

9704-130A

VOLUME NO.

9704-130 A.

FROM \_\_\_\_\_  
TO \_\_\_\_\_

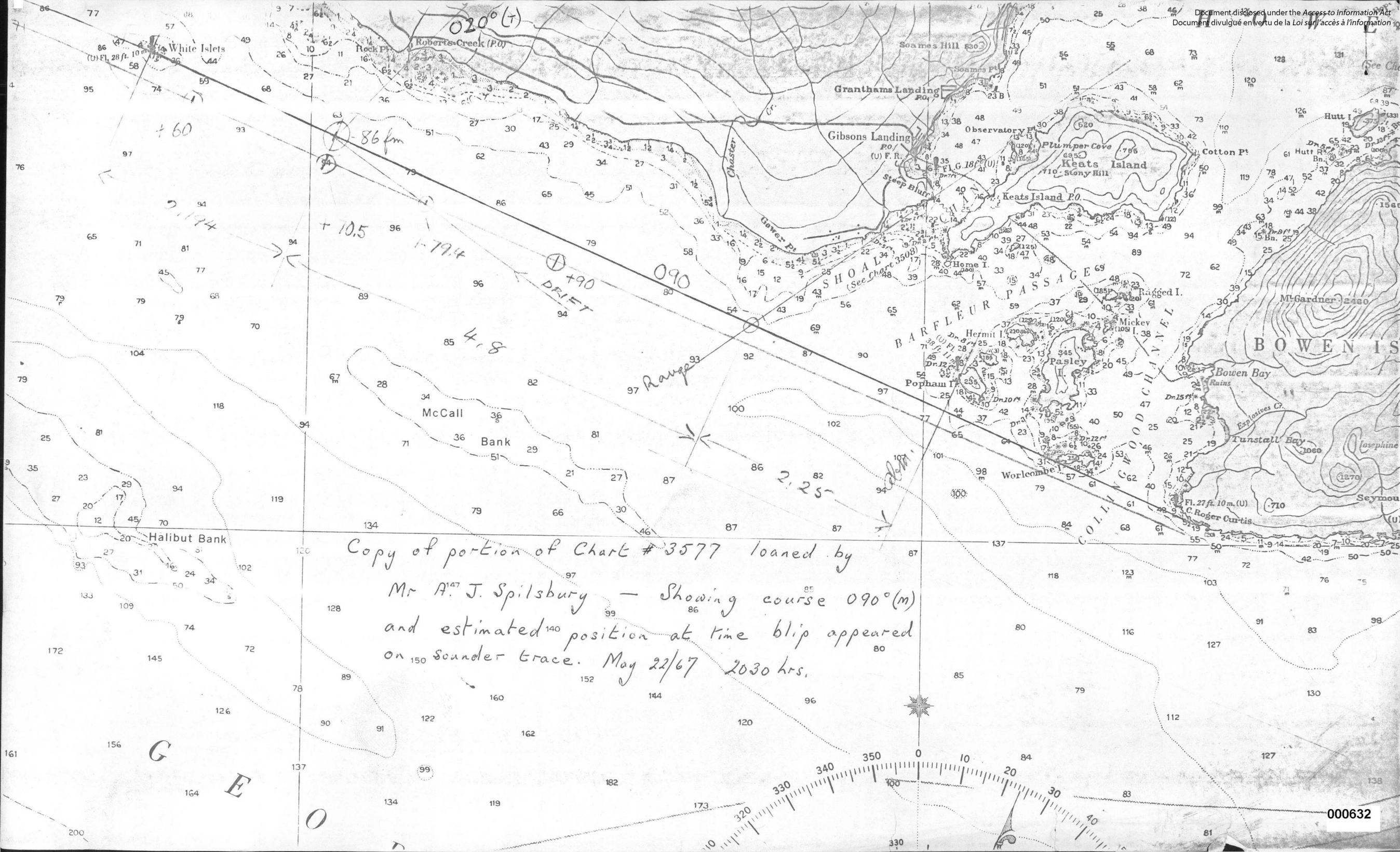
**IMPORTANT — NOTIFY RECORDS WHEN FILE IS PASSED DIRECT TO ANOTHER SECTION**

SUBJECT GULF MASTER - SEARCH.

SUB-SUBJECT \_\_\_\_\_

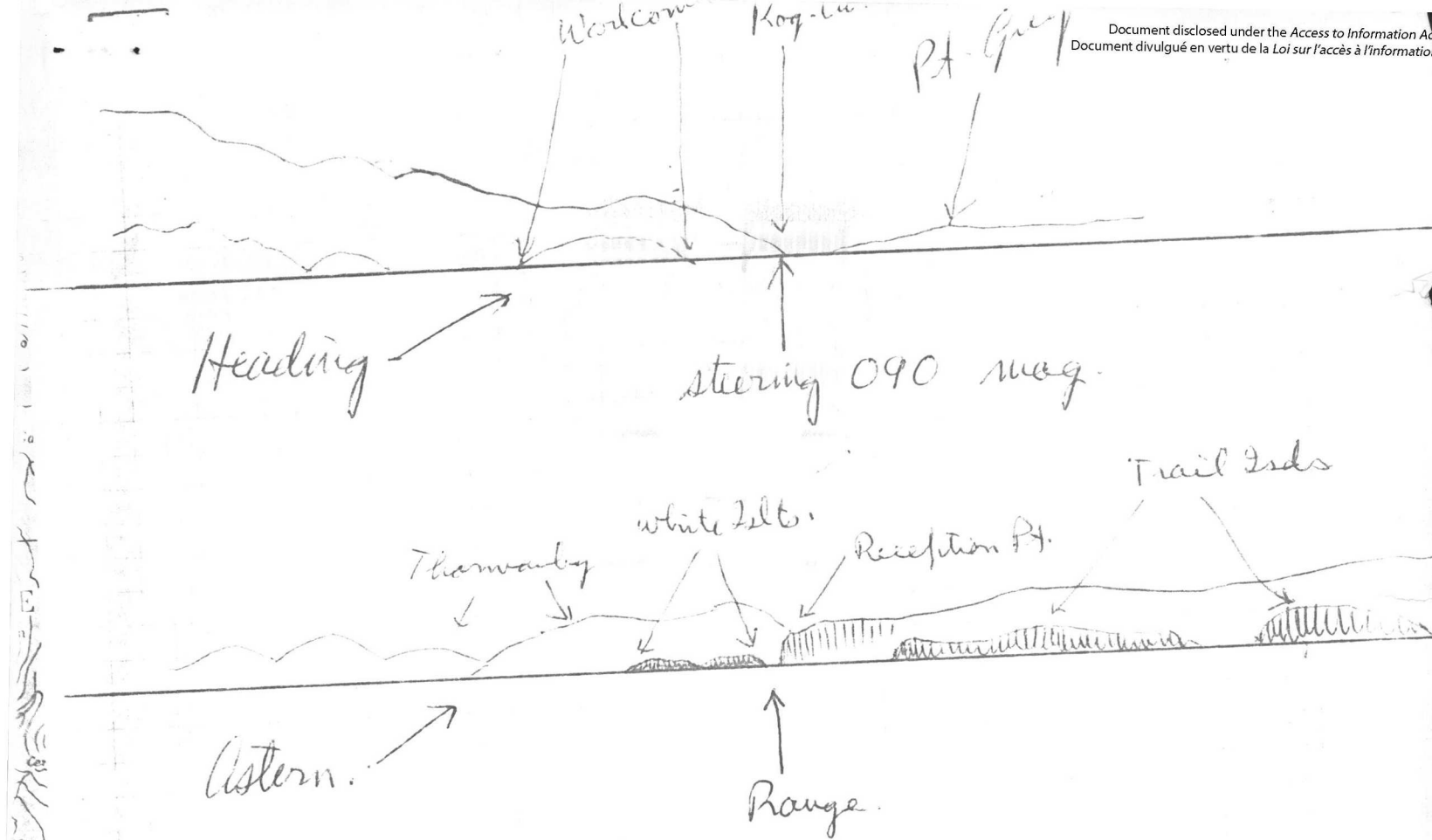
FILE TITLE \_\_\_\_\_

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Copy of portion of Chart # 3577 loaned by  
Mr. A. J. Spilsbury - Showing course 090°(m)  
and estimated position at time blip appeared  
on sonar trace. May 22/67 2030 hrs.





May 23 - Observation in 86 fms.  
about 2030 hours.



Copy of sketch by  
A. J. Spilsbury.

See Chart 3577.

COPY OF SOUNDER TRACING  
LOANED BY A.J. SPILSBURY  
SHOWING BLIP EXTENDING FROM  
BOTTOM

white Isl  
Absam.

Paper Roll  
advanced

May 22/67  
2030 hrs

70

80



9th

Albeam  
Popham  
Light

Paper Roll  
advanced

81

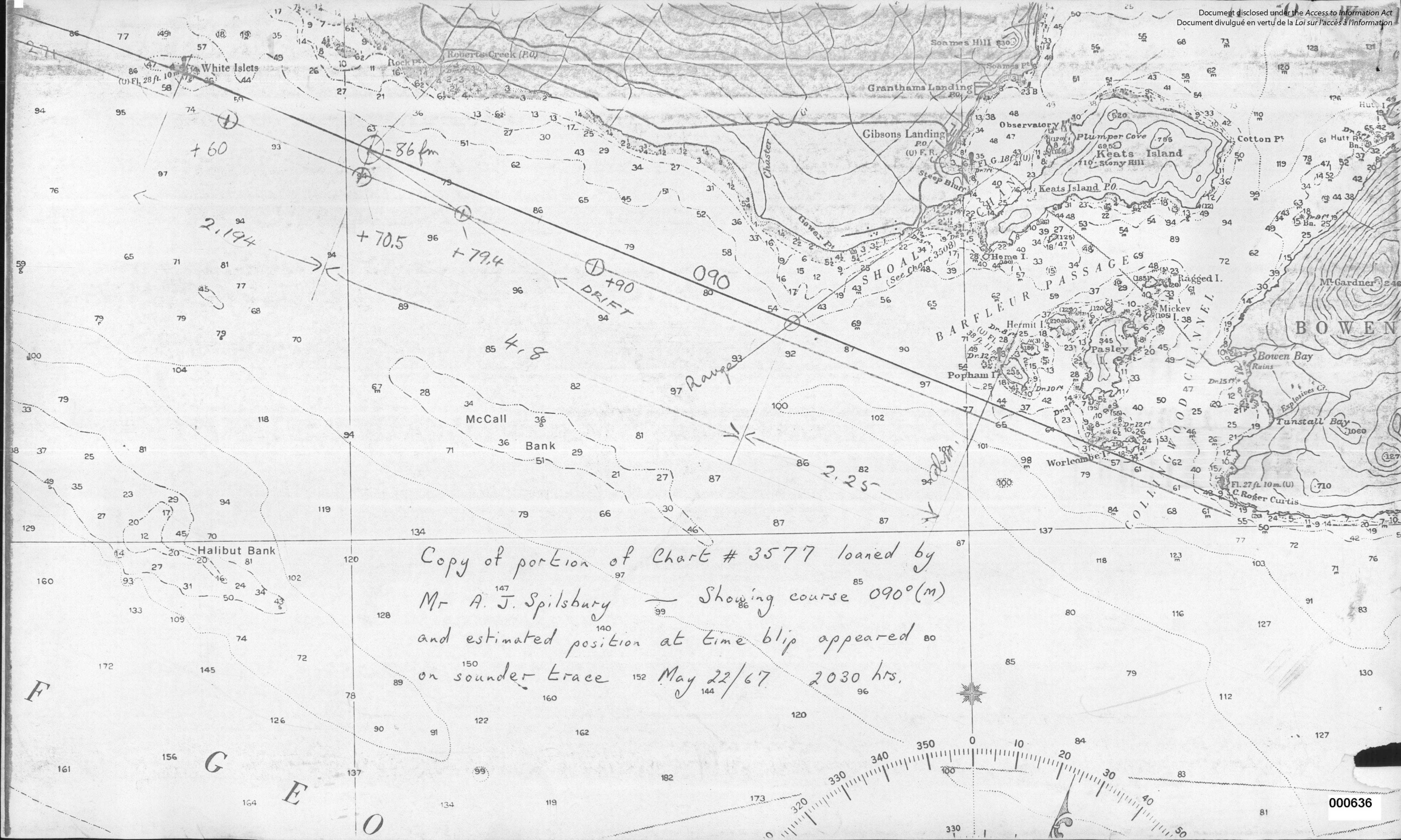
ATLAS-WERKE Aktiengesellschaft DK-26 50 527-1079

ATLAS-WERKE Aktiengesellschaft DK 26-50 527-1073

631.84

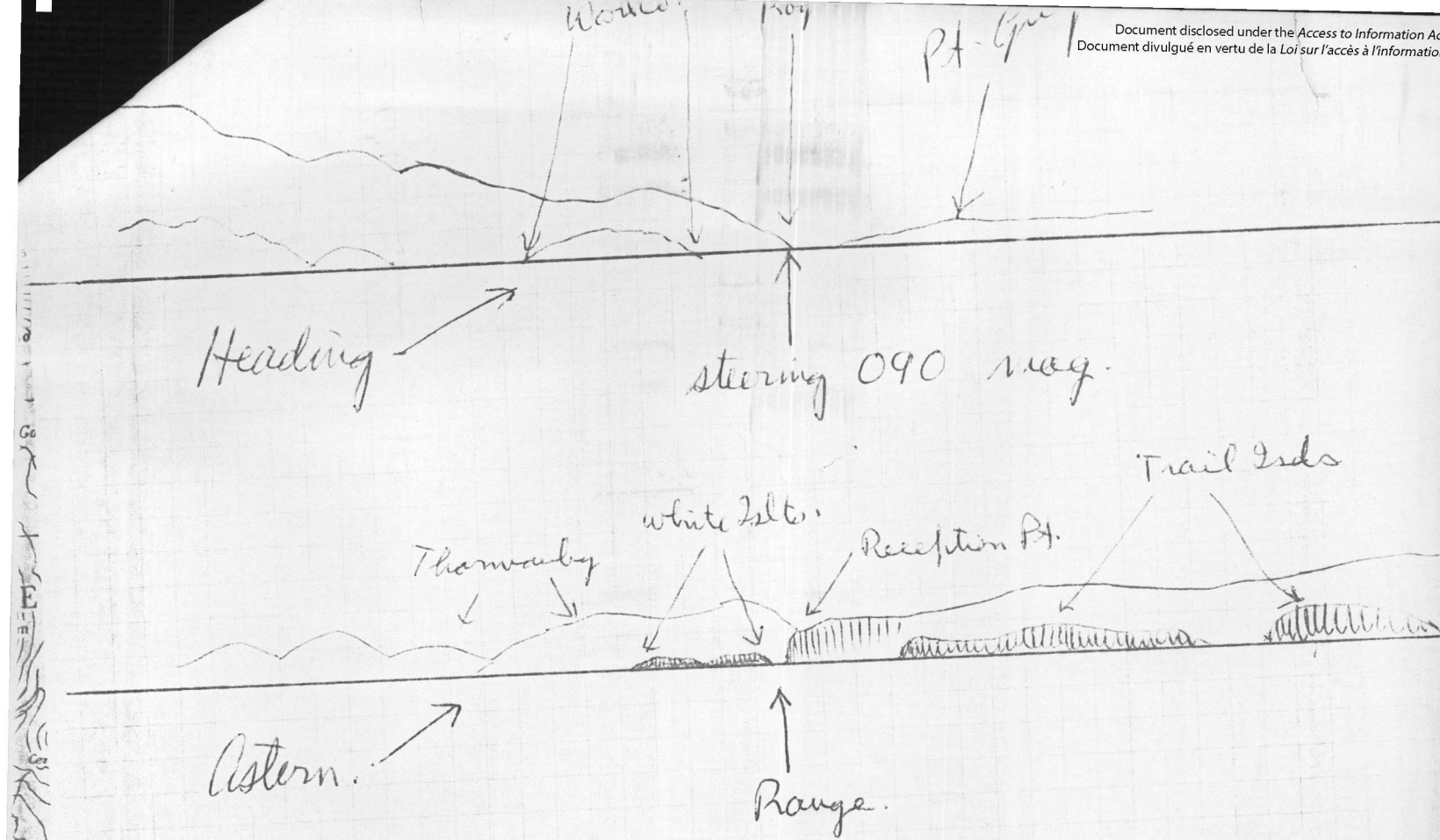
Aktiengesellschaft DK 25-50 527-1073





Copy of portion of Chart # 3577 loaned by  
Mr. A. J. Spilsbury — Showing course 090°(M)  
and estimated position at time blip appeared  
on sonar trace May 22/67 2030 hrs.



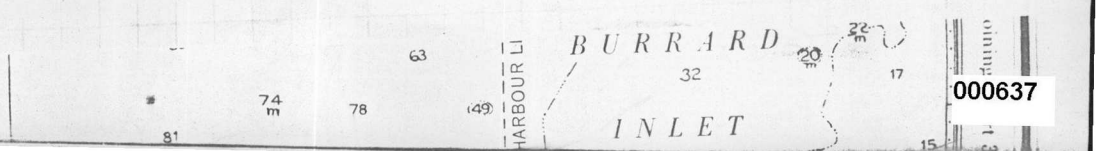


May 23 - Observation in 86 fms.  
about 2030 hours.



Copy of sketch by  
A. J. Spilsbury

See Chart 3577.



White Isl  
Abcam.

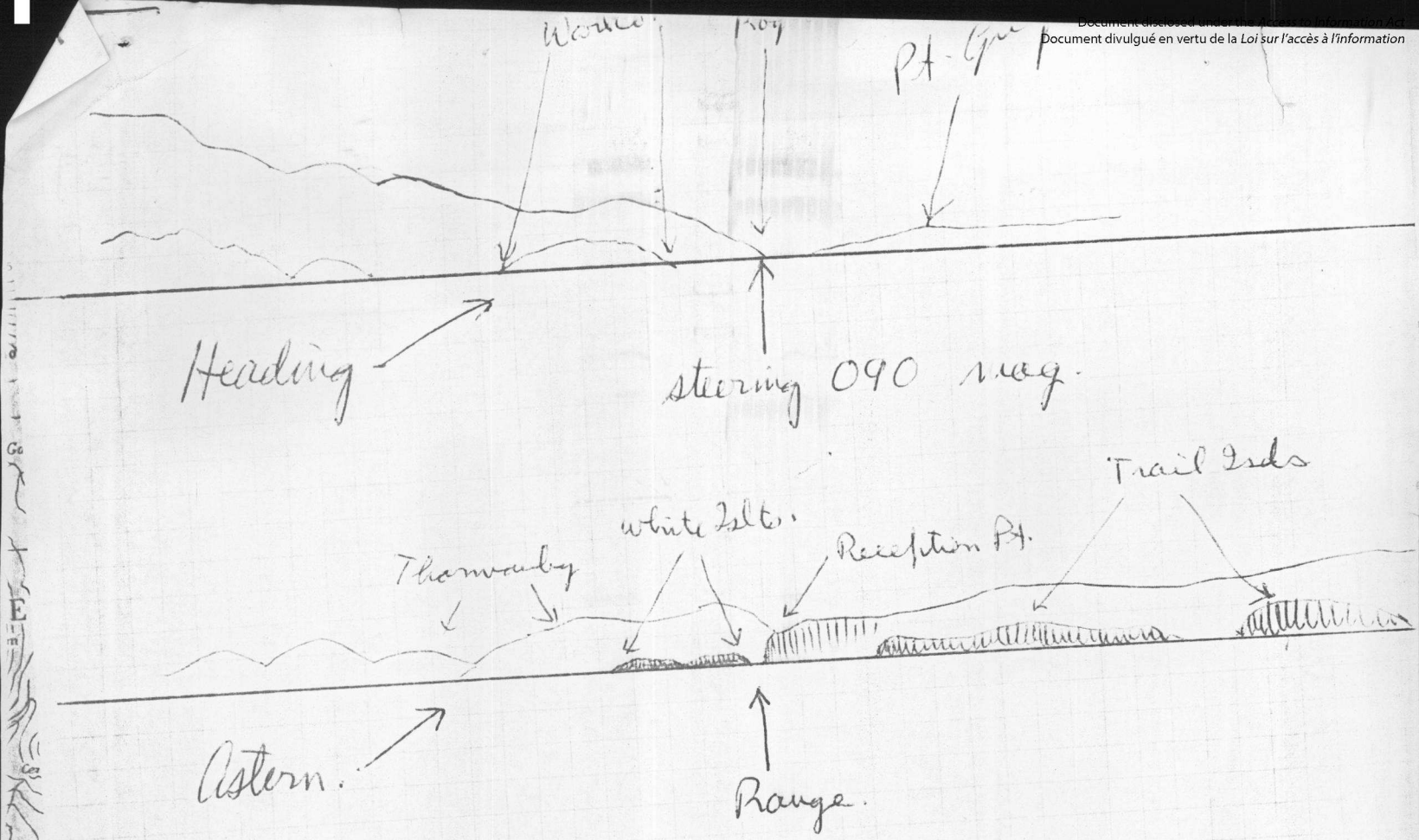
Paper Roll  
advanced

May 22 / 67  
2030 lbs.

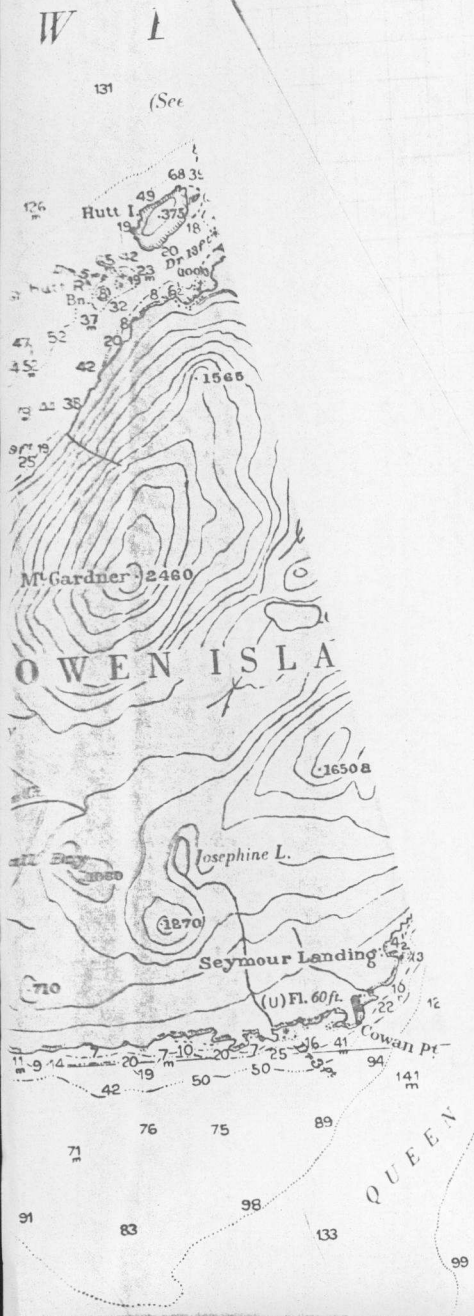
70

80





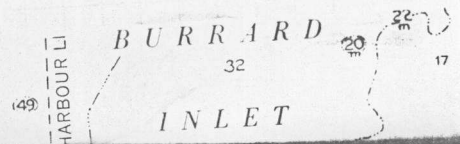
May 23 - Observation in 86 fms.  
about 2030 hours.



