August 15, 2025 MIR-25-33

# Collision of Multi-Purpose Carrier *BBC Africa* with Bulk Carrier *Common Faith*

On August 25, 2023, about 1012 local time, the multi-purpose carrier *BBC Africa* lost primary steering as it was departing the Manchester Terminal on the Houston Ship Channel in Houston, Texas, and struck the moored bulk carrier *Common Faith* (see figure 1 and figure 2).[1] There were no injuries, and no pollution was reported. Damage to the vessels was estimated at $1.1 million.[2]


**Figure 1.** Multi-purpose carrier *BBC Africa* at Manchester Terminal, Houston, Texas, after the collision.

[1] In this report, all times are central daylight time, and all miles are statute miles.

[2] Visit ntsb.gov to find additional information in the public docket for this NTSB investigation (case no. DCA23FM048). Use the CAROL Query to search investigations.

## Casualty Summary

| | |
|---|---|
| **Casualty type** | Collision |
| **Location** | Buffalo Bayou, Houston Ship Channel, Houston, Texas<br>29°43.26′ N, 95°14.37′ W |
| **Date** | August 25, 2023 |
| **Time** | 1012 central daylight time<br>(coordinated universal time –6 hrs) |
| **Persons on board** | 15 (*BBC Africa*), 23 (*Common Faith*) |
| **Injuries** | None |
| **Property damage** | $1,175,000 est. |
| **Environmental damage** | None |
| **Weather** | Visibility 10 mi, clear, winds southeast 13 kts, air temperature 99°F, water temperature 93°F |
| **Waterway information** | Channel, width 250 ft, depth 35 ft, slack tide, |


**Figure 2.** Area where the *BBC Africa* collided with the *Common Faith*, as indicated by a circled *X*. (Background source: Google Maps)

# 1 Factual Information

## 1.1 Background

The *BBC Africa*, a 390-foot-long, Antigua and Barbuda-flag multi-purpose vessel, was built in 2005 by Tianjin Xingang Shipbuilding Heavy Industry in Tianjin Binhai, China. The vessel was owned by Winter MPP GmbH Co. (Winter) and classified by Det Norske Veritas (DNV). The *BBC Africa* had two cargo holds, a single (Becker type) rudder, and a left-hand-turning, four-blade, controllable-pitch propeller (CCP) directly driven by a Maschinenbau Kiel GmbH (MAK) slow-speed diesel main engine rated at 8,448 hp.[3]

The *BBC Africa* was equipped with a simplified-voyage data recorder (S-VDR) manufactured by Danelec marine.[4] However, on August 17, 2023, the master reported that the S-VDR was not recording—the operating company requested manufacturer support service and received temporary permission from the Flag authority to proceed with the voyage while they arranged for service. The system was inoperative at the time of the casualty and did not record audio files, parametric data, or the sequence of events. Technicians replaced the S-VDR capsule on September 1, 2023.

The 623-foot-long, Greece-flag bulk carrier *Common Faith* was built in 2012 by COSCO Shipyard Group Co, Ltd in Shanghai, China. The vessel was owned by Poseidon Navigation SA and operated by Common Progress Compania Naviera S.A.

## 1.2 Event Sequence

### 1.2.1 Predeparture

On August 24, 2023, at 0045, *BBC Africa* arrived at the Manchester Terminal, berth E, in Houston, Texas, with 13 crew onboard, from Veracruz, Mexico. The vessel was moored port side to the pier and began to offload cargo. A bunker barge arrived alongside at 2215 and began bunkering operations.

[3] In a *controllable-pitch propeller*, the blades are not fixed in position but are fastened to the hub in a way that allows them to rotate and thereby change pitch. The blade pitch determines both the vessel's speed and its direction (forward or astern) through the water.

[4] An *S-VDR* records fewer parameters (compared to a VDR). S-VDR systems record bridge audio and basic parametric data but are not required to record more extensive parameters such as engine, steering, or alarm data.

On August 25, about 0130, the *BBC Africa* completed discharging cargo. At 0630, bunkering was complete. Shortly thereafter, the chief officer recorded the vessel's forward and aft drafts and finalized departure stability calculations.

