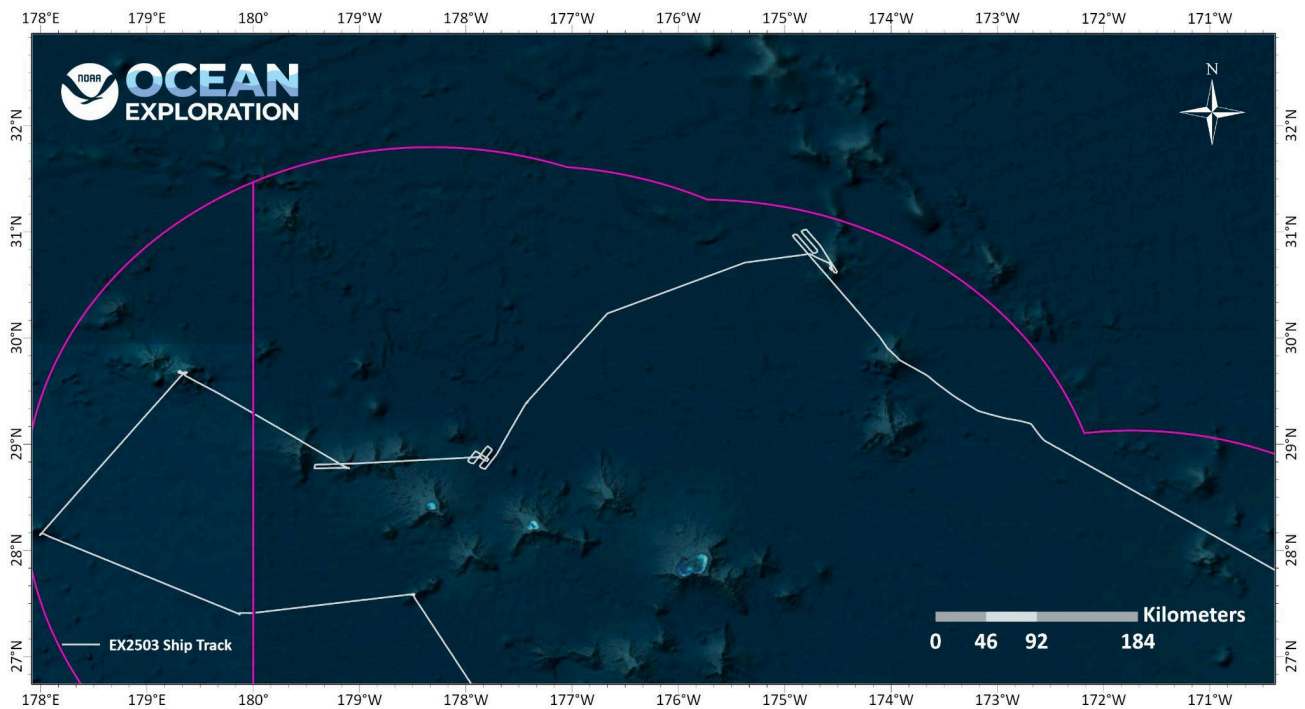


ROV Dive Summary

EX2503, Dive 07, April 20, 2025

General Location Map



Dive Information

Site Name	USS Yorktown Dive #2
General Area Descriptor	Papahānaumokuākea
Science Team Leads	Sara Kahanamoku-Meyer (UH Mānoa/HI Sea Grant) and Brian Kennedy (ODL/BU)
Expedition Coordinator	Sam Cuellar (NOAA Ocean Exploration)
ROV Dive Supervisor	Chris Ritter (GFOE)
Mapping Lead	Neah Baechler (NOAA Ocean Exploration/UCAR)
Sample Data Manager	Anna Lienesch and Jordan Schweizer (NCEI)

Dive Purpose	To explore specific science questions on several areas of the USS Yorktown
Maritime Heritage Restrictions	Yes
ROV Dive Summary Data	<p>Dive Type: Normal</p> <p>In Water: 2025-04-20T18:28:14.706171 POSITION RESTRICTED</p> <p>On Bottom: 2025-04-20T21:24:09.914045 POSITION RESTRICTED</p> <p>Off Bottom: 2025-04-21T01:38:21.027838 POSITION RESTRICTED</p> <p>Out Water: 2025-04-21T04:29:54.308053 POSITION RESTRICTED</p> <p>Dive Duration: 10:01:39</p> <p>Bottom Time: 4:14:11</p> <p>Max Vehicle Depth: RESTRICTED</p> <p>Min Seafloor Depth: RESTRICTED</p> <p>Distance Travelled: 409.3 m</p>

