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**U.S. NATIONAL OCEAN SERVICE
HYDROGRAPHIC SURVEYS INDEX**

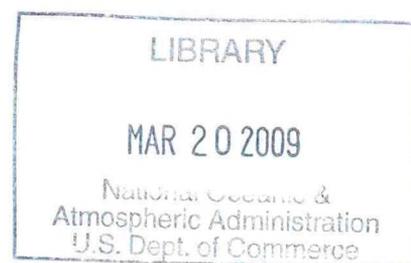
**OPERATORS MANUAL
VERSION 1.0**

AUGUST 1988

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Operator's Manual for program HSINDEX
Version 1.0

I. INTRODUCTION

A. What is the Hydrographic Surveys Index

The National Ocean Service (NOS) maintains an index of the approximately 10,000 hydrographic surveys it has performed since 1834. The index takes the form of a large number of charts on which survey boundarys are hand-drawn. These charts are manually searched to identify surveys in an area of interest.

The HSINDEX computer program is designed to assist in searching a digital version of the hydrographic surveys index. HSINDEX allows an operator to:

- identify an area to search from a geographic display of the shoreline;
- search the database for surveys lying within the area of interest;
- further restrict the search to a range of years and/or survey scales;
- edit the list of selected surveys;
- print and/or plot the results.

The companion program HSIEDIT provides the means to establish and maintain the digital index.

B. How to interact with the software

1. Starting the software

To start the program, type HSINDEX at the C> prompt and press the ENTER key. Subsequent operator interaction is in response to prompts at the bottom of the computer screen, or via operator selections from on-screen menus to the right.

Don't worry about damaging the software. You are working with a copy of the database that is made when the program loads. If you have an accident, turn the machine off then on and start again. A fresh copy of the data will be made.

2. Interacting with the graphics software (AutoCad)

When the word COMMAND shows on the bottom line of a graphics display, the software is waiting for you to select an instruction from the onscreen menu at the right.

To make a menu selection, move the mouse until your selection is highlighted and press the pick button on the

mouse. Alternatively, use the INS key to activate the menu, the arrow keys to move the highlighted box, and the ENTER to pick the menu selection. The DEL key deactivates the menu.

When a prompt such as "SELECT OPR AREA OR QUIT" or like "FIRST POINT" shows on the bottom line of the graphics display, the software is waiting for you to perform a "pick". Move the cursor (crosshair or small box) to the object you wish to identify and press the pick button on your digitizer. Alternatively, move the cursor with the arrow keys on your keyboard and press ENTER to execute the "pick". Pressing PG UP once speeds up the cursor. PG DN slows it down.

When prompted for specific information, such as "ENTER SURVEY REGISTRATION NUMBER", type the information and press ENTER. If you make an error while typing, the BACKSPACE key will back up the cursor, erasing the characters underneath.

The 2-key combination CTRL C causes AutoCad to abort ongoing commands and menu selections, and return you to the COMMAND prompt. Use it if the program is doing confusing things that you have never seen before.

AutoCad has a text screen as well as the graphics screen. Use the F1 function key to toggle back and forth if needed.

3. Interacting with the spreadsheet software (SuperCalc4)

With one exception, all interaction with the spreadsheet is done using the function keys F1 to F10 and the 2-key combinations ALT F1 to ALT F10. F1 and ALT F1 display HELP menus.

The one exception is when the SELECTION PARAMETER TABLE is displayed using F2. Here, the arrow keys move the highlighted box, you type the year or scale of interest, and then press ENTER to enter the typed data.

If you have displayed "All Surveys" with F7, or the "Selected Surveys" with F6, the PG UP and PG DN keys will move you through the listed data.

C. TRY THIS - A hands-on example of finding surveys using HSINDEX

An example use of HSINDEX would be to find all surveys in Pamlico Sound, North Carolina, performed between 1913 and 1920 with scales larger than 1:40,000.

START IN THE GRAPHICS

1. Start the software by typing HSINDEX at the C> prompt.
2. At the "SELECT OPR AREA OR QUIT" prompt, pick F on the map

- of North America.
3. Pick SHOW SHORE from the onscreen menu at the right. Wait for the shoreline and new onscreen menu to be displayed.
 4. At the COMMAND prompt, pick DEFINE AREA from the onscreen menu. Follow the prompts and pick 2 corners of a box around Pamlico Sound. Your area of interest will be enlarged.
 5. At the next COMMAND prompt, pick GET DATA from the onscreen menu. The spreadsheet will be loaded and displayed.

