

WITT O'BRIEN'S

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response

Dali Incident Review

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Key Bridge Response 2024

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REGARDING THE FRANCIS SCOTT KEY
BRIDGE RESPONSE



Baltimore, Maryland

KEY BRIDGE RESPONSE 2024

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-18.66° +1.43° 8.3x



Baltimore, Maryland

KEY BRIDGE RESPONSE 2024



Source: Getty, EPA

BBC

Baltimore, Maryland

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Baltimore, Maryland

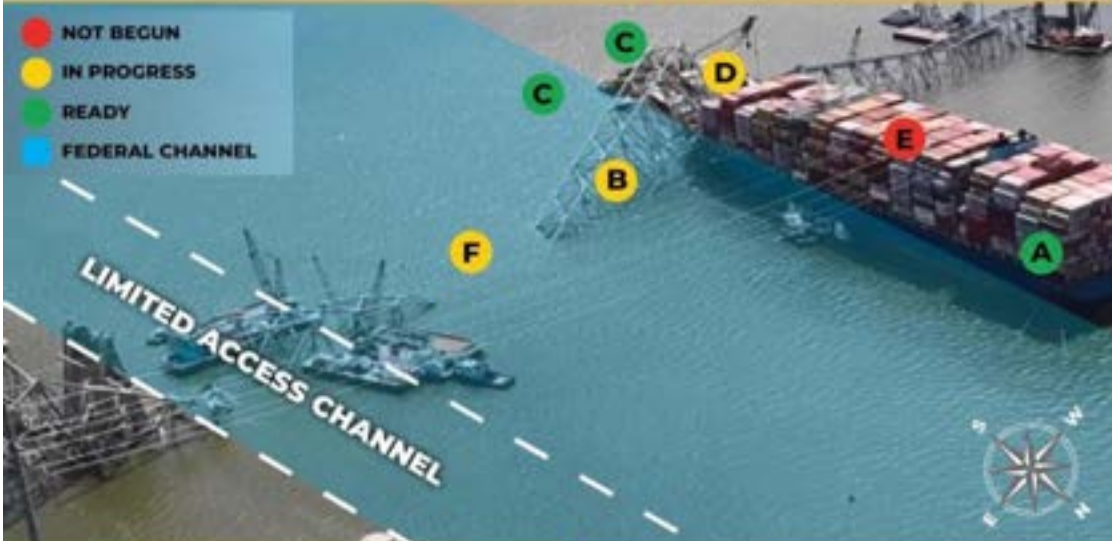
KEY BRIDGE RESPONSE 2024



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SALVAGE OPERATIONS PLAN

The situation remains dynamic, and the plan and the graphic will be continually updated as the engineering data becomes known.



PRIORITIES

CLEAR FEDERAL CHANNEL

- Establish limited access channel
- Establish wreckage consolidation point
- Position cranes to remove bridge span from DALI
- Clear wreckage from DALI
- Remove wreckage from Federal Channel

REFLOAT & REMOVE M/V DALI

- Assess cargo and remove containers as necessary
- Stage assets for repositioning of M/V DALI
- Refloat and move M/V DALI from hard grounding

CLEAR REMAINING WRECKAGE

- Systematically clear wreckage from outside of the federal channel
- Facilitated under the direction of Maryland Department of Emergency Services

OBJECTIVES

- A** Stabilize M/V DALI to prevent pivoting.
- B** Analyze internal bridge truss structure.
- C** Position 1000-ton and 500-ton floating cranes.
- D** Remove wreckage from M/V DALI.
- E** Refloat M/V DALI away from wreckage.
- F** Disassemble and remove bridge.



U.S. ARMY



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of Engineers

Our commitment to supporting the Unified Command Center in accounting for the missing victims of this tragedy remains our top priority.

RELEASED BY BG JOHN LLOYD AS OF 15 APR 2024

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KEY BRIDGE RESPONSE 2024

WRECKAGE WEIGHT

The situation remains dynamic, and the plan and the graphic will be continually updated as the engineering data becomes known.

