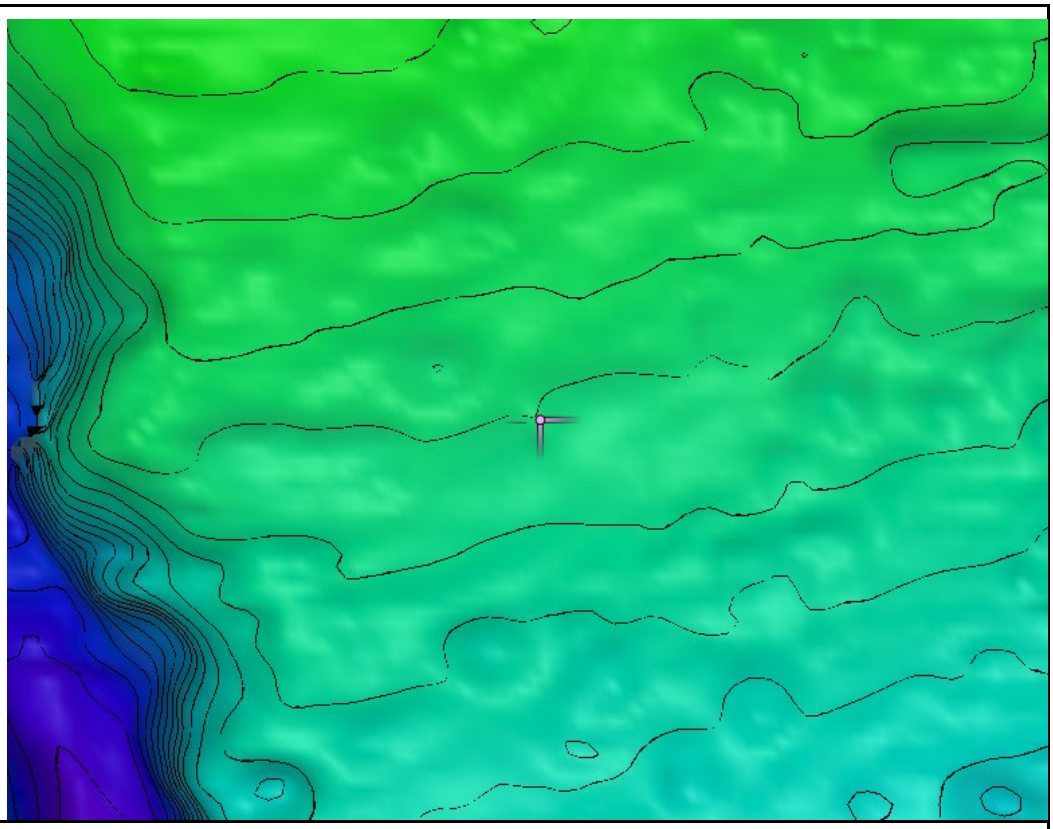
Ocean Exploration and Research

Okeanos Explorer ROV Dive Summary: EX-19-04, Dive 02, July 27, 2019

Dive Information

General Location Map	
General Area Descriptor	U.S. Northeast
Site Name	USS Baldwin, near Block Canyon
Science Team Leads	Jan Albiez (Kraken Robotics)
Expedition Coordinator	Michael P. White (NOAA-OER)
ROV Dive Supervisor	Daniel Rogers (GFOE)
Mapping Lead	Michael P. White (NOAA-OER)

ROV Dive Name

Cruise	EX1904

Dive Number	DIVE02

Equipment Deployed

ROV	*Deep Discoverer*		
Camera Platform	*Seirios*		
ROV Measurements	✔ CTD	✔ Depth	✔ Altitude
	✔ Scanning Sonar	✔ USBL Position	✔ Heading
	✔ Pitch	✔ Roll	✔ HD Camera 1
	✔ HD Camera 2	✔ Low Res Cam 1	✔ Low Res Cam 2
	✔ Low Res Cam 3	✔ Low Res Cam 4	✔ Low Res Cam 5
Equipment Malfunctions	None		
ROV Dive Summary Data (from Processed ROV)	Dive Summary: EX1904_DIVE02 ^^^ As Dive 02 was conducted on a Underwater Cultural Heritage (UCH) site, the location information for this site is restricted under OER's UCH policies and the National Historic Preservation Act. Dive duration: 9:25:20 Bottom Time: 8:0:38 Max. depth: 352.0 m		
Special Notes			

