

# **SEARCH FOR AND SALVAGE OF LOST AIRCRAFTS DURING LAST WORLD WAR IN THE TRONDHEIMS-FJORD AREA**

By

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# Background

- The Actual plane to be rescued, a Blackburn Skua Fighter Dive-Bomber, was one of 15 similar Aircraft carrier ("Ark Royal") based planes directed to attack the German Battle Cruiser "Scharnhorst" on Trondheim Harbour June 13, 1940.
- Of 15 attacking planes as many as 8 were lost (shot down or forced to land) during the attack, due to counter attack by German air fighters and lack of support of British air fighters. The target aircraft for our operations about 70 years later, L2896, Green A, was after being damaged in the air combat able to make a successful landing at sea near to the shore at the outlet of Orkdalsfjorden, a branch fjord of the Trondheim fjord as seen on next slide

DEMaT'11 University of Split, Croatia, October 26-25 2011

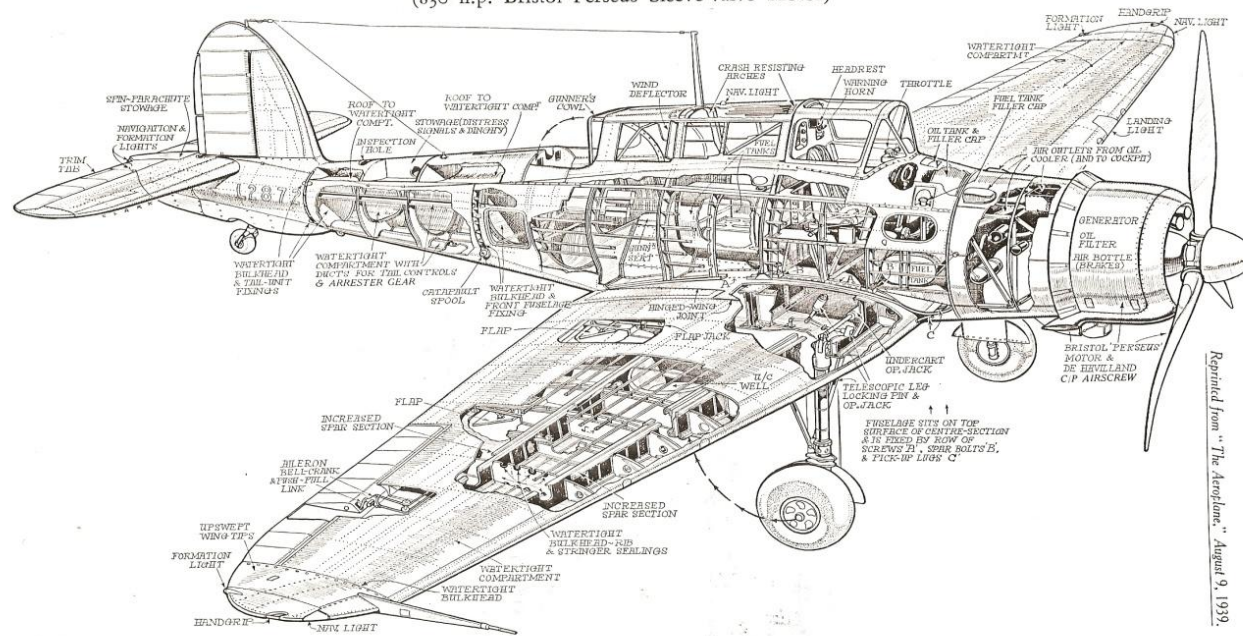


- Landing and wreck position (red mark) for the Blacburn Skua Aircraft in 1940 and area for NTNU, IMT operations to salvage aircraft and engine wrecks in 2007-2011.

# Rescue history of the Blackburn Skua aircraft

- 2007: The Blackburn Skua was found at 243 m depth in the outlet of the Orkdal Fjord
- 2008: The Wreck was successfully brought to surface, taken ashore in Trondheim and transported to Bodø aviation museum
- 2010: The Engine was located at 374 m depth
- 2011, Spring: The Engine was brought to surface, taken ashore and transported to Bodø

THE BLACKBURN SKUA FIGHTER DIVE-BOMBER  
(830 h.p. Bristol Perseus Sleeve-valve Motor)



Reprinted from "The Aeroplane", August 9, 1939.

