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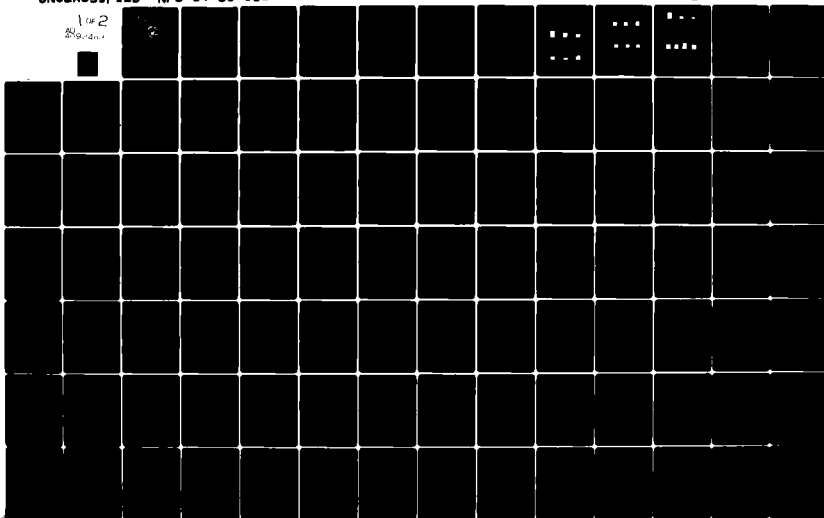
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THESIS

EVALUATION OF THE UTILIZATION OF RESEARCH
AND DEVELOPMENT RESULTS BY THE
NAVAL FACILITIES ENGINEERING COMMAND

by

Michael Gresham/Akin

Gerald Dwayne/Nix

Gordon Ross/Jefferson

September 1980

Thesis Advisor:

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Prepared for:

Naval Facilities Engineering Command
Alexandria, Virginia 20361

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NAVAL POSTGRADUATE SCHOOL
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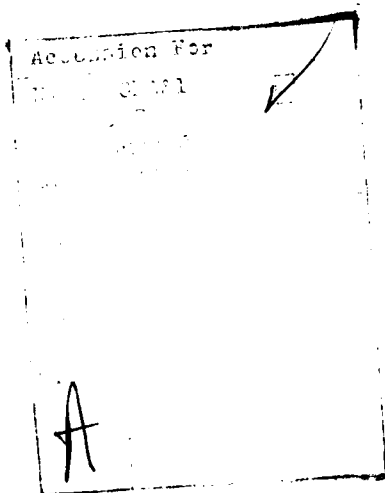
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of technology. This thesis is an effort to determine the following: Is relevant information being received in the field? How much is received? Why is it not received? The thesis also measures the progress made by NAVFAC over the past decade and examines methods to increase the technology reception capacity of the users.

The results of the study strongly indicate laboratory support has steadily improved during the past twelve years and the field organizations that utilize research results have a positive opinion of the laboratory and its research data.



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Evaluation of the Utilization of Research and Development
Results by the Naval Facilities Engineering Command

by

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MASTER OF SCIENCE IN MANAGEMENT

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ABSTRACT

Every major command within the Department of Defense shares an acute interest in the cost effective utilization of research and development results in the field. The Naval Facilities Engineering Command's awareness of the frequently heard statement from the field, "We tell the laboratory what is needed in the field; why don't they research it?," resulted in a long-range program to enhance the organization's transfer of technology. This thesis is an effort to determine the following: Is relevant information being received in the field? How much is received? Why is it not received? The thesis also measures the progress made by NAVFAC over the past decade and examines methods to increase the technology reception capacity of the users.

The results of the study strongly indicate laboratory support has steadily improved during the past twelve years and the field organizations that utilize research results have a positive opinion of the laboratory and its research data.

EXECUTIVE SUMMARY

The Naval Facilities Engineering Command (NAVFAC) initiated a program in 1962 to enhance utilization of research and development results within the NAVFAC organization and to improve accessibility of technological expertise in the Civil Engineering Laboratory (CEL) to the user in the field.

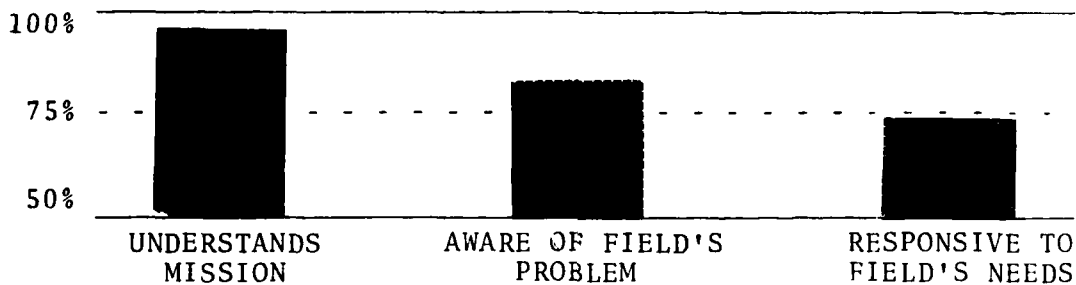
In 1967, assistance was requested from the Naval Postgraduate School (NPS) to assist the CEL in determining use of technical data originating in the CEL and distributed to the field. The NPS conducted a study in 1968 and determined deficiencies did exist in the documentation and distribution systems. In order to determine the results of efforts to improve technology transfer within NAVFAC subsequent to the 1968 survey, the NPS conducted a similar survey in 1980.

Over 2000 questionnaires were mailed to Naval organizations that frequently utilize technology transferred from the CEL, and 750 were returned for analysis. The response to the 1980 questionnaire indicates the CEL has steadily improved in many areas during the last twelve years and the organizations that utilize CEL research data have a strong positive opinion of their support.

The questionnaire was divided into six major areas of concern; a brief description of the areas and a depiction of the results follow:

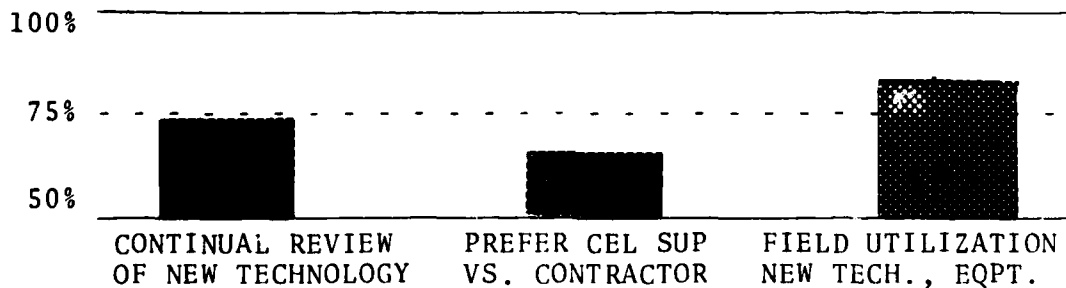
A. AWARENESS OF CEL MISSION AND CAPABILITIES

Determine awareness and understanding of the CEL, its mission and capabilities. Examine user perception of CEL's ability to respond to the technical needs of the field activities.



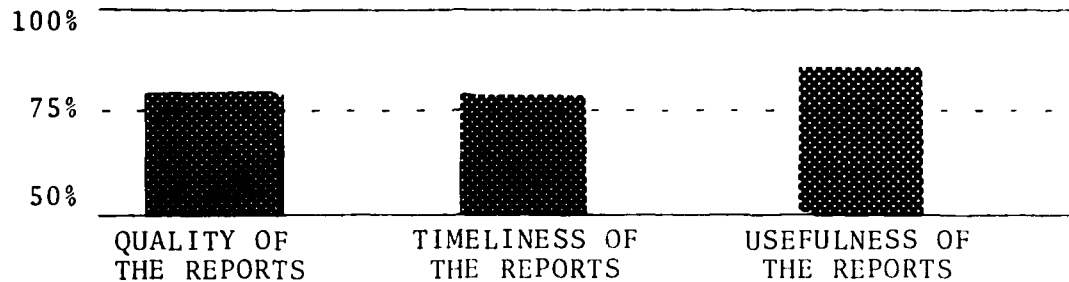
B. UTILIZATION OF CEL REPORTS

Measure field utilization of CEL reports, field organization's efforts to maintain state-of-the-art status, and determine field units' preference for CEL support versus contractor support.



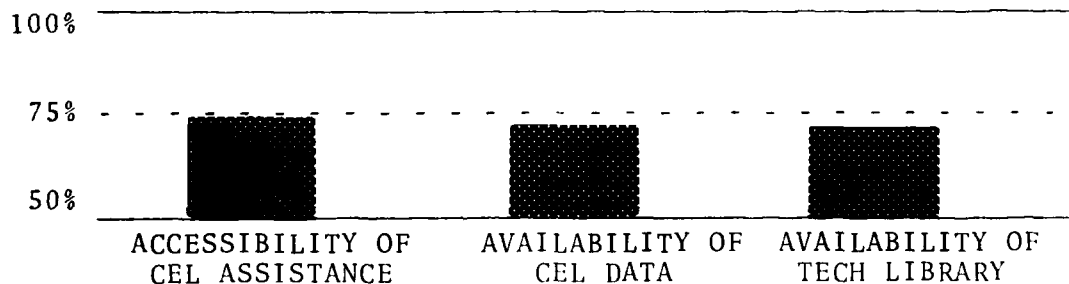
C. CEL RESEARCH REPORTS AND FEEDBACK

Examine quality of CEL technical data and timeliness of responses to the field activities.



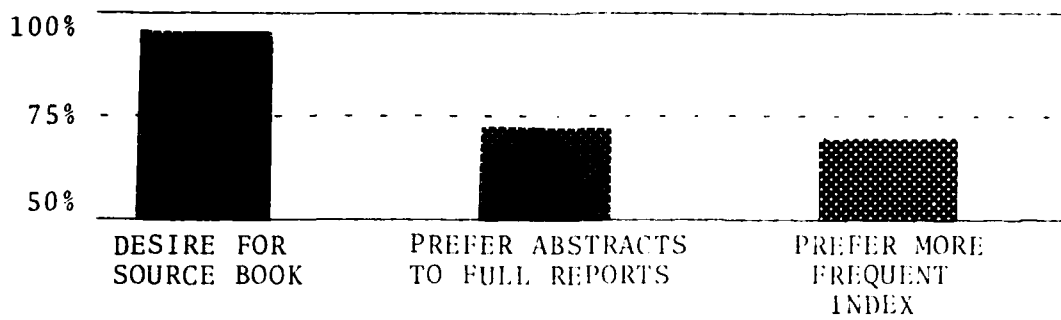
D. ACCESSIBILITY OF RESEARCH DATA

Determine accessibility of CEL technical assistance to the user and availability of technical research data in the field.



E. DESIRE/NEED FOR A RESEARCH SOURCE BOOK

Determine user satisfaction of present reference system of CEL literature and measure the desire of the field activities for a source book that would provide quick reference to research data and innovations documented by the CEL.



F. LIMITATIONS ON FIELD USE OF RESEARCH TECHNOLOGY

Examine limitations in the field precluding the implementation of CEL data such as budget constraints, lack of materials, technical assistance or the requirement of approval from higher authority for implementation.

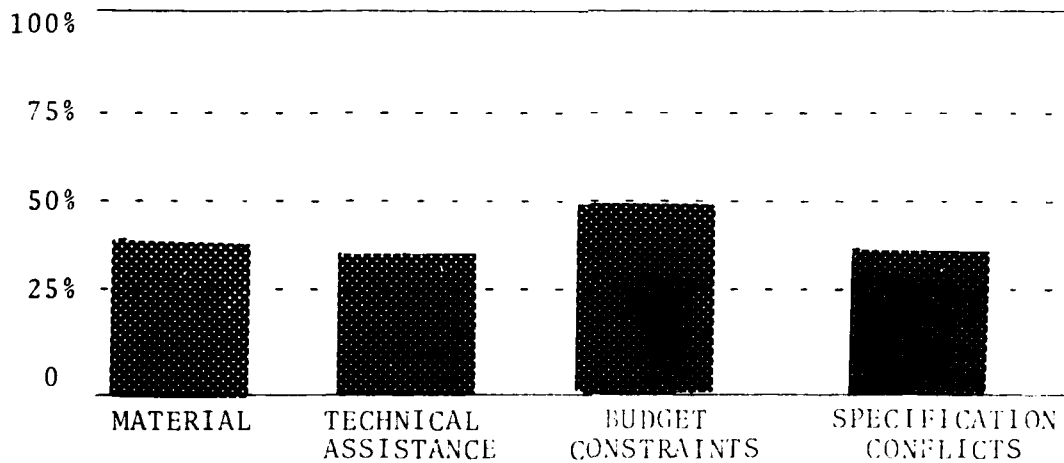


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We would like to acknowledge the help and assistance provided by Mr. Eugene Early of the Civil Engineering Laboratory. His suggestions, insights and critiques were invaluable. Also we are indebted to Mr. Pete Triem, of the Civil Engineering Laboratory, for his assistance in the selection of the distribution list and the subsequent effort in mailing the questionnaires.

I. INTRODUCTION

Gilmore defines technology transfer as "...a purposive continuous effort to move technical devices, material, methods, and/or information from the point of discovery or development to new users."¹

As expenditures for research and development continue to increase, the existence of what Havelock terms "the knowledge gap" had become readily apparent to both the suppliers or sources of technological information and the potential users of the knowledge. Specifically, the Naval Facilities Engineering Command was cognizant of such a knowledge gap and was concerned with attempting to define a technology transfer mechanism which could effectively alleviate the effects of the knowledge gap when implemented.

It is known that the primary cause for the movement of knowledge has been the "pull" force rather than the "push" force. And yet, the bulk of effort has been toward the push responsibility of research people.

DESCRIPTION OF PRIOR EFFORTS TO ENHANCE UTILIZATION OF RESEARCH RESULTS

In 1962, the Naval Facilities Engineering Command (NAVFAC) initiated an innovation program to enhance technology transfer

¹Gilmore, J. S., "The Environment and the Action in Technology Transfer, 1978-1980," Denver, Colorado: Denver Research Institute, University of Denver, 1969.

within the NAVFAC organization. To make laboratory expertise available to the user in the field, an RDT&E Assistance Program was established. This program afforded laboratory personnel to answer, on short notice, inquiries received from field units.

To further improve technology transfer in the command, NAVFAC Headquarters established a program in 1964 that was responsible for directing the effective utilization of research output of the laboratory. Titled the RDT&E Utilization Program, actions were directed from Headquarters through administrative tools such as instructions, memoranda, etc. However, because of the Headquarters' physical separation from the producers and users, the program was not successful and was discontinued in 1966.

Major steps were taken in 1966 to de-emphasize central control of technology transfer and establish a direct dialogue between the laboratory and the field. RDT&E Liaison Officers were assigned to each of the Field Divisions fostering a mechanism of inter-field division transfer of innovative solutions generated in the field and eliminating headquarters interference.

In 1967, NAVFAC Headquarters became quite sensitive to the problem of unused technology and directed the Civil Engineering Laboratory (CEL) to determine the extent to which technical reports were being utilized. The laboratory turned

to the Naval Postgraduate School (NPS) to assist in this effort, feeling the NPS had the personnel with the background and training to approach the problem from a behavioral science point of view rather than from that of a typical "physical science" oriented engineer.

The NPS initial effort resulted in an unpublished progress report by J. W. Creighton, S. Shirley and G. Steadley. This report was followed by a project entitled "Implementation of Research Results," entailing the development of a system for monitoring research projects from proposal through implementation. The intended purpose of the system was to assure timely acceptance and application of research results. The study conducted for the Civil Engineering Laboratory in 1968 began with the assumption that part of the responsibility for use of the CEL's research product rested with the laboratory. A second assumption was that all civil engineering field personnel were aware of the research effort at the laboratory and other new developments generated elsewhere. The study exposed deficiencies in the documentation and distribution systems. Since then, extensive modifications have resulted. The study also indicated gaps in understanding the movement of knowledge.

Two additional major works published by NPS during this period were "Technology Transfer and Utilization Methodology: Further Analysis of the Linker Concept" by J. A. Jolly and J. W. Creighton, 30 June 1974, and "Enhancement of Research

and Development Output Utilization Efficiencies: Linker Concept Methodology in the Technical Transfer Process" by J. W. Creighton, J. A. Jolly and S. A. Denning, 30 June 1972.

In 1971, the Civil Engineering Laboratory established the Field Engineering Support Office (FESO). The FESO's sole purpose was to see that the customers in the field were satisfied and that timely responses to field requests for technical information were provided by the CEL.

It should be noted that all actions taken up to this time to improve technology transfer in NAVFAC and related Navy units were command-initiated actions. In 1971, the General Accounting Office (GAO) conducted a government-wide survey to determine the effectiveness of Federal research efforts. GAO found the following:

- . There was a vast store of federally funded research results lying unused.
- . Lack of policy guidance defining DOD's role in the transfer process.
- . Interpretation by some DOD officials that the Mansfield Amendment prohibited expenditure of DOD R&D funds for other than mission-related work.
- . DOD's concern that the use of staff to assist civil agencies, even temporarily on a reimbursable basis, might lead to reductions in authorized personnel ceilings.
- . Successful uses by one organization of research results were not frequently transferred to other organizations.
- . Substantial evidence in all Federal agencies that missions of research establishments were widely separated from those of operating, functional establishments.

Prior to 1971, a group of individuals from west coast Navy facilities met periodically in what became known as the Navy Technology Transfer Consortium. Later, as interest by other Department of Defense Laboratories increased, it evolved into the DOD Technology Transfer Consortium and in 1975 into the Federal Laboratory Consortium. The Consortium's major function was to coordinate interactions with other public agencies and technology users at the federal, state, and local government levels and with the private sector. The CEL, NAVFAC, and NAVMAT, the Naval Material Command, played a major role in the initiation and development of the consortium.

Subsequent to the GAO audit and the establishment of the DOD Technology Transfer Consortium, NAVFAC and the CEL continued efforts to improve and expand its technology utilization process. Note the following positive efforts.

- . Scheduled periodic meetings between Engineering Field Division (EFD) representatives, Headquarters personnel, and Laboratory scientists and administrators to explore ways by which needed technological information could reach field people.
- . Encouraged field feedback to the Laboratory to indicate needed areas of research.
- . Encouraged the field engineers to pull knowledge from the laboratories' sources by providing Laboratory financial support assistance and by recognizing the assistance in the various laboratory personnel reward systems.
- . Made modifications in the policies for documentation and distribution of laboratory

results so as to encourage interest and "pull" by field personnel.

- . Established liaison with the "CECOS" school to acquaint all CEC officers in training at the school with the laboratory, its efforts and the assistance it could provide.
- . Established a policy of working with industry so that new ideas could be incorporated into industrial products as rapidly as possible with an objective to generate availability as a lower-cost, off-the-shelf, commercial product.
- . Provided assistance and information in many forms through the NAVMAT-sponsored "Navy Fact Sheet."
- . Cooperated with the Naval Material Command, Office of Information, in its efforts to support the utilization of Navy-Generated Research. Sponsored, with NAVMAT, two information transfer symposia.
- . Supported, with research assistance for thesis work, the education programs of many civil engineering officers engaged in study at the Naval Postgraduate School.
- . Sponsored research into research result utilization at the Naval Postgraduate School which has resulted in approximately 40 publications related to the utilization of technological information.
- . Aided other agencies in planning their technology utilization programs.
- . Evolved an evaluation methodology which can demonstrate in dollars the effectiveness and value of the support system.
- . Embarked on a program to market new and appropriate technology in such a manner as to generate a "pull" for the technology among potential field engineers.

These extensive efforts have earned NAVFAC the reputation as a leader in the field of technology utilization.

The technology utilization program has thus received substantial support, but the question has surfaced as to whether or not the research activity is viewed by engineers in the field as enhancing their effectiveness.

OBJECTIVES

The knowledge utilization efforts and actions taken by the Research Office of the Naval Facilities Engineering Command in the past two decades have taken the following general path.

1. A normal period when need for research was recognized by substantial funding support. Careers were dedicated to research. This period was characterized by a broad assumption that research was inherently good. It was taken for granted.
2. A period in which the benefits resulting from R&D investments became questioned.
3. A period in which many actions were taken to assure that the research organization's responsibilities toward securing benefits from R&D investments were being met.
4. A period in which efforts of the preceding period have confirmed but in which questions arose as to whether or not actions taken have been effective, and as to what directions future actions should take.

To summarize this trend: First, a successful on-going R&D program existed; second, a study was made of the program which indicated that some of the mission elements of the R&D community were not being adequately met; third, extensive changes and additions were made in policy and procedure to treat the deficiencies.

A unique opportunity is presented as a contribution to the fourth period by investigating the extent to which effort taken in period 3 satisfies the deficiencies exposed in period 2. This opportunity is addressed in this work under the following objectives.

1. Determine by questioning NAVFAC employees and other commands supported by the CEL whether or not the effort to enhance the effectiveness of RDT&E investments has been beneficial.
2. Determine whether or not communications between field and research people have improved.
3. Determine if there are suggestions from the field for further improvements in the research utilization program.

II. APPROACH METHODOLOGY

MEASUREMENT OF TECHNOLOGY TRANSFER

The Assistant Commander for Research and Development, Naval Facilities Engineering Command, and the Civil Engineering Laboratory (CEL) sponsored a study in 1979 which had the intent of replicating the 1968 studies. It was commended by interviewing field personnel and personnel at the CEL. These interviews included many of the questions used in 1968 and questions designed to determine the morale level at the CEL. It was believed that added work load and the changed nature of work for some of the scientists might have deteriorated morale.

After interviews with 68 individuals, it was found that some of the 1968 questions were not appropriate for a replicative study. Situations had changed, and improved understanding of the Facilities Engineering work environment indicated that the questions showed a lack of appreciation of personnel responsibilities and duties of headquarters and field personnel. This study ended with a recommendation to the Assistant Commander for R&D, NAVFAC not to pursue the replicative study per se, and suggested changed types of questions which might be used if a comparative study were to be undertaken.

Three basic approaches for studying the transfer of technology appeared to be available in conducting this study:

(1) travel to installations and look for specific instances in which CEL reports had been utilized; (2) travel to a number of installations and interview personnel with the intent of determining the extent to which they had utilized the provided information; and (3) mail questionnaires to recipients of CEL reports and attempt to survey the extent to which they are utilized.

The first two approaches were ruled out primarily because of the travel requirements imposed.

The approach adopted was to develop a questionnaire which could be mailed to selected personnel and organizations of the CEL distribution list. The questionnaire was developed with three criteria in mind: (1) attempt to determine why CEL reports had or had not been used; (2) identify mechanisms for the flow of new technology to the field organizations from research laboratories; and (3) determine whether or not there is a need/desire for a different type of technology source document.

It was believed that the questionnaire approach would allow this survey to be conducted under conditions similar to those utilized in the 1968 study.

When taking the broad view of technology transfer, it becomes clear that technology transfer can take many forms. Transfer of CEL-developed knowledge is not limited to those occasions when a construction or modification effort can be

explicitly attributed to someone having read a CEL report. Commonly, and with CEL, transfer does not occur without use. This separates it from education and just knowing. When the product/process is known about but not tried, it is not considered to be transferred. On the other hand, if one knows about the product/process and investigates enough to commit to use it when the occasion arises, then there is a quasi-transfer. However, even this is not considered as technology transfer in its purest sense. A potential for transfer of technology can be claimed when someone has read a CEL report, inasmuch as the information gained can influence him at some later time. In this circumstance, the objective is to make sure that the individual knows of the existence of the knowledge so that it is available for future needs.

