

Incident Title		Very Large Crude Carrier Grounding	
Incident Type		Water Pollution	
Date		24 th March 1989	
Country		USA	
Location		Prince William Sound, AL	
Fatalities		Injuries	Cost
0		0	US\$ 3.2 bn (1996) – Ref. 2
Incident Description		A single-hull very large crude carrier (VLCC) which had been loaded with approximately 1,263,000 barrels of Prudhoe Bay crude oil at the Valdez Marine Terminal (AL, USA) ran aground on Bligh Reef, a well-known navigational hazard in Prince William Sound, while bound for Long Beach (CA, USA). The vessel was under the navigational control of the Third Mate at the time of the incident. The grounding ruptured 8 cargo tanks, spilling around 258,000 barrels of oil into the sea. At the time, this was the largest single oil spill in US waters. There were no injuries but there was catastrophic damage to the environment. The oil spill killed an estimated 250,000 sea birds, 3,000 otters, 300 seals, 250 bald eagles and 22 killer whales. Fishing in oil-polluted waters was prohibited so many villages in the area, which were heavily dependent on salmon and herring fishing, faced financial ruin.	
 <p>Credit: RGB Ventures/SuperStock</p>			
Incident Analysis		<p>Basic cause was rupture of cargo tanks due to damage sustained by the ship's hull when it ran aground on a reef.</p> <p>Critical factors included: 1) The ship deviated from the vessel traffic separation scheme (TSS) to avoid an ice float field, 2) The Master's judgement was impaired (due to alcohol), 3) The Third Mate was suffering from fatigue (due to work overload), 4) The remote location of Prince William Sound impeded emergency response efforts (accessible only by helicopter, plane or boat) and resulted in late deployment of oil spill cleanup barge(s).</p> <p>Root causes included: 1) Inadequate vessel tracking system (eg. outdated radar, inadequate communication system), 2) Inadequate piloting services, 3) Inadequate staffing (fit Master and rested crew), 4) Violation of procedures (Master placing unqualified Third Mate in charge of navigation at a critical time), 5) Inadequate training (alcohol/drug rehabilitation supervision), 6) Inadequate corporate management oversight, 7) Insufficient oil spill response equipment inventory (e.g. booms, oil-skimmers), 8) Inadequate contingency plans and communication strategy for dealing with major spills.</p>	
Lessons Learned		<p>1) Fatigue can severely impair crew members' judgement and performance, 2) Organisational change impacting crew levels require careful consideration of human factors, particularly at times of abnormally high workload (e.g. tank cleaning, cargo handling, navigating in narrow shipping lanes), 3) Double-skin hulls may help reduce water pollution in the event of a (low intensity) grounding or collision, 4) Any crew member suspected of consuming alcohol or drugs (including the Master) should be subjected to testing before sailing, 5) Twin tug escorts should be provided for oil-laden ships in narrow shipping lanes, 6) Booms to cordon off long stretches of shoreline become ineffective in stormy seas, 7) Dispersants, detergents, and hot water cleaning of shoreline can cause substantially more wildlife mortality than the oil itself, 8) Oil spill response procedures should be routinely practised, 9) The US federal Oil Pollution Act (OPA) of 1990 created procedures for responding to future oil spills and established the legal liabilities of responsible parties.</p>	
More Information		<p>1) "Marine Accident Report - Grounding of the US Tankship Exxon Valdez on Bligh Reef, Prince William Sound, Near Valdez, Alaska, March 24, 1989", National Transport Safety Board Report No. NTSB/MAR-90/04.</p> <p>2) "Trouble on Oiled Waters: Lessons from the Exxon Valdez Oil Spill", R. T. Paine et al, Annu. Rev. Ecol. Syst. 1996. 27:197-235.</p>	
Industry Sector		Process Type	Incident Type
Oil & Gas		Transportation	Water Pollution
Equipment Category		Equipment Class	Equipment Type
Not equipment-related		Not applicable	Not applicable