

Underwater Archaeological Society of British Columbia

Permit 2024-0318 Final Report

Hampden P5433 Wreck Site (DeRu-214)
compass recovery



Submitted to the Archaeology Branch
July 2025

Credits

Project & Dive Team Lead Jacques Marc (UASBC)

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Paul Spencer

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Christopher Locker
Chris Mills
Greg Nuttall
Ian Stephen

Plaque Placement Divers Rob Field
Mike Lewis
Chris Mills
Kail Pawson

Underwater Photography Leila Bautista
Lyle Berzins

Photogrammetry Ewan Anderson
Roger Lacasse

Report Author Jacques Marc

Mapping Ewan Anderson

Introduction

On October 16, 2024, site Alteration Permit 2024-0318 was issued to Jacques Marc of the Underwater Archaeological Society of British Columbia (UASBC) and David Jackson of the British Columbia Aviation Museum (BCAM) to recover an aircraft compass from the crash site of Handley-Page Hampden P5433 (DeRu-214), located in Saanich Inlet, 500 m offshore between Coal Point and Warrior Point (Figure 1).

Condition 2 of the permit requires the submission of a written report outlining the work carried out be submitted to the Archaeology Branch by July 31, 2025. This report is submitted in fulfillment of that condition.

Background

Site Discovery & Recording

Lyle Berzins, a Victoria-based diver, discovered the remains of an aircraft wreck in Saanich Inlet in October 2022. He informed the UASBC of his discovery on October 30, 2022. The UASBC dove the site for the first time on December 4, 2022.

During the initial UASBC survey dive, two 9-cylinder radial aircraft engines, an intact propeller and a single set of landing gear were located in 26 m (85 feet) of water. The main fuselage of the plane was not located.

The UASBC returned to the site on January 14, 2024, and conducted extensive swim searches in the vicinity of the wreck down to 39 meters (127 feet) but no additional wreckage was found. During the second dive on January 14, UASBC divers commenced mapping the wreck site and documenting individual aircraft parts. A base line was put in place between the propeller and the landing gear, measuring 35.7 m at 96 degrees. While surveying small objects in the vicinity of the landing gear divers discovered an aircraft compass. Its location was surveyed, and the compass was photographed. The compass was found to be 26.9 meters up the baseline and 2.9 meters off the right side of the baseline. The dimensions of the landing gear and the propeller were also recorded, as this information was needed to identify the type of aircraft.

The UASBC revisited the site on February 4, 2023. This site visit included a search in deeper water around the reef and a continuation of artifact documentation and mapping survey work. Photography of the area surrounding the engines and propellers was completed for photogrammetry during this site visit (Figure 2; Anderson 2023). The remainder of the wreck site was photographed on October 22, 2024, and the two photogrammetry models of each part of the site were merged (Lacasse 2024).

Aircraft History

Identifying the aircraft was done by comparing the landing gear on the bottom to plane types stationed at Patricia Bay (now Victoria International Airport) during World War II. The landing gear proved to be from a Handley-Page Hampden medium bomber. A Pegasus engine from a Hampden

bomber on display at BCAM was also compared to the engines at the wreck site. The measurements for the lifting ring and engine cylinders were a match.

Next, a list of Hampdens stationed at Patricia Bay was generated, totalling 104 planes. This list was reduced by identifying all the Hampdens that suffered category “A” crashes where the plane was destroyed. Twenty-six Hampdens were lost. Of the 26 that crashed, two crashed in Saanich Inlet. P5436 was recovered in 1986 and is now on display at the Canadian Museum of Flight in Langley. That left one plane out standing: Hampden P5433.

BCAM & UASBC Partnership

When the BCAM learned of the discovery, the UASBC was asked if an artifact could be recovered for display in the museum’s Memorial Room. The only displayable artifact was the compass.

