

095083

095083

CASE STUDY (CS 6)



A SYSTEMATIC APPROACH TO
SEARCHING UNITED STATES LAWS:
A CASE STUDY

DIVISION OF FINANCIAL AND GENERAL MANAGEMENT STUDIES
UNITED STATES GENERAL ACCOUNTING OFFICE

NOVEMBER 1975

~~700 238~~ **095083**

C o n t e n t s

CHAPTER		<u>Page</u>
1	INTRODUCTION	1
2	AN ILLUSTRATIVE GAO REQUEST	2
3	THE SYSTEMATIC APPROACH	4
	Classification of laws by groups (step 1)	4
	Searching the laws (step 2)	7
	Limitations on utilization (step 3)	10
4	ALTERNATIVE SYSTEMS AND USES	12
APPENDIX		
I	Summary of research techniques and agricultural reporting laws cited	14

ABBREVIATIONS

JURIS	Justice Retrieval and Inquiry System
LITE	Legal Information thru Electronics

CHAPTER 2

AN ILLUSTRATIVE GAO REQUEST

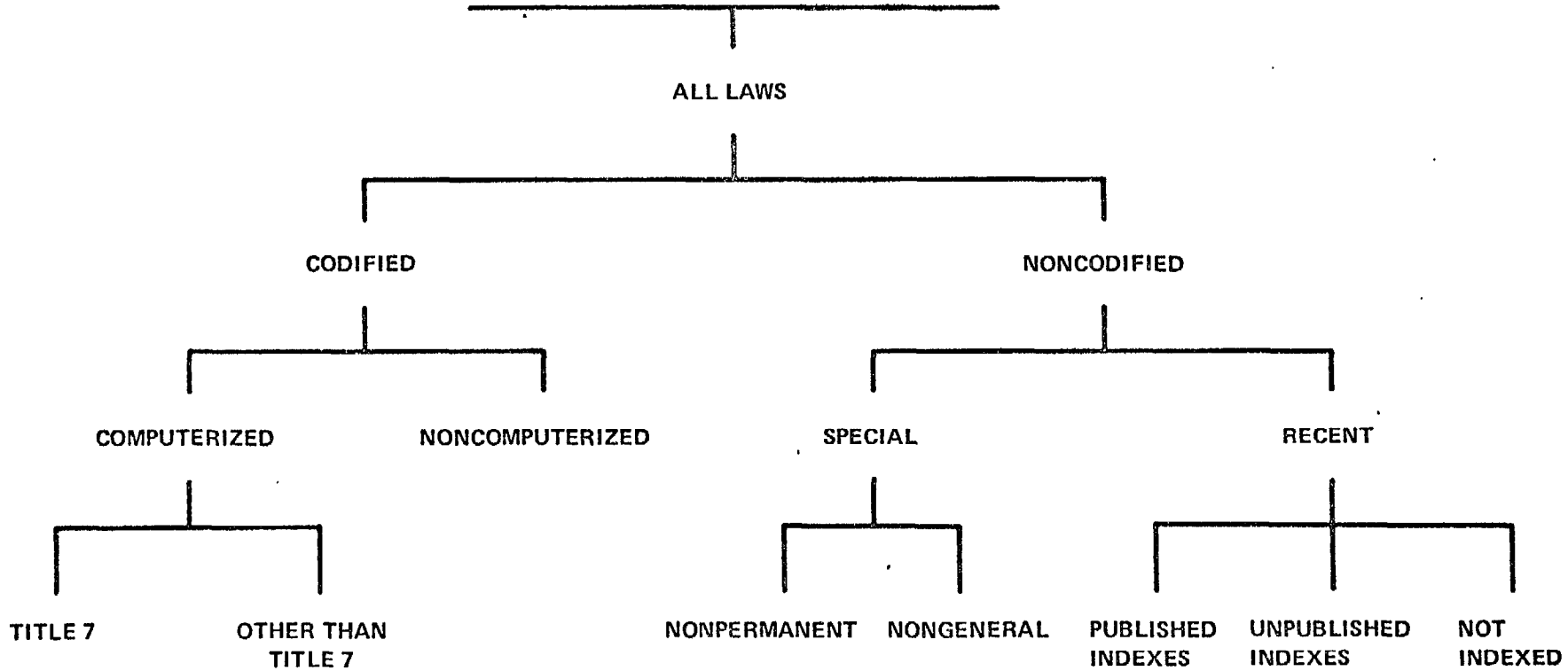
5.150

The Senate Committee on Agriculture and Forestry in September 1972 requested that GAO list all laws affecting agriculture and requiring agency reports. Because of the large number of public laws, the task appeared formidable. Examining existing computerized systems, however, revealed that a large percentage of laws were computerized and readily accessible; the remaining laws were too new to be easily accessible and would have had to be searched in other ways.

