BSAFE

INCIDENT CASE STUDY

No.22 | FEBRUARY 2024

DRAGGING ANCHOR LEADING TO MULTIPLE COLLISIONS

A DRAGGING ANCHOR INCIDENT CAUSED A GENERAL CARGO SHIP TO COLLIDE WITH TWO NEARBY SHIPS, RESULTING IN STRUCTURAL DAMAGE TO ALL THREE SHIPS. FORTUNATELY, NO POLLUTION OR LOSS OF LIFE WAS REPORTED.

FIGURE 1 GENERAL CARGO SHIP A
SOURCE IHS MARITIME, S&P GLOBAL

FIGURE 2 RESEARCH SURVEY SHIP B
SOURCE IHS MARITIME, S&P GLOBAL

WHAT HAPPENED

A 2,840 gt general cargo ship (ship A) embarked on a journey from Groveport, England, to the Holme Hook anchorage on the River Humber for bunkering. The ship was under pilotage and in ballast condition. The ship had recently lost its port anchor due to heavy weather, and a replacement anchor was yet to be fitted. Therefore, the ship's classification society had issued a Condition of Class (CoC) requiring it to keep its main engine on standby while at anchor.

While the ship was navigating upriver to the anchorage area, the weather conditions were deteriorating. Around the same time, a ship from the same company (ship C) experienced anchor dragging at Hawke Anchorage and only managed to hold its position by dropping an additional shackle of cable into the water. The attending pilot advised the master on ship C to also keep the ship's engine on standby.

Meanwhile, ship A arrived at the Holme Hook anchorage initiating its anchoring procedures. However, due to adverse weather, the planned bunkering operation was aborted, and the master was advised by the local Vessel Traffic Services (VTS) to anchor at the Hawke anchorage. Before leaving Holme Hook anchorage, the master of ship A noticed his ship had also dragged anchor.

Ship A then proceeded to the Hawke anchorage and anchored at around 23:00. Prior to disembarking, the pilot advised the master to remain vigilant, and to keep the ship's engine on standby. However, soon after the pilot disembarked, the master ordered to stop the engine and handed over the bridge anchor watch to the second officer without any specific instructions to be alert of the weather situation.

Upon assuming the watch, the second officer went on to complete administrative tasks. At this point, a research and survey ship (ship B) was anchored three cables to the northwest of ship A.

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WHAT HAPPENED (CONTINUED)

At 02:46, ship A started dragging anchor however, the second officer failed to recognise this until nine minutes later. The second officer notified ship A's master immediately and the duty engineer was called to start the main engine. The duty able seaman was then directed forward to inspect the anchor cable.

The chief officer took over watch from the second officer at 03:00 and the second officer went down to hasten the engineer. Ship B cautioned ship A on Very High Frequency radio that it was dragging anchor directly towards ship B. Ship A acknowledged the call and informed ship B that they were preparing to start their engine. Thereafter, the bridge watchkeeper on ship B also instructed their duty engineer to start the main engine and informed the master of the situation. Humber VTS also transmitted a warning to both ships and enquired on their current engine readiness situation.

Despite ship A's attempts to start the main engine and utilising its bow thruster for avoidance, the collision occurred at 03:12, with ship A's stern colliding with ship B's bow.

Following the collision, ship A managed to start its main engine. However, the vessels remained entangled due to ship B's anchor chain and attempts to disentangle were complicated by wind and tidal forces, causing the entangled vessels to drift towards Ship C, anchored nearby.

