Issued December 22, 2022 MIR-22-29

Collision between Yacht *Utopia IV* and Tank Vessel *Tropic Breeze*

On December 23, 2021, about 2201 local time, the motor yacht *Utopia IV* and tank vessel *Tropic Breeze* were transiting the Northeast Providence Channel, 20 miles northwest of Nassau, Bahamas, when the two vessels collided.[1] The *Tropic Breeze*'s engine room began flooding. The vessel's seven crewmembers abandoned the *Tropic Breeze* to liferafts and a rescue boat before the ship sank, and they were rescued by a Good Samaritan vessel. Three of the 13 crew aboard the *Utopia IV* sustained minor injuries. There were 156,500 gallons of petroleum cargo and fuel lost with the tanker. Damage to the vessels was estimated at $7.9 million.

Figure 1. *Utopia IV* (*left*) and *Tropic Breeze* (*right*) before the casualty. (Sources: Rossinavi [*left*]; Capt. Chris Knowles [*right*])

[1] (a) In this report, all times are eastern standard time, and all miles are nautical miles (1.15 statute miles). (b) Visit ntsb.gov to find additional information in the public docket for this NTSB investigation (case no. DCA22FM009).Use the CAROL Query to search investigations.

NOTE: This report was reissued on March 29, 2023, with corrections to the number of persons on board and the overall length of the *Utopia IV* on pages 1, 2, 3, 4, and 12.

Casualty type	Collision
Location	Northeast Providence Channel, 20 miles northwest of Nassau, Bahamas 25° 17.48' N, 77° 37.98' W
Date	December 23, 2021
Time	2201 eastern standard time (coordinated universal time –5 hrs)
Persons on board	7 (*Tropic Breeze*), 20 (*Utopia IV*)
Injuries	3 minor
Property damage	$7.9 million est.
Environmental damage	Oil sheen
Weather	Winds northeast 10–20 kts, seas 2–3 ft, northerly swell 3–4 ft, broken sky, visibility 10 mi, sunset 1726
Waterway information	Deepwater passage, width 25 mi, depth 9,300 ft (at collision location), variable current