A joint UASBC/BCAM permit request was submitted to recover the compass September 11, 2024. Site Alteration Permit 2024-0318 authorizing the recovery of the compass was granted October 16, 2024

Collection & Treatment

Pre-Recovery

Prior to the recovery of the compass the UASBC discussed conservation measures with the Canadian Conservation Institute in Ottawa and an application for conservation treatment was prepared. The application was submitted to the CCI November 14, 2024, after the compass was recovered.

Recovery

On November 9, 2024, the UASBC visited the crash site to place an underwater memorial plaque on the site to commemorate the crash and the four crew members who perished. During the dive to place the plaque, the compass location was re-surveyed, and the compass was *photographed in situ* (Photo 1). Once this was complete the compass was moved carefully into an enclosed plastic container and placed in a diver’s mesh bag for recovery. A marker float was released at the compass location so that an accurate GPS location could be taken. The recorded coordinates for the compass are 48 40 .242N x 123 29 .332W.



Photo 1. Compass in situ.



Photo 2. Compass in seawater on board the dive boat.

The compass was brought to the surface slowly to minimize any damage from moving it. Once onboard the dive boat, the compass was kept in seawater and photographed to record its condition (Photo 2).

Initial Conservation

Leslie Hickey of the Parks Canada Marine Conservation Team provided advice on how to deal with the compass after recovery. Following her instructions, the compass has been kept submerged completely in a container with a lid in seawater. After two weeks, the UASBC began exchanging the sea water for tap water. For the duration of this process the compass has been kept in a cool dark location.

Following the recovery of the compass a UASBC Registration and Condition form was completed to record the initial condition of the compass. See Appendix 1.

The compass was sent to the Canadian Conservation Institute (CCI) April 28, 2025, and was received in good condition by the institute May 2, 2025. Appendix 2 Inward – CCI: 136194 Receipt. As of July 8, 2025, CCI has completed before-treatment photographs and x-rays; and work has started on a condition report and treatment proposal.

References

Anderson, Ewan 2023. *Hampden Bomber Wreck Site*. Sketchfab. <https://sketchfab.com/3d-models/hampden-bomber-wreck-site-e18eed838b8d4eb2a4b50492d012c53e>

Lacasse, Roger 2024. *Combined Handley-Page Hampden Bomber Models*. Sketchfab. <https://sketchfab.com/3d-models/combined-handley-page-hampden-bomber-models-aeb9693aaac948cca7848df92a7a612a>

