Witness
[redacted]; Witness
[redacted] Witness
[redacted] Witness
[redacted] Witness
[redacted]; Witness
[redacted]; Subject of Investigation
[redacted] Subject of Investigation

Response Resources. The following incident response resources were subjects of this investigation.

Resource Name:	AF Rescue - 105 (C-130)
Resource ID:	
Kind:	Aircraft (Fixed Wing)
Sub-Kind:	
Type:	

Resource Name:	ALASKA PATRIOT
Resource ID:	513392
Kind:	Vessels
Sub-Kind:	Other
Type:	

Resource Name:	BLUE PACIFIC
Resource ID:	569927
Kind:	Vessels
Sub-Kind:	Other
Type:	

Resource Name:	CLIPPER EXPRESS
Resource ID:	236979
Kind:	Vessels
Sub-Kind:	Other
Type:	

Resource Name:	GLACIER BAY
Resource ID:	600325

Kind: Vessels
Sub-Kind: Other
Type:

Resource Name: HC130H - 1707
Resource ID: 1707
Kind: Aircraft (Fixed Wing)
Sub-Kind:
Type:

Resource Name: HC130H - 1707
Resource ID: 1707
Kind: Aircraft (Fixed Wing)
Sub-Kind:
Type:

Resource Name: HC130H - 1707
Resource ID: 1707
Kind: Aircraft (Fixed Wing)
Sub-Kind:
Type:

Resource Name: HC130H - 1709
Resource ID: 1709
Kind: Aircraft (Fixed Wing)
Sub-Kind:
Type:

Resource Name: HC130H - 1709
Resource ID: 1709
Kind: Aircraft (Fixed Wing)
Sub-Kind:
Type:

Resource Name: HH60J - 6012
Resource ID: 6012
Kind: Aircraft (Helicopter)
Sub-Kind:
Type:

Resource Name: HH60J - 6012
Resource ID: 6012
Kind: Aircraft (Helicopter)
Sub-Kind:
Type:

Resource Name: HH60J - 6012
Resource ID: 6012

Kind: Aircraft (Helicopter)
Sub-Kind:
Type:

Resource Name: HH60J - 6012
Resource ID: 6012
Kind: Aircraft (Helicopter)
Sub-Kind:
Type:

Resource Name: HH60J - 6021
Resource ID: 6021
Kind: Aircraft (Helicopter)
Sub-Kind:
Type:

Resource Name: HH60J - 6021
Resource ID: 6021
Kind: Aircraft (Helicopter)
Sub-Kind:
Type:

Resource Name: HORIZON
Resource ID: 586183
Kind: Vessels
Sub-Kind: Other
Type:

Resource Name: WHEC - 725
Resource ID: 725
Kind: Vessels
Sub-Kind: Other
Type:

Other Subjects. The following were subjects of this investigation.

Waterway Segment(s). The following waterway segment(s) were subjects of this investigation.

Bering Sea
Role: Location
Local Name: Bering Sea
Description:

Incident Information

Location(s).

Description	Latitude	Longitude
Aboard Vessel: GALAXY	56 45.0 N	170 57.0 W
Bering Sea	56 22.0 N	171 20.0 W
Harborview Medical Center - Seattle, WA	47 39.0 N	122 17.0 W

Sequence of Events.

10/20/2002 15:55:00 to 10/20/2002 16:22:00 (Estimated): Engine Space Not Attended

Condition Class: Policy, Procedures, or Regulations
Condition Type: Policy, Regs, and Procedures Condition
Subject Type: Procedure
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Name	Type	Status	Role
GALAXY	Vessel	Actual Total Loss	Involved in a Marine Casualty

Details Filed: Detail Description

FPV GALAXY's machinery spaces were classed to the ABS standards of a "manned engine space". The machinery spaces were being operated to the ABS standards of a "periodically unattended engine space". Engine space was not attended from 1555-1622

10/20/2002 16:15:00 to 10/20/2002 16:15:00 (Estimated): Fire Detection

Condition Class: Operations Status
Condition Type: Vessel Operation Status
Subject Type:
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Name	Type	Status	Role
GALAXY	Vessel	Actual Total Loss	Involved in a Marine Casualty

Details Filed: Vessel Activity Details

Vessel Activity Type: Underway
Course: 270 True
Speed: 11 Knots
Activity Description: Fire not initially detected by crew nor by heat detection sensors. It could not be determined if the heat detectors in the vessel's engine room were operational at the time of the fire. In addition, smoke detectors were not installed in the E/R.
Permit Required: No
Latent Unsafe Condition: Yes

10/20/2002 16:15:00 to 10/20/2002 16:15:00 (Estimated): Large fire load aboard vessel

Condition Class: Vessel, Facility, Equipment, Gear, or Cargo
Condition Type: Vessel Material/Equipment Condition
Subject Type: Fire Fighting
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Name	Type	Status	Role
GALAXY	Vessel	Actual Total Loss	Involved in a Marine Casualty

Details Filed: Detail Description

The large fire load on board, including foam insulation, dunnage, wood pallets and wax coated bags, combined with minimal level of structural fire protection, contributed to the intensity and rapid spreading of the fire following the explosion.

Details Filed: Material/Equipment Condition

System: Fire Fighting
Sub-System: Structural Fire Protection - General
Component: <None Selected>
Details:
Cite:

10/20/2002 16:15:00 to 10/20/2002 16:15:00 (Known): Drill Conductor Not Certified

Condition Class: Policy, Procedures, or Regulations
Condition Type: Policy, Regs, and Procedures Condition
Subject Type: Procedure
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Name	Type	Status	Role
GALAXY	Vessel	Actual Total Loss	Involved in a Marine Casualty

Details Filed: Policy/Regs/Procedures Condition

ISM Code Data
Does the ISM Code apply to the Vessel: No
Safety Management System (SMS) implemented: No

ISO 9000 Data
Does ISO 9000 apply to the Vessel: No
Quality Management System (QMS) implemented: No

ISO 14000 Data
Does ISO 14000 apply to the Vessel: No
Environmental Management System (EMS) implemented: No

Policies/Procedures that Do Not Exist
Explanation of Nonexistence:
Major Nonconformity: No

Policies/Procedures that Are Not Aboard
Explanation why Not Aboard:
Major Nonconformity: No

Policies/Procedures/Law/Regulation that is Present but Inadequate

Law/Regulation:	Yes
Name:	46 CFR Part 28.270
Effective Date:	
ISM Policy:	No
ISO 9001 Policy:	No
Issued By:	Drill Conductor
Policy Nature:	Organization of onboard training and drills
Reason Inadequate:	Drill Conductor not certified to conduct drills

Policies/Procedures/Law/Regulation that is Present and Adequate

Latent Unsafe Condition: Yes

10/20/2002 16:15:00 to 10/20/2002 16:15:00 (Known): Chief Mate's License Expired

Condition Class: Policy, Procedures, or Regulations
Condition Type: Policy, Regs, and Procedures Condition
Subject Type: Regulations
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Name	Type	Status	Role
GALAXY	Vessel	Actual Total Loss	Involved in a Marine Casualty

Details Filed: Policy/Regs/Procedures Condition

ISM Code Data
Does the ISM Code apply to the Vessel: No
Safety Management System (SMS) implemented: No

ISO 9000 Data
Does ISO 9000 apply to the Vessel: No
Quality Management System (QMS) implemented: No

ISO 14000 Data
Does ISO 14000 apply to the Vessel: No
Environmental Management System (EMS) implemented: No

Policies/Procedures that Do Not Exist
Explanation of Nonexistence:
Major Nonconformity: No

Policies/Procedures that Are Not Aboard
Explanation why Not Aboard:
Major Nonconformity: No

Policies/Procedures/Law/Regulation that is Present but Inadequate

Law/Regulation: Yes
Name: 46 CFR 15.810 (c)
Effective Date:
ISM Policy: No
ISO 9001 Policy: No
Issued By: Chief Mate's License Expired
Policy Nature: Manning levels
Reason Inadequate: Chief Mate's License Expired 5 Days Prior to Accident

Policies/Procedures/Law/Regulation that is Present and Adequate

Latent Unsafe Condition: No

10/20/2002 16:20:00 to 10/20/2002 16:21:00 (Estimated): Vessel Underway

Condition Class: Operations Status
Condition Type: Vessel Operation Status
Subject Type:
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Name	Type	Status	Role
GALAXY	Vessel	Actual Total Loss	Involved in a Marine Casualty

Details Filed: Vessel Activity Details
Vessel Activity Type: Underway
Course: 270 True
Speed: 11 Knots
Activity Description: Vessel was underway to retrieve longline gear in the Bering Sea
Permit Required: No
Latent Unsafe Condition: No

10/20/2002 16:20:00 to 10/20/2002 16:20:00 (Estimated): Weather and Sea Conditions

Condition Class: Marine Environment
Condition Type: Marine Environment
Subject Type:
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Name	Type	Status	Role
Bering Sea	Waterway		Location

Details Filed: Marine Environment Details
Weather Conditions:

	Weather Forecast	Actual Weather Conditions
Wind Speed:		25 Knots

Wind Direction:	30
Wind Gusts:	30 Knots
Ceiling:	Feet
Sky Conditions:	Broken
Air Temperature:	35° F
Weather/Precipitation:	Snow
Visibility/Precipitation:	Blowing snow
Visibility:	nm
Precipitation (24 hr period):	
Sea Level Pressure:	Millibars

Weather a Forecast Obtained:	
Date/Time Obtained:	
Source of Forecast:	
How were Conditions Predicted:	
Weather Forecast Error:	No

Water Conditions:

	Water Forecast	Actual Water Conditions
Water Temperature:		43° F
Water Depth/River Stage:		(Feet above MLLW)
Tide:		
Tidal Current Speed:		Knots
Tidal Current Direction:		
River Current Speed:		Knots
River Current Direction:		
Ice Coverage:		%
Character of Ice:		
Wave Height:		15 feet
Wave Direction:		
Wave Period:		seconds
Swell Height:		feet
Swell Direction:		
Swell Period:		seconds
Warnings in Effect:		

Was a Water Forecast Obtained:	
Date/Time Obtained:	
Source of Forecast:	
Water Forecast Error:	
Latent Unsafe Condition:	No

10/20/2002 16:22:00 to 10/20/2002 16:22:00 (Estimated): E/R Fire

Event Type: Fire
Event Class: Initial - out of control
Event Subclass:
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Name	Type	Status	Role
GALAXY	Vessel	Actual Total Loss	Involved in a Marine Casualty

Report of Investigation

Details Filed: Detail Description

NUMEROUS CREWMEMBERS DETECTED SMOKE ON THE VESSEL. CAPT [redacted] OBSERVED SMOKE RISING FROM THE DECK-CARPET SEAMS IN THE WHEELHOUSE. THE FIRE ALARM WAS THEN ACTIVATED BY CAPT [redacted] CREWMEMBERS THEN ASSEMBLED IN FIRE TEAMS PER THE WQSB. SEVERAL CREWMEMBERS THEN REPORTED SEEING SMOKE COMING FROM THE VICINITY OF THE STARBOARD HATCH TO THE UPPER ENGINE ROOM.

Details Filed: Fire Details

Was the Vessel Configured with Main Vertical Zones? No

Spaces Affected:

Initial:

Space Where Fire Occurred: Machinery Space
Description of Space:
Extent of Damage:

Fire Boundaries

Fire Boundaries Intact: Intact

Did approved passive fire fighting materials perform as expected: Yes

Ventilation Fire Dampers Fitted: Yes
Damper Information:
Ventilation System Active: Yes

Fire Screen Doors Fitted: No

Windows Fitted: No

Ignition and Fuel:

Ignition Source Known: No

Source Category	Description
10.11- Other	Hot E/R surfaces
10.4- Electrical other than static charges	main generator electrical short

Fuel Type(s):

Initial or Secondary	Type	Description	HAZMAT	Source (liquid fuel only)
Initial	8.6- Liquid Fuel	Fuel oil	Yes	9.8- Others

Pattern of Spread: Smoke had penetrated seams of decks, into wheelhouse. Crew observed alot of smoke coming up from the lower engine room into the upper engine room. Exiting the engine room through both port and stbd upper engine room hatches.
Description of Smoke: Dark to black color, appearing thick/heavy.

10/20/2002 16:23:00 to 10/20/2002 16:26:00 (Estimated): Vessel lost electrical power minutes before explosion.

Event Type: Loss of Electrical Power
Event Class: Other loss
Event Subclass:
Location: Known; US Waters
Description: Aboard Vessel: GALAXY

Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Name	Type	Status	Role
GALAXY	Vessel	Actual Total Loss	Involved in a Marine Casualty

Details Filed: Detail Description

Vessel lost electrical power minutes prior to the explosion. The cause of the power loss is not known, however it is unlikely that fire attack caused the generator to shut down. It is more likely that the power failed due to a disruption of the fuel supply

10/20/2002 16:24:00 to 10/20/2002 16:26:00 (Known): 12 of 15 fire fighting personnel respond to scene and initiate fire fighting actions. After several minutes, all fire fighting team members with the exception of [redacted], and [redacted] have evacuated the interior spaces of the vessel.

Action Type: Safety and Emergency Operations - Controlling and Fighting Fires
Action Class: Use fire fighting equipment and procedures
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Name	Type	Status	Role
VIELMA, RAUL A.	Party	At Risk, Not Injured	Witness

Details Filed: Detail Description

Upon hearing people shouting fire and hearing the fire alarm, Mr. [redacted] raced down from the galley to the gear line and began trying to locate the origin of the smoke. He followed the smoke aft and then went one deck below to the lower engine room where he discovered that the lower engine was filled with smoke. He saw no flames at this point. He then made the decision to return to the next deck up to get an SCBA and a fire extinguisher. He did not close the hatch between the engine room and the refrigeration space when he departed. While putting on the SCBA he noted that smoke was now pouring heavily from the port side upper engine room hatch. He attempted to notify the bridge but was not successful. He decided that he needed to activate the CO2 and raced up two more decks to notify the Captain. Upon receiving permission to activate the system, he raced back down to the CO2 room and attempted to activated the system. As he put his hands on the controls, a violent explosion rocked the vessel which threw him to the deck. He became disoriented and evacuated from the interior of the vessel to forward weather deck.

[redacted]	Party	At Risk, Not Injured	Witness

Details Filed: Detail Description

Mr. [redacted] responded to the scene and assisted the Chief Mate and the deck boss on the starboard side of the vessel near the upper engine room hatch. Mr. [redacted] remained on scene with the Chief Mate and [redacted]. When the smoke became overwhelming, he and the other two fire team members moved to the gear setting hatch. After being at that location less than a minute, a violent explosion occurred and the pressure wave from the explosion blasted Mr. [redacted] and the other two men through the gear setting hatch and into the Bering Sea.

[redacted]	Party	Injured	Subject of Investigation

Details Filed: Detail Description

Mr. [redacted] responded to the scene and assisted the Chief Mate and Mr. [redacted] on the starboard side of the vessel near the upper engine room hatch. Mr. [redacted] remained on scene with the Chief Mate and Tory [redacted]. When the smoke became overwhelming, he was directed by the Chief Mate to open the forward gear hauling hatch to clear out some of the smoke. When the smoke continued to increase, he and the other two fire team members moved to the gear setting hatch. After being at that location less than a minute, a violent explosion occurred and the pressure wave from the explosion blasted Mr. [redacted] and the other two men through the gear setting hatch and into the Bering Sea.

