

CASE STUDY

Offshore Supply Vessel Delay: Impacts on Scheduling, Efficiency, and Safety.

This case study explores the journey of an offshore supply vessel that deviates from a pre-defined schedule created to maximize fuel efficiency, safety, and compliance with maritime regulations. The vessel makes several unplanned changes in speed and position, which result in an increase of 36% in fuel costs. These deviations also impact subsequent operations and pose safety challenges, the extent of which is difficult to quantify.

INTRODUCTION

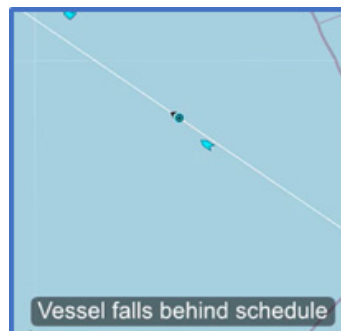
Offshore supply vessels (OSVs) play a vital role in supporting offshore oil and gas operations by transporting equipment, personnel, and supplies. Timely and safe operation of these vessels is essential for the success of offshore activities. However, this case study delves into an incident where an OSV encountered an unexpected one-hour delay upon its return to port. What makes this case particularly intriguing is the concealed sequence of events occurring between ports, unknown to the shore-based management team, which forms the focal point of this discussion.

BACKGROUND

The OSV in question had the designated purpose of delivering logistical support to a network of FPSOs. The voyage from the port to the offshore field took approximately 20 hours. A detailed route and timetable were developed to maximize fuel efficiency, safety, and compliance with maritime regulations. This plan was designed and endorsed through collaboration between the shore-based logistics team and their counterparts in the field of FPSO logistics. This collaborative effort ensured that the plan took into consideration offshore operations and FPSO availability. Furthermore, it ensured that the plan adhered to the concept of Simultaneous Operations (SIMOPS) within the field, with route adjustments made to account for planned seismic activity in the area.

EVENTS LEADING TO DELAY

Excessive Speed:

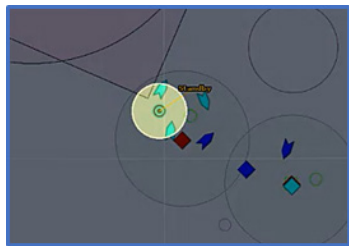


During the journey out to the field the OSV fell behind the planned schedule.

The OSV, for an unknown reason, has fallen behind (11 km) the target plan, as can be seen in Figure 1: The vessel falls behind schedule. For the OSV to meet the target plan, the vessel increases its speed.

Increased Fuel Burn:

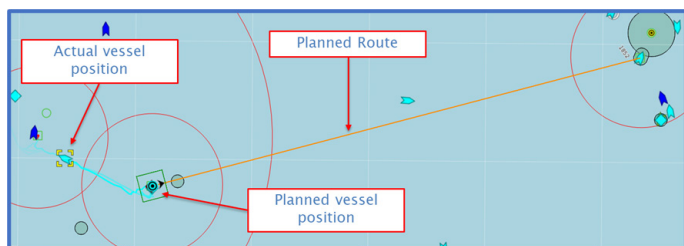
The OSV's accelerated speed resulted in 36% greater fuel consumption than initially anticipated. The crew, in a spontaneous move, chose to prioritize speed over fuel efficiency to expedite the journey.



Vessel Waits in Standby Zone

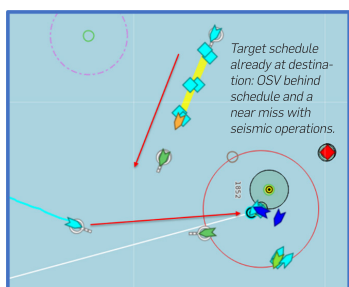
Unplanned Vessel Move:

After completing activities at the FPSO, the vessel made an unplanned move to the west. This had a knock-on effect on the next stage of the journey, as it was now 7km off the planned position.



Deviation from planned position

Safety Near-Miss:



Near-miss with the seismic operations.

Furthermore, they reached the FPSO one hour ahead of their agreed-upon schedule, incurring additional fuel consumption because the vessel had to remain on Dynamic Positioning (DP) until the FPSO was ready to receive it.

To make up time, the vessel increased its speed, which consequently increased overall fuel consumption. Additionally, there were planned seismic survey activities in the vicinity, which had been considered when the route plan was created. The vessel had to increase speed again to pass in

front of the 10-kilometer-long seismic cable spread. Not only did this increase fuel consumption and emissions, but it also increased the potential for accidents.

CONCLUSION

The delay of the offshore supply vessel due to excessive speed, increased fuel consumption, and a safety near-miss had significant consequences for scheduling, environmental impact, and safety.

This case study serves as a reminder of the importance of adhering to plans and established guidelines, even in high-pressure situations, to ensure the efficiency and safety of offshore supply operations.

It also supports systems and applications such as the Sercel Marlin Application Suite, where real-time tracking and operational awareness can support OSV and other marine vessels being safe.

The Marlin Application Suite brings transparency to offshore activities and an optimized solution that provides real-time alerts to operators of any deviations from the plan so that action can be taken.

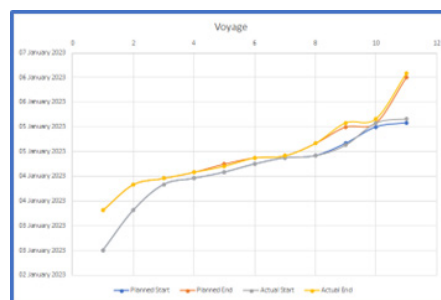
IMPACTS AND CONSEQUENCES

Fuel Costs:

The vessel schedule had been optimized to ensure that fuel costs were kept to a minimum. As demonstrated, the vessel deviated from the plan, and this resulted in an increase of 36% in fuel costs over the course of its journey.

Delayed Next Shipping:

A one-hour delay upon return to the port had a ripple effect throughout the entire supply chain. The subsequent shipping operation, contingent upon the prompt arrival of the OSV's cargo, was pushed back, resulting in financial repercussions for various stakeholders within the supply chain. Despite the dashboard displaying only a 1% overrun on the working time, it fails to reflect the significant knock-on effects of the delay. Figure 5, Planned vs. Actual, offers a granular level of detail into the planned vs. actual data.



Planned vs Actual

Environmental Impact:

The increased fuel burn rate not only raised operational costs by 36% but also had a negative impact on the vessel's carbon emissions. This incident highlighted the importance of adhering to fuel efficiency guidelines and sustainability initiatives in the maritime industry.

Safety Implications:

The safety near-miss was a stark reminder of the potential consequences of not following the planned route and speed limits. The incident served as a wake-up call for the importance of adhering to safety protocols, even in the face of time constraints.

LESSONS LEARNED AND RECOMMENDATIONS

Adherence to Schedule:

The safety near-miss was a stark reminder of the potential consequences of not following the planned route and speed limits. The incident served as a wake-up call for the importance of adhering to safety protocols, even in the face of time constraints.

Fuel Efficiency:

Fuel efficiency should not be compromised, even under pressure to meet tight schedules. A more balanced approach to speed and fuel consumption is essential to minimize environmental impacts and operational costs.

Safety First:

Safety protocols and regulations should always be followed. The near-miss incident underscores the importance of respecting plans and established guidelines to prevent accidents and injuries. The adoption of a system such as Marlin Application Suite would have alerted all the relevant stakeholders in real-time, and as such, the near-miss could have been avoided.