Dive Description

Similar to Dive 06, *Deep Discoverer (D2)* made contact with the bottom away from the USS *Yorktown* wreck site amidst clay ejecta displaced during the wreck's impact with the substrate. A bomb cart was a notable isolated artifact located in this ejecta field, and was near some unidentified sheet metal and portable artifacts. As planned, after ending Dive 06 with a faint outline of an automobile in the hangar deck at port quarter, *D2* returned to this area roll-up door to resume documentation, beginning at the mudline where dislodged armor plating was observed. *D2* ascended to the hangar deck level, and the faint outline of a potential automobile was confirmed and enhanced with different vehicle lighting settings. Chrome trim, hubcaps, and fender lines were diagnostic features observed from this driver's side profile view that sent scientists scrambling for an ID.

D2 progressed aft investigating hatches, and the catwalk just below the flight deck that allowed fore and aft movement by sailors without interfering with aircraft operations. Panning aft of the catwalk, *Yorktown's* big 5" anti-aircraft guns were observed around Frame 174 with their shields unbolted, probably in jettisoning efforts by damage control crews. The hinged semi-circle platforms are in the upright/deployed position. Hormathiidae anemones growing on the rifled barrel. *D2* got some insightful views of the 5" turret mechanics, trainer seat, electronics, and a data plate. On the after-most 5" gun around frame 183 is a hauser line and a rubber firehose once stowed inboard of the gun gallery and now tangled around the base of the barrel, possibly connected to the jettisoning efforts, or entangled during the wrecking event.

Continuing aft on the port side, *D2* observed the area of flight deck that was broken off, and after capstan machinery room, spare parts locker, and remnants of the foc'sle deck where the 20'0" small boat and associated equipment were stored. *D2* dropped down the mudline where an extraordinary tube worm colony was growing out of an aperture right at the waterline. Typically, these colonies are only associated with cold seep environments. Ascending to image the stern at frame 198, ship identifiers "5" and "YORKTOWN" were seen embossed. The relatively-small stern deck features 20mm Oerlikon anti-aircraft guns and 50-caliber multi-use guns still pointed skyward. A CO2 extinguisher nozzle and CBA tank/harness lay in the sediment, speaking to the firefighting activities that challenged *Yorktown's* crew during the battle.

USS *Yorktown* is listed on the seabed to starboard at roughly 20-degrees, and anemones were seen growing just on the starboard side of the hull at the stern. *D2* moved to the starboard quarter and ascended to flight deck level to investigate Elevator Shaft #3 around frame 184. Four (but potentially more) Douglas Dauntless SBD dive bombers were found jumbled in the elevator. One was observed with tailnumber "B5" that was later identified by Russ Matthews as Bureau #4542 of USS *Enterprise's* Bombing Squadron Six (VB-6) flown by Ensign George H. Goldsmith, pilot, and Radioman 1st Class James W. Patterson, Jr. This plane was damaged during its attack on Japanese carrier *Kaga* and landed on *Yorktown* after running low on fuel. It was likely stowed aft and out of the way in the hangar deck and was jumped in the elevator shaft with the other planes during the wrecking event.

One of these other planes had a 500lb bomb still secured to its release cradle. Aviation-grade oxygen storage cylinders were seen lining the walls and fallen over on the inboard side of the shaft. *D2* continued hovering over the aircraft and zooming on items in view, including a hatch with plate "Squadroom Storerooms 02-186". *D2* ascended out of Shaft #3 and continued forward on the starboard side, imaging the starboard aft 5" guns, and completed another dive objective: confirming the wing seen on the 2023 NA154 dive. Based on the oil cooler opening and shell ejection chutes, it's likely this once belonged to an F4F Wildcat fighter.

From this starboard vantage point into the hangar deck and just past the F4F wing, *D2* collected more video on the car, which was observed to have a cloth roof, intact bumper, and chrome trim pieces, and a license plate reading "SHIP SERVICE" on its top line and potentially "CV-5" or "NAVY" on the bottom line. Its hood was blown off, but the split windshield was intact. The team later identified this as a 1941 Ford Super Deluxe Woody. A roll-up door that once shielded this opening into the hangar deck from weather lays in the sediment. Just forward of the F4F wing and the Woody is the starboard side small boat davit at the mudline. This davit would deploy and retrieve the 50'0" Officers' Boat and the 50'0" Motor Launch, both missing. Just above, the 50-caliber and 20mm Oerlikon gun galleries were observed as *D2* continued forward. Rubber on the Oerlikon shoulder pads is still intact. On the same gallery, a fire pump made by "American LaFrance" still has paint, gauges, and rubber hoses.