Meanwhile, the second officer completed the predeparture checklist items for bridge operations, including testing the steering gear, which he accomplished by starting the two steering gear pumps and performing full movement of the rudder from the bridge's main control station and the port bridge wing control tiller. According to the second officer and second engineer, all functional tests were performed from the port bridge wing and main control station without an alarm or reported issue and recorded as complete at 0910. Both steering gear pumps remained on for maneuvering.

At 0930, a Houston pilot and an apprentice boarded the vessel and met the master, chief officer, and second officer on the bridge (the helmsman was also on the bridge). The pilot later told investigators that, during the master/pilot information exchange, he asked the master about any deficiencies, and the captain assured him everything was "in good working order."

The harbor tug *Leighton K* was positioned on the starboard quarter of the *BBC Africa*. Meanwhile, in the engine room, the second engineer and motorman completed the preparation for sea checklist. No issues were observed or reported.

At 0946, the chief engineer started the main propulsion engine from the engine control room, while the second engineer and motorman were in the lower level of the engine room performing visual and audible examinations of the main and auxiliary systems and machinery, monitoring local pressures and temperatures of the main propulsion systems. They did not report any issues to the chief engineer.

At 0950, the chief engineer (in the engine control room) transferred the main engine propulsion (pitch control) to the bridge's main control station (see figure 3). About 1 minute later, the master transferred maneuvering control (bow thruster, main propulsion pitch control, and steering) to the port bridge wing, where the master and pilot were stationed. The master used the port bridge wing non-follow up (NFU) steering tiller to swing and test the rudder (5-10° port and starboard) again, verifying control/response with the corresponding rudder indicator display on the panel (for more information on the steering controls, see section 1.3.2, Steering Gear System and Controls).[5]

[5] A non-follow up (NFU) tiller is used for immediate rudder control, where the rudder only moves when the tiller is engaged and stops when the input is released. A follow-up (FU) system is used for precise and continuous rudder positioning where the system ensures the vessel's rudder is held at an exact input position until a new input is provided. Typically, vessels are operated in follow-up mode.

### 1.2.2 Departure

At 0958, the unmooring operation began, and, five minutes later, the vessel was underway. The pilot increased the vessel's speed from dead slow ahead to slow ahead. The vessel transited outbound on the Sims Bayou at 1.9 knots with the *Leighton K* trailing on the vessel's starboard quarter. About five minutes later, the pilot ordered half ahead and provided rudder commands to center the vessel in the channel.

At 1010:20, the *BBC Africa* entered Buffalo Bayou at a speed of 2.9 knots and a heading of 47°. The pilot contacted the *Leighton K* by VHF radio to release the harbor tug's assistance. Shortly thereafter, the master and pilot ordered for maneuvering control (bow thruster, main propulsion engine control, and steering) to be transferred from the port bridge wing back to the main control station on the bridge, with the center helm in follow-up (FU) mode and the helmsman responding to pilot commands. To do so, the chief officer, on the bridge, matched the main propulsion throttle position to the bridge wing position (half ahead) and then pressed the in-command (FU) button at the centerline console. The chief officer noted that the button lit up, indicating that the main control station had control of the propulsion and steering.

At 1011:17, the vessel had a speed of 5.1 knots and a heading of 53°, and the pilot ordered 10° rudder to starboard. The helmsman turned the helm control to starboard 10, confirmed the rudder indicator was at "starboard 10," and verbally responded to the pilot. At 1011:24, the automatic identification system (AIS) data indicated that the vessel started to turn to starboard, with a rate of turn (ROT) of 12.7°/min. However, after a few seconds, the pilot noticed that the ship's rate of turn was not moving to starboard as he expected, and he ordered "starboard 20" and then "hard to starboard" (30°).

