



UNITED STATES GENERAL ACCOUNTING OFFICE

WASHINGTON, D.C. 20548



LM105513

HUMAN RESOURCES
DIVISION

B-164031(5)

March 28, 1978

The Honorable Elliott H. Levitas
House of Representatives

Dear Mr. Levitas:

In your letter of March 31, 1977, you asked us to evaluate alleged problems in organization, management, and efficient use of Federal funds at the National Medical Audiovisual Center (NMAC) in Atlanta, Georgia. You informed us that you had been receiving reports from NMAC employees alleging problems in these areas. In spite of written inquiries to and reports from officials of the National Library of Medicine (NLM), which is administratively responsible for NMAC, and the Civil Service Commission, you said the allegations had not been satisfactorily confirmed or refuted.

You asked us to help resolve allegations concerning at least three areas of NMAC activity. These were employee allegations that:

1. NMAC was incurring excessive costs because it was contracting for audiovisual production rather than producing in-house.
2. NMAC was lax in enforcing contract deadlines and was receiving poor quality work from contractors.
3. NMAC was not fully or productively using its personnel and equipment.

Although we found that the first allegation was inappropriate and lacked perspective, we noted other problems which indicate that NMAC was incurring excessive costs in its contract program. The second and third allegations are essentially valid but need to be viewed in the proper perspective.

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NMAC's underlying problem has been the lack of an adequate and specific plan of action and assessment of how to cost-effectively accomplish its mission. Also, problems at NMAC have resulted from a management decision to keep many employees whose skills were no longer needed or needed only infrequently; weaknesses in contract administration; the failure of many NMAC employees to accept or adjust to NMAC's new mission and its effects on them, and to fully appreciate NMAC efforts to retain them; and poor communication between NLM and NMAC management and NMAC employees.

Our findings and recommendations are summarized below. More detailed information is contained in enclosure I. As instructed by your office, we did not obtain official written comments from the Department of Health, Education, and Welfare (HEW), but the matters included in this report were discussed with NLM and NMAC officials. Their comments have been incorporated where appropriate.

PRODUCE IN-HOUSE
RATHER THAN BY CONTRACT

Allegations that NMAC was incurring excessive costs because it was contracting for the production of audiovisuals rather than producing them in-house are inappropriate.

The allegations were made by current or former NMAC employees who had been affected by a 10-year period of organizational and functional changes which they did not fully understand or accept. However, we did find that NMAC's contract program was expensive; it needs to know more about audiovisual needs of its target population and how effectively it is meeting them; and it needs to explore less costly ways of accomplishing its mission.

NMAC's production of audiovisuals has declined in favor of its use of contractors. This shift occurred because of a complete change in NMAC's mission, and according to NLM, strong encouragement from the Office of Management and Budget to contract out whenever feasible. Prior to 1967, when NLM assumed administrative control of NMAC, NMAC was primarily a producer of audiovisual materials to support broad educational and informational needs of the Public Health Service and other Federal agencies. Subsequently, NLM, under the direction of its Board of Regents, charged NMAC with a new mission--to help improve the education of health professionals through promotion, demonstration, innovation, and distribution of instructional audiovisuals.

In fiscal year 1972, NMAC began awarding contracts to encourage and help health professional schools, health professional societies, and other organizations to develop, produce, promote, or use audiovisuals to augment traditional teaching methods for medical education. NMAC sharply curtailed in-house audiovisual production because such activity did not fit into its new mission and because of the Office of Management and Budget policy to encourage use of contractors. As defined by NLM's Board of Regents, NMAC's production activity was to be primarily directed toward innovation and experimentation, not general production of audiovisuals.

Because of NMAC's change in mission, we did not compare the costs of its producing in-house versus by contract. However, our findings show that NMAC has had difficulty obtaining acceptable products from contractors, incurred substantial contract costs, and operates inefficiently because its in-house production capacity is often unused. We believe HEW needs to evaluate NMAC's mission and how effectively and efficiently it is achieving it.