The beliefs and attitudes possessed by a recipient of a CEL report can be critically important in determining why he reacted to the report as he did. Therefore, the questionnaires used in this study included questions directed at assessing the individual's beliefs and attitudes about CEL and CEL's reports.

QUESTIONNAIRE DEVELOPMENT

During the original 1968 project, two separate questionnaires were developed and utilized in the survey. The first was the NCEL Report Questionnaire and the second was entitled UCEL User Questionnaire. These two questionnaires addressed specific reports rather than the reports in general.

Since some of the questions on the previous questionnaires were no longer relevant, it was necessary to develop a number of new questions directed toward current conditions.

Initially, ideas for questions were drawn from a wide variety of sources such as the original two questionnaires, a research project conducted by Mr. Bob Hudson, Naval Air Facility, Atsugi (Appendix A), and from questions developed by J. W. Creighton, Naval Postgraduate School, which he used in the personal interviews with civil engineering researchers and scientists. Additional input was solicited from Mr. Eugene Early of the CEL. Mr. Early was the first person assigned to the CEL's Field Engineering Support Office (FESO) and is therefore thoroughly familiar with interface problems between the field and the CEL.

This work revealed six separate content areas within the general topics of technology transfer and the utilization of CEL-developed reports. In other words, after taking a broad view of what factors might cause difficulty in the transfer of technology via CEL and its reports, six areas of concern were identified. These six areas were:

- a. User awareness of the CEL mission
- b. Field identification of needs/requirements to the CEL
- c. CEL research feedback
- d. Accessibility of research data

e. Desire/need for a new research source book

f. Field utilization of research technology

A number of potential questions were written and edited before the first draft was completed. They were administered to a number of Naval Postgraduate School CEC students and their criticisms and recommendations were noted. A second draft was then provided to representatives from the CEL, Engineering Field Division (EFD), CEC officer instructor at the NPS and others familiar with the research. After incorporating the changes indicated on the second draft, the final form of the questionnaire was prepared. See Appendix B.

DISTRIBUTION OF QUESTIONNAIRES

Distribution of the questionnaires was accomplished by utilizing the CEL general distribution list, which afforded the opportunity to obtain the opinion of as many users as possible of CEL technology and its application in the field. Unlike the survey conducted by Mr. Hudson and the personal interviews by Creighton, it received wide distribution, including the Pacific area, European area and the entire United States. Recipients of the questionnaire were the same as those individuals who receive technical data sheets, technical reports, technical notes, technical memoranda and the Guide to Technical Documents from the CEL. Persons outside U.S. Navy organizations were deleted from the list, i.e., Army, Air Force, Coast Guard, and other federal agencies

and industry. Therefore, the responses would reflect only the Navy respondent's views.

III. ANALYSIS OF SURVEY DATA

QUESTIONNAIRE RESPONSE

A total of 2,175 questionnaires were mailed. Of these, 27 were returned to the sender by the postal service for various reasons, i.e., authorized time for forwarding had expired, APO discontinued, undeliverable as addressed, address unknown, moved -- not forwardable, moved -- left no address, etc. An additional 86 were returned unanswered with comments explaining the lack of response, i.e., too new in the position to respond, have never heard of the CEL, have never received a CEL report, etc. Of the remaining 2,062 questionnaires distributed, a total of 750 were completed and returned, a response rate of 36.3%.

CONTENT DEVELOPMENT

When the questionnaire was developed, it was recognized that some of the questions would not be applicable to all recipients. Therefore, questions were categorized under the six major areas, and those questions or sections not applicable to a respondent's position could be deleted. The "No Response" column in the survey results reflects the percentage of respondents having no opinion on that particular question.

STATISTICAL DATA/RESULTS

Results of the survey are divided into the eight major Naval Facilities Engineering Command activities that utilize technological support from the CEL. The eight activities are: Public Works Department (PWD), Resident Officer in Charge of Construction (ROICC), Public Works Center (PWC), Officer in Charge of Construction (OICC), Construction Battalion (CB), Naval Facilities Engineering Command Headquarters (NAVFAC), Engineering Field Division (EFD), and the Civil Engineering Laboratory (CEL). In addition, a ninth category was added to include all activities not within the NAVFAC organization, titled "Other."

The respondents were requested to complete each question of the 58-question survey with one of four responses: Strongly Agree (SA), Agree (A), Disagree (D), or Strongly Disagree (SD). If the individual felt his/her level of experience did not qualify a response, the question or section was to be left blank.

RANK/GRADE OF RESPONDENTS

The rank of all military personnel and the grade of civilian personnel were compiled to provide the reader a general relationship of the survey results to the respondent's position within the organization. (See Tables 1 through 9.)

TABLE 1
RANK/GRADE OF PWD RESPONDENTS

RANK/GRADE	RESPONSE	% OF TOTAL
Ensign	13	5.0
Lieutenant JG	18	6.9
Lieutenant	35	13.5
Lt. Commander	31	11.9
Commander	19	7.3
Captain	1	0.4
GS-09	8	3.1
GS-10	1	0.4
GS-11	23	8.8
GS-12	63	24.2
GS-13	42	16.2
GS-14	6	2.3
TOTAL	260	100.0

TABLE 2
RANK/GRADE OF ROICC RESPONDENTS

RANK/GRADE	RESPONSE	% OF TOTAL
Lieutenant JG	5	9.4
Lieutenant	19	35.8
Lt. Commander	15	28.3
Commander	5	9.4
GS-12	7	13.2
GS-13	2	3.8
TOTAL	53	100.0

TABLE 3
RANK/GRADE OF PWC RESPONDENTS

RANK/GRADE	RESPONSE	% OF TOTAL
Lieutenant JG	5	11.9
Lieutenant	6	14.3
Lt. Commander	4	9.5
Commander	2	4.8
Captain	1	2.4
GS-11	1	2.4
GS-12	9	21.4
GS-13	13	31.0
GS-14	1	2.4
TOTAL	42	100.0

TABLE 4
RANK/GRADE OF OICC RESPONDENTS

RANK/GRADE	RESPONSE	% OF TOTAL
Lieutenant	3	23.1
Lt. Commander	2	15.4
Commander	3	23.1
GS-11	1	7.7
GS-12	1	7.7
GS-14	2	15.4
GS-15	1	7.7
TOTAL	13	100.0

TABLE 5
RANK/GRADE OF CB RESPONDENTS

RANK/GRADE	RESPONSE	% OF TOTAL
Ensign	1	4.5
Lieutenant JG	4	18.2
Lieutenant	4	18.2
Lt. Commander	9	40.9
Commander	1	4.5
GS-12	2	9.1
GS-13	1	4.5
TOTAL	22	100.0

TABLE 6
RANK/GRADE OF EFD RESPONDENTS

RANK/GRADE	RESPONSE	% OF TOTAL
Lt. Commander	3	2.2
Commander	1	0.7
Captain	2	1.5
GS-9	5	3.6
GS-11	25	18.4
GS-12	60	44.1
GS-13	24	17.6
GS-14	12	8.8
GS-15	4	2.9
TOTAL	136	100.0

TABLE 7
RANK/GRADE OF NAVFAC RESPONDENTS

RANK/GRADE	RESPONSE	% OF TOTAL
Lieutenant JG	1	1.7
Lieutenant	1	1.7
Lt. Commander	1	1.7
Commander	3	5.0
GS-9	3	5.0
GS-11	10	16.7
GS-12	20	33.3
GS-13	5	8.3
GS-14	9	15.0
GS-15	6	10.0
SES	1	1.7
TOTAL	60	100.0

TABLE 8
RANK/GRADE OF CEL RESPONDENTS

RANK/GRADE	RESPONSE	% OF TOTAL
GS-15	1	100.0
TOTAL	1	100.0

TABLE 9
RANK/GRADE OF OTHER RESPONDENTS

RANK/GRADE	RESPONSES	% OF TOTAL
Ensign	3	1.8
Lieutenant JG	5	3.1
Lieutenant	28	17.2
Lt. Commander	25	15.3
Commander	15	9.2
Captain	6	3.7
GS-09	1	0.6
GS-10	2	1.2
GS-11	14	8.6
GS-12	22	13.5
GS-13	17	10.4
GS-14	13	8.0
GS-15	11	6.7
Other	1	0.6
TOTAL	163	100.0

EXPERIENCE LEVEL OF RESPONDENTS

Each respondent was also requested to provide years of experience with NAVFAC-related activities, i.e., design, construction, maintenance, planning, CB operations, etc. Table 10 provides mean (average) years of experience for each organization and its standard deviation. (Editor's Note: Approximately 68% of those surveyed will be within the mean $\pm$ the standard deviation.)

TABLE 10
EXPERIENCE LEVEL OF RESPONDENTS IN YEARS

ORGANIZATION	MEAN	STANDARD DEVIATION
PWD	13.02	8.50
ROICC	10.11	7.04
PWC	12.48	9.33
OICC	15.31	6.82
CB	9.96	7.77
EFD	11.52	7.93
NAVFAC	12.42	9.63
CEL	30.00	0.00
OTHER	10.07	8.49

It should be noted that group 9 "Other" projects a questionable response. Many of those surveyed in the "Other" group stated experience level within Navy and DOD organizations and not experience with NAVFAC-related activities. Therefore, this mean is higher than it should be.

QUESTIONNAIRE RESPONDENTS NOT ASSIGNED TO NAVFAC ACTIVITIES

The questionnaire was distributed to organizations throughout the U.S. Navy as well as NAVFAC activities. Of the 750 questionnaires returned, 163 were submitted by respondents from Navy activities outside the NAVFAC organization, but utilize the CEL for laboratory support. Organizations in this category include: NAVSEA, NAVAIR, NAVELEX, NAVSUP, OPNAV and several operational units. Responses from these organizations are projected in the "Other" group.

COMMENTS/SUGGESTIONS

The final section of the questionnaire was a request for comments and suggestions from the respondent. Appendix C is a compilation of the remarks.

RESULTS OF THE 1968 QUESTIONNAIRE

As stated earlier, one of the objectives of the 1980 survey was to determine the improvement, if any, of CEL support since the 1968 survey. To accomplish this, 20 questions on the 1968 survey were repeated; question-by-question comparison and analysis can be found in the results

of the 1980 questionnaire. The 20 questions from the 1968 survey and their results can be found in Appendix D.

IV. QUESTIONNAIRE RESPONSE ANALYSIS

OVERVIEW

As soon as the responses began to come back, the project team found itself with vast amounts of data on its hands. For instance, each questionnaire returned has 63 data points. As the mail-outs increased in size so, of course, did the amount of data that had to be summarized and analyzed. None of this was unexpected, however, so computer program development was going on concurrently with questionnaire development and data collection. The 750 questionnaires analyzed resulted in excess of 48,000 data points.

The computer program generated summaries of the data or performed statistical operations with the data. Frequency distributions were generated from the responses to the questions and should help the reader to form overall opinions about the responses.

When comparisons among different respondent groups such as PWC, ROICC, etc., were of interest, statistical tests were calculated.

INTERPRETATION OF THE RESPONSES TO THE 58 QUESTIONS

The following question-by-question analysis is based on the statistical output from the computer program.

QUESTION 1: I understand the purpose and mission of the CEL.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>.4</u>	<u>26.2</u>	<u>69.2</u>	<u>4.2</u>	<u>0</u>
ROICC	<u>53</u>	<u>0</u>	<u>26.4</u>	<u>64.2</u>	<u>9.4</u>	<u>0</u>
PWC	<u>42</u>	<u>0</u>	<u>26.2</u>	<u>71.4</u>	<u>2.4</u>	<u>0</u>
OICC	<u>13</u>	<u>15.4</u>	<u>38.5</u>	<u>46.2</u>	<u>0</u>	<u>0</u>
CB	<u>22</u>	<u>0</u>	<u>59.1</u>	<u>36.4</u>	<u>4.5</u>	<u>0</u>
EFD	<u>136</u>	<u>.7</u>	<u>13.2</u>	<u>70.6</u>	<u>12.5</u>	<u>2.9</u>
NAVFAC	<u>60</u>	<u>0</u>	<u>21.7</u>	<u>65.0</u>	<u>11.7</u>	<u>1.7</u>
CEL	<u>1</u>	<u>0</u>	<u>0</u>	<u>100.0</u>	<u>0</u>	<u>0</u>
OTHER	<u>163</u>	<u>1.2</u>	<u>28.8</u>	<u>57.1</u>	<u>10.4</u>	<u>2.5</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>.8</u>	<u>25.2</u>	<u>64.9</u>	<u>7.9</u>	<u>1.2</u>

An overwhelming majority (90.1%) are in agreement with this statement. It is noteworthy that the EFD, NAVFAC, and Other groups have the largest percentage of disagreement. In the 1968 survey, 67% of the respondents were in disagreement with this statement. It is evident that the program to inform CEL users of the laboratory's function has been very successful.

QUESTION 2: CEL technicians know nothing of my problems
in the field.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>1.9</u>	<u>18</u>	<u>5.4</u>	<u>68.5</u>	<u>23.5</u>
ROICC	<u>53</u>	<u>0.0</u>	<u>0.0</u>	<u>3.8</u>	<u>71.7</u>	<u>24.5</u>
PWC	<u>42</u>	<u>0.0</u>	<u>0.0</u>	<u>4.8</u>	<u>69.0</u>	<u>26.2</u>
OICC	<u>13</u>	<u>15.4</u>	<u>0.0</u>	<u>7.7</u>	<u>46.2</u>	<u>30.8</u>
CB	<u>22</u>	<u>4.5</u>	<u>0.0</u>	<u>4.5</u>	<u>63.6</u>	<u>27.3</u>
EFD	<u>136</u>	<u>8.1</u>	<u>2.9</u>	<u>16.9</u>	<u>62.5</u>	<u>9.6</u>
NAVFAC	<u>60</u>	<u>1.7</u>	<u>5.0</u>	<u>11.7</u>	<u>63.3</u>	<u>18.3</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>
OTHER	<u>163</u>	<u>3.7</u>	<u>1.8</u>	<u>9.2</u>	<u>62.6</u>	<u>22.7</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>3.5</u>	<u>1.6</u>	<u>8.7</u>	<u>65.3</u>	<u>20.9</u>

Consistent with the 1968 results, the majority (86.2%) are in disagreement with the statement. Those groups in the field, i.e., PWD, ROICC, PWC, OICC and CB, have the lowest percentage of agreement whereas those groups not located in the field have the highest percentage of agreement.

QUESTION 3: There is a lack of responsiveness by the CEL
to the more common technical needs.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>5.0</u>	<u>1.2</u>	<u>16.9</u>	<u>64.2</u>	<u>12.7</u>
ROICC	<u>53</u>	<u>5.7</u>	<u>0.0</u>	<u>13.2</u>	<u>60.4</u>	<u>20.8</u>
PWC	<u>42</u>	<u>0.0</u>	<u>2.4</u>	<u>11.9</u>	<u>61.9</u>	<u>23.8</u>
OICC	<u>13</u>	<u>15.4</u>	<u>0.0</u>	<u>23.1</u>	<u>30.8</u>	<u>30.8</u>
CB	<u>22</u>	<u>9.1</u>	<u>0.0</u>	<u>13.6</u>	<u>54.5</u>	<u>22.7</u>
EFD	<u>136</u>	<u>10.3</u>	<u>2.9</u>	<u>21.3</u>	<u>57.4</u>	<u>8.1</u>
NAVFAC	<u>60</u>	<u>3.3</u>	<u>5.0</u>	<u>13.3</u>	<u>70.0</u>	<u>8.3</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>
OTHER	<u>163</u>	<u>6.7</u>	<u>2.5</u>	<u>13.5</u>	<u>60.1</u>	<u>17.2</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>6.3</u>	<u>2.0</u>	<u>16.1</u>	<u>61.2</u>	<u>14.4</u>

Over 75% of the respondents are in disagreement with this statement. It indicates that, in fact, there is a sense of responsiveness on the part of CEL to the common technical needs of CEL users. This is a significant improvement over the 1968 survey when 46% were "undecided" and only 36% disagreed.

QUESTION 4: The CEL's R&D effort is being expended in areas that are applicable to real problems that you are experiencing in the field.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>7.7</u>	<u>4.6</u>	<u>67.3</u>	<u>20.4</u>	<u>0.0</u>
ROICC	<u>53</u>	<u>1.9</u>	<u>7.5</u>	<u>79.2</u>	<u>11.3</u>	<u>0.0</u>
PWC	<u>42</u>	<u>4.8</u>	<u>4.8</u>	<u>78.6</u>	<u>9.5</u>	<u>2.4</u>
OICC	<u>13</u>	<u>15.4</u>	<u>0.0</u>	<u>69.2</u>	<u>15.4</u>	<u>0.0</u>
CB	<u>22</u>	<u>9.1</u>	<u>13.6</u>	<u>59.1</u>	<u>18.2</u>	<u>0.0</u>
EFD	<u>136</u>	<u>14.0</u>	<u>1.5</u>	<u>52.2</u>	<u>28.7</u>	<u>3.7</u>
NAVFAC	<u>60</u>	<u>8.3</u>	<u>6.7</u>	<u>55.0</u>	<u>25.0</u>	<u>5.0</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>8.0</u>	<u>13.5</u>	<u>63.2</u>	<u>12.9</u>	<u>2.5</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>8.5</u>	<u>6.5</u>	<u>64.0</u>	<u>19.2</u>	<u>1.7</u>

Approximately 70% of the respondents are in agreement that the CEL R&D effort is being expended in areas applicable to field problems. The CEL was rated much higher by the field elements (over 70%) than by the EFD (54%).

QUESTION 5: Better utilization of CEL's reports could be obtained by improving the image of the CEL.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>10.8</u>	<u>6.2</u>	<u>31.5</u>	<u>45.4</u>	<u>6.2</u>
ROICC	<u>53</u>	<u>7.5</u>	<u>7.5</u>	<u>32.1</u>	<u>47.2</u>	<u>5.7</u>
PWC	<u>42</u>	<u>2.4</u>	<u>4.8</u>	<u>26.2</u>	<u>59.5</u>	<u>7.1</u>
OICC	<u>13</u>	<u>15.4</u>	<u>0.0</u>	<u>23.1</u>	<u>53.8</u>	<u>7.7</u>
CB	<u>22</u>	<u>9.1</u>	<u>9.1</u>	<u>40.9</u>	<u>36.4</u>	<u>4.5</u>
EFD	<u>136</u>	<u>12.5</u>	<u>8.8</u>	<u>46.3</u>	<u>25.7</u>	<u>6.6</u>
NAVFAC	<u>60</u>	<u>8.3</u>	<u>5.0</u>	<u>55.0</u>	<u>28.3</u>	<u>3.3</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>
OTHER	<u>163</u>	<u>8.6</u>	<u>6.7</u>	<u>30.1</u>	<u>44.2</u>	<u>10.4</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>9.7</u>	<u>6.7</u>	<u>35.6</u>	<u>40.9</u>	<u>7.1</u>

The survey indicates a slight disagreement that utilization of CEL reports would improve with an improved image of the CEL. Image of the CEL does not appear to be a problem.

Question 6: Which of the following do you feel best describes the type of R&D being conducted by the CEL?

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE PERCENT			
		DID NOT ANSWER	THEORETICAL	APPLIED RESEARCH	MIX OF BOTH
PWC	<u>260</u>	<u>5.8</u>	<u>4.6</u>	<u>21.9</u>	<u>67.7</u>
ROICC	<u>53</u>	<u>0.0</u>	<u>5.7</u>	<u>24.5</u>	<u>69.8</u>
PWC	<u>52</u>	<u>11.9</u>	<u>2.4</u>	<u>16.7</u>	<u>69.0</u>
OICC	<u>13</u>	<u>15.4</u>	<u>0.0</u>	<u>23.1</u>	<u>61.5</u>
CB	<u>22</u>	<u>0.0</u>	<u>4.5</u>	<u>22.7</u>	<u>72.7</u>
EFD	<u>136</u>	<u>14.7</u>	<u>8.8</u>	<u>25.7</u>	<u>50.7</u>
NAVFAC	<u>60</u>	<u>6.7</u>	<u>5.0</u>	<u>18.3</u>	<u>70.0</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>11.7</u>	<u>2.5</u>	<u>37.4</u>	<u>48.5</u>
TOTAL	<u>750</u>				
MEAN OF TOTAL RESPONSE		<u>8.7</u>	<u>4.8</u>	<u>25.7</u>	<u>60.8</u>

It appears as if there is a good mix of R&D coming out of the CEL, with only 4.8% responding that the R&D is too theoretical and 8.7% "no response."

QUESTION 7: CEL, as a service organization, should try to be more responsive to the field activity's needs.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>4.6</u>	<u>13.5</u>	<u>62.3</u>	<u>17.7</u>	<u>1.9</u>
ROICC	<u>53</u>	<u>0.0</u>	<u>13.2</u>	<u>62.3</u>	<u>20.8</u>	<u>3.8</u>
PWC	<u>42</u>	<u>0.0</u>	<u>9.5</u>	<u>64.3</u>	<u>23.8</u>	<u>2.4</u>
OICC	<u>13</u>	<u>7.7</u>	<u>15.4</u>	<u>53.8</u>	<u>23.1</u>	<u>0.0</u>
CB	<u>22</u>	<u>9.1</u>	<u>4.5</u>	<u>68.2</u>	<u>18.2</u>	<u>0.0</u>
EFD	<u>136</u>	<u>11.8</u>	<u>14.7</u>	<u>55.9</u>	<u>14.7</u>	<u>2.9</u>
NAVFAC	<u>60</u>	<u>8.3</u>	<u>16.7</u>	<u>65.0</u>	<u>8.3</u>	<u>1.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>9.2</u>	<u>8.0</u>	<u>54.6</u>	<u>23.3</u>	<u>4.9</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>6.8</u>	<u>12.3</u>	<u>59.9</u>	<u>18.3</u>	<u>2.8</u>

Approximately 72% of the respondents feel the CEL should try to be more responsive to the field activities' needs. All nine groups are in agreement on the question.

QUESTION 8: When I need an informal response to a technical question, I prefer to obtain information from a contractor source rather than the CEL.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>3.1</u>	<u>2.7</u>	<u>41.5</u>	<u>43.5</u>	<u>9.2</u>
ROICC	<u>53</u>	<u>3.8</u>	<u>7.5</u>	<u>47.2</u>	<u>32.1</u>	<u>9.4</u>
PWC	<u>42</u>	<u>4.8</u>	<u>2.4</u>	<u>42.9</u>	<u>40.5</u>	<u>9.5</u>
OICC	<u>13</u>	<u>0.0</u>	<u>0.0</u>	<u>61.5</u>	<u>30.8</u>	<u>7.7</u>
CB	<u>22</u>	<u>9.1</u>	<u>4.5</u>	<u>18.2</u>	<u>54.5</u>	<u>13.6</u>
EFD	<u>136</u>	<u>5.9</u>	<u>8.8</u>	<u>41.2</u>	<u>35.3</u>	<u>8.8</u>
NAVFAC	<u>60</u>	<u>1.7</u>	<u>6.7</u>	<u>25.0</u>	<u>51.7</u>	<u>15.0</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>
OTHER	<u>163</u>	<u>4.9</u>	<u>4.9</u>	<u>18.4</u>	<u>57.7</u>	<u>14.1</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>4.1</u>	<u>4.9</u>	<u>35.2</u>	<u>44.8</u>	<u>10.9</u>

Over 55% of those surveyed prefer to obtain informal technical information from the CEL, while 40% prefer to utilize a contractor source.

