



Managing Historic Wrecks

The RFA Darkdale

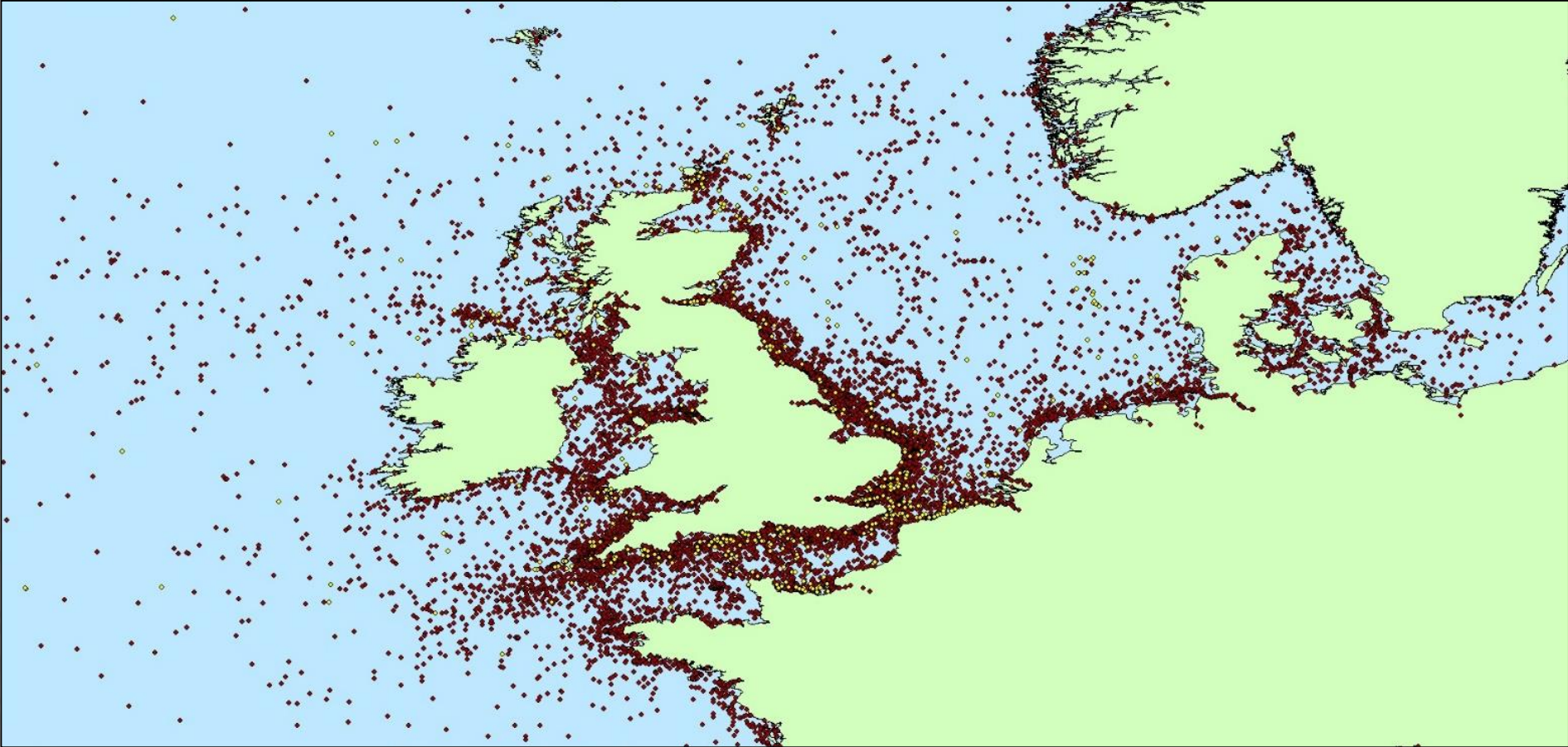
Polly Hill, Salvage and Marine Operations, Ministry of Defence, UK



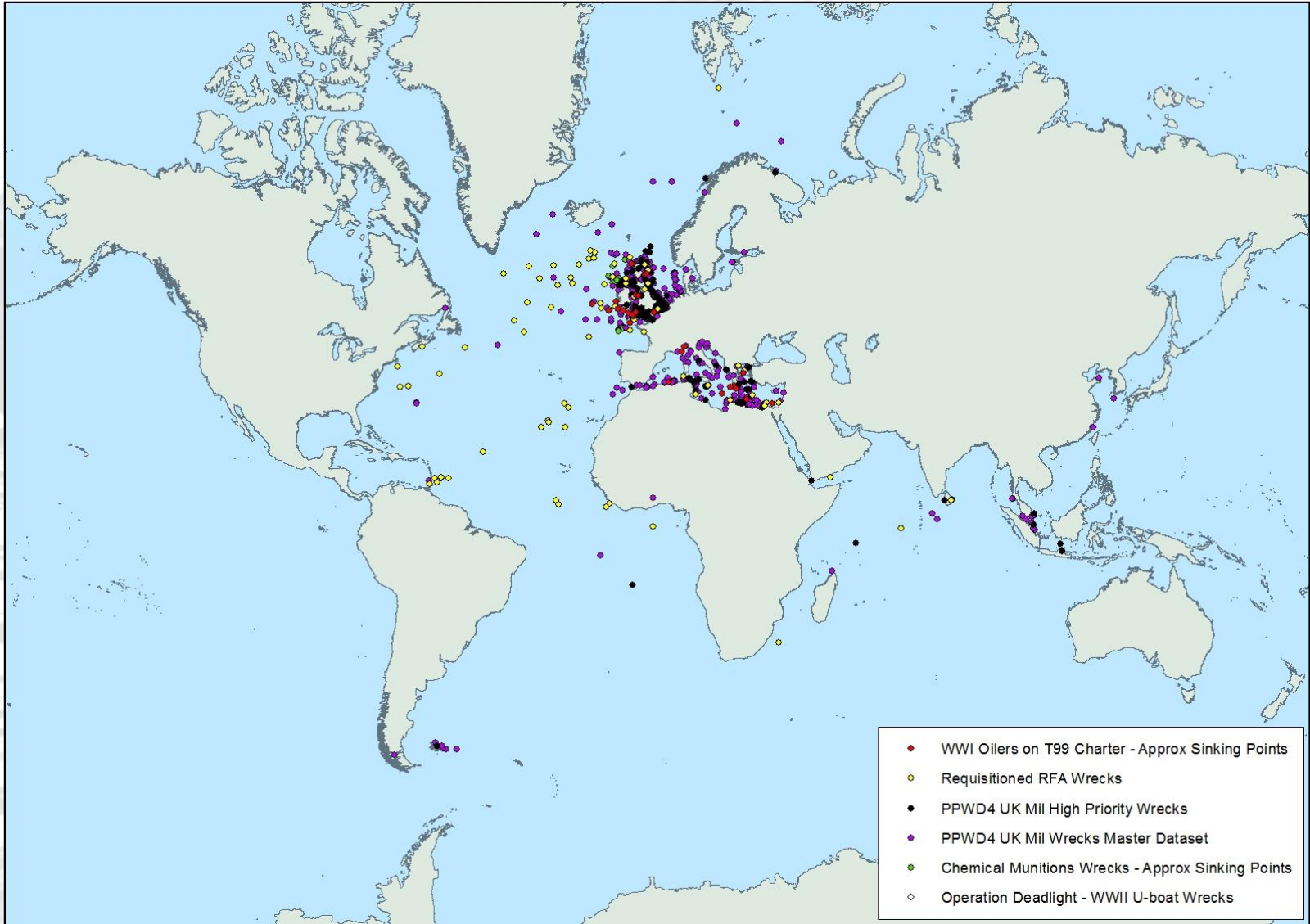
Ministry
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Post 1870 MOD Wrecks



Post 1870 MOD Wrecks



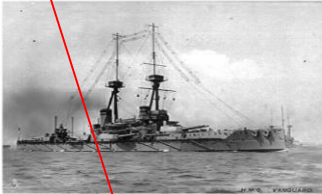
Why Spend Money on Them? - Oil



Current Methodology

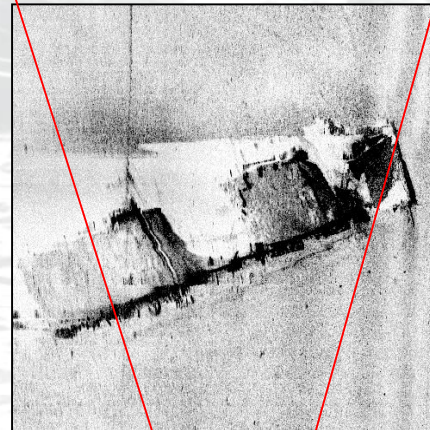
Vessel details	
Vessel type	St Vincent Class, Dreadnought Battleship
Vessel length	132.40m
Vessel beam	25.60m
Vessel tonnage	19000t
Date of construction	Launched February 1909 (by Vickers Barrow in Furness)
Proprietary type	Coal