WEAK CONTRACT ADMINISTRATION

NMAC has been lax in enforcing contract deadlines, specifying product standards to be met by contractors, and monitoring contractors' progress. As a result, it has frequently extended completion dates, increased contract funding, and received unsatisfactory products. In some cases, a product was not delivered or NMAC had to redo contractors' work. NLM and NMAC officials agree that NMAC contract administration needs to be improved and they have initiated corrective action. However, they believe that they have successfully encouraged health professional schools and organizations to develop, promote, or use audiovisuals despite the problems cited. They have not, however, adequately evaluated their efforts.

INEFFICIENT USE OF PERSONNEL AND EQUIPMENT

NMAC does not fully or productively use many of its employees and much of its audiovisual production equipment. Most of the employees who are not fully or productively used were employed as audiovisual production technicians and specialists who were assigned to production areas or who have been reassigned to areas which do not require use of their audiovisual skills. In addition, NMAC increased its equipment inventory and purchased more sophisticated equipment than it needed.

NMAC's personnel problem stems largely from a management decision to retain most NMAC employees even though many had skills which were not needed to achieve NMAC's new mission. In addition, NMAC reorganizations, functional changes, and reassignments were not effective in seeing that all employees were fully and productively occupied. Many NMAC employees did not, could not, or would not understand or accept all the changes. NMAC did not always keep its employees fully informed on what was happening or why.

Morale is low among many NMAC employees. Their uncertainty over their jobs when NMAC moves to Maryland, which is scheduled for the spring of 1980, has accentuated their low morale. NLM and NMAC officials acknowledge that many NMAC employees are not fully occupied. They stated that substantial or rapid progress to correct this problem will not be made until NMAC moves to Bethesda.

NMAC has continued to increase and up-grade its investment in audiovisual production equipment despite its change in mission. Although NLM and NMAC officials believe that such equipment is needed for research, experimentation, training, and consultation, they acknowledged that it is often unused. Therefore, we believe NMAC's need for much of this equipment should be thoroughly evaluated.

RECOMMENDATIONS TO
THE SECRETARY OF HEW

To minimize the unnecessary expenditure of Government funds and ensure efficient use of resources pending NMAC's move to Maryland, we recommend that the Secretary of HEW require that

- a thorough evaluation is made of NMAC's mission and how effectively it is achieving it;
- a strategy and specific objectives and plans for accomplishing the mission are promptly developed and approved;
- an evaluation is made of the resources needed and the most cost effective way to achieve its mission;
- no additional employees are hired or equipment purchased for NMAC until an acceptable strategy and specific plans and objectives are developed and approved;

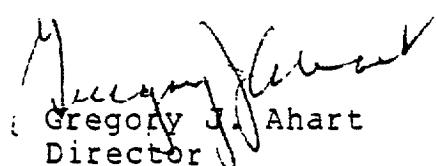
--appropriate actions are taken to deal with unnecessary equipment and personnel on-hand, including thorough consideration of placing some of NMAC's employees and equipment at the Center for Disease Control; and

--only that equipment and those personnel essential to accomplish NMAC's mission are obtained in the future.

As agreed with your office, a copy of this report is being sent to Senator Sam Nunn. We will not release it to others until we meet with you to discuss its contents. We understand this meeting will be within 1 week after you receive this report.

We trust that this report is responsive to your request.

Sincerely yours,


Gregory J. Ahart
Director

Enclosure

OBSERVATIONS ON
THE MANAGEMENT AND USE
OF RESOURCES AT THE NATIONAL
MEDICAL AUDIOVISUAL CENTER

BACKGROUND

In October 1966, a special subcommittee of the House Committee on Interstate and Foreign Commerce identified deficiencies in the nation's biomedical communications system and recommended several actions to correct the deficiencies identified. The subcommittee recommended, among other things, that the Department of Health, Education, and Welfare (HEW) shift control of the Public Health Service Audiovisual Facility in Atlanta, Georgia from the National Center for Disease Control to the National Library of Medicine (NLM). The subcommittee believed this shift would enable NLM to better integrate HEW's audiovisual activities with other biomedical communication services.