Copy of sketch by

A. J. Spilsbury

See Chart 3577.



CAP'T

COPY

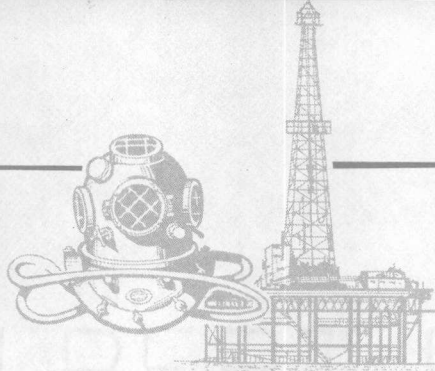
REPORT ON SEARCH  
FOR.

"GULFMASTER"

APRIL 1968



# CAN DIVE



CANADIAN DIVING SERVICES LTD.

866 EAST CORDOVA STREET  
VANCOUVER, B.C., CANADA

P.O. BOX 4488  
SANTA BARBARA  
CALIFORNIA, U.S.A.

April 11, 1968

Mr. J. A. G. St. Laurent  
Chief, Purchases & Contracts  
Department of Transport  
Ottawa, Ontario

SUBJECT: Contract to locate the sunken tugboat  
"Gulfmaster."

Reference No. 9704-669

Dear Sir:

We hereby submit a report covering the investigation conducted by our company on behalf of the Department of Transport into the sinking of the "Gulfmaster."

We trust you will find our presentation to your satisfaction and look forward to serving you again.

Yours very truly,

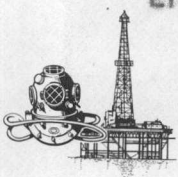
CAN-DIVE SERVICES LTD.

A handwritten signature in cursive script that reads "Phil Nuytten".

Phil Nuytten, Manager

PN:ls

Enc.

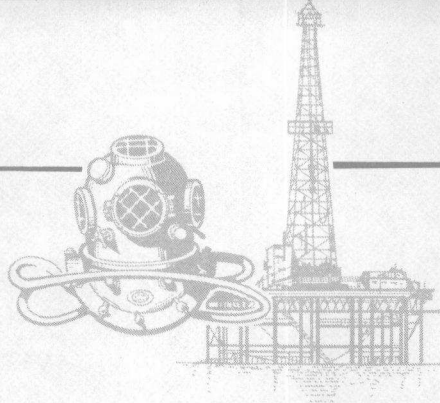


PHONE: A.C. 604 - 255-5323  
VANCOUVER, CANADA

A.C. 805 - 963-2688  
SANTA BARBARA, U.S.A.

000641

# CAN DIVE



CANADIAN DIVING SERVICES LTD.

866 EAST CORDOVA STREET  
VANCOUVER, B.C., CANADA

P.O. BOX 4488  
SANTA BARBARA  
CALIFORNIA, U.S.A.

REPORT

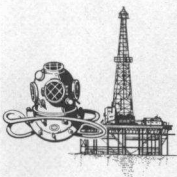
on

SEARCH FOR SUNKEN TUG  
GULFMASTER CONDUCTED  
FEBRUARY - MARCH 1968

by

P.R. NUYTTEN

April 11th 1968



PHONE: A.C. 604 - 255-5323  
VANCOUVER, CANADA

A.C. 805 - 963-2688  
SANTA BARBARA, U.S.A.

000642



## APPENDICES

- I    Triangulation of Control Stations      Dwgs. 101-05
- II   General arrangement of rigging used to tow Sensor
- III Graph showing distance from Sensor versus Magnetic Field Intensity
- IV   Magnetic Tensity variation for spot readings
- V    Search pattern determination for spot readings
- VI   Bottom contours of search area with overlay showing Magnetic Field Intensity
- VII Bottom contours of White Islets search area with overlay showing Magnetic Field Intensity
- VIII Tidal drift patterns
- IX   Semi Quantitative Spectrographic Analysis of Ferro-Magnetic Ore

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Bottom Profiling Sonar.....	3
Underwater Television.....	3
OBSERVATIONS.....	4
CONCLUSIONS.....	5



## INTRODUCTION

The purpose of this report is to outline methods and procedures used in conjunction with an attempt to locate the tugboat "Gulfmaster" which sank January 11, 1967, off Sechart, B.C. ✓

The area chosen by the D.O.T. as being most likely to contain the wreck was an area in the shape of a rough triangle bounded by Mission Point, Trail Islands and White Islets. ✓

Operations commenced on February 15, 1968, with a survey party dispatched to the site to set up shore control stations. (See Appendix I) ✓

## SEARCH EQUIPMENT & METHODS

### Proton Magnetometer

A device which registers the intensity of the earth's magnetic field in "gammas." Concentrated ferrous masses will produce an abrupt change depending on the size of the mass - this change is known as an "anomaly."

In a magnetometer search for an underwater object, the searcher is primarily concerned with 2 questions; at a known distance and a given mass, what size anomaly or "magnetic disturbance" may be expected and what method may be employed to guarantee that this required distance is not exceeded. Appendix II & III show distance and gamma change graph, while Appendix IV & V show an overlap, vertical drop pattern.

The more usual method of towing the magnetometer sensor was employed in all areas except White Islets. Towing the magnetometer sensor was discarded, in this area, in favour of the vertical drop method as concentrated ferrous masses of ore were suspected. Subsequent laboratory analysis of rock samples, from this area, bore out this suspicion. This condition necessitated extensive and labourious work around White Islets to differentiate between submarine pinnacles with high ferrous content and a possible target.



### Bottom Profiling Sonar

Sonar was used to profile the bottom contours allowing a plotting of magnetic gradient and bottom profile on the same chart. It will be noted on the enclosed overlays that the magnetic field of the search area agrees inversely with the bottom contours. (See DWGS. # D 101-01 & D 101-02) With the magnetometer sensor being towed at a constant depth, a change in bottom contours may be expected to give a magnetic change also, as the distance to any geological mass is increased or decreased. An abrupt gamma change without a corresponding depth change is a sufficient reason to investigate the spot visually, either by diver or underwater television.

### Underwater Television

A close-circuit television unit, with the camera in an underwater housing was employed to investigate those suspected target areas too deep to be inspected by a diver. The unit was used infrequently as almost all of the possible target areas occurred in the shallow water (150') around White Islets. Procedure was to determine possible target areas by plotting bottom profile and gamma recorder charts. Shore control stations and constant time-position checks allowed pin-point return to any suspected area. The T.V. was then lowered to investigate.

## OBSERVATIONS

### Drift Studies

Drift studies were conducted in the area of White Islets. (See #B 101-06) These studies revealed the existence of a "Beck Eddy" which cause the normal direction of the tidal current to be reversed. These findings, in conjunction with positions of debris and oil slicks etc., along with the last positive sighting of the "Gulfmaster", allowed the most likely areas within the search pattern to be thoroughly investigated.

### Geological Disturbances

A massive geological dyke of iron bearing mineral was observed to traverse White Islets on a northwest - southeast bearing. From this main dyke, several smaller intrusions were observed to lead off in many directions. On analysis, this dyke material was found to be highly ferrous. (See Appendix IX) This high concentration of iron in a dyke formation is responsible for the area of high magnetic field intensity on the west side of White Islets. (See Dwgs. #101-03.)



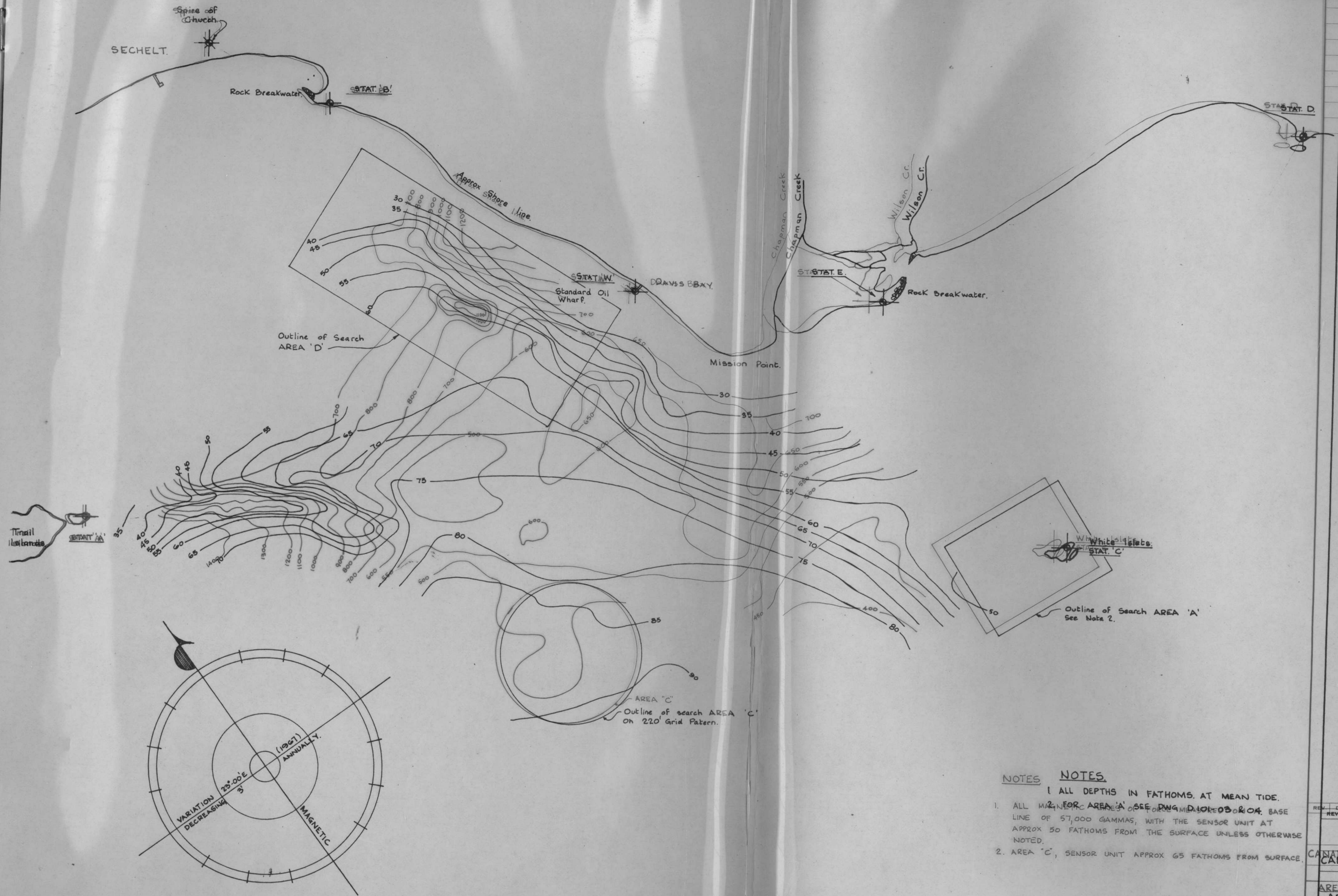
### CONCLUSION

In conclusion, the reader will note that all the enclosed information gives as concise an over-all picture of the search area as is possible with the techniques and equipment employed. Bad weather and extensive high-ferrous geology combined to extend the search period longer than had been estimated, however the D.O.T.'s extension of time allowed the area to be thoroughly searched.

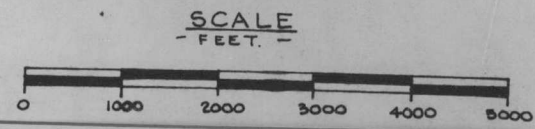
It is our belief that the wreck of the tug, "Gulf-master" is not in the area searched.

While the area designated to be searched is a likely one, it is by no means the only possible one.

We would be glad to indicate our recommendations and reasons for an extension of the search area, upon request.



- NOTES**
1. ALL DEPTHS IN FATHOMS, AT MEAN TIDE.
  2. FOR AREA 'A' SEE DWG. D-101-02 & 04. BASE LINE OF 57,000 GAMMAS, WITH THE SENSOR UNIT AT APPROX 30 FATHOMS FROM THE SURFACE UNLESS OTHERWISE NOTED.
  3. AREA 'C', SENSOR UNIT APPROX 65 FATHOMS FROM SURFACE.



REV.	DATE	REVISION	DR	CH	APP.
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

**TRITON ENGINEERING AND CONSTRUCTION LTD.**  
VANCOUVER 4, B.C.

**CANADIAN DIVING SERVICES LTD.**

GULF Master Search  
GULF Master Search  
AREAS "B", "C", "D"  
AREAS "B", "C", "D"  
SUBSURFACE CONTOURS.

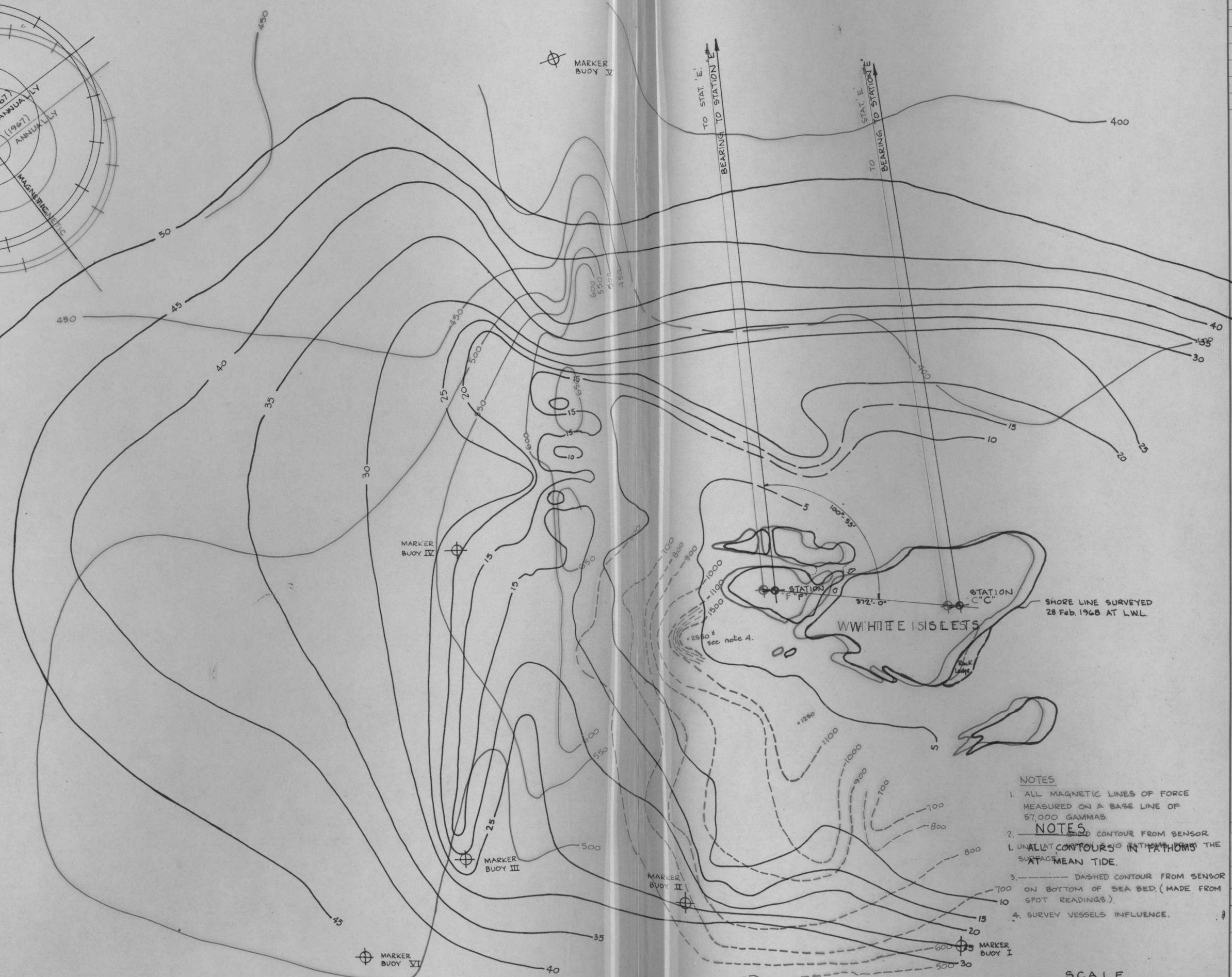
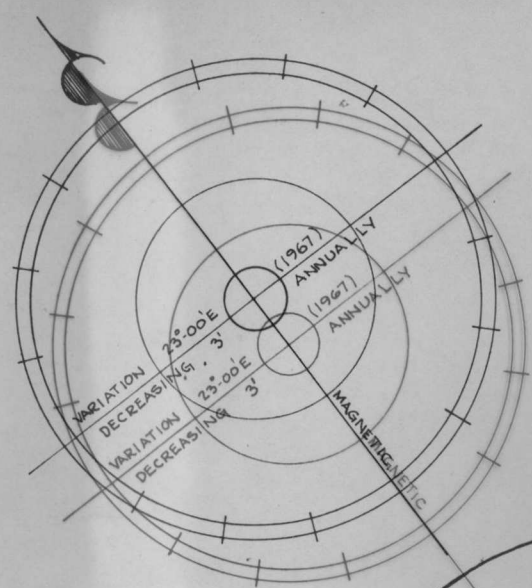
CERTIFIED FOR CONSTRUCTION  
T.E.C. PROJ. ENG. AS NO SCALE

CODE NO. DRN T.E.C. PROJ. ENG. NO. 101-01  
CODE NO. DRN 101-01  
CH DR 101-01  
APP CH 101-01

T.E.C. DRAWING NO. 101-01  
CLIENT DWG. NO. 101-01

000650





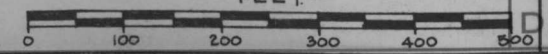
NOTES

1. ALL MAGNETIC LINES OF FORCE MEASURED ON A BASE LINE OF 57,000 GAMMAS.
2. UNALIGNED CONTOUR FROM SENSOR
3. DASHED CONTOUR FROM SENSOR ON BOTTOM OF SEA BED (MADE FROM SPOT READINGS).
4. SURVEY VESSELS INFLUENCE.

NOTES

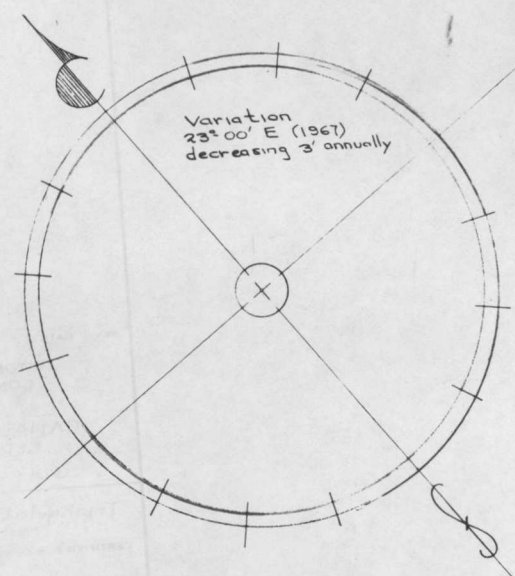
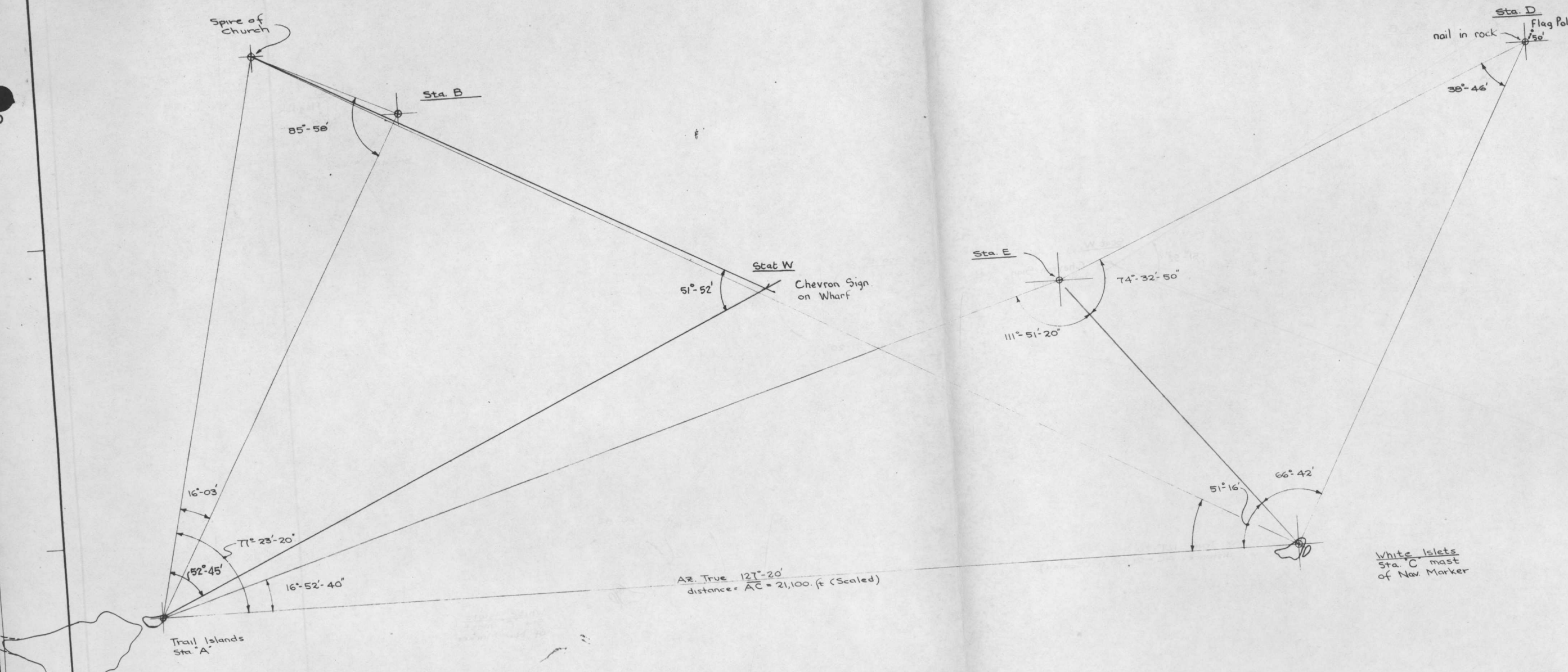
1. UNALIGNED CONTOUR FROM SENSOR
2. DASHED CONTOUR FROM SENSOR ON BOTTOM OF SEA BED (MADE FROM SPOT READINGS).
3. SURVEY VESSELS INFLUENCE.

