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ABSTRACT

This document is a self-paced training packet developed for a pilot project at the University of Houston-University Park to teach chemistry faculty members and research assistants to do their own online searching. The training begins with general topics such as the kinds of searches that can be done most effectively online, the selection of appropriate databases to search, and the use of documentation. Basic search concepts such as database structure, Boolean operators, and search strategy formulation are also covered. Exercises provide the opportunity for hands-on practice searching CAS (Chemical Abstracts) online. Separate handouts provided include an introduction to the pilot project; a guide to procedures for searching chemistry reports online; summaries of CAS commands and Boolean operators, and an evaluation form. (Author/KM)

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CHEMISTRY RESEARCH ONLINE

A Guide for Faculty

IR051636

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CONTENTS

INTRODUCTION.....1

What Is Online Searching?.....1

1. WHY SEARCH ONLINE?.....2

What Kinds Of Searches Can Be Done Most Effectively Online?.....2

Which Databases Should You Search?.....3

2. PREPARING TO SEARCH.....5

Database Structure.....5

Searchable Fields.....6

Basic Index.....7

Additional Indexes.....7

Boolean Operators.....7

AND.....8

OR.....8

NOT.....9

Documentation.....10

Database Producer Documentation.....10

Online Service Documentation.....10

3. WRITING THE SEARCH STRATEGY.....12

Sample Worksheet.....15

4. CAS ONLINE SYSTEM COMMANDS.....16

Selecting Your File.....16

Entering Your Search Strategy.....16

Searching Fields of the Record.....17

Author Searching.....18

Combining Terms With Set Numbers.....19
Truncation of Terms.....20
Range Searching.....20
Printing Your Results.....21
Disconnecting.....21
Search Strategy Worksheet.....22
5. EXECUTING THE SEARCH.....23
Sample Search.....23
General Features of ProSearch.....27
6. DIALOG SYSTEM COMMANDS.....30
Selecting A Database.....30
Entering Your Search Strategy.....30
Searching Fields of the Record.....31
Combining Terms With Set Numbers.....32
Truncation of Terms.....33
Author Searching.....34
Printing Your Results.....34
Logging Off DIALOG.....35
7. PRACTICE SEARCHES.....36

INTRODUCTION

This year, the Library has begun a one-year pilot project to allow faculty in the Chemistry Department to do their own online searching of indexes to the journal literature. As a participant in this project you will have the control and convenience of doing your own computerized literature searching on an IBM XT located in the Chemistry Department. You will have access to two major online services: DIALOG Information Services and CAS Online.

WHAT IS ONLINE SEARCHING?

Using printed indexes to identify bibliographic citations is a familiar process to researchers. Citations can also be identified by online searching, i.e., using a computer to search a bibliographic database.

The search process starts with a question that is refined into a search strategy. The online searcher then uses a computer to connect to an online service. An online service provides access to many databases. The databases are often computerized versions of standard printed indexes such as Chemical Abstracts and Science Citation Index. Each online service has unique commands that are used to perform the search strategy in a database. The result of the online search is a list of references, or bibliographic citations, that answer the searcher's question.

This packet of training materials has been designed to assist you in learning the concepts and skills necessary to search online systems effectively. It provides:

- A comparison of traditional and online searching
- An introduction to the structure of bibliographic databases
- Techniques to design an effective search strategy
- An introduction to online system commands
- Procedures for g the computer to search
- Sample searches to practice

1. WHY SEARCH ONLINE?

Convenience is undoubtedly a major factor in choosing to search online. Searching indexes through a computer terminal located close to your office is in most cases faster and easier than using the printed equivalents that may be located across campus in the Main Library. However, searching bibliographic databases by computer is not free, and unless you're working with an unlimited research budget, you'll need to learn to determine which topics can be searched most effectively by computer and which databases are likely to contain the most usable information.

WHAT KINDS OF SEARCHES CAN BE DONE MOST EFFECTIVELY ONLINE?

A computer search can help solve a number of research problems, including the following:

- A complex topic involving several concepts
- New terminology that has not yet been adopted by the indexes
- Subjects seldom treated that may be listed under a broader subject heading in a printed index
- Research involving the use of specific instruments or other measurement devices or specific chemicals or methods that can be identified by name
- Information in articles published too recently to be included in printed indexes

In order to determine if your topic is appropriate for a computer search, it is important to consider the key concepts within your subject carefully. The number of concepts involved or the distinctiveness of the terms are major factors in deciding whether a computer search is appropriate. For example, the subject of toxicity of vinyl polymers through the skin involves several concepts: vinyl polymers, skin, and toxicity. The computer can quickly sort through hundreds of articles on vinyl polymers and pull out only those that mention toxicity through the skin.

Using the computer to find articles on vinyl polymers in general would be far less appropriate, since so much has been written on the subject that it would be quite expensive to print all of the citations that could be identified in a computer search and since the single concept of vinyl polymers can be found easily

in printed indexes. Single concepts or terms may be appropriate for computer searching if very little has been written on the subject or if you are looking for a new term that has not yet been picked up in the printed indexes. For example, drug design is a distinctive single concept that is difficult to find in printed indexes, but easy to locate by computer. Since the computer can search every word in an article's title and abstract, as well as the assigned subject terms, it is invaluable as a tool to identify articles using new terminology.

WHICH DATABASES SHOULD YOU SEARCH?

If you have a topic appropriate for a computer search, you next need to determine which of the hundreds of bibliographic databases are most appropriate for your topic. Research in some subject areas can be satisfied by using only one or two databases, while other areas may require searching in many different databases. Unfortunately, not all printed indexes have online equivalents, so researchers in some fields may have to rely completely on printed sources or use a combination of printed and online indexes. Conversely, some databases are available only online, so researchers interested in the information indexed in those databases must rely completely on computer searching.

When deciding on a database to search, it is important to check the descriptive information, or documentation, available by the computer to determine the characteristics listed below:

- Subject matter and types of publications indexed
- Dates of publications included
- Whether there is a printed equivalent
- Cost to search the database and any extra charges to print citations
- Frequency of updating

(See Chapter 2 for more information on database documentation.)

These are some of the top online sources for information related to the study and practice of chemistry.

1. CAS Online - the online equivalent to Chemical Abstracts.
2. Science Citation Index - a series of files on DIALOG. Extremely useful when tracing cited references.

3. Compendex - a machine readable version of the Engineering Index that provides access to many articles dealing with the technical aspects of chemical procedures.

A complete listing of the more than 200 databases currently available, along with their scope of coverage, is available in the Chemistry Department. For additional assistance in choosing a database, feel free to contact Jim Oliver at 749-7348.

2. PREPARING TO SEARCH

In order to develop an effective search strategy, you should know:

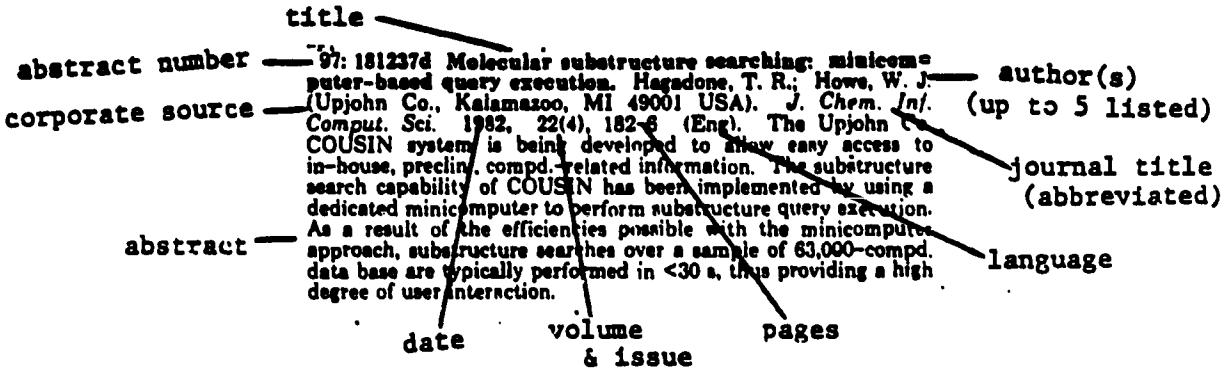
- The general structure of bibliographic databases
- The use of Boolean operators AND, OR, and NOT
- What kind of documentation is available