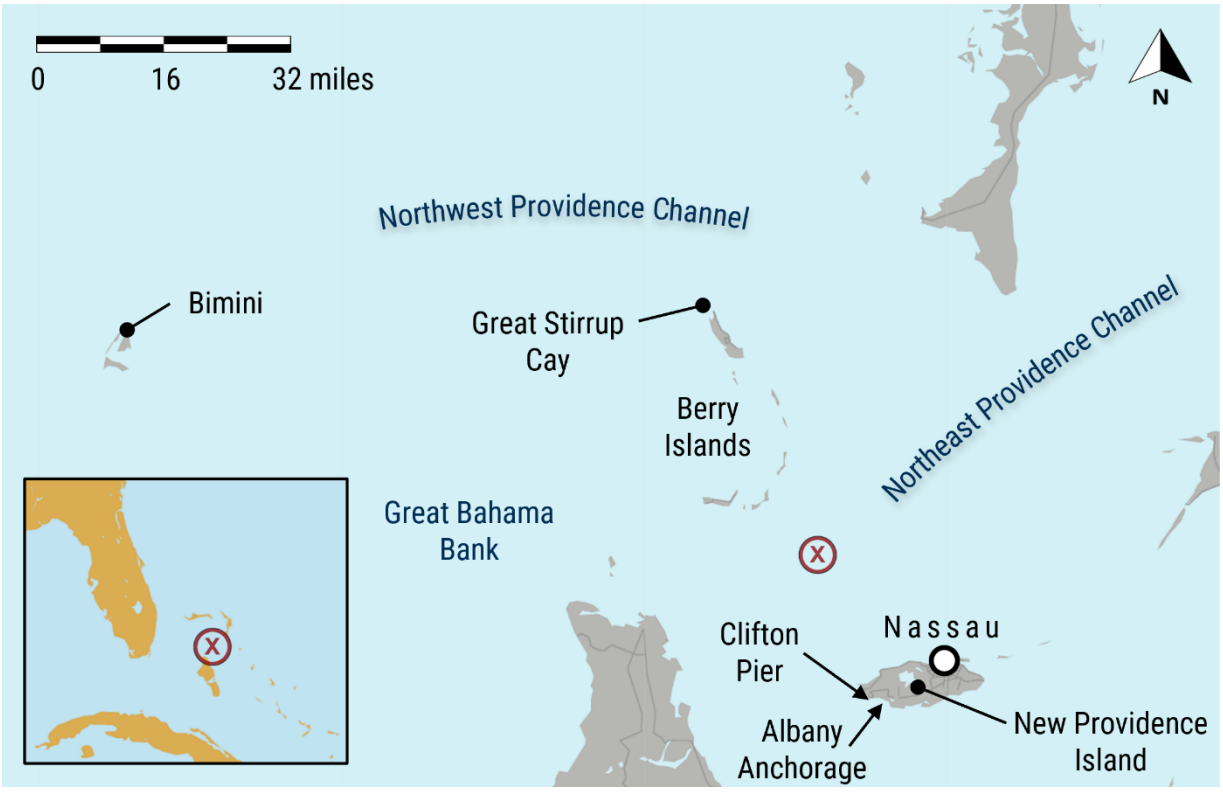

Figure 2. Area where the *Utopia IV* and *Tropic Breeze* collided, as indicated by a red *X*. (Background source: Google Maps)

1. Factual Information

1.1 Background

The US-flagged *Utopia IV* was a 205.4-foot-long motor yacht built in 2018 in Italy. The vessel had an aluminum hull with a plumb bow.[2] It had four water jet drives capable of speeds of up to 33 knots.

The Belize-flagged *Tropic Breeze* was a 159-foot-long steel product tanker operated by Maritime Management. The ship was built in the Netherlands in 1989 and was originally 135 feet long before being lengthened in 1997. The vessel had 14 integral cargo tanks plus two fixed liquid petroleum gas tanks on deck. (Because the vessel was built in 1989, the double hull requirements of the Oil Pollution Act of 1990 did not apply.[3]) The *Tropic Breeze* made semi-monthly runs from New Providence Island, Bahamas, to Great Stirrup Cay, Bahamas, with petroleum products. The company operated seven other ships.

1.2 Event Sequence

On December 23, 2021, at 1800, the *Tropic Breeze* departed Clifton Pier on New Providence Island at a speed of 5 knots en route to Great Stirrup Cay—a voyage north-northwest that was estimated to take 12 hours. The vessel was loaded with a cargo of 100,000 gallons of high-sulfur marine gas oil (MGO), 22,000 gallons of ultra-low sulfur MGO, 20,000 gallons of gasoline, and 8,500 gallons of liquid petroleum gas. The vessel also carried 6,000 gallons of ultra-low sulfur MGO as bunkers (vessel fuel). All but two cargo tanks were pressed up (full), and there was no ballast on board. The vessel's loaded draft was 7.5 feet (hull depth of 9.8 feet). The vessel had a crew of seven, and according to the master, "everything on the bridge was working."

At 2030, the *Utopia IV* weighed anchor offshore of Albany (on New Providence Island) and got underway toward Bimini Island (about 160 miles away) at a speed of about 20 knots. The captain's planned route took the vessel around the west side of New Providence Island and north of the Berry Islands. The yacht carried 7 passengers in

[2] The angle that vessel's stem makes with the waterline is known as the bow rake. A *plumb bow* has a near vertical stem (no rake) as opposed to a more typical raked bow with flare (hull width increases vertically). A plumb bow cuts through swells and allows for a maximum waterline length relative to overall hull length.

[3] When a vessel is *double-hulled*, its cargo tanks are within an inner watertight hull separated by ballast tanks or other spaces from its outer hull. Double-hull construction is intended to minimize the chances of cargo loss to the environment by providing protection from side or bottom damage.

addition to 13 crewmembers. The captain conned the vessel while the bosun navigated and kept a bridge log. The bosun stated that the weather was clear, but bow spray made it more difficult to see outside from inside the wheelhouse and required intermittent use of bridge window wipers. According to the bosun, the *Utopia IV*'s plumb bow allowed more water to collect on deck and the windshield. The display for one of the vessel's radars (S-band) was inoperative; the other radar (X-band) was set to a 3-mile scale.

