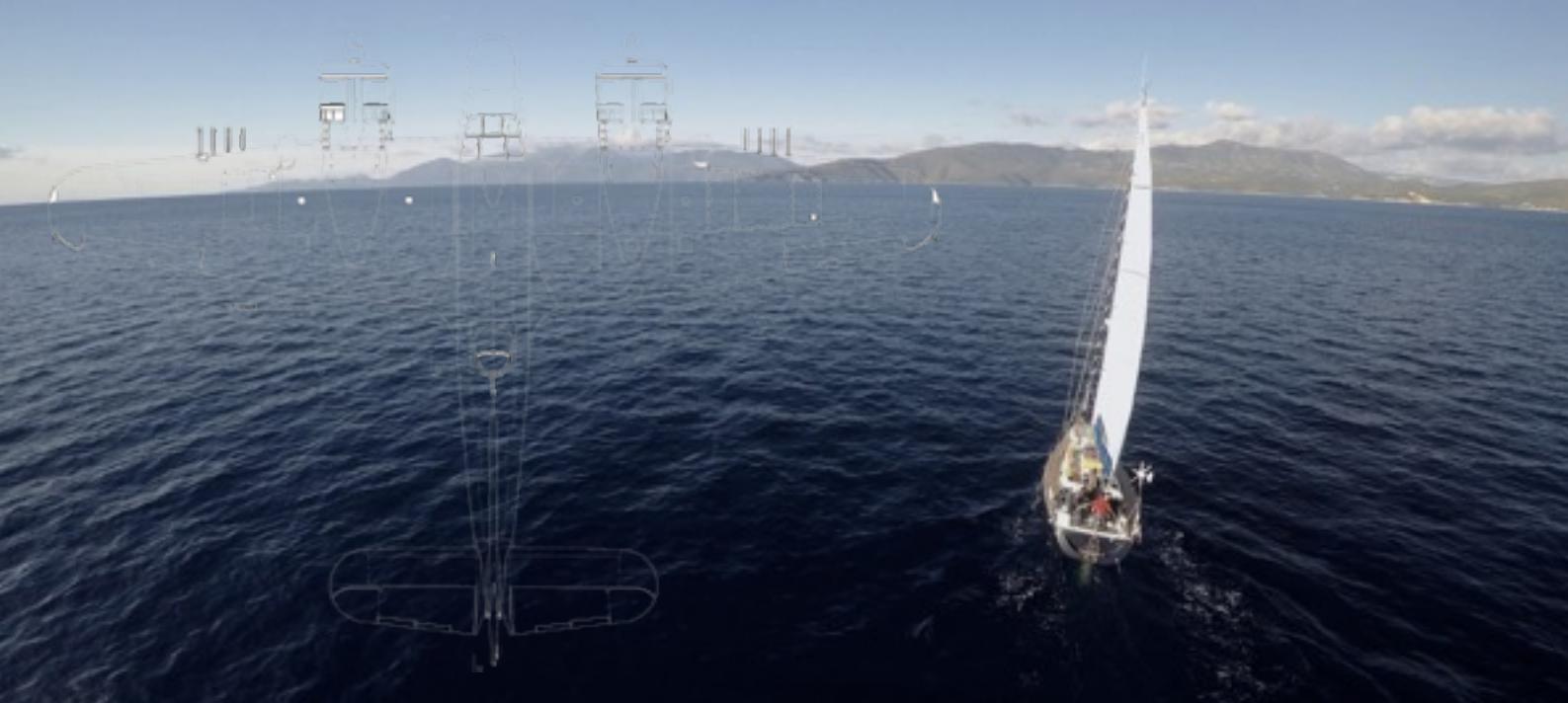


PILOT PROJECT : BRISTOL BEAUFIGHTER

GREECE / FISKARDO

2015



INTRO

After many expeditions along the coast of the Mediterranean sea since 2009, the OCEAN71 team discovers the city of Fiskardo in the Ionian islands, where the team has initiated ground contacts and preliminary investigations on the remains of a British Bristol Beaufighter fighter plane that was shot down on July 19th, 1944. The air fighter sank after an emergency landing on water. The purpose of the May 2015 expedition is to push further the underwater investigations of the wreck and complete a comprehensive survey of the whole event.



After having spent two years (2012-2013) in Albania studying an ancient site with archeologists from the University of Geneva, we sailed to the South Ionian Greek islands. In July 2014, we met Cedric Georges, owner of diving center Fiksardo Divers, who presented us the story and the underwater remains of the British Bristol Beaufighter.