NMAC's establishment

Consequently, in July 1967, HEW transferred control of the facility to NLM. The facility remained in Atlanta, and NLM changed its name to the National Medical Audiovisual Center (NMAC). Prior to NLM's acquisition, the facility produced and distributed audiovisual materials for the Center for Disease Control, other Public Health Service organizations, and other Federal agencies. The audiovisuals produced were usually intended for general public health use.

Change in NMAC mission

Between July 1967 and March 1970, NLM and its Board of Regents--an advisory group established by NLM's authorizing legislation to provide policy and technical guidance--studied and considered how NMAC could best help NLM fulfill its responsibilities for improving biomedical communications and education. In March 1970, NLM changed NMAC's organization to implement the recommendations of its Board of Regents. NLM directed NMAC to curtail its audiovisual production activities and redirect its efforts to promote, support, and improve the acquisition, development, use, organization, and distribution of audiovisuals specifically for medical education. As recommended by NLM's Board of Regents, NMAC was directed to use contracts to support communications development in biomedical institutions. According to NLM, NMAC's

curtailment of in-house production was heavily influenced by strong Office of Management and Budget encouragement to contract out production work whenever feasible.

NMAC's new functions were to:

- Acquire and distribute films and other audiovisual resource materials.
- Provide audiovisual reference and research services.
- Consult and assist in the development and use of audiovisual materials and systems.
- Conduct or sponsor audiovisual research, training, experimental production, and other activities to develop communications media.
- Encourage production, dissemination, and use of audiovisual materials.

Although NMAC's previous mission also required many of these activities, its new mission involved (1) a de-emphasis of in-house audiovisual production and concentration on promotion, training, support, distribution, and innovation; (2) heavy reliance on contracts; and (3) a shift in target population to health professional schools, societies, and associations.

NMAC resources

Between fiscal years 1968 and 1977, NMAC appropriations have increased from \$1.8 million to \$3.4 million, or by about 89 percent. During the same time period, the number of NMAC employees has declined from 127 to 94, or by about 26 percent. In addition, since fiscal year 1972 the Health Resources Administration in HEW, which also has responsibilities for improving medical education, has provided an average of about \$834,300 annually for NMAC activities--\$720,700 for contractual costs and \$113,600 for direct operations. Also, it has placed an average of eight full-time employees at NMAC each year. In return NMAC has made much of its operating capacity and technical expertise available to the Health Resources Administration.

For fiscal year 1977, total resources available to NMAC included about \$4.3 million for contracts and operations, a work force of 100 persons, and an audiovisual facility

containing equipment and production materials costing about \$2.4 million. NMAC's fiscal year 1977 operating resources included NMAC appropriations of about \$3.4 million and 94 NMAC employees and Health Resources Administration funding of about \$.9 million and six employees assigned to NMAC.

Effect of mission change
on NMAC staffing

Despite NMAC's change of mission and redirection of effort, NLM decided to keep most of its employees. According to NLM, this decision stemmed from departmental directives which strongly encouraged retention and retraining of employees. As of December 1977, 64 of NMAC's 94 employees had been at NMAC since it was reassigned to NLM in 1967.

NLM began to align NMAC's organization and resources with its new mission during fiscal year 1970, when it reorganized NMAC, made a relatively small reduction in its employee force (the number of employees decreased by 18 during the year), reassigned many audiovisual production employees to other duties, such as assisting in the distribution of audiovisual materials and providing training and consultation to medical institutions on the development and use of audiovisuals, and provided training to staff for their new jobs. Many reassignments also involved reductions in employee grade levels. Since fiscal year 1970, NMAC has reorganized several times, made additional staff reassignments and reductions in grade levels, provided additional staff training, lost employees through attrition, and hired others with different types of skills, such as persons knowledgeable about educational theory and instructional methods.

Planned relocation of NMAC

NLM plans to move NMAC to Bethesda, Maryland in 1980. It will become part of NLM's Lister Hill National Center for Biomedical Communications when construction of its new facility is completed. The Center was established in 1968 to (1) serve as a focal point within HEW for developing and coordinating biomedical communications systems and networks, (2) develop information systems and networks to improve health science education and research, and (3) facilitate health service delivery.