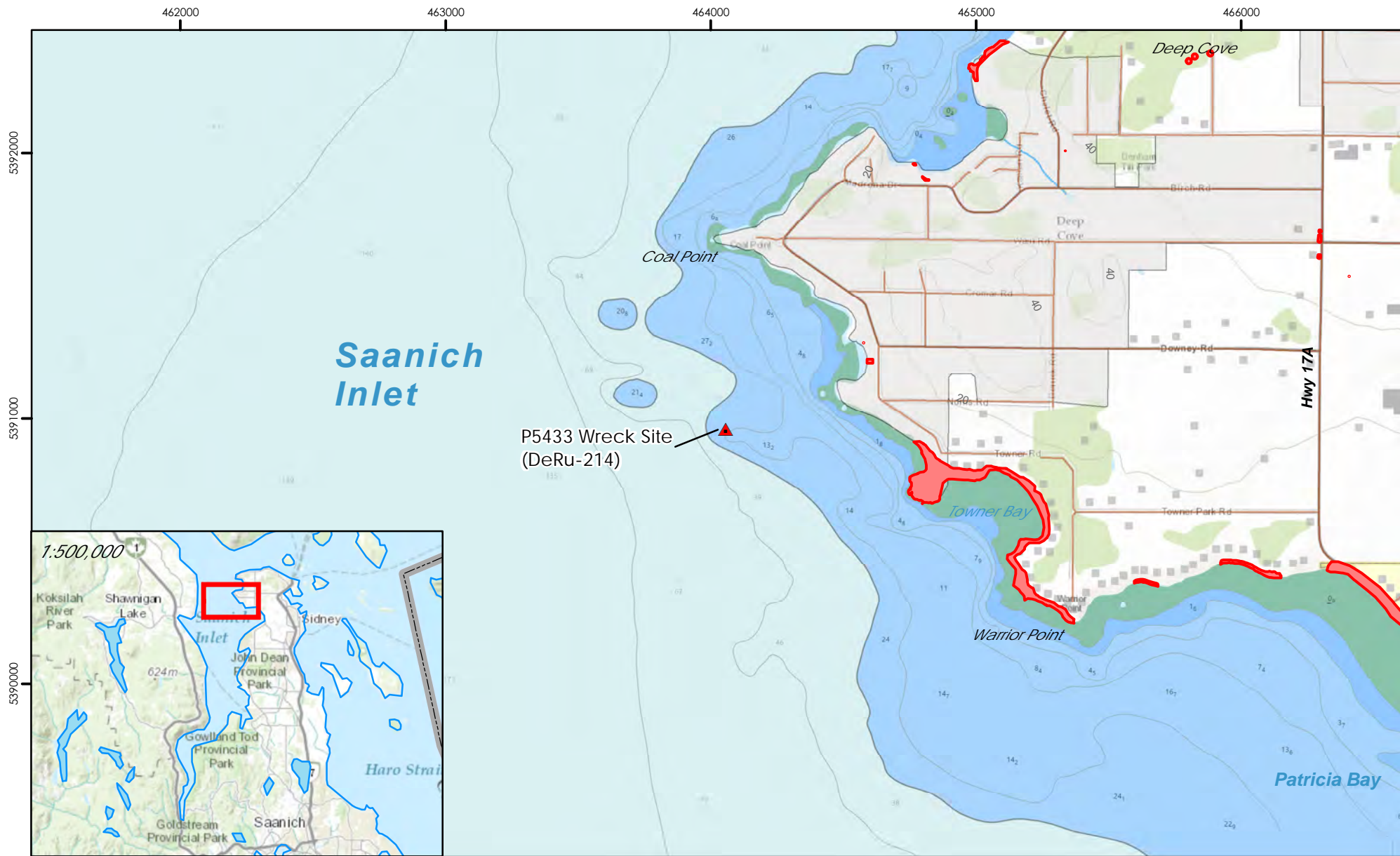
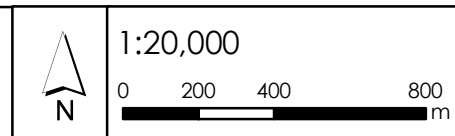


Figure 1. Location of Hadley-Page Hampden P5433 Wreck Site (DeRu-214)

Site Name: Hadley-Page Hampden P5433
 Borden No.: DeRu-214
 HCAP/App. No.: 11200-30/24A0390
 Map Date: 9/11/2024
 Coordinate System: NAD 1983 UTM Zone 10N
 Bathym. Data Source: ENC Maritime Chart Service DFO
 Bathym. Data Currency: 2024-02-24
 Topo. Data Source: CanVec courtesy NRCan – 2019-07-24

- Archaeological Site
- River/Creek
- Waterbody
- Wooded Area
- Built-up Area
- Contour