ESTIMATED
50,000
TONS

=

WEIGHT OF MORE THAN
3,800
FULLY LOADED
DUMP TRUCKS

OF STEEL & CONCRETE
ACROSS THE TOTAL COLLAPSED SPAN

*Based on an average 13-ton weight
of a fully loaded dump truck



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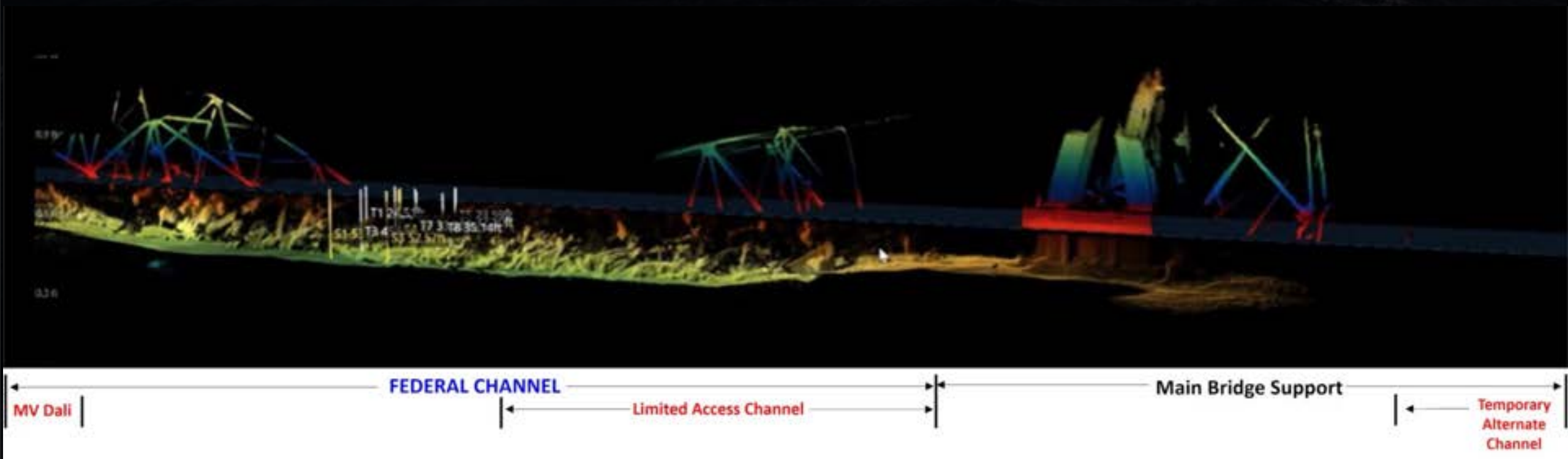
RELEASED BY BG JOHN LLOYD AS OF 28 APR 2024

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Baltimore, Maryland

<https://youtu.be/Olus67TV0SI?si=oVcULIB29aNHD3o8>

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★ Press Staging Site



[View on dvidshub.net](https://www.dvidshub.net)

Baltimore, Maryland

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March 26

M/V Dali Loses Power Departing Baltimore and Makes Contact with Key Bridge

VRP activated, initial response actions commence

March 30

Removal of Wreckage Begins

UC Objectives –

- *Maintain Safety of crew, responders, public and environment*
- *Clear Dali from Ship Channel*
- *Fully Restore Ship Channel Operations*
- *Keep Public and Stakeholders Informed*

Resolve & DJS commence salvage operations

April 2

First of Three Temporary Alternative Channels Opens

Allowing shallow-draft vessels to transit through the Port of Baltimore

April 7

Removal of Containers from M/V Dali Begins



April 25

Limited Access Channel to a width of 300 feet and depth of 35 feet

300 feet and depth of 35 feet

May 9

Recreational vessels permitted to transit through Key Bridge Response Safety Zone

May 13

Charges Placed and Precision Cuts Performed

Section 4, which had pinned M/V Dali under a 10-million-pound segment of the Key Bridge is demolished and cleared from the vessel

May 20

M/V Dali Refloated and Moved out of Ship Channel

Federal Channel cleared to a width of 400 ft and depth of 50 ft

June 4

Federal Channel Restored to 100%

Last major piece of steel truss removed from Federal Channel

June 25

M/V Dali Departs Baltimore and safely arrives in Norfolk, VA

Container removal, clean up and repairs continue



COAST GUARD FOUNDATION

DC20



Results

Fully restoring the Federal Channel to its original width and depth involved the removal of about **50,000 tons of bridge wreckage** from the Patapsco River.

