

approved by the overall community planning group. He emphasized that it was important that the vocational-technical proposal be part of the total planning. Only when that was done, would the proposal be given any positive action and approval.

It was in that meeting with the educational interests of the community that Mr. Bradford first laid down the rules that would become so familiar with respect to the availability of furniture and equipment to outfit the buildings. Mr. Bradford promised that such surplus property would be made available with the buildings unless it fell within one or more of the following categories:

An item essential to a mission of the Air Force being relocated from the base;

An item that was on a Department of Defense "need-to-buy" list; or

An item purchased with nonappropriated funds.

Mr. Ostenberg advised the Federal delegation that the school board was committed to begin classes in September of 1965 and asked if it might be possible to acquire surplus Schilling facilities in advance of that date. Mr. Bradford's reply was that, if base officials could make them available, it would be possible to receive permission for occupancy on or about June 1, 1965.

School officials immediately began the task of preparing a formal proposal, including in it a list of furniture and equipment which they would need to outfit the new school facilities. On the 25th of February, Mr. Ostenberg presented the vocational-technical school proposal to the Schilling Development Council for their approval. The council unanimously approved the suggested usage and advised OEA of their action. On the 8th of March, Ostenberg reported to the board of education that Federal officials had informed him that the proposal for the vocational-technical school was the best prepared proposal they had seen. The proposal had been hand-carried to Washington for informal review. He further reported that they had been told they might obtain a right-of-entry so that occupancy of base facilities could be made by June 30.

Washington and Kansas City officials made a special visit to Salina in the last 3 days of March to discuss the vocational-technical school proposal and other packages being prepared for their consideration. It was at these meetings that the local school officials were told they would receive a permit of occupancy not later than June 15th so that the school staff could move in for renovation and installation of equipment in preparation for the September 1 opening. Colonel Scanlan advised the 15th Air Force and SAC Headquarters that the buildings requested could be made available. On the 29th of April, Superintendent Ostenberg, in a letter to Colonel Scanlan, officially requested occupancy permits for three of the principal buildings in the vocational-technical school package. Colonel Scanlan attached copies of Ostenberg's letter to his own letter to SAC Headquarters in which he—

strongly recommends that appropriate outgrant be authorized so that these three facilities can be made available to the Salina board of education—if these buildings are to be made immediately available, special expedited handling must be given this correspondence. The Corps of Engineers can start action, with GSA concurrence, upon receipt of SAC approval of availability of these buildings. This request for an outgrant is in itself, under present circumstances, an exception to normal procedures. Therefore, it appears that the appropriate agencies and the Department of Defense, at Washington, D.C., level, would need to fully coordinate this and provide their agencies at local level (GSA, DHEW, and

Corps of Engineers) specific instructions to cover this particular situation. If, for any reason, an appropriate outgrant cannot be made available immediately, the Salina board of education must be so advised.

It was not until a second visit by a large delegation of Washington and Kansas City Federal officials late in May that a definite occupancy date was established. At that meeting, chaired by Mr. Bradford, it was established that the buildings and equipment for the area vocational-technical school would be assigned to the Salina board of education by July 15. Although almost a month later than the earlier assigned target date, it was the first of the disposal packages which had become a reality. When the long awaited announcement was made on the 13th of July that the transfer would be effective on the 15th, Superintendent Ostenberg assured local citizens that he would have plenty of time to get everything ready for September. At that time he had his core requirement of three buildings and some 10,498 items of equipment including a completely equipped machine shop.

The new school opened its doors to over 200 daytime students, and ever-increasing enrollments in post-high-school and adult night courses, exactly on schedule. Its success is a matter of record. The first class was graduated in May 1966.

SCHILLING INSTITUTE

In a number of studies completed in the decade preceding the announced closure of Schilling Air Force Base, various advisory educational groups had called attention to the lack of opportunity to receive a technician-level education in the State of Kansas. State and local societies of engineers and technicians had also been pointing out the serious lack of technical education opportunities for the citizens of Kansas. The studies further indicated the serious shortage of properly trained technicians. Attempts to obtain the necessary funds to establish a technical institute within the State were lost in the clamor for those same dollars by the existing institutions of higher learning.

With the announced closing of Schilling a few local individuals, aware of this problem in the State, began discussing and exploring the possibilities of the usage of Schilling facilities. In early January of 1965, President Dr. James A. McCain, of Kansas State University, wrote the Schilling Development Council and offered the services of the university to assist Salina in the program of economic recovery. In replying to Dr. McCain the council advised him of the scheduled mid-January meetings with governmental officials and suggested that the university might send people to learn firsthand what might be available at Schilling for technical school purposes.

Dr. Paul E. Russell, dean of the Kansas State College of Engineering, his assistant Prof. Henry M. Neely, Jr., and Prof. Thomas F. Creech immediately began a survey and inspection of the available facilities and their adaptability for the laboratories and classrooms that would be necessary at a technical institute. This team of engineering educators enthusiastically reported that the potential exceeded the basic criteria by many fold. The fact that hundreds of items of equipment and furniture would be declared surplus and would quite likely be made available to the school, added to their enthusiasm. At the mid-January meetings it was publicly announced that Kansas

State University was interested in establishing a technical institute at collegiate level in facilities at the base. Mr. Neely and Mr. Creech began spending almost full time inventorying, evaluating, and in the preparation of a tentative proposal for the establishment of a State-sponsored technical institute.

When the initial five-package utilization plan was presented to the public in mid-March, institute planning had progressed to the point that justification had been developed for some 95 acres of land and two complexes of squadron headquarters buildings, shops, dormitories, dining halls, and student recreation buildings. Local citizens, the development council and the K-State sponsors realized that the success of the proposal would require the acceptance of the idea by the Governor, the State legislature, the board of regents, and numerous other State and Federal agencies.

Speedy action was obviously paramount and an attempt to get at least tentative commitments from these groups had to be made within a very few weeks. In the discussions with State officials, it was most important that the sponsors be able to say with positiveness that the proposal would meet the requirements of and would be acceptable to OEA, DHEW, GSA, etc. The terms of such a transfer had to be clearly defined and understood. The policy with respect to availability of surplus equipment and furniture would also be of considerable help in the efforts to expedite State approval of the proposal. Armed with this information and many other supporting facts, the community of Salina, with the full cooperation of Kansas State University staff people, began an organized campaign throughout the State gathering support for the proposed institution.

The Kansas State Engineering faculty envisioned the school as a 2-year post-high-school institution offering an associate degree of technology in a number of programs. Initially the plan further contemplated curriculum in six programs.

Aeronautical technology.

Civil technology.

Design and detail technology.

Electronic technology.

Electrical technology.

Mechanical technology.

The program would be expanded as dictated by the requirements of industry in Kansas and in the surrounding States. It was pointed out that only two similar institutions existed within a radius of three or four hundred miles.

Nearly everyone agreed that it was a splendid idea. The Governor said so. The board of regents said so. The engineering societies said so. The chambers of commerce and industrial development groups said so and so did a great many other organizations and individuals. The only trouble was that no one at the capitol seemed to want to put up the money; a matter of less than \$200,000 initially. Without the appropriation, both the institute and the potential Federal grants of surplus property and continuous supporting funds would be lost to the State.

Salina civic leaders, area political leaders, industrialists from around the State, consulting engineers and architects, and aircraft company executives descended upon Topeka in mass, in person, by mail, by telegram, and by phone call. Professional lobbyists were amazed

at the somewhat amateurish approach and its signal success. On May 13, 1965, upon publication in the Topeka Daily Capital, house bill 1101 became law and the technical institute was born under the name of Schilling Institute. The legislation provided that the new school would be administered by a "State education authority" consisting of three members. Dean Paul Russell, the institute's first pioneer, was selected by Governor Avery as one of the three members to administer the affairs of the new school. Henry Neely was appointed the institute's first president and Tom Creech, in turn, was selected by President Neely to be the institute's first academic director. By these appointments, the continuity of the planning and developing of Schilling Institute was assured.

Mr. Neely, using a desk in the airport authority office, began the complex and involved task of organization which was directed toward the opening of the Institute in September 1966. The formal proposal grew from some 40 pages of explanation and justification to a document with over 500 pages. Dozens of meetings at Washington, at Kansas City, and at Salina were held. The listing of support equipment and furniture, made available by DOD, grew to 78,039 items.

While these efforts and contacts with the Federal agencies were being conducted, the institute was faced with problems within the State as well. The leaders of education throughout the State, particularly those concerned with junior colleges and the area vocational-technical schools, voiced objections to the establishment of the institute and based their statements on the misconceived idea that the institute would be duplicating the educational opportunities available at their own institutions. Basically however, it was evident that they were anticipating loss of dollars because of the new school. The staff of the institute was slowly and systematically increased and all of its members took turns in visiting the hundreds of high schools throughout the State to bring the story of the institute to the 1965 high school graduates and to their counselors. Locally, the institute had to resolve the conflicts between their needs and those of Kansas Wesleyan University for buildings and areas at the base. The institute was also preparing a proposal, and appropriate justification, for one of the surplus Atlas missile sites located a few miles north of Salina. This complex of mechanical, electrical, electronic, and environmental equipment was surely a most desirable laboratory for advanced students of the institute.

President Neely and his staff were continually emphasizing that the institute was not a Salina institution but a State institution. The staff was also proving to the State that the institute program was not in any way a duplicate of that offered at the junior colleges or at the vocational-technical schools. Despite the efforts and recommendations of Governor Avery, the Institute budget was reduced by \$193,000 forcing the institute to reevaluate its initial program.

Although the Schilling Institute Story abounds with the recounting of problems and obstacles, it truly is a story of monumental success. The delays in getting formal approval from the Federal Government were frustrating. However, on July 18, 1966, the institute became a reality at Schilling with the raising of the National and State flags in front of the administration building. Plans are now firm for an initial enrollment of 250 students in September 1966 and the imple-

mentation of programs in aeronautical, civil, computer, electronic, and detail and design technologies.

With a projected enrollment of over 2,000 students within the next 5 or 6 years, Salina community leaders and the Salina Airport Authority consider the institute to be a most promising major "industry". Kansas now has its long needed and sought after technical institute.

VOCATIONAL REHABILITATION CENTER

From the first day following the mid-January meetings in 1965, a small group of citizens led by Charles Waeckerle, a local financing and investment company official, had been devoting their time and energies to find a medically associated use for the base hospital building and its supporting facilities. It had been concluded that neither of the two large, modern and recently expanded Salina hospitals could economically add the facilities to their purposes and it was further concluded that the community did not need a third general hospital.

On that premise, the committee contacted every State, National, Federal, and private institution that could conceivably use the facility: Heart and cancer treatment and research organizations were contacted; the Shrine, as a children's hospital; the Knights of Columbus, for similar purposes; United Commercial Travelers; Kansas University Medical Center; the Menninger Foundation; Mayo Brothers; and a number of other similar institutions. The answers received in every instance, particularly after representatives had visited the base, were that the hospital certainly had great value but its location in central Kansas, the lack of funds, the distance from other high-level medical centers and combinations of these reasons made it impractical for them to consider the matter further. Many of those directly connected with the problem feel that there should be some systematic method of making all public and quasi-public agencies aware of the availability of superb surplus medical facilities.

However, the efforts of Mr. Waeckerle and his active committee did finally bear fruit. In mid-June of 1965, a chance contact with a representative of the Kansas Vocational Rehabilitation Advisory Board, by a Salina doctor, quickly developed into a potential medically associated use for the hospital facility. Roger H. Triplett, State director of the Kansas Division of Rehabilitation, was invited by Waeckerle to visit the facilities and, after the initial tour in late June, Triplett wrote that the facilities would be ideal to provide the comprehensive and specialized services needed by many of our disabled in Kansas. He pointed out that Salina, centered in the State, is easily accessible from all parts of the State and that the buildings were ideally suited to the rehabilitation program. Triplett also mentioned the availability of the area vocational-technical school and the Schilling Institute for rehabilitation training. Triplett requested an expression from the city of its desire to obtain a rehabilitation center and the city's willingness to cooperate with such a project. At a hurriedly called meeting attended by more than sixty members of the economic development committee of the chamber of commerce, he had his answer in an unanimous endorsement. There followed the need to obtain approval of the proposal from both State and Federal officials, a program which was vigorously pursued. On August 6, 1965, a formal request was made to the Department of Health,

Education, and Welfare and on the 14th of September the Salina community was advised that the application for the hospital and related facilities had been tentatively approved. This program of giving medical treatment, vocational and medical evaluation, counseling and guidance, vocational training, and other needed services to men and women injured in industrial accidents or otherwise physically handicapped will be initiated in the fall of 1966.

THE HIGHER EDUCATION CENTER

During the review of the Schilling Institute request for facilities at the Base, it became apparent that there would be sufficient facilities for both the institute and a proposed center for higher education. As a result, Dr. James A. McCain of Kansas State University, acting in his capacity as chairman of the extension commission of the State board of regents, requested that President Neely of the Schilling Institute set aside a portion of the institute area for a regional director of industrial education and programs set up under the "Title I, Community Services," portion of the Higher Education Act of 1965. The effect of this action was to establish, an educational complex ranging from the high school through university graduate levels at the base.

The higher education programs will be developed around community and State needs. Initially, emphasis will be in terms of business, industry, and technological needs. The six Kansas institutions of higher learning will coordinate their programs on the Schilling Institute campus through their extension divisions. State, Federal, and private financing will provide the operating and research funds as required.

These new programs in higher education will bring professional and technical leaders to the community.

Initial efforts to establish and fund these new programs, within the institute complex, are being made as of this writing.

KANSAS WESLEYAN UNIVERSITY

Kansas Wesleyan University, offering a 4-year liberal arts program, is a long-established and valuable asset to the city of Salina. In recent years the enrollment at KWU has been gaining at a rate nearly matching the other colleges and universities of the State; increasing at approximately 10 to 20 percent per year.

In the months preceding the announced closing of Schilling Air Force Base, KWU officials had been studying the physical plant problems resulting from these enrollment gains. The university was land-locked by valuable residential and commercial development. There was need for new student housing, a new science building, a new library, and additional classroom space. The campus consisted of only 24.5 acres of land. It was concluded that, although very convenient and attractive, expansion into contiguous areas might be prohibitively expensive.

With the Schilling closure announcement, Dr. D. Arthur Zook, president of KWU, immediately became interested in the possibilities of establishing a second campus at Schilling. In the weeks preceding the mid-January meetings, he and members of his staff surveyed and

evaluated Schilling buildings and areas and developed considerable interest in pursuing the possibility that an area in the southeastern corner of the base might be desirable for a second campus. The area encompassed the hospital, gym, three bachelor officers quarters, the nurses residence, officers club, community center, chapel, theater, and a number of dormitories and supporting dining halls. In reporting this interest at the mid-January meetings, Dr. Zook commented that the university understood that medical or medically-associated interests might preclude the use of the hospital by any educational institution but that KWU was interested in pursuing the matter even though the "package" would be somewhat less attractive to them if the hospital was not available.

In late January 1965, Dr. Zook presented the university's tentative plan to the Schilling Development Council. The discussion that followed was centered primarily on the financial aspects of the proposed campus and the ability of the university and its many supporters to see the plan through. At that date there was no appreciable conflict between the proposed Kansas Wesleyan University campus and the proposals of the other educational users. The council elected to take the matter under advisement and suggested to Dr. Zook that he continue the development of a formal proposal. In mid-February, Murray A. Wilson, a member of the council and a long-time supporter of the university, asked the council for its stand on whether or not they would look with favor on a study program which would include an exhaustive evaluation of the Wesleyan proposal. This study would be conducted by a branch of the Ford Foundation, well qualified to appraise the situation. Mr. Wilson was advised that the council was certainly in favor of such a study and that they saw much value in determining whether the idea of a second campus was feasible or desirable.

Hare & Hare, consulting planners and architects of Kansas City, Mo., were engaged in support of the Ford Foundation program and their preliminary report was made available in May of 1965. In the intervening weeks, Dr. Zook had been in contact with Washington officials of DHEW and had presented a preliminary proposal to them for their comments and review. The Hare & Hare report, documented by appropriate data and maps, proposed a second campus area that included buildings and areas in the Schilling Institute package and areas that were proposed to be in the municipal airport package.

The Salina Airport Authority was forced to assume the responsibility of arbitration. In mid-June a compromise was reached by all concerned and the conflicts appeared to be resolved. However, on the very day of that arbitration meeting, representatives of the vocational rehabilitation office at Topeka visited the base and, within the next few days, the tentative vocational rehabilitation center proposal became a major conflict with the Kansas Wesleyan University package.

The role of arbitrator again fell on the members of the airport authority. Quite factually, the situation was the only real sour note in the tune Mr. Bradford had named, "It's Up To You". The community leaders were certainly divided on the matter but a substantial majority were in favor of the establishment of the vocational rehabilitation center which was proposing to use the very heart of the Kansas Wesleyan University area.

Despite the conflict, the Kansas Wesleyan University board of trustees voted unanimously to apply to the Department of Health, Education, and Welfare for more than 150 acres in the southeast corner of the base. Their decision to make application was drawn from several sources. The Hare & Hare feasibility study, which covered the adaptability and cost of renovation of existing buildings and a cost analysis of operation, was coupled with the projections by college authorities for the next two decades and a detailed study of the plant requirements of the immediate future. The university also had the advice of several outstanding educators, including some of the country's foremost campus planners.

The Wesleyan proposal was in complete detail and a usage plan for all of the area and all of the buildings was included. A few days later the Central Kansas Conference of the Methodist Church approved the university's plans for a second campus by a substantial majority.

