7601

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Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. 2247 *Office No.* H-7601

LOCALITY

State Idaho

General locality Pend Oreille Lake

Locality Clark Fork to Spring Pt.

194 8

CHIEF OF PARTY

E.R.McCarthy

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7601

Form 537
(Ed. June 1946)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER No. H7601

Field No. 2247

State IDAHO

General locality PEND OREILLE LAKE

Locality CLARK FORK TO ~~PEND OREILLE LAKE~~ Spring Pt.

Scale 1:20,000 Date of survey APRIL TO AUGUST 1948

Instructions dated 2 JUNE 1947

Vessel SHORE PARTY - LAUNCH ARK

Chief of party E.R. McCARTHY

Surveyed by E.R. McCARTHY & W.F. DEANE

Soundings taken by ~~ECHO METER~~ graphic recorder, ~~HAND LEAD~~ wire

Fathograms scaled by FIELD PARTY

Fathograms checked by " "

Protracted by STANLEY TARKENTON

Soundings penciled by " "

Soundings in ~~FATHOMS~~ feet at ~~MEAN LOW WATER~~ MEAN WINTER LEVEL, ELEV. 2,048.15'

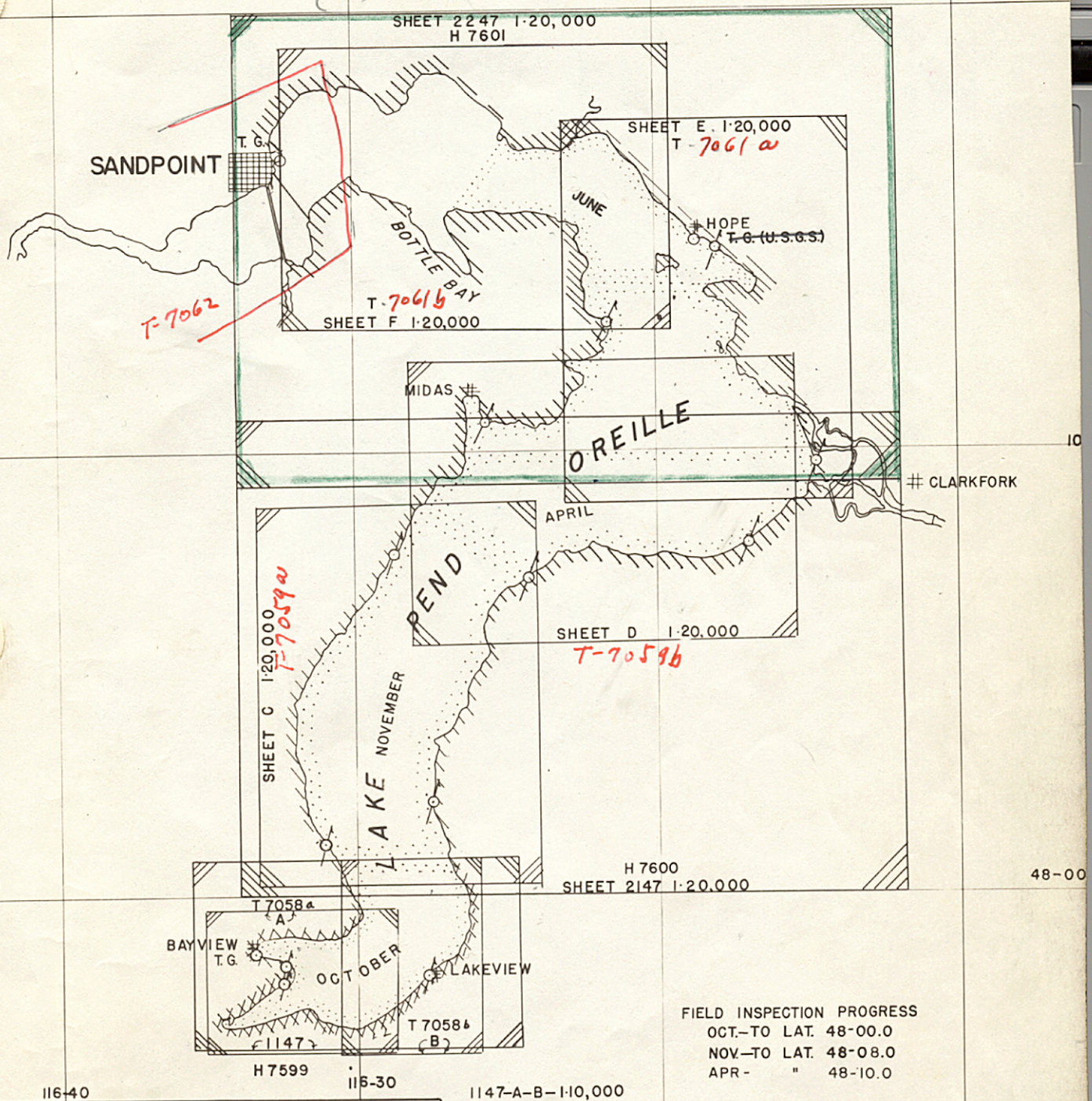
REMARKS: SMOOTH SHEET PLOTTED AT THE NORFOLK PROCESSING OFFICE

there is some reason to question the origin and use of the term "mean" -- note that this term is not used in records of H-7599 & H-7600. See CL 1686/68

11/7/68

U. S. GOVERNMENT PRINTING OFFICE 693019

T-7059b
(GC) T-7061a+b
(GC) T-7062



FIELD INSPECTION PROGRESS
OCT.—TO LAT. 48-00.0
NOV.—TO LAT. 48-08.0
APR- " 48-10.0

LEGEND
HYDROGRAPHY
SHORELINE
GRAPHIC CONTROL
MAGNETIC STATION

U. S. COAST & GEODETIC SURVEY
L O COLBERT — DIRECTOR

ANNUAL REPORT

AKE PEND OREILLE, IDAHO

OGRAPHY & TOPOGRAPHY ONLY

SHORE PARTY PROJECT CS-331
E. R. McCARTHY CHIEF OF PARTY

JULY 1947-JUNE 1948

SCALE 0 1 2 3 4 5 MILES

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET REG. NO. H-7601

LAKE PEND OREILLE, IDAHO

PROJECT CS-331 1948 E. R. MCCARTHY, CHIEF OF PARTY

A. PROJECT

Project CS-331. Instructions dated 2 June 1947, as supplemented by amendment (letter) dated 28 June 1948.

