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DEPARTMENT OF COMMERCE AND LABOR

COAST AND GEODETIC SURVEY

O. H. TITTMANN, Superintendent

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SURVEY OF OYSTER BARS

SOMERSET COUNTY MARYLAND

DESCRIPTION OF BOUNDARIES AND LANDMARKS AND REPORT
OF WORK OF UNITED STATES COAST AND GEODETIC SUR-
VEY IN COOPERATION WITH UNITED STATES BUREAU OF
FISHERIES AND MARYLAND SHELL FISH COMMISSION

By C. C. YATES

CHIEF OF COAST AND GEODETIC SURVEY PARTY
ASSISTANT, COAST AND GEODETIC SURVEY

WASHINGTON
GOVERNMENT PRINTING OFFICE
1908

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DEPARTMENT OF COMMERCE AND LABOR

U.S. COAST AND GEODETIC SURVEY

O. H. TITTMANN, Superintendent

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DEPARTMENT OF COMMERCE AND LABOR

Document No. 94

COAST AND GEODETIC SURVEY

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LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,
Washington, June 29, 1908.

SIR: I have the honor to transmit herewith the report of the officer detailed from the Coast and Geodetic Survey to cooperate with the Bureau of Fisheries and the Maryland Shell Fish Commission in surveying the oyster bars of the State of Maryland, and certain technical results which are necessary for the interpretation and use of the plats of the survey made by the Government.

This work has been done under the provisions of the act of Congress entitled "An act to authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shellfish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland," approved May 26, 1906, and of the acts of Congress making appropriations for sundry civil expenses of the Government for the fiscal years ending June 30, 1907, 1908, and 1909.

Respectfully,

O. H. TITTMANN, *Superintendent.*

To Hon. OSCAR S. STRAUS,
Secretary of Commerce and Labor.

CERTIFICATION.

ANNAPOLIS, MD., *June 25, 1908.*

The following publication is certified to contain correct technical descriptions of all boundaries and landmarks established in the waters of Somerset County by the Maryland Shell Fish Commission in cooperation with the United States Coast and Geodetic Survey.

C. C. YATES,
Chief of Coast and Geodetic Survey Party,
Assistant, Coast and Geodetic Survey.

ANNAPOLIS, MD., *June 25, 1908.*

Examined and certified to be correct.

WALTER J. MITCHELL,
CASWELL GRAVE,
BENJAMIN K. GREEN,
Maryland Shell Fish Commissioners.
SWEPSON EARLE,
Hydrographic Engineer.

NOTE.—As required by law, certified copies of this publication and of the charts of the natural oyster bars of "Somerset County and adjacent waters" were filed in the office of the clerk of the circuit court of Somerset County and in the office of the Board of Shell Fish Commissioners, at Annapolis, on July 1, 1908.

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SURVEY OF OYSTER BARS, SOMERSET COUNTY, MD.

INTRODUCTION.

PUBLICATIONS.

The preparation of publications relating to the survey of the oyster bars, crab bottoms, and clam beds of Maryland has been divided between the Government and the State in accordance with the laws ^a authorizing the work and the natural division of the surveying operations of the cooperating forces.

The publications prepared and issued by the Government under the direction of the Superintendent of the Coast and Geodetic Survey consist of a series of charts and a technical report for each county surveyed.^b The charts show all legal boundaries of oyster bars, crab bottoms, and clam beds within the adopted boundaries of the waters opened up for leasing with each county, and the location of all landmarks (Coast and Geodetic Survey triangulation stations) used as a foundation for the delineation of these various boundaries. The technical report gives technical and legal descriptions of all oyster bar and other boundaries, and descriptions of all landmarks shown on the charts, and includes the report ^c of the representative of the Coast and Geodetic Survey in charge of the work of that Service in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission. These charts and technical reports are prepared and certified for file with the courts and the Commission, as required by the laws of the State, and contain all information necessary to make a permanent record of the work of the Commission and the Government for all future requirements of the courts, or for any resurveys that may become necessary.

The part prepared and issued by the State under the direction of the Shell Fish Commission consists of an annual report ^d of all the operations of the Commission performed under the provisions of the laws of Maryland,^e including results of biological and economic oyster investigations, methods and results of the hydrographic survey of the boundaries of oyster bars and crab bottoms, the administrative report and financial statement of the Commission, information relating to oyster culture, methods of sur-

^a See Appendix A for laws relating to the cooperation of the Coast and Geodetic Survey and Bureau of Fisheries with the Maryland Shell Fish Commission.

^b These charts and technical reports can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C. The publications ready for issue are those of Anne Arundel and Somerset counties. Those of Wicomico and Worcester counties are now being prepared.

^c See page 16 and the progress map attached to this publication.

^d These reports can be obtained by application to the Shell Fish Commission, Annapolis, Md. They are issued annually in October, and the first report is now available for distribution.

^e See Appendix D for an extract from the "First Report of the Maryland Shell Fish Commission," giving a concise summary of the "Haman Oyster Culture Law."

veying and leasing of oyster lots, and much other important matter of legal and scientific value.

These two sets of publications are planned and arranged to supplement each other without unnecessary duplication, and when combined they form a complete report of operations, methods, and results of the work of both the Government and State.

COOPERATION OF THE COAST AND GEODETIC SURVEY.

The work of the Coast and Geodetic Survey, as the name of the Service indicates, includes a survey of the coasts of the United States made on a geodetic basis. This has involved the gradual construction of a great framework of interstate triangulation for use as a foundation for detail hydrographic and topographic surveys, from which there has been compiled and published a complete set of charts of the coasts of the United States, including all waters of Maryland where oysters grow. This existing triangulation, hydrography, and topography is essential for a correct and practical survey of natural oyster bars; and it being one of the fundamental functions of the Coast and Geodetic Survey to furnish such data, the cooperation of the Coast and Geodetic Survey with the Bureau of Fisheries and the Maryland Shell Fish Commission is a practical and natural development of Government work leading to the conservation and increase of the supply of food.

COOPERATION OF THE BUREAU OF FISHERIES.

The Bureau of Fisheries has cooperated with the Coast and Geodetic Survey and the Maryland Shell Fish Commission principally as an advisor in matters relating to the biological and economic survey of oyster bars and the methods to be employed for that purpose.^a A steam launch, rowing boat, and certain apparatus have also been furnished.

The primary function of the Bureau of Fisheries is to increase the productiveness of marine and fresh waters by such measures as may be best suited to the purpose, and the services rendered in connection with the survey of the oyster bars of Maryland are strictly in line with the fundamental law under which it acts. In certain States other than Maryland similar work has been conducted by the Bureau acting independently, the same ends being attained at greater expense to the Government.

GENERAL REMARKS.

A brief account of the particular surveying operations which constitute an "oyster survey" as now being carried on in Maryland will assist in the interpretation of records contained in the technical part of this report, and will be of interest to the many who may not understand the necessity for the great amount of work being done or its complicated character.

To those familiar with surveying methods on open waters the necessity for the various operations performed are evident, especially when it is known that the boundaries of the public oyster bars and of the private lots leased for purposes of oyster culture must be surveyed and charted with the greatest attainable accuracy. To others it will be

^a Hon. George M. Bowers, Commissioner of Fisheries, has detailed for this service Dr. H. F. Moore, Assistant, Bureau of Fisheries.

sufficient to state that the actual experience gained from oyster surveys in other States has proven that to accurately locate and permanently establish oyster boundaries as is now being done in Maryland is necessary if endless dissatisfaction and future litigation are to be avoided.

Such refinement of survey work as demanded by the conditions of an oyster survey when carried on at considerable distances offshore can only be obtained by the use of a system of triangulation as a framework or foundation. Therefore, a triangulation survey including the permanent marking of the positions of landmarks with monuments and a record of the descriptions of their locations for future recovery is a necessary operation of a complete oyster survey.

The technical records which established the relation between the offshore oyster boundaries and triangulation landmarks are sufficient for the requirements of engineers in making resurveys, but do not supply the needs of others who are interested in the same boundaries by reason of their occupation as oystermen concerned as to the public oyster bars, or oyster culturists concerned as to the barren bottoms. For these it is necessary to have the charts of the survey show the relation of the shore line and other topographic features to the boundaries of the public oyster bars and private oyster farms. Therefore, a topographic survey is a necessary operation of a complete oyster survey.

In the settlement of the important question of what is, or what is not, a natural oyster bar, and in the consideration of bottoms to be selected for purposes of oyster culture, information as to the depth of water and the character of the bottom is required. Therefore, a hydrographic survey is a necessary operation of a complete oyster survey.

Consequently, the necessary components of a satisfactory foundation for a complete oyster survey are the three classes of survey operations technically named triangulation, topography, and hydrography, or, stated in another way, the foundation of a practical oyster survey includes the surveying operations usually followed by the Coast and Geodetic Survey leading up to the preparation and publication of navigational charts.

Having obtained this cartographic survey for a foundation, partly by new work and partly from records of previous work of the Government, the combined operations ^a making up an "oyster survey" are completed by superimposing on this foundation special surveys and investigations pertaining particularly to oysters or other shell fish.

The special surveys pertaining to oysters furnish information as to the location and outline of oyster-shell bottoms and are carried on by the sounding boat party in addition to their usual hydrographic work.^b This operation consists of a record of the character of vibration of a wire and chain apparatus which drags over the bottom. The vibrations or lack of vibrations indicating the presence or absence of shells.

The special oyster investigations ^c consist of the actual determination of the kind and quantity of oysters on the bottom, and such economic and biological studies of the supply of oyster food, density of water, character of the bottom, and other important

^a See Appendix C of this publication for "Statistics of results of combined operations of the Government and State."

^b See pages 104 to 123 of "First Annual Report of Maryland Shell Fish Commission."

^c See pages 30 to 67 and 129 to 199 of "First Annual Report of Maryland Shell Fish Commission."

matters as affect the growth of oysters. In this work the oyster investigation stations are located and buoyed by the hydrographic party while engaged in the survey of the oyster-shell limits. They are selected with the view of obtaining characteristic data which can be used for the interpretation of the recorded vibrations of the chain apparatus at all other points covered by the survey.

The actual surveying operations and oyster investigations having been completed for any one county, there still remains technical work of nearly equal magnitude to that described.^a This work consists of the preparation of charts and technical descriptions of boundaries and landmarks for record and publication by the Government, the manufacture and planting of the "State buoys" at all corners of the oyster-bar boundaries, the preparation of that part of the annual report of the Commission covering the oyster investigations, the making of the leasing charts and finished projections, and finally the survey and record of the boundaries of oyster lots leased from the State by private individuals for the purposes of oyster culture.

From the foregoing account it can be seen that a complete oyster survey properly conducted so as to answer all practical requirements of the present and permanency of results for the future is a very complicated affair, involving many lines of surveying and other scientific work, and requiring the professional services of experts in the various operations of cartographic surveying and shell-fish investigations.

REPORT OF THE WORK OF THE COAST AND GEODETIC SURVEY.

INSTRUCTIONS.

The two following letters, together with the laws^b of the United States relating to the subject, constitute the "instructions" received by the chief of the Coast and Geodetic Survey party engaged on work in connection with the Maryland Shell Fish Commission. They are short and definite, but furnish ample authority and leeway for all legitimate development of the cooperation of the Government and the State in the survey of oyster bars. The "free hand" permitted by these orders, together with the aid and many valuable suggestions received from the officers of the Survey at Washington, has proved very beneficial to the work, and is greatly appreciated.

DEPARTMENT OF COMMERCE AND LABOR,
OFFICE OF THE SECRETARY,
Washington, June 2, 1906.

SIR: In reply to your letter of May 28, requesting me to designate officers of the Coast and Geodetic Survey and of the Bureau of Fisheries to cooperate with the State of Maryland in making survey of and locating the natural oyster beds, I have the honor to inform you that Mr. C. C. Yates will be designated to cooperate on the part of the Coast and Geodetic Survey as soon as Congress makes the provisions of the act effective by providing an appropriation for the purpose.

Respectfully,

LAWRENCE O. MURRAY, *Assistant Secretary.*

His excellency Hon. EDWIN WARFIELD,
Governor of Maryland, Annapolis, Md.

^a No mention is made here of the large amount of administrative work of the Commission, which is greatly complicated and increased by the economic and political effect of the oyster-survey operations on many thousands of people whose interests are more or less involved.

^b For these laws see Appendix A.

DEPARTMENT OF COMMERCE AND LABOR,
COAST AND GEODETIC SURVEY,

Washington, July 3, 1906.

SIR: Upon the receipt of these instructions you will surrender the command, accounts, etc., of the steamer *Endeavor* to the Hydrographic Inspector. * * *

As soon as this transfer is completed you will enter upon the duties of Coast Survey representative on the Shell Fish Commission of Maryland.

You will consult the commissioners, prepare a programme of work, and submit estimates in the usual form.

You are authorized to come to Washington for consultation from time to time as may be necessary.

Very respectfully,

O. H. TITTMANN, *Superintendent.*

Capt. C. C. YATES,

U. S. C. and G. S. Steamer Endeavor, Baltimore, Md.

ORGANIZATION.

The organization of the party has remained practically unchanged and consists of the chief and the necessary triangulators, computers, and draftsmen.

EQUIPMENT.

The equipment for the work of the party has been ample and satisfactory. The large living and office quarters furnished the Government on the Maryland Shell Fish Commission house boat *Oyster* have been very convenient for the work, besides facilitating efficient cooperation with the surveying and oyster investigation parties of the State. In addition to the accommodations on the *Oyster* the Coast and Geodetic Survey party has had the constant use of the large steam launch *Inspector* and several other boats furnished by their own Service, and the occasional use of the Bureau of Fisheries launch *Canvasback*^a and the steamer *Governor McLane*^b of the State fishery force.

The greater part of the equipment of instruments for the operations of both the Government and State have been furnished by the Coast and Geodetic Survey and consist of all necessary theodolites, levels, sextants, drafting instruments, hydrometers, etc., required for all field and office work.

CHRONOLOGICAL STATEMENT OF WORK.^c

On June 20, 1907, the "Charts of Natural Oyster Bars" and report^d of "Survey of Oyster Bars" for Anne Arundel County were issued and filed, and the survey records and reports for that county have been filed in the archives of the Survey at Washington.

In addition to this work, a Coast and Geodetic Survey signal-building party was engaged in the erection of triangulation signals in Somerset County from May 2 to June 25 in cooperation with a signal-building party of the Shell Fish Commission.

^a By courtesy of Dr. H. F. Moore, U. S. Bureau of Fisheries.

^b By courtesy of Capt. James A. Turner, commanding.

^c The field and office work relating to Somerset County is so intermixed with that of Wicomico County that this statement includes part of the work of the latter county.

^d See this report for an account of the work from July 3, 1906, to June 20, 1907.

From June 25 to November 6, when the field work in Somerset and Wicomico counties was practically completed, the usual routine of field and office work was followed without material interruption except that resulting from the moving of the house boat *Oyster* from Crisfield to Manokin River on July 13, then to Piney Island on August 27, and to Wicomico River, on August 30, where she remained until her removal to Nanticoke River on September 30.

From this latter date the work in Wicomico County predominated, and when the field surveys were practically completed on November 6 the entire party left by rail for Worcester County, it being impracticable to move the house boat to the waters of that locality.

At the close of the survey work in Worcester County in the last part of December, office work relating to Somerset and Wicomico counties was actively commenced at Baltimore^a and was continued without material interruption until March 23, 1908, when a subparty went to Worcester and Somerset counties to finish some details of field work in those sections required for the preparation of the technical reports and oyster charts.

The very large amount of work of computation and drafting necessary to make the results of the survey of the previous season available for publication was nearly completed on May 2, when it was transferred to the Government quarters on the house boat *Oyster*, which left Baltimore on the same day with the party and outfit for her anchorage off Solomons Island, in the Patuxent River.

The active field work in Calvert County dates from May 2, but from that time until the filing of this report and the oyster charts of Somerset County the chief of party, in addition to his regular field duties, was frequently at Baltimore and Washington to look after their final preparation for publication.

STATISTICS.^b

Landmarks and triangulation signals erected.....	60
Monuments planted to mark triangulation stations.....	61
Triangulation stations occupied for observations of horizontal angles.....	66
Old triangulation stations recovered.....	24
New triangulation stations established.....	62
Total old and new triangulation stations marked and described.....	86
Linear miles of shore line covered by triangulation (approximate).....	125
Square miles covered by triangulation (approximate).....	375
Hydrographic projections prepared and completed as records of oyster, crab, and clam bound-	
aries.....	13
Triangles computed.....	200
Geographic positions computed.....	76

^a Office rooms were furnished for the work of the Government party in the "old court-house" and afterwards in the new custom-house by courtesy of Hon. William F. Stone, collector of customs.

^b These statistics only include field and office work directly performed by the party of the Coast and Geodetic Survey in connection with the oyster survey of Somerset County, and do not include the many thousands of soundings and examinations of the character of the bottom made by the engineers of the Commission, which are of considerable value to the Coast and Geodetic Survey as hydrographic records for future use in connection with the preparation of new editions of charts of the waters of Maryland.

Survey of Oyster Bars, Somerset County, Md.

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Corners of oyster, crab, and clam boundaries established by computation.....	506
Back azimuths and distances computed from corners of boundaries to triangulation stations....	1, 518
Descriptions of triangulation stations prepared for publication.....	86
Descriptions of oyster, crab, and clam boundaries prepared for publication.....	94
Total typewritten pages of manuscript prepared for publication of report.....	264
"Charts of Natural Oyster Bars" prepared for publication.....	6
Progress map prepared for publication.....	1

GENERAL STATEMENT.

The results obtained from the work of the Coast and Geodetic Survey in Somerset County in cooperation with the Bureau of Fisheries and the Maryland Shell Fish Commission need no other summary than is indicated by the published "Charts of Natural Oyster Bars" and the scheme of hydrographic projections and triangulation stations shown on the progress map at the beginning of this report.

The triangulation has been carried on in accordance with the standard methods of the Coast and Geodetic Survey, making this work and that of the "Descriptions of Triangulation Stations" of permanent value, not only to the State of Maryland in the survey of her oyster bars, but also to the Government for any future work it may do in the regions covered by the oyster survey operations.

The hydrographic projections and published charts were prepared with all the accuracy permitted by their large scale, especially as to the boundaries of the various shell-fish bottoms in relation to landmarks, but this accuracy of location on the charts is further added to by published technical descriptions which should minimize the probability of any future dispute as to either landmarks or boundaries.

Stated another way and quoting from the report of the "Survey of Oyster Bars of Anne Arundel County:"

The geographic positions of the permanent landmarks and signals have been determined with the usual precision of a trigonometric survey, and their locations at all points necessary to provide ample foundation for the surveying and charting operations permitted great accuracy of definition and location for the natural oyster bar and other boundaries established. At the same time, the very important element of permanency of the positions of boundaries has been secured, as the relocation of geodetic positions can always be accomplished by a competent surveyor, even though the original landmarks and monuments have been washed away, as has been the fate of hundreds of such points established by the Coast and Geodetic Survey on the shores of the Chesapeake Bay during the last sixty-five years.

In fact, when the survey of the oyster bars of Maryland is completed, it is believed that it will stand the test of time and practical use as a working foundation for whatever form the oyster legislation of the future may assume; and that the doing of the work systematically and accurately, once for all, not only means a better foundation of a great oyster industry by irradicably locating the natural oyster bars for the use of the public, but also a better and more permanent superstructure of oyster culture for the individual by the reason of the integrity of the foundation on which it stands.

Before ending this report the representative of the Coast and Geodetic Survey wishes to renew his statement of appreciation of the courteous assistance received from various Government and State officials and others interested in the oyster industry of Maryland, especially to the following:

To his colleague from the Department of Commerce and Labor, Dr. H. F. Moore of the Bureau of Fisheries, whose efficient cooperation, well-known experience, and scientific knowledge of all matters relating to oysters have been of great value to the work.

To Mr. Walter J. Mitchell, chairman of the Maryland Shell Fish Commission, who, by his administrative ability in carrying out the complicated requirements of the oyster laws and by his unflinching tact, has made the cooperation of the various services engaged on the work both agreeable and effective.

To Dr. Caswell Grave, secretary of the Commission, who, as editor of the Commission's annual report and commissioner in charge of the biological and economic oyster investigations, has been brought into constant contact with the Government work and aided its operations in every way.

To Benjamin K. Green, treasurer of the Commission, who has looked after the equipment and commissary of the house boat in such a way as to add greatly to the comfort and convenience of the party of the Coast and Geodetic Survey.

To Swebson Earle, hydrographic engineer to the Commission, whose knowledge of the work from former service in the Coast and Geodetic Survey has greatly facilitated his practical use of the technical data furnished by the Government.

To Thomas H. Robinson, counsel to the Commission, for courteously furnishing valuable information relating to county boundaries.

And to the many others connected with the Commission or who as residents in the locality where the work was being carried on have greatly assisted by furnishing important information or willing services.

CHARTS AND MAPS.

CHARTS OF NATURAL OYSTER BARS.

The charts^a of the natural oyster bars of "Somerset County and Adjacent Waters," published by the Coast and Geodetic Survey from results of surveys of the Government in cooperation with the Maryland Shell Fish Commission, consist of a series of five sheets covering the eastern shore of Chesapeake Bay from Hooper Strait to the Maryland-Virginia boundary, including Tangier and Pocomoke sounds and numerous other tributaries. They are published on a scale of 1 part in 20,000 (approximately 3¼ inches to a statute mile) and are constructed on polyconic projections and based on the United States standard datum of the Coast and Geodetic Survey.

These charts show all oyster bars, crab bottoms, clam beds, and other boundaries established by the Commission, and are certified for the purpose of filing in the office of the clerk of the circuit court of Somerset County and in the office of the Commission at Annapolis, as required by the oyster laws of Maryland.

In addition to the oyster-bar and other boundaries, the charts show the location and name of all landmarks (U. S. Coast and Geodetic Survey triangulation stations) used in making the survey, together with the hydrography and topography^b necessary to make the technical definitions and delineations of boundaries readily understandable

^a These charts can be obtained by application to the Superintendent of the Coast and Geodetic Survey, at Washington, D. C.

^b Much of the details of the inshore topography was obtained from the excellent map of Somerset County prepared and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark from surveys of the Maryland Geological Survey in cooperation with the U. S. Geological Survey.

both by the people engaged in the oyster industry and the general public who may become interested through leasing of barren bottoms for oyster culture.

The names of the oyster bars, crab bottoms, and clam beds are those used locally, as nearly as could be ascertained by the hydrographic engineer of the Commission. When there was no local name in common use, as was generally the case with the crab bottoms, a name was selected from one of the prominent features of the vicinity. By the use of recognized names or those that would naturally suggest certain sections of water, it is believed that much confusion will be avoided in the location on the charts of the oyster bars and crab bottoms, especially by those not familiar with the use of maps.

The corners of the oyster bars, crab bottoms, and clam beds are numbered from 1 to the total number of corners in each area under consideration. Where boundaries adjoin, making one point a corner of two or more oyster bars, crab bottoms, or clam beds, as the case may be, these points have two or more numbers, each number corresponding to the bar, bottom, or bed in which the figure is located. The numbers of the corners correspond with the technical and legal descriptions of this publication under the headings of "Boundaries of natural oyster bars," "Boundaries of crab bottoms," and "Boundaries of clam beds."

The landmarks, oyster bars, crab bottoms, and clam beds have been grouped in the "Contents" of this publication in accordance with the charts upon which they are shown. To find a particular bar, bottom, bed, or landmark which is only known by name, consult the "Contents" and the desired chart and general location will be indicated. To find the name of a bar, bottom, bed, or landmark which is only known by location, consult the progress map at the beginning of this publication for the number of the chart on which it is to be found, and then examine the known locality on the chart for the name of the bar, bottom, bed, or landmark in question.

The contours on the charts showing the depth of water at mean low tide have been taken from the hydrographic sheets of former work of the Coast and Geodetic Survey. Four curves were selected as being the most convenient for taking off from the original hydrographic sheets and the ones of greatest value to those interested in shell-fish industries. The 1-fathom contour (6 feet) corresponds in a general way to the outer limits of the crab bottoms, while the waters outside of this curve and inside the 5-fathom contour (30 feet) practically include all the oyster bars surveyed. The 3-fathom contour (18 feet) furnishes the curve of about the average depth of water on the oyster bars and the 10-fathom contour (60 feet) serves in a general way to indicate the outer limits of probable oyster culture.

The boundaries of the waters within the "territorial limits of the county" and the boundaries of the "waters contiguous to the county" opened up for the leasing with Somerset County are plainly indicated on the charts. A full technical description of these boundaries is given in this publication under the heading "Boundaries of county waters."

The areas in acres of the oyster bars, crab bottoms, and clam beds were determined under the direction of the hydrographic engineer of the Commission by two independent planimeter measurements of the areas as delineated on the smooth projections of the

Coast and Geodetic Survey. These areas are given in small figures in parentheses on the face of the chart and are usually located within the boundaries of the different areas.

The symbols used on the charts for the different kinds of boundaries, triangulation stations, contours of depth of water, etc., require no other explanation than that given in the legend and other notes on the face of the charts.

LEASING CHARTS.

The leasing charts of Somerset County, like those for Anne Arundel County, have been prepared under the direction of the hydrographic engineer of the Commission. These charts are constructed on polyconic projections and based on the United States standard datum of the Coast and Geodetic Survey. They are made on the scales of 1 part in 5,000 or 1 part in 10,000, as the needs of oyster culture may require. Anne Arundel County required 13 leasing charts and Somerset County 12 to cover their oyster bottoms.

These charts show all the oyster bars, crab bottoms, and clam beds and other boundaries established by the Commission, and also all boundaries of oyster lots leased for the purpose of oyster culture, thus making them comprehensive and valuable records of the results of the operations of the oyster-culture laws.

The lots leased under the provision of the "old 5-acre law" are frequently of irregular shape, but the lots leased under the provision of the new oyster laws must be of rectangular shape by the terms of that act. For this latter purpose the leasing charts have been divided by parallels of latitude and meridians of longitude into small rectangles of 1 acre or 5 acres, as may be best suited to area under consideration, and prospective leaseholders by the rules of the Commission are compelled to select whole rectangles as far as practicable.

For reasons of the present changeable nature of the number of lots leased and the large number of charts required, the leasing charts are not likely to be published for some years, but they can be seen at any time on file at the offices of the Commission, in Annapolis.

PROJECTIONS.

The polyconic projections^a covering Somerset County waters are 13 in number and on the scale of 1 part in 10,000. They were all constructed by draftsmen of the Coast and Geodetic Survey, who also plotted the sextant positions on the smooth projections which determine the location of the legal boundaries of the oyster bars, crab bottoms, or clam beds as delineated by the Shell Fish Commission.

A copy of each of these projections, with all the plotted positions of triangulation stations, shore line, sextant positions, and boundaries of oyster bars, was made under the direction of the hydrographic engineer of the Commission by pricking through with a sharp needle the intersections of the projection lines and all other points as plotted on the original sheets.

These projections (in duplicate) are the original records of all oyster bar and other boundaries established by the Commission, one set being filed in the archives of the Coast and Geodetic Survey, at Washington, and the other set in the office of the Shell Fish Commission at Annapolis.

^a For the scheme of these projections see the progress map at the beginning of this publication.

PROGRESS MAPS.

The progress map to be found at the beginning of this publication is on a scale of 1 part in 100,000, and shows in outline the work accomplished by the U. S. Coast and Geodetic Survey in Somerset County and contiguous waters. It gives the scheme of all the charts and smooth projections constructed in connection with the survey, the location and names of all triangulation stations used as a basis for the surveying work, and the "boundaries of county waters" established by the Commission for the purpose of carrying out the laws of Maryland relating to oyster culture.

Besides indicating the amount of work done by the Coast and Geodetic Survey in connection with the work of the Shell Fish Commission, this progress map will be of special value for index purposes to engineers and others searching for the particular chart or projection covering the locality of the oyster bars or landmarks that may be under consideration.

The progress map^a accompanying the "First Annual Report of the Maryland Shell Fish Commission" was prepared under the direction of the hydrographic engineer of the Commission. It is on the scale of 1 part in 400,000 and shows the outline of the tide-water counties of Maryland, with shaded areas to indicate the waters already covered by the operations of the oyster survey of Maryland.

BOUNDARIES OF COUNTY WATERS.^b

WATERS WITHIN TERRITORIAL LIMITS OF COUNTY.

The laws of Maryland relating to oyster culture provide that "no person shall be permitted, by lease, assignment, or in any other manner, to acquire a greater amount of land than ten acres situated within the territorial limits of any of the counties, or one hundred acres in any other place."

The boundary line^c between the waters "within the territorial limits" of Somerset County and the waters in "any other place," as established by the Shell Fish Commission for the purpose of carrying out the oyster laws, and delineated on the charts and the smooth projections of the Coast and Geodetic Survey, is technically described and defined as follows:

Commencing at a point defined by the intersection of the channels of Wicomico Creek and Wicomico River; thence with the channel of Wicomico River along the boundary line as laid down on Chart No. 5 of the "Natural Oyster Bars" of Maryland, published by the Coast and Geodetic Survey, to a point defined by the intersection of the channel of Nanticoke River with Wicomico River; thence in a straight line to a point defined by^d latitude $38^{\circ} 11' 50''$ 3, and longitude $75^{\circ} 58' 20''$ 8, situated in upper end of

^a This map and report can be obtained by application to Maryland Shell Fish Commission, at Annapolis, Md.

^b For a complete historical and legal description of the boundaries of the counties of Maryland, the valuable publication entitled "The Counties of Maryland—Their Origin, Boundaries, and Election Districts," prepared by Dr. Edward B. Mathews and published by the Maryland Geological Survey under the direction of Dr. William Bullock Clark, Superintendent, should be consulted, as the boundaries described in this publication have been established and technically defined for the purpose of carrying out the oyster laws of the State, and may or may not be correct for other purposes.

^c See "Charts of Natural Oyster Bars," published by the Coast and Geodetic Survey, and the progress map at the beginning of this publication.

^d Latitudes and longitudes based on the United States standard datum of the U. S. Coast and Geodetic Survey.

Tangier Sound, about $\frac{7}{8}$ mile " east-southeast of Sharkfin Shoal Light, $2\frac{1}{2}$ miles south of western extremity of Clay Island, and $1\frac{3}{4}$ miles west-northwest of Halls Point; thence in a straight line along the channel of Tangier Sound to a point defined by latitude $38^{\circ} 10' 08''.1$, and longitude $75^{\circ} 58' 40''.6$, situated about $2\frac{3}{4}$ miles south by east of Sharkfin Shoal Light and $1\frac{5}{8}$ miles west of upper land end of Deal Island; thence in a straight line across Tangier Sound to a point defined by latitude $38^{\circ} 08' 50''.6$, and longitude $76^{\circ} 01' 53''.4$, situated on a point of land on the southeastern extremity of Bloodworth Island, which is the north point of the Tangier Sound entrance to Holland Straits; thence in a straight line across Holland Straits to a point defined by latitude $38^{\circ} 06' 39''.9$, and longitude $76^{\circ} 03' 17''.8$, situated on northwest extremity of a small island slightly detached from South Marsh and on north side of Holland Straits entrance to Pry Cove; thence in a straight line to a point defined by latitude $38^{\circ} 05' 44''.1$, and longitude $76^{\circ} 03' 44''.6$, situated on Pry Island, which is located on south side of Holland Straits entrance to Pry Cove; thence in a straight line to the open waters of the Chesapeake Bay at point defined by latitude $38^{\circ} 04' 40''.8$, and longitude $76^{\circ} 04' 14''.8$, situated at junction of Holland and Kedge straits; thence in a straight line along the dividing waters of Chesapeake Bay and Kedge Straits to a point defined by latitude $38^{\circ} 02' 07''.0$, and longitude $76^{\circ} 02' 34''.0$, situated on the northwest side of Fog Point, which is the south point of the Chesapeake Bay entrance to Kedge Straits; thence along the mean low water line of the Chesapeake Bay shore of Smith Island across the mouth of all inlets less than 100 yards in width to a point defined by latitude $38^{\circ} 00' 31''.0$, and longitude $76^{\circ} 03' 08''.9$, situated on a point at the extreme northwest entrance to Smith Island Thoroughfare; thence in a straight line across the Chesapeake Bay entrance of Smith Island Thoroughfare and Goose Harbor Cove to a point defined by latitude $37^{\circ} 59' 30''.0$, and longitude $76^{\circ} 03' 09''.6$, situated on a point at the extreme southwest entrance to Goose Harbor Cove; thence along the mean low water line of Chesapeake Bay shore of Smith Island across the mouth of all inlets less than 100 yards in width to the intersection of the mean low water line and the Maryland-Virginia boundary line; thence in a straight line with the Maryland-Virginia boundary across Smith Island and the waters of Smith Gut, Shanks Creek, and Tylers Creek to a point at a corner of the boundary near the Tangier Sound shore of Smith Island situated on land known locally as Horse Hummock; thence in a straight line with the Maryland-Virginia boundary to point at a corner of the boundary in the middle of Tangier Sound, situated about $1\frac{1}{4}$ miles southwest by west of James Island Light, $2\frac{3}{4}$ miles east by south of Horse Hummock, and $3\frac{1}{4}$ miles northwest of House Island; thence in a straight line with the Maryland-Virginia boundary to a point at a corner of the boundary in the middle of Tangier Sound, situated about $4\frac{3}{4}$ miles southwest by south of James Island Light, $3\frac{3}{4}$ miles southeast by east of Horse Hummock, and $2\frac{5}{8}$ miles west of House Island; thence in a straight line with the Maryland-Virginia boundary across House Island to a corner of the boundary situated in the water between Watkins Point and Green Harbor Island; thence in a straight line with the Maryland-Virginia boundary to a corner of the boundary situated in the middle of Pocomoke Sound about $4\frac{1}{2}$ miles east of Watkins Point and $2\frac{5}{8}$ miles south of Watkins Island off entrance to Apes Hole Creek; thence in a straight line with the Maryland-Virginia boundary to a corner of the boundary situated in the middle of Pocomoke Sound about $2\frac{1}{2}$ miles northwest by west of Saxs Church, $2\frac{1}{2}$ miles east by south of Watkins Island off entrance to Apes Hole, and 2 miles southwest of extreme end of point between East and Marumscoc creeks; thence with the Maryland-Virginia boundary as laid down on "Charts of Natural Oyster Bars" No. 10 along the middle of Pocomoke Sound and Pocomoke River as far as oysters grow.

WATERS CONTIGUOUS TO COUNTY.

The oyster laws of Maryland provide that a true and accurate delineation of all natural oyster bars shall be made on copies of charts of the U. S. Coast and Geodetic Survey, "which said copies shall be filed in the office of the said Commissioners in the city of Annapolis," and "in the office of the clerks of the circuit courts for the respective counties wherein the grounds so designated may lie."

For the purpose of carrying out the latter part of this section of the law and for the purpose of establishing the limits of the oyster-culture area to be opened up for the

" Statute miles.

leasing with Somerset County, a boundary line between the waters contiguous to but not within the territorial limits of Somerset County and the waters contiguous to but not within the territorial limits of adjacent counties has been established by the Shell Fish Commission. This boundary line^a has been delineated on the "Charts of Natural Oyster Bars," published by the Coast and Geodetic Survey, and is technically described and defined as follows:

Commencing at a point defined by latitude $38^{\circ} 04' 40''.8$, and longitude $76^{\circ} 04' 14''.8$, situated on line of territorial limits of county at junction of Holland and Kedge straits; thence in a straight line across waters of Chesapeake Bay to Holland Island Bar Light, the location of which is defined by latitude $38^{\circ} 04' 07''.3$, and longitude $76^{\circ} 05' 45''.9$; thence in a straight line across waters of Chesapeake Bay to a point defined by latitude $38^{\circ} 04' 34''.8$, and longitude $76^{\circ} 12' 01''.0$, situated near the middle of Chesapeake Bay, on northwestern end of a shoal marked by a red buoy of the U. S. Light-House Establishment situated about $5\frac{1}{2}$ miles west by north of Holland Island Bar Light, $7\frac{1}{8}$ miles east by north of Point Lookout Light, and $13\frac{1}{2}$ miles north of Smith Point Light; thence in a straight line with the waters of Chesapeake Bay to a point on Smith Point defined by the corner of the Maryland-Virginia boundary at the intersection of the straight line boundary across Chesapeake Bay and the low-water line of the southern shore of Potomac River; thence with the Maryland-Virginia boundary in a straight line across Chesapeake Bay to the point defined by the intersection of the boundary with the mean low-water line of the Chesapeake Bay shore of Smith Island; thence with territorial limits of county along the Chesapeake Bay shore of Smith Island and waters of entrance to Kedge Straits to point of beginning.