The controversy continued for several weeks. The Kansas City office of DHEW had two applications involving the same areas of the base. In evaluating the program the regional representative of DHEW did not believe that the program set forth by Kansas Wesleyan University would warrant a public benefit discount of 100 percent, but would be entitled to something less than a 100 percent. As a quasi-public organization they would not have the priority that the State-Federal usage as a vocational rehabilitation center would enjoy.

Hopefully, the Salina Airport Authority attempted to come up with a compromise to the roadblocks that had been confronted by the university officials. A large part of their present campus was occupied by a football stadium, track, and playing fields. The airport authority suggested that these areas might become available for expansion of the university if replacement areas were available at the base. It was pointed out that base athletic fields and playgrounds already existed that could be easily made available to Wesleyan. These efforts bore no fruit. On the 24th of September, the Kansas Wesleyan University Board voted unanimously to withdraw their entire application, including the possibility of obtaining space for an athletic stadium.

The Kansas Wesleyan University chapter of the Salina story does not end with their loss of Schilling Air Force Base facilities. Enrollment again increased in September 1965 and, as of this writing, plans for the construction of a new science building, a new residence hall, and a new library are being completed. The university is in the midst of a fund-raising campaign to meet matching-fund requirements. Their goal of \$400,000 is approaching fulfillment.

APPENDIX B—THE NEW SALINA MUNICIPAL AIRPORT

The current chapter of the story of the airport package was concluded on the 14th of July 1966. On that date both private and commercial aviation moved from the old municipal airport to Schilling Air Force Base. The airport story began almost immediately after the announcement from Washington that Schilling would be closed. Local flying enthusiasts, and all of those interested in general aviation, hoped that the beautiful long runways at Schilling were not to be forgotten in the scramble to utilize the facilities after the scheduled closing. It was admitted that Salina had a marginally adequate airport but it easily could find itself in the enviable position of having

superb facilities. All, or at least the majority of the community leaders, realized that Schilling's runways were long enough and tough enough to handle any commercial aircraft in existence. If the city was to continue to grow, which they felt it would in spite of the temporary setback, airport facilities would play an increasingly important role in the community's economy. The Schilling runways and aircraft aprons could be a priceless asset. With the availability of the base, Salina would have the potential to become a terminal city on interstate routes of an aerial nature as well as being at the intersection of two interstate highways. Those individuals actively engaged in the industrial development activities of the chamber of commerce were visualizing a solid row of aviation associated industries down the east side of the Schilling aircraft aprons.

The Schilling Development Council, in cooperation with City Manager Norris Olson, arranged to have an engineering study and evaluation made of the existing municipal airport and a similar study of the airbase facilities. The studies compared operating and maintenance costs and included preliminary engineering estimates of the cost of the capital improvements that would be required within the next few years at each of the facilities. A recapitulation of the results of the studies is shown in the following tables. Only the principal items are shown.

Capital improvements costs

Old airport		New airport	
Extension of north-south runway.....	\$70,000	Relocate hangars.....	\$45,000
Land for north-south runway extension...	55,000	Relocate beacon and wind cone.....	1,000
New clearance easements.....	11,700	Floodlighting south apron.....	4,300
Rerouting Crawford Avenue.....	80,000	Modify airfield lighting.....	11,500
Additional taxiways.....	20,000	Modify runways and taxiways marking...	18,400
Additional runway lighting.....	9,000	Taxiway and apron repairs.....	5,000
Paving northwest-southeast runway.....	292,000	New T-hangars.....	60,000
New taxiways.....	27,700	Remodeling of base operations building for terminal use.....	25,000
Expansion of terminal building.....	43,500		
New fire station.....	30,000		
Additional parking lot.....	6,750		
New maintenance hangar.....	120,000		
Relocate powerlines.....	85,000		
Total.....	850,650	Total.....	150,200

Yearly operating and maintenance costs

	Old airport	New airport
Salaries.....	\$30,000	\$45,000
Utilities.....	6,000	15,000
Insurance.....	4,500	11,000
Building repair.....	2,200	5,000
Equipment repair.....	2,300	5,000
Snow removal.....	1,500	5,000
Pavement maintenance and repair.....	8,000	26,000
Total.....	54,500	112,000

In conjunction with that study, the development council office was preparing a tentative listing of the facilities at the base that they considered to be either necessary or desirable if it were to become the municipal airport. During the preparation of this listing, a very basic and fundamental concept of the future of the base was established. It was apparent that one single governmental agency would have to

take the responsibility for the continued operation of all of the services that would be vital to the overall occupancy of base properties. Under this concept the list of facilities became quite lengthy. It obviously included all of the runways, taxiways and aprons, aircraft fueling systems, airfield lighting, weather and communication facilities, navigational aids, and similar items essential to the airport itself. The list of supporting facilities was almost as long. It included the water supply, treatment, transmission, storage, and distribution facilities; the sanitary sewerage collection and treatment facilities; the industrial waste treatment facility; on-base railroad trackage; on-base streets and street rights-of-way; overhead and underground utility line easements; electric power primary and secondary distribution systems; the street lighting system; the natural gas distribution system and the government-owned portions of the telephone system.

When the engineering report was received early in March of 1966, the comparative evaluation quite conclusively proved that the move to Schilling was economically desirable. Although year-round maintenance costs at Schilling would obviously be higher because of the more extensive facilities, the city's share of the costs of capital improvements at the old municipal airport would certainly become a sizable burden on the city. Central Airlines had given notice to the city that their planned changeover to turboprop aircraft in 1966 would require additional runway length and this item alone involved considerable moneys for additional land, relocated major roads, and the moving of a high-tension electric power transmission line.

As a result of these preliminary studies, the development council immediately contacted the Federal Aviation Agency and requested that they come to Salina and assist the community in a more detailed study of the possibilities of transferring the municipal airport operation. In the first of a series of meetings with FAA, it was pointed out that the FAA itself would have to evaluate the facilities at Schilling and their adaptability to civilian aircraft operations. The visits by FAA and their meetings with the development council and its successor, the airport authority, continued through July of 1965. On July 28, a formal application was forwarded to FAA by the development council. The application followed the format suggested by FAA and was supported by all of the data required by them. In the initial meetings it had been established that FAA could recommend to the General Services Administration that the supporting utilities and services, such as the water, sewerage, and storm drainage systems, and essential streets could be included, although they need not necessarily be in the airport area itself.

The FAA application was presented in 10 sections titled:

- Deficiencies of present municipal airport.

- Proposed utilization plan for Schilling runways, taxiways, aprons and related buildings and facilities.

- Buildings to be used for airport purposes.

- Structures and facilities (other than buildings) to be used for airport purposes.

- Buildings and structures encompassed by airport boundaries, not expected to produce revenue and included by virtue of their location.

- Utilities and services.

- Off-base facilities.

Revenue producing buildings and facilities.

Estimated annual expenditures and expected annual income.

Master development plan for the future.

The application, which included appropriate maps, also included a detailed listing of essential off-base facilities including such items as navigational aids, water wells, water lines and water storage facilities, aviation easements, and similar airfield-associated items of property.

While waiting for FAA to review, approve, and recommend the application to the General Services Administration, the airport authority began preparing for the problems that would be involved in the transfer and which would become the responsibility of the community. Meetings were held with the local aircraft owners and pilots to coordinate the efforts of the authority with them and to keep them well informed. The authority also began the accumulation of a listing of surplus equipment that would be necessary to the airfield operation. This listing was forwarded to the FAA for incorporation in the application for the real property.

Wilson & Co. was engaged to prepare an airport master development plan for submittal to FAA; a requirement at all fields that are a part of the national airport plan.

The council's request that the instrument landing system at Schilling be included in the airport transfer became quite involved. Our request for these items was said to be a precedent and the difficulties of securing the approval of the many agencies involved were most numerous. The problem was not answered by the FAA's inclusion of the ILS system in their recommendation. As was proven in a number of other instances, it took the coordination and effort of the Office of Economic Adjustment to hold the components of the system at the base until the FAA could accept responsibility. The system was a vital concern of the airport authority since without it a number of potential commercial users of the airfield would not be interested in Salina. Similar action was necessary in the case of the control tower and the emergency airfield lighting generator.

When the FAA recommendation was sent to the General Services Administration, it was, for the most part, in conformance with the airport authority's application. FAA saw fit to delete certain areas that had been requested as a part of the airport and these areas, in a few instances, included structures from which the airport authority had expected to receive supporting income. Further, in the case of the cross-wind runway, the FAA deleted one end and its connection to a taxiway. However, the FAA recommendation to GSA did provide a most adequate facility for the establishment of a municipal airport.

The FAA recommendation also proposed that two buildings and the control tower be transferred to them rather than to the airport authority. The FAA flight service station would occupy the former rapcon building, the FAA radio transmitters would be located in a second building, and FAA would become responsible for the control tower.

The airport authority then began an evaluation of the existing hangars at the municipal field and contracted for the dismantling and reerection of two or them at Schilling and for the construction of two new aircraft hangars. The base operations building, which was

in a sense the terminal building at the base, was remodeled and made suitable for a public airport terminal building.

The FAA flight service station will be moved to its new quarters at Schilling in the next few months. The airport authority has agreed to pay the cost of manning the control tower until the record proves that the FAA criteria for establishing and staffing a control tower has been met. It is expected that operations at the new field will quickly reach the minimum of 24,000 itinerant operations per year and that this level will be maintained for three consecutive accounting periods. At that time FAA will assume the costs of the air traffic controllers. This minimum number of flight operations had been reached in two consecutive periods in 1964 at the old airport. New airport users already include Beechcraft, Funk Aviation, and the air branch of the Kansas Highway Patrol.

The city Commission and City Manager Olson are completing plans to convert the old municipal airport into a much needed municipal golf course—the terminal building can be easily converted into an adequate and convenient club house.

The story of the airport package has not been concluded but the future appears to hold promising potentials. There is little question that the facilities at Schilling can be developed into a municipal airport that need not be second to any other municipal field in the country.

APPENDIX C—INDUSTRIAL EXPANSION

When the Salina community began to comprehend the magnitude of the economic blow involved in the closing of the base, its leaders and citizens frantically attempted to organize a concerted effort toward replacing payroll and income that had been provided by the military. Historically, Salina had been an agricultural and trade community. The closing of the base prompted the revitalization of what had been a rather half-hearted campaign to diversify the economic base of the community industrially. Community leaders and the chamber of commerce were in agreement that the greatest single potential for future development would be the utilization of the existing facilities at the base for industrial and commercial purposes. They also quickly inventoried the industrial sites and industrial parks that had been available for some time in other locations within the community.

There appeared to be sufficient land for expansion, but the problem areas seemed to be (1) lack of a coordinated professional approach (2) the need for a trained labor force, and (3) the absence of a data bank which would give prospective industries a clear picture of Salina's assets and liabilities.

The first problem was attacked through coordinated efforts of the city government, the chamber of commerce, and the airport authority.

In the case of the labor force, several significant elements were present:

The median school year completed (persons 25 years or older) was 12.3 in 1960. Thus, there was a basis of educational attainment.

Salina, as an agricultural-trade center, had not developed a reservoir of skilled industrial personnel. Only some 600-900

persons out of the civilian work force (over 18,000) were employed in activities requiring highly developed skills.

The educated younger workers were seeking jobs elsewhere due to limited local opportunities.

Prior to the base closing announcement, it had been recognized that, if industry and manufacturing were attracted to Salina, reduced activities or closure of Schilling would have a lesser and shorter lived effect on the economy of the community.

In the mid-January meetings of 1965 with Washington officials the industrial development committee heard words of wisdom from John Kavanagh and OEA industrial consultant, and others in the delegation. The leaders were told that the first inclination they might have, that a preparing a colorful brochure to be mailed promiscuously around the country, should most certainly be postponed, if not forgotten. They advised, as the recommended alternative, that Salina leaders begin preparing and assembling documentary data about all facets of the community so that it would be available to prospective industrial clients. We were advised of the dangers of committee action, as opposed to the one-man director, because of the "let George do it" attitude that would most certainly develop; that the industrial development effort was not an evening or one weekend's work or something that a citizen might take on as a hobby. The community was admonished that it would probably take 5 years and not 6 months to show any degree of success. In the words of Mr. Kavanagh, a potential industrial client must say no not only once but eight times before he is to be dropped from the effort. The program would take money and our attitudes about spending the money would be most important. Jim Keefe described the development program as involving getting data on people, natural resources, utilities, markets, and in effect, an economic handbook. Within a week after hearing the charges of the industrial development specialists the chamber of commerce was organizing itself to comply with their basic suggestions.

Our community leaders had not, however, fully comprehended the wisdom of the admonition to slow down the advertising of availability of base properties to industry. Potential clients were being shown buildings that could not possibly become available for at least a year and buildings that were not included in the airport package were being shown as available.

The committee soon learned that there was nothing magic about the words industrial development and that it was not a presto chango business. At an early February meeting they reported that there were certainly some sleight-of-hand tricksters abroad. They reported that they had been besieged by persons that would like Salina to put them in business or finance their operations and who obviously considered Salina as an easy mark. Although the committee was investigating each lead or suggestion thoroughly, it was impossible to finance every inventor with an idea. They learned that it was necessary to turn down industries that were obviously not worthy of community consideration.

For the next 2 or 3 months the rumors of industrial client contacts were almost constant. Many of these rumors were actually quite factual and the community was visited by representatives of a number of concerns that had been attracted to Salina. In almost every

instance, the contact was soon lost primarily because of the uncertainties as to occupancy, leasing terms, and other equally important considerations.

Two or three of the early industrial leads did progress to the status of consideration of temporary occupancy permits through established Corps of Engineer's procedures. Prompted by a request from the mayor of Salina, and with the approval of the Air Force and base officials, the Corps of Engineers did advertise the availability of four buildings and solicited bids for occupancy. Only one bid was received on one of the structures and no bids on the others. The single bid proved to be considerably below the expected leasing figure and was rejected.

Early in June 1965, it was announced that the chamber had hired Jim D. Trickett, industrial development specialist from Tulsa, Okla., and that he would start his duties in the first week of July. Within a week after Mr. Trickett's arrival in Salina, the announcement was made that the Westinghouse Corp. was seriously considering the construction of a major lamp plant at Salina. Although the Westinghouse final decision was not made until the 7th of September, it served as a subject for conversation that certainly boosted the morale of the entire community throughout the summer. Mr. Trickett and his industrial development steering committee set their sights on a promised availability date of January 1, 1966, for base facilities and began a continuing search for potential industry.

In these months the airport authority developed standard lease forms, adopted a realistic set of restrictive covenants, made tentative arrangements for the takeover of utility systems and worked out acceptable arrangements with base officials for occupancies by industry.

When the formal approval of the airport package was announced in mid-February 1966 it was possible to announce the successful conclusion of negotiations with seven firms who would totally employ nearly 1,000 persons. To many the success of the industrial development efforts was nothing short of phenomenal.

Beech Aircraft Corp. leased the five largest available buildings including the large maintenance hangar (120,000 square feet) and a modern warehouse (90,000 square feet). Since the first announcement Beech has exercised an option and leased three additional warehouses.

Funk Aviation rented a large hangar and immediately began the production of crop-dusting aircraft.

Customs Metals rented a building and began the manufacture of mobile home components parts.

Craddock Uniforms moved in and are in production of a fine line of band uniforms.

Griswold Seeds opened a distribution center warehouse at the base.

A wholesale frozen food distribution center was opened in another warehouse.

Moisture control equipment was being manufactured, soon in production-line quantities and the production of artificial marble was underway in another structure.

The industrial development chapter of the Salina story is far from ready for conclusion. There are a few possible additions yet pending. Quite unbelievably, the more desirable buildings that became available

with the approval of the airport package have all been leased. The facilities that are still vacant will, in many cases, be suitable only for quite specialized usages. The airport authority is now concentrating on the development of vacant areas within its control. More importantly, the authority is now in the process of negotiating with the General Services Administration for the purchase of those areas deleted from the original application by the FAA. These areas, and the few suitable buildings that are included, were considered to be unnecessary to support the airport under the regulations of the Federal airport disposal procedures and, therefore, fell into the category of properties that would be sold by the General Services Administration.

This story of Salina's industrial expansion would not be complete if mention were not made of the notable efforts of Carl Engstrom, the president of the chamber of commerce, and the cooperation of the chamber under his leadership, during the early days of trial.

As of this hour, Salina's industrial pot is beginning to boil. Hopefully, in a matter of another few short months—perhaps weeks—it could be a rolling boil.

APPENDIX D—THE WAITING WIVES

During the month of March 1965, the 1st Infantry Division of Fort Riley (60 miles from Schilling Air Force Base) was preparing to go to Vietnam. Concurrently, the 735 Capehart units at Schilling were being declared excess to the needs of the Department of Defense.

Departing servicemen at Fort Riley, concerned over the welfare of their families while they were away, approached the Schilling base commander requesting permission for their families to occupy some of the vacant Capeharts. At the same time, at the Washington level, the Army expressed concern over the major social problems brought about by the hurried move of personnel overseas and the consequent loss of Government housing on the part of their families.

These two expressions of serious concern, combined with the DOD/GSA knowledge of the serious glut of residential housing on the civilian economy in Salina, led to a decision to withdraw the Schilling Capeharts from excess status, assign them to the Army, and make them available to families of members of all the military services sent overseas. The Air Force continued to pay the mortgage costs, and to provide essential utility services as long as its caretaker elements were in place at the base. National publicity was given to the program, through both official channels and news media.

The city of Salina has made the "waiting wives" a welcome element of the community. Examples are numerous but one—the fact that the girls at Marymount College babysat for wives attending a special concert at the college—will suffice.