Vessel Image

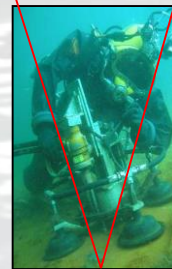


Latitude	58 51 4N	Longitude	003 06 4W
Description of problem	Scapa Flow		
Date sunk	09 July 1917		
Fatalities	804 fatalities		
Protected wreck site	Yes, Controlled Site under the Protection of Military Remains Act 1986 (Designation of Vessels and Controlled Sites) Order 2002		
History of sinking	<p>During the evening of 09 July 1917 HMS Vanguard was lying at anchor in Scapa Flow with the rest of the Grand Fleet. At approximately 22:20 the ship suffered a series of catastrophic explosions before rapidly sinking.</p> <p>Witness statements given at the subsequent Court of Enquiry suggested that the first explosion occurred about the foremast and that this was followed very shortly afterwards by an explosion in the vicinity of the mainmast 1st and 2nd gun turrets and subsequently by at least one more explosion. The ship was rapidly enveloped in smoke and sank in seconds. Of the more than eight hundred men onboard at the time of her loss only two were saved.</p> <p>The Court of Enquiry was unable to determine any definite cause for the explosions in the ship. It concluded that the fire most likely was the result of either the ignition of cordite, due to an avoidable cause or in the abnormal behaviour of a charge of cordite. The shell magazines, particularly in one of the armships magazines, triggered a chain of detonations and the rapid loss of the ship.</p> <p>Since 1917 the wreck has been subject to significant disturbance. Subsequent notes narrates of salvage having taken place immediately after the First World War. However, no information is available on what has been lost or what might have been removed from the site. Far more substantial salvage work took place when a Glasgow scrap iron company (Muir & Macdonald) purchased the wreck from the Admiralty in 1957.</p> <p>One diver, Frank Lisker, who worked for Handy Marine Metals on the wreck from 1968 to 1969, noted that "What little evidence was left of the crew could only be found in the coastal dudge where bones were preserved. This and the wooden boxes and bins still stacked near the gun turrets, are remnants of the original magazine explosion that blew the ship in at least some of the oil from the ship into the surrounding water. Furthermore, the presence of his diver seems to have resulted in further damage the preservation of human skeletal remains. Although over 80 years have elapsed since Lisker's work on the wreck and the completion of the report it is possible that human remains may still be present at the site.</p>		

Stage One – DBA (Desk Based Assessment)



Stage Two – On Site Survey



Stage Three – Intervention



Stage One DBA - Sources

No. 183.

S.S. "DESABLA" Gross Tons. 3,047.
 Oiler Transport No. 83.
 Casualty. Captured by submarine and sunk by torpedo.

Owners. Bank Line Ltd.
 Left Portland on - for Invergordon.
 Cargo Oil. No. of Crew. Passengers. None.
 Attacked. 19.6.15. Time. 7.30 a.m. Position. 16 miles E. from God Head.
 Abandoned. 19.6.15. Time. 8.30 a.m.
 Sank. 19.6.1915. Time. Probably about 1.0 p.m.

Summary of Evidence.

Submarine was first seen right astern, and gaining rapidly on the steamer. The master endeavoured to manoeuvre his vessel so as to keep the enemy astern, but as the submarine was much faster she rapidly got into position close to the ship. While she was being chased, the enemy kept up a continual fire at her from a gun mounted forward of the conning tower. Seeing that escape was impossible, the master then stopped his engines and ordered all hands to the boats, which were successfully lowered. All the crew got safely away, and the enemy then fired a torpedo into the "Desabla" about 8.30 a.m. The boats remained in the vicinity until 10.30 a.m. and in the meantime the enemy boarded the steamer. When last seen by the master about 12.30 p.m. the ship was sinking fast, and the submarine had disappeared.

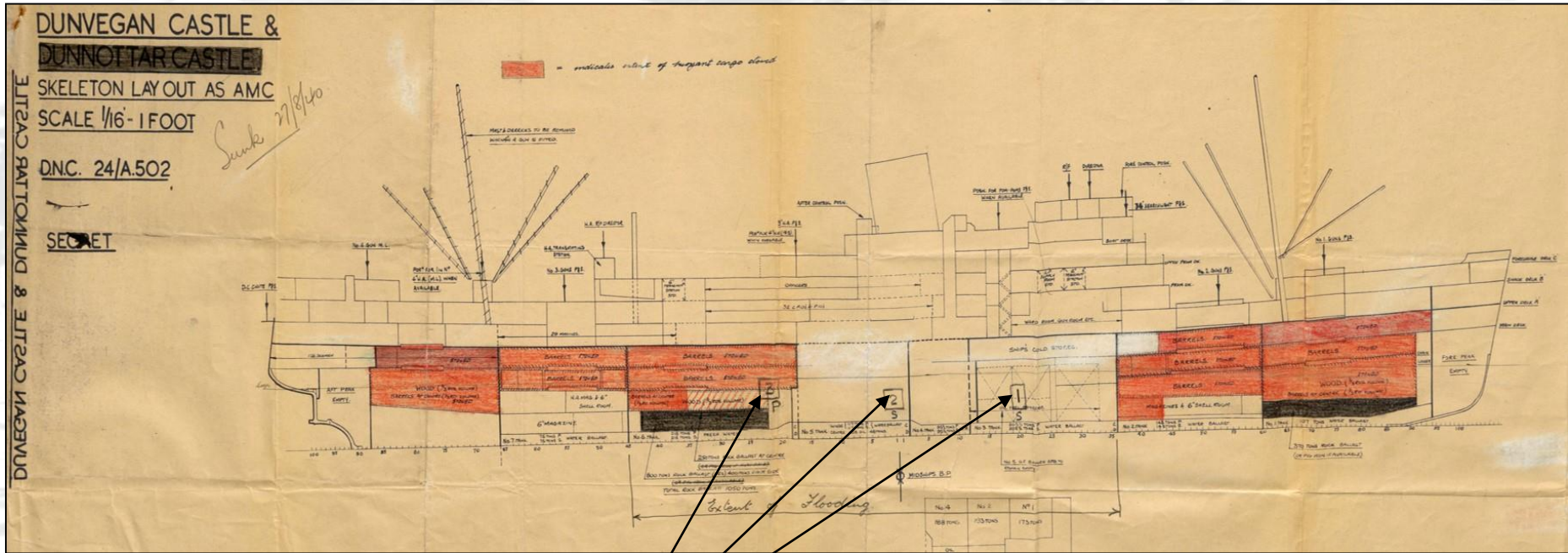
Lives lost or men injured. None.

What became of survivors of crew and passengers?
 Picked up by Armed trawlers at 3.30 p.m.

Was ship defensively armed and with what gun? No.
 Had Master W/T code and what became of it? Yes. Destroyed by Master.
 Had Master other confidential papers and what became of them? All confidential papers destroyed by master.