At its highest point, the **Unified Command, consisting of 6 agencies**, led the response efforts among about **56 federal, state, and local agencies**, represented by **1,587 individual responders**. Additionally, about **500 specialists from around the world** operated a fleet of **18 barges, 22 tugboats, 13 floating cranes, 10 excavators, and four survey boats**. Subject matter experts from all over the U.S. also provided essential technical knowledge to the Unified Command. Over **90 dive missions** by over 60 divers were conducted in the first 30 days. Aerial operations were run by **more than 100 pilots and support specialists** from over 35 agencies, conducting **250 Unmanned Aircraft System missions and 60 manned helicopter and fixed-wing sorties**. Serving as the literal eye-in-the-sky, the Air Operations branch was instrumental from the early search and rescue phase to the ongoing salvage operations, providing essential oversight for Unified Command, operators, and leadership.











Norfolk, Virginia

KEY BRIDGE RESPONSE 2024



Norfolk, Virginia

KEY BRIDGE RESPONSE 2024



Recommendations and Reminders

- Blackouts or power issues are being taken very seriously by the USCG around the country
- Ensure you are reviewing blackout procedures, recovery, and notifications
- The USCG has been quick to issue Captain of the Port (COTP) orders to ensure the necessary parties are engaged and involved in the response
- **Reminder** – ensure the QI is notified *as soon as possible* for any instances of pollution or the “substantial threat” of pollution in US waters

WHEN TO CALL THE QI

USCG REQUIREMENTS

Mandatory Notification		The USCG must be notified if there is a discharge of oil in/on the water or if there is a "substantial threat" of a discharge into the water. The USCG defines the following as a "substantial threat" including:
1	Grounding or stranding - even the slightest touch of the bottom	
2	Collision and allision - including a hard bump by a tug or a hard landing at a dock	
3	Spill on deck - any quantity that is enough for the oil to flow toward the rail	
4	Hull Failure	
5	Excessive List	
6	Containment system failure	
7	Submerged and foundered	
8	Wrecked and stranded	
9	Hazardous vapor release	
10	Machinery/Equipment malfunctions - steering, auxiliaries, fire pump, life boat, radar, radio, compass, cargo handling gear, etc.	
11	Explosion	
12	Fire	



US law says that a "Person in Charge of a vessel" must notify the USCG if any of these situations exist. This "Person in Charge" can be the Master, the owner/operator, the DPA, the QI or another person who your company policy says is "in charge" of your ship.

The regulations say that this person must make notifications as soon as possible (without delay).

QUALIFIED INDIVIDUAL

WHEN A VRP/NTVRP IS ACTIVATED

- A CommandPro[®] **Vessel Incident Report** will be generated.
- All required regulatory agency notifications are made.
- Notifications and mobilization (as needed) of response resources from the OSRO and SMFF.
- Contact will be made to the company emergency contacts in the order listed top down via phone with a follow-up via email to include the report.

DRILL		
WITT O'Brien's Vessel Incident Report		
Vessel Identification		
MPC #	Date Call Received	Call Received By
1000000	06/14/2022 07:26	Ta-Robin
Vessel		
Master/Captain:	Capn Zuma	Phone: 30 211 2061071
Master Email:	master.ambipar@ambipar.com	
Vessel Name:	ALM HORTEN	Vessel Operator: ALM Tankers SA
Flag:	Liberia	MCI: 907616
Incident Information (Information from Master Only)		
Type of Incident:	Grounding	
Incident Date:	06/14/2022 07:26 (GMT +01:00) Seawant When Time: Dublin, Edinburgh, London (GMT)	
Location:	Houma Ship Channel	
Nearest City:	Houma	State/Country: Texas
Latitude:	29° 22' 59.62" N	Longitude: 90° 44' 45.24" W
Material Spilled:	None	Amount Spilled:
Incident Secured:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Estimated Spill Rate:
Incident Description:	It is noted that on June 14, 2022, the M/V ALM HORTEN is underway, fully laden with cargo of crude oil bound for Houston, TX, when it suffers a steering gear failure resulting in a grounding near the entrance of the Houma Ship Channel at position	
No. Of Injuries:	0	No. Of Fatalities:
Discrepancies:	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	Was there any damage? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Vessel Damage		
Damage to Facility or Other vessel		
P & T Club: The United Kingdom Mutual Steamship Assurance A...		
Agent: Agent Phone		
Weather Conditions		
Air Temp:	75.0°	Water Temp:
Clouds:	00-100%	Visibility:
Wind Direction:	090-180°	Wave Height:
Wave:	0-10'	High Tide Time:
 07/08/2022 10:41 Powered By WITT O'BRIEN'S		

QUESTIONS

inquiry@wittobriens.com

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