The *Utopia IV* had a forward masthead light mounted on a telescoping mast that could be retracted into the deck when not in use. According to the captain, a mechanical issue prevented the mast from being completely extended during the casualty voyage.

About 2100, the captain stated that he left the wheelhouse with a radio to check on the passengers. He returned to the wheelhouse before departing again at 2148 to check on the passengers. He stated that he saw no visual, automatic identification system (AIS), or radar targets before departing. The captain told investigators he expected the bosun to maneuver as necessary for traffic; however, the bosun stated his understanding was that he first had to radio the captain to receive permission to maneuver the vessel. The bosun told investigators that while he was alone in the wheelhouse after the captain's departure, he did not see any visual, radar, or AIS targets.

On board the *Tropic Breeze*, the master and an able seafarer (AB) were on watch on the bridge. According to the crew, the *Tropic Breeze*'s AIS had a power issue, worked only intermittently, and was scheduled to be repaired as soon as COVID precautions allowed a technician to travel to the vessel.[4] (After the casualty, investigators queried databases and found the AIS unit had not transmitted a position in 11 months.) The vessel also had two radars: the master stated that one was off at the time, and the other was set to a 3-mile scale. The master had the radar set to alarm for targets within 2 miles. The crew stated that the mast atop the bridge blocked the radar sweep aft, so the radar display showed a shadow area directly astern. (After the casualty, the master stated that he did not see the *Utopia IV* on the radar.) The master had set up the autopilot earlier in the evening, and according to the AB, there were no course changes during his watch.

The AB left the *Tropic Breeze*'s bridge to complete a round about 2155. He returned a few minutes later having checked the engine room, navigation lights, and alarm panels.

Just before 2200, the bosun on the *Utopia IV* turned his attention to recording the hourly log entries and navigation fix, leaving his back turned to the forward windows (the captain had not yet returned to the wheelhouse, having left at 2148). About the same

[4] The Code of Safety for Cargo Ships Operating in the Caribbean required AIS for vessels greater than 150 GT ITC on an international voyage. *GT ITC*, or gross tonnage-international tonnage convention, is the international standard for the measurement of the volume of all enclosed spaces on a vessel, as defined in the International Convention on Tonnage Measurement of Ships, 1969.

time, the *Tropic Breeze*'s master started toward his cabin, immediately aft of the bridge, to use the restroom.

At 2200:48, a closed-circuit television (CCTV) camera in the *Utopia IV*'s galley captured equipment and crew suddenly propelled forward as the bow of the *Utopia IV* (traveling at about 20 knots) struck the transom of the *Tropic Breeze* (traveling at about 5 knots) from directly astern, slightly to port of the tank vessel's centerline. Several of the yacht's crew were thrown to the deck or into bulkheads as *Utopia IV* struck the tank vessel at a relative speed of about 15 knots; three crewmembers sustained minor injuries. The *Utopia IV*'s captain was in the main dining area and was thrown into the "forward bulkhead and door frame."

The *Utopia IV*'s chief stewardess told investigators she saw the *Tropic Breeze*'s navigation lights illuminated postcollision. According to the *Utopia IV*'s crew, the *Utopia IV*'s lights were all on.