LANDMARKS (U. S. COAST AND GEODETIC SURVEY TRIANGULATION STATIONS).

EXPLANATION OF DESCRIPTIONS OF LANDMARKS.

The oyster laws of Maryland authorizing the surveys to be made by the Shell Fish Commission provide for "an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of said natural oyster beds, bars, and rocks, as shown by delineation on the maps and charts." The law of the United States authorizing the cooperation of the Department of Commerce and Labor in the survey of natural oyster bars of Maryland provides for the erection of "such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland."

Under the provisions of the sections of the laws stated above, the markings and descriptions of landmarks must be sufficient for the present and future needs of both the Government and the State. With this end in view, considerable work has been expended in erecting permanent monuments at the triangulation stations and in the proper description of their location.

An effort has been made to arrange the descriptions of locations of landmarks in a uniform and logical manner. The descriptions start with the assumption that the individual seeking to find a landmark has only an indefinite idea of its location.

^a See progress map at the end of this publication

They then gradually proceed from general descriptions of the surroundings of a landmark to the specific details of the character of the center and reference markings. An examination of the descriptions themselves will best indicate the method followed.

The heading of each description is the name by which the landmark or triangulation station is known and designated in all work and records of the Government and State.

Under the heading of "Locality" the first paragraph gives a description of the general locality of the landmark and the serial number of the published "Chart of Oyster Bars" of Maryland which best shows its location. The published charts are on the large scale of 1 part in 20,000, and show the location of the triangulation stations so clearly that in many cases the written descriptions will not be required to find them.

Under the same heading of "Locality" the second paragraph furnishes the description of the immediate locality of the landmark and refers to the bearing and distance of standard cement monument marking the reference station, as it is the first object that is likely to catch the eye when the immediate vicinity of the desired station is reached.

Under the heading of "Marks" a description is given of the character of the markings of the "observed station" and the reference station. It will be noted that, although the "observed station" is the one "occupied" and "observed on" for horizontal angles, and also the one whose geographic position is computed, frequently it is not marked as well as the reference station, and in many instances has only a pine stub to indicate its position. This is the case for the reason that the necessity of intervisibility of landmarks usually made it compulsory to locate these stations on edges of banks and ends of points of land, which in Chesapeake Bay and tributaries generally means that they will be washed away in a short period of years. The past experience of the Coast and Geodetic Survey in this region has shown the necessity of reference marks, if the frequent reestablishment of a new framework of triangulation is to be avoided.

All the marks designated in the descriptions as "the center point of triangle on standard cement monument" are exactly alike. These monuments are made of cement, sand, and gravel, and are 2 feet long and 8 inches square at top and bottom. Their tops are all marked with the same brass mold and show a center hole surrounded by a triangle, with the letters "M. S. R. C." arranged around the vertex and the letters "U. S. C. S." underneath the base of the triangle. The center hole is always in the center of the top of the monument by construction, and if this is found to have been broken off without disturbing the bottom, the center of its square section can be used as the location of the station.

All the "standard cement monuments," whether used for marking the "observed station" or "reference station," have been planted upright in exactly the same manner, with their tops projecting 3 or 4 inches above the surface of the ground.

Therefore, as the above facts in reference to the "standard cement monuments" are a constant element in all cases, the repetition of these facts in the description of stations is made needless by this one statement.

It is the expectation that the reference stations,^a the character of which is explained above, will be used in many cases in the near future in the place of the "observed sta-

^a To obtain the geographic positions of any of the "observed stations" or of the "reference stations," application should be made to the Superintendent of the Coast and Geodetic Survey at Washington, D. C.

tions." This has been made possible by the careful measurements of direction and distance of these stations from the "observed station," which are recorded under the heading of "References."

Under the heading of "References" are given the directions and distances of all objects that might be useful in locating the stations when the surface marks can not be found. It is also contemplated that for general purposes of topography, hydrography, or location of boundaries of oyster bars these references will be sufficient in many cases to relocate the position of an "observed station" or reference station when both of them have been destroyed.

The first reference object given in the descriptions is always a triangulation station visible from the station being described. Its direction is taken as being $0^{\circ} 00' 00''$, and the direction of all other objects are measured from it as an initial point, the angles being taken in a clockwise direction (left to right).

The true bearing ^a of the initial object is always given in parenthesis alongside the name. This furnishes means for the calculation of the bearings of any of the other reference objects for the purposes of locating a station by compass bearings or for the relocation of corner buoys of oyster-bar boundaries by the method of horizontal angles described in this publication under the heading of "Boundaries of oyster bars."

The distances in the last column under "References" are given in three different units, which vary according to their accuracy. The "miles" are statute miles and may be considered only as rough estimates. The "yards" are more accurate, but must be looked on as results generally obtained by pacing or careful estimating. The "meters," however, are accurate to the degree indicated by their decimals and in every case have been measured with a steel tape. In the same manner the accuracy of the directions are indicated by the refinement of direction with which they are recorded.

DESCRIPTIONS OF TRIANGULATION STATIONS.

SENATOR.

Locality.—Western shore of Tangier Sound, on southern side of Holland Straits and on extreme northeast point of South Marsh. (See Charts Nos. 5, 6, and 7.)

Observed station is on marsh land about 35 yards from north side and about 30 yards from east side of point. Myrtle bushes skirt shore, commencing due north, and two small pools of water are near station, one due south about 10 yards and the other southwest about 5 yards. No permanent reference points near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	t	"	
"Sharkfin Shoal Light" (N $16^{\circ} 20'$ E).....	00	00	00	4¾ miles.
Chimney on house to right of "Haines"....	31	30	--	4¾ miles.
Left-hand chimney of crab house on Deal				
Island.....	50	19	--	3½ miles.
Right end of large oyster house on Deal				
Island.....	81	59	--	3½ miles.
Lone pine tree.....	301	35	--	1⅞ miles.

^a The mean magnetic variation for Somerset County for 1908 was $5^{\circ} 30'$ west of north and increasing at the rate of $3'$ yearly.

CRAB.

Locality.—Upper end and western shore of Tangier Sound on eastern side of Bloodworth Island about $2\frac{5}{8}$ miles southeast of Sharkfin Shoal Light House and about halfway between Piney Island Cove to north and Great Cove to south. (See Chart No. 5.)

Observed station is about 15 yards from high-water mark to the northeast and about 35 yards from the shore to the east. A small flat-roof crab house stands about 80 yards to the north-northeast and another crab house about twice the distance in the same direction.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	0	1	"	
"Sharkfin Shoal Light" (N $45^{\circ} 25'$ E).....	00	00	00	$2\frac{5}{8}$ miles.
Left end of large white house near Stump				
Point.....	6	11	--	$7\frac{5}{8}$ miles.
End of roof of white house on bluff.....	31	36	--	$6\frac{1}{4}$ miles.
End of Deal Island wharf.....	53	03	--	$3\frac{3}{4}$ miles.
Large white house near red roof one.....	72	35	--	$4\frac{1}{4}$ miles.
Aspen tree near "Joshua"	88	00		$5\frac{1}{2}$ miles.
Tall pine tree.....	165	00	40	$1\frac{1}{2}$ miles.
Near end of flat-roof shanty.....	288	32	--	80 yards.
Flag pole on Brown's crab house.....	299	01	--	150 yards.

SHARKFIN SHOAL LIGHT.

Locality.—Northern end of Tangier Sound about equally distant from entrances of Hooper Strait, Fishing Bay, and Nanticoke River. (See Chart No. 5.)

Marks.—Observed station is center point of black lantern on hexagonal screw pile known as "Sharkfin Shoal Light."

References.—

	0	1	"	
"Great Shoals Light" (N $81^{\circ} 45'$ E).....	00	00	00	$5\frac{7}{8}$ miles.

HEAD.

Locality.—Upper end of Tangier Sound, on southern part of peninsula known as "Bishops Head," situated between Hooper Strait and Fishing Bay. (See Chart No. 5.)

Observed station is on eastern side marsh land about $\frac{1}{2}$ mile north of extreme southerly end of Bishops Head and about 15 yards east of two crab houses. It is about 15 yards southwest of high-water mark, behind water bushes which skirt the shore. Cement monument marking reference station is 13.41 meters west from observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	0	1	"	
"Sharkfin Shoal Light" (S $60^{\circ} 41'$ E)....	00	00	00	$2\frac{3}{4}$ miles.
Crab-house flagstaff.....	50	30	--	$3\frac{1}{4}$ miles.
Large pine.....	97	42	--	2 miles.
REFERENCE STATION	139	55	40	13.41 meters.
Near gable of $2\frac{1}{2}$ -story white house.....	140	24	--	$\frac{1}{4}$ mile.
Chimney on white house.....	156	44	--	$\frac{1}{8}$ mile.
Left side of crab house.....	166	38	--	17.31 meters.
Right side of crab house.....	199	54	--	16.11 meters.
Chimney on yellow house.....	208	28	--	$1\frac{1}{2}$ miles.
Chimney on end of white house.....	238	53	--	3 miles.
Right side of Nanticoke Point woods.....	326	56	--	$7\frac{1}{2}$ miles.

FROG.

Locality.—West shore of mouth of Nanticoke River, on the southeasterly point of Clay Island, known as "Frog Point." (See Chart No. 5.)

Observed station is on a marsh point about 25 yards back from extreme end of point, 20 yards from the east side and 25 yards from the west side. Water bushes abound back of station. There are no permanent reference objects near station. Cement monument marking reference station is 13.10 meters north of observed station.

Marks.—Observed station is nail in stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Sharkfin Shoal Light" (S 41° 25' W) ----	00	00	00	3½ miles.
Left tangent of Clay Island.....	35	17	--	1¼ miles.
REFERENCE STATION.....	141	45	50	13.10 meters.
Right tangent of Sandy Point.....	177	41	--	¾ mile.
Chimney on white house with black roof..	179	12	--	2½ miles.
Chimney on near end of large red-roof				
white house.....	183	02	--	2½ miles.
Stack on canning house.....	184	36	--	2½ miles.
Land end of Nanticoke wharf.....	184	36	--	2½ miles.
End of Nanticoke wharf house.....	186	00	--	2¼ miles.
Chimney on ell end of main part of large				
red-roof white house.....	211	27	--	2½ miles.
Right tangent of Nanticoke Point woods.	238	44	--	2¾ miles.
Large square chimney on white house				
(Dames Quarter).....	264	17	--	4 miles.
Rock Creek poplar tree.....	284	17	--	3½ miles.
Flagstaff on Deal Island wharf.....	322	09	--	4¾ miles.

COW.

Locality.—Western shore Nanticoke River on Mink Point about ¼ mile east of entrance to Cow Creek. (See Chart No. 5.)

Observed station is on a very soft marsh point at the outer edge of water bushes about 5 yards back from the shore to the east, 15 yards from extreme end of point to the southeast, and 15 yards from the shore to the southwest. No permanent reference objects near station. Cement monument marking reference station is 8.68 meters northwest of observed station.

Marks.—Observed station is a nail in a pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Frog" (S 6° 13' W).....	00	00	00	2 miles.
A shanty.....	37	16	--	¾ mile.
REFERENCE STATION.....	129	19	20	8.68 meters.
White shanty.....	189	53	--	1 mile.
A shanty.....	209	52	--	½ mile.
Tangent of land.....	217	43	--	½ mile.
Large red roof greenhouse.....	236	48	--	2½ miles.
Windmill.....	243	52	--	2¾ miles.
Gambrel of house.....	244	13	--	2½ miles.
Chimney of large greenhouse.....	254	24	--	2¼ miles.
Canning house stack.....	257	28	--	1¾ miles.
Canning house stack.....	275	26	--	1½ miles.
Near corner of Nanticoke wharf.....	284	49	--	1½ miles.
Large red roof white house.....	297	32	--	2½ miles.
Large red roof white house.....	299	24	--	2½ miles.
Right tangent of Nanticoke woods.....	310	15	--	3 miles.
Left tangent of Sandy Point.....	341	48	--	1½ miles.

NANTICOKE CHURCH.

Locality.—Eastern shore of Nanticoke River in town of Nanticoke, about $\frac{1}{4}$ mile back from river and $\frac{3}{4}$ mile northeast of Roaring Point. (See Chart No. 5.)

Marks.—Observed station is center point of spire of church known as "Nanticoke Methodist Episcopal Church."

References.—None necessary.

ROAR.

Locality.—Eastern shore of Nanticoke River on point of land known as Roaring Point, and about $\frac{1}{4}$ mile north from outer end of Roaring Point wharf. (See Chart No. 5.)

Observed station is 30 yards to the east of the extreme end of the point and on a sandy knoll about 5 feet above high-water mark. It is about 20 yards back from high-water mark on the north side and about 40 yards back from high-water mark on south side of the point. Pine woods stand about 150 yards inshore from station.

Marks.—Observed station is center point of triangle on standard cement monument.

<i>References.</i> —	o	'	"	
"Frog" (S 39° 02' W).....	00	00	00	2½ miles.
Two shanties.....	19	17	--	2 miles.
One shanty.....	30	20	--	1¾ miles.
A shanty.....	71	32	--	1¾ miles.
White shanty.....	98	53	--	1¾ miles.
Barn steeple.....	117	41	--	4½ miles.
White shanty behind "Okay".....	121	25	--	2¾ miles.
Red roof house.....	144	42	--	7½ miles.
Twin trees on Ragged Point.....	159	30	--	2 miles.
Chimney on white house.....	175	23	--	1½ miles.
Windmill.....	184	04	--	1 mile.
Gambrel roof house.....	184	32	--	1 mile.
White canning house stack.....	195	11	--	½ mile.
Land end of wharf.....	271	58	--	¼ mile.
Large house.....	293	38	--	1½ miles.
Right tangent of Nanticoke Point woods.....	297	22	--	2½ miles.
Right tangent of Nanticoke wharf.....	304	52	--	¾ mile.
Left tangent of Sandy Point.....	359	51	--	1¾ miles.

NANTI.

Locality.—Eastern side of entrance to Nanticoke River about $\frac{1}{2}$ mile northwest of Nanticoke Point. (See Chart No. 5.)

Observed station is on grassy land about 2 feet above and 20 yards back from high-water mark. It is about midway between edge of woods on Nanticoke Point and unpainted house near poplars $\frac{1}{4}$ mile to the north.

Marks.—Observed station is center point of triangle on standard cement monument.

<i>References.</i> —	o	'	"	
"Sharkfin Shoal Light" (S 65° 14' W).....	00	00	00	5 miles.
Tangent of Sandy Point.....	51	33	--	2¾ miles.
Left end of Nanticoke wharf.....	89	45	--	2 miles.
Near chimney of red roof house.....	96	51	--	¾ mile.
Chimney of unpainted house.....	101	08	--	¼ mile.
Near chimney of house nearest woods.....	116	56	--	¼ mile.
Tree high above woods.....	119	53	--	2½ miles.
Right end of heavy woods.....	134	03	--	1¾ miles.
Right end of scant woods.....	147	11	--	¾ mile.

	°	'	"	
Wild cherry tree.....	178	24	--	50 yards
Left end of woods.....	227	46	--	$\frac{1}{4}$ mile.
Right end of woods.....	269	45	--	$\frac{1}{4}$ mile.
Poplar tree Dames Quarter.....	307	28	--	$2\frac{3}{4}$ miles.
Tangent of Haines Point.....	330	55	--	$4\frac{1}{2}$ miles.

WHITE.

Locality.—Eastern shore of entrance to Nanticoke River on western part of Nanticoke Point. (See Chart No. 5.)

Observed station is on a sand and grass point about 2 feet above high-water mark, 3 yards from the west side, 15 yards from the south end, and 20 yards from southeast side. Dense pine woods stand about 100 yards to the northwest, open marsh to the northeast, and a clump of about a dozen pine trees in marsh about $\frac{3}{8}$ mile to the northeast. There is a cove about 40 yards east of the station and another point of land about 100 yards to the southeast. Cement monument marking reference station is 16.63 meters north of observed station.

Marks.—Observed station is a nail in a pine stub about 6 inches below surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Great Shoals Light" (S 44°16' E).....	00	00	00	$1\frac{1}{4}$ miles
Poplar tree at Dames Quarter.....	65	08	--	$2\frac{1}{2}$ miles
Tangent of Hall Point.....	86	06	--	$3\frac{1}{4}$ miles.
Tangent of Sandy Point.....	164	17	--	3 miles.
Left end of pine woods.....	172	27	--	100 yards.
Right end of pine woods.....	213	21	--	150 yards.
REFERENCE STATION.....	227	29	00	16.63 meters.
Largest tree in clump of about 12 pines.....	247	23	--	$\frac{3}{8}$ mile.
Chimney on cabin on Ellis Point.....	279	05	--	2 miles.
White house.....	311	54	--	$\frac{1}{2}$ mile.
Point of land.....	335	02	--	100 yards.

ELLA.

Locality.—North shore of Wicomico River on point at east side of entrance to Ellis Bay. (See Chart No. 5.)

Observed station is on a marsh point about 1 foot above high-water mark. It is about 10 yards back from the shore to the west, 20 yards back from the shore to the south, and 20 yards back from the shore to the north. No permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Great Shoals Light" (S 9° 49' W).....	00	00	00	2 miles.
Tangent of land on Mollies Point.....	5	14	--	1 mile.
Watch house.....	26	10	--	$\frac{1}{2}$ mile.
Left of woods on Nanticoke Point.....	44	23	--	$1\frac{1}{2}$ miles.
Right of woods on Nanticoke Point.....	52	33	--	$1\frac{1}{4}$ miles.
Chimney of white house.....	135	45	--	2 miles.
Chimney of gray house.....	142	43	--	2 miles.
Chimney of white house.....	249	27	--	200 yards.
Mount Vernon Church.....	257	58	--	$2\frac{1}{4}$ miles.
Chimney on middle of white house.....	274	28	--	$1\frac{1}{4}$ miles.
Chimney on cream and brown house.....	290	49	--	1 mile.
Chimney on brown house.....	291	03	--	1 mile.
Smoke pipe of watch house.....	306	57	--	1 mile

Survey of Oyster Bars, Somerset County, Md.

HOLLAND.

Locality.—North shore of Wicomico River on Holland Point about $1\frac{1}{4}$ miles west of Mount Vernon Church, and $1\frac{1}{4}$ miles east of Ellis Bay. (See Chart No. 5.)

Observed station is on a marsh point about 20 yards north of high-water mark on its extreme end and about 100 yards west of a creek. A small cabin stands about 200 yards to the west.

Marks.—Observed station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Wind" (S 28° $35'$ W).....	00	00	00	$1\frac{1}{4}$ miles.
Great Shoals Light.....	4	34	--	$2\frac{3}{4}$ miles.
Tangent of Mollies Point.....	18	39	--	2 miles.
Left tangent of woods on Nanticoke Point....	34	33	--	$2\frac{3}{4}$ miles.
Right tangent of woods on Nanticoke Point....	39	28	--	$2\frac{3}{4}$ miles.
Chimney of house near Ellis Bay.....	46	19	--	$1\frac{1}{4}$ miles.
Chimney of cabin.....	56	14	--	200 yards.
Chimney on left end of large red roof building..	91	56	--	3 miles.
Large chimney on white house.....	188	31	--	$1\frac{1}{4}$ miles.
Chimney of slate-colored house.....	230	43	--	$1\frac{1}{4}$ miles.
Chimney on middle of light-blue house.....	240	48	--	1 mile.
Chimney on $2\frac{1}{2}$ -story light-green house.....	266	41	--	$\frac{3}{4}$ mile.
Right chimney on white house.....	317	29	--	$\frac{1}{2}$ mile.

CHILD.

Locality.—North shore of Wicomico River about $\frac{7}{8}$ mile north of Mount Vernon Church. (See Chart No. 5.)

Observed station is on marsh land about 2 feet above and 15 yards back from high-water mark. There is an old wharf about 300 yards to the east and at a point about 100 yards to the north, two creeks join and form a single creek about 20 feet wide which flows into the river at a point about 15 yards west of observed station.

Marks.—Observed station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Mount Vernon Church" (S 10° $15'$ E).....	00	00	00	$\frac{7}{8}$ mile.
Chimney on white house in woods on opposite shore.....	3	23	--	$\frac{3}{4}$ mile.
Chimney on white house on sand bluff on opposite shore.....	15	32	--	$\frac{5}{8}$ mile.
Smoke pipe on large white house.....	19	55	--	$\frac{3}{4}$ mile.
Chimney on brown house.....	48	14	--	$1\frac{1}{2}$ miles.
Great Shoals Light.....	49	33	--	$3\frac{3}{4}$ miles.
Tangent of Holland Point.....	62	44	--	$1\frac{1}{4}$ miles.
Fork of creek.....	183	08	--	100 yards.
Chimney of large house.....	206	39	--	2 miles.
Chimney of another large house.....	238	43	--	$\frac{3}{4}$ mile.
Mount Vernon wharf smoke pipe.....	293	12	--	$1\frac{1}{2}$ miles.
Large white house in woods.....	324	03	--	$\frac{3}{4}$ mile.
Cream-colored house in woods.....	345	47	--	$\frac{1}{2}$ mile.

CREEK.

Locality.—North shore of Wicomico River, about $\frac{3}{4}$ mile northwest of Mount Vernon wharf and about $1\frac{3}{8}$ miles northeast of Mount Vernon Church. (See Chart No. 5.)

Observed station is on a marsh grass and sand point making out to the south and about 10 yards from the high-water mark of each of the three sides of the point. About 10 yards west of observed station is the mouth of a creek or drain 10 feet wide which runs only a short distance inland. There are several unpainted houses within 200 yards of observed station and a lone pear tree stands about 200

yards to the north. There is a cultivated field about 150 yards back of station which extends to edge of woods $\frac{1}{4}$ mile distant.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Mount Vernon Church" (S 30° 39' W).....	00	00	00	1 $\frac{3}{4}$ miles.
Chimney on light-blue house with red blinds.....	13	46	--	1 $\frac{1}{4}$ miles.
Lone tree.....	72	59	--	1 mile.
Chimney of old unpainted house.....	108	18	--	300 yards.
Chimney of light-green trimmed house.....	135	15	--	200 yards.
Pear tree.....	159	48	--	200 yards.
Left chimney of cream-colored house.....	218	06	--	300 yards.
Tangent of cove.....	224	--	--	30 yards.
Smoke pipe on Mount Vernon wharf.....	282	34	--	$\frac{3}{4}$ mile.
Chimney outside yellow house.....	312	04	--	$\frac{5}{8}$ mile.
Chimney on slate-colored house.....	352	57	--	$\frac{3}{4}$ mile.

END.

Locality.—North shore of Wicomico River, opposite Mount Vernon wharf. (See Chart No. 5.)

Observed station is on marsh land about 3 feet above and about 100 yards north of high-water mark in river and about 75 yards to the northwest of a large creek which runs about 2 miles inland. Water bushes skirt shore around station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Jones" (S 60° 33' W).....	00	00	00	$\frac{3}{4}$ mile.
Chimney on white house.....	7	24	--	1 mile.
Tangent of land.....	12	28	--	1 mile.
Near chimney of cream-colored house.....	68	25	--	$\frac{1}{2}$ mile.
Cupola on red barn.....	155	21	--	$\frac{3}{4}$ mile.
Old-style windmill.....	163	26	--	$\frac{3}{4}$ mile.
Chimney of Whitehaven Hotel.....	171	09	--	1 $\frac{1}{4}$ miles.
Webster's canning house.....	252	28	--	$\frac{1}{2}$ mile.
Right hand chimney on gray house.....	273	42	--	$\frac{1}{2}$ mile.
Left side of Mount Vernon wharf.....	294	13	--	$\frac{1}{4}$ mile.
Stack of Dashiell's canning house.....	304	52	--	$\frac{3}{8}$ mile.
Middle attic window of white house.....	328	54	--	$\frac{1}{2}$ mile.
Chimney outside of yellow house.....	352	12	--	$\frac{1}{2}$ mile.

WALNUT.

Locality.—South shore of Wicomico River, about 175 yards east of Mount Vernon wharf. (See Chart No. 5.)

Observed station is on marsh land about 17 feet from shore and 50 yards west of a small creek. Several large walnut and locust trees stand about 250 yards south of station and 2 houses and 2 sheds about 250 yards to the southwest.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	'	"	
"Jones" (S 83° 49' W).....	00	00	00	$\frac{3}{4}$ mile.
Right side of Mount Vernon wharf house.....	17	18	--	175 yards.
Chimney outside of white house.....	46	52	--	1 mile.
Left chimney of gabled house.....	53	47	--	1 mile.
Old style windmill.....	121	00	--	$\frac{1}{2}$ mile.
Left end of roof of Whitehaven wharf.....	136	18	--	1 $\frac{1}{2}$ miles.
Chimney of Whitehaven Hotel.....	136	40	--	1 $\frac{1}{2}$ miles.
Opening between pair of pine trees near Whitehaven.....	140	--	--	1 $\frac{1}{2}$ miles.

	°	'	"	
Stack of Webster's canning house.....	187	38	--	300 yards.
Opening between two walnut trees.....	274	--	--	200 yards.
Chimney of Whitlock's house.....	307	37	--	250 yards.
Stack of Dashiell's canning house.....	352	23	--	400 yards.

JONES.

Locality.—South shore of Wicomico River about $\frac{3}{4}$ mile west of Mount Vernon wharf. (See Chart No. 5.)

Observed station is on a knoll about 25 feet above and 30 yards to south of high-water mark, and about 200 yards to the east of a cove. The knoll on which the station is located is the highest point on the shore in this locality. Several small cabins stand to the northward about 25 yards, and a large lone cedar tree about 35 yards to the southwest.

Marks.—Observed station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Ivee" (S 78° 54' W).....	00	00	00	$\frac{3}{4}$ mile.
Large square chimney on four-gable house.....	10	05	--	$\frac{1}{4}$ mile.
Cedar tree.....	11	22	--	25 yards.
Tangent of point of land.....	34	54	--	$\frac{1}{8}$ mile.
Nail in blaze in cedar tree.....	62	26	--	20.30 meters.
Chimney on light-green house on opposite shore.....	102	33	--	$\frac{3}{4}$ mile.
White cupola in Whitehaven.....	148	53	--	$2\frac{1}{4}$ mile.
Old style windmill.....	153	31	--	$1\frac{1}{2}$ miles.
Whitehaven Hotel chimney.....	155	48	--	$2\frac{1}{4}$ miles.
Large chimney on yellow house.....	178	37	--	$\frac{1}{4}$ mile.
Chimney on end of brown house.....	216	37	--	$\frac{1}{2}$ mile.
Chimney on white house.....	266	42	--	$\frac{1}{4}$ mile.
Weeping willow.....	307	55	--	$\frac{1}{4}$ mile.
Nail in blaze in cedar tree.....	318	30	--	31.10 meters.

IVEE.

Locality.—Southeast shore of Wicomico River about $\frac{1}{4}$ mile northwest of Mount Vernon Church (See Chart No. 5.)

Observed station is on grass land about 1 foot above and 10 feet back from high-water mark. A small cove makes in about 100 yards east of station. A small lone pine stands about 110 yards to the east-southeast, and a sand bluff with pine trees about 100 yards to the southwest. Beyond the woods along the beach is a bluff 15 feet high upon which are several houses.

Marks.—Observed station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Mount Vernon Church" (S 22° 37' E)....	00	00	00	$\frac{3}{8}$ mile.
White house chimney.....	55	35	--	$\frac{1}{4}$ mile.
Chimney on end of white house.....	209	55	--	2 miles.
Chimney of green-trimmed house near "Creek".....	245	28	--	$1\frac{1}{4}$ miles.
Old style windmill.....	264	47	--	$2\frac{1}{8}$ miles.
Slate-colored house.....	276	22	--	$\frac{1}{2}$ mile.
Chimney on middle of white house beyond woods.....	297	11	--	1 mile.
Lone pine tree.....	317	53	--	110 yards.

MOUNT VERNON CHURCH.

Locality.—Southeast side of Wicomico River about $\frac{3}{8}$ mile back from the shore $1\frac{1}{2}$ miles south-west of Mount Vernon wharf. (See Chart No. 5.)

Observed station is on main road in Mount Vernon and is situated on the highest point in the vicinity.

Marks.—Observed station is center of steeple of Mount Vernon Methodist Church.

References.—None necessary.

BALL.

Locality.—Southeast shore of Wicomico River on a point of land about 1 mile northeast of Wingate Point. (See Chart No. 5.)

Observed station is on a sand and grass point making out about 100 yards west of a sand bluff. A small creek empties into the river about 10 yards to the east, and three poplars stand about 100 yards to the south. The extreme northern end of the point is about 35 yards from station and the western side is about 10 yards.

Marks.—Observed station is center point of triangle on standard cement monument

References.—

	o	1	"	
"Holland" (N 20° 03' W).....	00	00	00	1½ mile.
Middle one of five pines.....	107	09	--	100 yards.
Chimney on John Withlock's house.....	137	57	--	100 yards
Left end of pine woods.....	145	33	--	½ mile.
Right end of pine woods.....	165	04	--	½ mile.
Chimney on white house.....	183	32	--	¼ mile.
Third poplar.....	211	14	--	100 yards
Chimney of brown house.....	248	27	--	½ mile.

WIND.

Locality.—Southeast shore of Wicomico River about $\frac{1}{4}$ mile north of southern end of Wingate Point. (See Chart No. 5.)

Observed station is about 30 yards from high-water mark of Wicomico River on the north side and 20 yards from the west side. An oyster watchhouse stands about 100 yards to the east of the station

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	1	"	
"Great Shoals Light" (S 36° 29' W).....	00	00	00	1½ miles.
Tangent of Mollies Point.....	33	35	--	1 mile.
Left end of woods.....	46	12	--	1¾ miles.
Right end of woods.....	51	45	--	1¾ miles.
Tangent of Ellis Point.....	102	47	--	1 mile.
White house in woods.....	157	19	--	3 miles.
Smoke pipe on watchhouse.....	185	49	--	100 yards.
Chimney of brown house.....	203	38	--	½ mile.
Chimney of cream-colored house with brown trimmings.....	215	34	--	½ mile.
Watchhouse.....	308	41	--	¼ mile.
Chimney on 2½-story house.....	342	18	--	3 miles.
Chimney on end of white house Dames Quarter.....	350	57	--	2½ miles.

LITTLE.

Locality.—Southern shore of Monie Bay on second prominent point of marsh about $\frac{1}{4}$ mile to the west of entrance to Little Monie Creek. (See Chart No. 5.)

Observed station is on a marsh point covered with water bushes and reeds. It is about 1 foot above high-water mark, 7 yards from the west side, 10 yards from the east side, and about 50 yards from extreme end of point. No permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement manumnt.

References.—

"Great Shoals Light" (S 83° 43' W).....	00	00	00	2 1/4 miles.
Left side of woods on Nanticoke Point.....	19	34		3 1/4 miles.
Right side of woods on Nanticoke Point.....	22	24		3 1/2 miles.
Tangent of Wingate Point.....	34	39		1 1/2 miles.
Chimney on red roof white house.....	60	13		1 1/2 miles.
Chimney on near end of white house with brown trimmings.....	62	02		1 1/2 miles.
Chimney on red roof white house with green blinds.....	62	43		1 1/2 miles.
Left chimney of yellow house trimmed white.....	79	52		1 1/2 miles.
Middle of woods.....	80			1 3/4 miles.
Large brown house.....	93	55		1 3/4 miles.
Mount Vernon Church.....	102	42		1 3/4 miles.
Tangent of point of land.....	165	47		1/4 mile.
Tangent of point of land.....	320	16		75 yards.
Tangent of land.....	346	47		3 miles.

DOVE.

Locality.—South shore of Monie Bay and about 1/4 mile east of entrance to Pigeon Creek. (See Chart No. 5.)

Observed station is on marsh land about 10 yards back from high-water mark not far from water bushes which stand to the east. Cement monument marking reference station is 13.98 meters southeast from observed station. No permanent reference objects near station.

Marks.—Observed station is a nail in pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

"Great Shoals Light" (N 57° 41' W).....	00	00	00	1 1/4 miles.
Left side of Nanticoke Point woods.....	6	56		2 3/4 miles.
Left side of Roaring Point heavy woods.....	19	29		5 miles.
High lone pine showing above woods.....	23	39		5 miles.
Tangent of Wingate Point.....	52	52		2 miles.
Chimney of red roof house.....	67	30		2 miles.
Chimney on yellow house with red gable roof.....	84	12		3 miles.
Mount Vernon Church.....	86	37		3 1/4 miles.
Tangent of land.....	100	38		300 yards.
REFERENCE STATION.....	203	38	50	13.98 meters.
Chimney of white house with dark red trimmings.....	245	21		1 1/4 miles.

GREAT SHOALS LIGHT.

Locality.—Middle of entrances to Monie Bay and Wicomico River about halfway between Long Point to the south and Mollies Point to the north. (See Chart No. 5.)

Marks.—Observed station is center of black lantern on square screw pile structure known as "Great Shoals Light."

References.—

"Sharkfin Shoal Light" (S 81° 50' W).....	00	00	00	5 7/8 miles.
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SHORT.

Locality.—Southern shore of entrances to Monie Bay and Wicomico River on Long Point and about 1 mile south-southwest from Great Shoals Light. (See Chart No. 5.)

Observed station is on a sandy knoll on eastern side of entrance to Dames Quarter Creek about 15 feet back from high-water mark on the north side and about 30 feet from east side of point. It is on the highest part of the knoll which is about 5 feet above high-water mark.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sharkfin Shoal Light" (S 89° 03' W)...	00	00	00	5 ³ / ₈ miles.
Tile pipe in cement ("Long " 1901).....	23	57	45	63.703 meters.
Nanticoke wharf.....	67	57	--	4 ¹ / ₈ miles.
Left side of Nanticoke woods.....	69	13	--	2 miles.
Yellow house with red blinds.....	74	53	--	3 ¹ / ₂ miles.
Left tangent of Wingate Point.....	124	13	--	2 ³ / ₈ miles.
Chimney on red roof white house.....	132	39	--	3 miles.
Near chimney of yellow house.....	136	40	--	3 miles.
Chimney on red trimmed house.....	212	49	--	2 miles.
Left tree at Dames Quarter.....	260	37	--	1 ¹ / ₄ mile.
Chimney on white barn.....	279	45	--	300 yards.
Left chimney on white house.....	320	05	--	200 yards.
Chimney on yellow house.....	341	35	--	200 yards.

ROOM.

Locality.—Upper end and eastern shore of Tangier Sound on Halls Point. (See Chart No. 5.)

Observed station is on a bluff 15 feet high about 5 yards back from its edge. It is about 25 yards east of a clump of mulberry trees and about 15 yards north-northwest of a barn. Locust and mulberry trees stand all about station and locust bushes along the edge of the bluff. A wagon trail runs parallel to the shore about 15 yards back of station. Cement monument marking reference station is 21.45 meters south-southwest of observed station and almost in line with a large mulberry tree.

Marks.—Observed station is nail in center of stub with top flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sharkfin Shoal Light" (N 70° 00' W)...	00	00	00	2 ¹ / ₂ miles.
Gable on near side of red roof on white house on Bishop's Head.....	3	01	--	5 ¹ / ₂ miles.
Near end of roof of large 2 ¹ / ₂ -story house...	12	53	--	7 ¹ / ₄ miles.
Left tangent of Clay Island.....	39	18	--	3 ¹ / ₂ miles.
Left side of Sandy Point woods.....	70	08	--	4 miles.
Roaring Point wharf.....	85	22	--	5 miles.
Near chimney on end of large red roof white house.....	94	36	--	4 ¹ / ₄ miles.
Right side of Nanticoke woods.....	110	28	--	3 ³ / ₄ miles.
Mount Vernon Church.....	127	18	--	7 miles.
Near corner of barn.....	137	06	--	15.96 meters.
Right hand corner of barn.....	152	08	--	18.11 meters.
REFERENCE STATION.....	268	30	00	21.45 meters.
Large cedar tree.....	276	30	--	100 yards.
Two-inch iron pipe.....	279	38	30	9.21 meters.

HAINES.

Locality.—Upper end and eastern shore of Tangier Sound on Haines Point, about ⁵/₈ mile north of Denl Island Wharf. (See Chart No. 5.)