SELECT A SUBSET OF SURVEYS IN THE SPREADSHEET

6. Move the highlighted box to the FROM YEAR block using the arrow keys, type 1913, and press ENTER. Then move the box to the TO YEAR box, type 1920, and press ENTER.
7. Now move the box to the TO SCALE block, type 40000 and press ENTER. If necessary, change the FROM SCALE to the largest scale possible, say 5000.
8. Press F1 to display the menu.
9. Pick the Auto Selection (F3) from the menu. The selected surveys will then be displayed. These are the surveys within your Pamlico Sound window, performed between 1913 and 1920 with scales larger than 1:40,000. If you remembered that F3 does the selection, you do not need to display the menu with F1 first.
10. Use PG UP and PG DN to examine the surveys. If they don't appear to meet your intended criteria, press F2, correct the selection parameters, and rerun the selection with F3.
11. Press F1 for the menu and select F10 to return to the graphics.

DISPLAY THE BOUNDARYS

12. Pick SEE BNDY from the onscreen menu to display the boundaries you selected in the spreadsheet.
13. Do a ALL zoom to back up, then a WINDOW zoom to center the displayed surveys.
14. Pick OPTIONS from the onscreen menu.
15. When the options menu is displayed, pick SHOW #s to display the survey registration numbers.
16. Return to the main menu by picking MAIN MENU.
17. You can now print or plot the selected surveys using the appropriate menu selection, or experiment with the other commands.
18. Pick QUIT from the menu when you are done.

D. Special vocabulary and definitions

A few special terms are used in the HSINDEX software. RETURN and ENTER mean to press the key labeled RETURN, ENTER or labeled with the symbol  located towards the right side of your keyboard.

When prompted to PICK, SELECT or IDENTIFY an object or point on the graphic display, move the cursor (a crosshair or

small box) to the object or point you wish to identify to the program, and press the "pick" button on your mouse or digitizer. If you do not have a digitizer or mouse, move the cursor with the arrow keys on your keyboard and press ENTER to execute the "pick".

The terms BOUNDARY and SURVEY refer to the outline of an area surveyed. These are the objects that the indexing software maintains and displays.

The term DATA refers to the text information associated with each boundary. Those data are the survey registration number, the year that most of the survey was done, any other years that the survey spanned, the survey scale, and any comments particular to that survey.

OPR AREA is an abbreviation for Operational Area. These 26 areas are an NOS-defined partitioning of the US shoreline.

II. EXAMPLES OF OTHER USES OF THE HSINDEX SOFTWARE

A. Finding the most recent surveys which cover an area

Build a set of selected surveys as explained in the example above. Before returning from the spreadsheet to the chart with F10, press the 2-key combination ALT F1 and sort the surveys by year using ALT F7 (notice that it sorts the years in descending order so the most recent is first). Now return to the chart with F10.

If you pick 1x1 BNDY from the options menu, HSINDEX will display your selected surveys one at a time in the order you sorted them so the most recent will show up first. You can keep or reject the surveys (using K or R) as they are added to the display until the area is covered, then respond to the KEEP/REJECT/DONE prompt with the letter "d".

B. Examining individual surveys

You can specify surveys individually and have them displayed by picking ONE BNDY off the options menu. The prompt will ask you to type in the desired survey registration number. Pick ONE BNDY again to add another specific survey.

C. Data-only searches

You are not required to draw the shoreline and look at the boundaries to get a printed selection set of surveys. After you indicate the OPR area of interest, pick SHOW DATA rather than SHOW SHORE (see step c in the detailed example given earlier). HSINDEX will go immediately to the spreadsheet where you can do a selection and print the results.

D. Making page-size indexes

Custom page-size indexes can be made easily. Select and display the boundaries you want to include on the page-size index using any convenient method. Use ERASE from the options menu or (UN)SEL to remove any you don't want. Pick PLOT #s from the options menu to display the survey registration numbers, then use the MOVE # command to rearrange the numbers and make the display more legible. Finally, return to the main menu and select PLOT or PRPLOT. What you see on the screen is what will be plotted.