DATABASE STRUCTURE

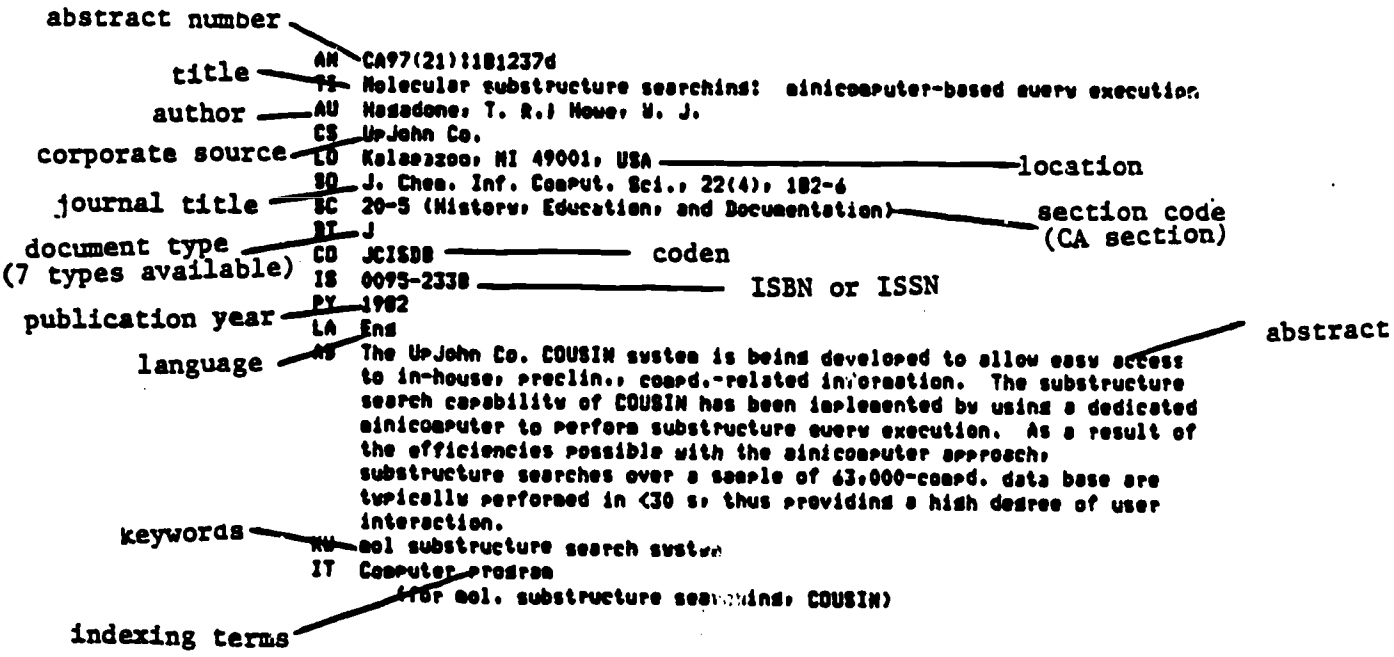
An online database is composed of RECORDS, each corresponding to a bibliographic citation to one item (i.e., one journal citation). Each part of the record - author, title, journal name - is known as a FIELD. When formulating his/her search, the searcher instructs the computer to search the author field, title field, journal name field, etc.

The following example shows a Chemical Abstracts citation (with fields labeled) displayed in both online and print indexes.

CHEMICAL ABSTRACTS
Print Index Record



CAS ONLINE
Online Record



SEARCHABLE FIELDS

While the same fields appear in printed indexes, the online record typically has a greater number of searchable fields than its printed equivalent. In the following list of searchable fields in Chemical Abstracts, note the additional fields, or access points, searchable online as compared with the printed version of the same citation:

Chemical Abstracts	CAS Online
author	author
subject	subject
keyword	keyword
chemical formula	indexing term
patent	chemical formula
indexing term	title
	registry number
	journal name
	publication date
	abstract

BASIC INDEX

The fields that have subject content are collectively known as the Basic Index. Typically the Basic Index will include the title and subject descriptor fields. If you do not specify which field is to be searched, all of the Basic Index fields will be searched. The Basic Index Fields can also be searched individually by adding a two-letter suffix to the search term (described in Chapter 4).

ADDITIONAL INDEXES

All of the other fields, such as the author, the journal name, abstract, date of publication, etc., are collectively known as the Additional Indexes. The Additional Indexes can be searched by adding a two-letter suffix to the search term (described in Chapter 4).

In a printed index, you are limited to the access points made available by the publisher, e.g., the subject index, author index, keyword index. Furthermore, in a printed index, you may search only one field at a time -- you must choose whether to search the subject index, author index, etc. In an online database, however, virtually all the fields may be searched, and you may combine searches of several fields into one search. For example, you may search for articles on a topic limited to a specific year, in a particular language, by a particular author.

BOOLEAN OPERATORS

The computer sees your search as a series of terms, linked together by the logical operators AND, OR, or NOT, taken from a system known as Boolean logic. Boolean operators allow you to combine two or more concepts in order to retrieve bibliographic references on a topic.

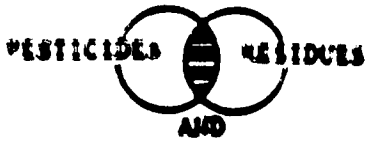
Computer searching parallels to a large degree the process involved in using a printed index. For example, consider manually searching subject indexes for references to documents about pesticide residues. First, the index heading "Pesticides" is located and then the entries listed under the heading are scanned to find those that mention "residues." This process reflects the fact that you are interested in documents that are indexed with both the terms "pesticides" and "residues."

AND

This same search can be accomplished by the use of search terms and Boolean operators. To request the computer to go through the same process, you would type into the online terminal a search statement, sometimes referred to as a search strategy, which combines the terms of interest with the Boolean operator AND.

For Example: pesticides AND residues

This strategy instructs the computer to compare the set of references that are indexed with the term "pesticides" with the set of references that are indexed with the term "residues," and to retrieve only those references that are indexed with both terms. The following Venn Diagram illustrates the resulting set (shaded area):



OR

Just as in doing a manual search for a topic in a printed index, alternate terms should also be considered. In computer searching, a reference is retrieved only if there is an exact match between the terms in the search strategy and the terms found in the reference. Therefore, if "pollution" is an alternate term for "residue" in the search, it should be specified in the search strategy. Alternate terms, sometimes called related terms, synonymous terms, or synonyms, are combined in the strategy with the Boolean operator OR.

For Example: residues OR pollution

The use of the OR operator instructs the computer to retrieve references that are indexed with either term, as represented by the Venn Diagram below.

NOT

A third Boolean operator can be helpful in computer searching. The NOT operator is used to exclude references indexed with a specific term. For example, if you were interested in pesticide residues except when they occur in food, the following strategy might be used:

(Pesticides AND Residues) NOT Food

The Venn Diagram for this profile is shown below:

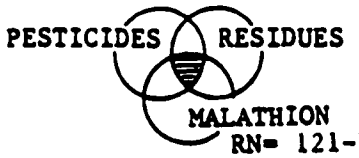
A search strategy utilizing the AND, OR and NOT operators may involve combinations of terms from any searchable fields of the bibliographic record, including the following:

DESCRIPTORS--subject terms used by the particular database you are searching.

KEYWORDS--important words or phrases, including new terminology or "buzz words" in your area or research. Keywords should be used when you are unable to locate an appropriate descriptor for your topic.

CODES, TAGS, ETC.,--numeric or other code designators representing specific subject areas or fields (oftentimes very specific in nature--eg., chemical registry number, document type, etc.,)

For example, in Chemical Abstracts it is possible to search for chemicals by entering their registry number. If you were only interested in pesticide residues of Malathion, you could use the search strategy illustrated in the following Venn diagram:



Descriptors, keywords, codes, and tags may vary from one database to another. Therefore, it is important to consult the printed documentation provided by the database vendor or producer before you begin to construct your search strategy.

DOCUMENTATION

In addition to a general knowledge about the use of Boolean operators, you will need to know specific information about database structure and the databases that you will be searching.

Documentation is information that tells you what is in a database and how to manipulate the contents of the database to get the results you want. You will find documentation available both in printed form and as part of the ProSearch software. Documentation can come from the database producer (CAS) or from an online service (DIALOG). Documentation is available at the Chemistry Department.

DATABASE PRODUCER DOCUMENTATION

The primary type of documentation supplied by the database producer is the thesaurus. A good thesaurus will tell you the subject terms, or descriptors, to use when searching by subject and when the descriptors were adopted. It will give you a list of related descriptors. A thesaurus can be one of the most valuable tools available for preparing a search strategy.

A database that has a thesaurus is said to have a "controlled vocabulary." That means that the indexers work only with the descriptors in the thesaurus when assigning subjects to the descriptor field. When using a thesaurus, you often have a large number of potential descriptors from which to choose. What you choose will depend upon a number of factors, such as whether you want everything on a subject, or only a few, highly relevant articles. The thesaurus vocabulary may change over the years, requiring you to consider the time period to be covered when choosing terms.

Some producers also send regular newsletters (CAS Online News, for example) that offer helpful searching hints. Producers may also supply search aids, which may range from pamphlets to loose-leaf notebooks, which provide such information as the list of journals indexed and techniques for efficient searching.

ONLINE SERVICE DOCUMENTATION

Online service documentation usually consists of information about the system (features common to all databases) as well as information about the specific features of each database available. The system information is available only in paper, but much of the database-specific information on DIALOG files is available on ProSearch by pressing the Data Sheet key (F7). (See Chapter 5 for more information on the ProSearch software.)

The documentation for specific databases will list the types of subjects covered, the types of materials included (journal articles, reports, etc.,), and the source of the content of the

file (who produces it). The documentation will also give a sample record and a list of the fields in the record, including the two-letter code to be used for searching specific fields.

3. WRITING THE SEARCH STRATEGY

A search strategy is a logical statement that tells the computer which searching operations you wish to be performed. It employs your knowledge of system commands along with Boolean operators and search terms to precisely define the course of action.

Use a worksheet (sample on page 15) to prepare your search strategy. The worksheet will include places to list your concepts, along with synonyms and other words you plan to use. It will prompt you to think of limiting the search by date, by language, etc., depending upon what the documentation for your database says is possible. You will want to write your ideas on the worksheet.

Writing a search strategy involves the following steps:

1. Write down what you want to know as specifically as possible. This is your search statement.

   Is there any literature on the synthesis of Tryptophan with the use of a catalysis?

2. Using the available documentation, decide which database(s) might have the answer you are looking for.

   CAS Online

3. Identify the important concepts in your search statement.

CONCEPT 1	CONCEPT 2	CONCEPT 3
synthesis	Tryptophan	catalysis

4. For each concept identified in step 3, list other words or phrases that could be used to express the same idea or an equally useful idea.

CONCEPT 1	CONCEPT 2	CONCEPT 3
synthesis	Tryptophan	catalysis
manufacturing	6912-86-3	

   The need for care when choosing the terminology that best describes your topic cannot be overemphasized. You should consult appropriate thesauri and searching guides in your subject area. They will provide not only synonyms but oftentimes will be useful in helping you better define your search by suggesting alternate terminology and searching codes specific to the database you will be searching. A few of the more useful ones are listed below:

THESAURUS	DATABASE
CA Index Guide	CAS Online
CA Headings List	CAS Online

5. Decide if the words can be searched in the Basic Index or need to be limited to a specific field.

   When you search a database, you may specify which fields of the record are to be searched for each term. You may also simply enter a term and not specify the fields to be searched. When you fail to specify the fields to be searched, the system will, by default, search the Basic Index. Fields that are included in the Basic Index, as well as those included in the Additional Indexes, are clearly labeled in examples given in the documentation for each database. Whether you choose to limit your term(s) to a field will depend upon how frequently the term might appear in the database you have chosen to search. The more common the term, the more likely you are to want to restrict your search to the descriptor and/or title field(s).