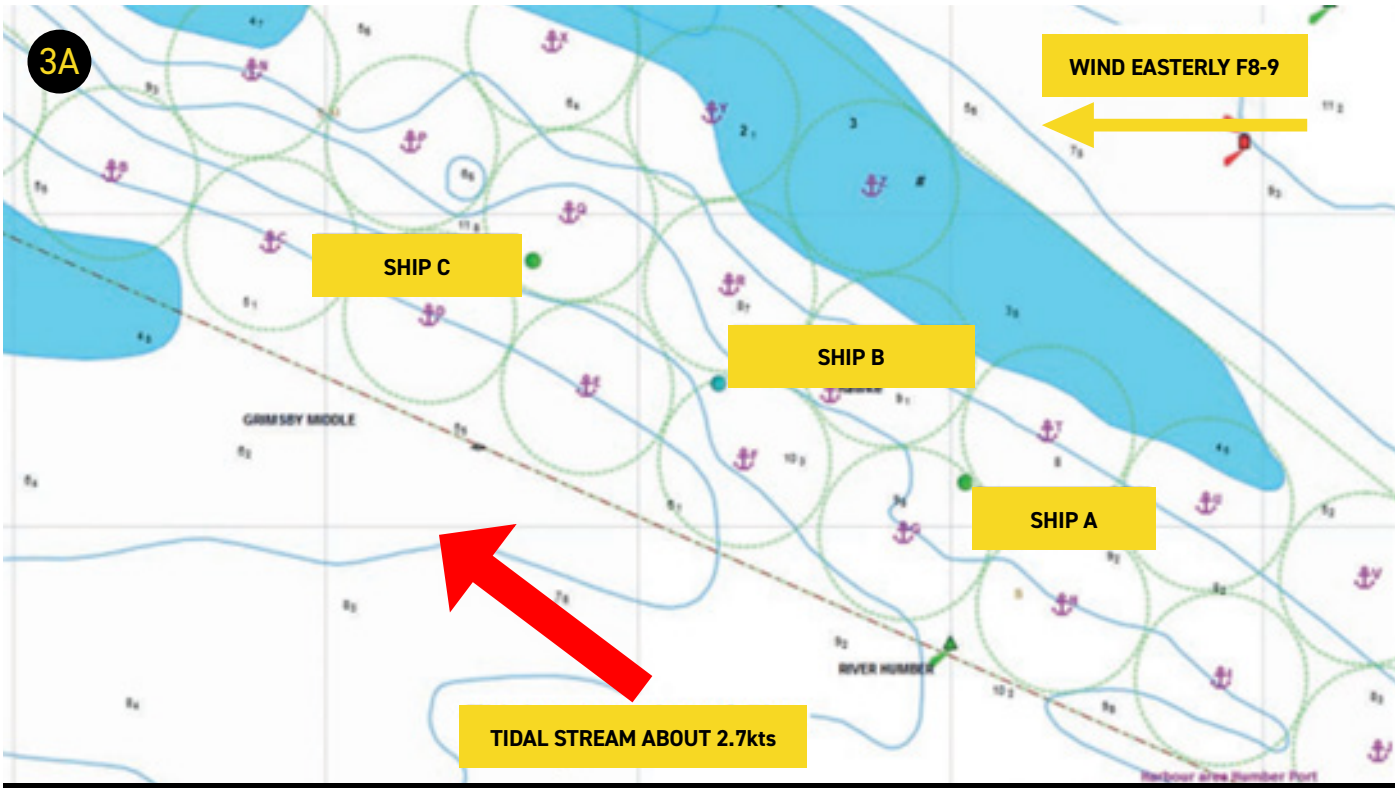

FIGURE 3A SHIP A STARTS DRAGGING ITS ANCHOR
SOURCE MAIB REPORT 18/2018

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WHAT HAPPENED (CONTINUED)

