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CENTRALIZED RESEARCH AND NAARS USAGE

IN CPA FIRMS

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by

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INTRODUCTION

This study describes aspects of CPA firms' centralized research departments. Representatives of eleven large firms were questioned about the philosophy and operations of their activities related to researching technical accounting matters. Although a common characteristic of all the departments studied was the use of the NAARS* system in answering questions from the field, the study was not limited to NAARS usage alone. In most of the departments, NAARS was only one aspect of a larger research system. This made it necessary to examine the entire research effort before the use of a subsystem such as NAARS could be understood.

At the time of the selection of subjects, 16 individual CPA firms were subscribers to the NAARS service. Our sample of eleven was drawn from these subscribers, and the selected group accounted for over 90% of NAARS usage by these firms. After selecting the subject firms, we identified the person in each firm who was most knowledgeable of both NAARS and the overall research effort. It is probably true that in complex organizations such as large CPA firms, no one person's view, no matter how informed

*NAARS, an acronym for National Automated Accounting Research System, is a separate library of Mead Data Central, Inc.'s LEXIS system. NAARS performs rapid searches of documents such as annual reports, and the contents of its files are controlled by the Information Retrieval Committee of the AICPA.

she or he may be, is completely representative of the entire firm. However, the success of interviews, such as those conducted in this study, is dependent on this selection process, as well as other factors such as questions, strategies, etc. In order to mitigate these problems, a group selected from members of the AICPA Information Retrieval Committee was formed to advise as to the appropriate respondents and questioning strategies. We are reasonably confident, therefore, within the inherent limitations of the techniques employed, that our observations are representative of the subject firms.

After identification of the appropriate respondent from each subject firm, interviews were conducted in the respondents' offices. Three instruments were used in the data gathering process: 1) "General Discussion Questions"- a list of the broad topics to be discussed during the interview was mailed in advance of the visit; 2) "Background Data" - a request for specific numerical information was mailed in advance of the visit; and 3) "Interview Instrument" - the document used during the interviews which includes many probe and follow-up questions asked of all respondents. Each interview lasted approximately two hours and, with permission of the respondents, was tape recorded. Much of the information in this study is based on the taped interviews and the background data provided to the interviewers.

The major sections of this paper are as follows:

1) CENTRALIZED RESEARCH UNITS - This section describes the range of research efforts at the centralized locations we observed. First, we list three general models which capture distinct philosophies as to the role of centralized research. Secondly, we relate our observations to the models. We conclude by describing the many specific characteristics of the centralized research units studied.

2) NAARS - In this section we concentrate on the use of the NAARS system. Highlights of the information gathered are given under the following headings:

- 1) The general role of NAARS in the research process
- 2) Personnel who use the NAARS terminals
- 3) Development of field awareness of NAARS capabilities
- 4) Evaluation of NAARS
- 5) Other uses of the system
- 6) Future plans

3) CONCLUSIONS AND OBSERVATIONS - In this section we give our personal observations as to the current and future developments in centralized research and the use of computer-assisted data retrieval systems such as NAARS in CPA firms.

CENTRALIZED RESEARCH UNITS

While each subject firm is in many ways unique in the particulars of its operations, the necessity to investigate accounting questions arising in the field is a common need. The firms studied responded to this need in similar ways by centralizing certain research efforts. This study focuses on the departments in large CPA firms which we have characterized as centralized research units (CRUs). Our definition of a CRU is based on two important common characteristics which we observed in all such departments: (1) they all were charged with responding to technical accounting questions from practice offices, and (2) they all used the NAARS system in their activities.

MODELS

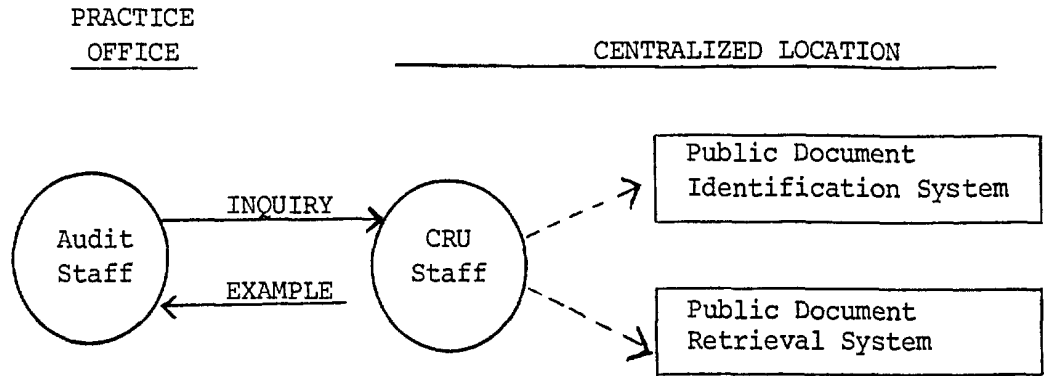
Although we observed a continuum of types of CRUs, we feel that it would be instructive to generalize our observations into three distinct hypothetical models. No CRU observed is a "pure" example of any of the models shown, but, as we indicate below, CRUs do display certain key characteristics which reveal tendencies to a location on the continuum.

Model I

In this model the CRU would provide examples of disclosure in financial statements without attempting to resolve the underlying questions. The problem resolution orientation would be neutral in that the CRU would not be actively involved in the final resolution.

DIAGRAM OF MODEL I

Interaction of Audit Function and CRU



→ means communication between staffs
 - - - -> means direct access to data

CHARACTERISTICS OF MODEL I

- Problem Resolution Orientation.....Neutral
- Tools and References.....NAARS
 Microfiche
 Published financial statements
 Other Standard References such as Trends and Techniques, Financial Report Surveys, and Disclosure Journal
- Response Format.....Financial statements or portions of financial statements
- Response Dissemination.....To requestor only
- Follow-up.....None
- Other Duties of CRU.....None
- Personnel.....Permanent researchers and possibly rotating staff
- Field Access to Prior Research.....None

The CRU's major tasks would be the interpretation of research requests and the formulation of appropriate search strategies. In order to respond to the requests for examples, some type of document retrieval system would be needed which would contain a means of identifying the appropriate documents among all of those publicly available and a means of retrieving those documents. Other than the transmittal of the examples to the field, no formal dissemination of results would be necessary, and no records or files would have to be maintained. The implication is that each request would be handled independently in that no reference to prior research would be utilized.

In keeping with their neutral posture, the Model I CRUs would not follow up a response to find out the actual result in the client engagement. Again, no internal precedent would be generated and therefore, ensuring compliance and consistency of applications would not be a function of a Model I CRU.

Two final observations are that the Model I CRU would have a narrow range of responsibilities with little interaction with other centralized departments, and that, because of its neutral problem resolution orientation, the CRU would not have to be headed up by persons with partner status, i.e., permanent researchers with or without rotating junior staff people would be appropriate.

Model II

Problem resolution orientation is not neutral in this model. The CRU would be involved in choosing the "appropriate" resolution