Datum Uhrzeit	Angabe des Ortes, Wind, Wetter, Bewegung, Sichtbarkeit der Luft, Mondschein usw.	Vorkommnisse	Datum Uhrzeit	Angabe des Ortes, Wind, Wetter, Bewegung, Beleuchtung, Sichtbarkeit der Luft, Mondschein usw.	Vorkommnisse
16.11.12. 6 ²¹ Uhr 6 ²⁶ " " 8 ²² " 8 ²⁵ "	Went: N. 1. See: ruhig.	1. Der Transporter. 2. Zwei Rettungsboote. 3. Luftschiff mit über 3000 l. Gasen. 4. Transporter Luftspannung 4000 m. Transporter. R. D. in unmittelbarer Nähe. 5. Abwarten eines Luftschiffes. 6. Der Kapitän gebietet die Rettungsboote zu verlassen. Die Rettungsboote sind zu verlassen. 7. Die Rettungsboote sind zu verlassen. 8. Die Rettungsboote sind zu verlassen. 9. Die Rettungsboote sind zu verlassen. 10. Die Rettungsboote sind zu verlassen.	17.11.12. 8 ⁵¹ Uhr 11 " " 13 " " 15 " " 17 " " 19 " " 21 " " 23 " " 25 " " 27 " " 29 " " 31 " "	1. Der Transporter. 2. Zwei Rettungsboote. 3. Luftschiff mit über 3000 l. Gasen. 4. Transporter Luftspannung 4000 m. Transporter. R. D. in unmittelbarer Nähe. 5. Abwarten eines Luftschiffes. 6. Der Kapitän gebietet die Rettungsboote zu verlassen. Die Rettungsboote sind zu verlassen. 7. Die Rettungsboote sind zu verlassen. 8. Die Rettungsboote sind zu verlassen. 9. Die Rettungsboote sind zu verlassen. 10. Die Rettungsboote sind zu verlassen.	
19.6.15. 4 ⁵⁸ Uhr 8 ²⁵ Uhr 9 ²⁰ " 11 ²⁰ " 12 ³⁰ " 1 ¹⁵ Uhr 2 ³⁰ " 3 ³⁰ " 4 ³⁰ "	10 am N. 1. 1. 1. on Went: hell See: hell	Transporter mit über 3000 l. Gasen. 2. Zwei Rettungsboote. 3. Luftschiff mit über 3000 l. Gasen. 4. Transporter Luftspannung 4000 m. Transporter. R. D. in unmittelbarer Nähe. 5. Abwarten eines Luftschiffes. 6. Der Kapitän gebietet die Rettungsboote zu verlassen. Die Rettungsboote sind zu verlassen. 7. Die Rettungsboote sind zu verlassen. 8. Die Rettungsboote sind zu verlassen. 9. Die Rettungsboote sind zu verlassen. 10. Die Rettungsboote sind zu verlassen.	18.11.12. 10 ⁵¹ Uhr 11 " " 12 " " 13 " " 14 " " 15 " " 16 " " 17 " " 18 " " 19 " " 20 " " 21 " " 22 " " 23 " " 24 " " 25 " " 26 " " 27 " " 28 " " 29 " " 30 " " 31 " "	10 am N. 1. 1. 1. on Went: hell See: hell	Transporter mit über 3000 l. Gasen. 2. Zwei Rettungsboote. 3. Luftschiff mit über 3000 l. Gasen. 4. Transporter Luftspannung 4000 m. Transporter. R. D. in unmittelbarer Nähe. 5. Abwarten eines Luftschiffes. 6. Der Kapitän gebietet die Rettungsboote zu verlassen. Die Rettungsboote sind zu verlassen. 7. Die Rettungsboote sind zu verlassen. 8. Die Rettungsboote sind zu verlassen. 9. Die Rettungsboote sind zu verlassen. 10. Die Rettungsboote sind zu verlassen.

Stage One DBA - Sources



Location of the torpedo hits that caused the loss of HMS *Dunvegan Castle*

Stage One DBA - Sources

UK Civil Hydrography Programme H525

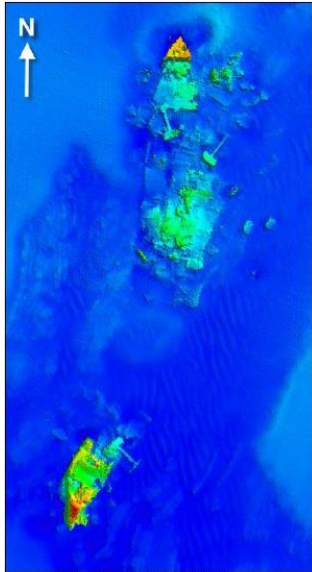


Figure 2 - Plan view of Wreck 22682 DTM.

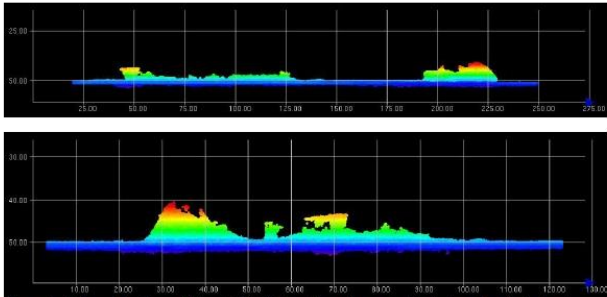
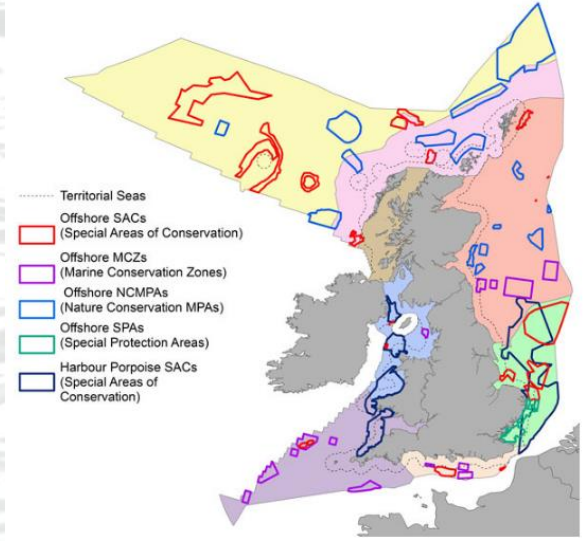
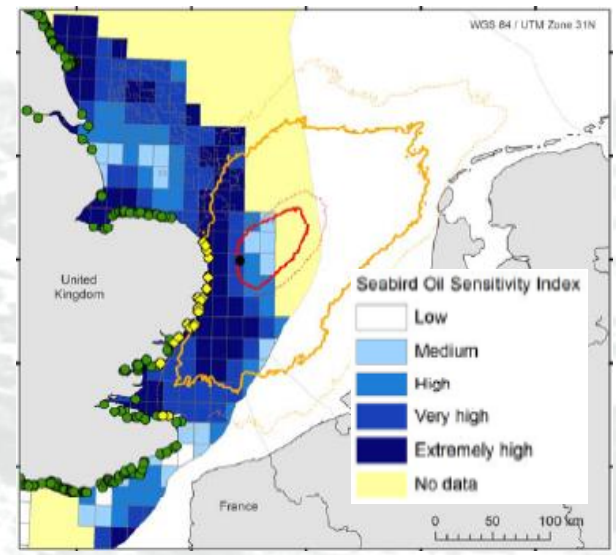
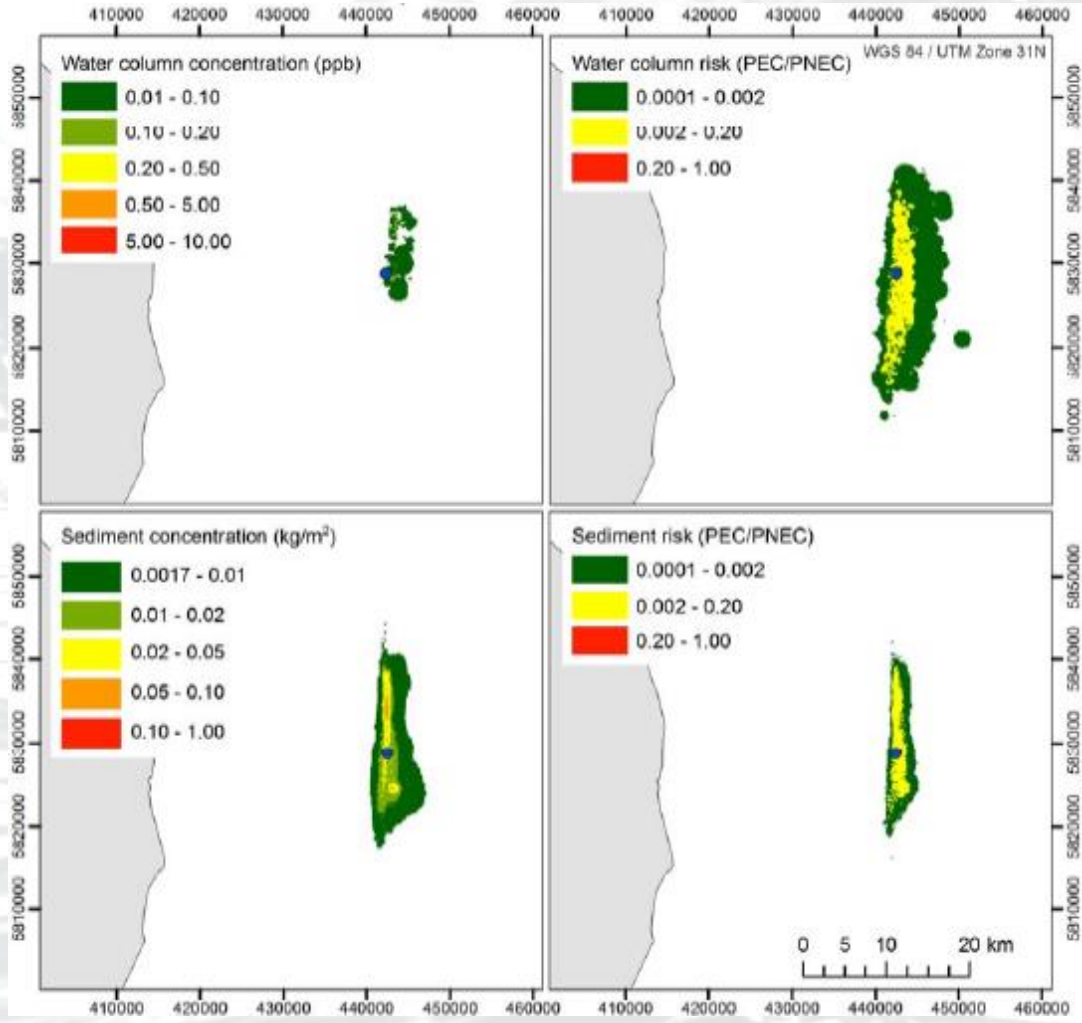


