ABS WAVESIGHT™

A new vision for maritime software

Making the switch from paper to electronic logs in maritime shipping

New research highlights a growing trend toward the use of electronic logbooks – and why maritime shipping firms are making the shift

A ship's logbook is not just a mandatory safety requirement; it is essential for understanding any sequence of events on a voyage including the operational status and decision-making processes on board vessels at critical times.

To better understand how the maritime industry is faring with log maintenance practices and its journey towards the digitalization of logging systems, ABS Wavesight™ surveyed 144 maritime professionals, including masters, engineers, fleet managers, and technical managers at commercial shipping and shipping management companies, on their current practices and their perspectives on transitioning to electronic logbooks (eLogs).

The survey findings indicate that significant issues remain in using traditional paper logbooks and also a significant shift towards eLogs, driven by the demand for more reliable, timely, and accurate recordkeeping.

The International Maritime Organization (IMO) has facilitated this transition by endorsing the use of electronic record books under MARPOL regulations, effective from October 2020.

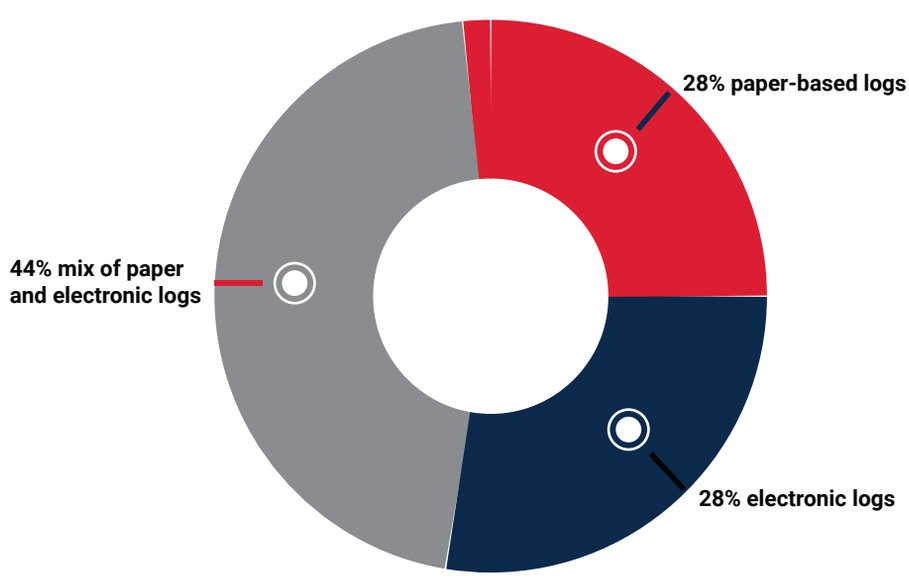
Building on the imperative for digital transformation in the maritime industry, this comprehensive survey details the current state of logbook maintenance, the extent of eLog adoption, and the persistent challenges faced by maritime professionals in keeping vessel logs maintained.

These insights shed light on the needs within the maritime shipping sector and also set the stage for understanding how and why the transition to electronic logs is unfolding.

eLogs are gaining ground

In a significant industry-wide shift, 72% of surveyed maritime professionals report that their organizations have adopted electronic logs in some form. Among these, 28% have transitioned entirely to electronic logs, while 44% utilize a combination of electronic and paper logs, signaling a major move towards digital solutions.

Despite the push towards digitalization, a notable portion of the industry (28%) still relies exclusively on paper logs. This illustrates the continuing challenge and potential resistance within certain segments of the industry that could be linked to traditional practices or technological barriers.



Logbook usage by type - paper vs. electronic

Shipmanagement companies are leading the charge in adoption of electronic logs, with nearly half (48%) having completely transitioned, compared to only 23% of commercial shipowners. These companies are likely to adopt electronic logs at a higher rate for several reasons.

Their larger scale and more complex operations necessitate efficient log management, while stricter regulatory compliance requirements and industry quality systems drive the need for more precise and easily accessible records.

Central oversight is easier to achieve with digital tools that provide real-time data and eLogs improve the ability to preemptively address risks through better data analysis.

eLogs can improve operational efficiency through streamlined processes and reduced manual data entry and may also enhance data protection and accuracy, reducing the risk of errors and data tampering.