QUESTION 9: I am encouraged by my command to take time to update myself of new methodologies and products.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>2.3</u>	<u>4.6</u>	<u>45.0</u>	<u>36.2</u>	<u>11.9</u>
ROICC	<u>53</u>	<u>1.9</u>	<u>3.8</u>	<u>39.6</u>	<u>43.4</u>	<u>11.3</u>
PWC	<u>42</u>	<u>2.4</u>	<u>16.7</u>	<u>47.6</u>	<u>28.6</u>	<u>4.8</u>
OICC	<u>13</u>	<u>0.0</u>	<u>7.7</u>	<u>76.9</u>	<u>7.7</u>	<u>7.7</u>
CB	<u>22</u>	<u>9.1</u>	<u>4.5</u>	<u>59.1</u>	<u>22.7</u>	<u>4.5</u>
EFD	<u>136</u>	<u>2.9</u>	<u>5.9</u>	<u>58.1</u>	<u>27.2</u>	<u>5.9</u>
NAVFAC	<u>60</u>	<u>5.0</u>	<u>20.0</u>	<u>55.0</u>	<u>13.3</u>	<u>6.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>4.3</u>	<u>20.2</u>	<u>44.8</u>	<u>27.0</u>	<u>3.7</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>3.2</u>	<u>10.1</u>	<u>48.9</u>	<u>29.9</u>	<u>7.9</u>

The survey indicates that 59% of the respondents are encouraged by their command to keep up to date on new methodologies and products. A significant figure on this question is that the ROICC group had more respondents (55%) that feel they are not encouraged to remain up to date while 43% felt they were.

QUESTION 10: I have sufficient time at work to adequately review CEL literature.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>.8</u>	<u>2.3</u>	<u>31.9</u>	<u>49.2</u>	<u>15.8</u>
ROICC	<u>53</u>	<u>0.0</u>	<u>3.8</u>	<u>26.4</u>	<u>41.5</u>	<u>28.3</u>
PWC	<u>42</u>	<u>0.0</u>	<u>4.8</u>	<u>47.6</u>	<u>31.0</u>	<u>16.7</u>
OICC	<u>13</u>	<u>0.0</u>	<u>0.0</u>	<u>30.8</u>	<u>46.2</u>	<u>23.1</u>
CB	<u>22</u>	<u>0.0</u>	<u>9.1</u>	<u>40.9</u>	<u>36.4</u>	<u>13.6</u>
EFD	<u>136</u>	<u>0.0</u>	<u>3.7</u>	<u>29.4</u>	<u>54.4</u>	<u>12.5</u>
NAVFAC	<u>60</u>	<u>1.7</u>	<u>0.0</u>	<u>41.7</u>	<u>41.7</u>	<u>15.0</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>3.1</u>	<u>7.4</u>	<u>38.0</u>	<u>44.2</u>	<u>7.4</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>1.1</u>	<u>3.9</u>	<u>34.4</u>	<u>46.4</u>	<u>14.3</u>

Only 38% of the respondents are in agreement that they have adequate time at work to review CEL literature while over 60% are in disagreement.

QUESTION 11: Since all reports are not useful to this office,
I receive reports from selected categories only.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>3.1</u>	<u>7.3</u>	<u>55.4</u>	<u>29.6</u>	<u>4.6</u>
ROICC	<u>53</u>	<u>1.9</u>	<u>7.5</u>	<u>50.9</u>	<u>35.8</u>	<u>3.8</u>
PWC	<u>42</u>	<u>0.0</u>	<u>19.0</u>	<u>57.1</u>	<u>23.8</u>	<u>0.0</u>
OICC	<u>13</u>	<u>0.0</u>	<u>0.0</u>	<u>53.8</u>	<u>46.2</u>	<u>0.0</u>
CB	<u>22</u>	<u>4.5</u>	<u>4.5</u>	<u>36.4</u>	<u>54.5</u>	<u>0.0</u>
EFD	<u>136</u>	<u>6.6</u>	<u>4.4</u>	<u>55.1</u>	<u>27.2</u>	<u>6.6</u>
NAVFAC	<u>60</u>	<u>3.3</u>	<u>8.3</u>	<u>58.3</u>	<u>26.7</u>	<u>3.3</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>7.4</u>	<u>12.9</u>	<u>60.1</u>	<u>16.6</u>	<u>3.1</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>4.4</u>	<u>8.5</u>	<u>55.9</u>	<u>27.2</u>	<u>4.0</u>

The 1968 survey indicated a general agreement by the respondents and recommended distribution lists be carefully established. The general consensus (64.4%) are in agreement. However, it cannot be determined from information provided if the 31% in disagreement are receiving all reports by choice or not.

QUESTION 12: I would like to see bulletins come out with tips on new maintenance techniques, new equipment, new materials, etc.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>1.2</u>	<u>50.0</u>	<u>46.2</u>	<u>2.7</u>	<u>0.0</u>
ROICC	<u>53</u>	<u>0.0</u>	<u>37.7</u>	<u>56.6</u>	<u>5.7</u>	<u>0.0</u>
PWC	<u>42</u>	<u>0.0</u>	<u>61.9</u>	<u>38.1</u>	<u>0.0</u>	<u>0.0</u>
OICC	<u>13</u>	<u>0.0</u>	<u>61.5</u>	<u>38.5</u>	<u>0.0</u>	<u>0.0</u>
CB	<u>22</u>	<u>4.5</u>	<u>27.3</u>	<u>63.6</u>	<u>4.5</u>	<u>0.0</u>
EFD	<u>136</u>	<u>2.2</u>	<u>29.4</u>	<u>57.4</u>	<u>10.3</u>	<u>0.7</u>
NAVFAC	<u>60</u>	<u>3.3</u>	<u>31.7</u>	<u>60.0</u>	<u>3.3</u>	<u>1.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>5.5</u>	<u>33.7</u>	<u>53.4</u>	<u>6.1</u>	<u>1.2</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>2.4</u>	<u>40.5</u>	<u>51.6</u>	<u>4.9</u>	<u>0.5</u>

The overwhelming majority (92.5%) are in agreement. There has been only a slight change from the 1968 survey with 89% in agreement. The statement does not imply that there is a lack of "tips," but rather the desire for additional information.

QUESTION 13: There is a need to provide information to all field engineers concerning all products researched by CEL.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>1.9</u>	<u>21.5</u>	<u>43.8</u>	<u>28.1</u>	<u>4.6</u>
ROICC	<u>53</u>	<u>0.0</u>	<u>22.6</u>	<u>32.1</u>	<u>41.5</u>	<u>3.8</u>
PWC	<u>42</u>	<u>0.0</u>	<u>9.5</u>	<u>45.2</u>	<u>28.6</u>	<u>16.7</u>
OICC	<u>13</u>	<u>0.0</u>	<u>23.1</u>	<u>38.5</u>	<u>38.5</u>	<u>0.0</u>
CB	<u>22</u>	<u>0.0</u>	<u>18.2</u>	<u>31.8</u>	<u>50.0</u>	<u>0.0</u>
EFD	<u>136</u>	<u>1.5</u>	<u>24.3</u>	<u>50.0</u>	<u>19.9</u>	<u>4.4</u>
NAVFAC	<u>60</u>	<u>3.3</u>	<u>30.0</u>	<u>43.3</u>	<u>23.3</u>	<u>0.0</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>8.0</u>	<u>15.3</u>	<u>39.9</u>	<u>29.4</u>	<u>7.4</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>2.9</u>	<u>20.7</u>	<u>42.8</u>	<u>28.4</u>	<u>5.2</u>

There is a definite desire by the field groups to receive more information from the CEL on products being researched; 64% are in agreement that the reports would be useful. However, consideration must be given to Question 10; only 38% of the respondents feel there is adequate time at work to effectively read the reports now being received.

QUESTION 14: There is an effort by my organization toward attracting new methods and products into the work system.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>1.2</u>	<u>15.4</u>	<u>57.3</u>	<u>22.3</u>	<u>3.8</u>
ROICC	<u>53</u>	<u>1.9</u>	<u>7.5</u>	<u>37.7</u>	<u>45.3</u>	<u>7.5</u>
PWC	<u>42</u>	<u>0.0</u>	<u>10.7</u>	<u>66.7</u>	<u>14.3</u>	<u>2.4</u>
OICC	<u>13</u>	<u>0.0</u>	<u>15.4</u>	<u>61.5</u>	<u>15.4</u>	<u>7.7</u>
CB	<u>22</u>	<u>9.1</u>	<u>13.6</u>	<u>54.5</u>	<u>18.2</u>	<u>4.5</u>
EFD	<u>136</u>	<u>5.9</u>	<u>5.9</u>	<u>49.3</u>	<u>33.1</u>	<u>5.9</u>
NAVFAC	<u>60</u>	<u>6.7</u>	<u>21.7</u>	<u>48.3</u>	<u>23.3</u>	<u>0.0</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>5.5</u>	<u>19.0</u>	<u>48.5</u>	<u>20.2</u>	<u>6.7</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>3.6</u>	<u>14.4</u>	<u>52.4</u>	<u>24.8</u>	<u>4.8</u>

The survey indicates a strong effort by the field groups toward attracting new methods and products into the work system. (67% are in agreement while only 29% disagree.)

QUESTION 15: I feel that colleagues and superiors often discourage me from implementing CEL reports.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>3.1</u>	<u>2.3</u>	<u>9.6</u>	<u>66.5</u>	<u>18.5</u>
ROICC	<u>53</u>	<u>3.8</u>	<u>1.9</u>	<u>5.7</u>	<u>71.7</u>	<u>17.0</u>
PWC	<u>42</u>	<u>0.0</u>	<u>2.4</u>	<u>2.4</u>	<u>57.1</u>	<u>38.1</u>
OICC	<u>13</u>	<u>0.0</u>	<u>0.0</u>	<u>7.7</u>	<u>61.5</u>	<u>30.8</u>
CB	<u>22</u>	<u>13.6</u>	<u>0.0</u>	<u>0.0</u>	<u>68.2</u>	<u>18.2</u>
EFD	<u>136</u>	<u>8.8</u>	<u>2.2</u>	<u>8.8</u>	<u>66.2</u>	<u>14.0</u>
NAVFAC	<u>60</u>	<u>1.7</u>	<u>1.7</u>	<u>3.3</u>	<u>65.0</u>	<u>28.3</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>
OTHER	<u>163</u>	<u>8.6</u>	<u>1.2</u>	<u>6.7</u>	<u>58.9</u>	<u>24.5</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>5.3</u>	<u>1.9</u>	<u>7.3</u>	<u>64.4</u>	<u>21.1</u>

The respondents overwhelmingly disagree that they are discouraged from implementing CEL reports. Over 85% feel there is command encouragement to implement the reports.

QUESTION 16: CEL promptly provides information to its customers.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>13.8</u>	<u>8.1</u>	<u>61.5</u>	<u>15.8</u>	<u>.8</u>
ROICC	<u>53</u>	<u>11.3</u>	<u>5.7</u>	<u>66.0</u>	<u>17.0</u>	<u>0.0</u>
PWC	<u>42</u>	<u>9.5</u>	<u>14.3</u>	<u>64.3</u>	<u>11.9</u>	<u>0.0</u>
OICC	<u>13</u>	<u>15.4</u>	<u>15.4</u>	<u>38.5</u>	<u>30.8</u>	<u>0.0</u>
CB	<u>22</u>	<u>13.6</u>	<u>4.5</u>	<u>72.7</u>	<u>4.5</u>	<u>4.5</u>
EFD	<u>136</u>	<u>21.3</u>	<u>5.1</u>	<u>53.7</u>	<u>18.4</u>	<u>1.5</u>
NAVFAC	<u>60</u>	<u>8.3</u>	<u>6.7</u>	<u>50.0</u>	<u>33.3</u>	<u>1.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>15.3</u>	<u>8.0</u>	<u>63.2</u>	<u>13.5</u>	<u>0.0</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>14.7</u>	<u>7.6</u>	<u>60.0</u>	<u>16.9</u>	<u>0.8</u>

There is a very strong indication that the CEL promptly provides information to its customers; 68% agree while only 18% disagree. All of the field units agree CEL promptness is satisfactory.

QUESTION 17: CEL is helpful in providing information and/or other assistance on request.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>10.4</u>	<u>12.7</u>	<u>68.5</u>	<u>7.7</u>	<u>.8</u>
ROICC	<u>53</u>	<u>9.4</u>	<u>11.3</u>	<u>76.6</u>	<u>3.8</u>	<u>1.9</u>
PWC	<u>42</u>	<u>9.5</u>	<u>19.0</u>	<u>69.0</u>	<u>2.4</u>	<u>0.0</u>
OICC	<u>13</u>	<u>15.4</u>	<u>15.4</u>	<u>61.5</u>	<u>7.7</u>	<u>0.0</u>
CB	<u>22</u>	<u>13.6</u>	<u>9.1</u>	<u>72.7</u>	<u>4.5</u>	<u>0.0</u>
EFD	<u>136</u>	<u>19.9</u>	<u>5.1</u>	<u>62.5</u>	<u>11.0</u>	<u>1.5</u>
NAVFAC	<u>60</u>	<u>3.3</u>	<u>6.7</u>	<u>76.7</u>	<u>13.3</u>	<u>0.0</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>17.2</u>	<u>14.1</u>	<u>63.2</u>	<u>4.9</u>	<u>0.6</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>13.1</u>	<u>11.3</u>	<u>67.3</u>	<u>7.5</u>	<u>0.8</u>

It appears that there is a general feeling (78.6%) that CEL responds adequately to user initiated requests. This is an increase from the 1968 survey. The EFD and NAVFAC have the highest percentage of disagreement.

QUESTION 18: CEL tends to use terms and jargon with which I'm unfamiliar.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>4.2</u>	<u>1.5</u>	<u>18.1</u>	<u>66.9</u>	<u>9.2</u>
ROICC	<u>53</u>	<u>9.4</u>	<u>1.9</u>	<u>15.1</u>	<u>69.8</u>	<u>3.8</u>
PWC	<u>42</u>	<u>2.4</u>	<u>2.4</u>	<u>11.9</u>	<u>73.8</u>	<u>9.5</u>
OICC	<u>13</u>	<u>23.1</u>	<u>0.0</u>	<u>7.7</u>	<u>69.2</u>	<u>0.0</u>
CB	<u>22</u>	<u>9.1</u>	<u>0.0</u>	<u>4.5</u>	<u>81.8</u>	<u>4.5</u>
EFD	<u>136</u>	<u>16.2</u>	<u>1.5</u>	<u>19.9</u>	<u>55.6</u>	<u>6.6</u>
NAVFAC	<u>60</u>	<u>3.3</u>	<u>0.0</u>	<u>21.7</u>	<u>63.3</u>	<u>11.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>6.7</u>	<u>4.3</u>	<u>12.3</u>	<u>66.9</u>	<u>9.8</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>7.6</u>	<u>2.0</u>	<u>16.3</u>	<u>65.7</u>	<u>8.4</u>

The majority (74.1%) feel that CEL does not utilize unfamiliar terms or jargon. These results indicate an increase from 64% disagreement in the 1968 survey.

QUESTION 19: CEL provides progress reports on work they are doing for us.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>34.2</u>	<u>1.9</u>	<u>45.0</u>	<u>17.7</u>	<u>1.2</u>
ROICC	<u>53</u>	<u>30.2</u>	<u>1.9</u>	<u>34.0</u>	<u>28.3</u>	<u>5.7</u>
PWC	<u>42</u>	<u>31.0</u>	<u>2.4</u>	<u>47.6</u>	<u>19.0</u>	<u>0.0</u>
OICC	<u>13</u>	<u>23.1</u>	<u>0.0</u>	<u>61.5</u>	<u>15.4</u>	<u>0.0</u>
CB	<u>22</u>	<u>45.5</u>	<u>0.0</u>	<u>36.4</u>	<u>13.6</u>	<u>4.5</u>
EFD	<u>136</u>	<u>30.9</u>	<u>1.5</u>	<u>41.2</u>	<u>23.5</u>	<u>2.9</u>
NAVFAC	<u>60</u>	<u>13.3</u>	<u>8.3</u>	<u>46.7</u>	<u>26.7</u>	<u>5.0</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>44.8</u>	<u>3.1</u>	<u>38.7</u>	<u>11.0</u>	<u>2.5</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>33.9</u>	<u>2.5</u>	<u>42.5</u>	<u>18.7</u>	<u>2.4</u>

The most significant figure in the analysis of this question is that almost 34% did not answer it. Apparently, many in the field activities are not aware of progress reports provided by the CEL. However, of those who did answer, 45% are in agreement that progress reports are provided while only 21% are in disagreement.

QUESTION 20: The CEL reports that I receive normally contain too little information which is of interest to me or my department.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>5.8</u>	<u>4.2</u>	<u>26.2</u>	<u>59.6</u>	<u>4.2</u>
ROICC	<u>53</u>	<u>5.7</u>	<u>3.8</u>	<u>28.3</u>	<u>56.6</u>	<u>5.7</u>
PWC	<u>42</u>	<u>4.8</u>	<u>0.0</u>	<u>21.4</u>	<u>64.3</u>	<u>9.5</u>
OICC	<u>13</u>	<u>15.4</u>	<u>0.0</u>	<u>15.4</u>	<u>61.5</u>	<u>7.7</u>
CB	<u>22</u>	<u>22.7</u>	<u>4.5</u>	<u>13.6</u>	<u>59.1</u>	<u>0.0</u>
EFD	<u>136</u>	<u>16.2</u>	<u>5.1</u>	<u>31.6</u>	<u>44.9</u>	<u>2.2</u>
NAVFAC	<u>60</u>	<u>3.3</u>	<u>3.3</u>	<u>36.7</u>	<u>45.0</u>	<u>11.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>9.8</u>	<u>4.3</u>	<u>21.5</u>	<u>58.9</u>	<u>5.5</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>8.9</u>	<u>4.0</u>	<u>26.3</u>	<u>55.7</u>	<u>5.1</u>

Sixty-one percent of the respondents disagree that the CEL reports are non-informative and lack interest, while only 30% agree. The data indicates satisfaction from the field activities concerning the reports' pertinent information and interest to them.

QUESTION 21: The Engineering Field Division should screen all data from/to the CEL to/from the field units/activities.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>6.5</u>	<u>3.8</u>	<u>17.7</u>	<u>39.2</u>	<u>32.7</u>
ROICC	<u>53</u>	<u>5.7</u>	<u>3.8</u>	<u>9.4</u>	<u>54.7</u>	<u>26.4</u>
PWC	<u>42</u>	<u>4.8</u>	<u>0.0</u>	<u>19.0</u>	<u>35.7</u>	<u>40.5</u>
OICC	<u>13</u>	<u>15.4</u>	<u>7.7</u>	<u>23.1</u>	<u>38.5</u>	<u>15.4</u>
CB	<u>22</u>	<u>22.7</u>	<u>9.1</u>	<u>4.5</u>	<u>45.5</u>	<u>18.2</u>
EFD	<u>136</u>	<u>19.9</u>	<u>4.4</u>	<u>32.4</u>	<u>34.6</u>	<u>8.8</u>
NAVFAC	<u>60</u>	<u>16.7</u>	<u>11.7</u>	<u>35.0</u>	<u>25.0</u>	<u>11.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>23.9</u>	<u>1.8</u>	<u>17.2</u>	<u>38.0</u>	<u>19.0</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>14.0</u>	<u>4.1</u>	<u>20.8</u>	<u>38.1</u>	<u>22.9</u>

The respondents indicate a strong disagreement that the EFD should screen all data from and to the CEL from the field units. Sixty-one percent feel that the data should be transferred directly to the field, while only 25% feel that the EFD should serve as a screening point.

QUESTION 22: The background and theory included in most
CEL reports is usually helpful.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>5.4</u>	<u>5.0</u>	<u>77.3</u>	<u>11.5</u>	<u>.8</u>
ROICC	<u>53</u>	<u>1.9</u>	<u>1.9</u>	<u>84.9</u>	<u>9.4</u>	<u>1.9</u>
PWC	<u>42</u>	<u>2.4</u>	<u>14.3</u>	<u>73.8</u>	<u>9.5</u>	<u>0.0</u>
OICC	<u>13</u>	<u>15.4</u>	<u>7.7</u>	<u>76.9</u>	<u>0.0</u>	<u>0.0</u>
CB	<u>22</u>	<u>13.6</u>	<u>0.0</u>	<u>81.8</u>	<u>4.5</u>	<u>0.0</u>
EFD	<u>136</u>	<u>12.5</u>	<u>3.7</u>	<u>67.6</u>	<u>14.7</u>	<u>1.5</u>
NAVFAC	<u>60</u>	<u>5.0</u>	<u>3.3</u>	<u>75.0</u>	<u>15.0</u>	<u>1.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>9.8</u>	<u>10.4</u>	<u>73.0</u>	<u>5.5</u>	<u>1.2</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>7.6</u>	<u>6.0</u>	<u>74.9</u>	<u>10.4</u>	<u>1.1</u>

An overwhelming indication that the background and theory included in most CEL reports is helpful. Eighty-one percent are in agreement.

QUESTION 23: CEL report results or recommendations are dependable and accurate.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>13.1</u>	<u>6.5</u>	<u>74.6</u>	<u>5.4</u>	<u>.4</u>
ROICC	<u>53</u>	<u>11.5</u>	<u>5.7</u>	<u>77.4</u>	<u>5.7</u>	<u>0.0</u>
PWC	<u>42</u>	<u>2.4</u>	<u>9.5</u>	<u>83.3</u>	<u>4.8</u>	<u>0.0</u>
OICC	<u>13</u>	<u>23.1</u>	<u>23.1</u>	<u>46.2</u>	<u>7.7</u>	<u>0.0</u>
CB	<u>22</u>	<u>27.3</u>	<u>4.5</u>	<u>63.6</u>	<u>4.5</u>	<u>0.0</u>
EFD	<u>136</u>	<u>22.1</u>	<u>5.1</u>	<u>60.3</u>	<u>11.0</u>	<u>1.5</u>
NAVFAC	<u>60</u>	<u>3.3</u>	<u>5.0</u>	<u>76.7</u>	<u>15.0</u>	<u>0.0</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>15.3</u>	<u>9.2</u>	<u>73.6</u>	<u>1.2</u>	<u>0.6</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>14.3</u>	<u>7.1</u>	<u>71.9</u>	<u>6.3</u>	<u>0.5</u>

Again a very strong indication that the field groups have confidence in CEL work. Almost 80% find CEL reports accurate and dependable.

QUESTION 24: CEL reports are too theoretical to be useful.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>8.8</u>	<u>1.2</u>	<u>15.8</u>	<u>69.6</u>	<u>4.6</u>
ROICC	<u>53</u>	<u>7.5</u>	<u>1.9</u>	<u>15.1</u>	<u>71.7</u>	<u>3.8</u>
PWC	<u>42</u>	<u>2.4</u>	<u>2.4</u>	<u>9.5</u>	<u>81.0</u>	<u>4.8</u>
OICC	<u>13</u>	<u>15.4</u>	<u>0.0</u>	<u>15.4</u>	<u>61.5</u>	<u>7.7</u>
CB	<u>22</u>	<u>22.7</u>	<u>0.0</u>	<u>13.6</u>	<u>59.1</u>	<u>4.5</u>
EFD	<u>136</u>	<u>16.2</u>	<u>3.7</u>	<u>18.4</u>	<u>57.4</u>	<u>4.4</u>
NAVFAC	<u>60</u>	<u>6.7</u>	<u>0.0</u>	<u>28.3</u>	<u>58.3</u>	<u>6.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>10.4</u>	<u>0.6</u>	<u>8.6</u>	<u>68.7</u>	<u>11.7</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>10.4</u>	<u>1.5</u>	<u>15.2</u>	<u>66.7</u>	<u>6.3</u>

There is an increase from 54% disagreement in the 1968 survey to 73% on this questionnaire. This is a definite indicator that CEL's reports are of a more practical nature than one of theory.