Observed station is on sand and grass point about 20 yards back and 5 feet above high-water mark. Locust and water bushes stand about 20 yards to the north and the left edge of this clump is about on

line with Sharkfin Shoal Light. A barbwire fence runs 3 yards east of station. Cement monument marking reference station is 9.64 meters east of observed station.

Marks.—Observed station is nail in pine stub in center of a drain tile with top broken off below surface. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sharkfin Shoal Light" (N 45° 58' W).....	00	00	00	2½ miles.
Left of bushes.....	39	57	--	20 yards.
Left of Sandy Point woods.....	53	38	--	4¾ miles.
Chimney of 2½-story white house trimmed with red.....	75	04	--	½ mile.
Chimney of unpainted house.....	85	49	--	350 yards.
Chimney on end of red cottage trimmed white.....	99	00	--	¾ mile.
REFERENCE STATION.....	123	40	40	9.64 meters.
Pine tree.....	148	37	30	2.14 meters.
Large square chimney on red house.....	152	49	--	400 yards.
Right one of 5 large pines.....	184	40	--	300 yards.
Half way between chimneys on store on Deal Island.....	213	08	--	¾ mile.
Deal Island Church.....	217	00	--	1½ miles.
Black gum tree.....	223	49	--	6.70 meters.
Right end of Deal Island wharf.....	234	10	--	½ mile.
Hooper Straits Light.....	343	34	--	7½ miles

DEAL ISLAND CHURCH.

Locality.—Deal Island on main road about ¼ mile from the shore and about ¾ mile south of Laws Thoroughfare. (See Chart No. 5.)

Marks.—Observed station is center of steeple on Deal Island Methodist Church.

References.—None necessary.

BAR.

Locality.—Eastern shore of Tangier Sound on western side of Deal Island, about 1 mile northwest of entrance to Lower Thoroughfare and ½ mile south of Middle Creek. (See Charts Nos. 5 and 7.)

Observed station is about 10 yards east of high-water mark on sand and grass land back of sandy beach. The first of many tree stumps which are submerged at high water commence about 100 yards to the north and cat-tails grow abundantly back of station. Cement monument marking reference station is 6.09 meters east of observed station.

Marks.—Observed station is a nail in pine stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Sharkfin Shoal Light" (N 19° 40' W).....	00	00	00	4½ miles.
Tangent of Haines Point.....	27	29	--	2½ miles.
Flag pole on large building on Deal Island wharf.....	28	45	--	2 miles.
Middle chimney of large gray building.....	37	41	--	1 mile.
Chimney on white house.....	59	54	--	400 yards.
Middle chimney on red roof white house.....	79	51	--	¾ mile.
REFERENCE STATION.....	107	10	00	6.09 meters.
Chimney on white house.....	118	43	--	400 yards.
Chimney on dark gray house.....	161	57	--	300 yards.
Right chimney on white four-gabled house with red roof.....	176	39	--	½ mile.

JEAN.

Locality.—Northern shore of Manokin River on a marsh point on the west side of entrance to Geanquakin Creek. (See Charts Nos. 5 and 7.)

Observed station is on low marsh land about 35 yards back from extreme end, 30 yards from east side and 40 yards from north side of point. Pine woods stand about $\frac{1}{8}$ mile back from station. There are no permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	t	"	
"Fairmount Church" (S 39° 13' E)-----	00	00	00	3 $\frac{3}{8}$ miles.
Chimney on cabin standing near two others. 145	48	--	----	$\frac{3}{4}$ mile.
Left end of cabin in woods.-----	238	05	--	1 $\frac{1}{4}$ miles.
Chimney of William Muir's store.-----	301	07	--	1 $\frac{1}{4}$ miles.
Cupola on barn ("Barn")-----	324	58	--	2 $\frac{5}{8}$ miles.
Chimney of house near "Staff"-----	358	45	--	1 $\frac{1}{4}$ miles.

SANDY.

Locality.—Northern shore of Manokin River on point of land known as Sandy Point opposite Fishing Island. (See Charts Nos. 5 and 7.)

Observed station is on a sandy point about 5 feet above and 10 yards back from high-water mark on south side of point and about 75 yards from high-water mark on west side. A sandy beach is building out to southward and a heavy clump of myrtle bushes extends from a point about 25 yards west to a point about 75 yards west.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	t	"	
"Fairmount Church" (S 7° 54' E)-----	00	00	00	2 $\frac{1}{4}$ miles.
Bell tower on oyster house ("Cupola")-----	30	58	50	$\frac{3}{8}$ mile.
Flag staff on oyster house ("Staff")-----	65	43	50	1 $\frac{1}{8}$ miles.
Chimney on William Muir's store.-----	137	42	--	$\frac{3}{4}$ mile.
Chimney on store cabin.-----	196	18	--	$\frac{5}{8}$ mile.
Right end of roof.-----	254	03	--	1 mile.
Cupola on barn ("Barn")-----	307	15	40	$\frac{3}{4}$ mile.

HOLLAND ISLAND BAR LIGHT.

Locality.—Easterly side of Chesapeake Bay off entrance to Kedge Straits, about 2 $\frac{1}{4}$ miles south of Holland Island, 2 $\frac{1}{2}$ miles southwest of South Marsh, and 3 $\frac{3}{4}$ miles northwest of Smith Island. (See Chart No. 6.)

Marks.—Observed station is center point of black lantern on hexagonal screw pile structure known as "Holland Island Bar Light."

References.—

	o	t	"	
"Solomons Lump Light" (S 72° 06' E)-----	00	00	00	4 $\frac{3}{4}$ miles.

SOLOMONS LUMP LIGHT.

Locality.—Kedge Straits about $\frac{1}{2}$ mile north of Smith Island and about 1 $\frac{1}{2}$ miles south of South Marsh. (See Charts Nos. 6 and 7.)

Marks.—Observed station is center of black lantern on square tower on northerly side of a caisson and octagonal structure known as "Solomons Lump Light."

References.—

	o	t	"	
"Jones Island Light" (S 42° 12' E)-----	00	00	00	7 $\frac{7}{8}$ miles.

FOG.

Locality.—Eastern shore of Chesapeake Bay and southern shore of Kedge Straits on northwest point of Smith Island known as "Fog Point." (See Chart No. 6.)

Observed station is on the north side of a sand and grass point about 1 foot above high-water and about 65 yards from extreme end of point to northeast and 6 yards south-southeast from shore. The

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remains of old "Fog Point Light House" are about 50 yards to west-southwest, and myrtle bushes abound on all sides except on the west side, which is a sandy beach. Cement monument marking reference station is 15.26 meters south from observed station and about in line with a lone cherry tree $\frac{1}{4}$ mile distant.

Marks.—Observed station is nail in center of tile pipe with top flush with surface of ground. Reference station is center point of triangle on standard cement monument.

References.—

	o	i	"	
"Solomons Lump Light" (N 59° 22' E).....	00	00	00	1 $\frac{3}{4}$ miles.
Tangent of point of land.....	13	08	--	$\frac{3}{4}$ mile.
Large tree near two smaller ones.....	22	41	--	1 $\frac{1}{2}$ miles.
Lone pine tree.....	89	28	--	1 mile.
REFERENCE STATION.....	121	18	30	15.26 meters.
Large lone cherry tree.....	121	26	--	$\frac{1}{4}$ mile.
First one of two trees.....	133	43	--	$\frac{1}{2}$ mile.
Old light-house foundation.....	193	47	--	50 yards.
First tree on Holland Island.....	272	37	--	5 $\frac{3}{4}$ miles.

JOSEPH.

Locality.—Eastern shore of Chesapeake Bay and western side of Smith Island, about 3 miles southwest from Solomons Lump Light and about $\frac{1}{2}$ mile north of entrance to Smith Island Thoroughfare (See Charts Nos. 6 and 8.)

Observed station is on marsh land about 30 yards back from edge of sandy shore. There is nothing but marsh grass for $\frac{1}{4}$ mile on all sides except a slough about 30 yards wide, which begins about 60 yards southeast of observed station and runs south to Smith Island Thoroughfare. Cement monument marking reference station is 38.74 meters northeast of station and is nearly on line with Solomons Lump Light.

Marks.—Observed station is nail in stub flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	o	i	"	
"Solomons Lump Light" (N 40° 47' E) ..	00	00	00	3 miles.
REFERENCE STATION.....	00	13	55	38.74 meters.
Tall lone tree.....	20	42	--	1 $\frac{1}{4}$ miles.
Right-hand one of two pines.....	58	35	--	1 mile.
Right end of slough.....	69	43	--	60 yards.
Smith Island North Church.....	103	33	--	1 $\frac{1}{2}$ miles.
Gable on front of 2 $\frac{1}{2}$ -story house.....	109	28	--	1 $\frac{1}{4}$ miles.
"Smith Island Old Church".....	128	01	--	3 $\frac{1}{2}$ miles.

TERRAPIN.

Locality.—Western shore of Tangier Sound on extreme northeast point of Smith Island, known as "Terrapin Sand Point." (See Chart No. 7.)

Observed station is on the northeast side of a marsh point about 50 yards west of the extreme end and 35 yards southwest of high-water mark on northeast side. A clump of myrtle bushes stands on point about 150 yards southwest of the station. There are no permanent reference objects near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	o	i	"	
"James Island Light" (S 37° 40' E).....	00	00	00	4 $\frac{5}{8}$ miles.
Left end of myrtle bushes.....	65	13	--	150 yards.
Smith Island Church.....	80	25	--	4 miles.
Lone tree to right of another tree.....	85	23	--	7 miles.
Solomons Lump Light.....	169	20	--	3 $\frac{3}{8}$ miles.
Point of this island.....	214	03	--	150 yards.

MILES.

Locality.—Western shore of Tangier Sound on eastern side of the lower half of South Marsh. (See Chart No. 7.)

Observed station is on a marsh point making out about 75 yards south of entrance to small creek, which is middle one of three on this shore of the island. Station is about 50 yards south of the north side and about 60 yards west of extreme end of point. A row of myrtle bushes stands east of the station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	0	1	2	
"Sharkfin Shoal Light" (N 8° 33' E)	00	00	00	7½ miles.
Deal Island Church.....	29	26	--	5¼ miles.
End of roof of white house among trees, Deal Island.....	33	48	--	4¼ miles.
Tangent of near point of land.....	155	35	--	¼ mile.
Solomons Lump Light.....	178	56	55	3¼ miles.
Third (first large) tree from left.....	231	57	--	¾ mile.
Lone pine tree.....	330	27	--	4¼ miles.

JOSHUA.

Locality.—Eastern shore of Tangier Sound on western side of Little Island, about ¼ mile south-east from extreme eastern point of island. (See Chart No. 7.)

Observed station is on northern half of a sand dune about 10 feet above and 20 feet back from high-water mark. The southern half of the sand dune is covered with bushes and scrub trees. A large aspen tree stands about ¼ mile north of the station. Cement monument marking reference station is located on low land 32.06 meters north of observed station, and is nearly on line with large aspen tree.

Marks.—Observed station is a nail in pine stub flush with ground and is likely to be disturbed by shifting of sand dune. Reference station is center point of triangle on standard cement monument.

References.—

	0	1	2	
"Solomons Lump Light" (S 37° 41' W) ..	00	00	00	5½ miles.
Tall pine tree on opposite shore of Tangier Sound.....	81	48	--	5½ miles.
Center point of square roof house on Deal Island.....	129	32	--	1¼ miles.
Large aspen tree.....	160	08	--	¼ mile.
REFERENCE STATION.....	160	19	20	32.06 meters.
Nail in blaze in peach tree (1½ inches in diameter).....	259	40	--	30.74 meters.
Tangent point of island.....	290	48	--	¼ mile.

KELLEY.

Locality.—Northern shore of Manokin River on Kelley Island, which is located off point between Fishing Creek and Laws Thoroughfare just inside of entrance to Laws Thoroughfare. (See Chart No. 7.)

Observed station is on a small point making off southern side of a marsh island known as "Kelley Island." It is about 8 yards from the east side and about 12 yards from west side of point. Myrtle bushes grow about 5 yards to west and north of observed station and a crab shanty stands on northern end of island about 100 yards north from station. Cement monument marking reference station is 10.44 meters northeast of observed station.

Marks.—Observed station is center of a square wooden box with top just above ground. Reference station is center point of triangle on standard cement monument.

References.—

	0	1	2	
"Fairmount Church" (S 70° 41' E).....	00	00	00	6¼ miles.
Pine to left of two others.....	18	38	--	3¾ miles.
Left end of new house.....	23	37	--	4 miles.
Aspen tree near "Joshua".....	130	32	--	2½ miles.

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Chimney on very large white house on Deal	°	'	"	
Island.....	167	51	--	2 miles.
Crab house on Kelley Island.....	253	29	--	100 yards.
REFERENCE STATION.....	283	57	10	10.44 meters.

MARSH.

Locality.—Northern shore of Manokin River on a small marshy island on eastern side of entrance to Fishing Creek. (See Chart No. 7.)

Observed station is on southern part of a small marshy island about 25 feet from the south side, 30 feet from the northeast side, and 10 feet from west side of the island. Cement monument marking reference station is 24.34 meters northwest of observed station.

Marks.—Observed station is a nail in a pine stub in center of square wooden box. Reference station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Fairmount Church" (S 64° 47' E).....	00	00	00	4 $\frac{7}{8}$ miles.
Pine to the left of two other pines.....	31	45	--	2 $\frac{3}{4}$ miles.
Right side of house on Deal Island.....	143	10	--	2 $\frac{1}{2}$ miles.
REFERENCE STATION.....	222	22	20	24.34 meters.
Chimney of cabin in woods.....	306	37	--	2 $\frac{1}{2}$ miles.
Right-hand end of crab house.....	336	22	--	$\frac{3}{4}$ mile

ST. PIERRE.

Locality.—Manokin River on a small marsh island known as "St. Pierre Island." (See Chart No. 7.)

Observed station is on west side of island about 20 yards from the shore to the west and about 30 yards from the shore to the south. A clump of myrtle bushes stand about 15 yards northwest of station, and the shore of a small bay is about 30 yards to the east. Cement monument marking reference station is 7.97 meters east-southeast of observed station and on line to "Fairmount Church."

Marks.—Observed station is a nail in pine stub in center of square wooden box. Reference station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Fairmount Church" (S 59° 49' E).....	00	00	00	3 $\frac{7}{8}$ miles.
REFERENCE STATION.....	00	00	00	7.97 meters.
Chimney on house with two ells.....	57	15	--	1 $\frac{3}{4}$ miles.
Pine tree to the left of two others.....	58	52	--	2 miles.
Left end of roof of white house.....	61	09	--	1 $\frac{7}{8}$ miles.
Left end of crab house near Muddy Cove....	188	14	--	1 $\frac{3}{4}$ miles.
Chimney on cabin.....	258	54	--	1 $\frac{1}{4}$ miles.
Chimney on Muir's store.....	301	22	--	2 $\frac{1}{4}$ miles.
Right-hand chimney on yellow house.....	313	44	--	4 miles.

LOCUST.

Locality.—Western shore of upper Manokin River, about $\frac{1}{4}$ mile north of Locust Point. (See Chart No. 7.)

Observed station is on marsh land about 12 yards west from shore of river and about 12 yards north from a small creek. Myrtle bushes extend alongside of river and creek. There are no other permanent reference marks near station.

Marks.—Observed station is center point of triangle on standard cement monument.

<i>References.</i> —	°	'	"	
"Barn" (S 12° 48' E).....	00	00	00	$\frac{7}{8}$ mile.
Bell cupola on oyster house ("Cupola").....	52	35	--	1 mile.
Chimney on white house.....	219	20	--	$\frac{5}{8}$ mile.
Chimney on cabin near "Wab".....	244	22	--	1 $\frac{1}{4}$ miles.
North chimney on brick house ("Pen").....	267	04	--	1 mile
Chimney of cabin near "Cox".....	287	22	--	$\frac{5}{8}$ mile

FITZ.

Locality.—Northwestern shore of upper Manokin River, about 1 mile northeast from Locust Point. (See Progress Map.)

Observed station is on the edge of the lawn of a large old red brick house owned by Mr. Fitzgerald, about 4 yards west of shore and 23 yards southwest of extreme end of point. Four locust trees, each 8 inches in diameter, stand back of station, and there is a cobblestone about 12 inches in diameter about 2 yards to the east. There is a small pond 20 yards to the north of the station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Fairmount Church" (S 10° 50' W).....	00	00	00	3½ miles.
Bell cupola on oyster house ("Cupola")...	29	05	--	1½ miles.
Chimney of white house.....	38	35	--	½ mile.
Nail in blaze in locust tree (8 inches diameter).....	105	02	--	5.42 meters.
Near corner of brick house.....	139	34	--	100 yards.
Nail in blaze in locust tree (8 inches in diameter).....	208	52	--	6.24 meters.
Chimney of unpainted house.....	224	02	--	½ mile.
Chimney of cabin near "Wab".....	237	52	--	½ mile.
North chimney on large brick house ("Pen").....	287	58	20	½ mile.

WAB.

Locality.—North shore of upper Manokin River on a point on the western side of entrance to Goose Creek. (See Progress Map.)

Observed station is on a shell and marsh point about 10 feet back from both sides of point and about 3 feet above high-water mark. A small shanty stands directly west of station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Pen" (S 1° 32' E).....	00	00	00	½ mile.
Left-hand corner of shanty.....	80	01	--	19.46 meters.
Next corner of shanty.....	90	58	--	18.77 meters.
Chimney of two-story unpainted house...	107	50	--	250 yards.
Large pine.....	105	07	--	280 yards.
Chimney on middle of red roof on white house east.....	254	34	--	½ mile.
Easterly chimney of white house on opposite shore.....	280	15	--	½ mile.

PEN.

Locality.—Southeastern shore of upper Manokin River on Clifton Point. (See Progress Map.)

Observed station is northern chimney of a large 2½ story, 4-gable roof, brick house belonging to Mr. Pendelton. The house is back from the river, and there are trees between it and the shore.

Marks.—Observed station is center of northern chimney on house belonging to Mr. Pendelton.

References.—None necessary.

CON.

Locality.—Eastern shore of upper Manokin River on marsh point about ¾ mile north of entrance to Back Creek. (See Chart No. 7.)

Observed station is about 15 yards east and 10 yards south of high-water mark. A small building stands in the water about 20 feet from bank to the northeast of station, and Bennett's oyster watch-house is about 15 yards east of station.

Survey of Oyster Bars, Somerset County, Md.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Fairmount Church" (S 15° 34' W)-----	00	00	00	2¾ miles.
Cupola on barn ("Barn")-----	10	37	--	¾ mile.
Bell cupola on oyster house ("Cupola")---	43	51	--	1¼ miles.
Chimney of white house-----	111	27	--	¾ mile.
West corner of roof brick of house on oppo-				
site shore near "Fitz"-----	151	33	--	¾ mile.
Cabin near "Wab"-----	189	33	--	¾ mile.
Left corner of watchhouse-----	266	45	--	17.20 meters.
Near corner of watchhouse-----	274	58	--	14.13 meters.

GREEN.

Locality.—Upper Manokin River on eastern shore about ¼ mile north of entrance to Back Creek. (See Chart No. 7.)

Observed station is on grassy land about 10 yards east of a sandy beach adjoining a marsh point, and is about 3 yards north of curve in road. Two small locust trees stand about 3 yards distant, one to the northwest and the other to the east of station. A cedar tree 10 inches in diameter stands about 10 yards to the south.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Fairmount Church" (S 18° 53' W)-----	00	00	00	2½ miles.
Left chimney of white house-----	7	59	--	¾ mile.
Cupola on barn ("Barn")-----	25	23	50	¾ mile.
Pine tree to the right of two others-----	35	50	--	4½ miles.
William Muir's store chimney-----	84	55	--	1¾ miles.
Nail in blaze on tree (3 inches diameter)--	107	01	--	3.65 meters.
Chimney on white house-----	126	11	--	¾ mile.
Tangent of point of land-----	141	18	--	100 yards.
Nail in blaze on tree (10 inches diameter)-	342	09	--	8.90 meters.

BARN.

Locality.—South shore of Manokin River on prominent point of land between Wolf Trap and Back creeks. (See Chart No. 7.)

Marks.—Observed station is center point of cupola on a large red frame structure used as a barn on farm of Hershel Ford.

References.—None necessary.

CUPOLA.

Locality.—South shore of Manokin River on north end of Fishing Island. (See Chart No. 7.)

Marks.—Observed station is center point of top of bell cupola on Bennett's oyster house.

References.—None necessary.

STAFF.

Locality.—Southern shore of Manokin River on eastern side of entrance to Broad Creek, about ¾ mile southeast of Cormal Point. (See Chart No. 7.)

Marks.—Observed station is flagstaff on eastern end of roof of oyster house on Cox's wharf.

References.—None necessary.

FAIRMOUNT CHURCH.

Locality.—Town of Upper Fairmount about halfway between Manokin and Big Annesmessex rivers. (See Chart No. 7.)

Marks.—Observed station is center point of steeple on Fairmount Methodist Church.

References.—None necessary.

PRICKLY.

Locality.—Eastern shore of Tangier Sound and southeastern side of entrance to Manokin River on a small point $\frac{1}{4}$ mile south of Prickly Point. (See Chart No. 7.)

Observed station is on a sandy spot about 5 feet above and 30 yards back from high-water mark on west side and about 35 yards from end of point to northwest. About 10 feet southeast of station is a clump of myrtle bushes, and 7 to 18 yards back of these is a small group of pine trees.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"St. Pierre" (N 17° 33' E)	00	00	00	3 $\frac{1}{8}$ miles.
Pine tree to left of two others.....	26	54	--	1 $\frac{1}{2}$ miles.
Chimney of gray house.....	39	22	--	$\frac{1}{4}$ mile.
Pointed cupola on building through trees.	49	54	--	$\frac{3}{4}$ mile.
Near end of roof of house.....	52	25	--	1 mile.
Nail in blaze in tree.....	68	03	--	19.69 meters.
Left end of white house.....	93	46	--	1 $\frac{1}{4}$ miles.
Left end of roof of yellow house.....	101	01	--	$\frac{3}{4}$ mile.
Nail in blaze in tree	125	29	--	3.07 meters.
Chimney on gray house on next point....	163	02	--	$\frac{5}{8}$ mile.
Tangent of point of land.....	332	04	--	$\frac{1}{8}$ mile.

HAS.

Locality.—Eastern shore of Tangier Sound on point at north side of entrance to Big Annemessex River about halfway between Porpoise Point and Two Mouth Creek. (See Chart No. 7.)

Observed station is on a sand dune about 10 feet above and 30 yards back from high-water mark to the west. A pool averaging 40 feet by 100 feet stands 50 feet east of observed station. Cement monument marking reference station is 5.21 meters east of observed station and about on line to Fords wharf.

Marks.—Observed station is a nail in a pine stub with top flush with ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Solomons Lump Light" (S 84° 12' W)---	00	00	00	7 $\frac{3}{4}$ miles.
Tangent of point of land.....	12	02	--	$\frac{1}{8}$ mile.
Chimney of house among trees.....	92	10	--	1 $\frac{3}{4}$ miles.
Right end of white house roof.....	117	54	--	2 miles.
Chimney on large unpainted house.....	129	46	--	$\frac{3}{4}$ mile.
REFERENCE STATION.....	179	11	45	5.21 meters.
Tower on Odd Fellows Building, Crisfield.	265	50	--	5 $\frac{3}{8}$ miles.

FORD.

Locality.—North shore of Big Annemessex River on south side of Jerico Marshes just east of Muddy Creek. (See Chart No. 7.)

Observed station is chimney on roof of oyster house near Fords wharf. Chimney is a little east of middle of roof.

Marks.—Observed station is center of chimney on roof of oyster house.

References.—None necessary.

MOON.

Locality.—North shore of Big Annemessex River on point between Moon Bay and Crane Cove. (See Chart No. 7.)

Observed station is on a marsh point about 35 yards from extreme end, 25 yards from east side and 30 yards from south side. A small pool stands about 10 yards south of observed station and a crescent-shaped pool about 10 feet wide and 100 feet long extends from a point about 20 yards west to a point about 20 yards north of station. A row of small myrtle bushes begins at a point directly south of

observed station, extends along shore toward the east, and ends at Moon Bay. Another lot of small myrtle bushes begins at a point about 100 yards west of observed station and extends along the shore to the west. There are no other points of reference near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Ford" (N 75° 41' W)	00	00	00	1½ miles.
Eastern end of cabin roof	59	06	--	1½ miles.
Chimney on cabin	83	12	--	1¾ miles.
Chimney on cabin	85	44	--	1¾ miles.
Peak of center gable of red roof house	104	45	--	2½ miles.
Near end of old 2½-story house	117	00	--	1½ miles.
Western chimney of square roof house	189	47	--	1 mile.
Eastern end of white house roof	202	18	--	1¼ miles.
Eastern end of roof of large barn	229	30	--	1 mile.
Chimney on house ("Colburn")	262	16	--	¾ mile.
Chimney on middle of long barn	267	16	--	¾ mile.
Tangent of point of land	328	28	--	¾ mile.

COLBURN.

Locality.—South shore of Big Annemessex River on southeastern side of entrance to Colburn Creek (See Chart No. 7.)

Observed station is chimney on top of a modern several gable house. House sets alone about halfway between oyster houses to the west and a group of houses to the east.

Marks.—Observed station is center of chimney on top of modern several gabled house.

References.—None necessary.

GEOG.

Locality.—South shore of Big Annemessex River on point on east side of a square-shaped inlet about ¾ mile northeast of the entrance to Jones Creek. (See Chart No. 7.)

Observed station is on marsh land about 50 yards back from extreme end of point, about 20 yards from southeast corner of square-shaped bay and about 25 yards from east shore line. Myrtle bushes extend along shore to the east of station for about 100 yards, and reeds grow 25 yards to the north.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Has" (N 71° 44' W)	00	00	00	2¾ miles.
Nearest end of red roof on opposite shore	40	43	--	3¾ miles.
Pine tree to the right of two others	47	17	--	4¾ miles.
Chimney on oyster house ("Ford")	57	22	--	1½ miles.
Center gable of red house	109	37	--	3½ miles.
Chimney on middle of dark red oyster house	155	25	--	1 mile.

FLAT CAP.

Locality.—Eastern shore of Tangier Sound and about ½ mile south of Flat Cap Point on south side of entrance to Big Annemessex River. (See Chart No. 7.)

Observed station is on a sand dune about 10 yards back and 10 feet above high-water mark. A sandy beach extends along shore for about 100 yards in both directions and remainder of land is grassy. A slough begins at a point about 50 yards southeast of observed station and extends south. Cement monument marking reference station is 13.64 meters east of observed station.

Marks.—Observed station is a 1½-inch iron pipe with top flush with the surface of the ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Solomons Lump Light" (N 81° 14' W) ..	00	00	00	7¾ miles.
Left end of roof of white house near				
Prickly Point	90	21	--	2½ miles.

	°	'	"	
Right end of long building in woods.....	169	09	--	2½ miles.
REFERENCE STATION.....	179	22	40	13.64 meters.
Tower of Odd Fellows building, Crisfield..	243	06	--	3½ miles.
Lone smokestack on Crisfield Ice Plant....	251	31	--	3¾ miles.
Fish factory stack Janes Island.....	271	36	--	4¼ miles.

SMITH POINT LIGHT.

Locality.—Western side of Chesapeake Bay on southern side of entrance to Potomac River and about 3 miles east by south of Smith Point. (See Chart No. 8.)

Marks.—Observed station is center point of black lantern on caisson and brick structure known as "Smith Point Light."

References.—

	°	'	"	
"Holland Island Bar Light" (N 20° 13' E).....	00	00	00	13¾ miles.

NORTH CHURCH (SMITH ISLAND).

Locality.—In town of Ewell on group of marsh islands known as "Smith Island." (See Chart No. 8.)

Observed station is on solid land on south shore of Smith Island Thoroughfare about 1 mile from the eastern shore of Chesapeake Bay.

Marks.—Observed station is center point of spire of church known as "Corinth Methodist Episcopal Church."

References.—None necessary.

OLD CHURCH (SMITH ISLAND).

Locality.—Western side of the group of marsh islands known as "Smith Island" on solid land about ½ mile from the eastern shore of Chesapeake Bay and ½ mile east of upper end of Shanks Creek at Rhodes Point. (See Chart No. 8.)

Marks.—Observed station is center point of spire of church known as "Calvary Methodist Episcopal Church."

References. None necessary.

EWELL CHURCH (SMITH ISLAND).

Locality.—In town of Tylerton near the center of the group of marsh islands known as "Smith Island" on solid land about ½ mile east of the narrowest part of waters joining Tylers Creek and Tylers Ditch. (See Chart No. 8.)

Marks.—Observed station is center point of spire of church known as "Union Methodist Episcopal Church."

References.—None necessary.

SHANKS HAMMOCK.

Locality.—Eastern shore of Chesapeake Bay on Shanks Island, which is located in Virginia about ¾ mile east of the southern end of Smith Island. (See Chart No. 8.)

Observed station is on the northeast side of the island, on low ground about ¼ mile from its northern end about 70 yards back from shore and 110 yards from end of point to east. It is near the southern extremity of a hummock covered with a dense growth of scrub trees and bushes and is about 35 yards north of a pile of brick, the ruins of a house. Cement monument marking reference station is 1.43 meters southwest of observed station.

Marks.—Observed station is center of a 4-inch tile pipe with top just below the surface of the ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Smith Point Light" (S 69° 16' W).....	00	00	00	8¼ miles.
Smith Island Corinth Church (North Church)	115	50	00	5 miles

Survey of Oyster Bars, Somerset County, Md.

	°	'	"	
Smith Island Union Church (Ewell Church).....	130	13	00	3¾ miles.
Horse Hammock poplar.....	161	33	--	3½ miles.
Right tangent of point.....	168	28	--	110 yards.
Pine tree.....	185	39	--	¾ miles.
Stove pipe on large crab house.....	207	07	--	2½ miles.
"Fox Island Poplar".....	214	47	40	7¾ miles.
Pile of brick, the ruins of a house.....	273	--	--	35 yards.
REFERENCE STATION.....	349	06	20	1.43 meters.

REACH HAMMOCK.

Locality.—South end and eastern side of Tangier Sound on Reach Hammock Island, which is located between Smith and Tangier islands about 1 mile east of Fishbone Island. (See Chart No. 9.)

Observed station is on the northeastern end of a small marshy island known as Reach Hammock and is about 5 feet from the present shore line, which is rapidly washing away. It is close to a small fish fertilizer factory which stands on the island. Cement monument marking reference station is 9.10 meters east by south of observed station.

Marks.—Observed station is the center of a 6-inch tile pipe with top flush with surface of the ground. Reference station is center point of triangle on standard cement monument.

	°	'	"	
"Fox Island Poplar" (N 77° 04' E).....	00	00	00	4¼ miles.
Left corner of brick work of factory.....	85	07	--	6.68 meters.
Right corner of brick work.....	97	12	--	7.31 meters.
Near corner of shed.....	109	03	--	18.32 meters.
REFERENCE STATION.....	169	02	30	9.10 meters.
Chimney of small house.....	185	08	--	45 yards.
Left edge of house.....	208	51	--	1¼ miles.
Right edge of roof of right-hand house.....	210	01	--	1¼ miles.
Chimney of 2½-story house on Herring Island.....	236	38	--	2 miles.
Tallest pine Smith Island.....	242	39	--	4¼ miles.
Poplar near Horse.....	275	48	--	5 miles.
"Janes Island Light".....	314	55	--	6¾ miles.

FISHBONE.

Locality.—Dividing waters of Chesapeake Bay and Tangier Sound on western side of Fishbone Island, which is located between Smith and Tangier islands. (See Chart No. 9.)

Observed station is on marsh ground about 15 yards from shore to the west and about halfway between northern and southern extremities of island. The station is about level with high-water mark, but there is a slight elevation between station and shore and a small shanty stands about 20 yards to the southwest. Cement monument marking reference station is 10.08 meters south of observed station and about on line with shanty.

Marks.—Observed station is a nail in stub flush with surface of ground. Reference station is center point of triangle on standard cement monument.

	°	'	"	
"Janes Island Light" (N 40° 34' E).....	00	00	00	7¼ miles.
"Fox Island Poplar".....	39	19	--	5½ miles.
Chimney on house on Reach Hammock.....	58	49	--	1¼ miles.
REFERENCE STATION.....	158	30	50	10.08 meters.
Near corner of shanty.....	159	49	--	17.44 meters.
Chimney on 2½-story house on Herring Island.....	306	32	--	1¼ miles.
Peak of left house.....	349	32	--	200 yards.
Stove pipe on flat roof shanty.....	356	41	--	200 yards.

HORSE.

Locality.—West shore of Tangier Sound on east shore of Smith Island at point known as "Horse Hammock." (See Chart No. 9.)

Observed station is about 10 yards off shore in 2 feet of water at low-tide, between shore and northernmost row of piling. Several trees stand on bank near station. Cement monument marking reference station is 27.12 meters west of observed station and 20 yards back from shore.

Marks.—Observed station is stake in water. Reference station is center point of triangle on standard cement monument.

References.—

	o	i	"	
"James Island Light" (N 80° 19' E)-----	00	00	00	4¼ miles.
Somers Cove Light-----	1	30	00	6½ miles.
High pile-----	15	27	30	8.41 meters.
Fox Island Poplar-----	40	25	50	0¼ miles.
Left tangent of Smiths Island-----	106	45	--	150 yards.
Near corner of old cedar-----	146	02	--	32.42 meters.
Blaze in tree-----	155	41	--	14.21 meters.
Blaze in tree-----	166	27	--	25.02 meters.
REFERENCE STATION-----	174	15	30	27.12 meters.
Blaze in poplar-----	174	40	30	45.74 meters.
Pile extending above row of piles-----	309	08	--	16.66 meters.
High pile-----	333	03	--	9.80 meters.
Ice factory stack-----	355	07	--	7¼ miles.
Fish factory stack-----	358	04	--	5¾ miles.

JANES ISLAND LIGHT.

Locality.—Tangier Sound off entrance to Little Annessex River. (See Chart No. 9.)

Marks.—Observed station is center of black lantern on hexagonal screw pile structure known as "James Island Light."

References.—

	o	i	"	
"Solomons Lump Light" (N 42° 08' W)----	00	00	00	7⅞ miles.

SOMERS COVE LIGHT.

Locality.—Little Annessex River at entrance to Crisfield Harbor. (See Chart No. 9.)

Marks.—Observed station is center of spindle on top of black lantern on square screw pile structure known as "Somers Cove Light."

References.—

	o	i	"	
"James Island Light" (S 84° 41' W)-----	00	00	00	2¼ miles.

EMMANUEL CHURCH.

Locality.—City of Crisfield, about ¾ mile east of Crisfield Harbor. (See Chart No. 9.)

Marks.—Observed station is center of steeple on church known as "Emmanuel Methodist Episcopal Church."

References.—None necessary.

MOUNT PLEASANT CHURCH.

Locality.—City of Crisfield, about 1 mile from Crisfield Harbor. (See Chart No. 9.)

Marks.—Observed station is center of steeple on brick church on Main street known as "Mount Pleasant Methodist Protestant Church."

References.—None necessary.

ASBURY CHURCH.

Locality.—In town of Lawtonia, about 1½ miles from Crisfield Harbor. (See Chart No. 9.)

Marks.—Observed station is center of very slender steeple on church known as "Asbury Methodist Episcopal Church."

References.—None necessary.

BEACON.

Locality.—Between Tangier and Pocomoke sounds, on small island just north of Great Fox Island known as "House Island." (See Chart No. 9.)

Observed station is about 100 yards south of extreme northern shore and about 30 yards from west shore of island. The shore of an inlet which makes into eastern side of island is about 15 feet northwest of observed station. Cement monument marking reference station is 4.12 meters west of observed station. A temporary wooden beacon stands 0.40 meters south of observed station.

Marks.—Observed station is center of a 6-inch tile pipe set in cement and projecting above ground about 6 inches. Reference station is center point of triangle on standard cement monument.

NOTE.—What was taken to be center mark of old "Beacon" of 1898 is a 2-inch iron pipe projecting above ground with three stubs projecting 3 feet above ground which were apparently used to support instrument. Wooden sills supported by 10-inch piles form a square with the 2-inch pipe in center.