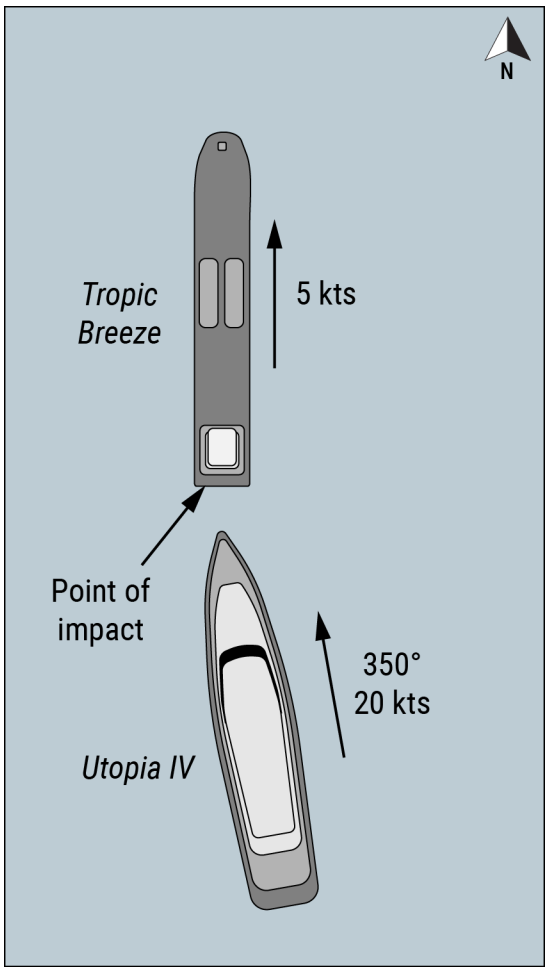

Figure 3. Approximate positions and headings of *Utopia IV* and *Tropic Breeze* before collision (not to scale).

The *Tropic Breeze*'s chief engineer investigated the tanker's damage. He found the engine room was flooding rapidly. He went to the bridge and reported the flooding to the master; he stated that he did not see the source of flooding, but the engine had stopped once it was submerged. About 2215, 15 minutes after the collision, the captain made a VHF distress call and decided to abandon the vessel because he did not believe the *Tropic Breeze* could survive a flooded engine room. The crew launched the rescue boat and a liferaft (the rafts were stowed aft of the bridge on the same deck). One or two crewmembers boarded the rescue boat, and the remainder of the crew boarded the liferaft.

The *Utopia IV*'s chief engineer restarted the yacht's engines, which had shut down after the collision. The chief mate, who had come to the wheelhouse, made a distress call by VHF radio. The *Utopia IV* was maneuvered to recover the *Tropic Breeze*'s crew, and the stern swim platform was lowered to allow them to board; however, sea swells and the height of the platform prevented them from boarding.

The yacht *Amara* heard three VHF distress calls from the *Utopia IV* (the crew on watch did not hear any from the *Tropic Breeze*), and the Royal Bahamian Defense Forces (which fulfill a role similar to the US Coast Guard) also received the distress calls.[5] The *Amara* arrived on scene and dispatched the vessel's 38-foot-long tender (which the *Amara* had been towing) with a crew of three, who then recovered all of the tanker's crew from the liferaft and rescue boat. The crewmembers on the tender and the *Amara*'s captain concurred it was not safe to get *Tropic Breeze*'s crew aboard either the *Amara* or the *Utopia IV* due to the sea state, so they were taken ashore to Lyford Cay Marina in Nassau via the tender, arriving about 0240.

Figure 4. *Tropic Breeze* crew wearing lifejackets in the liferaft and rescue boat before rescue. The *Utopia IV* is in the background. (Source: *Amara*)

The *Tropic Breeze* continued to flood, and according to the master, the vessel sank about 25 minutes after the collision. An alert from the vessel's Global Navigation Satellite System (GNSS)-enabled emergency position indicating radio beacon (EPIRB) was received by the Coast Guard's Rescue Coordination Center Miami at 2226, via the French Mission Control Center and medium Earth orbit search and rescue (MEOSAR)-enabled satellites.

After the *Amara*'s crew were informed by the *Utopia IV*'s crew that the vessel had a compromised hull, the *Amara* escorted the yacht to the Nassau cruise ship dock, arriving at 0240 before recovering its tender at 0300.

[5] The *Amara* (IMO No. 1001178) was a 187-foot-long, Cayman Island-flagged yacht.

1.3 Additional Information

1.3.1 Damage

Figure 5. *Tropic Breeze* sinking by its stern about 15 minutes after the collision.

The *Utopia IV* penetrated through the *Tropic Breeze*'s empty aft peak ballast tank, reported by the *Tropic Breeze*'s operator to be 3.9 meters (12.9 feet) longitudinally (forward and aft), to the engine room, flooding both the tank and engine room. The *Tropic Breeze,* valued at $5.1 million, sank in 9,300 feet of water. Lost cargo, valued at $343,881, was not recoverable.