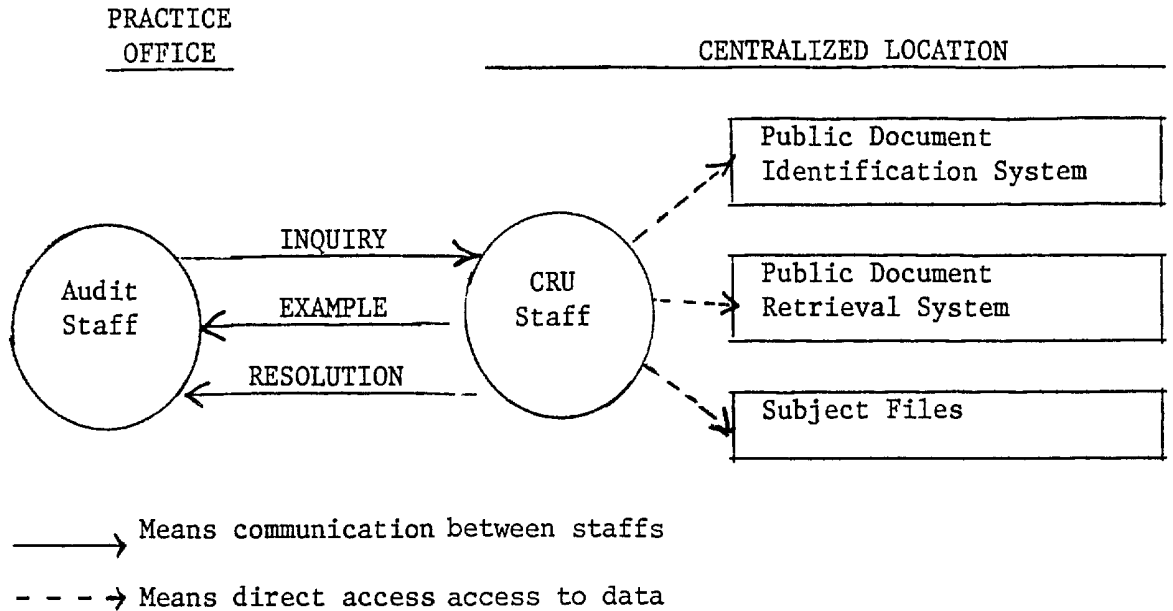
of an accounting problem. There would be, as in Model I, searches of public documents, but the motivation would not always be the transmittal of examples. Public document searches would be one aspect of determining external precedent. In addition, for certain searches, there would be an internal precedent determination based on review of internal subject files. The Model II CRU, then, would make a recommendation to the field with both external and internal precedent being brought to bear on the problem. Given this objective, the requests to the CRU would have to be stated as completely as possible in order that the context of the problem would be understood.

The response from the Model II CRU would be in some cases in the form of a recommended course of action. In addition to the recommendation and summarization of the problem, the response could include: references to authoritative literature, both internal and external examples, citations of firm manuals, and perhaps a statement reflecting the individual researcher's point of view. The response and related supporting documentation would become part of the internal subject files maintained by the CRU.

As in Model I, the Model II CRU would not initiate search requests. It would be passive in that sense. In addition, the field personnel would have no way of duplicating the research steps without contact with the CRU. The research process would be more or less a "black box" from the point of view of the audit teams. They would send in questions and get back responses, but would not be involved in searches or processing to any material degree.

DIAGRAM OF MODEL II

Interaction of Audit Function and CRU



CHARACTERISTICS OF MODEL II

- Problem Resolution Orientation.....Routinely makes recommendations
- Tools and References.....NAARS
 - Microfiche
 - Published financial statements
 - Centralized subject files
 - Other Standard References such as Trends and Techniques, Financial Report Surveys, and Disclosure Journal
- Response Format.....Memo with summarization of problem, references to examples, etc.
- Response Dissemination.....To requestor and centralized subject files
- Follow-up.....Compliance monitoring system exists
- Other Duties of CRU.....Assistance in preparation of manuals and responses to emerging issues
- Personnel.....At least one active partner with experienced rotating field people and permanent researchers
- Field Access to Prior Research.....None

Under this system it would seem that quality control and consistency considerations would pressure toward a follow-up procedure in which the CRU would determine the final implementation of its recommendations. The presumption would be that once a resolution would be reached on a problem, there would be compliance, and that consultation with the CRU would be documented in the workpapers for the client.

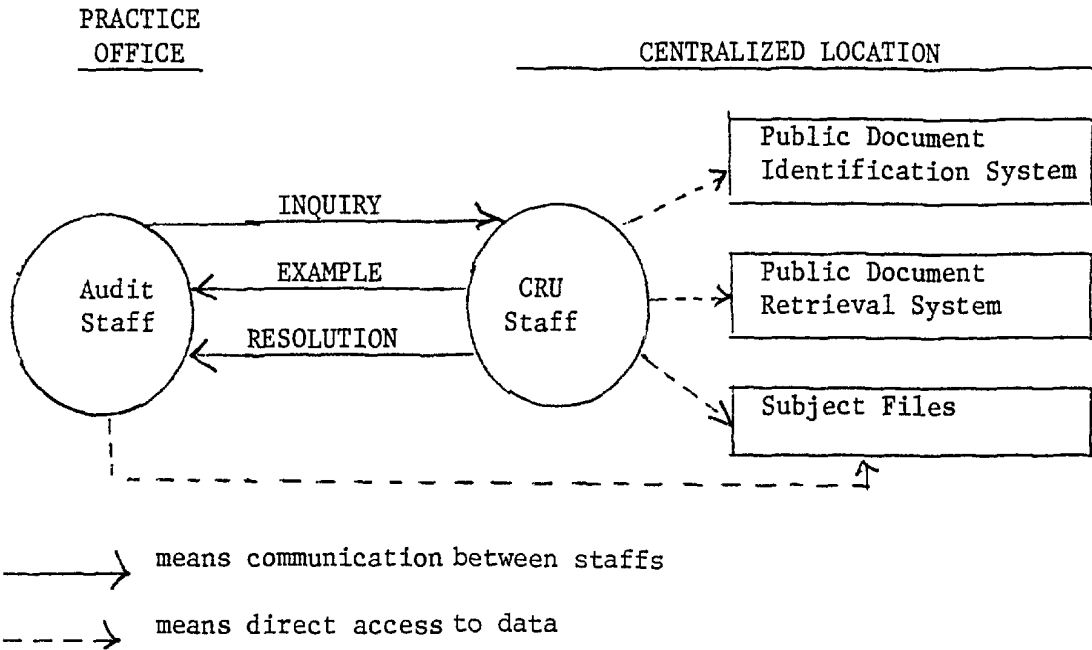
Natural extensions of functions for Model II CRUs, in contrast to the circumspection described in Model I, could include preparation of firm manuals and responding to emerging accounting issues. These activities closely relate to their problem resolution function and to their internal and external precedent orientation.

In this model, it would seem that the importance of understanding the client context would mandate that researchers have heavy audit experience. In addition, the problem resolution orientation would call for a high level of authority. It is contemplated, therefore, that Model II CRUs would have at least one actively involved partner and a rotating staff of experienced auditors. The CRU could also include permanent researchers whose responsibilities would be in specialized aspects of the data search.

Model III

This model would have all the characteristics of Model II, with the added dimension of the field having access to previous CRU resolutions. Access could be in the form of individual "hard" copies or electronic communications, which would eliminate channeling all questions

DIAGRAM OF MODEL III
Interaction of Audit Function and CRU



CHARACTERISTICS OF MODEL III

- Problem Resolution Orientation.....Routinely makes recommendations
- Tools and References.....NAARS
 Microfiche
 Published financial statements
 Subject files
 Other Standard References such as
Trends and Techniques, Financial
 Report Surveys, and Disclosure
 Journal
- Response Format.....Memo with summarization of problem,
 references to examples, etc.
- Response Dissemination.....To requestor and subject files
- Follow-up.....Compliance monitoring system exists
- Other Duties of CRU.....Assistance in preparation of manuals
 and responses to emerging issues
- Personnel..... At least one active partner with
 experienced rotating field people
 and permanent researchers
- Field Access to Prior Research..... Mechanisms exist for field access

through the CRU. The CRU then would get questions which the field could not resolve by internal precedent alone.

The differences between this and a Model II system are primarily in three areas: (1) the added mechanism at the CRU which allows the updating and disseminating of subject files, (2) the added mechanism at the field locations which allows access to subject files, and (3) the training of field personnel in the techniques of precedent research.

It should be noted that as in Model II, the CRU is responsible for maintenance of the subject files. The centralized nature of the primary research is the same.

CRU SURVEY RESULTS

The previous section described three generalized models representing hypothetical profiles of CRU activity. Below are our findings as to the actual functions of the eleven sampled CRUs. First, we compare the CRUs on three observed characteristics which we feel are important indicators of model orientation. Next, we discuss other operating characteristics we observed in the CRUs' research processes.