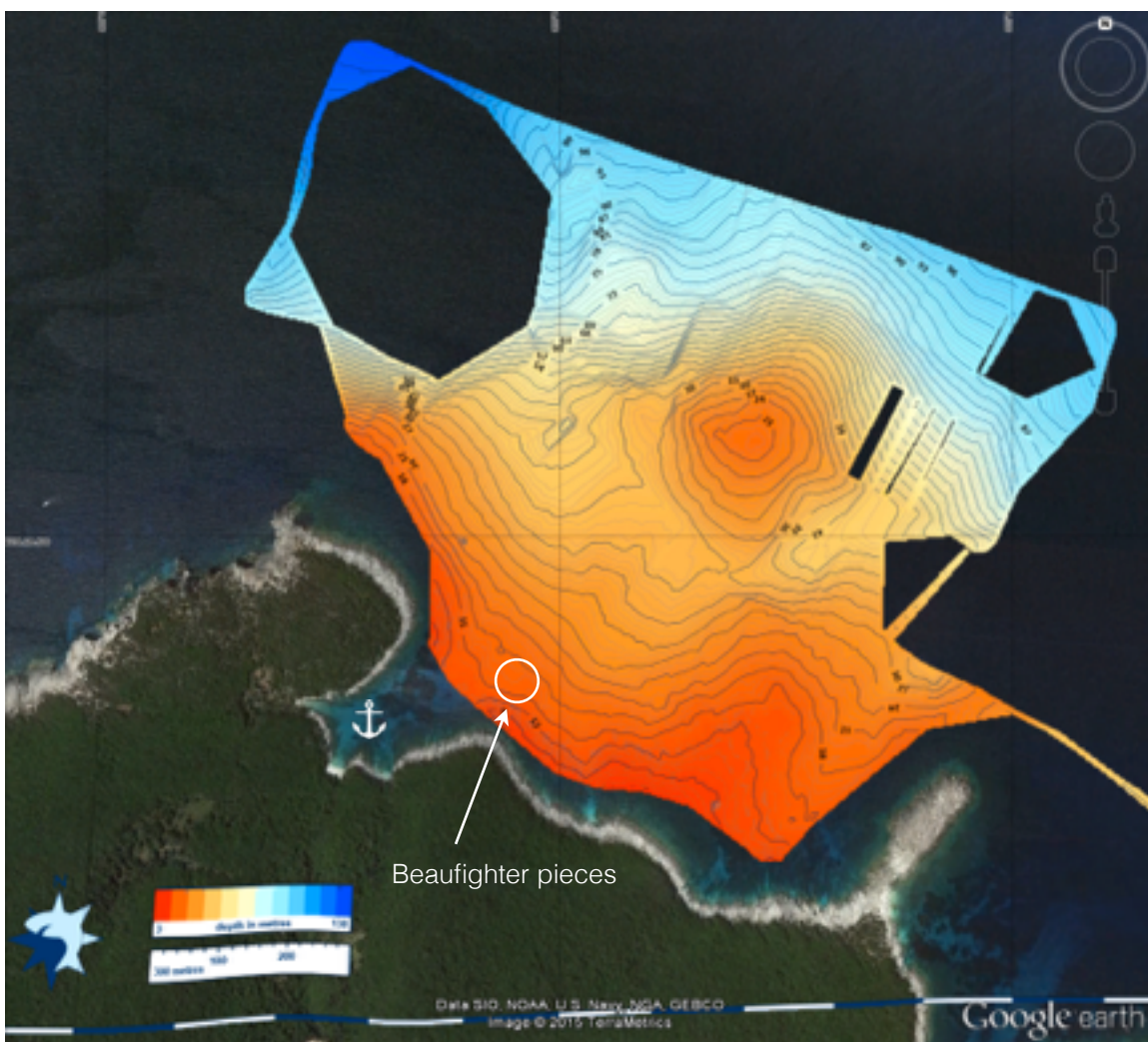


GENERAL LOCATION & MAP

Fiskardo is situated at the Northern tip of the island of Kefalonia on the Western coast of Greece.



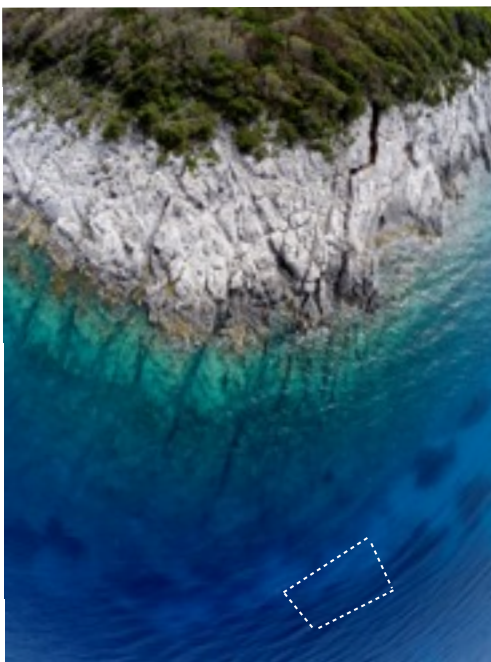
Using our sailing boat and our sonar, we started by mapping the area surrounding the remains of the plane.



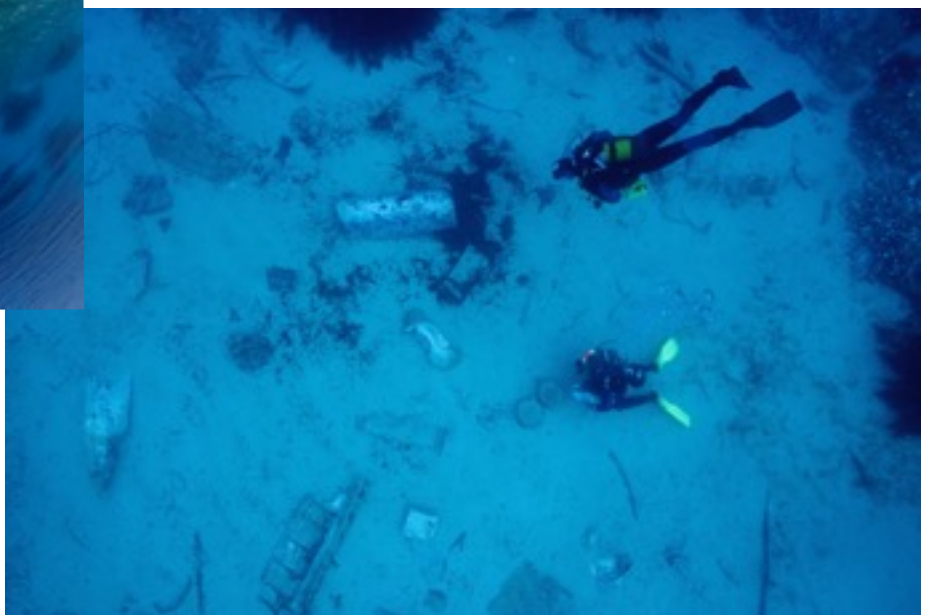


ANCHORAGE & RESEARCH AREA

Once the map was finished, we set the limits of the research area in order to study the remains of the Bristol Beaufighter. Most of the pieces are scattered between 12 and 17 meters deep, close from the shore. The area is well protected from the North-Western summer wind.