NMAC SHOULD KNOW ABOUT
AUDIOVISUAL NEEDS AND
HOW BEST TO MEET THEM

Although NMAC has formulated goals and objectives for accomplishing its mission, they are often stated in general terms and lack the specificity needed to measure achievement. Furthermore, it has not adequately (1) assessed the specific audiovisual needs of the biomedical education community, (2) determined either the type and quantity of resources necessary or how to most efficiently and effectively use them to meet those needs and achieve its objectives, and (3) evaluated its program to promote and encourage the development, production, and use of audiovisuals. Also, NMAC has administered several costly contracts with unacceptable or questionable results and has employees and equipment which are not fully used.

Lack of specific
objectives and work plans

Each year, NMAC prepares goals and objectives for accomplishing its mission. However, they are not precise, measurable, or well-understood by many employees. Furthermore, NMAC has not successfully developed a formal plan for implementing its mission, goals, and objectives which clearly prescribes specific actions to be taken, effective use of resources, or results to be achieved.

NMAC's director from October 1973 to September 1977 said that, when he assumed control, NMAC had no operating plan. He developed a plan, but its objectives and procedures were never clearly defined. He was still trying to refine the plan at the time of his retirement. The new director of NMAC said that he will develop a plan which can be understood and implemented. An NLM official said he believes NMAC needs to concentrate operational planning activity on better linking its contract activities to overall program and project objectives.

More should be known
about audiovisual needs

Although NMAC has made efforts to determine audiovisual needs, it should know more about the audiovisual needs of the biomedical educational community and how it can best organize, manage, and use its resources to meet these needs. Specifically, NMAC needs to know more about (1) the degree to which

institutions will accept the use of audiovisuals as an effective alternative or supplement to the traditional methods of instruction, (2) the priority that institutions place on audiovisual development and use, (3) the specific audiovisuals institutions need and want, and (4) how well it has met and can meet the perceived needs of the institutions.

NMAC receives advice on audiovisual needs during its contacts with health professional school staffs and from external and internal advisory groups. These groups have identified several general health science areas which should be given priority for audiovisual development. These areas include anatomy, physiology, biochemistry, pathology, physical diagnosis, life threatening emergencies, and primary care. However, these groups have generally not identified specific topics within these areas for which audiovisuals are needed.

NMAC has relied heavily on unsolicited proposals from professional organizations and institutions for identification of need and contract award. More than half of NMAC's contracts have resulted from unsolicited proposals. In April 1974, an NMAC advisory committee recognized that over the past few years NMAC had received a number of technically weak proposals and that the persons in the groups making these proposals lacked total knowledge of medical audiovisual needs in the areas in which they made their proposals. The committee said that better methods were necessary to identify need and accomplish objectives and recommended that NMAC emphasize competitive contracting. NMAC began emphasizing competition in contract awards in fiscal year 1976.

NMAC data on use of the audiovisuals obtained by contract further indicates that it needs better information on audiovisual needs. Although many of its audiovisual products are frequently loaned or sold, some are not. For example, during a recent 1-year period, five audiovisual units produced under one NMAC contract we reviewed were each loaned five or fewer times.

Several NMAC project officers and other employees interviewed were very critical of NMAC's limited knowledge of audiovisual needs of the biomedical community. NMAC's director told us that he agrees that NMAC needs to expand its knowledge in this area and has begun taking action to be more aware of the needs and how NMAC can best meet them.

NEED FOR IMPROVED
CONTRACT ADMINISTRATION

NMAC has made extensive use of noncompetitive, sole-source contract awards. Many of these contracts were awarded to support Health Resources Administration objectives which involved using or promoting the use of audiovisuals to improve or enhance health professional education. Several audiovisuals contracted for by NMAC were either unacceptable to NMAC, not completed, or not delivered on time or within the cost initially established. Although these problems may be partially attributable to the research and development nature of many of the contracts, they primarily resulted from NMAC's failure to (1) clearly specify in its contracts what it expected of the contractors and (2) adequately monitor the contractors' performance.