Model Orientation

Among the characteristics of CRUs we observed, we feel that the following three are pivotal in determining if a CRU tends toward one of the models discussed above:

Characteristic A - extent of problem resolution
within the CRU

Characteristic B - extent to which internal precedent
is used in the CRU's research process

Characteristic C - extent to which field personnel have
access to the CRU's prior research results

After listening to the taped interviews and reviewing other materials, a three-judge panel scored the eleven CRUs on the following scales:

<u>CHARACTERISTIC</u>	<u>SCORE</u>	<u>INTERPRETATION</u>
A (Problem Resolution Orientation)	1	<i>NO CRU PROBLEM RESOLUTION -</i> The CRU's function is to retrieve and communicate examples from publicly available documents.
	2	<i>LITTLE CRU PROBLEM RESOLUTION -</i> It is not routine for the CRU to engage in problem resolutions.
	3	<i>INDIRECT CRU PROBLEM RESOLUTION -</i> The CRU routinely resolves problems, but a non-CRU individual or group is involved in communicating the resolutions.
	4	<i>DIRECT CRU PROBLEM RESOLUTION -</i> The CRU routinely resolves problems and directly communicates the resolutions back to the field.
B (Reference to Internal Precedent)	1	<i>NO CRU INTERNAL PRECEDENT ORIENTATION -</i> The CRU does not refer to previous resolutions in its research effort, i.e., no subject files are maintained or accessed by the CRU.
	2	<i>LITTLE CRU INTERNAL PRECEDENT ORIENTATION -</i> Although the CRU maintains or has access to a subject file, it is either not highly developed or is not often used in CRU research.

<u>CHARACTERISTIC</u>	<u>SCORE</u>	<u>INTERPRETATION</u>
	3	<i>MODERATE CRU INTERNAL PRECEDENT ORIENTATION -</i> The CRU has access to a subject file and uses it occasionally in CRU research.
	4	<i>COMPREHENSIVE CRU INTERNAL PRECEDENT ORIENTATION -</i> The CRU uses highly accessible subject files as basic research tools.
C	1	<i>NO FIELD ACCESS TO PRIOR CRU RESEARCH -</i> There is no mechanism for field personnel to access CRU research without formal contact with the CRU.
(Field Access to Subject Files)	2	<i>LITTLE FIELD ACCESS TO PRIOR CRU RESEARCH -</i> Certain limited indications of CRU research results are available in the field, but these are neither comprehensive lists nor complete descriptions of research projects.
	3	<i>MODERATE FIELD ACCESS TO PRIOR CRU RESEARCH -</i> The field has direct access to either a comprehensive and updated research topic listing or a fairly extensive summary of important research projects.
	4	<i>COMPREHENSIVE FIELD ACCESS TO PRIOR CRU RESEARCH -</i> The field has direct access to complete and comprehensive descriptions of prior CRU research.

As indicated previously, the eleven responding CRUs were scored on the above three scales. Consensus was achieved among the judges and the following profiles resulted.

CRU Identification Number*	Characteristic Scores				Model Orientation **
	A	B	C	Mean Score	
3	1	1	2	1.3	I
7	2	1	1	1.3	I
8	1	1	2	1.3	I
1	3	4	1	2.6	II
2	3	4	1	2.6	II
5	4	4	1	3.0	II
6	4	3	1	2.6	II
10	4	4	1	3.0	II
11	4	4	1	3.0	II
4	4	4	3	3.6	III
9	4	4	3	3.6	III

* CRU identification numbers were randomly assigned.

** The assignment to models was made solely on the basis of the three characteristics.

Three CRUs were judged to have Model I orientations. Characteristic A scores show that CRUs 3 and 8 provide examples only while CRU 7 provides examples in most cases and is also involved to a minor extent in problem resolution. All three CRUs were scored 1 on characteristic B because prior problem resolutions played no role in their research.¹

^{1/} They did, to varying degrees, have techniques for accessing prior example searches. This score on characteristic B is, of course, a necessary consequence of their scores on characteristic A, i.e., CRUs which do not resolve problems have no resolutions to refer to. Therefore, the scores of 1 on characteristic B for CRUs 3 and 8 were predetermined by their scores of 1 on characteristic A.

Field access to prior research results (Characteristic C) was low for all three Model I CRUs. CRU 3's research occasionally becomes a part of a non-CRU file, which is available to field personnel. CRU 8 distributed a chronological listing of the topics of its example searches to the field.

Six CRUs were judged to have Model II orientations. All CRUs scored 3 or 4 on characteristic A which means that they all routinely recommend resolutions on inquiries. CRU 2 filters its findings through another unit which is responsible for "consulting" with field personnel. In this case, the CRU is one step removed from direct contact with the field in problem resolutions, but it was felt that the impact of the CRU's research was the same as if there was direct contact. In the case of CRU 1, both the problem resolution inquiries and responses are filtered through a series of regional and national consultants. Again, it is felt that the end result is substantially the same as if direct contact were maintained.

The scores on characteristic B indicate that all but CRU 6 use their own problem resolutions as prime tools in their research effort, i.e., the CRUs maintain and utilize a subject file system. CRU 6 maintains a subject file, but it is not comprehensive and its cross-referencing system is not highly developed. It is used to some extent in the research process, however. Characteristic C scores for all six CRUs show that there is no field access to prior CRU research.

Two CRUs were judged to have Model III orientations. Both CRUs scored 4's on characteristics A and B. This indicates that they routinely resolve problems from the field with which they have direct

contact, and that they utilize internally generated and maintained subject files in their research efforts. Both CRUs were scored 3 on characteristic C which shows a moderate degree of field access to their research. In CRU 4, a system of releases is available to the field which occasionally includes comprehensive descriptions of CRU problem resolutions. CRU 9 issues an index of research results to each practice office. It should be noted that neither of the Model III-oriented CRUs make available a comprehensive subject file to the field.

In summary, all eleven CRUs provide examples to the field. Eight are also involved in resolutions of problems and the creation of subject files. Only two CRUs were found to provide even moderate field access to prior resolutions.

Other Characteristics of CRU Operations

Our observations about CRU operations are presented in terms of subcategories of the research cycle:

1. THE ACTIVITY IN THE FIELD WHICH CULMINATES IN AN INQUIRY TO THE CRU
 - a. Procedures in the field
 - b. Inquiry transmittal
2. THE CRU RESEARCH PROCESS
 - a. Recording inquiries
 - b. Assignment of researcher
 - c. CRU organization
 - d. Methods of search
3. COMMUNICATION BACK TO THE FIELD
4. SUBJECT FILES AND REFERENCE SYSTEMS

Field Activity

Procedures in the Field - In nine of the eleven cases, firm manuals state what should be done by the audit personnel before contact is made with the CRU. In most cases, this involves searching authoritative literature and local office files, as well as consulting with the local or regional person who is designated as the first source of technical advice outside of the audit team. Only three firms indicated no such local and regional technical consulting functions. In addition, all firms have industry specialists who answer industry-specific questions. The extent to which the "formal channels" are actually followed was not ascertained in this study. It was learned, however, that it is not uncommon for CRU personnel, in response to a field inquiry, to suggest that more research be done on the local level. Although this research did not study the behavior of field personnel, it appears that pre-CRU research activities vary greatly.

Inquiry Transmittal - It was indicated that three firms have policies which allow only supervisory personnel to make contact with the CRU, while the remainder did not formally prohibit staff from making the initial contact. In all cases the phone is the most common medium for initial contact, with six respondents indicating that memoranda are also regularly used. Two CRUs require that initial phone contact be always followed by a memorandum from the field.

The CRU Research Process

Recording Inquiries - Nine of the CRUs formally record the initial field contact, and the resulting form becomes part of a permanent record.

This form normally includes the client's name, a summarization of the problem, the description of the research effort, the date the response is needed, and the CRU's conclusion and disposition of the request. Reference is usually made on the inquiry record of the specific research sources used and the conclusions drawn therefrom.

Assignment of Researcher - In most cases the CRU person involved in the initial contract will perform the bulk of the research. We found several cases where there were specific individuals who handle certain tasks such as NAARS searches or document retrieval procedures, but usually they are acting as an aid to the primary researchers on the project. In one CRU, the managers or supervisors function periodically as the researcher-of-the-day to receive requests, review the research department's results, and essentially assume overall responsibility for the disposition of those requests. They are aided by researchers who are recent college graduates and who will be transferred to a practice office after their stay of about one year.

CRU Organization - All of the CRUs studied are located in the national offices of their firms. In one case the CRU is officially one of three similar regional CRUs within the firm. It was our impression that, even in this case, the national office CRU is the central clearinghouse for research. As is true for most functions within CPA firms, final responsibility rests with a partner. However, by making a judgment as to the rank of the individual who has direct day-to-day control over CRU functions, we determined that five are at the partner level, five are at the manager level, and one is at the staff level. All of the above have relatively permanent, as opposed to rotating, appointments.

