

6797
WIRE DRAG

6797
WIRE DRAG

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Wire Drag Hydrographic
Project
Field No. CS-282 Office No. H6797
WIRE DRAG

LOCALITY

State North & South Carolina
General locality York Co. S.C.
Mecklenberg Co. N.C.
Locality Catawba Reservoir

1943
CHIEF OF PARTY
Lt. Max Ricketts

LIBRARY & ARCHIVES

DATE March 20, 1943

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET
WIRE-DRAG

REG. NO. H8797
WIRE DRAG

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

Field No. H8797

REGISTER NO.

State NORTH AND SOUTH CAROLINA WIRE DRAG
General locality MECKLENBERG COUNTY, N.C. - YORK COUNTY, S.C.
Locality CATAWBA RESERVOIR
Scale 1:10,000 Date of survey Feb. 18 - Mar. 4, 1943
Vessel Chartered Launches
Chief of Party Max G. Ricketts
Surveyed by Max G. Ricketts, Harry D. Reed, Jr., Charles M. Anstead
Protracted by Field party
Soundings penciled by "
Soundings in ~~fathoms~~ feet
Plane of reference Shoreline (Elev. 564.3')
Subdivision of wire dragged areas by Field party
Inked by Field party
"A + D Sheet"
Verified by prepared by Harold W. Murray
Instructions dated March 20, 1942 and February 9, 1943 19
Remarks: Covers two boatsheets

011
H8797

WIRE DRAG

DESCRIPTIVE REPORT

to accompany

CATAWBA RESERVOIR, N. C. & S. C.

WIRE-DRAG SHEET

PROJECT CS-282.

INSTRUCTIONS:

Director's instructions for project CS-282 dated March 20, 1942; his letter 22/MEK, 1990, dated February 9, 1943, and telegram dated March 5, 1943.

CONTROL:

Control on the southern sheet of this reservoir is based on the air-photo positions of four objects, signals POW, NOD, STEEL, and HIGH. The first two of these were shown on the boat sheet furnished by the Washington Office, the others being taken from the pictures in the field. The objects used for control have been circled in red on the boat sheet. Control was carried from these objects by sextant angles to cover the signal location for this sheet. Objects shown on the boat sheet furnished for this work were either cut in or occupied for a position in the sextant control where possible, gables of a few additional buildings which show on the pictures, but not on the boat sheet, were also located as signals. The signal names of the objects included in the sextant control are as follows: TOW, TWIN, BARN, OUT, SHED, USE, BAR, BOW, RED, CHIM, TED, EBB, TAB, BOAT, ROOF, FEZ, JOY, CUP, cupola on two other buildings in same group as signal CUP, and AGE. A displacement of the shoreline amounting to 400 meters was found at signal JOY, the north end of the sheet. When plotting the sextant control for the field sheets it became apparent in the first few signals above the dam that the displacement would be extreme. For the field work all signals are in relation to the four circled in red on the boat sheet; no adjustment was attempted to swing this work to the other objects listed above. Shoreline was adjusted to the sextant locations of the signals, and a new sheet prepared for the guide launch. This tentative field adjustment is shown by a purple dashed line on the ~~boat sheet~~ ^{East sheet} accompanying this sheet. The sextant intersections were satisfactory and it is believed that the majority of the discrepancies will be found in the plot from the air photos. It is realized that the basic control for the sextant control is weak, signal STEEL, as transferred, does not check too well, and the base is extremely short to expand over the distance covered. An examination of the pictures furnished does show very poor agreement in alignment of roads and power lines; it also appears that the shoreline as transferred is in some cases shoal area outline rather than true shoreline.

Example is in
North part of
sheet between
GRAM + SUB

Control for the northern sheet is based on the air-photo positions of four objects, signals NORD, SUR, JOY, and HUT. The ~~first~~ two were shown on the boat sheet furnished by the Washington Office, the others being taken from the pictures in the field. As on the southern

sheet cuts were taken to objects shown on the pictures to aid in the adjustment, these being signals EX and SHE, the north chimney of a house near EX, the chimney of a house and gable of a barn near LUG, and signals EWE and NED transmission towers at the northern end of the signal location. The signal location and shoreline agree very well in the area of the wire-drag work; a displacement of about 100 meters was found at the extreme northern end where the power line crosses. It is not believed that any adjustment will be necessary as the drag work has not been carried to the extreme northern end.

SURVEY METHODS: Standard wire-drag practice has been followed. A 16-foot and an 18-foot launch were hired to tow the drag, and a 17-foot launch was hired as a tender. A 1500-foot drag was used through "G" Day, and a 1200-foot drag for the balance of the work. The ground wire was 1/8 inch, intermediate buoys carried 35 pounds while the end buoys carried 70 pounds.