SCALE  
- FEET -



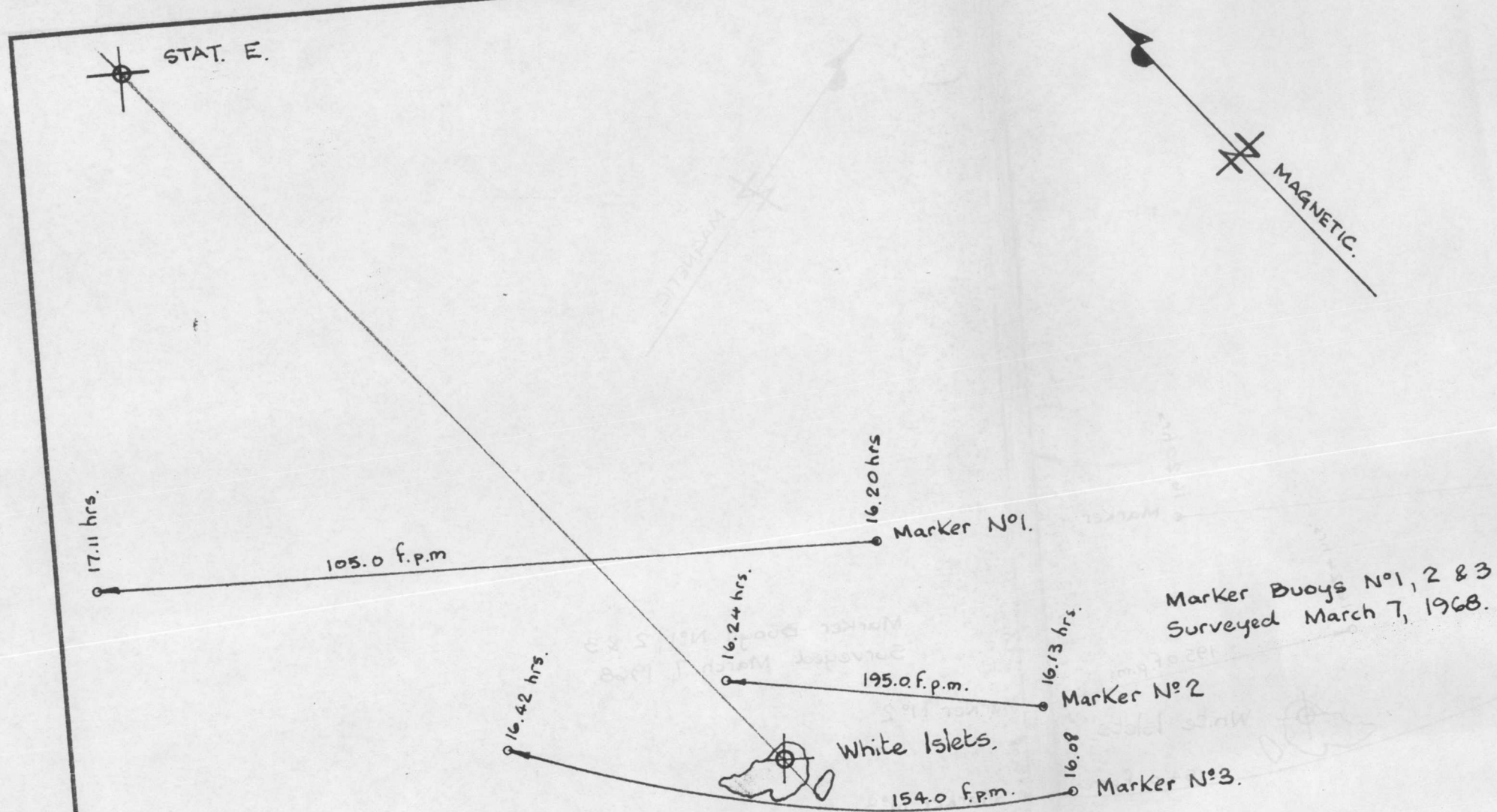
REV		DATE	REVISION	OR	DR	CH	APP
TRITON ENGINEERING AND CONSTRUCTION LTD. VANCOUVER, B.C.							
CANADIAN DIVER SERVICES LTD							
GulfMasterSeaSearch							
ARAREX "A" WHITE ISLANDS MAGNETIC MAP OF SUBSURFACE							
CERTIFIED FOR CONSTRUCTION							
T.E.C. PROJ. ENG. SEE 10% NOTED							
CODE	DSN	DSN	DAY	DAY	MO	YR	
DSN	DSN	DSN	11	27	26	68	
CH	CH	CH					
T.E.C. DRAWING No. CLIENT DWS. No. REV REV							
D0110B-04							
000651							



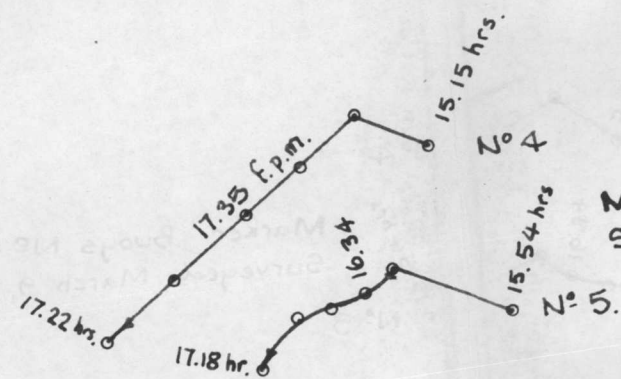


REV	DATE	REVISION	DR	CH	APP
<b>TRITON ENGINEERING AND CONSTRUCTION LTD.</b> VANCOUVER 4, B.C.					
<b>CANADIAN DIVING SERVICES LTD.</b> Gulf Master Search					
<b>Triangulation of Control Station</b>					
CERTIFIED FOR CONSTRUCTION					
CODE No.		T.E.C. PROJ. ENG.		SCALE	
DBN		B.V. IRVINE		1" = 1000.	
CH				20 16 45	
APP				DAY MO Y	
				18 2 6	
T.E.C. DRAWING No.		CLIENT DWG. No.		REV	
D 101-05				00065	





No. 5 - Scotchman with large Sea Anchor attached. At 15.54 hrs. 1 pt diesel fuel poured out. Oil slick produced = 40' x 20' in center was Scotchman. At 16.34 hrs in 84 fathoms the Oil slick was 52 feet down current from buoy.



EBB TIDE  
FROM TIDE TABLES.

WIND  
5 Knots.

TRITON ENGINEERING AND  
CONSTRUCTION LTD.  
VANCOUVER 4, B.C.

CANADIAN DIVING SERVICES LTD.

Gulf Master Search.

TIDE FLOW PATTERNS.

CERTIFIED FOR CONSTRUCTION

T.E.C. PROJ. ENG.

CODE NO.

DSN  
DR  
CH  
APP

1 BIRCH  
*Phil Loughlin*

T.E.C. DRAWING NO.

B 101-06

CLIENT DWG. NO.

SCALE  
1" = 1000'

DAY	MO	YR
4	4	68
9	4	68

REV



PHONE: (604) 6-4111

CABLE ADDRESS "ELDRICO"

FILE NO. S.3-C.1-68-39771

DATE April 1, 1968

To:

Canadian Diving Services Ltd.,

866 E. Cordova Street,

Vancouver, B. C.

Attention: Mr. Allan Black

## SEMI QUANTITATIVE SPECTROGRAPHIC ANALYSES

## COAST ELDRIDGE

ENGINEERS &amp; CHEMISTS LTD.

125 EAST 4TH AVE. VANCOUVER 10, CANADA

We Herby Certify that the following are the results of semi quantitative spectrographic analyses made on Ore samples submitted.

SAMPLE IDENTIFICATION	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Ga	Au	Fe
	8.0	ND	ND	0.1	ND	ND	0.001	ND	5.0	0.01	0.003	0.005	ND	Trace	Major
SAMPLE IDENTIFICATION	Pb	Mg	Mn	Mo	Nb	Ni	Si	Ag	Sr	Ta	Sn	Ti	W	V	Zn
	0.001	5.0	0.3	0.003	ND	0.007	Matrix	Trace	0.1	ND	ND	0.5	ND	0.03	0.01

All results are expressed as percent by weight. TRACE = Detected but below normal spectrographic range.

Note: Rejects retained one week. MATRIX = Major Constituent.

Pulps retained three months. MAJOR = Above normal spectrographic range.

N.D. = Not Detected.

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CHIEF CHEMIST





# CAN-DIVE

CANADIAN DIVING SERVICES LTD.

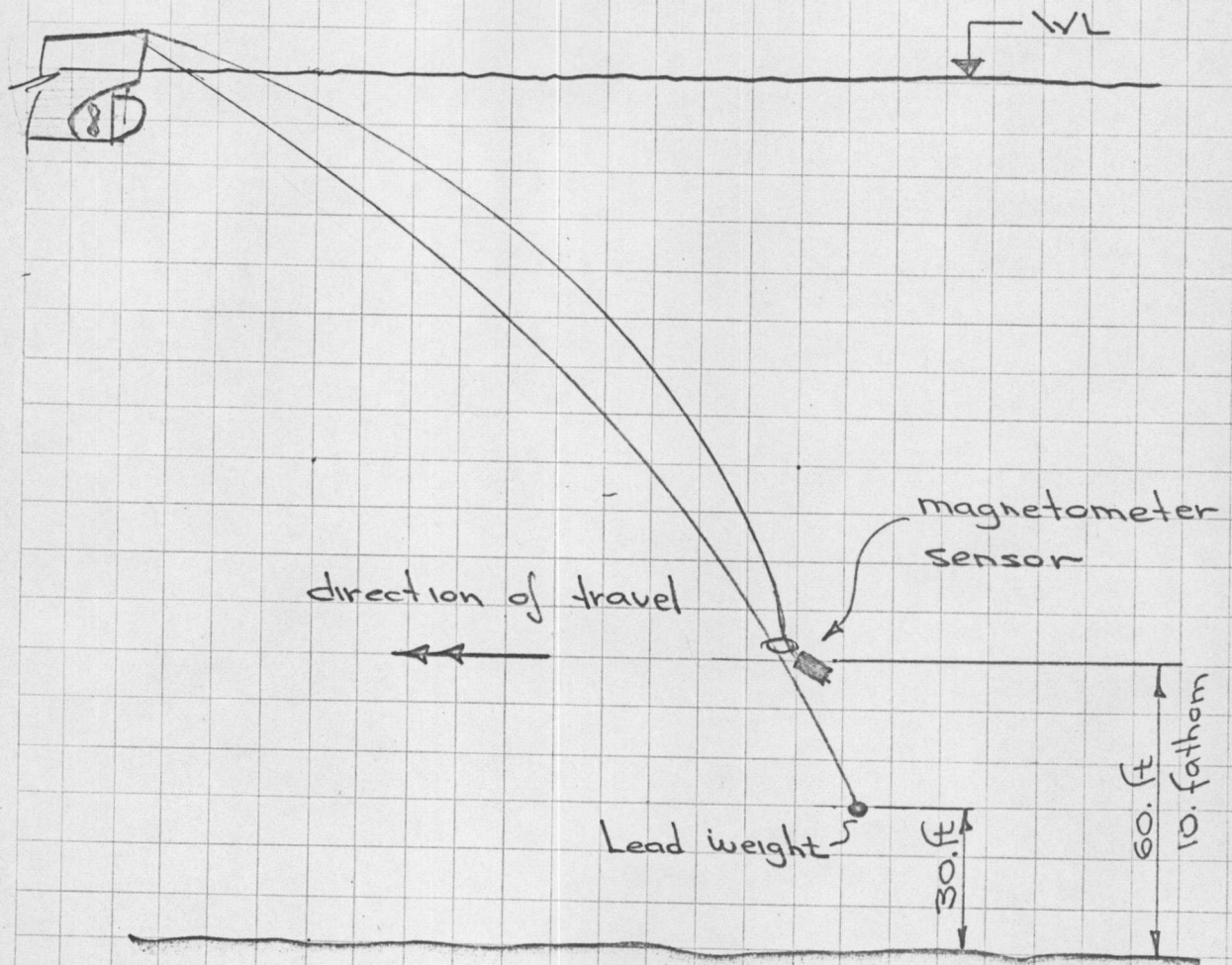
866 EAST CORDOVA STREET, VANCOUVER, B.C.

PROJECT Gulf Master Search  
SUBJECT

REFERENCE DUG.

DATE March 68 BY: BWI

## Appendix II



General arrangement  
of rigging used to  
tow sensor

# CAN-DIVE

CANADIAN DIVING SERVICES LTD.

866 EAST CORDOVA STREET, VANCOUVER, B.C.

PROJECT Gulf Master Search

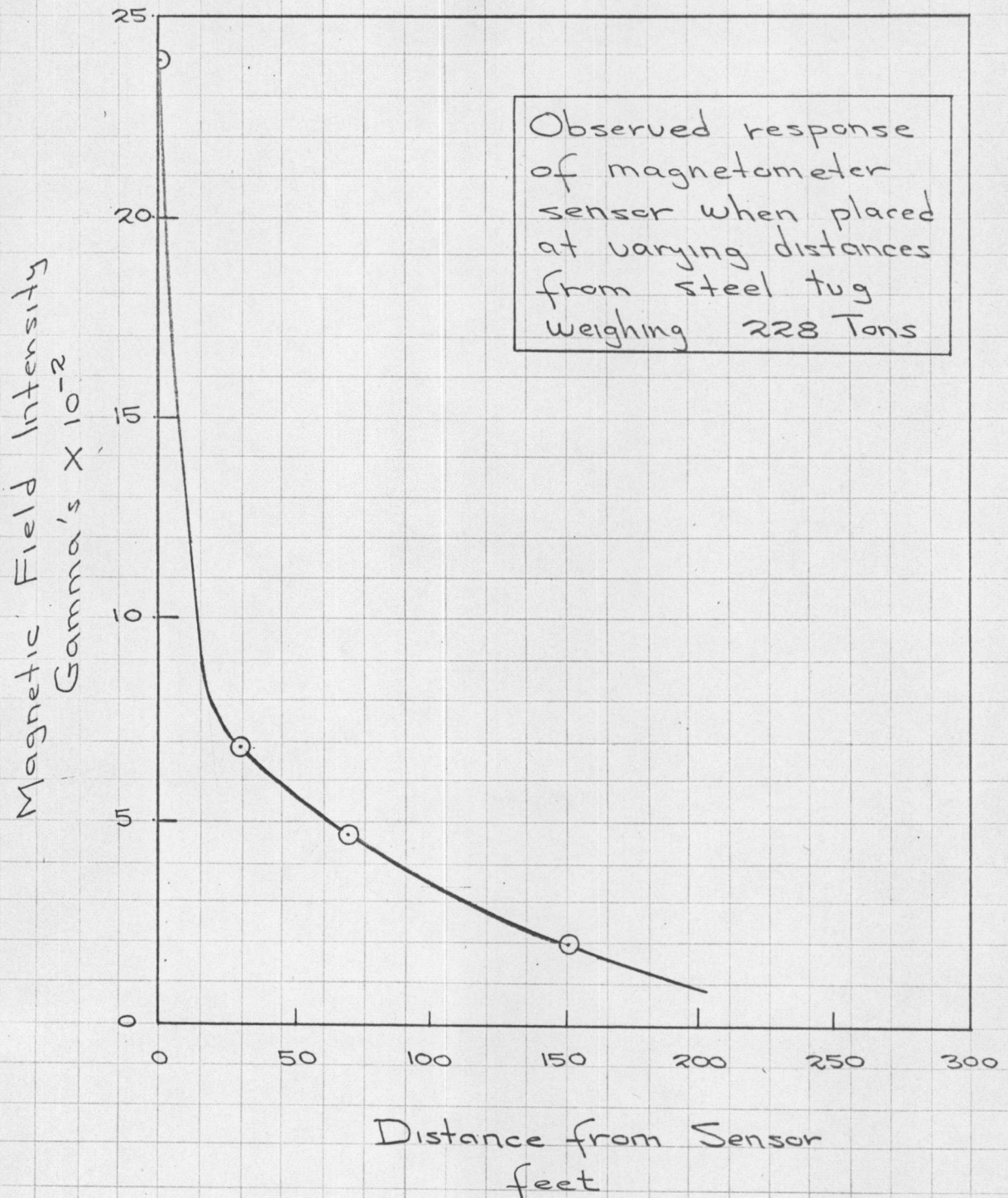
SUBJECT

REFERENCE DUG.

DATE March 68

BY: BWI

## Appendix III





# CAN-DIVE

CANADIAN DIVING SERVICES LTD.

866 EAST CORDOVA STREET, VANCOUVER, B.C.

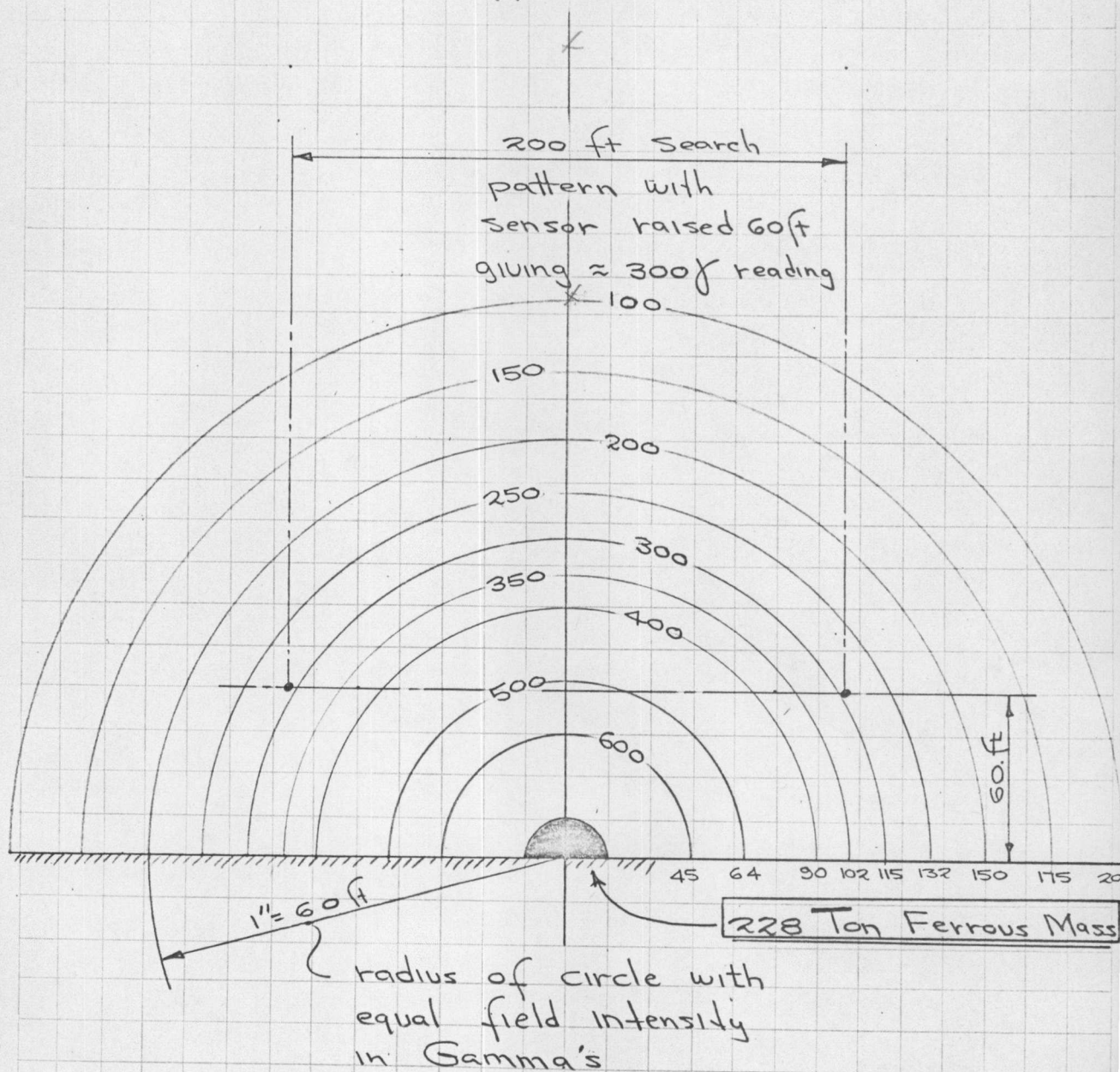
PROJECT Gulf Master Search

SUBJECT

REFERENCE DUG.

DATE March 68 BY: TBIWI

## Appendix IV



# CAN-DIVE

CANADIAN DIVING SERVICES LTD.