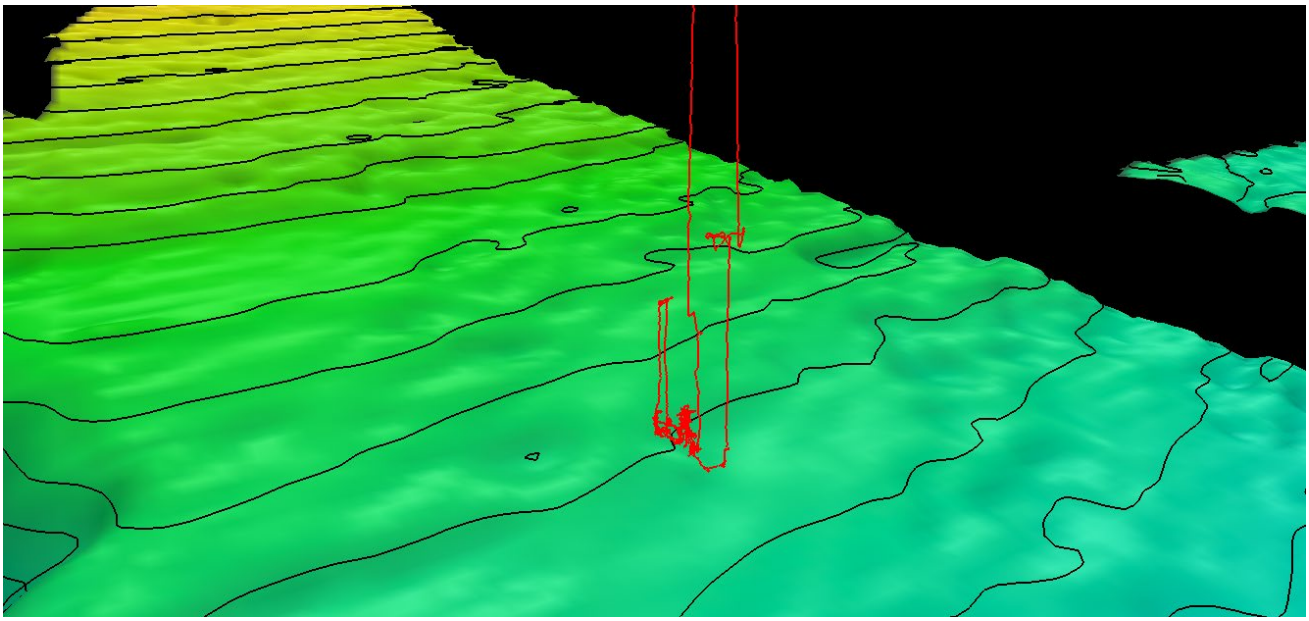
Scientists Involved (provide name, affiliation, email)

Name	Affiliation	Email
Robert Schwemmer	NOAA	robert.schwemmer@noaa.gov
Hans Van Tilburg	NOAA	hans.vantilburg@noaa.gov