DANGERS: On the southern sheet the runway area is excellent, being relatively clear to project depth of elevation 545 feet in all except the southern one and one-half miles. This southern section is foul, and is also restricted further by shoal projecting points.
Reached when set at 19 ft.

The northern sheet offers very restricted area due to shoals and numerous trees located. All obstructions are explained under wire-drag groundings.

Very little drift timber was noted on this reservoir, although at the beginning of signal building the reservoir was spilling.

WIRE-DRAG GROUNDINGS: Southern Sheet.

<u>Position</u>	<u>Depth (feet)</u> <u>Elevation</u>	<u>Location</u>	<u>Remarks</u>
12-13 D	19 (Drag Depth)	110m. E of CAN	grounding, not cleared
15c	548 16	130m NE of ELL	Bottom hard, not cleared.
16c	551 15	95m NXE of ELL	Bottom hard, detached sounding cleared 555. 9' (near edge of strip)
14c	545 19 (Drag Depth)	230m SSE of GUN	Pulled off tree, set at 545 19' in 44 feet, cleared 548: 11, 13 + 16
17c	548 16 (Drag Depth)	255m SxE of GUN	Pulled off, set at 545 in 42 ft. in group of 4 trees, cleared 553 13
1d	552 12	270m SxE of GUN	Tree in 39 feet in group of 4, cleared with 11 touched and pulled free at 553 13
12c	545 19 (Drag Depth)	275 200m S of GUN	Pulled off, set at 545 in 41 feet, cleared at 548. 11 Another ground halfway between N and 1, pulled free before fix could be obtained To close to above to plot, cleared with 11

WIRE-DRAG SOUNDINGS: Southern Sheet continued.

<u>Position</u>	<u>Depth (feet)</u> <u>Elevation</u>	<u>Location</u>	<u>Remarks</u>
13c	547 17	²⁶⁰ 270m S of GUN	Tree in group, in ⁴¹ 44 feet, cleared at 553. 11
2d	558 6	170m SSW of HOT	Stub in ¹³ 17 feet, not cleared.
3d	552 12	150m SSW of HOT	Bottom hard, not cleared.
4d	551 13	180m N of KEN	Tree in ³⁹ 43 feet, cleared ¹¹ 553.
5d	554 10	170m NE of NEW	Tree in group in ⁴⁰ 44 feet, not cleared. 9'
6d	554 10	180m NE of NEW	Do. Too close to above to plot
10c	554 10	190m ENE of NEW	Do. cleared with 6'
11c	552 13	195m ENE of NEW	Tree in group in ⁴² 45 feet, not cleared. 6' (near edge of strip)
6c	547 17 (Drag Depth)	170m NNE of NEW	Pulled free of tree in ⁴³ 46 feet, set at ¹¹ 547, cleared at 551. 13
7c	547 17 (Drag Depth)	165m NNE of NEW	Pulled free of tree in ⁴² 47 feet, set at 547, cleared at 551, too close to above to plot, cleared with 13'
8c	549 15	⁵ 180m NNE of NEW	Tree in ⁴¹ 44 feet, cleared 551. 13
---	545 19	150m NNE of NEW	Drag touched and pulled free set at 545, cleared 547. 13
4c	549 15	50m ENE of NEW	Bottom hard, not cleared.
13b	544 30	⁵ 80m N of NEW	Detached sdg., cleared 545. 13
3c	545 19 (Drag Depth)	180m NNW of NEW	Pulled free, set at ¹⁹ 545 on "C" Day, cleared at 545 ¹⁹ on "B" Day, in ⁴³ 46 feet.
9c	558 6	110m ESE of JAR	Bottom hard, not cleared.
5c	556 8	90m E of JAR	Bottom hard, not cleared.
2c	544 20	65m SE of JAR	Detached sdg., hard, cleared 555 ⁹
1c	552 13	50m S of JAR	Bottom hard, cleared 555. ⁹
7d	549 15	295m N of OLD	Bottom hard, not cleared.

WIRE-DRAG SOUNDINGS: Southern Sheet continued.