III. KEY AND MENU ENTRY DEFINITIONS

This reference section provides a complete listing of menu choices, function key definitions, and computer prompts plus a description of the required operator action and the computer's response.

A. Keys and entrys NOT TO USE!

1. SAVE - While in AutoCad, do not type SAVE and press ENTER. This will cause your blank workfile to be overwritten permanently with the OPR area presently displayed. Picking SAVE from the onscreen menu has a different effect and is OK to use at times called for in this manual.
2. END - Same effect as SAVE plus the program HSINDEX will be terminated.

B. North America menu choices and explanations

1. "SHOW DATA" - goes directly to the spreadsheet for the selected OPR area without first displaying the shoreline.
2. "SHOW SHORE" - loads and displays the shoreline for the selected OPR area.
3. "SELECT NEW AREA" - discards your OPR area selection and prompts again SELECT OPR AREA OR QUIT ... use if you select the wrong OPR area.
4. "QUIT" - terminates the program ... to begin again you need to type HSINDEX at the C> prompt.

C. Main Menu choices and explanations

1. "ZOOM" - no effect ... this is just a header to show that the next 4 items are all zooms.
2. "all" - zooms back to show the entire OPR area ... used if you get lost or window in on the wrong spot and want to back up and try again.
3. "window" - prompts the operator to pick 2 opposite corners

of a box and then zooms in on that box.

4. "last" - zooms to the previous display ... will zoom back through your entire sequence of previous zooms.
5. "1/2 X" - zooms to 1/2 the scale presently on the display ... useful for backing up far enough to make sure you see all boundaries brought into the display.
6. "DEF. AREA" - prompts the operator to pick 2 opposite corners of a box, zooms on that box, and writes the latitude and longitude of the box corners to the spreadsheet for use in selecting surveys ... should be used before SEE DATA if you want to restrict the search area.
7. "GET DATA" - loads and displays the spreadsheet of data for surveys in the OPR area ... DEFINE AREA should be used before picking SEE DATA.
8. "SEE BNDY" - draws all the boundaries selected using the spreadsheet ... they will be drawn in the order in which they were sorted when you exited the spreadsheet with F10.
9. "(UN)SEL" - prompts the operator to pick a survey boundary and moves the picked boundary out of the selection set (changes its color) ... they can be restored to the selection set by picking them again ... also useful to highlight a boundary temporarily when many boundaries are overplotted. (UN)Selected boundaries are not printed or plotted.
10. "COORDS?" - prompts the operator to pick any point and then displays the latitude and longitude of that point in the upper right corner of the screen.
11. "OPTIONS" - switches to the options menu.
12. "PRINT" - prints a list of the selected surveys ... ones removed from the selection set using (UN)SELECT (the red ones) are not listed.
13. "PRPLOT" - plots on the printer what you see on the screen.
14. "PLOT" - plots on the plotter what you see on the screen.
15. "QUIT" - terminates the program ... to begin again, type HSINDEX at the C> prompt.

D. Options Menu choices and explanations

1. "PLOT #s" - Displays the survey registration numbers of all surveys on the screen. Numbers are automatically scaled for legibility.

2. "SHOW #s" - Turns the numbers on if you already plotted them and turned them off.
3. "HIDE #s" - Turns the numbers off if you already plotted them and they are on.
4. "MOVE #" - Prompts operator to select survey number that he wants to relocate, then prompts for a point on the number and the location to which that point should be moved.
5. "COORDS?" - prompts the operator to pick any point and then displays the latitude and longitude of that point in the upper right corner of the screen.
6. "IDENTIFY" - prompts the operator to pick a survey boundary and displays the data for that boundary in the upper left corner of the screen.
7. "LIST ALL" - displays a list of all the surveys in the data base for the present OPR area ... press the 2-key combination CTRL C to terminate the listing early... press F1 to get back to the graphics.
8. "ALL BNDY" - draws all the boundaries selected using the spreadsheet ... they will be drawn in the order in which they were sorted by the spreadsheet.
9. "ONE BNDY" - prompts for a survey registration number and draws the boundary of that survey if it is in the database.
10. "1x1 BNDY" - draws all boundaries selected using the spreadsheet, but draws them one at a time giving the operator a chance to accept or reject each ... surveys will be shown one-by-one in the order in which they were sorted by the spreadsheet.
11. "L/L LINES" - draws and labels lines of latitude and longitude scaled to the onscreen display.
12. "ADD TEXT" - allows operator to enter a text caption ... prompts for a point to start the caption, and angle in degrees to print the text, and for the text caption.
13. "REDRAW" - redraws the display to remove any trash left over after an ERASE.
14. "ERASE" - will erase the survey boundary or registration number picked by the operator... make sure you erase both before plotting.
15. "OOPS" - will restore the last item erased ... any erasures before the most recent one are gone for good unless you use ALL BNDY, ONE BNDY, or 1x1 BNDY to draw it again.