The *Utopia IV* sustained damage including ruptured hull plating above and below the waterline, fractured framing, a compromised double bottom ballast tank, damaged bridge windows, and dislodged and damaged hatches, fittings, and equipment. Total damages were estimated at $2.4 million.

Figure 6. Damage to *Utopia IV*'s bow. (Source: Coast Guard)

1.3.2 Crew

The *Utopia IV* 's master had held a Coast Guard credential as master, limited to 3,000 GT ITC, since about 1996. He joined the vessel in Newport, Rhode Island, 10 days before the casualty and had sailed in Bahamian waters since 1985.

The *Utopia IV*'s bosun had sailed for 17 years and had been on board the vessel for 7 days. The captain stated that he verified the bosun's familiarity with all bridge electronics and with switching from manual steering to autopilot both upon joining the vessel and while on watch on the evening of the collision. The bosun held a Canadian Certificate of Competency per the Standards of Training, Certification and Watchkeeping Code (STCW) A-II/4, the equivalent of a Coast Guard Rating Forming Part of a Navigation Watch.

The *Tropic Breeze*'s master had been master of the *Tropic Breeze* for 1 month and had worked on the *Tropic Breeze* in various positions for 3 years. He held Bahamian credentials as master limited to 500 tons and chief mate limited to 3,000 tons. He had worked as a mariner for 11 years on a variety of vessels.

The AB on watch on the *Tropic Breeze* had been working as an AB on the tank vessel since 1997. He received his STCW certifications in 2000.

1.3.3 Vessel Inspections

The *Tropic Breeze* had no outstanding Conditions of Class.[6] The vessel had undergone a Port State Control exam 2 weeks before the collision; no deficiencies were reported.

The *Tropic Breeze* was issued a flag state exemption from the damage stability requirements of the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IBC Code).[7]

2. Analysis

The *Convention on the International Regulations for Preventing Collisions at Sea, 1972* (72 COLREGS) requires that "every vessel shall at all times maintain a proper lookout by sight and hearing as well as by all available means appropriate." In the time leading up to the casualty, the captain and bosun of the *Utopia IV* were standing watch in the wheelhouse and should have been maintaining a proper lookout in accordance with the 72 COLREGS. Visibility conditions were good (10 miles), and the captain and bosun should have been able to see the *Tropic Breeze*'s stern light as the yacht approached the tank vessel, even with bow spray on the windshield; however, neither reported seeing the *Tropic Breeze*, indicating they were not maintaining a proper lookout through visual scanning. Because the *Utopia IV* was traveling at 20 knots, it would have been prudent for the watchstanders (captain and bosun) in the wheelhouse to be attentive in their lookout duties in order to mitigate the effects of the bow spray—perhaps by having a lookout with no other duties assigned. However, shortly before the casualty, the captain left the bosun, who was not certified as mate or captain and therefore was not allowed by regulations to conn the vessel alone, to perform watchstanding duties by himself. Further, the bosun was multitasking and logging navigation data and therefore was distracted from performing effective lookout duties.

The *Utopia IV* and *Tropic Breeze* were both equipped with radar—regulations require systematic observations of radar targets to determine risk of collision—set to a

[6] A *condition of class* is a temporary arrangement issued by a classification society that allows a vessel to operate with a deficiency for a limited time period.

[7] *Stability* is the tendency of a vessel to return to its original upright position when a disturbing force (e.g., wind or wave) is removed. *Intact stability*, commonly called *stability*, refers to how an intact, or undamaged, vessel will respond (resist capsizing) when inclined in calm seas. *Damage stability* refers to a vessel's capacity to remain afloat and resist capsizing when one or more of its spaces is flooded. The ability to sustain damage, remain afloat, and resist capsizing is primarily related to the degree of subdivision in the vessel (the degree to which the hull is divided into separate, watertight compartments). Requirements for subdivision vary depending on a vessel's size and service.