GAO originally noted 398 citations affecting agriculture and Forestry. Of the total, 183 citations were considered relevant to the committee and 149 (or 82 percent) of these were obtained by computerized search. The remaining citations were obtained by visual search. Although it took several weeks to fully develop the search techniques, the actual search time was 3 staff-weeks--1 week to identify the citations and 2 weeks to review them for relevance. The results of the search are reported in "Agricultural Program Evaluation Laws and Studies" (B-161740, Nov. 23, 1973).

FIGURE 1

SUBCATEGORIZATIONS OF U. S. LAWS



3

CHAPTER 3

THE SYSTEMATIC APPROACH

The systematic approach to searching U.S. laws was divided into three steps.

1. The universe of laws was subdivided and grouped by the laws' classification.
2. Each group of laws was searched for the desired subject area using varying methods.
3. Searches were made for possible missed references.

CLASSIFICATION OF LAWS BY GROUPS (STEP 1)

The universe of laws is all laws passed by the Congress. This universe was first divided into codified and noncodified groups and then further subdivided according to our particular subject area. (See fig. 1.) Each of the subdivided groups was searched in an individual manner.

Codified laws

All laws for each session of the Congress are published in a permanent collection of bound volumes called the Statutes at Large, a chronological arrangement of the laws exactly as they have been enacted. The Statutes do not arrange laws according to subject matter or show the present status of an earlier law that has been amended. This is done in the U. S. Code, a consolidation and codification of the general and permanent U.S. laws. The laws are arranged in the code under 50 headings, according to subject matter. (See table 1.) The code sets out the current status of laws, as amended, without repeating all the language of amendatory acts, except when necessary. It aims to present laws in a concise and usable form, without requiring reference to the many volumes of the Statutes containing individual amendments. New editions of the code are published every 6 years and cumulative supplements are published after the conclusion of each regular session of the Congress.

GAO divided the codified laws into two subgroups: computerized and noncomputerized.

Computerized laws have every word--except common words like "a," "the" and "and"--stored in a computer system. At the time of the search, the Air Force had computerized all

BEST DOCUMENT AVAILABLE

TABLE 1

NUMBERS AND TITLES OF THE U.S. CODE

- | | |
|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| 1. General Provisions. | 27. Intoxicating Liquors. |
| 2. The Congress. | 28. Judicial Code and
Judiciary. |
| 3. The President. | 29. Labor. |
| 4. Flag and Seal, Seat of
Government, and the
States. | 30. Mineral Lands and Mining. |
| 5. Executive Departments and
Government Officers and
Employees. | 31. Money and Finance. |
| 6. Official and Penal Bonds. | 32. National Guard. |
| 7. Agriculture. | 33. Navigation and Navigable
Waters. |
| 8. Aliens and Citizenship. | 34. Navy. |
| 9. Arbitration. | 35. Patents. |
| 10. Army. | 36. Patriotic Societies
and Observances. |
| 11. Bankruptcy. | 37. Pay and Allowances (Army,
Navy, Marine Corps,
Coast Guard, Coast and
Geodetic Survey, and
Public Health Service). |
| 12. Banks and Banking. | 38. Pensions, Bonuses, and
Veterans' Relief. |
| 13. Census. | 39. The Postal Service. |
| 14. Coast Guard. | 40. Public Buildings, Property,
and Works. |
| 15. Commerce and Trade. | 41. Public Contracts. |
| 16. Conservation. | 42. The Public Health. |
| 17. Copyrights. | 43. Public Lands. |
| 18. Criminal Code and Criminal
Procedure. | 44. Public Printing and Docu-
ments. |
| 19. Customs Duties. | 45. Railroads. |
| 20. Education. | 46. Shipping. |
| 21. Food and Drugs. | 47. Telegraphs, Telephones,
and Radiotelegraphs. |
| 22. Foreign Relations and Inter-
course. | 48. Territories and Insular
Possessions. |
| 23. Highways. | 49. Transportation. |
| 24. Hospitals, Asylums, and
Cemeteries. | 50. War. |
| 25. Indians. | |
| 26. Internal Revenue. | |

laws, up to the 1964 edition, fifth supplement (updating the file to Jan. 18, 1970), of the code in the Legal Information Thru Electronics (LITE) system. LITE is a batch computer retrieval system which is accessed by communications with an attorney-programmer in Denver, Colorado. For our illustration, computerized laws were further divided into title 7 (directly classified as agricultural) and other than title 7 laws.