Dive Purpose	Test and demonstrate integration of Kraken SeaVision® System

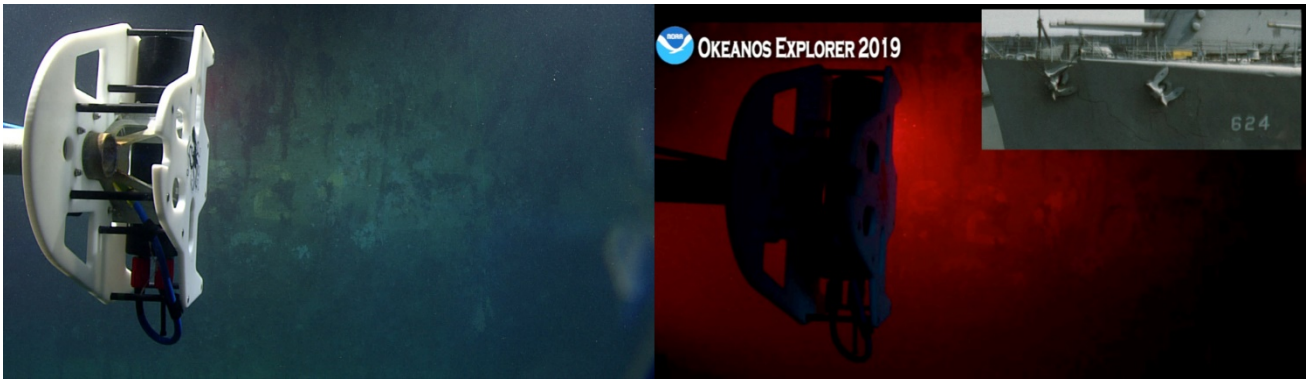
Dive Description	Bow facing south and lying straight up, the *Baldwin* remained silently on the seafloor until July 27, 2019, when a team lead by OER was able to use ROVs and the Kraken SeaVision® laser scanner to image and document the wreck site. This site was identified (last accessed May 2020) as a potential (now confirmed) shipwreck using mapping data collected by OER during a 2011 mission on the *Okeanos Explorer*. By documenting this site, NOAA OER will be able to publicly provide baseline characterization data to archaeologists, historians, and other researchers.
Notable Observations	Shipwreck
Community Presence/ Absence (community is defined as more than two species)	Corals and Sponges - No Chemosynthetic Community - No High biodiversity Community - No Active Seep or Vent - No Extinct Seep or Vent - No Hydrates - No
Feature Type	Flat

Close-up Map of Main Dive Site



EM302 Bathymetry with 1 Hz ROV Dive track in red. Vertical exaggeration 6x, 10 meter depth contours in black, 30 meter cell size.

Representative Photos of the Dive



Images from ROV *Deep Discoverer* looking at the ship's number on the starboard bow of the wreck. Inset shows a historic photo of the ship port side, with a view of the hull numbers. The digits "6," "2," and "4" are clearly visible. Combined with the position of the wreck and the features found while exploring it, the team was able to confirm that the wreck is indeed the USS *Baldwin.*