* depths in metres below chart datum



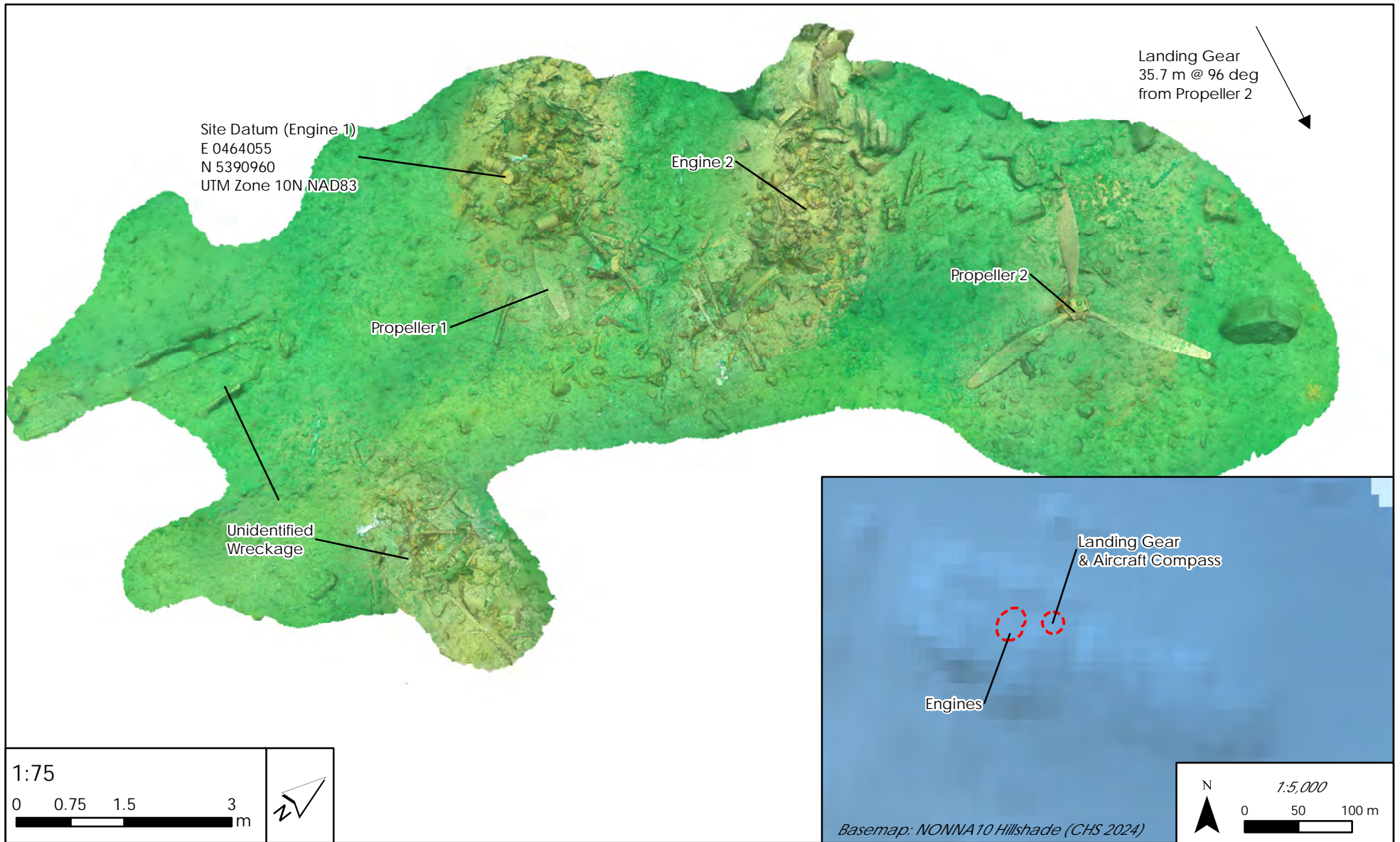




Figure 2. Site DeRu-214 - P5433 Wreck Site Map & Engines Area Detail

<p>Site Name: Hadley-Page Hampden P5433 Borden No.: DeRu-214 HCAP/App. No.: 11200-30/24A0390 Map Date: 2024-09-11 Coordinate System: NAD 1983 UTM Zone 10N Mapping Method: Photogrammetry Mapping Divers: Ewan Anderson, Jacques Marc Field Data Date: 2024-02-04</p>	<p> New Archaeological Site Boundary</p>	 <p>UASBC Underwater Archaeological Society of British Columbia</p>
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Appendix 1