Just after the hard to starboard order, the chief officer noticed that the "in-command FU" button's light had switched off (indicating that the main control station no longer had control of the propulsion engine and steering). He told investigators that, at the same time, the rudder indicator display showed the rudder move "hard to port." He pressed the "in-command FU" button again, and the helmsman again attempted to turn the rudder to hard starboard. Both the helmsman and chief officer told investigators that the rudder indicator momentarily reacted, but then the "in-command FU" button's light again switched off and the rudder indicator quickly returned to a hard port position of 30°. The chief officer attempted again to take command by pressing the "in-command FU" button, without success (see figure 3).

After that, the master switched the vessel's steering to emergency override mode, and he was able to take control from the bridge's center helm station (for

more information on the emergency override mode, see section 1.3.2, Steering Gear System and Controls). The helmsman and master both noted that the rudder indicator moved from 30° port to 30° starboard and the starboard NFU button light lit up while the master was holding the button down. When the rudder indicator reached 30°, the master released the button; at the same time, the pilot ordered full astern on the main propulsion and the master pulled the throttle in reverse (aft) and then placed the bow thruster position to 100% starboard thrust. The master also ordered the activation of the ship's horn to alert the crew and surrounding vessels, and the pilot radioed the *Leighton K* by VHF radio to return to the vessel.