The CRUs typically have experienced auditors at the manager or lower levels in charge of specific research requests. Eight CRUs indicated that usually those in charge of responding to specific inquiries are managers who rotate back to the field on tours ranging from six months to three years.

Methods of Search - In general, the methods of search reflect the researcher's experience and familiarity with the research question. In a number of cases, however, an informal sequence had evolved such that the central files are reviewed first to locate the disposition of similar inquiries, secondly, authoritative literature, NAARS, and a variety of sources are searched to identify potentially relevant documents, and finally, microfiche or hard copy financial reports are examined and/or copied.

Communication Back to the Field - Just as the initial contact is usually by phone, initial response to the field is typically by phone. Five firms indicated that memoranda or letters in response are optional; the remaining firms indicated these to be a requirement. Three firms will send a copy of the "record of inquiry" form if they consider it to adequately cover the facts and their response. In most cases, lists of relevant documents, often with reproductions of microfiche or hard copy reports, are included in the response. Eight firms indicated that all responses have to be formally reviewed by someone other than the researcher before the responses were given to the field. We noted that the three CRUs that assign their researchers final responsibility for the research results function primarily as generators of examples, rather than problem solvers. It did appear that in most

cases formal review by a partner or manager is often waived when the field only requests examples.

Subject Files and Reference Systems - All firms studied have one or more subject file systems, but the CRU is not always the sole contributor. In one case the CRU has little input into the firm's subject files and it plays no part in maintaining them. In most cases, however, the CRU maintains the firm's primary subject file and a file of its own research which is a major input into the firm's primary subject file. Other entries into the primary subject file are: "write-ups" from various personnel, "case reports" from the field, "consulting logs" of directors of accounting and auditing at practice offices, publications of other CPA firms, articles, etc.

Organization of the central files varies across the firms. We found different combinations of filing systems keying on such factors as client name, subject, date, and originating office. Two firms use all four filing systems to access prior research. Another two firms relied primarily on chronological files.

As shown on page 14, field personnel generally do not have direct access to subject files. Three CRUs regularly prepare and distribute reports on completed research requests to selected non-CRU personnel. An index for the CRU's files is generally only available to CRU personnel, while two firms did indicate that they provide all of their practice offices with such indexes.

Other Observations

Follow-Up - In general, the final decision concerning appropriate accounting for a particular client is said to be the field's responsibility, i.e., CRU personnel consistently said that the engagement

partners made the ultimate decision. Normally, follow-up to determine if recommendations are put into effect is informal. Two CRUs, however, require memoranda from the field which summarize substantive problems and their final resolutions. One CRU indicated that, depending on the complexity or risks surrounding the inquiry, it may ask for a copy of the report to review before release. Two CRUs indicated that a "consensus" is reached on problem inquiries, and that it is expected that the field will follow through according to the understanding. CRUs alluded to their Quality Control Groups as possibly providing some degree of follow-up. The field is generally expected to include its own memorandum on the consultation in the workpapers.

Billing for Services: - In general, the CRUs bill out all of their researchers' time except in those cases where the services do not relate to specific clients. Two CRUs explained that they try to encourage the field's use of their facilities; therefore, they might not bill the field office for all of the consultation time spent, particularly on small clients. Another CRU indicated that it would typically provide one-half to one hour of free consultation before billing.

NAARS

This section of our report summarizes responses about (1) the general role of NAARS in the research process, (2) personnel who use the NAARS terminals, (3) development of field awareness of NAARS capabilities, (4) evaluation of NAARS, (5) other uses of the system, and (6) future plans.

THE GENERAL ROLE OF NAARS IN THE RESEARCH PROCESS

The basic functions of NAARS are document identification and retrieval. In the CRUs examined, the former is by far the most important. All of the CRUs use the system primarily to identify potentially relevant documents and then generally use microfiche or hard copies of the financial statements to make a final determination of relevance. The respondents generally felt that using NAARS only for document identification was the most cost-effective procedure; and that, in addition, better quality reproductions of examples were possible from hard copy or microfiche. However, two CRUs did indicate that they do print and send financial statement examples from NAARS when the NAARS printout is sufficiently complete. One CRU felt that the high-speed NAARS printer permitted the most effective reproduction of the needed examples.

All of the CRUs consider NAARS to be an important research source. Some characterized it as their major research tool, while others viewed it as one of several important sources available. The average monthly NAARS usage at CRU terminals for July 1, 1977 to June 30, 1978 ranged from a low of 1 hour to a high of 25 hours. The overall average was 13 hours.

Differences in the amount of time the various CRUs use the NAARS terminal are not always completely explainable. It does appear, however, that both volume of field inquiries and the percentage to which

NAARS is applied are important. This information was acquired for the eleven CRUs and is summarized below.

<u># of Field Inquiries/Month</u>	<u># of CRUs</u>
7-31	3
45-75	5
135-200	3
<u>% of Requests which Utilized NAARS</u>	<u># of CRUs</u>
Less than 10%	2
20-30%	2
35-50%	5
Greater than 60%	2
<u># of NAARS Searches/Month</u>	<u># of CRUs</u>
Less than 5	2
9-15	4
25-65	5

Five CRUs average more than ten hours of NAARS use per month. The following generalizations can be made about those five CRUs:

- 1.) Model orientations - Model II or III
- 2.) Field inquiries/month - 45 or greater
- 3.) % of requests which utilize NAARS - 35% or greater
- 4.) NAARS searches/month - 25 or greater

In addition to the number of research requests for which the CRU utilizes NAARS, the amount of NAARS use at the CRU terminal is affected by such factors as efficiency in framing the appropriate search request, "browse" strategy, relative complexity of applications and potential access to the terminal by non-CRU personnel. Although not conclusive, some evidence was gathered which suggests differences in browsing time per search and in efficiency in framing search requests exist across CRUs. The eleven CRUs provided data on computer search time as a percentage of their total time on the terminal. A range from 4% to 14% was found. Interestingly, the five CRUs which use NAARS the most, averaged 10% computer search time to total terminal time, while the other six averaged 7%. A further discussion of factors which seem to impact on the amount of time a CRU uses NAARS is contained in the conclusions and observations section of the paper.

In most firms, field personnel do not specifically request or authorize that NAARS be used, even though the field is usually billed for its use. Only one respondent indicated that the field had to explicitly authorize NAARS use. Another CRU has its research department head authorize NAARS use. Only three respondents felt that the field often initiates the use of NAARS. The remainder usually leave the decision to use NAARS to the researcher's discretion.

The majority of CRUs do not directly let requestors know when NAARS has been used. Apart from reflecting NAARS charges on internal

billings*, only three CRUs appear to make it standard operating practice to inform the field that NAARS was used in handling their research requests. As one individual put it, "our primary concern is that the field know the capabilities of the research department to get at certain data, secondly, how the department works." Another individual, on the other hand, believes that "once the field sees what NAARS can do, there will be less resistance to its use."

All but two CRUs note on the inquiry record when NAARS has been used. One requires its researchers to complete a questionnaire on each research problem involving the use of NAARS, giving a brief statement of the problem, the data bases searched and an evaluation of the search. Only three CRUs maintain a separate file of NAARS applications. In one of these the file is used to collect reports written by field personnel on their good experiences using NAARS.

There was no indication in the survey that NAARS usage is overtly discouraged. In general, researchers appear very willing to suggest or to use NAARS when it is believed that it would be beneficial. The level of encouragement, however, is difficult to assess. In the final analysis, encouragement is dependent upon the level of training provided and the active support of management of the CRU.

* The survey found a variety of billing procedures. They included: 1) a flat charge per search of either \$50 or \$100 (one firm), 2) variable costs, or a multiple of such costs, determined from Mead's invoice (3 firms), and 3) hourly rates ranging from \$200 to \$400 (7 firms).

Most respondents feel that NAARS has no current competitors when the objective is searching a broad base of annual reports for examples of disclosure. In the past, Disclosure Journal fulfilled this function for most of the CRUs examined. Interestingly, Disclosure Journal continues to be an important research tool for three of the CRUs, while the remaining eight indicated little or no current use. Reasons given for current use were: 1) finding examples in areas where Disclosure Journal is not obsolete, 2) providing search terms for NAARS use, 3) its low cost, and 4) ease of use.