B. LIMITS

Northern section of Pend Oreille Lake as shown on index of sheets attached. Includes GARFIELD, ELLISPORT, BOTTLE and KOOTENAI BAYS.

The work was performed between 27 April and 29 July 1948, with a hydrographic examination of the shoal south of Pearl Island on 11 August.

The sheet joins H-7600 (1948) (Field 2147) on the south.

Progress was impeded somewhat by high water and floating debris in late May and early June.

C. EQUIPMENT

All hydrography was done with a 38-foot standard Navy motor sailer, which was modified by construction of a light cabin and the addition of a remote-control system so that the boat could be operated by one man.

The boat operated out of Garfield Bay and Bailey Boat Pier on the south side of the Sandpoint highway bridge.

Since no sounding was done on the turns, turning data were not ascertained.

All sounding was done with 808-type fathometers—808-A - #58 and 808-J - #114. Trouble was experienced with the phasing head on #58 and with overheating on #114.

D. TIDE STATIONS

A tide gage was located in David Taylor Model Basin Field Station in Bayview and a second on the draw of the Northern Pacific Railroad bridge south of Sandpoint. Since the lake had pool characteristics no time or height corrections were necessary.

E. SMOOTH SHEET

No work has been done on the smooth sheet by field party

F. BASIC CONTROL

Triangulation data were furnished from current surveys by the field party. All signals were obtained from graphic-control sheets T-7060 b, T-7061 a and b, and T-7062. Shoreline applied in W[illegible] 1947-48 1948 OFM

G. SHORELINE

Shoreline was obtained by photogrammetry and plotted by the Washington Office on the control sheets listed above from which it was transferred to the smooth sheet.

The low-water line was determined by hydrography in the lower section of Ellisport Bay and on the north shore of the lake from the Pack River to the west limits of the project. low water and shoreline are identical

The low-water line is indefinite in the vicinity of Kootenai Bay and in the area west of the railroad bridge. Elsewhere it was not practical to locate it. Indef. Shoreline determined by Hydro. and shown as dashed red line.

H. SOUNDINGS

Soundings were taken with an 808 fathometer equipped with inboard and outboard projectors. Vertical casts were taken with a standard hand-machine with power unit attached, and depths measured by a registering sheave using stranded wire.

Sheave No. 344, with a sheave factor of 1.006, was the only sheave used.

A special fresh-water tachometer was used with both the NK-7 and 808 fathometers. Constants are as follows:

	NK-7	808
Calibrated velocity	4,615 ft./sec.	4,730 ft./sec.
" "	1,407 m./sec.	1,442 m./sec.
Sweep speed (fm.)	28.8 rpm/min.	107.5 rpm/min.
" " (ft.)	172.8 rpm/min.	645 rpm/min.
Paper travel (fm.)	0.17"/min.	0.32"/min.
" " (ft.)	1.04"/min.	1.92"/min.

I. HYDROGRAPHIC CONTROL

Position of the launch was located by two angles between three known points and positions plotted at one- to three-minute intervals.

J. ADEQUACY

The hydrographic survey is a basic survey. There was no prior information of the area.

Junction with H-7600 (1947-48) on the south side will be taken up by the Processing Office report.

K. CROSSLINES

Crosslines were about 10% of the mileage. Crossings, after application of the phase corrections to the 808 instruments, were satisfactory.

L. COMPARISON WITH PRIOR SURVEYS

There is no existing chart of this area. Topographic detail, including shoreline and some contours, was published by the U. S. Geological Survey, on a scale of 1:31,680, from data determined by—apparently—a locally controlled topographic survey executed in 1926.

N. DANGERS AND SHOALS

(a) Shoals.

There are but two shoals within the limits of the sheets:

1. Latitude 48° 12.75', longitude 116° 19.~~8~~74'—rocky shoal, least depth ~~23~~24' (23~~1~~al)
2. Latitude 48° ~~16.0~~15.99', longitude 116° 29.~~5~~44'—rocky shoal, least depth 2' (23~~1~~ak)

(This ~~west~~ east shoal is marked by a temporary pile on its ~~east~~ east side, located pos. 83~~8~~aq').

(b) Dangers.

1. Latitude 48° 10.~~3~~15', longitude 116° ~~22.2~~26.25'.

A group of rocks bare 3-5' at datum level were located by topography (photos).

2. Latitude 48° 12.~~7~~67', longitude 116° 19.~~6~~57'.

A snag, or temporary pile, about ~~5~~4' above datum level—this is a marker for the shoal to the northwest.

3. Latitude 48° 16.~~7~~62', longitude 116° 24.~~8~~66' (see index volumes 9 and 21).

This is a tree resting on the bottom, which has been in place for several years. It is very conspicuous

and may be moved as it is about 10-12' above the surface regardless of the lake level.

4. Latitude 48° 15.5', longitude 116° 27.0' (see index Vol. 10)

   This is a tree similar to that described above.

5. Several snags, or trees, apparently aground—were located west of Fisherman's Island and in Kootenai Bay. These were of temporary nature and should not be charted.

6. Latitude 48° 16.5' to 17.6', west of longitude 116° 32' (f' day)

   The area north of the City Pier at Sandpoint was a log pool in previous years. The area covered on f' day is carpeted with logs and is full of shifting "deadheads" (a log with one end on the bottom and the other 6"-18" above the surface). The city of Sandpoint has a project to clean out the area, but at the present rate of progress it will be several years before the area is clear.