[redacted] Party Missing Subject of Investigation

Details Filed: Detail Description

Mr[redacted] responded to the initial smoke with the Chief Engineer. He followed the Chief Engineer down to the lower E/R and then went up one deck to the starboard side near the upper engine room hatch where he began to don an SCBA. While at that location, Mr. [redacted] opened the starboard side upper engine room hatch and made a brief entry into the space. Mr. [redacted] indicated that a "thick stream of smoke came out" from the space when the hatch was opened by Mr[redacted] Mr. [redacted] stated that Mr[redacted] made entry into the space wearing an SCBA and that he saw flames in the upper engine room coming up from the lower engine room level and going up the fidley space. Mr. [redacted] directed two crew members to go one deck up and open the lower level accommodation doors which open up onto the forward main deck to ventilate the smoke. Mr. [redacted] and Mr. [redacted] followed these orders and went up one deck to open the doors. Mr. [redacted] went to the port side door, and Mr. [redacted] went to the starboard side door.

The smoke began to overwhelm the three fire team members on the gear line. Mr. [redacted] directed Mr. [redacted] to run forward to open the hatch into the hauling station, which opens to the exterior of the vessel. The three fire team members then immediately proceeded to the stern of the vessel and opened the gear setting hatch. According to testimony, the purpose of opening the two hatches was no longer to ventilate the space but instead to get air for the fire team and provide a possible evacuation route. The fire team members hung their upper bodies out of the gear setting hatch and called up to the crew now on the top deck for lines to be lowered so they could evacuate the space.

Moments later a violent explosion occurred. Mr. [redacted] and the other two member were blasted through the open hatch and into the Bering Sea.

10/20/2002 16:24:00 to 10/20/2002 16:26:00 (Estimated): Data for Fire Team Equipment Usage

Event Type: Emergency Response
Event Class: Fire-fighting Response
Event Subclass:
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Name	Type	Status	Role
GALAXY	Vessel	Actual Total Loss	Involved in a Marine Casualty

Details Filed: Firefighting Details

Detection

Method of Detection:	Other Means of Detection
Description:	Heat Detectors
Ignition-Detection Time:	Unknown

Description of Fire: Smoke throughout the superstructure. Heat detectors never sounded.

Response

Participants:

Crew/employees: Yes

Municipal Firefighters: No

CG Operational Controls Imposed: No

Burning Items Jettisoned: No

Description of Initial Response: 12 of 15 members of fire team responded to upper engine room hatch. Upon evaluating location of fire, 8 of 12 fire team members ordered to evacuate to top deck & four remained on scene. C/E ran to wheelhouse to tell Captain he was going to activate CO2

Effectiveness

Drills routinely conducted prior to incident: No

Were the Following Effective in Fighting Fire:

Firefighting Plan: No

Firefighting Equipment/System: Yes

Crew/Employee Response: No

Municipal Firefighters Response: No

Other Responses Effective in Fighting Fire: Crew could not control fire or prevent explosion.

Impact of Smoke on Fighting Fire: Only 2 crew members had SCBAs.

Effectiveness Issues Observed:

Equipment/System

Equipment System: MANUFACTURER: KIDDE-FENWAL INC., CLASS DESC:CARBON DIOXIDE TYPE FIRE EXTINGUISHING SYSTEM

Required/Supplemental: Required

USCG Approved: Yes

Approval Number: 162.038/1

Was Equipment/System Available: Yes

Was it Used Properly: No

Was Extinguishing Agent:

Appropriate for Fire: No

Did it Fail During Use: No

10/20/2002 16:26:00 to 10/20/2002 16:26:00 (Estimated): Backdraft Explosion occurs from the E/R

Event Type: Explosion
Event Class:
Event Subclass:
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Name	Type	Status	Role
GALAXY	Vessel	Actual Total Loss	Involved in a Marine Casualty

Details Filed: Detail Description

Type of Explosion:

Due to the lack of physical evidence, it is necessary to categorize the explosion on board as described by the vessel's crew before attempting to describe the initial source of the fire. Based upon the existing literature and the testimony provided from crew members of the FPV GALAXY, testimony of expert witnesses, vendors, and other people associated with the vessel, the explosion type most consistent with the observations of the crew is that of a backdraft explosion. The following is a summary of a backdraft analysis as described by Zalosh (2002).

Fleishman et. al. (1996) define a backdraft as a rapid deflagration following the introduction of oxygen into a compartment filled with accumulated unburned fuel. The first step in the development of a backdraft is the formation of a fuel-rich atmosphere in an oxygen vitiated enclosure. The second step is the sudden introduction of air into the enclosure by opening a door or window. As air flows into the enclosure and the hot fuel rich gases are flowing out, a mixing region develops at the boundary between the two streams. If the mixture becomes large before it encounters a sufficiently hot surface to ignite it, then a deflagration occurs. The expanding flame front generated in the deflagration pushes fuel rich gases out through the enclosure opening followed by a fire ball or flame jet. Finally, a blast wave propagates away from the enclosure at a speed somewhat greater than the speed of sound.

In comparing the descriptions of the crew members on board to field observations noted in existing backdraft literature, in particular Zalosh (2002) and Gottuk et. al. (1999), the descriptions of the explosion experienced on the FPV GALAXY are remarkably consistent with known backdraft explosions. The necessary physical parameters, the behavior of the smoke, the timing of the explosion following the opening of the two hatches, and the force of the blast are consistent with this analysis.

Physical Parameters and Availability of Fuel: Certain quantitative conditions have to be met to create a backdraft explosion. First, the fuel mass fraction concentrations must be 16% at the time of air inflow. Second, oxygen concentrations must be below 12%, and finally the local gas or wall temperatures must be above the auto ignition temperature for the fuel vapor. Such calculations can only be obtained through complex fire modeling. However, due to a lack of physical evidence, such complex modeling was not possible. However, some limited calculations were performed to determine the amount of fuel needed to cause an explosion of the magnitude experienced on the FPV GALAXY. Based upon the volume of the FPV GALAXY's engine room and the amount of force necessary to knock three men overboard, Dr. [redacted] determined that a minimum of 32 gallons of atomized diesel fuel would be needed to create the explosion.

Smoke Color and Behavior: According to testimony provided by Mr. [redacted] the smoke was initially reported as being "thick black" and then transitioning to white, yellowish white" just seconds before the explosion occurred. These observations of changes in smoke color are very consistent with a backdraft explosion that occurred in Brooklyn, NY in June 2001 as documented by Zalosh (2002). According to the testimony of Mr. [redacted], the smoke was not entering into the refrigeration space when he stood at the threshold of the watertight doorway between the refrigeration space and the engine room. This is likely to have been caused by a pressure differential between the two spaces, which is common in the development of a backdraft explosion and also indicates that the air was flowing towards the engine room.

"Breathing" Prior to Explosion: Immediately prior to the explosion on board the FPV GALAXY, Mr. [redacted] who was located on the forward main deck holding open the port side door into the accommodation spaces witnessed the following:

"It was just a massive, almost like an implosion, because it was like it took a big breath before it blew."

This observation of air being drawn into the vessel is again is remarkably consistent with the backdraft explosion documented in Zalosh (2002) where several witnesses reported "a loud

sucking noise right before the explosion," indicating air rushing into the building just prior to the explosion.

Introduction of Air into the Engine Room and the Timing of Explosion: According to the literature available, backdraft explosions typically occur following the introduction of air into an oxygen vitiated enclosure. The engine room was not completely closed off, which could allow air to flow into that space. The watertight hatch leading into the lower engine room was left open. The dampers leading to the forward main deck were not manually closed. The starboard hatch to the upper engine room was only partially closed (one dog secured). In addition to these closures not being secured, various crew members opened hatches leading outside to the main deck, and also opened hatches allowing air to flow in from the gear setting and hauling stations. Opening any of these hatches or doors could potentially provide sufficient air flow into the engine room which in turn could cause an explosion to occur. Another potential source of air may have been the air receiver located in the engine room. It is possible that the "click" heard by the fire team may have been the safety relief valve on the air receiver lifting. If the safety relief valve had lifted, the receiver would have discharged air directly into the engine room and possibly could have provided the air necessary for the explosion to occur.

Once a sufficient amount of air is introduced, an explosion occurs fairly quickly. According to experiments conducted by the U.S. Navy, backdraft explosions typically occur 15-23 seconds following the introduction of air into the space (Gottuk et al., 1999). According to the testimony of the crew members on the FPV GALAXY, the explosion occurred approximately 30 - 45 seconds following the opening of two hatches: one into the gear hauling station and one to the gear setting station.

Force of the Explosion: According to the testimony provided, the force of the explosion was sufficient to simultaneously eject three people out of the gear setting hatch as well as knock down one person standing in the vicinity of the port side hatch leading out onto the forward main deck. Based upon Gottuk et. al (1999) "the forces of the gases rushing through the buffer zone doors was estimated by the safety team personnel to be sufficient to knock over a man." According to the testimony of fire fighters in the Astoria Hardware Store blast, several men reported being blown off their feet and landing up to ten feet away (Zalosh 2002). Typical explosion overpressures associated with knocking people over are of the order of one to two pounds per square inch.

A backdraft explosion has sufficient power to cause physical damage as well. The Astoria Hardware Store blast was of sufficient strength to "blow out the brick sidewall of the basement, and lift(ed) the basement ceiling (Zalosh 2002)." Although not confirmed in testimony, it is likely that the force of the blast was also strong enough to blow open the watertight hatch leading to the mooring station on the port side of the vessel.

Observation of a Fireball: The final observation consistent with a backdraft explosion is the presence of a fireball following the explosion. As previously described, a characteristic fireball is often present in a backdraft explosion. Not all crewmembers on the FPV GALAXY witnessed a fireball, however, Mr. [redacted] reported seeing a fireball move past the CO2 room door entry (forward to aft) immediately during or following the explosion.

Details Filed: Explosion Details

Type of Explosion: Chemical

Ignition Source Known: No

Possible Sources:

Source Category	Description
10.9- Hot exhaust pipe or steam line	

Fuel(s):

Fuel Type	Description
Vapors of ignitible (flammable and combustible) liquids	Fuel type was most likely diesel mist.

Location: Machinery Spaces
Description: Upper or Lower Engine Room
Hazardous Location: No

Damage Summary
Damage Characterization: High-order Damage
General Description: Unknown. Crew abandoned vessel shortly after incident and damage survey could not be conducted. Force of blast generated sufficient pressure wave to blast three men through the vessel's gear setting hatch.

10/20/2002 16:26:01 to 10/20/2002 16:35:00 (Estimated): Injury to [redacted] due to explosion

Event Type: Personnel Casualties
Event Class:
Event Subclass:
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Name	Type	Status	Role
[redacted]	Party	Missing	Subject of Investigation

Details Filed: Injury Details
Did death occur: No
Did injury occur: Yes
Nature of Event Causing Injuries: Unknown Injury Type
Severity:
Injury Description:
Type: Unknown
Body Region: Upper limbs (extremity)
Aspect:
System/Organ:

Was Diving Involved: No
Is the Person Missing: No
Subject to Chemical Exposure: No

Exposed to Biological Hazards No
Exposed to a Confined Space/Respiration Hazard: No
Exposed to Other Hazards: No
Narrative Summary: Although all three fire team members were blown from the vessel at the same time and from the same location, it appears that Mr. [redacted] may have been seriously hurt during the explosion. Mr. [redacted] testified that Mr. [redacted] was the first one who was able to get into a life ring, and that the crew was able to haul him up out of the water about one - third of the way up the side of the FPV GALAXY. However, Mr. [redacted] could not hold on and fell back into the water. Captain [redacted]r provided testimony that indicated that Mr. [redacted] did not appear to be swimming as strongly [redacted] didn't seem that he had the same physical abilities that the other two did…he wasn't kicking with the same desperation that I saw with [redacted] and [redacted]…he was

obviously hurt…in a situation like that I would have totally expected a lot more response from him in those conditions.

10/20/2002 16:27:00 to 10/20/2002 16:30:00 (Estimated): Three person fire team, standing at the gear setting hatch, were ejected overboard from pressure of the explosion.

Event Type: Falls into Water
Event Class: From Vessel
Event Subclass:
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Name	Type	Status	Role
[redacted]	Party	At Risk, Not Injured	Witness

Details Filed: Person-In-Water Details

Use CESM:	No
Confirmed in the water:	Yes
Time Entered Water:	10/20/2002 4:27:00 PM Estimated
Time Taken Out:	10/20/2002 4:30:00 PM Estimated
Survival Time:	
Gender:	Male
Age:	[redacted]
Body Fat:	
Weight:	Pounds
Description:	
Health:	
Clothing:	Street / Work Clothing
Exposure Suit:	No
Light:	No
PFD:	No
Additional Information:	A line with a buoy was successfully thrown to Mr. [redacted] He was able to straddle the buoy and was successfully pulled up the entire height of the vessel just forward of the starboard side mooring cleat. It took approximately 5-6 men to pull Mr. [redacted] up. Mr. [redacted] estimated he was in the water for approximately 2-3 minutes before being pulled from the water. He estimated it took another 2-3 minutes to be hauled up the side of the vessel.

[redacted]	Party	Injured	Subject of Investigation

Details Filed: Person-In-Water Details

Use CESM:	No
Confirmed in the water:	Yes
Time Entered Water:	10/20/2002 4:27:00 PM Estimated
Time Taken Out:	10/20/2002 4:30:00 PM Estimated
Survival Time:	
Gender:	Male

Age: [redacted]
Body Fat:
Weight: Pounds
Description:
Health:
Clothing: Street / Work Clothing
Exposure Suit: No
Light: No
PFD: No
Additional Information: Mr. [redacted] was able to grab hold of a thrown line. While being hauled up by the vessel stern, the pitching movement caused him to smash into the hull. He then lost consciousness, got tangled in the line, and was then lowered into the gear setting hatch from which he had been ejected minutes before..

[redacted] Party Missing Subject of Investigation

Details Filed: Person-In-Water Details

Use CESM: No
Confirmed in the water: Yes
Time Entered Water: 10/20/2002 4:27:00 PM Estimated
Time Taken Out: 10/20/2002 4:30:00 PM Estimated
Survival Time: 18 hours

Gender: Male
Age: [redacted]
Body Fat: 20
Weight: 180 Pounds
Description:
Health:
Clothing: Work clothes
Exposure Suit: No
Light: No
PFD: No
Additional Information: Although all three fire team members were blown from the vessel at the same time and from the same location, it appears that Mr. [redacted] may have been seriously hurt during the explosion. Mr. [redacted] testified that Mr. [redacted] was the first one who was able to get into a life ring, and that the crew was able to haul him up out of the water about one - third of the way up the side of the FPV GALAXY. However, Mr. [redacted] could not hold on and fell back into the water. Another attempt to rescue him was made along the starboard side of the vessel. However, he could not be rescued and is missing and presumed dead.