- Detailed structure and component description of the Blackburn Skua Aircraft.

## MAIN SPECIFICATION DATA OF THE BLACKBURN SKUA AIRCRAFT.

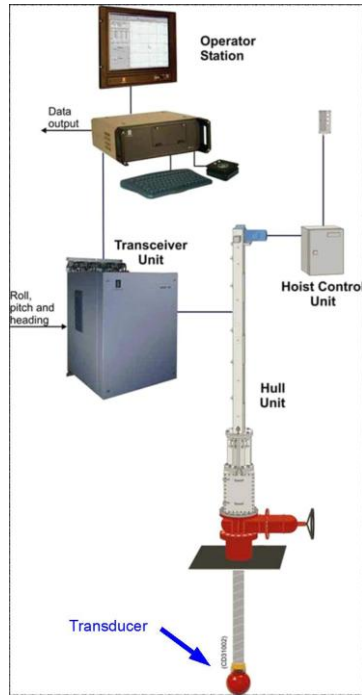
<b>Aircraft Type:</b>	Blackburn Skua
<b>Mark:</b>	II
<b>Primary Role:</b>	Naval fighter/dive-bomber
<b>First Flight:</b>	9.2.1937
<b>Date operating with FAA squadrons:</b>	August 1938-1944/1945
<b>Manufacturer:</b>	Blackburn
<b>Engine:</b>	One 905 hp 9 cylinder Bristol Perseus XII radial engine
<b>Wing Span:</b>	Wingspan 46.2 ft (14.07 m)
<b>Length:</b>	Length 35.6 ft (10.85 m)
<b>Height:</b>	Height 12.4 ft (3.79 m)
<b>Wing Area:</b>	Wingarea 312 sq ft (28.98 sq m)
<b>Empty Weight:</b>	Weight empty 5,490 lb (2,490 kg)
<b>Max.Weight:</b>	max. 8,228 lb (3,732 kg)
<b>Speed:</b>	Speed 225 mph (362 km/h)
<b>Ceiling:</b>	Ceiling 19,095 ft (5,820 m)
<b>Range:</b>	Range 800 mi (1,287 km)
<b>Armament:</b>	Four .303in forward firing machine guns in wings with One Lewis gun on flexibile mount in rear cockpit. One 500lb bomb beneath fuselage and 8 30lb practice bombs on underwing racks.
<b>Crew:</b>	2
<b>Squadrons:</b>	755,757,758,759,760,767,769,770,771,772,774,776,778,779,780,782,787,788,789,791,792,794,797 800,801,803,806



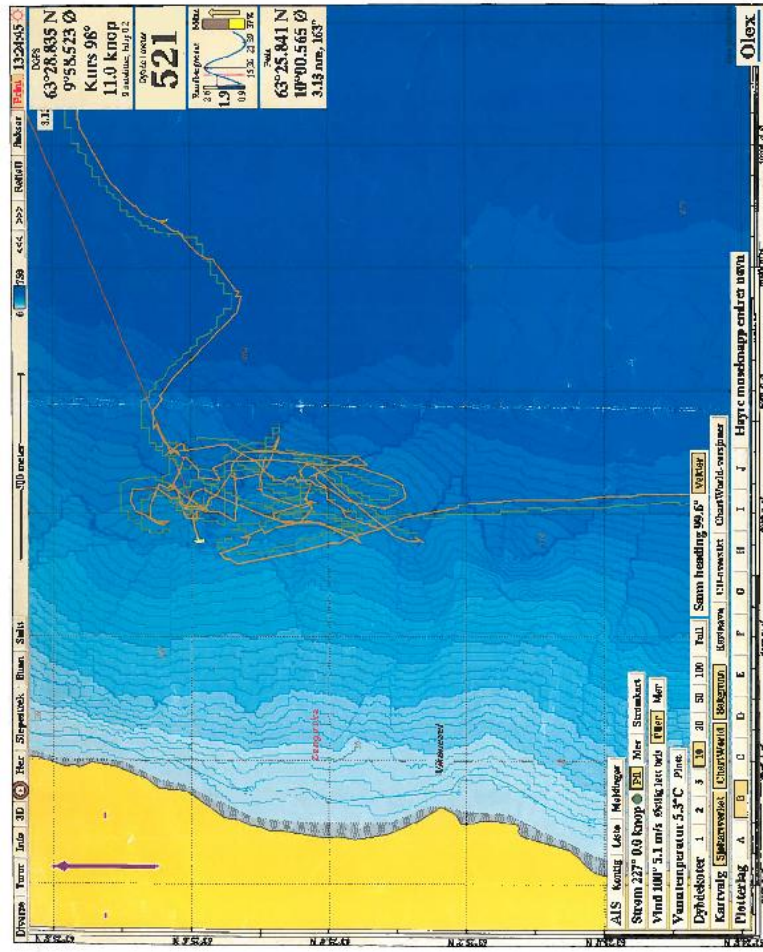
R/V "Gunnerus" starboard side view.