References at observed station.—

"James Island Light" (N 11° 01' W).....	00	00	00	-----	3¾ miles.
Fish factory stack.....	22	49	--	-----	4¼ miles.
"Ashbury Church Spire".....	51	32	15	-----	6 miles.
"Sam".....	92	42	05	-----	1¼ miles.
Chimney of highest building on Fox Island	171	16	--	-----	1¼ miles.
"Fox Island Poplar".....	194	26	--	-----	1 mile.
2-inch iron pipe ("Beacon 1898").....	200	28	15	-----	7.26 meters.
Wooden beacon.....	222	46	00	-----	0.40 meters.
REFERENCE STATION (cement monument).....	299	20	40	-----	4.12 meters.

References at 2-inch iron pipe ("Beacon 1898").—

"James Island Light" (N 11° 01' W).....	00	00	00	-----	3¾ miles.
Fish factory stack.....	22	20	--	-----	4¼ miles.
"Ashbury Church Spire".....	51	30	--	-----	6 miles.
"Sam".....	92	27	--	-----	1¼ miles.
Chimney on highest building on Fox Island	171	07	--	-----	1¼ miles.
"Fox Island Poplar".....	194	23	--	-----	1 mile.
REFERENCE STATION (Cement monument).....	353	13	50	-----	8.875 meters
"Beacon" (OBSERVED STATION).....	20	35	00	-----	7.26 meters.
Wooden beacon.....	19	26	--	-----	6.89 meters.

FOX ISLAND POPLAR.

Locality.—Eastern shore of lower Tangier Sound on western side of Great Fox Island about half-way between the northern and southern ends of the island. (See Chart No. 9.)

Observed station is a very prominent lone Lombardy poplar situated on solid land about ⅓ mile inshore from Tangier Sound.

Marks.—Observed station is center of a lone Lombardy poplar tree.

References.—None necessary.

SAM.

Locality.—Western end and northern shore of Pocomoke Sound on north side of the entrance to Cedar Straits about ⅓ mile north of Green Harbor Island. (See Chart No. 9.)

Observed station is on marsh land between two clumps of water bushes about 10 yards back from extreme high-water mark and 15 yards back from ordinary high-water mark. A slough passes about 100 yards north of station and there are several pools 50 yards north of station. Cement monument marking reference station is 2.81 meters north of observed station. "Watkins Point" of the Maryland-Virginia boundary is in the water between "Sam" and Green Harbor Island.

Marks.—Observed station is center of iron pipe projecting 4 inches above ground. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"James Island Light" (N 27° 30' W).....	00	00	00	4 miles.
Fish factory stack.....	23	56	--	4 miles.
Ice factory stack.....	40	46	--	4 miles.
REFERENCE STATION.....	41	35	50	2.81 meters.
East.....	95	03	--	3 miles.
Point of land.....	142	16	--	50 yards.
Left tangent of small island.....	175	18	--	300 yards.
Right tangent of small island.....	202	59	--	300 yards.
Left chimney on Fox Island.....	239	15	--	1¾ miles.
Chimney on middle of large building on Fox Island.....	241	08	--	1¾ miles.
"Fox Island Poplar".....	253	24	--	1¾ miles.
Large clump of trees on Fox Island.....	264	21	--	1¾ miles.

WATERMELON HUMMOCK.

Locality.—Northern shore of Pocomoke Sound in midst of a large tract of marsh land lying between Apes Hole Creek and Broad Creek about 2½ miles southeast of Somers Cove Light. (See Chart No. 9.)

Observed station is in midst of marsh near a clump of trees which stand about 25 yards to the north. It is about 150 yards southwest of a wide part of the upper end of Massey Creek.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Somers Cove Light" (N 51° 30' W).....	00	00	00	2½ miles.
Nail in blaze in pine.....	46	55	30	21.00 meters.
Nail in blaze in pine.....	83	47	30	11.36 meters.
Cedar tree.....	235	19	--	100 yards.
"Fox Island Poplar".....	278	51	--	4¼ miles.

EAST.

Locality.—North shore of Pocomoke Sound between Apes Hole and Broad creeks on a detached marsh point on east side of entrance to Cow Gap Creek. (See Chart No. 9.)

Observed station is on southerly part of a small marsh island separated about 200 yards from point of mainland. Water bushes cover northerly part of the island. Observed station is about 13 yards south of shore, 14 yards west of shore, 36 yards north of shore, and 5 yards east of shore. Cement monument marking reference station is 6.38 meters southeast of observed station.

Marks.—Observed station is a spike in a cement filled tile pipe with top even with surface of marsh. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"James Island Light" (N 62° 19' W).....	00	00	00	5½ miles.
Fish factory stack.....	16	06	--	4¾ miles.
Somers Cove Light.....	20	18	00	3½ miles.
Tall tree.....	40	27	--	1¾ miles.
Point of land east.....	143	19	--	35 yards.
REFERENCE STATION.....	212	04	00	6.38 meters.
Pole at oyster house.....	277	12	--	3½ miles.
Right chimney of first house on Fox Island.....	298	31	--	4½ miles.
Point of land west.....	305	25	--	200 yards.
Cabin chimney.....	313	09	--	1¼ mile.

MONKEY.

Locality.—North side of Pocomoke Sound on a small island known as "Watkins Island" off entrance to Apes Hole Creek. (See Chart No. 9.)

Observed station is in the middle of a small islet about 12 yards by 4 yards which is covered with marsh grass and awash at high water. It is very solid ground on top but soft beneath and island will probably be washed away in a few years.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Scot" (N 77° 17' E).....	00	00	00	3¾ miles.
Chimney of Stirling's watch house.....	9	27	--	¾ mile.
Left hand chimney of Matthews red roof				
house on Saxis Island.....	22	01	--	5 miles.
Chimney of shanty near "Mos".....	68	40	--	4½ miles.
Ducking blind.....	134	36	--	200 yards.
Ducking blind.....	280	40	--	200 yards.
Peak of brown house.....	302	18	--	2¼ miles.
Windmill on barn.....	315	48	--	2½ miles.
Cupola of red house.....	336	49	--	5¼ miles.

SCOT.

Locality.—North shore of Pocomoke Sound on extreme southern point of marsh land between East and Marumscoc creeks. (See Chart No. 10.)

Observed station is on a marsh point about 25 yards back from extreme end of point, 30 yards back from west side of point, and 20 yards from south side. It is surrounded by a thick and high clump of water bushes which extend along the shore to the eastward. There are no permanent reference objects near station. Cement monument marking reference station is 11.66 meters northeast of observed station.

Marks.—Observed station is an inverted spike in cement which is flush with ground and covers the top of a 6-inch tile pipe. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Old" (N 83° 00' E).....	00	00	00	2½ miles.
First red house (near Oil).....	30	17	--	3¼ miles.
2½-story white house.....	57	17	--	2¼ miles.
Chimney on 4-gable house.....	70	31	--	2¼ miles.
"Saxis Church".....	80	59	35	2¾ miles.
Chimney of Stirling's watch house.....	172	55	--	2½ miles.
Large tree.....	181	32	--	5¼ miles.
REFERENCE STATION.....	317	31	40	11.66 meters.
Chimney of brown house.....	314	56	--	2¼ miles.
Chimney of oyster house.....	358	57	--	2½ miles.

OLD.

Locality.—North shore of Upper Pocomoke Sound on point of land halfway between Marumscoc Creek (called "Old Johns Creek" on navigation charts) and Williams Point. (See Chart No. 10.)

Observed station is about 150 yards east of John T. Handy's wharf and about 15 feet back. It is on a narrow strip of marsh land which is wearing away by wave action, and thick water bushes stand east and west of station. Three large pine trees stand about ⅓ mile north by east and several oyster houses about 200 yards to the west. Cement monument marking reference station is 11.57 meters north by east of observed station and about on line with largest of three large pines mentioned above.

Marks.—Observed station is spike in cement which is flush with ground and covers the top of a 6-inch tile pipe. Reference station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Scot" (S 83° 02' W).....	00	00	00	2½ miles.
Chimney of Richardson's oyster house.....	12	41	--	1¾ miles.
End of wharf.....	16	41	--	150 yards.
Chimney of dwelling house.....	37	53	--	125 yards.
Largest of three pine trees.....	110	40	--	¾ mile.
Tree to right of three pine trees.....	112	00	--	¾ mile.
REFERENCE STATION.....	112	36	50	11.57 meters.
Chimney of dilapidated white house.....	162	43	--	250 yards.
Nearest gable of first faded red roof house.....	250	03	--	2 miles.
Nearest end of peak of Matthew's house on Saxis Island.....	310	21	--	2½ miles.
Right tangent of Saxis Island.....	313	21	--	2½ miles

WILL.

Locality.—North shore of Pocomoke River on peninsula known as "Williams Point." (See Chart No. 10.)

Observed station is on the highest part of Williams Point about ¾ mile north of extreme southern end of point and well back from both shores. A clump of bushes and two small cedar trees stand about 40 yards to the north and two medium-sized cedar trees about 300 yards to the west. A drainage creek with mouth on easterly side of peninsula runs almost completely around observed station, passing about 50 feet to the south.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Old" (N 71° 18' W).....	00	00	00	1¾ miles.
Cedar tree.....	7	33	--	300 yards.
Persimmon tree.....	20	24	--	320 yards.
Nail in blaze in cedar tree.....	153	21	20	34.30 meters.
Cedar tree near "Oil".....	297	13	--	1¾ miles.
Cedar tree.....	357	55	--	300 yards

CUP.

Locality.—Virginia side of Pocomoke River on solid land about ¼ mile back from shore and ½ mile from nearest bend of Holden Creek. (See Chart No. 10.)

Observed station is octagonal cupola on unpainted barn on land known as "Jolly's Neck Farm." Barn stands near many cedar trees and south of another large unpainted building.

Marks.—Observed station is center point of top of cupola on barn.

References.—None necessary.

SUMMER.

Locality.—South and Virginia shore of mouth of Pocomoke River about ¾ mile south of Williams Point, on point known locally as "Sand Bar Point." (See Chart No. 10.)

Observed station is on sandy part of marsh land about 20 feet back from high-water mark on north and west sides of point. There are no permanent reference marks near station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	°	'	"	
"Will" (N 7° 06' E).....	00	00	00	1¾ miles.
Chimney of large white house.....	15	39	--	2¼ miles.
Large high tree.....	25	42	--	3 miles.
Large high tree (opposite shore).....	37	08	--	2 miles.
Southerly chimney of large house.....	79	39	--	1¾ miles.
Chimney on ell of red roof house.....	119	48	--	¾ mile.
First pine tree in half dozen or more.....	161	25	--	½ mile.
Larger chimney of white house near woods.....	199	52	--	½ mile.
Federman's windmill.....	41	11	--	mile

Survey of Oyster Bars, Somerset County, Md.

	°	'	"	
Peak of Federman's store.....	274	53	--	¾ mile.
"Oil".....	281	01	15	1 mile.
Lone tree.....	317	52	--	2½ miles.

OIL.

Locality.—South and Virginia shore of upper end of Pocomoke Sound on a point of land known as "Pig Point," located about 1½ miles southwest of Williams Point. (See Chart No. 10.)

Observed station is on western side of a marsh point covered with sand about 2 feet above and 30 feet east of ordinary high-water mark, 5 feet east of extreme high-water mark, 100 feet south of ordinary high-water mark, and about 3 feet south of extreme high-water mark. Water bushes skirt shore to east and north and sand beach curves to southwest. On next point about ¼ mile southwest are two trees. Cement monument marking reference station is 46.18 meters south of observed station.

Marks.—Observed station is spike in center of 6-inch tile pipe filled with cement with top flush with surface. Reference station is center of triangle on standard cement monument.

References.—

	°	'	"	
"Will" (N 47° 10' E).....	00	00	00	1½ miles.
Large lone tree.....	17	43	--	2½ miles.
Peak of roof of Federman's store.....	70	03	--	¾ mile.
Chimney on oyster house.....	78	07	--	¼ mile.
Large tree.....	84	47	--	¼ mile.
Windmill on Federman's barn.....	90	19	--	¾ mile.
Chimney outside of cabin.....	100	50	--	¼ mile.
Persimmon tree.....	123	12	--	¼ mile.
REFERENCE STATION.....	137	50	40	46.18 meters.
Tree.....	179	50	--	¼ mile.
Point of land.....	186	10	--	100 yards.
"Saxis Church".....	193	28	--	2¾ miles.
Wharf.....	209	32	--	2¾ miles.
Chimney of white house.....	277	54	--	1½ miles.
Highest chimney in group of white houses.....	290	20	--	1¾ miles.
High long leaf pine.....	295	53	--	2 miles.
Westerly end of barn.....	352	40	--	2 miles.

WHARF.

Locality.—Southeast and Virginia side of Pocomoke Sound about ½ mile offshore of Saxis Island and about ¾ mile north-northwest of "Saxis Church." (See Chart No. 10.)

Observed station is on northwest end of house on detached pile structure called Saxis Pier.

Marks.—Observed station is flag pole on northwest end of peak of pier house on Saxis Island pier

References.—

	°	'	"	
"Saxis Church" (S 26° 10' E).....	00	00	00	¾ mile.

SAXIS CHURCH.

Locality.—Southeast and Virginia shore of Pocomoke Sound on solid land known as "Saxis Island" about 3¼ miles from shore of sound and ½ mile northeast of mouth of Starling Creek. (See Chart No. 10.)

Marks.—Observed station is center point of spire on church known as Southern Methodist Episcopal Church.

References.—None necessary.

MOS.

Locality.—Eastern extremity of marsh land between Pocomoke Sound and Messongo Creek on a point of land locally called "Fishing Point." (See Chart No. 10.)

Observed station is on the western extremity of marsh point and about ½ mile east of the eastern extremity of a small island. It is about 2 feet above and 8 feet back from ordinary high-water on north

side and 45 feet from western end of point. A crab-packing shanty stands about 8 yards to eastward of observed station.

Marks.—Observed station is center point of triangle on standard cement monument.

References.—

	0	1	2	
"Monkey" (N 35° 23' W).....	00	00	00	4½ miles.
Point of Island.....	33	01	--	¾ mile.
"Saxis Church".....	82	06	10	2½ miles.
Right edge of woods on Saxis Island.....	86	11	--	2½ miles.
Left corner of crab house.....	98	58	--	6.74 meters.
Right corner of crab house.....	128	43	--	6.37 meters.
Point of land on Burntwood Island.....	163	01	--	2 miles.
Chimney on shanty.....	301	38	--	200 yards.

BOUNDARIES OF OYSTER BARS.

EXPLANATION OF DESCRIPTIONS OF BOUNDARIES.

The oyster bars of Somerset County are 37 in number, and their total area, as marked out by buoys placed by the hydrographic engineer of the Commission, is 27,566 acres. As provided by law, the boundaries of the oyster bars are all straight lines, but they inclose areas of all shapes from triangles to complicated fourteen-sided figures, and of all sizes from 3.083 acres to 10 acres.^a The sides vary in length from 130 to 6,800 yards, and in some cases the corners of the boundaries are practically at the triangulation stations from which they are located, while in other instances they are over 13,600 yards from the landmarks most available for the purpose of fixing their positions.

The varied characteristics of the legal boundaries of the oyster bars indicated by the above statement, together with the complicated requirements of the law under which the survey has been made, and the magnitude of the work, with the consequent need of fixed and uniform methods, has made the problem of describing the boundaries one of considerable difficulty and importance.

The boundaries of the oyster bars of Maryland, as established by the Shell Fish Commission and delineated on the Coast and Geodetic Survey charts and projections and on the leasing charts of the Commission, are technically defined and described by a method somewhat different from that used in other oyster surveys. But it is believed that the forms finally adopted will fulfill all needs of the survey for both the present and future.

The descriptions have been arranged in tabular form, thus avoiding many hundred repetitions of the same words by making one explanation of the tables sufficient for all oyster bars in the county.

At the top of each tabular form is given the legal name of the oyster bar to be described, its general locality, and the serial number of the "Charts of Oyster Bars" of Maryland on which its legal boundaries are shown.

The first column, under the heading of "Corner of bar," gives the number corresponding to the corner of the boundary as shown on the charts and to the number on the buoy marking the actual corner of the bar. The numbers of the corners have been assigned by naming the southernmost point No. 1, thence proceeding in a clockwise direction around the bar; but where a corner of one oyster bar is identical with the

^a For similar statistics for other counties that have been surveyed, see Appendix C of this publication.

corner of the boundaries of one or more other oyster bars, crab bottoms, or clam beds, only the number of the corner of the oyster bar being described in the table is given in this column.

The second and third columns, under the headings of "Latitude" and "Longitude," give the geographic positions of the corners. These positions have been adopted by the Commission as the primary technical definition of the corners, and should be considered as final in case of a dispute arising from discrepancies caused by other means of location. The latitudes and longitudes given in these columns are based on the United States standard datum of the Coast and Geodetic Survey, and the points thus defined can be relocated from distant triangulation stations of the Survey, even though all the landmarks and buoys originally used for their location have been destroyed by natural causes or by acts of vandals desiring to defeat the purposes of the oyster laws of Maryland.

The fourth and fifth columns, under the general heading of "True bearing"^a and the specific headings "Forward" and "Back," give bearings measured from a true north-and-south line. The three "Forward" bearings are from the corner of the boundary designated in the first column to the triangulation stations named on the corresponding lines in the last column, and the three "Back" bearings are from these same stations in the last column to the corresponding corner of boundary in the first column. The difference in minutes of arc between the forward and back bearings shown in some cases is actual and not accidental, and is due to the fact that the computations took into account the spheroidal shape of the earth.

The sixth column, under the heading of "Distance," gives the three computed distances in yards from the corner of the bar noted in the first column to the three triangulation stations named on the corresponding lines in the last column, and vice versa.

The seventh and last column, under the heading of "U. S. C. & G. S. triangulation station,"^b gives the names of the landmarks from which were computed the corresponding "Latitude," "Longitude," "True bearing," and "Distance" of the "Corner of the bar" designated in the first column. A full description of the location and markings of these triangulation stations is given in another part of this publication, under the heading of "Description of triangulation stations."

SURVEYING METHODS FOR RELOCATION OF BOUNDARIES.

There are a number of methods that can be used in the relocation of the actual boundaries of the natural oyster bars as technically described in this publication and delineated on the published charts of the Coast and Geodetic Survey and the leasing charts of the Shell Fish Commission.

The following brief descriptions of five of these more or less different methods assume a certain amount of experience and knowledge on the part of the engineer in the particular kind of surveying under consideration, and are only intended as reminders of ways and means that can be used.

There are two problems that are likely to present themselves to those interested in the boundaries of natural oyster bars. One, to determine whether the buoys marking

^a The mean magnetic variation of Somerset County for 1908 was $5^{\circ} 30'$ west of north, and increasing at the rate of $3'$ yearly.

^b Geographic positions of these triangulation stations can be obtained by application to the Superintendent of the Coast and Geodetic Survey at Washington.

the corners have been dragged or otherwise moved from their correct positions, and the other, to relocate or reestablish a buoy at the point from which it was removed. The different ways of solving these two problems partly depend upon the instruments possessed by the engineer and his assistants and partly on his training and experience.

(1) *Triangulation*.—This method is the one that will give the greatest accuracy, but on account of its requiring special data and instruments, and being an operation rarely used by engineers not engaged in geodetic surveying, it is recommended only for cases in dispute that can not be settled satisfactorily by some other method. An explanation of this class of work would be too long for a report of this sort, and those not familiar with this method are referred to the publications on the subject by the Coast and Geodetic Survey.

(2) *Hydrographic*.—This method is the most simple and satisfactory one that can be adopted if the surveyor can obtain the use of the necessary instruments and assistants. It is the one best suited for the work of the engineers of the Commission in relocating corners of boundaries, as it gives results of the accuracy ordinarily required and is rapid in execution. Besides, it has the advantage of being available whenever three triangulation stations of suitable relative positions are visible from the offshore points needing relocation.

Most navigators and others familiar with the use of a sextant are well acquainted with the graphic three-point method of fixing a position on water, and only a brief description of the operation will be stated.

In the case where there is only one engineer, having a single sextant, the three-point method can be used, but not until the two angles determining the position of any buoy have been derived from the "Forward bearing" given in the tabular forms describing the boundaries of the oyster bars. For example, take "Turtle Egg Island" bar, which is the first one described in this publication, and assume that "Corner No. 3," is to be examined as to its position. The angle between the two landmarks "Senator" and "Deal Island Church" as determined from right to left from the forward bearings from this corner is $128^{\circ} 39'$ and the angle between "Deal Island Church" and "Crab" is $99^{\circ} 30'$. Having these two angles, the engineer proceeds to the buoy of doubtful location and measures the actual sextant angles between the landmarks for which the calculations were made. If the measured and calculated angles do not agree the buoy is not in its correct position and the boundary corner must be relocated. This is accomplished by moving the boat about until a point is reached where angles do agree, and this point being the desired location, the buoy can be placed in its correct position.

If the engineer can obtain the use of both a sextant and a three-arm protractor ("position finder"), the availability of the hydrographic method is increased, as the use of the protractor is essential in case of the washing away or destruction of one or more of the landmarks originally used in describing the boundaries. Under these circumstances, any three landmarks of suitable relative positions that are visible from the point to be located can be utilized. For example, the engineer can proceed to the buoy of doubtful position and measure the two adjacent sextant angles between the three landmarks selected. These two angles are set off on the three-arm protractor and the actual position of the buoy plotted on the chart by shifting the protractor about until the edge of each of the three arms passes through the center of the symbols on the

chart marking the position of the three landmarks selected. The center of the hub of the protractor will indicate on the chart the actual position of the buoy, and if the point thus obtained does not coincide with the true position of the corner of the boundary as given on the chart, the surveyor can proceed to locate the buoy correctly by reversing the operation. This is done by placing the center point of the hub of the protractor over the corner of the boundary in question and measuring on the chart the two adjacent protractor angles between the three selected landmarks. One of the angles thus obtained is set on the sextant and the boat moved about until the two landmarks are shown by the sextant to subtend the same angle obtained from the protractor. The second angle is then placed on the sextant and the same operation gone through, and so on, first using one angle on the sextant then the other until a point is reached where both observed sextant angles are practically identical with the protractor angles. The point thus located is the desired one and the buoy can be placed to mark the true position of the corner of the boundary in question.

If the engineer possesses two sextants and a protractor, this problem is far easier of solution, as the two angles can be set off on separate sextants and the observer can quickly find the desired point where they agree with the protractor angles by using one sextant after the other without the need of resetting either.

If there are two observers, two sextants, and a protractor, it can be seen that the best conditions for both rapid and accurate hydrographic locations of points are attained; in fact, this is the method by which the buoys at the corners of the boundaries were originally placed by the hydrographic engineer to the Commission.

(3) *Magnetic bearings from offshore.*—This method of fixing a position on water is a simple and well-known one in navigation. It is available to anyone having a boat compass and will be of special use to the State fishery force in investigating cases where buoys are supposed to have been moved for illegal purposes.

In the case where a buoy is supposed to have been moved from its true position the observer takes compass bearings to the three landmarks given in the last column of the tables opposite the boundary corner in question. These bearings are then corrected for the local declination,^a and if the results agree with the published bearings the buoy is correctly located.

In the case where the buoy is not in its correct position, or has disappeared altogether, the desired point can be determined by maneuvering the vessel until the corrected bearings agree with the ones in the tabular descriptions, when the buoy can be anchored in its proper location.

In the case where the landmarks for which the bearings are published have been destroyed or washed away, any landmarks whose positions are indicated on the charts can be used by getting their bearings directly from the chart by parallel rulers or a protractor and then applying them in the same manner as the ones published in the tables.

(4) *Magnetic bearings from shore.*—This method will be of special value to engineers having an ordinary surveyor's compass. The compass can be set over the point marking a "triangulation station" on shore, the name of which is given in the last column opposite the "corner" in question. The instrument is then set at the corresponding

^aThe mean magnetic variation of Somerset County for 1908 was 5° 30' west of north and increasing at the rate of 3' yearly.

"back" bearing (corrected for local magnetic declination), given in the fourth column of the tables opposite the "corner" in question and on line with the name of the "station" being occupied. The direction thus determined will give one range on which the desired point must be located. The compass can then be moved to a second triangulation station and another range located in a similar manner. The intersection of these two range lines will give the desired point; but in general it should be checked by an additional range line determined from a third station.

(5) *Horizontal angles measured at landmarks.*—This process is a modification of the triangulation method, and will be useful to engineers who have a transit and desire considerable accuracy.

The instrument is placed over a "triangulation station," the name of which appears in the last column of the tabular description opposite the "corner" in question. The telescope is then pointed to the landmark indicated in the "Descriptions of landmarks" as having a direction of $0^{\circ} 00' 00''$ from the triangulation station being occupied by the transit. The tabular description of the boundaries is next examined and the "back" bearing of the questionable boundary "corner" from the landmark being occupied is taken out. The angle calculated from the "back" bearing and the bearing given in parentheses alongside the zero landmark in the "Descriptions of landmarks" is then set off on the transit, and a range line established on which the desired point must be located. A similar process is then carried on at a second station, and so on until the position of the buoy is satisfactorily fixed.

BOUNDARIES OF NATURAL OYSTER BARS.

TURTLE EGG ISLAND.

(Upper Tangier Sound—Charts Nos. 5 and 7)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	$^{\circ}$ $'$ $''$	$^{\circ}$ $'$ $''$	$^{\circ}$ $'$ $''$	$^{\circ}$ $'$ $''$	Yards	
1	38 05 49.58	76 00 03.78	S 77 38 W	N 77 38 E	609	Miles.
			S 12 54 W	N 12 53 E	6113	Solomons Lump Light
			N 65 07 E	S 65 09 W	5553	Joshua.
2	38 06 24.78	76 00 21.47	S 5 22 W	N 5 22 E	1323	Miles.
			N 78 12 E	S 78 14 W	5629	Joshua.
			N 10 01 W	S 10 01 E	3400	Senator.
3	38 08 42.38	76 00 20.00	S 26 01 W	N 26 01 E	1437	Senator.
			N 77 22 E	S 77 24 W	5582	Deal Island Church.
			N 22 08 W	S 22 08 E	3984	Crab.
4	38 08 37.36	75 59 11.44	N 69 02 E	S 69 03 W	3878	Deal Island Church.
			N 40 45 W	S 40 46 E	5095	Crab.
			S 65 28 W	N 65 27 E	2700	Senator.
5	38 05 57.12	75 59 10.20	S 79 13 W	N 79 12 E	2059	Miles
			S 24 12 W	N 24 11 E	6812	Solomons Lump Light
			N 60 02 E	S 60 03 W	4168	Joshua.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MUD.

(Upper Tangier Sound—Chart No. 5.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 08 37.36	75 59 11.44	N 69 02 E	S 69 03 W	3878	Deal Island Church.
			N 40 45 W	S 40 46 E	5095	Crab.
			S 65 28 W	N 65 27 E	2700	Senator.
2	38 08 42.38	76 00 20.00	S 26 01 W	N 26 01 E	1437	Senator.
			N 77 22 E	S 77 24 W	5582	Deal Island Church.
			N 22 08 W	S 22 08 E	3984	Crab.
3	38 09 06.39	76 00 41.00	S 1 56 W	N 1 56 E	2102	Senator.
			N 86 03 E	S 86 07 W	6019	Deal Island Church.
			N 18 06 W	S 18 06 E	3030	Crab.
4	38 09 26.74	76 00 23.48	S 10 55 W	N 10 55 E	2838	Senator.
			S 87 10 E	N 87 07 W	5546	Deal Island Church.
			N 32 41 W	S 32 41 E	2607	Crab.
5	38 09 53.08	75 59 18.00	N 67 28 W	S 67 29 E	3411	Crab.
			S 31 50 W	N 31 49 E	4325	Senator.
			S 72 57 E	N 72 58 W	3970	Deal Island Church.

OLD ORCHARD.

(Upper Tangier Sound—Chart No. 5.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 09 12.58	75 58 01.68	N 83 29 E	S 83 30 W	1775	Deal Island Church.
			N 26 24 E	S 26 24 W	3064	Haines.
			S 61 51 W	N 61 53 E	4893	Senator.
2	38 09 15.60	75 58 21.20	N 87 31 E	S 87 32 W	2285	Deal Island Church.
			N 35 27 E	S 35 28 W	3245	Haines.
			S 57 34 W	N 57 33 E	4495	Senator.
3	38 10 06.90	75 58 19.19	S 42 53 W	N 42 52 E	5651	Senator.
			S 53 49 E	N 53 49 W	2761	Deal Island Church.
			N 63 27 E	S 63 28 W	2044	Haines.
4	38 10 09.70	75 57 15.91	N 9 57 E	S 9 58 W	831	Haines.
			N 83 20 W	S 83 17 E	6445	Crab.
			S 17 31 E	N 17 31 W	1809	Deal Island Church.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

HAINES.

(Upper Tangier Sound—Chart No. 5.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 10 06.90	75 58 19.19	S 42 53 W	N 42 52 E	5651	Senator.
			S 53 49 E	N 53 49 W	2761	Deal Island Church.
			N 63 27 E	S 63 28 W	2044	Haines.
2	38 11 13.65	75 58 16.39	N 39 44 W	S 39 45 E	2367	Sharkfin Shoal Light.
			S 73 37 W	N 73 35 E	4993	Crab.
			S 52 40 E	N 52 40 W	2206	Haines.
3	38 12 08.36	75 57 32.19	S 46 31 E	N 46 30 W	2365	Room.
			N 61 58 E	S 62 00 W	6723	White.
			N 13 21 E	S 13 22 W	4252	Frog.
4	38 11 16.19	75 57 05.79	S 5 03 W	N 5 03 E	1429	Haines.
			N 82 39 E	S 82 39 W	1023	Room.
			N 2 43 E	S 2 43 W	5903	Frog.
5	38 10 46.46	75 57 43.66	S 85 02 W	N 85 00 E	5683	Crab.
			S 23 24 E	N 23 24 W	3230	Deal Island Church.
			S 64 30 E	N 64 30 W	978	Haines.
6	38 10 09.70	75 57 15.91	N 9 57 E	S 9 58 W	831	Haines.
			N 83 20 W	S 83 17 E	6445	Crab.
			S 17 31 E	N 17 31 W	1809	Deal Island Church.

HALLS POINT.

(Upper Tangier Sound—Chart No. 5.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 11 16.19	75 57 05.79	S 5 03 W	N 5 03 E	1429	Haines.
			N 82 39 E	S 82 39 W	1023	Room.
			N 2 43 E	S 2 43 W	5903	Frog.
2	38 12 08.36	75 57 32.19	S 46 31 E	N 46 30 W	2365	Room.
			N 61 58 E	S 62 00 W	6723	White.
			N 13 21 E	S 13 32 W	4252	Frog.
3	38 12 22.06	75 57 04.02	S 24 30 E	N 24 30 W	2330	Room.
			N 62 46 E	S 62 48 W	5830	White.
			N 3 30 E	S 3 30 W	3653	Frog.
4	38 12 10.72	75 55 55.59	N 47 32 E	S 47 33 W	4560	White.
			N 21 22 W	S 21 22 E	4357	Frog.
			S 26 35 W	N 26 35 E	1909	Room.
5	38 11 52.57	75 55 45.84	N 40 04 E	S 40 05 W	4824	White.
			N 21 34 W	S 21 35 E	5022	Frog.
			S 45 28 W	N 45 28 E	1563	Room.
6	38 11 47.98	75 56 30.40	S 4 22 E	N 4 22 W	944	Room.
			N 48 07 E	S 48 09 W	5762	White.
			N 7 48 W	S 7 49 E	4870	Frog.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

ROCK CREEK.

(Upper Tangier Sound—Chart No. 5.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 12 11.80	75 55 19.92	S 45 58 W	N 45 57 E	2509	Room.
			N 89 35 E	S 89 36 W	3363	Short.
			N 38 27 E	S 38 28 W	3884	White.
2	38 12 17.40	75 55 28.62	S 39 07 W	N 39 07 E	2492	Room.
			S 87 23 E	N 87 20 W	3598	Short.
			N 42 51 E	S 42 52 W	3892	White.
3	38 12 20.98	75 55 15.54	S 43 05 W	N 43 04 E	2812	Room.
			S 84 59 E	N 84 57 W	3259	Short.
			N 40 04 E	S 40 05 W	3572	White.

EVANS.

(Entrance to Wicomico River—Chart No. 5.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 12 11.13	75 55 00.80	N 89 04 E	S 89 05 W	2854	Short.
			N 31 53 E	S 31 54 W	3610	White.
			S 53 20 W	N 53 20 E	2883	Room.
2	38 12 36.31	75 54 44.50	S 46 54 W	N 46 53 E	3762	Room.
			S 71 39 E	N 71 38 W	2550	Short.
			N 33 37 E	S 33 38 W	2661	White.
3	38 12 50.97	75 53 52.76	S 38 49 E	N 38 49 W	1664	Short.
			N 89 20 E	S 89 20 W	1755	Great Shoals Light.
			N 3 14 E	S 3 14 W	1725	White.
4	38 12 38.84	75 53 10.40	S 5 22 W	N 5 22 E	892	Short.
			N 55 41 E	S 55 41 W	761	Great Shoals Light.
			N 25 48 W	S 25 48 E	2367	White.
5	38 12 24.72	75 53 38.75	S 58 26 E	N 58 26 W	787	Short.
			N 56 47 E	S 56 48 W	1652	Great Shoals Light.
			N 6 02 W	S 6 02 E	2621	White.

BUOY.

(Entrance Wicomico River—Chart No. 5.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 12 30.79	75 52 38.34	S 73 13 E	N 73 12 W	1765	Dove.
			N 17 45 W	S 17 45 E	736	Great Shoals Light.
			S 56 38 W	N 56 38 E	1121	Short.
2	38 12 45.82	75 52 36.80	N 53 50 W	S 53 50 E	328	Great Shoals Light.
			S 41 02 W	N 41 01 E	1489	Short.
			S 58 21 E	N 58 21 W	1938	Dove.
3	38 12 48.43	75 52 23.80	N 80 10 W	S 80 10 E	620	Great Shoals Light.
			S 47 31 W	N 47 31 E	1795	Short.
			S 49 43 E	N 49 43 W	1708	Dove.
4	38 12 32.26	75 52 22.18	N 45 08 W	S 45 08 E	923	Great Shoals Light.
			S 64 00 W	N 64 00 E	1520	Short.
			S 66 04 E	N 66 04 W	1376	Dove.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

WINGATE.

(Lower Wicomico River—Chart No. 5.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 14 01.31	75 51 58.41	N 70 14 E	S 70 14 W	379	Wind.
			N 38 53 E	S 38 53 W	2099	Holland.
			N 31 47 W	S 31 47 E	1307	Ella.
2	38 14 05.12	75 52 02.63	S 61 19 E	N 61 19 W	536	Wind.
			N 43 31 E	S 43 32 W	2077	Holland.
			N 30 23 W	S 30 22 E	1138	Ella.
3	38 14 21.26	75 51 40.50	N 41 12 E	S 41 12 W	1277	Holland.
			N 69 23 W	S 69 24 E	1245	Ella.
			S 8 26 W	N 8 26 E	810	Wind.
4	38 14 12.82	75 51 33.60	N 27 50 E	S 27 50 W	1409	Holland.
			N 61 48 W	S 61 49 E	1529	Ella.
			S 30 21 W	N 30 21 E	598	Wind.

MOUNT VERNON WHARF.

(Middle Wicomico River—Chart No. 5.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 15 10.22	75 48 29.18	S 77 45 E	N 77 44 W	175	Walnut.
			N 6 01 W	S 6 01 E	434	End.
			S 81 02 W	N 81 02 E	1138	Jones.
2	38 15 13.76	75 48 30.30	N 50 26 W	S 50 26 E	1342	Creek.
			S 74 50 W	N 74 50 E	1134	Jones.
			S 52 02 E	N 52 02 W	254	Walnut.
3	38 15 15.14	75 48 19.08	N 49 44 W	S 49 44 E	411	End.
			S 76 09 W	N 76 09 E	1435	Jones.
			S 25 44 W	N 25 44 E	225	Walnut.
4	38 15 18.76	75 48 09.97	N 75 29 W	S 75 29 E	574	End.
			S 74 07 W	N 74 06 E	1701	Jones.
			S 46 18 W	N 46 18 E	470	Walnut.
5	38 15 14.18	75 48 08.56	N 63 19 W	S 63 19 E	665	End.
			S 79 28 W	N 79 28 E	1702	Jones.
			S 65 41 W	N 65 41 E	414	Walnut.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

GEORGES.