Figure 4 - Orthometric views of Wreck 22682 viewed from the west side (top) and south (bottom).

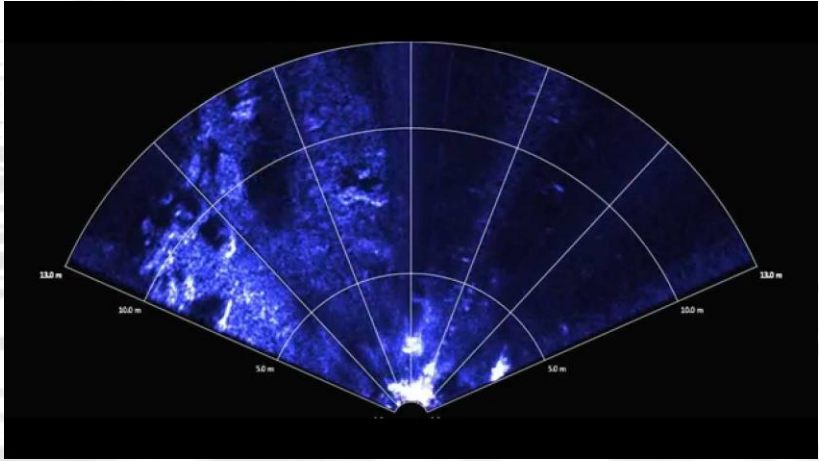
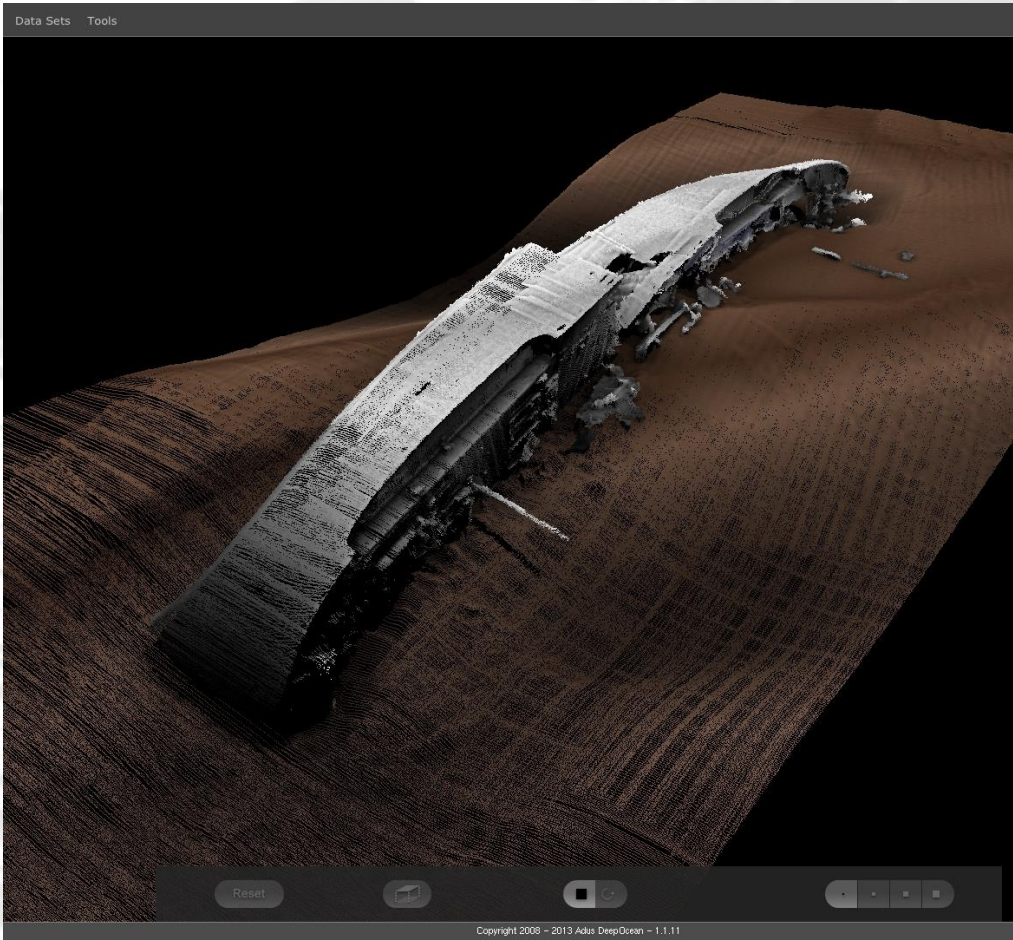
Maritime & Coastguard Agency