The DOD guidance provided that the Schilling "waiting wives" program would be a test to determine whether such a program was feasible. Currently, the test is scheduled for completion by June 30, 1967.

The program has been an unqualified success, as evidenced by the following statistics: (Data as of August 1, 1966):

520 of the units are currently occupied. Another 152 families are scheduled in.

Total population is some 2,500, including 1,800 children. The Schilling Manor School, located in the Capehart area, will be overcrowded this year (capacity is 900) and it will be necessary to send 300 children to schools in Salina.

The entire operation (excluding the commissary) is being handled with less than 60 full-time personnel.

APPENDIX E—THE RESIDENTIAL HOUSING ISSUE

In 1960, some 6 percent of Salina's dwelling units were vacant (821 out of 14,304). A post office survey on December 4, 1964, showed an increase in vacancies to 1,400—or 9 percent of the inventory at that time. True, there remained a substantial number of below standard dwellings, but the thought of combining an existing high vacancy rate with the loss of some 2,500 Air Force families and the addition of the 735 Air Force-owned Capehart units was a matter of frightening concern.

The first to feel the impact were the Air Force families who had bought homes and were then ordered out—during the period of major drops in market values. The majority of these individuals had purchased homes in the \$9,000 to \$18,000 price range, with the enlisted personnel occupying the lower portion of the price range. A phenomenon known as the "equiteer" arrived on the scene. This individual would approach the Air Force member and offer to relieve him of his mortgage obligations and pay a nominal sum for his equity. The serviceman, concerned about his credit rating, would often jump at the deal. Unfortunately, he was rarely aware of his contingent liability to reassume payment in the event the new buyer failed to meet the mortgage obligations. The equiteer would often rent the house, fail to make any mortgage payments, and pocket the rental proceeds. Then the serviceman, at his new base, having forgotten about his home in Salina, would receive the bill—not only for the current mortgage payment but all those which had been missed.

Many servicemen, who had FHA-insured or VA-guaranteed mortgages, approached these agencies requesting that they be relieved of both the dwelling and the mortgage. FHA, generally, accepted a deed in lieu of foreclosure. VA because of its dependence on a revolving fund, was unable to do so where there was a significant difference in market values and mortgage balances.

All in all, the serviceman homeowner ordered from Schilling in the spring and summer of 1965 had a rough financial time—both in disposing of his home and in avoiding the need for making house payments in two locations, at his new base and back in Salina.

As noted elsewhere, the 735 Capeharts were withdrawn from excess and, as long as they are used for the "waiting wives" program, they will not impact on the residential housing picture of Salina.

With regard to the dwelling units in Salina, another post office survey was conducted on September 16, 1965. At that time, it was estimated that, of 15,588 possible postal deliveries, some 3,321 or 21.3 percent were vacant. Of these 2,578 were residences, 743 were apartments, and 37 were mobile homes.

In order to determine real estate trends since the closing of Schilling, interviews were made with the past president of the Salina Real Estate

Board, reputable real estate firms and local investors. The general consensus was:

1. The value of housing priced at \$15,000 and more has been quite stable since the base was closed.

2. The value of housing priced at less than \$15,000 has experienced a marked drop. The location of housing in this price bracket has had considerable influence on the asking price (for example, the early 1950 emergency housing project in Indian Village lost a major portion of its preclosing announcement value).

3. Older housing in the community experienced the greatest decline in value. One real estate representative commented, "Older houses in the community are a dime a dozen."

All real estate agencies reported excellent business during 1965 and the first 6 months of 1966. Local real estate people believe that this trend is the result of many factors including:

1. There has been considerable movement to better housing-up-grading.

2. Vacant FHA and VA housing, with little or no down payment, has created a new market.

3. Local investors have purchased many properties in anticipation of improved housing markets resulting from the opening of the Westinghouse plant and the new industries which have been attracted or are being attracted to the Salina Airport Industrial Center at former Schilling Air Force Base.

APPENDIX F—ENABLING LEGISLATION

CHAPTER 117—ACQUIRING PROPERTY FROM UNITED STATES

Senate Bill No. 235

AN ACT Authorizing certain cities to establish and create an authority for the purpose of acquiring property from the United States or any of its agencies, the state of Kansas, any political subdivision thereof or any municipality therein, or any other source authorized by this act, and to own, maintain, operate, improve, develop and dispose of such property; and to levy taxes and to issue general obligation bonds, revenue bonds, industrial revenue bonds and warrants to provide revenues required for such purposes.

Be it enacted by the Legislature of the State of Kansas:

SECTION 1. This act shall be known as the surplus property and public airport authority act.

SEC. 2. It is hereby declared to be the policy of the state that to promote the public interest, economy, health, safety, education and general welfare of the cities to which the provisions of this act may be applicable and of the residents and property owners therein that the people be empowered to acquire, own, maintain, operate, improve and dispose of surplus real or personal properties of the United States, the state of Kansas, any political subdivision thereof or any municipality therein, within or without the cities to which the provisions of this act may be applicable, including, but not limited to, property which may be essential, suitable or desirable for the development, improvement, operation or maintenance of a public airport. Because of the unique problems which exist relative thereto, the creation of an authority separate and distinct from such cities and the counties in which such cities are located is necessary.

SEC. 3. This act shall apply to any city of the first class located in a county in which the United States Air Force has or shall hereafter acquire, maintain, operate, or control an air base, which air base has been or shall hereafter be declared surplus or is otherwise available for disposition by the United States or any of its agencies.

SEC. 4. As used in this act:

(a) "City" means a city to which this act applies as provided in section 3 of this act which establishes and creates an authority pursuant to this act.

(b) "Authority" means a surplus property and public airport authority created pursuant to this act.

(c) "Property" means any interest in any real or personal property within or without the city acquired or available for acquisition by the authority from:

(1) The United States or any of its agencies pursuant to the federal property and administrative services act of 1949, as amended, the surplus property act of 1944, as amended, the federal airport act of 1946, as amended, and any other federal law relating to disposition of property owned or held by the United States or any of its agencies;

(2) the state of Kansas, any political subdivision thereof, or any municipality therein under the provisions of any applicable statutes of the state of Kansas or municipal ordinances; or

(3) any other source authorized by this act.

(d) "Public airport" means a public airport as defined in the federal airport act of 1946, as amended, and shall include such property which in the determination of the administrator of the federal aviation agency is essential, suitable or desirable for the development, improvement, operation or maintenance of such public airport or reasonably necessary to fulfill the immediate and foreseeable future requirements of such public airport for the development, improvement, operation or maintenance of such public airport, including property needed to develop sources of revenue from non-aviation businesses at such public airport.

(e) "Board of directors" means the board of directors of the authority.

(f) "Director" means a member of the board of directors of the authority.

SEC. 5. The governing body of any city to which this act applies is hereby authorized to establish and create, by adoption of an appropriate ordinance citing this act, and authority as herein provided to acquire, own, maintain, operate, improve, develop, lease and dispose of property in furtherance of the provisions of this act. Such authority shall be a body corporate and politic constituting a public corporation and a tax-supported institution, agency and organization, and shall have the same immunities and exemptions from the payment of costs, damages, charges, taxes and fees as are granted to the city. Such authority shall be managed and controlled by a board of directors consisting of five (5) directors to be appointed by the governing body of the city, each of whom shall be a resident of the city. The original board of directors of the authority shall be appointed at the time of the creation of the authority and one of said directors shall be appointed for a term of three (3) years, two for a term of two (2) years and two for a term of one (1) year, with the term of office of

each such director to commence on the date of his appointment and each of said directors shall serve until the expiration of his term and until his successor is appointed. The governing body of the city shall appoint successors to the original and succeeding directors as the respective term of each expires, each of whom shall serve for a term of three (3) years and until his successor is appointed: *Provided, however*, That no director shall serve as a director for more than eight (8) consecutive years. Vacancies shall be filled for unexpired terms. Any director may be removed by a majority vote of the governing body of the city from office for reasonable cause. The directors shall not be compensated for services rendered as such directors but shall be reimbursed for all reasonable expenses incurred in carrying out their duties as such directors. Notwithstanding the provisions of K.S.A. 13-533 and K.S.A. 13-2111, no person who is appointed as a director, or any corporation in which such director is an officer or stockholder, shall be prohibited by said statute from operating under any franchise granted by the city or having any contract with the city by reason of his appointment as such director: *Provided, however*, That it shall be unlawful for any director to be a party to or pecuniarily interested in, directly or indirectly, any contract, lease, sale of property, franchise or other agreement of the authority.

SEC. 6. The authority shall have perpetual succession subject to the power of the city to dissolve the same in the time and manner provided in section 11 of this act, and shall have the power:

- (a) To adopt, alter and use corporate seal;
- (b) To sue and be sued, to prosecute and to defend any action in any court of competent jurisdiction;
- (c) To receive, purchase, lease, obtain option upon, acquire by contract or grant, or otherwise acquire, to own, hold, maintain, operate, improve, subdivide, lease, lease for oil and gas purposes and develop, and to sell, convey, lease, exchange, transfer, assign, grant option with respect to, mortgage or otherwise dispose of property;
- (d) To enter into contracts to carry out the purposes of the authority and to execute contracts and other instruments necessary or convenient to the exercise of any of the powers of the authority;
- (e) To acquire, hold and dispose of property without regard to the provisions of any other laws governing the acquisition, holding and disposition of public property and public funds by cities and their agencies;
- (f) To adopt, amend and repeal bylaws, rules and regulations not inconsistent with this act governing the manner in which the powers and purposes of the authority shall be carried out and effected: *Provided, however*, The same shall become effective upon ratification of the governing body of the city;
- (g) To select, appoint, employ, discharge or remove such officers, agents, counsel and employees as may be required to carry out and effect the powers and purposes of the authority and to determine their qualifications, duties and compensation;
- (h) To borrow money and pledge, mortgage or otherwise hypothecate property and revenues as security therefor;
- (i) To contract with the United States or any of its agencies, the state of Kansas, any political subdivision thereof and any municipality therein with respect to the terms on which the authority may agree to purchase or receive property, including, but not limited to,

provisions for the purchase of property over a period of years, for payment of the purchase price or installments thereof in the manner and to the extent required, and for pledge of all revenues and income received from the sale or operation of said property after providing for administration, maintenance and operation costs, to payment of the principal of the purchase price and interest thereon or of any bond issued by the authority therefor;

(j) To enter into agreements with the city or others for the furnishing of any utilities, facilities and services owned, maintained, furnished or conducted by the city on such terms and conditions and for such considerations as may be agreed upon between the city or others and the authority;

(k) To distribute to the city any funds not necessary for the proper conduct of the affairs of the authority.

SEC. 7. This act shall empower any city to which this act applies to establish and create an authority, and shall empower such city and such authority to exercise the powers herein granted, and no action, proceeding or election, other than the adoption of the ordinance referred to in section 5 of this act, shall be required prior to the establishment and creation of such authority or to authorize the exercise of any of the powers herein granted, any provisions of the laws of the state or of any city charter or ordinances to the contrary notwithstanding. The boundaries of any such authority shall be commensurate with the boundaries of the property acquired by the authority and the property so acquired need not be in a single contiguous area. All or any part of the real estate constituting a part of the property located within the boundaries of the authority may be annexed and taken within the corporate limits of the city in the same manner and to the same extent as any other real estate which is not owned or controlled by the city and any such real estate so annexed and taken within the corporate limits of the city shall be exempt from any bond indebtedness of the city incurred prior to the date of such annexation, and the city may exempt such real estate from any city taxes which the governing body of the city shall determine. A city which establishes and creates an authority under the provisions of this act and the authority created by such city shall have the same rights, privileges and immunities with respect to property located outside the municipal limits of such city as now exist for any property located within the limits of such municipality, including the right of eminent domain: *Provided*, That the right of eminent domain shall be exercised only by the authority with the approval of the governing body of the city in order to acquire property or an interest in or through air space which is essential, suitable or desirable for the development, improvement, operation or maintenance of a public airport. Such city shall also have the right to transfer and convey to such authority, without consideration, any public airport owned by such city.

SEC. 8. With the consent of the governing body of the city, the authority may annually levy a tax not to exceed three (3) mills on each dollar of the assessed tangible valuation of the property of the city for the furtherance of the purposes of the authority, to be levied and collected in like manner with other taxes, which levy the board of directors shall, on or before August 25, of each year, certify to the county clerk who is hereby authorized and required to place the

same on the tax roll of said county to be collected by the treasurer of said county and paid over by him to the board of directors of the authority. Such levy shall be in addition to all other levies authorized by law and none of the limitations of chapter 79, article 19, of the Kansas Statutes Annotated, shall apply to such levy. The authority shall be exempt from the provisions of the budget laws of the state.

SEC. 9. The authority shall have power to issue its own general obligation bonds, revenue bonds, industrial revenue bonds, and no-fund warrants as hereinafter in this section provided.

(a) If the authority shall desire to issue its general obligation bonds, the board of directors of the authority shall adopt a resolution setting forth the principal amount of bonds proposed to be issued and the purpose for which said bonds are to be issued, and shall forward a certified copy of such resolution to the mayor of the city. The mayor shall present such resolution to the governing body of the city for its approval or disapproval. If the governing body of the city shall by ordinance disapprove said resolution of the authority, no further action shall be taken by the authority on the basis of said resolution. If the governing body of the city shall by ordinance unconditionally approve said resolution of the authority, the governing body of the authority may proceed to authorize and issue the general obligation bonds of the authority in the amount and for the purpose specified in the resolution of the authority. The governing body of the city, however, upon the presentation to it of the resolution of the authority, in lieu of disapproving or unconditionally approving said resolution, may adopt a resolution giving its approval of the resolution of the authority but directing the publication once in the official city newspaper of a notice setting forth the intention of the authority to issue its general obligation bonds in the amount and for the purpose specified in the resolution of the authority, and if within fifteen (15) days after the publication of said notice there shall be filed with the city clerk a written protest against the issuance of said general obligation bonds of the authority signed by not less than twenty percent (20%) of the qualified electors of such city, the governing body of the city shall submit the proposed improvement and the proposed general obligation bond issue of the authority to the electors of the city at a special election to be called for that purpose upon at least ten (10) days' notice, to be held not later than sixty (60) days after the filing of such protest, or at a regular city election or general election which will occur not sooner than thirty (30) days nor later than sixty (60) days after the filing of such protest. In the event that a majority of the voters voting on such proposition at such election shall vote in favor thereof, such improvement may be made and such general obligation bonds of the authority may be issued by the authority to pay the cost thereof. General obligation bonds of the authority shall not be issued in excess of three percent (3%) of the assessed valuation of all the tangible taxable property within the city as shown by the assessment books of the previous year. The general obligation bonds of the authority as to the term, maximum interest rate, and other details shall conform to the provisions of the general bond law. The full faith and credit of the authority shall be pledged to the payment of the general obligation bonds of the authority, including

principal and interest, and the authority shall annually levy a tax on all tangible taxable property within the city, in addition to all other levies authorized by law, in an amount sufficient to pay the interest on and principal of said bonds as the same become due. Such general obligation bonds of the authority shall not constitute a debt or obligation of the city which established and created the authority.

(b) The authority may issue from time to time the revenue bonds of the authority for the purpose of purchasing, constructing, or otherwise acquiring, repairing, extending, or improving any property or facility of the authority and may pledge to the payment of such revenue bonds, both principal and interest, any rental, rates, fees or charges derived or to be derived by the authority from property or facilities owned or operated by it. Such revenue bonds of the authority shall mature serially beginning not later than five (5) years after the date of issuance, and the date of maturity of such bonds shall not be fixed for a longer period of time than thirty-five (35) years after the date of issuance. Said revenue bonds shall bear interest at a rate not exceeding five percent (5%) per annum, payable semiannually, such interest to be evidenced by coupons attached to said bonds. Such bonds and interest coupons shall be negotiable. Said bonds shall contain recitals stating the authority under which such bonds are issued, that they are issued in conformity with the provisions, restrictions and limitations of such authority, and that such bonds and interest coupons are to be paid by the issuing authority from any rental, rates, fees or charges derived or to be derived by the authority from property or facilities owned or operated by it and not from any other fund or source. The resolution authorizing the issuance of revenue bonds of the authority may establish limitations upon the issuance of additional revenue bonds of the authority and may provide that additional revenue bonds shall stand on a parity as to the revenues of the authority and in all other respects with revenue bonds previously issued by the authority on such conditions as may be specified in the resolution. Said resolution may include other agreements, covenants or restrictions deemed advisable by the governing body of the authority to effect the efficient operation of the property and facilities of the authority, and to safeguard the interests of the holders of the revenue bonds of the authority, and to secure the payment of said bonds and the interest thereon promptly when due. When an authority authorizes and issues its revenue bonds under the provisions of this section, an amount of the net revenues of the property and facilities of the authority sufficient for the purpose shall be pledged to the payment of the principal of and the interest on the bonds as the same become due, and it shall be the mandatory duty of any authority issuing revenue bonds under this act to fix and maintain rentals, rates, fees and charges for the use and services of the property and facilities of the authority sufficient to pay the cost of operation and maintenance of such property and facilities, pay the principal of and interest on all revenue bonds or other obligations issued by the authority and chargeable to the revenues of the authority as and when the same become due, provide an adequate depreciation and replacement fund, and create reasonable reserves therefor, and to provide funds ample to meet all valid and reasonable requirements of the resolution authorizing the

revenue bonds. Said bonds shall be registered in the office of the secretary or clerk of the authority issuing the same and in the office of the state auditor and shall not be offered for sale to the state school fund commission.

(c) The authority may issue the industrial revenue bonds of the authority, such bonds to be issued in the manner and under and in accordance with the terms and provisions of K.S.A. 12-1740 to 12-1749, inclusive, and any acts relating to the subjects of such act, and all amendments thereof.