10/20/2002 16:28:00 to 10/20/2002 16:33:00 (Estimated): Man Overboard Recovery of [redacted], and [redacted]

Action Type: Safety and Emergency Operations - Person Overboard Procedures
Action Class: Bring person aboard
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Report of Investigation

Name	Type	Status	Role
[redacted]	Party	Injured	Subject of Investigation

Details Filed: Detail Description

Captain [redacted] supervised the initial attempt of recovering the three fire team members from the water. He organized the 18 crew members who had evacuated to the top deck into three separate teams. Each team worked together to get lines and buoys down to the crew members in the water. 2 of the 3 crew members were successfully recovered in this manner. The third person, [redacted] floated forward along the starboard side of the vessel where a separate man overboard recovery attempt was made by [redacted]

10/20/2002 16:30:00 to 10/20/2002 16:30:00 (Estimated): Injury to [redacted] during Man Overboard Recovery

Event Type: Personnel Casualties
Event Class:
Event Subclass:
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Name	Type	Status	Role
[redacted]	Party	Injured	Subject of Investigation

Details Filed: Injury Details

Did death occur: No
Did injury occur: Yes
Nature of Event Causing Injuries: Contact Injury- Collision with Fixed Object
Severity:
Injury Description:
Type: Concussion
Body Region: Head
Aspect:
System/Organ:

Type: Contusion
Body Region: Lower limbs (extremity)
Aspect:
System/Organ:

Was Diving Involved: No
Is the Person Missing: No
Subject to Chemical Exposure: No

Exposed to Biological Hazards No
Exposed to a Confined Space/Respiration Hazard: No
Exposed to Other Hazards: No
Narrative Summary: During the man overboard recovery, Mr. N[redacted] began to swing out and then swung back into the hull of the FPV GALAXY with such force that he was somehow knocked unconscious. According to the testimony of Mr. [redacted], Mr. [redacted] got knocked out and he let go of the line. Somehow his leg got tangled in the line and he did not fall back into the water. While Mr. [redacted] hung upside down by his leg,

Mr[redacted], with the assistance of several other crew members, was able to lower Mr. [redacted] back into the gear setting hatch that he had been blown out of just minutes before. Mr. [redacted] appeared back on the top deck several minutes after being lowered back into the hatch. Mr. [redacted] has no recollection of how he got to the top deck. However, several crew members saw Mr. [redacted] emerge from the trunk on the top deck where the other crew members had evacuated from the superstructure just minutes before.

10/20/2002 16:31:00 to 10/20/2002 16:45:00 (Estimated): [redacted] attemped to rescue Mr. [redacted].

Action Type: Safety and Emergency Operations - Person Overboard Procedures
Action Class: Bring person aboard
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Name	Type	Status	Role
[redacted]	Party	At Risk, Not Injured	Witness

Details Filed: Detail Description

Mr. [redacted] directed Mr. P[redacted], who was the FPV GALAXY's designated rescue swimmer, to jump into the water to assist Mr. [redacted]. Mr. [redacted] already had his survival suit fully donned. Mr. [redacted] gave a life ring to Mr. [redacted] and Mr. [redacted] jumped in. Mr. [redacted] quickly swam to Mr. [redacted] despite the 15-20 foot seas and racing current and was able to get Mr. [redacted] face out of the water. He was also able to get one of Mr. [redacted] arms partially inside the life ring. Despite his efforts, he could not get Mr. [redacted] securely in the life ring and Mr. [redacted] did not appear to be capable of assisting in his own rescue.

The two men in the water became exhausted. Testimony provided by various witnesses suggests that the two were in the water together for approximately 10-15 minutes. Captain [redacted] who was intently watching from the top deck and the top of the wheelhouse testified that at this point "Jerry was lethargic… was totally non-reactive to any support and Calvin was really struggling." Mr. P[redacted] testified that "([redacted] was like in a state of shock. He never said nothing to me." Nevertheless, Mr. [redacted] continued to struggle and fight to rescue [redacted]

The two began to drift away from the vessel, so the crew on the forward main deck began to haul the line back in, with the life ring attached. Assisting in this was Mr[redacted] who had run forward from the ladder and then forward to a hatch which led down to the factory space and gear hauling station. From the gear hauling station, Mr. Taylor attempted to assist Mr. [redacted] and Mr. [redacted] back to the vessel by hauling in the line on the ring buoy. Mr. [redacted] Mr. [redacted] and Mr. [redacted] acting together were able to get the two within a few feet of the vessel. As the two got closer, however, the rolling of the vessel and the wave action made it extremely difficult to maintain a grip on the line. Because the line to the life ring was so thin and because they had limited use of their hands due to the cold and the survival suits, the line would pay back out when the boat rolled and when waves would catch the two crew members. This scenario, where the men would get close to the vessel and then drift away again, occurred two - three times.

In what turned out to be a final attempt to control the paying out line, Mr. [redacted] put a wrap on the line using one of the rollers at the gear hauling station. However, the boat rolled suddenly away from the men due to the wave action. When the boat rolled, the line tightened and the ring buoy

was pulled free from Mr. [redacted] and Mr. [redacted] grasp. Mr. [redacted] again valiantly attempted to hang onto Mr. [redacted], but he could no longer do so as the last of his strength failed him and he was now on the verge of losing his own life. [redacted] shouted over and over again at Mr. [redacted] stating "you got to stop, you got to stop, you got to stop. It's over." Captain [redacted] testified he could see white foam coming from Mr. [redacted] mouth. Mr. [redacted] rolled face down into the water and then floated away from Mr. [redacted] Mr. [redacted] was not seen by the crew again.

10/20/2002 16:34:00 to 10/20/2002 16:35:00 (Estimated): Loss of [redacted]

Event Type: Personnel Casualties
Event Class:
Event Subclass:
Location: Unknown

Subject(s) and Details:

Name	Type	Status	Role
[redacted]	Party	Missing	Subject of Investigation

Details Filed: Injury Details

Did death occur: No
Did injury occur: No
Is the Person Missing: Yes
Missing Person's Status: Presumed Dead
Date of Declared Death:
Nature of Event Leading to Presumed Death: Contact Injury- Other
Declared By:
Organization:
Was Diving Involved: No
Subject to Chemical Exposure: No

Exposed to Biological Hazards No
Exposed to a Confined Space/Respiration Hazard: No
Exposed to Other Hazards: No
Narrative Summary: Mr. [redacted] drifted with the vessel along the starboard side, approximately ten feet away from the hull. Captain [redacted] testified that he saw Mr. [redacted] floating in the water while he was in the wheelhouse attempting to make a MAYDAY. The crew members on the forward main deck ([redacted], and later [redacted]) were in the process of collecting survival suits for the other crew members and donning their own suits. As Mr. [redacted] floated forward alongside the vessel, he was spotted by the four crew members who were forward of the wheelhouse. Mr. [redacted] acted immediately and threw a line and a life ring to Mr. [redacted]. Despite the howling wind blowing the line and the life ring around wildly, he was able to get a one inch line to Mr. [redacted] and Mr. [redacted] was able to loosely wrap the line around his right arm, but he was not able to tightly grab a hold of it. Mr. [redacted] then rolled face down into the water. Mr. [redacted] directed Mr. [redacted] who was the FPV GALAXY's designated rescue swimmer, to jump into the water to assist Mr. [redacted] Mr. [redacted] already had his survival suit fully donned. Mr. [redacted] gave a life ring to Mr. [redacted] and Mr. [redacted] jumped in. Mr. [redacted] quickly swam to Mr. [redacted] despite the 15-20 foot

seas and racing current and was able to get Mr [redacted] face out of the water. He was also able to get one of Mr. [redacted] arms partially inside the life ring. Despite his efforts, he could not get Mr. [redacted] securely in the life ring and Mr. [redacted] did not appear to be capable of assisting in his own rescue.

Mr. [redacted] again valiantly attempted to hang onto Mr. [redacted], but he could no longer do so as the last of his strength failed him and he was now on the verge of losing his own life. [redacted] shouted over and over again at Mr. [redacted] stating "you got to stop, you got to stop, you got to stop. It's over." Captain [redacted] testified he could see white foam coming from Mr. [redacted] mouth. Mr. [redacted] rolled face down into the water and then floated away from Mr. [redacted] Mr. [redacted] was not seen by the crew again.

10/20/2002 16:36:00 to 10/20/2002 16:36:00 (Known): MAYDAY from GALAXY to LORSTA St. Paul

Action Type: Safety and Emergency Operations - Emergency Communications
Action Class: Establish emergency communications with shore authorities
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Name	Type	Status	Role
[redacted]	Party	Injured	Subject of Investigation

Details Filed: Communications Details

Communications Description: MAYDAY Transmission from F/V GALAXY to USCG LORSTA St. Paul using GMDSS handheld radio
Communications Type: Ship to Shore
Sent or Received: Received
Means of Communication: Communications Equipment
Frequency/Channel Channel 16
Power Setting:
Communication Acknowledged: Yes
Communication Protocols:
Communications Effectiveness: Communication Effective
Effectiveness Description:
Interference Difficulties:
Interference Description:

10/20/2002 16:38:00 to 10/20/2002 16:38:00 (Estimated): 2nd explosion

Event Type: Explosion
Event Class:
Event Subclass:
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Report of Investigation

Subject(s) and Details:

Name	Type	Status	Role
GALAXY	Vessel	Actual Total Loss	Involved in a Marine Casualty

Details Filed: Detail Description

Crewmembers stated that a second explosion occurred in the E/R and the forward part of the wheelhouse erupted into flames.

Details Filed: Explosion Details

Type of Explosion: Chemical

Ignition Source Known: No

Possible Sources:

Source Category	Description
10.11- Other	Unknown

Fuel(s):

Fuel Type	Description
Vapors of ignitible (flammable and combustible) liquids	Initial explosion was likely of sufficient source to cause day tanks to fail & spill more fuel into the E/R

Location: Machinery Spaces

Description: Lower and Upper Engine Room

Hazardous Location: No

Damage Summary

Damage Characterization: High-order Damage

General Description: The flames from the explosion completely engulfed the forward section of the wheelhouse.

10/20/2002 16:39:00 to 10/20/2002 21:00:00 (Estimated): Fireball Engulfs Wheelhouse

Event Type: Fire
Event Class: Secondary - out of control
Event Subclass:
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Name	Type	Status	Role
GALAXY	Vessel	Actual Total Loss	Involved in a Marine Casualty

Details Filed: Detail Description

Sometime during the attempted rescue of Mr. Stephens and the passing of the survival suits to the top deck, a second explosion occurred and the forward part of the wheelhouse erupted into flames. According to testimony provided by all the crew members on the forward main deck, the origin of the flames was the vents leading into the engine room and the two main deck hatches leading from the forward main deck into the superstructure of the vessel. The flames initially shot forward from the vents and the hatches approximately 25 - 40 feet and completely engulfed the forward section of the wheelhouse. The flames and the explosion forced Mr. [redacted] and Mr. [redacted] to run for cover on the forward part of the vessel. The smoke and flames on the wheelhouse then increased dramatically.

The fire continued to spread throughout the superstructure of the vessel and began to move from the forward part of the top deck to the aft part of the top deck. Numerous crew members testified that the paint on the top deck was igniting, the deck was distorting and bubbling, and flames were beginning to shoot up through the deck. In addition, several crew members testified that a three to four foot brilliant blue flame ignited from the termination of the ventilation piping for the vessel's anhydrous ammonia system. This vent was located on the mast atop the wheelhouse approximately 10 feet above the top of the wheelhouse. Several crew members testified that this venting was extremely loud. The crew pressed up against the aft most section of the top deck, towards the port side of the vessel where there was the least amount of smoke.

Details Filed: Fire Details

Was the Vessel Configured with Main Vertical Zones? No

Spaces Affected:

Initial:

Space Where Fire Occurred:	Machinery Space
Description of Space:	Wheelhouse, Accomodations, Factory Space
Extent of Damage:	Extensive

Fire Boundaries

Fire Boundaries Intact: Compromised

Fire Boundaries Compromised: Lower E/R hatches not secured. Dampers not secured. Force of explosion also allowed fire to travel thoughout vessel

Description of Compromise:

Did approved passive fire fighting materials perform as expected: Unknown

Ventilation Fire Dampers Fitted: Yes

Damper Information:

Damper Type	Fire Rating	Damper Status	Closed?
Manual	Unrated	Open	No

Ventilation System Active: Yes

Fire Screen Doors Fitted: No

Windows Fitted: Unknown

Ignition and Fuel:

Ignition Source Known: No

Source Category	**Description**
10.2- Open flames other than 10.1 and 10.8	From 2nd explosion

Fuel Type(s):

Initial or Secondary	**Type**	**Description**	**HAZMAT**	**Source (liquid fuel only)**
Secondary	8.6- Liquid Fuel		Yes	9.8- Others
Secondary	8.1- Structural Materials		No	

Pattern of Spread: Spreading throughout the ship. Primarily affected aft superstructure.

Description of Smoke: Hot, thick, dark color.

10/20/2002 16:50:00 to 10/20/2002 16:50:00 (Estimated): Injury related to fireball from 2nd Explosion

Report of Investigation

Event Type: Personnel Casualties
Event Class:
Event Subclass:
Location: Known; US Waters
Description: Aboard Vessel: GALAXY
Latitude: 56 45.0 N Longitude: 170 57.0 W

Subject(s) and Details:

Name	Type	Status	Role
[redacted]	Party	Injured	Subject of Investigation

Details Filed: Injury Details

Did death occur: No
Did injury occur: Yes
Nature of Event Causing Injuries: Contact Injury- Fall onto surface
Severity:
Injury Description:
Type: Burn
Body Region: Wrist/Hand
Aspect:
System/Organ:

Type: Burn
Body Region: Abdomen
Aspect:
System/Organ:

Type: Burn
Body Region: Back
Aspect:
System/Organ:

Type: Fracture
Body Region: Chest
Aspect:
System/Organ:

Was Diving Involved: No
Is the Person Missing: No
Subject to Chemical Exposure: No

Exposed to Biological Hazards No
Exposed to a Confined Space/Respiration Hazard: No
Exposed to Other Hazards: No
Narrative Summary: Mariner burnt his hands while handling burning line during an evolution of passing survival suits to the crew. A second explosion in the E/R occurred, which caused him to fall from the wheelhouse catwalk to a catwalk below. During his fall, he attempted to grab onto the wheelhouse railing and further burnt his hands on the hot railing. He fell 10' to catwalk, got up and then fell, trying to avoid the fire around the wheelhouse, another 12' to the main deck where he fractured several ribs.

Several minutes prior to these injuries, CAPT Shoemaker also had burned his arm while attempting to transmit a MAYDAY call on the vessel radio in the wheelhouse.