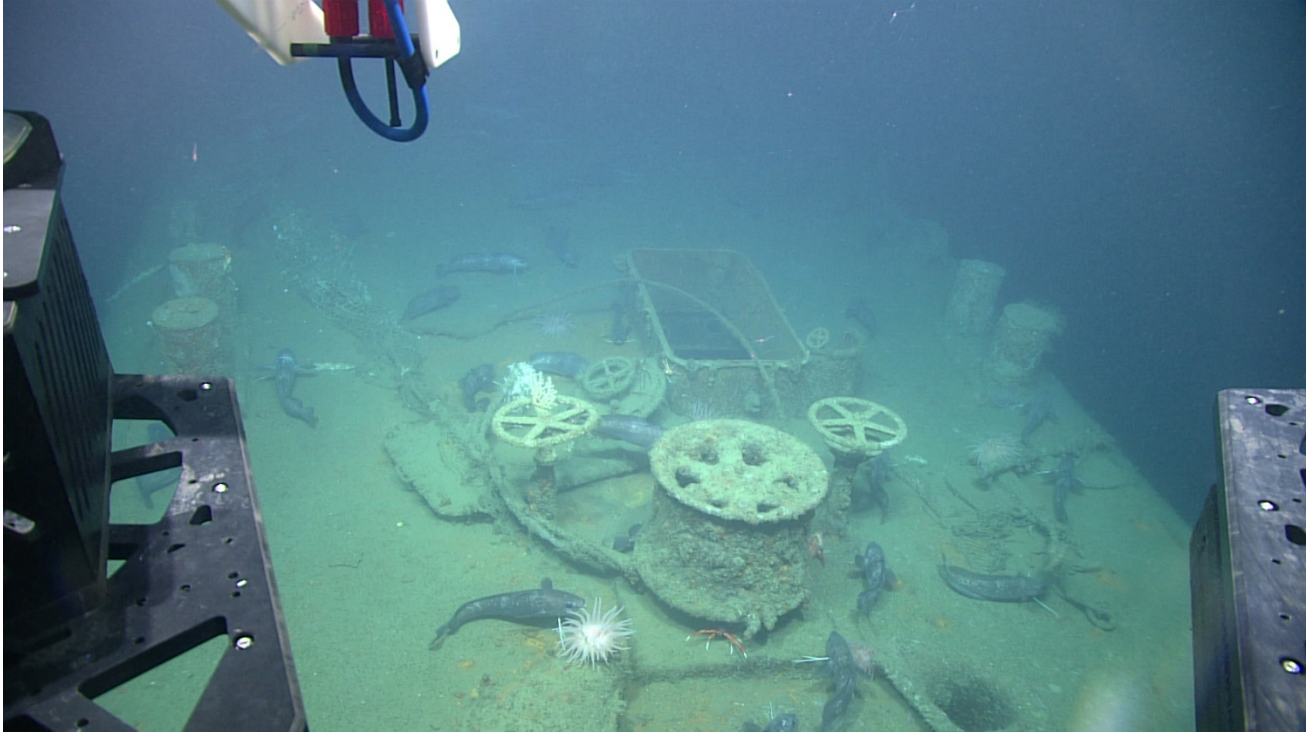
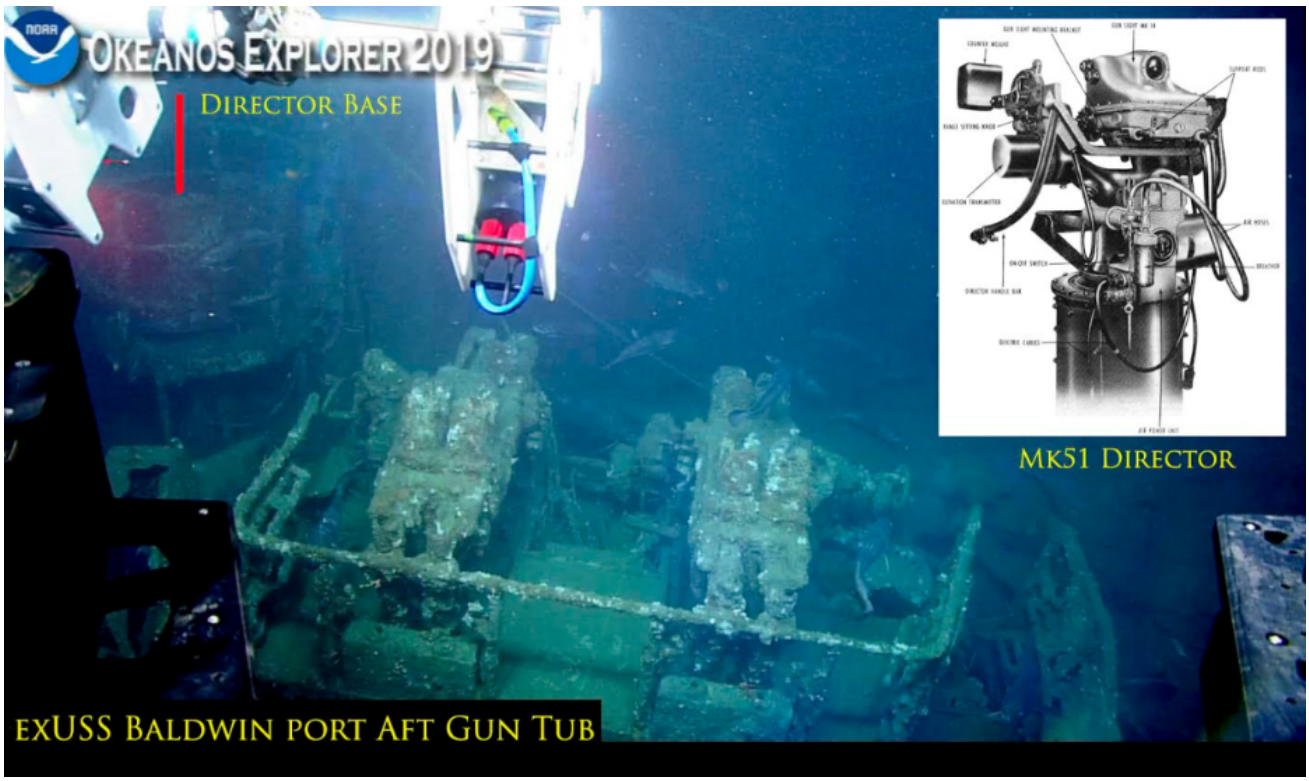