QUESTION 25: I feel that most CEL reports contain useful data.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>5.0</u>	<u>6.9</u>	<u>78.5</u>	<u>9.2</u>	<u>.4</u>
ROICC	<u>53</u>	<u>1.9</u>	<u>3.8</u>	<u>84.9</u>	<u>9.4</u>	<u>0.0</u>
PWC	<u>42</u>	<u>2.4</u>	<u>9.5</u>	<u>85.7</u>	<u>2.4</u>	<u>0.0</u>
OICC	<u>13</u>	<u>15.4</u>	<u>0.0</u>	<u>84.6</u>	<u>0.0</u>	<u>0.0</u>
CB	<u>22</u>	<u>9.1</u>	<u>0.0</u>	<u>90.9</u>	<u>0.0</u>	<u>0.0</u>
EFD	<u>136</u>	<u>11.0</u>	<u>4.4</u>	<u>69.9</u>	<u>14.7</u>	<u>0.0</u>
NAVFAC	<u>60</u>	<u>3.3</u>	<u>6.7</u>	<u>85.0</u>	<u>5.0</u>	<u>0.0</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>9.8</u>	<u>10.4</u>	<u>73.0</u>	<u>4.9</u>	<u>1.8</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>6.9</u>	<u>6.8</u>	<u>77.6</u>	<u>8.1</u>	<u>0.5</u>

Consistent with question 24, 84.4% feel the reports contain useful data/information. Only 6.9% of the respondents elected not to answer this question. A substantial decrease from the "undecided" in the 1968 survey.

QUESTION 26: I only skim the CEL reports I receive.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>5.0</u>	<u>9.2</u>	<u>50.0</u>	<u>34.2</u>	<u>1.5</u>
ROICC	<u>53</u>	<u>1.9</u>	<u>11.3</u>	<u>58.5</u>	<u>28.3</u>	<u>0.0</u>
PWC	<u>42</u>	<u>7.1</u>	<u>7.1</u>	<u>47.6</u>	<u>35.7</u>	<u>2.4</u>
OICC	<u>13</u>	<u>15.4</u>	<u>15.4</u>	<u>30.8</u>	<u>38.5</u>	<u>0.0</u>
CB	<u>22</u>	<u>13.6</u>	<u>4.5</u>	<u>77.3</u>	<u>4.5</u>	<u>0.0</u>
EFD	<u>136</u>	<u>13.2</u>	<u>7.4</u>	<u>52.9</u>	<u>24.3</u>	<u>2.2</u>
NAVFAC	<u>60</u>	<u>6.7</u>	<u>1.7</u>	<u>46.7</u>	<u>40.0</u>	<u>5.0</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.7</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>6.7</u>	<u>6.7</u>	<u>47.2</u>	<u>35.0</u>	<u>4.3</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>7.3</u>	<u>7.7</u>	<u>50.7</u>	<u>31.9</u>	<u>2.4</u>

No large difference is apparent with 58.4% agreeing and 34.3% disagreeing. This indicates that over one third of the users read the CEL reports, rather than just skimming them.

QUESTION 27: CEL reports contain too much tabulated data
(graphs, charts, etc.).

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>7.7</u>	<u>1.2</u>	<u>16.5</u>	<u>67.7</u>	<u>6.9</u>
ROICC	<u>53</u>	<u>3.8</u>	<u>0.0</u>	<u>13.2</u>	<u>81.1</u>	<u>1.9</u>
PWC	<u>42</u>	<u>4.8</u>	<u>2.4</u>	<u>16.7</u>	<u>69.0</u>	<u>7.1</u>
OICC	<u>13</u>	<u>23.1</u>	<u>7.7</u>	<u>0.0</u>	<u>69.2</u>	<u>0.0</u>
CB	<u>22</u>	<u>22.7</u>	<u>0.0</u>	<u>13.6</u>	<u>59.1</u>	<u>4.5</u>
EFD	<u>136</u>	<u>16.9</u>	<u>1.5</u>	<u>15.4</u>	<u>62.5</u>	<u>3.7</u>
NAVFAC	<u>60</u>	<u>6.7</u>	<u>1.7</u>	<u>16.7</u>	<u>73.3</u>	<u>1.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>11.7</u>	<u>1.2</u>	<u>12.3</u>	<u>65.6</u>	<u>9.2</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>10.4</u>	<u>1.3</u>	<u>14.8</u>	<u>67.6</u>	<u>5.9</u>

The respondents show a heavy disagreement that CEL reports contain too much tabulated data. Over 73% find the data useful while only 16% feel there is too much tabulated data.

QUESTION 28: CEL reports are inconclusive and provide no recommended actions.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>7.3</u>	<u>1.2</u>	<u>12.3</u>	<u>70.4</u>	<u>8.8</u>
ROICC	<u>53</u>	<u>5.7</u>	<u>0.0</u>	<u>13.2</u>	<u>77.4</u>	<u>3.8</u>
PWC	<u>42</u>	<u>2.4</u>	<u>0.0</u>	<u>4.8</u>	<u>78.6</u>	<u>14.3</u>
OICC	<u>13</u>	<u>23.1</u>	<u>7.7</u>	<u>7.7</u>	<u>46.2</u>	<u>15.4</u>
CB	<u>22</u>	<u>18.2</u>	<u>0.0</u>	<u>9.1</u>	<u>68.2</u>	<u>4.5</u>
EFD	<u>136</u>	<u>17.6</u>	<u>2.2</u>	<u>17.6</u>	<u>61.0</u>	<u>1.5</u>
NAVFAC	<u>60</u>	<u>3.3</u>	<u>1.7</u>	<u>25.0</u>	<u>63.3</u>	<u>6.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>
OTHER	<u>163</u>	<u>10.4</u>	<u>0.6</u>	<u>4.9</u>	<u>70.6</u>	<u>13.5</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>9.7</u>	<u>1.2</u>	<u>12.1</u>	<u>68.5</u>	<u>8.4</u>

The majority (76.9%) of the respondents disagree with this statement. This is again an increase from 62% in the 1968 survey. It should be noted that questions 25 and 26 could bear heavily on these results.

QUESTION 29: CEL reports are so dry that it is hard to maintain the reader's interest.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>6.2</u>	<u>2.3</u>	<u>25.0</u>	<u>59.2</u>	<u>7.3</u>
ROICC	<u>53</u>	<u>5.7</u>	<u>1.9</u>	<u>26.4</u>	<u>64.2</u>	<u>1.9</u>
PWC	<u>42</u>	<u>2.4</u>	<u>0.0</u>	<u>28.6</u>	<u>61.9</u>	<u>7.1</u>
OICC	<u>13</u>	<u>23.1</u>	<u>15.4</u>	<u>7.7</u>	<u>46.2</u>	<u>7.7</u>
CB	<u>22</u>	<u>18.2</u>	<u>0.0</u>	<u>13.6</u>	<u>68.2</u>	<u>0.0</u>
EFD	<u>136</u>	<u>11.8</u>	<u>5.1</u>	<u>22.1</u>	<u>58.8</u>	<u>2.2</u>
NAVFAC	<u>60</u>	<u>5.0</u>	<u>1.7</u>	<u>28.3</u>	<u>56.3</u>	<u>8.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>8.6</u>	<u>1.8</u>	<u>14.7</u>	<u>62.0</u>	<u>12.9</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>8.0</u>	<u>2.7</u>	<u>22.1</u>	<u>60.1</u>	<u>7.1</u>

The 1968 survey showed 60% of the respondents were in disagreement. We see a slight increase to 67.2%. Over two thirds of the readers do not feel the reports are dry or difficult to maintain their interest.

QUESTION 30: Material in CEL reports is presented in an easily understood manner.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>5.8</u>	<u>2.3</u>	<u>70.4</u>	<u>21.5</u>	<u>0.0</u>
ROICC	<u>53</u>	<u>5.7</u>	<u>0.0</u>	<u>75.5</u>	<u>18.9</u>	<u>0.0</u>
PWC	<u>42</u>	<u>2.4</u>	<u>2.4</u>	<u>78.6</u>	<u>16.7</u>	<u>0.0</u>
OICC	<u>13</u>	<u>15.4</u>	<u>0.0</u>	<u>69.2</u>	<u>7.7</u>	<u>7.7</u>
CB	<u>22</u>	<u>18.2</u>	<u>0.0</u>	<u>77.3</u>	<u>4.5</u>	<u>0.0</u>
EFD	<u>136</u>	<u>12.5</u>	<u>2.2</u>	<u>61.8</u>	<u>20.6</u>	<u>2.9</u>
NAVFAC	<u>60</u>	<u>5.0</u>	<u>5.0</u>	<u>61.7</u>	<u>28.3</u>	<u>0.0</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>9.8</u>	<u>6.1</u>	<u>69.9</u>	<u>14.1</u>	<u>0.0</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>8.1</u>	<u>3.1</u>	<u>69.1</u>	<u>19.1</u>	<u>0.7</u>

Seventy-two percent of the respondents feel CEL reports are presented in an easily understood manner while only 20% disagree.

QUESTION 31: I feel work contracted to labs outside the Navy is completed in a more timely and efficient manner than in the CEL

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>35.0</u>	<u>1.5</u>	<u>12.3</u>	<u>46.2</u>	<u>5.0</u>
ROICC	<u>53</u>	<u>28.3</u>	<u>0.0</u>	<u>13.2</u>	<u>52.8</u>	<u>5.7</u>
PWC	<u>42</u>	<u>28.6</u>	<u>2.4</u>	<u>16.7</u>	<u>47.6</u>	<u>4.8</u>
OICC	<u>13</u>	<u>30.8</u>	<u>7.7</u>	<u>15.4</u>	<u>30.8</u>	<u>15.4</u>
CB	<u>22</u>	<u>50.0</u>	<u>4.5</u>	<u>9.1</u>	<u>36.4</u>	<u>0.0</u>
EFD	<u>136</u>	<u>33.8</u>	<u>2.9</u>	<u>20.6</u>	<u>35.3</u>	<u>7.4</u>
NAVFAC	<u>60</u>	<u>23.3</u>	<u>6.7</u>	<u>20.0</u>	<u>41.7</u>	<u>8.3</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>25.8</u>	<u>0.6</u>	<u>16.6</u>	<u>49.1</u>	<u>8.0</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>31.3</u>	<u>2.1</u>	<u>15.7</u>	<u>44.4</u>	<u>6.4</u>

Thirty-one percent of the respondents did not answer this question, most indicating no involvement with labs outside the Navy. Of those answering, 50% find the CEL more timely and efficient while 18% prefer outside labs.

QUESTION 32: I find it professionally informative to read
CEL reports/notes pertaining to my field.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>5.0</u>	<u>11.2</u>	<u>76.5</u>	<u>6.5</u>	<u>.8</u>
ROICC	<u>53</u>	<u>3.8</u>	<u>13.2</u>	<u>81.1</u>	<u>1.9</u>	<u>0.0</u>
PWC	<u>42</u>	<u>2.4</u>	<u>23.8</u>	<u>71.4</u>	<u>2.4</u>	<u>0.0</u>
OICC	<u>13</u>	<u>15.4</u>	<u>7.7</u>	<u>76.9</u>	<u>0.0</u>	<u>0.0</u>
CB	<u>22</u>	<u>9.1</u>	<u>9.1</u>	<u>72.7</u>	<u>9.1</u>	<u>0.0</u>
EFD	<u>136</u>	<u>11.8</u>	<u>10.3</u>	<u>64.7</u>	<u>13.2</u>	<u>0.0</u>
NAVFAC	<u>60</u>	<u>3.3</u>	<u>18.3</u>	<u>66.7</u>	<u>8.3</u>	<u>3.3</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>9.8</u>	<u>16.6</u>	<u>67.5</u>	<u>5.5</u>	<u>0.6</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>7.2</u>	<u>13.5</u>	<u>71.6</u>	<u>7.1</u>	<u>0.7</u>

Again, a strong indication that the field activities
approve of the CEL's informative reports. Over 85% approve
of the reports' informative format.

QUESTION 33: Receiving reports on Arctic equipment while stationed in the tropics is a typical CEL distribution snafu.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>16.5</u>	<u>3.5</u>	<u>23.1</u>	<u>49.2</u>	<u>7.7</u>
ROICC	<u>53</u>	<u>5.7</u>	<u>5.7</u>	<u>24.5</u>	<u>60.4</u>	<u>3.8</u>
PWC	<u>42</u>	<u>14.3</u>	<u>0.0</u>	<u>19.0</u>	<u>59.5</u>	<u>7.1</u>
OICC	<u>13</u>	<u>15.4</u>	<u>7.7</u>	<u>23.1</u>	<u>46.2</u>	<u>7.7</u>
CB	<u>22</u>	<u>27.3</u>	<u>4.5</u>	<u>22.7</u>	<u>40.9</u>	<u>4.5</u>
EFD	<u>136</u>	<u>34.6</u>	<u>4.4</u>	<u>20.6</u>	<u>37.5</u>	<u>2.9</u>
NAVFAC	<u>60</u>	<u>21.7</u>	<u>10.0</u>	<u>16.7</u>	<u>45.0</u>	<u>6.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>21.5</u>	<u>5.5</u>	<u>8.6</u>	<u>54.0</u>	<u>10.4</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>20.7</u>	<u>4.7</u>	<u>18.9</u>	<u>48.8</u>	<u>6.9</u>

In 1968, 36% of the respondents fele that distribution snafus were not typical of NCEL. An increase to 55.7% shows significant progress in CEL's distribution process. All of the field elements (PWD, ROICC, PWC and OICC) were considerably below the mean "no response" with the EFD considerably above.

QUESTION 34: The format for providing information from private sector corporations is a more usable form than CEL's.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>19.2</u>	<u>.4</u>	<u>15.8</u>	<u>60.4</u>	<u>4.2</u>
ROICC	<u>53</u>	<u>20.8</u>	<u>1.9</u>	<u>9.4</u>	<u>66.0</u>	<u>1.9</u>
PWC	<u>42</u>	<u>11.9</u>	<u>0.0</u>	<u>16.7</u>	<u>69.0</u>	<u>2.4</u>
OICC	<u>13</u>	<u>23.1</u>	<u>0.0</u>	<u>15.4</u>	<u>53.8</u>	<u>7.7</u>
CB	<u>22</u>	<u>45.5</u>	<u>0.0</u>	<u>13.6</u>	<u>40.9</u>	<u>0.0</u>
EFD	<u>136</u>	<u>21.3</u>	<u>4.4</u>	<u>23.5</u>	<u>50.0</u>	<u>0.7</u>
NAVFAC	<u>60</u>	<u>16.7</u>	<u>6.7</u>	<u>25.0</u>	<u>48.3</u>	<u>3.3</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>25.8</u>	<u>2.5</u>	<u>9.8</u>	<u>56.4</u>	<u>5.5</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>21.3</u>	<u>2.1</u>	<u>16.1</u>	<u>56.9</u>	<u>3.5</u>

Over 60% of the respondents prefer the CEL's format for providing information over private sector corporations while only 18% prefer the private sector sources.

QUESTION 35: I feel that reading the CEL reports is a waste of time.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>4.2</u>	<u>0.0</u>	<u>3.1</u>	<u>70.0</u>	<u>22.7</u>
ROICC	<u>53</u>	<u>5.7</u>	<u>0.0</u>	<u>1.9</u>	<u>69.8</u>	<u>22.6</u>
PWC	<u>42</u>	<u>2.4</u>	<u>7.1</u>	<u>2.4</u>	<u>54.8</u>	<u>33.3</u>
OICC	<u>13</u>	<u>15.4</u>	<u>0.0</u>	<u>7.7</u>	<u>53.8</u>	<u>23.1</u>
CB	<u>22</u>	<u>9.1</u>	<u>0.0</u>	<u>9.1</u>	<u>59.1</u>	<u>22.7</u>
EFD	<u>136</u>	<u>8.8</u>	<u>0.7</u>	<u>10.3</u>	<u>66.2</u>	<u>14.0</u>
NAVFAC	<u>60</u>	<u>3.3</u>	<u>1.7</u>	<u>3.3</u>	<u>63.3</u>	<u>28.3</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>
OTHER	<u>163</u>	<u>10.4</u>	<u>1.2</u>	<u>3.1</u>	<u>57.1</u>	<u>28.2</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>6.7</u>	<u>0.9</u>	<u>4.5</u>	<u>64.4</u>	<u>23.5</u>

It is most significant that 87.9% of the respondents feel that reading CEL reports is not a waste of time. The OICC group is the only group with a large "no response" mean above the overall mean.

QUESTION 36: CEL reports require so much sifting that the reader has difficulty finding the "meat" of the subject.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>6.5</u>	<u>1.2</u>	<u>20.0</u>	<u>65.0</u>	<u>7.3</u>
ROICC	<u>53</u>	<u>9.4</u>	<u>1.9</u>	<u>20.8</u>	<u>66.0</u>	<u>1.9</u>
PWC	<u>42</u>	<u>2.4</u>	<u>0.0</u>	<u>19.0</u>	<u>64.3</u>	<u>14.3</u>
OICC	<u>13</u>	<u>15.4</u>	<u>0.0</u>	<u>15.4</u>	<u>61.5</u>	<u>7.7</u>
CB	<u>22</u>	<u>18.2</u>	<u>0.0</u>	<u>18.2</u>	<u>59.1</u>	<u>4.5</u>
EFD	<u>136</u>	<u>19.1</u>	<u>2.2</u>	<u>19.9</u>	<u>55.1</u>	<u>3.7</u>
NAVFAC	<u>60</u>	<u>6.7</u>	<u>5.0</u>	<u>23.3</u>	<u>56.7</u>	<u>8.3</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>9.8</u>	<u>1.2</u>	<u>9.8</u>	<u>66.9</u>	<u>12.3</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>10.0</u>	<u>1.6</u>	<u>17.9</u>	<u>62.8</u>	<u>7.7</u>

A unanimous response that the CEL reports are not difficult to read and obtain the desired information. Over 70% are satisfied with the readability of CEL reports.

QUESTION 37: I feel it would be helpful for the lab to identify points of contact that could provide assistance.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>5.4</u>	<u>21.2</u>	<u>66.2</u>	<u>6.2</u>	<u>1.2</u>
ROICC	<u>53</u>	<u>1.9</u>	<u>24.5</u>	<u>69.8</u>	<u>1.9</u>	<u>1.9</u>
PWC	<u>42</u>	<u>2.4</u>	<u>19.0</u>	<u>69.0</u>	<u>7.1</u>	<u>2.4</u>
OICC	<u>13</u>	<u>30.8</u>	<u>15.4</u>	<u>53.8</u>	<u>0.0</u>	<u>0.0</u>
CB	<u>22</u>	<u>13.6</u>	<u>18.2</u>	<u>63.0</u>	<u>4.5</u>	<u>0.0</u>
EFD	<u>136</u>	<u>7.4</u>	<u>21.3</u>	<u>63.4</u>	<u>5.1</u>	<u>0.7</u>
NAVFAC	<u>60</u>	<u>5.0</u>	<u>36.7</u>	<u>53.5</u>	<u>5.0</u>	<u>0.0</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>8.6</u>	<u>17.8</u>	<u>68.7</u>	<u>3.7</u>	<u>1.2</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>6.7</u>	<u>21.6</u>	<u>65.7</u>	<u>4.9</u>	<u>1.1</u>

Over 86% of the respondents feel that the CEL should identify points of contact within the CEL that will provide assistance to the field groups. Certainly an area to consider in improving relations between the CEL and the field. However, this could most probably be a deficiency on the part of the field units and not the CEL.

QUESTION 38: I find it more economical to contract work with private labs rather than to the CEL.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>34.6</u>	<u>0.0</u>	<u>7.7</u>	<u>47.7</u>	<u>10.0</u>
ROICC	<u>53</u>	<u>26.4</u>	<u>0.0</u>	<u>11.3</u>	<u>58.5</u>	<u>3.8</u>
PWC	<u>42</u>	<u>31.0</u>	<u>0.0</u>	<u>4.8</u>	<u>54.8</u>	<u>9.5</u>
OICC	<u>13</u>	<u>38.5</u>	<u>0.0</u>	<u>15.4</u>	<u>30.8</u>	<u>15.4</u>
CB	<u>22</u>	<u>50.0</u>	<u>0.0</u>	<u>9.1</u>	<u>40.9</u>	<u>0.0</u>
EFD	<u>136</u>	<u>35.3</u>	<u>0.7</u>	<u>16.9</u>	<u>42.6</u>	<u>4.4</u>
NAVFAC	<u>60</u>	<u>18.3</u>	<u>6.7</u>	<u>15.0</u>	<u>51.7</u>	<u>8.3</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>35.6</u>	<u>2.5</u>	<u>7.4</u>	<u>49.1</u>	<u>5.5</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>33.3</u>	<u>1.2</u>	<u>10.1</u>	<u>48.1</u>	<u>7.2</u>

By the large margin of 55% to 11%, the field groups find it more economical to contract work to the CEL than to private labs. This response, along with the response to question 31, that the majority feel the CEL is more timely and efficient than outside labs, provides strong reasoning to the need for accomplishing R&D in-house whenever possible.

QUESTION 39: I have more influence over work contracted to private labs than I do to the CEL.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>36.9</u>	<u>1.9</u>	<u>26.5</u>	<u>28.1</u>	<u>6.5</u>
ROICC	<u>53</u>	<u>34.0</u>	<u>1.9</u>	<u>17.0</u>	<u>45.3</u>	<u>1.9</u>
PWC	<u>42</u>	<u>28.6</u>	<u>0.0</u>	<u>28.6</u>	<u>35.7</u>	<u>7.1</u>
OICC	<u>13</u>	<u>38.5</u>	<u>0.0</u>	<u>38.5</u>	<u>15.4</u>	<u>7.7</u>
CB	<u>22</u>	<u>50.0</u>	<u>0.0</u>	<u>13.6</u>	<u>36.4</u>	<u>0.0</u>
EFD	<u>136</u>	<u>33.8</u>	<u>2.9</u>	<u>30.9</u>	<u>27.9</u>	<u>4.4</u>
NAVFAC	<u>60</u>	<u>10.0</u>	<u>8.3</u>	<u>38.3</u>	<u>41.7</u>	<u>1.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>36.2</u>	<u>2.5</u>	<u>20.9</u>	<u>35.6</u>	<u>4.9</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>33.7</u>	<u>2.5</u>	<u>26.3</u>	<u>32.5</u>	<u>4.9</u>

No major opinion on this question, almost 34% having no opinion, 29% agreeing that the field groups have more influence over contract work with private labs, while 37% feel the field has more influence over work accomplished in the CEL

QUESTION 40: In my organization, laboratory research-result information is available to people who wish to use it.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>23.5</u>	<u>1.9</u>	<u>55.4</u>	<u>18.1</u>	<u>1.2</u>
ROICC	<u>53</u>	<u>22.6</u>	<u>0.0</u>	<u>45.3</u>	<u>26.4</u>	<u>5.7</u>
PWC	<u>42</u>	<u>21.4</u>	<u>9.5</u>	<u>54.8</u>	<u>11.9</u>	<u>2.4</u>
OICC	<u>13</u>	<u>30.8</u>	<u>0.0</u>	<u>61.5</u>	<u>0.0</u>	<u>7.7</u>
CB	<u>22</u>	<u>27.3</u>	<u>9.1</u>	<u>45.5</u>	<u>13.6</u>	<u>4.5</u>
EFD	<u>136</u>	<u>29.4</u>	<u>0.7</u>	<u>44.9</u>	<u>22.1</u>	<u>2.9</u>
NAVFAC	<u>60</u>	<u>3.3</u>	<u>11.7</u>	<u>63.3</u>	<u>18.3</u>	<u>3.3</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>22.7</u>	<u>4.3</u>	<u>59.5</u>	<u>9.8</u>	<u>3.7</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>22.8</u>	<u>3.5</u>	<u>54.1</u>	<u>16.8</u>	<u>2.8</u>

Fifty-eight percent are in agreement that research-result information is available to those who need it while only 19% disagreed.