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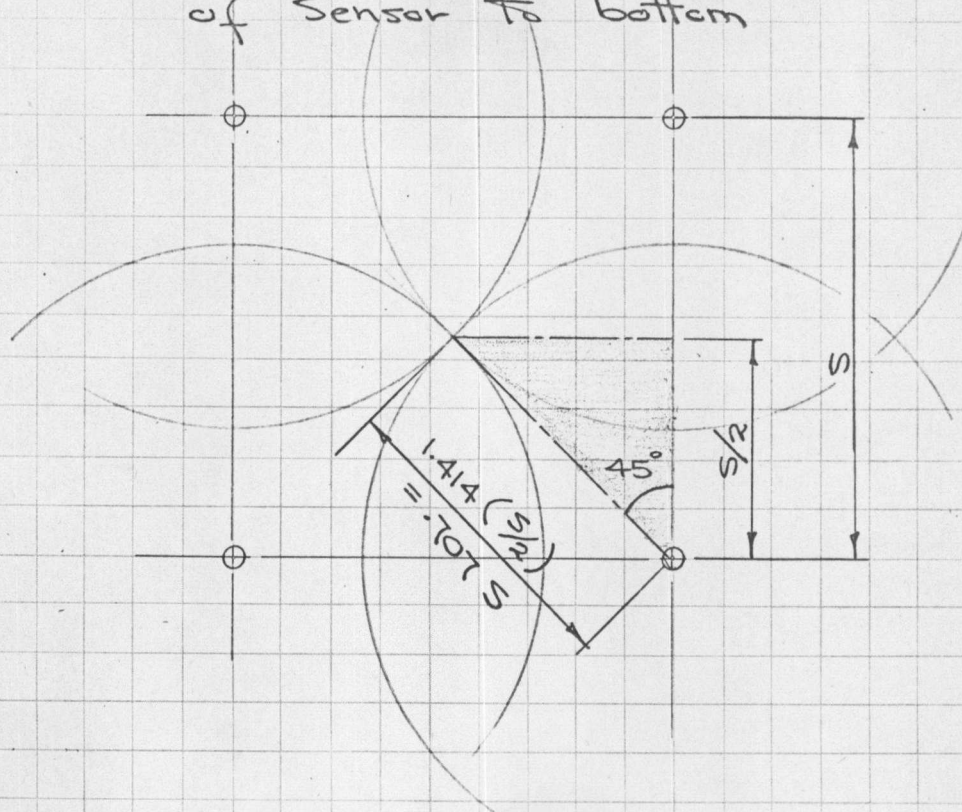
## Appendix V

PROJECT Gulf Master Search  
SUBJECT \_\_\_\_\_

REFERENCE DUG.

DATE March 68 BY: BWI

Search Pattern Values  
for vertical lowering  
of Sensor to bottom



for 300  $\gamma$  reading  $R = 115 \text{ ft}$ ; see Graph I

$$\therefore 0.707 S = 115 \text{ ft} ; S = 162.8 \text{ ft}$$

or given  $S = 150 \text{ ft}$

$$.707 S = 106.$$

$\therefore$  max  $\gamma$  reading for  $R = 106 \text{ ft}$ ;

$$\text{max } \gamma = 340 \gamma$$



Y HAND

PERSONAL

9704-130A

615 Federal Building,  
325 Granville Street,  
Vancouver 2, B.C.

April 14, 1969.

Mr. A. J. Spilsbury,  
President,  
Spilsbury & Tindall Ltd.  
and Associated Companies,  
120 East Cordova Street,  
Vancouver 4, B.C.

Dear Sir:

re: m.v. "GULF MASTER" - SEARCH.

Reference is made to our letter of December 4, 1968, concerning the loan of your copy of Canadian Chart No. 3577 together with echo sounder tracings taken during a passage from Merry Island to Cape Roger Curtis.

The chart and tracings are being returned to you with this letter.

We wish to thank you for your help in this matter. At the moment the Department does not intend renewal of this search.

Yours very truly,

C. E. Burrill,  
Regional Superintendent,  
Nautical Services.

CEB:ea  
Encs.

# MEMORANDUM

CLASSIFICATION

TO  
A

Regional Director,  
Marine Services, Western,  
Department of Transport,  
Federal Building,  
225 Granville Street,  
Vancouver, B.C.

YOUR FILE No.  
Votre dossier

OUR FILE No. 9704-669  
Notre dossier

DATE 26 November, 1968

FROM  
De

Director, Marine Regulations

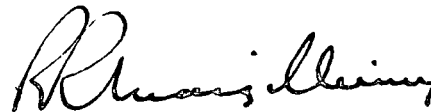
FOLD

SUBJECT  
Sujet

"GULF MASTER" Search

This has reference to my memorandum, dated November 15, 1968, relating to the marginally noted subject.

As advised in the penultimate paragraph thereof, a copy of the report of the lifebuoy tests, conducted by D.P.W., is herewith enclosed.



R. R. Macgillivray

Encl:

2 copies





## Department of Public Works

Testing Laboratories,  
Riverside Drive,  
Ottawa 8, Ontario.

## Ministère des Travaux publics

• November 19, 1968

your file / votre dossier 9410-5 (PRIH)  
our file / notre dossier 31-2-53

*P. F.*  
Capt. P.F. Batten,  
Steamship Inspector,  
Marine Regulations Branch,  
Department of Transport,  
Ottawa, Ontario.

Dear Sir:

RE: Examination of Life Ring from S.S. Gulf Master

As requested in your letter of September 11 1968, we have examined the life ring from the S.S. Gulf Master to obtain information as to the cause of its present appearance and to ascertain if this appearance had been caused by oil, fire, or immersion in deep water.

The results of the examination are attached.

Yours very truly,

*R. Ferguson*  
*for* N.E. Laycraft,  
Chief,  
Testing Laboratories.

Attached(1)

Department of Public Works  
Testing Laboratories  
Ottawa, Ontario

Examination  
Of Life Ring  
From

S.S. Gulf Master

November, 1968

000662



FILE NO.: 31-2-53

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APPENDIX I: Photographs

. . . . . (6 sheets )

←

## INTRODUCTION

The S.S. Gulf Master was lost with all hands on the B.C. coast in January, 1967 without there being any evidence as to the cause of the disaster. In the summer of 1968 a life ring from the ship was found and this ring was submitted to us by the Department of Transport with a request that an investigation be made to determine if the appearance of the ring was due to damage by oil or fire and whether the ring had been subjected to pressure as a result of immersion in deep water. This report details the work carried out and the results obtained.

## SAMPLES

The following samples were examined;

- (a) Life ring from the S.S. Gulf Master; Lab. No. 19,053/Y, 30 inch diameter, D.O.T. Approval No. 14-3, manufactured by Monsanto Canada Ltd.
- (b) Life ring; 24 inch diameter, D.O.T. Approval No. 14-4, manufactured by Monsanto Canada Ltd., referred to in this report as "new" ring, used for comparative purposes as its properties were expected to be very similar to those of the Gulf Master ring as manufactured.

## PROCEDURE

The Gulf Master ring was examined as received both visually and microscopically. Visually, the ring was examined for color, appearance, etc. and photographs were taken. Microscopic examinations were made of the surface paint film, as well as of the cell structure immediately below



- 2 -

this film, and photomicrographs were made. Various compression tests were conducted and the degree of recovery measured. A chemical analysis of the surface stain was carried out and a section of the ring was placed in water under high pressure and the effects observed.

Similar tests were conducted on the "new" ring. In addition, the "new" ring was subjected to accelerated weathering and high temperature in order to ascertain if exposure to these conditions would result in duplication of the surface appearance of the Gulf Master ring.

#### RESULTS

Visual examination showed the surface of the Gulf Master ring to be covered with a dark brown stain in a regular mottled pattern. The surface was alligatored and the ring showed an appreciable (approximately 10%) shrinkage as was evident from the looseness of the pins to which the rope was attached. (See Figures 1 and 3, Appendix I).

Microscopic examination of the paint on the Gulf Master ring showed fine cracks, particularly in the hollows of the alligator pattern, while a cross-section examination showed the paint film to be of uniform thickness and the cell structure just below the surface to have a compressed oval appearance. (See Figures 5 and 7, Appendix I).

The stain on the surface was soluble in alcohol and in dilute hydrochloric acid; chemical and infra-red analysis showed the material to consist primarily of organic matter with 1-2% iron. While a positive identification of the organic material could not be made, there was

. . . 3

- 3 -

definitely no indication of carbonaceous matter such as would result from burning nor of petroleum-based material. On the basis of this work, and as stains are known to be caused by water immersion, we feel that the surface stain on the ring resulted from immersion in water for a considerable length of time.

Exposure of the "new" ring to high temperature (surface temperature of 300°F under an infra-red heat lamp for 30-45 minutes) caused splitting of the paint film and melting of the underlying foam. These results in no way resembled the surface alligatoring of the Gulf Master ring, and it was concluded that heat was not the cause of this surface appearance.

Exposure of the "new" ring to 15 cycles accelerated weathering in an Atlas Twin-Arc Weatherometer did not result in alligatoring or any other appreciable change and weathering was therefore considered not to have been a factor in the condition of the Gulf Master ring.

Confined and unconfined compression tests (See Tables 1 and 2, and Graph) of foam from both the Gulf Master and "new" rings showed approximately the same stress at equivalent strain; however the recovery from compression is slightly higher for the Gulf Master foam, suggesting that this ring had already undergone compression with resulting permanent deformation. It is noteworthy that the length of time that the foams are compressed is a very important factor, as samples held at a comparatively low compression for 7 days show a smaller recovery than those which are highly compressed but released immediate

The tests in which sections of the Gulf Master and "new" rings were immersed in water at 150 p.s.i. for 3 days were probably the most



- 4 -

significant in terms of information obtained. Sections of both rings (4 in. - 8 in. long) were placed under water in a large compression chamber of a Triaxial Soil Testing Machine and subjected to 150 p.s.i. for 3 days. The condition of the samples was observed while they were under pressure and 24 hours and 7 days after they were removed from the chamber.

The Gulf Master section compressed very substantially (60-70%). The surface folded in a manner tending to make the brown stain come together and obliterate the white alligator pattern. When the pressure was released the section expanded to regain its original appearance. It would appear, therefore, that the stain was deposited while the ring was under pressure and that the degree of contraction was somewhat equivalent to that produced by 150 p.s.i. for 3 days.

In the case of the section of the "new" ring there was a similar high degree of compression and folding of the surface. After release of the pressure the surface remained in a wrinkled condition (See Figure 6, Appendix I), which was unchanged after 7 days recovery and which, while not identical to that of the Gulf Master ring, nevertheless showed many similarities. The differences are thought to be due to the fact that complete rings could not be pressure-tested and that the length of the test was much shorter than the period for which the Gulf Master ring may have been under water.

The section of "new" ring 24 hours and 7 days after release from pressure showed a significant amount of non-recovery which is evident in Figure 2 and 4, Appendix I). The surface showed some cracking of the

. . . 5

- 5 -

paint (See Figure 6, Appendix I), which was not dissimilar to the cracking observed on the Gulf Master ring as received, particularly in the hollows of the alligator pattern.

The effect of pressure on the cell structure of the "new" ring is shown in Figures 8 and 9, Appendix I, where it is evident that the cells in the pressurized sample have flattened and taken on an appearance somewhat similar to that of the cells of the Gulf Master ring as received (See Figure 7, Appendix I).

TABLE I  
UNCONFINED COMPRESSION TESTS ON 1 INCH CUBES

<u>Pressure Required for:</u>	<u>Gulf Master Life Ring</u>	<u>"New" Life Ring</u>
10% Compression	40 p.s.i.	30 p.s.i.
20%	41 p.s.i.	40 p.s.i.
30%	42 p.s.i.	44 p.s.i.
40%	52 p.s.i.	51 p.s.i.
50%	63 p.s.i.	62 p.s.i.
60%	82 p.s.i.	81 p.s.i.
70%	125 p.s.i.	124 p.s.i.
80%	250 p.s.i.	240 p.s.i.
Recovery of Samples Held at 25% Compression for 7 days:		
1. After 2 days Recovery	93%	94%
2. After 7 days Recovery	96%	94%
Recovery after 7 days of Samples held at 80% Compression For 1 minute.	99%	97%

... 6



- 6 -

TABLE 2

CONFINED (COMPRESSION CHAMBER) COMPRESSION TESTS ON 4 X 2 X 2 INCH BLOCKS

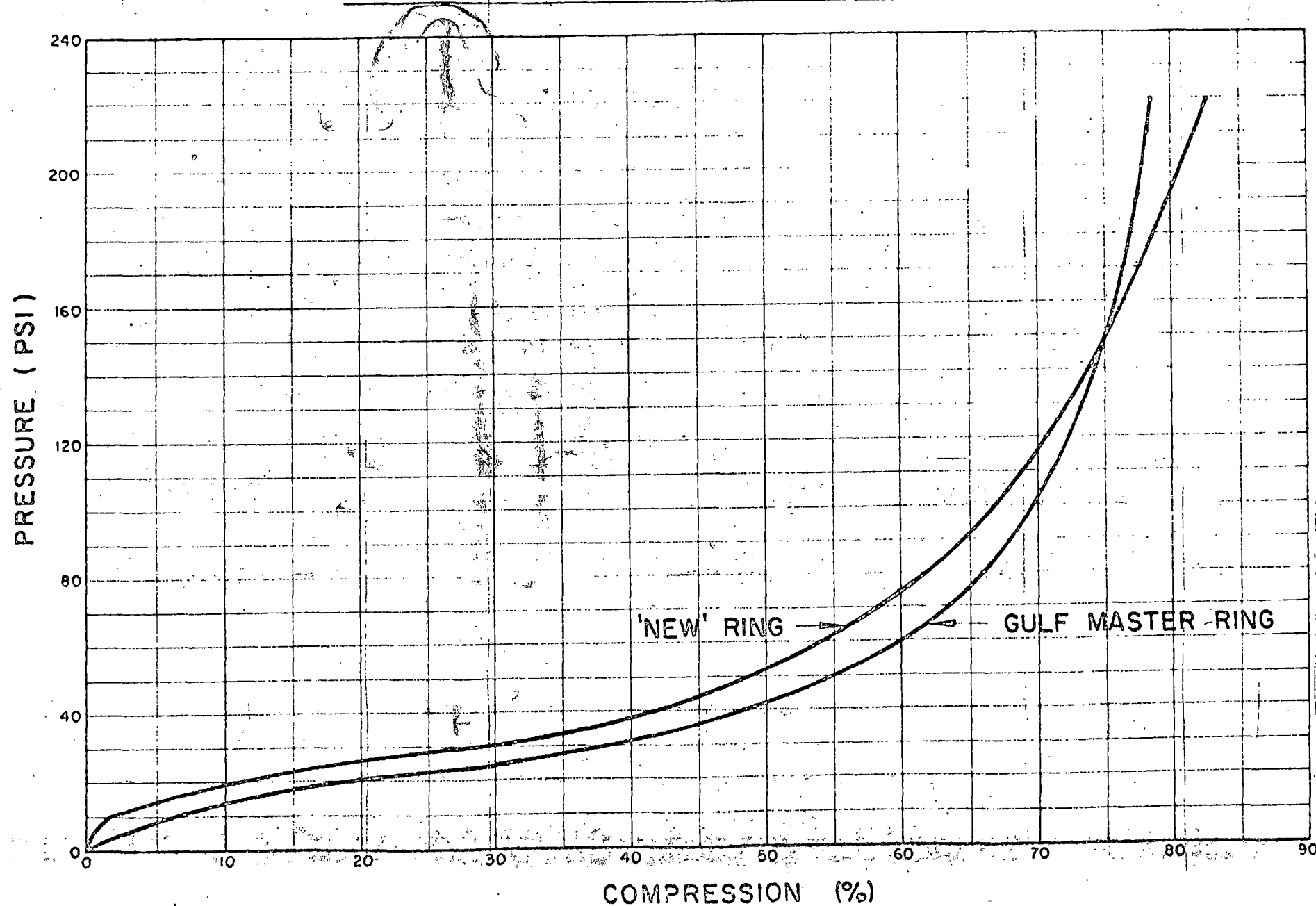
<u>Pressure Required For:</u>	<u>Gulf Master Life Ring</u>	<u>"New" Life Ring</u>
10% Compression	15 p.s.i.	18 p.s.i.
20%	20 p.s.i.	25 p.s.i.
30%	25 p.s.i.	30 p.s.i.
40%	32 p.s.i.	38 p.s.i.
50%	40 p.s.i.	50 p.s.i.
60%	58 p.s.i.	73 p.s.i.
70%	100 p.s.i.	118 p.s.i.
75%	160 p.s.i.	150 p.s.i.
80%	280 p.s.i. (Projected)	230 p.s.i. (Proj)

Recovery of Samples Held at  
75% Compression for 7 days:

1. After 2 days Recovery	92%	90%
2. After 7 days Recovery	95%	93%

... ?

# RELATIONSHIP OF COMPRESSION TO PRESSURE IN LIFE RING FOAMS ( 4" X 2" X 2" Blocks in Triaxial Compression Machine )





- 8 -

### CONCLUSIONS

All the test results lead toward the conclusion that the condition in which the life ring from the S.S. Gulf Master was received was due to fairly extended immersion in a considerable depth of water. The points to be considered are: the brown surface stain, the alligating and cracking of the paint film, and the shrinkage of the foam. The analysis of the stain showed that it did not result from fire or oil damage and water staining appeared to be the only likely cause. The other effects could not be duplicated on a new ring by heat or weathering but were approached quite closely through application of pressure.

It is not possible to estimate either the depth or time involved with any degree of precision. Our tests indicate that the pressure could not have been much less than 100 p.s.i. (approximately 200 ft. of water) but, on the other hand, it could have been almost any amount greater than this. The time factor is even more doubtful though we would expect that a heavy water stain would require at least several months to develop.

*R. Ferguson*

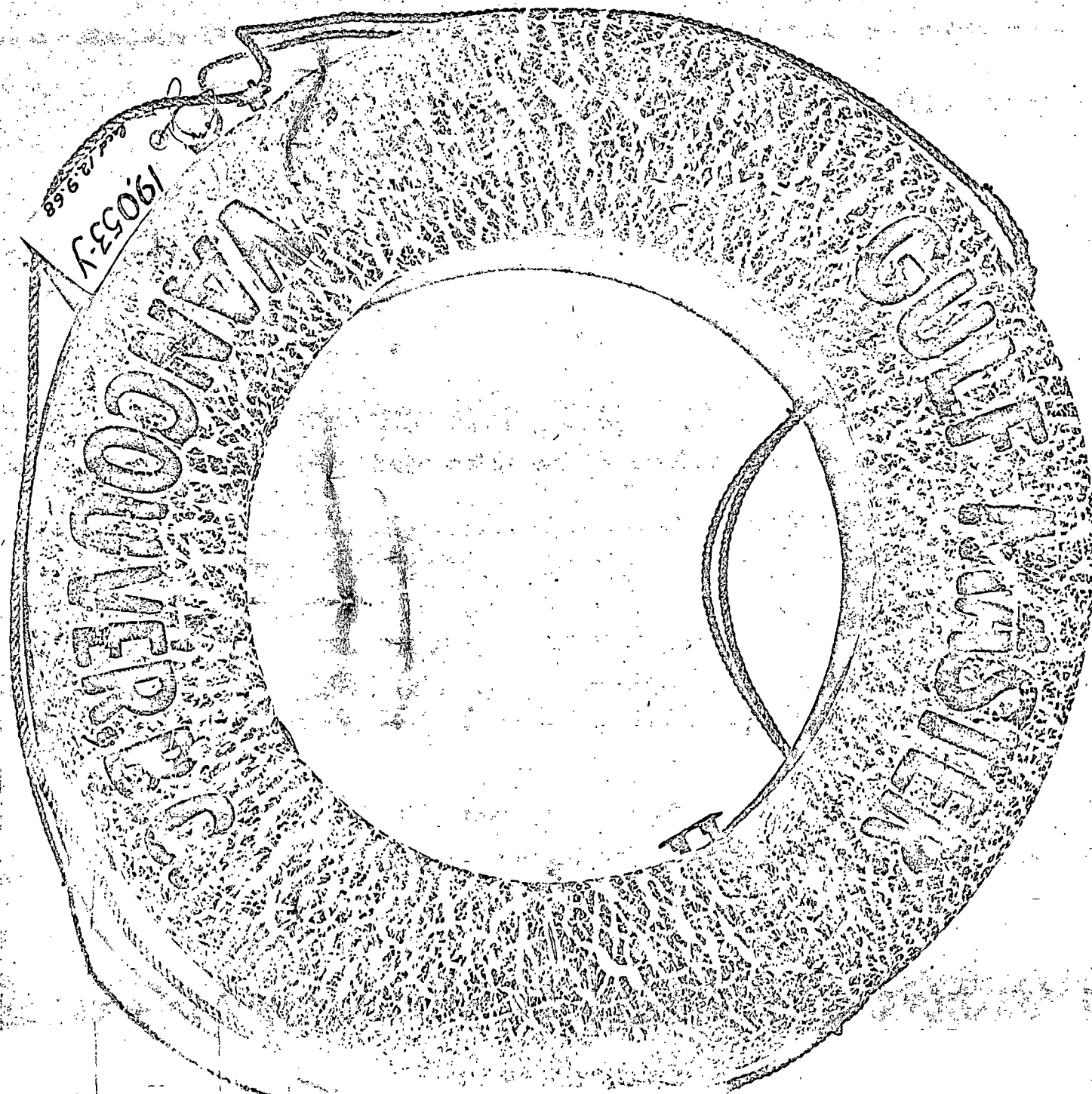
R. Ferguson,  
Chemist,  
Chemical Section.

*M.B.D. Wilkins*

M.B.D. Wilkins,  
Sub-Section Supervisor,  
Chemical Section.