   Prior to publication of a chart the Sandpoint Chamber of Commerce should be contacted for the current status of the area.

7. City dock, Sandpoint.

   The new construction partially located by sextant fix on f' day was later plotted on the graphic-control sheet which should be accepted over the sounding record.
   Dock plotted on smooth sheet as shown on T-7062 (1948)

8. Caution note.

   During periods of rising lake level debris stranded on shore is floated and is present in large quantities in the lake. During this period, boats should proceed slowly and cautiously to avoid damage.

O. COAST PILOT INFORMATION.

Coast Pilot report will be rendered separately.

P. AIDS TO NAVIGATION

There are no officially established aids to navigation on the lake. There are a few privately established aids of a temporary nature and flimsy construction.

There are two bridges within the limits of the sheet, with data as follows:

Northern Pacific Railroad bridge—steel swing.

Vertical clearance	36'
North channel clearance	77'
South " "	77'

Bonner County Highway bridge—wooden trestle with single bascule draw.

Vertical clearance	26'
Horizontal "	78'

The above clearances check the values shown in the United States Engineers publication. Vertical clearance is referred to an elevation of 2,048.15'.

Q. LANDMARKS

Report has been submitted. The cupola of the stone building at HOPE (signal OFF), the tower of the coal dock (signal COAL), the railroad draw, and the power company stack are the ~~base~~ best objects in the vicinity.

R. GEOGRAPHIC NAMES

A special report on this subject will be submitted. Filed in Geo. Name Sect.

S. SILTED AREAS

The lake is the gouged out valley of an ancient river bed which was formed by the deposition of a terminal moraine in the western extremity of Squaw and Idlewild Bays during the Wisconsin Age of the Pleistocene glacial epoch.

There are silt deposits in the trough of the valley throughout the whole length of the lake.

The area in the vicinity of the north branch of Clark Fork is heavily silted and deposition is being made south and east of Sheepherder Point.

U. FATHOMETER CORRECTIONS

Velocity, index, and phase corrections were applied to the raw fathometer soundings for the period a (27 April) through v (30 June) days. The bar check was used as a basis of correction after that period.

For velocity corrections the bar check was used only to set the initial. Computed velocity corrections were applied. The index correction (when necessary) was applied to correct the registered initial reading.

Phase corrections have been entered in the same column as the index corrections, but are written in colored crayon.

Velocity, index, and bar-check corrections are appended.

V. SERIAL TEMPERATURE OBSERVATIONS

Instructions for the project (par. 17) specified that repeat bathythermograph observations should be made at stations to be selected by the Chief of Party in conjunction with the civilian officer in charge of the Model Basin Field Stations.

A few observations were sufficient to show that the temperature gradient varied very little in the lake south of the islands so an agreement was made with the field station, which agreement was confirmed by an inspecting officer from the Model Basin at Washington, to reduce the number of observations. After this time only sufficient observations were taken to follow the changes in the gradient. Serial temperatures for the whole project—observations and graphs—were submitted separately.

W. MISCELLANEOUS

The survey was carried west to the beginning of the Pend Oreille River.

Z. TABULATION OF APPLICABLE DATA.

Reports affecting the sheet, which have been filed separately:

Temperature observations and curves.
Computation of index and velocity corrections (to be submitted).

Respectfully submitted

E. R. McCarthy
Chief of Party

ERM/MEK
10 December 1948

Statistics to accompany Hydrographic Survey H-7601 1948
(Field Number 2247)————————————Project CS-331

Launch ARK (BLUE)

Day	Date	Volume	Soundings H-L & W	Positions	Statute miles sounding
	1948				
a	27 Apr.	1	0	55	14.4
b	19 May	1	0	152	29.3
c	20 "	2	0	139	33.9
d	24 "	2&3	0	142	39.4
e	25 "	3	0	130	29.9
f	26 "	3	0	11	3.2
g	7 June	4	1	1	0
h	8 "	4	5	153	26.7
j	9 "	4&5	3	114	24.2
k	10 "	5	1	145	26.1
l	11 "	5&6	1	102	20.6
m	14 "	6	0	63	15.8
n	15 "	6	1	106	23.6
p	17 "	6&7	1	130	29.6
q	18 "	7	2	115	26.7
r	23 "	7&8	5	118	19.2
s	24 "	8	2	136	32.4
t	28 "	9	1	130	33.8
u	29 "	9&10	3	146	33.4
v	30 "	10	1	165	37.1
w	6 July	10&11	0	172	33.3
x	8 "	12&13	0	195	39.1
y	12 "	12&13	1	175	36.1
z	13 "	13&14	0	169	37.8
a a'	14 "	15	6	146	28.4
a b'	15 "	15,16,17	1	169	34.8
a c'	16 "	17	16	59	9.6
a d'	19 "	17	0	66	12.8
a e'	20 "	17&18	0	183	42.0
a f'	21 "	18&19	0	134	~~43.0~~ 14.6
a g'	22 "	19&20	0	164 126	~~28.6~~ 43.0
a h'	26 "	20	4	~~50~~	~~9.4~~ 28.6
a j'	28 "	21	0	~~107~~ 50	~~19.0~~ 9.4
a k'	29 "	21	1	--- 107	~~15~~ 19.0
a l'	11 Aug.	22	4	25	~~45~~
	Totals		60	4193 ~~4138~~	889.3 874.8

Tidal note to accompany Descriptive Report for Hydrographic Sheet H-7601 1948 (Field 2247):

The gages used to control the sheet were located as follows:

David Taylor Model Basin Field Station,
Latitude 47° 58.7', longitude 116° 33.7'
Datum 3.4' on staff

Gage located about 11 miles S.W. of southern limits of survey.

Northern Pacific Railroad bridge, Sandpoint,
Latitude 48° 15.4', longitude 116° 31.6'
Datum 3.0' on staff

Datum for the lake is elevation 2,048.15'

The gages were used interchangeably as there was not over 0.2' difference between them.