10/20/2002 17:39:00 to 10/20/2002 17:39:00 (Estimated): Summary of Lifesaving Equipment Data

Event Type: Abandonment
Event Class: Forced
Event Subclass:
Location: Unknown

Subject(s) and Details:

Name	Type	Status	Role
GALAXY	Vessel	Actual Total Loss	Involved in a Marine Casualty

Details Filed: Lifesaving Details

Lifesaving Equipment Summary

** Summary Information Pulled From Vessel Referential Information on 05/12/2004 **

Primary Equipment	**Quantity**	**Capacity**
Rescue Boats	***	***
Inflatable Rafts	***	***
Life Floats:	***	***
Workboats:	***	***
Motor Lifeboats:	***	***
Lifeboats w/Radio:	***	***
Lifeboats (Port)	***	***
Lifeboats (Starboard)	***	***
Lifeboats (Stern)	***	***
Lifeboats (Total)	***	***
Inflatable Buoyant Apparatus	***	***

Note: *** indicates no data available in Vessel Referential Information

Required Equipment	**Required**	**Used**
Ring Buoys (Total):	***	0
Ring Buoys w/Lights:	***	0
Ring Buoys w/Line:	***	0
Ring Buoys w/Smoke Signal:	***	0
Ring Buoys (Other):	***	0
Life Preservers (Adult):	***	0
Life Preservers (Child):	***	0
Immersion Suits:	0	0
Anti-Exposure Suits:	***	0
Thermal Aids:	***	0
Portable Lifeboat Radios:	0	0
Qualified Radio Operator:	***	0
EPIRB:	***	0
Lifesaving Person Support:	***	0

Note: *** indicates no data available in Vessel Referential Information

Miscellaneous Equipment	**On Hand**	**Used**

Self Righting Partially Enclosed Lifeboat (Port):	***	0
Self Righting Partially Enclosed Lifeboat (Starboard):	***	0
Total Enclosed Lifeboat (Port):	***	0
Totally Enclosed Lifeboat (Starboard):	***	0
Self Contained Air Support Lifeboat (Port):	***	0
Self Contained Air Support Lifeboat (Starboard):	***	0
Fire Protected Lifeboat (Port):	***	0
Fire Protected Lifeboat (Starboard):	***	0
Marine Evacuation Systems:	***	0
Equipment for People:	***	0

Note: *** indicates no data available in Vessel Referential Information

Evacuation Summary

Number of People on Board:	25
Number Abandoning Vessel:	25
Number Using Liferafts/Lifesaving Equipment:	15
Number Using Evacuation Systems:	0
Number Directly to Other Vessel/Platform:	6
Number Entering Water w/o Lifesaving Equipment:	2
Number Using Means Not Listed Above:	2

Evacuation Description: Vessel Abandoned in this Manner: 15 to liferaft (6 w/ suits, 9 w/out), 5 to CG helo (2 w/ suits, 3 w/out), 1to F/V BLUE PACIFIC (w/ suit), 4 to water (2 w/ suits, 2 w/out).

Equipment Used

Equipment Type:	Lifeboats
Equipment Description:	Inflatible Elliot 20 Liferaft
Required/Supplemental:	Required
Location:	Top Deck, Starboard Side
Securing Method:	Hydrostatic Release and Weak Link
Approved:	Yes
Approved By:	USCG
Approval #:	160.151/25/0
Unapproved Items Used:	No
Tested:	No
Serviced:	Yes
Service Date:	07/02/2002
Service Type:	Refurbish
Service Results:	Annual Servicing of Liferaft. Certificate Serial
Servicing Agency:	Puget Sound Inflatibles, Inc.
Certified:	Yes
USCG Witness:	No
Available:	Yes
Used:	Yes
Number of People Using:	15
Used to Capacity:	Yes
Used Properly:	Yes
Deployed Correctly:	Yes
Damaged During Use:	No
Failed During Use:	No

10/20/2002 17:40:00 to 10/20/2002 19:41:00 (Estimated): 15 Abandon Vessel into Liferaft

Action Type: Safety and Emergency Operations - Abandon Vessel Operations

Report of Investigation

Action Class: Launch, load, and maneuver lifeboats
Location: Unknown

Subject(s) and Details:

Name	Type	Status	Role
[redacted]	Party	At Risk, Not Injured	Witness

Details Filed: Detail Description

Mr. [redacted] was the first person to enter the raft and was instrumental in getting the crew to abandon ship. The full account of abandoning ship can be reviewed in Captain Shoemaker's detail description.

[redacted]	Party	Injured	Subject of Investigation

Details Filed: Detail Description

The starboard side liferaft, which was on the windward side of the vessel, was the only raft that was accessible to the crew. The port side liferaft was fully engulfed in smoke and heat which was coming up from below decks and also getting blown across the ship from the starboard side.

The arrangement of the raft installation made it necessary for Captain [redacted] to gather several crew members to launch the raft. The starboard side liferaft was a 20-person Elliot model with a SOLAS A pack. The raft weighed 375 pounds and had the approximate dimensions of 64" x 23" x 23". The raft was installed in a U shaped cradle of aluminum construction. The cradle is designed so that the raft must be lifted approximately 18 inches straight up to launch it. The raft was located adjacent to the starboard rail, which was approximately 40 inches high. The rail was equipped with removable chain rails that could be unhooked and removed so that the raft could be passed through the rail without lifting the raft over the rail.

According to testimony provided by Captain Shoemaker and Mr. [redacted] it took four people to lift the raft out of the cradle and launch it over the side because the raft was very heavy. The hydrostatic release was disconnected by the crew and the raft container thrown into the water. [redacted] pulled the painter out of the canister hand over hand until the raft inflated. According to Captain [redacted] the raft opened "beautifully." The painter was secured to the starboard rail and the raft lay some 35 - 50 feet below the top deck of the FPV GALAXY, approximately in line with the forward face of the wheelhouse.

After Mr. [redacted] slipped away, Mr. P[redacted] was physically exhausted to the point that he was barely able to help himself. The crew on the forward deck had been screaming at him to swim aft toward the starboard side liferaft, which had been launched just minutes before, and was approximately 50 feet away. As he swam, he had a life ring with him and a one inch line that had been thrown by Mr. [redacted]. Mr. [redacted] swam aft towards the raft but stopped once or twice due to exhaustion. Mr[redacted] and Mr. Rau assisted by pulling Mr. [redacted] aft towards the stern of the vessel. Mr. [redacted] eventually got to the raft, but did not have the strength to pull himself in. Realizing that Mr. [redacted] was exhausted and was in danger of losing his life, Mr. [redacted] raced forward to get another survival suit that fit better than his current suit and then raced back with the intention of jumping into the raft and assisting Calvin. As he prepared to jump into the raft to assist Mr. [redacted] he told Mr. [redacted] and the others on the forward main deck to remain with the boat and to gather up all the survival suits and buoys they could and go to the bow of the vessel.

Mr. [redacted] then jumped from a height of 10-12 feet from the starboard side forward main deck into the raft. Once inside, the raft was being slammed and pinned against the hull of the FPV GALAXY by the 15-20 foot seas. Mr. [redacted] was alongside the raft, partially entangled in the boarding ladder and could not pull himself free and could not pull himself into the raft. Also, the life ring had somehow gotten tangled or otherwise attached to the raft. After several failed attempts, Mr. [redacted] successfully pulled Mr. [redacted] into the raft. Seeing both men in the

raft, Captain [redacted] noted immediately that there was a line running forward to the rail on the starboard side of the ship that was holding the raft in place and not allowing the raft to be pulled aft. Captain [redacted] yelled repeatedly down to the raft telling the occupants to cut the line. In the raft, Mr. [redacted] looked frantically for a knife, but could not locate the knife (or could not reach the knife) which had come as survival equipment with the raft. Mr. [redacted] testified that although he knew the knife was in the raft, he could not locate it. He instead untangled the life ring from the raft. The life ring remained attached to the vessel.

With the raft now free from the line going forward, Captain [redacted] Mr. [redacted], [redacted] and Mr. [redacted] began to pull the raft by its painter towards the stern of the vessel. As the crew members on the top deck pulled the raft towards the stern, the seas, which were coming from the north, pinned the raft against the burning hot hull of the ship. Smoke filled the canopy of the raft, and the noise of the wind and the waves made it extremely difficult for the men in the raft to communicate with each other and with the crew remaining on the top deck.

Inside the raft, Mr. [redacted] worked desperately to put together the plastic paddles which came with the raft in order to use them to maneuver the raft aft. Mr[redacted] found the paddle parts to be duct taped together. Because his hands were so cold, and because the survival suit severely limited his manual dexterity, he had to rip the duct tape with his teeth before he could put the paddles together. Mr. [redacted] sought assistance from Mr. [redacted], but Mr. [redacted] was unable to provide assistance due to his exhaustion and was lying still on the floor of the raft. After several minutes, the crew on the top deck was able to begin moving the raft to the stern of the ship. Once Mr. [redacted] got the paddles put together he also assisted in moving the raft by paddling as hard as he could towards the stern. However, the raft paddles quickly broke.

In the confusion of the fire and smoke, getting survival suits passed out, and cutting fathom length lines and attaching buoys, only one of the 19 people on the top deck, [redacted] saw Captain [redacted] fall. Several crew members last saw Captain [redacted] going forward towards the wheelhouse and did not see him after that. Many assumed he perished in the wheelhouse when he did not return. In the minutes leading up to and immediately after Captain [redacted] fall, Mr. [redacted] attempted to gather up several crew members to launch the port side liferaft. According to Mr. [redacted] testimony, he tried at least two times to launch the port side raft without success. He dropped the chains and released the hydrostatic release unit, but the raft was too heavy for him to launch by himself and he could not convince the other crew members to brave the flames and smoke.

When Captain [redacted] fell off the wheelhouse, Mr. [redacted] automatically became in charge of evacuating the crew from the top deck. Although he had only a limited ability to communicate with the crew on the top deck, he was the second in command on the FPV GALAXY and was the most experienced person on scene. All the other key personnel on board had either been lost overboard (Mr. [redacted]), were incapacitated (Mr. [redacted]), or were isolated from the top deck (Captain [redacted]). The starboard side raft at this point was located in the water on the stern of the vessel, drifting from centerline to port side, and secured to the FPV GALAXY by the sea painter. The stern of the FPV GALAXY was pitching severely, causing the raft to be lifted up onto the stern. The smoke from the ship also was pouring into the raft at a tremendous rate, making it very hot and difficult to breathe while inside the raft.

The situation on the top deck was extremely dangerous. The fire continued to spread throughout the superstructure of the vessel and began to move from the forward part of the top deck to the aft part of the top deck. Numerous crew members testified that the paint on the top deck was igniting, the deck was distorting and bubbling, and flames were beginning to shoot up through the deck. In addition, several crew members testified that a three to four foot brilliant blue flame ignited from the termination of the ventilation piping for the vessel's anhydrous ammonia system. This vent was located on the mast atop the wheelhouse approximately 10 feet above the top of the wheelhouse. Several crew members testified that this venting was extremely loud. The crew pressed up against the aft most section of the top deck, towards the port side of the vessel where there was the least amount of smoke.

Mr. [redacted] initially called up to the crew, yelling for a knife. Based upon the testimony provided, there appears to have been a general disregard (brought on by a lack of communication) between Mr. [redacted], who was attempting to direct the top deck's evacuation efforts, and Mr. [redacted] and Mr. [redacted], who were on the top deck assisting in the evacuation.

According to the testimony provided by Mr. [redacted] and Mr. [redacted] Mr[redacted] had yelled up to them, asking for a knife. They had refused his request, even though they each had knives. Mr. Pigott stated,

"I ignored that command…to me he wanted to cut the painter…we got seventeen people up…you know, it didn't seem like the right move. Mr[redacted] then relayed to the crew on the top deck at the time, "Nobody throws a knife down there right now."

Mr. [redacted] testimony reflected similar observations:

"[redacted] was asking for a knife to cut the painter line, and it wasn't presented to him. One of them (a knife) was on me and the other one was on [redacted]. We didn't know the guy's intentions at this time."

According to his own testimony, Mr. [redacted] was calling for a knife because earlier he had been unable to reach the knife in the raft and he wanted to make certain he had a knife available when it became necessary to cut the raft free from the burning vessel. When specifically asked why he thought a knife was not presented to him when he was frantically looking for one, he stated "I wish I know why nobody want to give me a knife. If in their…thinking that I was going to cut the painter…boy that's wrong."

There was also confusion as to whether or not Mr. [redacted] wanted the crew to jump. Mr. [redacted] stated that he recalled Mr. [redacted] shouting "No, don't jump!" and Mr. [redacted] testified that he heard the same thing: "Don't jump; don't jump." Mr. [redacted] later recalled that "I don't know the reason for that- - if there was a safety issue, the raft being burned against the vessel."

According to Mr[redacted] testimony regarding this matter, he stated

"I was trying to locate a good place for them to jump. On the starboard side the boat was leaning too much and I was afraid they may land on the side of the hull". He further stated he ordered people to stop jumping due to smoke; "(I) didn't want him to jump because we were in a bad situation. It was hard for us to breath. I didn't want nobody else in the same situation. So I told him not to jump. Somebody else- - I don't remember who it was - he also make attempt to jump and I stop him."

When the raft was finally in a safe place for the crew to begin evacuating the vessel, the crew members were very hesitant to jump, despite the rapidly deteriorating situation on the top deck. Testimony indicates there were several reasons for this hesitancy. The jump they needed to make was approximately 35 - 50 feet; the seas were rolling through at 15-20 feet, making the raft an ever-moving target; Captain [redacted] last order to the crew on the top deck was not to jump until he gave the command to do so; and finally, of the 19 people on the top deck, only five had survival suits. Numerous crew members testified that they were very scared and did not initially have the courage to jump. Mr. [redacted] and Mr. [redacted] both testified that they continually yelled and screamed from below for the crew to jump. Once the raft was safely located in a position where the crew could safely jump, Mr. [redacted] pleaded with the crew members repeatedly in both Spanish and English, telling them to jump.

"Nobody wanted to jump. And I was losing strength because I was yelling so much, making signs, and I was telling them in English and Spanish 'jump.' But nobody jump."

It took several minutes for the first person to finally jump. [redacted] was the first person, followed by several others, most of whom jumped onto the top of the raft as directed by Mr. [redacted]. Mr. [redacted] and Mr. [redacted] who had the only two knives on the aft top deck, were

among the first crew members to jump into the raft. According to testimony provided by several witnesses, Mr. [redacted] and Mr. [redacted] initially landed in the water or bounced off the raft into the water and needed to be recovered. Mr. [redacted] fell into the water after making a final attempt to free up the port side liferaft. Mr. [redacted] testified as follows:

"…I went one last time to try to launch the other liferaft…the third (last) time I almost passed out from the smoke…I don't remember jumping over the rail; but I remember being under water."

When Mr. [redacted] was recovered from the water, he became instrumental in providing assistance in the raft, pulling people out of the water, moving the crew members to the outside of the raft, so as to make a larger and safer landing spot in the center of the raft, and cutting off the hard can buoys from the jumpers, so as to make for a softer landing.

Of the 19 people on the top deck, 14 eventually attempted to evacuate the vessel and 12 were successfully recovered into the raft. The two crew members who attempted to evacuate but were unsuccessful were Mr. Jose R. Rodas (a member of the processing crew) and Mr. George Karn (the cook).