Noncomputerized laws are primarily the newer additions to the code that have not yet been placed in the computer system. In addition, a few laws included in the notes of the code are never computerized.

Noncodified laws

Noncodified laws were subdivided into groups: those not codified because of their special nature and those passed too recently to be read, classified, codified, and published in the code.

Laws of a special nature include nonpermanent and non-general laws.

Nonpermanent laws are often appropriation laws. Since appropriation laws usually contain only annual or multiannual appropriations of funds, excluding nonpermanent laws from the code was not important to GAO's study. (Note: Recent appropriation laws and other temporary laws are frequently included in the notes of the code; none of the systems or documents listed in this study search or index the notes of the code.)

There are three groups of nongeneral laws --private laws, concurrent resolutions, and local-area laws. Private laws concern a few individuals; concurrent resolutions usually express facts, principles, opinions, and purposes of the Senate and the House of Representatives; and local-area laws often concern the District of Columbia or the naming of Federal buildings. Excluding these nongeneral laws from the code was not important to this study.

Recently passed, noncodified laws are laws passed after the publication of the latest edition or supplement of the code. Unlike the nongeneral and nonpermanent groups of laws, this set of laws could be relevant to GAO's study. These laws were divided into three categories:

1. Laws passed during the previous session of the Congress or after the last edition of the code and listed in published indexes.
2. Laws enacted during the current session of the Congress which have been indexed but not in published form. The Office of General Counsel, GAO, maintains an index of all public laws which was used in this study.
3. Laws enacted very recently (usually less than 1 week old) that have not been indexed. A list

was made from committee calendars and other related sources.

SEARCHING THE LAWS (STEP 2)

After grouping all laws, various search techniques were used. The techniques are described in this section, with special emphasis on computerized search.

Codified laws: Computerized title 7

Searching computerized systems involves choosing and combining proper key words and then requesting the system to provide all citations that contain the desired words. In searching title 7, the key words used for identifying laws requiring reports were:

Key words: List I

report	study	evaluate
reports	studies	evaluated
reporting		evaluating
		evaluation
		evaluations

Key words may be selected using a combination of approaches, discussions with project sponsors (e.g., congressional committee staff), a dictionary of synonyms, personal judgement, and trial and error.

(LITE was used for this study by contacting LITE Branch, HQASL/JASL, 3800 York Avenue, Denver, Colorado, 80205, (303) 825-1161, ext. 6433.)

GAO talked to a LITE attorney-programmer and gave him the list of key words. LITE completed the computer search in 4 days and mailed GAO a list of 164 citations. It should be noted that the key word of each citation is printed at the right of the line in which it appears. The system could provide the information in other forms since it can generate a list of citation titles and section numbers or a list of citation titles and numbers with the wording of the line in which the key word is located plus the lines immediately preceding and following it.

Many of the citations are often not relevant or not important to a particular study. To evaluate the listing and exclude unimportant items, the following steps were taken:

1. A sample of the citations was searched to determine the type of content.
2. Criteria were developed for assessing citations.
3. Each reference was read using the established criteria.

It would have been possible to program the request to eliminate some of these references automatically by using a more complex combination of key words. However, it is better in many cases to acquire too many citations and then exclude some than to miss references altogether.

Codified laws: Computerized other than title 7

Laws other than title 7 also pertain to agriculture. To find these laws, the previous list of words was used with a second set of key words.

Key words: List II

agriculture	food	nutrition
agriculture	foods	nutritional
fiber	forest	rural
fibers	forests	school lunch
	forestry	

The search was done in the same manner as the title 7 search. A total of 200 citations was originally retrieved from other than title 7 sections of the code, containing a combination of key words from lists I and II. Because of the new material, new criteria must be developed to assess and eliminate irrelevant citations.

A Venn diagram, a pictorial device for showing subgrouping within a large group, may be used in combining lists of key words. (See fig. 2.) In the diagram:

1. Rectangle U represents the universe of all citations of public law.
2. Circle A represents all citations that contain the word "agriculture" and its synonyms.
3. Circle B represents all citations that contain the word "report" and its synonyms.
4. Section C of circle B represents that subset of citations containing both the words "report" and "stenographic."