6. Consider non-subject parameters that you may want to include, such as limiting the search by date or by language. Consult the documentation to see what is possible.

   I want only articles from 1980 through 1986.

   RANGE = (1980,1986) <CAS Online>

7. Decide on the Boolean connectors to be used in linking the terms you have chosen.

   You now have four concepts: the original three and the date. The synonyms listed for each of the original concepts should be connected with OR; the concepts will be connected with AND.

8. Plan how you will alter the strategy if that becomes necessary when online. Your search may retrieve too much or too little information, or not retrieve what you had in mind. In such cases you should be ready to add or delete words or concepts as needed.

   EXAMPLE: If you retrieve too much, you may want to leave out the term manufacturing and receive only those articles that deal with the synthesis or, you may wish to concentrate on a specific type of catalyst.

   EXAMPLE: If you retrieve too little, you may want

to leave out the term for catalysis and locate all documents on synthesis of tryptophan in general. Perhaps you need to consider a larger span of time, say 1970 to 1986.

Not all search strategies are equally complex or difficult. You may, in working through the steps outlined above, quickly skip some as inappropriate. Your strategy may be as simple as one word or phrase, such as:

- A single word or phrase from the Basic Index
- A single word or phrase from a specific field
- A single author's name
- A search of some other field, such as a registry number

When doing simple searches, however, it is important to choose a term or phrase that will uniquely identify what you are seeking. If one word or phrase is not adequate to indicate what you want, it is time to consider including additional concepts.

The initial search strategy developed in this chapter is illustrated on the sample worksheet pm the following page. Before this search can be executed, it must be translated into commands recognized by the online service.

SEARCH STRATEGY WORKSHEET

Statement SYNTHESIS OF TRYPTOPHAN WITH THE USE OF CATALYSIS

nt Databases CAS ONLINE

Key Concepts

SYNTHESIS MANUFACTURING	TRYPTOPHAN 6912-86-3	CATALYSIS	

ations Dates?

ges?

ations Types?

Number citations expected? 5-10

Format of citations?

Online or Offline?

4. CAS ONLINE SYSTEM COMMANDS

Each service has a unique set of commands. This chapter will introduce you to CAS (Chemical Abstracts) system commands. At the end of the chapter, you will find a complete search strategy worksheet showing system dependent information.

Chapter 5 will take you step-by-step through the actual search on CAS. DIALOG system commands are covered in Chapter 6. Once you have experience on CAS, it will be easy to learn a second system.

Each file on CAS is searched through a series of commands that you enter at the terminal. In response to the system prompt "=>", you enter a command phrase telling the computer what to do, and then press the ENTER key to send the command to CAS. The system responds accordingly, following the response with another prompt "=>".

SELECTING YOUR FILE

Your first step is to select the file you want to search. This is done by entering the command FILE followed by the filename. There are four files in CAS ONLINE: HOME, the file you first enter upon accessing the system where the news is located; CA, or Chemical Abstracts file; REGISTRY, and CAOLD, which contains only abstract numbers for registry numbers prior to 1967. For example, to search CA, the bibliographic file, you would enter the following:

```
=> FILE CA
```

The FILE command may be used at anytime to change files.

ENTERING YOUR SEARCH STRATEGY

Records are retrieved by entering the SEARCH command or S (for short), followed by terms in your search strategy (indexing terms, keywords, etc.). Terms, in general, are SEARCHed individually rather than in multiword phrases, and are related to one another through the AND, OR, or NOT Boolean operators. Multiword phrases may be searched by inserting a (W) between all words in the phrase. The (W) connector tells the computer that you are looking for TERM A immediately followed by TERM B. For example:

SEARCH (or S) BIOPHARMACEUTICS (single word example)

S CYCLOSPORIN (single word example)

S MYOCARDIAL(W)INFARCTION (multiword example)

S SUDDEN(W)INFANT(W)DEATH(W)SYNDROME (multiword example)

S 123-23-321 (registry number example)

Other multi-word connectors are:

(L) This requires that each term appear anywhere in the same field, (e.g., CYCLOSPRIN(L)DOSAGE).

(A) The ADJACENT connector functions like the (W) connector except that they can be in any word order (e.g., MYOCARDIAL(A)INFARCTION would retrieve both MYOCARDIAL INFARCTION and INFARCTION MYOCARDIAL).

SEARCHING FIELDS OF THE RECORD

Unless you specify otherwise, items will be retrieved when the terms you search appear anywhere in the Basic Index of the record. The typical Basic Index fields in the bibliographic record are title, keywords, and indexing terms. For these Basic Index fields, an abbreviated code (e.g., TI for Title) may be used in the SEARCH statement to restrict retrieval to only that part of the record. The code follows the term, with a slash in between, as though it were a suffix:

S CYCLOSPORIN/TI (searches only the title field)

S CYCLOSPORIN/TI,AB (searches both titles and abstracts)

S CYCLOSPORIN(L)ADVERSE/TI (searches for the terms CYCLOSPORIN and ADVERSE anywhere in the title)

Other fields are known as Additional Indexes and also require the use of a suffix after their search term. Some typical Additional Index fields are author, journal name, and publication year. Some common examples of additional suffix fields are noted below.

FIELD	SUFFIX	EXAMPLE
BASIC INDEX	NONE	S 7432-43-4 or S CYCLOSPORIN
AUTHOR	/AU	S BROWN, JOHN/AU
CORPORATE SOURCE	/CS	S DOW(W)CHEMICAL/CS
CONTROLLED VOCABULARY (This relates to the IT field of the citation.)	/CV	S RING(W)CLOSURE/CV
DOCUMENT TYPE	/DT	S J/DT (journal)
LANGUAGE	/LA	S FR/LA
CORPORATE SOURCE ADDRESS	/LO	S MIDLAND/LO (Dow Chemical address)
PUBLICATION YEAR	/PY	S 1983/PY
DOCUMENT SOURCE	/SO	S (J(W)ORG(W)CHEM)/SO
DOCUMENT TITLE	/TI	S HISTORY/TI
ABSTRACT	/AB	S EXECUTION/AB

When dealing with suffix codes, you should consult the appropriate documentation to find the correct entry format.

AUTHOR SEARCHING

When doing an author search it is a good idea to EXPAND the name online during your search session. The EXPAND command lets you easily identify the exact way your author's name is listed in the file that you are searching (e.g., whether initials are used instead of first names being spelled out). To do an expand, type EXPAND plus the truncated version of your author's name (if the name is fairly uncommon), followed by the /AU suffix (e.g., EXPAND LOKHANDW/AU).

If the name is a common one, you should narrow it down by including one or more initials (e.g., EXPAND Smith, N.). Once you have EXPANDED and looked at the list to determine the author you want, merely SEARCH the E number as you would any set number. For example, if you are looking for articles by David D. Jones:

```
=>EXPAND JONES/AU

     E1 JAMES, J/AU
     E2 JONES/AU*
     E3 JONES, A/AU
     E4 JONES, BJ/AU
     E5 JONES, DD/AU
     E6 JONES, DAVID D/AU
     E7 JONES, DAVIID D/AU        (David is misspelled)
     E8 JONES, JAMES/AU
     E9 JONES, JOHN C/AU
     E10 JONES, KE/AU

=>S E5 OR E6 OR E7                (Typographical error is caught with E7.)
```

COMBINING TERMS WITH SET NUMBERS

Once you have entered your search terms or phrases, CAS responds with the posting (number of bibliographic record matches), along with an assigned QUERY NUMBER. Every time one or more search terms are selected, they are put into numbered sets for you to use. Once a set number is formed, it may be used as if it were a search term itself. When using query numbers in a SEARCH statement be sure to place an "L" in front of its number, as shown below:
(What the searcher has actually entered at the terminal is indicated by UNDERLINING)

```
=> S HISTORY AND MASS(W)SPECTRO?
             23432   HISTORY
           5535445 MASS
           5432544 SPECTRO?
     L1          23 HISTORY AND MASS(W)SPECTRO?
```

By using S STEPS query numbers are created for intermediate postings. In the example above you can see that the terms HISTORY, MASS, and SPECTRO? are given postings, but not L numbers. With S STEPS they are also given L numbers. As you can see below, using S STEPS the number of postings is inside parentheses. This is to tell you that even though these L numbers can not be used in a DISPLAY or PRINT command, they can be used in subsequent search commands, as in the example below.

```
=> S STEPS  HISTORY AND MASS (W) SPECTRO?

     L1        (23432)    HISTORY
     L2     (5535445)     MASS
     L3     (5432544)     SPECTRO?
L4                  23    HISTORY AND MASS (W) SPECTRO?

=> S L2 AND REVIEW

              5535445     MASS
                10933     REVIEW
L5                550     MASS AND REVIEW
```

TRUNCATION OF TERMS

Truncation allows you to tell the computer that a word may end with anything after the letter that you specify. Three characters are used in truncation:?, #, and !.

To permit any number of letters after the root, use a question mark:

=> S MASS(W)SPECTRO?	Retrieves spectrometer, spectroscope, spectroscopy, etc.

To select one or no letters use a pound sign:

=> S HEART(W)ATTACK#	Retrieves the phrase heart attack and heart attacks.
=> S BEHAVIO#R	Searches for both behavior and behaviour.

To select one letter only, use the !:

=> S WOM!N	Will retrieve either the word WOMAN or WOMEN.