R/v "Gunnerus" Main vessel and equipment specifications

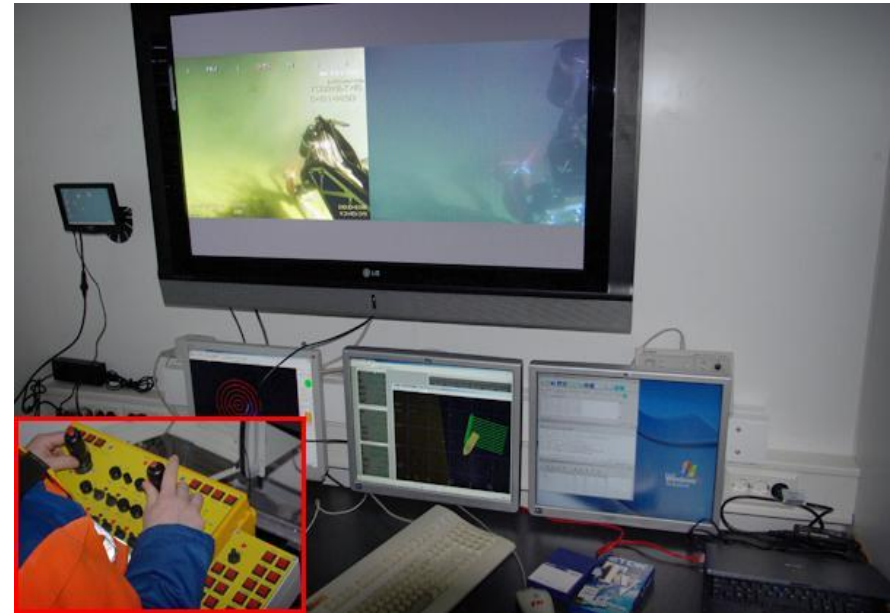
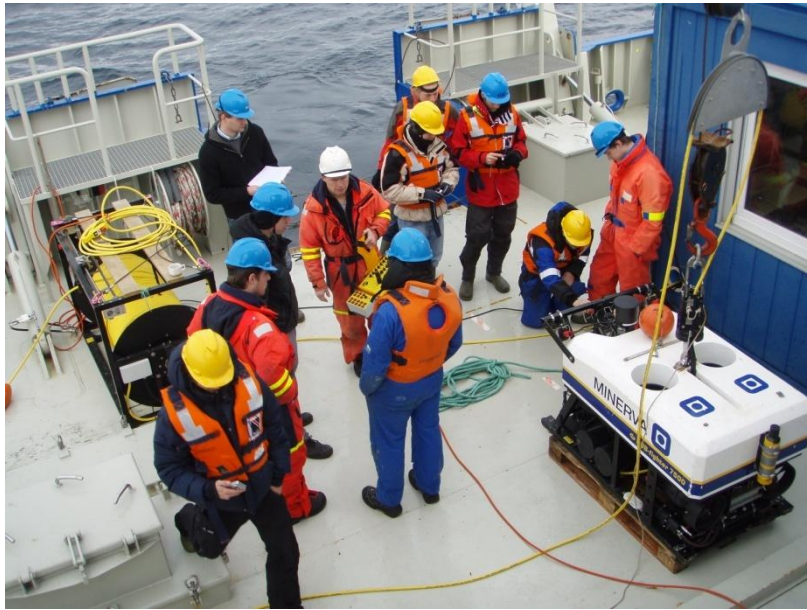
Length over all	31.25 m
Beam	9.90 m
Moulded depth	4.20 m
Draught	2.70 m
Dead weight	107 t
Main propulsion	2x 500 kW electric motors
Main generators	3 x 450 KW
Bow thruster	200 kW
Max speed	12.6 knots
Dynamic positioning system	Kongsberg SDP-11 cPos
Acoustic positioning system	Kongsberg Seatex HiPAP 500
Multibeam echosounder	Kongsberg EM 3002 S
Catch monitoring system	Simrad P154
ROV	Subfighter, Minerva