R. Ferguson/dr

FIGURE 1



GULF MASTER LIFE RING  
(AS RECEIVED)



FIGURE 2



SECTIONS OF NEW LIFE RING BEFORE (RIGHT) AND AFTER (LEFT)  
PRESSURE TESTING

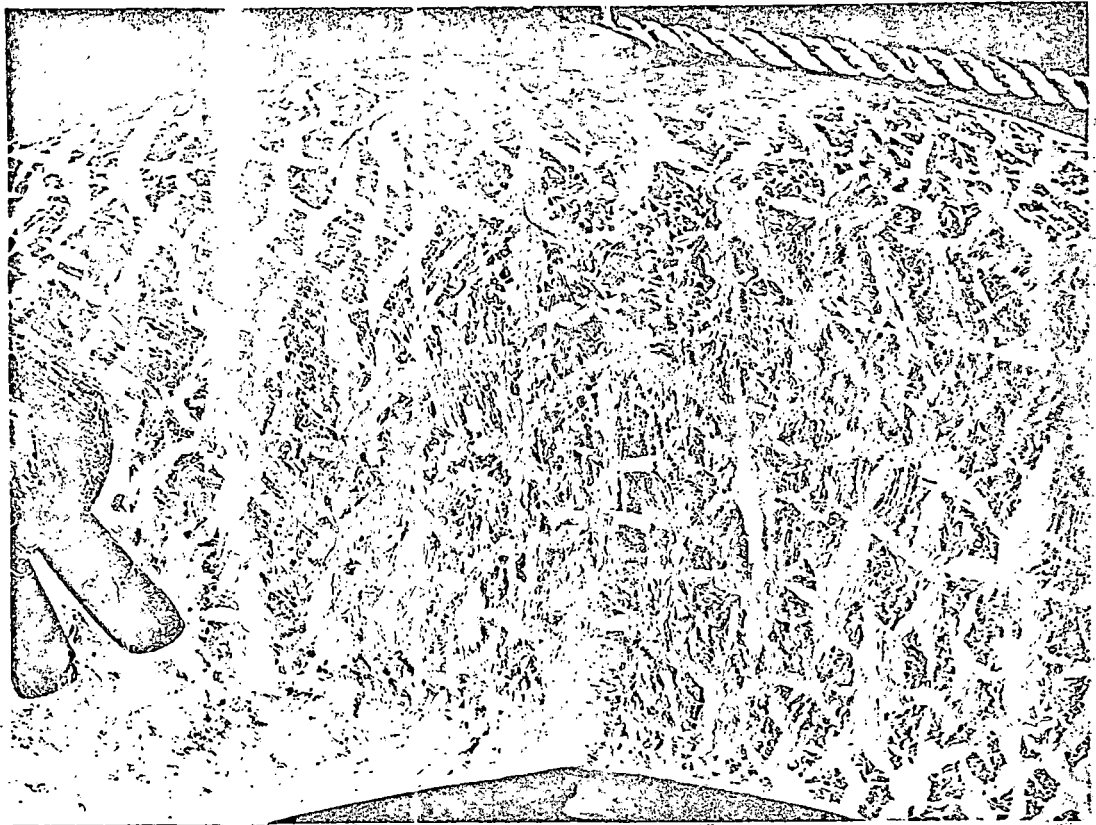


FIGURE 3: CLOSE-UP OF GULF MASTER RING (AS RECEIVED)  
SHOWING SHRINKAGE AROUND PIN

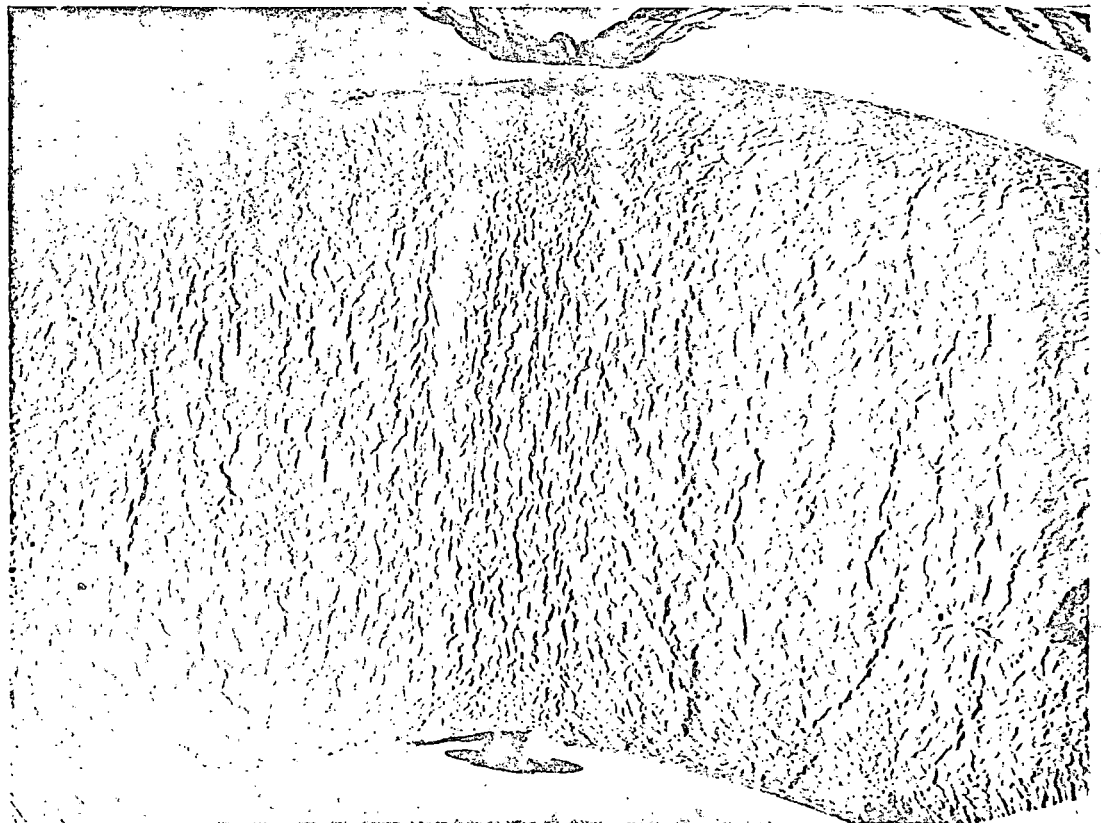


FIGURE 4: CLOSE-UP OF NEW RING (AFTER PRESSURE TESTING)  
SHOWING SHRINKAGE AROUND PIN

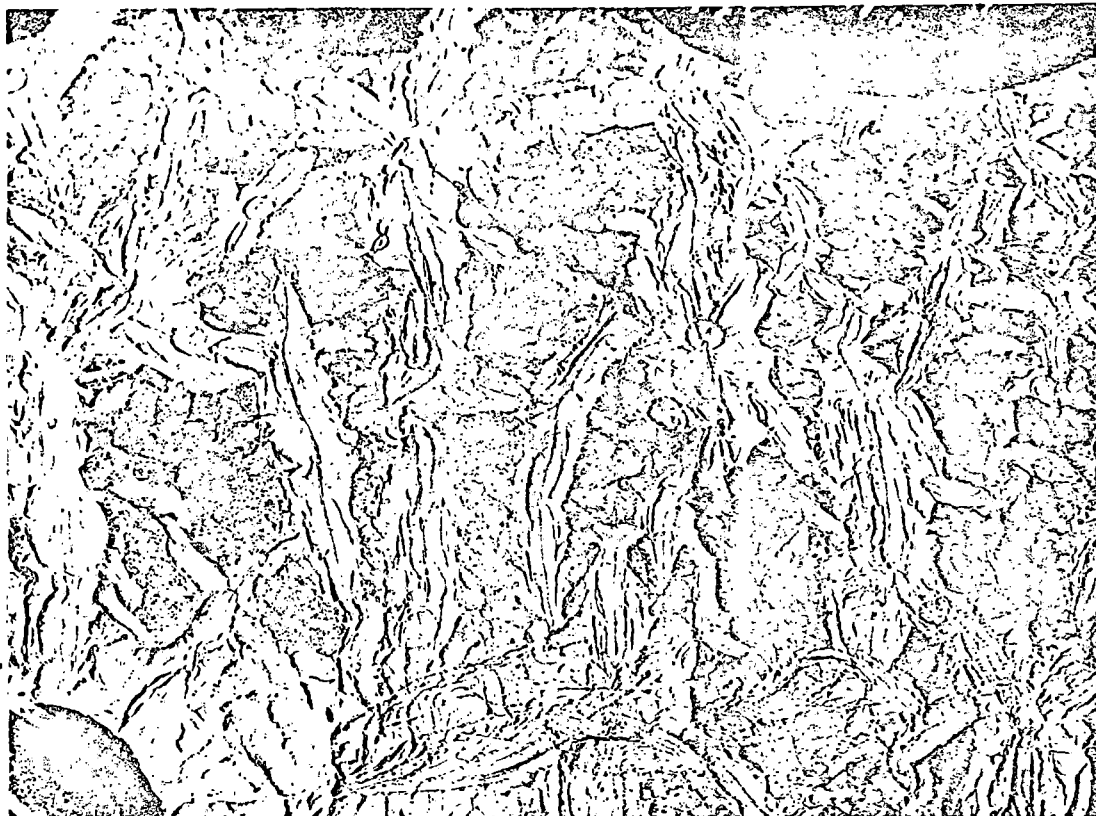


FIGURE 5: MAGNIFIED (2X) VIEW OF SURFACE OF GULF MASTER LIFE RING  
AS RECEIVED

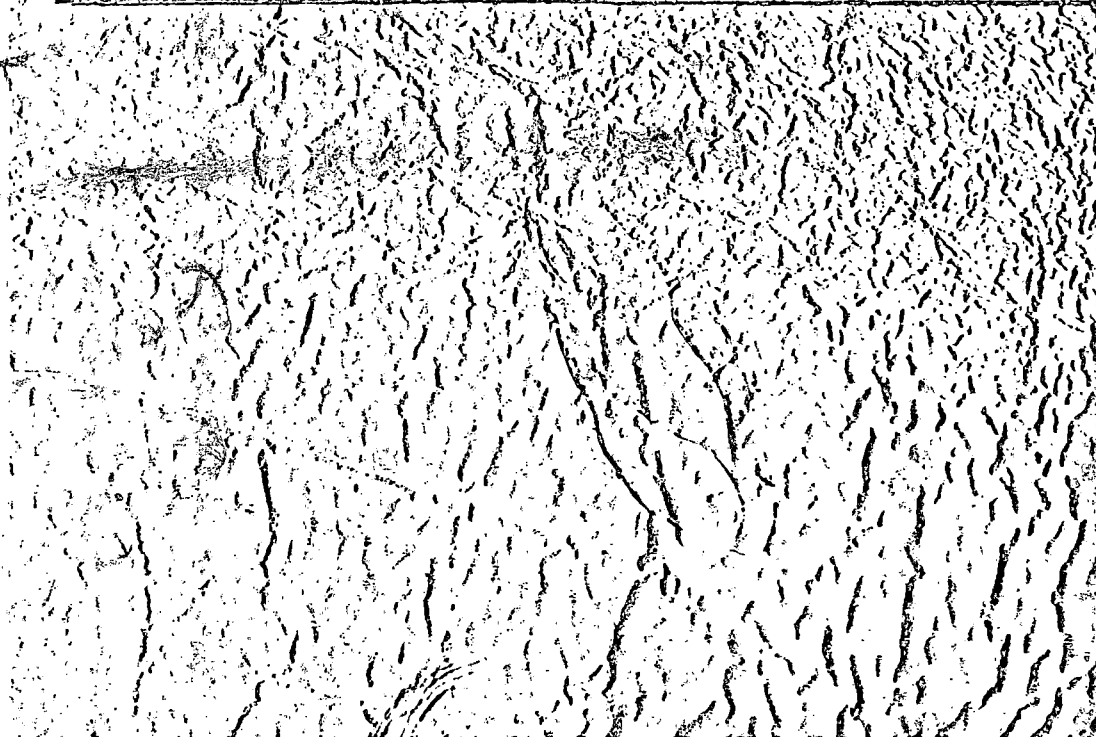


FIGURE 6: MAGNIFIED (2X) VIEW OF SURFACE OF NEW LIFE RING AFTER  
PRESSURE TESTING



FIGURE 7



CROSS-SECTION OF FOAM CELLS IN GULF MASTER LIFE RING (AS RECEIVED)  
98 X MAGNIFICATION

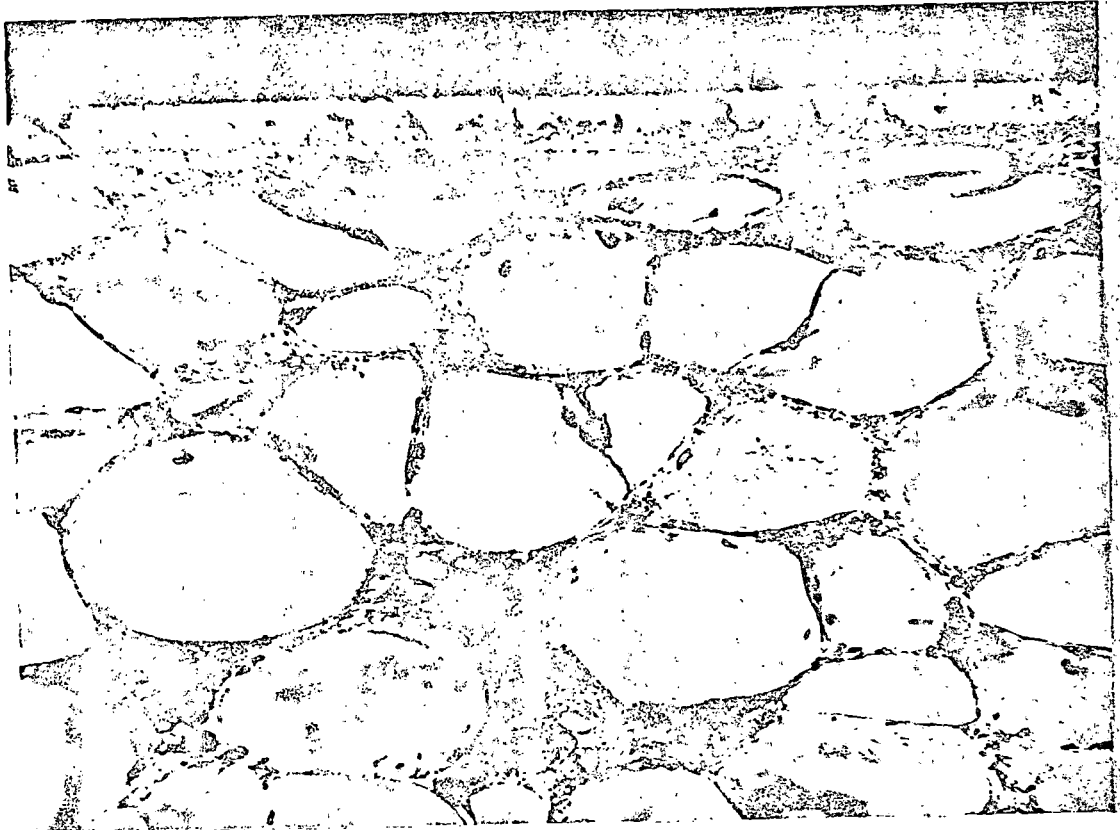


FIGURE 8: CROSS-SECTION OF FOAM CELLS IN NEW LIFE RING BEFORE PRESSURE TESTING 98 X MAGNIFICATION.



FIGURE 9: CROSS-SECTION OF FOAM CELLS IN NEW LIFE RING AFTER PRESSURE TESTING 98 X MAGNIFICATION.

Mr. H. O. Buchanan,  
Regional Director,  
Marine Services,  
Western.

9704-1

9704-130A

December 4, 196

RSN, Western.

GULF MASTER - SEARCH.

Reference is made to D.M.R.'s memorandum of November 15, concerning the possibility of renewing the search for the tug, GULF MASTER.

Copies of all information, newspaper clippings and reports on file at this office have been forwarded to Ottawa as received.

The R.C.M.P. has nothing further to add to the statements previously received from people in the Sechelt area. During the course of the search by Can-dive Ltd., these people and others were again interviewed without any further information being obtained.

The search conducted by H.M.C.S. "YUKON" was not an organized search and the R.C.N., did not wish for any publicity. Using electronic equipment the area between White Islets and Trail Island was searched but no traces of the sunken tug were found.

Eighteen witnesses at the Coroner's Inquest did not add any more information to that reported in our Preliminary Inquiry.

Riv-Tow Marine Ltd., (Cosulich) was responsible for sea searches using a magnetometer, air searches at low water and also for searchers walking the coast line and rocks around Mission Point and White Islets at low water springs. As it was almost high water when it was thought that the GULF MASTER sank, it was hoped to find some traces of the tug having struck the rocks.

Canadian Merchant Service Guild has nothing to add to the known information.

Can-Dive Services Ltd., stated that the seventeen dives were made during a short space of time during their first sweeps in the White Islets area. It was found that the high magnetometer read-out was caused by veins of iron ore. It was felt that these readings should be checked visually to ensure that the magnetometer read-out was being interpreted correctly. The dives were concentrated around the White Islets as it was thought that this was the most probable position of the sunken tug.



Mr. H. O. Buchanan,  
Regional Director,  
Marine Services, Western.

- 2 -

December 4, 1968.

Most searches have been concentrated in the White Islets to Trail Islands area without any results. As stated in my memorandum of May 3rd, study of information available on the last sighting of the GULF MASTER, speed of the vessel, weather, tidal currents, location of oil slicks and debris when first sighted would appear to place the sunken tug southeast of White Islets.

This appears to be confirmed by the only additional information obtained from our recent enquiries.

On May 22nd, 1967, Mr. A. J. Spilsbury, President, Spilsbury & Tindall Ltd., aboard his yacht on passage Merry Island, to Cape Roger Curtis, noticed a blip on the echo sounder trace soon after passing White Islets. Being interested in wrecks, etc., he noted his course as 090(M) and checked position. Obtaining fixes he was able to establish his speed over the ground. By working back he established that the blip occurred in 86 fathoms at a position 020(T), 1.1 miles from the end of the wharf at Roberts Creek. Copies of Mr. Spilsbury's chart, sounder tracings and notes are enclosed.

Mr. Spilsbury, is an electronics engineer and keen yachtsman with previous experience of locating wrecks by echo sounder. He was aware of the loss of GULF MASTER and returned to the same position of the blip with the hope of confirming his findings but without success.

It is suggested that a slow speed pattern search, at this position off Roberts Creek, using an echo sounder may be of some use. The person conducting the search should be familiar with the trace produced by a wreck on the bottom.

If a further full scale search is to be undertaken it is suggested that the earliest it should be attempted is the end of April or beginning of May.

As yet I have not received any further offers of a search on a "no cure no pay" basis.

I should add that from my recent enquiries it would appear that the marine fraternity are still very much interested in locating this sunken tug with the possibility of establishing the cause.

C. E. Burrill,  
Regional Superintendent,  
Nautical Services.

CEB:ea  
Encls.

9704-130A

615 Federal Building,  
Vancouver 2, B.C.

December 4th, 1968.

Mr. A. J. Spilsbury,  
President,  
Spilsbury & Tindall Ltd.  
and Associated Companies,  
120 East Cordova Street,  
Vancouver 4, B.C.

Dear Sir:

re: m.v. GULF MASTER SEARCH.

Thank you for the loan of your copy of Canadian Chart No. 3577 together with notes and echo sounder tracings taken during a passage from Merry Island to Cape Roger Curtis.

I found our conversation on the possible position of this sunken tug most interesting and wish to express my appreciation for your information which I feel will be most valuable in our search.

Your chart and notes will be returned to you after they have been evaluated.

Yours very truly,

C. E. Burrill,  
Regional Superintendent,  
Nautical Services.

CEB:ea

9704-130A

615 Federal Building,  
Vancouver 2, B.C.

Mr. C. S. Cosulich,  
President,  
Rivtow Marine Ltd.,  
1990 Kent Street,  
Vancouver 15, B.C.

Dear Sir:

re: m.v. "GULF MASTER" - Search.

We are at present reviewing the file on the loss of the tug "GULF MASTER", in the vicinity of White Islets on January 11th, 1967, with the possibility of determining whether a search in a new area is justified.

Any information which you may be able to supply on the Searches conducted by your Company and on the possible position of this sunken tug would be very much appreciated and helpful in our review.

Perhaps a convenient time and date could be arranged when we may visit your office to discuss this matter.

Yours very truly,

C. E. Burrill,  
Regional Superintendent,  
Nautical Services.

CEB:ea





# ACTION REQUEST FICHE DE SERVICE

FILE NO. — DOSSIER N°

TO — À

DATE

LOCATION — LIEU

FROM — DE

☒ ACTION  
DONNER SUITE

☐ APPROVAL  
APPROBATION

☐ COMMENTS  
COMMENTAIRES

☐ DRAFT REPLY  
PROJET DE RÉPONSE

☐ MAKE  
FAIRE.....COPIES

☐ NOTE AND FILE  
NOTER ET CLASSER

☐ NOTE & RETURN/OR FORWARD  
NOTER ET RETOURNER/OU FAIRE SUIVRE

☐ P. A. ON FILE  
CLASSER

☐ REPLY  
RÉPONSE

☐ SEE ME  
ME VOIR

☐ SIGNATURE

☐ TRANSLATION  
TRADUCTION

☐ YOUR REQUEST  
À VOTRE DEMANDE

☐


Please prepare a draft report  
as discussed.

HS

000682

# MEMORANDUM

CLASSIFICATION

  
TO  
A  
The Regional Director,  
Marine Services, Western,  
Department of Transport,  
Federal Building,  
VANCOUVER, B.C.

YOUR FILE No. 9704-1  
Votre dossier

OUR FILE No. 9704-669  
Notre dossier

DATE 15 November, 1968.

FROM  
De

Director, Marine Regulations

FOLD

SUBJECT  
Sujet

"GULF MASTER" Search

As you are aware, the loss of the tug "GULF MASTER", in the vicinity of White Islets on January 11, 1967, remains the subject of continued public interest and we are at present reviewing this file in an endeavour to determine whether a renewal of this search is in any way justified.

To assist me in arriving at a conclusion, would you please provide me with a comprehensive report, including a positive recommendation, based on all the information which is available to you. The contents of the R.C.M.P., R.C.N., Coroner's, Cosulich Brothers, and Canadian Merchant Service Guild files may prove of assistance in this direction. Bearing in mind that we have accepted Can Dive's report as submitted, I am now wondering whether it would be possible to obtain more information from them with regard to the 17 dives reportedly made; more specifically with regard to the location and reasons for these dives.

The recently recovered lifebuoy from this craft has been the subject of extensive tests by D.P.W. in Ottawa. A copy of their findings will be forwarded to you when they become available.

Finally, it would be helpful to know if any offer of search on a no cure no pay basis is extant should we decide to re-open this search.

  
R. R. Macgillivray

# CAN DIVE

CANADIAN DIVING SERVICES LTD.

866 EAST CORDOVA STREET  
VANCOUVER, B.C., CANADA

P.O. BOX 4488  
SANTA BARBARA  
CALIFORNIA, U.S.A.