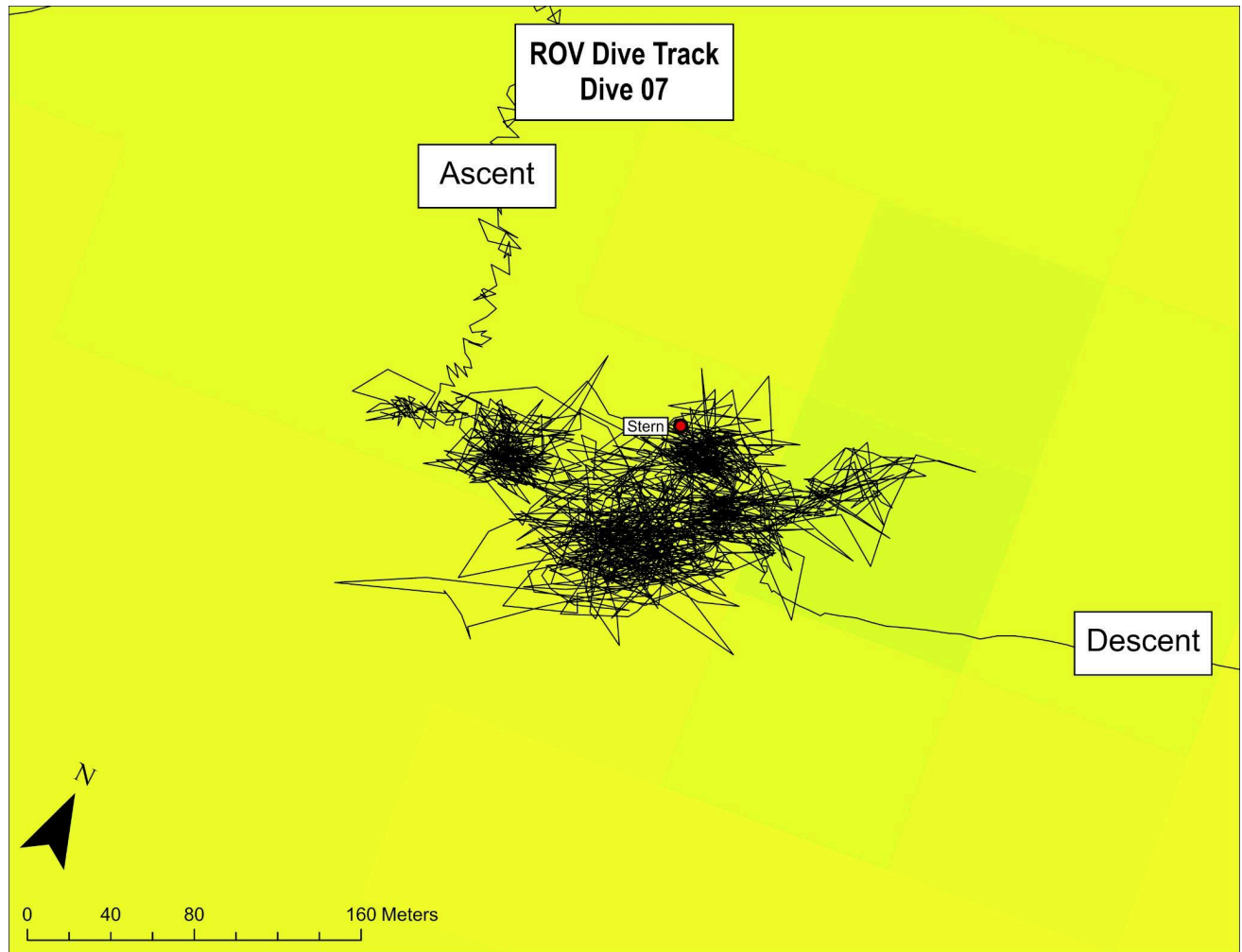
	<p><i>D2</i> ascended to the flight deck to investigate bomb damage from the third 250kg bomb dropped by Aichi D3A dive bombers from <i>Hiryu</i>. A potential work suit was observed just under the flight deck, and has been redacted from the full dive video published on SeaTube at 06:46:22 dive time. Also observed was tie-down metal stripping, and a white mound of likely-microbes growing atop arresting wire running port to starboard.</p> <p><i>D2</i> proceeded forward along the starboard side gun gallery featuring 4 50-caliber guns, with the forward-most around frame 134 missing from its mount. It's likely that dislodging is related to area damage to the catwalk, hatch, and parachute packing space. Past Elevator Shaft #2 and around frame 113, <i>D2</i> imaged the 4-barrel 1.1" / 75-caliber anti-aircraft weapon described in the NHHHC-hosted account of <i>Yorktown's</i> Medical Officer, LT Joseph P. Pollard. Just forward, an aircraft crane davit is intact just aft of the uptakes and island. The boom is resting on another 1.1" / 75-caliber gun. This crane may also have been utilized to deploy and retrieve the 2 40'0" Motor Launches between frames 96-106. Anthony Tully had requested investigating the upper portions of the island for additional, potentially unreported battle damage. None was seen, and the dive was concluded here.</p> <p><i>D2</i> begins ascent to the surface.</p>
Notable Observations	
Community and Habitat Observations	<p>Corals and Sponges — Present Chemosynthetic Community — Present High biodiversity Community — Absent Active Seep or Vent — Absent Extinct Seep or Vent — Absent Hydrates — Absent</p>
CMECS Feature Type(s)	Wreck
SeaTube Link (science annotations)	https://data.oceannetworks.ca/app/dive-logs/1505