Maximum reading on the Bayview gage was 23.4' above the datum.

GEOGRAPHIC NAME LIST

• Anderson Point

Bottle Bay

• Bottle Point

• Camp Bay

~~Chambers Bay~~

Clark Fork
(North Branch)*

• Clark Fork (into SE. part of Pend Oreille)*

• Contest Point

• Cottage Island

• East Hope

• Elliot Bay

• Ellisport Bay

• Fisherman Island

• Fry Creek

• Garfield Bay

• Glengary

• Green Bay

Haley Bay

• Hope

• Hope Point

• Kootenai

• Kootenai Point

• Long Point

• Martin Bay

• Memaloose Island

• Mineral Point

Murphy Bay

• Newman

• Oden Bay

Oden Point

• Owens Bay

• Pack River

• Pack River Flats

• Pearl Island

• Pend Oreille Lake*

• The Peninsula

• Pend Oreille River* (from lake to Columbia)

• Picard Point

• Ponderay

Rocky Point

• Sand Creek

• Sandpoint

• Sheepherder Point

Sourdough Point

Spring Point

• Sunnyside

• Sunrise Bay

Thompson Point

• Trestle Creek

• Warren Island

• White Rock

Several names not preceded by • are O.K., but cannot be identified with available material.

* after name signifies U.S.B.G.N. decision.

Names preceded by • are approved. 11-9-49. L. Heck (See also list on usual form.)

Abstract of velocity, index, phase, and bar-check corrections.

1. Velocity corrections.

Velocity corrections were used on a-v days inclusive as the depths were much too great for the bar check.

Corrections were entered as follows:

0.1	to	30	fathoms
0.2	"	101	"
0.5	"	101	"

Abstract of velocity corrections follow. Calibration speeds for the fresh-water tachometer were:

4,730'/sec. (1,442 fm./sec.) for the 808
4,615'/sec. (1,407 fm./sec.) " " NK-7

a-day 808
27 April

Fathoms			
0	to	6	
-0.1	"	11	
-0.2	"	17	
-0.3	"	24	
-0.4	"	31	
-0.6	"	43	
-0.8	"	55	
-1.0	"	67	
-1.2	"	79	
-1.4	"	92	
-1.6	"	103	
-2.0	"	131	
-2.5	"	158	
-3.0	"	183	
-3.5	over	183	

b-f days 808
17-26 May

Fathoms			
0	to	10	
-0.1	"	21	
-0.2	"	29	
-0.4	"	48	
-0.2	"	59	
-0.8	"	72	
-1.0	"	84	
-1.2	"	96	
-1.4	"	100	
-1.5	"	119	
-2.0	"	150	
-2.5	"	178	
-3.0	over	178	

g-Q days 808
7-18 June

Fathoms			
0	to	4	
-0.1	"	21	
0	"	33	
-0.2	"	48	
-0.4	"	61	
-0.6	"	74	
-0.8	"	87	
-1.0	"	104	
-1.5	"	134	
-2.0	"	164	

r-v days 808
23-30 June

Fathoms			
0	to	3	
-0.1	"	11	
-0.2	"	16	
-0.1	"	27	
0	"	35	
-0.2	"	50	
-0.4	"	62	
-0.6	"	75	
-0.8	"	88	
-1.0	"	103	
-1.5	"	135	
-2.0	"	165	
-2.5	over	165	

2. Index

Bar checks were taken to determine corrections to the instruments for the period a-v days (27 April to 30 June). In general, the velocity correction was applied to the raw sounding, and index determined as follows:

Index correction equals calculated sounding minus bar check registration of that sounding . The calculated sounding is the depth at which the bar should have registered, or the true sounding minus velocity correction.

In theory, the index correction would have been the same for all depths. Actually there were some slight differences. If less than 0.1 fm., the corrections determined by the 5-fathom bar was used. If more than 0.1 fm., then a mean was used. Little weight was given to the 10- and 15-fathom registrations.

The phasing head on fathometer #58 was loose and tended to jump the initial reading when returned to the "A" phase; index corrections of this instrument were determined largely on the initial reading.

Index corrections follow:

a-day, 27 April

Corrections to A phase only pos. 1-39, ∕0.2 fm., pos. 39-43, -0.1 fm., position 44 to end day -0.3 fm.

b-day, 17 May

Corrections pos. 1-87.
Corrections entered to 0.1 fathom, 0 to 0945, ∕0.1 to 1025, ∕0.2 to 1110, ∕0.3 to 1150, ∕0.4 to 1213.
Corrections entered to 0.2 fathom, 0 to 1025, ∕0.2 to 1150, ∕0.4 after 1150.
Corrections entered to 0.5 fathom, 0 to 1200, ∕0.5 after 1200
Corrections pos. 88-152.
Entered on A phase only after 1530, -0.1 under 30 fms., 0 over 30 fms.

c-day, 20 May

Corrections pos. 1-57.
Corrections entered to 0.1 fathom, 0 to 1025, -0.1 to 1025, -0.2 to 1043, -0.3 to 1103, -0.4 to 1122, -0.5 to 1142, -0.6 to 1200, -0.7 to 1220, -0.8 to 1228.