Registration and Condition Form

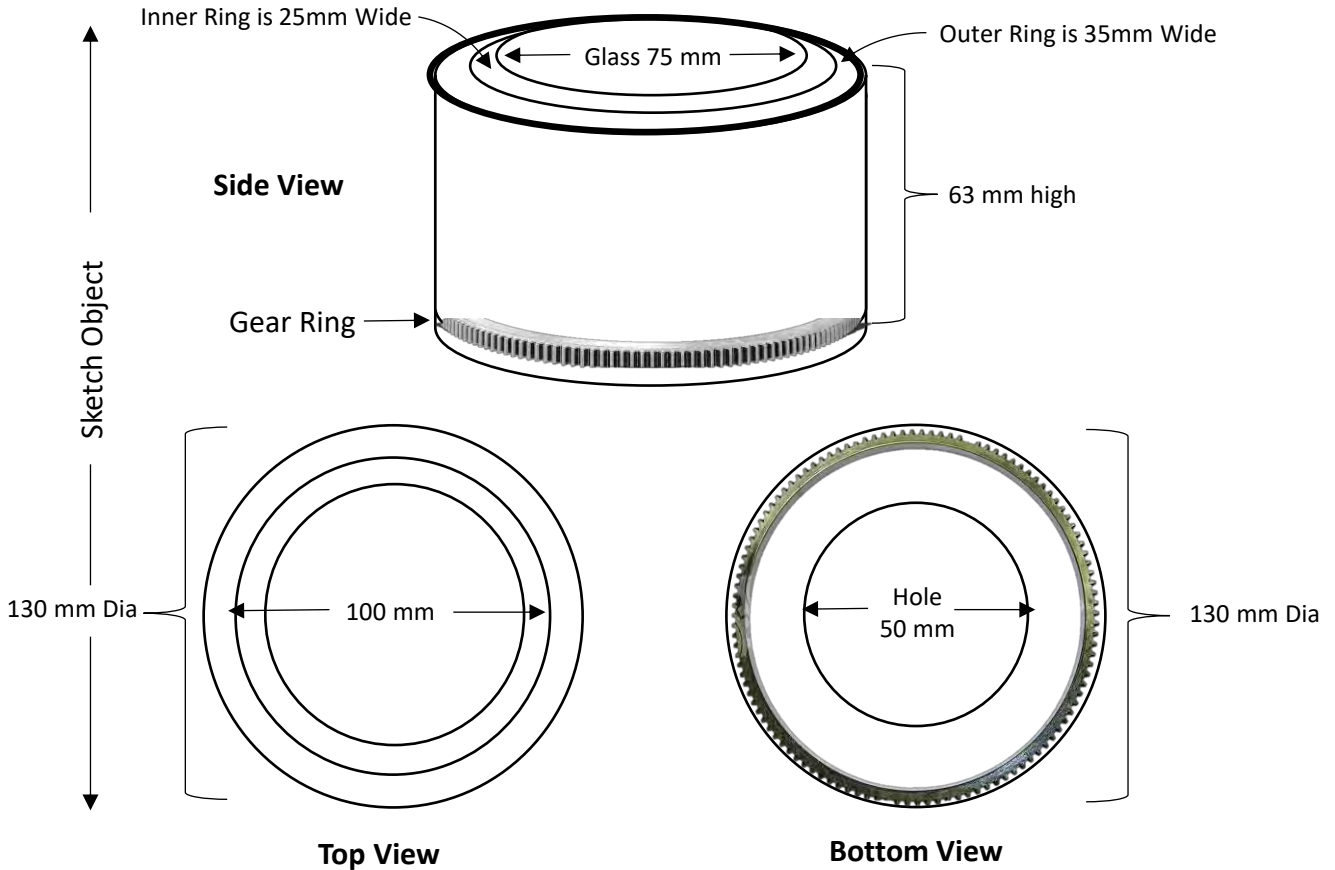
UASBC REGISTRATION & CONDITION REPORT

Name: **Jacques Marc** Date: **November 11, 2024** Artifact Status _____

1. Identification: ACC. No. _____ UASBC No. **01-901-24**

2. Object Name: **Plane Navigation Compass** Site or Vessel: **Hampden P5433**

3. Sketch object with measurements below. (Record dimensions in millimeters)



4. Weight: Grams **1080 grams**

5. Material:

Ceramic Type: Earthenware ___ Stoneware ___ Porcelain ___ Bone China ___

Metal: Iron ___ Lead ___ Copper ___ Aluminum ___ Gold ___

Brass X Silver ___ Tin ___ Pewter ___

Textile: Wool ___ Silk ___ Cotton ___ Linen ___ Hemp ___ Sisal ___ Jute ___

Wood: Softwood ___ Hardwood ___ Species if known: _____

Miscellaneous: Leather ___ Cordage ___ Bone ___ Ivory ___ Shell ___ Horn ___

Claw ___ Feather ___ Quill ___ **Glass X**

Description: (Possible Identification, shape, markings, colours, No. of pieces.)

The compass is a single piece but is made up of several components. There is an outer brass ring that is 30 mm wide. Inside of the outer ring is a second thinner 25 mm wide brass ring. The center