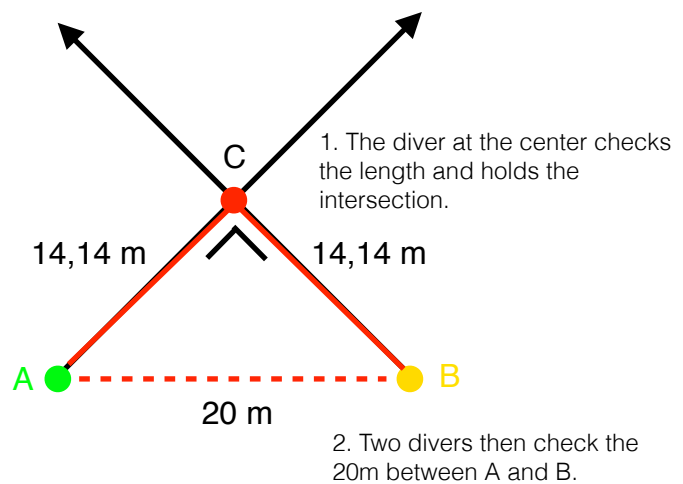
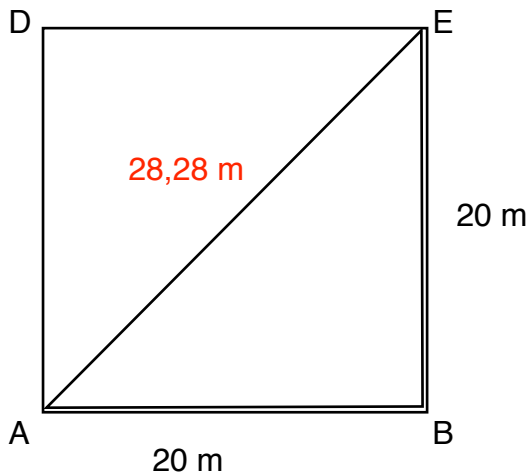


The waters around the island of Kefalonia are cristal clear, allowing the divers to work in very good conditions. In addition, a very smooth current is circling around the island, cleaning most of the time the seafloor from dead seagrass.