(Middle Manokin River—Charts Nos. 5 and 7.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 07 34.98	75 50 51.58	S 61 04 E	N 61 02 W	4965	Fairmount Church.
			N 13 42 E	S 13 42 W	2314	Jean.
			N 53 58 W	S 53 58 E	1054	St. Pierre.
2	38 07 37.55	75 51 09.09	S 62 39 E	N 62 37 W	5417	Fairmount Church.
			N 35 54 W	S 35 54 E	659	St. Pierre.
			N 68 19 W	S 68 20 E	3245	Marsh.
3	38 08 15.04	75 50 56.73	S 44 25 W	N 44 25 E	1023	St. Pierre.
			S 71 55 E	N 71 55 W	2350	Staff.
			N 37 21 E	S 37 22 W	1130	Jean.
4	38 08 41.22	75 50 12.44	N 88 14 W	S 88 14 E	492	Jean.
			S 33 12 E	N 33 11 W	1927	Staff.
			S 78 31 E	N 78 30 W	2791	Sandy.
5	38 08 46.80	75 50 02.99	S 76 56 W	N 76 56 E	766	Jean.
			S 24 03 E	N 24 02 W	1972	Staff.
			S 60 07 E	N 60 07 W	2594	Cupola.
6	38 08 42.06	75 49 27.21	S 89 33 W	N 89 33 E	1698	Jean.
			S 62 07 W	N 62 05 E	3508	St. Pierre.
			S 5 13 W	N 5 13 E	1647	Staff.
7	38 08 22.52	75 49 17.98	N 71 37 W	S 71 38 E	2054	Jean.
			S 21 56 W	N 21 56 E	1059	Staff.
			S 65 43 E	N 65 43 W	1153	Cupola.
8	38 08 22.89	75 48 50.33	S 48 42 W	N 48 42 E	1507	Staff.
			S 32 51 E	N 32 51 W	579	Cupola.
			N 83 32 E	S 83 33 W	551	Sandy.
9	38 08 18.77	75 48 36.40	S 60 21 W	N 60 21 E	1729	Staff.
			S 9 19 W	N 9 19 E	352	Cupola.
			N 41 21 E	S 41 21 W	268	Sandy.
10	38 08 13.78	75 48 46.70	S 60 47 W	N 60 46 E	1407	Staff.
			S 50 31 E	N 50 31 W	282	Cupola.
			N 50 42 E	S 50 42 W	583	Sandy.
11	38 08 16.22	75 49 44.00	N 55 34 W	S 55 34 E	1517	Jean.
			S 73 49 W	N 73 48 E	2762	St. Pierre.
			S 21 08 E	N 21 08 W	825	Staff.
12	38 08 07.26	75 50 47.14	S 64 16 W	N 64 16 E	1078	St. Pierre.
			N 20 20 E	S 20 20 W	1237	Jean.
			S 76 43 E	N 76 43 W	2034	Staff.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

SOUTHWEST MIDDLEGROUND.

(Chesapeake Bay—Off Smith Island—Charts Nos. 6 and 8.)

Cornered bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	<i>°</i> <i>'</i> <i>"</i>	<i>°</i> <i>'</i> <i>"</i>	<i>°</i> <i>'</i>	<i>°</i> <i>'</i>	<i>Yards.</i>	
1	37 58 56.40	76 10 01.95	S 87 36 E N 70 20 E N 33 04 E	N 87 31 W S 70 24 W S 33 07 W	12019 11802 12510	Old Church (Smith Island). Joseph. Holland Island Bar Light.
2	38 01 24.82	76 10 20.36	S 66 14 E S 84 49 E N 53 10 E	N 66 09 W N 84 44 W S 53 13 W	13658 11653 9142	Old Church (Smith Island). Joseph. Holland Island Bar Light.
3	38 00 48.20	76 08 02.85	S 64 10 E N 88 43 E N 28 33 E	N 64 07 W S 88 46 W S 28 34 W	9810 7940 7642	Old Church (Smith Island). Joseph. Holland Island Bar Light.
4	37 59 25.92	76 07 29.61	S 79 18 E N 67 17 E N 16 15 E	N 79 15 W S 67 20 W S 16 16 W	8083 7643 9882	Old Church (Smith Island). Joseph. Holland Island Bar Light.

KEDGE STRAITS.

(Chesapeake Bay—Off Kedge Straits—Chart No. 6.)

	<i>°</i> <i>'</i> <i>"</i>	<i>°</i> <i>'</i> <i>"</i>	<i>°</i> <i>'</i>	<i>°</i> <i>'</i>	<i>Yards.</i>	
1	38 02 59.23	76 05 02.83	S 67 03 E S 88 09 E N 26 34 W	N 67 01 W N 88 07 W S 26 34 E	4415 6613 2566	Fog. Solomons Lump Light. Holland Island Bar Light.
2	38 03 44.58	76 05 27.95	S 55 28 E S 76 33 E N 31 59 W	N 55 26 W N 76 30 W S 31 59 E	5735 7485 902	Fog. Solomons Lump Light. Holland Island Bar Light.
3	38 04 06.44	76 04 14.42	N 89 20 W S 34 50 E S 64 59 E	S 89 21 E N 34 48 W N 64 57 W	2438 4858 5869	Holland Island Bar Light. Fog. Solomons Lump Light.
4	38 03 23.36	76 04 01.96	S 16 38 E S 43 55 E S 78 21 E	N 16 38 W N 43 54 W N 78 19 W	5279 3519 5092	Joseph. Fog. Solomons Lump Light.

OYSTER CREEK.

(Outer Kedge Straits—Chart No. 6.)

	<i>°</i> <i>'</i> <i>"</i>	<i>°</i> <i>'</i> <i>"</i>	<i>°</i> <i>'</i>	<i>°</i> <i>'</i>	<i>Yards.</i>	
1	38 03 41.17	76 02 30.87	N 80 23 W S 0 14 E S 57 31 E	S 80 25 E N 0 14 W N 57 30 W	5272 3138 3033	Holland Island Bar Light. Fog. Solomons Lump Light.
2	38 04 09.14	76 04 01.30	S 88 43 W S 30 43 E S 62 38 E	N 88 42 E N 30 42 W N 62 36 W	2789 4745 5595	Holland Island Bar Light. Fog. Solomons Lump Light.
3	38 04 34.32	76 04 32.26	S 65 05 W S 33 24 E S 59 26 E	N 65 04 E N 33 24 W N 59 24 W	2164 5903 6730	Holland Island Bar Light. Fog. Solomons Lump Light.

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BOUNDARIES OF NATURAL OYSTER BARS—continued.

OYSTER CREEK—Continued.

Cor- ner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
					<i>Yards.</i>	
4	38° 04' 40.70"	76° 04' 11.80"	S 65° 04' W	N 03° 03' E	2077	Holland Island Bar Light.
			S 28° 28' E	N 8° 27' W	5840	Fog.
			S 55° 41' E	N 33° 39' W	6452	Solomons Lump Light.
5	38° 05' 10.20"	76° 04' 00.70"	S 82° 53' W	N 81° 52' E	3510	Holland Island Bar Light.
			S 24° 25' E	N 24° 34' W	6593	Fog.
			S 49° 56' E	N 10° 34' W	6780	Solomons Lump Light.
6	38° 03' 01.98"	76° 03' 40.24"	S 61° 10' W	N 61° 08' E	3823	Holland Island Bar Light.
			S 17° 38' E	N 17° 37' W	6150	Fog.
			S 45° 21' E	N 45° 20' W	6195	Solomons Lump Light.
7	38° 04' 29.16"	76° 03' 45.49"	S 77° 04' W	N 77° 02' E	3293	Holland Island Bar Light.
			S 22° 50' E	N 22° 50' W	5160	Fog.
			S 34° 28' E	N 34° 27' W	5587	Solomons Lump Light.
8	38° 04' 13.84"	76° 03' 35.49"	S 87° 31' W	N 87° 29' E	3080	Holland Island Bar Light.
			S 1° 50' E	N 1° 50' W	4241	Fog.
			S 44° 28' E	N 44° 27' W	3820	Solomons Lump Light.

MUSSEL HOLE.

(Middle Tangier Sound—Chart No. 7.)

					<i>Yards.</i>	
1	38° 02' 36.70"	75° 59' 41.02"	N 10° 41' W	S 10° 41' E	6483	Miles.
			S 74° 37' W	N 74° 38' E	2045	Solomons Lump Light.
			S 35° 44' E	N 35° 43' W	4150	Terrapin.
2	38° 02' 44.55"	76° 00' 05.88"	N 5° 03' W	S 5° 03' E	8320	Miles.
			S 77° 56' W	N 77° 57' E	1337	Solomons Lump Light.
			S 49° 22' E	N 49° 21' W	4709	Terrapin.
3	38° 03' 07.81"	75° 59' 53.42"	N 31° 17' E	S 31° 16' W	6118	Joshua.
			S 70° 34' W	N 70° 33' E	5309	Miles.
			S 73° 09' W	N 73° 09' E	1742	Solomons Lump Light.
4	38° 03' 40.94"	75° 59' 35.20"	N 18° 38' W	S 18° 38' E	4440	Miles.
			S 53° 27' W	N 53° 27' E	2723	Solomons Lump Light.
			S 21° 48' E	N 21° 44' W	5957	Terrapin.
5	38° 05' 49.58"	76° 00' 03.77"	S 77° 38' W	N 77° 38' E	600	Miles.
			S 15° 54' W	N 15° 53' E	6113	Solomons Lump Light.
			N 63° 07' E	S 63° 09' W	5553	Joshua.
6	38° 08' 37.22"	75° 59' 10.20"	S 70° 13' W	N 70° 12' E	2059	Miles.
			S 24° 12' W	N 24° 11' E	6812	Solomons Lump Light.
			S 60° 02' E	N 60° 03' W	4168	Joshua.
7	38° 01' 50.94"	75° 58' 34.94"	N 26° 41' W	S 26° 42' E	6306	Miles.
			N 89° 00' W	S 89° 02' E	3734	Solomons Lump Light.
			S 0° 14' E	N 0° 14' W	3004	Terrapin.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

CHAIN SHOAL.

(Upper Tangier Sound—Chart No. 7.)

Cor- rect ed bear	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	"	"	"	"	Yards	
1	38 05 54.32	75 58 08.33	N 40 52 E N 43 56 W S 85 20 W	S 40 52 W S 43 58 E N 85 28 E	2877 6077 3763	Joshua. Senator. Miles.
2	38 06 41.67	75 58 29.59	S 77 08 E N 52 06 W S 58 43 W	N 77 06 W S 52 07 E N 58 42 E	2594 4525 3933	Joshua. Senator. Miles.
3	38 07 40.53	75 58 13.70	N 82 59 W S 40 11 W S 80 57 E	S 83 00 E N 40 11 E N 50 56 W	4024 5466 2711	Senator. Miles. Joshua.
4	38 07 49.58	75 58 08.32	N 83 18 W S 41 19 W S 48 50 E	S 83 16 E N 41 18 E N 48 55 W	4167 5561 2603	Senator. Miles. Joshua.
5	38 07 49.36	75 57 48.36	N 83 53 W S 48 14 W S 40 02 E	S 83 53 E N 45 13 E N 40 01 W	4695 5920 2224	Senator. Miles. Joshua.
6	38 06 30.96	75 57 51.84	N 80 00 E N 82 46 W S 73 53 W	S 50 01 W S 52 47 E N 73 52 E	1988 5748 4279	Joshua. Senator. Miles.
7	38 06 02.66	75 57 29.40	N 26 02 E N 31 38 W S 83 00 W	S 26 02 W S 51 40 E N 83 04 E	2108 6599 4744	Joshua. Senator. Miles.

PINEY ISLAND WEST.

(Middle Tangier Sound—Chart No. 7.)

Cor- rect ed bear	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	"	"	"	"	Yards.	
1	38 02 51.48	75 56 30.20	N 77 42 E N 4 58 W N 86 36 W	S 77 44 W N 4 58 E S 86 36 E	6823 8366 7059	Has. Joshua. Solomons Lump Light
2	38 03 50.44	75 57 18.84	N 5 47 E N 82 08 W S 71 23 W	S 5 49 W N 82 07 E N 71 21 E	6401 6326 6080	Joshua. Miles. Solomons Lump Light.
3	38 05 48.86	75 57 49.50	N 31 45 E S 88 33 W S 39 48 W	S 31 46 W N 88 32 E N 39 46 E	2776 4174 7724	Joshua. Miles. Solomons Lump Light.
4	38 05 56.82	75 57 19.40	N 17 39 E S 85 13 W S 42 49 W	S 17 39 W N 85 41 E N 42 47 E	2104 4999 8459	Joshua. Miles. Solomons Lump Light
5	38 05 42.60	75 56 59.66	N 2 58 E N 88 52 W S 47 38 W	S 2 58 W S 88 54 E N 47 36 E	574 5502 8492	Joshua. Miles. Solomons Lump Light.
6	38 02 52.53	75 55 46.18	N 75 32 E N 12 53 W N 80 54 W	S 75 34 W S 12 24 E S 80 57 E	5072 8804 8234	Has. Joshua. Solomons Lump Light.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

PINEY ISLAND SWASH.

(Lower Manokin River—Chart No. 7.)

Cor- ner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Rack		
	° ' "	° ' "	° ' "	° ' "	Yards	
1	38 06 30.82	75 55 43.81	N 51 16 E	S 51 18 W	5513	Marsh
			N 27 09 E	S 27 08 W	3826	Kelley.
			N 63 23 W	S 63 24 E	2111	Joshua.
2	38 06 40.44	75 56 03.80	N 57 07 E	S 57 05 W	5756	Marsh.
			N 36 29 E	S 36 28 W	3832	Kelley.
			N 65 22 W	S 65 23 E	1491	Joshua.
3	38 06 55.34	75 55 50.46	N 59 39 E	S 59 41 W	5201	Marsh.
			N 36 43 E	S 36 44 W	3216	Kelley.
			N 86 02 W	S 86 01 E	1715	Joshua.
4	38 07 20.78	75 55 27.89	N 65 32 E	S 65 33 W	4260	Marsh.
			N 37 32 E	S 37 32 W	2170	Kelley.
			S 72 17 W	N 72 16 E	2427	Joshua.
5	38 07 54.55	75 53 44.94	S 89 25 E	N 89 21 W	3765	St. Pierre.
			N 61 07 E	S 61 07 W	1296	Marsh.
			N 67 43 W	S 67 44 E	1534	Kelley.
6	38 07 37.14	75 53 26.26	N 80 28 E	S 80 30 W	3313	St. Pierre.
			N 27 45 E	S 27 45 W	1369	Marsh.
			N 58 38 W	S 58 37 E	2256	Kelley.
7	38 06 40.66	75 54 52.43	N 43 15 E	S 43 16 W	4279	Marsh.
			N 7 00 E	S 7 00 W	3096	Kelley.
			N 79 19 W	S 79 20 E	3314	Joshua.
8	38 06 59.58	75 55 20.55	N 56 02 E	S 65 05 W	4439	Marsh.
			N 24 50 E	S 24 49 W	2683	Kelley.
			S 89 27 W	N 89 26 E	2508	Joshua.

SANDY POINT.

(Middle Manokin River—Chart No. 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 08 08.44	75 48 27.90	N 70 53 E	S 70 53 W	2070	Green
			N 5 09 W	S 5 09 E	553	Sandy.
			N 89 48 W	S 89 48 E	283	Cupola.
2	38 08 13.78	75 48 46.70	S 60 47 W	N 60 46 E	1407	Staff.
			S 50 31 E	N 50 31 W	282	Cupola.
			N 50 42 E	S 50 42 W	583	Sandy.
3	38 08 18.77	75 48 36.40	S 60 21 W	N 60 21 E	1729	Staff.
			S 9 19 W	N 9 19 E	352	Cupola.
			N 41 21 E	S 41 21 W	268	Sandy.
4	38 08 16.04	75 48 08.80	N 74 07 E	S 74 07 W	1502	Green.
			N 62 18 W	S 62 18 E	631	Sandy.
			S 72 08 W	N 72 08 E	832	Cupola.
5	38 08 10.17	75 48 07.23	N 66 13 E	S 66 14 W	1536	Green.
			N 50 43 W	S 50 43 E	775	Sandy.
			S 86 04 W	N 86 04 E	836	Cupola.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

CORMAL.

(Middle Manokin River—Chart No. 7.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards	
1	38 07 33.63	75 50 42.00	S 60 03 E	N 60 01 W	4720	Fairmount Church.
			N 70 06 E	S 70 07 W	1959	Staff.
			N 7 16 E	S 7 16 W	2313	Jean.
2	38 07 34.98	75 50 51.58	S 61 04 E	N 61 02 W	4965	Fairmount Church
			N 13 42 E	S 13 42 W	2314	Jean.
			N 53 58 W	S 53 58 E	1054	St. Pierre.
3	38 08 07.26	75 50 47.14	S 64 16 W	N 64 16 E	1078	St. Pierre.
			N 20 20 E	S 20 20 W	1237	Jean.
			S 76 43 E	N 76 43 W	2034	Staff.
4	38 08 16.22	75 49 44.00	N 55 34 W	S 55 34 E	1517	Jean.
			S 73 49 W	N 73 48 E	2762	St. Pierre.
			S 21 08 E	N 21 08 W	825	Staff.
5	38 08 13.78	75 48 46.70	S 60 47 W	N 60 46 E	1407	Staff.
			S 50 31 E	N 50 31 W		Cupola.
			N 50 42 E	S 50 42 W	583	Sandy.
6	38 07 59.80	75 49 18.22	N 74 32 E	S 74 33 W	1098	Cupola.
			N 56 53 E	S 56 53 W	1538	Sandy.
			S 60 59 W	N 60 59 E	445	Staff.
7	38 08 08.57	75 49 29.28	S 80 27 W	N 80 26 E	3087	St. Pierre.
			S 10 28 W	N 10 28 E	521	Staff.
			S 89 51 E	N 89 51 W	1352	Cupola.
8	38 08 09.18	75 49 54.96	S 47 56 E	N 47 55 W	794	Staff.
			N 76 50 E	S 77 00 W	2329	Sandy.
			N 41 13 W	S 41 13 E	1457	Jean.
9	38 08 05.77	75 49 58.00	S 58 07 E	N 58 07 W	790	Staff.
			N 74 46 E	S 74 47 W	2435	Sandy.
			N 35 58 W	S 35 59 E	1499	Jean.
10	38 08 00.34	75 49 53.88	S 67 21 E	N 67 20 W	607	Staff.
			N 35 20 W	S 35 21 E	1708	Jean.
			S 84 23 W	N 84 23 E	2402	St. Pierre.
11	38 07 52.81	75 50 00.00	N 88 26 E	S 88 26 W	734	Staff.
			N 26 36 W	S 26 37 E	1843	Jean.
			N 89 30 W	S 89 31 E	2227	St. Pierre.
12	38 07 45.55	75 50 26.40	N 79 29 E	S 79 30 W	1451	Staff.
			N 3 42 W	S 3 42 E	1896	Jean.
			N 80 10 W	S 80 11 E	1546	St. Pierre.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MARSHY ISLAND.

(Lower Manokin River—Chart No. 7.)

Cor- ner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 19.82	75 53 40.47	S 17 05 E	N 17 04 W	6283	Flat Cap.
			S 40 08 E	N 40 08 W	3321	Has.
			N 63 55 E	S 63 56 W	2225	Prickly.
2	38 05 17.10	75 54 19.78	S 22 41 E	N 22 40 W	7505	Flat Cap.
			S 42 41 E	N 42 40 W	4704	Has.
			N 88 54 E	S 88 55 W	3047	Prickly.
3	38 05 50.40	75 54 24.20	S 71 25 E	N 71 24 W	3338	Prickly.
			N 24 23 E	S 24 25 W	5282	Marsh.
			N 60 03 W	S 60 05 E	4626	Joshua.
4	38 07 04.22	75 53 18.62	N 61 34 E	S 61 36 W	3483	St. Pierre.
			N 10 35 E	S 10 35 W	2362	Marsh.
			N 42 56 W	S 42 57 E	3113	Kelley.
5	38 07 38.06	75 52 23.58	N 72 05 E	S 72 05 W	1679	St. Pierre.
			N 41 08 W	S 41 09 E	1568	Marsh.
			N 72 23 W	S 72 25 E	3763	Kelley.
6	38 07 37.58	75 51 09.09	S 62 39 E	N 62 37 W	5417	Fairmount Church.
			N 35 54 W	S 35 54 E	659	St. Pierre.
			N 68 19 W	S 68 20 E	3245	Marsh.
7	38 07 34.98	75 50 51.58	S 61 04 E	N 61 02 W	4965	Fairmount Church.
			N 13 42 E	S 13 42 W	2314	Jean.
			N 53 58 W	S 53 58 E	1054	St. Pierre.
8	38 07 03.79	75 51 10.99	S 74 29 E	N 74 27 W	5046	Fairmount Church.
			N 11 21 W	S 11 22 E	1705	St. Pierre.
			N 51 45 W	S 51 46 E	3775	Marsh.
9	38 07 05.36	75 52 17.32	S 78 03 E	N 78 01 W	6776	Fairmount Church.
			N 41 28 E	S 41 29 W	2161	St. Pierre.
			N 27 41 W	S 27 42 E	2579	Marsh.
10	38 08 46.90	75 53 38.71	S 64 08 E	N 64 08 W	2169	Prickly.
			N 11 07 E	S 11 08 W	5024	Marsh.
			N 65 03 W	S 65 05 E	5757	Joshua.

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BOUNDARIES OF NATURAL OYSTER BARS—continued.

DRUM POINT.

(Lower Manokin River—Chart No. 7.)

Cor- rect ed bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 32.62	75 53 15.53	S 12 16 E S 37 08 E N 40 34 E	N 12 16 W N 37 07 W S 40 35 W	5532 2445 2952	Flat Cap. Has. Prickly.
2	38 04 49.82	75 53 40.47	S 17 05 E S 40 08 E N 63 55 E	N 17 04 W N 40 08 W S 63 50 W	6283 3321 2225	Flat Cap. Has. Prickly
3	38 05 46.90	75 53 38.71	S 04 08 E N 11 07 E N 65 03 W	N 04 08 W S 11 08 W S 65 08 E	2160 5024 5757	Prickly. Marsh. Joshua.
4	38 07 05.36	75 52 17.32	S 78 03 E N 41 28 E N 27 41 W	N 78 01 W S 41 29 W S 27 41 E	6776 2161 2579	Fairmount Church. St. Pierre. Marsh.
5	38 07 03.79	75 51 10.99	S 71 39 E N 11 21 W N 51 45 W	N 71 37 W S 11 22 E S 51 40 E	8046 1705 3775	Fairmount Church. St. Pierre. Marsh.
6	38 07 34.98	75 50 51.58	S 01 04 E N 13 42 E N 53 58 W	N 01 02 W S 13 42 W S 53 58 E	4965 2314 1054	Fairmount Church. Jean. St. Pierre.
7	38 07 33.63	75 50 42.00	S 60 03 E N 70 06 E N 7 16 E	N 60 01 W S 70 07 W S 7 16 W	4720 1950 2313	Fairmount Church. Staff. Jean.
8	38 07 22.98	75 50 41.10	S 63 50 E N 60 34 E N 8 48 E	N 63 48 W S 60 35 W S 8 48 W	4530 2088 3701	Fairmount Church. Staff. Jean.
9	38 07 14.55	75 50 47.49	S 67 59 E N 56 37 E N 36 18 W	N 67 57 W S 56 38 W S 36 18 E	4560 2382 1924	Fairmount Church. Staff. St. Pierre.
10	38 06 59.16	75 50 46.00	S 74 06 E N 46 19 E N 28 43 W	N 74 05 W S 46 50 W S 28 43 E	4361 2973 2084	Fairmount Church. Staff. St. Pierre.
11	38 06 35.34	75 51 56.97	S 86 18 E N 18 40 E N 27 50 W	N 86 18 W S 18 40 W S 27 51 E	6100 2778 3728	Fairmount Church. St. Pierre. Marsh.
12	38 06 05.78	75 52 32.34	S 6 36 E N 85 04 E N 26 46 E	N 6 36 W S 85 07 W S 26 47 W	1593 7050 4004	Prickly. Fairmount Church. St. Pierre.
13	38 05 56.46	75 53 00.24	S 36 05 E N 33 08 E N 0 41 W	N 36 04 W S 33 09 W S 0 41 E	1560 4708 4607	Prickly. St. Pierre. Marsh.
14	38 05 01.80	75 52 41.83	N 19 48 E N 4 50 W N 50 37 W	S 19 49 W S 4 50 E S 50 39 E	6149 6173 7808	St. Pierre. Marsh. Joshua.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

PRICKLY POINT.

(Mouth Manokin River—Chart No. 7.)

Corner of bar	Latitude		Longitude		True bearing		Distance	U. S. C. & G. S. triangulation station
					Forward	Back		
	°	'	°	'	°	'	Yards	
1	38 04	28.72	75 53 19.95		S 13 47 E	N 13 46 W	5452	Flat Cap.
					S 41 06 E	N 41 05 W	2426	Has.
					N 40 40 E	S 40 41 W	2228	Prickly.
2	38 04	50.38	75 54 16.08		S 24 53 E	N 24 52 W	6641	Flat Cap.
					S 50 24 E	N 50 22 W	4011	Has.
					N 71 58 E	S 71 59 W	3100	Prickly.
3	38 05	17.10	75 54 19.78		S 22 41 E	N 22 40 W	7505	Flat Cap.
					S 42 41 E	N 42 40 W	4704	Has.
					N 88 54 E	S 88 55 W	3047	Prickly.
4	38 04	49.82	75 53 40.47		S 17 05 E	N 17 04 W	6283	Flat Cap.
					S 40 08 E	N 40 08 W	3321	Has.
					N 63 55 E	S 63 56 W	2225	Prickly.
5	38 04	32.62	75 53 15.53		S 12 16 E	N 12 16 W	5552	Flat Cap.
					S 37 08 E	N 37 07 W	2445	Has.
					N 40 34 E	S 40 35 W	2052	Prickly.

PINEY ISLAND EAST.

(Middle Tangier Sound—Chart No. 7.)

	Latitude		Longitude		True bearing		Distance	U. S. C. & G. S. triangulation station
					Forward	Back		
	°	'	°	'	°	'	Yards	
1	38 03	05.04	75 54 16.59		S 48 39 E	N 48 37 W	3742	Flat Cap.
					N 72 14 E	S 72 15 W	3260	Has.
					N 28 06 W	S 28 08 E	8939	Joshua.
2	38 04	19.61	75 54 49.20		S 36 25 E	N 36 23 W	6196	Flat Cap.
					S 60 05 E	N 60 03 W	4255	Has.
					N 62 28 E	S 62 30 W	4320	Prickly.
3	38 04	12.34	75 53 21.76		S 15 49 E	N 15 48 W	4929	Flat Cap.
					S 52 10 E	N 52 10 W	2079	Has.
					N 33 47 E	S 33 48 W	2698	Prickly.
4	38 03	23.75	75 53 02.85		S 15 11 E	N 15 10 W	3216	Flat Cap.
					N 72 18 E	S 72 19 W	1194	Has.
					N 40 24 W	S 40 27 E	9527	Joshua.

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BOUNDARIES OF NATURAL OYSTER BARS—continued.

HARRIS.

(Middle Tangier Sound—Chart No. 7.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 02 37.94	75 54 04.81	S 58 00 E	N 57 59 W	2942	Flat Cap.
			N 55 38 E	S 55 39 W	3380	Has.
			N 27 13 W	S 27 15 E	9894	Joshua.
2	38 03 05.04	75 54 16.59	S 48 39 E	N 48 37 W	3742	Flat Cap.
			N 72 14 E	S 72 15 W	3260	Has.
			N 28 06 W	S 28 08 E	8939	Joshua.
3	38 03 23.75	75 53 02.85	S 45 11 E	N 45 10 W	3216	Flat Cap.
			N 72 18 E	S 72 19 W	1194	Has.
			N 40 24 W	S 40 27 E	9527	Joshua.
4	38 02 40.04	75 52 45.88	S 13 26 E	N 13 26 W	1675	Flat Cap.
			N 58 48 E	S 58 49 W	5484	Ford.
			N 20 28 E	S 20 28 W	1961	Has.

BIG ANNEMESSEX.

(Big Annemessex River—Chart No. 7.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 02 50.93	75 51 45.86	N 51 20 E	S 51 21 W	3959	Ford.
			N 31 53 W	S 31 53 E	1731	Has.
			S 31 14 W	N 31 14 E	2336	Flat Cap.
2	38 03 16.52	75 51 49.69	N 63 14 E	S 63 15 W	3576	Ford.
			N 53 14 W	S 53 14 E	1014	Has.
			S 21 12 W	N 21 12 E	3066	Flat Cap.
3	38 03 45.06	75 51 07.58	S 30 17 W	N 30 17 E	4426	Flat Cap.
			S 55 12 E	N 55 11 W	3314	Geog.
			N 72 37 E	S 72 37 W	2170	Ford.
4	38 03 51.42	75 49 12.66	N 66 25 W	S 66 25 E	1084	Ford.
			S 9 16 W	N 9 16 E	2134	Geog.
			S 43 22 E	N 43 21 W	2420	Colburn.
5	38 03 08.18	75 48 47.60	S 73 07 E	N 73 06 W	1039	Colburn.
			N 44 50 E	S 44 50 W	1650	Moon.
			N 41 17 W	S 41 18 E	2517	Ford.
6	38 03 03.08	75 48 54.81	S 83 45 E	N 83 45 W	1193	Colburn.
			N 45 17 E	S 45 17 W	1908	Moon.
			N 35 27 W	S 35 27 E	2533	Ford.
7	38 03 17.77	75 49 31.17	S 8 47 E	N 8 47 W	982	Geog.
			N 69 58 E	S 69 59 W	2475	Moon.
			N 17 40 W	S 17 40 E	1646	Ford.
8	38 03 05.44	75 50 32.58	S 72 45 E	N 72 44 W	1872	Geog.
			N 29 50 E	S 29 50 W	2287	Ford.
			N 71 07 W	S 71 08 E	3031	Has.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

CHURCH CREEK.

(Chesapeake Bay—Off Smith Island—Chart No. 8.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 58 41.19	76 04 16.61	N 89 55 E	S 89 56 W	2791	Old Church (Smith Island).
			N 60 15 E	S 60 16 W	4167	North Church (Smith Isl'd).
			N 22 06 E	S 22 07 W	7531	Fog.
2	37 58 53.37	76 05 41.59	S 85 25 E	N 85 23 W	5075	Old Church (Smith Island).
			N 74 16 E	S 74 18 W	6114	North Church (Smith Isl'd).
			N 37 49 E	S 37 52 W	8316	Fog.
3	37 59 53.49	76 05 47.45	S 65 00 E	N 64 58 W	5755	Old Church (Smith Island).
			S 86 31 E	N 86 28 W	6053	North Church (Smith Isl'd).
			N 49 10 E	S 49 12 W	6945	Fog.
4	38 00 01.79	76 04 12.09	S 44 32 E	N 44 31 W	3807	Old Church (Smith Island).
			S 79 28 E	N 79 27 W	3557	North Church (Smith Isl'd).
			N 32 29 E	S 32 30 W	5050	Fog.

PHILIBYS.

(Lower Tangier Sound—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 56 57.88	75 54 49.54	N 59 04 E	S 59 05 W	4041	Somers Cove Light.
			N 15 01 W	S 15 01 E	1771	Janes Island Light.
			N 86 25 W	S 86 28 E	7711	Horse.
2	37 57 10.16	75 55 47.46	N 71 38 E	S 71 40 W	5281	Somers Cove Light.
			N 39 59 E	S 40 00 W	1692	Janes Island Light.
			N 89 24 W	S 89 26 E	6149	Horse.
3	37 57 36.68	75 54 13.91	N 74 05 W	S 74 05 E	1467	Janes Island Light.
			S 1 46 W	N 1 46 E	7833	Fox Island Poplar.
			N 73 00 E	S 73 01 W	2629	Somers Cove Light.
4	37 57 06.76	75 54 25.70	S 0 37 E	N 0 37 W	6821	Fox Island Poplar.
			N 57 52 E	S 57 53 W	3341	Somers Cove Light.
			N 37 49 W	S 37 50 E	1786	Janes Island Light.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

GREAT ROCK.

(Lower Tangier Sound—Chart No. 9.)

Cor- ner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 55 03.68	75 55 47.80	S 40 19 E N 11 09 E N 54 48 W	N 40 18 W S 11 10 W S 54 51 E	3504 5668 7514	Fox Island Poplar. Janes Island Light. Horse.
2	37 55 04.91	75 56 45.03	S 54 27 E N 25 26 E N 47 05 W	N 54 26 W S 25 27 W S 47 07 E	4665 6112 6298	Fox Island Poplar. Janes Island Light. Horse.
3	37 56 05.24	75 56 31.32	N 58 03 E N 32 56 E N 65 38 W	S 58 06 W S 32 57 W S 65 40 E	7286 4153 5465	Somers Cove Light. Janes Island Light. Horse.
4	37 57 10.16	75 55 47.46	N 71 38 E N 39 59 E N 89 24 W	S 71 40 W S 40 00 W S 89 26 E	5281 1692 6149	Somers Cove Light. Janes Island Light. Horse.
5	37 56 57.88	75 54 49.54	N 59 04 E N 15 01 W N 86 25 W	S 59 05 W S 15 01 E S 86 28 E	4041 1771 7711	Somers Cove Light. Janes Island Light. Horse.

FOX ISLAND.

(Lower Tangier Sound—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 54 26.23	75 56 53.80	S 70 45 E N 22 44 E N 38 03 W	N 70 43 W S 22 45 W S 38 05 E	4269 7398 7103	Fox Island Poplar. Janes Island Light. Horse.
2	37 55 04.91	75 56 45.03	S 54 27 E N 25 26 E N 47 05 W	N 54 26 W S 25 27 W S 47 07 E	4665 6112 6298	Fox Island Poplar. Janes Island Light. Horse.
3	37 55 03.68	75 55 47.80	S 40 19 E N 11 09 E N 54 48 W	N 40 18 W S 11 10 W S 54 51 E	3504 5668 7514	Fox Island Poplar. Janes Island Light. Horse.
4	37 54 29.34	75 56 05.26	S 61 02 E N 13 06 E N 45 57 W	N 61 01 W S 13 06 W S 45 59 E	3124 6898 7894	Fox Island Poplar. Janes Island Light. Horse.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

STONE.

(Northern Pocomoke Sound—Chart No. 9.)

Cor- ner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 55 41.57	75 48 32.21	S 85 52 E	N 85 49 W	8251	Saxis Church.
			N 7 51 E	S 7 51 W	2676	Monkey.
			N 88 43 W	S 88 44 E	2467	East.
2	37 55 53.60	75 48 43.03	S 83 19 E	N 83 15 W	8577	Saxis Church.
			N 16 15 E	S 16 15 W	2339	Monkey.
			S 80 51 W	N 80 50 E	2206	East.
3	37 56 11.53	75 48 29.22	N 65 24 E	S 65 27 W	7473	Scot.
			N 9 52 E	S 9 53 W	1666	Monkey.
			S 69 26 W	N 69 25 E	2720	East.
4	37 56 01.22	75 48 05.47	N 60 42 E	S 60 45 W	7065	Scot.
			N 9 56 W	S 9 56 E	2021	Monkey.
			S 79 11 W	N 79 10 E	3238	East.
5	37 55 50.76	75 47 52.93	S 82 49 E	N 82 46 W	7237	Saxis Church.
			N 16 16 W	S 16 16 E	2439	Monkey.
			S 85 52 W	N 85 53 E	3525	East.
6	37 55 45.79	75 48 13.64	N 2 58 W	S 2 58 E	2517	Monkey.
			S 88 19 W	N 88 18 E	2904	East.
			S 67 30 W	N 67 27 E	10680	Fox Island Poplar.

WATKINS.

(Northern Pocomoke Sound—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 56 01.22	75 48 05.47	N 60 42 E	S 60 45 W	7065	Scot.
			N 9 56 W	S 9 56 E	2021	Monkey.
			S 79 11 W	N 79 10 E	3238	East.
2	37 56 11.53	75 48 29.22	N 65 24 E	S 65 27 W	7473	Scot.
			N 9 52 E	S 9 53 W	1666	Monkey.
			S 69 26 W	N 69 25 E	2720	East.
3	37 56 25.34	75 48 44.22	N 69 49 E	S 69 52 W	7666	Scot.
			N 30 16 E	S 30 16 W	1362	Monkey.
			S 56 29 W	N 56 28 E	2573	East.
4	37 56 41.98	75 48 17.81	N 72 12 E	S 72 15 W	6816	Scot.
			N 1 46 W	S 1 46 E	614	Monkey.
			S 55 12 W	N 55 11 E	3472	East.
5	37 56 42.70	75 47 54.58	N 70 40 E	S 70 43 W	6220	Scot.
			N 47 16 W	S 47 17 E	870	Monkey.
			S 59 59 W	N 59 58 E	4009	East.
6	37 56 25.57	75 47 39.00	N 64 12 E	S 64 14 W	6057	Scot.
			N 42 06 W	S 42 06 E	1574	Monkey.
			S 69 50 W	N 69 48 E	4141	East.