BEST DOCUMENT AVAILABLE

5. Section D represents citations containing the words "agriculture", "report", and "stenographic", e.g., a law authorizing the Secretary of Agriculture to hire stenographic reporting service.
6. Shaded section E (or A+B-D) is the area of special interest in this search; i.e., agriculture laws dealing with reports, but not stenographic requirements.

To obtain the desired citations, the proper key words and proper conjunctive word(s) must be used. An example follows.

Desired citations
(represented by areas of the diagram)

Key and conjunctive words

A + B	"Agriculture" or "reports"
D + E	"Agriculture" and "reports"
E	"Agriculture" and "reports" <u>but not</u> "Stenographics"

Codified laws: Noncomputerized

These laws were searched in the same manner as the non-codified recent laws discussed below.

Noncodified laws: Special nature

None of the special laws were included in this search, because they were local-area laws.

Noncodified laws: Recent laws in published indexes

There are several published indexes of public laws. The index used in this study to identify recent laws was the "Index to Public Laws," prepared by the Office of General Counsel, GAO.

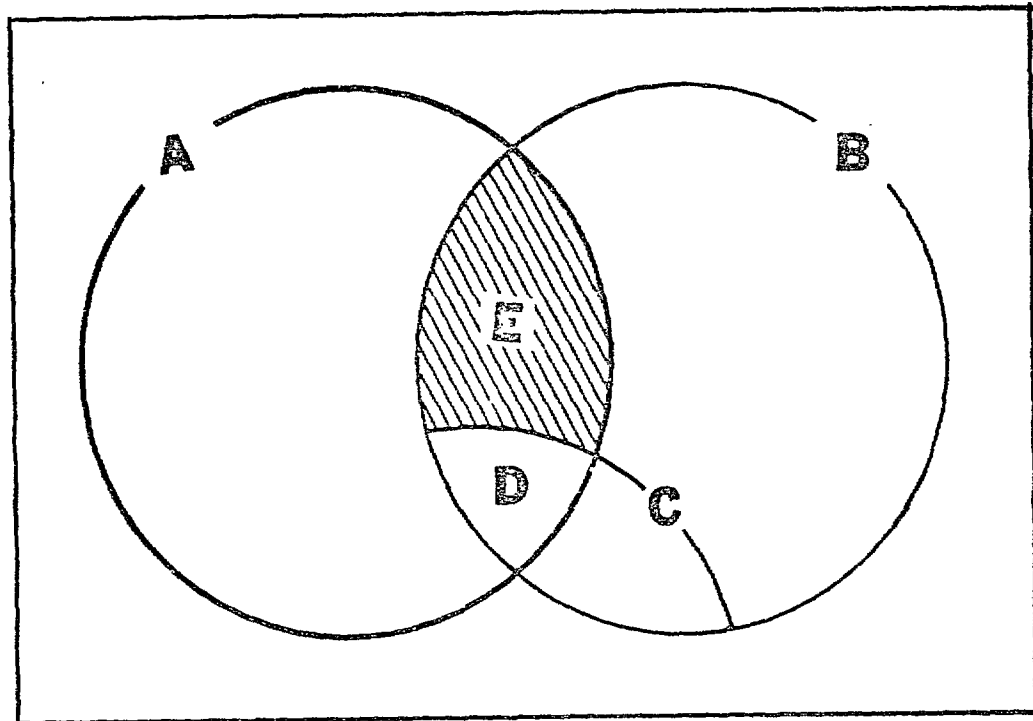
The following steps were taken in this section of the study.

1. Since the index is arranged by alphabetical order, the key words cited in list II were used to narrow down the search.
2. The Statutes at Large or the laws themselves were then examined. The headings and subheadings of the laws were then searched for the key words cited in list I.

FIGURE 2

SEARCH OF LAWS USING LITE SYSTEM

U = The Universe of U. S. Laws



3. If the key words were cited in the headings or subheadings, the laws were reviewed to determine inclusion or exclusion.

Noncodified laws: Recent laws in unpublished indexes

The Index and Files Section, Office of General Counsel, GAO, indexes all public laws for each session of the Congress. These laws, listed on index cards, were searched in the same way as published indexes.

Noncodified laws: Recent laws not indexed

Laws that are only a few days old may not be indexed. To identify such laws, the user must refer to the calendars of the House of Representatives, the Senate, and appropriate congressional committees.

LIMITATIONS ON UTILIZATION (STEP 3)

The data search illustrated in this paper, like other search techniques, presented certain limitations.

