

A close look at...

Changing Minds: Proving Success Against All Odds

It's a time of trial and change for the maritime industry. As shipping companies explore means and ways to cut costs to remain competitive in the industry, fuel cost becomes the main target for savings. We delve into details of one such company who achieved shocking results by using automated fuel management system.

INTRODUCTION

Background. With an increasing pressure to cut costs in the current shipping climate, companies are looking for means to control expenditure on fuel, as it is one of the most cost intensive components in operations - which can account up to 50% of operating costs.

Ascenz is an end-to-end maritime operational risk intelligence company that provides fuel efficiencies management systems with global coverage and a large customer base. They have fitted more than 350 vessels with their proprietary fuel management systems and established a trustworthy and dependable name for themselves in the industry.

Client. Rayden* is a huge integrated international oil and gas company operating hundreds of chartered vessels under their belt in operations. Despite being an established organisation, most of the company's chartered vessels are fitted with basic and limited systems, with fuel measurement and reporting processes still done manually. The standard process involves categorising activities by type, and reporting the fuel consumption of the day based on established (fixed) benchmark figures tagged to the activities. These benchmark figures are typically established according to the information proxied from sea trials and crew's experience. This non-scientific method makes measurement and management prone to high levels of human error and does not account for external factors affecting fuel efficiency.

Objectives. Rayden's goal is simple: to adopt a system that would help them attain accurate fuel measurement. With hundreds of vessels under their wing, the system needs to be of the highest accuracy possible, with proven and tested results. They want an automated system that can get accurate readings without human intervention to maximise accuracy and efficiency.

THE SEA TRIAL

A controlled sea trial was proposed to be conducted on one selected FCB (Fast Crew Boat) to ascertain the accuracy of the Ascenz's fuel management system. To ensure objectivity of the trial, Rayden and Ascenz agreed to bring in external parties to verify the process. This was necessary in order to manage clients' expectations on how significant deviations could be between actual vs reported fuel consumption.

A methodology was planned out and communicated to the client and ship owner beforehand and all parties agreed that this is the most methodical way to ascertain the most accurate results.

METHODOLOGY

The methodology of the controlled trial is based on the principal of keeping as key factors constant in order to compare the manually collected data against the Ascenz fuel monitoring system data on an equal ground.

To achieve a controlled environment, the following set up was configured:

- 2 day-tanks are taken as the only storage of fuel and isolated from others for both supply and return to prevent 'contamination' in the fuel monitored
- In order to ensure the supplied bunker amount is correct, we confirmed the accuracy of the supply vessel's bunker meter by checking the accuracy of that meter with 3 other measurement methods:
 - o Ascenz Coriolis flow meter
 - o Oil drum volumetric calculation
 - o Vessel sounding comparison

With these 3 independent checks, the accuracy of the supplier's bunker meter is verified to be within 99% accuracy.

- External controls including an approved bunker supplier and third party surveyors are engaged. The surveyors are employed to monitor and check on the set up and processes to ensure no mistakes or mishandling occur before and during the trial

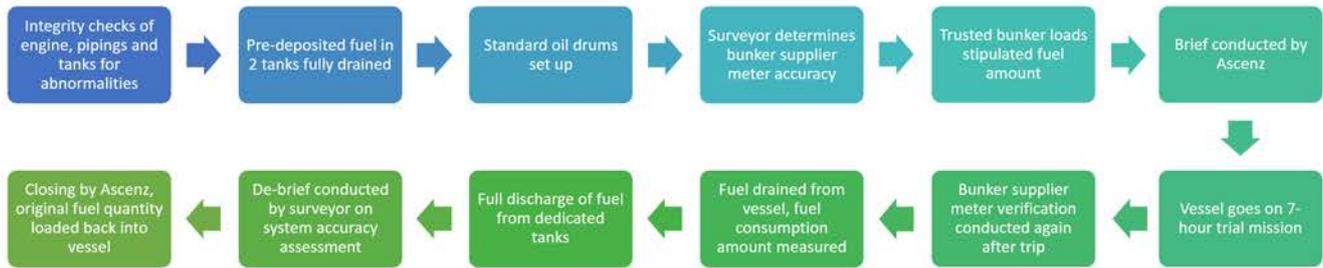
In addition, to ensure objectivity of results and highest attainable system accuracy, the following was set up:

- All potential leakage points on the piping are identified and sealed off
- Piping masters are on guard at the engine room continuously to ensure there are no disturbances, tampering or mishandling during the trial



**Client name has been changed.*

PROCESS



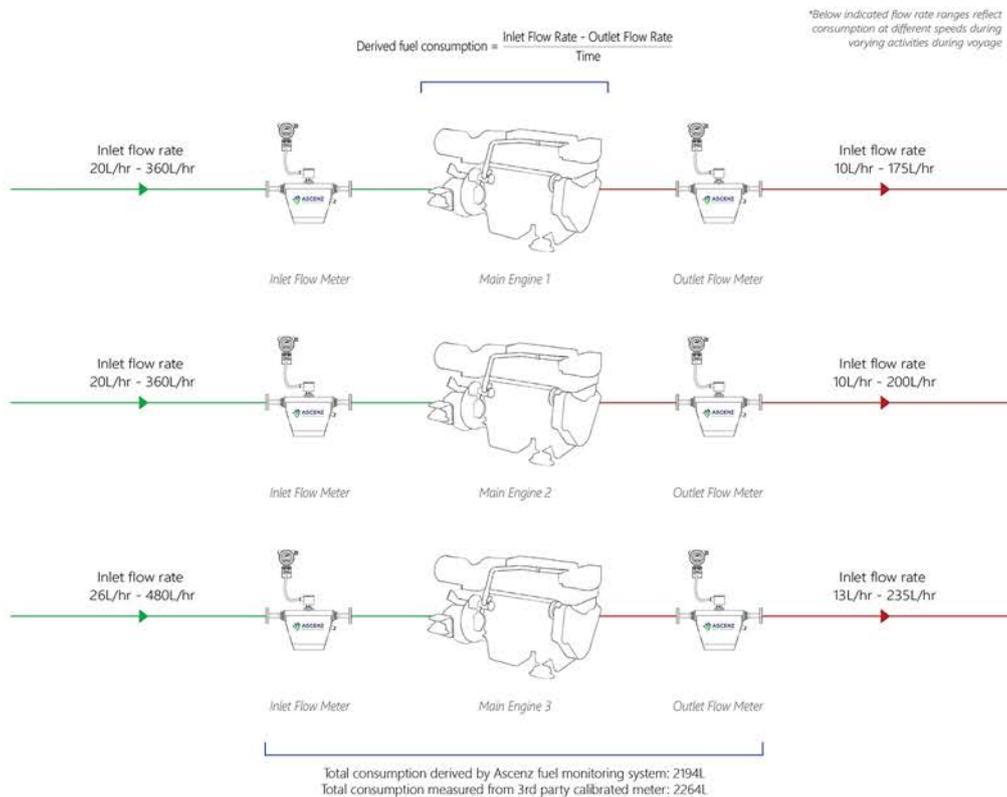
ACCURACY

Component accuracy vs System accuracy. Component accuracy refers to the highest potential accuracy of a specific part or component within a system, whereas system accuracy refers to the totality of accuracy considerations of all components contained within. It is important to differentiate between these two as component accuracy is never the same as system accuracy, and the two are often very different. Other factors affecting system accuracy includes configuration of piping, which may affect the number of meters used (hence increasing potential accuracy), condition of vessel and engine, external conditions and factors.

OUTCOME SUMMARY AND APPLICATIONS

- The calculated system accuracy was 97%
- All parties involved are convinced that the results from the Ascenz fuel management system are accurate and reliable
- To test against the Rayden internal benchmark consumption rate, we measured the consumption rate at a stipulated activity during high load. Rayden's benchmark rate reported 740L per hour, whereas the actual measured rate is 550L per hour based on Ascenz system (to 97% accuracy), producing a significant deviation of -25.7%.

Following the one-day sea trial, the flow meters were left on the vessel to monitor and collect data for the next 18 days. This process is set up to get a better understanding of the average fuel consumption over longer period of time.