10/20/2002 17:45:00 to 10/20/2002 17:50:00 (Estimated): Loss of Jose R. Rodas and George Karn

Event Type: Personnel Casualties
Event Class:
Event Subclass:
Location: Unknown

Subject(s) and Details:

Name	Type	Status	Role
RODAS, JOSE RODAS	Party	Dead	Subject of Investigation

Details Filed: Injury Details

Did death occur: Yes
Was Death Immediate: No
Cause of Death: Cold Water Immersion
Nature of Event Causing Death: Noncontact Injury- Exposure
Date of Death Known: Yes
Date: 10/20/2002
Date of Declared Death: 10/29/2002
Declared By: [redacted] MD
Organization: State of Alaska Health & Social Services
Was Diving Involved: No
Did injury occur: No
Is the Person Missing: No
Subject to Chemical Exposure: No

Exposed to Biological Hazards: No
Exposed to a Confined Space/Respiration Hazard: No
Exposed to Other Hazards: No
Narrative Summary: As some of the crew members began to jump into the raft, one of the crew, Mr. Jose R. Rodas, attempted to evacuate the top deck by lowering himself down the stern of the vessel using two lines he had found. According to the testimony of Mr. [redacted] (a member of the processing crew) and Mr. [redacted] (the assistant cook), Mr. Rodas appeared to be panicking. Instead of jumping into the raft with the others, he secured two lines around the top rail of the vessel and

then tied the lines around his waist. He then attempted to lower himself to the liferaft some 35 - 50 feet below. Mr. [redacted] and Mr. [redacted] told Mr. (Jose R.) Rodas not to attempt this feat. Specifically, Mr. [redacted] stated,

"I told him twice not to tie himself up like that, because I was afraid that the line would get all tangled….I think maybe at that point he was already panicked."

When asked during testimony if anyone tried to talk Mr. Jose R. Rodas out of lowering himself down the side of the boat, Mr. [redacted] responded,

"Yes. We told him not to get over excited. I don't know what he was thinking. But he jumped when - I think when he saw the fire coming close."

As he lowered himself down the burning hot stern, Mr. Rodas ran out of line and ended up about 8-10 feet above the waterline. Mr. Rodas did not have a knife to cut himself free and the remaining crew members on the top deck did not have knives. The crew members on the top deck attempted repeatedly to haul Mr. Rodas back to the top deck, however, the line was too thin for the crew members to get purchase. Attempts to untie the lines were also unsuccessful. As Mr. Rodas hung from the stern, large waves hit him, causing him to spin and get further tangled. As he hung there, he repeatedly cried out for help.

From Mr. [redacted] point of view in the raft, Mr. Rodas was in serious trouble. Mr. [redacted] testified,

"…at that moment the situation with Rodas, it was very bad, you know. I don't want to get into detail how Rodas was feeling there, but he needed help bad. And I just couldn't find a way to help him. And the people on the top couldn't help him either."

He was getting pounded against the burning hull by the large waves that were rolling through. In addition, the lines that had been around Mr. Rodas' waist had moved up and were now around the lower portion of Mr. Rodas' chest, restricting his breathing. Mr. Vielma tried desperately to find a knife to pass up to Mr. Rodas, but no one onboard the raft presented him with a knife.

Minutes after Ms. [redacted] and Mr. [redacted] jumped into the water, the three remaining crew members on the aft top deck ([redacted] and [redacted] again attempted to pull Mr. Rodas up the side of the ship without success. The intensity of the smoke and fire was increasing and was getting closer to the aft rail where they were all standing. The heat of the fire was beginning to burn the back of their legs as they were attempting to pull Mr. Rodas up the side of the ship. Unable to tolerate the heat any longer, and fearing for their lives, the three climbed up the aft mast on the ship, which was located on the aft most portion of the top deck. The three climbed the ladder as high as they could go and then waited for help.

About five minutes after Mr. [redacted] jumped, the line that Mr. Rodas was attached to burned or chaffed through, causing Mr. Rodas to fall into the water. Mr. Rodas then drifted in the same general direction as Ms. Weckback and Mr. Newhall. Mr. Rodas called out to the remaining crew members on the stern and Mr. [redacted] shouted at him "to stay calm, that the boat was on its way." Mr. Rodas was also sighted by the crew members remaining on bow of the FPV GALAXY. The crew members on the forward main deck testified that he drifted along the same

general track as Ms. [redacted] and Mr. [redacted]. Approximately 15 minutes after Mr. Rodas went into the water, the crew members on the aft mast sighted the lights of a fishing vessel.

At 2004, the F/V CLIPPER EXPRESS recovered Mr. Rodas, who had buoys tightly tied around his midsection. A rescue swimmer from the F/V CLIPPER EXPRESS was placed into the water to retrieve Mr. Rodas. Because Mr. Rodas had been submerged in the water for an unknown amount of time, a crane was used to hoist him aboard the vessel. When he was recovered on board, Captain [redacted] reported that he was foaming at the mouth. Mr. Rodas was taken to a warm area on the ship, in the vicinity of the interior engine room stack, where two crewmembers, [redacted] and [redacted], immediately initiated CPR. Mr. [redacted] testified that at one point while CPR was being performed Mr. Rodas temporarily regained a "real weak pulse."

At 2058 [redacted] was hoisted on board and the flight crew initiated CPR on him and continued until CG6021 landed in St. Paul. During the flight, the rescue swimmer relayed to the aircraft commander that Mr. Rodas briefly had a very weak pulse.

At 2135 the CG6021 on deck at St. Paul and the crew members from the GALAXY were transferred over to local emergency personnel and were taken to the clinic in St. Paul. Mr. Rodas was transported to the St. Paul medical clinic where he was pronounced dead.

KARN, GEORGE Party Dead Subject of Investigation

Details Filed: Injury Details

Did death occur: Yes
- Was Death Immediate: No
- Cause of Death: Cold Water Immersion
- Nature of Event Causing Death: Noncontact Injury- Exposure
- Date of Death Known: No
- Was Diving Involved: No

Did injury occur: No
Is the Person Missing: No
Subject to Chemical Exposure: No

Exposed to Biological Hazards No
Exposed to a Confined Space/Respiration Hazard: No
Exposed to Other Hazards: No

Narrative Summary: Several crewmembers testified that Mr. Karn was the last person to jump for the raft. Ms. [redacted] described Mr. Karn had jumped from the vessel by placing one leg in front of the other and then putting his arm up alongside his head. Mr. [redacted] who was standing next to Mr. Karn, testified that at the precise moment Mr. Karn jumped, the raft drifted away towards the port side of the vessel and that Mr. Karn ended up in the water and then quickly drifted away in the opposite direction of the raft. According to Mr. [redacted] Mr. Karn intended to land on top of the raft, but instead landed about 5-7 feet away from the raft. In the space of 30 seconds, he had drifted 30-35 feet away from the liferaft and continued to drift with the current.

Mr. [redacted] also witnessed Mr. Karn jump and saw him fall into the water. Mr. [redacted] explained that when Mr. Karn jumped, the raft was on one side of a cresting wave

and Mr. Karn was on the other side of the same wave. As the wave flattened out, the raft was blown by the wind towards the port side of the vessel and the current carried Mr. Karn along the starboard side of the vessel and away from the raft. Mr. Vielma noted that when Mr. Karn landed in the water, he had his suit fully donned. Mr. Vielma testified that he thought that Mr. Karn would have a chance to be recovered because he was wearing a fully donned survival suit.

Several crew members inside the raft testified that Mr. [redacted] was positioned in the entry way of the raft and was calling to them, looking for a line to throw to Mr. Karn. From the aft top deck Mr. [redacted] reported that he also saw a crew member, whom he identified as Mr. [redacted] trying to throw a short line to Mr. Karn. Mr. [redacted] further testified that he saw Mr. [redacted] with a line but,

"the line was too short and seas really rough and in no time, in a blink of the eye, he was far away from the raft. No way that they could get him."

Based upon the testimony provided, it appears Mr. [redacted] was not attempting to use the buoyant quoit and thirty meter heaving line attached to the port entrance to the raft, but was instead using a one fathom line that had been retrieved from a crew member in the raft. Mr. [redacted] observed that Mr. Karn attempted to swim back to the raft on his stomach but was not able to so. Mr. Karn then floated away on a track which carried him past the starboard side of the vessel. He was sighted by the crew members remaining on the bow and then once again by the crew members in the raft. At that point, Mr. Karn was several hundred yards away from the raft floating in the survival position (face up). Mr. Karn was never rescued by the Coast Guard. After searching a 1900 square mile area and dedicating 69 hours of flight time, RADM Underwood suspended the search for George Karn and [redacted] at 1900 on October 23, 2002.

On June 9, 2003, a human jaw bone was discovered by Mr. [redacted] with the U.S. Fish and Wildlife Service in location 51-50.07 N, 177-42.66 W on the northern shore of Tanaga Island, in the central Aleutian Chain. The jawbone was discovered above the high tide line. On June 12, 2003, an Imperial survival suit, serial number #70009, was discovered by Mr. [redacted] above the high tide line in location 51-49.66 N, 177 43.93 W, a quarter mile away from where the jawbone had been discovered three days earlier. The survival suit had a large hole in the back and along the right leg. The back of the suit had been marked and read "M/V GA…" and there was a servicing date and serial number on the suit. No additional remains were found in the suit.

The jaw bone and the suit were taken into custody by the Alaska State Troopers on June 16, 2003. The suit and the jawbone were photographed and examined. Investigation by the Alaska State Troopers determined that the suit had last been inspected by Imperial Manufacturing Company in Seattle, WA on August 15, 2000. According to records at Imperial, the survival suit belonged to the FPV GALAXY. The jaw bone was compared to dental records of Mr. George Karn, which had been provided by Mr. Karn's next of kin, [redacted]. Mr. Karn had last been seen on October 20, 2002 in a survival suit approximately 30-35 miles southwest of St. Paul Island. Forensic analysis by the State of Alaska Medical Examiner's Office determined that the jaw bone remains were that of Mr. George Karn. Mr. Karn's remains were found approximately 450 miles away from where he was last seen alive.

Report of Investigation

10/20/2002 17:59:00 to 10/20/2002 19:47:00 (Estimated): Two abandon vessel into water and recovered by F/V CLIPPER EXPRESS

Event Type: Falls into Water
Event Class: From Vessel
Event Subclass:
Location: Unknown

Subject(s) and Details:

Name	Type	Status	Role
[redacted]	Party	Injured	Subject of Investigation

Details Filed: Person-In-Water Details

Use CESM: No
Confirmed in the water: Yes
Time Entered Water: 10/20/2002 5:59:00 PM Estimated
Time Taken Out: 10/20/2002 7:47:00 PM Known
Survival Time:

Gender: Male
Age: [redacted]
Body Fat:
Weight: Pounds
Description:
Health:
Clothing:
Exposure Suit: Yes
Light: Yes
PFD: No
Additional Information: Jumped into the water from a height of 50 feet to save [redacted]. Recovered by F/V CLIPPER EXPRESS at 1947. Was in good condition when recovered.

[redacted]	Party	Injured	Subject of Investigation

Details Filed: Person-In-Water Details

Use CESM: No
Confirmed in the water: Yes
Time Entered Water: 10/20/2002 5:59:00 PM Estimated
Time Taken Out: 10/20/2002 7:47:00 PM Known
Survival Time: 2 Hours

Gender: Female
Age: [redacted]
Body Fat:
Weight: 160 Pounds
Description:
Health:
Clothing: Pajamas & boots
Exposure Suit: No
Light: No
PFD: No

Report of Investigation

Additional Information: Jumped from vessel to escape burning vessel. Kept afloat in life ring for approximately 2 hours by [redacted] Recovered by F/V CLIPPER EXPRESS at 1947. Was [redacted] when recovered.

10/20/2002 18:00:00 to 10/20/2002 19:47:00 (Estimated): Injury to [redacted] as a result of cold water immersion

Event Type: Personnel Casualties
Event Class:
Event Subclass:
Location: Unknown

Subject(s) and Details:

Name	Type	Status	Role
[redacted]	Party	Injured	Subject of Investigation

Details Filed: Injury Details

Did death occur: No
Did injury occur: Yes
Nature of Event Causing Injuries: Noncontact Injury- Exposure
Severity:
Injury Description:
Type: [redacted]
Body Region: Whole Body
Aspect:
System/Organ:

Was Diving Involved: No
Is the Person Missing: No
Subject to Chemical Exposure: No

Exposed to Biological Hazards No
Exposed to a Confined Space/Respiration Hazard: No
Exposed to Other Hazards: No
Narrative Summary: Ms. [redacted] jumped from the vessel into the water wearing only pajamas and a jacket. She was immersed in cold water for approximately two hours before being recovered by the F/V CLIPPER EXPRESS. She was successfully treated for [redacted] on board the F/V CLIPPER EXPRESS.

10/20/2002 19:20:00 to 10/20/2002 19:20:00 (Estimated): Crewmember injured while evacuating vessel.

Event Type: Personnel Casualties
Event Class:
Event Subclass:
Location: Unknown

Subject(s) and Details:

Name	Type	Status	Role

[redacted]	Party	Injured	Subject of Investigation

Details Filed: Injury Details

Did death occur: No
Did injury occur: Yes
Nature of Event Causing Injuries: Contact Injury- Collision with Fixed Object
Severity:
Injury Description:
Type: Burn
Body Region: Face
Aspect:
System/Organ:

Type: [redacted]
Body Region: Whole Body
Aspect:
System/Organ:

Type: [redacted]
Body Region: Face
Aspect:
System/Organ:

Was Diving Involved: No
Is the Person Missing: No
Subject to Chemical Exposure: No

Exposed to Biological Hazards No
Exposed to a Confined Space/Respiration Hazard: No
Exposed to Other Hazards: No
Narrative Summary: Mr[redacted] had [redacted] while attempting to get away from the fire on the vessel. He then suffered [redacted] and [redacted] while evacuating the vessel.