QUESTION 41: My organization routes all CEL data that concerns the mission of the department/branch to its personnel.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>10.4</u>	<u>9.2</u>	<u>67.7</u>	<u>12.7</u>	<u>0.0</u>
ROICC	<u>53</u>	<u>7.5</u>	<u>9.4</u>	<u>62.3</u>	<u>15.1</u>	<u>5.7</u>
PWC	<u>42</u>	<u>7.1</u>	<u>26.2</u>	<u>57.1</u>	<u>7.1</u>	<u>2.4</u>
OICC	<u>13</u>	<u>23.1</u>	<u>7.7</u>	<u>69.2</u>	<u>0.0</u>	<u>0.0</u>
CB	<u>22</u>	<u>31.8</u>	<u>0.0</u>	<u>45.5</u>	<u>18.2</u>	<u>4.5</u>
EFD	<u>136</u>	<u>21.3</u>	<u>4.4</u>	<u>47.8</u>	<u>20.6</u>	<u>5.9</u>
NAVFAC	<u>60</u>	<u>10.0</u>	<u>13.3</u>	<u>43.3</u>	<u>26.7</u>	<u>6.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>18.4</u>	<u>9.8</u>	<u>49.1</u>	<u>19.6</u>	<u>3.1</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>14.5</u>	<u>9.5</u>	<u>56.5</u>	<u>16.5</u>	<u>2.9</u>

A strong indication that the field groups feel they are adequately supported by their organizations' routing system, 66% are in agreement while only 19% disagree.

Question 42: Is there a Technical Library for your department/
branch?

	Frequency	Did Not Answer	Yes	No
PWD	<u>260</u>	<u>3.8</u>	<u>70.0</u>	<u>26.2</u>
ROICC	<u>53</u>	<u>1.9</u>	<u>66.0</u>	<u>32.1</u>
PWC	<u>42</u>	<u>4.8</u>	<u>66.7</u>	<u>28.6</u>
OICC	<u>13</u>	<u>23.1</u>	<u>61.5</u>	<u>15.4</u>
CB	<u>22</u>	<u>4.5</u>	<u>90.9</u>	<u>4.5</u>
EFD	<u>136</u>	<u>10.3</u>	<u>63.2</u>	<u>26.5</u>
NAVFAC	<u>60</u>	<u>3.3</u>	<u>85.0</u>	<u>11.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>6.7</u>	<u>55.8</u>	<u>36.8</u>
TOTAL	<u>750</u>	<u>7.3</u>	<u>66.9</u>	<u>27.1</u>

Over one fourth of the respondents do not have a technical library available to their department/branch. This could be cause for problems in dissemination and recall of research information.

Question 43: For the times you have utilized CEL recommendations, did you:

	Frequency	Did Not Answer	Locate by Index	Look through Files	Call CEL	Have Others Look
PWD	<u>260</u>	<u>18.5</u>	<u>30.0</u>	<u>16.9</u>	<u>20.8</u>	<u>13.8</u>
ROICC	<u>53</u>	<u>20.8</u>	<u>32.1</u>	<u>18.9</u>	<u>17.0</u>	<u>11.3</u>
PWC	<u>42</u>	<u>21.4</u>	<u>33.3</u>	<u>11.9</u>	<u>23.8</u>	<u>9.5</u>
OICC	<u>13</u>	<u>30.8</u>	<u>30.8</u>	<u>7.7</u>	<u>15.4</u>	<u>15.4</u>
CB	<u>22</u>	<u>27.3</u>	<u>31.8</u>	<u>9.1</u>	<u>18.2</u>	<u>13.6</u>
EFD	<u>136</u>	<u>31.6</u>	<u>22.1</u>	<u>14.0</u>	<u>23.5</u>	<u>8.8</u>
NAVFAC	<u>60</u>	<u>23.3</u>	<u>30.0</u>	<u>11.7</u>	<u>28.3</u>	<u>6.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>27.6</u>	<u>35.0</u>	<u>9.8</u>	<u>14.1</u>	<u>13.5</u>
TOTAL	<u>750</u>	<u>24.0</u>	<u>30.1</u>	<u>13.9</u>	<u>20.1</u>	<u>11.9</u>

Over 50% of the respondents were able to utilize CEL technology by referring to the published index or calling the "hot line" established by the CEL for this specific purpose.

QUESTION 44: I feel that I have ready access to a complete file and reference system of CEL literature published over the last three years.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>4.2</u>	<u>5.8</u>	<u>33.1</u>	<u>43.5</u>	<u>13.5</u>
ROICC	<u>53</u>	<u>3.8</u>	<u>1.9</u>	<u>30.2</u>	<u>43.4</u>	<u>20.8</u>
PWC	<u>42</u>	<u>2.4</u>	<u>16.7</u>	<u>28.6</u>	<u>38.1</u>	<u>14.3</u>
OICC	<u>13</u>	<u>7.7</u>	<u>0.0</u>	<u>53.8</u>	<u>23.1</u>	<u>15.4</u>
CB	<u>22</u>	<u>13.6</u>	<u>0.0</u>	<u>40.9</u>	<u>27.3</u>	<u>18.2</u>
EFD	<u>136</u>	<u>7.4</u>	<u>5.1</u>	<u>19.9</u>	<u>50.0</u>	<u>17.6</u>
NAVFAC	<u>60</u>	<u>10.0</u>	<u>8.3</u>	<u>30.0</u>	<u>41.7</u>	<u>10.0</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>6.7</u>	<u>8.0</u>	<u>34.4</u>	<u>36.8</u>	<u>14.1</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>6.0</u>	<u>6.4</u>	<u>30.9</u>	<u>41.9</u>	<u>14.8</u>

Fifty-six percent disagree that they have ready access to a complete file and reference system of CEL literature published in the last three years while 37% feel access files are available. Apparently, a need exists for filing or indexing this data.

QUESTION 45: I prefer receiving abstracts of CEL reports to receiving the complete report.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>4.6</u>	<u>13.8</u>	<u>60.0</u>	<u>19.6</u>	<u>1.9</u>
ROICC	<u>53</u>	<u>15.1</u>	<u>0.0</u>	<u>64.2</u>	<u>20.8</u>	<u>0.0</u>
PWC	<u>42</u>	<u>0.0</u>	<u>23.8</u>	<u>45.2</u>	<u>28.6</u>	<u>2.4</u>
OICC	<u>13</u>	<u>7.7</u>	<u>15.4</u>	<u>53.8</u>	<u>15.4</u>	<u>7.7</u>
CB	<u>22</u>	<u>9.1</u>	<u>22.7</u>	<u>54.5</u>	<u>13.6</u>	<u>0.0</u>
EFD	<u>136</u>	<u>10.3</u>	<u>6.6</u>	<u>47.1</u>	<u>33.8</u>	<u>2.2</u>
NAVFAC	<u>60</u>	<u>6.7</u>	<u>11.7</u>	<u>41.7</u>	<u>31.7</u>	<u>8.3</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>6.7</u>	<u>10.4</u>	<u>51.5</u>	<u>26.4</u>	<u>4.9</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>5.9</u>	<u>12.5</u>	<u>53.5</u>	<u>25.1</u>	<u>3.1</u>

Sixty-six percent of the respondents prefer receiving abstracts of CEL reports rather than the report itself while only 28% preferred the reports over the abstracts. This is a similar response to the 1968 survey.

QUESTION 46: A CEL index of reports should be published more frequently.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>6.9</u>	<u>7.3</u>	<u>49.6</u>	<u>33.8</u>	<u>2.3</u>
ROICC	<u>53</u>	<u>3.8</u>	<u>18.9</u>	<u>49.1</u>	<u>28.3</u>	<u>0.0</u>
PWC	<u>42</u>	<u>2.4</u>	<u>9.5</u>	<u>52.4</u>	<u>31.0</u>	<u>4.8</u>
OICC	<u>13</u>	<u>7.7</u>	<u>7.7</u>	<u>53.8</u>	<u>30.8</u>	<u>0.0</u>
CB	<u>22</u>	<u>13.6</u>	<u>13.6</u>	<u>40.9</u>	<u>31.8</u>	<u>0.0</u>
EFD	<u>136</u>	<u>8.8</u>	<u>16.2</u>	<u>53.7</u>	<u>21.3</u>	<u>0.0</u>
NAVFAC	<u>60</u>	<u>13.3</u>	<u>25.0</u>	<u>35.0</u>	<u>18.3</u>	<u>8.3</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>11.7</u>	<u>4.3</u>	<u>46.0</u>	<u>36.8</u>	<u>1.2</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>8.5</u>	<u>10.8</u>	<u>48.3</u>	<u>30.4</u>	<u>2.0</u>

Fifty-nine percent are in agreement that the CEL should publish an index of reports more frequently. Response to this question is almost exactly the same as the 1968 survey. Improvement is still needed in this area.

QUESTION 47: It would be beneficial for the lab to produce a source book that provides quick reference to the latest research and innovations related to NAVFAC projects.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>6.9</u>	<u>22.7</u>	<u>59.2</u>	<u>10.0</u>	<u>1.2</u>
ROICC	<u>53</u>	<u>5.7</u>	<u>24.5</u>	<u>67.9</u>	<u>1.9</u>	<u>0.0</u>
PWC	<u>42</u>	<u>0.0</u>	<u>19.0</u>	<u>73.8</u>	<u>7.1</u>	<u>0.0</u>
OICC	<u>13</u>	<u>7.7</u>	<u>23.1</u>	<u>61.5</u>	<u>7.7</u>	<u>0.0</u>
CB	<u>22</u>	<u>13.6</u>	<u>27.3</u>	<u>54.5</u>	<u>4.5</u>	<u>0.0</u>
EFD	<u>136</u>	<u>8.1</u>	<u>30.1</u>	<u>58.8</u>	<u>2.9</u>	<u>0.0</u>
NAVFAC	<u>60</u>	<u>6.7</u>	<u>35.0</u>	<u>51.7</u>	<u>5.0</u>	<u>1.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>13.5</u>	<u>19.6</u>	<u>57.1</u>	<u>9.2</u>	<u>0.6</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>8.3</u>	<u>24.3</u>	<u>59.5</u>	<u>7.2</u>	<u>0.7</u>

The respondents showed a strong desire for a source book that will provide quick reference to the latest research and development at the CEL. Almost 84% consider a source book beneficial while only 8% disagree.

QUESTION 48: Materials to implement CEL findings are seldom available.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>17.7</u>	<u>3.8</u>	<u>27.7</u>	<u>48.15</u>	<u>2.3</u>
ROICC	<u>53</u>	<u>20.8</u>	<u>5.7</u>	<u>43.4</u>	<u>28.3</u>	<u>1.9</u>
PWC	<u>42</u>	<u>7.1</u>	<u>2.4</u>	<u>21.4</u>	<u>66.7</u>	<u>2.4</u>
OICC	<u>13</u>	<u>23.1</u>	<u>0.0</u>	<u>15.4</u>	<u>61.5</u>	<u>0.0</u>
CB	<u>22</u>	<u>36.4</u>	<u>4.5</u>	<u>27.3</u>	<u>31.8</u>	<u>0.0</u>
EFD	<u>136</u>	<u>28.7</u>	<u>2.2</u>	<u>26.5</u>	<u>41.2</u>	<u>1.5</u>
NAVFAC	<u>60</u>	<u>11.7</u>	<u>5.0</u>	<u>40.0</u>	<u>38.3</u>	<u>5.0</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>23.9</u>	<u>3.7</u>	<u>17.2</u>	<u>53.4</u>	<u>1.8</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>20.8</u>	<u>3.6</u>	<u>27.7</u>	<u>46.8</u>	<u>2.1</u>

Forty-nine percent of those surveyed disagree that materials to implement CEL findings are seldom available. Thirty percent agree and consider material availability a problem.

QUESTION 49: I seldom find an application of anything I've read in a CEL report.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>6.2</u>	<u>2.3</u>	<u>25.4</u>	<u>58.1</u>	<u>8.1</u>
ROICC	<u>53</u>	<u>11.3</u>	<u>7.5</u>	<u>22.6</u>	<u>54.7</u>	<u>3.8</u>
PWC	<u>42</u>	<u>7.1</u>	<u>0.0</u>	<u>19.0</u>	<u>64.3</u>	<u>9.5</u>
OICC	<u>13</u>	<u>15.4</u>	<u>0.0</u>	<u>15.4</u>	<u>61.5</u>	<u>7.7</u>
CB	<u>22</u>	<u>27.3</u>	<u>0.0</u>	<u>36.4</u>	<u>31.8</u>	<u>4.5</u>
EFD	<u>136</u>	<u>19.1</u>	<u>1.5</u>	<u>25.0</u>	<u>52.9</u>	<u>1.5</u>
NAVFAC	<u>60</u>	<u>5.0</u>	<u>0.0</u>	<u>20.0</u>	<u>60.0</u>	<u>15.0</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>12.3</u>	<u>4.3</u>	<u>14.7</u>	<u>59.5</u>	<u>9.2</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>10.9</u>	<u>2.5</u>	<u>22.1</u>	<u>57.1</u>	<u>7.3</u>

The respondents disagreed strongly (65%) that there is seldom an application for items read in CEL reports. Twenty-five percent of the respondents agree.

QUESTION 50: Often extensive equipment changes are required to use CEL recommendations.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>20.8</u>	<u>1.9</u>	<u>34.2</u>	<u>41.2</u>	<u>1.9</u>
ROICC	<u>53</u>	<u>22.6</u>	<u>5.7</u>	<u>28.3</u>	<u>41.5</u>	<u>1.9</u>
PWC	<u>42</u>	<u>9.5</u>	<u>0.0</u>	<u>31.0</u>	<u>59.5</u>	<u>0.0</u>
OICC	<u>13</u>	<u>15.4</u>	<u>0.0</u>	<u>7.7</u>	<u>76.9</u>	<u>0.0</u>
CB	<u>22</u>	<u>40.9</u>	<u>0.0</u>	<u>13.6</u>	<u>45.5</u>	<u>0.0</u>
EFD	<u>136</u>	<u>35.3</u>	<u>0.7</u>	<u>26.5</u>	<u>36.0</u>	<u>1.5</u>
NAVFAC	<u>60</u>	<u>21.7</u>	<u>1.7</u>	<u>25.0</u>	<u>48.3</u>	<u>3.3</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>28.8</u>	<u>1.2</u>	<u>21.5</u>	<u>44.8</u>	<u>3.7</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>25.2</u>	<u>1.6</u>	<u>27.6</u>	<u>43.5</u>	<u>2.1</u>

No strong indication of limitations created by the CEL recommendations causing extensive equipment changes. Twenty-five percent had no opinion, 29% agree extensive changes are required and 46% are in disagreement.

QUESTION 51: We lack the technical help to adequately utilize CEL findings.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>9.2</u>	<u>4.2</u>	<u>32.7</u>	<u>48.5</u>	<u>5.4</u>
ROICC	<u>53</u>	<u>17.0</u>	<u>7.5</u>	<u>35.8</u>	<u>39.6</u>	<u>0.0</u>
PWC	<u>42</u>	<u>11.9</u>	<u>4.8</u>	<u>23.8</u>	<u>52.4</u>	<u>7.1</u>
OICC	<u>13</u>	<u>15.4</u>	<u>0.0</u>	<u>30.8</u>	<u>53.8</u>	<u>0.0</u>
CB	<u>22</u>	<u>36.4</u>	<u>0.0</u>	<u>27.3</u>	<u>36.4</u>	<u>0.0</u>
EFD	<u>136</u>	<u>24.3</u>	<u>3.7</u>	<u>19.9</u>	<u>50.0</u>	<u>2.2</u>
NAVFAC	<u>60</u>	<u>5.0</u>	<u>8.3</u>	<u>25.3</u>	<u>55.0</u>	<u>8.3</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>19.6</u>	<u>3.7</u>	<u>22.1</u>	<u>48.5</u>	<u>6.1</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>15.5</u>	<u>4.4</u>	<u>26.8</u>	<u>48.7</u>	<u>4.7</u>

The field groups indicate technical help is available to adequately utilize CEL findings. Fifty-three percent feel technical help is available while 31% feel assistance is required.

AD-A092 469

NAVAL POSTGRADUATE SCHOOL MONTEREY CA

F/G 5/2

EVALUATION OF THE UTILIZATION OF RESEARCH AND DEVELOPMENT RESUL--ETC(U)

SEP 80 M G AKIN, G D NIX, G R JEFFERSON

UNCLASSIFIED

NPS-54-80-011

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2 of 2

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DATE _____

25-49

QUESTION 52: New ideas, such as CEL presents, receive a fair hearing in this organization.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>11.2</u>	<u>4.2</u>	<u>64.2</u>	<u>18.8</u>	<u>1.5</u>
ROICC	<u>53</u>	<u>13.2</u>	<u>3.8</u>	<u>47.2</u>	<u>32.1</u>	<u>3.8</u>
PWC	<u>42</u>	<u>4.8</u>	<u>4.8</u>	<u>69.0</u>	<u>19.0</u>	<u>2.4</u>
OICC	<u>13</u>	<u>15.4</u>	<u>15.4</u>	<u>61.5</u>	<u>7.7</u>	<u>0.0</u>
CB	<u>22</u>	<u>18.2</u>	<u>4.5</u>	<u>59.1</u>	<u>13.6</u>	<u>4.5</u>
EFD	<u>136</u>	<u>24.3</u>	<u>0.7</u>	<u>54.4</u>	<u>16.9</u>	<u>3.7</u>
NAVFAC	<u>60</u>	<u>6.7</u>	<u>6.7</u>	<u>60.0</u>	<u>26.6</u>	<u>0.0</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>17.2</u>	<u>6.1</u>	<u>62.6</u>	<u>13.5</u>	<u>0.6</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>14.5</u>	<u>4.4</u>	<u>60.7</u>	<u>18.5</u>	<u>1.9</u>

CEL reports are reveiwed and studied by the field units, according to the survey. Sixty-five percent of respondents are in agreement with the question while 20% disagree.

QUESTION 53: The people here seem to prefer the way we do things now over using CEL recommendations.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>12.3</u>	<u>3.5</u>	<u>34.6</u>	<u>46.5</u>	<u>3.1</u>
ROICC	<u>53</u>	<u>17.0</u>	<u>7.5</u>	<u>30.2</u>	<u>45.3</u>	<u>0.0</u>
PWC	<u>42</u>	<u>4.8</u>	<u>2.4</u>	<u>35.7</u>	<u>54.8</u>	<u>2.4</u>
OICC	<u>13</u>	<u>15.4</u>	<u>0.0</u>	<u>7.7</u>	<u>76.9</u>	<u>0.0</u>
CB	<u>22</u>	<u>31.8</u>	<u>0.0</u>	<u>18.2</u>	<u>50.0</u>	<u>0.0</u>
EFD	<u>136</u>	<u>23.5</u>	<u>2.2</u>	<u>29.4</u>	<u>44.1</u>	<u>0.7</u>
NAVFAC	<u>60</u>	<u>11.7</u>	<u>0.0</u>	<u>38.3</u>	<u>41.7</u>	<u>8.3</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>23.9</u>	<u>1.8</u>	<u>20.9</u>	<u>49.1</u>	<u>4.3</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>17.3</u>	<u>2.7</u>	<u>29.7</u>	<u>47.3</u>	<u>2.9</u>

According to the established pattern of responses, the field groups feel CEL recommendations are reviewed and changes made to existing procedure whenever it is necessary. Fifty percent of the respondents feel the changes are made while 32% feel their command prefers the status quo.

QUESTION 54: Budget limitations preclude implementation of
CEL recommendations.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>10.0</u>	<u>6.2</u>	<u>44.2</u>	<u>36.5</u>	<u>3.1</u>
ROICC	<u>53</u>	<u>18.9</u>	<u>9.4</u>	<u>35.8</u>	<u>35.8</u>	<u>0.0</u>
PWC	<u>42</u>	<u>7.1</u>	<u>7.1</u>	<u>40.5</u>	<u>45.2</u>	<u>0.0</u>
OICC	<u>13</u>	<u>15.4</u>	<u>0.0</u>	<u>30.8</u>	<u>53.8</u>	<u>0.0</u>
CB	<u>22</u>	<u>40.9</u>	<u>0.0</u>	<u>27.3</u>	<u>31.8</u>	<u>0.0</u>
EFD	<u>136</u>	<u>29.4</u>	<u>3.7</u>	<u>27.9</u>	<u>36.0</u>	<u>2.9</u>
NAVFAC	<u>60</u>	<u>13.3</u>	<u>6.7</u>	<u>25.0</u>	<u>48.3</u>	<u>6.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>23.3</u>	<u>3.7</u>	<u>33.7</u>	<u>36.2</u>	<u>3.1</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>18.1</u>	<u>5.2</u>	<u>35.9</u>	<u>38.0</u>	<u>2.8</u>

An even split, 41% feel budget limitations preclude
implementations of CEL recommendations while 41% disagree
that budget limitations are involved.

QUESTION 55: New procedures on this job too often require approval from higher authority.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>10.4</u>	<u>4.2</u>	<u>36.2</u>	<u>45.4</u>	<u>3.8</u>
ROICC	<u>53</u>	<u>15.1</u>	<u>13.2</u>	<u>35.8</u>	<u>35.8</u>	<u>0.0</u>
PWC	<u>42</u>	<u>9.5</u>	<u>4.8</u>	<u>31.0</u>	<u>50.0</u>	<u>4.8</u>
OICC	<u>13</u>	<u>15.4</u>	<u>7.7</u>	<u>15.4</u>	<u>61.5</u>	<u>0.0</u>
CB	<u>22</u>	<u>27.3</u>	<u>0.0</u>	<u>27.3</u>	<u>40.9</u>	<u>4.5</u>
EFD	<u>136</u>	<u>25.0</u>	<u>5.1</u>	<u>36.8</u>	<u>30.1</u>	<u>2.9</u>
NAVFAC	<u>60</u>	<u>13.3</u>	<u>15.0</u>	<u>45.0</u>	<u>26.7</u>	<u>0.0</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>20.2</u>	<u>6.7</u>	<u>28.8</u>	<u>40.5</u>	<u>3.7</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>16.3</u>	<u>6.4</u>	<u>34.4</u>	<u>39.9</u>	<u>3.1</u>

Again, a very close response, 40.8% agreeing that higher authority is required to initiate new procedures while 43% disagree. This question also received a split response in the 1968 survey.

QUESTION 56: I often run into conflict between codes or specifications and research-result advice.

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSE (PERCENT)				
		DID NOT ANSWER	SA	A	D	SD
PWD	<u>260</u>	<u>17.3</u>	<u>2.7</u>	<u>23.8</u>	<u>51.9</u>	<u>4.2</u>
ROICC	<u>53</u>	<u>17.0</u>	<u>9.4</u>	<u>35.8</u>	<u>37.7</u>	<u>0.0</u>
PWC	<u>42</u>	<u>19.0</u>	<u>2.4</u>	<u>21.4</u>	<u>52.4</u>	<u>4.8</u>
OICC	<u>13</u>	<u>23.1</u>	<u>0.0</u>	<u>0.0</u>	<u>76.9</u>	<u>0.0</u>
CB	<u>22</u>	<u>40.9</u>	<u>0.0</u>	<u>4.5</u>	<u>54.5</u>	<u>0.0</u>
EFD	<u>136</u>	<u>27.9</u>	<u>4.4</u>	<u>30.9</u>	<u>36.0</u>	<u>0.7</u>
NAVFAC	<u>60</u>	<u>11.7</u>	<u>11.7</u>	<u>35.0</u>	<u>38.3</u>	<u>3.3</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>28.2</u>	<u>1.8</u>	<u>20.9</u>	<u>45.4</u>	<u>3.7</u>
TOTAL	<u>750</u>					
MEAN OF TOTAL RESPONSE		<u>22.0</u>	<u>3.9</u>	<u>25.1</u>	<u>46.1</u>	<u>2.9</u>

The ROICC group mean (45.2%) in agreement is considerably above the mean of the total respondents (29%). However, 50% of the respondents feel this is not a problem. The "no response" mean of 22% could be regarded as high.