Respondents were asked to compare NAARS to a hypothetical manual index system such as a current Disclosure Journal. Only five CRUs concluded that NAARS would definitely be better than an up-to-date manual index system, while two felt strongly that a manual index would be superior. Most did consider NAARS and manual indexes to be compatible. Many individuals have considerable experience in using manual indexes and find them easier to use than NAARS. On the other hand, most respondents indicated that with NAARS they were able to retrieve examples that would be impossible to obtain through a manual system.

PERSONNEL WHO USE NAARS TERMINALS

Respondents were asked to provide information about NAARS usage for their entire firm, as well as for their specific CRUs. Estimates of the total number of persons in each firm who have been trained to use NAARS were:

<u># people trained</u>	<u># of firms</u>
1 - 5	1
10 - 30	7
40 - 70	3

All firms appear to be quite selective in deciding who is to be trained to use NAARS. The above range in numbers of people trained, reflects such factors as the number of terminals in the firm and the rotation policy of personnel at the CRU. Seven of the firms have either one or two terminals, while the remaining four firms range between three and seven terminals. Each of the three firms which indicated the largest number of people trained also have three or more terminals. Individuals who are trained in NAARS usage at a CRU and then rotate back to the field also impact on the total number of people trained. The degree of impact is necessarily dependent on the size of the CRU and the nature of its rotation policy.

Respondents were asked to estimate the percentages of the total number trained who were partners, managers or staff. The average percentages are: partners - 24%, managers - 47% and staff - 29%. It should be noted, however, that partners comprise much less than 24% of the regular users of NAARS. This difference appears to relate to the widely-held belief that there must be encouragement by high level people if NAARS is to be used effectively. The training of many partners is apparently aimed at providing them with a basic knowledge and appreciation of the system.

The location of the terminals and actual usage information both indicate that centralized research is by far the primary application of NAARS. Direct use by field offices is minimal. The remaining portion of this section on personnel who use the NAARS terminals will focus on the CRUs.

As indicated previously, the majority of CRUs examined consider NAARS to be a major research tool. This is also reflected in the percentage of professionals in the CRUs who regularly use NAARS:

<u>% of professionals in CRU using NAARS regularly</u>	<u># of firms</u>
10 - 25%	2
26 - 50%	2
51 - 75%	1
76 - 100%	6

The total number of regular users in each CRU is summarized below:

<u>Total number of regular users in CRU</u>	<u># of firms</u>
1 - 5	6
6 - 10	2
11 - 15	2
16 - 20	1

As can be seen, the total number of regular users is typically five or fewer. The three firms with eleven or more regular users do, however, represent three of the four highest users of NAARS in terms of average monthly usage.

When regular users at CRUs are classified by their staff level, the average percentages are: partners - 8%, managers - 46%, and staff - 46%. As previously noted, these percentages indicate that partners represent a much smaller portion of regular users than their relative percentage of total people trained to use NAARS. These averages, however fail

to show the considerable diversity that does exist. In three CRUs, only staff are regular users, while in two others, managers are the only regular users. One respondent indicated that partners comprise almost half of the regular users in that CRU.

In most CRUs the partners are permanently assigned, while the managers tend to rotate back to field offices. Tenure decisions with respect to staff appear to be divided between the use of permanent researchers and new people who will rotate out to field offices. Rotating personnel typically outnumber permanent people. The period of time such people are potentially available for NAARS research is dependent on their "tours of duty." Decisions on how to use these people vary widely. One firm makes no attempt to train its managers who rotate into the CRU for only a three to six month period. In contrast, other firms arrange for everyone in the CRU to be trained to use NAARS, even if they do not become active users. Two CRUs noted that their more recently trained researchers tend to use NAARS in responding to field inquiries more often than any other group.

Respondents were asked to indicate essential qualities a NAARS user should possess. Attributes volunteered were:

- 1) accounting background and/or experience
- 2) mathematical ability (logic for developing strategy)
- 3) good vocabulary
- 4) familiarity with financial statements
- 5) research orientation, and
- 6) familiarity with computer capabilities

These responses undoubtedly were based on the needs of the fairly sophisticated user. Given the fact that NAARS applications range

from the retrieving of simple examples to assisting in complex research, it is not surprising that the users of NAARS actually vary from secretaries with no formal accounting background to partners with years of professional experience.

There are advantages and disadvantages for using people at any given level. While the partners would exhibit many of the above qualities, questions might be raised as to the best use of their time and perhaps their adaptability to entirely new approaches. For managers, two contrasting viewpoints were encountered. Some individuals felt that managers are the most efficient level person to use the system, while others felt managers to be overqualified. This diversity is undoubtedly influenced by the type of activities in the specific CRUs.

When the CRUs were asked about using paraprofessionals to operate the terminals, there was considerable agreement that paraprofessionals could be effective only if they had sufficient grasp of accounting terminology and concepts and were supervised by an appropriate professional staff person. A stronger position taken was that paraprofessionals were out of the question because only trained accountants could use NAARS effectively. It is interesting to note that two firms, in fact, have found it satisfactory to use non-accountants to regularly perform NAARS searches for examples of financial statement disclosure. These persons include undergraduate accounting students, librarians and secretaries.

Organized training for NAARS users is typically limited to the half-day session provided by Mead Data Central. Only two CRUs offer additional

in-house training of any formal nature. The majority of respondents felt that Mead's training was of some value in providing an introduction to the mechanics of the system. The most common complaint was that instructors lacked sufficient accounting background to provide relevant examples. It was also suggested that it would be helpful if "update" sessions were made available on a regular basis.

None of the CRUs had any personnel who had received NAARS training in a business school. Only a few firms indicated that getting hands-on experience with NAARS at the university level would be useful, principally because they viewed the primary use of the system as likely to remain with centralized research groups. Introducing the concept of computerized document retrieval at the university level was considered more worthwhile, particularly when combined with developing the students' understanding of researching literature. The primary benefits of such training were viewed as the likely increased receptivity of future personnel toward automated data retrieval in general and toward the function of centralized research groups in particular.

All respondents agreed that the formal Mead training could only acquaint the potential user with the mechanics of the system, and that the real learning process takes place when NAARS is actually used in connection with day-to-day problems. Opinions on the minimum period of time necessary to obtain an average level of proficiency varied from two months to a year of continuous use (that is, at least 5-6 searches each month.) There was general consensus that one's proficiency is easily lost if NAARS is not used continuously. Overall proficiency on NAARS was assessed by survey respondents as better than average where the users have been

with the department for longer than one year. Proficiency in the mechanical operation of the terminal appeared to be relatively easy to obtain. The two major challenges to the researchers were framing the appropriate search requests and identifying new types of applications.

In most CRUs researchers have wide latitude in both the selection and application of research sources. This is reflected in the way in which NAARS is used. Eight of the respondents indicated that for a given problem, it was generally one person's responsibility to decide to use NAARS, frame the search request, and operate the terminal. Within this group exceptions to this procedure generally involve new staff or paraprofessionals who tend to be involved primarily in terminal operation. Consultation with others is also common when developing the search strategy for a difficult problem. Of the three other CRU's, one requires authorization from the field, another requires a supervisor's approval and the third has NAARS requests channeled from eight to ten researchers to one principal terminal operator.

Respondents generally felt that their people enjoyed using NAARS. It was often added that, of course, their people did a variety of things, and attitudes might be less receptive if NAARS research was all a person did. Opinions varied on how much centralization of NAARS usage there should be within the CRU. It was generally felt that each researcher should perform his own searches as part of his overall research effort. In contrast, in one firm, a manager is designated to serve as the NAARS coordinator even when (s)he is not involved with field inquiries. As coordinator, (s)he will do some complex searches and consult with other users on their use.

DEVELOPMENT OF FIELD AWARENESS OF NAARS CAPABILITIES

All CRUs examined are similar to the extent that it is always the field's responsibility to request help. With respect to increasing utilization of NAARS, two basic approaches are possible. One tactic would be to "sell" the idea of a centralized research group without reference to specific resources such a group would use. The idea here is that increased utilization of the CRU would, at the same time, increase the number of possible NAARS applications. While not necessarily incompatible with the former, the second approach would be to focus more on the "selling" of NAARS as a specific research tool available to the field through the CRU. The presumption here is that NAARS adds a new dimension to the capabilities of the CRU and the field must be aware of this potential before a wide range of NAARS-related problems would start flowing into the CRU. In this study, we examined this second approach--development of field awareness of NAARS capabilities.