Image from ROV *Deep Discoverer* looking down at a capstan on the forward deck, with the prow towards the bottom of the image. Note the hake fish aggregated on the ship

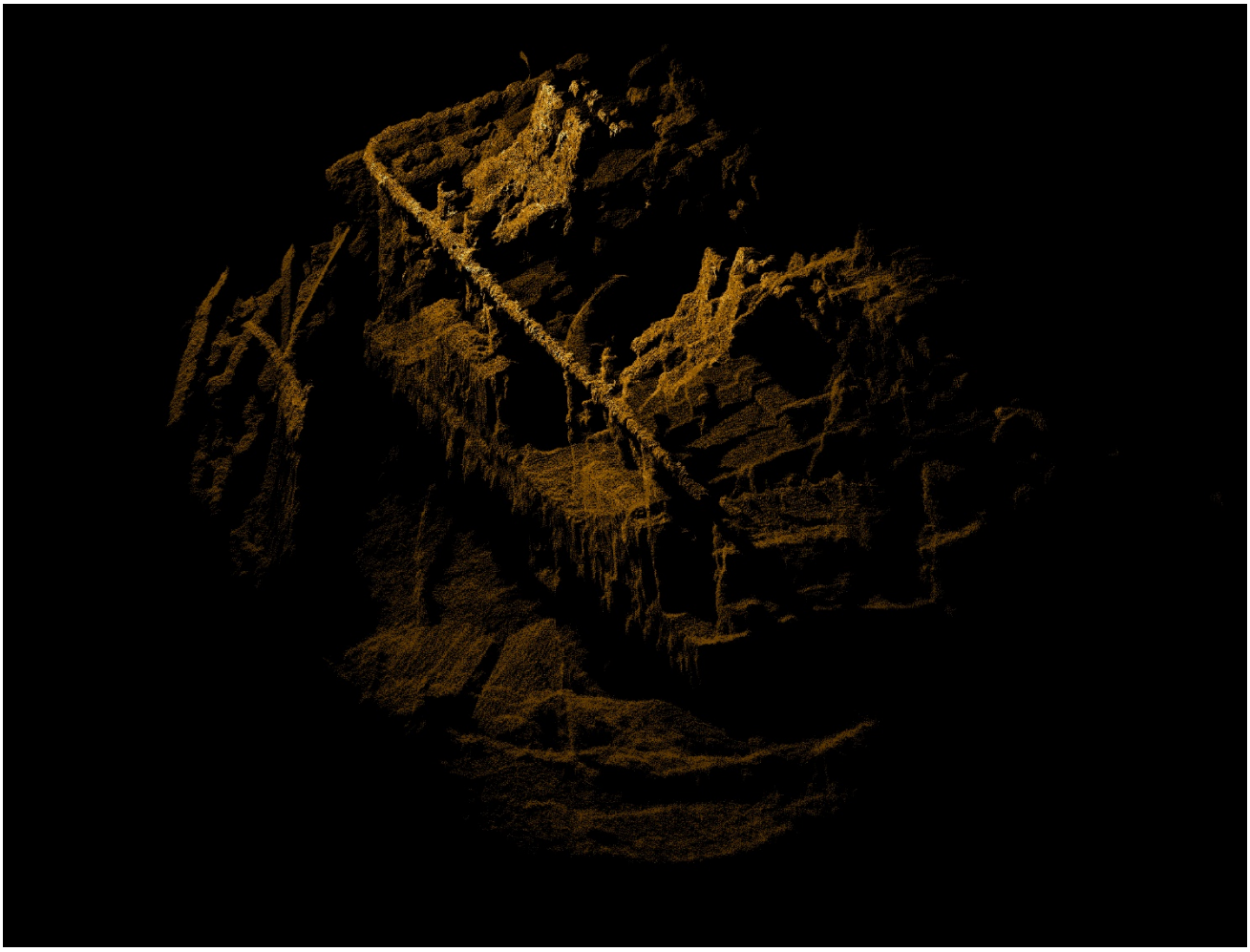
3D high-resolution point-cloud rendering of the forward deck and capstan.