Survey of Oyster Bars, Somerset County, Md.

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BOUNDARIES OF NATURAL OYSTER BARS—continued.

LONG POINT.

(Northern Pocomoke Sound—Chart No. 9.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37° 56' 25.34	75° 48' 44.22	N 69 49 E	S 69 52 W	7666	Scot.
			N 30 16 E	S 30 16 W	1362	Monkey.
			S 56 29 W	N 56 28 E	2573	East.
2	37 57 00.82	75 48 42.30	S 73 37 W	N 73 36 E	2931	Watermelon Hummock.
			S 40 01 W	N 40 00 E	3418	East
			S 88 09 E	N 88 08 W	635	Monkey.
3	37 57 02.80	75 48 31.38	S 73 57 W	N 73 56 E	3229	Watermelon Hummock.
			S 42 50 W	N 42 49 E	3660	East.
			S 75 31 E	N 75 31 W	354	Monkey.
4	37 56 50.20	75 48 38.72	S 80 50 W	N 80 49 W	2945	Watermelon Hummock.
			S 45 25 W	N 45 24 E	3218	East.
			S 70 55 E	N 70 52 W	8892	Saxis Church.
5	37 56 41.98	75 48 17.81	N 72 12 E	S 72 15 W	6816	Scot.
			N 1 46 W	S 1 46 E	614	Monkey.
			S 55 12 W	N 55 11 E	3472	East.

GUNBY.

(Middle Pocomoke Sound—Chart No. 10.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 56 11.06	75 46 07.04	S 11 50 E	N 11 50 W	4762	Mos.
			S 69 55 E	N 69 54 W	4634	Saxis Church.
			N 43 49 E	S 43 51 W	4330	Scot.
2	37 56 28.98	75 46 40.33	S 19 31 E	N 19 31 W	5586	Mos.
			S 67 17 E	N 67 15 W	5681	Saxis Church.
			N 57 03 E	S 57 04 W	4632	Scot.
3	37 56 48.98	75 46 15.36	S 11 25 E	N 11 24 W	6059	Mos.
			S 57 54 E	N 57 52 W	5399	Saxis Church.
			N 60 11 E	S 60 12 W	3712	Scot.
4	37 56 35.02	75 45 34.66	S 1 10 E	N 1 10 W	5470	Mos.
			S 55 28 E	N 55 27 W	4231	Saxis Church.
			N 42 40 W	S 42 41 E	3150	Scot.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

MARUMSCO.

(Middle Pocomoke Sound—Chart No. 10.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 56 45.40	75 44 30.51	S 15 24 W S 32 50 E N 62 44 E	N 15 23 E N 32 49 W S 62 46 W	6034 3272 5484	Mos. Saxis Church. Old.
2	37 57 27.13	75 45 13.96	S 3 30 W S 35 13 E N 70 33 E	N 3 30 E N 35 12 W S 70 33 W	7239 5087 1678	Mos. Saxis Church. Scot.
3	37 57 39.07	75 43 56.62	N 72 05 W S 10 47 E N 79 58 E	S 72 05 E N 10 47 W S 79 59 W	507 4641 4032	Scot. Saxis Church. Old.
4	37 56 55.12	75 43 48.54	S 11 58 E N 59 49 E N 23 11 W	N 11 58 W S 59 50 W S 23 11 E	3146 4344 1781	Saxis Church. Old. Scot.

KITTS CREEK WEST.

(Upper Pocomoke Sound—Chart No. 10.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 58 18.42	75 42 32.72	S 66 44 W S 13 08 W S 70 09 E	N 66 43 E N 13 07 E N 70 08 W	2964 6044 1841	Scot. Saxis Church. Old.
2	37 58 26.98	75 42 47.64	S 57 53 W S 8 58 W S 66 47 W	N 57 52 E N 8 58 E N 66 46 E	2744 6251 2316	Scot. Saxis Church. Old.
3	37 58 32.00	75 42 41.52	S 56 48 W S 10 10 W S 61 09 E	N 56 47 E N 10 10 E N 61 09 W	2973 6445 2244	Scot. Saxis Church. Old.
4	37 58 26.82	75 42 27.42	S 63 06 W S 13 47 W S 60 15 E	N 63 04 E N 13 47 E N 60 14 W	3212 6353 1831	Scot. Saxis Church. Old.

BOUNDARIES OF NATURAL OYSTER BARS—continued.

KITTS CREEK EAST.

(Upper Pocomoke Sound—Chart No. 10.)

Corner of bar	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards	
1	37 57 58.16	75 41 47.71	S 82 56 W	N 82 54 E	3954	Scot.
			S 26 20 W	N 26 19 E	5805	Saxis Church
			N 83 45 E	S 83 45 W	533	Old.
2	37 58 15.78	75 42 26.14	S 69 32 W	N 69 31 E	3093	Scot.
			S 14 57 W	N 14 57 E	6001	Saxis Church
			S 70 59 E	N 70 58 W	1645	Old.
3	37 58 24.01	75 42 20.96	S 65 54 W	N 65 52 E	3327	Scot.
			S 15 31 W	N 15 30 E	6305	Saxis Church
			S 60 08 E	N 60 08 W	1634	Old.
4	37 58 16.70	75 42 09.59	S 71 35 W	N 71 34 E	3520	Scot.
			S 18 51 W	N 18 51 E	6158	Saxis Church
			S 63 00 E	N 63 00 W	1249	Old.
5	37 58 06.40	75 41 41.59	S 79 25 W	N 79 23 E	4159	Scot.
			S 26 33 W	N 26 32 E	6131	Saxis Church
			S 59 00 E	N 59 00 W	426	Old.

BOUNDARIES OF CRAB BOTTOMS.

EXPLANATION OF DESCRIPTIONS OF BOUNDARIES.

The laws providing for the survey of the oyster bars of Maryland also contain a section which requires "an accurate survey of and delineation upon the maps and charts aforesaid of all bottoms of the tributaries of the Chesapeake Bay where grass grows and it is profitable to scrape for soft shell or shedder crabs, and shall have such bottoms properly designated by permanent objects on the shore, as provided hereinbefore for natural oyster beds, bars, and rocks, which said crabbing sections shall be exempt from leasing for oyster culture."

The crab bottoms of Somerset County are the first ones to be surveyed in Maryland,^a and as far as known such a survey is altogether a new problem which differs^b in many ways from that of a survey of oyster bars.

In a general way it can be stated that the boundaries of the crab bottoms as established by the Maryland Shell Fish Commission and delineated on the "Charts of Oyster Bars," published by the Coast and Geodetic Survey, are confined to waters between the 1-fathom contour (6 feet depth of water) and the shore line. Therefore, in most cases the mean low water line of the shore has been adopted as an inner boundary for the

^a Anne Arundel County has no crab bottoms within the meaning of the law.

^b See pages 69 to 70 of "First Annual Report of Maryland Shell Fish Commission" for description of "Survey of crabbing grounds."

crab bottoms, but the same system of straight lines and numbered corners used to delineate the oyster bars has been retained for defining the offshore water boundaries.

There are 54 individual "crab bottoms" in Somerset County exempt from leasing for oyster culture which have been surveyed and delineated under separate names by the Commission, and their total area as determined by the hydrographic engineer of the Commission is 32,108 acres. The largest of these bottoms is 2,182 acres and the smallest 23 acres.

The boundaries of the crab bottoms of Somerset County as established by the Shell Fish Commission and shown on the Coast and Geodetic Survey charts and projections and on the "leasing charts" of the Commission are technically defined and described by a method but little different from that used for the description of the boundaries of oyster bars.

The descriptions have been arranged in tabular form, thus avoiding many hundred repetitions of the same words by making one explanation of the tables sufficient for all crabbing bottoms in the county.

At the top of each tabular form is given the legal name of the crab bottom to be described, its general locality, and the serial numbers of the "Charts of Oyster Bars" of Maryland on which its boundaries are shown.

The first column, under the heading of "Corner of bottom," gives the number corresponding to the corner of the boundary as shown on the charts. These numbers have been assigned to the corners of the crab bottoms in a slightly different manner from that used in describing the oyster bars, although both proceed in a clockwise direction around their boundaries. In delineating the crab bottoms it was generally planned to have both the first and last corners fall on land, thus making the mean low-water line of the shore between these two corners form the connecting boundary, as is always stated in such cases in a note at the bottom of the tabular descriptions. Where a corner of one bottom is identical with the corners of one or more other crab bottoms, oyster bars, or clam beds, only the number of the crab bottom being described in the table is given in this column.

The second and third columns, under the headings of "Latitude" and "Longitude," give the geographic positions of the corners. These positions have been adopted by the Commission as the primary technical definitions of the corners, and should be considered as final in case of a dispute arising from discrepancies caused by other means of location. The latitudes and longitudes given in these columns are based on the United States standard datum of the Coast and Geodetic Survey, and the points thus defined can be relocated from distant triangulation stations of the Survey, even though all the landmarks and buoys used for their original location have been destroyed.

The fourth and fifth columns, under the general heading of "True bearing"^a and the specific headings of "Forward" and "Back," give bearings measured from a true north and south line. The three "Forward" bearings are from the corner of the boundary designated in the first column to the triangulation stations named on the corresponding lines in the last column, and the three "Back" bearings are from these same stations in the last column to the corresponding corner of boundary in the first column.

^a The mean magnetic variation of Somerset County for 1908 was 5° 30' west of north and increasing at the rate of 3' yearly.

The sixth column, under the heading of "Distance," gives the three computed distances in yards from the corner of the crab bottom noted in the first column to the three triangulation stations named on the corresponding lines in the last column, and vice versa.

The seventh and last column, under the heading of "U. S. C. & G. S. triangulation station," gives the names of the landmarks from which were computed the corresponding "Latitude," "Longitude," "True bearing," and "Distance" of the "Corner of the bottom" designated in the first column. A full description of the location and markings of these triangulation stations is given in another part of this publication, under the heading of "Descriptions of landmarks."

The descriptive note of the shore line boundary which usually follows the description of the last corner on the tabular form and sometimes between intermediate corners which happen to fall on land requires no explanation, other than to state that the laws of Maryland reserve to riparian owners all waters of "any creek, cove, or inlet less than one hundred yards in width at its mouth at low tide."

SURVEYING METHODS FOR RELOCATION OF BOUNDARIES.

There are a number of methods that can be used in the relocation of the actual boundaries of the crab bottoms as technically described in this publication and delineated on the published charts of the Coast and Geodetic Survey, but as they are practically the same as those required for the relocation of oyster-bar boundaries the description of the "Surveying methods for relocation of boundaries" under the heading of "Boundaries of oyster bars" in this publication will be sufficient to indicate several methods that can be used in the relocation of crab-bottom boundaries.

BOUNDARIES OF CRAB BOTTOMS.

DEEP BANKS.

(*Inner Holland Straits—Charts Nos. 5 and 6.*)

Corner of bottom	Latitude		Longitude		True bearing		Distance	U. S. C. & G. S. triangulation station
					Forward	Back		
	°	'	°	'	°	'	Yards.	
1	38	07	32.98	76 02 06.20	S 40 11 W	N 40 10 E	9076	Holland Island Bar Light.
					S 36 24 E	N 36 23 W	4494	Miles.
					N 64 29 E	S 64 30 W	2435	Senator.
2	38	07	45.04	76 02 35.76	S 34 36 E	N 34 36 E	8020	Holland Island Bar Light.
					S 40 39 E	N 40 38 W	5303	Miles.
					N 77 51 E	S 77 52 W	3054	Senator.
3	38	08	50.58	76 01 53.42	S 32 59 W	N 32 56 E	11384	Holland Island Bar Light.
					S 20 28 E	N 20 27 W	6653	Miles.
					S 49 51 E	N 49 50 W	2431	Senator.
4	38	08	04.09	76 00 43.66	S 5 43 E	N 5 43 W	4689	Miles.
					S 70 11 E	N 70 09 W	6484	Joshua.
					N 80 42 E	S 80 45 W	5117	Bar.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CRAB BOTTOMS—continued.

HOLLAND STRAITS.

(West Tangier Sound—Charts Nos. 5, 6, and 7.)

Corner of bottom	Latitude		Longitude		True bearing				Distance	U. S. C. & G. S. triangulation station
					Forward		Back			
	°	'	"	°	'	"	°	'	"	Yards.
1	38	08	04.09	76	00	43.66	S 5 43 E	N 5 43 W	4689	Miles.
							S 70 11 E	N 70 09 W	6484	Joshua.
							N 80 42 E	S 80 45 W	5117	Bar.
2	38	08	50.58	76	01	53.42	S 32 59 W	N 32 56 E	11384	Holland Island Bar Light.
							S 20 28 E	N 20 27 W	6653	Miles.
							S 49 51 E	N 49 50 W	2431	Senator.
3	38	09	26.74	76	00	23.48	S 10 55 W	N 10 55 E	2838	Senator.
							S 87 10 E	N 87 07 W	5546	Deal Island Church.
							N 32 41 W	S 32 41 E	2607	Crab.
4	38	09	06.39	76	00	41.00	S 1 56 W	N 1 56 E	2102	Senator.
							N 86 05 E	S 86 07 W	6019	Deal Island Church.
							N 18 06 W	S 18 06 E	3030	Crab.
5	38	08	42.38	76	00	20.00	S 26 01 W	N 26 01 E	1437	Senator.
							N 77 22 E	S 77 24 W	5582	Deal Island Church.
							N 22 08 W	S 22 08 E	3984	Crab.

PUNGERS CREEK.

(West Upper Tangier Sound—Charts Nos. 5, 6, and 7.)

	°	'	"	°	'	"		°	'	"	Yards.	
1	38	08	04.09	76	00	43.66	S 5 43 E	N 5 43 W			4689	Miles.
							S 70 11 E	N 70 09 W			6484	Joshua.
							N 80 42 E	S 80 45 W			5117	Bar.
2	38	08	42.38	76	00	20.00	S 26 01 W	N 26 01 E			1437	Senator.
							N 77 22 E	S 77 24 W			5582	Deal Island Church.
							N 22 08 W	S 22 08 E			3984	Crab.
3	38	06	24.78	76	00	21.47	S 5 22 W	N 5 22 E			1323	Miles.
							N 78 12 E	S 78 14 W			5629	Joshua.
							N 10 01 W	S 10 01 E			3400	Senator.
4	38	05	49.58	76	00	03.78	S 77 38 W	N 77 38 E			609	Miles.
							S 12 34 W	N 12 53 E			6113	Solomons Lump Light.
							N 65 07 E	S 65 09 W			5553	Joshua.
5	38	05	46.97	76	00	23.58	N 66 27 E	S 66 29 W			6072	Joshua.
							N 6 36 W	S 6 36 E			4654	Senator.
							S 57 11 W	N 57 11 E			80	Miles.

Thence from corner No. 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

LAWS THOROUGHFARE NORTH.

(Northeast Tangier Sound—Inside Deal Island—Chart No. 5.)

Corner of bottom	Latitude			Longitude			True bearing		Distance	U. S. C. & G. S. triangulation station
							Forward	Back		
	°	'	"	°	'	"	°	'	Yards.	
1	38	10	00.83	75	56	45.32	N 30 58 W	S 30 58 E	1304	Haines.
							S 58 13 W	N 58 10 E	7468	Senator.
							S 10 46 W	N 10 46 E	1449	Deal Island Church.
2	38	10	12.78	75	56	36.20	N 51 57 W	S 51 57 E	1160	Haines.
							S 56 39 W	N 56 37 E	7889	Senator.
							S 15 42 W	N 15 42 E	1897	Deal Island Church.

Thence from corner No. 2 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

DEAL ISLAND.

(East Upper Tangier Sound—Charts Nos. 5 and 7.)

	Latitude			Longitude			True bearing		Distance	U. S. C. & G. S. triangulation station
							Forward	Back		
	°	'	"	°	'	"	°	'	Yards.	
1	38	07	50.57	75	57	26.57	N 85 01 W	S 85 03 E	5269	Senator.
							S 48 40 W	N 48 38 E	6371	Miles.
							S 26 00 E	N 26 00 W	1940	Joshua.
2	38	07	49.36	75	57	48.36	N 83 55 W	S 83 53 E	4695	Senator.
							S 45 14 W	N 45 13 E	5920	Miles.
							S 40 02 E	N 40 01 W	2224	Joshua.
3	38	07	49.58	75	58	08.32	N 83 15 W	S 83 16 E	4167	Senator.
							S 41 19 W	N 41 18 E	5561	Miles.
							S 48 56 E	N 48 55 W	2603	Joshua.
4	38	08	20.24	75	58	12.82	N 74 45 E	S 74 45 W	1071	Bar.
							S 46 20 E	N 46 21 W	2848	Deal Island Church.
							S 82 17 W	N 82 15 E	4054	Senator.
5	38	08	47.88	75	57	40.59	S 15 01 E	N 15 01 W	674	Bar.
							N 49 18 E	S 49 18 W	1585	Deal Island Church.
							N 12 37 E	S 12 37 W	3666	Haines.
6	38	08	50.96	75	57	21.51	N 36 43 E	S 36 43 W	1160	Deal Island Church.
							N 4 49 E	S 4 49 W	3486	Haines.
							S 23 52 W	N 23 52 E	825	Bar.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

LAWS THOROUGHFARE SOUTH.

(North Manokin River—Inside of Deal Island—Charts Nos. 5 and 7.)

Cor- ner of bot- tom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 08 17.58	75 54 13.80	S 73 20 W	N 73 20 E	680	Kelley.
			S 25 36 E	N 25 35 W	6683	Prickly.
			S 85 28 E	N 85 27 W	1909	Marsh.
2	38 07 54.55	75 53 44.94	S 89 25 E	N 89 21 W	3765	St. Pierre.
			N 61 07 E	S 61 07 W	1296	Marsh.
			N 67 43 W	S 67 44 E	1534	Kelley.
3	38 07 20.78	75 55 27.89	N 65 32 E	S 65 33 W	4260	Marsh.
			N 37 32 E	S 37 32 W	2170	Kelley.
			S 72 17 W	N 72 16 E	2427	Joshua.
4	38 07 33.58	75 55 38.18	S 60 08 W	N 60 07 E	2350	Joshua.
			S 48 31 E	N 48 29 W	6856	Prickly.
			N 51 05 E	S 51 05 W	2052	Kelley.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

MARSH ISLAND.

(North Shore Manokin River—Charts Nos. 5 and 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 08 13.09	75 53 02.32	S 68 00 W	N 67 57 E	6675	Joshua.
			S 9 29 E	N 9 29 W	5957	Prickly.
			S 75 49 E	N 75 48 W	2712	St. Pierre.
2	38 07 54.55	75 53 44.94	S 89 25 E	N 89 21 W	3765	St. Pierre.
			N 61 07 E	S 61 07 W	1296	Marsh.
			N 67 43 W	S 67 44 E	1534	Kelley.
3	38 08 17.58	75 54 13.80	S 73 20 W	N 73 20 E	680	Kelley.
			S 25 36 E	N 25 35 W	6683	Prickly.
			S 85 28 E	N 85 27 W	1909	Marsh.

Thence from corner No. 3 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

ST. PIERRE.

(North Shore Manokin River—Charts Nos. 5 and 7.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
1	38° 08' 13.08"	75° 51' 18.98"	S 10 30 W	N 10 30 E	Yards, 676	St. Pierre.
			S 87 56 E	N 87 54 W	4276	Cupola.
			N 52 58 E	S 52 59 W	1601	Jean.
2	38° 08' 13.04"	75° 50' 50.73"	S 44 25 W	N 44 25 E	1023	St. Pierre.
			N 71 55 E	N 71 55 W	2350	Staff.
			N 37 21 E	S 37 22 W	1130	Jean.
3	38° 07' 37.53"	75° 51' 09.09"	S 62 39 E	N 62 37 W	5417	Fairmount Church.
			N 35 54 W	S 35 54 E	659	St. Pierre.
			N 68 19 W	S 68 20 E	3245	Marsh.
4	38° 07' 38.06"	75° 53' 23.58"	N 72 05 E	S 72 05 W	1679	St. Pierre.
			N 41 08 W	S 41 09 E	1568	Marsh.
			N 72 23 W	S 72 25 E	3763	Kelley.
5	38° 07' 37.14"	75° 53' 00.26"	N 80 28 E	S 80 30 W	3313	St. Pierre.
			N 27 45 E	S 27 45 W	1369	Marsh.
			N 58 38 W	S 58 37 E	2256	Kelley.
6	38° 07' 54.55"	75° 53' 44.94"	S 89 25 E	N 89 21 W	3765	St. Pierre.
			N 61 07 E	S 61 07 W	1296	Marsh.
			N 67 43 W	S 67 44 E	1534	Kelley.
7	38° 08' 13.09"	75° 53' 02.32"	S 68 00 W	N 67 57 E	6675	Joshua.
			S 9 29 E	N 9 29 W	5957	Prickly.
			S 75 49 E	N 75 48 W	2712	St. Pierre.

Thence from corner No. 7 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

GEANQUAKIN.

(North Shore Manokin River—Charts Nos. 5 and 7.)

	Latitude	Longitude			Yards.	
1	38° 09' 02.82"	75° 50' 09.12"	S 39 08 W	N 39 09 E	920	Jean.
			S 22 26 E	N 22 26 W	2531	Staff.
			S 64 07 E	N 64 06 W	2942	Sandy.
2	38° 08' 41.22"	75° 50' 12.44"	N 88 14 W	S 88 14 E	492	Jean.
			S 33 12 E	N 33 11 W	1927	Staff.
			S 78 31 E	N 78 30 W	2791	Sandy.
3	38° 08' 15.04"	75° 50' 56.73"	S 44 25 W	N 44 25 E	1023	St. Pierre.
			S 71 55 E	N 71 55 W	2350	Staff.
			N 37 21 E	S 37 22 W	1130	Jean.
4	38° 08' 13.08"	75° 51' 18.98"	S 10 30 W	N 10 30 E	676	St. Pierre.
			S 87 56 E	N 87 54 W	4276	Cupola.
			N 52 58 E	S 52 59 W	1601	Jean.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

SPRING ISLAND.

(East Shore Holland Straits—Chart No. 6.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 06 39.86	76 03 17.80	S 37 30 W	N 37 28 E	6484	Holland Island Bar Light.
			S 68 15 E	N 68 13 W	4926	Miles.
			N 55 19 E	S 55 20 W	4992	Senator.
2	38 07 45.04	76 02 38.70	S 34 37 W	N 34 36 E	8920	Holland Island Bar Light.
			S 40 39 E	N 40 38 W	5303	Miles.
			N 77 51 E	S 77 52 W	3054	Senator.
3	38 07 32.98	76 02 06.20	S 40 11 W	N 40 10 E	9076	Holland Island Bar Light.
			S 36 24 E	N 36 23 W	4494	Miles.
			N 64 29 E	S 64 30 W	2435	Senator.

Thence from corner No. 3 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

PRY COVE.

(East Shore Holland Straits—Chart No. 6.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 05 44.11	76 03 44.60	S 44 43 W	N 44 42 E	4594	Holland Island Bar Light.
			S 15 12 E	N 15 11 W	7546	Fog.
			S 38 05 E	N 38 03 W	7318	Solomons Lump Light.
2	38 06 39.86	76 03 17.80	S 37 30 W	N 37 28 E	6484	Holland Island Bar Light.
			S 68 15 E	N 68 13 W	4926	Miles.
			N 55 19 E	S 55 20 W	4992	Senator.

Thence from corner No. 2 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

NORTH KEDGE STRAITS.

(Entrance Kedge Straits—Chart No. 6.)

Corner of bottom	Latitude ° ' "	Longitude ° ' "	True bearing		Distance Yards.	U. S. C. & G. S. triangulation station
			Forward	Back		
1	38 04 29.67	76 02 08.22	S 82 36 W	N 82 34 E	5851	Holland Island Bar Light.
			S 7 04 W	N 7 04 E	4809	Fog.
			S 30 54 E	N 30 53 W	3805	Solomons Lump Light.
2	38 04 13.84	76 02 35.49	S 87 31 W	N 87 29 E	5080	Holland Island Bar Light.
			S 1 50 E	N 1 50 W	4241	Fog.
			S 44 28 E	N 44 27 W	3826	Solomons Lump Light.
3	38 04 29.16	76 03 45.49	S 77 04 W	N 77 02 E	3293	Holland Island Bar Light.
			S 22 50 E	N 22 50 W	5160	Fog.
			S 54 28 E	N 54 27 W	5587	Solomons Lump Light.
4	38 05 01.98	76 03 40.24	S 61 10 W	N 61 08 E	3823	Holland Island Bar Light.
			S 17 38 E	N 17 37 W	6150	Fog.
			S 45 21 E	N 45 20 W	6195	Solomons Lump Light.
5	38 05 10.20	76 04 00.70	S 52 53 W	N 52 52 E	3516	Holland Island Bar Light.
			S 21 25 E	N 21 24 W	6593	Fog.
			S 46 56 E	N 46 54 W	6780	Solomons Lump Light.
6	38 05 44.11	76 03 44.60	S 44 43 W	N 44 42 E	4594	Holland Island Bar Light.
			S 15 12 E	N 15 11 W	7546	Fog.
			S 38 05 E	N 38 03 W	7318	Solomons Lump Light.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

SHEEPSHEAD.

(North Kedge Straits—Charts Nos. 6 and 7.)

	Latitude ° ' "	Longitude ° ' "			Yards.	
1	38 04 14.98	76 00 47.58	S 4 04 W	N 4 03 E	2777	Solomons Lump Light.
			N 48 18 E	S 48 21 W	8310	Joshua.
			N 10 36 E	S 10 36 W	3112	Miles.
2	38 03 07.81	75 59 52.42	N 31 17 E	S 31 19 W	9118	Joshua.
			N 9 34 W	S 9 35 E	5399	Miles.
			S 73 09 W	N 73 09 E	1742	Solomons Lump Light.
3	38 03 52.80	76 01 33.90	N 85 49 W	S 85 52 E	6734	Holland Island Bar Light.
			S 23 10 W	N 23 09 E	3837	Fog.
			S 27 11 E	N 27 11 W	2272	Solomons Lump Light.
4	38 04 13.84	76 02 35.49	S 87 31 W	N 87 29 E	5080	Holland Island Bar Light.
			S 1 50 E	N 1 50 W	4241	Fog.
			S 44 28 E	N 44 27 W	3826	Solomons Lump Light.
5	38 04 29.67	76 02 08.22	S 82 36 W	N 82 34 E	5851	Holland Island Bar Light.
			S 7 04 W	N 7 04 E	4809	Fog.
			S 30 54 E	N 30 53 W	3805	Solomons Lump Light.

Thence from corner No. 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CRAB BOTTOMS—continued.

FISHING POINT.

(Tangier Sound—Entrance Kedge Straits—Charts Nos. 6 and 7.)

Cornered bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 01 29.00	76 00 56.80	N 3 31 E N 66 43 W S 74 16 W	S 3 31 W S 66 46 E N 74 17 E	805 8389 2587	Solomons Lump Light. Holland Island Bar Light. Fog.
2	38 01 44.78	76 00 55.48	N 2 38 E N 70 16 W S 64 00 W	S 2 38 W S 70 19 E N 63 59 E	272 824 2817	Solomons Lump Light. Holland Island Bar Light. Fog.
3	38 01 28.84	76 00 03.70	N 5 08 W N 59 03 W S 44 24 E	S 5 08 E S 59 04 E N 44 23 W	6674 1593 4327	Miles. Solomons Lump Light. Terrapin.
4	38 01 35.00	75 59 10.00	S 51 07 E N 18 16 E N 46 50 W	N 51 07 W S 18 18 W S 46 51 E	2050 11502 3836	Terrapin. Joshua. Solomons Lump Light.
5	38 01 28.96	75 59 14.56	S 57 46 E N 18 31 W N 43 25 W	N 57 45 W S 18 30 E S 43 26 E	2140 11732 3894	Terrapin. Joshua. Solomons Lump Light.

Thence from corner No. 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

SOUTH KEDGE STRAITS.

(Entrance Kedge Straits—Chart No. 6.)

Cornered bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 02 07.00	76 01 34.00	N 68 11 E N 80 39 E N 51 35 W	S 68 11 W S 80 40 W S 51 37 E	104 3060 6528	Fog. Solomons Lump Light. Holland Island Bar Light.
2	38 02 30.23	76 02 35.04	N 57 14 W S 9 26 E N 74 03 E	S 57 14 E N 9 26 W S 74 04 W	6049 755 2776	Holland Island Bar Light. Fog. Solomons Lump Light.
3	38 02 46.44	76 01 48.74	N 66 40 W S 40 12 W N 81 27 E	S 66 42 E N 40 11 E S 81 27 W	6884 1704 1450	Holland Island Bar Light. Fog. Solomons Lump Light.
4	38 02 52.84	76 00 54.95	N 72 03 W S 59 23 W S 41 17 E	S 72 06 E N 59 22 E N 42 08 W	8152 2958 13840	Holland Island Bar Light. Fog. Jones Island Light.
5	38 02 44.78	76 00 55.48	N 2 38 E N 70 16 W S 64 00 W	S 2 38 W S 70 19 E N 63 59 E	272 824 2817	Solomons Lump Light. Holland Island Bar Light. Fog.
6	38 02 29.00	76 00 56.80	N 3 31 E N 66 43 W S 74 16 W	S 3 31 W S 66 46 E N 74 17 E	805 8389 2587	Solomons Lump Light. Holland Island Bar Light. Fog.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

SMITH ISLAND THOROUGHFARE.

(Smith Island—Charts Nos. 6, 8, and 9.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 59 49.66	76 02 56.68	S 15 55 E	N 15 55 W	2397	Old Church.
			S 80 46 E	N 80 45 W	1504	North Church.
			N 6 08 W	S 6 08 E	2160	Joseph.
2	38 00 11.66	76 03 01.32	S 14 23 E	N 14 23 W	3145	Old Church.
			S 68 34 W	N 68 34 E	1885	North Church.
			N 4 20 W	S 4 20 E	1410	Joseph.

Thence from corner No. 2 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

TERRAPIN SAND.

(Southwest Tangier Sound—Charts Nos. 7 and 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 01 28.96	75 59 14.56	S 57 46 E	N 57 45 W	2140	Terrapin.
			N 18 31 W	S 18 30 E	11732	Joshua.
			N 43 25 W	S 43 26 E	3894	Solomons Lump Light.
2	38 01 35.00	75 59 10.00	S 51 07 E	N 51 07 W	2050	Terrapin.
			N 18 16 E	S 18 18 W	11502	Joshua.
			N 46 50 W	S 46 51 E	3836	Solomons Lump Light.
3	38 01 01.70	75 57 33.37	S 80 30 W	N 80 30 E	995	Terrapin.
			S 23 13 W	N 23 12 E	8424	Horse.
			N 78 09 E	S 78 14 W	8233	Flat Cap.
4	38 00 15.12	75 57 10.17	N 48 42 W	S 48 43 E	2131	Terrapin.
			S 32 34 W	N 32 32 E	7322	Horse.
			S 33 43 E	N 33 42 W	5938	Janes Island Light.
5	38 00 10.56	75 57 23.66	N 38 30 W	S 38 30 E	1994	Terrapin.
			S 30 45 W	N 30 44 E	7002	Horse.
			S 37 22 E	N 37 21 W	6022	Janes Island Light.
6	38 00 18.54	75 58 43.38	S 13 00 W	N 13 00 E	6453	Horse.
			S 48 51 E	N 48 49 W	7680	Janes Island Light.
			N 34 27 E	S 34 27 W	1566	Terrapin.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

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BOUNDARIES OF CRAB BOTTOMS—continued.

SOUTH MARSH.

(West Tangier Sound—Chart No. 7.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 05 46.97	76 00 23.58	N 66 27 E	S 66 29 W	6072	Joshua.
			N 6 36 W	S 6 36 E	4654	Senator.
			S 57 11 W	N 57 11 E	80	Miles.
2	38 05 49.58	76 00 03.78	S 77 38 W	N 77 38 E	609	Miles.
			S 12 54 W	N 12 53 E	6113	Solomons Lump Light.
			N 65 07 E	S 65 09 W	5553	Joshua.
3	38 03 40.04	75 59 32.90	N 18 38 W	S 18 38 E	4440	Miles.
			S 53 27 W	N 53 27 E	2723	Solomons Lump Light.
			S 21 45 E	N 21 44 W	5957	Terrapin.
4	38 03 07.81	75 59 52.42	N 31 17 E	S 31 19 W	9118	Joshua.
			N 9 34 W	S 9 35 E	5399	Miles.
			S 73 09 W	N 73 09 E	1742	Solomons Lump Light.
5	38 04 14.98	76 00 47.58	S 4 04 W	N 4 03 E	2777	Solomons Lump Light.
			N 48 18 E	S 48 21 W	8310	Joshua.
			N 10 36 E	S 10 36 W	3112	Miles.

Thence from corner No. 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

WENONA.

(East Upper Tangier Sound—Chart No. 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 07 07.07	75 57 00.83	N 72 02 W	S 72 04 E	6239	Senator.
			S 63 23 W	N 63 21 E	6119	Miles.
			S 30 39 E	N 30 38 W	322	Joshua.
2	38 07 07.81	75 57 24.02	N 70 21 W	S 70 23 E	5646	Senator.
			S 60 18 W	N 60 17 E	5584	Miles.
			S 68 54 E	N 68 54 W	839	Joshua.
3	38 07 49.36	75 57 48.36	N 83 55 W	S 83 53 E	4695	Senator.
			S 45 14 W	N 45 13 E	5920	Miles.
			S 40 02 E	N 40 01 W	2224	Joshua.
4	38 07 50.57	75 57 26.57	N 85 01 W	S 85 03 E	5269	Senator.
			S 48 40 W	N 48 38 E	6371	Miles.
			S 26 00 E	N 26 00 W	1940	Joshua.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

5	38 07 37.82	75 56 52.22	N 81 48 W	S 81 51 E	6228	Senator.
			S 56 28 W	N 56 25 E	6838	Miles.
			S 2 50 W	N 2 50 E	1316	Joshua.
6	38 07 37.02	75 56 47.46	N 81 43 W	S 81 46 E	6357	Senator.
			S 57 14 W	N 57 11 E	6929	Miles.
			S 8 29 W	N 8 29 E	1301	Joshua.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

LITTLE DEAL ISLAND.

(North Entrance Manokin River—Chart No. 7.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 07 01.70	75 56 01.94	N 63 17 E	S 63 18 W	5355	Marsh.
			N 43 19 E	S 43 20 W	3249	Kelley.
			S 86 06 W	N 86 05 E	1407	Joshua.
2	38 06 55.34	75 55 50.46	N 59 39 E	S 59 41 W	5201	Marsh.
			N 36 43 E	S 36 44 W	3216	Kelley.
			N 86 02 W	S 86 01 E	1715	Joshua.
3	38 06 40.44	75 56 03.80	N 57 07 E	S 57 05 W	5756	Marsh.
			N 36 29 E	S 36 28 W	3832	Kelley.
			N 65 22 W	S 65 23 E	1491	Joshua.
4	38 06 22.24	75 55 56.58	S 69 12 E	N 69 10 W	6018	Prickly.
			S 29 27 E	N 29 26 W	4243	Kelley.
			N 51 25 W	S 51 25 E	1979	Joshua.
5	38 06 22.82	75 57 00.64	S 73 38 E	N 73 36 W	7643	Prickly.
			N 45 54 E	S 45 55 W	5281	Kelley.
			N 7 28 E	S 7 28 W	1226	Joshua.
6	38 06 55.00	75 56 48.50	S 65 12 E	N 65 10 W	7722	Prickly.
			N 53 15 E	S 53 16 W	4330	Kelley.
			N 51 35 W	S 51 35 E	210	Joshua.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

LOWER THOROUGHFARE.