(d) The authority may issue its no-fund warrants under the conditions and in the manner provided by law for the issuance of no-fund warrants by cities of the first class.

(e) The bonds, warrants, and other obligations and liabilities of the authority shall not constitute any debt or liability of the state of Kansas or of the city which established and created the authority, and neither the state nor the city shall be liable thereon.

SEC. 10. All contracts, leases, agreements, books and records of the authority shall constitute public books and records and shall be available for examination by the city and any of its officers, employees and agents during normal business hours. The authority shall cause an audit of its books and records to be conducted at least annually, by an independent certified public accountant and the city shall be furnished copies of the report of such examination.

SEC. 11. An authority created and established by a city may be dissolved at any time by such city by adoption of an appropriate ordinance effecting a dissolution thereof: *Provided, however,* That the authority established hereunder shall continue for a period of not less than ten (10) years: *Provided further, however,* That an authority established hereunder shall not be dissolved until all of its liabilities, bonds and other valid indebtedness have been paid in full or have been otherwise discharged: *Provided further, however,* That upon such dissolution the city shall acquire the property of the authority subject to any leases or agreements duly and validly made by the authority.

SEC. 12. If any section, clause or provision of this act shall be declared unconstitutional, the decision shall affect only the section, clause or provision so declared to be unconstitutional and shall not affect any other section, clause or provision of this act.

SEC. 13. This act shall take effect and be in force from and after its publication in the official state paper.

Approved April 9, 1965.

Published in the official state paper April 16, 1965.

CHAPTER 422—ESTABLISHMENT OF SCHILLING INSTITUTE

House Bill No. 1101

AN ACT Providing for the establishment of Schilling institute under the state education authority therein created; providing certain powers and duties.

Be it enacted by the Legislature of the State of Kansas:

SECTION 1. This act shall be known and may be cited as the "state education authority act."

SEC. 2. As used in this act unless the context otherwise requires:

(a) The term "state authority" means the state education authority established by this act.

(b) The word "president" means the chief administrative officer of Schilling Institute.

(c) The term "state education authority division" means the sub-department of the department of public instruction which is headed by the state education authority.

(d) The term "technical education" means vocational or technical training or retraining which is given in or by Schilling institute and which is conducted as a program of education designed to train individuals as technicians in recognized fields. Programs of technical education include, but not by way of limitation, aeronautical technology, construction technology, drafting and design technology, electrical technology, electronic technology, mechanical technology, automatic data processing and computer technology, industrial technology, metals technology, safety technology, tool design technology, cost control technology, surveyor, industrial production technology, sales service technology, industrial writing technology, communications technology, chemical control technology, or quality control technology. Additional programs of technical education shall be specified from time to time by the state educational authority in the manner provided in this act.

(e) The term "state technical plan" means the plan formulated by the state authority in compliance with this act and shall consist of such provisions concerning the establishment and operation of Schilling institute as may be necessary or appropriate to plan and guide Schilling institute and programs offered thereby.

(f) The term "advisory council" means the eleven-member advisory council provided for in subsection (h) of section 2 of House bill No. 893 of the 1965 regular session of the legislature, being the community junior college act, and such advisory council is hereby given the additional name of technical education advisory council.

(g) The term "state superintendent" means the state superintendent of public instruction.

Sec. 3. There is hereby created the state educational authority which shall be composed of three (3) members as follows:

(a) The state superintendent of public instruction shall be a member and chairman of the state authority for a term concurrent with his term as state superintendent.

(b) The governor shall appoint the other two (2) members of the authority for terms of four years each to commence on May 1, 1965. Any vacancy occurring under (a) shall be filled by the person who succeeds to the office of state superintendent of public instruction, and may be the assistant state superintendent of public instruction. Any vacancy occurring under (b) shall be filled by appointment for the unexpired term, if any, and otherwise for a term of four (4) years by appointment of the governor. Incumbent members of the state authority shall continue to hold over after completion of their terms until a successor is duly appointed and qualified. Members other than the chairman may be removed for cause by ouster by the state on the relation of the attorney general. Members of the state authority shall be paid travel and subsistence expenses incurred in performance of their duties. The authority shall have such powers and perform such duties as are prescribed in this act, and such other powers and duties as may be provided by law.

SEC. 4. The state educational authority is hereby designated to be the state board charged with planning, establishment, development and control of Schilling institute. The state authority is empowered and directed to establish, create and equip at Salina, an institution for technical education to be known and called Schilling Institute. The state authority shall appoint the president of Schilling Institute who shall serve at the pleasure of the state authority and who shall receive such compensation as is provided by the state authority and approved by the state finance council. The state authority is authorized to employ such other persons for professional or other work as it deems proper upon such terms as it may determine.

SEC. 5. The president shall appoint professors, teachers and teaching technicians of Schilling institute and shall fix their compensation with the approval of the state authority. The number and qualifications thereof shall be determined by the state authority but shall not be inconsistent with provisions of the state technical plan. The president shall appoint such administrative officers and employees as are necessary to the operation of Schilling institute and their compensation and tenure (not including the president, professors or teachers), shall be fixed in accordance with the Kansas civil service act. The president, professors, technicians and teachers of Schilling institute shall be included for retirement purposes within any retirement plan or system which may be provided by K.S.A. 74-4925. All administrative officers and employees not engaged by Schilling institute to give instruction shall be covered for retirement purposes under the Kansas public employees retirement system created under K.S.A. 74-4901 to 74-4924, both inclusive.

SEC. 6. The state authority shall prepare and adopt the state technical plan in accordance with the provisions of this act and the following shall apply to the state technical plan and its adoption:

(a) Any part or parts of the state technical plan may be adopted by the state authority at any regular or special meeting.

(b) Any part or parts of the state plan provided for in the community junior college act may be adopted by reference as a part of the state technical plan.

(c) Any part or parts of any state plan for vocational education may be adopted by reference as a part of the state technical plan.

(d) The state plan may include any provisions that the state authority deems appropriate for the control or planning of Schilling institute or technical education.

(e) Any part or parts of any rules and regulations of the state authority or any other rules and regulations may be adopted by reference as a part of the state technical plan.

(f) Any part or parts of any state plan adopted by the state higher education facilities commission established under Senate bill No. 1 of the 1965 regular session of the legislature may be adopted by reference as a part of the state technical plan.

(g) Schilling institute may be planned for and developed to qualify as a "public technical institute" as such term as defined in subsection (g) of section 751 of Title 20 of the United States Code, or as an "area vocational education school" as that term is defined in subsection 2 of section 35g of Title 20 of the United States Code or as both such public technical institute and such area vocational education school.

(h) The state authority or any person designated by it may prepare a part or all of a state plan related to Schilling institute to be submitted to the state higher education facilities commission to be submitted by such state commission under authority of Senate bill No. 1 of the 1965 regular session of the legislature to the proper authorities of the federal government under the higher education facilities act. The state higher education facilities commission shall give any such plan or part of a plan so submitted a high priority in its recommendations and state plans.

(i) The state authority or any person designated by it may prepare a part or all of a state plan related to Schilling institute to be submitted to the state board for vocational education, and the same shall be given high priority for inclusion in the state plan for vocational education.

SEC. 7. The state authority shall have and may exercise the following powers and authority:

(a) To prepare and adopt the state technical plan;
(b) to exercise and perform any powers granted in this act;
(c) to adopt rules and regulations in the manner provided by law;
(d) to grant certificates of completion of courses or curriculum and to grant associate of arts degrees;

(e) to provide either through rules and regulations or through the state technical plan for eligibility for school activities, tuition, fees, courses and curriculum of any student of Schilling institute;

(f) to contract with the governing body of any subdivision of the state of Kansas to carry out the purpose and intent of this act; the governing body of every subdivision of government in Kansas is authorized to contract with the state authority for such purposes;

(g) to accept from the United States government or any of its agencies or any other public or private body grants or contributions of money, funds or property which the authority may authorize to be used for or in aid of Schilling institute or any of the purposes authorized by this act or the state technical plan;

(h) to acquire by gift, purchase, condemnation or otherwise, own, lease, use and operate property, whether real, personal, or mixed, or any interest therein, which is necessary or desirable for technical education;

(i) to determine that any property owned by Schilling institute or the state authority is no longer necessary for technical education purposes and to dispose of the same at public or private sale.

(j) to exercise the right of eminent domain, pursuant to chapter 26 of the Kansas Statutes Annotated;

(k) to acquire any land and buildings formerly comprising any part of what is commonly known as Schilling air force base, Salina, Kansas, by purchase, lease or contract from the United States government or any of its agencies. The state authority is authorized to grant such assurances as may be appropriate to the acquisition and utilization of any such land and buildings;

(l) the state authority, or the president to the extent authorized by the state authority, may purchase, equip and construct such buildings and installations as may be necessary or appropriate to carry out the purposes of this act.

SEC. 8. Funds appropriated by the legislature for the state authority or Schilling institute shall be appropriated to the state authority as a division of the state department of public instruction: *Provided*, Appropriations of the state board vocational education either of the current fiscal year or any following fiscal year for area vocational-technical schools or education may be allocated to the state authority for the purposes specified in this act. Any funds appropriated by the legislature may be used by the state authority in any manner not in conflict with the appropriation act. Expenditures made for Schilling institute shall be made by the state authority, or by the president in accordance with provisions and procedures specified by the state authority. The budget of the state authority shall be a part of the budget of the department of public instruction. The budget of the state authority shall include the budget for Schilling institute. The state superintendent in preparing the budget of the state department of education shall include the budget of the state authority. Preparation of that part of the budget of the state department of public instruction related to the state authority shall be subject to approval and adoption by the state authority. Budget hearings on the budget of the state department of public instruction, and in particular on the part thereof relating to the state authority, shall be had and conducted as may be prescribed by the budget director on advice of the governor.

SEC. 9. The state controller is authorized to issue his warrants on the vouchers of the state authority for any funds appropriated to the state authority or Schilling institute. The state controller may also issue his warrants on the vouchers of the president to the extent and upon such limitations as may be prescribed by the state authority.

SEC. 10. If any clause, paragraph, subsection or section of this act shall be held invalid or unconstitutional it shall be conclusively presumed that the legislature would have enacted the remainder of this act without such invalid or unconstitutional clause, paragraph, subsection or section.

SEC. 11. This act shall take effect and be in force from and after its publication in the official state paper.

Approved April 26, 1965.

Published in the official state paper May 13, 1965.

APPENDIX G—STATISTICAL DATA

Economic indicator data is of importance in appraisal of the impact upon the Salina community caused by the closure of Schilling Air Force Base. Summerized data for a few of these indicators has been selected as documentation for the Salina story.

Civilian workforce trends, Salina, Kans., area (Saline County)

Industry	May 1963	May 1964	May 1965	May 1966
Civilian workforce, total.....	18,850	19,400	17,400	16,050
Unemployed.....	525	450	425	300
Percent of civilian workforce.....	2.8	2.3	2.4	1.9
Employed, total.....	18,325	18,950	16,975	15,750
Agricultural.....	1,000	1,000	950	875
Nonagricultural.....	17,325	17,950	16,025	14,875
All other.....	2,450	2,575	2,250	1,925
Wage and salary.....	14,875	15,375	13,775	12,950
Manufacturing.....	1,475	1,775	1,450	1,400
Food and kindred products.....	850	825	800	625
Other manufacturing.....	625	950	650	775
Nonmanufacturing.....	13,400	13,600	12,325	11,550
Contract construction.....	2,050	1,900	1,525	1,350
Transportation, communication, electricity, gas, sanitation service.....	1,425	1,475	1,325	1,325
Wholesale and retail trade.....	4,275	4,475	4,050	3,850
Finance, insurance and real estate.....	625	625	625	600
Services.....	2,850	2,850	2,975	2,900
Government.....	2,125	2,225	1,775	1,475
Other.....	50	50	50	50

Source: "The Salina Labor Market Review" published by the Salina office of the Kansas Employment Service.

Bank debits to demand deposit accounts of individuals, partnerships, and corporations, Salina, Kans.

[In thousands of dollars]

Year	Amount	Year	Amount
1960.....	\$716,449	1963.....	\$916,514
1961.....	806,256	1964.....	882,677
1962.....	871,259	1965.....	842,099

1965, 1st 5 months, \$335,086; 1966, 1st 5 months, \$370,784 (10.7-percent increase over same period of 1965).

Source: Federal Reserve Bank, Kansas City, 10th district.

BUSINESS DATA: RETAIL TRADE AND SERVICE ESTABLISHMENTS

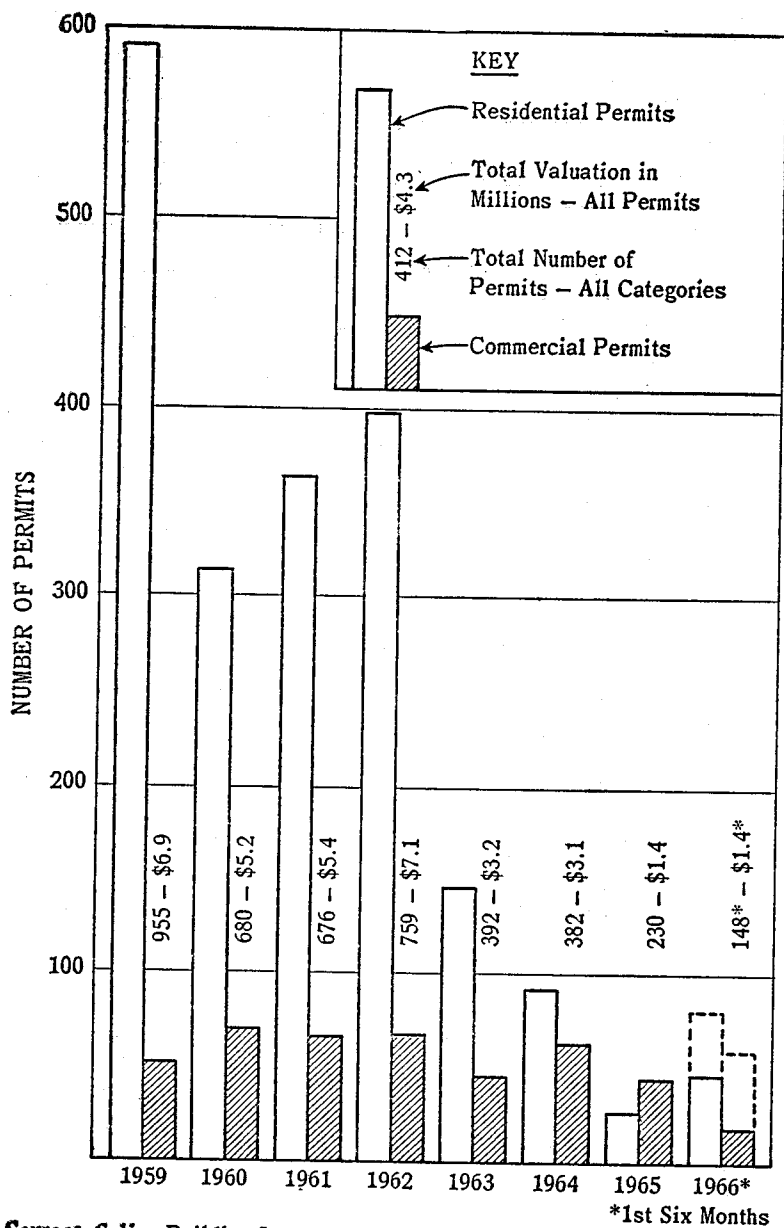
The Salina Credit Bureau reports that the number of business establishments in the city decreased following the closing of Schilling Air Force Base. They point out that the trend took an upward turn in March and April of 1966.

Four major retail business establishments closed and one major retail business reduced its floor area after the base closure: three department stores, one lumber yard, and a hardware store.

The credit bureau estimated that about 20 service-type businesses closed during the period. These businesses included: beauty shops, military store, restaurants, shoe stores, ready-to-wear shops, small sundry shops, lending institutions, jewelry stores, taverns, grocery stores, and service stations. In their opinion the marginal service businesses that have weathered the storm will prosper as new growth is experienced in the community.

It should be pointed out that business trends are not all negative. The building permit records show that twenty-one new business buildings were built in the city of Salina during 1965 and the first 6 months of 1966. In addition, two major chainstore operations more than doubled their floor space for retail activities.

BUILDING CONSTRUCTION PERMITS SALINA, KANSAS



Source: Salina Building Inspection Office

Total retail sales, Saline County

[Estimated percentage change from same month of previous year]

Month	Percentage change	Month	Percentage change
October 1964.....	-3.3	July 1965.....	-6.2
November 1964.....	-1.9	August 1965.....	-10.2
December 1964.....	-17.4	September 1965.....	-8.2
January 1965.....	+1.5	October 1965.....	-14.8
March 1965.....	+1.7	November 1965.....	-7.7
April 1965.....	-2.4	December 1965.....	+10.8
May 1965.....	-13.1	January 1966.....	+12.8
June 1965.....	-2.3	February 1966.....	+5.8

Source: Kansas Business Review, published by the Center of Regional Studies, University of Kansas.

Retail sales tax collections and tax rate, Saline County

Year ended June 30	Retail sales tax collections	Tax rate (percent)	Year ended June 30	Retail sales tax collections	Tax rate (percent)
1950.....	\$603,868.04	2	1959.....	1,706,223.55	2½
1951.....	718,069.73	2	1960.....	1,811,328.54	2½
1952.....	876,190.83	2	1961.....	1,952,245.23	2½
1953.....	1,038,342.85	2	1962.....	2,107,176.85	2½
1954.....	1,032,224.99	2	1963.....	2,050,038.18	2½
1955.....	1,161,324.98	2	1964.....	2,127,629.72	2½
1956.....	1,148,119.49	2	1965.....	2,074,934.51	2½
1957.....	1,122,930.99	2	1966 (estimated).....	1,850,000.00	2½
1958.....	1,125,849.62	2			

Source: State of Kansas, Department of Revenue.