Equipment Deployed

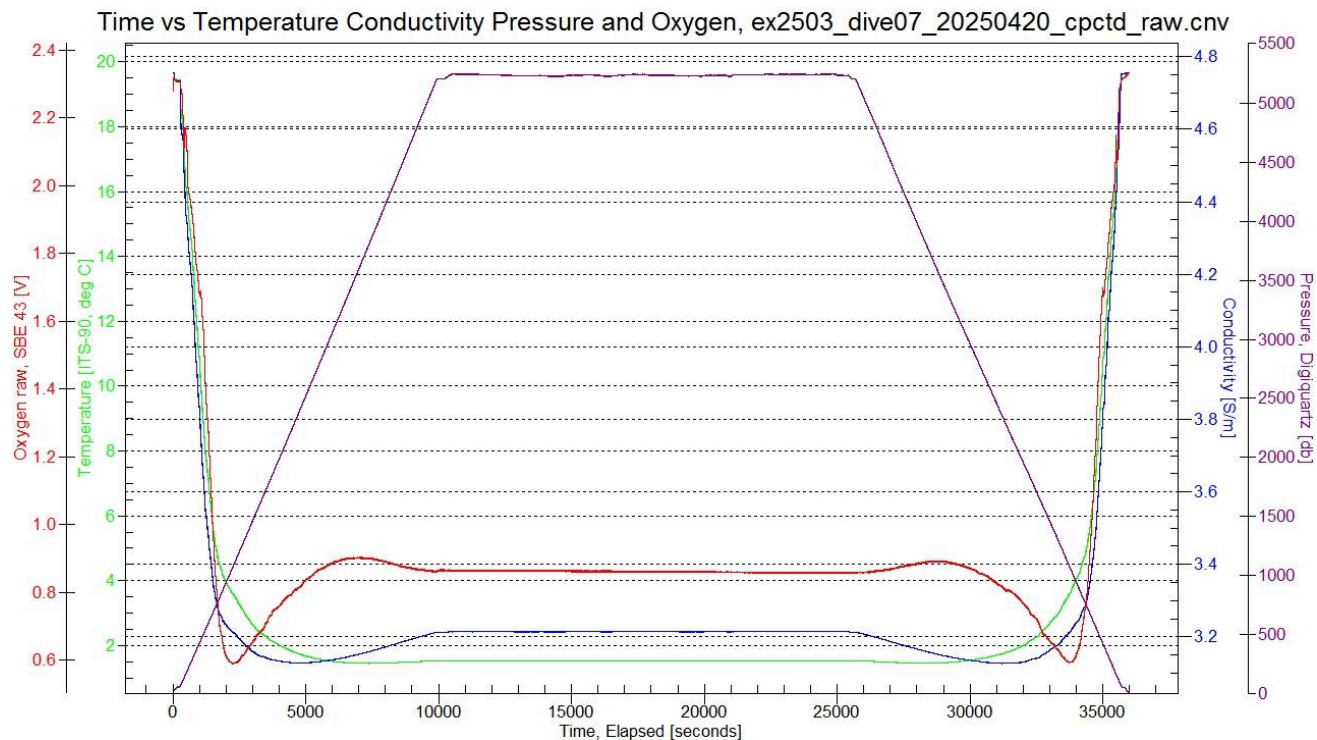
ROV	<i>Deep Discoverer</i>
Camera Platform	<i>Seirios</i>

