

“OCEAN PRIDE” Ship Fire

At 0916 hours on Saturday, August 4, 2001, the Department responded to a major ship fire on the Lake Washington Ship Canal.

The vessel was a 200' fish processing ship tied up to the corporate facility dock at 1100 West Ewing. The vessel was scheduled to depart Monday, August 6.

On Friday, August 3, repair personnel discovered a fuel line leak in the freezer storage area below the water line deck level. The leak of diesel fuel was addressed by removing the saturated flammable foam insulation into bags and placing them at the base of a hatchway for later removal. The amount and length of the fuel leak remains to be determined. There is no indication the leak was secured the day of the fire.

Saturday welding/cutting was taking place above the spill and bagged contaminated insulation. This resulted in a fire in the area directly below.

At the time of the fire the vessel contained 180,000 gallons of diesel fuel and 30,000 lbs of anhydrous ammonia (used as a refrigerant).

The vessel had been refitted and remodeled a number of times, to address its changing roles as a fish processor. The latest being to prepare it for herring off the coast of Washington. The crew quarters, gallery, and living spaces had been framed out with dimensional wood lumber and was fully outfitted for the scheduled departure.

The vessel consisted of a freezer/hold and fuel/mechanical space at the lowest level. A process line with large, open spaces at the entry level deck, a large, open storage area at the next level, and on the main deck, compressors and ancillary equipment. At the stern, the ammonia storage and refrigeration equipment extended from below the water line to the main deck.

The vessel, as a result of preparing for departure, had most hatches and passageways open, both horizontally and vertically.

The fire spread from the aft port section at the origin point rapidly as a result of ignited diesel fuel which caused the flammable sprayed on insulation to also ignite. The fire and fire products traveled forward to a large hatch which exited directly into the next

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deck and then into the crew quarters and gallery area. The result was a “chimney” effect which was fueled by flammable liquids at the lowest point in the vessel.

The fuel load, both flammable liquids and combustible construction, contributed to rapidly untenable interior conditions due to extreme heat conditions. Firefighter teams repeatedly entered the deck levels to advance into the fire on multiple levels only to be driven back by extreme heat and steam production from their hose streams.

The fire presented significant challenges on a much larger scale. The vessel contained 30,000 lbs of ammonia. This hazardous material is a flammable gas and a health hazard at high concentrations. It has the potential to explode violently with direct flame

impingement. In addition to the ammonia, there were 180,000 gallons of diesel fuel which presented a fire, explosion, and ecological hazard.

A Unified Command was established with the Coast Guard, Seattle Police, and vessel representatives. The Department requested the EOC be opened. This was to coordinate an appropriate response in the event of a need to evacuate downwind. The Ship Canal was closed to vessel traffic.

Due to the flammable liquid fire at the lowest point in the vessel, a strategic plan was developed to bring the fire under control using the following goals:

- ✍ Do not capsize the vessel with inappropriate use of firefighting water.
- ✍ Protect the fuel tanks and ammonia storage areas.
- ✍ Minimize the exposure of our personnel to the untenable conditions until we could lower the heat being generated.
- ✍ Accumulate adequate resources to effectively extinguish the fire.
- ✍ Do no additional harm to our personnel or the environment.

To accomplish these goals we used the following tactics, in order:

- ✍ Apply large quantities of firefighting foam to the flammable liquid fire at the base of the vessel.
- ✍ Extinguish the fires burning on the decks in the center of the vessel.
- ✍ Extinguish the fires in the crew quarters, gallery and wheelhouse.

The tactics worked effectively and the fire was under control in 4 hours, with a final extinguishment accomplished 7 hours into the incident.

Six (6) firefighter suffered minor injuries ranging from heat exhaustion to steam burns. All were treated at HMC and released.

The vessel replacement cost is estimated at \$17 million.

The Department committed two-thirds of our on-duty resources to this single incident, leaving the city with limited fire/medical coverage for over 6 hours.

Summary of "Ocean Pride" Ship Fire

Fire personnel	160
Apparatus	40
Fireboats	2
Length of Incident	7 hours
Firefighter injuries (minor)	6
Foam concentrate	700 gallons
<i>Estimated Loss</i>	<i>\$3,000,000 +</i>