10/20/2002 19:41:00 to 10/20/2002 19:46:00 (Known): [redacted] abandons vessel and swims to F/V BLUE PACIFIC

Event Type: Falls into Water
Event Class: From Vessel
Event Subclass:
Location: Unknown

Subject(s) and Details:

Name	Type	Status	Role
[redacted]	Party	At Risk, Not Injured	Witness

Details Filed: Person-In-Water Details

Use CESM: No
Confirmed in the water: Yes
Time Entered Water: 10/20/2002 7:41:00 PM Estimated
Time Taken Out: 10/20/2002 7:46:00 PM Known
Survival Time:

Report of Investigation

Gender:	Male
Age:	[redacted]
Body Fat:	
Weight:	Pounds
Description:	
Health:	
Clothing:	
Exposure Suit:	Yes
Light:	Yes
PFD:	No
Additional Information:	Jumped from bow of FPV GALAXY and swam to F/V BLUE PACIFIC

10/20/2002 19:41:01 to 10/20/2002 19:45:00 (Known): F/V GLACIER BAY successfully locates liferaft w/ 15 POB

Event Type: Emergency Response
Event Class: Search and Rescue
Event Subclass: Search Successful - Rescue successful
Location: Unknown

Subject(s) and Details:

Name	Type	Status	Role
GLACIER BAY	Vessel	Undamaged	Transiting Vicinity of Primary Subject

Details Filed: Detail Description
F/V GLACIER BAY successfully rescued 15 POB from GALAXY's liferaft

10/20/2002 19:42:00 to 10/20/2002 19:45:00 (Known): F/V BLUE PACIFIC successfully recovers [redacted] from water

Event Type: Emergency Response
Event Class: Search and Rescue
Event Subclass: Search Successful - Rescue successful
Location: Unknown

Subject(s) and Details:

Name	Type	Status	Role
BLUE PACIFIC	Vessel	Undamaged	Transiting Vicinity of Primary Subject

Details Filed: Detail Description
F/V BLUE PACIFIC successfully locates Matt Taylor and recovers him from water

10/20/2002 19:47:00 to 10/20/2002 19:47:00 (Known): F/V CLIPPER EXPRESS successfully locates and rescues [redacted] and [redacted]

Event Type: Emergency Response
Event Class: Search and Rescue
Event Subclass: Search Successful - Rescue successful
Location: Unknown

Subject(s) and Details:

Name	Type	Status	Role
CLIPPER EXPRESS	Vessel	Undamaged	Moored/Anchored in Vicinity of Primary Subject

Details Filed: None

10/20/2002 19:50:00 to 10/20/2002 19:50:00 (Estimated): F/V CLIPPER EXPRESS successfully locates Jose R. Rodas but fails to revive him

Event Type: Emergency Response
Event Class: Search and Rescue
Event Subclass: Search Successful - Rescue unsuccessful
Location: Unknown

Subject(s) and Details:

Name	Type	Status	Role
CLIPPER EXPRESS	Vessel	Undamaged	Moored/Anchored in Vicinity of Primary Subject

Details Filed: Detail Description

10/20/2002 20:27:00 to 10/20/2002 20:27:00 (Known): CG HELO 6021 successfully rescues 5 POB from vessel

Event Type: Emergency Response
Event Class: Search and Rescue
Event Subclass: Search Successful - Rescue successful
Location: Unknown

Subject(s) and Details:

Name	Type	Status	Role
GALAXY	Vessel	Actual Total Loss	Involved in a Marine Casualty

Details Filed: Detail Description

HH60J - 6021 Resource
Details Filed: None

10/21/2002 14:30:00 to 10/21/2002 14:30:00 (Known): Drug testing in Anchorage, AK; drug test results returned as [redacted].

Action Type: Other Actions - Drug and Alcohol Use and Testing
Action Class: Take Drug Test - Post-casualty
Location: Unknown

Report of Investigation

Subject(s) and Details:

Name	Type	Status	Role
[redacted]	Party	At Risk, Not Injured	Subject of Investigation

Details Filed: Drug and Alcohol Test Details

Sample Collection

Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM
Means of Direction: fax/verbal
Directed By:
Organization:
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken: 10/21/2002 3:05:00 PM
Sampling Location: Anchorage, AK
DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: Yes
Irregularities Noted: No
Transferred/Chain of Custody Complete: No

Field Sobriety Test

Field Sobriety Test Performed: No

Drug Analysis

Analyzing Laboratory: DRUGPROOF, Div. of Dynacare/Whole owned sub. of Lab. Corp.
DOT Protocols Used: Yes
Test Results: [redacted]
Medical Review Officer/Coroner:
MRO/Coroner Conclusions: [redacted]
Sample Transferred and Chain of Custody Complete: Yes

Drug Re-Analysis

[redacted]	Party	Injured	Subject of Investigation

Details Filed: Drug and Alcohol Test Details

Sample Collection

Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM
Means of Direction: fax/verbal
Directed By:
Organization:
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken: 10/21/2002 2:20:00 PM
Sampling Location: Anchorage, AK
DOT Protocols Used: Yes
Collection Agent Name:

Collection Agent's Organization:
Donor Certified: Yes
Irregularities Noted: No
Transferred/Chain of Custody Complete: No

Field Sobriety Test
Field Sobriety Test Performed: No

Drug Analysis
Analyzing Laboratory: DRUGPROOF, Div. of Dynacare/Whole owned sub. of Lab. Corp.
DOT Protocols Used: Yes
Test Results: [redacted]
Medical Review Officer/Coroner:
MRO/Coroner Conclusions: [redacted]
Sample Transferred and Chain of Custody Complete: Yes

Drug Re-Analysis

10/21/2002 22:00:00 to 10/21/2002 22:00:00 (Estimated): Post Casualty Drug Testing

Action Type: Other Actions - Drug and Alcohol Use and Testing
Action Class: Take Drug Test - Post-casualty
Location: Known; On Land
Description: Harborview Medical Center - Seattle, WA
Latitude: 47 39.0 N Longitude: 122 17.0 W

Subject(s) and Details:

Name	Type	Status	Role
[redacted]	Party	Injured	Subject of Investigation

Details Filed: Drug and Alcohol Test Details

Sample Collection
Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM
Means of Direction: Verbal and Fax
Directed By:
Organization: U.S. Coast Guard
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Alcohol
Sample Type: Urine
Date/Time Sample Taken: 10/21/2002 4:23:00 PM
Sampling Location: Harborview Medical Center - Burn Unit
DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: No
Irregularities Noted: No
Transferred/Chain of Custody Complete: No
Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken: 10/21/2002 4:23:00 PM
Sampling Location: Harborview Medical Center - Burn Unit

DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: No
Irregularities Noted: No
Transferred/Chain of Custody Complete: No

Field Sobriety Test
Field Sobriety Test Performed: No

Drug Analysis
Analyzing Laboratory: Harborview Medical Center - Seattle Washington
DOT Protocols Used: No
Test Results: [redacted]
Metabolites Present:
Medical Review Officer/Coroner:
MRO/Coroner Conclusions: [redacted]
Sample Transferred and Chain of Custody Complete: Yes

Drug Re-Analysis

10/22/2002 11:19:00 to 10/22/2002 11:19:00 (Known): Unlocated EPIRB hit indicating vessel sank

Event Type: Sinking
Event Class: Damage Control Efforts Not Possible
Event Subclass:
Location: Known; US Waters
Description: Bering Sea
Latitude: 56 22.0 N Longitude: 171 20.0 W

Subject(s) and Details:

Name	Type	Status	Role
GALAXY	Vessel	Actual Total Loss	Involved in a Marine Casualty

Details Filed: Detail Description

The FPV GALAXY was last sighted by the U.S. Coast Guard in position 56-22 N, 171 -20 W at 1715 on October 21, 2002. At 1119 on October 22, 2002, an unlocated EPIRB hit registered to the FPV GALAXY was transmitted. When the crew abandoned the vessel, the vessel's gear hauling hatch and gear setting hatch were wide open to the seas. Because the poor weather conditions which occurred on October 22, 2002, and due to the exterior watertight hatches being open to the seas, Captain [redacted] testified that he believed the vessel would have quickly sank.

10/23/2002 9:00:00 to 10/23/2002 22:00:00 (Estimated): Post Casualty Drug Testing [redacted])

Action Type: Other Actions - Drug and Alcohol Use and Testing
Action Class: Take Drug Test - Post-casualty
Location: Unknown

Subject(s) and Details:

Name	Type	Status	Role
[redacted]	Party	At Risk, Not	Witness

[redacted] Injured

Details Filed: Drug and Alcohol Test Details

Sample Collection

Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM
Means of Direction: Verbal and Fax
Directed By:
Organization:
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken: 10/23/2002 12:00:00 PM
Sampling Location: Seattle, WA
DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: Yes
Irregularities Noted: No
Transferred/Chain of Custody Complete: Yes

Field Sobriety Test

Field Sobriety Test Performed: No

Drug Analysis

Analyzing Laboratory: DRUGPROOF, Div. of Dynacare/Whole owned sub. of Lab. Corp.
DOT Protocols Used: Yes
Test Results: [redacted]
Medical Review Officer/Coroner: [redacted]
MRO/Coroner Conclusions: [redacted]
Sample Transferred and Chain of Custody Complete: Yes

Drug Re-Analysis

[redacted] Party At Risk, Not Injured Witness

Details Filed: Drug and Alcohol Test Details

Sample Collection

Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM
Means of Direction: Verbal and Fax
Directed By:
Organization:
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken: 10/23/2002 12:00:00 PM
Sampling Location: Seattle, WA
DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: Yes
Irregularities Noted: No
Transferred/Chain of Custody Complete: Yes

Field Sobriety Test
Field Sobriety Test Performed: No
Drug Analysis
Analyzing Laboratory: [redacted]
of Lab. Corp.
DOT Protocols Used: Yes
Test Results: [redacted]
Medical Review Officer/Coroner:
MRO/Coroner Conclusions:
Sample Transferred and Chain of Custody Complete: Yes
Drug Re-Analysis

[redacted] Party At Risk, Not Injured Witness

Details Filed: Drug and Alcohol Test Details

Sample Collection
Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM
Means of Direction: Verbal and Fax
Directed By:
Organization:
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken: 10/23/2002 12:00:00 PM
Sampling Location: Seattle, WA
DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: Yes
Irregularities Noted: No
Transferred/Chain of Custody Complete: Yes
Field Sobriety Test
Field Sobriety Test Performed: No
Drug Analysis
Analyzing Laboratory: DRUGPROOF, Div. of Dynacare/Whole owned sub. of Lab. Corp.
DOT Protocols Used: Yes
Test Results: [redacted]
Medical Review Officer/Coroner: [redacted]
MRO/Coroner Conclusions: [redacted]
Sample Transferred and Chain of Custody Complete: Yes
Drug Re-Analysis

[redacted] Party At Risk, Not Injured Witness

Details Filed: Drug and Alcohol Test Details

Sample Collection
Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM
Means of Direction:
Directed By:
Organization:

Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken: 10/23/2002 12:00:00 PM
Sampling Location: Seattle, WA
DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: Yes
Irregularities Noted: No
Transferred/Chain of Custody Complete: Yes

Field Sobriety Test
Field Sobriety Test Performed: No

Drug Analysis
Analyzing Laboratory: DRUGPROOF, Div. of Dynacare/Whole owned sub. of Lab. Corp.
DOT Protocols Used: Yes
Test Results:
Medical Review Officer/Coroner:
MRO/Coroner Conclusions:
Sample Transferred and Chain of Custody Complete: Yes

Drug Re-Analysis

[redacted] Party At Risk, Not Injured Witness

Details Filed: Drug and Alcohol Test Details

Sample Collection
Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM
Means of Direction: Verbal and Fax
Directed By:
Organization:
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken: 10/23/2002 12:00:00 PM
Sampling Location: Seattle, WA
DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: Yes
Irregularities Noted: No
Transferred/Chain of Custody Complete: Yes

Field Sobriety Test
Field Sobriety Test Performed: No

Drug Analysis
Analyzing Laboratory: DRUGPROOF, Div. of Dynacare/Whole owned sub. of Lab. Corp.
DOT Protocols Used: Yes
Test Results:
Medical Review Officer/Coroner:

MRO/Coroner Conclusions: [redacted]
Sample Transferred and Chain of Custody Complete: Yes

Drug Re-Analysis

[redacted] Party At Risk, Not Injured Witness

Details Filed: Drug and Alcohol Test Details

Sample Collection

Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM
Means of Direction: Verbal and Fax
Directed By:
Organization:
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken: 10/23/2002 12:00:00 PM
Sampling Location: Seattle, WA
DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: Yes
Irregularities Noted: No
Transferred/Chain of Custody Complete: Yes

Field Sobriety Test

Field Sobriety Test Performed: No

Drug Analysis

Analyzing Laboratory: DRUGPROOF, Div. of Dynacare/Whole owned sub. of Lab. Corp.
DOT Protocols Used: Yes
Test Results: [redacted]
Medical Review Officer/Coroner: [redacted]
MRO/Coroner Conclusions: [redacted]
Sample Transferred and Chain of Custody Complete: Yes

Drug Re-Analysis

[redacted] Party At Risk, Not Injured Witness

Details Filed: Drug and Alcohol Test Details

Sample Collection

Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM
Means of Direction: Verbal and Fax
Directed By:
Organization:
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken: 10/23/2002 12:00:00 PM
Sampling Location: Seattle, WA
DOT Protocols Used: Yes

Collection Agent Name:
Collection Agent's Organization:
Donor Certified: Yes
Irregularities Noted: No
Transferred/Chain of Custody Complete: Yes

Field Sobriety Test
Field Sobriety Test Performed: No

Drug Analysis
Analyzing Laboratory: DRUGPROOF, Div. of Dynacare/Whole owned sub. of Lab. Corp.
DOT Protocols Used: Yes
Test Results: [redacted]
Medical Review Officer/Coroner: [redacted]
MRO/Coroner Conclusions: [redacted]
Sample Transferred and Chain of Custody Complete: Yes

Drug Re-Analysis

[redacted] Party At Risk, Not Injured Witness

Details Filed: Drug and Alcohol Test Details

Sample Collection
Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM
Means of Direction: Verbal and Fax
Directed By:
Organization:
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken: 10/21/2002 12:00:00 PM
Sampling Location: Anchorage, AK
DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: Yes
Irregularities Noted: No
Transferred/Chain of Custody Complete: Yes

Field Sobriety Test
Field Sobriety Test Performed: No

Drug Analysis
Analyzing Laboratory: DRUGPROOF, Div. of Dynacare/Whole owned sub. of Lab. Corp.
DOT Protocols Used: Yes
Test Results: [redacted]
Medical Review Officer/Coroner:
MRO/Coroner Conclusions: [redacted]
Sample Transferred and Chain of Custody Complete: Yes

Drug Re-Analysis

[redacted] Party At Risk, Not Injured Subject of Investigation

Details Filed: Drug and Alcohol Test Details

Sample Collection

Reason for Sample:	Post-casualty
Date/Time Directed:	10/21/2002 2:30:00 PM
Means of Direction:	Verbal and Fax
Directed By:	
Organization:	
Description:	
Directed to get DOT Test:	Yes
Chemical Test Sample Provided:	Yes
Chemical Test Type:	Dangerous Drugs
Sample Type:	Urine
Date/Time Sample Taken:	10/23/2002 12:00:00 PM
Sampling Location:	Seattle, WA
DOT Protocols Used:	Yes
Collection Agent Name:	
Collection Agent's Organization:	
Donor Certified:	Yes
Irregularities Noted:	No
Transferred/Chain of Custody Complete:	Yes

Field Sobriety Test

Field Sobriety Test Performed:	No

Drug Analysis

Analyzing Laboratory:	DRUGPROOF, Div. of Dynacare/Whole owned sub. of Lab. Corp.
DOT Protocols Used:	Yes
Test Results:	[redacted]
Medical Review Officer/Coroner:	
MRO/Coroner Conclusions:	
Sample Transferred and Chain of Custody Complete:	Yes

Drug Re-Analysis

[redacted] Party Injured Subject of Investigation

Details Filed: Drug and Alcohol Test Details

Sample Collection

Reason for Sample:	Post-casualty
Date/Time Directed:	10/21/2002 2:30:00 PM
Means of Direction:	Verbal and Fax
Directed By:	
Organization:	
Description:	
Directed to get DOT Test:	Yes
Chemical Test Sample Provided:	Yes
Chemical Test Type:	Dangerous Drugs
Sample Type:	Urine
Date/Time Sample Taken:	10/23/2002 12:00:00 PM
Sampling Location:	Seattle, WA
DOT Protocols Used:	Yes
Collection Agent Name:	
Collection Agent's Organization:	
Donor Certified:	Yes
Irregularities Noted:	No
Transferred/Chain of Custody Complete:	Yes