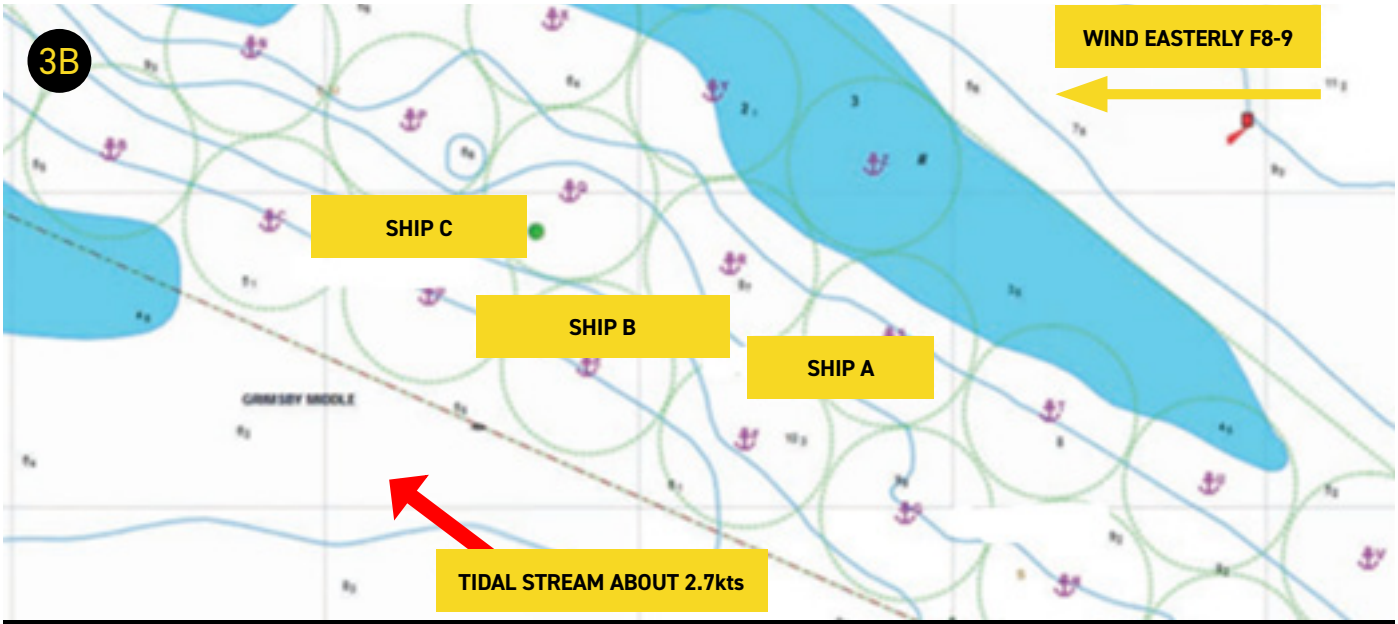

FIGURE 3B SHIP A COLLIDES WITH SHIP B DRAGGING ITS ANCHOR
SOURCE MAIB REPORT 18/2018

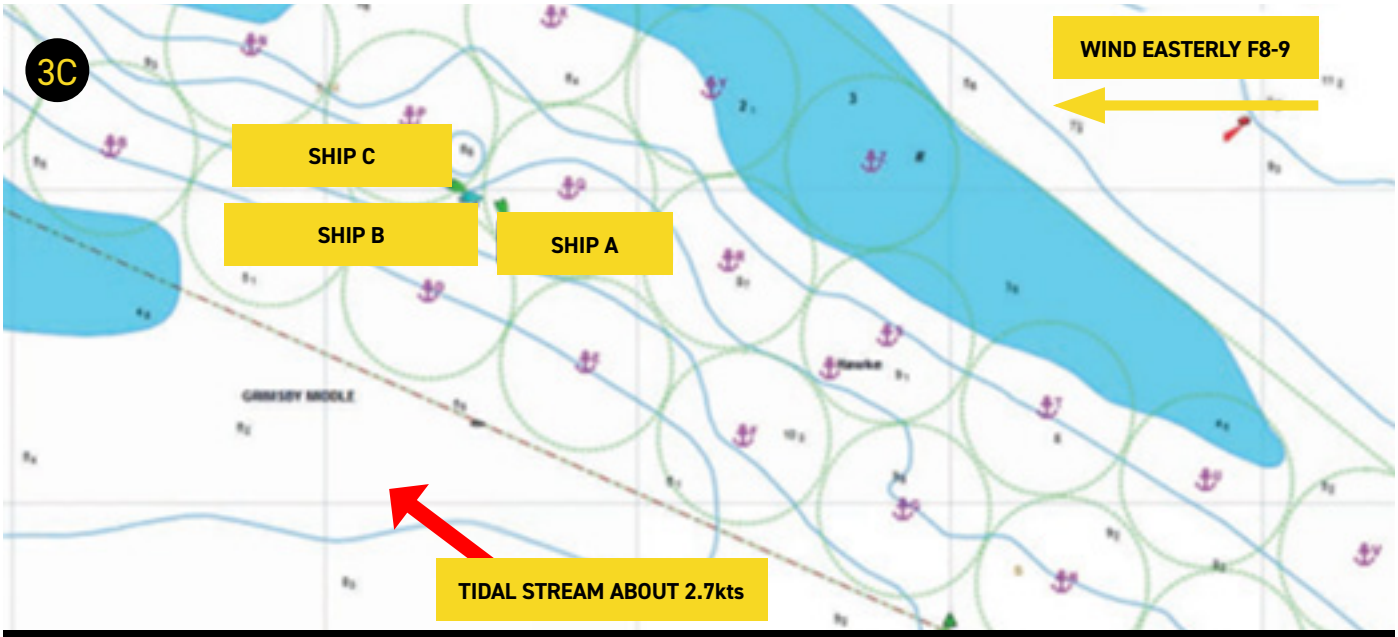

FIGURE 3C SHIP A, SHIP B AND SHIP C DRIFTING AFTER SHIP A'S COLLISION WITH SHIP C
SOURCE MAIB REPORT 18/2018

Ship C was advised by the VTS to weigh its anchor as soon as it became apparent the two ships were unable to arrest their ship's drift. The master of ship C immediately engaged astern propulsion but shortly afterwards, at 03:20, ship A's port quarter collided with ship C's bow.

BRITANNIA COMMENTARY ON INCIDENT ON NEXT PAGE

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BRITANNIA COMMENTARY ON INCIDENT