November 22nd 1968

Department of Transport  
Marine Services Division  
615 Federal Building  
Vancouver 2, B.C.

ATTENTION: Captain Burrill

Dear Sir:

Re: Gulf Master Search

Thank you for your letter of the 20th regarding our search for the tug "Gulfmaster". We would be delighted to make available to you any information we possess that may be of assistance. We still have the magnetometer gamma charts, bottom profile charts and all the surveying data pertinent to this project.

The dives that you mention in your letter were made during a short space of time during our first sweeps in the White Islets area. As the magnetic profiles show, the area abounded with iron ore and we felt it wise to check a number of these "veins" to gain a better knowledge of the magnetometer read-out characteristics. In every case, the high readings were found to be rock out-croppings with an extremely high ferrous content. (See assay report - Appendix IX of our report). After a number of these checks, we were able to satisfy ourselves that we were, indeed, interpreting the magnetometer read-out correctly.

We hope you will consider extending the search area further south and, if our previous work has been satisfactory, allow us to find the missing tug. We have a number of reasons to believe that the "Gulfmaster" is in an area further south and we outlined these reasons in a letter to Mr. Catinus in Ottawa. I am enclosing a copy of this letter for your perusal.

I would hope that any further work done in this direction would be considered an extension of the previous search area rather than a new project.

Please do not hesitate to call me if I can be of any assistance in this matter and I am,

Yours very truly,

*H. Scott*

Per: P. Nuytten, President  
CAN DIVE SERVICES LTD.

PN:ls  
Encl

PHONE: A.C. 604-255-5323  
VANCOUVER, CANADA

A.C. 805-963-2688  
SANTA BARBARA, U.S.A.

000684



# CAN DIVE

CANADIAN DIVING SERVICES LTD.

866 EAST CORDOVA STREET  
VANCOUVER, B.C., CANADA

P.O. BOX 4488  
SANTA BARBARA  
CALIFORNIA, U.S.A.

May 21, 1968

Department of Transport  
Parliament Buildings  
Ottawa, Ontario

ATTENTION: Mr. Catinus

Dear Sir:

Pursuant to our telephone conversation of this date, our recommendation that the search for the tug "Gulfmaster" should be extended is based on the following reasons.

- a) A large portion of the conceivable area of sinking has been thoroughly investigated.
- b) Several testimonies of witnesses place the vessel, still afloat, in the vicinity of the southernmost end of our previous search area.
- c) The drift and current studies in our report (page ) coupled with the wind direction at the time of sinking, indicate that the first sighting of the oil-slick and survivor should be considered as the northern boundary of the search area. This sighting was in the White Islets area. The wreckage could not have originated further north unless the debris, oil-slick and survivor drifted against the current and tide.

Although the times given, in the enquiry, between the last sighting of the tug and first sighting of the survivor must be considered approximate, they indicate that a period of no more than 40 minutes could have elapsed between the sinking and the subsequent survivor sighting. Taking these figures at their outside, it is our opinion that the survivor could not have drifted more than 3-3½ miles north from the point of sinking.

PHONE: A.C. 604 - 255-5323  
VANCOUVER, CANADA

A.C. 805 - 963-2600  
SANTA BARBARA, U.S.A.

000685

- 2 -

Con't.

As White Islets have been eliminated, we would recommend a further search area bounded on the north by our previous survey and extending southeast of this position for a distance of 4 miles.

We feel that, based on a re-evaluation of all existing data, this area would be the most likely one and can be searched thoroughly in a reasonable time period. It is somewhat larger an area, than the original, but given good weather we feel confident of being able to complete in about 20 days.

Many of the time-consuming items on the first survey can be eliminated as they have already been computed and charted. Such things as; expected magnetometer response, magnetic sphere of influence, accommodations, pattern of search procedure, organization of various search and identify methods, etc. would be a repetition of the previous search.

The majority of the equipment used on the previous search would be retained as it functioned extremely well and the crew has become very adept in its use.

We would further recommend that an extension of this search be carried out in the months of June, July or August to avoid ~~standby~~ standby time due to adverse weather. More than fifty percent of the previous invoices to D.O.T. was caused by adverse weather, and we feel that a continuation of the search during calm months would result in a shorter completion time and for less cost.

We would be glad to indicate a suitable search area, ~~clearly~~ clearly defined on a chart, at your request.

Thank you for the opportunity to submit our recommendations and I am,

Yours truly,

CAN DIVE SERVICES LTD.

Phil Nuytten

PN:1s

9704-130A

615 Federal Building,  
Vancouver 2, B.C.

November 20, 1968.

Canadian Diving Services Ltd.,  
866 East Cordova Street,  
Vancouver, B.C.

Attention L. Mr. P. Nuytten,  
Manager.

Dear Sirs:

Re: "GULF MASTER" Search.

We are at present reviewing the file on the loss of the tug "GULF MASTER", in the vicinity of White Islets on January 11, 1967, with the possibility of determining whether a search in a new area is justified.

In the course of discussing with you a report of the search conducted by your company for the location of this tug it was mentioned that on some seventeen occasions divers went down to carry out visual searches and that the area surrounding White Islets was searched in this manner. We wondered if you would be so kind as to supply us with more information on these dives, specifically with regard to the location and reasons for these dives.

Any other information or loan of files, plans, etc. you may be able to supply on the possible position of this tug would be very much appreciated and helpful in our review of this matter.

Yours very truly,

C. E. Burrill,  
Regional Superintendent,  
Nautical Services.

CEB:ea



9704-130A

Canadian Merchant Service Guild,  
230 West Broadway,  
Vancouver, B.C.

615 Federal Building,  
Vancouver 2, B.C.

November 20th, 1968.

Attention: Captain G. S. Morris,  
Chairman, Investigations Committee.

Dear Sirs:

Re: "GULF MASTER" Search.

We are at present reviewing the file on the loss of the tug "GULF MASTER", in the vicinity of White Islets on January 11, 1967, with the possibility of determining a new search area.

Any information you may be able to supply from your files on the possible position of this tug would be very much appreciated and helpful in our review of this matter.

Yours very truly,

C. E. Burrill,  
Regional Superintendent,  
Nautical Services.

CEB:ea



# Canadian Merchant Service Guild

A NATIONAL ASSOCIATION OF

MASTERS - MATES - PILOTS - ENGINEERS AND OTHER MARINE OFFICERS

## La Guilde de la Marine Marchande du Canada

ASSOCIATION NATIONALE DES CAPITAINES - OFFICIERS BREVETES ET PILOTES



1917 - 1967

AFFILIATED WITH

CANADIAN LABOUR CONGRESS THE OFFICERS (MERCHANT NAVY) FEDERATION INTERNATIONAL TRANSPORT WORKERS FEDERATION



EASTERN OFFICE  
3235 GRANBY AVENUE  
MONTREAL, P.Q.  
TELEPHONE 254-4571  
TELEX 012-140

MARITIME OFFICE  
PORT BORDEN, P.E.I.  
BORDEN 256

HEAD OFFICE  
904 LADY ELLEN PLACE  
OTTAWA 3, ONTARIO  
TELEPHONE 729-3146  
TELEX 013-243

VANCOUVER ISLAND OFFICE  
4308 SAVOY PLACE  
VICTORIA, B.C.  
TELEPHONE 479-6193

WESTERN OFFICE  
230 WEST BROADWAY  
VANCOUVER 10, B.C.  
TELEPHONE 872-7811  
TELEX 04-50305

Mr. G.W. Stead

- 2 -

September 5, 1968.

We would also like to know if any tests have been carried out on the life ring to determine at what depth it has been suberged to and what the results of those tests were.

We would appreciate your early reply.

Yours very truly,

GSM:ah

Capt. Griffiths S. Morris,  
Chairman,  
Investigations Committee,  
Western Branch,  
Cdn. Merchant Service Guild.



# Canadian Merchant Service Guild

A NATIONAL ASSOCIATION OF  
MASTERS - MATES - PILOTS - ENGINEERS AND OTHER MARINE OFFICERS  
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ASSOCIATION NATIONALE DES CAPITAINES - OFFICIERS BREVETES ET PILOTES



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TELEPHONE 479-6193

WESTERN OFFICE  
230 WEST BROADWAY  
VANCOUVER 10, B.C.  
TELEPHONE 872-7811  
TELEX 04-50305

Vancouver 10, B. C.,  
September 5th, 1968.

Mr. Gordon Stead,  
~~Deputy Minister of Transport~~, Assistant Deputy Ministry, Marine,  
Department of Transport,  
Ottawa, Ontario.

Dear Sir:

We have received word that the search for the  
M.V. GULF MASTER has been called off and that no extension  
of the search area is being contemplated at this time.

After very carefully reviewing the entire incident  
and the various reports and recommendations that we have on  
file, and paying particular attention to the observations of  
the Pilot of the Beaver Aircraft who first sighted the man on  
the raft, and subsequently gave an estimated position and  
drift speed from bearings he took while orbiting the scene,  
which compared very closely to the drift studies and  
observations later undertaken by Canadian Diving Services,  
and having discussed these and other factors such as the weather  
at the time of the incident with the various Officers on the  
search vessels, both Coast Guard and Commercial, we have  
concluded that the area that was designated as the search area  
is in fact only the north west half of the area which should  
be searched.

Therefore, it is with firm convictions that we ask  
you to reopen the investigation and that a search be conducted  
in the area south east of White Islets.

The recent finding of the life ring from the GULF  
MASTER by Mr. E. Smith, off Gower Point, indicates that the vessel  
is still in the area and has not as some think been carried off  
by underwater currents.

continued.....





# Canadian Merchant Service Guild

A NATIONAL ASSOCIATION OF

MASTERS - MATES - PILOTS - ENGINEERS AND OTHER MARINE OFFICERS

## La Guilde de la Marine Marchande du Canada

ASSOCIATION NATIONALE DES CAPITAINES - OFFICIERS BREVETES ET PILOTES



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CANADIAN LABOUR CONGRESS THE OFFICERS (MERCHANT NAVY) FEDERATION INTERNATIONAL TRANSPORT WORKERS FEDERATION



EASTERN OFFICE  
3235 GRANBY AVENUE  
MONTREAL, P.Q.  
TELEPHONE 254-4571  
TELEX 012-140

MARITIME OFFICE  
PORT BORDEN, P.E.I.  
BORDEN 256

HEAD OFFICE  
904 LADY ELLEN PLACE  
OTTAWA 3, ONTARIO  
TELEPHONE 729-3146  
TELEX 013-243

VANCOUVER ISLAND OFFICE  
4308 SAVOY PLACE  
VICTORIA, B.C.  
TELEPHONE 479-6193

WESTERN OFFICE  
230 WEST BROADWAY  
VANCOUVER 10, B.C.  
TELEPHONE 872-7811  
TELEX 04-50305

Mr. G.W. Stead

- 2 -

September 5, 1968.

We would also like to know if any tests have been carried out on the life ring to determine at what depth it has been suberged to and what the results of these tests were.

We would appreciate your early reply.

Yours very truly,

GSM:ah

Capt. Griffiths S. Morris,  
Chairman,  
Investigations Committee,  
Western Branch,  
Cdn. Merchant Service Guild.



TO  
A

16 AUG 28 1968

# MEMORANDUM

CLASSIFICATION

Captain C.E. Burrill,  
Regional Superintendent, Nautical Services,  
Department of Transport,  
Federal Building,  
VANCOUVER, B.C.

YOUR FILE No. 9704-130A  
Votre dossier

OUR FILE No. 9704-669  
Notre dossier

FROM  
De

Investigations Officer

DATE 26 August, 1968.

FOLD

SUBJECT  
Sujet

Tug "GULF MASTER"

With further reference to your memorandum of July 12, enclosing photographs of a "GULF MASTER" life-buoy recovered from the sea on June 29, C.N.P. and D.M.R. would appreciate your comments and these of Mr. Sigsworth on the following points:

1. Did the condition of the buoy suggest either that it had been recently separated from the wreck or that it might have been washed ashore and subsequently released by a high tide? *Not Known*
2. What was the composition of the buoy and grablines? *Look at*
3. Which side was uppermost when found? *Not Known*
4. Was there any sign of marine growth? *No.*
5. Would it be possible to determine by chemical or other analysis whether the stains were caused by oil, rust or from some other cause? *could be*
6. Did the life-buoy show any sign of fire damage? *Not known.*
7. Could the indentations on the life-buoy have been caused by it having been subjected to pressure? *Not known.*

*W.A.W. Catinus*  
(W.A.W. Catinus)

*his Express to Director*  
*end of July 20-*

Captain W.A.W. Catinus  
Marine Investigation and Wreck,  
Department of Transport,  
Hunter Building,  
Ottawa, Ont.

9704 - 669

9704-130A

Sept. 4, 1968

R.S.N. (Western)

"GULF MASTER"

With reference to your memorandum of August 26th the lifebuoy recovered from the tug "Gulf Master" was sent to Ottawa by Air Express on or about July 20th. Answers to your questions are as follows:

1. No but the condition of buoy and lines suggests that it may have been recently separated from the wreck.
2. Aero type plastic buoy with yellow coloured synthetic (polypro) grab lines.
3. Not known.
4. No.
5. Could be but buoy was forwarded to Ottawa for analysis.
6. The brown markings may have been caused by smoke but at that time it was thought more likely to be oil stains.
7. Not known.

C. E. Burrill,  
Regional Superintendent, Nautical Services.

CEB:ea

# MEMORANDUM

CLASSIFICATION



TO  
A

Captain C.E. Burrill,  
Regional Superintendent, Nautical Services,  
Department of Transport,  
Federal Building,  
Vancouver, B.C.

YOUR FILE No.  
Votre dossier 9704-130A

OUR FILE No.  
Notre dossier 9704-669

DATE 16 July, 1968.

FROM  
De

Investigations Officer

FOLD

SUBJECT  
Sujet

Tug "GULF MASTER"

Thank you for your memorandum of July 12, enclosing photographs of a life-buoy from the "GULF MASTER" recovered by a yachtsman on June 29, 1968.

It is noted that this buoy has been turned over to the Regional Superintendent, S.S.I., Vancouver.

(W.A.W. Catinus)

Marine Investigations & Wreck

AUG - 9 1968



9704-130A

607 Federal Building,  
Vancouver 2, B.C.

July 15th, 1968.

Innex International,  
203 - 10209 - 97th Street,  
Edmonton, Alta.

Dear Sirs:

Thank you for your letter of 27th June, concerning a proposal to conduct an air search for the wreck of the tug, "GULF MASTER", using a magnetometer.

Your proposal was forwarded to our Headquarters, Ottawa. In reply it is said that as an exhaustive but unsuccessful search has already been made for this wreck and no new information received, it is felt that further expenditure of public funds at this time is not warranted.

Any further contract would have to be concluded by way of tenders in the normal manner.

It was felt that your offer was extremely attractive and we thank you for your interest in this matter.

Yours truly,

C. E. Burrill,  
Regional Superintendent, Nautical Services.

CEB:ea



JUL 15 1968

# MEMORANDUM

CLASSIFICATION

TO  
A

Captain C.E. Burrill,  
Superintendent, Nautical Services,  
Department of Transport,  
Federal Building,  
325 Granville St.,  
Vancouver, B.C.

YOUR FILE No.  
Votre dossier

OUR FILE No. 9704-669  
Notre dossier

FROM  
De

Chief, Nautical & Pilotage Division

DATE July 8, 1968

SUBJECT  
Sujet

"GULF MASTER" Search

I refer to your memorandum of June 28, forwarding a copy of a letter from Innex International Limited offering to conduct an air search for the wreck of the tug "GULF MASTER".

As you are aware, an exhaustive but unsuccessful search has already been made for this wreck. We are not aware of any new information which would warrant further expenditure of public funds in this matter. In any event our understanding is that any further contract would have to be concluded by way of tenders in the normal manner.

Please inform Innex International Limited and thank them for their interest.

G.W.R. Graves,  
Chief, Nautical & Pilotage Division.

Captain G.W.H. Graves,  
Chief, Nautical and Pilotage Division,  
Department of Transport,  
Ottawa, Ontario.

9704-669

9704-130A

July 12, 1968

Superintendent, Nautical Services,  
Vancouver, B.C.

Tug "GULF MASTER".

Enclosed are photographs of a life-buoy from the "GULF MASTER" which was recovered from the water by a yachtsman Edward Smith on June 29th, 1968. Mr. Smith was proceeding in a straight line out from Shoal Channel and picked up this buoy approximately five miles from Gower Point.

A line attached to the life-buoy was in a tangle in the centre with only about six feet free end. The line still retained the kink where it had been attached by a toggle to the vessel.

The buoy was covered with brown stains interlaced with indentations and scored in one or two places. On the reverse side there was a rust ring where the buoy may have been laying against the vessel. The brown stains and indentations were not so pronounced on the reverse side.

Mr. Smith turned the buoy over to the Coast Guard who passed it on to the Regional Superintendent, S.S.I.

A portion of chart No. 3579 is also enclosed.

C.E. Burrill,  
Regional Superintendent,  
Nautical Services.

CEB:lv

Encl.

DEPARTMENT OF TRANSPORT  
MINISTÈRE DES TRANSPORTS

IF UNDELIVERED RETURN TO POINT OF MAILING  
EN CAS DE NON-LIVRAISON RENVoyer À L'EXPÉDITEUR

OFFICE AT \_\_\_\_\_  
BUREAU DE \_\_\_\_\_  
02-0036 (54)

ON HER MAJESTY'S SERVICE

SERVICE DE SA MAJESTÉ



PHOTOS

Life buoy - ex GULF MASTER

retain on file.

000698





000699



000700

DOT DMO VCR

V+

DOTDMA OTT

DOT DMO VCR

PLEASE PASS TO CAPT G W R GRAVES

CHIEF NAUT AND PILOTAGE

28/6/68

RE GULF MASTER I HAVE IN WRITING AN OFFER FROM INNEX

INTERNATIONAL TO SEARCH ON A NO CURE NO PAY BASIS IF VESSEL LOCATED

WILL IDENTIFY BY UNDERWATER T V PHOTO AND BUOY AT FLAT FEE OF EIGHT M

THOUSAND DOLLARS. EQUIPMENT MAGNETOMETER, ASQ-3 FLUXGATE DEVICE

USED IN AIR SEARCH OF AREA. AVAILABLE ONLY WITHIN NEXT FEW WEEKS

SO PLEASE ADVISE AS SOON AS POSSIBLE IF WILLING TO ACCEPT OFFER.

MEMO FOLLOWING

C E BURRILL

SUPT NAUT SERVICES

VAN B C

Captain G.W.R. Graves,  
Chief, Nautical and Pilotage Division,  
Department of Transport,  
Ottawa, Ontario.

9704-669

9704-130A

Superintendent, Nautical Services,  
Vancouver, B.C.

June 28, 1968

"GULF MASTER"

Further to my telex of today, although there was a press release that the Department was not conducting any further searches for the "GULF MASTER", there is still some local interest and opinions have been expressed that we should have continued searching.

A few weeks ago I was approached by Innex International who were interested in conducting an air search for this tug using a magnetometer. They claimed that they had searched for and located several bulldozers which had been lost from a barge on Great Slave Lake. They covered an area of 120 square miles and located these bulldozers beneath six feet of ice. It was also claimed that mineral deposits do not interfere with the locating of large metal objects.

They seemed so confident that they would be successful that they agreed to a "No Cure No Pay" agreement and I asked them to put it in writing.

Enclosed is a copy of their letter stating a flat rate of \$8000.00 to locate, identify by underwater T.V. photographs and buoy the "GULF MASTER".

At the moment they are said to be in between jobs for an American company in California. If the Department is prepared to accept their offer they would prefer to commence operations within one or two weeks.

C.E. Burrill,  
Superintendent, Nautical Services.

CEB:lv

Encl.



John KEMPO.  
Bar - Soli.

203

Area Code 403

424-8288.

INNEX INTERNATIONAL

203 - 10209 - 97<sup>th</sup> STREET, ✓  
EDMONTON, ALBERTA.

JUNE 27, 1968

D.O.T.  
MARINE INVESTIGATIONS DEPT.,  
325 GRANVILLE STREET,  
VANCOUVER 1, B.C.

ATTENTION: CAPT. <sup>BURRILL</sup>  
BURROUGH

DEAR SIR:

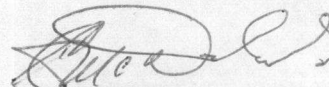
FURTHER TO OUR CONVERSATION OF THE 27<sup>th</sup>, THE FOLLOWING  
IS OUR PROPOSAL FOR LOCATION OF THE TUG, GULF MASTER.

USING OUR MAGNETOMETER, AN ASQ-3 TYPE FLUXGATE DEVICE,  
WE WILL INSTITUTE AN AIR SEARCH OF THE AREA IN WHICH THE WRECK IS  
THOUGHT TO LIE. IN THE EVENT THAT THE SEARCH IS UNSUCCESSFUL, ALL  
EXPENSES INCURRED WILL BE BOURNE BY OURSELVES.

IF, HOWEVER, THE WRECK IS LOCATED, WE WILL HAVE AVAILABLE  
CLOSED CIRCUIT T.V. EQUIPMENT FOR PURPOSES OF PHOTOGRAPHIC RECONNAIS-  
SANCE, AND WILL BUOY THE WRECK IN CASE SALVAGE OPERATIONS ARE DESIRED  
BY THE DEPARTMENT.

FOR SUCCESSFUL LOCATION, A FLAT FEE OF \$8,000.00 WILL BE  
PAYABLE TO INNEX INTERNATIONAL LTD.

YOURS VERY TRULY,  
YOUR  
INNEX INTERNATIONAL LTD.

  
PER C. W. McDONALD

CWMcD/s

As soon as possible.

Captain G.W.R. Graves,  
Chief, Nautical and Pilotage Division,  
Department of Transport,  
Ottawa, Ontario

9704-669

9704-130A

Superintendent, Nautical Services,  
Vancouver, B.C.

May 3, 1968

"GULF MASTER" - Search by Canadian Diving Services Ltd.

A copy of a report from Canadian Diving Services Ltd., concerning an attempt to locate the tug "GULF MASTER" by means of a magnetometer was discussed with the Divisional Supervisor, S. S. I., and further explained by Mr. P. Nuytten, Manager, Can-Div.

It is our opinion that a thorough inspection was made of the search area as required by the specifications. On seventeen occasions particularly in the area around White Islets divers went down to carry out visual searches of the bottom. We agree with the conclusion of the report that the tug "GULF MASTER" is not in the area covered by the search.