Field Sobriety Test

Field Sobriety Test Performed:	No

Drug Analysis
Analyzing Laboratory: [redacted]
of Lab. Corp.
DOT Protocols Used: Yes
Test Results: [redacted]
Medical Review Officer/Coroner: [redacted]
MRO/Coroner Conclusions: [redacted]
Sample Transferred and Chain of Custody Complete: Yes
Drug Re-Analysis

[redacted] Party At Risk, Not Injured Witness

Details Filed: Drug and Alcohol Test Details

Sample Collection
Reason for Sample: Post-casualty
Date/Time Directed:
Means of Direction:
Directed By:
Organization:
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken:
Sampling Location:
DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: Yes
Irregularities Noted: No
Transferred/Chain of Custody Complete: Yes

Field Sobriety Test
Field Sobriety Test Performed: No

Drug Analysis
Analyzing Laboratory:
DOT Protocols Used: Yes
Test Results: [redacted]
Medical Review Officer/Coroner:
MRO/Coroner Conclusions: [redacted]
Sample Transferred and Chain of Custody Complete: Yes

Drug Re-Analysis

[redacted] Party At Risk, Not Injured Witness

Details Filed: Drug and Alcohol Test Details

Sample Collection
Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM
Means of Direction: Verbal and Fax
Directed By:
Organization:
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes

Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken: 10/23/2002 12:00:00 PM
Sampling Location: Seattle, WA
DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: Yes
Irregularities Noted: No
Transferred/Chain of Custody Complete: Yes

Field Sobriety Test
Field Sobriety Test Performed: No

Drug Analysis
Analyzing Laboratory: DRUGPROOF, Div. of Dynacare/Whole owned sub. of Lab. Corp.
DOT Protocols Used: Yes
Test Results: [redacted]
Medical Review Officer/Coroner: [redacted]
MRO/Coroner Conclusions: [redacted]
Sample Transferred and Chain of Custody Complete: Yes

Drug Re-Analysis

[redacted] Party At Risk, Not Injured Witness

Details Filed: Drug and Alcohol Test Details

Sample Collection
Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM
Means of Direction: Verbal and Fax
Directed By:
Organization:
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken: 10/23/2002 12:00:00 PM
Sampling Location: Seattle, WA
DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: Yes
Irregularities Noted: No
Transferred/Chain of Custody Complete: Yes

Field Sobriety Test
Field Sobriety Test Performed: No

Drug Analysis
Analyzing Laboratory: DRUGPROOF, Div. of Dynacare/Whole owned sub. of Lab. Corp.
DOT Protocols Used: Yes
Test Results: [redacted]
Medical Review Officer/Coroner: [redacted]
MRO/Coroner Conclusions: [redacted]
Sample Transferred and Chain of Custody Complete: Yes

Drug Re-Analysis

[redacted] Party At Risk, Not Injured Witness

Details Filed: Drug and Alcohol Test Details

Sample Collection

Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM
Means of Direction: Verbal and Fax
Directed By:
Organization:
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken: 10/23/2002 12:00:00 PM
Sampling Location: Seattle, WA
DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: Yes
Irregularities Noted: No
Transferred/Chain of Custody Complete: Yes

Field Sobriety Test

Field Sobriety Test Performed: No

Drug Analysis

Analyzing Laboratory: DRUGPROOF, Div. of Dynacare/Whole owned sub. of Lab. Corp.
DOT Protocols Used: Yes
Test Results: [redacted]
Medical Review Officer/Coroner: [redacted]
MRO/Coroner Conclusions: [redacted]
Sample Transferred and Chain of Custody Complete: Yes

Drug Re-Analysis

[redacted] Party At Risk, Not Injured Witness

Details Filed: Drug and Alcohol Test Details

Sample Collection

Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM
Means of Direction: Verbal and Fax
Directed By:
Organization:
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken: 10/23/2002 12:00:00 PM
Sampling Location: Seattle, WA
DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: Yes

Irregularities Noted: No
Transferred/Chain of Custody Complete: Yes

Field Sobriety Test
Field Sobriety Test Performed: No

Drug Analysis
Analyzing Laboratory: DRUGPROOF, Div. of Dynacare/Whole owned sub. of Lab. Corp.
DOT Protocols Used: Yes
Test Results: [redacted]
Medical Review Officer/Coroner: [redacted]
MRO/Coroner Conclusions: [redacted]
Sample Transferred and Chain of Custody Complete: Yes

Drug Re-Analysis

[redacted] Party At Risk, Not Injured Witness [redacted]

Details Filed: Drug and Alcohol Test Details

Sample Collection
Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM
Means of Direction: Verbal and Fax
Directed By:
Organization:
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken: 10/23/2002 12:00:00 PM
Sampling Location: Seattle, WA
DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: Yes
Irregularities Noted: No
Transferred/Chain of Custody Complete: Yes

Field Sobriety Test
Field Sobriety Test Performed: No

Drug Analysis
Analyzing Laboratory: DRUGPROOF, Div. of Dynacare/Whole owned sub. of Lab. Corp.
DOT Protocols Used: Yes
Test Results: [redacted]
Medical Review Officer/Coroner: [redacted]
MRO/Coroner Conclusions: [redacted]
Sample Transferred and Chain of Custody Complete: Yes

Drug Re-Analysis

[redacted] Party At Risk, Not Injured Witness

Details Filed: Drug and Alcohol Test Details

Sample Collection
Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM

Means of Direction: Verbal and Fax
Directed By:
Organization:
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken: 10/23/2002 12:00:00 PM
Sampling Location: Seattle, WA
DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: Yes
Irregularities Noted: No
Transferred/Chain of Custody Complete: Yes

Field Sobriety Test
Field Sobriety Test Performed: No

Drug Analysis
Analyzing Laboratory: DRUGPROOF, Div. of Dynacare/Whole owned sub. of Lab. Corp.
DOT Protocols Used: Yes
Test Results: [redacted]
Medical Review Officer/Coroner:
MRO/Coroner Conclusions:
Sample Transferred and Chain of Custody Complete: Yes

Drug Re-Analysis

[redacted] Party At Risk, Not Injured Witness

Details Filed: Drug and Alcohol Test Details

Sample Collection
Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM
Means of Direction: Verbal and Fax
Directed By:
Organization:
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken: 10/23/2002 12:00:00 PM
Sampling Location: Seattle, WA
DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: Yes
Irregularities Noted: No
Transferred/Chain of Custody Complete: Yes

Field Sobriety Test
Field Sobriety Test Performed: No

Drug Analysis
Analyzing Laboratory: DRUGPROOF, Div. of Dynacare/Whole owned sub. of Lab. Corp.

DOT Protocols Used: Yes
Test Results:
Medical Review Officer/Coroner:
MRO/Coroner Conclusions:
Sample Transferred and Chain of Custody Complete: Yes

Drug Re-Analysis

[redacted] Party At Risk, Not Injured Witness

Details Filed: Drug and Alcohol Test Details

Sample Collection

Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM
Means of Direction: Verbal and Fax
Directed By:
Organization:
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Dangerous Drugs
Sample Type: Urine
Date/Time Sample Taken: 10/23/2002 12:00:00 PM
Sampling Location:
DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: Yes
Irregularities Noted: No
Transferred/Chain of Custody Complete: No

Field Sobriety Test

Field Sobriety Test Performed: No

Drug Analysis

Analyzing Laboratory: DRUGPROOF, Div. of Dynacare/Whole owned sub. of Lab. Corp.
DOT Protocols Used: Yes
Test Results:
Medical Review Officer/Coroner:
MRO/Coroner Conclusions:
Sample Transferred and Chain of Custody Complete: Yes

Drug Re-Analysis

[redacted] Party At Risk, Not Injured Witness

Details Filed: Drug and Alcohol Test Details

Sample Collection

Reason for Sample: Post-casualty
Date/Time Directed: 10/21/2002 2:30:00 PM
Means of Direction: Fax and Verbal
Directed By:
Organization:
Description:
Directed to get DOT Test: Yes
Chemical Test Sample Provided: Yes
Chemical Test Type: Dangerous Drugs
Sample Type: Urine

Date/Time Sample Taken: 10/23/2002
Sampling Location: Seattle, WA
DOT Protocols Used: Yes
Collection Agent Name:
Collection Agent's Organization:
Donor Certified: Yes
Irregularities Noted: No
Transferred/Chain of Custody Complete: No

Field Sobriety Test

Field Sobriety Test Performed: No

Drug Analysis

Analyzing Laboratory: DRUGPROOF, Div. of Dynacare/Whole owned sub. of Lab. Corp.
DOT Protocols Used: Yes
Test Results:
Medical Review Officer/Coroner: [redacted]
MRO/Coroner Conclusions:
Sample Transferred and Chain of Custody Complete: Yes

Drug Re-Analysis

V. CAUSAL ANALYSIS

The Initiating Event of the Incident

Initiating Event:

Fire (10/20/2002 4:22:00 PM)

Production Factors

Active Equipment/Material Failures - Active failures of equipment

Based upon analysis of multiple scenarios for the initiating event, the most probable source of the fire was a large leak in the fuel supply line to the starboard generator in the engine room.

Fire: 10/20/2002 4:22:00 PM, Aboard Vessel: GALAXY, GALAXY

Preconditions

LUCs in Equipment - Mismatch between design use and production activity

Fire detection system in E/R consisted only of heat detectors. Smoke detectors were not installed.

Operations Status: 10/20/2002 4:15:00 PM, Aboard Vessel: GALAXY, GALAXY

Workplace Factors

LUCs in Supervision - Unneccesary hazard authorized

Under the vessel's operating procedures, the E/R was not always manned. Approximately 50%-60% of time, engineers were elsewhere on the vessel. For 25

minutes prior to detection of the smoke, Chief Engineer was in galley eating lunch.

Policy, Procedures, or Regulations: 10/20/2002 3:55:00 PM, Aboard Vessel: GALAXY, GALAXY

Under the vessel's operating procedures, the E/R was not always manned. Approximately 50%-60% of time, engineers were elsewhere on the vessel. For 25 minutes prior to detection of the smoke, Chief Engineer was in galley eating lunch.

Policy, Procedures, or Regulations: 10/20/2002 3:55:00 PM, Aboard Vessel: GALAXY, GALAXY

Organization Factors

LUCs in Regulations - Inadequate or absent regulations

Coast Guard regulations for engine room watch keeping and engine room staffing on small fish processing vessels are not clear and subject to misinterpitation by vessel owners and operators.

Policy, Procedures, or Regulations: 10/20/2002 3:55:00 PM, Aboard Vessel: GALAXY, GALAXY

There are currently no regulations for smoke detection equipment for engine rooms on commercial fishing vessels

Operations Status: 10/20/2002 4:15:00 PM, Aboard Vessel: GALAXY, GALAXY

Coast Guard regulations for engine room watch keeping and engine room staffing on small fish processing vessels are not clear and subject to misinterpitation by vessel owners and operators.

Policy, Procedures, or Regulations: 10/20/2002 3:55:00 PM, Aboard Vessel: GALAXY, GALAXY

LUCs in Regulations - Inadequate or absent enforcement

The Coast Guard fishing vessel safety program in the Thirteenth and Seventeenth districts has inconsistently enforced regulations regarding the licensing requirements for Assistant Engineers and the watchkeeping requirements for engineering watches.

Policy, Procedures, or Regulations: 10/20/2002 3:55:00 PM, Aboard Vessel: GALAXY, GALAXY

Defense Factors

Active Equipment/Material Failures - Active failures of equipment

Fire: 10/20/2002 4:22:00 PM, Aboard Vessel: GALAXY, GALAXY

Failures of Defense Against Subsequent Events in the Incident

Subsequent Event #1:

Loss of Electrical Power (10/20/2002 4:23:00 PM)

Defense Factors

Active Equipment/Material Failures - Active failures of equipment

Vessel lost power most likely due to a disruption of the fuel supply line to the starboard generator. Due to lack of evidence, however, it cannot be determined if this was the cause of the power loss.

Loss of Electrical Power: 10/20/2002 4:23:00 PM, Aboard Vessel: GALAXY, GALAXY

Subsequent Event #2:

Explosion (10/20/2002 4:26:00 PM)

Defense Factors

Defenses that were in place but failed due to inadequacy - Inadequate defect/problem reporting policies and procedures

Procedure was the Captain had to be notified if the CO2 system was to be activated. The C/E had to go up two decks to notify the Captain & then had to return to the CO2 control room. This delay was likely sufficient to allow the explosion to occur.

Explosion: 10/20/2002 4:26:00 PM, Aboard Vessel: GALAXY, GALAXY

Procedure was the Captain had to be notified if the CO2 system was to be activated. The C/E had to go up two decks to notify the Captain & then had to return to the CO2 control room. This delay was likely sufficient to allow the explosion to occur.

Explosion: 10/20/2002 4:26:00 PM, Aboard Vessel: GALAXY, GALAXY

Active Human Failures - Execution Errors - Attention Failures - Inattention Errors

Omission Following Interruption; Chief Engineer failed to secure the hatch leading into the lower engine room after discovering smoke in the space. He intended to back to the space to fight the fire, but never returned.

Explosion: 10/20/2002 4:26:00 PM, Aboard Vessel: GALAXY, GALAXY

Active Human Failures - Planning Errors - Mistakes - Rule-based Mistakes - Misuse of a good rule

Informational Overload; Chief Mate misinterpreted events. He believed that CO2 system had been discharged & then ordered several hatches be opened to clear the smoke fromf the vessel's interior. This action likely provided ventilation necessary to cause the backdraft expl

Explosion: 10/20/2002 4:26:00 PM, Aboard Vessel: GALAXY, GALAXY

Subsequent Event #3:

Personnel Casualties (10/20/2002 4:26:01 PM)

Defense Factors

Defenses that were in place but failed due to inadequacy - Inadequate training

Fire fighting training received by Chief Mate did not address recognition of immenent backdraft explosions.

Explosion: 10/20/2002 4:26:00 PM, Aboard Vessel: GALAXY, GALAXY

Active Human Failures - Planning Errors - Mistakes - Knowledge-based Mistakes - Bias

Salience Bias; Chief Mate did not recognize that an explosion was imminent. As a result, he and the other team did not evacuate to a safe place on board, but instead remained on scene.

Explosion: 10/20/2002 4:26:00 PM, Aboard Vessel: GALAXY, GALAXY

Subsequent Event #4:

Falls into Water (10/20/2002 4:27:00 PM)

Defense Factors

Active Human Failures - Planning Errors - Mistakes - Knowledge-based Mistakes - Bias

Salience Bias; [redacted] did not recognize that an explosion was imminent and that fire team was in danger at their location. As a result, he and the other team did not evacuate to a safe place on board, but instead remained on scene.

Falls into Water: 10/20/2002 4:27:00 PM, Aboard Vessel: GALAXY, [redacted]

Salience Bias; Mr. [redacted]ll did not recognize that an explosion was imminent. As a result, he and the other team did not evacuate to a safe place on board, but instead remained on scene.

Falls into Water: 10/20/2002 4:27:00 PM, Aboard Vessel: GALAXY, [redacted]

Salience Bias; Chief Mate did not recognize that an explosion was imminent. As a result, he and the other team did not evacuate to a safe place on board, but instead remained on scene.