Corrections entered to 0.2 fathom, 0 to 1005, -0.2 to 1043, -0.4 to 1122 -0.6 to 1200, -0.8 to 1228.
Corrections entered to 0.5 fathom, 0 to 1020, -0.5 to 1155, -1.0 after 1155.
Corrections pos. 58-139, after 1515 use -0.1 under 30 fathoms, and 0 over 30 fathoms.

d-day, 24 May

No corrections in morning. Correction of -0.1 fathom to depths under ~~3~~ 30 fathoms after 1500.

e-day, 25 May

Corrections 0 to 1130, -0.1 fm. to 1520, -0.2 after 1520.

f-day, 26 May

No corrections.

g-day, 27 May

No corrections.

h-day, 8 June

Positions 1-19, correction -0.1 fathom - A phase only.
" 20-56, " -0.1 " - depths under 30 fms.
" 56-62, see sounding record.
" 63-109, -0.1 fm. to 1430, -0.2 to 1500, -0.3 to 1530, for depths under 30 fathoms, and -0.2 to 1530 for depths over 30 fathoms.
" 110-153, -0.2 fm. to 1625, and -0.1 after 1625 for depths under 30 fathoms, and -0.2 for depths over 30 fms.

j-day, 9 June

-0.1 fathom for depths under 30 fathoms, -0.2 fathom for depths between 30 and 100 fathoms, 0 over 100 fathoms.

k-day, 10 June

Pos. 1-129, -0.1 fathom under 30 fathoms and -0.2 over 30 fathoms. After pos. 129 -0.2 fathom.

l-day, 11 June

-0.1 fathom to 1023, -0.2 to 1102, -0.4 to 1121, -0.3 to 1215, -0.4 to 1213 for depths under 30 fathoms, -0.4 to 1313 for depths over 30 fathoms, 0 from 1408 to 1430, -0.1 to 1505 for depths under 30 fathoms, and 0 for depths over 30 fm.

m-day, 14 June

Positions 1-29 -0.1 fathom under 30 fathoms, 0 over 30 fathoms,
" 29-42 0 over 30 fathoms
" 42-63 -0.2 fathom for depths under 100 fathoms

n-day, 15 June

Corrections A phase only.
Positions 1-16 -0.1 fathom for depths under 30 fathoms, 0 for depths over 30 fathoms
" 17-27 -0.3 fathom for depths under 30 fathoms, -0.4 for depths over 30 fathoms
-0.3 fathom 1124-1131, -0.2 fathom 1131-1138, -0.1 fm. 1138-1144, 0 1144-1151, ∕0.1 1151-1158, ∕0.2 1158-1204, ∕0.2 1204-1233
" 52-60 0 correction, after position 60 -0.4 fathom

p-day, 17 June

-0.1 fathom 1033-1110, -0.2 1110-1200, -0.3 1200-1254 for depths under 30 fathoms and -0.2 over 30 fathoms, -0.I fathom 1347-1653 for depths under 30 fathoms and 0 for depths over 30 fathoms.

q-day, 18 June

Positions 1-19 -0.1 fathom for depths under 30 fathoms, and 0 over 30 fathoms.
" 19-65 -0.2 fathom for depths under 100 fathoms
-0.2 " 1342-1434, -0.3 1434 end day for depths under 30 fathoms and -0.2 for depths over 30 fathoms.

r-day, 23 June

-0.1 fathom to 1130, -0.2 to 1220, -0.3 to 1311 for depths under 30 fathoms and 0 to 1130, -0.2 after 1130 over 30 fathoms, -0.1 to 1430, 0 to 1437, ∕0.1 to 1444, ∕0.2 to 1450.

s-day, 24 June

-0.1 fathom to 1028 for depths under 30 fathoms, 0 for depths over 30 fathoms
∕0.1 fathom to 1115 " " " " " , 0 " " " "
∕0.3 " " 1125 " " " " " ,∕0.2" " " "
∕0.2 " " 1158 " " " " " ,∕0.2" " " "
∕0.4 " " 1235 " " " " " ,∕0.4" " " "
∕0.2 " 1407-1600, ∕0.3 1600-1650 for depths under 30 fathoms, and ∕0.2 for depths over 30 fathoms
-0.2 fathom 1651 to end of day

t-day, 28 June

0 to 1010 for depths under 30 fathoms, 0 for depths over 30 fms.
-0.1 to 1040" " " " " , 0 " " " " "
-0.2 to 1110" " " " " , -0.2 " " " " "
-0.2 to 1200" " " " " , -0.2 " " " " "
-0.1 " 1230" " " " " , 0 " " " " "
0 " 1303" " " " " , 0 " " " " "
0 1350-1435 " " " " , 0 " " " " "
-0.1 to 1520for " " " " , 0 " " " " "
-0.2 " end of day" " " " " ,-0.2 " " " " "

u-day, 29 June

-0.1 to 1110 and 0 for rest of day for depths under 30 fathoms and 0 all day for depths over 30 fathoms

v-day, 30 June

-0.1 to 0738, 0 to 0946, ∓0.1 to 0954, ∓0.2 to 1011 for depths under 30 fathoms and 0 to 1954, ∓0.2 after 0934 for depths over 30 fms. 0 1015 to 1037, -0.3 1055-1338, -0.1 1355-1530, 0 after 1530 for depths under 30 fathoms and 0 1015-1037, -0.2 1055-1338, 0 1355- rest of day for depths over 30 fathoms.

3. Bar-check corrections.

Beginning with w-day most all corrections were determined with the bar check. Such velocity corrections as were applied were computed in the sounding record.

w-day, 6 July

The bar checks were unsatisfactory, and used the velocity corrections as determined for the period 23-30 June, as follows:

0' 0-9', ∓0.2' 9-22', ∓0.4 22-37', ∓0.6 37-90'

Index correction was applied to machine #58, as follows:

∓0.6' pos. 1-85, ∓0.4' pos. 85-116, ∓0.2 pos. 116-118 and 0 for rest of day.