Question 57: How many times in the past three years have you PERSONNALLY been responsible for actually implementing CEL recommendations in the field?

	Frequency	Never	1-3	4-6	7-10	Over 10
PWD	<u>260</u>	<u>24.2</u>	<u>51.9</u>	<u>17.3</u>	<u>4.2</u>	<u>2.3</u>
ROI CC	<u>53</u>	<u>43.4</u>	<u>39.6</u>	<u>13.2</u>	<u>3.8</u>	<u>0.0</u>
PWC	<u>42</u>	<u>21.4</u>	<u>61.9</u>	<u>14.3</u>	<u>0.0</u>	<u>2.4</u>
OICC	<u>13</u>	<u>38.5</u>	<u>38.5</u>	<u>15.4</u>	<u>7.7</u>	<u>0.0</u>
CB	<u>22</u>	<u>40.9</u>	<u>40.9</u>	<u>18.2</u>	<u>0.0</u>	<u>0.0</u>
EFD	<u>136</u>	<u>43.4</u>	<u>40.4</u>	<u>12.5</u>	<u>2.2</u>	<u>1.5</u>
NAVFAC	<u>60</u>	<u>41.7</u>	<u>40.0</u>	<u>8.3</u>	<u>3.3</u>	<u>6.7</u>
CEL	<u>1</u>	<u>0.0</u>	<u>0.0</u>	<u>100.0</u>	<u>0.0</u>	<u>0.0</u>
OTHER	<u>163</u>	<u>40.5</u>	<u>39.9</u>	<u>13.5</u>	<u>4.3</u>	<u>1.8</u>
TOTAL	<u>750</u>	<u>34.5</u>	<u>45.3</u>	<u>14.5</u>	<u>3.5</u>	<u>2.1</u>

The significant majority (65.4%) of the respondents have, in fact, implemented CEL recommendations. These results indicate that CEL research is being utilized in the field.

Question 58: In conjunction with previous questions concerning frequency of usage, why did you use CEL recommendations?

GROUP	FREQUENCY	DISTRIBUTION OF RESPONSES PERCENT					REQUESTED CEL INFO
		DID NOT ANSWER	MEMORY	RECENT READINGS	RECOMMENDED READINGS	LAST PLACE TO LOOK	
PWD	260	16.9	41.5	24.2	3.8	2.7	10.8
ROICC	53	30.3	32.1	18.9	1.9	1.9	15.1
PWC	42	11.9	40.5	23.8	7.1	0.0	16.7
OICC	13	30.8	46.2	7.7	0.0	0.0	15.4
CB	22	36.4	31.8	9.1	0.0	0.0	22.7
EFD	136	33.1	37.5	9.6	3.7	0.0	16.2
NAVFAC	60	21.7	40.0	11.7	11.7	5.0	10.0
CEL	1	0.0	100.0	0.0	0.0	0.0	0.0
OTHER	163	30.1	36.8	19.0	4.3	1.2	8.6
TOTAL	750						
MEAN OF TOTAL		24.5	38.8	18.3	4.4	1.7	12.3

The significant point in this question is that less than 2% felt CEL was the last place to look while 73.8% of the respondents were aware of the information that could be provided by the CEL.

V. SUMMARY

The results of the survey have definitely provided a basis for determining the adequacy of transfer of technology by CEL and its support to field groups throughout NAVFAC. A review of the questionnaire responses and an analysis of its statistical data should provide the reader ample information on the CEL research-result utilization effort. In addition, responses concerning progress made by the CEL subsequent to the 1968 survey should further enhance the effort presently being made in the CEL.

Review of the questionnaire's six major areas of concern are provided in summary form to emphasize the progress that has been made by the CEL.

AWARENESS OF CEL MISSION AND CAPABILITIES

The majority of the respondents from the field activities feel they understand the CEL mission and that the CEL personnel are also aware of problems in the field. The field activities also feel the CEL's research and development effort is generally in areas applicable to field needs, a satisfactory mix of theoretical research and research that can be readily applied to field situations. The CEL was rated very high by the field groups and the image of the laboratory is very satisfactory.

UTILIZATION OF CEL REPORTS

The field groups expressed a strong desire to utilize the CEL for technical support versus contracting the work to laboratories outside DOD. It is the general consensus that the CEL is found to be more prompt, timely, efficient and economical. The field groups also feel they are able to participate more in research conducted at the CEL.

The survey found the field commands to be appreciative of new techniques, new maintenance procedures and new materials developed in the CEL, and that the field commands encourage change and updating.

CEL RESEARCH REPORTS AND FEEDBACK

CEL reporting to the field activities was also found to be quite satisfactory. The respondents feel the reports are easily understood, dependable, accurate, factual, and provide good conclusions and recommended actions. The field groups also find the tabulated information (graphs, charts, etc.) to be useful and the background and theory found in most reports to be helpful.

ACCESSIBILITY OF RESEARCH DATA

Many of the problems concerning accessibility of research data fall within the field command. The survey indicates over 25% have no technical library within their branch/department. CEL data is routed on a need-to-know basis; therefore, much technical data can be sidetracked before reaching the intended

user. A strong response, 86% of those surveyed, agree that the CEL needs to identify points of contact within the CEL to assist field activities with particular problems.

DESIRE/NEED FOR A RESEARCH SOURCE BOOK

Eighty-five percent of the respondents are in agreement that the CEL needs to develop a source book that would provide quick reference to the latest research and innovations related to CEL projects. The field activities desire improvement of indexing material generated in the past and feel the index should be published more frequently. The respondents also prefer abstracts over full reports.

LIMITATION ON FIELD USE OF RESEARCH TECHNOLOGY

There were no major limitations revealed in the field's use of research technology. The field groups feel that material is a minor problem. There are no extensive equipment changes and technical help is available in the field. Approximately half of the respondents feel budget limitations affect technological change and that approval from higher authority creates delays. However, no major problems exist.

An interesting closing note is that of the 750 respondents to the questionnaire, over 65% have used the laboratory at least once during the past three years. This figure indicates that CEL research is being utilized in the field.

In summarizing the 1968 survey, there was a universal feeling that NCEL reports were not providing the assistance

and technology transfer intended. Factors which led to this conclusion included:

- . Many reports failed to provide information which would assist in the accomplishment of the recipient's assigned task.
- . A definite lack of cost or material fabrication information exists within NCEL's reports.
- . Common problem areas were not attacked by NCEL technical reports.

However, the respondents did have a positive opinion on the following:

- . All reports provided current up-to-date information.
- . The reports were not adversely technical in nature, providing the layman with understandable facts and knowledge.

It is quite evident now, and supported by the data gathered on this survey, that the CEL has steadily improved the mentioned deficiencies over the past 12 years and is overwhelmingly accepted by the organizations which utilize CEL research.

The CEL is recognized as a leader in the field of technology transfer. This is attributed to the fact that NAVFAC recognized early on the importance of technology transfer and has supported the laboratory in this endeavor.

The 1980 survey identifies areas to be "looked at" for possible improvement and it is hoped that this survey not only disproves the statement that field activities are

displeased with CEL research, but will also provide information for the CEL to continue with its improvements.

APPENDIX A

SURVEY TO STUDY THE USAGE AND EFFECTIVENESS OF NAVY'S
CIVIL ENGINEERING LABORATORY (CEL) RESEARCH AND DEVELOPMENTS

by

Bob Hudson

NAF Atsugi

April 1979

- Background:** This survey and resulting study are being conducted as a project for a University of Southern California class in Management of Research and Development (R&D).
- This is not an official U.S. Navy study. However, it is being performed with the full concurrence of CEL.
- Purpose:** To measure "in the field utilization" of CEL R&D efforts and to determine if CEL efforts effectively meet field needs.
- Objective:** Propose method or system to improve field utilization and to better match field needs to CEL R&D effort.
- Note:** The completion of this survey is purely voluntary. However, your assistance will be appreciated and, hopefully, the results will be beneficial to you as a manager.
- Instructions:** Please answer each question by checking appropriate block. Comments are welcome on any question.

Please complete the questionnaire completely once started. Please do not obtain any reference material or research any of the questions. All answers should be based on your present knowledge. This survey is anonymous, and the final study will NOT contain any reference to any person by name, rank, or grade except as CEC officers or Civil Service personnel. Please be frank in all evaluations.

Scope and Methodology

To determine the stated objectives, a questionnaire was distributed to personnel at three Naval shore facilities in Japan. Personnel selected for the survey currently occupy a position that would enable the incumbent to be a "potential user" of CEL technological development, i.e., one who should be able to specify methods and materials for physical accomplishments or one who manages a group which performs these functions.

Total number of personnel surveyed by area and number of responses are as follows:

	<u>NUMBER OF PERSONNEL SURVEYED</u>	<u>NUMBER OF RESPONSES</u>
NAVAL AIR FACILITY ATSUGI	7	5
NAVAL FLEET ACTIVITIES, SASEBO	4	4
NAVAL PUBLIC WORKS CENTER YOKOSUKA	<u>22</u>	<u>20</u>
TOTAL	33	29

The survey was COMPLETELY anonymous with each completed survey being returned in a sealed envelope to a central collection point at each activity.

Responses were analyzed on a percentage basis. As there was no distinction within personnel surveyed nor any quantitative value assigned to individual answers, no statistical analysis or test was performed.

Results

The following outlines survey results on a question-by-question basis.

QUESTION #1 - Do you feel that you fully understand the purpose and mission of CEL?

Yes 62% No 38%

QUESTION #2 - Check as many of the following that you feel are representative of CEL R&D efforts.

(Percentages of personnel checking each applicable area are indicated.)

<u>Percentage</u>	<u>Research Area</u>
86%	Alternate Energy Sources
66%	Physical Security Systems
100%	Paint Systems
76%	Waterfront Structures
83%	Energy Monitoring & Control Systems
66%	Computer Analysis of Structures to Resist Accidental Explosions
10%	Reliability of Ship Fire Control Systems*
24%	Selection of Equipment for Destruction of Classified Material
45%	Solid State Circuit Breakers
14%	Very Low Frequency Communication Systems*
93%	Roofing
83%	Maintenance of Airfields

*Not in CEL R&D mission. Twelve areas are listed, ten of which CEL is currently doing or has done research. The other two areas are not applicable to R&D mission of CEL.

QUESTION #3 - Which of the following do you feel best describes the type of R&D being conducted by CEL?

<u>Percentage</u>	<u>Research Area</u>
4%	Pure Theoretical Research
54%	Research which can be readily applied to field situations
42%	Mixture of the two above

QUESTION #4 - Does CEL publish the following literature?

	<u>YES</u>	<u>NO</u>	<u>DON'T KNOW</u>
a. Tech Data Sheet	97%	--	3%
b. Energy Forum Newsletter	55%	17%	28%
c. Index of all Research Conducted by Specific Area, i.e., Shore and Harbor Facilities, Environmental Protection, etc.	52%	3%	45%

	<u>YES</u>	<u>NO</u>	<u>DON'T KNOW</u>
d. Cumulative Index in Alphabetical Order by Subject, i.e., Paint, Concrete, Underwater, etc.	66%	--	34%
e. "RAP" Briefs	34%	7%	59%
QUESTION #5 - Do you feel that you get to review all CEL literature received by your station/activity?			
Always	33%		
Usually	45%		
Never	11%		
Don't Know	11%		
QUESTION #6 - Do you route all CEL data that concerns the mission of your department/branch to your subordinates?			
Yes	43%		
No	43%		
Don't Have Any Subordinates	14%		
QUESTION #7 - Do you feel that you have ready access to a complete file and reference system of CEL literature published over the last three years?			
Yes			66%
No			39%
Some information; don't know if complete			30%
Some information, but not complete			8%
Have my own CEL data in my desk			8%
QUESTION #8 - Is there a Technical Library for your department/branch?			
Yes	41%		
No	59%		
QUESTION #9 - How thoroughly do you normally read/review CEL literature?			
Read all literature completely			0%
Read title and lightly review all material			39%

Read title and lightly review only the literature which is of interest to me	61%
Don't read	0%

QUESTION #10 - Do you feel that you have sufficient time at work to adequately review CEL literature?

Yes	39%
No	61%

QUESTION #11 - Do you feel that you currently occupy a position that you could influence change at your activity via CEL recommendations or from other technological sources?

Yes	79%
No	61%

QUESTION #12 - Is CEL data researched prior to formulating a plan of action for problem solution?

Always	0%
Occasionally	52%
Never	10%
Don't have any problems to which CEL R&D effort applies	10%
Don't Know	28%

QUESTION #13 - How many times in the past three years have you PERSONALLY been responsible for actually implementing CEL recommendations in the field (i.e., recommendations of which you were the origin, not someone else in the chain of command)?

Never	12
1-3 times	16
4-6 times	0
6-10 times	1
Over 10	0

QUESTION #14 - In conjunction with previous questions concerning frequency of usage, why did you use CEL recommendation? (Please make one check for each usage of CEL recommendations.)

- Remembered that CEL had done work in concerned area
- Happened to read CEL literature concerning specific problem at time problem occurred

- Someone else recommended CEL literature _____
- Didn't know where else to look _____
- Requested specific information from CEL _____

QUESTION #15 - For the times you have utilized CEL recommendations, did you: (Check as many as applicable.)

- Readily locate desired subject by CEL published index _____
- Look through all available CEL literature until you found the desired information _____
- Couldn't locate desired information; had to call or write CEL for assistance _____
- Directed someone else to locate desired information _____

Results - Both Questions #14 and #15 refer to Question #13 regarding frequency of usage of CEL data. Intent of survey was to determine why CEL recommendations were followed and manner in which information was obtained. These questions were meant to apply to respondents who had indicated usage in Question #13. However, most of the respondents who checked the "Never" category of Question #13 also checked Questions #14 and #15. As a result, these questions were considered invalid and not tabulated as part of the survey.

QUESTION #16 - Do you feel that CEL R&D effort is being expended in areas that are applicable to real problems that you are experiencing in the field?

Always	0%
Most of the time	69%
Occasionally	36%
Never	0%

APPENDIX B
QUESTIONNAIRE ON CEL TECHNICAL REPORTING SYSTEM
NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA - 93940

IN REPLY REFER TO

NC4(54Cf)/mga
2 June 1980

From: Dr. J.W. Creighton, Professor, Department of
Administrative Sciences
To : Distribution List
Subj: Research Assistance; request for
Encl: Questionnaire on Civil Engineering Laboratory
Technical Report System

1. The Naval Postgraduate School is examining the technical report system for the Civil Engineering Laboratory (CEL), Port Hueneme, California. The intent of the survey is to determine the user satisfaction of CEL documentation and the effectiveness of the present distribution system.

2. The analysis of the technical report system will encompass three major areas: user awareness of the CEL mission and purpose, evaluation of the present report system, and the possible need for changes.

3. It is requested that the enclosure be completed and returned in the provided envelope by 4 July 1980 .


J.W. Creighton
Professor of Management

encl

QUESTIONNAIRE

Instructions

There are no right or wrong answers in this questionnaire. The four blocks following each statement are to reflect your attitude or feeling toward that particular statement.

SA indicates STRONGLY AGREE
A indicates AGREE
D indicates DISAGREE
SD indicates STRONGLY DISAGREE

Please check only one block that *most closely* describes your attitude or feeling toward that statement. If you feel that your present or past assignment does not qualify you to complete a section, it may be omitted.

	SA	A	D	SD
I. AWARENESS OF CEL MISSION AND CAPABILITIES				
1. I understand the purpose and mission of the CEL.	☐	☐	☐	☐
2. CEL technicians know nothing of my problems in the field.	☐	☐	☐	☐
3. There is a lack of responsiveness by the CEL to the more common technical needs.	☐	☐	☐	☐
4. The CEL's R&D effort is being expended in areas that are applicable to real problems that you are experiencing in the field.	☐	☐	☐	☐
5. Better utilization of CEL's reports could be obtained by improving the image of the CEL.	☐	☐	☐	☐
6. Which of the following do you feel best describes the type of R&D being conducted by the CEL? ___ Pure Theoretical Research; ___ Research which can be readily applied to field situations; ___ Mixture of the two.				
7. CEL, as a service organization, should try to be more responsive to the field activity's needs.	☐	☐	☐	☐
II. UTILIZATION OF CEL REPORTS				
8. When I need an informal response to a technical question, I prefer to obtain information from a contractor source rather than the CEL.	☐	☐	☐	☐
9. I am encouraged by my command to take time to update myself of new methodologies and products.	☐	☐	☐	☐
10. I have sufficient time at work to adequately review CEL literature.	☐	☐	☐	☐
11. Since all reports are not useful to this office, I receive reports from selected categories only.	☐	☐	☐	☐
12. I would like to see bulletins come out with tips on new maintenance techniques, new equipment, new materials, etc.	☐	☐	☐	☐
13. There is a need to provide information to all field engineers concerning all products researched by CEL.	☐	☐	☐	☐
14. There is an effort by my organization toward attracting new methods and products into the work system.	☐	☐	☐	☐

	SA	A	D	DD
15. I feel that colleagues and superiors often discourage me from implementing CEL reports.	☐	☐	☐	☐
III. CEL RESEARCH REPORTS AND FEEDBACK				
16. CEL promptly provides information to its customers.	☐	☐	☐	☐
17. CEL is helpful in providing information and/or other assistance on request.	☐	☐	☐	☐
18. CEL tends to use terms and jargon with which I'm unfamiliar.	☐	☐	☐	☐
19. CEL provides progress reports on work they are doing for us.	☐	☐	☐	☐
20. The CEL reports that I receive normally contain too little information which is of interest to me or my department.	☐	☐	☐	☐
21. The Engineering Field Division should screen all data from/to the CEC to/from the field units/activities.	☐	☐	☐	☐
22. The background and theory included in most CEL reports is usually helpful.	☐	☐	☐	☐
23. CEL report results or recommendations are dependable and accurate.	☐	☐	☐	☐
24. CEL reports are too theoretical to be useful.	☐	☐	☐	☐
25. I feel that most CEL reports contain useful data.	☐	☐	☐	☐
26. I only skim the CEL reports I receive.	☐	☐	☐	☐
27. CEL reports contain too much tabulated data (graphs, charts, etc.)	☐	☐	☐	☐
28. CEL reports are inconclusive and provide no recommended actions.	☐	☐	☐	☐
29. CEL reports are so dry that it is hard to maintain the reader's interest.	☐	☐	☐	☐
30. Material in CEL reports is presented in an easily understood manner.	☐	☐	☐	☐
31. I feel work contracted to labs outside the Navy is completed in a more timely and efficient manner than in the CEL.	☐	☐	☐	☐
32. I find it professionally informative to read CEL reports/notes pertaining to my field.	☐	☐	☐	☐
33. Receiving reports on arctic equipment while stationed in the tropics is a typical CEL distribution snafu.	☐	☐	☐	☐
34. The format for providing information from private sector corporations is a more usable form than CEL's.	☐	☐	☐	☐
35. I feel that reading the CEL reports is a waste of time.	☐	☐	☐	☐
36. CEL reports require so much sifting that the reader has difficulty finding the "meat" of the subject.	☐	☐	☐	☐
IV. ACCESSIBILITY OF RESEARCH DATA				
37. I feel it would be helpful for the lab to identify points of contact that could provide assistance.	☐	☐	☐	☐

	SA	A	D	SD
38. I find it more economical to contract work with private labs rather than to the CEL.	☐	☐	☐	☐
39. I have more influence over work contracted to private labs than I do to the CEL.	☐	☐	☐	☐
40. In my organization, laboratory research-result information is available to people who might use it.	☐	☐	☐	☐
41. My organization routes all CEL data that concerns the mission of the department/branch to its personnel.	☐	☐	☐	☐
42. Is there a Technical Library for your department/branch? ____ Yes ____ No				
43. For the times you have utilized CEL recommendations did you: (Check as applicable)				
☐ Readily locate desired subject by CEL published index?				
☐ Look through all available CEL literature until found desired information?				
☐ Have to call/write CEL for assistance as desired information couldn't be located?				
☐ Direct someone else to locate desired information?				
V. DESIRE/NEED FOR A RESEARCH SOURCE BOOK				
44. I feel that I have ready access to a complete file and reference system of CEL literature published over the last three years.	☐	☐	☐	☐
45. I prefer receiving abstracts of CEL reports to receiving the complete report.	☐	☐	☐	☐
46. A CEL index of reports should be published more frequently.	☐	☐	☐	☐
47. It would be beneficial for the lab to produce a source book that provides quick reference to the latest research and innovations related to NAVFAC projects.	☐	☐	☐	☐
VI. LIMITATIONS ON FIELD USE OF RESEARCH TECHNOLOGY				
48. Materials to implement CEL findings are seldom available.	☐	☐	☐	☐
49. I seldom find an application of anything I've read in a CEL report.	☐	☐	☐	☐
50. Often extensive equipment changes are required to use CEL recommendations.	☐	☐	☐	☐
51. We lack the technical help to adequately utilize CEL findings.	☐	☐	☐	☐
52. New Ideas, such as CEL presents, receive a fair hearing in this organization.	☐	☐	☐	☐
53. The people here seem to prefer the way we do things now over using CEL recommendations.	☐	☐	☐	☐
54. Budget limitations preclude implementation of CEL recommendations.	☐	☐	☐	☐
55. New procedures on this job too often require approval from higher authority.	☐	☐	☐	☐
56. I often run into conflict between codes or specifications and research-result advice.	☐	☐	☐	☐
57. How many times in the past three years have you PERSONALLY been responsible for actually implementing CEL recommendations in the field?				
____ Never ____ 1-3 times ____ 4-6 times ____ 7-10 times ____ Over 10 times				

58. In conjunction with previous questions concerning frequency of usage, why did you use CEL recommendations? (You may check more than one)

- ☐ Remember that CEL had done work in concerned area
- ☐ Happened to read CEL literature concerning specific problem at time problem occurred
- ☐ Someone else recommended CEL literature
- ☐ Didn't know where else to look
- ☐ Requested specific information from CEL.

(1) Rank/Grade _____

(2) Check type of organization that you are assigned to:

- | | | | |
|------------------------------|--------------------------------|---------------------------------|-------------------------------|
| ☐ PWD | ☐ ROICC | ☐ PWC | ☐ OICC |
| ☐ CB | ☐ EFD | ☐ NAVFAC | ☐ CEL |

(3) Other (Specify) _____

(4) Years of experience with NAVFAC related activities (design, construction, maintenance, planning, CB operations) _____

We strongly encourage additional comments/suggestions :

APPENDIX C

1980 SURVEY COMMENTS/SUGGESTIONS

RANK	ORGANIZATION	YEARS OF EXPERIENCE
04	Ordnance Dept NWSTA	2
"Material available from CEL is not readily applicable to special weapons/ordnance depot level maintenance field except in the security of facilities area."		
GS-14	NAVFAC	11
"CEL has a bad habit of issuing incomplete or incorrect technical info from 'an ivory tower.' Quite often this info is contradictory to the valid data issued as a part of NAVFAC "TS" guide specs and DM's. CEL should assure that they are in line with HQ before telling PWO's or ROICC's to try a new roof, paint, etc."		
GS-14	Naval Coastal Systems Center	--
"In ocean engineering the communications are good. CEL's system is far superior to any other Navy lab and it might be worthwhile to investigate the other systems? If they exist."		
05	PWD	14
"This questionnaire is typical of the way CEL goes after a question -- build an airplane to fly across the street. In previous PW PW duties have called CEL and gotten excellent response but more than needed. The abstract report system is boring. Only a few per cent is applicable at any time. If the info is here when we need it, then it gets used. Prefer to see call service emphasized and use talent and experience to respond to specific needs."		
05	OPNAV	--
"Returned unanswered. I am in the Supply Corps of the U.S. Navy and have never had prior interface with the CEL organization. I know nothing of CEL's mission. It would be improper for me to complete this questionnaire."		