of the compass is defined by a 75 mm diameter glass face piece. The compass is 62 mm high. There is a 50 mm diameter hole in the base. A gear like apparatus encircles the bottom of the compass 3 mm above the base. The compass has a 3 mm raised lip on the top.

Condition:

Identify degradation: e.g. weathering fractures, splitting, warping.

Biological: Marine borers, encrustations, concretions, staining etc.

The compass is in quite fragile condition. The base has corroded through and there are marine worms and a barnacle growing on the external surface. The opening in the base has allowed seawater to enter the inside of the compass and it has displaced the original oil and corroded the compass card. There are vestiges of the navigation arrow visible under the glass.

Environment or Location Where Found

E.g. Fresh water, salt water, depth of water, mud, sand, rock, low tide area, on surface, buried.

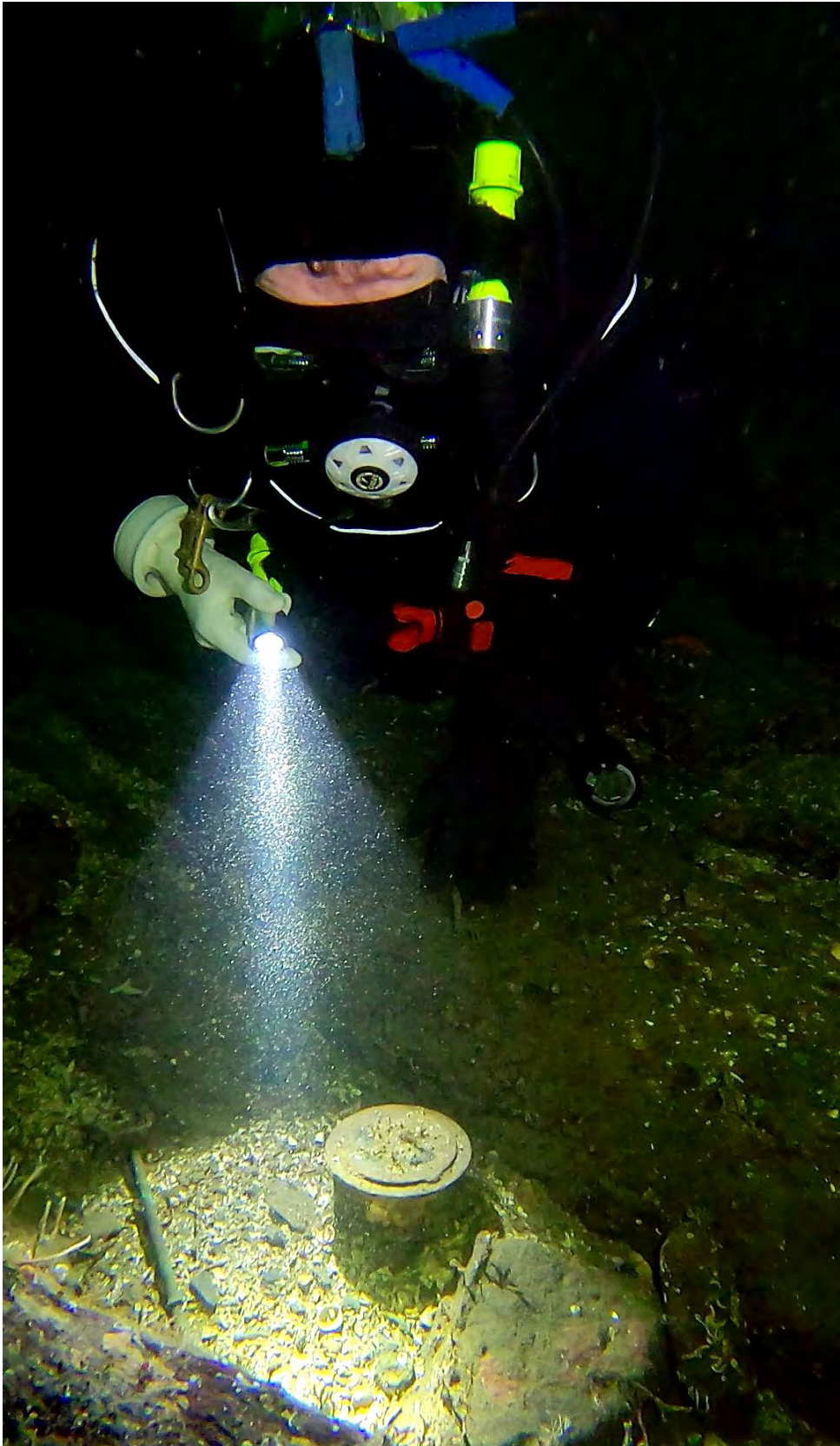
The compass was found on a sand shell bottom between rock outcrops. The compass was found 9.1 meters on a 60 degree bearing from the landing gear axel. The GPS coordinates are 48 40 .242 N x 123 29 .332W