September school enrollment by divisions

	1957	1958	1959	1960	1961	1962	1963	1964	1965 ¹	1966 ¹
Special.....									55	63
Kindergarten.....	889	987	1,102	1,146	1,236	1,313	1,211	1,261	1,215	825
Elementary.....	4,021	4,419	4,486	4,619	5,121	5,147	5,271	5,582	5,341	3,964
Junior High.....	1,437	1,554	1,751	1,944	2,133	1,991	1,933	2,029	1,975	1,770
Senior High.....	1,035	1,202	1,337	1,332	1,463	1,625	1,745	1,840	1,720	1,501
Total.....	7,382	8,162	8,676	9,041	9,953	10,076	10,160	10,712	10,306	8,123

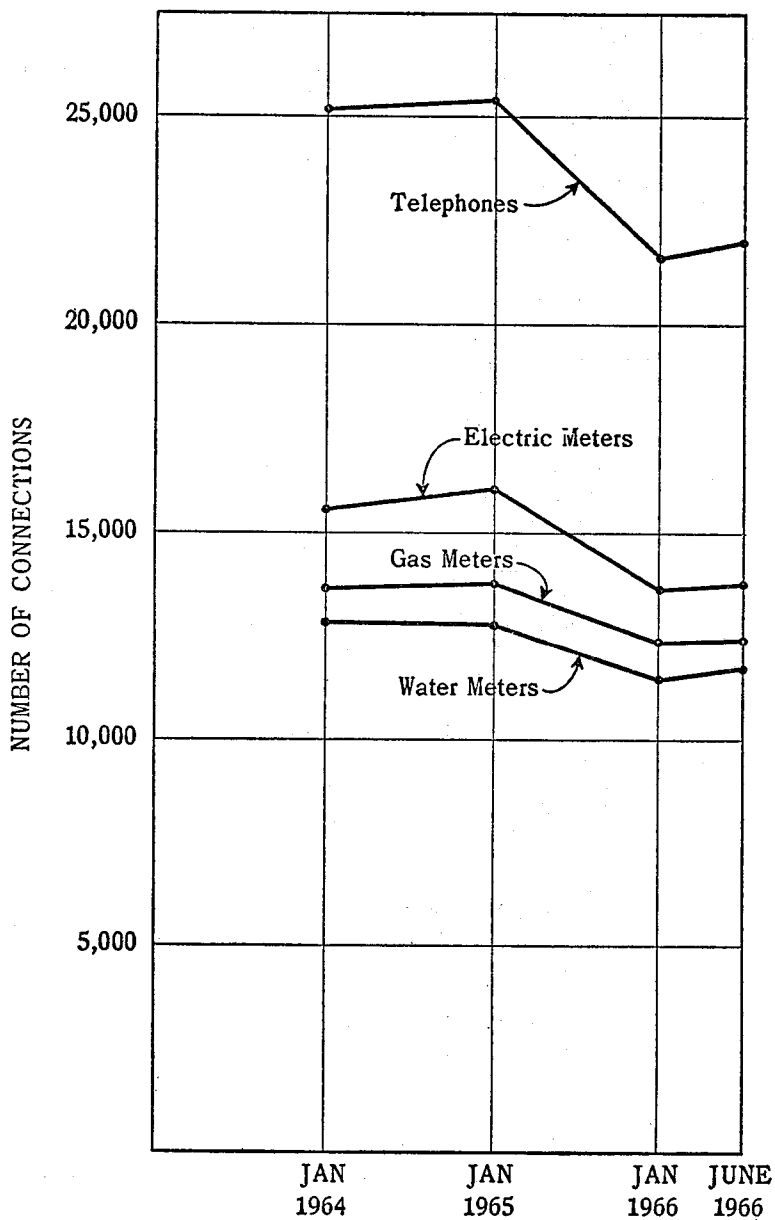
¹ January data.

Source: Salina Superintendent of Schools.

School enrollment trends, January 1963 to March 1966

Date of report	Primary school enrollment	Secondary school enrollment	Total	Pupils leaving school	
				Number	Moved away
Jan. 18, 1963.....	6,398	3,499	9,897	396	373
Mar. 22, 1963.....	6,244	3,433	9,677	482	437
Oct. 30, 1963.....	6,535	3,651	10,186	282	244
Jan. 17, 1964.....	6,639	3,620	10,259	403	363
Mar. 20, 1964.....	6,770	3,631	10,301	315	276
Nov. 4, 1964.....	6,727	3,772	10,499	415	374
Jan. 22, 1965.....	6,611	3,685	10,306	435	382
Jan. 21, 1966.....	4,852	3,271	8,123	398	370
Mar. 25, 1966.....	4,916	3,293	8,209	224	200

Source: Salina Superintendent of Schools.

UTILITY CONNECTION TRENDS
SALINA, KANSAS

ECONOMIC IMPACT ANALYSIS OF SUBCONTRACTING PROCUREMENT PATTERNS OF MAJOR DEFENSE CON- TRACTORS: SEPTEMBER 1966*

[Submitted to Deputy Assistant Secretary of Defense, Systems Analysis—(Economics) (Contract DA-49-083 OSA 3116) Task Order SA-7]

I. SUMMARY OF FINDINGS

The following findings and conclusions (necessarily tentative because of the inherent data limitations described in ch. II) may prove useful both for what they reveal quantitatively as well as for the directions they suggest for further study:

1. A comparison of the geographic place (State) of performance distribution of C-E-I-R study subcontracts with DOD prime contracts shows that eight of the top 10 States appear on both lists, though there are noticeable differences in some of these State shares of the National totals. California and New York, which rank first and second in both series, together account for over 40 percent of the U.S. total subcontract awards. (See table 5, cols. 1 and 2.)

2. Geographic concentration appears to be greater for subcontract than for DOD prime contract awards. The 10 leading States in the subcontract series receive over 75 percent of all subcontract awards, whereas the 10 top States in the prime contract series account for 67 percent of total DOD prime contract procurement. (See table 5, cols. 1 and 2.)

3. Comparison of the subcontract geographic distribution for this study with that of the census MA-175 survey of defense-oriented industries for 1963, reveals surprisingly similar patterns. The five top ranked States are not only identical in order of rank, but are virtually equal in their share of the national totals individually and collectively. (See table 5, cols. 1 and 3.)

4. When comparing the C-E-I-R study with the NASA subcontract place of performance patterns, the two top States hold identical rank positions in both series. However, there are sizable variations in their share of the national total as well as in the order of ranking of the other leading states. (See table 5, cols. 1 and 4.)

5. Prime contractors located in California, New York, and Missouri were the originating source of 70 percent of all subcontract awards covered in this study. (See table 7, col. 2.)

6. The three leading States of origin (California, New York, and Missouri) are identical in rank for both the C-E-I-R study and NASA subcontract award series. These States originate approximately 70 percent of all subcontract procurement covered by both of the series. (See table 8.)

*Preliminary report by C-E-I-R, Inc., Applied Research and Management Sciences Division, Bethesda, Md.

7. An analysis of interstate and interregional subcontracting flows reveals that—

(a) Though the two leading subcontract performing States, California and New York, were net exporters of subcontracts (awarded a greater value of subcontracts than they received), they far outranked other States in value of subcontracts performed within the State. (See table 9A, col. 5.) This results from their retention of a high proportion of the sizable total dollar value of subcontracts awarded by their indigenous prime contractors. Among the leading States in DOD prime contracts received, California retains for within-State subcontract performance almost 53 percent of all subcontracts awarded by its prime contractors, New York retains 29 percent, and Missouri only 2 percent. (See table 10, col. 1.)

(b) On the average, only one-third of the subcontract procurement by prime contractors in a State are awarded to subcontractors within the same State. The retention ratios within the broader census division and region increase to 40 and 49 percent, respectively. (Table 10.)

(c) The general net flow of subcontracts tends towards the States in the northeast and north central regions. States in the west and south regions, except for Maryland and Virginia, received a substantially higher proportion of their subcontract performance from within-State prime contractors than from primes located in other States. (Table 10.)

(d) There appears to be little discernible relationship between the relative share a State receives in subcontracts and its distance from the prime contractor's State of origin. A special check of California and New York prime contractors showed that there were considerable variations in the proportion of subcontracts awarded within their particular State and region, and also their comparative awards to the other regions. Indicative of the peculiarities of distribution, subcontracting firms in California received a greater share of New York's awards than subcontractors within New York. New York, on the other hand, received only a small proportion of all California defense subcontract awards. As factors other than distance appear to be more significant in determining the selection of a subcontractor, these merit more study than data available for this study permitted. (See app. IV.)

8. A study of subcontracting concentration reveals that for all prime contractors (submitting usable data on value of awards to individual subcontractors) their top 10 subcontractors account for an average of over 80 percent of all subcontracts awarded. Considerably below this average are the prime contractors in the aircraft and airframe claimant program whose top 10 subcontractors accounted for only 50 percent. (See table 13.)

9. A sample of four large prime contractors indicates that 70 to 90 percent of their total subcontracting dollar value is concentrated in relatively few (no more than 10) SIC 4-digit industries. (See table 14.)

NEW ENGLAND'S DEFENSE CLOSINGS*

PART I: IMPACT ON AFFECTED COMMUNITIES

Announcement of the closing of several large defense installations in New England presents a challenge to many affected communities. The Defense Department made public its decision to close these bases several years in advance in order to allow the communities sufficient time to attract new industries. In some places, however, much time and effort were devoted to reversing the decision and "saving the installation." Now that the closings have been accepted, positive plans for the future are being made.

In this article, the varying impact of defense installation closings will be assessed. To help affected communities select useful industrial techniques, a description of some positive steps taken is also included. In general, during periods of full employment most affected communities can make the transition with relatively few problems.

GOVERNMENT AID

When the Defense Department finds it necessary to close a particular installation, a special program is used to cushion the impact for the workers and the affected community. This adjustment program is two-pronged. First, job opportunities are being offered to permanent civil service employees who are willing to be moved to another job in the Department of Defense. Second, a special community assistance program has been set up to help attract new industry to areas where the Defense Department has closed down. The Office of Economic Adjustment within the Department of Defense provides technical know-how to affected communities and particularly helps to locate and expedite Federal aid programs. Because the majority of workers are guaranteed other jobs within the government, the problems of the affected communities differ substantially from those of the displaced workers. Part I of this article deals with the community impact and Part II with impact on the workers.

Most of New England's affected installations played an important role in the country's early history. Capt. John Paul Jones' ship, the *Ranger*, of Revolutionary War fame was built at Portsmouth before it had an official naval shipyard. The Springfield Armory was the first to be established by the U.S. Government and dates back to 1794. There Eli Whitney developed machinery for standard interchangeable gun parts. The Watertown Arsenal, established in 1815, soon became particularly noted for its special metals and castings for cannon. Now, however, vast changes in technology have caused the Defense Department to consider their continued operation uneconomic.

Although the region has not been particularly hard hit by the closing

*Reprinted from Federal Reserve Bank of Boston *New England Business Review*, October 1966.

The *New England Business Review* is produced in the Research Department. Edwin C. Gooding was primarily responsible for the article. "New England's Defense Closings: Part I *** impact on affected communities" and "Part II *** impact on displaced workers."

of defense bases primarily employing military personnel, its loss in government manufacturing jobs in shipyards, arsenals, and armories has been severe since 1961. As shown in table 1, these job losses were proportionally about three times greater than in any other region.

TABLE 1.—*Personnel affected by actions to close or reduce major military installations, 1961-65*¹

[Census region and type of activity]

Region	Manufacturing installations				Bases and other installations			
	Number of actions	Number of personnel	Number affected per 1,000 employment	Rank	Number of actions	Number of personnel	Number affected per 1,000 employment	Rank
New England.....	3	12,200	3.17	1	3	6,600	1.35	8
Middle Atlantic.....	3	13,350	1.08	2	12	26,850	2.18	6
Pacific.....	3	4,950	.68	3	16	26,235	3.60	4
South Atlantic.....	1	1,000	.12	4	4	14,400	1.78	7
East North Central.....	1	900	.07	5	7	10,950	.90	9
West South Central.....	0	-----	-----	-----	13	31,450	6.69	1
Mountain.....	0	-----	-----	-----	9	13,340	6.35	2
East South Central.....	0	-----	-----	-----	2	17,100	5.57	3
West North Central.....	0	-----	-----	-----	8	15,550	3.51	5

¹ Information on actions is from U.S. Department of Defense news releases and a memorandum dated July 20, 1965. A major closing is one which affects 350 or more personnel. Employment figures used in the calculations are total nonagricultural employment, 1964, U.S. Bureau of Labor Statistics.

VARYING IMPACTS

The closings affect three States of the region in varying degrees ranging from 2.6 jobs for each 1,000 nonagricultural employees in Massachusetts to 32 jobs for each 1,000 in Maine.

The severity of the impact depends in part on the type of installation to be closed. The shutting of a military base probably has the least impact. Military bases are typically quite self-sufficient with on-base housing and post-exchange facilities limiting the amount of money spent in the local community. In contrast, a government-owned manufacturing facility such as an arsenal or a Navy yard employs many civilians who live in the local area and trade at local stores. Thus, it contributes substantially more to a community's economic base than a typical military installation.

The impact of a defense base closing is also influenced by the reuse potential of the land and buildings vacated by the Department of Defense. An Air Force base requires an extensive amount of land relative to the employment it provides. In contrast, a Navy yard uses only a small land area to generate substantial employment. Consequently, the task of providing an equal amount of employment through alternative uses of Air Force facilities is not nearly as formidable as that of replacing employment in a shipyard's land and buildings.

Perhaps a major factor determining the severity of the impact of a defense installation shutdown is the size of the affected work force in relation to total manufacturing employment in the area. If the installation is located in a large metropolitan area, then the closing of even a sizable manufacturing facility will have a relatively negli-

gible impact because the income loss will be spread over many trade and service outlets in the area. On the other hand, in smaller communities where the economic base is heavily dependent on the installation, the closing may cause a substantial decline in local employment.

Table 2 shows the number of affected personnel as a percent of manufacturing jobs in the area for the five largest closings in New England since 1961. The sharp contrast between the impact on Boston and Bangor, Maine, points up the extent of the differences.

TABLE 2.—Major defense closings of installations in New England, 1961-65

Action	Area	Date of announcement	Scheduled completion date	Personnel affected ¹	Civilian manufacturing employment—Year of announcement	Affected personnel as percent of manufacturing jobs
Presque Isle Air Force Base.	Limestone-Caribou. ²	Mar. 30, 1961	Oct. 1, 1961..	1,400	³ 1,468	95
Dow Air Force Base.	Bangor-Old Town. ²	Nov. 19, 1964	July 1968....	4,500	³ 5,775	78
Portsmouth Naval shipyard.	Portsmouth Naval shipyard study area.	do.....	Prior to July 1974.	7,600	⁴ 34,973	22
Springfield Armory..	Springfield-Chicopee-Holyoke SMSA.	do.....	April 1968....	2,500	³ 68,800	4
Watertown Arsenal..	Boston SMSA.....	Apr. 24, 1964	September 1967.	2,100	³ 275,700	1

¹ U.S. Department of Defense memorandum dated July 20, 1965; includes closings and reductions affecting 350 or more personnel.

² Areas defined as "economic areas" by Maine Department of Labor and Industry.

³ Total manufacturing employment. Maine Department of Labor and Industry, Census of Maine Manufactures (annual).

⁴ Covered employment in manufacturing, New Hampshire Department of Employment Security, Employment and Wages in Each Job Center (annual), and Maine Employment Security Commission (mimeographed), plus Navy Yard Civilian Employment.

⁵ Estimated total employment in manufacturing for the SMSA, U.S. Bureau of Labor Statistics, *Employment and Earnings* (monthly).

WATERTOWN ARSENAL

Because Watertown is an integral part of the Boston metropolitan area, the closing of the arsenal is having relatively few adverse effects on the community. Only a small proportion of the employees actually reside in the town. Moreover, about half of the work force are remaining in government employment in the Boston area. As a result, with about two-thirds of the closing already completed, only a small number of houses have become available. The Boston metropolitan real estate market has readily absorbed these and undoubtedly will be able to absorb any further turnover.

About a fifth of the workers are taking early retirement. A majority of these retirees are highly skilled and can readily find employment in the area if they wish. In fact, private employers have offered many jobs to Watertown workers but relatively few have been accepted. Because employment is not a major concern, Watertown officials have concentrated on another goal—how best to raise the tax base.

The town of Watertown will be given the right to buy a large part, 49 acres, of the arsenal property at fair market value if no Government agency can make full use of the land and buildings vacated. This is a

significant industrial development advantage because the property is one of the largest available near the core of the city. The town has created a redevelopment authority which is specifically authorized to buy the property and select the investor or group who will develop it. Because of the prime nature of the real estate, the officials of the redevelopment authority will have a choice of several attractive alternatives. Since the major criterion for the selection of the developer will be the net contribution to the town's tax base, a light industry or office complex will probably be favored over a residential development which might necessitate new school construction. A shopping center will probably not be considered because it would create more competition for downtown merchants. Representatives of light manufacturing and insurance firms have shown substantial interest with one developer anticipating the employment of 5,000 workers. Thus the town may achieve its reuse objectives with little effort.