Extensive use of
sole-source contracts

Forty-one, or about 61 percent, of the 67 NMAC contracts awarded between fiscal years 1972 and 1977 were made on a sole-source basis. NMAC officials have recognized the desirability of using a competitive contract award process and have recently taken steps to reduce its heavy reliance on sole-source contracts. For example, 10 of the 11 NMAC contracts awarded in fiscal year 1972 were awarded on a sole-source basis, but in fiscal year 1977, only three of its eight contracts were awarded on such basis.

Ambiguous contract terms
and inadequate monitoring

Of 59 contracts awarded by NMAC between fiscal years 1972 and 1976, 46 had time extensions ranging from 1 to 30 months, and additional funding totalling \$1.4 million was awarded for 19 of the contracts. To evaluate NMAC's contract administration, we reviewed the files for a random sample of 15 of the 59 contracts NMAC awarded between fiscal years 1972 and 1976. At the time of our field work, nine of these contracts had expired and six were still in process.

We found that all or part of the contractor's work was unacceptable to NMAC for four of the six completed contracts that involved audiovisual production. Also, 11 had completion dates extended from 1 to 18 months; costs were increased for seven after award; and work scopes were changed for seven.

Many of these modifications resulted at least partially from NMAC's lack of specificity in defining the standards to be met by contractors and from its inadequate monitoring of contractors' performance.

The following examples illustrate the problems identified.

Example A

In June 1973, a 1-year, \$98,800 NMAC contract was awarded to a professional society to develop and produce 16 medical audiovisual instructional units. The underlying objective of the contract was to encourage the society to continue to develop and produce audiovisual instructional materials without continued Federal support.

The contractor delivered 10 finished units and six draft units to NMAC. However, the 10 finished units were unacceptable because NMAC found problems with the content presentation, instructional effectiveness, and audiovisual technical quality, and the six draft units were incomplete. The NMAC project officer recognized that the contractor had not been aware of some of the specific activities required to comply with the requirements in question because they were not clearly specified in the contract. The contractor was awarded a 4-month extension and additional funding of about \$50,000 to revise the units. NMAC also included specific requirements to be met by the contractor in the contract modification. The contractor delivered the revised units but NMAC again found them unacceptable. NMAC paid the contractor in full and closed-out the contract even though the products were unacceptable to it.

In October 1974, another 1-year NMAC contract was awarded to this contractor for about \$83,100 to produce four audiovisual instructional units and a report on how the contractor could continue to develop and produce audiovisuals without continued Federal support. In September 1975, NMAC extended the contract period for 2 months and refined the work scope. NMAC found the four units delivered by the contractor to be unacceptable for generally the same reasons as the previous contract. NMAC also found the contractor's report too sketchy and in need of revision. However, NMAC again paid the contractor in full and closed-out the contract even though the contractor's products did not meet its requirements.

NMAC made no attempt to revise the audiovisual units or the report. NLM, however, allowed the contractor to complete and market the units produced under the first and second contracts. Although the contractor advertised the availability of the units, NMAC made no attempt to determine whether revisions to upgrade the units had been made or whether the contractor successfully marketed the tapes.

Example B

In April 1973, a \$97,600 1-year NMAC contract was awarded to a professional association to produce 10 audiovisual instructional units. In December 1973, the completion date was extended to September 1974. The 10 units submitted by the contractor were unacceptable to NMAC because they did not meet its audiovisual technical standards for placement in national distribution. (These standards were not made part of this contract, but were incorporated in a later contract in June 1975.) The contractor agreed to assist NMAC in upgrading the production quality at no additional cost to NMAC.

In May 1974, another NMAC contract was awarded to this association. This contract was for \$32,800 and was to be completed in November 1974. One aspect of the contract was for the association to prepare a report on its field testing of the 10 units that were to be produced under the first contract. The completion date of this second contract was extended to January 1975. The contractor continued to work with NMAC during this period to upgrade the production quality of the 10 units.