RANGE SEARCHING

A strong feature of CAS Online is range searching, or searching a subset of the database. This can be set for a number of parameters, however two of the most useful are Chemical Abstracts collective indexing periods and indexing dates.

SET RANGE (1980,)	To search from 1980 to the present.
SET RANGE (1972,1979)	To search between 1972 and 1979.
S FULVINIC(W)ACID RANGE (9CI)	To search for fulvinic acid in the 9TH COLLECTIVE INDEX.

PRINTING YOUR RESULTS

Once you have refined your search and you know which set you want to retrieve, you have options of either viewing them at the terminal or having them printed at CAS's OFFICE offline to be sent via mail. Both ways require that you specify a query number, a format, and a group of records to be printed or viewed.

<u>To display online</u>:

=>DISPLAY L# BIB ABS 1-5

Query Number, Format, Range of records

<u>To print offline</u>:

=>PRINT

It is best to just enter PRINT and allow the explanations to lead you along. Be certain to enter your personal mailing address or else the prints will come to the Library and not directly to you.

NOTE ON FORMAT

CAS Online offers a combination of formats to use depending on the file. Those commonly used in the CA file are:

FORMAT	CONTENT
BIB	Bibliographic citation
ABS	Abstract
ALL	The complete record
TRIAL	Title and controlled vocabulary. This is useful to examine results during a search without cost. There is an additional print charge for the other formats.

DISCONNECTING

When finished with the system, be certain to disconnect from the system or logoff. The command is LOGOFF YES.

=>LOGOFF YES

SEARCH STRATEGY WORKSHEET

n Statement SYNTHESIS OF TRYPTOPHAN WITH THE USE OF CATALYSIS

nt Databases CAS ONLINE

Key Concepts

SYNTHESIS MANUFACTURING	TRYPTOPHAN 6912-86-3	CATALYSIS	

cations Dates?

ges?

cations Types?

Number citations expected? 5-1

Format of citations? bib abs

Online or Offline?

5. EXECUTING THE SEARCH

In previous sections you learned how to prepare for an online search, how to construct a basic search strategy, and how to translate your search strategy into commands recognized by the online system. In this section, you will learn how to access the online system and actually perform the search. You should be sitting at the computer for some hands-on practice.

The communications software that you will be using to access the online systems is called ProSearch. ProSearch will allow you to choose an online system and will dial the phone and perform the logon procedures for the system you have selected.

SAMPLE SEARCH

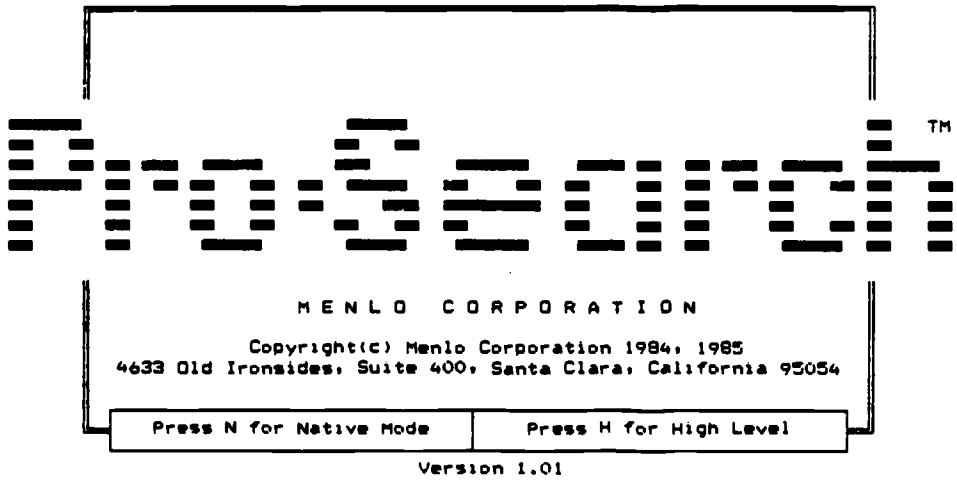
1. TURN ON THE COMPUTER

a. First turn on the computer and the monitor. Flip up the orange switch on the right side of the computer. Turn the top knob on the monitor to the right.

b. Type today's date (month-day-year) and press ENTER (↵). Type the current time (hours:minutes). Time is entered on a 24-hour clock. For example, 3:00 p.m. is 15:00. Press ENTER.

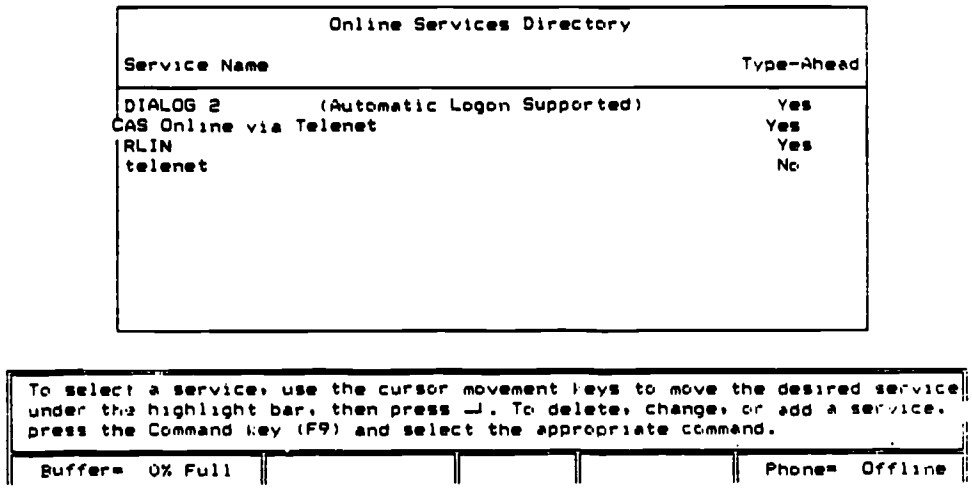
c. When you see the "C:\prosrch>" prompt, type "pro n" and press ENTER. (If the prompt is something else, first enter "cd\prosrch" to get the "c:\prosrch>" prompt.)

d. This ProSearch title screen will appear briefly:



2. CHOOSE AN ONLINE SERVICE

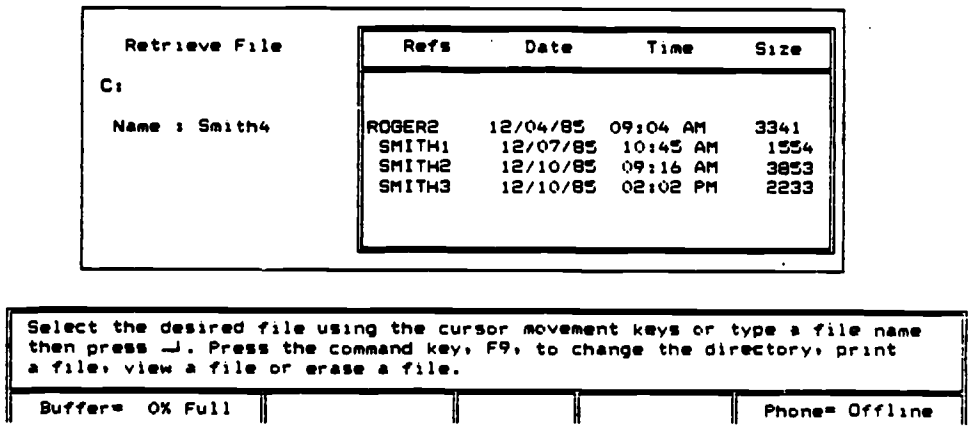
a. The Online Services Directory will appear after the ProSearch title screen:



b. Scroll through the list of online services by pressing the arrow keys (↑ , ↓). Press ENTER when CAS Online is highlighted. Next you will see a blue screen.

3. SAVE YOUR SEARCH IN A DISK FILE

a. Press the Disk Key (F7) on the left side of the keyboard to begin saving your search on a disk file. You will see a list of files on the screen. You can scroll through one list by using the arrow keys (↑ , ↓).



b. For the file name, type the first six letters of your last name plus a number and press ENTER. For instance, if Smith already has three searches in the list (SMITH1, SMITH2, and SMITH3), he would type SMITH4. After pressing ENTER, you will see the blue screen.

4. CONNECT TO CAS ONLINE

a. Press the Phone key (F5) to log on (connect) to the CAS Online System. ProSearch will dial the phone and perform the logon procedure. When prompted, enter the logon id, password, and terminal type. The terminal type is "3."

```
LOGONID:  ssscol[illegible]7b
PASSWORD:  *********
TERMINAL (Enter 1, 2, 3, or ?): 3
```

NOTE: THE COST METER IS NOW RUNNING AND WILL BE UNTIL YOU LOGOFF.