THE SPRINGFIELD ARMORY

The Defense Department has also announced that the Springfield Armory will close in the spring of 1968. This decision was particularly difficult to accept because the workers have relatively few opportunities for comparable government jobs within commuting distance. Consequently, most workers will have to choose between moving or leaving government employment.

Fortunately, the current prosperity may make the transition relatively painless for the community and for many of the workers. Located in western Massachusetts, the Springfield-Holyoke-Chicopee complex is a medium-size metropolitan area with nonagricultural employment of 181,000 workers. It has a large, diversified and growing manufacturing base and armory workers represent only 3 percent of the area's manufacturing employment.

Because many skills are in short supply, area employers may be able to hire most workers who choose to take early retirement or severance pay. Average weekly earnings in manufacturing at \$105 in 1964 reflect a pay scale and fringe benefits only slightly lower than at the armory.

In addition to employers already located in the area, the combination of a pool of skilled workers and the possible availability of scarce machine tools may encourage an outside firm to take over part of the 100 acres of land and buildings that belong to the armory. Several large firms are reported to be interested.

Other uses for parts of the vacated land are also being seriously considered. One is the creation of a tourist attraction in the form of a small arms museum to include specimens made at the armory since the Revolutionary War. An expansion of the community's technical institute is under study for another complex of buildings. Moreover, a large lake with 11 acres of frontage on the armory's grounds may be used for the development of community recreation facilities. Thus, despite a slow start, Springfield may be able to make a satisfactory adjustment to the loss of the armory.

DOW AIR FORCE BASE

Dow, a Strategic Air Command base, established before World War II, is located in the outskirts of Bangor, Maine. The base occupies

3,400 acres, representing about 10 percent of the city's land area. It has a complement of about 4,000 military personnel and in addition provides employment for some 400 civilians. Closing is scheduled for July 1968.

The State of Maine and the city of Bangor are working together to develop a master plan that will take full advantage of the re-use potential of the base. Because government surplus property is available at little or no cost for conversion into educational, hospital, and municipal airport facilities, about half of the original investment of \$100 million is expected to be devoted to such public purposes. There is a possibility that the University of Maine will use some of the facilities to develop a separate 2,000 student campus. The base, located only 6 miles from the campus, contains messhalls, dormitories, and other buildings which could be made useful to the university and would be available for the cost of conversion. Moreover, the base's hospital may be developed to replace the present municipal chronic disease facility. And if the city agrees to accept responsibility for maintaining the airport, it can acquire that \$35 million facility for the payment of \$1. Although annual operating costs of \$400,000 appear high, they will be shared by many users including an Air National Guard unit and it is possible that the city will not have to pay any of these costs.

The base contains about 1,000 units of permanent housing, roughly 8 percent of the total in Bangor. At the date of closure, the U.S. Department of Defense will remain responsible for the \$13.5 million of mortgages outstanding on this housing. To prevent widespread disruption of the private housing market, some units will be used by the University of Maine for faculty and married student housing and some taken by the city to house people displaced by urban renewal projects. About 180 units will be leased by military personnel remaining in the area. Finally, 226 single family units will be placed on the market but should be easily absorbed by the expanded private activity in the adjacent industrial park.

The loss of the military payroll will undoubtedly have an adverse effect on Bangor, a city of about 39,000 inhabitants. However, the city plans to develop the remaining lands and buildings of the base into an industrial park which if successful will bring added income to the residents. In addition to being able to acquire the buildings at low cost, the park will also have the advantage of being adjacent to an interstate highway and a commercial airport, important considerations for many firms.

By the nature of the Air Force mission, the base will remain near full strength until closing. Its conversion is therefore still in the planning state, but the advance indications are that the transition will be relatively painless and productive.

THE PORTSMOUTH NAVY YARD

The problem resulting from the announced closing of the Portsmouth Navy Yard appears more serious, however. Since its inception in 1800, the Navy yard has been the major employer in this area of New Hampshire as well as in the southern tip of Maine. Fully one-fifth of the area's economic base is dependent on the Navy

yard. To soften the blow, the Defense Department provided a 10-year phaseout period.

Because of the demands of the Navy yard, the workers in the area are more educated and more skilled than the average for New Hampshire or Maine. The average educational level of the area's population is a half year above that of either State. Also the proportion of skilled workers to total manufacturing employment is 40 percent in the area as compared to 15 percent in Maine and New Hampshire.

Few government jobs are available within a commuting range of Portsmouth. If the Navy yard workers choose to remain government employees, as a majority did at the Watertown Arsenal, outmigration will be substantial and cause serious economic dislocation in the area.

The Portsmouth area well illustrates the varying impact of different types of defense installations on employment, for the area is dependent on the Pease Air Force Base as well as on the Navy yard. To compare their effects on the area's economy, this bank made an analysis of the secondary employment derived from each installation and from private manufacturing activities in the area. The results of the analysis suggest that the employment multiplier for Pease is 1.4 while that for the Navy yard is 1.6, and that for private manufacturing is 1.8. Thus, the loss of a job at Pease results in eliminating the support for 0.4 of a job in local employment, while the loss of each employee at the Navy yard causes a reduction of 0.6 of a job.

Using this analysis, if half the present Portsmouth Navy Yard labor force—about 3,650 workers—choose to accept other government jobs and migrate from the region, the support for some 2,200 jobs will be lost. Although these losses are not as great as they would be if a private manufacturing firm closed, the Portsmouth area will nevertheless need to do an exceptional job of industrial development promotion to prevent substantial outmigration.

If such outmigration does occur the real estate market will undoubtedly suffer some adverse effects. Several factors, however, should help prevent a complete collapse of this market. New residential construction in the area has been cut substantially since the announcement of the shipyard's closing. Over the 10-year phaseout period, continued cutbacks of building activity will limit the amount of surplus housing. In addition, some of the housing might be sold to people who work in northeastern Massachusetts.

In a few communities where defense bases have already closed, the Federal Housing Administration refrained from the immediate resale of the houses it repossessed. It thus helped to stabilize the local market. However, such action may not be needed in the Portsmouth area if industrial promotion efforts are successful.

A majority of the shipyard workers could take early retirement, remain in the area and supplement their benefits by taking other jobs. In the last 2 years private manufacturing employment has increased substantially in the area. In fact, employers complain of a labor shortage. Most of the growth in manufacturing employment, however, is concentrated in industries that pay considerably lower wage rates than shipbuilding. As shown in table 3, the average annual manufacturing wage in the area is \$4,800 as compared to \$7,000 for the Navy yard. However, some better-paying jobs may be available to Navy yard workers willing to commute 30 to 45 miles to northeastern Massachusetts.

TABLE 3.—*Comparison: Average annual wages in manufacturing, 1964*

[Portsmouth Naval Shipyard, other manufacturing in Portsmouth Naval Shipyard study area, State of New Hampshire, and State of Maine]

Area	Average annual manufacturing wage	Percent of Portsmouth Naval Shipyard annual wage
Portsmouth Naval Shipyard	\$6,999	100.0
Other manufacturing in study area	4,838	69.1
State of New Hampshire	4,802	68.6
State of Maine	4,527	64.6

Source: Shipyard figures: Shipyard commander, 1964 card count; State data: New Hampshire Department of Employment Security, employment and wages in each job center, 4th quarter, 1964 (includes covered employment only); Maine Department of Labor and Industry, Census of Maine Manufactures, 1964.

Thus, the Portsmouth area must attempt to capitalize on (1) the pool of skills potentially available when released from the shipyard; (2) the shipyard's buildings and land; and (3) its coastal location. In the postwar period one of the area's most important private manufacturing firms was attracted through its need for deep channel and ice-free harbor facilities. The firm's wage level and skill requirements have provided the type of industrial alternatives that might prevent substantial outmigration from the area.

The economic resources of the region are now being studied by the area's Seacoast Regional Development Association in cooperation with the University of New Hampshire. The results will provide the detailed statistics needed for a full-scale economic development program.

That Portsmouth faces difficult adjustment problems cannot be denied. Still other, smaller and more isolated communities have made successful adjustments to similar situations. One such community was Presque Isle, Maine.

THE PRESQUE ISLE STORY

Presque Isle is situated in the northeastern corner of Aroostook County, the most northern county in the State of Maine. When the closing of its Air Force base was announced in 1961, the 1,250 military personnel and the 250 civilian workers affected received a payroll of \$2.5 million representing more than half the economic base of the community.

With the aid of the development agency of the State of Maine, the Office of Economic Adjustment of the Department of Defense, the Area Redevelopment Administration of the Department of Commerce, as well as aggressive local leadership, the airbase property was developed in a number of ways. Representatives from all these groups worked together to develop the manufacturing potential of the natural resources in the area. With the aid of an ARA industrial loan a potato grading and processing plant was established. This plant has helped the local farmers capitalize on the recent nationwide potato shortage and the resulting high prices. Also a plywood manufacturing plant was set up to develop the hardwood potential of the area. Altogether about 900 new manufacturing jobs were created. (See table 4.)

TABLE 4.—*Manufacturing employment in Presque Isle, Maine, before and after airbase shutdown, Mar. 30, 1961*

Year:	Number employed
1957.....	189
1958.....	266
1959.....	253
1960.....	246
1961.....	400
1962.....	871
1963.....	1, 137

Source: Census of Maine Manufacturers.

In addition, because the law provides that States or communities can take over surplus military property without charge if it is to be used for educational or hospital services, the State of Maine was able to use some of the property to establish the Northeastern Maine Vocational Education Institute. Moreover, the base was used to develop excellent commercial airport facilities. Thus, intelligent and aggressive local, State, and Federal leadership combined to achieve a minor miracle in industrial development.

HOW TRANSFERABLE?

What part of the Presque Isle experience can be applied to other communities affected by a defense installation closing? Of course, not every area has as much unrealized manufacturing potential as Presque Isle with its potato and hardwood resources. On the other hand, most communities have the advantage of being considerably less isolated. Moreover, the current prosperous state of the economy and the resulting labor shortages will make adjustment easier than in periods of recession.

Every affected community can benefit from the positive efforts of its leaders in a carefully planned industrial development effort. Also the Office of Economic Adjustment in the Department of Defense is available to assist in these efforts. Not only does this Office provide technical advice, it may also be able to expedite and coordinate various types of Federal assistance from other agencies, as it did in the case of the ARA loan for the Presque Isle potato processing plant.

The availability of good industrial land and buildings is a prime asset in any industrial development program. In most cases, when a base is closed, the Department of Defense liquidates its holdings of land and buildings. Because the buildings are defense oriented, their fair market value for peaceful purposes is typically substantially less than the original cost. The immediate resale price is also considerably lower than it would be if the property were subdivided and held for a period of 5 to 10 years. Consequently, the community may be able to obtain a potentially valuable complex of land and buildings if imagination is used to redevelop such surplus property. Affected communities that can bring about a relatively smooth transition may develop new approaches to industrial development that will prove invaluable if and when general disarmament necessitates similar adjustments on a more massive scale.

PART II: IMPACT ON DISPLACED WORKERS

To cushion the impact on the workers of closing defense installations, the Department of Defense has guaranteed a job offer to each permanent civil service employee who is displaced. The offer, however, would not necessarily be in the same community or even at the same rate of pay. While not eliminating the psychological problems arising from the need to transfer job and sometimes home surroundings, these workers at least have the security of knowing that other jobs are available for them. This opportunity to transfer is of course totally different from the threat of unemployment which may face workers displaced by the closing of a private manufacturing facility. The transfer system has thus benefited the displaced workers who have on the whole shown a marked preference for continuing in government employment even if moving is necessary. It has also benefited the Department of Defense by providing a pool of skilled workers for installations with expanding needs under the pressures of the Vietnam buildup.

COMPUTERIZED TRANSFER SYSTEM

On November 20, 1964, Secretary of Defense McNamara announced that each permanent civil service worker displaced by a defense installation closing would be entitled to the offer of one job within the Department. At that time, he imposed a temporary freeze on hiring new blue collar workers within the Department but this general freeze was soon replaced by a relatively sophisticated system of selective freezes. These provided that all suitable openings be made available to displaced workers without restricting hiring of other personnel for jobs which displaced workers could not or would not fill.

An integral part of this nationwide clearinghouse system is the computerized location of job openings. Every 2 weeks the computer prepares a "stopper sheet" for any installation in which a displaced worker has indicated interest. The installation is then required to review displaced candidates with appropriate skills before being free to promote from within the base or hire in the local labor market.

For the worker, participation in the centralized referral system is purely voluntary. If, however, he chooses not to participate or unduly limits the locations to which he would move, he sacrifices his guarantee of a job offer. Still, every effort is made to find an opening that meets his desires.

Each worker receives job counseling designed to explain the alternatives and to aid him in making the best use of the transfer system if he decides to participate. The counseling provides a description of installations with skill needs where suitable openings will probably occur. Once a worker designates a location as satisfactory, he is expected under normal circumstances to accept an appropriate job there. If the worker refuses one offer—all he is guaranteed—he is given a lower priority rating and the hiring installation is allowed to fill the vacancy by promoting from within. If the worker refuses a second offer, his name is dropped from the clearinghouse system.

Although this method may seem harsh, hiring at installations where workers are needed cannot be delayed indefinitely. In fact, displaced workers have refused 36 percent of the jobs offered and thus many have

lost their job guarantees. Such refusals of course reflect the well-known immobility of workers, particularly those with blue collar skills.

Although the Defense Department has made many efforts to be of assistance, the displaced workers have two major complaints. First, when an installation actually makes a job offer, the worker is allowed only 24 to 48 hours to decide whether to accept or reject it. The workers feel that this time period is insufficient and that they should be allowed at least a week for a final decision. Second, many workers are required to decide without being given an opportunity to see the areas or installations with job openings. The Department does allow workers time off to visit adjacent installations but there are no regular provisions for workers to visit distant bases.

WORKER EXPERIENCE

One advantage of the computerized central referral system is that it provides information on the placement experience of the workers who choose to register. These include well over half the workers displaced by closures of large installations; they also include workers laid off as a result of cutbacks in employment at some operating installations.

As table 5 indicates, about 92 percent of the 14,700 registered workers who have been placed have been transferred within the Department of Defense. About 6 percent have taken jobs in other government departments but only 1.4 percent of those registered took jobs in private industry. This estimate of private placements, however, is an understatement. Many workers who originally registered to transfer later chose to take advantage of the special early retirement privileges and have since found jobs privately. Even after making a rough adjustment for these retirements, it appears likely that for the Nation as a whole no more than one out of eight displaced workers who registered with the centralized referral system has entered private industry.

TABLE 5.—*Placement of civilian personnel affected by closures and cutbacks, registered in centralized referral system (CRS), Aug. 31, 1966*

	Percent
Placed by centralized referral system within department.....	44. 7
Otherwise transferred within Department of Defense.....	15. 0
Transferred outside Department of Defense.....	6. 4
Reassigned or reinstated at same institution.....	32. 6
Placed in private industry.....	1. 4
Total.....	¹ 100. 0

¹ May not add to 100 due to rounding of figures.

Source: U.S. Department of Defense, CRS Monthly Computer Report.

SAME PAY

Most workers who succeeded in getting other government jobs were able to maintain their pay levels. As table 6 shows, more than two-thirds of the placements were made at the same or higher grades. Moreover, not all those rehired at a lower grade took a paycut. Under the Department's transfer system, a worker's former wage rate can in many circumstances be maintained for 2 years before application of the new wage rate is mandatory. Since most workers who were rehired at a lower level lost only one or two grades, subsequent wage adjustments will minimize any loss in pay.

TABLE 6.—*Placements by CRS system within Defense Department, Aug. 31, 1966*

	Placements					
	Inside area		Outside area		Total	
	Number	Percent	Number	Percent	Number	Percent
Higher grade.....	170	7	260	6	430	6
Same grade.....	1,331	55	2,795	66	4,126	62
Lower grade.....	910	38	1,162	28	2,072	31
Total.....	2,411	100	4,217	100	6,628	100

¹ May not add to 100 due to rounding of figures.

Source: U.S. Department of Defense, CRS Monthly Computer Report.

VARIATIONS BY REGION

For the Nation as a whole about three-fifths of the placements have been made outside the commuting area. This experience however, has not been uniform by region. As table 7 shows, displaced workers in Boston and Philadelphia have been exceptionally fortunate. More than three-fourths of the Boston district workers and two-thirds of those in Philadelphia were able to obtain transfers within the commuting area. By contrast, in another district with a large number of displacements—Atlanta—only a fourth of the workers were able to remain in the locale. These differences depend primarily, of course on whether other local defense installations are expanding employment at the time of a particular closing. In one case in the Philadelphia district many displaced workers had merely to walk across the street to be absorbed by an expanding installation.

TABLE 7.—*CRS Government placements within commuting area by district, August 31, 1966*

	Percent of total within commuting area
Boston.....	77.3
Philadelphia.....	66.7
New York.....	46.9
United States.....	36.7
Seattle.....	29.3
Atlanta.....	25.8
Chicago.....	23.1
San Francisco.....	22.9
Denver.....	19.4
Dallas.....	11.7
St. Louis.....	11.1

Source: U.S. Department of Defense, CRS Monthly Computer Report.

As would be expected four out of five refusals of alternative government jobs were for those requiring relocation. (See table 8.) In both the Boston and New York districts, however several hundred defense jobs within commuting distance were also turned down. These two districts also had the highest rate of refusals to total offers. Although this high incidence of refusals may reflect the strong economic climate, it may also indicate that workers in the Northeast are more immobile.