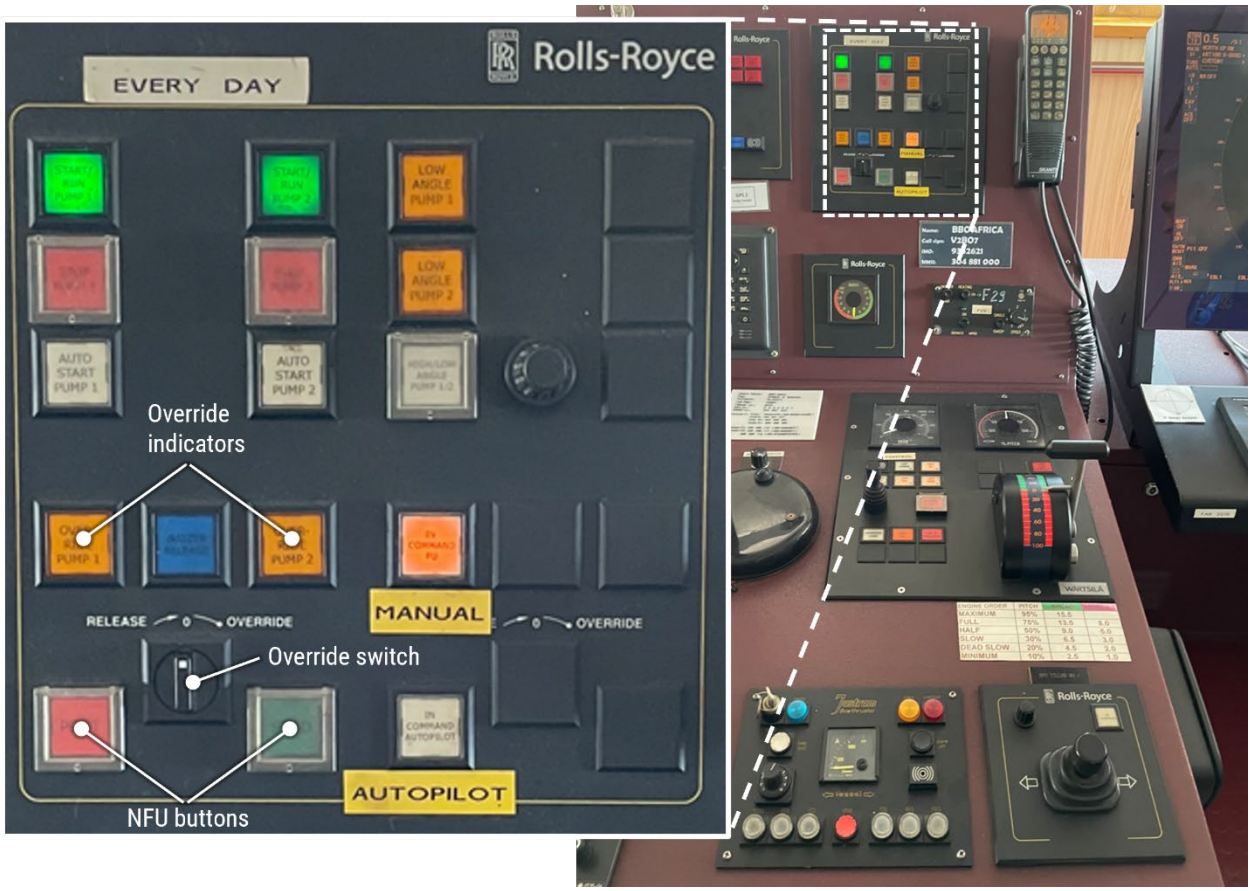


**Figure 3.** *BBC Africa* main bridge control station. Inset shows the emergency override portion of the steering panel with its NFU buttons, override switch, and override indication lights labeled.

However, at 1012:00, the vessel continued, at 6.8 knots and with a heading of 044°, toward the Anderson Grain Terminal, where the bulk carrier *Common Faith* was docked, loading cargo. At 1012:27, traveling at 6.7 knots, the *BBC Africa* collided with the *Common Faith* (see figure 4).

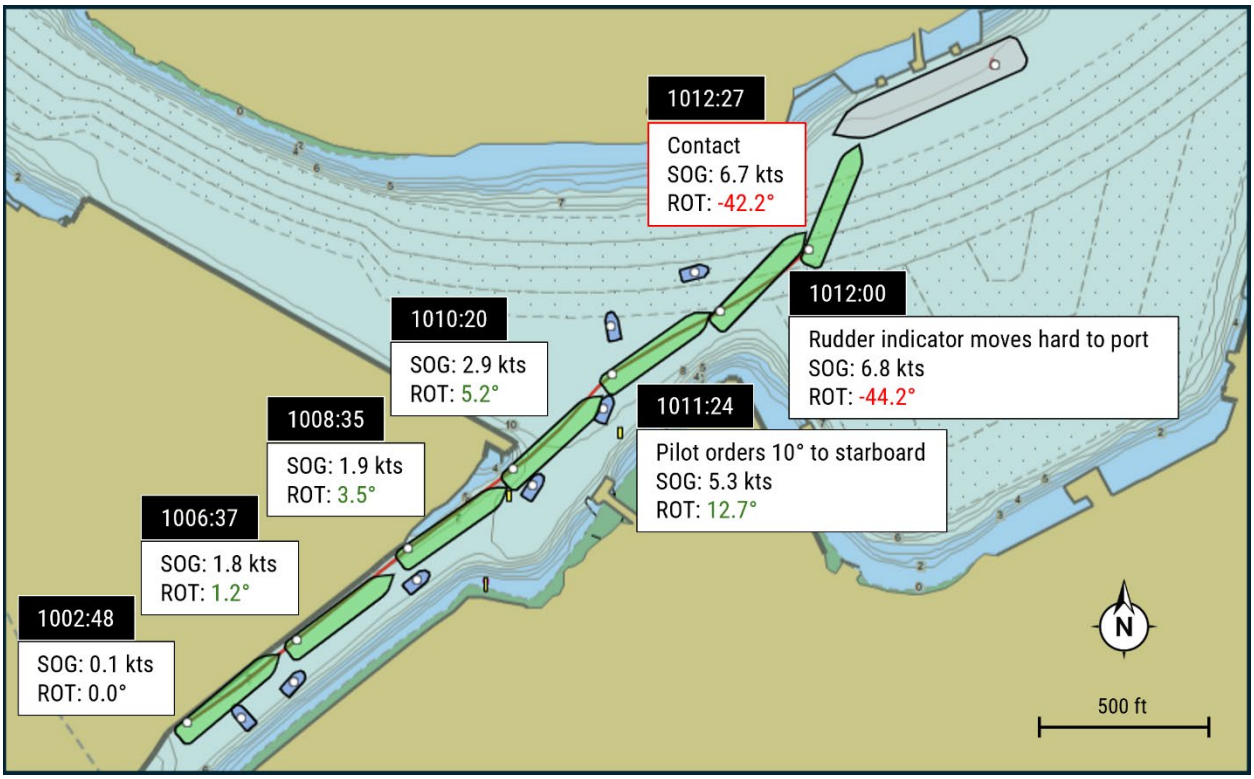


**Figure 4.** *BBC Africa* trackline, showing speed over ground (SOG) and rate of turn (ROT), leading up to the contact with the *Common Faith*. (Background source: MadeSmart)