WIRE DRAG

<u>Position</u>	<u>Depth (feet)</u> <u>Elevation</u>	<u>Location</u>	<u>Remarks</u>
12b 20D	554 10 19 (Drag Depth)	340m N of OLD 190m SW of RAT	Bottom hard, not cleared. Grounded, pulled free, cleared 19'
8b	550 14	310m NNE of TWIN	Bottom hard, not cleared.
9b	546 18	190m NE of TWIN	Bottom hard, not cleared, at "F" buoy on start.
10b	546 18	220m NE of TWIN	Bottom hard, not cleared, at "4" buoy on start.
11b	547 17	255m NNE of TWIN	Bottom hard, at "3" buoy on start, cleared 558.6
21D	6	220m NE " "	Grounding, not cleared
21D	12	190m ENE " "	inclined section here
8d	549 14	360m E of ISLE	Stub, bottom 547, not cleared.
9d	553 13	300m E of ISLE	Bottom hard, not cleared, at "F" buoy on reverse.
5b	549 17	300 ²⁸⁵ m WSW of US	Tree in 44 ⁴⁰ feet, not sure of top, touched and pulled free on "E" Day at 545 , cleared 548.16
6b	545 19 (Drag Depth)	305m WSW of US	Pulled off, set at 545 ¹⁹ , slid over at 545 , on "E" Day, cleared 548.16 Plotted 17 sdy at 5b above
7b	546 18	310m WSW of US	Tree in 44 ⁴⁰ feet, touched and pulled free at 545 on "E" Day, cleared 548.16
1e	545 19	325 ³ m W of US	Tree in 43 ³⁷ feet, cleared 548.16
2e and 3b	550 14	450m SW of FIG	Tree in 42 ³⁸⁺³⁹ feet, cleared 553.11
2b	545 18 (Drag Depth)	420 ³ m SW of FIG	Pulled off at 545 ¹⁸ in 43 ³⁹ feet, not cleared.
3e	550 14	230 ² m SE of INK	Bottom hard, not cleared.
4b	553 11	175m E of INK	Bottom hard, detached sdy. on shoal near E.L., not cleared.
1b and 4e	545 18 (Drag Depth)	300m NW of GOB	Pulled off at 545 ¹⁸ in 38 ³⁴ feet, unable to hit obstruction with lead. Also pulled free in same vicinity on "E" Day! ¹⁹ Cleared 547.
5e	549 15	135 ² m SE of ROSS	Bottom hard, not cleared.

WIRE DRAG

WIRE-DRAG SOUNDINGS: Southern Sheet continued

<u>Position</u>	<u>Depth (feet)</u> <u>Elevation</u>	<u>Location</u>	<u>Remarks</u>
---	545 18 (Drag Depth)	160m ESE of ROSS	"F" buoy grounded and pulled free, set at ¹⁸ 545, bottom, not cleared. _{m 32'}
1f	547 18	395m ESE of PIN	Bottom hard, not cleared.
2f	547 18	380m NNE of PIN	Pulled free of stub, bottom ¹⁹ 546, not cleared. plotted 18'
3f	547 18	355m NNE of PIN	Bottom hard, not cleared.
5a	546 18	230m East of MOP	Bottom soft, not cleared.
6a	546 18	310m ENE of MOP	Stump, bottom ²¹ 543, not cleared.
6e	548 16	480m NNE of MOP	Bottom hard, "F" aground on start, not cleared.
7a	547 17	590m NNE of MOP	Bottom hard, not cleared.
4a	549 15	640m NNE of MOP	Bottom hard, not cleared.
3a	550 14	630m NNE of MOP	Bottom hard, not cleared.
2a	545 19 (Drag Depth)	250m SSW of MUT	Pulled off at ¹⁹ 545, bottom 540, cleared 548.16, in 24'
1a	547 17	385m WNW of BOAT	Stump, bottom ²¹ 543, cleared ¹⁴ 550.
---	550 14	¹¹⁵ 190m NNW of MUT	Touched and pulled free at 550. _{not cleared}
17-18A	545 19	80m WSW of HOG	Touched and pulled free at 545. _{not cleared}

WIRE-DRAG SOUNDINGS: Northern Sheet.

4f	546 19'	145m E of NORD	Bottom hard, not cleared.
5f	546 19'	140m ExN of NORD	Bottom soft mud, not cleared.
6f	549 16'	145m E of NORD	Stub, bottom ^{18'} 547, not cleared.
7f	545 20'	350m E ^s of NORD	Bottom hard, a ground between 2 and 3 pulled free due to strong wind, cleared 548.16'
8f	545 20'	440m ExN ^s of NORD	Bottom hard, grounding after the ^{16'} others had been freed, cleared 548
1j	546 18'	305m ESE of MIN	Stump, bottom ^{22'} 544, not cleared.
	16 (Drag Depth)	460m E of NORD	grounding, touched and pulled free, not cleared

WIRE-DRAG SOUNDINGS: Northern Sheet continued.