In June 1975, the association received another NMAC contract. This \$8,755 contract was for the contractor to revise the units to reflect recent changes in medical procedures and the results of field testing. The revisions were to be completed by November 30, 1975 and were to meet NMAC audiovisual technical production specifications which--for the first time--were made a part of the contract. In November 1975, the completion date was extended to January 1976, but revisions were still not finished and work continued.

In February 1978, NMAC personnel told us that NMAC staff (with contractor assistance) had recently completed revising six of the units and had made them available for national distribution. NMAC expects to complete three more of the units by June 1978. One of the units was dropped.

Ambiguous contract terms

The lack of specificity in NMAC's contract terms enabled the contractors to submit products they believed met their stated contractual obligations, even though the products were unacceptable to NMAC. NMAC project officers, their supervisors, and management officials interviewed generally agreed that NMAC needs to (1) better delineate in its contracts what is expected and (2) do a better job monitoring contractors' progress.

NLM and NMAC officials said that although a number of its contracts specify the delivery of an audiovisual product, the underlying objective of many of these contracts was to encourage and stimulate the contractor's continued involvement in the promotion, development, production, or use of audio-visuals. They believe this objective has been accomplished even though the audiovisual products delivered to NMAC were often unacceptable. NMAC, however, had not systematically evaluated the extent to which that objective has been accomplished.

Contract monitoring

NMAC project officers usually monitored contractors' performance by reviewing periodic progress reports and through telephone contacts with contractor personnel. Consequently, NMAC project officers often did not have assurance that the contractors understood the standards NMAC expected to be met until the contractor submitted a product at or near the end of the contract's performance period. NMAC project officers and supervisory and management personnel interviewed generally agreed that more on-site monitoring was needed, but said this was not done because of insufficient travel funds.

NLM and NMAC have initiated action to see that their requirements are more clearly specified in contracts and have established procedures for assuring that management keeps better informed on contractors' progress.

INEFFICIENT USE OF PERSONNEL AND EQUIPMENT

Between August and November 1977, we frequently observed idle equipment and employees not productively used during several unannounced walk-throughs at NMAC. Although we often noted little or no productive employee activity in several

NMAC organizational units, the problem appeared more pronounced in units responsible for audiovisual production activity.

Our observations alone were not designed to produce conclusive evidence of whether or not employees were fully and efficiently used. However, several employees and supervisors we interviewed said that their job assignments do not keep them fully occupied or efficiently use their skills. For example:

--One unit chief said that his audiovisual production capacity was underused by one-third.

--Another unit chief told us that his unit could triple its production output with its present capacity.

--An audiovisual production employee in another unit said that he spent more time looking for work than working. A medical advisor in this unit told us that he was not fully used. He believed that NMAC could have better used his skills if he were involved in other types of activities than he was.

--An audiovisual technician in still another section said that he was busy only about 60 percent of the time.

Reasons for personnel and equipment problems

NMAC's inefficient use of personnel and equipment has resulted from (1) its failure to effectively implement its change in mission, (2) the de-emphasis of audiovisual production in favor of contracting out, (3) a decision to retain many production-oriented employees who could not or did not adjust to its new mission, and (4) continuing costly investments in audiovisual production equipment.

Underuse of personnel

Since 1968, NMAC has reduced the overall size of its staff, made at least six organizational changes, eliminated some types of positions and created others, reassigned personnel to different units and changed duties, and retrained employees to better align its resources with its new mission. These efforts, however, did not result in full and efficient use of staff or equipment.

NMAC kept many of its audiovisual production personnel even though the need for their skills declined. According to NLM, the decision to do this resulted from HEW directives which strongly encouraged retaining and retraining of employees. As of December 1977, NMAC still employed 64 of the employees it had in 1967 when NLM acquired it. Many of these 64 employees were audiovisual production technicians who were detailed or reassigned to new duties which did not require use of their production skills or keep them fully occupied.

Many of these employees who remained in the audiovisual production area at NMAC were not kept fully occupied because of the de-emphasis in production in favor of contracting out. NMAC in-house production activity declined from 76 completed audiovisuals in fiscal year 1970 to only 22 in fiscal year 1977. For the same fiscal years audiovisuals resulting from contracts increased from zero to 50.