As third party service providers, shipmanagers say increasing demands from clients and stakeholders for transparency and quick access to data are more readily met with electronic systems.

eLogs transition - Shipmanagement companies vs Shipping companies

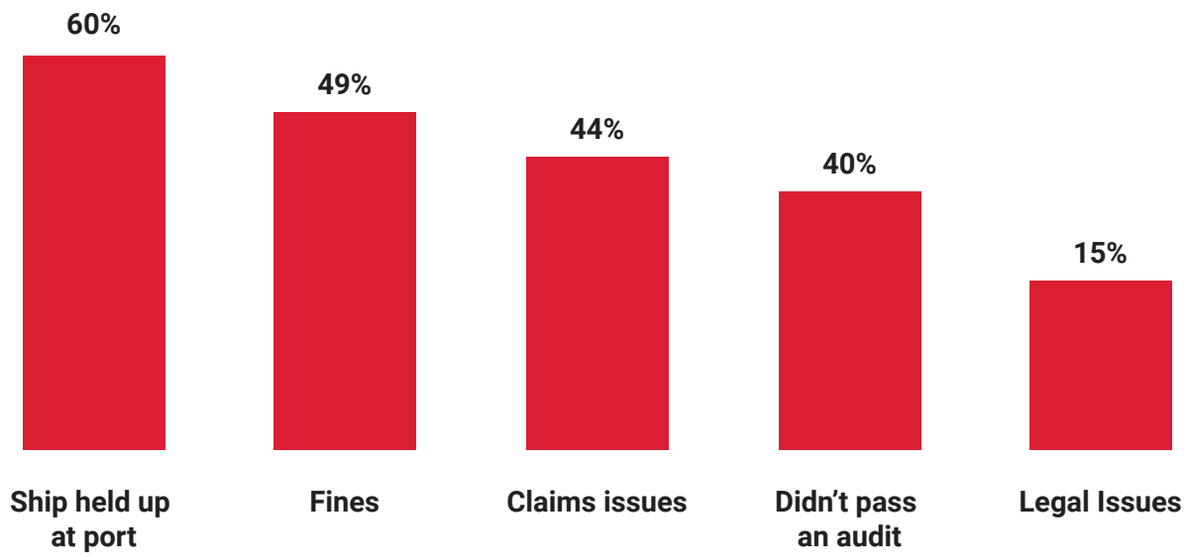
Measuring the impact

The consequences of inadequate log management are substantial and affect a majority of commercial and shipmanagement companies, creating serious operational, financial and even legal repercussions. 60% of companies questioned reported ships being held up at ports due to issues with logbook maintenance, and 49% report being fined.

The risk of port delays is even greater for companies relying solely on paper logs, with 88% saying they faced delays at port. Shipmanagement companies also report a higher incidence of port delays (66%) compared to shipowners (59%).

Frequent fines are another common issue, with almost half (49%) of companies surveyed saying they've been fined due to log maintenance issues. Fines are more prevalent among shipping companies, where 57% have been penalized, compared to just 21% of shipmanagement firms.

Beyond delays and fines, respondents also indicated that their companies have experienced claims issues (43%), audit failures (39%), and legal issues (15%), with a pronounced problem among those receiving logs ashore only monthly. More than half (55%) of companies that receive logs ashore monthly have experienced legal issues compared to only 15% overall.



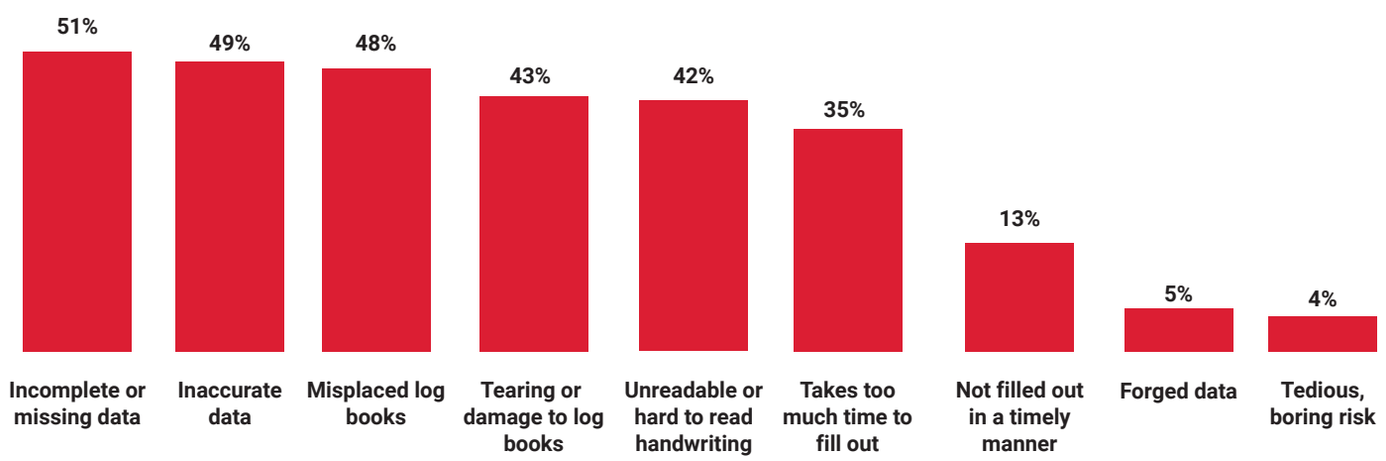
Issues experienced by maritime companies due to poorly maintained logs