5. ENTER THE SEARCH STRATEGY

Type the strategy for the "synthesis of tryptophan with the use of catalysis" search that was developed in Chapter 3. The following example shows how the strategy is translated into CAS Online system commands. Notice that the first command is "file ca" to choose CA, the bibliographic file.

```
=> file ca

FILE 'CA' ENTERED AT 17:31:15 ON 21 JAN 88
COPYRIGHT 1988 BY THE AMERICAN CHEMICAL SOCIETY

=> s steps synthesis or manufacturing

L1  (   21890S)SYNTHESIS
L2  (    15448)MANUFACTURING
L3      231420 SYNTHESIS OR MANUFACTURING

=> s steps tryptophan or 6912-66-3

L4  (    10509)TRYPTOPHAN
L5  (       10)6912-66-3
L6      10514 TRYPTOPHAN OR 6912-66-3

=> s catalysis

L7      43045 CATALYSIS

=> s L3 and L6 and L7

L8            3 L3 AND L6 AND L7
```

6. DISPLAY THE RESULTS

When you have created a set containing the desired citations, use the system commands to either display the citations online or to have the citations printed offline and mailed.

```
=> d L8 bib abs 1-2


L8  ANSWER 1 OF 3

AN  CA100(23):182248q
TI  Protease-catalyzed synthesis of melanocyte-stimulating hormone (MSH)
    fragments
AU  Kullmann, Willi
CS  Max-Planck-Inst. Biophys. Chem.
LO  Goettingen, Fed. Rep. Ger.
SO  J. Protein Chem., 2(4), (289)1-301
SC  34-3 (Amino Acids, Peptides, and Proteins)
SX  7
DT  J
CO  JPCHD2
IS  0277-8033
PY  1983
LA  Eng
AB  Trypsin, .alpha.-chymotrypsin, pepsin, carboxypeptidase Y, and
    thermolysin served as catalysts for the protease-controlled synthesis
    of some fragments of MSH.  To obviate proteolytic cleavage of peptide
    bonds, several expedients leading to the target peptides were
    developed.  The enzymic procedure enabled under mild conditions the
    prepn. of the desired peptides whose amino acid compn. may cause
    complications during conventional syntheses.
```

7. DISCONNECT FROM CAS ONLINE

a. When your search is complete, enter the CAS command for logging off, which is LOGOFF YES.

```
=> logoff yes


COST IN U.S. DOLLARS          SINCE FILE       TOTAL
                              ENTRY    SESSION
FULL ESTIMATED COST                6.88        6.88

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)
CA SUBSCRIBER                     -1.24       -1.24

STN INTERNATIONAL LOGOFF AT 17:34:23 ON 21 JAN 86
```

The logoff message will include a logoff time and a cost estimate for the search session. We receive a 90% academic discount on CAS Online, so figure the cost estimate by subtracting the "CA Subscriber" discount from the "Total Session" cost and multiplying by .10.

Estimated cost = (6.88 - 1.24) x .10 = .56

This information will be used to fill out the logbook.

8. PRINT THE SEARCH

a. After the search session, which may include logging on and off several times, press the Disk key (F7). This will close the file you have created.

b. To print the file, first turn the printer on. The power switch is on the right, toward the back. The green ready light should be on. If not, press the "online" button.

c. Press the Disk key (F7). Use the arrow keys to highlight the file that you wish to print and press the Command key (F9).

d. Select the print command by pressing the letter "P". Your search session, including the search strategy, the citations you displayed, and the logoff messages will be printed.

e. When printing is complete, press the Command key (F9) and then press "E" to exit the ProSearch program.

GENERAL FEATURES OF PROSEARCH

As you can see from this practice search, the ProSearch program is easy to use. Following is a summary of the general features that you should understand as you use ProSearch.

FREQUENTLY USED KEYS

Keys that are used frequently in ProSearch include:

ENTER (↵) - Pressed to enter a command.

ESCAPE (ESC) - Used to cancel a command or to back up one program step.

CURSOR MOVEMENT KEYS:

ARROW KEYS - Move the cursor or highlight bar one position.

HOME - Move to the beginning of a list.

END - Move to the end of a list.

PgUp - Move up several items in a list.

PgDn - Move down several items in a list.

FUNCTION KEYS

ProSearch also makes use of the function keys on the left side of the keyboard.

HELP (F1) - Press this key at any time to display information about the screen you are on or the command you have selected.

BREAK (F2) - Sends a break to an online system. Used to stop the system from processing a command or to stop displaying a list of citations.

PHONE (F5) - Used to connect or disconnect from an online system.

DATA SHEET (F6) - Used to display information about a database such as fields available for searching. You will be prompted for a DIALOG file number. (Data not available for CAS.)

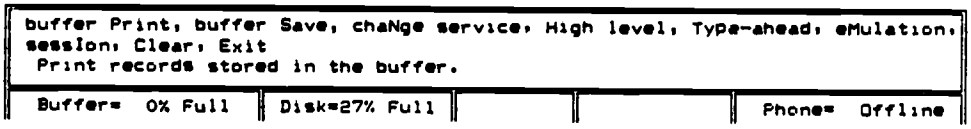
DISK (F7) - Used to begin or stop saving a search in a disk file.

PRINTER (F8) - Used to begin or stop printing the search as it is run.

COMMAND (F9) - Press at any time to enter the command mode and to display menu of available commands.

COMMAND WINDOW

When the Command key (F9) is pressed, a list of available commands will be displayed near the bottom of the screen. A command can be selected by pressing the letter that is capitalized in the desired command.



STATUS LINE

The status line at the bottom of the screen shows the condition of various program features, such as whether the search is being simultaneously printed, whether the search is being saved in a disk file, and the status of the phone connection.

IMPORTANT STATUS NOTES

When the "Disk = x% Full" message is displayed, your search is being safely saved in a file.

When the "Phone = Online" message is displayed, you are connected to an online system and being charged connect costs.

6. DIALOG SYSTEM COMMANDS

DIALOG commands are similar to CAS Online commands but there are differences. This chapter will introduce you to the basic DIALOG commands.

Each database on the DIALOG system is searched through a series of commands that you enter at the terminal. In response to the system prompt "?", you enter a command phrase telling the computer what to do, and then press the ENTER (↵) key to send the command to DIALOG. The system responds accordingly, following the response with another prompt "?".

SELECTING A DATABASE

Each database on the DIALOG system is searched through a series of commands that you enter at the terminal. In response to the system prompt "?", you enter a command phrase telling the computer what to do, and then press the ENTER key to send the command to DIALOG. The system responds accordingly, following the response with another prompt "?".

Your first step is to select the database you want to search. This is done by entering BEGIN or B (for short), along with the file number of your database as found in the documentation. For example, you would select MEDLINE (File number 154) by entering:

BEGIN 154

OR

B 154

BEGIN may be used at anytime to change databases; however, it also erases all previously created sets.

ENTERING YOUR SEARCH STRATEGY

Records are retrieved by entering the SELECT STEPS command or SS (for short), followed by terms in your search strategy (descriptors, keywords, etc.). Search terms, in general, are SELECTed individually rather than in multiword phrases, and are related to one another through the OR, AND, or NOT Boolean operators. Multiword phrases may be SELECTed by inserting a (W) between all words in the phrase. The (W) connector tells the computer that you are looking for TERM A immediately followed by

TERM B. For example:

```
SS BIOPHARMACEUTICS          (single word example)
SS CYCLOSPORIN               (single word example)

SS MYOCARDIAL(W)INFARCTION      (multiword example)
SS SUDDEN(W)INFANT(W)DEATH(W)SYNDROME   (multiword example)
SS MINORITY GROUPS/DE        (searches for the phrase in the
                              descriptor field)
```

Notice that multiword connectors such as (W) are not necessary when searching a phrase in the descriptor field. The computer treats a multiword descriptor as if it were a single search term.

Other multiword connectors are:

(F) This requires that each term appear anywhere in the same field, e.g., CYCLOSPORIN(F)DOSAGE

(N) The NEAR connector functions like the (W) connector except that they can be in any word order, e.g., MYOCARDIAL(N)INFARCTION would retrieve both MYOCARDIAL INFARCTION and INFARCTION MYOCARDIAL

When using the (W) or (N) connectors it is possible to specify the number of intervening words you would be willing to accept in the phrase. This is done by placing an appropriate number to the left of the CONNECTOR.

For example:

MYOCARDIAL(1W)INFARCTION would retrieve both MYOCARDIAL INFARCTION and MYOCARDIAL ACUTE INFARCTION

CYCLOSPORIN(2N)ADVERSE would retrieve the term CYCLOSPORIN either next to or within one or two words of the term ADVERSE, in any order.

SEARCHING FIELDS OF THE RECORD

Unless you specify otherwise, items will be retrieved when the terms you SELECT appear anywhere in the Basic Index of the record. The typical Basic Index fields in the bibliographic record are title, abstract, and subject descriptor. For these Basic Index fields, an abbreviated code (e.g., TI for Title) may be used in the SELECT statement to restrict retrieval to only that part of the record. The code follows the term, with a slash in between, as though it were a suffix:

SS CYCLOSPORIN/TI	(searches only the title field)
SS CYCLOSPORIN/TI,AB	(searches both titles and abstracts)
SS CYCLOSPORIN(F)ADVERSE/TI	(searches for the terms CYCLOSPORIN and ADVERSE anywhere in the title)

Other fields are known as Additional Indexes and require the use of a prefix before search terms; thus their field restriction is automatic. Some typical additional index fields are author, journal name, and publication year. Some common examples of additional prefix fields are noted below.

FIELD	PREFIX	EXAMPLE
AUTHOR	AU=	AU=BROWN, JOHN
PUBLICATION YEAR	PY=	PY=1983
LANGUAGE	LA=	LA=FRENCH

When dealing with suffix or prefix codes, you should consult available documentation to find the correct entry format, e.g., the data sheet display screens.

COMBINING TERMS WITH SET NUMBERS

Once you have entered your search terms or phrases, DIALOG responds with the posting (number of bibliographic record matches), along with an assigned SET NUMBER.

Every time one or more search terms are SELECTED, they are put into numbered sets for you to use. Once a set number is formed, it may be used as if it were a search term itself. When using set numbers in a SELECT statement be sure to place an S in front of its number, as shown below:

(What the searcher has actually entered at the terminal is indicated by UNDERLINING:)

	SET	ITEMS	DESCRIPTION
?	SS Alzheimers(w)disease		
	s1	107	alzheimers
	s2	2165	disease
	s3	94	alzheimers(w)disease

```
? SS therapy or treatment or diagnosis

     s4      2334              therapy
     s5      1654              treatment
     s6       654              diagnosis
     s7      4532              therapy or treatment or diagnosis

?  SS s3 and s7

             94                s3
           4532                s7
     s8      31                s3 and s7
```

Set numbers can also be selected and combined with any other search term to further refine your search as illustrated below:

```
? SS s8 and LA=RUSSIAN

             31                s8
     s9    2352                LA=RUSSIAN
     s10     13                s8 and LA=RUSSIAN
```

TRUNCATION OF TERMS

Truncation tells the computer to permit variation in word length or spelling. A question mark is used to truncate the root of the term.