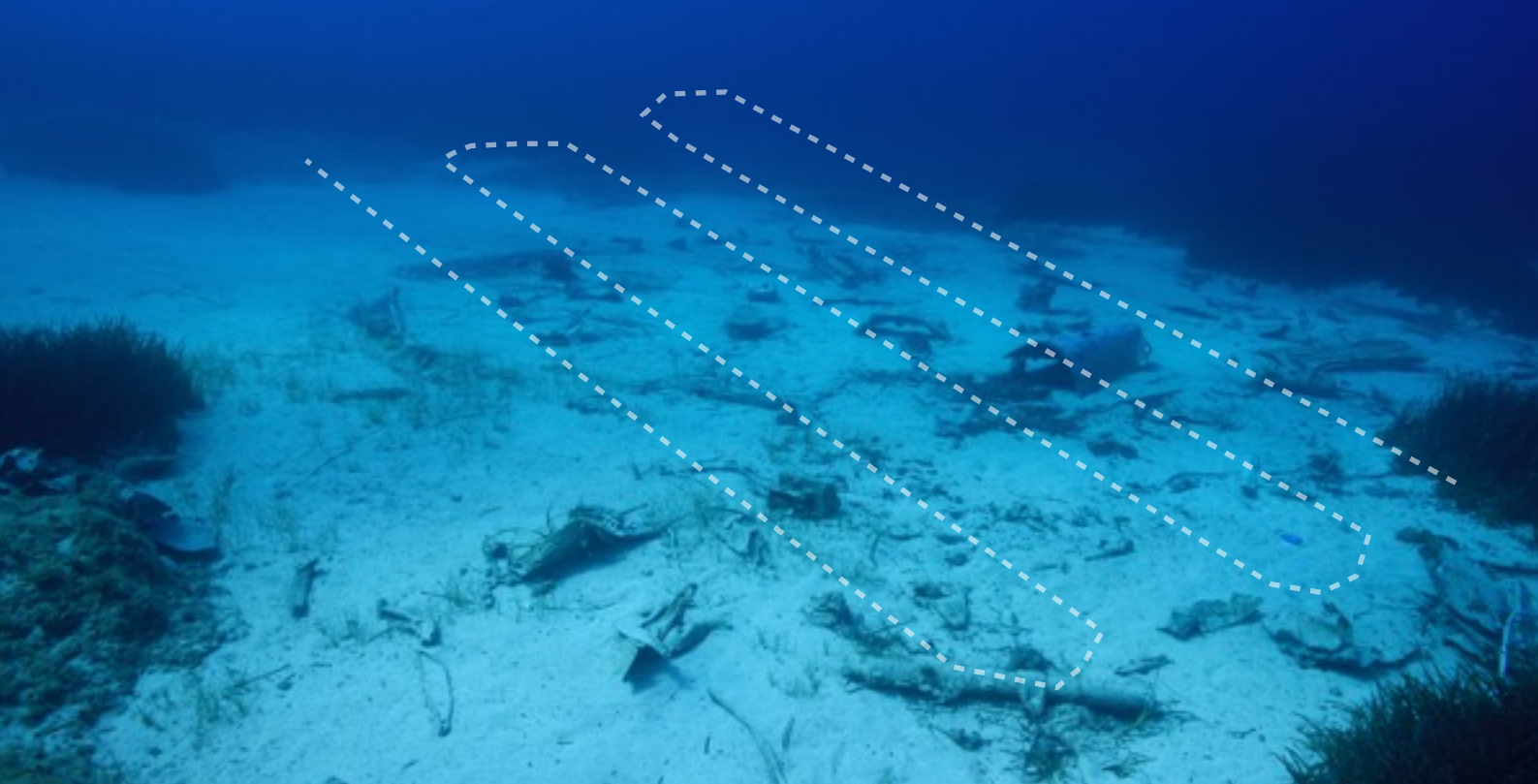
SETTING BOUNDARIES

The team then decided to set underwater boundaries of the selected area. We decided to start with a square of 20 meters by 20 meters. Using the length of the side, we deduced the length of the diagonal. With a diver on each corner, and a diver at the center, we were able to limit a perfect square.



Once the underwater corners were found, we deployed buoys that mirrored our u/w limits on the surface. It then became possible to get the GPS coordinates of the area.

We added some intermediate buoys (every 5 m / 2 m high) so the photographer had visual marks for the photogrammetric acquisition.