Challenges with paper-based logbooks

Paper-based logbooks continue to present significant challenges in the maritime shipping industry, with the greatest impacts on data reliability and operational efficiency.

Incomplete or missing data (51%), inaccurate data (49%), and misplaced logbooks (48%) are the top three challenges reported with paper-based logbooks.

As a result, decision-making, compliance and operational integrity can all be impacted. In the case of lost or misplaced logbooks, maritime companies potentially face serious operational disruptions in addition to compliance and customer issues.



Key challenges with paper-based logs

The impact of these challenges can vary significantly across different roles within maritime operations and by company type. Chief engineers, for example, are particularly concerned by the time required to maintain paper logs, with 62% citing it as a primary concern, substantially higher than the overall average (35%). However, they report inaccurate data as less of an issue (19%) compared to the general feedback (49%).

Technical managers and masters, on the other hand, show heightened concern over misplaced logbooks (54% vs. 48% overall), indicating a role-specific impact on their responsibilities and daily operations.

Shipping companies are more likely to report problems with inaccurate data (52% versus 38%) and misplaced logbooks (50% versus 38%) when compared to shipmanagement companies. Shipmanagers, however, more often identify incomplete or missing data as a top challenge (62% versus 49%), suggesting different operational pressures or administrative practices between the two types of companies.

62% of chief engineers say paper-based logs take too much time to fill out

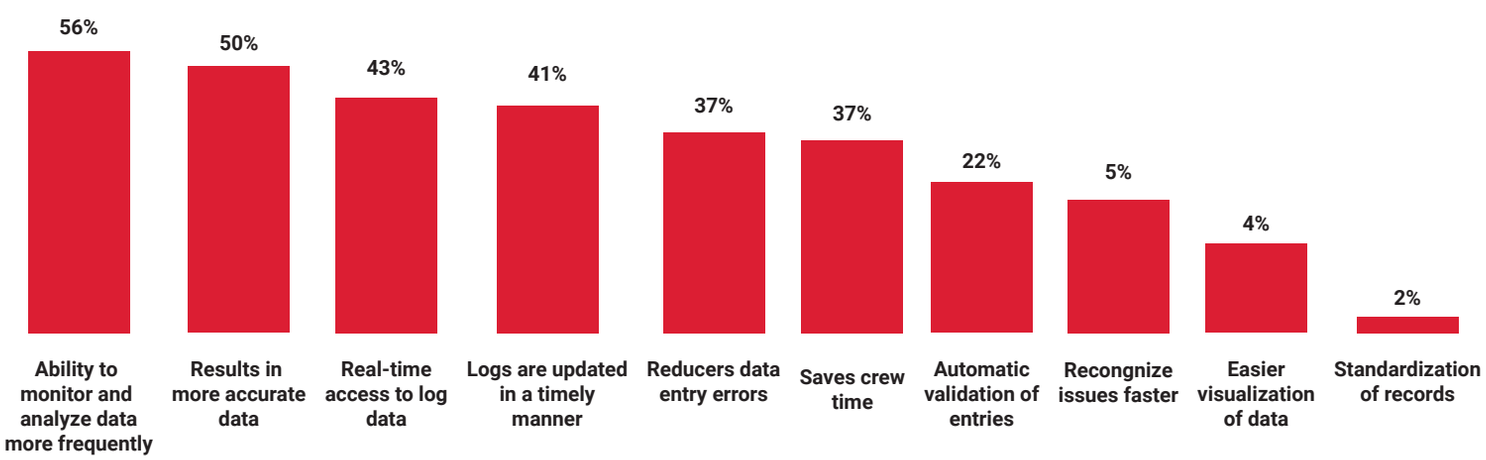
54% of technical managers and captains are concerned with misplaced logbooks