Position	Depth(feet) Elevation	Location	Remarks
1g	Two 19 ¹ (Drag Depth) 547 17	260m. ESE of MIN 160m ESE of BUD EKS	Grounding, touched and pulled free, not cleared Stub, bottom 548 ¹⁸ , cleared 548-9 ^{not}
2g	547 17	310m NE of BUD	Tree in 4 ³ feet, cleared 548 ¹⁶
3g	549 16	430m SSE of OAK	Stub, bottom 548 ¹⁶ , cleared 552 ¹³
4g	549 16	400m SSE of OAK	Bottom mud, cleared 552 ¹³
5g	549 16	320m SSE of OAK	Bottom mud, cleared 552 ¹³
7g	551 13	330m SE of OAK	Stub, bottom 550 ¹⁴ , not cleared.
8g	552 12	250m ESE of OAK	Bottom hard, not cleared.
9g	548 16	280m ESE of OAK	Bottom hard, grounded on reverse, not cleared.
6g	549 15	250m SSE of MET	Bottom hard, cleared 555 ⁹
10g	549 15	210m ESE of GAR	Tree in 27 ²⁴ feet, not sure of top, cleared 550 ¹⁴
---	548 14	2 ⁸ 0m SW of PUG	Touched and pulled free set at 548 ¹⁴ , previously cleared 548 ¹⁶ inclined section here of 14+16'
20-22	548 16	240m W of PUG	Touched and pulled free set at 548 ¹⁶ , previously cleared at 548 ¹⁶
---	548 16	2 ⁵⁰ 260 m " of PUG	Touched and pulled free set at 548 ¹⁶ , previously cleared at 548 ¹⁶
11g	549 15	160m SxE of POT	Bottom hard ^M , not cleared.
12g	551 13	1 ⁸⁰ 0m SxE of POT	Stub, bottom 550 ¹⁴ , "N" slid through mud prior to grounding, not clear- ed.
13g	548 16	190m SxE of POT	Bottom mud, "1" drifted aground after stop, not cleared.
1h	550 13	270m WSW of POT	Bottom hard, detached sdg. on "1" aground at start, cleared 552 ¹¹
2h-33h			Detached soundings to define limits of shoals ahead of drag.
34h	549 14	280m NNE of PIG	Stub, bottom 545 ¹⁸ , cleared 551 ¹²

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WIRE-DRAG SOUNDINGS: Northern Sheet continued.

WIRE DRAG

<u>Position</u>	<u>Depth (feet)</u> <u>Elevation</u>	<u>Location</u>	<u>Remarks</u>
35h	548 15 (Drag Depth) 260m	NNE of PIG	Pulled off at 548 ^{15 in 20'} , cleared 551 ¹² .
36h	553 10	415m SSE of BOB	Tree in 27 ²³ feet, cleared 555 ⁸ .
37h	549 14	315m SSE of BOB	Bottom mud, cleared 555 ⁸ .
38h	551 12	380m SSE of BOB	Tree in 23 ¹⁹ feet, cleared 555 ⁸ .
39h	556 7	380m SSE of BOB	Tree in 27 ²³ feet, not sure of top, cleared 557.7 .
40h	558 4	275m NNW of FORD	Tree in 46 ⁴² feet, cleared 559 ⁵ .
41h	548 15	280m NE of BED	Bottom hard, "3" aground while freeing drag, cleared 559.5 .
18 H	--- 8 (Drag Depth) 210m	ESE of BED	Touched and pulled free, slope section, appr. elev. 552 , cleared 559.5 .
17-18H	15 (Drag Depth) 230m	W of Ford	Grounding, touched and pulled free, cleared 5'

COMPARISONS WITH PREVIOUS SURVEYS: No previous surveys.

GENERAL INFORMATION:

A foul area at ~~elevation 548~~^{15'} is indicated on the northern boat sheet east of signal FARM; attempted starts in this area with the drag at ~~548~~¹⁵ had to be abandoned. A part of this area has been cleared ~~at 552 with 11 + 5'~~.

Attempted starts in the area between signal SIG and NEAR, on the southern sheet, proved the area too shoal for a deeper drag than ~~555~~⁹; the tender took frequent soundings ahead of the drag, and it was set to ~~547~~¹⁹ as soon as these soundings indicated sufficient water.

The Duke Power Company supplied this party with the water levels during the period of drag work.

WATER-LEVEL DATA:

The normal level is considered as the top of the dam or elevation 570 feet. This reservoir has a possible draw-down of 15 feet, the usual fluctuation being about 6 feet below spillway elevation of 570 feet. The superintendent of the dam states that the customary maximum draw-down is not in excess of 10 feet. The operations office of the Duke Power Company, in Charlotte, stated that in times of heavy load conditions, as at present, the reservoir will be maintained within the 6-foot range. For convenience in tabulating water-level data, this company considers the spillway elevation of 570.0 feet as 100 feet; the water levels furnished are on that basis; 100.0 equals 570.0 feet elevation.

