"ASFA CD-ROM at the Scripps Institution"
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The University of California San Diego (UCSD) Library actively encourages greater awareness and usage of bibliographic databases by its academic community and utilizes compact disk databases as one tool. In December 1986, UCSD's Scripps Institution of Oceanography (SIO) Library began providing the Aquatic Sciences and Fisheries Abstracts (ASFA) compact disk database for public access. Produced by Cambridge Scientific Abstracts, ASFA covers worldwide information on freshwater and marine environments with two disks spanning 1982 to present; the current disk is updated semiannually.

SOFTWARE FEATURES

With both menu-driven "menus" and command-driven "dot line commands" search modes, ASFA's search software is similar to the software used for Cambridge's other disk products: MEDLINE and LIFE SCIENCES COLLECTION. In menu mode, the searcher follows a series of windowing menus to complete the search. In command mode, the searcher details a series of commands to complete the search. The search software is quite sophisticated especially the command mode; the menu mode's user friendly approach has diminished searching power. Search operators are "and", "or", and "andnot"; an adjacency operator "within" distinguishes textual distance between two terms. Truncation, nested search terms, and field-specific searching are supported. A search can back-reference previous search steps. The record format can be adjusted in order to display, print, or download specific fields; for example, the default format can be changed from the full record to the bibliographic citation, abstract, and language. Search results can be printed or downloaded individually or in their entirety. To avoid rekeyboarding, a complicated search strategy involving multiple terms and steps can be saved as a MACRO for subsequent execution against a second or newly received disk. The database index can be examined with an EXPAND command and previous search steps can be reviewed with a TABLE command.

EQUIPMENT

End-of-the-year funds from the SIO Graduate Department purchased the ASFA backfile disk and a one-year subscription, a Philips disk player, and an IBM compatible hard-disk microcomputer with Hewlet-Packard Thinkjet printer. (ASFA

needs a microcomputer with DOS 3.1 or greater, 512K RAM, a hard disk or a 740K or larger floppy disk drive, and an available expansion slot for the disk player interface card). The HP Thinkjet printer is an inexpensive ink-jet printer featuring no impact noise (unlike dot-matrix printers) and easy paper loading. The searchers themselves load Library-supplied paper into the printer. The printer's ink-jet occasionally suffers stoppage and its reservoir depletes every two weeks; an ink-jet printer with a larger reservoir would be more desirable. Located in a highly visible area near the Reference Desk, the Library's microcomputer, player, and printer are tethered by a locked cable and have not been tampered with to date. The two compact disks are available for checkout at the Circulation Desk and are available to anyone leaving an identification card. Users have no difficulty loading disks into the player with only one user inserting a disk into a floppy disk drive. The ASFA search software can access only one disk player even though the disk player interface card that is inserted into the microcomputer's expansion slot has two ports for accessing two players. Cambridge needs to support other configurations than the standard one-player/one-disk. It would be nice to have two half-height compact disk drives in the microcomputer or two external disk drives in order to make the disks inaccessible to the public.

USING AUTOMENU FOR A USER-FRIENDLY SYSTEM

In order to facilitate unassisted searching of the ASFA disks and to record usage data, an external menu system comprising menus and instructional text surrounds the ASFA search software. The AUTOMENU "shareware" software creates a controlled hard disk environment for execution of pre-defined DOS commands, display of text files, and loading of ASFA or other software. AUTOMENU removes the DOS prompt from the searcher and offers numbered menu options. This external AUTOMENU-based system utilizes basic knowledge of DOS commands and batch file processing. The simplicity of the system is its merit; programming skills are not required.

AVOIDING PROBLEMS

The microcomputer, player, and printer are never switched off; a "screensaver" software blacks out the monitor screen when dormant. Using NORTON UTILITIES's "FA" software, everything on the hard disk was changed to an unerasable status (a "read only" file attribute); the ASFA software and other Library-origin software/files cannot be erased. Most DOS COM or EXE files are not available on the hard disk; many DOS commands particularly FORMAT are dangerous on a public-

access microcomputer. FASTBACK backup software and a word processor capable of editing ASCII files are present on the hard disk.

INTRODUCTORY MENU

When a searcher walks up and touches the microcomputer's keyboard to refresh the screen display, AUTOMENU types a text screen (figure 1) with disk-loading instructions. Next, a primary AUTOMENU (figure 2) displays menu options to begin searching ASFA, to learn searching ASFA, or to begin searching a database on the hard disk (the Library plans to mount more local databases).