Key drivers of the transition to electronic logs

With the problems of using paper based systems showing no signs of being resolved, the maritime industry is increasingly turning to eLogs, driven by the need for more reliable, timely, and accurate recordkeeping. This shift is supported by several core benefits that directly impact operational capacities and strategic management.

56% of respondents note that eLogs facilitate more frequent monitoring and analysis of data, and 50% say they improve data accuracy.

eLogs were also shown to facilitate more efficient log sharing with shore. While 24% of respondents said their companies received paper logs daily, 43% weekly, and 28% monthly, those using eLogs were more likely to send them daily (33% vs. 13% with paper logs). Another interesting finding was that commercial shipping firms often share logs weekly (48%), whereas shipping management firms typically do so monthly (34%).



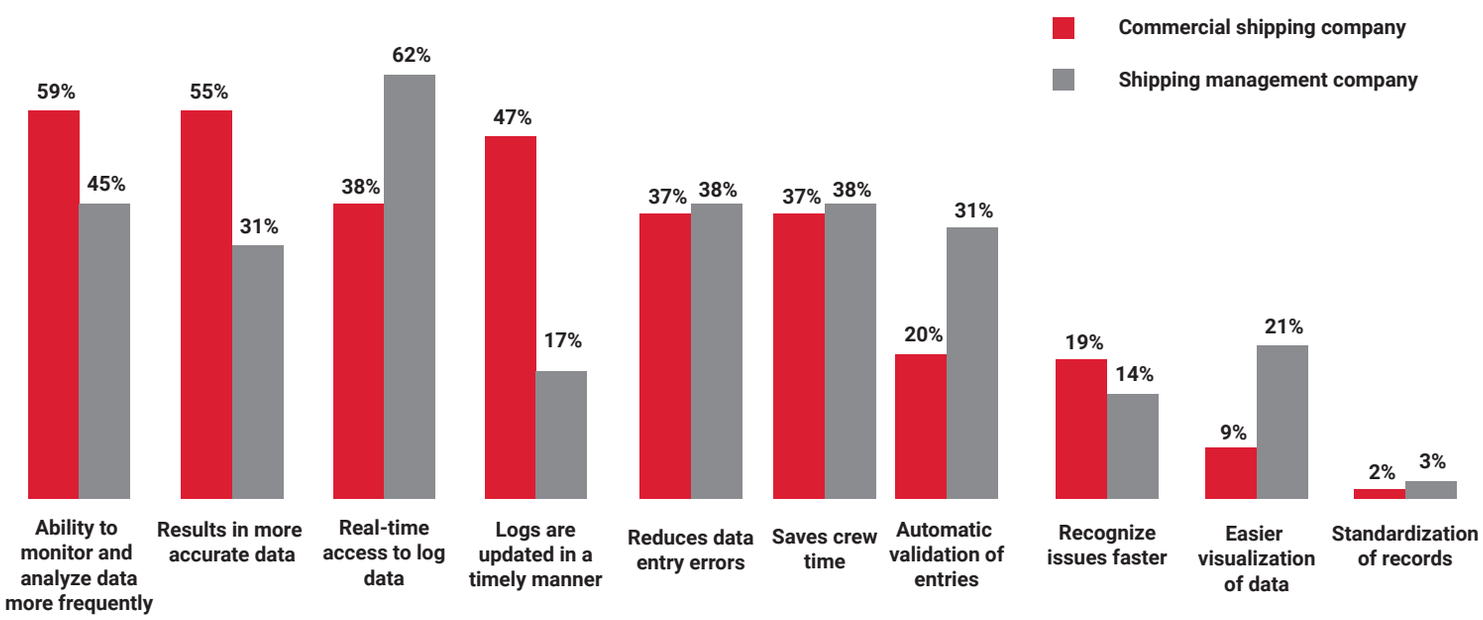
Benefits of switching to eLogs

Technical managers and chief engineers (62%) are most likely to report that the ability to monitor and analyze data more frequently is the top benefit of eLogs.