WATER-LEVEL DATA: Continued.

WIRE DRAG

<u>Date</u> 1943	<u>Elevation</u>	<u>Depth below</u> <u>Top of Dam(570')</u>	<u>Date</u> 1943	<u>Elevation</u>	<u>Depth below</u> <u>Top of Dam (570')</u>
February 15	98.7	-1.3	February 25	97.4	-2.6
" 16	98.4	-1.6	" 26	97.3	-2.7
" 17	97.8	-2.2	" 27	97.0	-3.0
" 18	97.9	-2.1	" 28	97.0	-3.0
" 19	97.7	-2.3	March 1	96.9	-3.1
" 20	97.5	-2.5	" 2	96.5	-3.5
" 21	97.7	-2.3	" 3	96.2	-3.8
" 22	97.7	-2.3	" 4	96.2	-3.8
" 23	97.7	-2.3	" 5	96.3	-3.7
" 24	97.4	-2.6			

CORRECTIONS AND ADDITIONS TO CHECK SHEET PROJECT "AFIRM:"

Boats available: The majority of small power boats on this reservoir have been placed in storage. In case of emergency several might be available from storage in the boathouses of Mr. William F. Joyner, operator of the service station and storage at the Buster Boyd Bridge, which divides the two sheets. These boats are stored with him by owners residing in Charlotte and vicinity.

Communication facilities: There is no telephone in the service station at the bridge; the nearest available telephone is located in a farmhouse about 3 miles from the bridge, and just off the highway to Charlotte.

STATISTICS:

<u>Date</u> 1943	<u>Day</u>	<u>Volume</u>	<u>Drag</u> <u>Length</u>	<u>Positions</u>	<u>Statute</u> <u>Miles</u>	<u>Soundings</u>
February 18	A	1	1500	53(7)	3.3	6
" 19	B	1	1500	64(13)	4.0	10
" 20	C	1	1500	42(17)	1.9	11
" 22	D	1	1500	59(9)	2.3	9
" 23	E	1	1500	38(6)	1.5	5

WIRE DRAG

STATISTICS: Continued

<u>Date</u> 1943	<u>Day</u>	<u>Volume</u>	<u>Drag</u> <u>Length</u>	<u>Positions</u>	<u>Statute</u> <u>Miles</u>	<u>Soundings</u>										
February 24	F	1	1500	17(8)	0.6	7										
" 26	G	1	1500	59(13)	2.6	13										
" 27	H	1	1200	34(41)	1.7	40										
March 4	J	2	1200	28(1)	1.7	1										
<table border="0" style="width: 100%;"> <thead> <tr> <th></th> <th><u>Positions</u></th> <th><u>Statute Miles</u></th> <th><u>Soundings</u></th> <th><u>Area</u></th> </tr> </thead> <tbody> <tr> <td>Totals:</td> <td>394(115)</td> <td>19.6</td> <td>102</td> <td>2.6 square statute miles</td> </tr> </tbody> </table>								<u>Positions</u>	<u>Statute Miles</u>	<u>Soundings</u>	<u>Area</u>	Totals:	394(115)	19.6	102	2.6 square statute miles
	<u>Positions</u>	<u>Statute Miles</u>	<u>Soundings</u>	<u>Area</u>												
Totals:	394(115)	19.6	102	2.6 square statute miles												

Respectfully submitted,

Max G. Ricketts
 Max G. Ricketts,
 Lieut., C. & G. Survey.

(101)

H-6797 (1943) W.D.

Catawba Reservoir, North and South Carolina

1. This report is submitted in lieu of the standard review form.
2. The work complies with the intent of the specific instructions.
3. The field party referred all soundings and drag data to elevations referenced to the top of the dam (elev. 570), thus: bottom 540; sounding 548; cleared 550. Inasmuch as the shoreline was referenced to an intermediate plane of 564.3 feet, it was thought best to convert all hydrographic data to the same plane as the shoreline. This agrees with the statement of the Duke Power Company which is that even in times of heavy load conditions, the reservoir will be maintained within a range of 6 feet.

The office work consisted of entering "so called" tide reducers (water level changed each day), reducing all sounding data to the plane of 564.3 feet, constructing depth diagrams in the sounding records and preparing the Area and Depth Sheet.

Considerable redragging was required in order to obtain clearance depths over the numerous shoals and trees. Preparation of the A. & D. Sheet was a practical necessity because of the numerous strips required in the same areas.