RANK	ORGANIZATION	YEARS OF EXPERIENCE
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06	CNO	7
----	-----	---

"I head the Physical Security Branch of OPNAV. The Physical Security lab at CEL is, perhaps, the best such lab in DOD. For instance, the Army (the lead service for locking systems) has contracts with CEL for the work. CEL reports on physical security research are always timely, readable, and infinitely practical. My responses in this questionnaire are based on the fact that I receive only CEL reports and tech sheets relating to physical security."

GS-13	NAVFAC	20
-------	--------	----

"I feel that the reports address ideas too far into the future. I would like to see ideas, reports, etc. on materials, equipment that is presently available to the industry."

05	ROICC, PWC, OICC	20
----	------------------	----

"Felt the questions were directed towards a negative response or to support a negative image of CEL. Questions assume they are guilty of doing a poor job. I disagree."

GS-12	PWD	16
-------	-----	----

"The subject material of the majority of the CEL technical reports is so technical that it cannot be understood by the average intelligent engineer. Most appear to be dreamed up for lack of something to do and may apply to a very minute Navy activity or function, but certainly not for Navy wide distribution and use. One out of ten technical reports are applicable or of some value or benefit, and then the conclusions stated are not so conclusive that it serves as information only and not a definite action to implement or correct a particular situation. Tech Data Sheets and Technical Notes are much more useful and a good source of information when applicable to public works activities."

05	PWD, ROICC, OICC	21
----	------------------	----

"In each instance that a specific request was made to CEL, an immediate response has been received."

RANK	ORGANIZATION	YEARS OF EXPERIENCE
GS-15	NAVSEA	--
"CEL has made very significant contributions to my programs, deep submergence rescue, and DSV's Turtle and Sea Cliff."		
03	--	--
"Sir: Being a Marine at a Navy base and not involved in the CEL program, I am returning this form so it may be used elsewhere."		
GS-12	Security Division	1
"I deal only with CEL data related to security. More detailed treatment of the subject would be useful. Could CEL assemble a "package" of security related Tech Data Sheets and then provide them to all Security Officers?"		
MSCT	Physical Security	3
"Environmental design to aid in crime repression/prevention is fairly new to this agency. Your material assisted us in formulating the guidance for our 1979 crime prevention program order and provided a foundation for the training of our personnel."		
GS-14	NAVFAC	15
"I get the impression this questionnaire is biased to make CEL look good. NOT NECESSARY."		
GS-12	NAVFAC	5+
"Have not had a large amount of involvement with the lab."		
GS-12	PWD	5
"CEL should at least once a year send literature on what their function is, so various facilities would know how, when, why, they could be helped by CEL."		
GS-12	PWD	9
"The CEL reports have not been too applicable to this Public Works Dept. but may be applicable elsewhere."		

RANK	ORGANIZATION	YEARS OF EXPERIENCE
GS-14	NAVFAC	30
"Usefulness of reports is in great part related to the man doing the work. If he is a good, <u>practical</u>, engineer with some (or more) familiarity with the <u>real world</u>, the report is usually <u>quite</u> useful. If he is a "blue-sky theorist," or has blinders on, the report is useful only for the circular file."		
GS-11	PMTc	--
"Much of this questionnaire has nothing to do with the highly selective use of CEL reports at this activity."		
06	EFD	22
"We should focus our efforts on the basics -- i.e., lower life for water front structures, better trouble free and cheaper roof systems, energy free building design, longer life for pavement, determine how to get away from use of oil/gold/copper/silver/air conditioning and heating."		
05	NAVMAT	1
"Greater emphasis on reviewing/updating distribution lists for Technical Reports is needed by CEL."		
--	--	--
"I am unable to locate anybody on board PROTEUS that is aware of the receipt of the subject documents."		
P&E	PWD	15
"This format is a waste of time and money. CEL does an adequate and needed job as far as I am concerned."		
04	PWD, OICC	11
"When CEL produces a report, there should be included a strong statement for application. For example point by manufacturer number, as specified shall be used in this case. Then provide the general specs so that the spec can be directly incorporated into the contract documents. It would be nice to have "cookbook" do's and don't's in certain maintenance systems. For instance: open circuit cooling tower systems.		

You could say watch Cl_2 residual and recommend certain min/max; add x chemicals to avoid y problems; limits of scale, rust and so on."

GS-12

EFD

7

"Need more architecturally related research. Environmental health of materials lights, systems, etc. Use of color; use a signage; people's ability to adapt to energy related ideas, e.g., massive solar; review buildings later for their performance against snow, sun, wind, energy consumption, environmental abuse."

GS-12

Security Dept, Pt. Mugu

12

"In the security field info received has been helpful. It would be helpful if info was developed on advanced technology and procedures."

GS-13

PMTC

--

"Strong inhouse lab capability must be maintained to assure unbiased research and continued efforts in areas that would not appear lucrative to commercial organizations."

GS-11

PWD

3+

"We get some CEL technical notes and some reports, but I'm sure that there are more we don't receive. Would like more info on CEL, contact point, types of work you do, etc."

03

PWC

4

"I enjoy all articles/literature and feel that it provides professional development. I would be able to take advantage of CEL expertise if I had a comprehensive list of contact and areas of expertise, and easily available telephone contacts."

03

PWC

7

"The CEL reports have been of great benefit especially in energy related areas -- one recommendation for improvement would be that information published in letters, e.g., energy forum, be put out only when ready to implement. Often I have seen a "program" in this literature and then find out it is planned for implementation 6-12 months from now; often after a rotation date for CEC officers."

RANK	ORGANIZATION	YEARS OF EXPERIENCE
GS-12	EFD	18+
"Suggest a quality publication on what you're doing and what has been done. Categorize if possible. Correlate tests on materials in systems with design manuals, NAVFAC regulations and NAVFAC specifications as well as definitive designs. If this is done, then more efficient materials/methods, etc., can be adopted into Navy construction in facilities."		
02	PWD	2
"I personally have not had too much involvement with CEL, which is why many questions were left unanswered. Being the new Public Works Officer here at NSGA Skaggs Island, I would appreciate any useful advice or services which would help improve our base."		
GS-14	Naval Ship R&D Center	--
"My division provides support to NAVFAC on occasion. I look at all reports from CEL -- I read those of interest and pass on to personnel in my division those reports bearing on our work. I find them of good engineering quality and well prepared."		
GS-13	NIS	6
"I like reviewing CEL reports and findings but wonder sometimes if I might be missing something of application to my rather unusual interests. I wish I'd see more frequent blurbs on what's available. My telephone inquiries have always seemed eager and enthusiastic to help."		
04	NBG	3
"Our association with CEL is strictly in the field of providing facilities and assistance in projects relating to RDT&E, OPEVAL, TECHEVAL operations on equipment particular to beach group function. The reports/recommendations mentioned in the survey are seldom applicable and we see very few of them. There is published a quarterly abstract of CEL documents which is available to us if needed."		
GS-13	PWC	10
"CEL basically seems removed from normal facilities construction, repair and maintenance. CEL does not produce		

NAVFAC type specifications for utilization of new products or methods. Defective built-up roofing is an industry wide problem which is costing the Navy millions of dollars, but for years you discuss foam roofing that has little application and results into a maintenance problem. We could use guidance on fabric under layments for asphalt paving. We could use all kinds of information on use of plastics in construction, chemical cleaning of piping, construction and corrosion of cooling towers, epoxies, concrete repair, fire extinguishment systems, etc."

GS-12 PWC 27

"We need simple, basic detail drawings in a booklet form that SHOP people can use in repair and construction work so that these details will not have to be drawn so many times."

06 -- --

"I have never heard of the technical report system for the CEL. In fact, I am not aware of the CEL."

GS-11 NARF 6

"You need better exposure. Upon receipt of this survey and research to determine what CEL does, I was unaware of your organization."

04 ROICC 4

"CEL ought to utilize those CEC Officers attending Postgraduate School to pursue some field problems. In accomplishing my thesis, I would have preferred to work on problems within my own organization rather than one provided by the school."

GS-14 Military Sealift Command 0

"I have never seen a CEL report."

GS-14 NAVFAC 13

"Dislike the questionnaire -- requires positive or negative position when neutral may be appropriate."

04 PWD (prior UCT) 15

"As costs go up, CEL needs to cut back on distribution. We are a small PWD yet we get 3 to 6 copies of all material in our area. \$'s will soon necessitate cutting this back to 2.

One tech file copy -- one working field copy. Often each ECE officer gets his own copy as well as a copy going to his "billet." In my current job a lot of CEL's work is not of concern, yet a great deal more gives us new food for thought. I wish they had more travel \$ for field assist to problems. We can't afford to bring them out. Each report doesn't have to list total distribution. It wastes paper. Just comment that distribution is "on file." Good work B2 for CEL."

GM-13

Naval Supply Center PWD

26

"Recommend that a system be instituted whereby your technical people can visit on-site industrial knowhow -- i.e., in three work days technical data could be gathered that would normally required months/years in CEL facilities to reinvent the wheel. Most major industries are glad to help government in the hope it will reduce taxes. The major industries maintain information data bank centers -- enhancing inquiry response(s)."

GS-12

PWD

--

"1. Keep up the good work. 2. Orient bldg construction items toward method of specifying in a non-proprietary manner and using CSI format for specifying. Avoid giving only manufacturer's identification in reports."

GS-10

Security

--

"My particular organization screen only that CEL material that deals with the testing of locking devices and physical security barriers. Such material has not been abundant from CEL in the past."

GS-11

Naval Underwater Sys Center-Documents --

"As you see, the categories are all "blank." We have little contact with CEL reports. We receive perhaps 15-20 per year (of about 2500 reports). There is little time or personnel to treat these reports on an individual basis. If one is of known interest to an individual researcher, it is sent on, after cataloging into the collection. If not of immediate interest, it is shelved. I am sorry to be of so little addition to your survey."

03

PWD, ROICC

4

"I think the recent effort to 'straighten-out' the mailing/distribution of CEL materials has been successful."

RANK	ORGANIZATION	YEARS OF EXPERIENCE
GS-9	Contractor M&O	1

"I give this explanation to some answers: Our activity being out of CONUS does not have access to AUTOVON thus limiting communications to other activities such as CEL. CEL has to this point never been contacted on any problems. Also, our activity is a contractor M&O operation which makes using CEL as a problem solver more difficult. I use CEL reports for general information only."

GS-12	ROICC, PWC	2
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"Whether it is coincidence or not CEL literature is in my in-box when a real world situation comes across my desk and almost always I find solutions and recommendations directly applicable."

04	Staff Medical at Naval Special Warfare	0
----	--	---

"I am not familiar with CEL. I am just recently assigned here. As a physician at a line command, am I supposed to be using this info? It is unclear why this questionnaire was sent to me."

04	USS PRAIRIE (AD-15)	2
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"PRAIRIE has not been a user of CEL tech data reports."

04	ROICC	8
----	-------	---

"CEL efforts should be concentrated more on the basic problems in public works, facilities maintenance/upkeep, and CB operations (level of effort based at the E-2 thru E-5 skill/comprehension for accomplishment). Basic problems we all face is not enough time to read an indepth report/interest generating abstracts receive more attention. Would prefer free CEL services."

GS-12	Installation Security	--
-------	-----------------------	----

"Use of information from CEL is limited to security applications. I have found the reports and tech data sheets received informative and useful."

GS-14	Other Navy Lab	10
-------	----------------	----

"My office is involved in cooperative participation with CEL on NAVFAC sponsored R&D in the area of amphibious and advanced base systems."

RANK	ORGANIZATION	YEARS OF EXPERIENCE
GS-12	PWD	4

"Keep up the good work!"

04	PWD	10
----	-----	----

"CEL is generally helpful to solve more complex problems; however, it is easier to hire an A&E and get a response to a question quickly rather than waiting for CEL. Most CEL research on ocean engineering is for me a waste of time. Much CEL literature also seems to be a reinvention of the wheel -- work already done on solar energy. Don't we trust others to do research or are we merely not interested or ignorant of what outside researchers at universities or other government agencies are doing? It appears CEL could do the Navy a great service by digesting the mountains of research and applying the resources to Navy problems. CEL should help all CEC officers and Navy engineers keep up with Navy problems by providing Navy solutions from a common research source, i.e., the research academic community at large."

CWO4	PWD, CB	20
------	---------	----

"I know CEL is only a telephone call away -- I have used them three times in the last 5 years and it has been beneficial each time."

GS-12	PWD	18
-------	-----	----

"Many of the reports received at Louisville do not apply; such as data on piers, waterfronts, airfields. Addresses should be permitted to be on the mailing list only for topics applicable to the station."

03	ROICC	9
----	-------	---

"CEL should spend as much of their resources on energy conservation type research as humanly possible."

GS-13	CESO	24
-------	------	----

"One area that the CEL can improve on is being responsive to the needs of design engineers who must use military specifications to identify material and equipment required to perform the desired functions in the design of facilities. For example, in most construction contracts, standard

specifications are used which identify military specifications or federal specifications to describe material required in the construction. IF RDT&E performed on new material which is superior to that specified is recommended, the MILSPEC/FEDSPEC should be revised as soon as possible. It will affect new procurement actions for federal supply activities also."

01 PWD 1

"The reports are good but most time unrelated or, if related, too technical. A paragraph on each subject with the ability to send for the applicable report would be good."

04 PWD 14

"I have been disappointed in CEL's theoretical approach to current energy conservation problems facing all activities; however, past research and recommendations in the areas of common maintenance problems such as paints and corrosion, roofing systems, etc., have been very helpful. Suggest CEL continue to emphasize need to research, evaluate and recommend adoption of the best industry materials and technology to solve common Navy facility and maintenance problems. Tech Data Sheets addressing this type of effort continue to be the most useful to me."

03 Staff Civil Engineer 9

"Most fellow officers I discussed this review of CEL with felt there is too little connection between the real maintenance, repair and construction problems faced every day and those topics seen from CEL. Would like to have a point of contact to enter real problems into CEL system."

GS-15 Naval Ocean Systems Center --

"Our group specializes in acoustic and related properties of marine sediments. Such work is not commonly done at CEL, but when done is excellent. We have had personal contacts at CEL for many years."

GS-15 NOSC 15

"In my opinion, CEL has the best organized system for publication and distribution of research findings generated by its technical staff. There is no doubt that it can be improved further, but it stands already so high above publication systems of other Navy labs that it may not be cost effective to strive for further improvements."

RANK	ORGANIZATION	YEARS OF EXPERIENCE
GS-12	PWD	12
"Many of the questions do not pertain to PWD operations."		
04	Portsmouth Naval Shipyard	--
"I am returning subject questionnaire uncompleted. I have no dealings with or knowledge of this report and, therefore, feel unqualified to respond."		
GS-13	Staff Civil Engineer	23
"Keep up the good work!"		
04	Tender Repair	--
"I regret that I am unable to answer this questionnaire because I am unfamiliar with CEL reports. To either agree or disagree would not be fair to the outcome or CEL."		
04	PWC	10+
"The implementation of new technology to the common every day problems would seem to provide the best payoff of any area of research. Roofing, foam application and the like have been considered but are not aggressive enough in recommending or reviewing new products and procedures. We are making too many errors related to the known product and misusing the new products (wrong applications). Someone needs to be the keeper of the Navy facilities related corporate management."		
GS-12	PWD	38
"Many years ago I read and studied the subject of the Art of Plain Talk. You might find it beneficial to train your engineers to write at the eighth-grade level rather than at the graduate level. We run into many maintenance problems daily. I would like to see these people in the field in order to cross-fertilize ideas. Over the years I have encountered the negative attitude that the organization can resolve everyday. "Don't bother bringing in outsiders." The problems remain unsolved and costs to the government continue to rise. I know of many problems that I would like to see CEL study."		

RANK	ORGANIZATION	YEARS OF EXPERIENCE
GS-13	EFD	4

"Our only complaint is that we receive too many copies of CEL reports. Is it true that each and every person in the Navy is on the mailing list? I'm sure that there must be a cost saving potential some place -- but we are deluged with a dozen copies of the same report often."

GS-15	NAVFAC	30
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"CEL is an excellent organization. Most work is practical and useful in facility construction."

GS-15	EFD	21
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"#37 -- contact in problems generally should be through NAVFAC HQ. Conflicts can/do arise if FAC policy makers are not made aware of problems."

GS-12	PWD	11
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"I very rarely see anything from CEL. I recently filled out a form indicating which material I would like to receive. At present with no knowledge of the CEL material, I cannot complete this survey form."

GS-11	EFD	4
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"Would like to see an index of all Tech Memos."

04	OICC, CB	14
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"In addition for reference libraries, etc., of data, CEL pubs -- particularly this "quick seen ones" increase individual general education on methods avail for various solution. I'm sure that in many cases when the problem arises, the solution may come to mind as a result of CEL past info. Development of the details to the solution they may or may not go back to CEL sources depending on the availability of other sources for this info."

06	Naval Safety Center Shore Safety Programs	--
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"Sorry but we do not receive CEL reports."

RANK	ORGANIZATION	YEARS OF EXPERIENCE
GS-14	NAVFAC	15

"As in all things, some of CEL's publications are useful, understandable and relevant -- and some are none of the above -- interim summaries in various fields listing findings/conclusions and CEL contacts with phone numbers would be of great help."

GS-14	NAVSEA	--
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"NAVSEA library has only a small collection of CEL's publications. Also NAVSEA is not on distribution list."

GS-14	NAVELEX	5
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"Some of the CEL reports are interesting from a personal viewpoint but not related closely to my electronics job."

GS-12	PWD	17
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"Don't change anything at CEL; particularly don't publish more papers, indexes, etc. I consider this form a great waste of time and money and the results will be meaningless (but will require more "papers" to be distributed)."

05	IMA afloat	--
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"In two years I do not recall receiving any information from CEL. I am not sure as to what type information the lab would be sending to a Destroyer tender."

04	Staff	10
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"One of the problems I have is finding info. If it were microfiched, the data/reports would be easier to store and would therefore be more likely to be available when I need it."

GS-14	NAVFAC	16
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"My biggest gripe is that all too often recommendations are for further research and not for specific criteria which can be easily incorporated into one of our manuals. Second gripe is their slowness of response due to 'other important matters.'"

05	Facilities officer - high-level staff	20
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"#45 distribution of abstracts should be wider than that of actual reports."

RANK	ORGANIZATION	YEARS OF EXPERIENCE
MCD	PWD	39
"This questionnaire is too long and reflects the thinking of CEL reports."		
04	PWD, OICC	17
"I'm basically satisfied with CEL. No strong recommendations for change."		
03	PWD	6
"CEL is a really good idea, however, due to the scope of problems that they are tasked with, only a portion of their output is useful to the average PWO. I believe that a bit more publicity would help CEL."		
GS-14	EFD	25
"Recommendation for utilization of proprietary product should be accompanied with competition -- nonproprietary aspect -- proprietary procurement is contrary to NAVFAC policy making it difficult to implement CEL recommendations. Keep up the good -- we appreciate it."		
05	Tycom	4
"My questionnaire should be disregarded since my only interest in CEL work relates to nuclear weapons security."		
05	--	--
"As far as can be determined, this command does not receive CEL tech reports."		
05	SYSCOM	20
"At the SYSCOM level, access to CEL abstracts is handy in order to prod field activities into trying something to resolve a problem."		
03	PWO at contractor-run facility	6
"I have had very little need to use the services of CEL over the past couple of years."		

RANK	ORGANIZATION	YEARS OF EXPERIENCE
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03	PWD	9
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"Many of the questions will be answered by people having perceptions established by geographic location. This will have a real effect on the results unless that is taken into account."

CWO4	Security Officer MCAS	--
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"I have had only one CEL cross my desk -- at a most opportune time -- it solved the problem immediately. However, since this is my first encounter with a CEL, I cannot faithfully -- or honestly -- answer the question. Suffice it to say -- the one CEL in question hit the nail right smack on the head. Since I deal with security matters and related matters, I would not require the full list of CEL's. A published listing of CEL's would work fine for me. I'm impressed by the contacts and suggest an attaboy for a job well done."

GS-14	Navy R&D Center	--
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"My most recent involvement with CEL was substantially more than three years ago. My contacts have been limited to arch-related endeavors."

GS-13	PWD	21
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"The truth is that a considerable portion of CEL data is peculiar to specialized areas and is not useful across-the-board. As a field activity, we have limited resources for maintenance of a file system and are encumbered by considerable personnel attrition. We prefer a system whereby we can contact a CEL specialist to discuss specific problem areas, in lieu of maintaining a large data file, etc."

GS-15	OPNAV	10
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"My interest in receiving CEL reports is for information only."

GS-11	CESO	14
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"Before designing a new item or component for a new item, research the commercial market availability to provide these items."

RANK	ORGANIZATION	YEARS OF EXPERIENCE
03	ROICC	6
"An index published periodically would be of more benefit to the ROICC organization because employees here have a tough enough time keeping up with standard paperwork flow."		
GS-11	PWD	15
"The CEL literature goes too far into the theory end of items. Most people out in the field are of the nuts and bolts type and not differential math types."		
GS-12	PWD	15
"The majority of CEL reports are of little use to me. The great value of CEL to me is a direct source of reliable, unbiased expert information. For example, in protective coatings and roofing materials, I have often utilized direct phone calls to CEL personnel to get their opinions and advice on various systems rather than trust the "hoopla" of manufacturer or contractor claims. I have grown to trust CEL opinions and when in doubt will call them."		
03	ROICC	7
"I read the sheets and file for future use. There is more info for PW than the ROICC."		
GS-15	ONR Field Office	--
"CEL reports on solar heating of buildings and hot water just arrived. TR-877. I can relate to it -- I want to use solar heating in a new house. Normally I can't relate to CEL's reports to ONR's efforts in technology base developments."		
02	SCE	2-1/2
"Overall, CEL literature I receive is good in that it tells me what CEL is doing, and what should be available to help me should I ever need it."		
04	Shore Activity SCE	18
"Would be helpful to get a binder and index for all abstracts and tech bulletins to be filled in for easy reference."		

RANK	ORGANIZATION	YEARS OF EXPERIENCE
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03	--	--
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"The FRANK CABLE was put in commission on 5 Feb 80. To date the only item we have received from CEL is TN N-1567. The information contained therein was very useful to us and enabled us to systematically test about 75 high security padlocks. To date this has been our only contact with CEL and I don't believe that such limited contact allows us to effectively respond to your questionnaire.

CUCM	PWD	22
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"Tech Data Sheets are excellent. This office makes good use of the recommended materials lists. Keep data sheets short for ease of filing for quick reference. We can always write for full reports if detailed information is necessary for a particular problem."

GS-12	ROICC, OICC	15
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"Suggest that a rip-out order blank be included in each "rap brief" so that additional information can be ordered on projects of interest. Most people are reluctant to call the contact person listed."

GS-11	PWD	--
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"I receive CEL reports pertaining to security only. I have found all to be very informative and well written. Thanks to a recent CEL report we discovered we had some worthless padlocks."