As was reported operations throughout the search period were hampered by the poor weather during the months of February and March. I cannot help feeling that the time of the year chosen to conduct these operations was most unfortunate. Considering that the search was commenced over twelve months after the "GULF MASTER" was reported missing, it seems that a few more months would have made very little difference. If the actual search operations had been postponed until May or June, advantage could have been taken of the long daylight hours and probably fine weather. This would have shortened the period required to cover the specified area and enabled the remaining time to be used to inspect other possible areas.

In the conclusion of a report on a preliminary inquiry into the loss of tug "GULF MASTER" it was thought that the vessel may have been lost in the area White Islets, Mission Point to Trail Islands. Perhaps this was the reason for giving this area in the specifications.

However, since the above report was submitted, this area was searched by the owners of the tug and other parties. Further research of information received, prevailing weather, tides, location of survivor when picked up, reported oil slicks etc., eliminated the probability of the tug being in the area of Trail Islands. Local opinion was that the tug was lost in the vicinity of White Islets or even as far south as Roberts Creek. This was mentioned by me last summer when I inquired if the Department was still interested in locating the "GULF MASTER".

.... /2



- 2 -

In the Can-Div report it was noted by the sketches that the area south east of White Islets does not appear to have been included in the search. It is thought that the "GULF MASTER" may have struck a ledge off White Islets, overturned and drifted before finally sinking to the bottom.

For these reasons it may have been preferable to have had the search area centered around White Islets and extended to include Roberts Creek.

If the Department intends to have further searches conducted to locate the "GULF MASTER" it is recommended that to cover all probable locations an extended search area should be inside a line from Mission Point to a point two miles south of the point and a line drawn east of this point to the shore line. (See attached portion of chart 3577).

The possibility of extending the search area was discussed with Mr. Nuytten and it was suggested provided the operations are carried out about the middle of June the proposed search area could be inspected at a cost of approximately two thirds that of the original operations or less depending upon the weather.

C. E. Burrill,  
Superintendent, Nautical Services

CEB:vm

Encl:

cc: Divisional Supervisor, S. S. I.





\*  
DOT DMO OTT

DOT PILOTS VCR

ATTENTION CAPTAIN G W R GRAVES  
CHEIF NAUTICAL AND PILOTAGE

15 3 68

RE: SEARCH FOR GULF MASTER WEATHER HAS PERMITTED ONLY FOURTEEN  
WORKING DAYS AND TEN STAND BY DAYS. PRESENT FORECAST INDICATES  
THREE TO FOUR STAND BY DAYS. SEARCH HAS BEEN UNSUCCESSFUL CON-  
TRACTOR BELIEVES ANOTHER TWO DAYS TO COMPLETE BUT DOES NOT FEEL  
THEY WILL ACCOMPLISH VERY MUCH. PLEASE PHONE AT 1600 E S T IF  
SEARCH SHOULD BE ABANDONED.

C E BURRILL  
SUPT NAUTICAL SERVICES

BC 15/1210

\*  
DOT DMO OTT

DOT PILOTS VCR

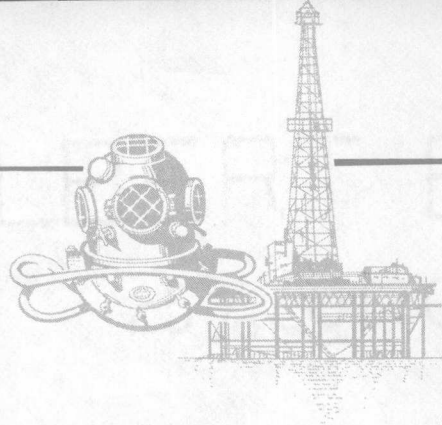
*Phone call from Latins  
complete contract  
interested in any  
new areas  
15-3-68  
LH*

# CAN DIVE

CANADIAN DIVING SERVICES LTD.

866 EAST CORDOVA STREET  
VANCOUVER, B.C., CANADA

P.O. BOX 4488  
SANTA BARBARA  
CALIFORNIA, U.S.A.



Cap't. C.E. Burri1  
Department of Transport  
Vancouver, B.C.

## PROGRESS REPORT - GULFMASTER SEARCH

On February 15th 1968, a survey crew was dispatched from Vancouver and proceeded to Sechelt, B.C. to establish shore control stations and beach sites to facilitate navigation and allow pinpoint return to suspected areas.

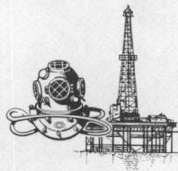
These bench marks and radial planes were plotted on Chart #1, enclosed.

Preliminary sonar runs were made, at this time, to verify accuracy of existing hydrographic charts of the area. The area in and around white islets was replotted with particular care due to the presence of submarine peaks and outcroppings which have an adverse effect on magnetometer runs.

This work was completed on the 17th of February and the crew returned to Vancouver to assist in mobilizing the television and electronic equipment.

On February 19th the search crew proceeded to the Sechelt area with the underwater television equipment, survey transits, radio telephones, magnetometer, diving equipment and other miscellaneous rigging.

Preliminary evaluation of existing data had established no doubt in our minds that the wreck must lie southeast of a line drawn perpendicular to the pilot's first sighting of the oil slick, debris, and the mate on the raft. Accordingly, this area has received our most intensive attention. It is necessarily a slow process as the entire area around white islets is magnetically "active" with ferrous geology prominent. Major anomalies are plotted on a magnetic map and the most promising are checked by either diving, underwater



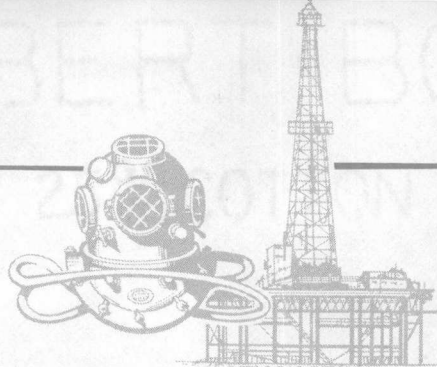
PHONE: A.C. 604 - 255-5323  
VANCOUVER, CANADA

A.C. 805 - 963-2688  
SANTA BARBARA, U.S.A.

000708



# CAN DIVE



CANADIAN DIVING SERVICES LTD.

866 EAST CORDOVA STREET  
VANCOUVER, B.C., CANADA

P.O. BOX 4488  
SANTA BARBARA  
CALIFORNIA, U.S.A.

- 2 -

T.V. or by a mathematical system, raising and lowering the mag sensor and computing the gamma change versus distance from bottom. These areas are plotted on a magnetic chart #2, enclosed.

Progress to date has consisted of eliminating those areas which have proved promising. The search area has been partially covered, approximately half, and thus far, only submarine pinnacles have been located.

Adverse weather has necessitated standby on several occasions and these time, dates, and weather conditions will be forwarded with our final report.

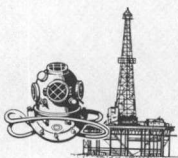
At this time, nine days have been actually expended in searching and plotting and we estimate an additional nine days will be required to conclude.

Further progress reports will be submitted at regular intervals.

Respectfully submitted by

A handwritten signature in cursive script, appearing to read "Phil Nuytten".

Phil Nuytten



PHONE: A.C. 604 - 255-5323  
VANCOUVER, CANADA

A.C. 805 - 963-2688  
SANTA BARBARA, U.S.A.

000709

Captain G.W.R. Graves,  
Chief, Nautical and Pilotage Division,  
Department of Transport,  
Ottawa, Ontario.

9704-669

9704-130A

Superintendent, Nautical Services,  
Vancouver, B.C.

March 6, 1968

"GULF MASTER".

Enclosed is a copy of a progress report from Canadian Diving Services Ltd., concerning the search for the tug "GULF MASTER". Copies of Charts #1 and #2 were not enclosed with their report but I have examined their work sheets. They have been requested to provide copies of official weather reports for those days claimed as stand by days.

From the information gathered from many sources it is Mr. Nuytten's opinion that the "GULF MASTER" was lost in the vicinity of White Islets. Although the whole of the search area will be covered it is the intention to make a more detailed search of the area around White Islets. The underwater terrain consists of numerous peaks, cliffs and valleys requiring a most careful search with magnetometer and underwater television camera.

A strike by ferry personnel has prevented me from visiting the Sechart area to observe the search in progress. I hope to have an opportunity to spend a day or two at the end of this week on the search vessel.

C.E. Burrill,  
Superintendent, Nautical Services

CEB:lv

Encl:





FEB 27 1968 MEMORANDUM

FEB 27 1968

CLASSIFICATION

TO  
A

Captain C.E. Burrill,  
Superintendent, Nautical Services,  
Department of Transport,  
Federal Building,  
VANCOUVER, B.C.

YOUR FILE No.  
Votre dossier

OUR FILE No. 9704-669  
Notre dossier

DATE 26 February, 1968.

FROM  
De

Investigations Officer

FOLD

SUBJECT  
Sujet

"GULF MASTER"

I enclose for your information the copy of an amendment to the contract for searching, locating and identifying the wreck of the "GULF MASTER".

Paragraphs XVIII and XIX are the amended portions to the original contract.

*W.A.W. Catinus*  
(W.A.W. Catinus)

Marine Investigations & Wreck

Encl:

(xvii) The sum of Sixty Dollars (\$60.00) per day for board and lodging of the said crew for each day during which the said crew is "on site" for purposes in connection with the performance of the said services and for each day during which the said crew is actually engaged in travelling from Vancouver to the site at the beginning of the said services and in returning to Vancouver at the completion of the said services, all as established to the satisfaction of the Director.

(xviii) For the use of the Bathysphere of the Contractor at the request, in writing, of the Director for purposes in connection with the performance of the said services, the sum of Four hundred dollars (\$400.00) per day for each day that the Bathysphere is so used or the total sum of Two thousand dollars (\$2,000.00) for each occasion that the use of the Bathysphere is so requested by the Director, WHICHEVER IS THE LARGER AMOUNT, all as established to the satisfaction of the Director.

TOGETHER with the actual and reasonable costs of mobilizing the said Bathysphere, support scow and crane from Vancouver to the site of the work and return to Vancouver, on each occasion that the use of the Bathysphere is so requested by the Director, plus 10% of such costs, all as established to the satisfaction of the Director.

(xix) The actual and reasonable costs to the Contractor of providing an operator for the said Bathysphere, such costs comprising salary, transportation expenses of the said operator from Vancouver to the site of the work and return to Vancouver, and board and lodging of the said operator at the site of the work, together with 10% of such costs, all as established to the satisfaction of the Director.

(xx) The sum of Four hundred dollars (\$400.00) for contingencies incurred by the Contractor, as established to the satisfaction of the Director,

payment under this clause to be made, from time to time, upon receipt of accounts therefor, accompanied by copies of payrolls, vouchers and invoices and such other information as the Director may require, and the written certificate of the Director certifying that the accounts are true and exact and that the Contractor has performed the services covered by the accounts and has complied with the terms of this contract shall be a condition precedent to the right of the Contractor to receive any payment from Her Majesty under this clause.

9. That the Contractor shall comply with and be subject to all the terms, stipulations and conditions contained in the labour conditions hereunto annexed and the said labour conditions shall be read with and shall form part of this contract.

10. That the Contractor shall not have nor make any claim or demand against Her Majesty for detriment, damage, injury, death or loss of any nature whatsoever or howsoever caused to any employee of the Contractor to the vessel, equipment, supplies, materials, effects or things at any time provided by the Contractor for purposes in connection with the performance of the said services, unless such damage or injury is due to the negligence of any officer or servant of Her Majesty while acting within the scope of his duties or employment.

11. That the Contractor shall and the Contractor hereby covenants to indemnify and save harmless Her Majesty from and against all manner of actions, causes of action, claims, demands, loss, costs, expenses, damages, liability, awards and proceedings of every kind and nature whatsoever by whomsoever made and brought which Her Majesty shall become liable to pay and arising out of the operations of the Contractor hereunder.

12. That it is expressly understood and agreed that notwithstanding anything contained herein, Her Majesty may terminate this Contract at any time by a notice in writing signed by or on behalf of the Minister and mailed addressed to the last known place of business of the Contractor, at any of Her Majesty's Post Offices, and thereupon after the mailing of such notice this Contract shall be determined and ended, in which event the Contractor shall have no claim against Her Majesty under this Contract, except to be paid a fair and reasonable amount as determined by the Minister whose decision shall be final in respect of the said services performed up to the time such notice is given, all in accordance with and pursuant to this Contract, less any sums theretofore paid on account thereof, all as may be evidenced

-8-

by the Certificate of the Director, which certificate shall be a condition precedent to the right of the Contractor to any payment under this clause.

13. That pursuant to the provisions of the statutes in such case made and provided no member of the House of Commons and Senate of Canada shall be admitted to any share or part of this Contract or to any benefit to arise therefrom.

14. That it is understood and agreed by and between the parties hereto that nothing herein contained shall obligate Her Majesty to pay to the Contractor any sum or sums under this Contract, unless and until the necessary funds have been voted by Parliament in that behalf.

IN WITNESS WHEREOF the parties hereto have executed these Presents the day and year first above written.

SIGNED, SEALED AND DELIVERED  
by Her Majesty in the  
presence of -

For Minister of Transport.

SIGNED, SEALED AND DELIVERED  
by the Contractor in the  
presence of -



JF:pn.

THIS INDENTURE made this                      day of  
One thousand nine hundred and sixty-eight:  
B E T W E E N:

HER MAJESTY THE QUEEN in Right of  
Canada, hereinafter referred to as  
"Her Majesty", represented herein  
by the Minister of Transport, here-  
inafter referred to as "the Minister",

Of the First Part:

- and -

CANADIAN DIVING SERVICES LTD., 866  
East Cordova Street, Vancouver, in  
the Province of British Columbia,  
hereinafter called "the Contractor",

Of the Second Part.

WHEREAS Her Majesty proposes to retain the Contractor  
to undertake a survey and investigation for the purpose of  
locating the tug "GULF MASTER" which sank on January 11,  
1967 in the vicinity of White Islets, Strait of Georgia,  
Province of British Columbia, and the Contractor has under-  
taken and agreed to make such survey and investigation for  
the consideration and upon and subject to the terms and  
conditions hereinafter set out and contained.

NOW THEREFORE THIS INDENTURE WITNESSETH that the said  
parties hereto hereby covenant, promise and agree, each  
with the other, as follows: -

1. In this contract the following words shall,  
unless the context require a different meaning, have the  
following meanings, respectively, that is to say: -

"Contractor", or other words relative thereto, or  
of like import, shall mean and include, the party of the

*ms.*

second part as above designated, or described, and its curators or successors, or assigns (duly consented to under this contract).

"Her Majesty", or other words relative thereto, or of like import, shall mean and include the reigning Sovereign or the Successors or Assigns of the Sovereign.

"Minister" shall mean the person holding the position, or acting in the capacity of the Minister of Transport, for the time being, and shall include the person holding the position, or acting in the capacity of the Deputy Minister of Transport, for the time being.

"Director" shall mean the person holding the position, or acting in the capacity of the Director of Marine Regulations of the Department of Transport, acting either directly or through the Regional Superintendent, Nautical Services of the Department of Transport, at Vancouver, British Columbia.

"Departmental Representative" shall mean the person holding the position or acting in the capacity of the Regional Superintendent, Nautical Services of the Department of Transport, at Vancouver, British Columbia, or his authorized representative.

2. That the Contractor shall perform all the services (hereinafter referred to as "the said services") required to be performed in connection with a survey and investigation on behalf of Her Majesty for the purpose of searching, locating, verifying, marking and inspecting the tug "GULF MASTER" which sank on January 11, 1967 in the vicinity of White Islets, Strait of Georgia, Province of British Columbia, and the said services shall be performed in accordance with this contract and the Specifications annexed hereto marked "A", which specifications are hereby declared to be part of this contract.

...

-3-

3. That all reports prepared by the Contractor respecting the performance of the said services shall be forwarded to the Departmental Representative and shall be the property of Her Majesty. The Contractor shall prepare and furnish to the Director all information required by the Departmental Representative, pursuant to the said reports.

4. That the Director shall furnish to the Contractor such information as the latter may reasonably require for purposes in connection with the performance of the said services.

5. That the Contractor shall not make any assignment of this Contract.

6. That the Contractor shall provide all necessary engineers, assistants, and employees, including ships crews necessary to perform the said services to the satisfaction of the Minister.

7. That the Contractor shall exercise its best endeavours and that of the engineering and other staff of the Contractor to the end that the said services shall be completed within the shortest practicable time and in all respects in the manner required by Her Majesty.

8. That for and in consideration of the premises and of the observance and performance on the part of the Contractor of all the covenants, provisions and conditions in this contract contained, Her Majesty will pay to the Contractor for and in respect of the said services, upon completion thereof and in full compensation therefor the prices or sums computed as follows:

- (1) The sum of One thousand dollars (\$1,000.00) for mobilising the vessels and equipment of the Contractor required for the performance of the said services, from Vancouver to the site of the work at the beginning of the said services and for return to Vancouver at the completion of the said services, as established to the satisfaction of the Director.

-4-

- (ii) The sum of One hundred and twenty dollars (\$120.00) per day for each day during which the search vessel of the Contractor is actually engaged for purposes in connection with the performance of the said services, as established to the satisfaction of the Director.
- (iii) The sum of Seventy dollars (\$70.00) per day for each day during which the search vessel of the Contractor is standing-by at the site of the said work, as established to the satisfaction of the Director.
- (iv) The sum of Three hundred and fifty dollars (\$350.00) per day for each of the first seven days during which a Magnetometer is employed by the Contractor for purposes in connection with the performance of the said services, as established to the satisfaction of the Director.
- (v) The sum of Three hundred and fifteen dollars (\$315.00) per day for each of the eighth to the fourteenth day, inclusive, during which a Magnetometer is employed by the Contractor for purposes in connection with the performance of the said services, as established to the satisfaction of the Director.
- (vi) The sum of Two hundred and seventy-five dollars (\$275.00) per day for each of the fifteenth to twenty-first day, inclusive, during which a Magnetometer is employed by the Contractor for purposes in connection with the performance of the said services, as established to the satisfaction of the Director.
- (vii) The sum of Two hundred and sixty dollars (\$260.00) per day for each day after the twenty-first day during which a Magnetometer is employed by the Contractor for purposes in connection with the performance of the said services, as established to the satisfaction of the Director.
- (viii) The sum of Forty Dollars (\$40.00) per day for each of the first seven days during which two (2) Tellurometers are employed by the Contractor for purposes in connection with the performance of the said services, as established to the satisfaction of the Director.
- (ix) The sum of Thirty-six dollars (\$36.00) per day for each of the eighth to the fourteenth day, inclusive, during which the two (2) Tellurometers are employed by the Contractor for purposes in connection with the performance of the said services, as established to the satisfaction of the Director.

...



-5-

- (x) The sum of Thirty-two dollars (\$32.00) per day for each of the fifteenth to twenty-first day, inclusive, during which the two (2) Tellurometers are employed by the Contractor for purposes in connection with the performance of the said services, as established to the satisfaction of the Director.
- (xi) The sum of Thirty dollars (\$30.00) per day for each day after the twenty-first day during which the two (2) Tellurometers are employed by the Contractor for purposes in connection with the performance of the said services, as established to the satisfaction of the Director.
- (xii) The sum of Eighteen dollars (\$18.00) per week for each week during which a Transit is used by the Contractor for purposes in connection with the performance of the said services, as established to the satisfaction of the Director; PROVIDED, however, that if in any week the Transit is used not more than four days, the sum payable to the Contractor for such use shall be calculated at the rate of Four dollars (\$4.00) for each day during which the Transit is so used, as established to the satisfaction of the Director.
- (xiii) The sum of Two hundred dollars (\$200.00) per day for each day during which an Underwater Television Unit with associated equipment is used for purposes in connection with the performance of the said services, all as established to the satisfaction of the Director.
- (xiv) The sum of One hundred dollars (\$100.00) per day for each day during which the Underwater Television Unit with associated equipment is standing-by at the site of the said work, as established to the satisfaction of the Director.
- (xv) The sum of Twenty-seven dollars and fifty cents (\$27.50) per day for each day during which the Rigging, Ropes, Buoys and Anchors of the Contractor are used for purposes in connection with the performance of the said services, all as established to the satisfaction of the Director.
- (xvi) The sum of Two hundred and twenty-five dollars (\$225.00) per day for the six man crew of the search vessel of the Contractor for each day during which the said crew is "on site" actually engaged or standing-by for purposes in connection with the performance of the said services, and for each day during which the said crew is engaged in travelling from Vancouver to the site at the beginning of the said services and return to Vancouver at the completion of the said services, all as established to the satisfaction of the Director.

-6-

(xvii) The sum of Sixty Dollars (\$60.00) per day for board and lodging of the said crew for each day during which the said crew is "on site" for purposes in connection with the performance of the said services and for each day during which the said crew is actually engaged in travelling from Vancouver to the site at the beginning of the said services and in returning to Vancouver at the completion of the said services, all as established to the satisfaction of the Director.

(xviii) The sum of Four hundred dollars (\$400.00) per day for the Bathysphere of the Contractor, for each day during which the Bathysphere is actually used at the request, in writing, of the Director, for the purposes in connection with the said services, as established to the satisfaction of the Director, *included*

(xix) The sum of Four hundred dollars (\$400.00) for contingencies incurred by the Contractor, as established to the satisfaction of the Director,

payment under this clause to be made, from time to time, upon receipt of accounts therefor, accompanied by copies of payrolls, vouchers and invoices and such other information as the Director may require, and the written certificate of the Director certifying that the accounts are true and exact and that the Contractor has performed the services covered by the accounts and has complied with the terms of this contract shall be a condition precedent to the right of the Contractor to receive any payment from Her Majesty under this clause.

9. That the Contractor shall comply with and be subject to all the terms, stipulations and conditions contained in the labour conditions hereunto annexed and the said labour conditions shall be read with and shall form part of this contract.

10. That the Contractor shall not have nor make any claim or demand against Her Majesty for detriment, damage, injury, death, or loss of any nature whatsoever or howsoever caused to any employee of the Contractor to the vessel, equipment, supplies, materials, effects or things at any time provided by the Contractor for purposes in connection with the performance

-7-

of the said services, unless such damage or injury is due to the negligence of any officer or servant of Her Majesty while acting within the scope of his duties or employment.