x-day, 8 July

Pos. 1-5 0' 0-12', -0.2 12-30'
" 6-11 0' 0-30'
" 12-25 0' 0-6', -0.2' 6-18, 0 18-30'
" 26-35 0 0-12', ∓0.2 12-24'
" 35-52 -0.2' 0-17', 0 17-24'
" 52-67 -0.4 0-18', -0.2 18-24'
" 67-87 -0.4 0-5', -0.6 5-20', -0.4 over 20'
" 87-91 -0.6 0-6', -0.8 6-10, -1.0 10-16', -0.8 16-21' -0.6 over 21'
" 92-195 0 0-6', -0.2' 6-15', 0 15-24'

y-day, 12 July

Pos. 1-16 0 0-6', -0.2 6-14', -0.4 14-30', -0.6 over 30'
" 17-53 -0.2' 0-7', -0.4 7-15', -0.6 15-32'
" 53-79 -0.4' 0-8', -0.6 8-16', -0.8 16-32'
" 80-98 -0.6 0-9', -0.8 9-16', -1.0 16-32'
" 99-154∓0.2 0-12', 0 12-24', -0.2 24-32'
" 155-175 0 0-9', -0.2 9-27', 0 over 27'

z-day, 13 July

Pos. 1-22 0 0-10', -0.2 10-20'
" 22-62 -0.2 5-10', -0.4 10-16', -0.6 over 16'
" 62-85 -0.2 0-6', -0.4 6-9', -0.6 9-12', -0.8 over 12'
" 86-155 0 0-5', -0.2 5-7', -0.4 7-9', -0.6 9-12', -0.8 12-20'
" 156-169 -0.2 4-6', -0.4 6-8', -0.6 8-10', -0.8 10-12'

a'-day, 14 July

Pos. 1-64 0 0-6', -0.2 6-11', -0.4 11-16', -0.6 over 16'
" 65-67 0 0-9', -0.2 9-15'
" 68-82 ∕0.2 0-9', 0 9-24'
" 82-92 ∕0.4 0-11', ∕0.2 11-40'
" 93-146 0 all depths

b'-day

Pos. 1-44 0 all depths
" 45-49 0 0-7', -0.2 7-16', -0.4 16-30'
" 100-169 0 0-7', -0.2 7-13', -0.4 13-21', -0.2 21-37', 0 37-60'

c'-day, 16 July

Pos. 1-5 -0.4 9-27', -0.2 27-36', 0 over 36'
" 6-7-8 see record
" 9-15 0 0-54'
" 15-22 0 0-54' Index correction -0.2
" 22-28 0 0-54' " " -0.4
" 28-36 0 0-54' " " 0
" 37-59 ∕1.0 0-54'

d'-day, 19 July

A phase 0 0-9', -0.2 9-42'
B " ∕0.2 35-42'

e'-day, 20 July

Pos. 1-88 0 0-6', -0.2 6-42'
" 89 B phase ∕0.5'
" 89-41 0 0-20', -0.2 20-50'
" 141-183 -0.2 0-20', -0.4 20-50'

f'-day, 21 July

Pos. 0 0-24'
" 40-61 -0.2 all depths
" 6-90 -0.4 " "
" 91-92 0 0-16', -0.2 over 16'
" 93-134 A phase -0.2 0-16', 0 16-27' ∕0.2 27-55'
B " ∕1.0 35-42', ∕0.8 42-60', ∕0.6 60-80'

g'-day, 22 July

Pos. 1-82 A phase 0 0-55'
B " ±0.8 35-50'
" 1-82 Index
Pos. 1-15 0, pos. 15-69½ -0.2, pos. 69½-81½ -2.4
" 81½-82 -0.2
" 83-102 0 0-12', ±0.2 12-21', ±0.4 21-32' ±0.6 over 32'
" 103-139 -0.2 0-13', 0 13-23', ±0.2 23-35', ±0.4 over 35'
" 139-164 -0.4 0-13', -0.2 13-23', 0 23-33', ±0.2 over 33'

h'-day, 26 July

Pos. 1-112 A phase 0 0-20', ±0.2 20-36', ±0.4 36-55'
B " ±1.2 all depths
" 112-126 A " 0 0-.3', ±0.2 13-23', ±0.4 23-34', ±0.6 34-55'
B " ±1.8 all depths

j'-day, 28 July

0 0-15', ±0.2 15-22', ±0.4 22-27', ±0.6 27-31', ±0.8 31-35', ±1.0 over 35'

k'-day, 29 July

Pos. 1-68 A phase 0 0-10', ±0.2 10-15', ±0.4 15-18', ±0.6 18-21', ±0.8 21-24', ±1.0 24-30', ±1.2 30-55'
B " ±2.0 all depths

" 69-72 See record p. 39
" 73-91 A phase -1.0' 0-55'
B " 0 35-90'
C " ±1.8 70-105'
" 92-107 See record p. 72.

l'-day, 12 August

±0.2 0-16', ±0.4 16-22', ±0.6 22-26'
±0.8 26-33', ±1.0 33-55'

4. Phase corrections.

Phase corrections, where applicable, have been entered in the same column as the index correction. Generally the phase corrections were applied in conjunction with the velocity correction.

Values are as follows—feet or fathoms:

	No. 114	No. 58
Corrections to "A" phase	0	0
" " "B" "	±1.0	0
" " "C" "	±2.5	-1.1
" " "D" "	±3.8	-2.5

MEMORANDUM BY CHIEF OF PARTY

The work of this survey—both field and office—was done under my immediate supervision.

The survey is considered complete with no additional work necessary. The boat sheet and records were examined daily.

The types of personnel available for fathometer reader, recorder, and draftsman did not meet the normal specifications, but were the best available. The information in the records is complete and legible, but hardly neat.

In plotting the inshore lines which parallel the beach, the course column must be used.

In the area north of the city docks at Sandpoint there are a large number of logs on the bottom and also drifting about the area. These are shown on the fathograms and notation has been made in the records when they could be identified. Before the sheet is completed a check should be made with the Sandpoint Chamber of Commerce as to the status of their log-clearing project.

Except for the log off Bottle Point and that used as hydrographic signal"LONE" the snags and logs located are of temporary nature.