To permit any number of letters after the root, use a single question mark:

```
? SS ALZHEIMERS?
? SS HORTICULT?
? SS PY=198?
```

To permit a specified number of characters after the root, use the question mark in succession:

? SS CAT? ?	zero or one character permitted (the space is essential here to show only one additional character following stem -- i.e., CAT or CATS retrieved here.)
? SS CHERR???	number of ? indicates maximum number of additional characters following stem (CHERRY or CHERRIES retrieved here.)

To permit any single character inside a term to vary, replace it with a question mark:

? SS wom?n	(WOMEN or WOMAN retrieved here.)

AUTHOR SEARCHING

When doing an author search it is a good idea to EXPAND the name online during your search session. The EXPAND command lets you easily identify the exact way your author's name is listed in the file that you are searching (for example, whether initials are used instead of complete spelling of first names).

To do an expand, type EXPAND AU= plus the stem of the author's name you wish to expand (e.g., EXPAND AU=LOKHANDW). You don't need to use the truncation symbol because truncation is implied whenever you use the EXPAND command.

If the name is a common one, you should narrow it down by including one or more initials (e.g., EXPAND Smith, M.). Consult the data sheets to see if commas are used after the last name.

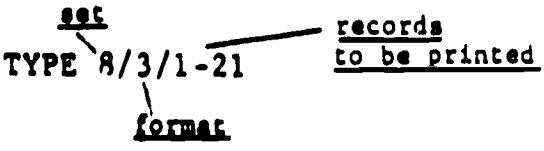
Once you have EXPANDED and looked at the list to determine the author you want, merely SELECT the E number as you would any set number. For example, if you are looking for articles by Mila Banton Smith:

```
? EXPAND AU=SMITH, M

Ref        Items          Index-term

E1             1          AU=SMITH, MILA BANTON
E2             1          AU=SMITH, M. M. P.
E3                        *AU=SMITH, M
E4             1          AU=SMITH, NICK L.
E5            20          AU=SMITH, MILA BANTON
E6            18          AU=SMITH, O. DALE
E7            12          AU=SMITH, PATRICIA


? S2 E5
```

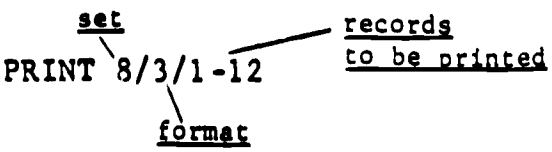
PRINTING YOUR RESULTS

Once you have refined your search and you know which set you want to retrieve, you have options of either viewing them at the terminal or having them printed in DIALOG's office offline to be sent via the mail. Both ways require that you specify a set number, a format, and a group of records to be printed or viewed:

TO DISPLAY ONLINE:



TO PRINT OFFLINE:



When you enter a PRINT or TYPE command, the first number specifies the set from which records are to be printed; the second number specifies the format; the third number specifies how many records are to be printed (see example above). You will automatically see the record(s) most recently entered into the database.

NOTE ON FORMAT

A database may offer up to nine different formats for you to choose. The formats allowed in each bibliographic database are listed in the appropriate DIALOG documentation. The more common ones are listed below:

FORMAT	CONTENT
2	Complete record except abstract
3	Bibliographic Citation
5	Complete Record
6	Accession number + title
7	Bibliographic citation + abstract
8	Accession #, title, + indexing

LOGGING OFF DIALOG

To disconnect from Dialog type LOGOFF HOLD. By including the word HOLD, DIALOG saves your search strategy for 10 minutes. If you log back on during that time period, DIALOG automatically places you where you left off. This is very handy when you need to logoff to check some terminology or refine your search strategy. You can quickly get back to where you were without losing any of your previously created search.

7. PRACTICE SEARCHES

The topics below are provided to give you a chance to practice searching online. These topics illustrate some of the common types of online searches.

This appendix includes completed search strategy worksheets and annotated printouts of actual searches for each of the topics.

1. TOPIC: Find articles by James Andrew McCammon.

2. TOPIC: Find any articles about Mitomycin that are written by Harold Kohn.

3. TOPIC: Find articles dealing with the use of GCMS to analyze vinyl chloride.

4. TOPIC: Find articles on nitromide. First find the registry number for nitromide in the Registry File and then search for articles using the registry number in the CA file.

PRACTICE SEARCH #1

TOPIC: Find articles by James Andrew McCammon.

SEARCH STRATEGY WORKSHEET

Search Statement: FIND ARTICLES WRITTEN BY JAMES ANDREW McCAMMON

Relevant Databases: CA

Key Concepts

SYNONYMS				
	McCAMMON, J/AU			

Publications Dates?

Languages?

Publications Types?

Number citations expected?

Format of citations? BIB

(Online) or Offline?

PRACTICE SEARCH #1

① Select the Chemical Abstracts file using the FILE CA command.

② EXPAND the author's name.

③ Choose the expand numbers corresponding to the author. There is no way of knowing if E3 and E7 are James Andrew but they are chosen just in case.

④ DISPLAY the first two citations in Set L1 in the BIB format, bibliographic citation only.

⑤ LOGOFF YES to end the search.

```
* * * * * * * * * *  Welcome to STN International  * * * * * * * * * *

        INSPEC on STN via Y ports -- Enter NEWS 8 for Details

      CAS ONLINE USERS ROUNDTABLE -- New York, April 17, 1986

                        Enter NEWS for Details

* * * * * * * * *  Direct Dial Login: (614) 421-3781  * * * * * * * * *
FILE 'HOME' ENTERED AT 19:29:08 ON 07 APR 86

① => file ca

FILE 'CA' ENTERED AT 19:29:16 ON 07 APR 86
COPYRIGHT 1986 BY THE AMERICAN CHEMICAL SOCIETY

② => e mccammon, j/au

E1            7 MCCAMMON, DAN/AU
E2            2 MCCAMMON, HELEN M/AU
E3            1 MCCAMMON, J/AU
E4           34 MCCAMMON, J A/AU
E5           42 MCCAMMON, J ANDREW/AU
E6            1 MCCAMMON, J R/AU
E7            1 MCCAMMON, JAMES/AU
E8            1 MCCAMMON, JAMES A/AU
E9            6 MCCAMMON, JAMES R/AU
E10           2 MCCAMMON, M T/AU
E11           1 MCCAMMON, MARK/AU
E12           5 MCCAMMON, MARK T/AU

③ => s e3-e5 or e7-e8

              1 "MCCAMMON, J"/AU
             34 "MCCAMMON, J A"/AU
             42 "MCCAMMON, J ANDREW"/AU
              1 "MCCAMMON, JAMES"/AU
              1 "MCCAMMON, JAMES A"/AU
L1           79 ("MCCAMMON, J"/AU OR "MCCAMMON, J A"/AU OR "MCCAMMON, J A

④ => d l1 bib 1-2

L1  ANSWER 1 OF 79

AN  CA103(26):222104y
TI  Hydration of chloride and bromide anions: determination of relative
    free energy by computer simulation
AU  Lybrand, Terry P.; Ghosh, Indira; McCammon, J. Andrew
CS  Dep. Chem., Univ. Houston
LO  Houston, TX 77004, USA
SO  J. Am. Chem. Soc., 107(25), 7793-4
SC  69-3 (Thermodynamics, Thermochemistry, and Thermal Properties)
SX  68
DT  J
CO  JACSAT
IS  0002-7863
PY  1985
LA  Eng

L1  ANSWER 2 OF 79

AN  CA103(22):184414n
TI  Extended Brownian dynamics of diffusion controlled reactions
AU  Allison, S. A.; Northrup, S. H.; McCammon, J. A.
CS  Dep. Chem., Georgia State Univ.
LO  Atlanta, GA 30303, USA
SO  J. Chem. Phys., 83(6), 2894-9
SC  67-3 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms
    )
SX  65
DT  J
CO  JCPSA6
IS  0021-9606
PY  1985
LA  Eng

⑤ => logoff yes

COST IN U.S. DOLLARS          SINCE FILE      TOTAL
                                 ENTRY    SESSION
FULL ESTIMATED COST               2.58       2.58

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)
CA SUBSCRIBER                    -0.32      -0.32

STN INTERNATIONAL LOGOFF AT 19:30:35 ON 07 APR 86
```

PRACTICE SEARCH #2

TOPIC: Find any articles about Mitomycin that are written by Harold Kohn.

SEARCH STRATEGY WORKSHEET

Search Statement: FIND ANY ARTICLES WRITTEN BY HAROLD KOHN ON MITOMYCIN

Relevant Databases: CA

Key Concepts

SYNONYMS				
	KOHN, H/AU	MITOMYCIN / TI		

Publications Dates?

Languages?

Publications Types?

Number citations expected?

Format of citations? BIB ABS

Online or Offline?

PRACTICE SEARCH #2

① Select the Chemical Abstracts file using the FILE CA command.

② SEARCH the author AND mitomycin in the title.

③ DISPLAY the second citation in Set L1 in the BIB ABS format, bibliographic citation and abstract.