As noted previously, only a few CRUs make it standard operating practice to inform the field that NAARS was used in researching particular inquiries. Furthermore, only three respondents indicated that NAARS is described in a firm manual. In these cases, the description is typically covered as part of a summary of the functions of the CRU.

Senior training programs represent the lowest staff level training program at which NAARS is introduced. Three firms have some discussion of NAARS at this level--two on a continuing basis and one only sporadically.

The frequency with which NAARS is discussed at manager and partner meetings is also not high. Six respondents indicated that NAARS capabilities have not been a topic at either manager or partner meetings. Only two firms have arranged for continuing coverage of NAARS at regular meetings of managers or partners. One individual commented that there tended to be an increase in NAARS search requests when a training program or meeting included an actual demonstration of the system in contrast to just a lecture on its features.

The most common device used to develop field awareness of NAARS has been through articles in internal publications. Eight respondents indicated this approach. These efforts, however, appear to generally have been sporadic and concentrated mainly during the period when NAARS was first acquired by the firms. A variety of other methods for increasing field awareness have been used. These include:

- 1) letters describing NAARS to all partners and managers
- 2) distribution of examples which illustrate good NAARS applications
- 3) discussion of NAARS in certain self-study courses, and
- 4) rotation of CRU personnel back to field offices

At each CRU, the person(s) interviewed were asked to estimate the percentage of field personnel with various levels of awareness of NAARS. Most respondents found this difficult to do and cautioned us about the "best guess" nature of their responses. Nevertheless, some general observations can be made. Field personnel with considerable awareness of NAARS capabilities were primarily those persons who had worked at the CRU at some time. Two respondents commented that these "alumni" are often

the CRU's best customers. Only two individuals were willing to estimate that even 25% of their field audit partners and managers understood NAARS sufficiently to know its basic operating characteristics (full text, multiple-term search capability, etc.). Only four respondents estimated that over 50% of their field audit partners and managers would even recall having heard of NAARS.

EVALUATION OF NAARS

Respondents were asked to evaluate both the general concept of computerized information retrieval for accounting research and their specific experiences with the NAARS system. In terms of importance to the accounting profession in the future, five indicated that computerized information retrieval for accounting research would be important, while six felt it would be extremely important.

An open-ended question was asked of the eleven CRUs on their perceptions of the strengths and weaknesses of the NAARS system. Strengths volunteered by the respondents were:

- 1) the speed of NAARS in processing search requests
- 2) the efficiency of "browsing," particularly in the "KWIC" mode

- 3) the size of the data base which increases the potential for relevant examples, as well as providing some assurance of completeness of the search
- 4) the advantages of full-text searching where the researcher is not "at the mercy" of an indexer, particularly for unique fact or specific technical terminology problems
- 5) the ability to individually tailor search requests so that they may range from being very limited to quite broad
- 6) the ability to use multiple term search requests, particularly where alternative terminology exists or where it is a combination of several factors which best describes the research problem
- 7) the thoroughness of the computer in locating all documents which meet the specifications of the search request
- 8) the relative ease with which the mechanical aspects of terminal operation can be learned
- 9) the efficiency and assistance provided by the interactive features of the system
- 10) use of the system for document retrieval where the identity is already known but the hard copy is not otherwise conveniently available to the researcher.

Respondents were generally able to indicate more weaknesses of NAARs than strengths. This was strongly influenced by the fact that strengths tended to be stated in general terms, while the listing of weaknesses was often quite specific. In a very rough way, the weaknesses noted can be divided between those that are perhaps fundamental to the system and those that are at least potentially correctable. Although the discussion that follows summarizes the variety of complaints raised, it should be noted that no one point was typically raised by even a majority of the CRUs and thus unanimity should not be assumed.

The required creation of a unique search request for every new problem represents both an important strength and a fundamental weakness of NAARS. This approach places heavy emphasis on the selection of the proper word combination to be used in the search request. Most CRUs noted that this can be particularly difficult when the problem can only be described by common words, or when no standard terminology exists for a particular situation. Some respondents believe that the use of descriptors reduces this problem, but disagreement exists. Two CRUs indicated that an expanded use of descriptors would be helpful, while three felt there were already too many.

The more specific complaints were as follows:

- 1) required display of the "SELECT" menu before an option in this mode can be chosen
- 2) lack of control over and slow speed of the display screen
- 3) inability to simultaneously cross-file search
- 4) inconsistency in the data base, in terms of not always having the same companies represented
- 5) lack of segmentation of accounting policy footnote
- 6) cost of terminals
- 7) inability to mathematically search most segments
- 8) slow speed of printer
- 9) printer output unwieldy and of poor quality
- 10) inadequate explanation of descriptors
- 11) deskbook not complete enough
- 12) deskbook too complex
- 13) lack of compatibility with ancillary data systems

- 14) limitations in displaying certain tabular and textual material--need more information on the screen at one time

Most CRUs are generally satisfied with the existing NAARS data base. With respect to the annual report files, only one CRU indicated that reduction of the data base might be appropriate. Three CRUs would consider some general expansion of the annual report data base, while three others expressed a strong desire for more small companies to be represented. Interestingly, five CRUs specifically stated that more small companies were not necessary. This split is undoubtedly influenced by differences in the client bases of the firms.

10-K's were the only new type of document that a substantial number of the respondents expressed an interest in adding to the data base. A majority of the CRUs indicated that inclusion of 10-Ks would be useful to them, but most indicated that such an expansion would probably not be cost-justified. There was only very small interest in the addition of such documents as textbook material, quarterly reports or other special purpose SEC filings.

The CRUs were asked to express their views on impediments to expanded usage of NAARS. The range of responses, many of which go back to the previously discussed weaknesses of the system, included:

- 1) cost containment
- 2) users' low proficiency in framing search requests and efficiently identifying pertinent documents among those retrieved
- 3) lack of field awareness

- 4) small size of CRU
- 5) incompatibility of the system with time sharing
- 6) attitudes of management persons about computerized research
- 7) timeliness of the data base

With respect to the last impediment, timeliness, it should be noted that several CRUs observed that the lag was unavoidable. In the realm of new, emerging problems, someone obviously has to deal with them before their solutions can appear in the data base for others to access.

In evaluating NAARS, the CRUs were also asked if this type of system would lend itself to cooperative efforts among firms. Beyond the possibility of sharing access to a terminal at the field level, there was considerable agreement among the eleven CRUs that cooperative efforts among them would not be desirable. Even shared access would require close physical proximity to the terminal because of the fast turn-around time required for much accounting research. While some of the CRUs might occasionally run a NAARS search for another, smaller, firm, it was quite clear that all eleven respondents desired to maintain complete control over their own research. Legal, confidentiality and competitive reasons were cited as supporting this policy.

OTHER USES OF THE SYSTEM

Although searching the annual report files in response to field inquiries is clearly the primary application of the system, other uses were

also reported. The literature files are used by most of the firms but typically account for less than 10% of total NAARS use. Their primary application has been in collecting all references on a particular topic, be it for a policy statement, legal department research, or an important field question. The majority of the firms surveyed subscribe to INFORM and the New York Times Data Base, two options available to NAARS subscribers. INFORM's digest of articles has been found useful in preparing speeches, articles and engagement proposals.

The creation of private files reveals an added dimension of the system that may have considerable long-run importance. Only two firms have actually set up private files on the Mead system. Their files include firm manuals, technical up-dates sent to the field, and documentation relating to technical inquiries. With one system these firms are able to search a broad full-text data base of both internal and external documents for examples and precedent.

One respondent observed that full-text searching was uncovering relevant material that simply would not have been located using manual indexes. Given the complexity of modern business operations and the concomitant "explosion" of official pronouncements and firm-generated technical documents, computerized retrieval of both external and internal information may eventually be the universal research mode for the CRUs of large public accounting firms.

