CASE STUDY

VESSEL TYPE:  Tankers: Petroleum
TITLE:  Two Valves are Better than One
CATEGORY:  Cargo

THE INCIDENT:

This vessel was a small parcel tanker time chartered to an oil major, plying between two of their terminals. The vessel was fitted with five sets of cargo wing tanks, fed by a ring main pipeline system. On the voyage in question the vessel was ordered to load two grades of motor spirit. The first, unleaded petrol, was loaded into 2 and 4 wing tanks. This was followed by leaded petrol being loaded into 1 and 5 wing tanks. Number 3 wing tanks remained empty.

On arrival at the discharge berth both grades were to be discharged ashore simultaneously, the leaded petrol was to be discharged using the portside pump/line system and the unleaded via the starboard side pump/line system. Shortly after discharge commenced the starboard pump broke down. As a consequence 1 and 5 wing tanks were completely discharged whereas the line was flushed with fresh water and disconnected. The unleaded hose was then connected to the portside pump/line system which was then used to discharge the second parcel. Shortly after discharge resumed terminal personnel informed the vessel that measurement of shore tanks indicated that an additional 90 cubic metres of product had been discharged with the first parcel of leaded petrol. Discharge operations were stopped and an investigation was mounted. The investigation revealed that a crossover gate valve in number 2 port cargo tank had not been properly closed, with the result that unleaded petrol had been drawn from the starboard line system and discharged with the leaded petrol.

OBSERVATIONS:

The tanker's ring main system only permitted single valve separation between the two grades of cargo with the result that the failure of a valve or operator error in the manipulation of the valves would inevitably result in cross contamination. Subsequent to this incident the vessel's pipeline system was modified to give proper segregation between cargo grades.

ROOT CAUSE:

Failure to comply with vessel design requirement.

FINANCIAL COST:

On this occasion the oil company was able to resolve the problem of the contaminated fuel by blending and no cargo claim was made. Nevertheless the costs of investigating the matter amounted to approximately US$1,000.

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