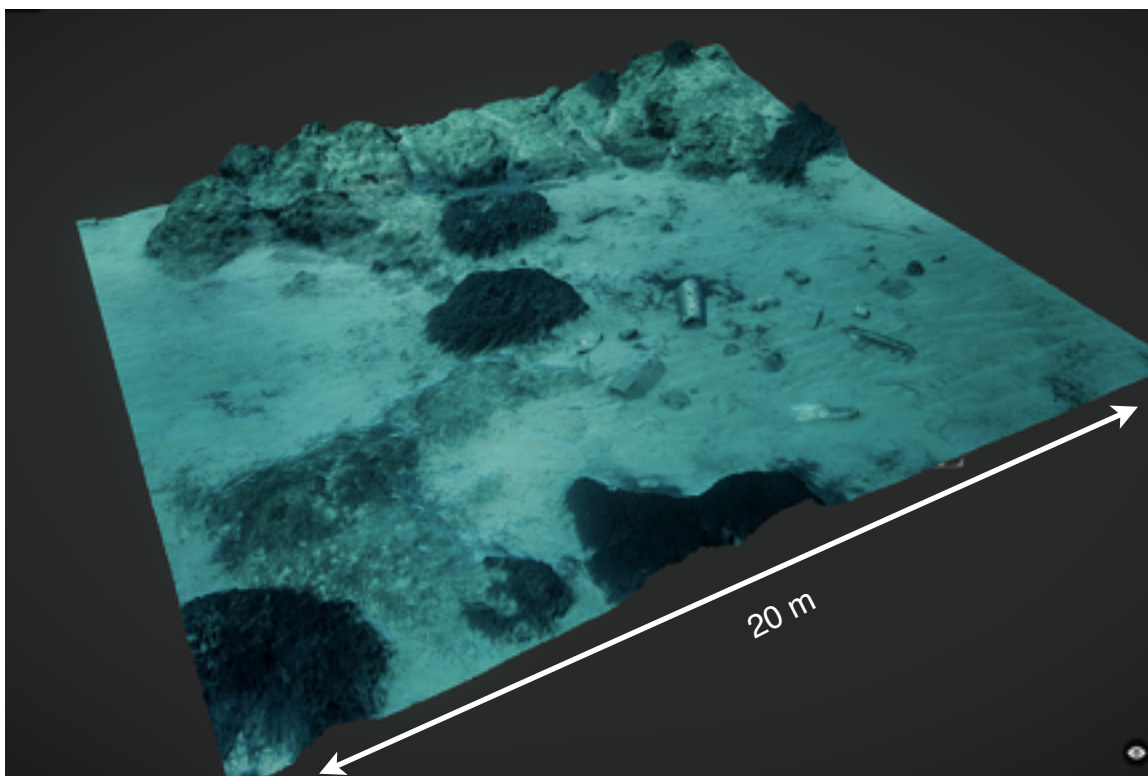


PHOTOGRAMMETRY

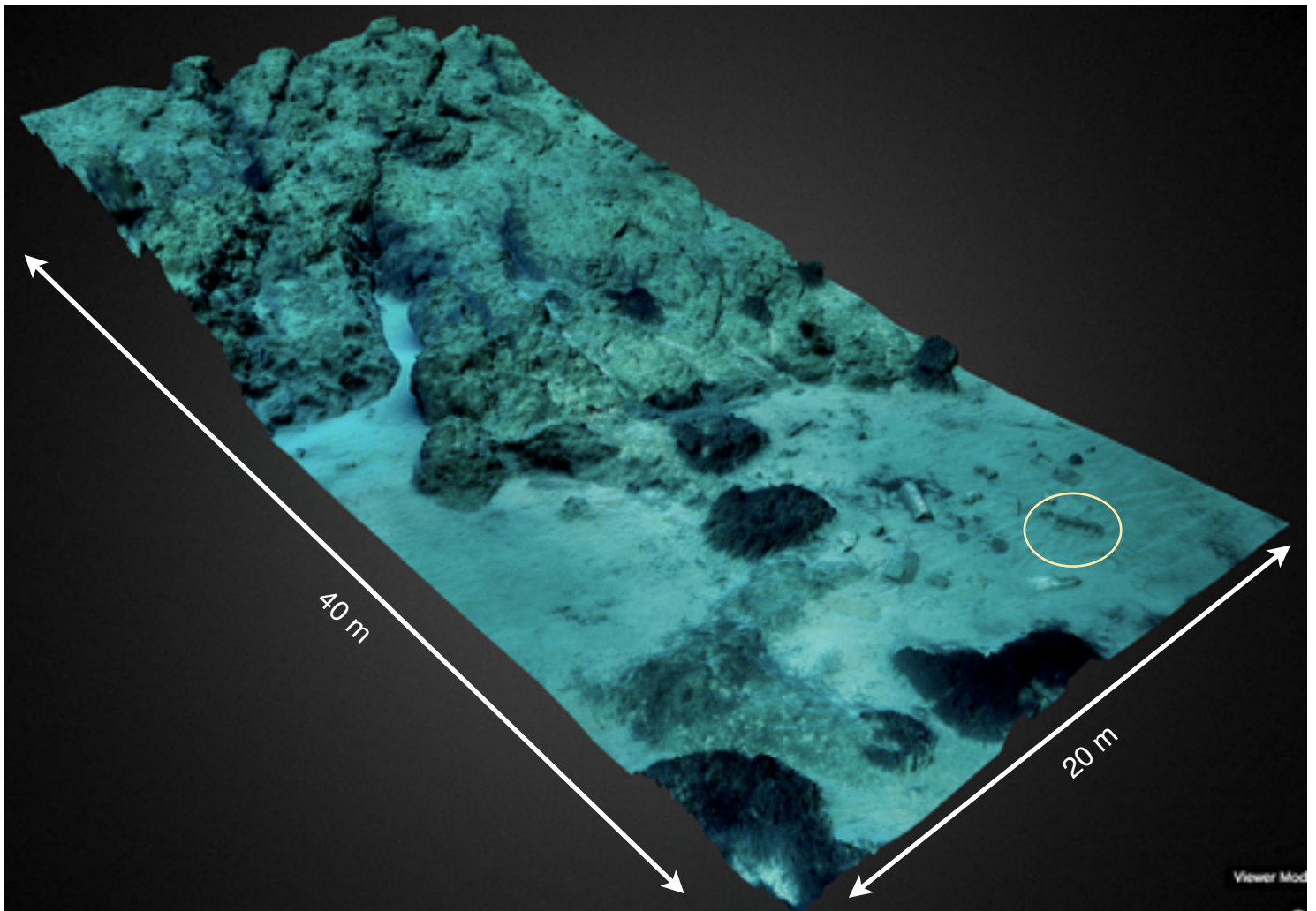
Using our underwater equipment, Philippe followed the zigzag path in order to cover the first square with a total of 150 pictures.

Equipment : *Nikon D800*
 Lens 20 mm
 Ikelite u/w casing

After processing the pictures, we finally displayed our first 3D modelized square.

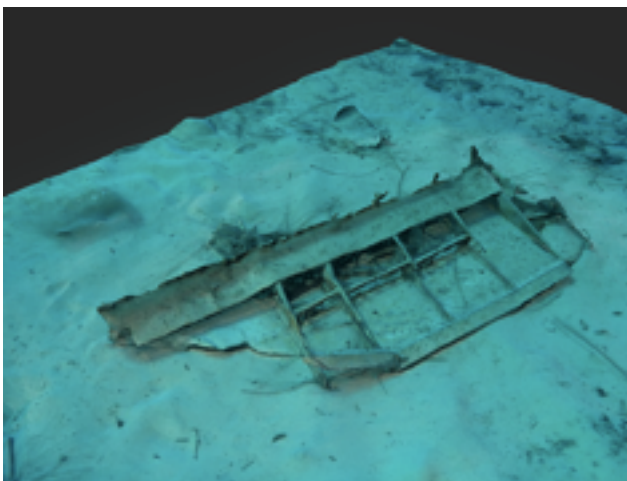


After reproducing the same boundaries and completing the photographic acquisition for the neighboring square, we processed the entire area.

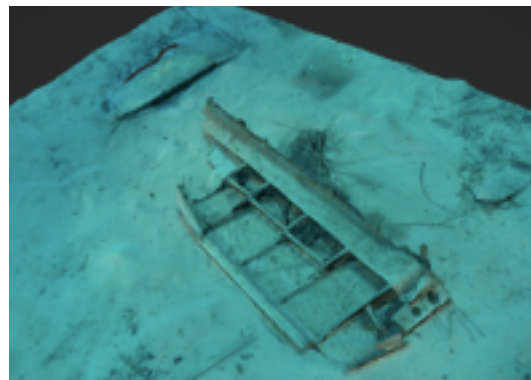


Now, that the 3D digital models were ready, we decided to upload them on sketchfab website (sketchfab.com) to test the possibility for the public to look at it and study these models without having a high performance PC. It is entirely possible, although the quality has to be reduced for the upload.

Then, we decided to see if it were possible to extract a photogrametric map. This document would be a useful tool for scientists studying a historic or a biological u/w site.