HiPAP 500 system (left) and ROV Minerva (right).



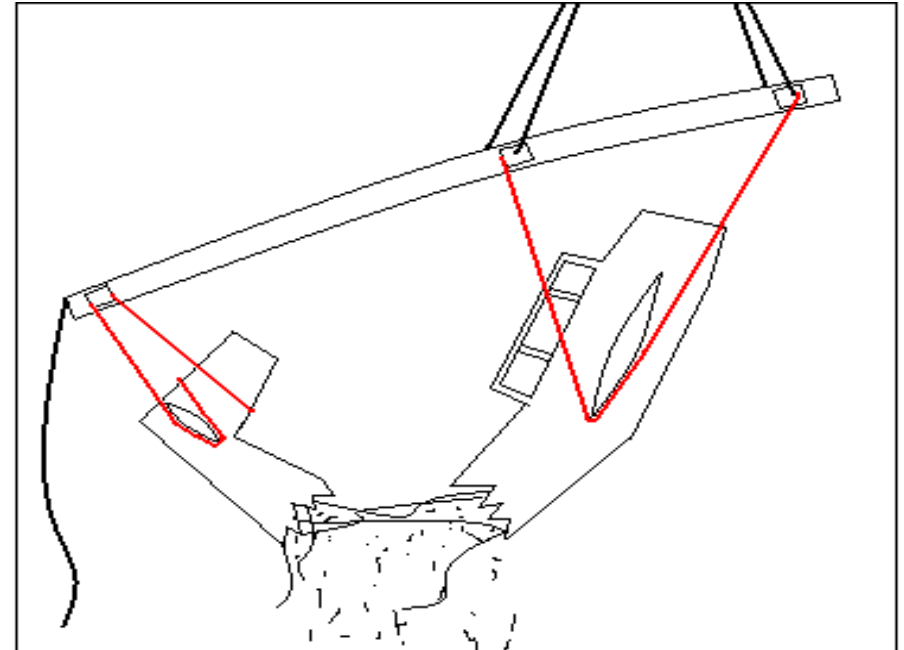
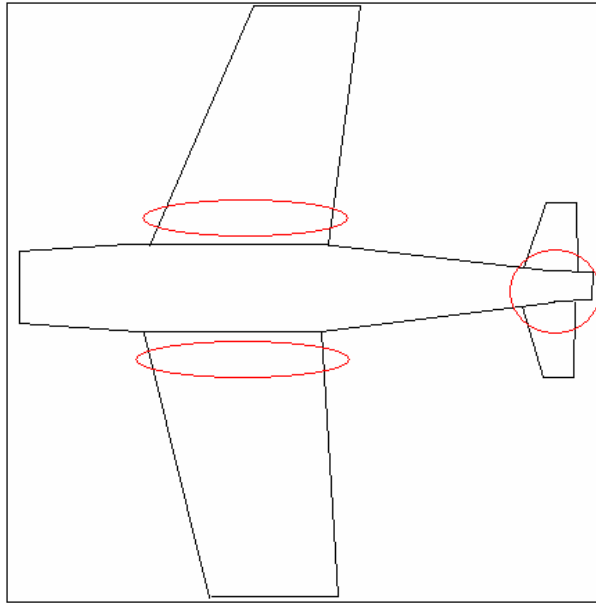
OLEX BOTTOM TOPOGRAPHY MAP WITH POSITION TRACING OF VESSEL AND ROV DURING SEARCHING ●



**Figure 7** Deck view showing the ROV container to the right, and ROV Minerva and the ROV cable winch, with a capacity of 700 meters cable (left), and the ROV Control room (right).