E. R. McCarthy
Chief of Party

ERM/MEK
10 December 1948

LIST OF SIGNALS H-7601

TRIANGULATION STATIONS

AMP - CAMP, 1947
BEA - BEAVER, 1947
BRI - PEND OREILLE LAKE, N.P.R.R., DRAWBRIDGE, 1947
COAL - PEND OREILLE LAKE, N.P.R.R., COAL DOCK, TOWER, 1947
COU - COUGAR, 1947
CUL - CULVER, 1947
DAS - MIDAS, 1947
ERR - BERRY, 1947
FIE - GARFIELD, 1947
FIS - FISHER, 1947
GRO - GROUSE, 1947
HEI - HEINE, 1947
HUB - DOVER, 1948
MEM - MEMALOOSE, 1947
NUB - SPRING, 1948
RAL - MINERAL, 1947
REN - WARREN, 1947
RES - TRESTLE, 1947
SHE - SHEEPHERDER, 1947
SLA - SLATE, 1947
SUN - SUNNY, 1947
TAC - SANDPOINT MOUNTAIN STATE POWDER CO., STACK, 1947
TEN - TENAI, 1947
VID - DAVID, 1947

TOPOGRAPHIC SIGNALS

From Field Topographic Sheet No. T-~~7060.~~ 7059b

Ach	Ear	Jap	Nav	Rag	Tum	Zup
Bah	Eat	Kee	Oak	Rip	Vic	
Ced	GAME	LAKE	One	Sun	Wee	
Daw	Hag	Lew	Pin	Tan	Xor	
Day	Ice	Min	Qui	TENT	Yip	

From Field Topographic Sheet No. T-7061 (a):

Act	Cod	Few	His	Job	Man	Odd	Rim	Tel	Yot
Add	Coo	Fez	Hod	Joe	Mar	Off	Rio	Try	Yup
Ado	Deb	Fin	Ida	Ken	Meg	Old	Road	Vad	Zap
Aha	Dim	Gag	Int	Key	Met	Ore	Sag	Vah	Zig
Alf	Dip	Gam	Ito	Kid	Mid	Oti	Sal	Vex	
Bat	Doc	Gas	Its	Kim	Mil	Pal	Sav	Vim	
Big	Dun	Gem	Ivy	Lam	Nay	Par	Set	Wag	
Bob	Ebb	Geo	Jar	Lay	Med	Pet	Shep	War	
Boj	Ego	Got	Jaw	Leo	Nil	Pie	Sic	Wed	
Car	Elm	Hat	Jay	Let	Nip	Ram	Sig	Wen	
Cat	Fat	Hem	Jib	Lid	New	Rat	Sir	WREN	
Caw	Fed	Hid	Jig	Mal	Obi	Rev	Tap	Yam	

TOPOGRAPHIC SIGNALS

From Field Topographic Sheet No. T-7061 (b):

Maw	Nip	Net	Rub	Rat	Jug
Ohm	Orb	Rus	Owl	Lod	~~Lit~~ Ilt
Peg	Pit	Sol	Nix	Jed	Hon
Rig	Tub	Shu	Pol (2)	Ini	Gin
Sax	Val	Tal	Nea	Har	Fly
Tom	Wen	Vut	Mug	Gef	End
Via	Sir	Whe	Lop	Fan	Dog
Yet	Yol	And	Gut	Eda	Cow
Ale	All	But	Imo	Dot	Bru
Axe	Ced	Cor	Hop	Cha (2)	Ant
Ber	Den	Dee	Gob	Bil	Zoo
Cha (1)	Eak	Eus	Foe	Aut	Yea (Live)
Cop	Fer	Ful	Don	Wha	Wan
Dar	Get	Gon	Cry	Voo	Vet
Emo	Hel	Ina	Bum	Sis	Ump
Fix	Lew	Jud	Ann	Coy	Tax
Gig	Min	Way	Rix	Pix	Xat
Hor	Nav	Vol	Pol (3)	Nit	Las
Joy	Ort	Tox	Nul	Mop	
Liz	Pol (1)	She	Mit	Log	

Note: duplication of Names on T-7061(b) - Topo sheet Not available so arbitrary Names Not assigned—

From Field Topographic Sheet No. T-7062:

Lar	Log	Box	Sue	Cue
Ora	Eon	Art	Put	
Pox	Bon	Win	Nuy	
Ric	Now	Say	Mum	
Sho	Arm	Pog	Lux	
Tot	Wig	Nul	Guy	
Una	Soy	Mop	Sab	
Vic	Pro	Low	Mug	
Azo	Mat	Hug	Wit	
Doo	Lop	Fro	Lug	
Eva	Got	Erg	Hum	
Cut	Foy	Pot	Ask	
Sop	Pof	Dud	Gus	
Pup	Dot	Bus	Bum	
Mid	Cry	Ave	Fey	

HYDROGRAPHIC STATIONS

Bib - Vol. 8, page 2, 41
Dol - Vol. 5, page 2
Gro - Vol. 9, page 26, 27, 28, & 29
Lone - Vol. 9, page 71
Lone - Vol. 10, page 5
Lone - Vol. 21, page 57
Org - Vol. 9, page 27 & 29

ADDENDUM

To Accompany

HYDROGRAPHIC SMOOTH SHEET H-7601 (Field No. 2247)

Survey H-7601 was smooth plotted by the Norfolk Processing Office. The projection was made by hand. All topographic control and detail was transferred from bromide copies of field topographic sheets, furnished by the Washington Office.

Discrepancies

Lat. 48°-17.43' Long. 116°-29.88' 6½ foot sounding (line 4-5x) not confirmed by surrounding hydrography. } Fath. speed in error. Sdg. not plotted.

Lat. 48°-10.0' Long. 116°-25.2' Shoreline omitted from smooth sheet, from signals DAW to KEE. Soundings falling on shore apparently indicate displacement of shoreline or control. (See positions 4, 5, 7 and 9d). } soundings adjusted to shoreline.

Respectfully submitted,

Hugh L. Proffitt

Hugh L. Proffitt
Cartographer

Norfolk, Virginia
17 October 1949

Approved and forwarded.

Earl O. Heaton

Earl O. Heaton
Supervisor, SE Dist.