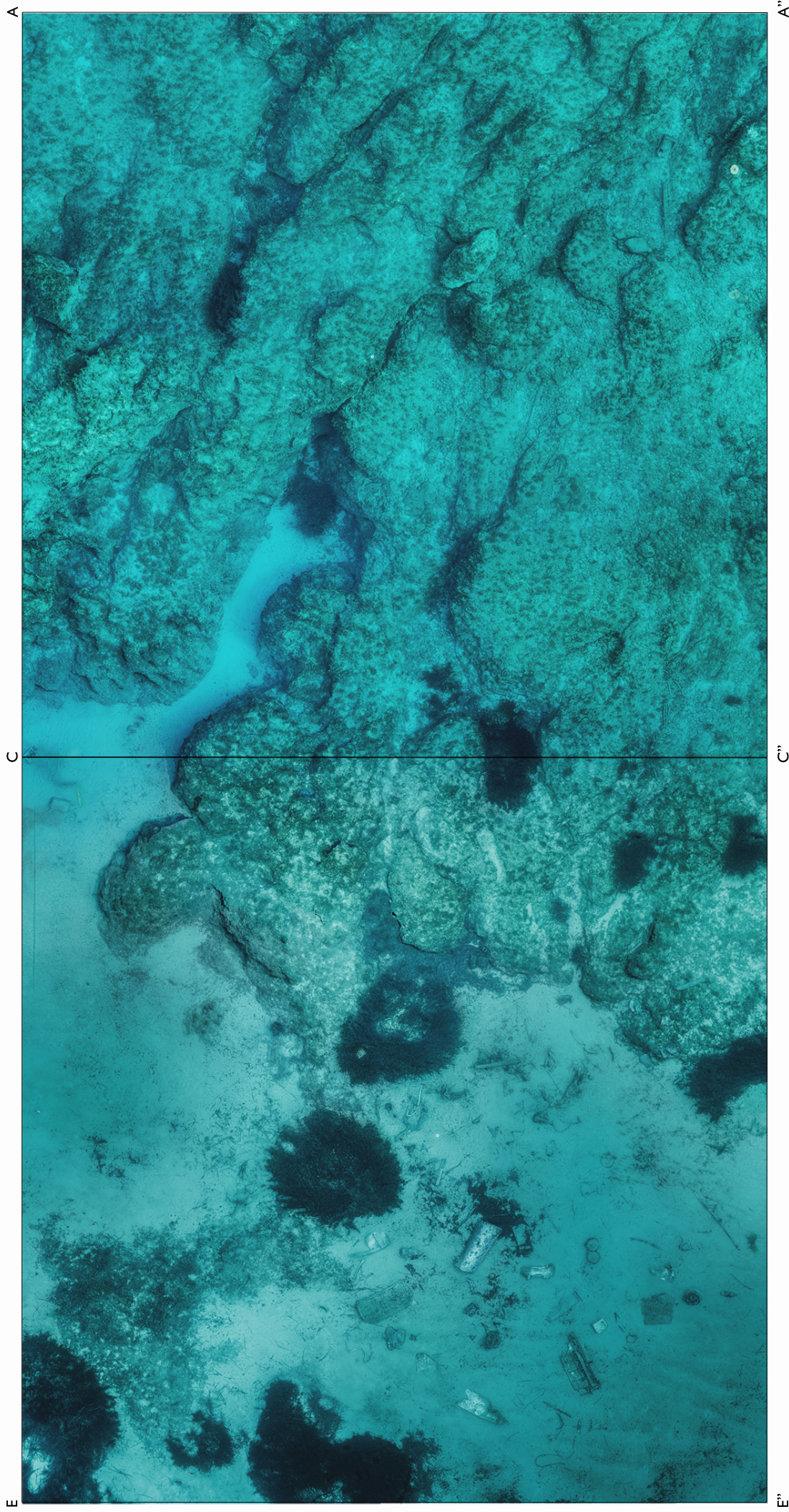
It is also possible to produce 3D models of specific parts, like this piece of a wing.



Mission Fiskardo 2015 (GREECE) *Bristol Beaufighter Mk.X - NE595 (605th Squadron)*

In the Northern part of Kefalonia island in the Ionian sea OCEAN71, Novalta and Fiskardo Divers conducted a survey of underwater remains of a shot and sunk British Bristol Beaufighter. In July 1944, this air fighter was part of harassing operations of German Southernly positions.

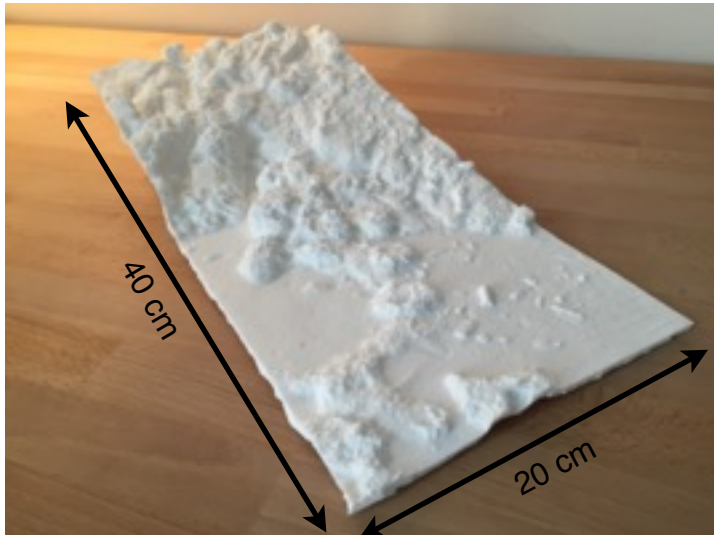
The 2015 survey team managed to deploy innovative underwater and aerial technologies to map and reconstruct in 3D the area of the crash.



Orhtophotoplan - 1/50ème
Z1 (A A" C C") 20mx20m / Z2 (C C" E E") 20mx20m
Acquisition réalisée le : 22/05/2015.
Post-traitements : NOVALTA SAS / Charles VENAYRE (Architecte DE.)

3D PRINTED MODEL

Finally, we wanted to test the possibility to recreate the 3D digital model in a solid small scaled model (1/100) to display in a museum or an exhibition. Here are the two steps :



The 3D lazer printed model can be painted either with or without the water blue dominant color.



MIXED AERIAL AND UNDERWATER PHOTOGRAMMETRY

Using our drone, we included the underwater photogrammetric plan into an aerial photogrammetry, giving a much broader perspective to the studied zone. We called it the «window on the sea».