3D scan of the starboard flybridge with the open door into the bridge. The scan shows one of the many fishing nets entangled in the wreck.

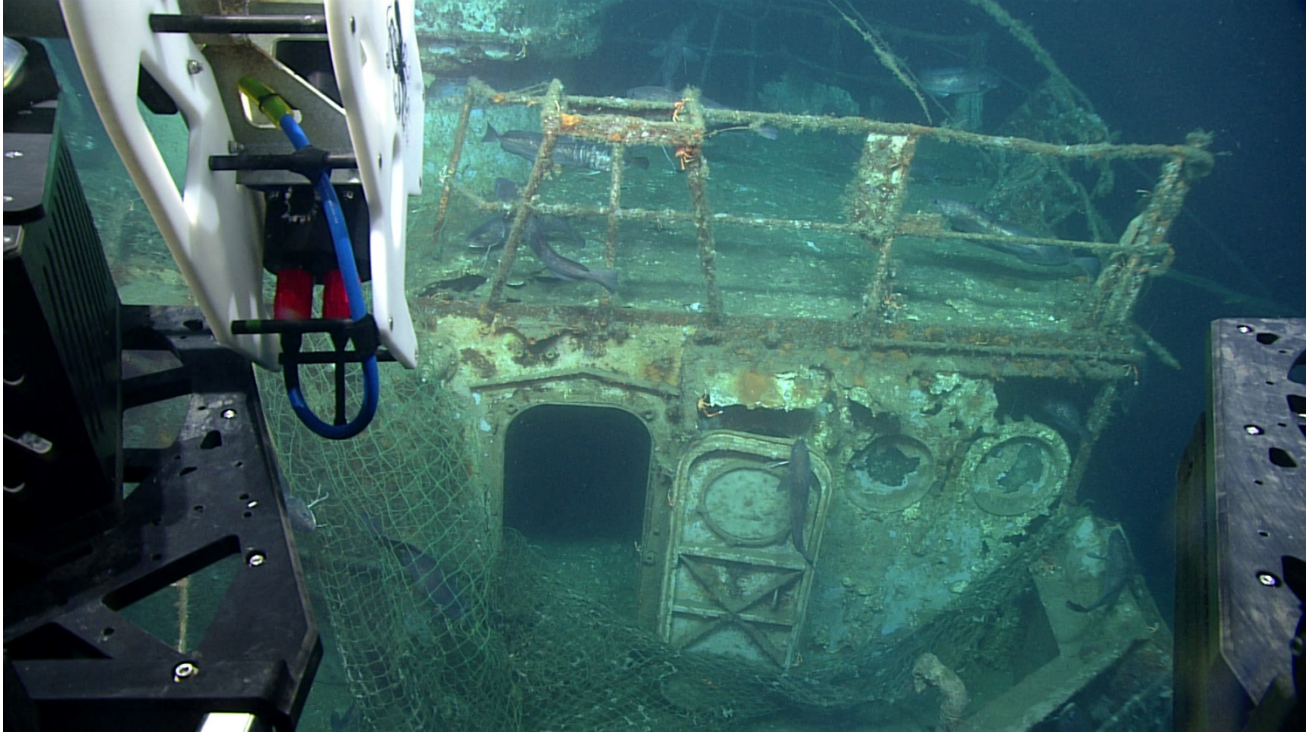


The Bofors 40 millimeter anti-aircraft guns (last accessed May 2020) were arguably the best light anti-aircraft weapon of World War II, employed on almost every major warship in the U.S. and UK fleets during World War II, circa 1943 to

1945. They were most effective on ships as large as destroyer escorts or larger when coupled with electric-hydraulic drives for greater speed and the Mark 51 Director for improved accuracy. The Bofors 40 millimeter gun became a fearsome adversary, accounting for roughly half of all Japanese aircraft shot down between October 1, 1944, and 1 February 1, 1945. The gun bases are present, the barrel breaches were removed while in reserve status.



3D high-resolution point cloud of the port after 40 millimeter anti-aircraft Bofors gun bases, the barrel breaches were removed while in reserve status. Laser scanning was completed from the starboard side of the Baldwin.



Open hatch and derelict fishing gear.

Samples Collected - No samples were collected on EX1904

Please direct inquiries to:

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