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Stage One DBA - Sources



Stage Two – On Site Survey



Stage Two – On Site Survey



Stage Three - Intervention



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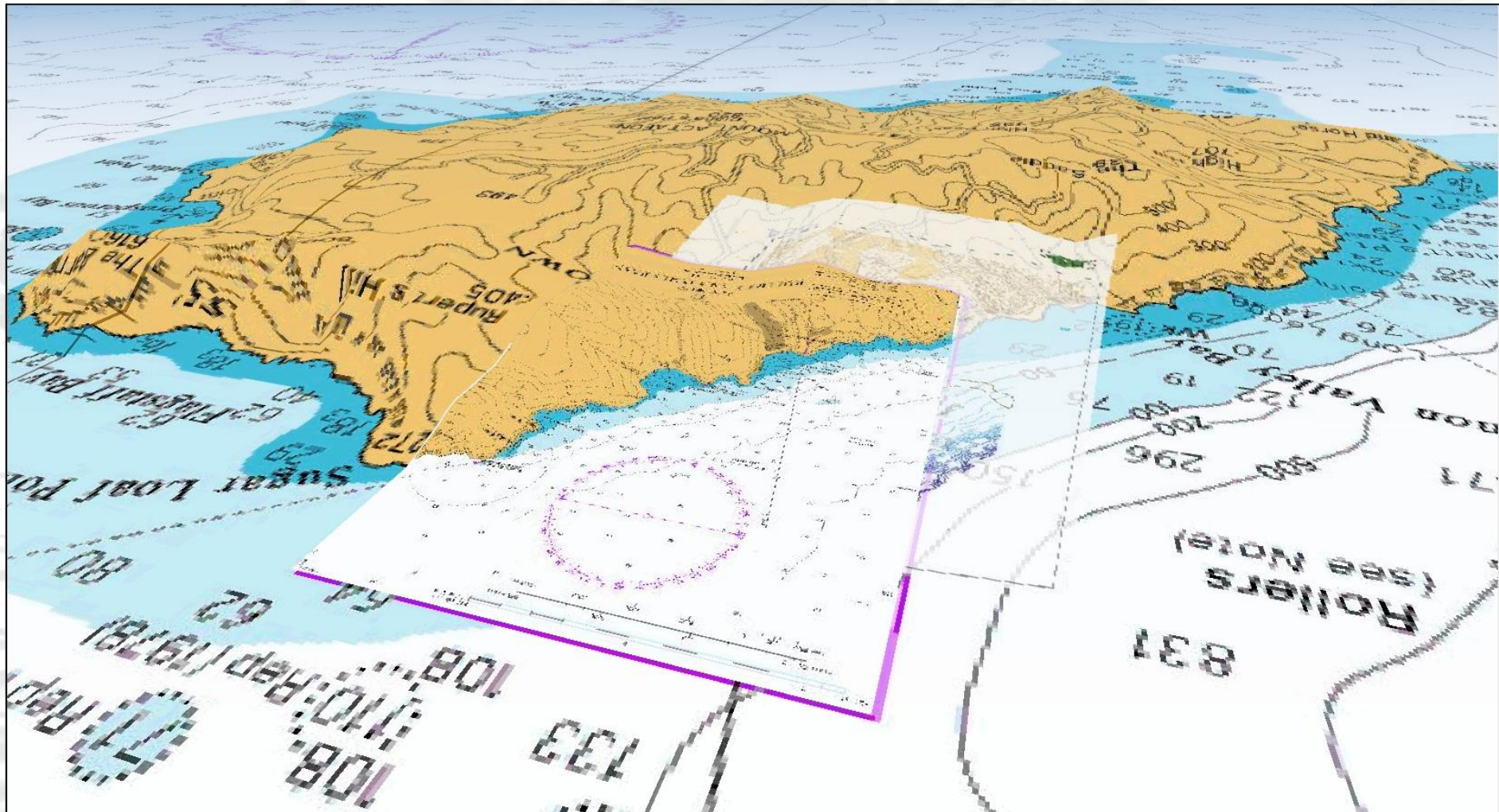
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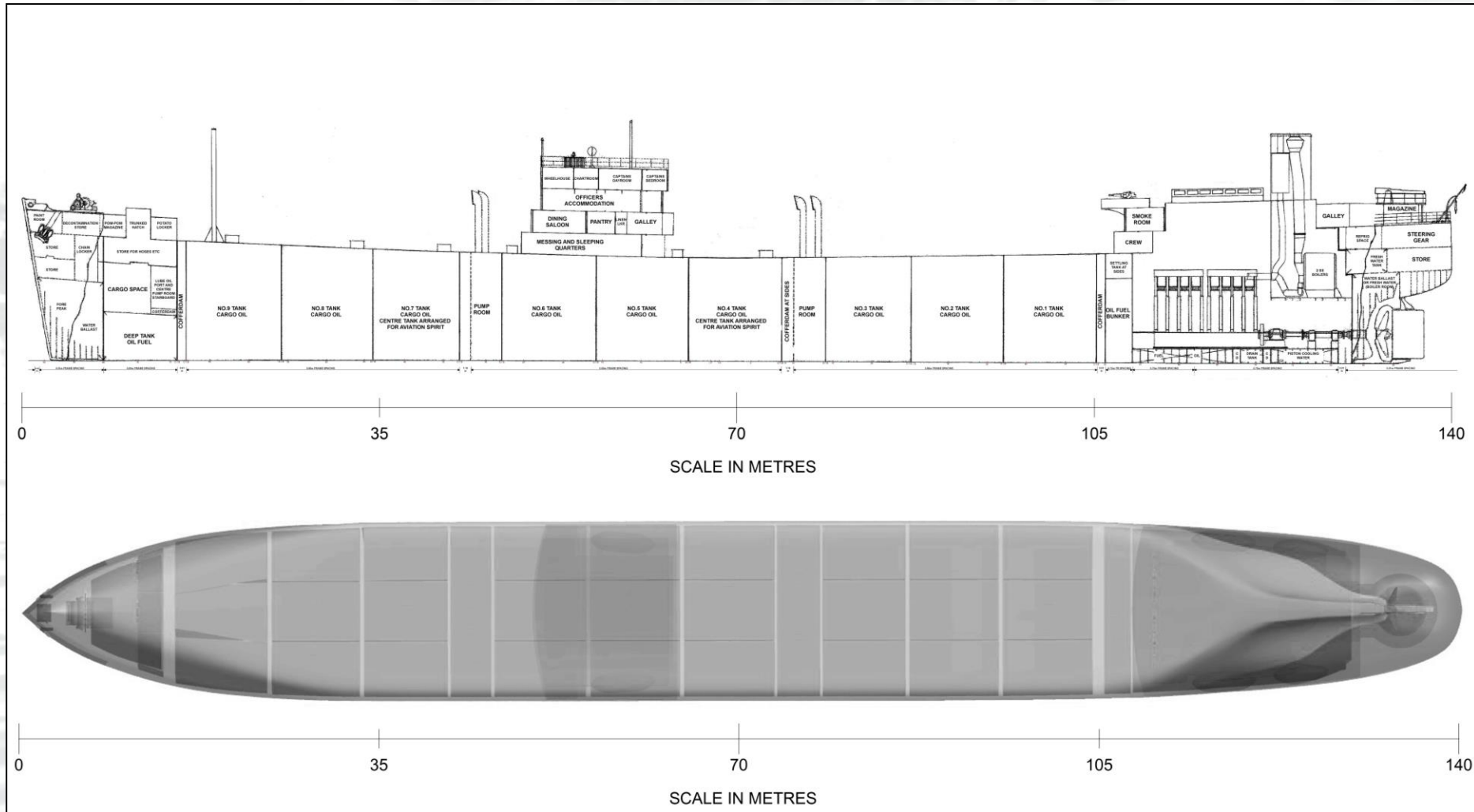
RFA Darkdale



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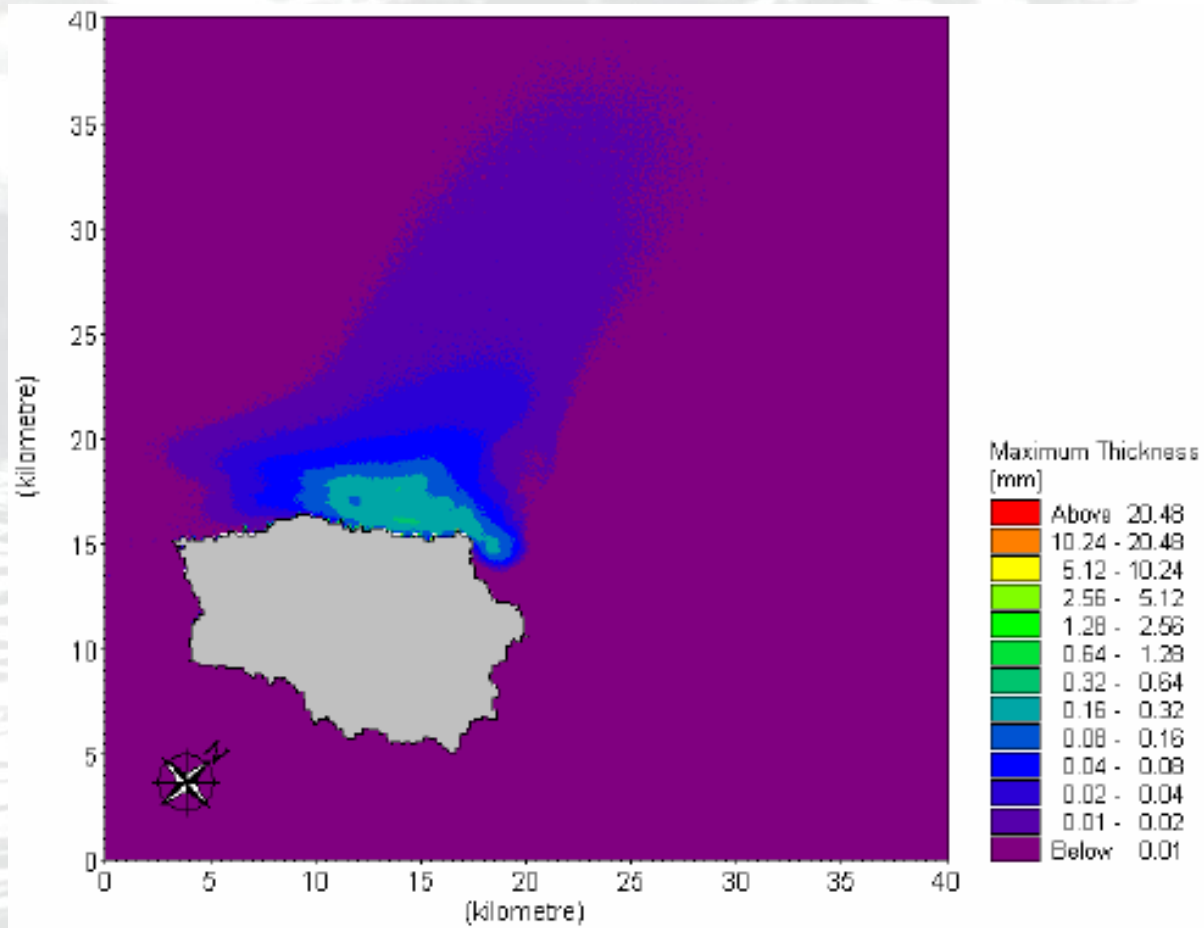
Anlaufskizze mit Schußbild. Wie sind Schußunterlagen erworben? Besondere Beobachtungen, Abwehr, Erklärung für Fehlschuß:



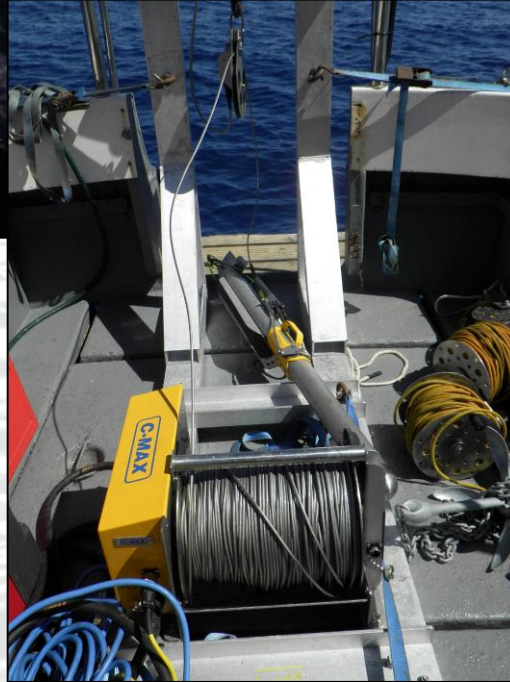
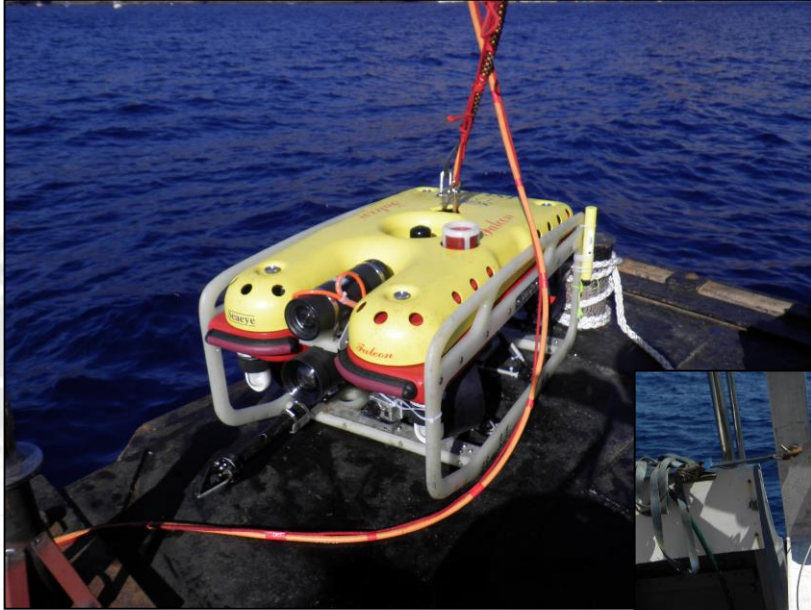
Ziel war vor Anker liegender Tanker von 8100 t. Tanker mußte unter allen Umständen sofort und restlos vernichtet werden. Dahernach den vorherigen ungeklärten Schüssen 4 Torpedos mit Schußwinkel 0.