3-mile scale. With the *Utopia IV* approaching the *Tropic Breeze* at a relative speed of 15 knots, a target would close 3 miles in just 12 minutes. However, none of the watchstanders on the *Utopia IV* (captain and bosun) or *Tropic Breeze* (master and AB) reported seeing the other vessel on radar; therefore, it is likely none of them had looked at the radar in the 12 minutes before the collision (although the *Tropic Breeze* crew stated there was a radar shadow aft, it is likely that the approach of the yacht would have been detected on radar). Additionally, there was no evidence that they used radar for long-range scanning. Therefore, neither crew used their vessel's radar effectively.

The *Tropic Breeze* was equipped with an AIS, which consists of a VHF transponder that transmits a vessel's identity, course, speed, size, and destination. The information is available to nearby vessels on their AIS display unit, radar, and/or electronic chart display and information system, which in turn will calculate and display a target's closest point of approach (CPA) and time to CPA. However, the *Tropic Breeze*'s AIS was inoperative due to a power issue: investigators queried databases and found the unit had not transmitted a position in 11 months. (There were repair parts on board awaiting a technician.) Had the unit been functioning, it is likely that the *Utopia IV* could have detected the *Tropic Breeze* before the collision. Likewise, with the unit inoperative, the *Tropic Breeze* could not display the *Utopia IV*'s AIS signal and identify the yacht's position relative to the tank vessel.

As the *Utopia IV* approached the *Tropic Breeze* from nearly directly astern, the yacht (as the overtaking vessel) was required by 72 COLREGS to give way to the tank vessel. However, because the watchstanders on the *Utopia IV* were not maintaining a proper lookout using all available means, they did not identify the risk of collision. Although the *Utopia IV* bore responsibility as the overtaking vessel to maneuver away from the tank vessel, once the yacht's intentions were unclear and a close-quarters situation had developed, the tank vessel should have taken action. However, the watchstanders on the *Tropic Breeze* did not detect the *Utopia IV* approaching. If they had seen the yacht, they likely would have signaled the potential danger in some way, whether by radio communication, whistle, or other means. Therefore, the *Tropic Breeze*'s watchstanders were also not maintaining a proper lookout. Had either kept a proper lookout, they likely would have detected each other and could have taken action to avoid the collision.

3. Conclusions

3.1 Probable Cause

The National Transportation Safety Board determines that the probable cause of the collision between the yacht *Utopia IV* and the tank vessel *Tropic Breeze* was the *Utopia IV*'s wheelhouse crew not maintaining a proper lookout and therefore not identifying the tank vessel they were overtaking. Contributing was the *Tropic Breeze*'s bridge team also not maintaining a proper lookout.

3.2 Lessons Learned

Proper Lookout

A proper lookout by suitably trained crewmembers is required by the *Convention on the International Regulations for Preventing Collisions at Sea, 1972* and is essential in determining the risk of collision. The effective use of all available resources by a bridge team, including visual scanning, radars, electronic charts, and an automatic identification system, increases collective situational awareness and contributes to a safe navigation watch. Operators and crews should ensure that vessel bridge teams are staffed with certificated/credentialed mariners who are familiar with all bridge navigation equipment and able to independently take immediate action.

Vessel	*Utopia IV*	*Tropic Breeze*
Type	Yacht/Boat (Yacht)	Cargo, Liquid Bulk (Tank vessel)
Flag	United States	Belize
Port of registry	Miami, Florida	Belize City, Belize
Year built	2018	1989
Official number (US)	1305829	N/A
IMO number	9851050	8906315
Classification society	American Bureau of Shipping	None
Length (overall)	205.4 ft (62.6 m)	159.8 ft (48.7 m)
Beam	35.4 ft(10.8 m)	26.2 ft (8.0 m)
Draft (casualty)	16.7 ft (5.1 m)	7.5 ft (2.3 m)
Tonnage	986 GT ITC	348 GT ITC
Engine power; manufacturer	4 x 2,600 hp (1,939 kW) MTU Friedrichshafen 16V2000M96 diesel engines	2 x 300 hp (224 kW); Caterpillar 3412E diesel engines

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

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For more detailed background information on this report, visit the NTSB investigations website and search for NTSB accident ID DCA22FM009. Recent publications are available in their entirety on the NTSB website. Other information about available publications also may be obtained from the website or by contacting–

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