

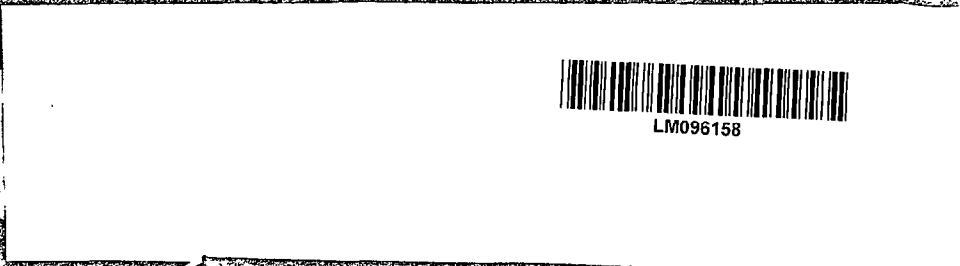
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**REPORT TO THE SUBCOMMITTEE  
ON RESEARCH AND DEVELOPMENT 20  
COMMITTEE ON ARMED SERVICES  
UNITED STATES SENATE**



**Followup Review Of In-House  
Laboratory Independent Research  
Program Of The Department Of  
Defense** B-164912

**BY THE COMPTROLLER GENERAL  
OF THE UNITED STATES**

701434

FEB. 26, 1973



COMPTROLLER GENERAL OF THE UNITED STATES

WASHINGTON, D.C. 20548

B-164912

The Honorable Thomas J. McIntyre, Chairman  
Subcommittee on Research and Development  
Committee on Armed Services  
United States Senate

L. 00300

Dear Mr. Chairman:

In your letter of May 19, 1972, you requested that we make a followup examination of the In-House Laboratory Independent Research (ILIR) program of the Department of Defense (DOD) to determine the specific actions resulting from the recommendations included in our earlier report on that program (B-164912, Feb. 14, 1972). You also requested that we examine the programs at selected laboratories of the three services which were not included in the previous study.

Prior to receiving your request, the Director of Defense Research and Engineering had informed us by letter of April 20, 1972, that:

\*\*\* it is time to reevaluate the overall objectives of this program in the light of past progress and considerable experience and to reestablish policy guidelines governing future implementation. In doing this we shall take careful note of the apparent inconsistencies found by your staff.

This reevaluation has not yet been completed. On December 1, 1972, the Deputy Director (Research and Advanced Technology) of the Office of the Director of Defense Research and Engineering informed us by letter that the review was in progress and that the target date for issuing revised guidelines was February 1973. We understand that DOD plans to report its actions to the Senate Armed Services Committee at that time. We plan to review the revised guidelines when issued and will evaluate their implementation when sufficient time has elapsed.

The Naval Materiel Command, in June 1972, made a change in its ILIR program policy. The previously stated objective of the program--to attract and hold talented and creative people in the Navy laboratories--was deleted. The new policy emphasizes the immediate availability of funds for in-house

generated ideas for the solution of Navy and Marine Corps problems. We assume that DOD's reevaluation of overall objectives will consider the Navy's change in policy as well as the stated policies of the other military services.

As you requested, we made a review of the ILIR programs at additional laboratories. Our findings generally confirm the inconsistencies in the uses of ILIR funds by the services that were noted in our earlier report. We found no additional inconsistent or questionable practices. The results of our latest review at three selected laboratories are detailed in the appendix.

We do not plan to distribute this report further unless you agree or publicly announce its contents. If we can be of further assistance, please let us know.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "Thomas B. Austin". The signature is written in a cursive style with a prominent initial "T".

Comptroller General  
of the United States

SUMMARY OF REVIEW BY  
GENERAL ACCOUNTING OFFICE OF  
IN-HOUSE LABORATORY INDEPENDENT RESEARCH PROGRAMS  
OF THREE DEPARTMENT OF DEFENSE LABORATORIES

An in-house laboratory independent research (ILIR) program, also known as Laboratory Directors Funds, is carried out by each of the three military services. In addition, the Department of the Navy has supported an independent exploratory development (IED) program which began in fiscal year 1966. Background information concerning the program's origin and its implementation can be found in our report to the Secretary of Defense, "Review of In-House Laboratory Independent Research Program of the Department of Defense" (B-164912, Feb. 14, 1972).

For this review, we selected three laboratories that had not been included in the above report. Our objective was to examine the manner in which ILIR funds were being used by each laboratory. The laboratories selected and the ILIR (including IED) funds available to each during fiscal year 1972 are shown below.

|   | Amount<br>( <u>millions</u> ) |
|---|-------------------------------|
| Harry Diamond Laboratories (HDL)<br>Washington, D.C.--Army      | \$0.9                         |
| Naval Weapons Center (NWC)<br>China Lake, California--Navy      | 6.0                           |
| Rome Air Development Center (RADC)<br>Rome, New York--Air Force | <u>0.5</u>                    |
|   | <u>\$7.4</u>                  |

The ILIR program funds of these laboratories represented about 17 percent of all such funds available to the in-house laboratories of the Army, Navy, and Air Force during fiscal year 1972.