The two smooth sheets are labeled "North Half" and "South Half." The A. & D. Sheet combines these as one sheet.

Submitted by Harold W. Murray, February 22, 1944

Approval
Robert W. Knox

Robert W. Knox
Chief, Surveys Section

H6797

WIRE DRAG	Remarks	Decisions
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GEOGRAPHIC NAMES

Survey No. **H6797**

WIRE DRAG
Name on Survey

	On Chart No.	On previous survey No.	On U. S. quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List	
A,	B,	C,	D	E	F	G	H	K	
North Carolina									1
South Carolina									2
Mecklenberg County N.C.									3
York County S.C.									4
Catawba Reservoir									5
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MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
DESCRIPTIVE REPORT
PHOTOSTAT OF

} No. H **H6797**
No. T WIRE DRAG

{ received March 20, 1943
registered March 22, 1943
verified
reviewed
approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
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RETURN TO

82	R.W.Knox
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R.W.K

APPENDIX - PHOTOGRAPHIC DATA FOR TRANSCONTINENTAL SEAPLANE ROUTE
(CHARLOTTE AREA)

Verticals	Project	project	project	project	OXFORD	RHODHISS
Flight track	Afirm 016 T	BAKER 306T	CAST 309 T	DOG 141 T	project EASY 262 T	274 T
Airspeed	146 mph	161 mph	148 mph	149 mph	148 mph	146 mph
Ceiling	U	est 9000	est 9000	est 9000	U	U
Sky	-	Sol. ocst	sol. ocst	sol. ocst	-	-
Atmosphere	Hazy	very hazy	very hazy	very hazy	hazy	hazy
Filter	A 25 red	Minus blue	minus blue	minus blue	A 25 red	same
Film	East. sp. pan	same	same	same	same	same
Light	Fair	flat	flat	flat	Fair	
Stop	f6.3& f.8	f.4	f.4	f.4	f.4 & f5.6	
Exposure	1/150	1/100	1/100	1/100	1/150	
Remarks			2 fill-in runs 245 T.	1 fill-in run 212 T.	1 fill-in run 032 T	1 fill in run 342 T
Altitude (corrected for temp. of air col.	7425	7485	7385	7175	7855	7990
Altitude of lake (normal)	570	624	510	300	935	995
Altitude of lake this date	564.3	605	491	300	928.6	991.3

ORDER OF USING FILM (VERTICALS)

RPROJECT "AFIRM" Rolls # 1,2,3,complete. 1st 55 exp. on roll #4. 40 exp. after #38 on roll #5.

PROJECT "BAKER" Roll # 4 after exp. #55 except last 28 exp.

Project "CAST" Last 28 exp. on roll # 4 and first 33 exp. on roll # 5

Project "DOG" The 55 exp. after #33 on roll #5.

Project "EASY" All of roll #6. The last 41 exp. on roll #5.

RECAPITULATION OF EXPOSURES (VERTICALS)

Roll #1, 2, 3. PROJECT "AFIRM"

Roll # 4 Exp. 1 - 55 Project "A". #56 - last 28, project "B"
last 28 exp. project "C"

Roll #5 Exp. 1 - 33, project "C". Exp. 34 - 88, project "D"
exp. 89 - 129, project "A". Exp. 130 - end, Project "E"

Roll #6 Project "E".

CHARLOTTE AREA
SLANTS (Seperate negatives already developed)

PROJECT "AFIRM"	NEGATIVES 18 to 158	(TR "A")
PROJECT "BAKER"	" 18 to 58	(TR "B")
PROJECT "CAST"	" 18 to 68	(TR "C")
Project "DOG"	" 18 to 38	(TR "D")
PROJECT "EASY"	" 18 to 158	(TR "E")
PROJECT "MISE"	" 18 to 108	(TR "MISC")

BLOW UP THE FOLLOWING SLANT NEGATIVES TO AID IN LAYING UP MAP

PROJECT TR "A"	18
" " "B"	18
" " "C"	18
" " "D"	18
" " "E"	S3 - 86 - 811

COMMENTS - This body of water appears to be ideally suited as a base or stopping point on a transcontinental seaplane route. Its outfitting appears to require the minimum of outlay. It is readily accessible by fast roads to a first class Army base where all services would be available, including repair, photographic, hospitalization, etc. Its distance is such as to be well within the range of the most modestly ranged service seaplane. A secondary radio range is available at Charlotte. With co-operation of the CAA it could be re-oriented to pass one leg (probably the west leg) over or very near the landing area. It is believed that this reservoir could be used as an alternate basing point or alternate landing place for east coast patrol planes caught by weather. It is believed to be sufficiently large to permit night landing in safety by use of floating bouy lights marking a landing strip. The simplest way of fueling would appear to be by truck from a cleared portion of the beach, ~~and~~ without attempting to haul the plane out. (the Pan-American system should be ideal). This would obviate the necessity of a permanent station.