④ LOGOFF YES to end the search.

```
• • • • • • • • • •  Welcome to STN International  • • • • • • • • • •

        INSPEC on STN via Y ports -- Enter NEWS 8 for Details

        CAS ONLINE USERS ROUNDTABLE -- New York, April 17, 1986

                        Enter NEWS for Details
• • • • • • • • •  Direct Dial Login: (614) 421-3781  • • • • • • • • •
FILE 'HOME' ENTERED AT 19:26:40 ON 07 APR 86

① => file ca

FILE 'CA' ENTERED AT 19:26:50 ON 07 APR 86
COPYRIGHT 1986 BY THE AMERICAN CHEMICAL SOCIETY

② => s kohn, h?/au and mitomycin/ti

            60 KOHN, H?/AU
           888 MITOMYCIN/TI
L1           5 KOHN, H?/AU AND MITOMYCIN/TI

③ => d l1 bib abs 2

L1  ANSWER 2 OF 5

AN  CA100(5):34309f
TI  Reactions of mitomycin C with potassium ethyl xanthate in neutral
    aqueous solution
AU  Hornemann, Ulfert; Iguchi, Kazuo; Keller, Paul J.; Vu, Huynh M.;
    Kozlowski, John F.; Kohn, Harold
CS  Sch. Pharm. Pharm. Sci., Purdue Univ.
LO  West Lafayette, IN 47907, USA
SO  J. Org. Chem., 48(25), 5026-33
SC  26-6 (Biomolecules and Their Synthetic Analogs)
DT  J
CO  JOCEAH
IS  0022-3263
PY  1983
LA  Eng
AB  The reaction of the antitumor antibiotic mitomycin C with EtOCS2K was
    investigated in neutral aq. soln. in the presence and absence of the
    reducing agent Na dithionite. The reductive reaction afforded after
    reoxidn. several lipophilic mitosene derivs. I (R = O2CNH2, S2COEt;
    R1 = .beta.-S2COEt; R2 = H; R = S2COEt  R1 = .alpha.-SH,
    and of the 1,2-cis-substituted mitosenes were nearly equal in the
    reductive reaction, in marked contrast to acid-catalyzed reactions
    leading to opening of the aziridine rin  of mitomycin C which yield
    cis/trans product ratios in excess of 3. Reaction in the absence of
    Na dithionite afforded the aziridinothi urethane II which was
    converted into the mitosene deriv. III. For diagram(s), see printed
    CA Issue.

④ => logoff yes

COST IN U.S. DOLLARS          SINCE FILE       TOTAL
                                 ENTRY     SESSION
FULL ESTIMATED COST               1.88        1.88

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)
CA SUBSCRIBER                    -0.44       -0.44

STN INTERNATIONAL LOGOFF AT 19:27:29 ON 07 APR 86
```

PRACTICE SEARCH #3

TOPIC: Find articles dealing with the use of GCMS to analyze vinyl chloride.

SEARCH STRATEGY WORKSHEET

Search Statement: FIND ARTICLES ON USING GCMS TO ANALYZE VINYL CHLORIDE

Relevant Databases: CA

Key Concepts

SYNONYMS				
	GCMS GC (W) MS GAS (L) CHROMATO ?(L)	MASS (L) SPECTRO ?	75-01-4 (REGISTRY NUMBER IS FOUND IN THE CHEMICAL ABSTRACTS INDEX GUIDE.)	ENG/LA

Publications Dates?

Languages? ENGLISH

Publications Types?

Number citations expected?

Format of citations? BIB ABS

(Online) or Offline?

PRACTICE SEARCH #3

① Select the Chemical Abstracts file using the FILE CA command.

② SEARCH the various forms of "gcms" using OR. The (L) connector is used to require that "gas", "chromato?", "mass", and "spectro?" will appear in the same field.

③ SEARCH the registry number for vinyl chloride. Registry numbers can be found in the Chemical Abstracts Index Guide.

④ Use AND to combine the two main concepts.

⑤ Use AND to limit the citations to English language material.

⑥ DISPLAY the first citation in Set 4 in the BIB ABS format, bibliographic citation and abstract.

⑦ LOGOFF YES to end the search.

```
• • • • • • • • • •  Welcome to STN International  • • • • • • • • • •

        INSPEC on STN via Y ports -- Enter NEWS 8 for Details

      CAS ONLINE USERS ROUNDTABLE -- New York, April 17, 1986

                        Enter NEWS for Details
• • • • • • • • •  Direct Dial Login: (614) 421-3781  • • • • • • • • •
FILE 'HOME' ENTERED AT 19:32:59 ON 07 APR 86
① => file ca

FILE 'CA' ENTERED AT 19:33:08 ON 07 APR 86
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② => s gcms or gc(w)ms or gas(l)chromato?(l)mass(l)spectro?

            32 GCMS
          2061 GC
          1836 MS
           830 GC(W)MS
        235377 GAS
        133450 CHROMATO?
         85167 MASS
        202685 SPECTRO?
          6380 GAS(L)CHROMATO?(L)MASS(L)SPECTRO?
L1        6596 GCMS OR GC(W)MS OR GAS(L)CHROMATO?(L)MASS(L)SPECTRO?

③ => s 75-01-4

L2        3780 75-01-4

④ => s l1 and l2

L3          27 L1 AND L2

⑤ => s l3 and eng/la

     4094345 ENG/LA
L4          19 L3 AND ENG/LA

⑥ => d l4 bib abs 1


L4  ANSWER 1 OF 19

AN  CA102(20):171761c
TI  Determination of low concentrations of vinyl chloride in air by GC/MS
AU  Moon, S.; Boyd, D. W.; Lichtman, A.; Porter, R. A.
CS  Div. Lab. Res., Nassau Cty. Dep. Health
LO  Hempstead, NY, USA
SO  Am. Lab. (Fairfield, Conn.), 17(1), 98, 100-5
SC  59-1 (Air Pollution and Industrial Hygiene)
SX  80
DT  J
CO  ALBYBL
IS  0044-7749
PY  1985
LA  Eng
AB  A method for simultaneous identification and quantification of vinyl
    chloride (I) [75-01-4] involved trapping I in air onto a
    charcoal-filled stainless steel collection tube, followed by thermal
    desorption and anal. by gas chromatog./mass spectroscopy (GC/MS).
    The injection port on a GC/MS was modified to allow it to function a
    a thermal desorption unit as well as an injection port. Ten samples
    of .apprx.15 nL of I were detd. with a std. deviation of .apprx.17%
    and a detection limit of .apprx.7.5 nL, which corresponds to 0.5 ppb
    in air if 15 L of air sample is collected. The sensitivity of the
    mass spectrometer changed from day to day, so it is important to det
    the response to I on a daily basis by using a known amt. of I. The
    upper detection limit (for 15 L of air collected) may be 435 nL,
    corresponding to 29 ppb in air.

⑦ => logoff yes

COST IN U.S. DOLLARS                SINCE FILE      TOTAL
                                       ENTRY     SESSION
FULL ESTIMATED COST                     8.76        8.76

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)
CA SUBSCRIBER                          -1.68       -1.68

STN INTERNATIONAL LOGOFF AT 19:37:00 ON 07 APR 86
```

PRACTICE SEARCH #4

TOPIC: Find articles on nitromide. First find the registry number for nitromide in the Registry File and then search for articles using the registry number in the CA file.

SEARCH STRATEGY WORKSHEET

Search Statement: FIND ARTICLES ON NITROMIDE USING THE REGISTRY NUMBER

Relevant Databases: REG, CA

Key Concepts

SYNONYMS				
	NITROMIDE			

Publications Dates?

Languages?

Publications Types?

Number citations expected?

Format of citations? BIB

Online or Offline?

PRACTICE SEARCH #4

① Select the Registry file using the FILE REG command.

② SEARCH for nitromide.

③ DISPLAY the registry record for nitromide in Set L1. Note that it shows that there are 59 records in the CA File on this compound.

④ Select the Chemical Abstracts file using the FILE CA command.

⑤ SEARCH for citations containing the registry number in Set L1.

⑥ DISPLAY the first citation in Set L2 in the BIB format, bibliographic citation only.

⑦ LOGOFF Y to end the search.

```
* * * * * * * * * *   Welcome to STN International   * * * * * * * * * *

* * * * * * * * *   Direct Dial Login: (614) 421-3781   * * * * * * * * *
FILE 'HOME' ENTERED AT 20:20:35 ON 19 FEB 86

①  => file reg

FILE 'REGISTRY' ENTERED AT 20:20:49 ON 19 FEB 86
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②  => s nitromide

L1            1 NITROMIDE

③  => d l1

L1  ANSWER 1 OF 1

RN  121-81-3
IN  Benzamide, 3,5-dinitro- (7CI, 8CI, 9CI)
SY  3,5-Dinitrobenzamide
SY  Nitromide
SY  Unistat
SY  Tristat
DR  8048-58-6, 8012-51-9
MF  C7 H5 N3 O5
CI  COM

O2N.          .C:        .CONH2
      .    .      :    .
         C          C
         :          .
         :          .
         C.        :C
            .    :
              C
              .
              .
              NO2

REFERENCES IN FILE CAOLD (PRIOR TO 1967)
59 REFERENCES IN FILE CA (1967 TO DATE)

④  => file ca

COST IN U.S. DOLLARS          SINCE FILE      TOTAL
                                   ENTRY    SESSION
FULL ESTIMATED COST                 0.60       0.60

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)
CA SUBSCRIBER                      -0.20      -0.20

FILE 'CA' ENTERED AT 20:22:53 ON 19 FEB 86
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⑤  => s l1

L2           59 L1

⑥  => d l2 bib 1

L2  ANSWER 1 OF 59

AN  CA104(4):28178
TI  A 3-(p-acetyl. ienoxy)propylsilane bonded phase for liqu.d
    chromatography of basic amines and other nitrogen compounds
AU  Pharr, Daniel Y.; Uden, Peter C.; Siggia, Sidney
CS  Dep. Chem., Virginia Mil. Inst.
LO  Lexington, VA 24450, USA
SO  J. Chromatogr. Sci., 23(9), 391-6
SC  80-4 (Organic Analytical Chemistry)
SX  22
DT  J
CO  JCHSBZ
IS  0021-9665
PY  1985
LA  Eng

⑦  => logoff y

COST IN U.S. DOLLARS          SINCE FILE      TOTAL
                                   ENTRY    SESSION
FULL ESTIMATED COST                 1.29       1.89

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)
CA SUBSCRIBER                      -0.16      -0.36

STN INTERNATIONAL LOGOFF AT 20:23:20 ON 19 FEB 86
```

WELCOME TO
CHEMISTRY RESEARCH ONLINE

You have received this packet because you expressed an interest in the Chemistry Research Online pilot project. Participants in the pilot project will be able to use a microcomputer located in the Chemistry Department, Room 305 Fleming, to do their own searching of CAS Online, the Chemical Abstracts database.