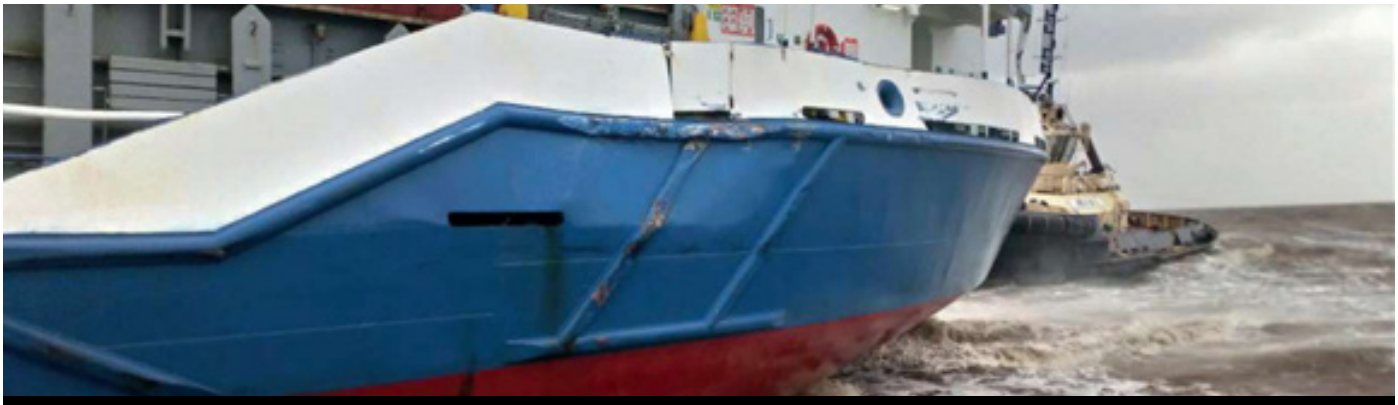

FIGURE 4 SHIP A'S DAMAGE FOLLOWING THE COLLISION
SOURCE MAIB REPORT 18/2018

THE FOLLOWING COMMENTARY IS PART OF THE CASE STUDY MATERIAL AND HAS BEEN PREPARED TO CONSIDER SOME OF THE KEY ISSUES. THIS WILL SUPPORT REFLECTIVE LEARNING AND ENABLE DISCUSSION OF SOME OF THE CONTRIBUTORY FACTORS AND LESSONS LEARNED WITH PARTICULAR REFERENCE TO BEST PRACTICES.

THE INVESTIGATION AND SUBSEQUENT CASE STUDY IDENTIFIED SEVERAL CONTRIBUTING FACTORS AND LESSONS LEARNED.

WATCHKEEPING

The handover of the bridge anchor watch failed to provide crucial information, including the position monitoring frequency, and the need to monitor changes in wind and tidal stream strength. Given the prevailing circumstances, watchkeeping responsibilities required immediate attention and focus, prioritising vigilant monitoring of the position due to potential risks. Administrative tasks should be delegated or postponed.

To improve future incident prevention, consider adopting a more frequent and vigilant monitoring interval for anchor positions, along with utilising Global Positioning System (GPS) anchor alarm aids. Implementing a shorter and tighter monitoring schedule could aid in early detection.

PROPER ANCHORING PROCEDURE

In the event of a dragging anchor, established procedures should include immediate reporting to the master, contacting the engine room / duty engineer to prepare the main engine and any other required machinery, and readying the windlass with the designated anchor party.

It is also important to ensure the bridge is sufficiently manned as required (helmsman and lookout). Furthermore, when applicable, deploying additional cables, notifying other vessels in the anchorage, as well as informing the port authority becomes crucial. This ensures adequate reaction time not only for the ship experiencing dragging anchor but also for ships in the vicinity, as the situation may escalate quickly.

These steps should form the backbone of established procedures, with the readiness level of both the main engine and the anchor party predetermined by the master. This decision should be based on factors such as the likelihood of dragging and nearby navigational hazards. The Safety Management System (SMS) should support the master by providing clear guidance on readiness levels and the allocation of crew resources.

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BRITANNIA COMMENTARY ON INCIDENT (CONTINUED)

EFFECTIVE COMMUNICATION

It was also observed ship A did not promptly alert other ships in the vicinity or VTS about its situation. Effective communication plays a pivotal role in maritime safety. In the event of engine readiness challenges on ship A, timely communication could enable nearby ships to take precautionary measures. Ensuring a strong communication protocol is in place allows for the distribution of crucial information, reducing contact or allision risks and fostering a safer maritime environment.

COMPANY PROCEDURES AND MAIN ENGINE READINESS

Ship A's master directly contradicted the CoC issued by halting the engine shortly after the pilot disembarked, despite the requirement for the main engine to remain on standby while the ship was at anchor. This decision may have been influenced by an inconsistency in the fleet's approach to engine readiness, as it was not defined in the ship's SMS, leaving it open to interpretation. Although it is commonly accepted that this encompasses the main engine being immediately ready for manoeuvre, the lack of explicit guidance in the SMS allowed for varied interpretations.

In cases where a CoC or other temporary operational restrictions are imposed on a ship, it is important to update the onboard SMS to reflect such restrictions and provide clear guidance to the master. Once the restrictions are lifted, the SMS should be returned to its original form, as applicable.