(Inside of Little Deal Island—Chart No. 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 07 33.58	75 55 38.18	S 60 08 W	N 60 07 E	2350	Joshua.
			S 48 31 E	N 48 29 W	6856	Prickly.
			N 51 05 E	S 51 05 W	2052	Kelley.
2	38 07 20.78	75 55 27.89	N 65 32 E	S 65 33 W	4260	Marsh.
			N 37 32 E	S 37 32 W	2170	Kelley.
			S 72 17 W	N 72 16 E	2427	Joshua.
3	38 06 55.34	75 55 50.46	N 59 39 E	S 59 41 W	5201	Marsh.
			N 36 43 E	S 36 44 W	3216	Kelley.
			N 86 02 W	S 86 01 E	1715	Joshua.
4	38 07 01.70	75 56 01.94	N 63 17 E	S 63 18 W	5355	Marsh.
			N 43 19 E	S 43 20 W	3249	Kelley.
			S 86 06 W	N 86 05 E	1407	Joshua.
5	38 07 37.02	75 56 47.46	N 81 43 W	S 81 46 E	6357	Senator.
			S 57 14 W	N 57 11 E	6929	Miles.
			S 8 29 W	N 8 29 E	1301	Joshua.
6	38 07 37.82	75 56 52.22	N 81 48 W	S 81 51 E	6228	Senator.
			S 56 28 W	N 56 25 E	6838	Miles.
			S 2 50 W	N 2 50 E	1316	Joshua.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

PINEY ISLAND.

(Entrance Manokin River—Chart No. 7.)

Cor- ner of bot- tom	Latitude			Longitude			True bearing		Distance	U. S. C. & G. S. triangulation station
							Forward	Back		
	°	'	"	°	'	"	°	'	Yards.	
1	38	04	50.38	75	54	10.08	S 24 53 E	N 24 52 W	6641	Flat Cap.
							S 50 24 E	N 50 22 W	4011	Has.
							N 71 58 E	S 71 59 W	3100	Prickly.
2	38	05	18.04	75	55	11.98	N 89 39 E	S 89 41 W	4438	Prickly.
							N 8 43 E	S 8 43 W	5916	Kelley.
							N 38 49 W	S 38 50 E	4363	Joshua.
3	38	05	53.05	75	55	41.00	S 77 36 E	N 77 34 W	5362	Prickly.
							N 19 57 E	S 19 57 W	4977	Kelley.
							N 41 02 W	S 41 02 E	2942	Joshua.
4	38	06	30.82	75	55	43.81	N 51 16 E	S 51 18 W	5513	Marsh.
							N 27 09 E	S 27 08 W	3826	Kelley.
							N 63 23 W	S 63 24 E	2111	Joshua.
5	38	06	59.58	75	55	20.55	N 56 02 E	S 56 05 W	4439	Marsh.
							N 24 50 E	S 24 49 W	2683	Kelley.
							S 89 27 W	N 89 26 E	2508	Joshua.
6	38	06	40.66	75	54	52.43	N 43 15 E	S 43 16 W	4279	Marsh.
							N 7 00 E	S 7 00 W	3096	Kelley.
							N 79 19 W	S 79 20 E	3314	Joshua.
7	38	07	37.14	75	53	20.26	N 80 28 E	S 80 30 W	3313	St. Pierre.
							N 27 45 E	S 27 45 W	1369	Marsh.
							N 58 38 W	S 58 37 E	2256	Kelley.
8	38	07	38.06	75	52	23.58	N 72 05 E	S 72 05 W	1679	St. Pierre.
							N 41 08 W	S 41 09 E	1568	Marsh.
							N 72 23 W	S 72 25 E	3763	Kelley.
9	38	07	04.11	75	53	18.02	N 61 34 E	S 61 36 W	3483	St. Pierre.
							N 10 35 E	S 10 35 W	2362	Marsh.
							N 42 56 W	S 42 57 E	3113	Kelley.
10	38	05	50.40	75	54	11.20	S 71 25 E	N 71 24 W	3338	Prickly.
							N 24 23 E	S 24 25 W	5282	Marsh.
							N 60 03 W	S 60 05 E	4626	Joshua.
11	38	05	17.10	75	54	19.78	S 22 41 E	N 22 40 W	7505	Flat Cap.
							S 42 41 E	N 42 40 W	4704	Has.
							N 88 54 E	S 88 55 W	3047	Prickly.

BOUNDARIES OF CRAB BOTTOMS—continued.

TEAGUE CREEK.

(South Shore Manokin River—Chart No. 7.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 06 48.06	75 50 19.23	S 76 44 E	N 76 44 W	3578	Fairmount Church.
			N 29 12 E	S 29 13 W	2526	Staff.
			N 37 54 W	S 37 54 E	2791	St. Pierre.
2	38 07 00.26	75 50 28.47	S 71 43 E	N 71 42 W	3928	Fairmount Church.
			N 39 36 E	S 39 36 W	2325	Staff.
			N 39 21 W	S 39 21 E	2316	St. Pierre.
3	38 07 36.22	75 50 21.92	S 55 29 E	N 55 28 W	4314	Fairmount Church.
			N 66 06 E	S 66 07 W	1430	Staff.
			N 70 36 W	S 70 36 E	1742	St. Pierre.

Thence from corner No. 3 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

GOOSE CREEK.

(South Shore Manokin River—Chart No. 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 05 18.83	75 52 25.47	N 17 33 E	S 17 34 W	5466	St. Pierre.
			N 64 48 W	S 64 50 E	7926	Joshua.
			S 2 18 E	N 2 18 W	3520	Has.
2	38 05 18.78	75 52 39.20	N 89 35 E	S 89 35 W	366	Prickly.
			N 5 59 W	S 5 59 E	5910	Marsh.
			N 63 36 W	S 63 39 E	7597	Joshua.
3	38 06 05.78	75 52 32.34	S 6 36 E	N 6 36 W	1593	Prickly.
			N 85 04 E	S 85 07 W	7056	Fairmount Church.
			N 26 46 E	S 26 47 W	4964	St. Pierre.
4	38 06 24.82	75 51 34.20	S 89 37 E	N 89 35 W	5481	Fairmount Church.
			N 5 24 E	S 5 24 W	3000	St. Pierre.
			N 32 44 W	S 32 45 E	4340	Marsh.
5	38 06 17.94	75 51 23.71	N 87 51 E	S 87 53 W	5204	Fairmount Church.
			N 0 03 E	S 0 03 W	3214	St. Pierre.
			N 34 04 W	S 34 05 E	4687	Marsh.

Thence from corner No. 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CRAB BOTTOMS—continued.

MINE CREEK.

(South Entrance Manokin River—Chart No. 7.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 19.88	75 52 56.22	S 7 35 E	N 7 35 W	5040	Flat Cap.
			S 32 09 E	N 32 09 W	1807	Has.
			N 22 24 E	S 22 25 W	2150	Prickly.
2	38 04 28.72	75 53 19.95	S 13 47 E	N 13 46 W	5452	Flat Cap.
			S 41 06 E	N 41 05 W	2426	Has.
			N 40 40 E	S 40 41 W	2228	Prickly.
3	38 04 32.62	75 53 15.53	S 12 16 E	N 12 16 W	5552	Flat Cap.
			S 37 08 E	N 37 07 W	2445	Has.
			N 40 34 E	S 40 35 W	2052	Prickly.
4	38 05 01.80	75 52 41.83	N 19 48 E	S 19 49 W	6149	St. Pierre.
			N 4 50 W	S 4 50 E	6473	Marsh.
			N 59 37 W	S 59 39 E	7808	Joshua.
5	38 05 18.78	75 52 39.20	N 89 35 E	S 89 35 W	366	Prickly.
			N 5 59 W	S 5 59 E	5910	Marsh.
			N 63 36 W	S 63 39 E	7597	Joshua.
6	38 05 18.83	75 52 25.47	N 17 33 E	S 17 34 W	5466	St. Pierre.
			N 64 48 W	S 64 50 E	7926	Joshua.
			S 2 18 E	N 2 18 W	3520	Has.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

HAZARD.

(East Tangier Sound—Chart No. 7.)

	° ' "	° ' "			Yards.	
1	38 03 34.52	75 52 20.16	N 2 18 W	S 2 18 E	3520	Prickly.
			S 84 12 W	N 84 07 E	13798	Solomons Lump Light.
			S 4 53 W	N 4 53 E	3480	Flat Cap.
2	38 03 14.58	75 52 22.80	S 4 38 W	N 4 37 E	2804	Flat Cap.
			S 79 40 E	N 79 38 W	4804	Geog.
			N 5 59 W	S 5 59 E	676	Has.
3	38 03 37.66	75 53 06.76	S 14 50 E	N 14 50 W	3696	Flat Cap.
			S 85 08 E	N 85 07 W	1247	Has.
			N 17 53 E	S 17 53 W	3585	Prickly.
4	38 04 28.72	75 53 19.95	S 13 47 E	N 13 46 W	5452	Flat Cap.
			S 41 06 E	N 41 05 W	2426	Has.
			N 40 40 E	S 40 41 W	2228	Prickly.
5	38 04 19.88	75 52 50.22	S 7 35 E	N 7 35 W	5040	Flat Cap.
			S 32 09 E	N 32 09 W	1807	Has.
			N 22 24 E	S 22 25 W	2150	Prickly.
6	38 03 40.62	75 52 34.38	S 1 17 E	N 1 17 W	3673	Flat Cap.
			S 28 29 E	N 28 29 W	431	Has.
			N 4 06 E	S 4 06 W	3320	Prickly.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

SHARK POINT.

(North Entrance Big Annemessex River—Chart No. 7.)

Cor- ner of bot- tom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 03.54	75 51 00.00	S 28 43 W	N 28 42 E	5078	Flat Cap.
			S 45 03 E	N 45 02 W	3559	Geog.
			N 89 13 E	S 89 14 W	1868	Ford.
2	38 03 45.06	75 51 07.58	S 30 17 W	N 30 17 E	4426	Flat Cap.
			S 55 12 E	N 55 11 W	3314	Geog.
			N 72 37 E	S 72 37 W	2170	Ford.
3	38 03 16.52	75 51 49.69	N 63 14 E	S 63 15 W	3576	Ford.
			N 53 14 W	S 53 14 E	1014	Has.
			S 21 12 W	N 21 12 E	3066	Flat Cap.
4	38 03 14.58	75 52 22.80	S 4 38 W	N 4 37 E	2804	Flat Cap.
			S 79 40 E	N 79 38 W	4804	Geog.
			N 5 59 W	S 5 59 E	676	Has.
5	38 03 34.52	75 52 20.16	N 2 18 W	S 2 18 E	3520	Prickly.
			S 84 12 W	N 84 07 E	13798	Solomons Lump Light.
			S 4 53 W	N 4 53 E	3480	Flat Cap.

Thence from corner No 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

FORDS WHARF.

(North Shore Big Annemessex River—Chart No. 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 03 59.36	75 49 12.98	N 80 26 W	S 80 26 E	998	Ford.
			S 8 02 W	N 8 02 E	2397	Geog.
			S 73 14 E	N 73 14 W	1923	Moon.
2	38 03 51.42	75 49 12.66	N 66 25 W	S 66 25 E	1084	Ford.
			S 9 16 W	N 9 16 E	2134	Geog.
			S 43 22 E	N 43 21 W	2420	Colburn.
3	38 03 45.06	75 51 07.58	S 30 17 W	N 30 17 E	4426	Flat Cap.
			S 55 12 E	N 55 11 W	3314	Geog.
			N 72 37 E	S 72 37 W	2170	Ford.
4	38 04 03.54	75 51 00.00	S 28 43 W	N 28 42 E	5078	Flat Cap.
			S 45 03 E	N 45 02 W	3559	Geog.
			N 89 13 E	S 89 14 W	1868	Ford.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

CRANE COVE.

(Upper Big Annemessex River—Chart No. 7.)

Corner of bot- tom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 03 42.22	75 48 07.10	S 49 22 W	N 49 21 E	2756	Geog.
			S 3 24 W	N 3 24 E	1452	Colburn.
			N 74 44 E	S 74 44 W	86	Moon.
2	38 03 38.99	75 48 30.78	S 40 53 W	N 40 53 E	2231	Geog.
			S 22 07 E	N 22 07 W	1447	Colburn.
			N 79 33 E	S 79 33 W	711	Moon.
3	38 03 30.79	75 48 41.32	S 39 54 W	N 39 54 E	1838	Geog.
			S 37 50 E	N 37 49 W	1347	Colburn.
			N 67 43 E	S 67 43 W	1076	Moon.
4	38 03 33.72	75 48 44.02	S 36 16 W	N 36 16 E	1871	Geog.
			S 37 41 E	N 37 41 W	1470	Colburn.
			N 73 50 E	S 73 51 W	1112	Moon.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

MOON BAY.

(Upper Big Annemessex River—Chart No. 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 32.37	75 47 18.00	N 19 43 W	S 19 44 E	3987	Fairmount Church.
			S 36 18 N	N 36 18 E	2069	Moon.
			S 23 57 W	N 23 57 E	3436	Colburn.
2	38 04 36.08	75 47 11.18	N 22 50 W	S 22 50 E	3937	Fairmount Church.
			S 38 07 W	N 38 06 E	2279	Moon.
			S 25 44 W	N 25 43 E	3625	Colburn.
3	38 04 17.56	75 47 10.50	N 19 58 W	S 19 59 E	4525	Fairmount Church.
			S 50 39 W	N 50 38 E	1843	Moon.
			S 31 08 W	N 31 07 E	3085	Colburn.
4	38 03 51.40	75 47 54.40	N 4 11 W	S 4 11 E	5149	Fairmount Church.
			S 41 37 W	N 41 37 E	384	Moon.
			S 13 35 W	N 13 35 E	1810	Colburn.
5	38 03 34.46	75 47 58.21	N 28 16 W	S 28 16 E	323	Moon.
			S 56 38 W	N 56 37 E	2788	Geog.
			S 15 13 W	N 15 13 E	1231	Colburn.
6	38 03 42.22	75 48 07.10	S 49 22 W	N 49 21 E	2756	Geog.
			S 3 24 W	N 3 24 E	1452	Colburn.
			N 74 44 E	S 74 44 W	86	Moon.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

RED CAP CREEK.

(Upper Big Annemessex River—Chart No. 7.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 04 26.31	75 46 37.60	N 31 27 W	S 31 28 E	4640	Fairmount Church.
			S 57 33 W	N 57 33 E	2727	Moon.
			S 40 07 W	N 40 06 E	3839	Colburn.
2	38 04 44.16	75 46 57.22	N 29 30 W	S 29 31 E	3857	Fairmount Church.
			S 40 44 W	N 40 44 E	2725	Moon.
			S 28 51 W	N 28 51 E	4040	Colburn.

Thence from corner No. 2 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

MILES.

(Upper Big Annemessex River—Chart No. 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 03 52.10	75 46 51.00	N 22 00 W	S 22 00 E	5513	Fairmount Church.
			S 81 01 W	N 81 00 E	1968	Moon.
			S 49 53 W	N 49 52 E	2766	Colburn.
2	38 03 59.10	75 47 02.98	N 19 42 W	S 19 43 E	5179	Fairmount Church.
			S 71 25 W	N 71 25 E	1715	Moon.
			S 41 40 W	N 41 39 E	2701	Colburn.
3	38 04 10.22	75 46 53.34	N 23 59 W	S 24 00 E	4027	Fairmount Church.
			S 63 56 W	N 63 55 E	2095	Moon.
			S 40 37 W	N 40 36 E	3153	Colburn.
4	38 04 07.16	75 46 47.40	N 25 08 W	S 25 09 E	5086	Fairmount Church.
			S 68 08 W	N 68 08 E	2106	Moon.
			S 44 00 W	N 43 59 E	3183	Colburn.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

COLBURN.

(Upper Big Annemessex River—Chart No. 7.)

Cor- ner of bot- tom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards	
1	38 03 25.02	75 47 30.76	N 9 29 W	S 9 29 E	6108	Fairmount Church.
			S 55 44 W	N 55 44 E	1071	Moon.
			S 50 30 W	N 50 30 E	1367	Colburn.
2	38 03 30.00	75 47 32.62	N 9 16 W	S 9 17 E	5934	Fairmount Church.
			N 62 29 W	S 62 30 E	942	Moon.
			S 44 06 W	N 44 06 E	1445	Colburn.
3	38 03 46.98	75 47 28.88	N 11 18 W	S 11 18 E	5388	Fairmount Church.
			S 81 38 W	N 81 37 E	945	Moon.
			S 34 28 W	N 34 28 E	1953	Colburn.
4	38 03 56.66	75 47 23.30	N 13 39 W	S 13 40 E	5102	Fairmount Church.
			S 66 49 W	N 66 49 E	1170	Moon.
			S 32 56 W	N 32 55 E	2307	Colburn.
5	38 03 58.06	75 47 14.60	N 16 18 W	S 16 19 E	5116	Fairmount Church.
			S 68 43 W	N 68 43 E	1409	Moon.
			S 36 50 W	N 36 50 E	2485	Colburn.
6	38 03 47.78	75 46 59.70	N 19 13 W	S 19 14 E	5568	Fairmount Church.
			S 84 31 W	N 84 30 E	1720	Moon.
			S 49 00 W	N 49 00 E	2496	Colburn.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

JACKSON ISLAND.

(South Shore Big Annemessex River—Chart No. 7.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	38 02 18.76	75 50 16.42	N 53 06 E	S 53 07 W	1696	Geog.
			N 11 14 E	S 11 14 W	3627	Ford
			N 52 15 W	S 52 16 E	4173	Has
2	38 02 16.18	75 50 37.78	N 60 08 E	S 60 09 W	2221	Geog.
			N 19 18 E	S 19 18 W	3862	Ford.
			N 45 56 W	S 45 57 E	3799	Has
3	38 03 05.44	75 50 32.58	S 72 45 E	N 72 44 W	1872	Geog.
			N 29 50 E	S 29 50 W	2287	Ford
			N 71 07 W	S 71 08 E	3031	Has
4	38 03 17.77	75 49 31.17	S 8 47 E	N 8 47 W	982	Geog.
			N 69 58 E	S 69 59 W	2475	Moon
			N 17 40 W	S 17 40 E	1646	Ford
5	38 03 03.08	75 48 54.81	S 23 15 E	N 23 15 W	1193	Colburn.
			N 45 17 E	S 45 17 W	1908	Moon.
			N 35 27 W	S 35 27 E	2533	Ford.
6	38 02 40.80	75 49 05.64	N 67 09 E	S 67 10 W	1601	Colburn.
			N 22 45 W	S 22 45 E	3052	Ford.
			N 60 34 W	S 60 34 E	598	Geog.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

JONES CREEK.

(South Shore Big Annesmessex River—Chart No. 7.)

Corner of bottom	Latitude			Longitude			True bearing		Distance	U. S. C. & G. S. triangulation station	
							Forward	Back			
	°	'	"	°	'	"	°	'	Yards		
1	38	01	55.18	75	50	19.00	N 38 10 E	S 38 11 W	2306	Geog.	
							N 43 57 W	S 43 59 E	4654	Has.	
							S 88 06 W	N 88 05 E	3530	Flat Cap.	
2	38	02	16.18	75	50	37.78	N 60 08 E	S 60 09 W	2221	Geog.	
							N 19 18 E	S 19 18 W	3862	Ford.	
							N 45 56 W	S 45 57 E	3799	Has.	
3	38	02	18.76	75	50	16.42	N 53 06 E	S 53 07 W	1696	Geog.	*
							N 11 14 E	S 11 14 W	3627	Ford.	
							N 52 15 W	S 52 16 E	4173	Has.	

Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

4	38	02	18.80	75	49	56.98	N 39 28 E	S 39 29 W	1319	Geog.	
							N 56 13 W	S 56 14 E	4593	Has.	
							S 77 30 W	N 77 28 E	4216	Flat Cap.	
5	38	02	06.75	75	50	01.30	N 33 49 E	S 33 49 W	1714	Geog.	
							N 51 21 W	S 51 23 E	4740	Has.	
							S 82 47 W	N 82 46 E	4032	Flat Cap.	
6	38	02	07.95	75	49	52.38	N 27 22 E	S 27 22 W	1557	Geog.	
							N 53 27 W	S 53 29 E	4904	Has.	
							S 82 39 W	N 82 37 E	4273	Flat Cap.	

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

DAUGHERTY CREEK.

(South Shore Big Annesmessex River—Chart No. 7.)

	°	'	"	°	'	"	°	'	Yards.		
1	38	02	06.39	75	50	54.34	N 58 46 E	S 58 47 W	2769	Geog.	
							N 37 36 W	S 37 37 E	3750	Has.	
							S 79 10 W	N 79 09 E	2632	Flat Cap.	
2	38	02	16.18	75	50	37.78	N 60 08 E	S 60 09 W	2221	Geog.	
							N 19 18 E	S 19 18 W	3862	Ford.	
							N 45 56 W	S 45 57 E	3799	Has.	
3	38	01	55.18	75	50	19.00	N 38 10 E	S 38 11 W	2306	Geog.	
							N 43 57 W	S 43 59 E	4654	Has.	
							S 88 06 W	N 88 05 E	3530	Flat Cap.	

Thence from corner No. 3 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CRAB BOTTOMS—continued.

TENTH POINT.

(South Shore Big Annesmessex River—Chart No. 7.)

Cor- ner of bot- tom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back.		
	° ' "	° ' "	° ' "	° ' "	Yards	
1	38 02 10.18	75 52 19.70	S 26 15 W	N 26 15 E	694	Flat Cap.
			N 74 16 E	S 74 17 W	4827	Geog.
			N 0 13 W	S 0 13 E	2842	Has.
2	38 02 23.42	75 52 03.18	N 46 15 E	S 46 16 W	4919	Ford.
			N 10 42 W	S 10 42 E	2440	Has.
			S 35 01 W	N 35 01 E	1314	Flat Cap.
3	38 02 32.43	75 51 27.28	N 39 58 E	S 39 59 W	4041	Ford.
			N 33 57 W	S 33 58 E	2524	Has.
			S 51 11 W	N 51 10 E	2190	Flat Cap.
4	38 02 16.18	75 50 37.78	N 60 08 E	S 60 09 W	2221	Geog.
			N 19 18 E	S 19 18 W	3862	Ford.
			N 45 56 W	S 45 57 E	3799	Has.
5	38 02 06.39	75 50 54.34	N 58 46 E	S 58 47 W	2769	Geog.
			N 37 36 W	S 37 37 E	3750	Has.
			S 79 10 W	N 79 09 E	2632	Flat Cap.

Thence from corner No. 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

SHANKS CREEK.

(Smith Island—Chart No. 8.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 57 15.10	76 01 47.78	S 88 19 E	N 88 17 W	3472	Horse.
			N 24 06 E	S 24 07 W	2535	Ewell Church.
			N 22 07 W	S 22 07 E	3138	Old Church.
2	37 57 15.78	76 02 17.53	S 88 20 E	N 88 18 W	4268	Horse.
			N 38 36 E	S 38 37 W	2932	Ewell Church.
			N 7 39 W	S 7 39 E	2909	Old Church.

Thence from corner No. 2 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

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BOUNDARIES OF CRAB BOTTOMS—continued.

TYLERS CREEK.

(*Smith Island—Charts Nos. 8 and 9.*)

Corner of bottom	Latitude			Longitude			True bearing		Distance	U. S. C. & G. S. triangulation station
							Forward	Back		
	°	'	"	°	'	"	°	'	Yards.	
1	37	57	13.20	76	00	24.18	S 88 14 E	N 88 14 W	1239	Horse.
							N 26 42 W	S 26 42 E	2662	Ewell Church.
							N 48 57 W	S 48 59 E	4524	Old Church.
2	37	57	14.16	76	01	05.30	S 88 17 E	N 88 16 W	2338	Horse.
							N 2 24 W	S 2 24 E	2348	Ewell Church.
							N 38 16 W	S 38 15 E	3741	Old Church.

Thence from corner No. 2 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BIG ISLAND.

(*Southwest Tangier Sound—Chart No. 9.*)

	°	'	"	°	'	"	°	'	Yards.	
1	37	59	14.18	75	58	57.16	S 14 45 W	N 14 45 E	4257	Horse.
							S 64 33 E	N 64 51 W	6793	Janes Island Light.
							N 19 54 E	S 19 55 W	3681	Terrapin.
2	37	58	13.99	75	57	58.77	S 51 42 W	N 51 41 E	3368	Horse.
							S 79 27 E	N 79 29 W	4672	Janes Island Light.
							N 3 20 W	S 3 21 E	5499	Terrapin.
3	37	57	43.01	75	58	22.82	N 87 55 E	S 87 57 W	5238	Janes Island Light.
							N 2 57 E	S 2 57 W	6544	Terrapin.
							S 62 29 W	N 62 28 E	2257	Horse.
4	37	57	25.62	75	58	29.02	N 81 49 E	S 81 51 W	5456	Janes Island Light.
							N 4 02 E	S 4 02 W	7139	Terrapin.
							S 76 02 W	N 76 01 E	1891	Horse.
5	37	57	06.40	75	58	59.12	N 77 04 E	S 77 06 W	6366	Janes Island Light.
							N 9 32 E	S 9 33 W	7878	Terrapin.
							N 79 30 W	S 79 31 E	1050	Horse.
6	37	57	12.07	75	59	37.78	S 6 49 E	N 6 49 W	8754	Reach Hammock.
							N 80 19 E	S 80 22 W	7341	Janes Island Light.
							N 17 08 E	S 17 09 W	7931	Terrapin.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CRAB BOTTOMS—continued.

DRUM.

(Southwest Tangier Sound—Chart No. 9.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
			° ' "	° ' "	Yards	
1	38 00 18.54	75 58 43.38	S 13 00 W	N 13 00 E	6453	Horse.
			S 48 51 E	N 48 49 W	7680	Janes Island Light.
			N 34 27 E	S 34 27 W	1566	Terrapin.
2	38 00 10.56	75 57 23.66	N 38 30 W	S 38 30 E	1994	Terrapin.
			S 30 48 W	N 30 44 E	7002	Horse.
			S 37 22 E	N 37 21 W	6022	Janes Island Light
3	37 59 33.46	75 57 20.02	N 25 24 W	S 25 25 E	3119	Terrapin.
			S 37 42 W	N 37 40 E	6015	Horse.
			S 45 15 E	N 45 13 W	5011	Janes Island Light.
4	37 59 14.86	75 56 57.37	N 28 59 W	S 29 00 E	4008	Terrapin.
			S 46 27 W	N 46 26 E	5910	Horse.
			S 46 07 E	N 46 07 W	4098	Janes Island Light.
5	37 58 47.38	75 57 15.60	N 18 27 W	S 18 27 E	4601	Terrapin.
			S 49 45 W	N 49 44 E	4974	Horse.
			S 60 04 E	N 60 03 W	3970	Janes Island Light.
6	37 58 13.09	75 57 58.77	S 51 42 W	N 51 41 E	3368	Horse.
			S 79 27 E	N 79 29 W	4672	Janes Island Light.
			N 3 20 W	S 3 21 E	5499	Terrapin.
7	37 59 14.18	75 58 57.16	S 14 45 W	N 14 45 E	4257	Horse.
			S 64 53 E	N 64 51 W	6793	Janes Island Light.
			N 19 54 E	S 19 55 W	3681	Terrapin.

Thence from corner No. 7 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

OLD HOUSE.

(Little Annessex River—Chart No. 9.)

	Latitude	Longitude	° ' "	° ' "	Yards.	
1	37 58 14.14	75 52 51.94	S 77 22 W	N 77 21 E	3688	Janes Island Light.
			S 36 33 E	N 36 33 W	548	Somers Cove Light.
			N 61 52 E	S 61 53 W	3176	Emmanuel Church.
2	37 58 09.83	75 52 57.62	S 78 17 W	N 78 16 E	3520	Janes Island Light.
			S 53 52 E	N 53 52 W	592	Somers Cove Light.
			N 61 43 E	S 61 45 W	3353	Emmanuel Church.
3	37 58 19.16	75 53 14.30	S 70 53 W	N 70 52 E	3176	Janes Island Light.
			S 53 53 E	N 53 53 W	1143	Somers Cove Light.
			N 69 35 E	S 69 37 W	3625	Emmanuel Church.
4	37 58 16.57	75 53 17.44	S 71 56 W	N 71 54 E	3069	Janes Island Light.
			S 59 48 E	N 59 48 W	1166	Somers Cove Light.
			N 68 46 E	S 68 48 W	3735	Emmanuel Church.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

LIGHT HOUSE.

(Little Annessex River—Chart No. 9.)

Corner of bottom	Latitude			Longitude			True bearing		Distance	U. S. C. & G. S. triangulation station
							Forward	Back		
	°	'	"	°	'	"	°	'	Yards.	
1	37	58	38.61	75	52	04.02	N 74 23 E	S 74 24 W	1912	Mount Pleasant Church.
							S 35 23 W	N 35 23 E	1617	Somers Cove Light.
							S 70 53 W	N 70 51 E	5145	Janes Island Light.
2	37	58	37.49	75	52	03.44	N 73 01 E	S 73 02 W	1893	Mount Pleasant Church.
							S 37 04 W	N 37 04 E	1606	Somers Cove Light.
							S 71 24 W	N 71 22 E	5163	Janes Island Light.
3	37	58	21.34	75	52	00.23	S 38 10 W	N 38 12 E	0902	Somers Cove Light.
							N 04 00 E	S 04 03 W	2812	Mount Pleasant Church.
							N 58 26 E	S 38 27 W	2203	Emmanuel Church.
4	37	58	15.18	75	52	17.41	S 48 21 W	N 48 21 E	796	Somers Cove Light.
							N 59 02 E	S 59 09 W	2343	Mount Pleasant Church.
							N 83 00 E	S 33 10 W	2348	Emmanuel Church.
5	37	58	07.17	75	52	27.62	S 51 13 W	N 51 13 E	414	Somers Cove Light.
							N 57 10 E	S 57 20 W	2917	Mount Pleasant Church.
							N 82 03 E	S 52 03 W	2729	Emmanuel Church.
6	37	58	10.24	75	52	31.4	S 27 13 W	N 27 13 E	483	Somers Cove Light.
							N 61 14 E	S 61 15 W	2917	Mount Pleasant Church.
							N 56 13 E	S 56 14 W	2711	Emmanuel Church.
7	37	58	09.98	75	52	35.48	S 17 41 W	N 17 41 E	372	Somers Cove Light.
							N 60 57 E	S 60 58 W	3049	Mount Pleasant Church.
							N 56 09 E	S 56 10 W	2843	Emmanuel Church.
8	37	58	04.50	75	52	32.20	S 49 50 W	N 49 49 E	262	Somers Cove Light.
							N 57 09 E	S 57 10 W	3069	Mount Pleasant Church.
							N 52 08 E	S 52 08 W	2881	Emmanuel Church.
9	37	57	59.48	75	52	39.71	S 84 41 W	N 84 39 E	3941	Janes Island Light.
							S 51 31 E	N 51 30 W	4507	Watermelon Hummock.
							N 51 51 E	S 51 52 W	3136	Emmanuel Church.
10	37	57	57.55	75	52	51.96	N 78 45 E	S 78 45 W	334	Somers Cove Light.
							N 4 00 E	S 4 00 W	7914	Flat Cap
							S 85 13 W	N 85 12 E	3610	Janes Island Light.
11	37	58	09.83	75	52	57.62	S 78 17 W	N 78 16 E	3520	Janes Island Light.
							S 53 52 E	N 53 52 W	592	Somers Cove Light.
							N 61 43 E	S 61 45 W	3353	Emmanuel Church.
12	37	58	12.54	75	52	51.94	S 77 22 W	N 77 21 E	3688	Janes Island Light.
							S 36 33 E	N 36 33 W	548	Somers Cove Light.
							N 61 52 E	S 61 53 W	3176	Emmanuel Church.

Thence from corner No. 12 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CRAB BOTTOMS—continued.

CANCER.

(Little Annemessex River—Chart No. 9.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 59 19.28	75 52 02.18	S 62 55 E	N 62 54 W	1655	Emmanuel Church.
			S 20 25 W	N 20 25 E	2871	Somers Cove Light.
			S 58 11 W	N 58 09 E	5797	Janes Island Light.
2	37 59 08.74	75 52 06.27	S 75 53 E	N 75 52 W	1631	Emmanuel Church.
			S 20 55 W	N 20 55 E	2500	Somers Cove Light.
			S 60 44 W	N 60 42 E	5523	Janes Island Light.

Thence from corner No. 2 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BACK CREEK.

(Little Annemessex River—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 58 57.66	75 51 42.16	S 88 31 E	N 88 31 W	943	Emmanuel Church.
			S 38 02 W	N 38 02 E	2492	Somers Cove Light.
			S 66 56 W	N 66 53 E	5936	Janes Island Light.
2	37 58 57.48	75 51 44.76	S 88 58 E	N 88 58 W	1008	Emmanuel Church.
			S 36 52 W	N 36 51 E	2444	Somers Cove Light.
			S 66 43 W	N 66 41 E	5869	Janes Island Light.
3	37 59 11.57	75 51 37.00	S 58 22 E	N 58 21 W	940	Emmanuel Church.
			S 34 33 W	N 34 32 E	2952	Somers Cove Light.
			S 63 28 W	N 63 26 E	6258	Janes Island Light.
4	37 59 08.84	75 51 47.07	S 44 50 E	N 44 50 W	1517	Emmanuel Church.
			S 25 00 W	N 24 50 E	3222	Somers Cove Light.
			S 57 38 W	N 57 37 E	6110	Janes Island Light.
5	37 59 30.96	75 51 59.84	S 50 53 E	N 50 52 W	1818	Emmanuel Church.
			S 18 57 W	N 18 56 E	3261	Somers Cove Light.
			S 55 20 W	N 55 18 E	6066	Janes Island Light.

Thence from corner No. 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

LAVELLETTTE.

(Little Annessex River—Chart No. 9.)

Corner of bot- tom	Latitude			Longitude			True bearing		Distance	U. S. C. & G. S. triangulation station
							Forward	Back		
	'	°	"	'	°	"	°	'	Yards.	
1	37	57	32.69	75	51	53.92	N 29 37 E	S 29 38 W	3148	Mount Pleasant Church.
							N 53 32 W	S 53 33 E	1520	Somers Cove Light.
							N 84 02 W	S 84 04 E	5175	James Island Light.
2	37	57	32.80	75	51	58.72	N 31 38 E	S 31 39 W	3211	Mount Pleasant Church.
							N 50 35 W	S 50 35 E	1416	Somers Cove Light.
							N 83 55 W	S 83 57 E	5047	James Island Light.
3	37	57	51.82	75	52	10.29	N 43 36 E	S 43 37 W	2889	Mount Pleasant Church.
							N 71 48 W	S 71 48 E	827	Somers Cove Light.
							S 88 40 W	N 88 42 E	4714	James Island Light.
4	37	58	03.21	75	52	07.92	N 48 29 E	S 48 29 W	2578	Mount Pleasant Church.
							N 41 54 E	S 41 55 W	2434	Emmanuel Church.
							S 81 34 W	N 81 34 E	857	Somers Cove Light.
5	37	58	13.52	75	51	56.98	N 50 17 E	S 50 18 W	2129	Mount Pleasant Church.
							N 42 20 E	S 42 21 W	1980	Emmanuel Church.
							S 67 28 W	N 67 27 E	1235	Somers Cove Light.
6	37	58	21.78	75	51	50.86	N 53 44 E	S 53 44 W	1838	Mount Pleasant Church.
							N 44 38 E	S 44 39 W	1666	Emmanuel Church.
							S 60 02 W	N 60 01 E	1505	Somers Cove Light.
7	37	58	21.84	75	51	42.60	N 49 16 E	S 49 16 W	1655	Mount Pleasant Church.
							N 38 46 E	S 38 46 W	1518	Emmanuel Church.
							S 63 41 W	N 63 41 E	1701	Somers Cove Light.

Thence from corner No. 7 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

JENKINS CREEK.

(Little Annessex River—Chart No. 9.)

	'	°	"	'	°	"	°	'	Yards	
1	37	57	06.40	75	51	57.59	N 32 08 W	S 32 09 E	2114	Somers Cove Light.
							N 74 14 W	S 74 16 E	5243	James Island Light.
							S 20 40 W	N 20 39 E	5130	Sam.
2	37	57	25.62	75	52	09.39	N 35 20 W	S 35 20 E	1400	Somers Cove Light.
							N 80 41 W	S 80 43 E	4798	James Island Light.
							S 15 21 W	N 15 20 E	5650	Sam.
3	37	57	32.80	75	51	58.72	N 31 38 E	S 31 39 W	3211	Mount Pleasant Church.
							N 50 35 W	S 50 35 E	1416	Somers Cove Light.
							N 83 55 W	S 83 57 E	5047	James Island Light.
4	37	57	32.69	75	51	53.92	N 29 37 E	S 29 38 W	3148	Mount Pleasant Church.
							N 53 32 W	S 53 33 E	1520	Somers Cove Light.
							N 84 02 W	S 84 04 E	5175	James Island Light.