Underutilization and ineffective use of NMAC employees were also noted during personnel management studies at NMAC by the Center for Disease Control in 1972 and by the Public Health Service's Office of Administrative Management in 1974. Both NLM and NMAC officials recognize that personnel problems exist which need to be corrected. They believe much of the problem results from having too many audiovisual production-oriented employees who could not or did not adjust to the operational changes required by NMAC's new mission, particularly the de-emphasis of in-house production activity.

At the time of our field work, NMAC's personnel officer was reviewing individual job descriptions to ensure that the duties of the employees were adequately described and properly graded. In addition, NLM officials said that much of the underutilization problem should be resolved through attrition when NMAC relocates to Bethesda, Maryland. NLM has decided not to eliminate employee positions until the move occurs.

Underuse of equipment

In September 1969, the NMAC Subcommittee of NLM's Board of Regents established guidelines calling for NMAC to de-emphasize production and emphasize the acquisition, cataloging, and distribution of existing audiovisuals and those being produced elsewhere. The guidelines further provided that NMAC was to maintain a modest and stable production capability for experimental and innovative productions.

NMAC has continued to increase and modernize its investment in audiovisual production equipment. Much of its audiovisual production equipment is often unused and appears to exceed demonstrated need.

NMAC's investment in equipment and production materials has increased about 2.4 times during the last 10 years, increasing from about \$1 million in 1967 to about \$2.4 million in 1977. For example, NMAC's inventory of television equipment grew from two cameras and one videotape recorder in 1966 to 12 cameras and over 50 videotape recorders in 1977. It also has 16 television cassette players, 59 television monitors, and other accessory equipment.

In addition, some of NMAC's equipment appears to be more sophisticated than it needs. For example, in 1976 NMAC purchased a computerized videotape editor costing about \$110,000. NMAC employees responsible for operating this editor indicated that NMAC editing demands were relatively low and that current editing needs could have been met with manual operation of their videotape recorder. They did indicate, however, that they may be able to make better use of the computerized editor in the future.

NLM and NMAC officials agree that NMAC has more equipment than it needs for the types and quantities of audiovisuals it produces. But they said that NMAC needs the equipment for research, experimentation, evaluation, training, and to keep abreast of the state of the art so that it can advise and assist the biomedical education community even though the equipment often remains unused. However, information obtained during our discussions with NMAC supervisory, professional, and technical personnel in several NMAC units did not support this argument.

For example, NMAC uses some of its less sophisticated, low-cost audiovisual equipment during some of its training workshops, but it usually does not use its more sophisticated equipment because most health professional schools do not have this type of equipment. During fiscal year 1977, 6 of the 11 in-house workshops involved the use of NMAC audiovisual production equipment for training, according to the NMAC's Educational Training and Consultation Branch. NMAC personnel told us that relatively little research and experimentation was done with NMAC's audiovisual equipment and that such activities were usually done by contractors.

In March 1977, a consultant to the Office of Telecommunications Policy, Executive Office of the President, visited NMAC as part of a Government-wide survey of audiovisual activities. He told us that he believed NMAC had more and more sophisticated equipment than its mission justified and that its equipment was being used only a very small fraction of its capacity. He believed NMAC should explore alternatives for accomplishing its mission, such as having its personnel keep up-to-date on new equipment by visiting private audiovisual producers or leasing equipment when needed.

LOW EMPLOYEE MORALE
AND POTENTIAL EFFECTS
OF PROPOSED MOVE

NMAC management did not always keep its employees fully informed on what it was doing or why various actions or changes occurred. As a result, many NMAC employees, particularly those who were or are involved in audiovisual production, did not fully understand or accept (1) NMAC's new mission; (2) the reasons for frequent organizational changes, curtailment of audiovisual production activities, reassignments, and reductions in grade levels; or (3) how they fit into NMAC's new mission. This lack of full understanding or acceptance together with NMAC's lack of use of employee production skills and insufficient work to keep employees fully occupied contributed to low morale among employees.