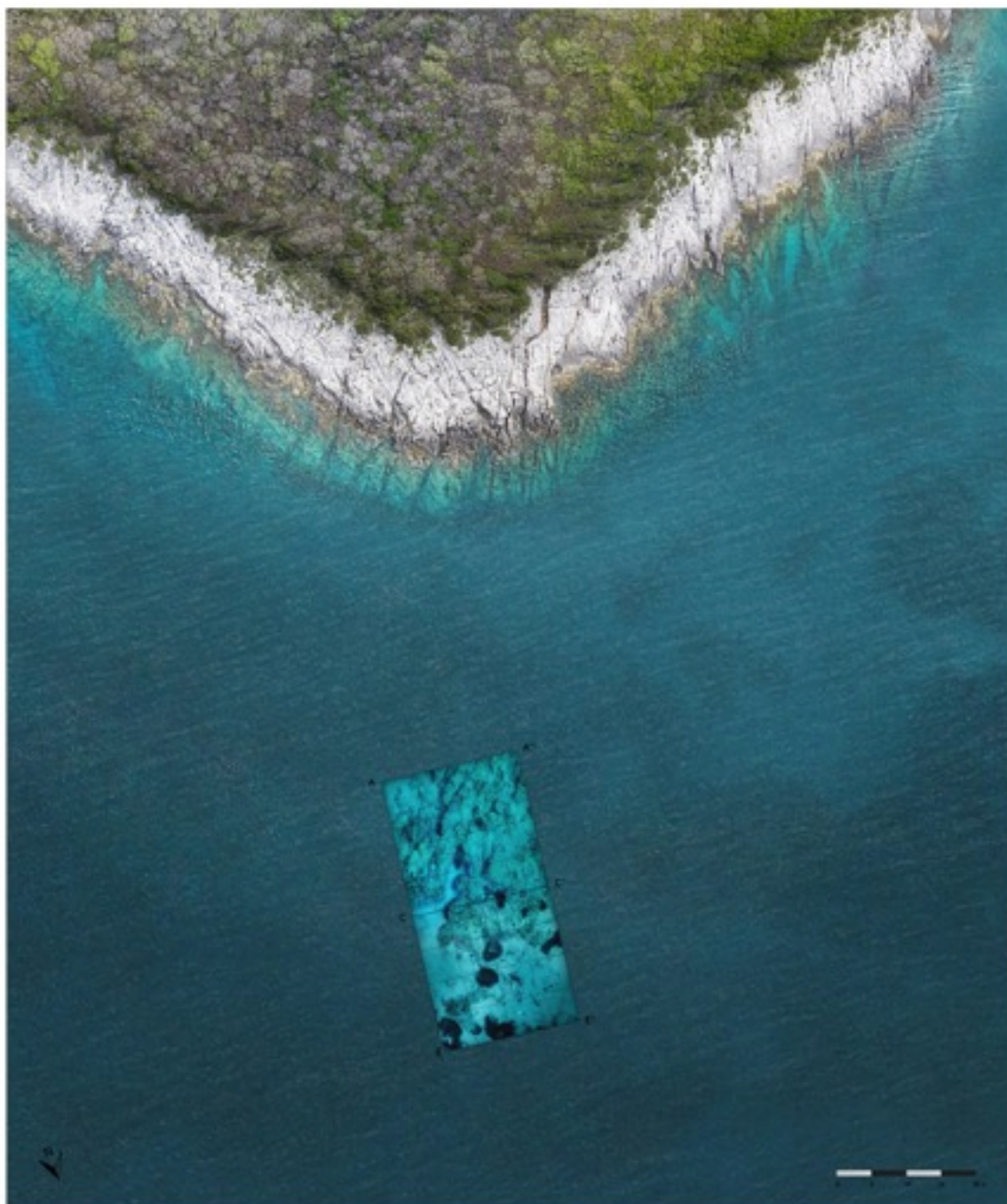


OCEAN71
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Mission Fiskardo 2015 (GREECE)
Bristol Beaufighter Mk.IX - NE593 (605th Squadron)

In the northern part of Peloponnese in the Ionian sea (200407), Hellenic and Russian Divers conducted a survey of underwater remains of a ship and sunk Bristol Beaufighter in July 1944. The aircraft was part of the wing operations of German Coastal positions. The 2015 survey team managed to deploy innovative underwater and aerial technologies to map and reconstruct in 3D the area of the crash.

FISKARDO-DIVERS



Ortophotoplan Mixte
Z1 (A-R-C-C') 20m x 20m / Z2 (C-C'-E-E') 20m x 20m
Projection: UTM 38N
Red. instruments: NOVALTA SAS / Drone: DJI Mavic Pro (Autel 3S)



UNDERSTANDING HISTORY

With the help of Cedric Georges, we also went on the footpath of the pilot after he crashed near Fiskardo. We met a couple of Greeks who, as children, remembered the event and gathered after the war a couple of pieces of the plane. Some pots, pans and knives were made out of the aluminium pieces of the Beaufighter.



A few kilometers West from Fiskardo, we also visited what was in July 1944 the German base where the pilot of the Beaufighter was briefly jailed.



This abandoned house was the German HQ, as described in the pilot logbook.