Immediately after the contact, the *BBC Africa* master called the chief engineer in the engine control room and explained that there was an issue with the steering gear system. The chief engineer told the master that no engineering alarms or steering gear alarms had activated for the steering control system, and that he would send the electrician to the steering gear room to check on the steering system and equipment. The master ordered the forward deck crew and bosun to check the focsle for leaks; they did not find any.

At 1014, the pilot informed Vessel Traffic Service Houston-Galveston of the collision and told them the plan was to back the ship to the closest open dock. The *BBC Africa* was moored to berth C at the Manchester Terminal at 1041.

## 1.3 Additional Information

### 1.3.1 Damage

Damage to the *Common Faith* totaled $475,000. The top of the port ballast tank was punctured, releasing ballast water into the harbor (see figure 5). Shell plating near the no. 1 port ballast tank was punctured and folded inward.

The total repair cost for *BBC Africa* was $700,000. The bulbous bow, port side hull plating, and port forward quarter bulwarks and shell plating were damaged, but the class inspection found no internal hull or tank top breaches. Repairs performed in the shipyard in Swinemunde, Poland, were completed in November 2023. The class society surveyed and confirmed the repairs.

**Figure 5.** *Left to right*: *BBC Africa* (left) and *Common Faith* after the collision. *Common Faith* punctured port ballast tank spilling ballast water (circled; left photo). (Source: *Common Faith* master)

### 1.3.2 Steering Gear System and Controls

The *BBC Africa*'s steering gear system and controls were manufactured by Rolls Royce and received type approval certification from Germanischer Lloyd (GL) in November 2003. The rudder actuator consisted of two hydraulic pump units, two solenoid-operated maneuvering valves, manual emergency control, a mechanical rudder indicator, and a 120-liter hydraulic oil reservoir tank. Steering tillers on the bridge wing stations or override push buttons on the bridge main console connected directly to the solenoids (and therefore controlled the maneuvering valves).

A steering control panel in the upper right-hand portion of the bridge main control console included auto-pilot mode, manual NFU, and emergency override mode (see figure 3). To switch to emergency override mode, the operator had to turn the override switch, flip up the protective cover on the NFU port or starboard button, and hold the button down while the rudder responded.

### 1.3.3 Post-Casualty Actions

On August 28, investigators, technicians from the manufacturer, and Coast Guard inspectors inspected and tested the mechanical and electrical components from the port bridge wing, center, and starboard steering control stations and the main control system cabinet located in a compartment aft of the bridge. None of the procedural tests replicated the same loss of steering scenario experienced by the crew.

The manufacturer technicians identified three potential sources of temporary loss of primary steering control; the port and starboard bridge wing NFU steering control tillers, the "in command" push buttons, and the main power supply transformer to the main steering control cabinet.

On October 16, the vessel owner replaced the *BBC Africa*'s primary NFU steering control tillers on both bridge wings, two termination cards, the power supply transformer, and bridge wing "in command" push buttons—all with original equipment manufacturer (OEM) parts (see figure 6). The company also replaced the same components on two of its other vessels with similar systems.

The company also conducted refresher training on *BBC Africa* and two other vessels on transferring of control stations and emergency control procedures that included the scenario of this casualty. All steering control units were renewed and tested for proper operation on all three vessels' steering control stations. No additional issues were reported to the company or manufacturer.