Different roles within companies will impact how the various advantages of eLogs are felt. For instance, technical and fleet managers in the survey prioritized features like automatic validation of entries and easier visualization of data. Masters and engineers, however, tended to see time savings for the crew as a bigger benefit.

Shipping company respondents report that the ability to monitor and analyze data more frequently is the primary perceived benefit of eLogs.

There is a notable difference in how benefits are valued between shipping companies and shipmanagement firms. Shipmanagers particularly value real-time data access (62% vs. 48% for commercial shipowners). Commercial shipping companies, however, place a higher importance on the ability to frequently monitor and analyze data (59% vs. 45% for shipmanagement firms).



Benefits of electronic logbooks for shipping and shipmanagement firms

Impact on shipping operations

The transition to eLogs significantly enhances various aspects of maritime operations. The ability to make faster and more reliable log entries can streamline daily operations, while access to real-time, accurate data allows for better strategic and on-the-spot decision-making.

eLogs ensure more rigorous adherence to regulatory requirements, enhance transparency with regulatory bodies and industry quality systems and reduce manual entry and simpler error correction lowers operational costs.

Immediate data insights help in proactively managing potential risks while advanced data handling capabilities provide a strategic advantage in a competitive market.

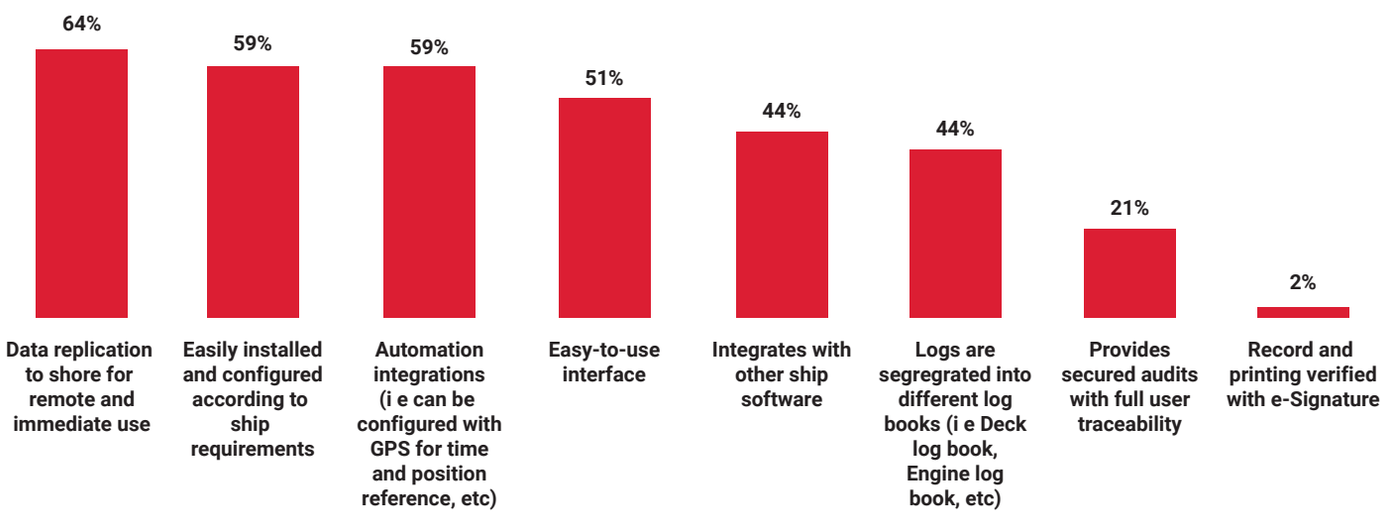
As the maritime industry continues to shift towards eLogs, user preferences for specific system capabilities demonstrate the operational needs and strategic goals of different operators.

The most important capability for an eLog system is data replication. A significant majority (64%) of those who have already transitioned or are considering eLogs prioritize data replication to shore for remote and immediate use. This feature is deemed crucial by 76% of shipmanagement companies, compared to 61% of shipping companies, indicating a greater need for real-time data access in shipmanagement operations.

Among those currently using paper logs, the demand for data replication is even higher, with 83% recognizing its importance compared to the overall average of 64%, highlighting a desire for significant operational improvements among those still using paper logs.