Falls into Water: 10/20/2002 4:27:00 PM, Aboard Vessel: GALAXY, [redacted]

Subsequent Event #5:

Personnel Casualties (10/20/2002 4:30:00 PM)

Defense Factors

Other

Mr. [redacted] sustained injuries to his [redacted] while being pulled back on board the GALAXY. Given the circumstances, there is nothing that reasonably could have been done to prevent these injuries.

Personnel Casualties: 10/20/2002 4:30:00 PM, Aboard Vessel: GALAXY, [redacted]

Subsequent Event #6:

Personnel Casualties (10/20/2002 4:34:00 PM)

Defense Factors

Defenses that were in place but failed due to inadequacy - Improper or inadequate personal protective equipment

Using a survival suit for a rescue swimmer suit is problematic because the suit is not designed to recover another person or design to swim quickly through the water.

Safety and Emergency Operations - Person Overboard Procedures: 10/20/2002 4:31:00 PM, Aboard Vessel: GALAXY, [redacted]

Defenses that could reasonably have been expected but were never put in place - Lack of requirements for credentials/qualifications

There is currently no stardard training program in place to certify or qualify rescue swimmers.

Safety and Emergency Operations - Person Overboard Procedures: 10/20/2002 4:31:00 PM, Aboard Vessel: GALAXY, [redacted]

Subsequent Event #7:

Fire (10/20/2002 4:39:00 PM)

Defense Factors

Defenses that were in place but were disabled - Engineered defenses deactivated to meet conflicting goals

Cover & fire damper closure device to E/R ventilation on forward wheelhouse was redesigned to prevent seawater from entering vent. New design did not facilitate easy closure of device & allowed fire to escape from E/R & set wheelhouse on fire

Fire: 10/20/2002 4:39:00 PM, Aboard Vessel: GALAXY, GALAXY

Subsequent Event #8:

Personnel Casualties (10/20/2002 4:50:00 PM)

Defense Factors

Other

As a result of the fire spreading from the fire to the wheelhouse as a result of the 2nd explosion, Captain [redacted] was forced to withstand extreme smoke & flames in order to make a MAYDAY & get survival suits for his crew.

Personnel Casualties: 10/20/2002 4:50:00 PM, Aboard Vessel: GALAXY, [redacted]

As a result of the fire spreading from the fire to the wheelhouse as a result of the 2nd explosion, Captain [redacted] was forced to withstand extreme smoke & flames in order to make a MAYDAY & get survival suits for his crew.

Personnel Casualties: 10/20/2002 4:50:00 PM, Aboard Vessel: GALAXY, [redacted]

Subsequent Event #9:

Personnel Casualties (10/20/2002 5:45:00 PM)

Defense Factors

Defenses that were in place but failed due to inadequacy - Inadequate supervision

A loss of command & control on the top deck due to incapacitation or isolation of key officers ([redacted]). resulted in no authority figure being available to keep Jose R. Rodas focused on safely evacuating the vessel.

Personnel Casualties: 10/20/2002 5:45:00 PM, Location Unknown, RODAS, JOSE RODAS

Defenses that were in place but failed due to inadequacy - Inadequate training

Crew members manning the liferaft opening failed to throw the buoyant quoit & heaving line to Mr. Karn. Instead they attempted to pass a 6-8 foot line to him w/out success. Whether they could have passed the quoit to Mr. Karn is unknown.

Personnel Casualties: 10/20/2002 5:45:00 PM, Location Unknown, KARN, GEORGE

Defenses that could reasonably have been expected but were never put in place - Missing engineered defenses

12 crew jumped from a height of approximately 50 feet into the liferaft. There was a boarding ladder on the port side of the vessel that was not utilized. It was quickly consumed w/ flames, however, most crew members did not know it was available.

Safety and Emergency Operations - Abandon Vessel Operations: 10/20/2002 5:40:00 PM, Location Unknown, [redacted].

Active Human Failures - Execution Errors - Attention Failures - Mistiming Errors

Other Mistiming Error; Mr. Karn mistimed his jump into the liferaft & ended up falling in the water. He was quickly swept away by the current.

Personnel Casualties: 10/20/2002 5:45:00 PM, Location Unknown, KARN, GEORGE

Active Human Failures - Planning Errors - Mistakes - Rule-based Mistakes - Use of a bad rule

Other Application of a Bad Rule; Mr. Rodas evacuated the vessel by tying a line around his waist & lowering himself down the hulll. Mr. Rodas did not give

himself enough rope & tied a knot which constricted around his waist. As result he never reached the raft & could not untie him

Personnel Casualties: 10/20/2002 5:45:00 PM, Location Unknown, RODAS, JOSE RODAS

Subsequent Event #10:

Falls into Water (10/20/2002 5:59:00 PM)

Defense Factors

Active Human Failures - Planning Errors - Mistakes - Rule-based Mistakes - Use of a bad rule

Other Application of a Bad Rule; [redacted] reasoned that she was more likely to die by staying on the burning vessel than by abandoning ship. She took a significant risk & jumped into the water w/out an immersion suit.

Falls into Water: 10/20/2002 5:59:00 PM, Location Unknown, [redacted]

Subsequent Event #11:

Personnel Casualties (10/20/2002 6:00:00 PM)

Defense Factors

Other

Ms. [redacted] suffered from [redacted] as a result of cold water immersion.

Personnel Casualties: 10/20/2002 6:00:00 PM, Location Unknown, [redacted]

Subsequent Event #12:

Personnel Casualties (10/20/2002 7:20:00 PM)

Defense Factors

Other

Mr. [redacted] received [redacted] and [redacted] when evacuating the vessel. He had to jump 50 feet into the water because the helo couldn't safely recover him from the burning deck of the ship. He was rescued by a USCG rescue swimmer.

Personnel Casualties: 10/20/2002 7:20:00 PM, Location Unknown, [redacted]

Subsequent Event #13:

Sinking (10/22/2002 11:19:00 AM)

Defense Factors

Defenses that were in place but were disabled - Engineered defenses deactivated to meet conflicting goals

When vessel was abandoned by her crew, several all watertight hatches were left in an open position to the seas. Based upon the weather conditions the following two days, it is likely that the vessel flooded through these hatches & sank

Sinking: 10/22/2002 11:19:00 AM, Bering Sea, GALAXY

VI. REFERRAL FOR ENFORCEMENT ACTION

The following referrals for enforcement action have been made as a result of this investigation and represent those instances where the Coast Guard has gathered evidence that indicates one or more alleged violations or offenses may have occurred. Any determinations as to whether or not one or more actual violations or offenses have occurred are documented in the appropriate Coast Guard enforcement activities.

APPENDIX 1 - EVIDENCE

1995704-01-[redacted]

GALAXY REPORT EXHIBITS (Document - Other Document)

Collection Information:

Date/Time: 03/16/2004 10:53:00 AM
Location: D17(moc)
Collected By: USCG Gathered; ,
Witnessed By: USCG Witness; ,

Tracking:

Attachments:

- Exhibit001.PDF; District 17 (dp); [redacted] 03/16/2004;
- exhibit002.pdf; District 17 (dp); [redacted] 03/16/2004;
- exhibit003.pdf; District 17 (dp); [redacted] 03/16/2004;
- exhibit004.pdf; District 17 (dp); [redacted] 03/16/2004;
- exhibit005.pdf; District 17 (dp); [redacted] 03/16/2004;
- exhibit006.pdf; District 17 (dp); [redacted] 03/16/2004;
- exhibit007.PDF; District 17 (dp); [redacted] 03/16/2004;
- exhibit010.pdf; District 17 (dp); [redacted] 03/16/2004;
- exhibit011.pdf; District 17 (dp); [redacted] 03/16/2004;
- exhibit012.pdf; District 17 (dp); [redacted] 03/16/2004;
- exhibit013.pdf; District 17 (dp); [redacted] 03/16/2004;
- exhibit015.pdf; District 17 (dp); [redacted] 03/16/2004;
- exhibit016.pdf; District 17 (dp); [redacted] 03/16/2004;
- exhibit017.pdf; District 17 (dp); [redacted] 03/16/2004;
- exhibit018.pdf; District 17 (dp); [redacted] 03/16/2004;
- exhibit019.pdf; District 17 (dp); [redacted] 03/16/2004;
- exhibit021.pdf; District 17 (dp); [redacted] 03/17/2004;
- exhibit023.pdf; District 17 (dp); [redacted] 03/17/2004;
- exhibit025.pdf; District 17 (dp); [redacted] 03/17/2004;
- exhibit028.pdf; District 17 (dp); [redacted] 03/17/2004;

- exhibit029.pdf; District 17 (dp); [redacted] 03/17/2004;
- exhibit030.pdf; District 17 (dp); [redacted] 03/17/2004;
- exhibit032.pdf; District 17 (dp); [redacted] 03/17/2004;
- exhibit033.pdf; District 17 (dp); [redacted] 03/17/2004;
- exhibit035.pdf; District 17 (dp); [redacted] 03/17/2004;
- exhibit040.pdf; District 17 (dp); [redacted] 03/17/2004;
- exhibit038.pdf; District 17 (dp); [redacted] 03/17/2004;
- Exhibit077.WMV; District 17 (dp); [redacted].; 03/18/2004;
- exhibit043.pdf; District 17 (dp); [redacted] 03/30/2004;
- exhibit044.pdf; District 17 (dp); [redacted] 03/30/2004;
- exhibit045.pdf; District 17 (dp); [redacted] 03/30/2004;
- exhibit046.pdf; District 17 (dp); [redacted] 03/30/2004;
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- exhibit062.pdf; District 17 (dp); [redacted] 03/31/2004;
- exhibit063.pdf; District 17 (dp); [redacted] 03/31/2004;
- exhibit064.pdf; District 17 (dp); [redacted] 03/31/2004;
- exhibit065.pdf; District 17 (dp); [redacted] 03/31/2004;
- exhibit067.pdf; District 17 (dp); [redacted] 03/31/2004;
- exhibit068.pdf; District 17 (dp); [redacted] 03/31/2004;
- exhibit069.pdf; District 17 (dp); [redacted] 03/31/2004;
- exhibit071.pdf; District 17 (dp); [redacted] 03/31/2004;
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- exhibit079.pdf; District 17 (dp); [redacted] 04/01/2004;
- exhibit080.pdf; District 17 (dp); [redacted] 04/01/2004;
- exhibit081.pdf; District 17 (dp); [redacted] 04/01/2004;
- exhibit082.pdf; District 17 (dp); [redacted] 04/01/2004;
- exhibit084.pdf; District 17 (dp); [redacted] 04/01/2004;
- exhibit085.pdf; District 17 (dp); [redacted] 04/01/2004;
- exhibit086.pdf; District 17 (dp); [redacted] 04/01/2004;
- exhibit087.pdf; District 17 (dp); [redacted] 04/01/2004;
- exhibit089.pdf; District 17 (dp); [redacted] 04/01/2004;

- exhibit091.pdf; District 17 (dp); [redacted] 04/01/2004;
- exhibit008.tif; District 17 (dp); [redacted] 04/02/2004;
- exhibit009.tif; District 17 (dp); [redacted] 04/02/2004;
- exhibit014.tif; District 17 (dp); [redacted] 04/02/2004;
- exhibit020.tif; District 17 (dp); [redacted] 04/02/2004;
- exhibit022.tif; District 17 (dp); [redacted] 04/02/2004;
- exhibit024.tif; District 17 (dp); [redacted] 04/02/2004;
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- exhibit027.tif; District 17 (dp); [redacted] 04/02/2004;
- exhibit031.tif; District 17 (dp); [redacted] 04/02/2004;
- exhibit034.tif; District 17 (dp); [redacted] 04/02/2004;
- exhibit036.tif; District 17 (dp); [redacted] 04/02/2004;
- exhibit037.tif; District 17 (dp); [redacted] 04/02/2004;
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- exhibit061.tif; District 17 (dp); [redacted] 04/02/2004;
- exhibit042.PDF; District 17 (dp); [redacted] 04/02/2004;
- exhibit070.tif; District 17 (dp); [redacted] 04/02/2004;
- exhibit076.tif; District 17 (dp); [redacted] 04/02/2004;
- exhibit083.tif; District 17 (dp); [redacted] 04/02/2004;
- exhibit088.tif; District 17 (dp); [redacted] 04/02/2004;
- exhibit066a.MOV; District 17 (dp); [redacted] 04/14/2004;
- exhibit066b.ppt; District 17 (dp); [redacted] 04/14/2004;
- exhibit066c.ppt; District 17 (dp); [redacted] 04/14/2004;
- exhibit066d.ppt; District 17 (dp); [redacted] 04/14/2004;

1995704-02-[redacted]

CG-2692 Submitted by Galaxy Fisheries LLC, Drug Test Results of [redacted] CG License of [redacted] Alaska State Trooper's Report: Discovery of George Karn's Remains, and Fire and Explosion Analysis. (Document - Other Document)

Collection Information:

Date/Time: 11/13/2003 10:00:00 AM
Location: MSO Anchorage
Collected By: USCG Gathered; ,
Witnessed By: USCG Witness; ,

Tracking:

Attachments:

- GALAXYCG2692.pdf; District 17 (dp); [redacted] 03/12/2004;
- Analysis.pdf; District 17 (dp); [redacted] 03/12/2004;
- DRUGTEST.pdf; District 17 (dp); [redacted] 03/12/2004;
- [redacted].pdf; District 17 (dp); [redacted] 03/12/2004;
- TrooperReport.pdf; District 17 (dp); [redacted] 03/12/2004;

APPENDIX 2 - CORRESPONDENCE

19526 - Report of Investigation

Source: USCG
Type: Incoming

Report of Investigation

Received: At D17 on 04/20/2004 8:50:00 AM
Attachments:
- GALAXY Report Body.pdf; Commandant (CG-3PCA); [redacted] 06/22/2005;

19527 - MSO Drill strategy (Draft)
Source: USCG
Type: Incoming
Received: At D17 on 04/20/2004 8:57:00 AM
Attachments:
- MSODrillStrategy.pdf; Draft policy, not yet approved for public disbursement; District 17 (dp); [redacted].; 04/20/2004;

33838 - IO Narrative
Source: USCG
Type: Incoming
Received: At unit on 04/18/2005 10:15:00 AM
Attachments:
- IO Narrative.doc; Commandant (CG-3PCA); [redacted] 04/18/2005;

35547 - Redacted FOIA copy of the Report of Investigation
Source: USCG
Type: Incoming
Received: At G-MOA on 06/03/2005 7:18:00 AM
Attachments:
- GALAXY FOIA Report.pdf; Commandant (CG-3PCA); [redacted].; 06/03/2005;

36352 - Table of Contents
Source: USCG
Type: Incoming
Received: At Unit on 06/22/2005 8:58:00 AM
Attachments:
- Galaxy Table of Contents.pdf; Commandant (CG-3PCA); [redacted] 06/22/2005;

36355 - Final Cover and Endorsements
Source: USCG
Type: Incoming
Received: At G-MOA on 06/22/2005 9:00:00 AM
Attachments:
- GALAXY Cover and Recommendations.pdf; Commandant (CG-3PCA); [redacted] 06/22/2005;