REGULAR PROGRAM AUGMENTATION

Navy policy provides that independent research (IR) and/or IED funds "will not normally be used to make up deficiencies in other programs or for contracts unless the latter support the basic goals of the programs." At the Naval Weapons Center, we found that IR/IED funds amounting to

\$95,000 were used to complete two projects started under regular research and development (R&D) programs. We are exploring the reason for such use of funds.

We did not find any ILIR funds used to augment regularly assigned mission programs (directed projects) at HDL or at RADC.

### LONG-TERM EFFORTS

#### Harry Diamond Laboratories

From fiscal year 1962 when the ILIR program began through fiscal year 1972, HDL had spent about \$8.3 million on 110 ILIR projects. On the average, projects were completed in about 2-1/2 years. Of the 110 projects, two were funded for 6 years and five were funded for 5 years.

HDL informed us that it tries to have its ILIR projects completed within a 2- to 3-year period but has extended the time for such reasons as:

1. The problem has proved to be more difficult than anticipated but the expected pay-off makes it worthwhile to continue it to a conclusion.
2. Postponements due to emergencies, such as occurred at the height of the Vietnam conflict.
3. Delays in receiving parametric data from the Surgeon General necessary in the development of an ILIR device.
4. Trying to coordinate the completion of the ILIR project and the time a sponsor is able to fund HDL for a project that is an outgrowth of the ILIR work.

#### Naval Weapons Center

NWC policy does not limit the life of IR projects, but it generally limits the life of IED projects to 2 years. The following table shows data on the ages of IR and IED projects that were active on July 1, 1972.

| <u>Funding category</u> | <u>Number of projects</u> | <u>Age in months</u> |                |
|-------------------------|---------------------------|----------------------|----------------|
|                         |                           | <u>Range</u>         | <u>Average</u> |
| IR                      | 53                        | 4 to 96              | 43             |
| IED                     | 49                        | 2 to 36              | 11             |

NWC informed us that the different policies on the duration of IR and IED projects relate to the different objectives for the two types of projects. Since NWC uses IR funds to study broad technical areas, such studies are evolutionary and have indefinite termination dates. The long-term goal of such work is to provide a technological base to support development activities in the furtherance of NWC's mission. On the other hand, NWC uses IED funds to demonstrate the feasibility of promising work for which it has not yet secured full and/or timely sponsorship. As a result, IED projects usually last less than 2 years, during which time a sponsor is found to fully fund the project or it is terminated.

#### Rome Air Development Center

Most of the ILIR projects lasted 2 years or less with most of the costs expended in the first year. The duration and value of projects active in fiscal year 1970 were:

| <u>Initially funded<br/>(fiscal years)</u> | <u>Number<br/>of<br/>projects</u> | <u>Duration<br/>(years)</u> | <u>Value</u> |
|--|-----------------------------------|-----------------------------|--------------|
| 1970                                       | 10                                | 1                           | \$366,560    |
| 1969                                       | 8                                 | 2                           | 386,401      |
| 1968                                       | 2                                 | 3                           | 279,780      |
| 1967                                       | 1                                 | 4                           | 500,000      |
| 1965                                       | <u>1</u>                          | 6                           | 103,786      |
| Total                                      | <u>22</u>                         |                             |              |

To accommodate the 10 newly initiated projects in fiscal year 1970, nine other projects were completed or terminated in fiscal year 1969. Six of those terminated as ILIR projects were included in the fiscal year 1970 regular R&D program.

Three of the four ILIR projects with a duration of 3 or more years were reviewed. In two of these projects, phases or sequential tasks necessitated the longer time. One of the two projects could, in the project engineer's opinion, have been funded in the regular program. The other project resulted in a system subsequently used in regular programs.

RADC informed us that the remaining project required an extended period to complete because of a shortage of assigned personnel and because no funds were available in the regular program to accommodate it.

RESEARCH CONTRACTED OUT AND  
EQUIPMENT PURCHASED

Harry Diamond Laboratories

Following are the ILIR costs for fiscal year 1972.

|                           |                         |
|---------------------------|-------------------------|
| Salaries and wages        | \$868,508               |
| Equipment                 | 43,786                  |
| Travel and transportation | 6,510                   |
| Supplies                  | 35,796                  |
| Services                  | 22,238                  |
| Contracts and orders      | <u>5,753</u>            |
| <b>Total</b>              | <b><u>\$982,591</u></b> |

Our tests of HDL records indicated that ILIR funds were not used to either contract for outside research in support of regular R&D projects or purchase equipment not in support of ILIR projects.