THE WATERTOWN ARSENAL WORKERS

Ninety percent of the permanent Arsenal personnel have already adjusted to the closing and are no longer working there. About half have transferred to other government jobs in the Greater Boston area. The largest number found work at the Boston Navy Yard and about 225 workers were hired by the U.S. Army Materials Research Agency located within the arsenal grounds. At least 37 people went to work for the NASA installation in Cambridge. Ironically 26 workers transferred to the Portsmouth Navy Yard even though it is scheduled to close by the mid-1970's. As the map on page 14 shows, the rest are scattered throughout the country; three have moved as far as Hawaii and one has accepted an overseas assignment in Japan.

The arsenal experience illustrates the strong tendency of all displaced Defense Department civilian workers to remain in government employment if at all possible. Despite ample opportunities for most Watertown workers no more than one worker in four will enter private employment. Many firms sent personnel teams into the arsenal in an attempt to recruit skilled workers. The bulk of the response to these offers come from those who were able to take early retirement and about two-thirds of that group took jobs in private industry. Other workers were entitled to severance pay which—depending on age and length of service—could amount to a year's salary.

NEW LOCATIONS OF WATERTOWN ARSENAL WORKERS
ACCEPTING GOVERNMENT TRANSFERS

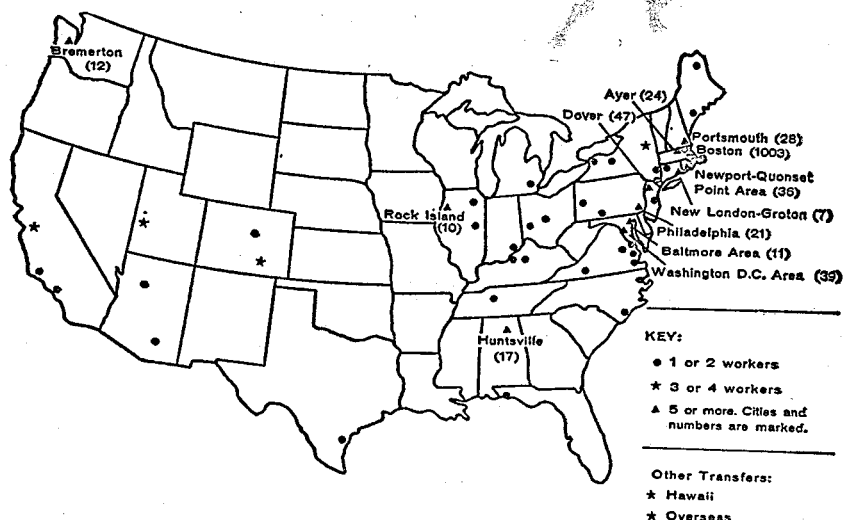


TABLE 8.—*Rejections of registrants to CRS job offers by wage rates and locality, Aug. 31, 1966*

	Rejections					
	Inside area		Outside area		Total	
	Number	Percent	Number	Percent	Number	Percent
Higher grade.....	39	5	107	4	146	4
Same grade.....	496	59	2,182	74	2,678	71
Lower grade.....	310	37	638	22	948	25
Total.....	845	100	2,927	100	2,772	100

¹ May not add to 100 due to rounding of figures.

Source: U.S. Department of Defense, CRS Monthly Computer Report.

THE SPRINGFIELD WORKERS

The major effort to relocate the workers at the Springfield Armory will take place this fall. As of August 31 only 762 of the 2,400 workers had left the armory. However, the same strong preference for continued government service appears evident. Sixty percent of those who have left have taken other government jobs. Less than half have had to relocate. The majority have found government jobs at a nearby Air Force base or are commuting 25 miles to Hartford, Conn. Only 6 percent have entered private industry directly although many of the 187 early retirees will undoubtedly also do so.

CONCLUSION

In this period of nearly full employment, workers displaced by the closing of Defense installations have many attractive work alternatives. Although the prospect of changing jobs and communities is psychologically disturbing, most will fortunately be spared such problems as were faced by displaced textile workers when the mills shut down.

A majority of these workers are willing to be moved to continue their employment in the government. Clearly, the desire to preserve their fringe benefits is strong enough to overcome their well-documented immobility. This conclusion may have significant implications for private employers who, with the increasing scarcity of skilled labor, may find it economic to underwrite the moving costs of blue collar workers displaced by the closing of inefficient units. Thus, the Defense Department's transfer program may well serve as a prototype to increase mobility and reduce the problems of workers displaced by changing economic conditions.

Some of the analysis in the preceding article was developed into a research report, "Estimation of Differential Employment Multipliers in a Small Regional Economy," by Steven J. Weiss and Edwin C. Gooding.

SOME IMPLICATIONS OF THE ECONOMIC IMPACT OF DISARMAMENT ON THE STRUCTURE OF AMERICAN INDUSTRY*

I. INTRODUCTION

A large proportion of our resources are devoted to the production of intermediate products which are incorporated in goods and services delivered to final demand. With given technology and prices of inputs, the character of final products will determine the composition of industrial output. If the demand for final goods is varied, then the composition of industrial output may be substantially altered. Specifically, the substitution of private or nondefense government spending for military hard goods purchases is likely to require a substantial reallocation of industrial resources, not only in terms of final goods, but also in terms of intermediate materials, supplies and components.

To investigate some of the major structural problems which might arise from shifts in defense expenditures to either the private sector or to other public nondefense sectors, an input-output model was implemented specifying three alternative full-employment patterns of end product deliveries for the year 1970. The model constructed was static, open on consumption with investment and government purchases stipulated as first order input requirements. The structural matrix consisted of an enumeration of 66 processing sectors derived from the Bureau of Labor Statistics 192 order Emergency Mobilization Model. The model is similar to the Leontief-Hoffenberg model, and the study is an extension of their basic research on disarmament reported in *Scientific American*.¹

The end product of the Leontief-Hoffenberg study is a 57 by 8 matrix whose elements are ratios permitting relatively easy computations of gains and losses in output and employment through scalar multiplication. The 57 rows in the matrix represent an exhaustive enumeration of the economy's industrial processing sectors and the eight columns identify major military and nonmilitary final demand components. The ratios were derived after computing the direct and indirect requirements of each i th processing sector to each j th demand component necessary to support the level and composition of final demand for the year 1958. Each ij th total requirement was proportioned to the corresponding j th sum of final demand (direct requirements). As such each ratio specifies the direct and indirect requirements of the i th industry to the j th demand component necessary to support \$1 million worth of final demand by the j th category of demand.

Net changes in output by processing sector may be established for any magnitude hypothesized by shifting final demand from military

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I am grateful for advice and suggestions given by Charles L. Schultze and Marvin Hoffenberg.

¹ Wassily W. Leontief and Marvin Hoffenberg, "The Economic Effects of Disarmament," *Scientific American*, vol. 204, No. 4 (April 1961), pp. 47-55.

to nonmilitary categories. This may be accomplished by obtaining the scalar-vector product of the assumed defense cut times the ratios in the military vector, then obtaining the scalar-vector product of the assumed defense cut times any nonmilitary demand vector, and finally subtracting the military product vector from the nonmilitary product vector. The resultant vector yields the net gains and losses in total output by industry for the 57 industries consistent with the magnitude assumed to be shifted from military to nonmilitary demand.

The major advantages of the matrix developed by Leontief and Hoffenberg are its flexibility and generality in computing impacts on the economy's processing sectors for shifts in final demand. Although the table was derived to show the impact of shifting defense expenditures to other categories of final demand, it may be used to compute impacts for any shift in expenditures from one category of demand to another. For example, one could compute the impact of shifting expenditures from investment in producers durables to highway construction or from personal consumption to government nonmilitary or any other combination that might reasonably be expected to accompany a change in economic policy.

The flexibility of this technique does impose some limiting assumptions on the model which may effect the accuracy of the derived impacts. Since the derived ratios are based on a specific set of final demand requirements, the scalar multiplication and subtraction of the product vectors is a short cut technique for computing the new level of total requirements brought about by changing the relative level of two or more final demand component aggregates without changing the internal composition of direct requirements. This implies that the relative composition of direct requirements for each demand component remains constant. Consequently shifts in expenditures from one demand component to another assume that the composition of direct requirements is affected proportionately.

The assumption of proportionate requirements accompanying any variation in the level of demand carries with it certain important implications. First, any cut back in military expenditures assumes that every existing weapon system is reduced in proportion to its original level which means that the technique may preclude analysis of a reduction in expenditures consistent with a nuclear disarmament. Second, any shift offset by increases in personal consumption assumes unitary elasticity of income for all commodities and hence a proportionate increase in demand for the output of all industries. Third, offsets through increased government nonmilitary expenditures assume that all existing programs will be increased proportionately. Although these are simplifying assumptions, if the magnitude approaches say 50 percent of the defense budget then these assumptions might be too restricting.

It is the purpose of this study to extend the pioneering efforts of the Leontief-Hoffenberg model by dropping the assumption of constant proportionality between demand categories and production sectors when allocating offset demand. The elimination of these assumptions requires that a new set of direct requirements or bill of goods be derived for each offset considered. Each set of direct requirements specified must be multiplied by the structural matrix in order to generate the intermediate pattern of demand consistent with the stipulated offset. The resulting product matrices must then be evaluated with reference to the pattern established for the armed economy.

This procedure sacrifices the flexibility of the Leontief-Hoffenberg model but enables one to determine the effects of probable changes in the internal composition of the final demand components on the output levels of the processing sectors.

II. METHODOLOGY AND ASSUMPTIONS

1. FINAL DEMAND

To test the impact of varying compositions of material requirements with a static input-output model consistent with a reduction in defense expenditures to the exclusion of all other exogenously influenced variables, the disposition of final demand for the armed and disarmed economy should be based on well behaved aggregates. That is to say the impact on structure could be isolated more precisely if (a) resources were fully employed with labor at the controversial 4 percent unemployment rate and plant utilization in the vicinity of 90 percent of capacity; (b) Federal, State, and local budgets were reasonably balanced; and (c) all other cyclical influences were minimal. It is difficult to discern what the structural impact would be if one uses data based on aggregates derived from an economy with high rates of unemployment and excess capacity, or excess demand and rising prices. Consequently aggregate supply and demand were projected to 1970 so that all variables could be controlled and a well behaved economy simulated. In addition to minimizing cyclical variation, requirements based on projected estimates for 1970 permit evaluation of shifts in the composition of demand for the economy at a time when arms reductions might be enacted. Granted arms reductions may not take place in 1970, 1975, or ever, but they will not take place in 1959, 1960, or 1961 either and the relative values of some aggregates are expected to change independently by 1970, i.e., total purchases of goods and services by State and local governments should surpass Federal purchases by 1970 even if the present level of defense is maintained.

Aggregate supply for 1970 was projected based on the following assumptions: (1) the total labor force would reach 85.9 million with 3.3 million unemployed (4 percent of the civilian labor force), (2) the Armed Forces would remain constant at 2.5 million, Federal civilian employment would rise moderately from present levels of 1.7-1.9 million to 2 million, and that State and local employment would continue to advance at a faster rate from 4.9 million to 6.6 million, (3) the level of average real wages paid to government employees would increase during the decade—military from \$3,500 to \$5,000, Federal civilian from \$5,100 to \$6,700, and state and local from \$3,900 to \$4,200,² (4) private average weekly hours would decline to 37.5, and finally (5) the average annual rate of change in productivity for the private sector would be 2.68 percent per year.

A projection of aggregate demand was derived by independently estimating personal consumption expenditures, gross private investment, and government purchases of goods and services consistent with the increases in gross output and income implicit in the supply function.

² The estimates are given in 1959 dollars so that they will be consistent with the 1959 price structure implicit in the projection of the private sector. If the projection of compensation was based on current dollar payments, the real purchasing power of government employees relative to the private labor force would be over stated given the level of prices assumed.

The general methodology for obtaining these measures may be stated briefly. First, the investment and government components were estimated by projections of ratios and trends of historic data covering the postwar period and extrapolated to 1970. Second, reasonable savings rates and a functional income distribution were stipulated yielding an implied level of aggregate consumption. Third, taxes were adjusted to produce a consumption level which together with the level of investment and government purchases sum to the supply estimate of gross national product. In other words, after independently estimating investment, government expenditures, and reasonable savings rates, tax rates were adjusted to insure aggregate demand equal to full employment aggregate supply.

This method requires one major assumption; namely, the split between government spending and personal consumption expenditures. Operating under the assumptions used in this study, the derived relationships appear reasonable with respect to past experience.³ Admittedly, the assumption involves a political judgment. For example, a lower estimate of government spending would have led to a reduction in taxes and a higher level of consumption and investment. However, the judgment could not be avoided since an explicit assumption with respect to the split had to be made. On the other hand, the input-output model is only mildly sensitive to reasonable variations in the assumed split. A summary of the projections is shown below in Table I. It should be emphasized that the levels projected and shown in the table have been adjusted under the assumption that the initial capacity projected would be utilized.

2. DIRECT REQUIREMENTS

The projected estimates of the major final demand components were used as control totals for stipulating the final requirements on the processing sectors for each of the three alternatives considered. The assumptions and methods for converting aggregate demand to specific industry requirements may be briefly outlined.

³ The ratios of consumption to GNP and government purchases to GNP for the period 1955-59 (computed from Commerce data in constant dollars), and the derived ratios for 1970 are as follows:

[In percent]

Year	Consumption	Government	Year	Consumption	Government
1955-----	64.7	18.6	1958-----	65.9	19.8
1956-----	64.4	18.0	1959-----	65.1	18.7
1957-----	64.3	18.5	1970-----	64.9	18.9

Personal consumption expenditures were estimated in purchaser values on a commodity basis for 55 categories. An average ratio of each expenditure category to aggregate disposable income was computed by relating consumption to income, relative prices, and time. Although various functional relationships were tested for goodness of fit, the regression equations used to derive all the estimates were of the general form:

$$X_i/Y = a + b_{12.34}Y + b_{13.24}Z_i + b_{14.23}T$$

where;

X_i = personal consumption expenditures in constant 1954 dollars
for the i -th commodity

$i = 1, 2, \dots, 55$

Y = disposable personal income in constant 1954 dollars

Z_i = an index of relative prices for the i -th commodity

$i = 1, 2, \dots, 55$

T = time

The parameters were established by using annual values for the 13-year period 1947-59.

Even though variations in consumption expenditures may be explained by variations in current income, previous income, rate of change in income, changes in the price level, interest rates, and holdings of liquid assets, previous studies indicate that the long-run variations in consumption are highly correlated to variations in current income.⁴

⁴ See for example Michael Sapir, "Review of Economic Forecasts for the Transition Period," *Studies in Income and Wealth*, vol. 11, 1949, pp. 302-317; Robert Ferber, "A Study of Aggregate Consumption Functions," Technical Paper 8, National Bureau of Economic Research, 1953; and Louis Paradiso and Mabel A. Smith, "Consumer Purchasing and Income Patterns," *Survey of Current Business*, vol. 39, No. 3 (March 1959), pp. 18-28.

TABLE I.—*Projection of gross national product, 1970*
 [In billions of 1959 dollars]

	1959	1970
Supply:		
Labor force (millions)	71.9	85.9
Armed Forces (millions)	-2.5	-2.5
Civilian labor force (millions)	69.4	83.4
Unemployed (millions)	-2.7	-3.3
Total civilian (millions)	66.7	80.1
Government civilian (millions)	-6.7	-8.6
State and local (millions)	5.0	6.6
Federal (millions)	1.7	2.0
Total private (millions)	60.0	71.5
Agricultural (millions)	5.8	4.2
Nonagricultural (millions)	54.2	67.3
Private average weekly hours	39.1	37.5
Private average yearly hours	2,033.2	1,950.0
Private total man-hours (millions)	122.0	139.4
Private output per man-hour (2.68 percent)	\$3.62	\$4.84
Plus Government product		\$53.5
Total GNP (supply)		\$728.3
Demand:		
Personal consumption expenditures	\$313.8	\$472.5
Gross private domestic investment	71.0	117.9
Plant and equipment	43.7	77.9
Residential construction	22.3	30.0
Inventories	5.9	7.0
Net export	-9.9	3.0
Government purchases of goods and services	97.2	137.9
Federal	53.3	65.8
State and local	43.9	72.1
Total GNP (demand)	483.0	728.3

Sources: Solomon Fabricant, *Basic Facts on Productivity Change*, Occasional Paper No. 63, National Bureau of Economic Research; "Technical Supplement No. 1," *Derivation of the 1970 Judgment Model*, report prepared by the National Planning Association, 1958; *Projection of the Labor Force, to 1975* Bureau of the Census, Current Population Reports, Series P25, No. 197; R. N. Goldsmith, *A Study of Saving in the U.S.*, vol. III, 1956; Edward E. Edwards and others, *The Next Decade and Its Opportunities for the Savings and Loan Business*, Indiana University, 1959; Otto Eckstein, *Trends in Public Expenditures in the Next Decade*, Committee for Economic Development, 1959; Bureau of the Budget, *Special Study, Ten-Year Projection of Federal Budget Expenditures*, Executive Office of the President, 1961; Clarence Long and Selma Mushkin, "Welfare Programs and Economic Growth and Stability," Joint Economic Committee Compendium, *Federal Expenditure Policy for Growth and Stability*, 1956; Office of Business Economics, *U.S. Income and Output*, Department of Commerce, 1958.

The set of regression equations was used to establish the level of final demand for the 55 categories of personal consumption based on the aggregate projection of personal disposable income. Subsequently, the set was used to derive new levels of consumption consistent with the projected increase in disposable personal income accompanying the tax cut hypothesized by the private offset. This procedure permitted changes in the disaggregated composition of personal consumption expenditures based on the shift from military demand to private demand. Finally, the 55 commodity estimates were converted to industry demands, and the converted estimates aggregated by industries were analysed for an armed and a disarmed economy assuming a private offset.