ROV Measurements	The following ROV measurements, data streams and equipment are used on each ROV deployment: CTD, depth, scanning sonar, USBL position, altitude, heading, attitude, high-resolution cameras, low-resolution cameras, manipulator arms, suction sampler, sample drawers and thrusters. The following row notes if any of these sensors were malfunctioning or not operational.
Equipment Malfunctions	None

Close-Up Map of Main Dive Site

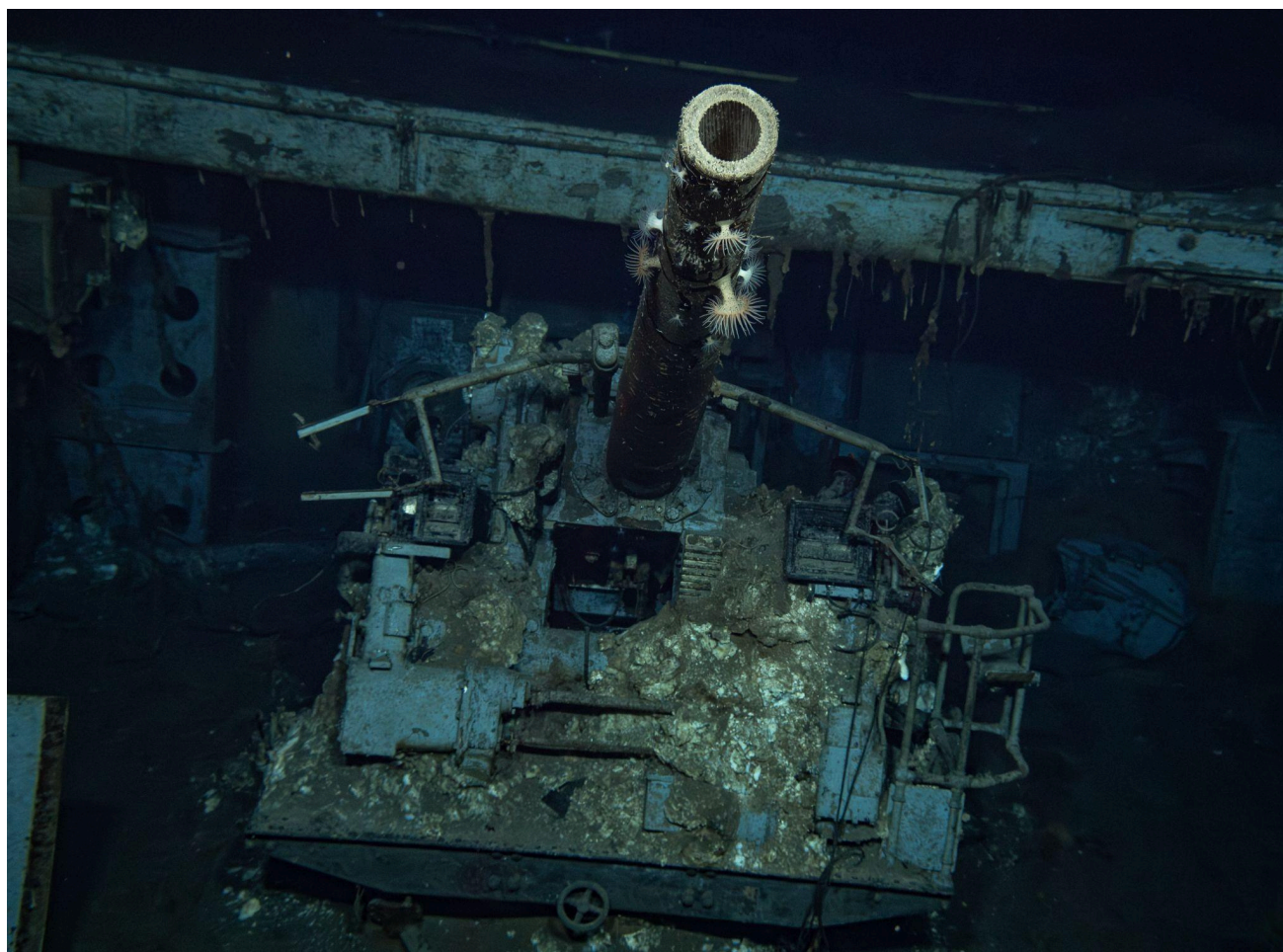


Sound Speed Manager Image of ROV CTD Profile



Ambient conditions during Dive 06. Plot shows Temperature (C°), Conductivity (S/m), Pressure (db), and Oxygen (V; as measured by SBE43).