GEOGRAPHIC NAMES

Survey No. H-7601

1 Name on Survey	On Chart No. A	On previous survey No. B	On U. S. quadrangle Maps C	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
Idaho			(for title)						USGB	1
Pend Oreille Lake			"	"					"	2
										3
Names are listed beginning at southwest corner and following shore of										4
lake around to southeast corner. Since sheet has not been inked, see										5
attached marked copy of a section of Kaniksu Nat. For. Map for placement										
of names:										6
Garfield Bay										7
Green Bay										8
Long Point										9
Mineral Point										10
Camp Bay										11
Elliot Bay										12
Pearl Island										13
Picard Point										14
Glengary										15
Martin Bay										16
Sunrise Bay										17
Anderson Point										18
Bottle Point										19
Bottle Bay										20
Newman										21
Contest Point										22
Fry Creek			(not Slagle Slough)							23
Pend Oreille River		(lake	to Columbia River)						USGB	24
Sandpoint										25
Sand Creek		(not Sandpoint Creek)								26
Pomeray										27

GEOGRAPHIC NAMES

Survey No. H-7601

2 Name on Survey	On Chart No. A	On previous survey No. B	On U. S. quadrangle Maps C	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
Kootenai										1
Kootenai Point										2
Oden Bay										3
Fishermen Island	(island only at highest stages of water, but name well established)									4
Sunnyside										5
Pack River										6
Pack River Flats										7
Trestle Creek										8
White Rock										9
Hope										10
East Hope										11
Warren Island										12
Ellisport Bay										13
Cottage Island										14
Hope Point										15
Owens Bay										16
Lemaloose Island										17
Sheepherder Point										18
Clark Fork									USGS	19
Spring Pt.										20
Murphy Bay			Names underlined in red are approved. 11-9-49 L Heck							21
Haley Bay										22
										23
										24
										25
										26
										27
										M 234

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7601

Records accompanying survey:

Boat sheets 1; sounding vols. 22; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls 16 Envel.;

special reports, etc. 1 Cahier Fathometer Corrections

1 Envel. of Phasing Tests

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet		4193.
Number of positions checked		98.
Number of positions revised		1.
Number of soundings revised (refers to depth only)		22.
Number of soundings erroneously spaced		6.
Number of signals erroneously plotted or transferred		0.
Topographic details	Time	82. hrs.
Junctions	Time	7. hrs.
Verification of soundings from graphic record	Time	36. hrs.

Verification by Stephen Boe Total time 581. hrs. Date 3-16-50

Reviewed by L W Zeskind Time 28 Date 11-21-50

M-2332-1

RAC

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. June 1937

TIDE NOTE FOR HYDROGRAPHIC SHEET

November 7, 1949

~~Division of Hydrography and Topography~~

Division of Charts: R. H. Carstens

Plane of reference approved in
22 volumes of sounding records for

HYDROGRAPHIC SHEET 7601

Locality Lake Pend Oreille, Idaho

Chief of Party: E. R. McCarthy in 1948
Plane of reference is 2048.2 feet above Sea-level datum.
7.4 ft. on tide staff at Bayview
13.6 ft. below B. M. 1 (1947)

3.3 ft. on tide staff at Sandpoint
32.2 ft. below B. M. U8 (1914)

Condition of records satisfactory except as noted below:

E. C. McKay
Section
Chief, ~~Division~~ of Tides ~~and Currents.~~

U. S. GOVERNMENT PRINTING OFFICE 756675

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY REGISTRY NO. H-7601

FIELD NO. 2247

Idaho, Lake Pend Oreille, Clark Fork to Spring Point
Surveyed in April - August, 1948 Scale 1:20,000
Project No. CS-331

Soundings: Control:

808 Fathometer Sextant fixes on shore signals

Chief of Party - E. R. McCarthy
Surveyed by - E. R. McCarthy and W. F. Deane
Protracted by - S. Tarkenton
Soundings plotted by - S. Tarkenton
Verified and inked by - S. Rose
Reviewed by - I. M. Zeskind, 22 November 1950
Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline and signals originate with T-7059b (1947-48), T-7061a and b (1948) and T-7062 of 1948, and are discussed in the Descriptive Report. The shoreline shown by dashed red lines was sketched in the Washington Office from zero depths. The shoreline thus shown falls in areas of indefinite shoreline on the topo sheets.

2. Sounding Line Crossings

Depths at crossings are in very good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated.

The bottom is fairly even except for sharp gradients inshore and in several offshore areas where benches and flats drop sharply to deeper lake depths. A deep with depths of 180 to 940 ft. extends from the southern limit of the sheet northward to Pack River.

4. Junctions with Contemporary Surveys

An adequate junction was effected with H-7600(1948) on the south. The survey extends to the Project limit on the west. No prior charting of the area is available for comparison.

5. Comparison with Prior Surveys

There are no prior surveys of the area by this Bureau.

6. Comparison with Chart 6170 (Latest print date 9/25/50)

A. Hydrography

The charted hydrography originates with the present survey prior to review. Only minor differences of 1-2 ft. between the charted and present survey soundings were noted. Attention, however, is directed to the revised 2 ft. RK. sounding on the present survey in Lat. 48°15.98', Long. 116°29.45', which falls 80 meters southeastward from the charted 4 ft. sounding. The present survey supersedes the charted information within the common area.

B. Aids to Navigation

There are no aids to navigation within the limits of the present survey.

7. Condition of Survey

a. The field plotting was accurately done.

b. The sounding records and Descriptive Report are complete and comprehensive.

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

9. Additional Field Work Recommended

This is an excellent basic survey and no additional field work is recommended.

Examined and approved:

H. R. Edmonston
Chief, Nautical Chart Branch

R. W. Knox
Chief, Division of Charts

L. S. Hubbard
Chief, Section of Hydrography

W. M. Scaife
Chief, Division of Coastal Surveys

NAUTICAL CHARTS BRANCH

SURVEY NO. H-7601

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
4-19-50	6170	C.R. WITTMANN	Before ~~After Verification and~~ Review
7-17-50	6170	Earl M. Bragnje	~~Before~~ After Verification and Review did revised only from the review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.