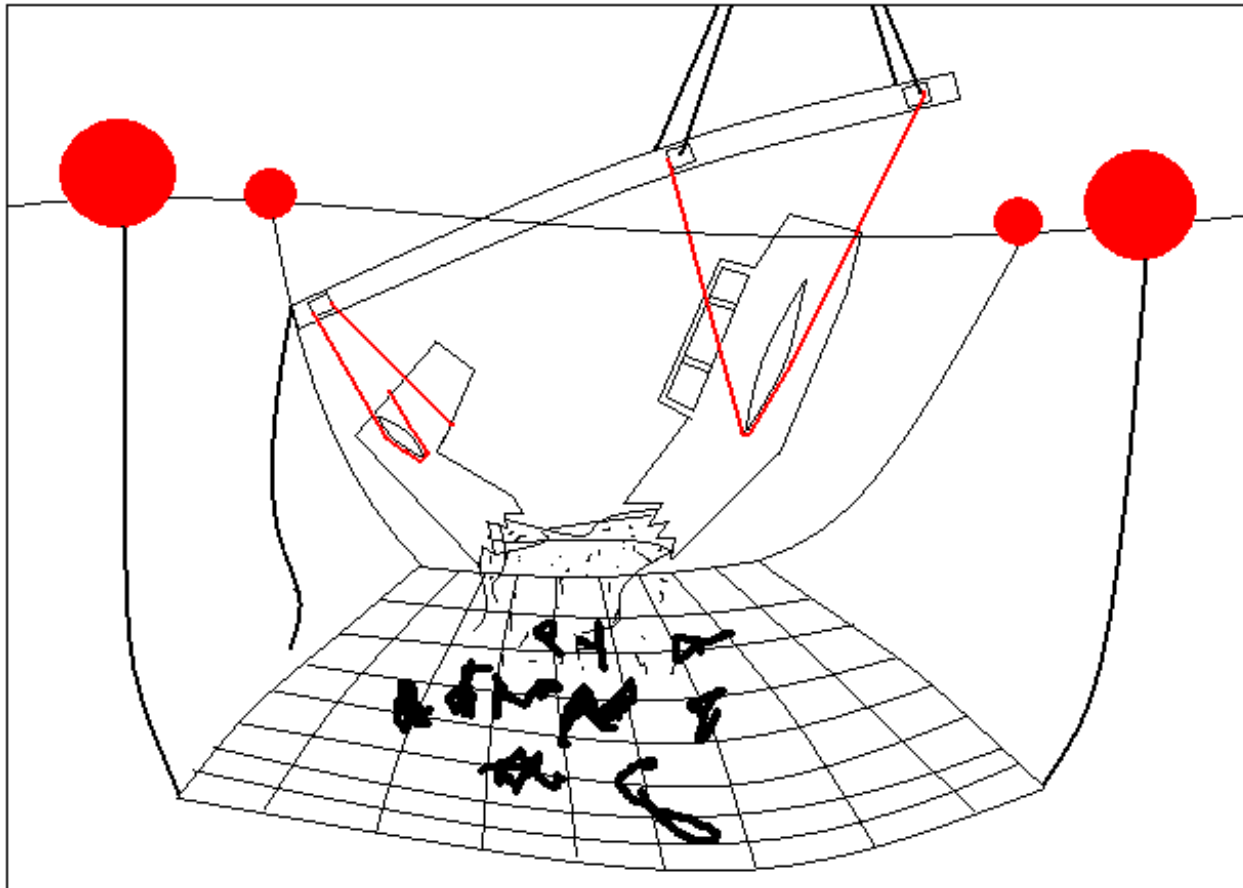


The "trap pipe" is pushed under the wing by Minerva's manipulator (left).