Representative Photos of the Dive



A 5-inch gun seen on the port aft gun gallery, with the gun tub shield removed.



Unidentified tubeworms are seen surrounding an outflow pipe on *Yorktown's* hull on the port side near the stern.



The white '5' is seen on *Yorktown's* stern.



'Yorktown' as seen on the ship's stern in raised letters.



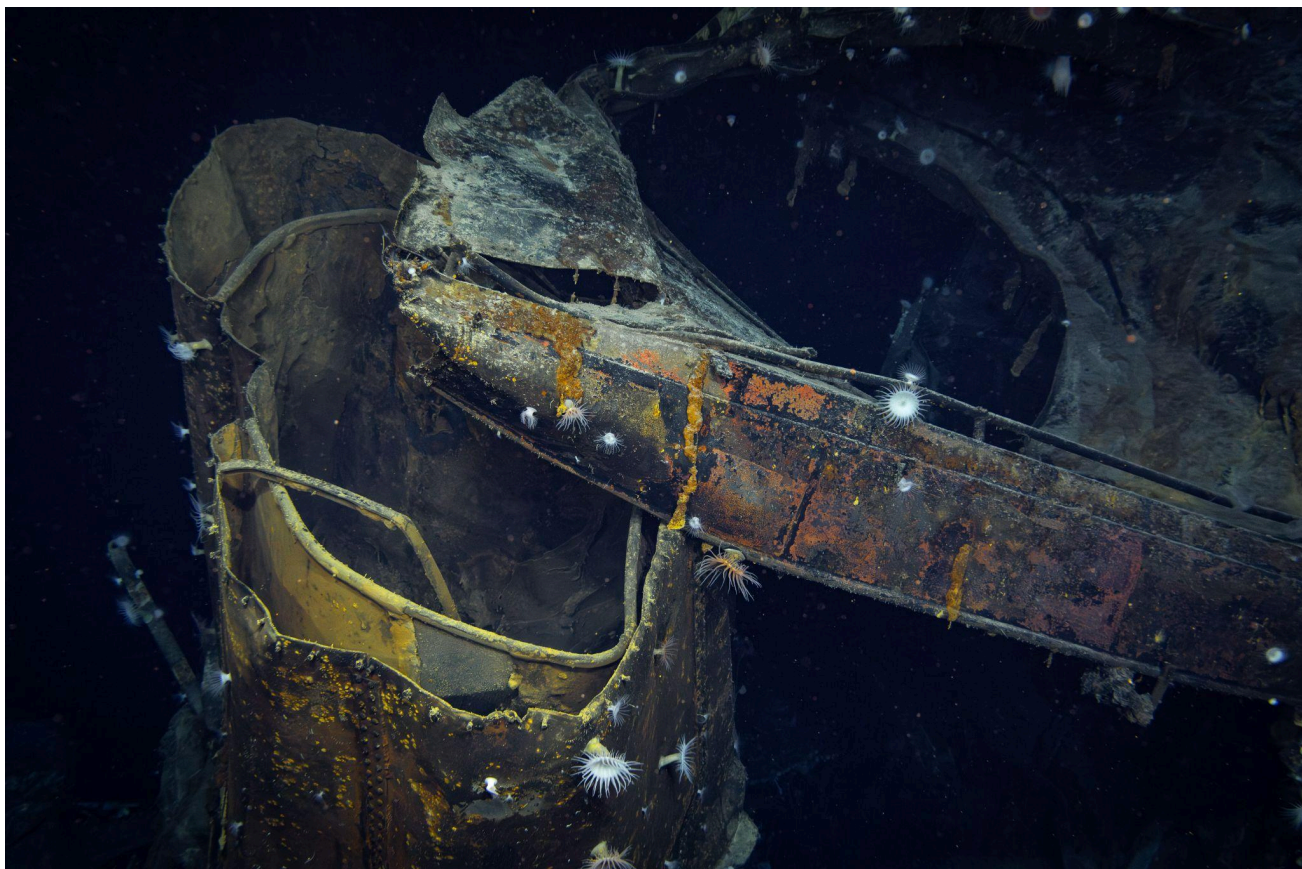
An overturned Douglas SBD-3 'Dauntless' dive bomber in the aft #3 elevator on *Yorktown*, still armed with a 500-lb bomb. This aircraft is one of several seen in a pile in the #3 elevator.