FUTURE PLANS

Respondents generally indicated no definite plans for any major changes related to their utilization of NAARS. The CRUs seem basically

content to continue with the systems and procedures that are currently in place. The few changes being considered are:

- 1) introducing NAARS into more continuing training programs at manager or in-charge staff level - 3 CRUs.
- 2) creating or modifying private files on the Mead system - 3 CRUs.
- 3) adding more terminals - 1 CRU.
- 4) expanding the use of paraprofessionals - 2 CRUs.

CONCLUSIONS AND OBSERVATIONS

This study reports on certain aspects of the research activities of eleven large CPA firms. In the first section, the operations of research departments of the subject firms, which we termed Centralized Research Units (CRUs), were described and three hypothetical models of varying research orientations were developed. We then characterized each CRU by its approximation to a hypothetical model and described some of the basic operating characteristics of the CRUs. The second major section of the paper reported on the role of NAARS within the CRUs. Many specific aspects of NAARS utilization were discussed.

The emphasis in the preceding sections was on reporting actual CRU activity. The final section of this study summarizes the authors' conclusions and observations concerning the major issues which will affect centralized research and the use of computer-assisted data retrieval in CPA firms.

OBSERVATIONS ABOUT CENTRALIZED RESEARCH

The models of CRU activity developed in the first section of the paper were intended to provide focal points for discussion and were not proposed as either precise descriptions of actual CRUs or ideal states toward which CRUs should evolve. We do feel, however, that there are certain fundamental implications of choosing

one orientation over another; implications which may affect activities at several levels of professional practice.

One major issue relates to the traditional practice of having field personnel bear the ultimate responsibility for client-related accounting decisions. This bias for individual professional autonomy, we found, is very strong and pervasive. A major challenge will be to make such an individualistic philosophy compatible with the changing modes of professional research - changes brought about by two major causes: (1) there is more information available than one person can possibly assimilate and (2) there is pressure on firms to standardize their accounting decisions. The problem is that autonomy of field decisions and the orientation of the CRUs are not independent. As the CRU make relatively more decisions, the field makes relatively less and vice versa. Weighing the benefits of field autonomy on one hand and centralized expertise and standardization on the other is required before a rational decision on CRU orientation can be made.

A related category of issues concerns the use of internal and external precedents as the basis for accounting decisions. The current interest in improved quality control within CPA firms could lead to a demand for more consistency in accounting decisions. It is not implausible that firms will have to demonstrate that mechanisms exist which give reasonable assurance that similar factual situations will result in similar accounting decisions or at least that certain research resources are available to all audit staff responsible for

accounting decisions. In any event, we feel that there will be increased pressure on firms to be internally consistent in regard to accounting decisions. This will probably lead to more comprehensive and accessible subject files which will increase further the importance of internal precedent as a key determinant of many accounting decisions.

External precedents are at the present time primarily used as means of putting problems into context or as background information for decision making. We do not feel that it is likely that major firms will make a general practice of allowing external precedents to control their decisions. The volume and variety of researchable questions, however, make surveying other firms' practices, as an initial phase of research, a useful technique.

Regardless of the positions taken concerning field autonomy and reliance on precedents, we feel that greater specialization in research is inevitable. The actual physical location of the research specialist is neither as crucial nor as predictable. It may turn out that each major field office or perhaps regional office will have a CRU-type staff, or that current industry specialists will expand their staffs to include more researchers. Another possibility is that current CRU operations may be expanded. In any event, it is unlikely that field auditors will have either the time or inclination to perform all of the necessary research. On the other hand, auditing experience seems to be a desirable attribute for researchers. The well-established practice

of rotating auditors to research appointments will probably continue, but we feel that the number of permanent research appointments will also increase. Physical locations of researchers will depend to a large extent on the future innovations in techniques of information transfer.

It is certainly possible that field personnel will have greater access to some forms of prior research either in hard copy or through electronic means. We do not visualize, however, that the field personnel will have all the techniques and devices available to the CRUs to perform original research. Some form of CRU will probably act as the initiator or clearing house for entries into the major subject files. Industry specialists and research specialists, through their consulting and decision making at one or more locations, will provide a great deal of the cases which will make up the files.

Another issue facing the profession is the research capabilities of smaller and middle sized firms. Discussion to this point was confined to very large firms. Other, smaller firms, however, have much the same kinds of research needs, and yet may not have the volume of activity which justifies in-house research departments. Our study did not investigate these firms directly, but we know of two sources of research services for these firms. The AICPA offers NAARS searches to CPA firms through its New York City terminal. (See Goodman, 1976.) Another source of research services for individual firms could be the various associations of CPA firms. We are aware of one such organization which performs research for its member firms.

Certainly these relationships are not completely analogous to the CRUs described in the study. We feel that it is extremely likely, however, that all CPA firms will have increasing needs for research specialists and that this will lead to new modes of research for all engaging in public accounting.

OBSERVATIONS ABOUT COMPUTER-ASSISTED DATA RETRIEVAL

The NAARS system currently plays a very unique role in the activities of the accounting profession. It exists primarily as a research source financed by a relatively small number of large firms and used predominantly by their CRUs. The overall cost of the system to the subscribers, while substantial, is probably reduced because of its being part of the previously existing and much larger legal research system, LEXIS.

All respondents indicated that the ability to access a broad base of financial statements was important in their research function. Further, NAARS was identified as the only system, manual or electronic, which currently exists for meeting this objective. Given this situation, expertise in the utilization of NAARS would seem important. Although admittedly subjective, it is our impression that a wide range in levels of expertise exists between the people characterized as regular users of NAARS. Only a few individuals appear to have developed high levels of both efficiency and effectiveness in their NAARS research techniques. This is not surprising in that full-text searching is a new technique for most people. Further, the personnel

rotation policies of many CRUs and the relatively limited number of NAARS applications encountered by most CRU personnel also hinder the development of extremely high levels of expertise. Other considerations about the desired level of proficiency are also important. It is possible to argue that given the current level of NAARS usage, training a person to a moderately high level of effectiveness (but with less attention to efficiency) is the most that can be cost-justified. If the future brings expanded NAARS usage, a different strategy might be employed. The important point to recognize is that NAARS research represents a skill. As with any other skill, levels of expertise vary. It is incumbent on each firm to determine if current NAARS expertise is compatible with the role of NAARS in the research efforts of that firm.

One objective of this study was to gain insight into the factors which cause different levels of use of NAARS by the eleven CRUs. This is a difficult problem. No one factor seems to be controlling and many are amenable to only quite subjective evaluation. Further, in any one CRU, factors pushing both for and against increased usage typically exist.

Our observations are divided into two general categories - factors which impact on the total number of field inquiries coming into a CRU and factors which have an effect on the percentage of inquiries which result in NAARS applications. The total number of field inquiries is influenced by both overall firm size and management decisions about the role of the CRU. In this regard, it is interesting

to observe that the three CRUs which we classified as having a Model I orientation (examples only) also had the fewest total field inquiries and that these were not necessarily the smaller of the firms in our sample. On the other hand, the three CRUs with the most field inquiries were all very large firms. Volume of field inquiries is important in that this imposes a limit on the number of potential NAARS applications.

The percentage of field inquiries which are translated into NAARS applications appears to be influenced by the following factors (no priority intended).

1. Field awareness of NAARS capabilities. Discussions and demonstrations of NAARS on a continuing basis at partner and manager meetings appears to be the most effective method of increasing NAARS awareness by the personnel who decide whether or not to contact the CRU.

2. Expertise of CRU researchers in utilizing NAARS. Individuals who are familiar with a research tool and skilled in its application are more likely to use it or suggest its use to others. In this regard, rotation of CRU personnel may limit their potential expertise and decrease potential NAARS utilization.

3. CRU management attitudes toward NAARS. Management attitudes about the effectiveness of NAARS and reasonableness of its costs appear to strongly influence the actions of CRU researchers.

4. Role of research staff in formulation and processing of NAARS search requests. Different approaches were observed. In some CRUs most of the researchers are regular users of NAARS, while in others the majority of researchers are not regular users but are expected to channel "NAARS" problems to one or a few individuals who are the primary users. The latter approach presents potential problems. It appears that when the majority of researchers are not involved in formulation and processing of NAARS search requests on a fairly regular basis, the inclination to use NAARS declines. This is not to suggest that some delegation of routine applications or consultation on difficult problems is not appropriate. We did observe that initial field inquiries are typically not channelled through one person. If the researcher who initially handles the inquiry is a regular user of NAARS, the likelihood of an application is greater than for a non-user.