INSTRUCTIONAL ASSISTANCE

If the learn-to-search-ASFA option is selected, AUTOMENU changes to a subdirectory and types text screens noting the coverage of the database (figure 3) and the two modes for searching (figure 4). The ASFA software itself does not provide this basic introductory information. Next, a second AUTOMENU (figure 5) displays menu options to display and/or print instructional information. Instructional text files for menu and command searching modes were written by the Library because the vendor-supplied online documentation was deemed inadequate. Cambridge does not provide menu-mode instructional text internally within its software because the menu mode is designed to be user-friendly. However friendly it tries to be, inexperienced searchers need assistance and the Library's external system provides it. Cambridge does provide command-mode instructional text internally within its software but the Library's external system provides more complete information. Unfortunately, the Library's menu and command mode instructional text files cannot be merged and substituted for Cambridge's internal command mode instructional text file.

AUTOMENU loads SIDEKICK's README.COM utility to display the Library's external instructional text files (figure 6). Only README.COM and not SIDEKICK is present on the hard disk. README.COM furnishes full cursor and printer control for an ASCII file entitled READ-ME.SK. The text can be scanned line-by-line or paged and printed by the page or in its entirety. SIDEKICK uses README.COM for its instructional text file; the Library uses README.COM for its ASFA instructional text files. AUTOMENU executes README.COM in either of two subdirectories which separate the menu and command mode instructional text files. Both files are named READ-ME.SK but are located in separate subdirectories.

LOGGING USAGE

When the begin-searching-ASFA option is selected, AUTOMENU presents another AUTOMENU which queries the status of the searcher (figure 7). The SIO Library is assessing disk users within its academic community and from selected other communities. After searcher status is selected, AUTOMENU echoes the status of the searcher and the time/date of logon into a LOG file. When the searcher exits the ASFA search software, the exit time is echoed into the LOG file. Searcher status, search session frequency, and length of search session is being logged to assist analysis of disk usage. When a searcher scans the Library's instructional text files, AUTOMENU echoes an access to the LOG file in order to document usage of the external instructions.

DOS redirection records search session information into the LOG file. For example, the following sequence creates a LOG file entry recording the date & length of an SIO academic's search session:

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ECHO ********** >> \LOG
     writes a line of asterisks into the LOG file; the
     asterisks separate search sessions in the LOG
ECHO SIO ACADEMIC >> \LOG
     writes "SIO ACADEMIC" in the next line of LOG
ECHO ----LOGON >> \LOG
     writes "----LOGON" in the next line of LOG
GETCLOCK >> \LOG
     writes date/time (GETCLOCK is the microcomputer's
     clock utility software whose name differs on
     various microcomputers eg ASTCLOCK).
CSA.EXE
     loads the ASFA search software; when the searcher
     exits the software, the next line executes
ECHO ----LOGOFF >> \LOG
     writes "----LOGOFF" in the next line of LOG
GETCLOCK >> \LOG
     writes date/time of exit in LOG
```

Instead of using clock utility software, BASIC can be utilized to create a date/time entry. For example, the line ECHO ? DATE$,TIME$: SYSTEM | BASIC | FIND /V "?" >> \LOG will briefly note the date/time in LOG when BASIC is in the root directory or a specified path. For IBM-compatible microcomputers, the term "BASIC" may have to be replaced with the name of the compatible's Basic eg GWBASIC.

MENU-DRIVEN SEARCH MODE

After searcher status and time is echoed into LOG, AUTOMENU types a final screen (figure 8) before the ASFA search software is loaded. This screen explains what to do when ASFA displays its first menu -- the main WORK ENVIRONMENT menu (figure 9). The Library's external system provides the introduction that Cambridge's ASFA software doesn't provide. Without introductory information about ASFA's dual search modes, the beginner does not know what to do with the WORK ENVIRONMENT menu.

SEARCHING WORDS

The WORK ENVIRONMENT menu is the juncture between menu and command searching. Choose MENUS and a MENU INTERFACE FUNCTIONS screen (figure 10) displays. From this screen the beginning searcher cannot readily discern that the WORD option should be selected from among the many options listed. Select WORD and a window opens up wherein the first word is typed. Press enter and a window opens offering a global search of all fields or field-specific searching of the database records (figure 11). The inexperienced searcher is usually bewildered by the concept of a "field" and this presents a user-education task. Usually the default global field search is selected; the cursor keys and the space bar are used to select specific field(s) for searching. Field selection could be more user-friendly if common choices were offered: a subject search of subject-oriented fields, an author search, a global search, and an "other" search that opens a window offering specific field selection. Press enter and a window for selection of a search operator opens. To search a second word, an operator other than NONE is selected and the second word and field(s) are entered (figure 12). After the term(s) are searched and results retrieved, the MENU INTERFACE FUNCTIONS screen (figure 10) redisplays and the searcher selects from DISPLAY, PRINT, or KEEP (download) options.

DISPLAYING SEARCH RESULTS

The DISPLAY option shows retrieved records one at a time (figure 13) for subsequent printing or downloading. Search terms are highlighted and a complete record usually extends onto a second screen. Since most searchers do not need the full record, the FORMAT command is used to select fields for display/print/downloading. FORMAT offers a preselected bibliographic format but does not offer the obvious choice -- a preselected format that includes the bibliographic citation plus abstract and text language fields. This popular format has to be custom-selected -- another user education task. Individual records can be downloaded and appended into one

file.

DOWNLOADING

Search results can be printed in their entirety using PRINT or downloaded in their entirety using KEEP. When downloading, the software prompts for a file name and then downloads onto the default drive -- the hard disk C drive instead of the searcher's floppy disk in the A or B drive. The searcher has to type "a:" or "b:" as the first two characters of the file name in order to download to floppy disk. No one realizes this at first -- another user education task. The ASFA software should query for the drive receiving downloads. ASFA software will not process downloads with large retrievals over some number around 500 and cannot efficiently process downloads that run over the capacity of a floppy disk. A floppy disk fills up with about 250 full-record references and then downloading stops. Inexcusably, downloading cannot be continued where left off. The searcher issues a new KEEP command but has no idea at which record number downloading ceased. Thus, to ensure complete downloading, the Library instructs searchers to assume downloads capture 200 references onto floppy disk and to start the second KEEP at reference number 201.

COMMAND-DRIVEN MODE

The command mode is entitled DOT LINE COMMANDS because a period, a dot, is the command line prompt like Dialog's question mark. The command mode uses the same commands as menus but with greater versatility eg nesting of search terms, multiple search terms, and special options for PRINT/DISPLAY/KEEP. Searches are more quickly consummated with no menus to follow step-by-step. The Library teaches the command mode to its primary clientele (SIO) wherein their continued usage of ASFA disks is expected. The command mode is learned quickly and is greatly preferred by continuing searchers. The menus mode is taught to searchers who are considered to be one-time-only searchers eg off-campus or non-science-major undergraduates.

A PROBLEM WITH TWO DISKS

The disks cannot be switched in the disk player while using the ASFA search software. A searcher cannot execute a search against one disk, switch disks, and execute it against the second disk; a non-recoverable error message results and the microcomputer has to be booted or switched off and on. To search the second disk, the ASFA search software is exited from the WORK ENVIRONMENT menu (figure 9), the disks switched, and then the software is re-entered through

AUTOMENU. This takes several long seconds while the ASFA software reloads and is a noticeable inconvenience.

PARK YOUR HEADS

When searchers are finished searching ASFA, they exit from the WORK ENVIRONMENT menu (figure 9) and AUTOMENU echoes the exit time in the LOG file. AUTOMENU types a text screen (figure 14) noting to either return the disks to the Circulation Desk or to change disks in the player. In case the searcher is done, AUTOMENU then runs a PARK software which parks the hard disk heads; this protects the hard disk drive from damage since the microcomputer is always switched on. The inexpensive hard disk used does not automatically park its heads as do more expensive hard disk drives.

IMPACT ON ONLINE SEARCHING

Reaction to the ASFA disks from the SIO's 190 graduate students and 270 academics has been extremely positive. Queueing problems occur infrequently. Interviewing has revealed that users usually consult the disks for casual information needs and not for comprehensive sweeps of the literature (a text screen that displays on the ASFA microcomputer makes this point --figure 3). These remarks corroborate the observed lack of impact on the Library's fee-based search service. Before and after the advent of disks in the Library, the fee-based service provides comprehensive searches for the preparation of dissertations, research proposals, or journal articles and also accesses many more databases than ASFA. Thus the ASFA disks are an enhancement of service and not a replacement for existing service. More specialized databases like BIOSIS, GeoRef, Inspec, and Chemical Abstracts are usually accessed by the fee-based service. Before the advent of the ASFA disks, online ASFA was rarely accessed by the Library since it does not cover many disciplines of interest to SIO in sufficient depth. Cambridge, the database producer, is now receiving revenue from the SIO Library that it did not previously receive and it is receiving it direct without dilution from a databank middleman.

DISKS VERSUS PRINTED EQUIVALENT

The Library is watching the overall development and in-house usage of compact disks and has not dropped its subscription to the printed ASFA at this time. A specialized compact disk product like ASFA has a smaller market which may not sustain the critical mass of subscribers needed to ensure future disk production. The Library continues to guide some users to the printed ASFA. A librarian should always consider whether it

is really worth the extra effort on the librarian's or the user's part to inject the latest technology into certain information requests. Certain topics can be very quickly looked up in the printed ASFA (especially when the disks are in use) and the broad subject arrangement of abstracts in the printed ASFA is very useful for browsing the literature. Long browsing sessions tie up the disks which are limited to a single searcher at a time. The teaching and learning time for the printed ASFA is much less than the teaching and learning time for the ASFA disks. The key is to get the requestor to the information quickly. Some library users grasp this point but most prefer the disks!

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