11. That the Contractor shall and the Contractor hereby covenants to indemnify and save harmless Her Majesty from and against all manner of actions, causes of action, claims, demands, loss, costs, expenses, damages, liability, awards and proceedings of every kind and nature whatsoever by whosoever made and brought which Her Majesty shall become liable to pay and arising out of the operations of the Contractor hereunder.

12. That it is expressly understood and agreed that notwithstanding anything contained herein, Her Majesty may terminate this Contract at any time by a notice in writing signed by or on behalf of the Minister and mailed addressed to the last known place of business of the Contractor, at any of Her Majesty's Post Offices, and thereupon after the mailing of such notice this Contract shall be determined and ended, in which event the Contractor shall have no claim against Her Majesty under this Contract, except to be paid a fair and reasonable amount as determined by the Minister whose decision shall be final in respect of the said services performed up to the time such notice is given, all in accordance with and pursuant to this Contract, less any sums theretofore paid on account thereof, all as may be evidenced by the Certificate of the Director, which certificate shall be a condition precedent to the right of the Contractor to any payment under this clause.

13. That pursuant to the provisions of the statutes in such case made and provided no member of the House of Commons

..

-8-

of Canada shall be admitted to any share or part of this Contract or to any benefit to arise therefrom.

14. That it is understood and agreed by and between the parties hereto that nothing herein contained shall obligate Her Majesty to pay to the Contractor any sum or sums under this Contract, unless and until the necessary funds have been voted by Parliament in that behalf.

IN WITNESS WHEREOF the parties hereto have executed these Presents the day and year first above written.

SIGNED, SEALED AND DELIVERED  
by Her Majesty in the  
presence of -

For Minister of Transport.

SIGNED, SEALED AND DELIVERED  
by the Contractor in the  
presence of -



615 Federal Building,  
Vancouver 2, B.C.

January 25, 1968

Cpl. J.C.K. Deovy,  
i/c Sechelt Detachment,  
R.C.M.P.,  
Box 153,  
Sechelt, B.C.

Dear Sir:

re: Tug "GULF MASTER"

Reference is made to our letter of March 22nd, 1967, advising you that I would keep you informed of further developments in this matter.

Canadian Diving Services Ltd., 866 East Cordova Street, Vancouver, have been awarded the contract to search for, locate and inspect the wreck of the tug "GULF MASTER". It is expected that operations in the Sechelt area will commence within a few weeks depending upon weather conditions.

I have been instructed to act as Departmental representative in this matter.

Yours truly,

C.E. Burrill,  
Superintendent, Nautical Services

CEB:lv

V\*

DOT DMO VCR

DOTDMA OTT

OTTAWA ONTARIO JANUARY 24 1968

CAPTAIN C E BURRILL

SUPERINTENDENT NAUTICAL SERVICES

VANCOUVE

REURTEL CONCUR IN REQUEST FROM CANADIAN DIVISING LIMITED FOR

TWO OR THREE DAYS AT 50 DOLLARS A DAY FOR PREPARATION AND

EVALUATION OF REPORTS ON LOCATION OF SUNKEN GULF MASTER. SPECIFICATIO

AND CONTRACT BEING FORWARDED TODAY (K1510)

J N BALLINER CHIEF AIDS TO NAVIGATION DEPT TRANSPORT

(11:50 AM WA)

CORRECTION LINE 1 CANADIAN DIVING LIMITED

DOT DMO VCR

DOTDMA OTT

DOTDMA OTT

DOT DMO VCR

PLEASE FORWARD TO CAPT G W R GRAVES

CHIEF NAUT AND PILOTAGE

22/1/68

RE SEARCH FOR GULF MASTER CAN DIVING LTD HAVE ASKED FOR TWO  
OR THREE DAYS AT ABOUT FIFTY DOLLARS A DAY FOR PREPARAZATION  
AND EVALUATION WORK PREVIOUS RECORDS OF WEATHER CONDITIONS  
INDICATE WORKING DAYS NOT EXPECTED TO COMMENCE UNTIL FEBRUARY

15. I WOULD APPRECIATE RECEIVING COPIES OF CONTRACT SO  
THAT I KNOW WHAT IS EXPECTED RE DATE OF COMMENCEMENT WORKING DAYS,  
STAND BY ETØ.

C E BURRILL

SUPT NAUTICAL SERVICES

DOTDMA OTT

DOT DMO VCR

000725



# MEMORANDUM

CLASSIFICATION

JAN 25 1968

TO  
A

Captain C.E. Burrill,  
Superintendent, Nautical Services,  
Department of Transport,  
Federal Building,  
Vancouver, BC.

YOUR FILE No.  
Votre dossier

OUR FILE No. 9704-669  
Notre dossier

DATE 24 January, 1968.

FROM  
De

Investigations Officer

FOLD

SUBJECT  
Sujet

Search for Wreck of "GULF MASTER"

I enclose for your information copies of tenders submitted  
by Canadian Diving Services Ltd., Vancouver, in connection with the  
search for the wreck of the "GULF MASTER".

A copy of the contract will be mailed to you under separate  
cover.

(W.A.W. Catinus)

Marine Investigations & Wreck

Encl:



MESSAGE CENTER  
CPC  
JAN 19 09 12 68

CN TEL OTT TA

DOTDMA OTT

CNTGA001 26/24 NL 5 EX FD VANCOUVER BC 18

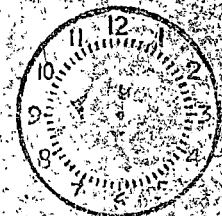
J A G ST LAURENT

CHIEF PURCHASE CONTRACTS DEPT TRANSPORT OTTAWA ONT  
ACKNOWLEDGE RECEIPT OF PROPOSAL ACCEPTANCE RE TUG GULFMASTER  
LOCATION AWAITING INSTRUCTIONS ON COMMENCEMENT. THANK YOU FOR  
OPPORTUNITY TO BE OF SERVICE

PHIL NUYTTEN CAN DIVE SERVICES LTD 866 EAST CORDOVA

DEPT. OF TRANSPORT  
OTTAWA

RECEIVED  
PURCHASING AGENT



RECEIVED

Dept. of Transport  
OTTAWA  
000727

DEPARTMENT OF TRANSPORT

# MESSAGE FORM

FILE NO. 9704-669 (CON)

DATE JANUARY 18 19 68

COMPLETE THIS SECTION FOR  
COMMERCIAL MESSAGES ONLY

CHARGE

SGN:PS

CANADIAN DIVING SERVICES LTD., 866 EAST CORDOVA ST., VANCOUVER, B.C.

PGF 97

YOUR PROPOSAL FOR SURVEY AND INVESTIGATION OF THE TUG "GULF MASTER" DATED  
NOVEMBER 3/67 AND DECEMBER 1/67 ACCEPTED SUBJECT TO COMPLETION OF FORMAL  
AGREEMENT COVERING DETAILS. INSTRUCTIONS RECOMMENCE RE COMMENCEMENT  
OF WORK TO FOLLOW. ACKNOWLEDGE BY RETURN WIRE.

*Jag*  
JAG SAINT-LAURENT/TRANSPORT  
CHIEF PURCHASES & CONTRACTS

**CAN DIVE**

**CANADIAN DIVING SERVICES LTD.**

866 EAST CORDOVA STREET  
VANCOUVER, B.C., CANADA

P.O. BOX 4488  
SANTA BARBARA  
CALIFORNIA, U.S.A.

November 3, 1967.

Department of Transport,  
Parliament Buildings,  
OTTAWA, Ont.

ATTENTION: Mr. J. A. G. Saint-Laurent, Chief Purchases & Contracts.

Dear Mr. Saint-Laurent:

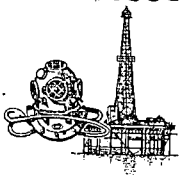
We are pleased to submit the following proposal to undertake a survey and investigation on behalf of the Department of Transport for the purpose of searching, locating, verifying, marking, and inspecting the tug, "Gulf Master", which was lost on January 11, 1967 in the vicinity of White Islets, Strait of Georgia, B.C.

To conduct this survey and investigation, we propose to use the following methods and systems.

A shore controlled search area grid system would be established using a nuclear precession magnetometer of solid state design for measuring the total intensity of the earth's magnetic field. All ferrous metal objects larger than a minimum size would be located and plotted on a chart of the general area where the "Gulf Master" is reported to have foundered. This model of nuclear magnetometer was used to locate the sunken chlorine barges in the Mississippi River under 20' of silt and mud and resulted in world-wide publicity.

The unit is used in conjunction with shore based tellurometer control points and the results of each sweep is continually plotted on a ship-board chart.

As the sensitivity range of the unit is great, the magnetometer can give an accurate profile of an area 300' to either side of the unit--this results in each sweep path being 600' wide. All ferrous metal objects located, would be examined in situ using underwater television equipment. Any object located which cannot be positively identified would then be visually examined from a Reading & Bates diving bell system. After "Gulf Master" has been positively identified, the outer hull area and superstructure can be closely examined and photographed from the bell system. If recovery of vessel is contemplated, this bell system has a built-in lock-out capability to allow divers to work at salvage of vessel. Estimated time to successfully complete this contract is 15 days.



PHONE: A.C. 604 - 255-5323  
VANCOUVER, CANADA

A.C. 805 - 753 483  
SANTA BARBARA, U.S.A.

000729

- 2 -

### Survey Procedure

- (1) Locate shore control grid lines on one axis using T.2. transit and route survey.
- (2) Obtain information by nuclear magnetometer recording along grid lines -- magnetometer positioned on by transit and located by tellurometer stationed at shore control check points for distance marked on tape co-ordinated by radio telephone and soundings double checked by recording echo sounder.

### General Costs Breakdown

✓ Mobilizing	\$1,000.00
✓ Search vessel	120.00 per day
✓ Nuclear Precession Magnetometer	350.00 per day
✓ T.V. Unit 24" Monitor - Camera equipment - Lighting	200.00 per day
✓ Tellurometer (2 instruments)	40.00 per day
✓ T.2. Transit	4.25 per day
Misc. Rigging, Ropes, Buoys, Markers, etc.	27.50 per day
Crew costs (6 men)	225.00 per day
Bell System - Nominal \$400.00 per day subject to negotiation dependent on scope of work.	
Board and Lodging (6 man crew)	60.00 per day
Contingencies (based on job duration of 15 days)	400.00

Enclosed please find photographs and literature on a Diving Bell system.

We look forward to the opportunity of carrying out this contract for you and would be pleased to discuss any variations you would like to include for the whole or any part of our proposal.

Yours very truly,

CAN DIVE SERVICES LTD.,

*Allan Black*  
Allan Black, President.

Encs.

dt

000730



CAN DIVE

CANADIAN DIVING SERVICES LTD.

866 EAST CORDOVA STREET  
VANCOUVER, B.C., CANADA

P.O. BOX 4488  
SANTA BARBARA  
CALIFORNIA, U.S.A.

20965

December 1, 1967.

Mr. J. A. G. Saint-Laurent,  
Chief, Purchases & Contracts,  
Department of Transport,  
OTTAWA, Ont.

REFERENCE: "M/V Gulf Master search" your file #9704-669.

Dear Sir:

We are in receipt of your letter dated November 28, 1967 wherein you ask for clarification of our submission pertaining to the search and location of the tug, "M/V Gulf Master".

We trust that the following answers to your various questions will prove satisfactory.

- 1) Our estimate of 15 days refers to "on site" days only -- mobilization and demobilization are extra.
- 2) The charges for -
  - a. Search Vessel - \$120.00 per working day  
70.00 per standby day
  - b. Magnetometer - 350.00 per day for the first 7 days  
315.00 per day for the second 7 days  
275.00 per day for the third 7 days  
260.00 per day for subsequent days
  - c. Tellurometer - 40.00 per day for the first 7 days  
36.00 per day for the second 7 days  
32.00 per day for the third 7 days  
30.00 per day for subsequent days
  - d. Transit - 4.00 per day  
18.00 per week  
150.00 per month
- 3) The underwater television unit and associated equipment will be charged at the listed rate only when actually used. A standby fee of \$100.00 per day will be charged for this equipment on site.

PHONE: A.C. 604 - 255-5323  
VANCOUVER, CANADA

A.C. 805 - 963-2688  
SANTA BARBARA, U.S.A.

...contd.

000731

- 2 -

3) Contd.

It is our feeling that, should "identification only" be required of this contract, the underwater T.V. will prove entirely satisfactory. The number of known shipwrecks present in the area, makes the use of a visual aid mandatory to work in close association with the broad-spectrum location capability of the magnetometer.

Procedure of the search will be essentially that of "locate and identify" until the correct vessel is found. We currently have two underwater T.V. units which we would call into play as one unit system. One is a light system for quick observation in depths to 300 ft., and the other, a more heavily constructed unit capable of relaying information from depths in excess of 1,000 ft.

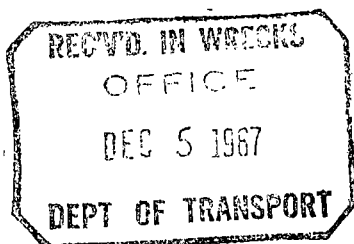
- 4) The charges for the bell system have purposely been left to separate negotiation dependent on whether or not actual recovery of the vessel is contemplated. The bell may be used as a close observation vehicle by diving in a sealed "bathy sphere" condition permitting numerous divers per day. The system can also be used to "lock out" divers to effect rigging preparatory to salvage.

The basic charge for the bell system is \$400.00 per day. We presume that the bell system with its inherent mobilization and support equipment costs would not be called for unless its use was clearly indicated. If the system was to be present for the entire search period, it would be charged out at the base rate of \$400.00 per day.

It may be of interest to note that we are the only company in Canada currently using the "exotic" breathing gas techniques and equipment that would allow placement of divers on the suspected location of the "M/V Gulf Master". Fee is almost entirely governed by depth.

The charges for an actual recovery diving crew are somewhat complicated as the depth involved represents the near-limits of diver capability. We believe that such negotiation, at this stage, is premature, and would better be gone into once the location, and therefore the depth, is clearly indicated.

I hope the foregoing will clear up any areas of question and we look forward in anticipation to your decision in this matter.



Thank you and I am,

Yours truly,

CAN DIVE SERVICES LTD.,

Allan Black, President,

dt

000732

Call came from Capt. Harrison:

You've been appointed Departmental Representative in connection with search ~~for~~ <sup>for</sup> wreck of "Gulf Master".  
Canadian Diving Services Ltd.,  
866 E. Cordova St.,  
Vancouver, B.C.

have been awarded contract and have been told to start work as soon as possible and to submit daily reports to you.

A letter will follow. . . .

Also, sending a ~~letter~~ wire to Diving Co. in  $\frac{1}{2}$  hr. to report this.

# MEMORANDUM



CLASSIFICATION

Steamship Inspection  
Service

JAN 24 1968

YOUR FILE No.  
Votre dossier

B.C.

OUR FILE No.  
Notre dossier

9704-669 (CSI)

The Divisional Supervisor,  
Steamship Inspection Service,  
325 Granville Street,  
Vancouver, B.C.

FROM  
De

C.S.I.

DATE January 23/68

SUBJECT  
Sujet

Search, Location and Inspection  
of tug "Gulf Master"

The Department is entering into a contract with Canadian Diving Services Limited for a search and locating of the wreck of the above vessel. Capt. Burrill has been appointed departmental representative in connection with this contract and has been instructed to work in close cooperation with you.

It is expected that when the wreck is located that you or your nominee will make the examination by remote television camera or other means in an effort to determine what caused the casualty.

Assuming the wreck is located, it may be that sufficient information can be gained in this way without proceeding to raise the wreck. However, this is a decision that can only be taken at that time. Should it be necessary to endeavour to raise the wreck to assess the probable cause of casualty, this then would require to be done in a manner which would provide the minimum disturbance to the conditions obtaining on board.

Attached is a specification of the work to be performed by Canadian Diving Services.

*H. O. Buchanan*

H. O. Buchanan,  
Chairman,  
Board of Steamship Inspection.

Encl. 1



AREA CODE 604  
BUS.: 255-5323  
RES.: 731-9813



- Document disclosed under the Access to Information Act  
Document divulgué en vertu de la Loi sur l'accès à l'information
- OXY HELIUM DIVING
  - BELL DIVING SYSTEMS
  - CLOSED CIRCUIT T.V.
  - ALL PHASES U /W CONSTRUCTION
- 255-5323

**CANADIAN DIVING SERVICES LTD.**

---

866 EAST CORDOVA STREET

VANCOUVER, B.C. 000735

CANADA

**PHIL NUYTTEN**



# MEMORANDUM

CLASSIFICATION

JAN 22 1968

TO  
A

Captain C. E. Burrill,  
Superintendent, Nautical Services,  
Department of Transport,  
Room 607 Federal Bldg.,  
VANCOUVER, B.C.

YOUR FILE No.  
Votre dossier

OUR FILE No. 9704-669  
Notre dossier

FROM  
De

Chief, Nautical & Pilotage Division

DATE 19.1.68

FOLD

SUBJECT  
Sujet

Search for Wreck of  
"GULF MASTER"

*Cordova* This is to inform you that Canadian Diving Services Ltd.,  
866 East Vancouver Street, Vancouver, have been awarded  
the contract to search for, locate and inspect the wreck of  
the tug "GULF MASTER" which sank in the vicinity of White  
Islets, Strait of Georgia, on January 11th, 1968. Attached  
herewith is a copy of the specification and you will note  
that it requires the submission of daily progress reports  
to the Department's representative. 1967

This being a matter of accident investigation, the purpose  
of which is to try and establish the cause of the sinking,  
you are instructed to act as Departmental representative in  
this matter, working in close co-operation with Mr. N.  
Sigsworth, Divisional Supervisor, Steamship Inspection Service,  
Vancouver. You will have to decide whether it is to be  
yourself or Mr. Sigsworth, or his nominee or both, who will  
attend to observe the tug when it is located and raised.  
You are also to furnish the contractor with any information  
you may have which might aid in locating the wreck.

Canadian Diving Services will be informed of your position  
in this matter.

*G. W. R. Graves*  
(G. W. R. Graves)  
Chief, Nautical & Pilotage Division.

att:

DEPARTMENT OF TRANSPORT

# MESSAGE FORM

FILE NO. 9704-669

DATE JANUARY 19 1968

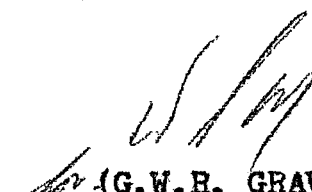
COMPLETE THIS SECTION FOR  
COMMERCIAL MESSAGES ONLY

CHARGE

2-200-56101

CANADIAN DIVING SERVICES LTD.  
866 CORDOVA STREET  
VANCOUVER  
B.C.

RE CONTRACT SURVEY AND INVESTIGATION OF TUG "GULF MASTER".  
PLEASE COMMENCE WORK AS SOON AS POSSIBLE. CAPTAIN C.E. BURRILL  
SUPERINTENDENT NAUTICAL SERVICES FEDERAL BUILDING VANCOUVER  
HAS BEEN APPOINTED DEPARTMENTAL REPRESENTATIVE. PLEASE SUBMIT  
DAILY PROGRESS REPORTS TO HIM.

  
(G.W.R. GRAVES),  
CHIEF, NAUTICAL & PILOTAGE DIVISION  
DEPARTMENT OF TRANSPORT

DEPARTMENT OF TRANSPORT

# MESSAGE FORM

FILE NO. 9704-669 (GOM)

DATE JANUARY 13 19 68

COMPLETE THIS SECTION FOR  
COMMERCIAL MESSAGES ONLY

CHARGE

SGV:PS

CANADIAN DIVING SERVICES LTD., 866 EAST CORDOVA ST., VANCOUVER, B.C.

PCF 97

YOUR PROPOSAL FOR SURVEY AND INVESTIGATION OF THE TUG "GULF MASTER" DATED  
NOVEMBER 3/67 AND DECEMBER 1/67 ACCEPTED SUBJECT TO COMPLETION OF FORMAL  
AGREEMENT COVERING DETAILS. INSTRUCTIONS RECOMMENCE RE COMMENCEMENT  
OF WORK TO FOLLOW. ACKNOWLEDGE BY RETURN WIRE.

  
JAG SAINT-LAURENT/TRANSPORT  
CHIEF PURCHASES & CONTRACTS



## SPECIFICATION

### General Description of the Work

To undertake a survey and investigation on behalf of the Department of Transport for the purpose of searching, locating, verifying, marking and inspecting the tug "Gulf Master" lost on January 11th, 1967, in the vicinity of White Islets, Strait of Georgia, B.C.

### Description of Tug "Gulf Master"

Registered Dimensions: 61.8 - 20.7 - 9.3  
Gross Tonnage : 77.66  
Registered Tonnage : 21

### Area to be Searched

All that portion of the bottom of the sea in the general area enclosed by Trail Islands, Mission Point and White Islet where the "Gulf Master" is reported to have foundered. Reference Canadian Hydrographic Service Chart 3577.

### Depths

With reference to Canadian Hydrographic Service Chart 3577, depths up to 600 feet will be encountered.

### Assistance by the Department

All information in the possession of the Department of Transport which might aid in locating the wreck will be made available to the contractor.

### Participation by the Department of Transport

The Department of Transport shall have the option of having a departmental representative in attendance at any time during this search and investigation to inspect or supervise the inspection of any finding of the contractor for the ultimate purpose of determining the cause of loss.

### Equipment, Materials and Services

The contractor shall furnish all equipment and materials for the entire operation, including any shore markers, ranges, etc. and any land requirements necessary.

Suitable accommodation for the Department of Transport representative shall be provided by the contractor when required.

Suitable underwater television camera equipment, monitoring facilities, underwater cameras, lights, etc. necessary for inspection purposes shall be provided when required.

### Labour

The contractor shall furnish all labour and competent supervisors such as navigators, specialists for the complete and thorough search of the vessel.

### Reports

Complete daily reports of all aspects of the search shall be furnished the Department's representative by the contractor.

At the completion of the work, a final report on the work shall be submitted to the Department of Transport.

### Marking

Upon discovery and verification of the vessel, suitable buoys shall be placed as markers indicating the location, and a proper fix established in relation to shore stations shall be made, all by the contractor and to the satisfaction of the Department of Transport