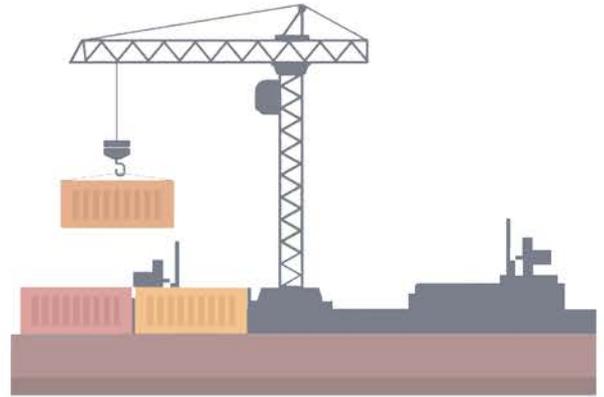
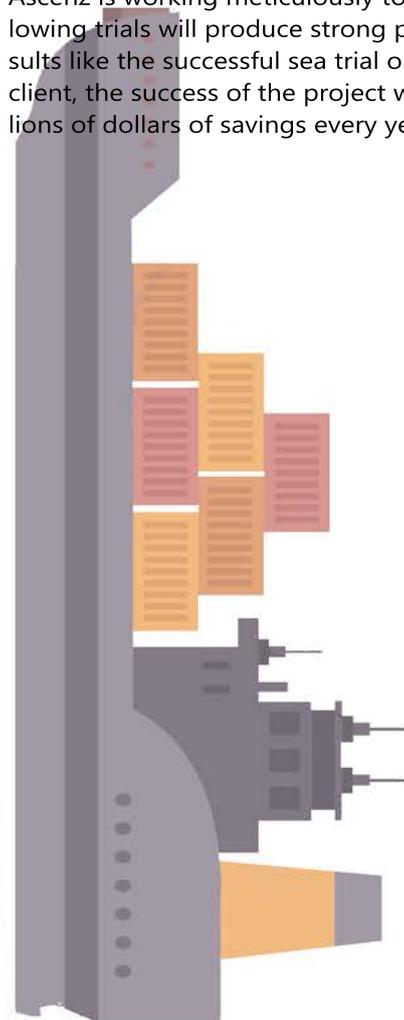
CALCULATED SAVINGS

- An average of -57% amount of fuel consumed compared to conventional manual reporting rate over a period of 18 days
- Average savings of approx. USD2062.50 per day for one FCB
- Results show that client can save about USD61,875 on this one FCB per 30 days*

APPLICATIONS & NEXT STEPS

Looking at the calculated savings, the ROI for our client is less than 2 months. The client decided to conduct the trials on their other types of vessels. Once proven effective, they will consider to fit their entire fleet with Ascenz's fuel management system within the next few years.

With a strong precedent to take reference to, Ascenz is working meticulously to ensure that the following trials will produce strong performance and results like the successful sea trial on the FCB. For the client, the success of the project will translate to millions of dollars of savings every year thereafter.



CONCLUSION

This trial was a fulfilling learning curve for both as we discover new methods and insights in the process together. The Ascenz team gained many learning points from adapting to the different conditions in the trial.

Managing expectations. In the process of this trial project, the Ascenz team realised that setting defined scope of work and mutually agreed upon expectations and parameters is very important and should not be left to 'work out on its own'. Especially in scenarios where there could be more than 2 parties involved, it is important to establish mutual understanding before embarking or rendering any service to carry out the project. Owing to past experiences, corporate cultural differences, parties may have very different understandings of what is 'normal' and 'acceptable', and such misunderstandings should be avoided as much as possible to avoid complications as the work and relationship progresses.

Delivering promises. Being confident about their products and services is merely not enough. It had to be substantiated with quality performance of products and providing satisfactory services from pre-sales to after-sales and beyond. Despite facing difficulties and unexpected challenges, the perseverance and know-how of the Ascenz team came into synergy to create commendable results for all stakeholders.

Flexibility. Ascenz takes pride in customising solutions to clients' unique conditions and requirements. The engineer and project management team works very closely together to make sure that every detail and exception is taken into consideration, before proposing the most suitable configuration for the client. Ascenz recognises that there is no one size fits all solution, and goes the extra mile to make the system most relevant and effective for each individual client and vessel.

The calculated savings is based on data collected from vessel in case. Exact numbers do not serve as a standard guide for potential difference and savings and does not apply to all FCBs or vessels.