The operating company also conducted an internal investigation into the collision and found that

- *The primary cause is equipment failure, though the steering gear was tested prior departure in presence of the Pilot on the bridge.*
- *Secondary cause was stress situation by the crew and Pilot due to very short reaction time in the port basin during departure.*

The company's investigation report also noted that

> *Further investigation determined the cause of loss of the signal of the steering control on the PS wing - the joystick (tiller) rubber had partly internal invisible cracks, thus the moisture was absorbed inside of controller unit and covered electrical processor, as consequence – loss of electrical signal.*

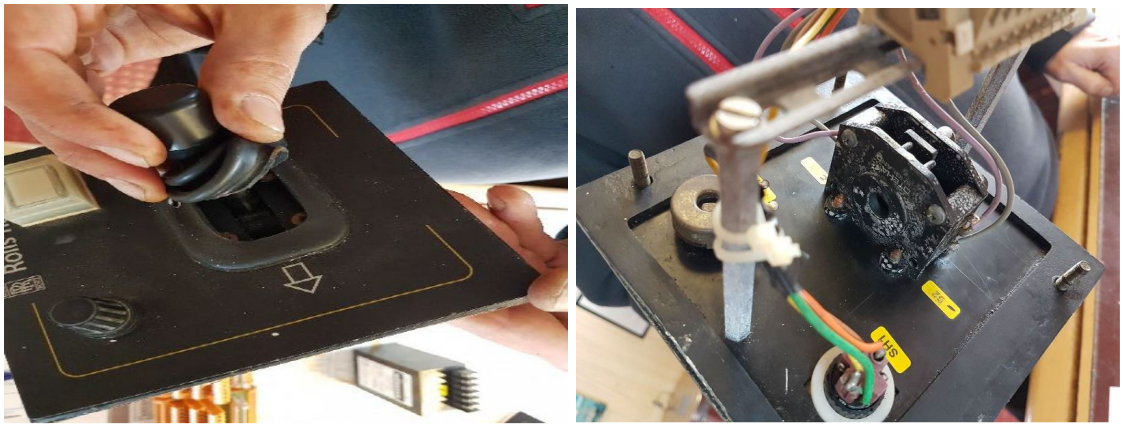

**Figure 6.** *BBC Africa* NFU steering tiller of the port wing control station showing damaged rubber boot and corroded/defective micro switch. (Source: Kongsberg Service Report)

Additionally, on October 18, the steering gear manufacturer released a Safety Bulletin informing customers of incidents where NFU tillers delivered between 2002 and 2009 had malfunctioned due to a weakness within the protective rubber bellow and the micro switches. The Bulletin noted that the "consequence of failing micro switches can lead to unintended rudder movement when the relevant steering stand is used, or non-responsive steering."

### 1.3.4 Crew and Training

The master had 30 years' experience in the maritime industry and had worked for the operating company since 2014. Aboard the *BBC Africa,* he was the chief officer for 3 years and served as the permanently assigned master for the last 9 years. The master told investigators he was at this dock at least seven times in the last couple of years.

The chief officer had worked for 10 years in the maritime industry. He had 2 years of experience as chief officer aboard this class of vessel and had served as chief officer for the last two contracts (ranging from 5.5 to 7 months) on board the *BBC Africa*.

The helmsman started his maritime career in 2018 and had worked the entire time for the operating company working on similar class vessels. He reported aboard the *BBC Africa* in May 2023. The helmsman held an ordinary seaman certificate from the Philippines.

The operating company required the crew to conduct at least one emergency drill each month for scenarios such as a man overboard, grounding, sinking, or collision. According to the vessel's drill records, all crewmembers aboard the vessel

had completed at least one drill within the past 3 months; an emergency steering drill was performed 3 days before the accident, on August 22, 2023. According to the master, the drill scenario included loss of primary steering and transfer to emergency override steering control from the bridge.

# 2 Analysis

On August 25, the multi-purpose carrier *BBC Africa* lost steering as it was departing the Manchester Terminal on the Houston Ship Channel and struck a nearby moored bulk carrier. The *BBC Africa*'s S-VDR was inoperative at the time, so investigators were unable to replay bridge audio or access parametric data.