WARNING The water is opaque (red silt) and depth perception is exceedingly difficult even on a windy day.

A

with notes on A to E.

TRANSCONTINENTAL SEAPLANE ROUTE
CHARLOTTE AREA

This party established its first base at Charlotte, N.C. on 6 December, 1941. A preliminary flight was made that afternoon to scout possible sites for seaplane bases. It was found that within a radius of 48 statute miles from the new Army Air Base at Charlotte, that there were five bodies of water capable of being developed into a seaplane base. These five bodies are as follows:

CATAWBA RESERVOIR located on the Catawba River 199 degrees true distance 14 miles from the Army air base. This reservoir is owned and operated by the Duke Power Company of Charlotte, N.C. for power purposes. The bearing and distance given is to the dams.

HIGH ROCK RESERVOIR located on the Pee Dee river 057 degrees true distance 47 miles from the Army air base. This reservoir is owned (or leased) by the Aluminum Co. of America and is operated by that company to produce power to operate their plant at Badin, N.C.

BADIN or THE NARROWS is located on the Pee Dee river 075 degrees true distance 48 miles from the Army air base. This reservoir is also owned and operated by the Aluminum Co.

TILLERY is located on the Pee Dee river bearing 091 degrees true from the Army air base distance 48 miles. This reservoir is owned by the North Carolina Power Co. and is used for power purposes. (Raleigh, N.C.)

OXFORD is located on the Catawba river 349 degrees true distance 44 miles from the Army air base. This reservoir is owned by the Duke Power Co and is operated for power, it is closely connected to

RHODHISS which is located on the Catawba river 322 degrees true distance 48 miles from the Army air base. It is also operated by the Duke Power Co. of Charlotte, N.C.

These reservoirs have been labeled Project "AFIRM" to "Easy" inclusive; OXFORD AND RHODHISS being classed as one project due to their proximity (project "E").

The Army air base at Charlotte extended the courtesies of their photographic laboratory to us which aided us greatly, as obliques

taken and developed greatly aided the mapping.

All of these reservoirs are capable of being used by aircraft of the PB2Y size. Planes of the PB2Y size could utilize all under proper wind conditions and a modicum of care in handling. The logical place to obtain services for all of these reservoirs is at the Army Air Base which has been recently commissioned, at Charlotte. At that base are tank trucks for fuel and oil which could reach any area in not over three to four hours. In order to make a regular stop of any of these lakes it would be desirable to provide a designated spot on each for servicing. This could be accomplished by using the Pan-American system of handling thier seaplanes; wherein the plane makes a bouy and is then handled by lines from the bouy to the beach. It would be highly impracticable to attempt to use beaching gear except in an emergency. On all of these lakes there are roads which lead to the waters edge (roads which were submerged when the reservoir was filled) and these could be utilized to service the planes from a tank truck.

Due to thier being located within a fifty mile radius it appears that the most logical choice would be CATAWBA reservoir for this area. The recommended operating area and anchorage is only eight miles from the air field. Facilities; berthing, messing, communications, access, repairs, hospitalization, radio, weather, photography, etc., are all available in a half hours ride. While the area is somewhat narrower than some of the individual reaches of the other reservoirs, it is amply to safely operate, it is believed, 18 to 24 PB2Y type seaplanes. This reservoir has the added advantage of having areas available for landing with any direction of wind.

It is suggested that this area be considered for use by coastal based patrol type planes in cases of emergency.

Inclosed is a detailed report on each. Enlarged oblique photos of each area ~~xxxx~~ are also being forwarded. Further obliques (at 10,000 and 2000 feet) showing each reservoir from different directions, are being forwarded to the Operations Department, Naval Air Station, Anacostia, (see Meeker, Y 1/c)

the recommended landing areas which is too low to be negotiated by any type of seaplane. No driftwood was observed and none is encountered except during spring freshets. The dams and reservoirs furth up the river serving to strain the water coming downn

Aerial obstructions - There are numerous power lines at the lower end of the reservoirbut none that should be of serious menace to aircraft. The right-of-ways- are well defined and cleared. The wires are at or slightly above the level of the tree tops surrounding. No power wires span the reservoir proper except for one unuseable arm on the west side of the lake and in the immediate vicinity of the power house is another set of wires. (see photos) The country surrounding is quite level or gently rolling. There are no high hills or other obstructions in the immediate vicinity which would interfere with aircraft operations. Approaches from all directions are feasible and safe, even over the high tension wires due to their low height.