Naval Weapons Center

During fiscal year 1972, NWC spent \$113,324, or 4 percent, of its IR funds and \$816,202, or 28 percent, of its IED funds under contracts. Navy instructions provide that IR and IED funds will not normally be used for contracts, except to support the basic goals of the program. No dollar limitation is specified in the instruction. An analysis of the 24 major contracts, which account for 82 percent of the contract funds, follows.

|                                   | Contracts |                 |            |                  |
|-----------------------------------|-----------|-----------------|------------|------------------|
|                                   | IR funded |                 | IED funded |                  |
|                                   | Number    | Amount          | Number     | Amount           |
| Contract type:                    |           |                 |            |                  |
| Industry                          | 3         | \$31,669        | 13         | \$501,106        |
| Universities                      | 1         | 39,982          | -          | -                |
| Civil Government agencies         | -         | -               | 2          | 105,000          |
| Navy installations                | <u>2</u>  | <u>11,102</u>   | <u>3</u>   | <u>73,120</u>    |
| Total                             | <u>6</u>  | <u>\$82,753</u> | <u>18</u>  | <u>\$679,226</u> |
| Contract purpose:                 |           |                 |            |                  |
| Hardware fabrication/modification | 2         | \$27,628        | 8          | \$475,016        |
| Technical designs/studies         | 2         | 46,084          | 6          | 118,590          |
| Range/test support                | -         | -               | 2          | 63,120           |
| Basic support services            | -         | -               | 2          | 22,500           |
| Other                             | <u>2</u>  | <u>9,041</u>    | <u>-</u>   | <u>-</u>         |
| Total                             | <u>6</u>  | <u>\$82,753</u> | <u>18</u>  | <u>\$679,226</u> |

Our review of the 24 contracts showed that they supported specific IR and IED projects. We reviewed costs for 18 of these projects and noted that over one-half of the 1972 costs for eight had been incurred under contracts.

NWC purchases equipment with IR and IED funds to support its IR and IED programs. Such purchases during fiscal year 1972 accounted for \$146,000 of IR and \$76,000 of IED funds. These expenditures represented about 5 percent of the IR and 3 percent of the IED funds expended during the year. The purchases were mostly small orders. One of the largest purchases, for \$29,500, was for equipment especially designed for and essential to the conduct of a specific IR task. We found no indication that ILIR money was used to purchase equipment for non-ILIR projects.

#### Rome Air Development Center

RADC used the ILIR funds almost entirely for contracting out research and for purchasing equipment or supplies to support research. Although scientists and engineers worked directly on ILIR projects, their salaries plus other direct and indirect costs were funded under other program element codes and projects. This is the normal Air Force laboratory practice.

During fiscal year 1971, RADC maintained cost records that identified the costs paid with general mission funds to support the ILIR program. The costs and their relationship to funds appropriated for the ILIR program were:

|                                 | <u>Amount</u>    |
|---------------------------------|------------------|
| ILIR programmed funds           | \$494,000        |
| General mission (support) costs | <u>213,000</u>   |
| Total                           | <u>\$707,000</u> |
| Percent of support to ILIR      | 43               |

Since RADC discontinued segregating support costs in December 1971, we were unable to obtain comparable data for fiscal year 1972.

RADC officials assured us that the failure to identify all costs associated with the ILIR program would be remedied by implementing, during the current fiscal year, a new "job order cost accounting system" under which all costs, direct and indirect, would be identified with the appropriate projects.



Conclusion

We believe that the practices noted above generally confirm the inconsistencies in the uses of ILIR funds by the military services that were noted in our February 1972 report. In view of DOD's plan to reevaluate the objectives of the ILIR program and to reestablish policy guidelines, as we had recommended in our earlier report, we are making no further recommendations. For your information the recommendations in our February 1972 report are stated below.

We recommended that the Secretary of Defense define the objectives of the ILIR program, after considering the needs for and the purposes served by the program in the conditions under which directors of in-house laboratories currently obtain resources and conduct operations. We suggested that his consideration should include the need for a statement of the broad uses which may be made of ILIR funds in fulfilling program objectives and the need for evaluating criteria to determine whether the projects undertaken have met these objectives.

We also believe that, because of the inconsistent views of various representatives of the services on whether ILIR program objectives can be met by using funds for work performed outside the laboratory or for purchasing equipment that does not support an ILIR project, guidance from the Secretary of Defense is desirable.

In our opinion the annual reports from the laboratories to the Assistant Secretary for Research and Development of each military service should include the salaries of researchers working on ILIR projects and other costs funded from other sources, as well as those costs funded directly from the ILIR program element. This would enable the Secretary to compare ILIR projects with other research efforts.