Our concluding comments about computer-assisted data retrieval look to the future and relate closely to our earlier comments on developments in centralized research. The role of computerized information retrieval in professional accounting research could become vastly different than we find today. Developments both within and outside the profession will have an impact. To the extent that internal precedent becomes increasingly important for maintaining quality control and limiting potential liability, the private data bases of large accounting firms will expand in their size and complexity. Electronic storage and access may be the only feasible methods of managing the expanded data bases.

Developments in computer technology will also be important. A decline in costs could expand the number of potential user firms and permit expansion to practice offices. At that point, serious questions would have to be addressed as to the information which should be made available to the field and the degree of centralization or decentralization of the research process.

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APPENDIX

Research Instruments

General Discussion Questions:

A) The Research Process

- 1) Describe, in general terms, the research process in your organization, i.e., the procedures used to resolve technical accounting (tax) questions which originate in the field.
- 2) What is the role of LEXIS/NAARS (L/N) in the research process?

B) Personnel

- 1) Who uses the L/N terminals?
- 2) What is the nature of the training for those directly involved in L/N research?
- 3) What has been done to develop "field" awareness of L/N capabilities?

C) Evaluation of the System

- 1) What are the strong and weak points of the L/N system?
- 2) What is your evaluation of the importance of the system to the profession?

D) Other uses of the system

- 1) Describe how the system has been modified or augmented for your particular uses.
- 2) Is the system used as a teaching aid in general training programs?

E) Future Plans for the System

- 1) What plans do you have for future uses of the system?

Background Data:

- 1) Is there a formal write-up of your firm's accounting (tax) research process, e.g., in a firm manual, which we can review?

- 2) In order to understand your general research procedures, can we review a specific example of an accounting (tax) research request, solution and related documentation?

- 3) What is the approximate total number of individuals within your firm who have been trained to answer research questions using the LEXIS/NAARS system?

- 4) Of the total indicated above, what are the approximate percentages of:

 partners _____ %

 managers _____ %

 other staff _____ %

- 5) Indicate below, by office, the number of LEXIS/NAARS terminals in your firm:

	<u>City</u>	<u># of Terminal</u>
Office #1	_____	_____
Office #2	_____	_____
Office #3	_____	_____
Office #4	_____	_____
Office #5	_____	_____
	_____	_____
	_____	_____

6. Indicate the types of the above offices (e.g., administrative headquarters, regional headquarters, field offices, etc.):

Office #1 _____
 Office #2 _____
 Office #3 _____
 Office #4 _____
 Office #5 _____

7. Indicate approximate terminal usage by the above offices:

	<u>#Hrs.</u> <u>per month</u>	<u>% of Time on</u> <u>Tax Research</u>	<u>% of Time on Accounting</u> <u>Research</u>
Office #1	_____ hrs.	_____ %	_____ %
Office #2	_____ hrs.	_____ %	_____ %
Office #3	_____ hrs.	_____ %	_____ %
Office #4	_____ hrs.	_____ %	_____ %
Office #5	_____ hrs.	_____ %	_____ %
	_____ hrs.	_____ %	_____ %
	_____ hrs.	_____ %	_____ %

8) Indicate the approximate number of people at the above offices who regularly perform searches on the LEXIS/NAARS system:

	<u># of People Who Perform Tax Searches</u>			<u># of People Who Perform Accounting Searches</u>		
	<u>Partners</u>	<u>Managers</u>	<u>Others</u>	<u>Partners</u>	<u>Managers</u>	<u>Others</u>
Office #1	_____	_____	_____	_____	_____	_____
#2	_____	_____	_____	_____	_____	_____
#3	_____	_____	_____	_____	_____	_____
#4	_____	_____	_____	_____	_____	_____
#5	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____

Interview Instrument

A) The Research Process

Open

- 1) Describe, in general terms, the research process in your organization, i.e., the procedures used to resolve technical accounting (tax) questions which originate in the field.

Probes

- 1) What kinds of questions flow through the research process?
- 2) Where do questions originate?
- 3) What is the organizational structure of the research effort, e.g., what is the degree of centralization, is one person responsible for overall effort, do individual researchers have latitude?
- 4) Who can ask questions of technical specialists?
- 5) Is there formal record keeping of research request?
- 6) What are the typical sources used to answer research questions?

- 7) What is the nature of the "final" review?
- 8) What are the final end-products of the research process?
- 9) What is the nature of the decimation of the end-products of the research effort?

Open

- 2) What is the role of LEXIS/NAARS (L/N) in the research process?

Probes

- 1) Can people in the field request L/N search specifically?
- 2) What research, if any, must be done using other techniques before L/N can be used? After L/N?
- 3) Are there guidelines for when L/N is to be used in answering a research question?
- 4) Are requestors told directly that L/N was used in their research effort?
- 5) Are indications made in "in-house" topic or subject files that L/N was used?

- 6) Is any separate file, index, etc. kept on L/N applications to research questions?
- 7) What is the nature of the L/N output in terms of degree of use of the printer, the use of 'mail it' from Mead, and the subsequent search of other sources after their identifications by the L/N systems.
- 8) Is L/N overtly encouraged or discouraged in the research effort? How?
- 9) Compare L/N to other research tools.
- 10) Is the L/N time recouped directly in billing to clients?

B) Personnel

Open

- 1) Who uses the L/N terminals?

Probes

- 1) What is breakdown between (a) those who decide to use L/N, (b) those who frame L/N research requests, and (c) the L/N terminal operator? What is the nature of the interactions between the individuals?

- 2) How long would one person, at any level, remain working directly or indirectly with L/N?
- 3) What is your impression of the "L/N expertise" of the primary person or team that perform the functions under 2) at each terminal location?

Open

- 2) What is the nature of the training for those directly involved in L/N research?

Probes

- 1) Is L/N training mostly formal or informal?
- 2) How much time does it take to train an operator/researcher?
- 3) Should training on L/N be done in universities?
- 4) Have your people received university training on L/N?
- 5) Are Mead training and training aides adequate? How should they be enhanced?

Open

- 3) What has been done to develop "field" awareness of L/N capabilities?

Probes

- 1) % of field personnel with considerable awareness of L/N?
- 2) % of field personnel which know basic functions of L/N but not 1)?
- 3) % of field personnel which have heard of L/N but not 1) or 2)?
- 4) Education of field personnel - centralized or decentralized process? Continuing or sporadic?
- 5) Have you observed any relationship between level of field awareness and requests for use of the system?

C) Evaluation of the System

Open

- 1) What are the strong and weak points of the L/N system?

Probes

- 1) What kind of questions are best and worst suited for L/N use?
 - a) General categories
 - b) Specific categories

- 2) Why are the systems not used more?

- 3) How would you improve the L/N systems?
 - a) Terminal
 - b) Data Base

- 4) Would any of the following be useful: a) 10-K's, b) Proxies, c) Prospectuses, d) Other SEC Materials

- 5) Would cooperative efforts among firms on L/N usage and/or training be feasible and/or desirable?

- 6) Have cost studies and/or cost-benefits analysis of any kind been attempted?

- 7) How do users of the terminal like that duty?

- 8) Are there scheduling problems?

- 9) Is the system difficult to use? Has your perceptions of the difficulty change?

Open

- 2) What is your evaluation of the importance of the system to the profession?

Probe

- 1) Have your perceptions of its importance changed?

D) Other uses of the system

Open

- 1) Describe how the system has been modified or augmented for your particular uses.

Probes

- 1) What is the nature of your private files?
- 2) What is the approximate breakdown in usage of the private versus the public files?

Open

- 2) Is the system used as a teaching aid in general training programs?

Probe

- 1) What are the types of training programs and levels of personnel?

E) Future Plans for the System

Open

- 1) What plans do you have for future uses of the system?

Probes

- 1) In terms of training?
- 2) Research?
- 3) Exposure of personnel?
- 4) Special (private) files?
- 5) Indexing?
- 6) Adding or deleting terminals?

F) General Information

Open

Do we have your permission to request follow-up information on the above directly from Mead Data Central?