Next, installation simplicity and adaptability to specific ship requirements is a key factor for 59% of respondents. Shipping companies show a slightly higher preference for easy installation and configuration (63%), as opposed to 45% of shipmanagement companies.

Finally, automation integrations are also highly valued, with 59% of respondents noting the importance of this capability, which facilitates a smoother operational transition and enhances overall system efficiency.

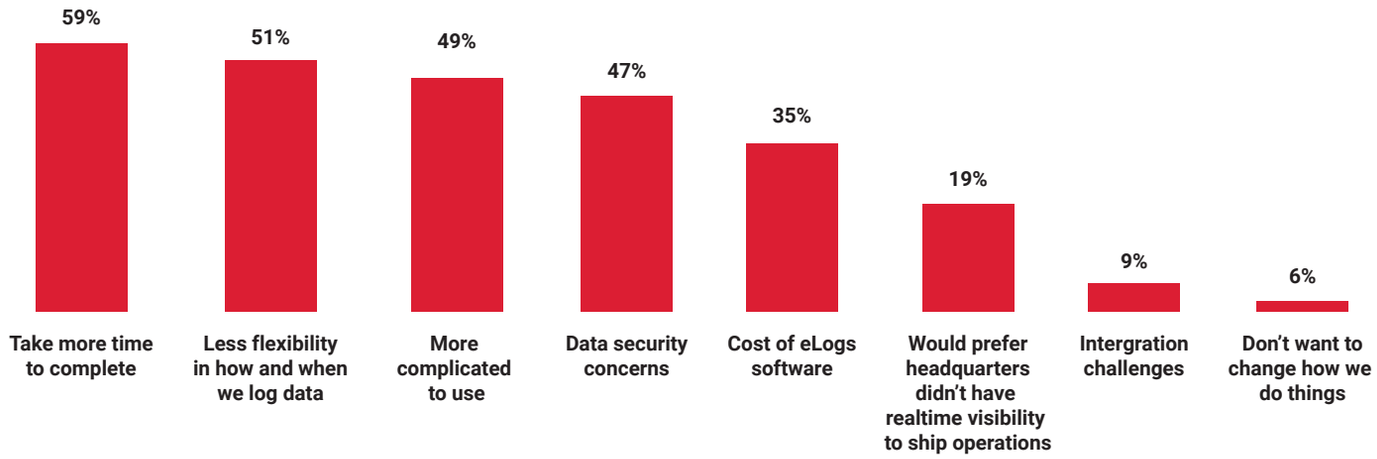


Most important capabilities for electronic log systems

What's holding companies back?

Despite the clear advantages of eLogs, various barriers continue to impede widespread adoption within the maritime industry.

The most common concern, cited by 59% of respondents, is the perception that eLogs require more time to complete than paper logs. Over half of the respondents (51%) believe that eLogs offer less flexibility in terms of how and when entries can be made and close to half (49%) view eLogs as more complex to use than traditional methods.



Why companies are holding back on implementing electronic logs

Selecting a System

When planning to implement eLogs, finding a system with the following capabilities will help ensure your company reaps the benefits accordingly:

• **Simplified user experience:** Choose software with an intuitive interface to help reduce the perceived complexity and time consumption many maritime professionals associate with eLogs.

• **Robust data security:** Ensure the electronic log software adheres to internationally recognized security standards, such as the ISO 27001 Cybersecurity standard. Also, look for features like tamper-proof logs, data encryption, and comprehensive access management, which are integral to addressing security concerns effectively.

• **Enhanced flexibility:** Software that supports remote data logging and access across multiple browser platforms can make electronic logs feel more flexible and less restrictive.

• **Real-time data access:** Features that support data replication to shore for immediate use can be beneficial, providing essential real-time data that enhances decision-making and compliance.

• **Regulatory compliance:** Partnering with a provider that stays ahead of regulatory changes ensures that eLogs remain compliant. This proactive approach can help your company navigate complex regulations with confidence and ease.