The crew told investigators that they had completed all pre-departure checklists and tests from the bridge and engine room and did not find any issues with the steering control systems. As the vessel approached Buffalo Bayou, steering was functioning from the port bridge wing. However, soon after steering control was transferred to the bridge's center helm using the in-command (FU) button at the center helm, the rudder swung hard to port, contrary to the pilot's orders and the helmsman's subsequent actions. The chief officer attempted to regain control by re-pressing the in-command FU button, without success. After about a minute, the master activated the steering control system's emergency override mode. Although he was able to regain control of the rudder, it was too late to sufficiently turn the vessel before colliding with the moored bulk carrier *Common Faith*.

Following the collision, technicians from the manufacturer and investigators inspected and tested the mechanical and electrical components of the three control stations and control system panels. None of the procedural tests replicated the same loss of steering scenario experienced by the crew. However, tests found three components that could have led to the steering failure: the port bridge wing tiller, the power supply transformer in the control cabinet located behind main bridge, and the push button relays to take "in command" status when requesting control. The operator replaced all three components following the collision, so investigators were not able to examine them further (the company also replaced these components on two other vessels with similar steering control systems). Additionally, after the collision, the steering gear manufacturer released a Safety Bulletin on switch failures in the bridge wing tillers. The Bulletin specifically noted that micro switch failure could lead to unintended rudder movements. Therefore, based on the rudder's movements and the post-casualty testing and inspection, the steering control failure was likely due to the bridge wing tiller micro switch failing.

After the chief officer first noticed that the rudder wasn't responding correctly, he made several unsuccessful attempts to regain primary steering control by re-pressing the FU button; finally, after about a minute, the master regained rudder control by using the emergency override function. Had the crew more quickly identified the issue or initiated the override function, they would have gained control of the rudder earlier.

# 3 Conclusions

## 3.1 Probable Cause

The National Transportation Safety Board determines that the probable cause of the collision of the multi-purpose carrier *BBC Africa* with the bulk carrier *Common Faith* was the *BBC Africa*'s loss of the primary steering control system due to a steering control system component failure. Contributing to the collision was the delayed response from the ship's crew to implement the emergency steering procedure from the bridge.

## 3.2 Lessons Learned

### Training for Steering Control System Failures

Steering control system failures can result in damaging consequences. In channels or during maneuvering, where immediate hazards (grounding, traffic, objects) are in proximity and therefore response time is critical to avoiding a casualty, steering system failure contingencies require immediate crew response. Training in steering recovery procedures, including scenario-based drills for bridge and engine teams, is critical to ensure crews can respond in the shortest possible time.

## Vessel Particulars

| Vessel | *BBC Africa* | *Common Faith* |
|---|---|---|
| **Type** | Cargo, General (Multi-purpose carrier) | Cargo, Dry bulk (Bulk carrier) |
| **Owner/Operator** | Winter MPP GmbH Co. /Reedereiver Waltung Heino Winter GMBH & Co. (Commercial) | Poseidon Navigation SA/Common Progress Compania Naviera S.A. (Commercial) |
| **Flag** | Antigua and Barbuda | Greece |
| **Port of registry** | St. John's, Antigua and Barbuda | Athens, Panama |
| **Year built** | 2005 | 2012 |
| **Official number** | | |
| **IMO number** | 9362621 | 9610092 |
| **Classification society** | DNV | Lloyd's Register of Shipping |
| **Length (overall)** | 390.0 ft (118.9 m) | 623.3 ft (189.9 m) |
| **Breadth (max.)** | 66.3 ft (20.2 m) | 105.9 ft (32.3 m) |
| **Draft (casualty)** | 20.2 ft (6.2 m) fwd, 21.8 ft (6.7 m) aft | 39.04 (11.9 m) |
| **Tonnage** | 7,002 GT ITC | 32,987 GT ITC |
| **Engine power; manufacturer** | 1 x 8,448 hp (6,300 kW) MAK 4-stroke MCR 7-cylinder diesel engine | 1 x 12,055 hp (8,990 kW) MAN B&W, 2-stroke 5-cylinder diesel engine |

NTSB investigators worked closely with our counterparts from **Coast Guard Sector Houston-Galveston** throughout this investigation.