Treatment Remarks:

Type of storage solution or environment. Salt water, fresh water, deionized water ethanol etc. Identify previous treatment if known. Storage conditions temperature and humidity.

Upon recovery the compass we followed the instructions of the Canadian Conservation Institute. The compass was initially stored in sea water in a dark cool space. Fresh water is being added to slowly change the environment to freshwater.

Hampden P5433 Compass in situ on the bottom.





Hampden P5433 Compass in situ on the bottom.



Hampden P5433 Compass in seawater at the surface.



Hampden P5433 Compass Top View



Hampden P5433 Compass Bottom View

Side View 1



Side View 2



Side View 3



Side View 4





Hampden P5433 Compass Diameter



Hampden P5433 Compass Height

Appendix 2

Canadian Conservation Institute Receipt



1030 Innes Road 1030, chemin Innes
Ottawa ON K1B 4S7 Canada Ottawa ON K1B 4S7 Canada
Tel. : 613-998-3721 Fax : 613-998-4721 Tél. : 613-998-3721 Téléc. : 613-998-4721
www.canada.ca/cci
www.canada.ca/chin

Inward – CCI: 136194

Institution: Underwater Archaeological Society of BC (UASBC)
Address: C/O Vancouver Maritime Museum
1905 Ogden Ave.
Vancouver BC V6J 1A3

Description of Artifact(s):	Accession Number:
Hampden P5433 Compass	DeRu-214

Total Packages: 1
Package ID: Canada Post Tracking Number is 0105934148779273
Carrier: Canada Post

Date Received: May 2, 2025
Date Unpacked: May 2, 2025

Packing Methods: In a cardboard box padded with packing peanuts and taped shut. A layer of ethafoam covers a plastic container, taped closed, and inserted in a plastic bag, knotted shut. The inside of the container is padded with slightly damp sponges and soft cloth is inserted in the compass. One tiny fragment was found detached under compass.

Artifact and Project Control Officer



Canadian
Conservation Institute

Institut canadien
de conservation

Canada