Height of surrounding terrain - Top of trees estimated at not over 100 feet from the present lake level.

Best anchorages - dependant on the wind. For access to facilities the area in the vicinity of the bridge appears best.

Best location for planting bouys - same as above.

Sheltered lees - available fro winds of any direction and of any reasonable velocity, in vicinity of surrounding wooded areas.

Character of the bottom - Mud, red clay, and silt. The reservoir was cleared of trees prior to flooding.

Personnel accomodations - None at present. Nearest accomodations at Army Air Base, Charlotte for any reasonable number. There are several club houses on the lakes edge such as Shriners, Elks, Boys Camp, etc which might be utilized by advance notice. Messing facilities available at Army Air Base.

Communication facilities - Telephone at dam. Telephones in private residences. Telephone at service station at bridge. Teletype and aerological facilities available at Army Air Base, in addition to Army Radio.

Seasonal fluctuations of water level.- water is kept at normal (top of spillway) at all times possible and will only be down at times when there is a scarcity of rainfall (as at present.). The lake CAN be drawn down 15 ft in emergencydrought conditions.

Length of take-off runs available - 7000 to 23,000 ft in length. (see photo) These figures were taken from the Engineers plan map.

Photographic data - see appendix (Charlotte area)

TRANSCONTINENTAL SEAPLANE ROUTE - PROJECT "AFIRM"

Project Designation - TR "A" Date 7 December, 1941.
Location - Lat. 35 - 01 to 35 - 11 N. Long. 81 - 00 to 81 - 05W
Located on the CATAWBA RIVER. (see Dept. of Com. Sectional map "CHARLOTTE").
Nearest town - CHARLOTTE, N.C. 8 miles NE and ROCKHILL, N.C. 7 miles S.
Local Name - CATAWBA
Prevailing wind - According to the Weather Bureau at Charlotte there is no pronounced prevailing wind in this locality. A NE or SW wind has a slightly greater percentage than wind from any other direction (15%).
Minimum depth of water - Dam - 70 ft. 10 miles up 40 ft. 20 miles up 20 ft. (The above figures were obtained from the Engineer in charge and were taken from a profile map of the reservoir. This ~~might~~ depth must be corrected for silting (unknown) and is the depth of water in the center of the former channel of the Catawba river. Further this depth of water is based on normal height of water in the reservoir. On this date the water was 5.7 ft. below normal. Normal is considered as being at the top of the dam and with water spilling.)
Current velocity - negligible.
True altitude above sea level - normal height 570 ft.
Aircraft servicing facilities - none at lake. Nearest facilities are at the Army Air Base, Charlotte
Access by highway - nearly any portion of the lake is accessible by good roads - many paved. U.S. Highways # 49 and 21 are the best. Numerous dirt roads lead to the water for use by private residences (mostly summer cottages and lodges)
Docks - Numerous private landings in vicinity of private residences about the lake
Boats available - none except private pleasure craft. There are a great many of these - many of which are motor boats. In the summer there are many more than were apparent at this time of the year.
Character of beaches - Mud and red clay. At normal water line the vegetation comes down to the water. Trees are cut back from the water's edge for a distance of 15 feet according to the statement of a company official but may have grown back since reservoir was filled.
Water obstructions - None observed except a few scattered tree trunks in isolated portions of the reservoir. These were all close inshore. There is a bridge at the upper end of

Surveys Section (Chart Division)

HYDROGRAPHIC SURVEY NO. **H6.797**

H6797 } *Two sheets:*
North and
South
WIRE DRAG

Records accompanying survey:

Boat sheets ⁴...; sounding vols. ¹...; wire drag vols. ³....;
 bomb vols. ⁰...; graphic recorder rolls ⁰....;
 special reports, etc. *Sketch Book, Sextant Controls, 11 sheets.....*
add. Sextant Control, Photostat of Project 'Affirm'

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

Number of positions on sheet	.....	496
Number of positions checked	.....	50
Number of positions revised	.....	5
Number of soundings recorded	.....	102
Number of soundings revised (refers to depth only)	.....	4
Number of soundings erroneously spaced	.....	✓
Number of signals erroneously plotted or transferred	.....	✓
Topographic details	Time	✓
Junctions	Time	✓
Verification of soundings from graphic record	Time	✓

Verification by *H.W. Murray*..... Total time *43 hrs.* Date *2/22/44*.

A+D Sheet
 Review by Time *16 "* Date *2/22/44*
 2