16. "Last Menu" - restores the main menu.

E. Function key definitions used in the spreadsheet

1. F1 - displays the menu of function keys.
2. F2 - displays the Selection Parameter Table and allows new parameters to be set.
3. F3 - automatically selects surveys within the window defined in the graphics display using DEFINE AREA, and within the year and scale range set in the selection parameter table.
4. F4 - automatically selects surveys within the window defined in the graphics display using DEFINE AREA, and within the year and scale range set in the selection parameter table, but pauses at each one requiring the operator to accept or reject that survey with a "Y" or an "N" ... requires pressing ENTER when all the surveys have been accepted or rejected.
5. F5 - allows the set of selected surveys to be edited (see edit key definitions below).
6. F6 - displays the set of selected surveys ... use PG UP and PG DN to move through the list ... displays a blank list if no selections have been made.
7. F7 - displays the data for all surveys in the OPR area ... use PG UP and PG DN to move through the list.
8. F8 - prints the data for the set of selected surveys.
9. F9 - prints the data for all surveys in the OPR area.
10. F10 - returns to the graphics and passes the list of selected surveys to the graphics software.

F. Alternate function key definitions

1. ALT F6 - sorts the surveys by survey registration number.
2. ALT F7 - sorts the surveys by year (most recent first).
3. ALT F8 - sorts the surveys by scale (largest scale first).
4. ALT F9 - sorts the surveys by comments (pushes comments to the end of the list... use PG DN to get there).
5. ALT F10 - returns to the graphics without passing the list of selected surveys to the graphics software ... the previously passed list will remain in effect.

G. Edit key definitions used in the spreadsheet

1. ALT F5 - marks a specific selected survey for deletion from the selection set.
2. ALT F6 - restores a survey marked for deletion to the selection set.
3. ALT F7 - deletes the selected surveys marked with F5 and restores the original function key definitions... use F1 to display those definitions.

H. Prompts and expected responses used in the graphics displays

1. "Select OPR area or QUIT" - expects the operator to pick one of the OPR area letters on the display, or to pick the word QUIT.
2. "First Point ... Other Point" - expects the operator to pick opposite corners of a box for zooming.
3. "Select point to display LAT/LONG" - expects the operator to pick a point on the screen.
4. "Enter survey registration number" - expects the operator to type a survey registration number followed by a ENTER.
5. "For survey in red, Keep, Reject or Done (K/R/D)?" - expects operator to type K,R, or D followed by ENTER to indicate whether the red survey boundary should be put in the display or discarded.
6. "Pick survey number to move ... Mark the FROM point ... Now mark the TO point" - expects the operator to pick a survey registration number, indicate a reference point on that survey number, and indicate where to move that reference point to.

IV. ERROR MESSAGES

- A. "cannot initialize digitizer" - your digitizer was not connected and/or turned on when you typed HSINDEX to start the program. Go back to the C> via a QUIT and type HSINDEX.
- B. "cannot reenter AutoLisp" - you are in the middle of one command and tried to start another. Use CNTL C to stop the ongoing command and try again.
- C. grid, screen flashing, help list, etc. upon starting HSINDEX and before OPR area is requested - The program FAKEY used to clean up the disk when you start HSINDEX is incorrectly set for your system. Have a skilled programmer edit the HSINDEX.BAT file where it says FAKEY wait 10 "n\r" by changing the 10 to other numbers. Try 15 first.

- D. "file not found" - When you start the program by typing HSINDEX at the C> prompt, you will see the message "file not found". This is part of the HSINDEX and EDITINDEX batch files that are looking for leftover trash from previous worksessions. If there is no such trash, you will see the message "file not found". This is not an error ... ignore it.