Douglas SBD-3 Dauntless '6-B-5' (BuNo 4581) of Bombing Squadron Six from *USS Enterprise* is seen here in elevator #3. Identified by its markings and historical records, 6-B-5 was among the first to attack the Japanese carrier *Kaga*. *Yorktown's* after-action report states that two battle-damaged *Enterprise* SBDs were recovered and struck below during the battle, but it did not give fuselage codes. However, the pilot of 6-B-5's name appears among the muster list of survivors rescued from *Yorktown* after it was abandoned.



Views from the aft #3 elevator and starboard hangar door of a suspected 1941 Ford Super Deluxe 'Woody' discovered on the hangar deck of *Yorktown*.



Remains of Stack #4 on the aft end of *Yorktown's* island.

Scientists Involved

Name	Email	Affiliation
Anna Lienesch	anna.s.lienesch@noaa.gov	UMD/ESSIC/CISESS & NOAA/NCEI
Anne Wright Nunn	anne.e.nunn.ctr@mail.mil	HJF Supporting DPAA
Anthony Tully		
Asako Matsumoto	amatsu@gorgonian.jp	Chiba Institute of Technology, Japan; The University Museum, the University of Tokyo
Brian Kennedy	briankennedy@oceandiscoveryleague.org	Ocean Discovery League
Charles Haberlein	chaberlein@aol.com	U.S. Navy: Naval History and Heritage Command (Retired Civil Servant)
Cherisa Friedlander	cherisa.l.friedlander@noaa.gov	NOAA
Chris Ritter	chris.ritter@tgfoe.org	Global Foundation for Ocean Exploration
Christopher Kelley	ckelley@hawaii.edu	University of Hawaii
Frank Thompson	frank.v.thompson4.civ@us.navy.mil	Naval History and Heritage Command
George Matsumoto	mage@mbari.org	MBARI
Hannah Fleming	hfleming@hjf.org	HJF supporting DPAA
Hunter Brendel	hunter.brendel@noaa.gov	NOAA
James Delgado	james.delgado@searchinc.com	SEARCH
Jason Meyer	jason7seas@gmail.com	
Jon Parshall		

Name	Email	Affiliation
Jordan Schweizer	jordan.schweizer@noaa.gov	CU Boulder/CIRES/NCEI
Katy Bell	katy@oceandiscoveryleague.org	ODL
Linda Sunderland	lsunderland@broward.org	Broward County / UNC Wilmington
Mike Brennan	mike.brennan@searchinc.com	SEARCH
Neah Baechler	neah.baechler@noaa.gov	NOAA Ocean Exploration
Phil Hartmeyer	phil.hartmeyer@noaa.gov	NOAA Ocean Exploration
Russ Matthews	russ@airseaheritage.org	Air/Sea Heritage Foundation
Sam Cuellar	samuel.cuellar@noaa.gov	NOAA Ocean Exploration
Sara Kahanamoku-Meyer	sara.kahanamoku@hawaii.edu	University of Hawaii at Manoa
Sophie Caradine-Taber	chiefst.explorer@noaa.gov	OMAO
Tim Holland		OMAO
Tony Perry		OMAO
Val Finlayson	vfinlays@umd.edu	University of Maryland College Park
William Hoffman	william.t.hoffman@noaa.gov	NOAA Office of National Marine Sanctuaries
David Jourdan	dave@nauticos.com	Nauticos

Direct inquiries to:

NOAA Ocean Exploration
1315 East-West Highway (SSMC3 2nd Floor)
Silver Spring, MD 20910

ex.expeditioncoordinator@noaa.gov

archaeology.oceanexploration@noaa.gov