**Figure 10**

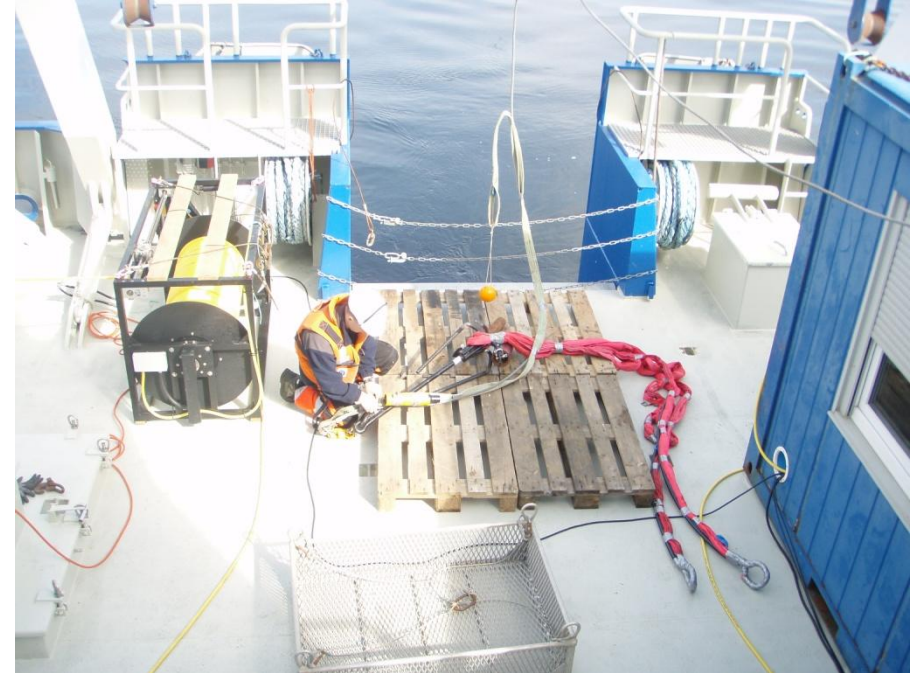
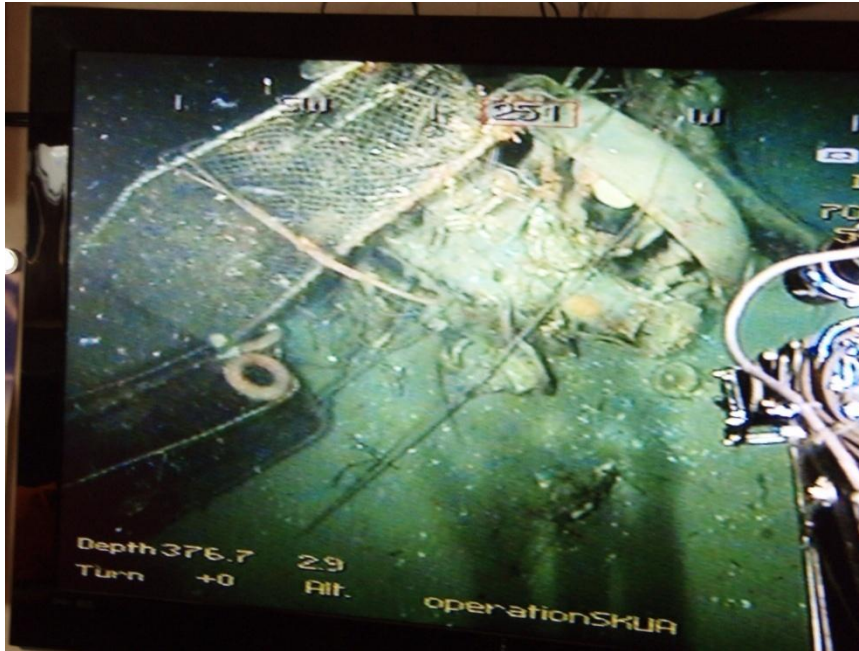
Planned strap fastening points (left) , and indication of "expected" tail breaking -which also happened during the salvage lift-(right).



Proposal by students to prevent loss of objects during eventual tail breaking



Lifting rig with attached HiPAP position sensor (left) and the heavy lift barge with the wreck hanging in the rig (right).



Aircraft engine with entangled fish pots (left) and engine salvage rig connected to the trawl wire (right).



Aircraft engine on sea bottom (left) and in the dry again (right). Observe the lifting straps between the radial cylinders.