THE GERMAN BASE

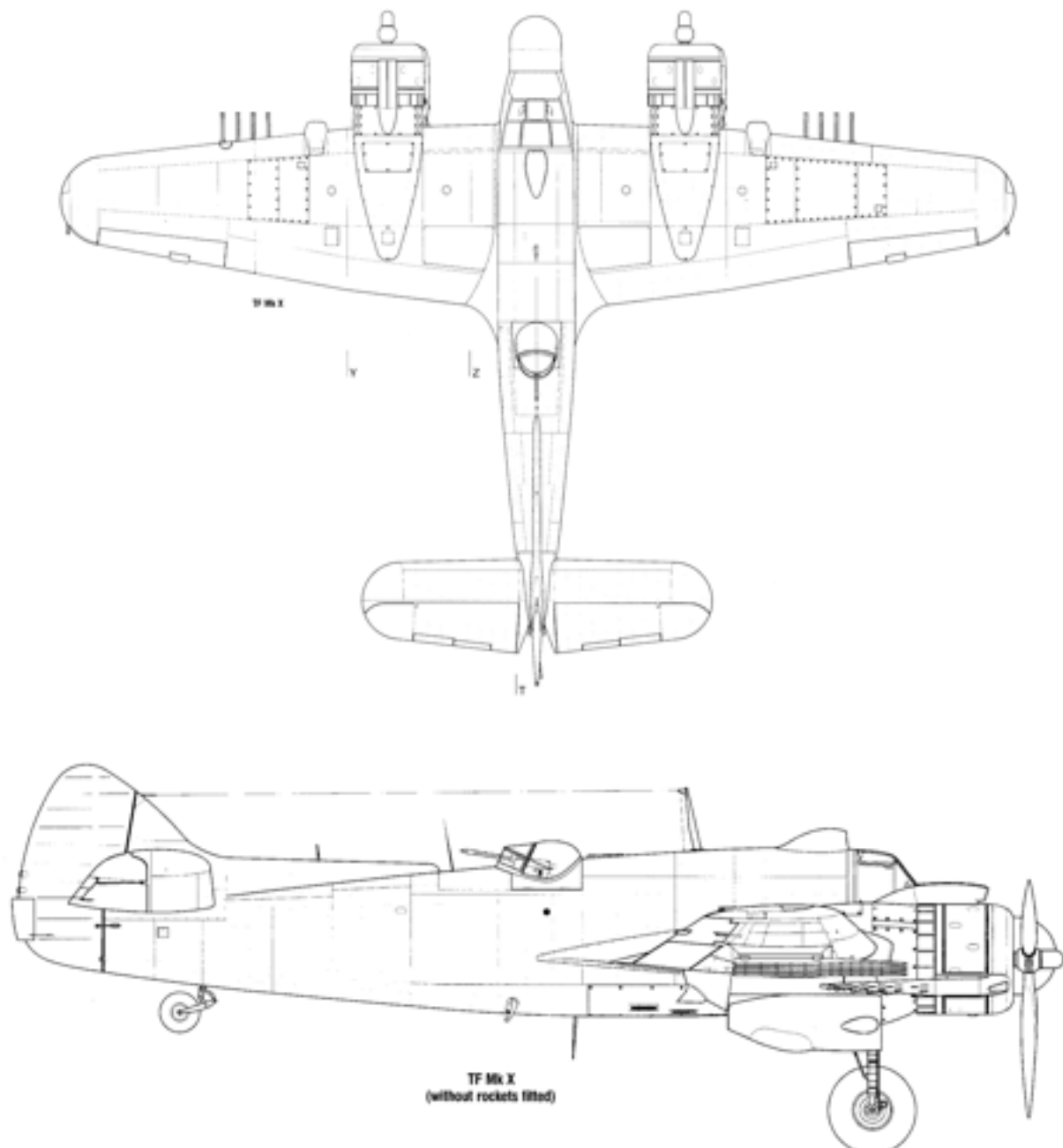
The German military base near Fiskardo had also for mission to overlook the Western coast of Kefalonia. Heavy canons were built to defend the North of the island from enemy ships. The canon towers were connected to each others with tunnels where the amunitions were stored.



RECONSTRUCTING HISTORY

[illegible]

Top, RAF pilot Harold Edward at the time he was arrested. Left, Fiskardo harbour under attack during WWII. Down, plans of the British Bristol Beaufighter.



VIDEO CLIP

Using our drone, and based on Harold logbook information, we tried to modelize the final seconds of the Beaufighter flight before Harold hit the water on July 19th 1944.

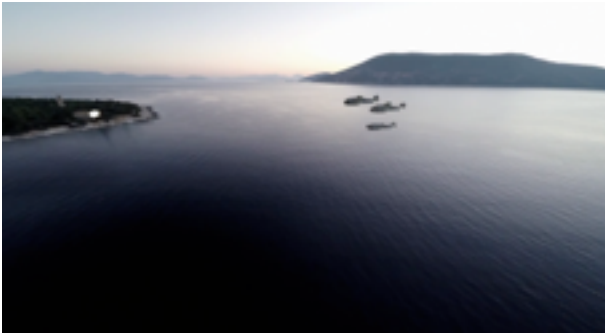
1.



2.



3.



4.



5.



6.



DRAWINGS © Antoine Bugeon / OCEAN71 Magazine

Using Harold logbook information, Antoine was able to draw what happened during Harold's mission in July 1944.



FUTURE POSSIBILITIES

Considering the fact that the co-pilot of Harold did not survive the crash, we believe we could set up a memorial stone either on the surface or in the water, near the remains of the Beaufighter for future divers.

As we will provide this document both to Harold's family and to the British military authorities in Greece (end of 2015 / beginning of 2016), it could be scheduled sometime during the summer of 2016.

Also, as Fiskardo former school is today abandoned, we could ask the municipality if we could set up a small exhibition in memory of Harold's co-pilot, which would tell the story of this Beaufighter. We could also explain to the public the basis of underwater archeology and the marine richness of the area.



Left, Fiskardo former school. Right, an example of underwater memorial stone.



OCEAN71
MAGAZINE

Julien PFYFFER

Ariel FUCHS

Philippe HENRY

Sébastien ROUSSEAU

Christophe VIGNAUX

Margaux CHALAS

Antoine BUGEON

Fabien MADORE

FISKARDO-DIVERS
A PROFESSIONAL, SCHOOL & FREETIME DIVE CENTRE IN THE HEART OF HAWAII

Cédric GEORGES

Jesus ABAD LOPEZ

 **NOVALTA**

Charles VENAYRE

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