Thence from corner No. 4 along the mean low-water line of the shore to corner No. 5, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

JENKINS CREEK—Continued.

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
5	37° 57' 31.64	75° 51' 47.21	N 26 25 E	S 26 25 W	3095	Mount Pleasant Church.
			N 56 11 W	S 56 12 E	1686	Somers Cove Light.
			N 83 51 W	S 83 53 E	5358	Janes Island Light.
6	37° 57' 32.58	75° 51' 31.33	N 19 10 E	S 19 11 W	2902	Mount Pleasant Church.
			N 63 34 W	S 63 35 E	2038	Somers Cove Light.
			N 84 37 W	S 84 39 E	5773	Janes Island Light.
7	37° 57' 26.20	75° 51' 30.62	N 17 32 E	S 17 33 W	3100	Mount Pleasant Church.
			N 58 41 W	S 58 42 E	2159	Somers Cove Light.
			N 82 31 W	S 82 34 E	5819	Janes Island Light.

Thence from corner No. 7 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

KINGS ISLAND.

(*Little Annessex River—Chart No. 9.*)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37° 57' 33.14	75° 53' 38.58	N 77 30 W	S 77 31 E	2410	Janes Island Light.
			S 8 51 E	N 8 50 W	5771	Sam.
			N 60 32 E	S 60 32 W	1806	Somers Cove Light.
2	37° 57' 37.36	75° 53' 30.06	N 81 38 W	S 81 39 E	2608	Janes Island Light.
			S 6 27 E	N 6 26 W	5881	Sam.
			N 60 58 E	S 60 59 W	1538	Somers Cove Light.
3	37° 57' 43.07	75° 53' 27.44	N 85 58 W	S 85 59 E	2657	Janes Island Light.
			S 5 35 E	N 5 35 W	6005	Sam.
			N 66 31 E	S 66 31 W	1389	Somers Cove Light.
4	37° 57' 42.74	75° 53' 19.82	N 86 02 W	S 86 03 E	2861	Janes Island Light.
			S 3 40 E	N 3 40 W	6038	Sam.
			N 62 12 E	S 62 13 W	1211	Somers Cove Light.
5	37° 57' 32.64	75° 53' 18.58	N 79 26 W	S 79 27 E	2937	Janes Island Light.
			S 3 33 E	N 3 33 W	5695	Sam.
			N 48 54 E	S 48 55 W	1377	Somers Cove Light.
6	37° 57' 32.00	75° 53' 12.34	N 43 14 E	S 43 15 W	1272	Somers Cove Light.
			S 1 53 E	N 1 54 W	5666	Sam.
			N 79 36 W	S 79 37 E	3105	Janes Island Light.
7	37° 57' 46.22	75° 53' 02.98	N 88 35 W	S 88 37 E	3305	Janes Island Light.
			S 0 36 W	N 0 36 E	6143	Sam.
			N 54 53 E	S 54 53 W	759	Somers Cove Light.
8	37° 57' 44.46	75° 52' 35.80	N 11 39 W	S 11 39 E	517	Somers Cove Light.
			N 88 00 W	S 88 01 E	4032	Janes Island Light.
			S 7 24 W	N 7 23 E	6134	Sam.
9	37° 57' 47.00	75° 52' 22.56	N 47 25 W	S 47 25 E	622	Somers Cove Light.
			N 89 26 W	S 89 27 E	4383	Janes Island Light.
			S 10 30 W	N 10 30 E	6274	Sam.

BOUNDARIES OF CRAB BOTTOMS—continued.

KINGS ISLAND—Continued.

Cor- ner of bot- tom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
10	37 57 25.62	75 52 09.39	N 35 20 W	S 35 20 E	1400	Somers Cove Light.
			N 80 41 W	S 80 43 E	4798	Janes Island Light.
			S 15 21 W	N 15 20 E	5650	Sam.
11	37 57 06.40	75 51 57.59	N 32 08 W	S 32 09 E	2114	Somers Cove Light.
			N 74 14 W	S 74 16 E	5243	Janes Island Light.
			S 20 40 W	N 20 39 E	5130	Sam.

Thence from corner No. 11 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

GREAT POINT.

(Entrance Little Annemessex River—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 56 58.46	75 53 32.95	S 9 14 E	N 9 14 W	4592	Sam.
			N 34 38 E	S 34 39 W	2494	Somers Cove Light.
			N 55 58 W	S 55 58 E	3022	Janes Island Light.
2	37 56 58.91	75 53 46.39	S 13 33 E	N 13 33 W	4677	Sam.
			N 41 03 E	S 41 05 W	2709	Somers Cove Light.
			N 52 00 W	S 52 00 E	2722	Janes Island Light.
3	37 57 48.22	75 53 58.10	N 89 35 W	S 89 35 E	1832	Janes Island Light.
			S 12 47 E	N 12 46 W	6367	Sam.
			N 79 42 E	S 79 43 W	2127	Somers Cove Light.
4	37 57 37.36	75 53 30.06	N 81 38 W	S 81 39 E	2608	Janes Island Light.
			S 6 27 E	N 6 26 W	5881	Sam.
			N 60 58 E	S 60 59 W	1538	Somers Cove Light.
5	37 57 33.14	75 53 38.58	N 77 30 W	S 77 31 E	2410	Janes Island Light.
			S 8 51 E	N 8 50 W	5771	Sam.
			N 60 32 E	S 60 32 W	1806	Somers Cove Light.

Thence from corner No. 5 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

FISHING CREEK.

(Southeast Tangier Sound—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 55 43.30	75 53 53.32	S 32 40 E	N 32 39 W	2373	Sam.
			N 23 10 E	S 23 11 W	4994	Somers Cove Light.
			N 24 53 W	S 24 54 E	4658	Janes Island Light.
2	37 56 05.77	75 53 49.43	S 23 08 E	N 23 07 W	2996	Sam.
			N 25 53 E	S 25 54 W	4262	Somers Cove Light.
			N 30 45 W	S 30 46 E	4035	Janes Island Light.

Thence from corner No. 2 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CRAB BOTTOMS—continued.

CEDAR STRAITS.

(Cedar Straits—Chart No. 9.)

Corner of bottom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
			° ' "	° ' "		
1	37 54 43.46	75 52 59.66	N 82 48 W	S 82 48 E	153	Sam.
			S 48 12 W	N 48 11 E	2986	Fox Island Poplar.
			N 66 41 E	S 66 43 W	5092	East.
2	37 54 40.64	75 52 59.74	N 65 43 E	S 65 45 W	5131	East.
			N 52 43 W	S 52 43 E	188	Sam.
			S 49 37 W	N 49 33 E	2921	Fox Island Poplar.
3	37 54 36.20	75 54 15.22	S 6 45 W	N 6 45 E	1757	Fox Island Poplar.
			N 81 56 E	S 81 57 W	1883	Sam.
			N 20 24 E	S 20 25 W	7313	Somers Cove Light.
Thence from corner No. 3 along the mean low-water line of the shore to corner No. 4, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						
4	37 54 41.87	75 54 17.75	S 4 06 W	N 4 06 E	1941	Fox Island Poplar.
			N 87 50 E	S 87 51 W	1933	Sam.
			N 11 44 W	S 11 44 E	6430	Janes Island Light.
5	37 55 19.06	75 53 58.24	S 11 42 W	N 11 41 E	3258	Fox Island Poplar.
			S 50 05 E	N 50 04 W	1841	Sam.
			N 21 11 E	S 21 12 W	5802	Somers Cove Light.
6	37 55 33.42	75 53 57.33	S 10 33 W	N 10 33 E	3738	Fox Island Poplar.
			S 39 48 E	N 39 47 W	2168	Sam.
			N 22 49 E	S 22 50 W	5343	Somers Cove Light.
Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.						

BROAD CREEK.

(Western Pocomoke Sound—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 55 43.19	75 50 04.56	N 47 28 E	S 47 29 W	3842	Monkey.
			N 18 57 W	S 18 58 E	1894	Watermelon Hummock.
			S 59 51 W	N 59 48 E	7983	Fox Island Poplar.
2	37 54 43.02	75 49 20.87	N 19 48 E	S 19 48 W	4916	Monkey.
			N 29 54 W	S 29 55 E	2340	East.
			N 89 40 W	S 89 43 E	5997	Sam.
3	37 54 42.50	75 50 04.82	N 31 26 E	S 31 27 W	5442	Monkey.
			N 0 12 E	S 0 12 W	2046	East.
			N 89 22 W	S 89 24 E	4823	Sam.
4	37 55 04.64	75 50 32.13	N 29 32 E	S 29 32 W	1494	East.
			N 2 15 E	S 2 15 W	3093	Watermelon Hummock.
			S 80 23 W	N 80 21 E	4151	Sam.
5	37 55 04.58	75 51 06.16	N 51 39 E	S 51 39 W	2098	East.
			N 18 25 E	S 18 26 W	3259	Watermelon Hummock.
			S 77 42 W	N 77 41 E	3259	Sam.

BOUNDARIES OF CRAB BOTTOMS—continued.

BROAD CREEK—Continued.

Cor- ner of bot- tom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
6	37 54 41.93	75 50 58.48	N 34 53 E	S 34 54 W	2517	East.
			N 12 04 E	S 12 05 W	3944	Watermelon Hummock.
			N 88 48 W	S 88 49 E	3390	Sam.
7	37 54 40.64	75 52 59.74	N 65 43 E	S 65 45 W	5131	East.
			N 52 43 W	S 52 43 E	188	Sam.
			S 49 37 W	N 49 33 E	2921	Fox Island Poplar.
8	37 54 43.46	75 52 59.66	N 82 48 W	S 82 48 E	153	Sam.
			S 48 12 W	N 48 11 E	2986	Fox Island Poplar.
			N 66 41 E	S 66 43 W	5092	East.

Thence from corner No. 8 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

WARE POINT.

(Northern Pocomoke Sound—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 57 02.04	75 49 28.14	S 61 20 W	N 61 20 E	1810	Watermelon Hummock.
			S 20 06 W	N 20 05 E	2830	East.
			S 88 07 W	N 88 06 E	1860	Monkey.
2	37 57 00.82	75 48 42.30	S 73 37 W	N 73 36 E	2931	Watermelon Hummock.
			S 40 01 W	N 40 00 E	3418	East.
			S 88 09 E	N 88 08 W	635	Monkey.
3	37 56 47.45	75 48 49.97	N 62 52 E	S 62 53 W	944	Monkey.
			S 81 48 W	N 81 47 E	2633	Watermelon Hummock.
			S 42 36 W	N 42 35 E	2943	East.
4	37 55 25.60	75 48 51.05	N 15 14 E	S 15 14 W	3306	Monkey.
			N 47 15 W	S 47 16 E	3512	Watermelon Hummock.
			N 73 11 W	S 73 12 E	2050	East.
5	37 54 43.02	75 49 20.87	N 19 48 E	S 19 48 W	4916	Monkey.
			N 29 54 W	S 29 55 E	2340	East.
			N 89 40 W	S 89 43 E	5997	Sam.
6	37 55 43.19	75 50 04.56	N 47 28 E	S 47 29 W	3842	Monkey.
			N 18 57 W	S 18 58 E	1894	Watermelon Hummock.
			S 59 51 W	N 59 48 E	7983	Fox Island Poplar.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CRAB BOTTOMS—continued.

APES HOLE.

(Northern Pocomoke Sound—Chart No. 9.)

Cor- ner of bot- tom	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards.	
1	37 57 14.29	75 48 12.92	S 70 24 W	N 70 22 E	3818	Watermelon Hummock.
			S 44 09 W	N 44 08 E	4280	East.
			S 17 29 W	N 17 29 E	498	Monkey.
2	37 56 41.98	75 48 17.81	N 72 12 E	S 72 15 W	6816	Scot.
			N 1 46 W	S 1 46 E	614	Monkey.
			S 55 12 W	N 55 11 E	3472	East.
3	37 56 50.20	75 48 38.72	S 80 50 W	N 80 49 E	2945	Watermelon Hummock.
			S 45 25 W	N 45 24 E	3218	East.
			S 70 55 E	N 70 52 W	8892	Saxis Church.
4	37 57 02.80	75 48 31.38	S 73 57 W	N 73 56 E	3229	Watermelon Hummock.
			S 42 50 W	N 42 49 E	3660	East.
			S 75 31 E	N 75 31 W	354	Monkey.
5	37 57 00.88	75 48 40.88	S 88 58 W	N 88 57 E	3046	Watermelon Hummock.
			S 30 41 W	N 30 40 E	3909	East.
			S 47 47 E	N 47 46 W	1134	Monkey.
6	37 57 26.04	75 48 43.29	S 58 58 W	N 58 57 E	3252	Watermelon Hummock.
			S 32 03 W	N 32 02 E	4091	East.
			S 37 13 E	N 37 13 W	1094	Monkey.

Thence from corner No. 6 along the mean low-water line of the shore to corner No. 1, excluding any creek, cove, or inlet less than 100 yards in width at its mouth at low tide.

BOUNDARIES OF CLAM BEDS.

EXPLANATION OF DESCRIPTIONS OF BOUNDARIES.

The Maryland legislature of 1908 in an act^a passed to prescribe additional duties to be performed by the Board of Shell Fish Commissioners provided for the establishment of boundaries of certain clam beds in Pocomoke Sound, which were to be "surveyed and designated on charts" and records prepared and filed in every particular as provided for by the Maryland laws for the survey of natural oyster bars.

The clam beds specified by the law are only 3 in number, with total acreage of 506 acres, the largest bed being 180 acres and the smallest 152 acres.

The boundaries of these clam beds were surveyed and established by the Shell Fish Commission and delineated on the "Charts of Oyster Bars" published by the Coast and Geodetic Survey in a manner identical with that used for the establishment of the oyster bar boundaries. Therefore the "Explanation of descriptions of boundaries," under the heading of "Boundaries of oyster bars," to be found in another part of this publication, will apply to the clam beds.

^a For the text of this act see Appendix B of this publication.

SURVEYING METHODS OF RELOCATION OF BOUNDARIES.

For similar reasons to those given under the previous heading, the "Surveying methods of relocation of boundaries," given under the heading of "Boundaries of oyster bars," to be found in another part of this publication, will apply to clam beds.

BOUNDARIES OF CLAM BEDS.

WARE ROCK.

(Pocomoke Sound—Chart No. 9.)

Corner of bed	Latitude	Longitude	True bearing		Distance	U. S. C. & G. S. triangulation station
			Forward	Back		
	° ' "	° ' "	° ' "	° ' "	Yards	
1	37 55 13.00	75 48 09.78	N 3 42 W	S 3 42 E	3622	Monkey.
			N 71 37 W	S 71 38 E	3230	East.
			S 73 21 W	N 73 18 E	10407	Fox Island Poplar.
2	37 55 14.60	75 48 46.62	N 11 54 E	S 11 54 W	3640	Monkey.
			N 65 09 W	S 65 09 E	2294	East.
			S 71 20 W	N 71 17 E	9486	Fox Island Poplar.
3	37 55 41.57	75 48 32.21	S 85 52 E	N 85 49 W	8251	Saxis Church.
			N 7 51 E	S 7 51 W	2676	Monkey.
			N 88 43 W	S 88 44 E	2467	East.
4	37 55 45.79	75 48 13.64	N 2 58 W	S 2 58 E	2517	Monkey.
			S 88 19 W	N 88 18 E	2964	East.
			S 67 30 W	N 67 30 W	10680	Fox Island Poplar.

GRAVEL ROCK.

(Pocomoke Sound—Chart No. 9.)

	° ' "	° ' "	° ' "	° ' "	Yards	
1	37 55 11.66	75 47 39.42	N 15 55 W	S 15 57 E	3808	Monkey.
			N 74 39 W	S 74 41 E	4020	East.
			S 74 47 W	N 74 42 E	11174	Fox Island Poplar.
2	37 55 13.00	75 48 09.78	N 3 42 W	S 3 42 E	3622	Monkey.
			N 71 37 W	S 71 38 E	3230	East.
			S 73 21 W	N 73 18 E	10407	Fox Island Poplar.
3	37 55 45.79	75 48 13.64	N 2 58 W	S 2 58 E	2517	Monkey.
			S 88 19 W	N 88 18 E	2964	East.
			S 67 30 W	N 67 27 E	10680	Fox Island Poplar.
4	37 55 50.76	75 47 52.93	S 82 49 E	N 82 46 W	7237	Saxis Church.
			N 16 16 W	S 16 16 E	2439	Monkey.
			S 85 52 W	N 85 53 E	3525	East.

Survey of Oyster Bars, Somerset County, Md.

BOUNDARIES OF CLAM BEDS—continued.

FLAT ROCK.

(Pocomoke Sound—Charts Nos. 9 and 10.)

Cast No. of lead	Latitude	Longitude	True bearing				Distance	U. S. C. & G. S. triangulation station
			Forward		Back			
			°	'	°	'		
1	37 55 34.84	75 46 56.00	N 37 26 W	S 37 27 E	3624	Monkey.		
			N 86 47 W	S 86 49 E	5044	East.		
			S 72 43 W	N 72 38 E	12505	Fox Island Poplar.		
2	37 55 39.26	75 47 40.94	N 20 11 W	S 20 12 E	2908	Monkey.		
			N 88 01 W	S 88 02 E	3837	East.		
			S 70 13 W	N 70 08 E	11416	Fox Island Poplar.		
3	37 56 08.82	75 47 03.84	N 49 00 W	S 49 00 E	2642	Monkey.		
			S 79 52 W	N 79 50 E	4904	East.		
			S 67 30 W	N 67 25 E	12700	Fox Island Poplar.		
4	37 55 43.18	75 46 44.80	N 43 56 W	S 43 57 E	3607	Monkey.		
			N 89 59 W	S 89 59 E	5336	East.		
			S 71 56 W	N 71 51 E	12877	Fox Island Poplar.		

APPENDIXES.

APPENDIX A.—LAWS RELATING TO THE COOPERATION OF THE COAST AND GEODETIC SURVEY AND BUREAU OF FISHERIES WITH THE MARYLAND SHELL FISH COMMISSION.

The work of the Coast and Geodetic Survey and of the Bureau of Fisheries, in cooperation with the Maryland Shell Fish Commission, in surveying the oyster bars, establishing permanent landmarks at triangulation stations, and preparing for publication the necessary charts and technical and legal descriptions of boundaries and landmarks shown on these charts, has been executed in compliance with a request from the governor of the State of Maryland to the Secretary of Commerce and Labor, and by the authority of the following laws of the United States and Maryland:

[Act of Congress approved May 26, 1906.]

AN ACT To authorize the Secretary of Commerce and Labor to cooperate, through the Bureau of the Coast and Geodetic Survey and the Bureau of Fisheries, with the shellfish commissioners of the State of Maryland in making surveys of the natural oyster beds, bars, and rocks in the waters within the State of Maryland.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of Commerce and Labor be, and he is hereby, authorized and directed, upon the request of the governor of the State of Maryland, to designate such officers, experts, and employees of the Bureau of the Coast and Geodetic Survey and of the Bureau of Fisheries as may be necessary to cooperate with the Maryland State board of shellfish commissioners in making a survey of and locating the natural oyster beds, bars, and rocks in the waters within the State of Maryland; and the Secretary of Commerce and Labor is hereby authorized and directed to furnish to the officers, experts, and employees of said Bureaus so detailed as aforesaid such instruments, appliances, and steam launches as may be necessary to make the survey aforesaid; and the Secretary of Commerce and Labor is hereby authorized to have made in the Bureau of the Coast and Geodetic Survey all the plats necessary to show the results of the aforesaid survey and the locations of the said natural oyster beds, bars, and rocks in the waters within the State of Maryland, and to furnish to the board of shellfish commissioners of the State of Maryland such copies as may be necessary, and for this purpose to employ, in the District of Columbia and elsewhere, such technically qualified persons as may be necessary to carry out the purpose of this act.

SEC. 2. That the Secretary of Commerce and Labor is hereby further authorized to have erected or constructed by the officers so detailed as aforesaid, while making such survey, such structures as may be necessary to mark the points of triangulation, so that the same may be used for such future work of the Coast and Geodetic Survey as the said Bureau may be hereafter required to perform in prosecuting the Government coast survey of the navigable waters of the United States located within the State of Maryland.

* * * * *

SEC. 4. That this act shall take effect from the date of its passage.

[Act of Congress approved June 30, 1906.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth nineteen hundred and seven, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects hereinafter expressed, for the fiscal year ending June thirtieth, nineteen hundred and seven, namely: * * *

Survey of Oyster Bars, Somerset County, Md.

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including the expenditures authorized under Public Act Numbered One hundred and eighty-one, approved May twenty-sixth, nineteen hundred and six, and contingent expenses incident thereto, five thousand dollars, together with the unexpended balance under this appropriation for nineteen hundred and six and prior years which is hereby reappropriated and made available on this account for the fiscal year nineteen hundred and seven. * * *

[Act of Congress approved March 4, 1907.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and eight, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and eight, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, to be immediately available and to continue available until expended, twenty-five thousand dollars. * * *

[Act of Congress approved May 27, 1908.]

AN ACT Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and nine, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated, for the objects herein-after expressed, for the fiscal year ending June thirtieth, nineteen hundred and nine, namely: * * *

COAST AND GEODETIC SURVEY: * * * For any special surveys * * * including expenses of surveys in aid of the shellfish commission of the State of Maryland, which expenses, including cost of plats and charts, shall not exceed fifteen thousand dollars in any one year, to be immediately available, twenty thousand dollars.

[Act of the legislature of Maryland approved April 2, 1906.]

AN ACT to establish and promote the industry of oyster culture in Maryland, to define and mark natural oyster beds, bars and rocks lying under the waters of this State, to prescribe penalties for the infringement of the provisions of this Act, and * * *

SECTION 1. *Be it enacted by the General Assembly of Maryland,* That the following sections be, and they are hereby, added to Article 72 of the Code of Public General Laws, title "Oysters." * * *

SEC. 86. The Board of Shell Fish Commissioners shall, as soon as practicable after the passage of this Act, cause to be made a true and accurate survey of the natural oyster beds, bars and rocks of this State, said survey to be made with reference to fixed and permanent objects on the shore, giving courses and distances, to be fully described and set out in a written report of said survey, as hereinafter required. A true and accurate delineation of the same shall be made on copies of published maps and charts of the United States coast and geodetic survey, which said copies shall be filed in the office of the said commissioners in the city of Annapolis; and the said commissioners shall further cause to be delineated upon copies of the published maps and charts of the United States coast and geodetic survey, of the largest scale, one copy for each of the counties of this State in the waters of which there are natural oyster beds, bars and rocks, all natural beds, bars and rocks lying within the waters of such county, which maps shall be filed in the offices of the clerks of the Circuit Court for the respective counties wherein the grounds so designated may lie.

* * * * *

SEC. 87. The Governor of this State is hereby requested to ask the assistance of the United States coast and geodetic survey, and of the United States Fish Commissioner, to aid in the carrying out of the provisions of the preceding section. * * *

SEC. 89. As soon as practicable after the first day of April, 1906, the said commissioners shall organize, and shall at once proceed, with the assistance of such person or persons as may be detailed by the United States coast and geodetic survey, and the United States Fish Commissioner, to aid them in their work, and of such persons as may be appointed under the preceding section, to have laid out, surveyed and designated on the said charts, the natural beds and bars, and shall cause to be marked and defined as accurately as practicable, the limits and boundaries of the natural beds, bars and rocks, as established by said survey, and they shall take true and accurate notes of said survey in writing, and make an accurate report of said survey, setting forth such a description of landmarks as may be necessary to enable the said board, or their successors, to find and ascertain the boundary lines of the said natural oyster beds, bars and rocks, as shown by a delineation on the maps and charts provided in this Act; said report shall be completed and filed in the office of the board in the city of Annapolis within ninety days after the completion of the survey of any county. Said commissioners shall cause the same to be published in pamphlet form, and transmit copies of the same to the clerks of the Circuit Court for the respective counties, where the charts have been filed or directed to be filed as hereinafter provided; the said report to be filed by the clerks of the several counties in a book kept for that purpose. And the said survey and report, when filed, subject to the right of appeal hereafter provided for in this Act, shall be taken in all of the courts of this State as conclusive evidence of the boundaries and limits of all natural oyster beds, bars and rocks, lying within the waters of the county wherein such survey and report are filed, and shall be construed to mean in all of the said courts that there are no natural oyster beds, bars or rocks lying within the waters of the counties wherein such report and survey are filed, other than those embraced in the survey authorized by this Act, and that all areas of the Chesapeake Bay and its tributaries within the State of Maryland, not shown in the survey to be natural oyster beds, bars or rocks, shall be construed in all the courts of the State to be barren bottoms, and open for disposal by the State for the purpose of private planting or propagation of oysters thereon under the provisions of this Act; provided, that the said survey and report shall not be so construed as to affect in any manner the holdings by citizens of this State in any lot which may have been appropriated or taken up under the laws of this State prior to the approval of this Act. * * *

The law of the State of Maryland, passed March 9, 1842, authorizing officers of the United States Coast and Geodetic Survey to enter upon the lands within the State limits for the purposes of the Survey, is as follows:

An Act Concerning the Survey of the Coast of Maryland.

SECTION 1. *Be it enacted by the General Assembly of Maryland,* That it shall and may be lawful for any person or persons employed under and by virtue of an act of the Congress of the United States, * * * at any time hereafter to enter upon lands within this State for the purpose of exploring, surveying, triangulating, or levelling, or doing any other matter or thing which may be necessary to effect the objects of said act, and to erect any works, stations, buildings, or appendages requisite for that purpose, doing no unnecessary injury to private or other property.

SEC. 2.^a *And be it enacted,* That in case the person or persons employed under the act of Congress aforesaid, can not agree with the owners or possessors of the land so entered upon and used as to the amount of damage done thereto by reason of the removal of fences, cutting of trees or injury to the crop or crops growing on the same, it shall and may be lawful for the said parties or either of them to apply to the chief justice for the time being or one of the associate judges of the judicial district in which such land may be situated, who shall thereupon appoint three disinterested and judicious freeholders, residents of the same judicial district, to proceed with as much despatch as possible to the examination of the matter in question, and the faithful assessment of the damages sustained by the owners or possessors aforesaid, and the said freeholders or a majority of them, having first taken and subscribed an oath or affirmation before the chief or associate justice aforesaid or other person duly authorized to administer the same, that they will well and truly examine and assess as aforesaid, and having given five days' notice to both parties of the time of their meeting, shall proceed to the spot, and then and there upon their own view and if required, upon the evidence of witnesses, (to be by

^a Under the rulings of the Comptroller of the Treasury no damages can be collected except through the United States Court of Claims unless an agreement has been made in advance.

them sworn or affirmed and examined) shall assess the said damages, and shall afterward make report thereof and of their proceedings in writing under their hands and seals and file the same within five days thereafter in the office of the clerk of the county in which the land aforesaid is situated, subject to an appeal by either party to the county court of the said county within ten days after filing as aforesaid, and the said report so made as aforesaid, if no appeal as aforesaid be taken, shall be held to be final and conclusive as between the said parties, and the amount so assessed and reported shall be paid to the said owners or possessors of the land so damaged within twenty days after the filing of said report, and the said chief or associate justice as aforesaid, shall have authority to tax and allow upon the filing of said report, such costs, fees and expenses to the said freeholders for the performance of their duty as he shall think equitable and just, which allowance shall be paid by the person or persons employed under the act of congress aforesaid, within the time last above limited, but if an appeal as aforesaid be taken, the case shall be set down for hearing at the first term of county court aforesaid, ensuing upon and after appeal, and it shall be lawful for either party immediately after the entry of such appeal, to take out summons for such witnesses as may be necessary to be examined upon the hearing aforesaid, and the said court shall have power in its discretion to award costs against which ever the final judgment shall be entered, and such appeal at the option of either party may and shall be heard before and the damages assessed by a jury of twelve men to be taken from the regular panel and elected as in other cases.

SEC. 3. And be it enacted, That if any person or persons shall wilfully injure or deface or remove any signal, monument or building or any appendage thereto, erected, used or constructed under and by virtue of the act of congress aforesaid, such person or persons so offending shall severally forfeit and pay the sum of fifty dollars with costs of suit to be sued for and recovered by any person who shall first prosecute the same before any justice of the peace of the county where the person so offending may reside, and shall also be liable to pay the amount of damages thereby sustained, to be recovered with costs of suit in an action on the case, in the name and for the use of the United States of America, in any court of competent jurisdiction.

APPENDIX B.—LAWS RELATING TO SURVEY OF CLAM BEDS.

[Act of the legislature of Maryland approved April 6, 1908.^a]

AN ACT to prescribe additional duties to be performed by the Board of Shell Fish Commissioners, to the duties already prescribed for them by Chapter 711 of the Acts of the General Assembly of Maryland of 1906.

SECTION 1. Be it enacted by the General Assembly of Maryland, That it shall be the duty of the Board of Shell Fish Commissioners, as soon after the passage of this Act as practicable, to have laid out, surveyed and designated on charts provided for such purpose, Gravel Rock, Ware Rock, and Flat Rock, being clam banks located in the waters of Pocomoke Sound, in Somerset county, and State of Maryland, and shall cause to be marked and defined as accurately as practicable the limits and boundaries of each of the above named rocks, and they shall take true and accurate notes of said survey and make the report and perform all other duties connected with said survey as said duties are prescribed by Chapter 711 of the Acts of the General Assembly of Maryland of 1906, pertaining to natural oyster beds and bars.

SEC. 2. And be it enacted by the General Assembly of Maryland, That after said rocks shall have been surveyed as provided in Section 1 of this Act, no part of them shall be leased to any person or persons for the purpose of planting, bedding or cultivating oysters, thereon, but they shall be reserved to the public in the State of Maryland for the sole purpose of taking clams therefrom, and shall be treated in every particular as are the natural oyster beds or bars which have been or shall be surveyed by the Board of Shell Fish Commissioners under Chapter 711 of the Acts of the General Assembly of Maryland of 1906.

SEC. 3. And be it further enacted, That this Act shall take effect from the date of its passage.

^a As published in bill form.

APPENDIX C.—STATISTICS OF RESULTS OF THE COMBINED OPERATIONS OF THE GOVERNMENT AND STATE.

For a further understanding of the character of the oyster survey work that is being carried on in Maryland the following statistical tabulations of the combined results of the various operations of both the Government and State will be of value. In this connection it should be remembered that these statistics only include the new work required to supplement the large amount of existing data obtained from the archives of Coast and Geodetic Survey and utilized in the preparation of the charts and technical records.

Operation.	Anne Arundel County.	Somerset County.	Total. (a)
Natural oyster bars surveyed and delineated.....	91	37	128
Acres of natural oyster bars.....	33,666	27,566	(b) 61,232
Crab bottoms surveyed and delineated.....		54	54
Acres of crab bottoms.....		32,108	32,108
Clam beds surveyed and delineated.....		3	3
Acres of clam beds.....		506	506
Number of oyster lots leased and surveyed.....	38	185	223
Acres of oyster lots leased and surveyed.....	765	725	1,490
Boundary buoys located and planted.....	162	154	316
Triangulation landmarks established.....	123	86	209
Miles of shore line covered by triangulation.....	110	125	235
Square miles of water covered by triangulation.....	220	375	595
Miles of examination of shell bottom with chain apparatus.....	369	296	665
Oyster investigation stations occupied.....	440	679	1,119
Number of soundings over shell bottoms.....	37,049	17,904	54,953
Square miles covered by soundings and chain apparatus.....	58	47	105
Projections prepared and plotted.....	9	13	22
Leasing charts prepared.....	13	12	25
Oyster charts published.....	4	6	10
Reports published.....	2	2	3
Progress maps published.....	2	2	3

(a) Less quantities covered by statistics of more than one county.

(b) Total area of natural oyster bars of Connecticut is 5,770 acres.

APPENDIX D.—THE HAMAN OYSTER CULTURE LAW.

[Extract from First Report of Shell Fish Commission.]

OBJECT.

"The legislature in placing chapter 711 of the acts of 1906, better known as the Haman Oyster Culture Law, upon the statute books of Maryland had a twofold object in view:

1. To encourage an industry in oyster culture upon the *barren bottoms* beneath the tidewaters of the State.
2. To prevent the leasing of *natural oyster bars* for the purpose of oyster culture."

SURVEY.

"To make the leasing of barren bottoms possible and the leasing of natural bars impossible, provision was made for a survey of the natural bars for the purpose of accurately locating and marking the same. It was definitely provided that no barren bottoms should be leased in any part of the State until the natural bars of that region had been surveyed, charted, and marked with buoys."

NATURAL BAR NOT DEFINED.

"The Shell Fish Commission is instructed by section 90 of the Haman Oyster Culture Law to exercise its judgment liberally in favor of the natural bars when surveying, charting and buoying them, but other than this the Commission is uninstructed in this important matter. The responsibility of defining a natural bar is placed upon the Commission."

DEFINITION OF A NATURAL OYSTER BAR.

DIVERSITY OF OPINION.

"No definition of a natural oyster bar could be formulated by any man or body of men which would meet with the approval of all parties concerned. Oystermen, as a rule, hold that all bottoms where oysters grow or have grown naturally even though now practically barren of oysters should be considered natural bars. Other citizens of the State who are not directly interested in the oyster business, but interested in the oyster industry from the standpoint of revenue, hold, as a rule, that no bottoms should be excluded from leasing for oyster culture which, by methods known to oyster culturalists, may be made to yield a greater number of oysters than they now produce."

"It should be evident to every one that neither of these definitions could be adopted by the Commission as a working basis for determining which of the grounds surveyed are natural oyster bars."

THE GOLDSBOROUGH DEFINITION.

"The definition of a natural bar which very nearly approaches a reasonable and satisfactory compromise between the extreme views given above and which has therefore been adopted by the Commission, is that contained in an opinion rendered by Judge Charles F. Goldsborough in the circuit court for Dorchester County in the July term, 1881, in the case of William T. Windsor and George R. Tood, *v.* Job T. Moore. It is as follows:

What then is a natural bar or bed of oysters? It would be a palpable absurdity for the State to attempt to promote the propagation and growth of oysters and to encourage its citizens, by a grant of land, to engage in their culture, if the lands authorized to be taken up were only those upon which oysters do not and can not be made to grow. That there may be lands covered by water in the State where no oysters can be found, but where, if planted, they could be cultivated successfully, may be possible, but, if so, I imagine that their extent must be too limited for them to be of much practical, general advantage for the purposes of such a law as the one under discussion; but there are thousands of acres of hard and shifting sands where oysters not only are not found, but where it would be folly to plant them; and these latter it can not be supposed that the State intended to offer to give away, for the simple reason that the State could not help knowing that nobody would have them.

Upon the other hand there are large and numerous tracts where oysters of natural growth may be found in moderate numbers, but not in quantities sufficient to make it profitable to catch them, and yet where oysters may be successfully planted and propagated. In my opinion these can not be called natural bars or beds of oysters, within the meaning of the Act of Assembly, and it is just such lands as these that the State meant to allow to be taken up under the provisions of the above-mentioned section of the Act.

But there is still another class of lands where oysters grow naturally and in large quantities and to which the public are now and have been for many years in the habit of resorting with a view to earning a livelihood by catching this natural growth, and here, I think, is the true test of the whole question. Land can not be said to be a natural oyster bar or bed merely because oysters are scattered here and there upon it, and because if planted they will readily live and thrive there; but whenever the natural growth is so thick and abundant that the public resort to it for a livelihood, it is a natural oyster bar or bed and comes within the above-quoted restriction in the law, and cannot be located or appropriated by any individual."

COAST AND GEODETIC SURVEY
PROGRESS MAP
 SOMERSET COUNTY
 MARYLAND

To accompany report of work of United States
 Coast and Geodetic Survey in cooperation
 with the Maryland Shell Fish Commission

1907

- ⊙ Landmarks (Coast Survey Triangulation Stations)
- Waters contiguous to county
- Waters within territorial limits of county
- Limits of projections on file at Washington
- Limits of charts published by Coast and Geodetic Survey

CHART No. 6.

CHART No. 5.

CHART No. 7.

CHART No. 8.

CHART No. 9.

CHART No. 10.

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