This packet is designed to be a self-paced introduction to online searching. If there is a demand, follow-up seminars will be scheduled later in the summer to answer your questions and provide tips on effective searching.

This packet includes:

- Welcome to Chemistry Research Online
- Chemistry Research Online Procedures
- Chemistry Research Online: A Guide for Faculty
- Search Strategy Worksheets
- Evaluation Questionnaire
- CAS Online Command Summary
- Interlibrary Loan Guide
- Staffed Faculty Photocopy Service Guide
- Dial-in Access to the Public Online Catalog
- The Online Catalog: Locating Materials

We suggest the following steps as the most efficient way to use this packet.

1. Review the Chemistry Research Online Procedures.
2. Read the self-paced workbook entitled Chemistry Research Online: A Guide for Faculty and work through the sample search in Chapter 5.
3. Try the practice searches in Chapter 7.
4. Complete and return the Evaluation Questionnaire. It is very important that we receive these in order to evaluate the self paced packet.

Please call the Sandy Maxfield (x7348), if you have any questions about the project or have problems as you are learning to search.

PROCEDURES

CHEMISTRY RESEARCH ONLINE

1. HOURS OF OPERATION

The computer is located in Room 305 Fleming and is available for searching CAS at the following times:

Monday, Wednesday, and Friday	4 p.m. to 7 a.m.
Tuesday and Thursday	4 p.m. to 5 p.m. and 7 p.m. to 7 a.m.
Saturday (except the first Saturday of the month)	8 a.m. to 1 p.m.
Sunday	5 p.m. to 7 a.m.

See Susannah Wong if your group does not have a key. There will be a calendar outside the door to Room 305 for individuals to reserve time on the computer. Please do not sign up more than one week in advance or for more than two hours at a time. Give everyone a chance to use the computer. The sign up is first come first serve.

2. LOG BOOK

All searches must be recorded in the log book located near the computer. A completed sample log sheet is attached. The time and cost information is necessary for our accounting records. Your answers in the evaluation section will be used in the evaluation of the pilot project, so please fill out a log sheet for every search performed. Leave the log sheets in the binder.

3. OFFLINE PRINTS

Offline prints will be mailed directly to you. Just remember to fill in your name and address when prompted by the computer. Be certain to record the Print Transaction Number in the log sheet.

4. PRACTICE SUBSIDY

Each project participant is allowed a practice subsidy of $37.50. This will give each person approximately 2 1/2 hours of practice time. Each person is responsible for not exceeding the $37.50 of subsidized searching. The free practice time must be used before July 31, 1986.

5. PAYMENT FOR SEARCHES

After using the $37.50 practice subsidy or after July 31, whichever comes first, searchers must have their own CAS Online accounts. See Susannah Wong to arrange an account.

6. DISK FILES CONTAINING SEARCHES

Project participants are asked to save all searches in a disk file as outlined in Chapter 5 of the "Chemistry Research Online" workbook. The searches in disk files will be matched with the evaluation questions on the log sheets and used in the evaluation of the project. Searchers may make copies of their own searches using their own floppy disks.

7. DOCUMENTATION

The thesauri and other documentation necessary for online searching is kept near the computer. Please do not remove them from the room.

8. USE OF THE COMPUTER

The microcomputer belongs to the Library and is to be used only for online searching.

9. ASSISTANCE

For assistance with search strategies, call Sandy Maxfield (x7348).

CAS ONLINE LOGOFF MESSAGE

* logoff you

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	8.76	8.76
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)		
CA SUBSCRIBER	-1.68	-1.68

STN INTERNATIONAL LOGOFF AT 19:37:00 ON 07 APR 86

ACCOUNTING PORTION OF LOG SHEET

CHEMISTRY ONLINE LOGSHEET

DATE 4-28-86 NAME Janet Smith

DEPT Chemistry PHONE x2612

Please record the time and cost information from the logoff messages.

CAS ONLINE
LOGOFF TIME 19:37:00
FULL EST. COST 8.76
DISCOUNT AMOUNT 1.68
COST = .10 x (FULL COST - DISCOUNT)
.71 = .10 x (8.76 - 1.68)
OFFLINE PRINT REQUEST
NUMBER

PAYMENT REMINDER: Each person is allowed $37.50 of practice searches on the Library's password. After that you must have your own account.

__X__ Own Acct: Name account is under Smith

_____ Training Subsidy: Not to exceed $37.50 per person

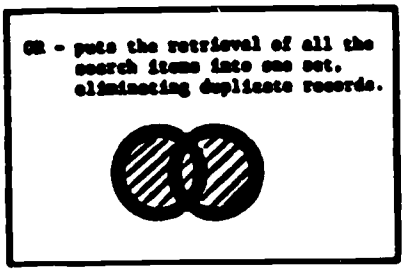
ALSO FILL OUT THE EVALUATION PORTION OF THE LOG SHEET.

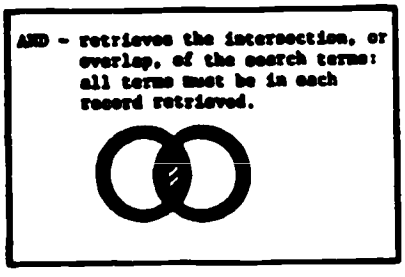
CAS COMMAND SUMMARY

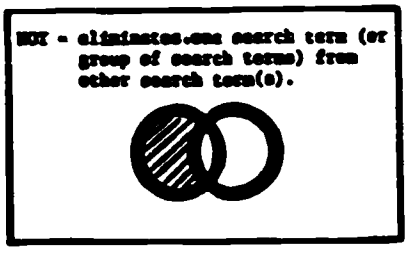
BASIC COMMANDS

Command	Example	Function
FILE	file ca file reg file caold	**FILE** connects you to the database in which you want to search. Enter the file name after the command. **FILE** may be used at any time to change databases. It does not erase your previous query numbers.
SEARCH	search titanium s coal/ti s l2 and analysis	**SEARCH** retrieves records containing the search term or terms you indicate, and stores them in query sets. Each query set is assigned an L#. A set may be used in later **SEARCH** statements by indicating its L#.
DISPLAY	display 12 bib 1 d l1 bib abs 1-3	**DISPLAY** requests that your results be displayed at your terminal immediately. It is followed by a query number, a format, and the group of records you wish to view.
PRINT	print	**PRINT** requests that results be printed offline and mailed to you. The simplest way to order prints is to enter the command **PRINT** and let the computer prompt you for the required information.
LOGOFF YES	logoff yes logoff y	**LOGOFF YES** ends the search session and disconnects you from STN. It produces an estimate of the cost of your session since logon.

LOGICAL CONNECTORS







POSITIONAL CONNECTORS

Connector	Example	Function
(W) (nW)	plant(W)production production(2W)plant	Terms must be adjacent to each other and in the order specified. A number in front of the W indicates maximum number intervening words.
(A)	linus(A)pauling coffee(3A)analysis	Terms must be adjacent to each other and in either order. A number in front of the A indicates the maximum number of intervening words.
(L)	mass(L)spectroscope	Terms must be in the same field of the same record, in any order.

SUPPLEMENTARY COMMANDS

Command	Example	Function
EXPAND	expand iron e pauling/au	**EXPAND** displays the word list, or index of the database. The entries in the list which displays may be **SEARCH**ed by their E numbers.
HELP	help	Obtain **HELP** while logged on. Displays general information about the help function or commands.
DIS HIS	display history d his	DIS HIS displays all of the sets formed during the search session.
SET	set steps on set range = (1980,)	**SET** defines the session parameters. See vendor documentation for exhaustive list of possible parameters.

EVALUATION

When you have completed the Chemistry Research Online training manual please answer the following questions by circling the appropriate number on the scale. Return the questionnaire to the Library through intercampus mail by folding. (Return address is printed on back of p. 2.)

1. Did the training manual clearly present the material?

Very Clear		Clear		Not Clear
1	2	3	4	5

2. Were the instructions in the self-paced manual clear?

Very Clear		Clear		Not Clear
1	2	3	4	5

3. Were you comfortable with this method of instruction?

Very Comfortable		Comfortable		Uncomfortable
1	2	3	4	5

4. Was this method of instruction compatible with your learning style?

Very Compatible		Compatible		Incompatible
1	2	3	4	5

5. Do you feel comfortable doing your own online research?

Very Comfortable		Comfortable		Uncomfortable
1	2	3	4	5

6. Do you have an improved understanding of microcomputers and their applications?

Improved		Slightly Improved		Not Improved
1	2	3	4	5

7. How confident do you feel in determining when to search online instead of searching the printed indexes?

Very Confident		Confident		Not Confident
1	2	3	4	5

8. Do you feel these training materials have improved your ability to articulate your research needs to a librarian?

Greatly Improved		Improved		Not Improved
1	2	3	4	5

9. To what extent did these training materials broaden your awareness of available services and resources within the library?

Greatly Increased		Increased		Not Increased
1	2	3	4	5

10. Are you interested in advanced training in search strategy development?

Very interested		Interested		Uninterested
1	2	3	4	5

11. Are you interested in advanced training in specific databases?

Very Interested		Interested		Uninterested
1	2	3	4	5

12. Are you interested in advanced training in system commands?

Very Interested		Interested		Uninterested
1	2	3	4	5

13. Are you interested in advanced training in microcomputer applications?

Very Interested		Interested		Uninterested
1	2	3	4	5

14. How long did it take you to complete the training materials?

1-2 Hours	2-3 Hours	3-4 Hours	4-5 Hours	5 Hrs. or more
1	2	3	4	5

Comments:

Thank you.