Both ship A and C were promptly informed about the forecasted weather conditions, predicted tidal stream, and the congestion at the anchorage. However, a distinct discrepancy in their approach to engine readiness raises concerns and highlights a potential gap in company guidance. This lack of uniformity raises questions about the effectiveness of the company's guidance and underscores the need for a more standardised and comprehensive approach to engine operations under similar circumstances.

TRAINING

From a training perspective, the difference in risk assessments and mitigation is an area requiring attention. Given the congested anchorage and the proximity of other ships, it is crucial to provide thorough training emphasising vigilant position monitoring for watchkeepers and ensuring immediate engine readiness. Once again, the masters of the same fleet (ship A and C) choosing different levels of engine readiness indicates a necessity for more explicit standardised protocols and risk management approaches, particularly in situations where such conditions were anticipated. This evaluation may contribute to improved training programs, fostering a more robust emergency preparedness culture within the fleet.

Overall, the incident involved adverse environmental conditions, lack of communication and deficiencies in hand-over/ watchkeeping procedures which led to damages and a complex recovery operation, including the intervention of a tug. The sequence of events highlights the challenges posed by adverse weather, and the importance of vigilant monitoring, effective communication, an effective anchor plan and coordinated responses to avoid such incidents.

Britannia has issued a publication on Dragging Anchor Prevention and further guidance on anchoring can be found on Britannia's website.

CONTACT

For more information on this incident email lossprevention@tindallriley.com

THIS CASE STUDY IS DRAWN FROM THE INVESTIGATION REPORT PUBLISHED BY UK MARINE ACCIDENT INVESTIGATION BRANCH (MAIB).
https://assets.publishing.service.gov.uk/media/5bd8374540f0b6051e77b6c0/2018_-_18_-_Celtic_Spirit.pdf

REFLECTIVE LEARNING MATERIAL ON NEXT PAGE

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REFLECTIVE LEARNING MATERIAL - DRAGGING ANCHOR

THE QUESTIONS BELOW WILL HELP YOU TO REVIEW THE INCIDENT CASE STUDY EITHER INDIVIDUALLY OR IN SMALL GROUPS. IF POSSIBLE, DISCUSS YOUR CONCLUSIONS WITH OTHERS, AS THIS IS AN EFFECTIVE WAY OF THINKING ABOUT THE ISSUES IN MORE DEPTH.

PLEASE USE THE INFORMATION PROVIDED IN THE CASE STUDY TOGETHER WITH YOUR OWN EXPERIENCES AND THOUGHTS, TO REFLECT ON THE INCIDENT AND HOW THE ISSUES IDENTIFIED MIGHT RELATE TO YOUR OWN SITUATION.

WHAT DO YOU BELIEVE WAS THE IMMEDIATE CAUSE OF THE INCIDENT?

WHAT OTHER FACTORS DO YOU THINK CONTRIBUTED TO THE INCIDENT?

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WHAT DO YOU BELIEVE WERE THE BARRIERS THAT SHOULD HAVE PREVENTED THIS INCIDENT FROM OCCURRING?

WHY DO YOU THINK THESE BARRIERS MIGHT NOT HAVE BEEN EFFECTIVE ON THIS OCCASION?

WHAT ACTIONS SHOULD THE MASTER HAVE TAKEN UPON NOTICING HIS SHIP WAS ALREADY DRAGGING ANCHOR AT THE PREVIOUS ANCHORAGE (HOLME HOOK)?

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WHAT WOULD BE THE APPROPRIATE INTERVAL OF POSITION FIXING WHEN YOU ARE ANCHORED IN CLOSE PROXIMITY TO OTHER SHIPS?

WHAT POSSIBLE REASON(S) MIGHT HAVE LED SHIP A'S MASTER TO ORDER THE MAIN ENGINE TO BE STOPPED, DESPITE THE PILOT'S ADVICE TO KEEP IT ON STANDBY?

WHO SHOULD SHIP A HAVE NOTIFIED/ALERTED IMMEDIATELY UPON NOTICING IT WAS DRAGGING ANCHOR?

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