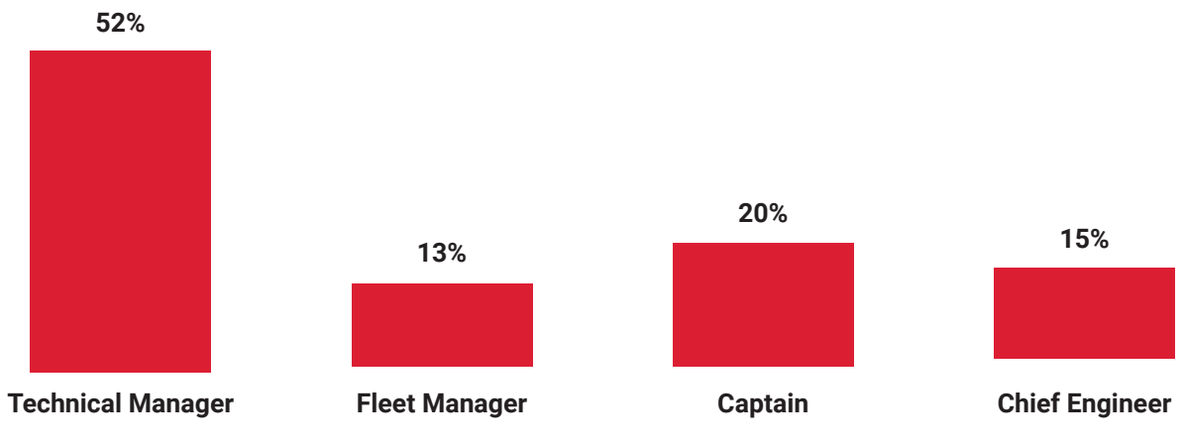
Moving Forward

The transition from traditional paper logs to eLogs is driven by the need for more accurate, reliable, and timely recordkeeping. eLogs can be a fundamental component that not only enhances operational efficiency but also plays a critical role in enabling compliance with maritime regulations and quality systems.

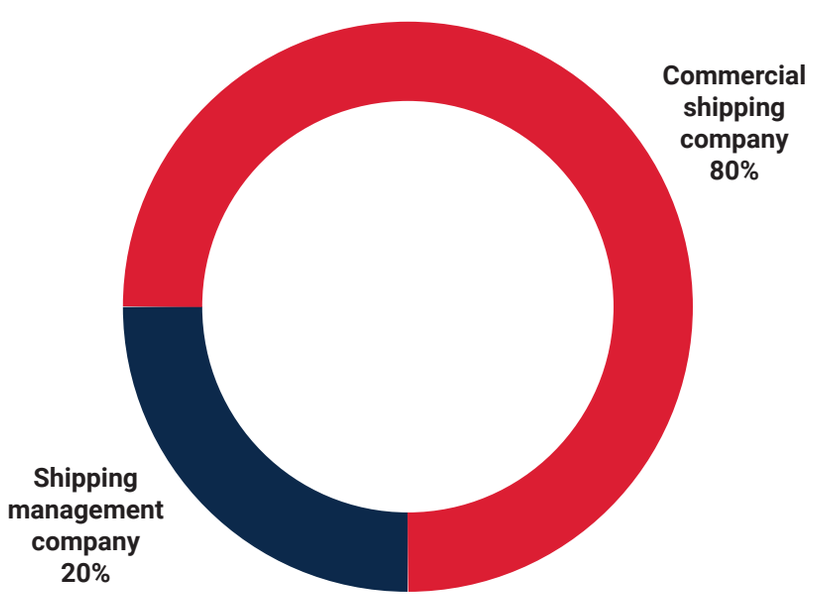
eLogs can offer substantial improvements over paper logs, including enhanced data integrity, easier access to real-time information, and more effective risk management. These systems allow for quicker decision-making processes and provide a competitive edge by improving the overall responsiveness of shipping operations.

As digitalization of the shipping industry continues, the adoption of eLogs is set to become standard practice, mandated by both the pressures of compliance and the necessities of modern maritime shipping operations. Companies that proactively embrace this change can not only stay ahead in terms

of compliance but can also enjoy enhanced operational efficiencies, improved safety standards, and a competitive advantage.



Role of respondents



Company Type

About ABS Wavesight

ABS Wavesight is the ABS Affiliated maritime software as a service (SaaS) company dedicated to helping shipowners and operators streamline compliance while maintaining competitive, more efficient, and sustainable operations. Our mission is to develop world-class software products that improve vessel performance for the health of our seas and environment. Backed by ABS's 162-year legacy of maritime innovation and experience, our products are collectively installed on more than 5,000 vessels across the global fleet. Learn more about ABS Wavesight by visiting: **www.abswavesight.com**