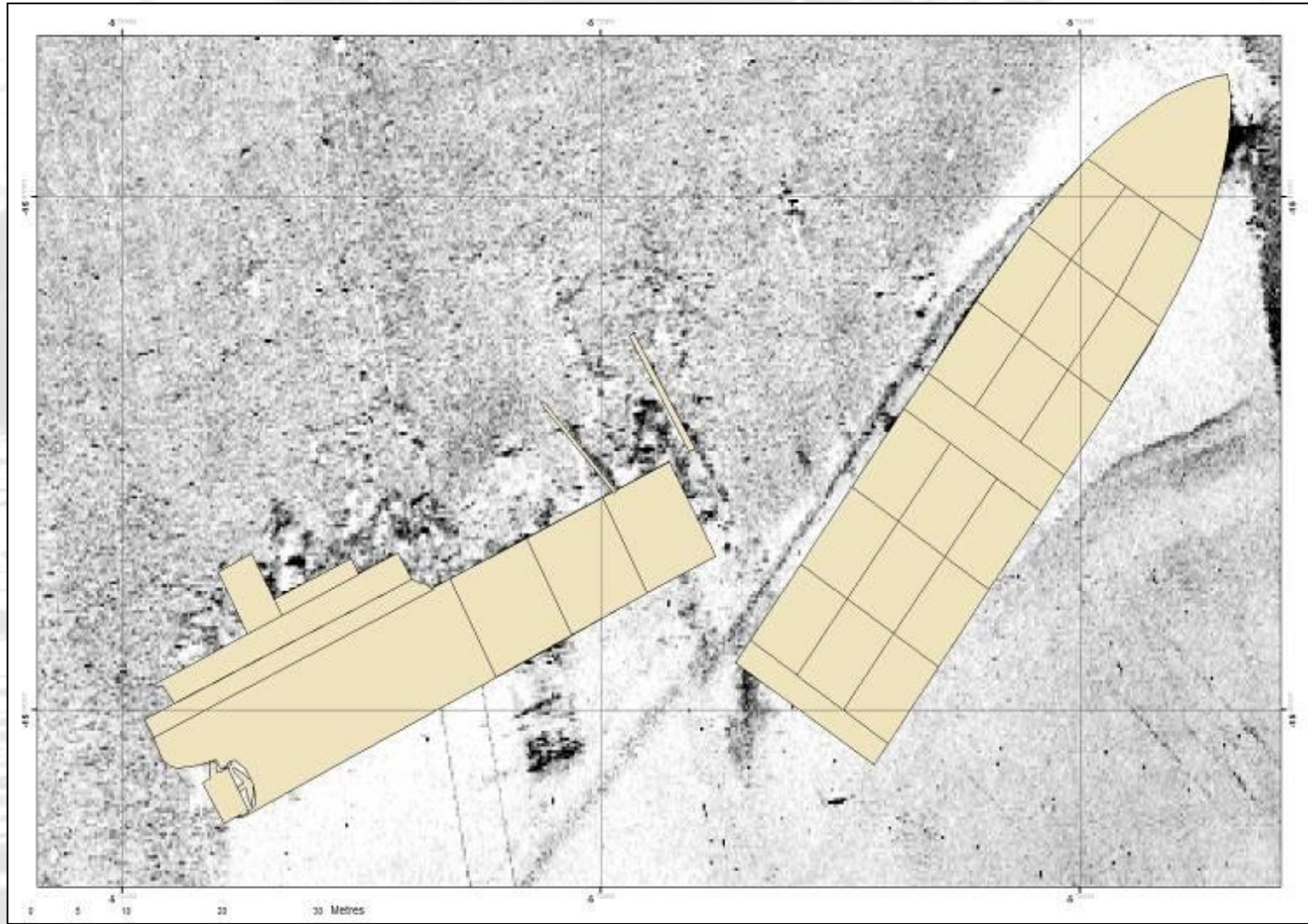
RFA Darkdale



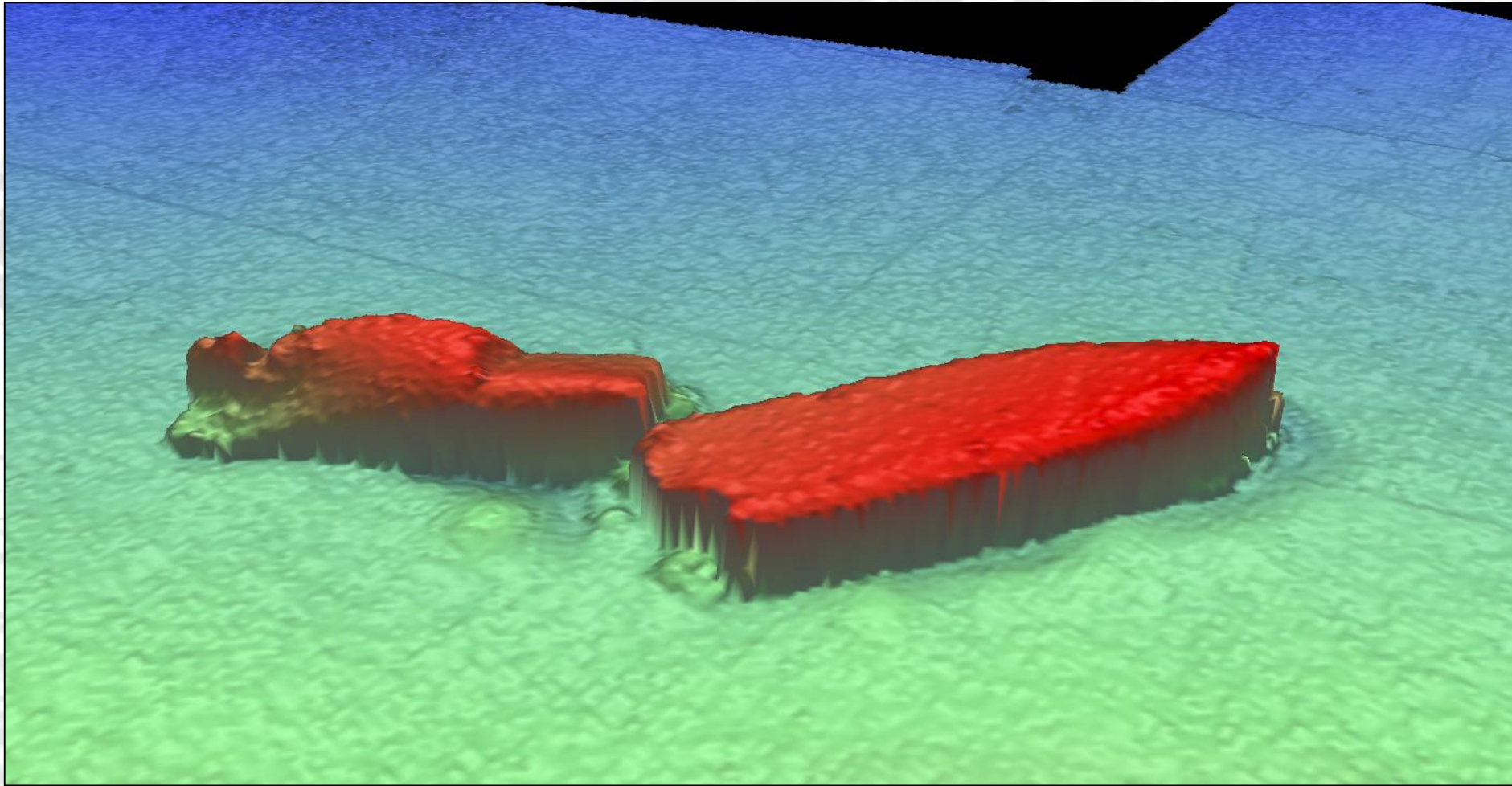
RFA Darkdale



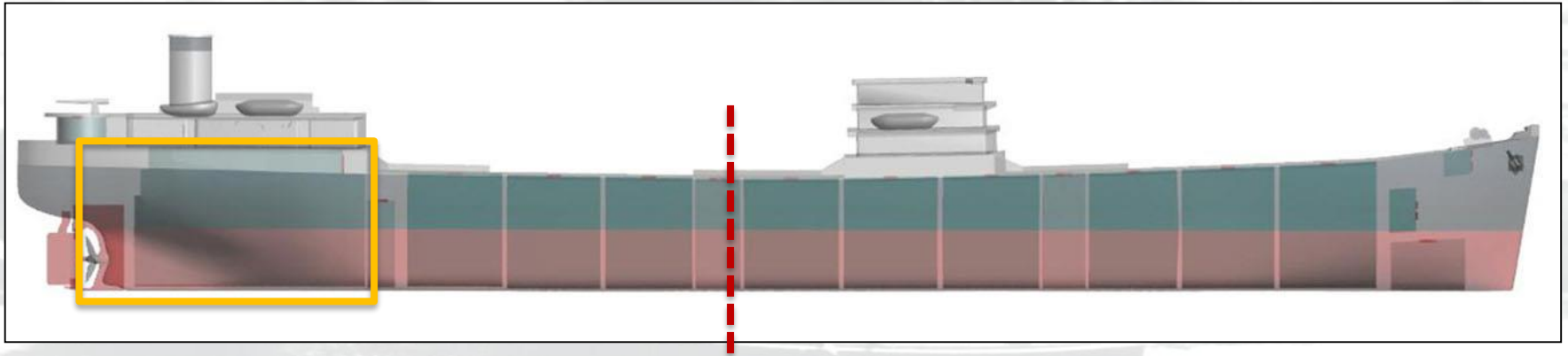
RFA Darkdale



RFA *Darkdale*

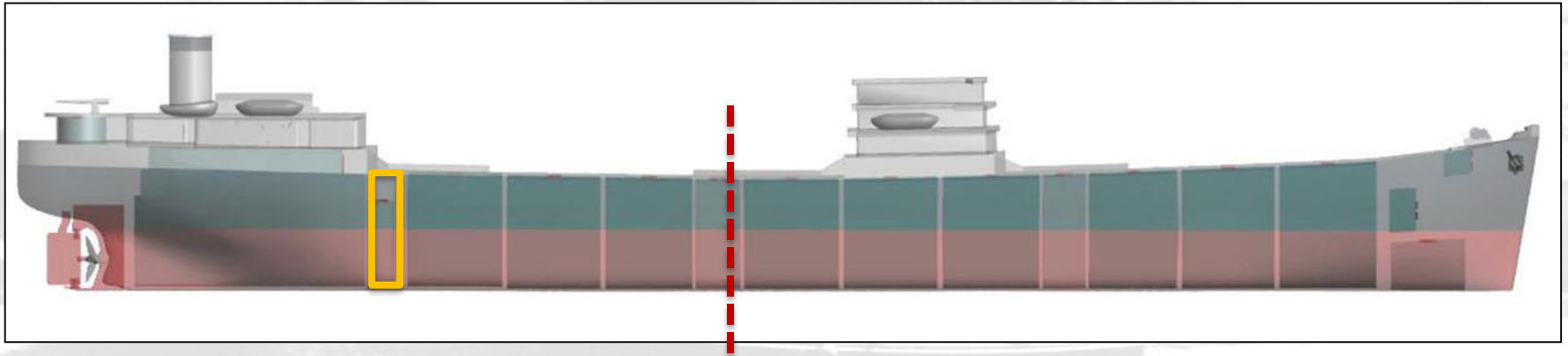


RFA *Darkdale*



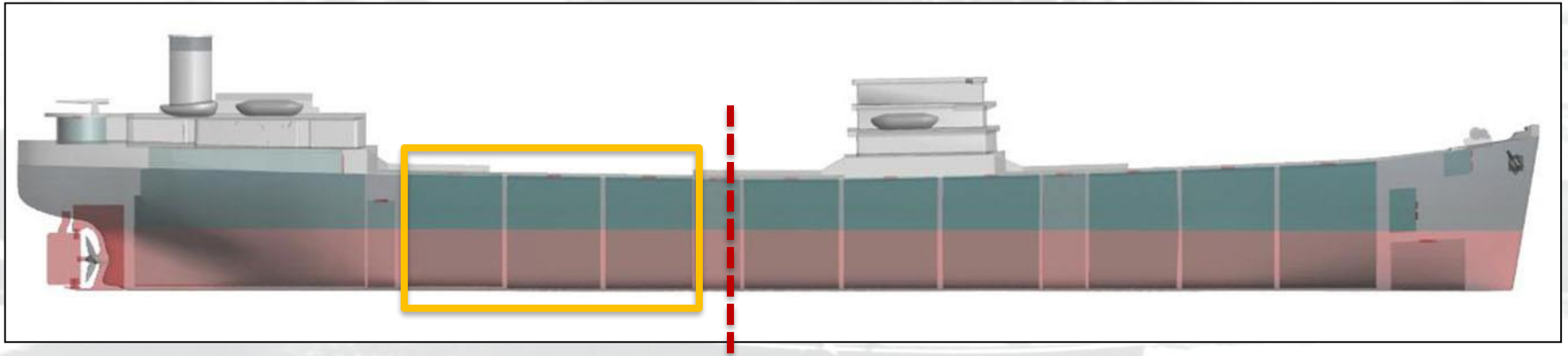
- Engine room likely to have torpedo damage to port side
- Mainly intact plating on starboard side will trap small residual quantities of oil