NMAC's planned move to Maryland accentuated this problem. Many NMAC employees were uncertain about their employment status after NMAC moves. This uncertainty has existed, at least to some extent, since NLM acquired NMAC and had long-range plans for moving it to Maryland. In fiscal year 1976, the Congress authorized construction funds for the Lister Hill National Center for Biomedical Communications, which will house NMAC, and NLM established a workgroup to study the merger of NMAC and the Center. In July 1976, NLM approved the merger which will occur after NMAC moves to Maryland, which is now scheduled for the spring of 1980.

NLM has been considering what changes in NMAC's organization, functions, staffing, and equipment should be made to effect the merger, but has not yet made final decisions. NLM is also considering the possibility of recommending reassignment of some NMAC employees and equipment to the Center for Disease Control for its use. NLM has begun keeping NMAC employees informed on the status of the Center's construction and the proposed move.

NLM officials believe that much of the low morale among many NMAC employees is largely attributable to the planned move to Bethesda. Furthermore, they believe that many of the NMAC employees who were or are involved in audiovisual production will decide not to move to Maryland. They believe this will help resolve the employee underutilization problem. Of 45 NMAC employees we interviewed, 19 said they did not plan to move to Maryland, 2 said they would move, and 24 were uncertain.

The consultant to the Office of Telecommunications Policy who reviewed NMAC operations expressed concern to us about its move to Maryland and disposition of its production capacity. He believed that much of NMAC's equipment was more sophisticated than the Center for Disease Control would need and than NMAC would need unless it greatly expanded its production activity. He believed HEW needed to carefully evaluate this situation.

CONCLUSIONS

NMAC has not been well managed. It had neither adequately assessed the audiovisual needs of the biomedical educational community nor developed a specific plan for efficiently implementing its new mission. It frequently received unacceptable products from its contractors because of weaknesses in its contract administration. It did not fully use its personnel and purchased more types and quantities of equipment than it needed or often used. It has not adequately evaluated the effectiveness of its program. Nor has it always maintained good communications with employees, many of whom are dissatisfied because of non-use of their production skills, lack of sufficient work to keep them occupied, uncertainty about their future, and inability or unwillingness to accept NMAC's new mission. Many employees apparently did not fully appreciate NLM efforts to retain them, and NLM and NMAC management did not always fully comprehend the needs of the employees.

NLM and NMAC management were faced with a difficult task. They acquired an existing organization and had to substantially change its mission, redirect its efforts, and change its method of operation. Many employees who had skills which were either no longer needed or needed only infrequently were kept. To retain many of these employees and accomplish its new mission NMAC had to reorganize, reassign, retrain, and downgrade staff. Many employees did not fully understand what was happening or why. Many were uncertain of their future at NMAC because of the planned move to Maryland.

NLM and NMAC struggled too long to adapt NMAC's organization and resources to its new mission. Nearly 11 years have elapsed since NLM acquired NMAC. Reorganizations, reassignments, and other NLM and NMAC activities have not been effective. Employee dissatisfaction and uncertainty have contributed to this problem, although their precise effects cannot be measured. The planned move of NMAC to Maryland provides an excellent opportunity for HEW to re-evaluate NMAC's mission, organization, and resource needs and use.

AGENCY COMMENTS

We discussed our findings with NLM and NMAC officials. They generally agreed with them and acknowledged that problems exist at NMAC that need to be resolved. However, they believed that some of the allegations made by employees were exaggerated and out of perspective. They believe NMAC had made progress in accomplishing its mission despite the problems that exist. Also, they believe that it needs to be recognized that equipment used for research will not always be fully used.

NLM and NMAC officials initiated or promised action to (1) better identify medical educational audiovisual needs, (2) improve contract administration and communications with employees, (3) keep better informed on equipment usage, and (4) better evaluate their efforts. However, they believe that they will not be able to make rapid or substantial progress in fully using NMAC resources until NMAC moves to Maryland. NLM was still considering the effects of the planned move on NMAC's operations at the time we completed our field work.