1. The LITE system searches only codified public laws. Some laws are never codified and are therefore not searched.

2. A report about agriculture may be required in the legislation without actually using the words "report" or "agriculture" or their synonyms.
3. It is conceivable that recent laws--not in LITE system at the time of the search which refer to agricultural reports could have been overlooked when searched visually.
4. Since the LITE system searched an edition of the code that was not current it is possible that some laws identified in this study could have been repealed or amended by a subsequent session of the Congress.

If the system is to be used for other than listing statutes, certain limitations must be recognized.

1. The computer does not contain information about interpreting and implementing statutory provisions after enactment. Court cases that may restrict the application of a statute or even declare it unconstitutional will not be noted. These judicial interpretations may also be conflicting between different courts which have considered the statute.
2. The statute cited might not show recent action taken by the President in his power to reorganize the executive branch of Government, which may transfer statutory powers and duties to agencies not originally mentioned in the statute.
3. Care should be taken to insure that the statute cited was in effect at the earlier date if other than the current date is important.

Our search technique results were compared with two other lists of reports for verification. The first list was of reports submitted to the Congress by the Clerk of the House of Representatives (H. Doc. 92-221); the second list was of recurring reports prepared by the Department of Agriculture and submitted to the Congress. Comparing GAO's search with these two lists showed that GAO's technique identified several more laws and that one citation was missed. The missed citation--a report on the Cotton Research Program--was specified in a note of the code, a section not searched.

The appendix summarizes the research techniques and the agricultural reporting laws cited, and figure 1 shows the subcategorization procedure for the laws cited.

CHAPTER 4

ALTERNATIVE SYSTEMS AND USES

In addition to LITE, another computerized system, JURIS (Justice Retrieval and Inquiry System), also contains the code and could have been used for this search. JURIS, operated by the Department of Justice, uses the same edition and supplement of the code for its data base and could have produced the same results as the LITE search if the same key words were used. The primary difference between the two systems is that JURIS is an interactive on-line system and LITE is a batch system. In an on-line system, the user uses a cathode ray terminal, enters his commands, receives a sample of the output, alters the commands, and receives the final output immediately on the terminal. In a batch system the user must forward his search request to an attorney-programmer who then constructs the search commands, enters them into the system, and waits until the computer completely processes the request before mailing the output to the user. Through a special command, JURIS could also provide a batch printout that could be mailed to the user.

Each system has its advantages. JURIS is highly responsive; the user can alter the search as it progresses and can derive his output immediately. LITE is convenient and easy to use, especially for the infrequent user.

(For a user interested in JURIS, four JURIS cathode ray tube terminals and two high-speed printers were available at the time of this search in room 5407, Department of Justice building, 10th and Pennsylvania Avenue, N.W. It is recommended that the user consult the JURIS User's Reference Manual before using the system.)

GAO can use LITE and JURIS systems for other search and retrieval problems. In recent months, GAO has used JURIS extensively to respond to many varied congressional requests. Both LITE and JURIS contain other accessible files besides laws, including the National Criminal Justice Retrieval System and Comptroller General decisions.

The computerized search and retrieval approach has been applied at other levels and in different areas. Several States have their own law files. In some cases local systems update every bill in the computer from the time it is proposed until it is either passed or rejected. This eliminates the category of codified but noncomputerized laws and insures that recently passed laws are already codified and ready to be searched. The computerized search and retrieval

method can be applied to other areas, including the bill status system of the House Information System which is used by GAO. Legislative status information is obtained by submitting any of the following: bill and resolution identification data (number, sponsor, etc.), subject description, committee actions, floor actions, or presidential actions.

SUMMARY OF RESEARCH TECHNIQUES
AND AGRICULTURAL REPORTING LAWS CITED

<u>Categories of laws</u>	<u>Search method</u>	<u>Total citations</u>	<u>Total relevant citations</u>
<u>Codified laws:</u>			
Computerized:			
Title 7	LITE--one set of key words	164	48
Other than ti- tle 7	LITE--two set of key words	200	101
Noncomputerized	Same as recent laws in pub- lished in- dexes	-	-
<u>Noncodified laws:</u>			
Special:			
Nonpermanent	Not searched	-	-
Nongeneral	Not searched	-	-
Recent:			
Published In- dexes	Visual search	13	13
Unpublished In- dexes	Visual search	21	21
Not indexed	Visual search	-	-
Total		<u>398</u>	<u>183</u>