GS-14	EFD	20
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"It is my opinion that CEL research is slower than other sources in the area of mechanical engineering."

03	Security	--
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"Frankly I don't know why I got this survey. I receive the Tech Data Sheets and find it useful and informative at times, but as far as "purpose and mission" or the technical details -- it is not of concern to me."

03	ROICC	6
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"I have just reported to my duty with ROICC. The bulk of my responses are based on my previous three years experience

in public works. CEL is an outstanding organization. I regret I have not fully utilized their services."

05

NAVFAC

21

"Executive summaries should be more hard hitting with less technical jargon. Info must be directed to PWO/ROICC in terms they understand and short/concise. "Not invented here" syndrome is rampant. NAVDAC codes should help/encourage use of new ideas/concepts."

GS-14

NAVFAC

14

"Most of CEL work is now reported in Tech Memos which are not distributed or indexed. Thus, a great deal of useful information does not get passed and opportunities for technology transfer are missed. The majority of TM's I have seen (not all) were suitable for release and would have benefited the Navy by their distribution and indexing in the CEL guide."

GS-13

NAVFAC

29

"I work very closely with personnel at CEL in all aspects of my work, and I ahsre all my efforts with CEL. It is mutual understanding of the field problems and NAVFAC HQ decisions that our work is accomplished. To know each other's capabilities and with mutual respect, our mission is accomplished."

SES

NAVFAC

22

"At my level, I find single page abstracts more useful than complete reports or multiple abstracts in a bound document. Limit is one minute reading time."

GS-12

PWD

4

"I began filling out the questionnaire, but found that I could not justify my responses one way or the other. Therefore, I will comment instead. We have tried about three times in four years to get CEL to solve a problem of major importance to us which were critical to our utilities. Their answer each time was that it was not of enough significance to the Navy. So we solved them ourselves with help from consultants. The CEL flyers I get are either normally very general and nonspecific on guidance or not pertinent to our needs."

GS-15

NAVFAC

23

"I have found that field activities sometimes request engineering assistance from CEL that could be better and more

easily furnished by an EFD. This is a waste of resources all around. For this reason I believe requests for assistance should go thru the EFD's. This would serve the further purpose of keeping EFD's informed of problems and the solution when provided by CEL."

GS-13 PWD 25

"CEL has done a great job thru the years! They keep up with the changes."

GS-10 Navy --

"This command receives, from Code L64, tech data sheets on physical security, which we find extraordinarily beneficial. Otherwise, we know little of CEL's functions."

GS-14 NAVFAC 9

"My field of work oriented interest is limited. I get copies of all reports in my area of interest. Recommendations for product/processes has been limited due to the nature of the research. I do not work with R&D contractors in my area of interest."

03 ROICC 5

"More emphasis in the maintenance sector of PW."

E6 NAVFAC 10

"The CEL publications are passed through the chain of command and are kept in binders. All too often when key personnel rotate all paper work is misplaced and CEL documents usually get thrown out as excess. For years the health hazard in my field has been overlooked and I feel CEL has finally brought this problem to light."

EOCS PWD, PWC 21

"Would like it at all possible to make us available the whole tech data sheets in the engine lab/shore and harbor facilities/energy conservation/power generation and environmental protection." (Corpus Christi)

02 PWD, ROICC 3

"I find tech data sheets most useful means of relaying info without getting bogged down in the nuts and bolts of a problem."

RANK	ORGANIZATION	YEARS OF EXPERIENCE
GS-13	PWD	20
"I like the reports, when my memory banks are working, I can recall that a report exists and when I need it I can find it. I consider the recommendations more valid than a vendor's because of their mental nature."		
GS-13	EFD	5
"It seems that every R&D report I read has a comment about more study and more money being required to accomplish the study -- 'self perpetuation.'"		
04	PWD	12
"Overall, the CEL is doing a good job in my opinion."		
GS-13	PWD	24
"It would be helpful if technical training would be, could be available, with CEL's vast knowledge of subjects they could do a real service at various activities."		
GS-13	PWD	18
"Keep up the good work."		
06	PWD	22
"CEL should continue to publicize themselves through personal appearances for one-hour sessions at Lt/Lcdr refresher courses and at service officer meetings as appropriate."		
GS-13	PWD	18
"I find CEL info very useful and necessary. I find it easier to call CEL rather than look thru hard copies on file. CEL recommendations are always based on CEL perceptions, they don't ever seem to ask field personnel. Therefore I have to use judgment as to whether I agree and can use their recommendations for my specific use. Recommend they get necessary input from users on specific tasks."		
GS-14	EFD	24
"Would like to see more effort towards gathering and publishing data on research/testing by other (private and		

governmental) labs. Most of our facilities components are similar to those in other government and private entities. We seem to do little to evaluate and publicize work by others (Army, Air Force, Bureau of Standards, private consumer organization, etc.). Everyone wants to do their 'own thing.'"

GS-11 PWD 6

"Recommend the more esoteric research papers be shortened to a more readable form. Advise the reader if interested in more detail, he can send for the complete research report. Our requirements in the field are for better more long-lived maintenance materials or new work techniques which will improve efficiency of operation."

GS-12 PWD 13

"Timeliness of data is more concern; i.e., research studies to be completed three years from now when need is current."

GS-13 NOSC 30

"As a former NCEL employee knowing the kind of work that is being performed, I frequently look for information in reports furnished. I feel that CEL produces much useful information in a useful format. I also find CEL personnel most helpful and responsive to requests submitted."

04 EFD 9

"Routing of reports to military personnel has become less than satisfactory over the past two years. I no longer get reports automatically and must ask for them specifically."

01 PWD 1

"Not having used CEL after only a short time in the field, I cannot give too much input. However, the publications I have read have been very informative and worthwhile."

03 Staff civil engineer at a 4
shore command

"Specify specific materials, give approximate costs, and where to order."

GS-11 NIF 5

"Would appreciate more reporting of active research via the tech data sheets."

RANK	ORGANIZATION	YEARS OF EXPERIENCE
GS-11	NIF	5
"Would appreciate more reporting of active research via the tech data sheets."		
GS-13	PWD	8
"In tech journals I see many new materials coming on the market. I have many questions on the new materials. Should I go to CEL to resolve my questions?"		
GS-14	OICC	8
"CEL has a bad reputation. They need to turn this around. Most people have little faith in answers because they don't generally provide solutions, just possible solutions and very often these end up being wrong."		
GS-12	PWD	34
"I have used CEL reports in the past to support designs used for Arctic camp facilities in the advanced base functional system. Also have obtained data from reports on field type, skid mounted laundries and other equipment."		
MS-14	PWD	38
"I would suggest, some system be developed by CEL to inquire into the needs of various naval activities regarding their repetitive maintenance, and repair problems; for their locations and environments."		
GS-12	PWD	5
"Continue study and inform on new materials and methods such as insulation, solar equipment hazardous waste disposal, exterior paints and coatings, alternate energy sources, cogeneration, economics of various lighting systems, air-conditioning and heating, insulation, roofing materials (new), etc."		
GS-13	Base Maint. Camp Lejeune	11
"I am totally unfamiliar with the CEL Technical Report System."		

RANK	ORGANIZATION	YEARS OF EXPERIENCE
GS-15	NAVSEA	10

"The biggest and most exasperating problem with CEL reports is that I can't use them to solve problems. There are not enough theory, background, equations, constraints, and examples to allow you to apply the information to similar or related problems. If the problem (answer) isn't in one of the charts, graphs, or tables then I am out of luck for my specific application."

04	OICC	14
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"The past 10 years has produced a significant emphasis on field rather than theoretical problems. Keep up the good work."

GS-13	EFD	20
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"The work in maintenance has been excellent. Would encourage more of it."

03	USS Puget Sound	--
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"Are you sure I was supposed to be on this mailing list?"

GS-13	NOSC	5
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"My primary interest in CEL is in the energy related activities. Since NAVFAC, and hence CEL, is the tasked agency for Navy energy work, I am involved with that facility. I would like to see the Navy expand its energy R&D activities to include all Navy laboratories, including NOSC. Perhaps CEL could be the primary contracting organization."

03	ROICC	5
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"Location at isolated duty stations prejudices answers to questions. New materials, equipment, etc., are unavailable here. Departmental personnel use CEL literature to keep themselves attuned to progress in the 'outside world.' Each location has unique problems and resources. The putting together of a general 'cook book' is near impossible. As in all engineering problem solving, the CEL data should be used to augment or clarify other commercially available information, i.e., kind of a 'government consumers test.'"

RANK	ORGANIZATION	YEARS OF EXPERIENCE
04	ROICC	10
"Recommend future questionnaires make all statements either affirmative or negative rather than mix the two. This would ease completion of the form. I have done a tour of duty at CEL so answers may be biased. A block indicating whether an individual had duty at CEL might be informative."		
04	NCSC	2
"I have not been receiving CEL reports, however, I do expect to see future literature related to diving underwater construction."		
05	ROICC	18
"We successfully utilized a CEL analysis and report on a blistered roof to conclude contractor liability negotiations."		
04	PWD/OICC	19
"I consider that CEL suffers from the same problem most Navy labs do -- the return of results/recommended solutions to specifically referred problems takes too long to be directly usable in solving the problem."		
GS-12	EFD	7
"Working in cost engineering in the EFD has not led to extensive exposure to CEL reports. On occasion I've heard about a technical memo that is helpful in my work. It would be helpful to cost engineers if an index of reports that provided cost info was published."		
GS-7	EFD	1
"Make a complete and cross-referenced index available to all employees, and inform them of its existence."		
GS-9	Engineering Dept.	6-1/2
"I have several years of OICC experience. During that time I found CEL reports useful. However, since being assigned to subase, Bangor, I haven't seen one CEL report. Would be nice to see some from time to time."		

RANK	ORGANIZATION	YEARS OF EXPERIENCE
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GS-14	EFD	28
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"The problem is that NAVFAC HQ approval is required for many design division actions and procedures. (Example: Asbestos -- CEL has prepared an excellent 59-page report recommending specific methods for removing/disposing or incorporating existing asbestos in structures. This CEL report took months of work by many well-qualified people but it lacks NAVFAC HQ approval. The EFD's have been waiting years for NAVFAC HQ instructions on how to handle asbestos in conformance with current laws.) This comment is that CEL and NAVFAC HQ are not together. CEL purs something out but NAVFAC HQ remains silent on whether to do it or not."

GS-12	EFD	10
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"Some RDT&E projects have been very useful -- such as oil/water detectors and separator studies; coating studies for salt water exposure; small personnel floats, etc. I have found a problem with obtaining interest on studies I have requested CEL to do. I contacted several researchers in the area of checking Portal Crane Track fittings and found very little interest. I think the lab should better serve the field engineers' questions and not the researcher's own interests."

GS-11	Engineering Dept.	3
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"In my present position I never hear one word about CEL. People I work with know very little about CEL. If CEL has services to offer people in the NAVFAC then I would think it would pay to advertise. Right now if CEL disappeared tomorrow, nobody in our department would notice or even care. Your information may be of value but it never gets to the field."

GS-11	EFD	3
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"My only contact with this CEL has been through a few of their reports I have just happened to run across. I have never been routed any copies of any CEL reports and the services they provide. From the little exposure I have had, it looks like they might have a service that could be of some service to EFD's -- if it were disseminated routinely and properly."

RANK	ORGANIZATION	YEARS OF EXPERIENCE
--	OICC	1
"Not aware of CEL activities. Would like more information concerning operations."		
GS-11	WESDIVENG	4
"To what extent can we use CEL expertise. How available is CEL's? Early availability is important and quick response to project problems."		
GS-11	EFD	12
"Didn't feel I was familiar enough with CEL to complete this form."		
GS-11	EFD	2
"Literature I have read from the CEL has been interesting and informative, but I have not had an opportunity as of yet to use the information supplied. I feel that an index of all CEL publications for quick and easy reference would assist the organizations to use the CEL research."		
GS-12	NAVFAC	4
"At present I only received CEL literature sporadically and often the information is unrelated to assigned work load. I never know who to contact at CEL for particular problems."		
GS-14	EFD	29
"Establish close contact with CEL methodology -- in seismic studies research, etc. Interface with all EFD's on greater frequency."		
GS-8	NAVFAC	15
"Rarely get to see CEL literature. Those reports I do see are interesting and comprehensive. My position is not of the authority to use CEL information without permission. I do not know how much of CEL reports are used in my assignment."		
GS-12	EFD	5
"CEL has been very helpful in providing needed technical data and advice."		

RANK	ORGANIZATION	YEARS OF EXPERIENCE
GS-12	EFD	10
"Two reports that have proven useful to me have been the one on HPS lighting in aircraft maintenance and the one on PVC coated conduit. Unfortunately, the way we must write our specification has made it difficult to do much about PVC conduit."		
GS-12	EFD	10
"An index of available information should be made more readily available."		
GS-12	EFD	8
"I have discovered that the staff at CEL can be very helpful as consultants. It is extremely beneficial to be able to contact a Navy employee that can provide comment on new technology."		
GS-12	EFD	1
"The most important requirement is a good index. Readily available and it should be simple. New improvements should be incorporated in type specs. Some mechanism to accomplish this should be developed."		
GS-11	EFD	6
"CEL has a habit of providing information on its exotic research, and little info on "nuts & bolts" type problems. This comment is based on working four years as a Public Works Officer in the CEC."		
GS-14	EFD	15
"I have not had the need to use the service of CEL since being with the NAVFAC organization; therefore, I do not have the experience in the day-to-day function of the CEL organization."		
GS-12	EFD	15
"The CEL persons and their respective fields should be listed with autovon numbers for consultation. The user organization should list procedures for obtaining consultation like funds transfer, etc. EFD engineers should have a lecture with slides on CEL and its purpose."		

RANK	ORGANIZATION	YEARS OF EXPERIENCE
GS-12	EFD	10
"CEL should better advertise its existence and produce latest index of available materials."		
GS-12	EFD	25
"Inflation has changed the construction material supply. Materials researched by CEL are not readily available and may not be suitable in different environments."		
05	PWD	21
"Comments result from last 3-1/2 years as PWO and preceeding 3-1/2 years as director, NAVFAC systems analysis division. In general, CEL reports seem concerned with either applied science in matters beyond the economic grasp of naval activities/claimants; or, concerned with matters having so little application opportunity that the research is economically unjustified. This perhaps suggests that CEL is too strongly motivated by the need for FAC-03 financial support and by an internally perceived need to display academically elegant capabilities. An idea of both phenomena may be gained by considering the size of the overall CEL effort in energy-related investigations since 1973 and computing that fraction of the effort devoted to identification/publication of measures which can be immediately implemented throughout the shore establishment, budget and other constraints notwithstanding."		
GS-12	PWD	2
"Ours is a public works engineering function requiring maintenance and renovation of existing structures. Many of your technical notes are not applicable simply because we are an inland facility."		
Professor	Naval Academy	35
"Our main channel of information with CEL is in the energy/environmental areas. Our experience shows that CEL has always been helpful and supportive when we have shown a need. That support has also been supplied rapidly when the information was reasonably accessible."		
04	CB	12
"I haven't noticed a great deal of CEL research reports dealing with construction methods/techniques, ABFC's, etc.,		

applicable to NcF. Strongly feel there is a need to catalog and index CEL research data that is directly applicable to the field -- by functional area, i.e., new construction methods; techniques; materials; PW maintenance/repairs. Many reports are esoteric -- deal with very specific problems -- some may be applicable, but we need a way of funding them when needed."

GS-13 NAVFAC 15

"Need easy access to capabilities of CEL -- funding a problem which I cannot normally provide to have unplanned tasks performed."

GS-9 NAVFAC 3

"Strongly recommend designs take into consideration the procurement process we have to live with and, therefore, research with care the commercial availability of components of the system being designed."

GS-15 NOSC 25

"They do a good job now relative to the needs of my department, which is the ocean technology department."

04 NBC 3

"Our association with CEL is strictly in the field of providing facilities and assistance in projects relating to RDT&E, OPEVAL, TECHEVAL operations on equipment particular to beach group functions. The reports/recommendations mentioned in the survey are seldom applicable and we see very few of them. There is published a quarterly abstract of CEL documents which is available to us if needed."

GS-11 PWD 10

"Area of interest is mechanical engineering. CEL is heavily weighted in the civil engineering field. Do not find much of interest in my area of operations. Feel that CEL lacks scientific objectivity in the mechanical and chemical engineering fields."

GS-12 Engineering Depart, Subase, 11
Washington

"I am not aware of what capabilities, types of personnel, response to field activities, facilities, etc., there are at CEL, CECOS, or NESO. Personnel in the field need to know."

It would be worth a trip to your location for a tour and brief on the above items. I would be willing to use my training time and dollars for the personnel of my branch. I have used the information on drydocks wastewater and disposal of spent abrasives."

GS-12 NAVFAC 13

"In my type of work I have no reason to use your organization."

GS-12 EFD 1-1/2

"I didn't know CEL existed (had to ask what the letters stood for)."

GS-11 EFD 8

"I have never seen CEL reports. I am unaware of CEL services available to the architects."

APPENDIX D

1968 SURVEY QUESTIONS AND ANALYSIS

The following questions were on the 1968 survey. These 21 questions were repeated on the present questionnaire. The responses and analysis from the 1968 report is provided with each question.

QUESTION 1: I feel that many CEC officers and Civil Service personnel are not aware of the mission, tasks, and function of the NCEL.

The majority of respondents (67%) agree with the question. The difference in military and civilian frequency distribution of responses and means (military 3.17, civilian 3.52) can be attributed to stronger military opinions and civilians showing a greater tendency to be uncertain. Neither group showed any significant inclination toward disagreement with the question. It appears that NCEL requires some improvement in their methods of informing users of NCEL mission, tasks, and functions.

QUESTION 2: NCEL really doesn't care about our problems in the field.

The overwhelming opinion is that NCEL does show interest in real field problems.

QUESTION 3: There is a lack of responsiveness by NCEL to the more common technical needs of the Civil Engineer Corps.

The large percentage of "undecided" responses (46%) with a lesser percentage of disagreement (36%) shows there is a question in most users' minds about NCEL's responsiveness to the technical needs of the CEC.

QUESTION 11: Since all reports are not useful to this office, I would prefer to receive reports from selected categories only.

The general and consistent agreement to this question suggests that NCEL distribution lists should be carefully established.

QUESTION 12: I would like to see bulletins come out with tips on new maintenance techniques, new equipment, new materials, etc.

The overwhelming majority (89%) of respondents agree or strongly agree with the question. This leads to the conclusion that users would like to get additional services from NCEL, i.e., receiving periodic bulletins.

QUESTION 17: NCEL is extremely helpful in providing information and/or other assistance on request.

The reasonably high overall mean of 3.74 and high group modes (all 4.0) indicate general agreement with the question. The lack of statistical significance of the test for differences among responses indicates uniformity of agreement regardless of paygrade or organization. It appears there is a general feeling that NCEL responds adequately to user-initiated requests.

QUESTION 18: NCEL tends to use terms and jargon with which I'm unfamiliar.

With 64% disagreeing with this question, it appears that NCEL's terms and jargon are understandable to most users. The familiar civilian-military response patterns cause a significant Chi-square result (17.02), with both groups favorable toward NCEL.

QUESTION 24: NCEL reports are too theoretical to be useful.

The fact that there is consistent disagreement (54%) with this question, and only 15% agreement, indicates NCEL reports are not overly theoretical. The pattern of civilians showing more favorable responses than military personnel is again found in the data from this question.

QUESTION 25: I find NCEL reports most useful.

The large statistically significant differences in frequency distribution of responses between military and civilian as evidenced by the Chi-square tests shows a pattern reversal between the "agree" and "undecided" categories. The civilians responded more favorably, while the military tended to remain undecided. Also, the lower military pay grades hold down the overall mean of 3.38, and in particular the military mean of 3.21, by a majority of them responding as "undecided" (52%).

QUESTION 26: I only skim the NCEL reports I receive.

The overall mean of 3.23 is not particularly meaningful for this question due to the very sharp split in opinions, with less than 8% of the total undecided.

QUESTION 28: NCEL reports are conclusive and provide good recommendations.

The majority of respondents (62%) agree with the question. The differences among group frequency distributions of responses seems to stem from a larger percentage of military responses being more tightly grouped in the uncertain category. The mean difference which appears between military pay grades seems to result from the majority of 0-2's being undecided, thus pulling their mean considerably below the others. The mean difference with Civil Service personnel stems from the fact that GS-13's and GS-14's responses are more uniformly distributed, whereas the GS-11 and GS-12 responses all lie in the upper three categories, thus resulting in a higher mean.

QUESTION 29: NCEL reports are so dry that it is hard to maintain the reader's interest.

The general disagreement on this question (60%) indicates that NCEL reports are in fact not dry reading. Civil Service responses, being more favorable to NCEL, result in a significant difference in military (2.64) and civilian (2.39) means (t - test - -3.28).

QUESTION 33: Receiving reports on Arctic equipment while stationed in the tropics is a typical NCEL distribution snafu.

The results show an unfavorable attitude toward NCEL's distribution as evidenced by only 36% of the respondents feeling that distribution snafus are not typical of NCEL.

The significant Chi-square results within military (35.94) and within civilian (81.67) groups appear to be caused by the wider spread of the 0-4 responses and the more favorable responses of the GS-12's.

QUESTION 35: I feel that reading the NCEL reports is a waste of time.

Both military and civilian agree that reading NCEL reports is not a waste of time. 0-2 responses within the military

varied sufficiently to cause a significant difference between overall military (2.13) and civilian means (1.95). The 0-2 responses (mean of 2.37) indicate a somewhat weaker position on the matter.

QUESTION 45: I prefer receiving abstracts of NCEL reports to receiving the complete reports.

The overall mean of 3.53 suggests a general agreement with the question. However, there is a highly significant difference between military and civilian response means. While both means showed agreement, the military are much more strongly inclined to favor the abstracts. There is no statistically significant difference among response patterns within ranks or among source installations.

The general opinion seems to be that most users would better be able to determine the usefulness of a report through reading an abstract rather than the complete report.

QUESTION 46: An NCEL index of reports should be published more frequently.

Since 58% agree with this question and the frequency distribution of responses are consistent, it appears that NCEL is not presently satisfying the users' desires for current indexes of NCEL reports.

The significant F-test between organizational means (3.68) can be attributed to the NAVFAC responses which indicate they are less concerned about the frequency with which NCEL produces indexes.

QUESTION 48: Materials to implement NCEL findings are seldom available.

The majority of the responses are undecided (52%), with a fairly even split above (22%) and below (26%) this category. The Chi-square results for civilian response pattern (78.952) were caused by the GS-14 pattern spreading out more evenly than the responses of the total group. The t-test results (-2.989) can be attributed to the military tending toward agreement and the civilians to be more "favorable" in their responses.

QUESTION 52: My command is dynamic; we're always seeking out new ideas like those presented in NCEL reports.

The overall mean (3.41) and group means (military 3.39, civilians 3.44) show agreement with this question, and there are no statistically significant differences between groups.

QUESTION 55: New procedures on this job too often require approval from higher authority.

The even split in frequency distribution of responses (34% agree, 31% undecided, 35% disagree) makes it difficult to interpret the results of this question. The split may, however, indicate that at the user level there is a lack of authority necessary for implementation of NCEL procedures.

QUESTION 57: NCEL reports have helped me solve several problems that occurred on the job.

There is a general difference in frequency distribution of responses and means between military and civilians (military 2.77, civilian 3.21). Civilians tend toward agreement and military tend toward disagreement. The stronger disagreement in lower pay grades of both groups may indicate that this "younger" group has had less exposure to NCEL reports, and have thus received fewer benefits.

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