RFA *Darkdale*



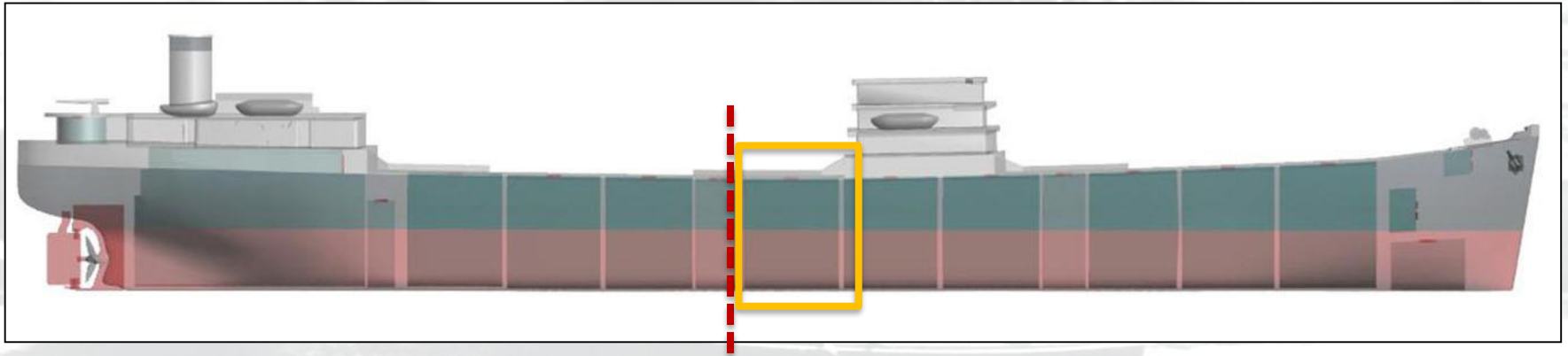
- Bunker tanks likely to contain some oil
- Most likely source of leak in 2010

RFA *Darkdale*



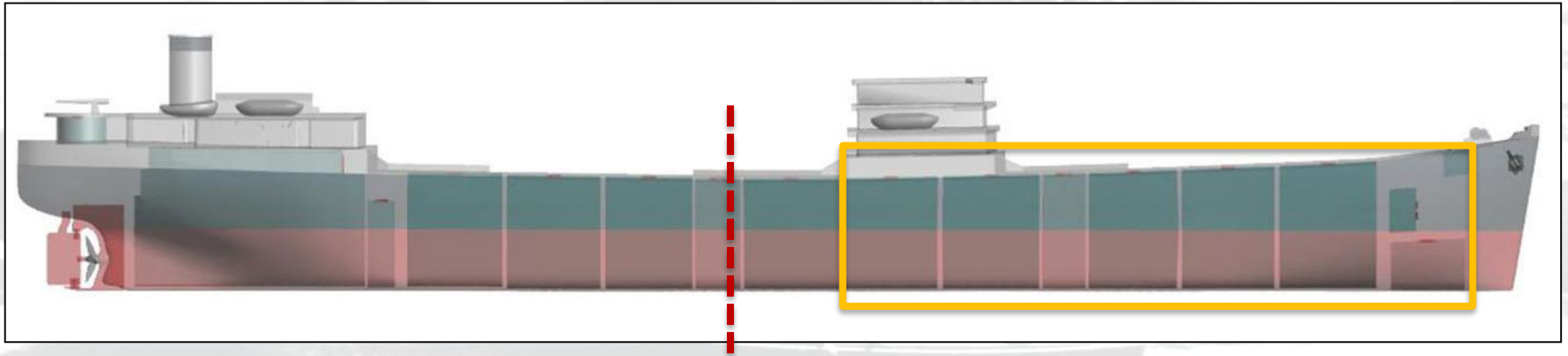
- Badly torpedo damaged
- Cargo tanks 1 to 3 open to the sea; no significant oil content

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- No. 4 Cargo tank partially open to the sea but known to contain some oil
- Estimated to be circa 150m³

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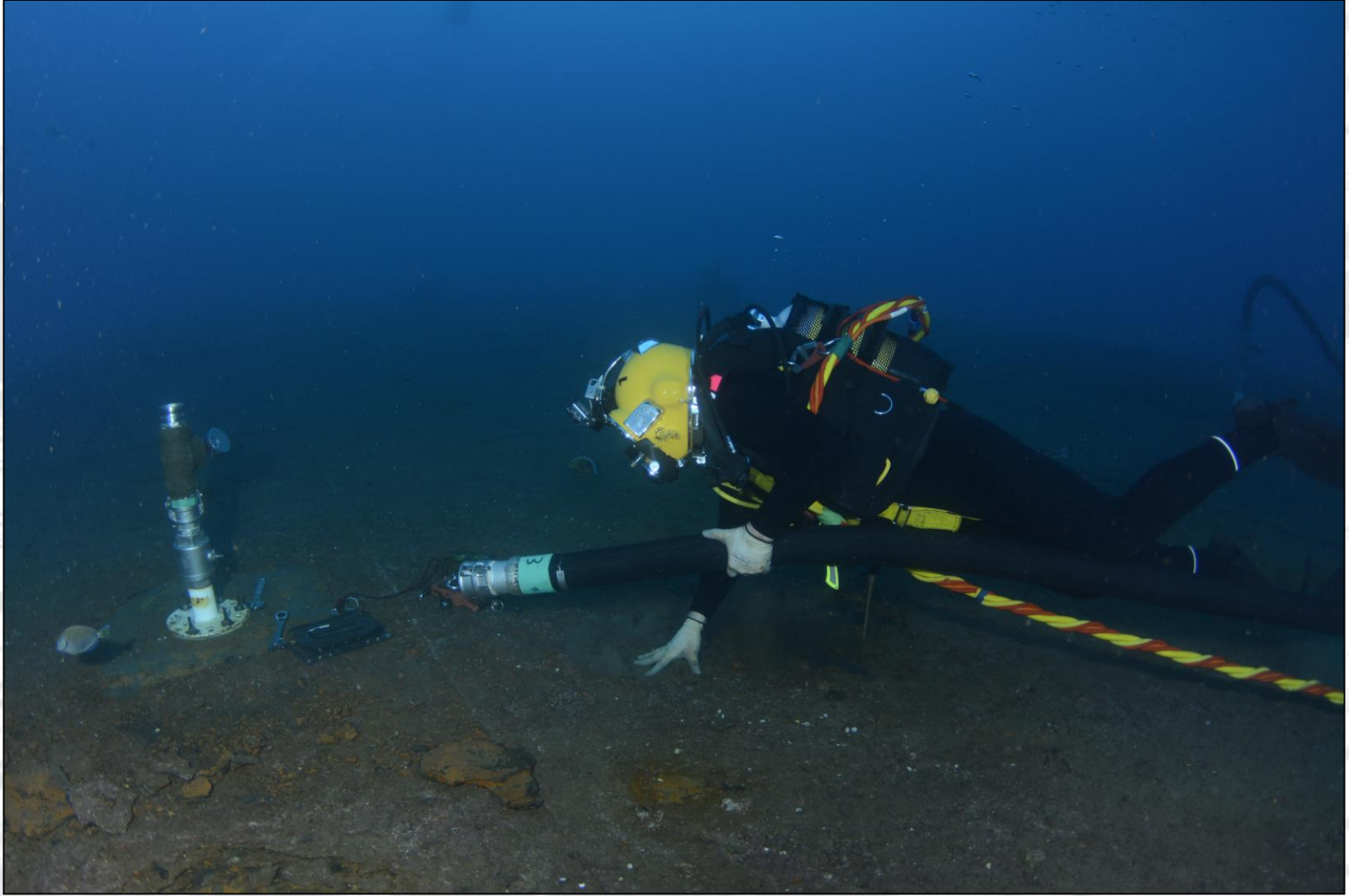


- Cargo tanks 5 to 9 intact
- Estimated quantity of oil remaining onboard 2800 to 4500m³

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RFA Darkdale



RFA Darkdale