The industry estimates for the government and investment components of final demand do not represent purchases of final products, but estimates of direct requirements necessary to supply final products to these categories of demand. For example, the military purchases tanks from the ordnance industry; however, ordnance has been formulated as an exogenous sector and therefore does not appear in the system of equations connecting the endogenous sectors

together. Consequently, the requirements for goods and services for the production of tanks by the ordnance industry appear as direct requirements by the military on the remainder of the processing sectors. Similarly the requirements by the investment industries to produce final goods are distributed among the remainder of the processing system. The inclusion of investment demand in the bill of goods is based on the assumption that decisions with respect to the level of investment are essentially autonomous in nature and often tend to be unrelated to current production. Furthermore, the lack of interaction of military suppliers with the other processing sectors indicates that their inclusion in the system of equations connecting the endogenous sectors would be in most instances trivial. For example, very few industries require purchases of tanks to meet their requirements for final demand.

III. THE MODEL AND RESULTS OF COMPUTATIONS

The model consists of (1) a 66 order square structural matrix; (2) two 15 by 66 direct requirements matrices; and (3) one 16 by 66 direct requirements matrix. The first 15 by 66 requirements matrix was stipulated consistent with the composition of final demand for the economy supporting the military establishment at the level witnessed between 1955 and 1958. The second and third matrices were stipulated after computing reductions for demands by major military weapons systems and hypothesizing alternative offset policies. Each column vector in the requirements matrices was derived to support the level and composition of a specific component of final demand.

Multiplication of the direct requirements matrices by the structural matrix determined the total requirements of the processing sectors necessary to support the level and composition of demand based on variations in policy toward the level and composition of defense expenditures. The first product matrix specified total requirements by industry comparable to those derived by Leontief and Hoffenberg for 1958. The second product matrix specified total requirements by industry based on a 50-percent reduction in military procurement offset by a compensating reduction in personal income taxes and corporate income taxes.

Although total military procurement expenditures were cut by 50 percent, the reduction was distributed disproportionately to the composite military demand vectors reflecting the assumption of a policy of nuclear disarmament.⁵ Holding all other government non-defense purchases constant, the reduction in defense spending creates a potential government surplus. Therefore, once the new level of defense has been stated, the problem of redistributing the government surplus must be handled. The second matrix assumed that government revenue would be reduced to the new lower level of expenditures, that redistribution occurred instantaneously, and that the increased income generated would be readily absorbed into the private sector.⁶

⁵ The reductions were as follows: aircraft and missile procurement, 63 percent; other major procurement, 43 percent; procurement for maintenance and operations, 40 percent; and procurement for research and development, 37 percent.

⁶ In essence, the economy was viewed as if the transition had taken place and the former level of gross national product maintained. Granted, this reasoning assumes away an important temporal problem of maintaining demand during the period of transition. This problem has been considered by Benoit and Suits using the READ model, see Emile Benoit, "The Disarmament Model," and Daniel B. Suits, "Econometric Analysis of Disarmament Impacts," in *Disarmament and the Economy*, Emile Benoit and Kenneth E. Boulding, Eds. (New York, Harper & Row, 1963), pp. 28-49, 99-111.

TABLE II.—*Relationship of disarmament alternatives to armed economy*

[In millions of 1947 dollars]

Industry classification	Direct requirements armed economy	Direct requirements disarmed economy private offset	Direct requirements disarmed economy public offset	Direct and indirect requirements armed economy	Direct and indirect requirements disarmed economy private offset	Direct and indirect requirements disarmed economy public offset
Livestock and poultry.....	39,982	40,252	40,021	81,274	82,524	81,463
Grain and feed crops.....	982	973	986	14,711	16,649	14,820
Food products.....	37,570	36,911	37,618	57,972	57,781	58,153
Tobacco manufacturers.....	7,439	7,432	7,439	22,046	22,385	22,169
Alcoholic beverages.....	3,687	3,721	3,686	14,095	14,466	14,204
Cotton synthetics.....	6,769	6,953	6,776	21,431	22,054	21,519
Apparel.....	20,014	20,379	20,137	37,093	37,922	37,309
Leather and leather products.....	3,760	3,916	3,787	10,978	11,375	11,085
Plastics.....	545	532	515	7,347	7,490	7,194
Logging, sawmills.....	8,937	9,147	9,128	16,800	17,250	17,128
Pulp, paper and products.....	1,791	1,795	1,935	10,610	10,798	10,975
Industrial inorganic chemicals.....	1,239	1,230	1,729	7,914	8,025	8,626
Industrial organic chemicals.....	189	194	195	8,451	8,601	8,647
Miscellaneous chemicals and paint.....	4,554	4,678	4,684	18,650	19,170	18,836
Drugs and medicines.....	6,079	6,315	6,177	16,186	16,709	16,376
Rubber and rubber products.....	1,414	1,451	1,455	10,367	10,643	10,455
Nonmetallic minerals.....	4,913	4,913	5,226	10,670	10,799	11,140
Petroleum and petroleum products.....	7,371	7,145	7,302	14,935	14,640	14,841
Coal.....	1,794	1,846	1,961	4,438	4,527	4,658
Coke and products.....	469	486	514	7,841	7,915	8,188
Iron and steel.....	1,180	1,129	1,236	8,246	8,292	8,485
Iron and steel forging.....	367	353	378	5,588	5,646	5,705
Copper.....	419	343	356	7,776	7,785	7,729
Aluminum.....	-77	-84	-82	4,947	5,073	5,233
Other nonferrous.....	-618	-642	-641	5,450	5,587	5,515
Metal containers.....	102	100	92	8,197	8,354	8,357
Cutlery tools.....	1,177	1,168	1,195	5,921	5,986	6,027
Plumbing and heating.....	2,546	2,566	2,612	9,073	9,169	9,244
Metal stampings.....	593	565	606	6,539	6,581	6,650
Fabricated metal products.....	4,303	4,265	4,597	10,900	10,973	11,336
Engines and turbines.....	784	813	806	6,993	6,992	7,126
Construction and mining equipment.....	2,484	2,612	2,742	8,218	8,330	8,577
Farm and industrial tractors.....	3,001	3,225	3,113	9,780	10,059	10,014
Machine tools.....	1,498	1,568	1,480	5,793	5,862	5,845
Industrial machinery.....	5,858	6,353	5,912	10,907	11,241	11,036
Power transmission.....	-30	-33	-31	1,986	1,841	2,048
Pumps and compressors.....	676	709	707	6,940	6,808	7,063
Refrigeration equipment.....	2,866	1,763	2,382	10,379	9,757	10,496
Motors and generators.....	944	886	847	6,897	6,967	6,881
Insulated wire and cable.....	2,131	2,228	2,228	8,840	9,081	9,022
Electrical appliances.....	2,971	2,601	2,979	10,102	9,790	10,201
Radio and related products.....	2,987	3,160	3,002	10,456	10,877	10,574
Communication equipment.....	1,775	1,584	1,515	7,465	7,421	7,221
Electrical equipment.....	1,486	1,598	1,493	7,463	7,733	7,544
Motor vehicles and trailers.....	16,963	17,786	17,480	29,683	30,925	30,498
Aircraft and parts.....	8,971	4,962	6,441	14,659	10,362	11,955
Ships and boats.....	1,602	1,118	1,076	7,038	7,828	7,739
Locomotive and railroad cars.....	575	615	587	9,437	9,654	9,576
Photography equipment.....	2,429	3,208	2,266	7,891	8,850	7,810
Miscellaneous manufacturing industries.....	5,760	5,756	5,901	14,228	14,431	14,492
Electric light and power.....	2,258	2,196	2,734	4,080	4,067	4,632
Gas utilities.....	778	109	810	4,863	4,875	4,928
Railroads, trucking.....	11,757	12,168	12,385	17,474	17,374	18,189
Overseas transportation.....	422	511	394	4,705	5,080	4,774
Air transportation.....	755	946	788	6,639	6,831	6,590
Local and highway.....	2,733	2,594	2,709	8,746	8,836	8,801
Trade.....	72,360	74,543	72,639	78,672	81,272	79,047
Auto and other repair.....	6,508	7,093	6,870	21,853	23,127	22,462
Printing and publishing.....	4,506	4,658	4,744	9,647	9,942	10,022
Advertising.....	644	693	646	6,954	7,204	7,156
Telephone and telegraph.....	8,034	8,319	8,235	10,480	10,903	10,709
Banking, finance, and in- surance.....	22,907	25,212	23,262	29,870	32,741	30,334
Real estate and rent.....	51,931	56,308	52,200	56,287	60,828	56,625
Motion picture and other.....	4,279	4,494	4,279	10,810	11,441	10,874
Service industries.....	11,976	12,564	12,047	20,311	21,347	20,482
Medical, dental, professional.....	21,232	25,028	22,096	29,679	33,815	30,601

The third product matrix specified total requirements by industry based on the 50-percent reduction in military procurement offset by compensating increases in Federal, State, and local nondefense procurement. 25 percent of the offset was directly allocated by the Federal Government—one-half for space exploration and one-half for increases in all other Federal projects. The remaining 75 percent was transferred to State and local governments for metropolitan development and urban renewal, State hospitals, education, and construction.

Table II summarizes the total direct industry output requirements and the total direct and indirect industry requirements for the armed economy and the two offsets considered. A few general observations may be made concerning the output levels presented in this table. First, a more extensive variation in direct requirements is recorded by each industry than the variations recorded for its total requirements. This may be explained in part by the level of aggregation. A 66 order aggregation attributes a broad enough production base to the firms classified within each industry to meet the change in the composition of demand consistent with the shifts in defense hypothesized. Second, direct industry requirements are more sensitive to policy alternatives than total requirements. Again the level of aggregation may influence these results, but more likely, the degree of dependence on direct requirements. For example, approximately 50 percent of the livestock and poultry industry's output is necessary to meet the demand of final buyers. The modest increase in direct requirements brought about by the disarmament alternatives leads to a modest increase in total requirements. The livestock and poultry industry is highly independent with respect to shifts in the composition of final demand accompanying a shift in defense expenditures. On the other hand, the iron and steel industry displays a much higher dependence on the demands of other industries. Hence the stipulated variation in direct requirements is dampened when the pattern of intermediate output is generated.⁷

The degree of an industry's interdependence and its sensitivity to shifting defense expenditures is given by the relationships presented in Table III. The ratios relate the new level of requirements stipulated and generated for each alternative to the level derived for the armed economy in each industry. The first two columns show the stipulated first round impacts on direct output, and the following three columns indicate the significance of the impact when related to the original total output. The last two columns show the variation in total output brought about by pursuing either policy.

Taken together industry by industry, these relationships permit a useful classification for measuring the extent of structural impact. The criterion for classification is the level of an industry's production base relative to its direct requirements. Industries may be grouped into three categories using the criterion on an arbitrary basis. An industry with a *broad* production base will be defined as one that ships less than 30 percent of its total output to final buyers. (See

⁷ This generalization holds true for all similar industries except the grain and feed crops industry.

col. 3, Table III).⁸ An industry that ships between 30 and 70 percent of its total output to meet direct requirements will be categorized as one with a *diversified* production base, and finally a *narrow* production base will be associated with an industry that ships over 70 percent of its total output to final users.

Of the 66 industries listed, thirty seven have broad production bases, five have narrow production bases, and the remaining twenty-four fall in the diversified class. Industries with broad production bases display a high degree of indifference to shifts in defense spending with respect to variations in total output even though the offset produces wide variations in direct requirements (see for example iron and steel, metal containers, metal stampings, or machine tools). This proposition holds even for broad production base industries with a strong residual dependence on defense procurement. For example, the adverse effect upon direct requirements for communication equipment and ships and boats under either offset considered is significantly diminished in one industry and leads to an expansion in output in the other with no significant variation recorded for policy choice.

The majority of industries with diversified production bases are neutral with respect to shifts in the composition of direct requirements. Industries that are oriented toward defense or are directly affected by the offset considered are sensitive to policy adjustments. For example, the decrease in aircraft and parts is minimized by increased expenditures for space assumed in the public offset but still records an eighteen per cent reduction in total capacity. The importance of the production base is evident when comparing the variation in impact between the aircraft industry and the ships and boats industry.

The five industries classified in the narrow production base category potentially represent the most volatile group with respect to shifts in the composition of demand. However, these industries show very little direct dependence on military procurement and hence display no adverse effects. On the other hand, the dependence on direct requirements is particularly evident when considering the expansion of output accompanying the private policy offset.

In general the results of the computations show that the shift from defense to nondefense expenditures has an expansionary impact on the majority of industries. The derived relationships appear to provide evidence for the argument advanced by Professor Fishman, concerning the expansionary impact of shifting defense expenditures.⁹

⁸ In the technical sense an industry may ship nothing to final demand and yet have a very narrow production base, i.e., copper ore, and iron ore. These industries ship virtually all of their output to one or two other intermediate producing industries and have been eliminated from consideration in the 66 order enumeration based on the principle that two industries may be aggregated if one consumes substantially all of the output of the other.

⁹ See Leslie Fishman, "The Expansionary Effects of Shifts From Defense to Nondefense Expenditures," in *Disarmament and the Economy*, pp. 173-181, and more rigorously discussed in "A Note on Disarmament and Effective Demand," *Journal of Political Economy*, vol. LXX, No. 2 (April 1962), pp. 183-186.

TABLE III.—*Relationship of disarmament alternatives to armed economy*

[Expressed as ratios]

Industry classification	Ratio of direct private offset to direct armed	Ratio of direct public offset to direct armed	Ratio of direct armed to direct and indirect armed	Ratio of direct private offset to direct and indirect armed	Ratio of direct public offset to direct and indirect armed	Ratio of direct and indirect private offset to direct and indirect armed	Ratio of direct and indirect public offset to direct and indirect armed
Livestock and poultry.....	1.01	1.00	0.49	0.50	0.49	1.02	1.00
Grain and feed crops.....	.99	1.00	.07		.07	1.13	1.01
Food products.....	.98	1.00	.34	.64	.65	.99	1.00
Tobacco manufacturers.....	1.00	1.00	.34	.26	.26	1.02	1.01
Alcoholic beverages.....	1.01	1.00	.26	.32	.32	1.03	1.01
Cotton synthetics.....	1.03	1.00	.32	.54	.54	1.02	1.01
Apparel.....	1.02	1.01	.54	.36	.36	1.04	1.01
Leather and leather products.....	1.04	1.01	.34	.07	.07	1.02	.98
Plastics.....	.98	.95	.07	.54	.54	1.03	1.02
Logging, sawmills.....	1.02	1.02	.63	.17	.18	1.03	1.03
Pulp, paper and products.....	1.00	1.08	.17	.16	.22	1.01	1.09
Industrial inorganic chemicals.....	.99	1.40	.16	.02	.02	1.02	1.02
Industrial organic chemicals.....	1.03	1.03	.24	.25	.25	1.03	1.01
Miscellaneous chemicals and paint.....	1.03	1.03	.24	.30	.38	1.03	1.01
Drugs and medicines.....	1.04	1.02	.38	.46	.49	1.01	.98
Rubber and rubber products.....	1.03	1.03	.14	.48	.48	1.01	1.04
Nonmetallic minerals.....	1.00	1.06	.46	.48	.49	.99	.99
Petroleum and petroleum products.....	.97	.99	.49	.42	.44	1.02	1.05
Coal.....	1.03	1.09	.40	.06	.07	1.01	1.04
Coke and products.....	1.04	1.10	.06	.14	.15	1.00	1.03
Iron and steel.....	.96	1.05	.14	.06	.07	1.02	1.01
Iron and steel forging.....	.96	1.03	.07	.04	.05	1.00	.99
Copper.....	.82	.85	.05			1.03	1.06
Aluminum.....		1.06				1.02	1.01
Other nonferrous.....		1.04				1.02	1.02
Metal containers.....	.98	.90	.01	.01	.01	1.01	1.02
Cutlery tools.....	.99	1.02	.20	.20	.20	1.01	1.02
Plumbing and heating.....	1.01	1.03	.28	.28	.29	1.01	1.02
Metal stampings.....	.95	1.02	.09	.09	.09	1.01	1.02
Fabricated metal products.....	.99	1.07	.39	.39	.42	1.01	1.04
Engines and turbines.....	1.04	1.03	.11	.12	.12	1.00	1.02
Construction and mining equipment.....	1.05	1.10	.30	.32	.33	1.01	1.04
Farm and industrial tractors.....	1.07	1.04	.31	.33	.32	1.03	1.02
Machine tools.....	1.05	.99	.26	.27	.26	1.01	1.01
Industrial machinery.....	1.08	1.01	.54	.58	.54	1.03	1.01
Power transmission.....			.10	.10	.10	.98	1.03
Pumps and compressors.....	1.05	1.05	.23	.23	.23	.94	1.02
Refrigeration equipment.....		1.01					1.01

TABLE III.—*Relationship of disarmament alternatives to armed economy—Continued*
 [Expressed as ratios]

Industry classification	Ratio of direct private offset to direct armed	Ratio of direct public offset to direct armed	Ratio of direct armed to direct and indirect armed	Ratio of direct private offset to direct and indirect armed	Ratio of direct public offset to direct and indirect armed	Ratio of direct private offset to indirect private offset to direct and indirect armed	Ratio of direct and indirect private offset to direct and indirect armed
Motors and generators.....	0.04	0.90	0.14	0.13	0.12	1.01	1.00
Insulated wire and cable.....	1.05	1.05	.24	.25	.25	1.03	1.02
Electrical appliances.....	.88	1.00	.29	.26	.29	.96	1.01
Radio and related products.....	1.06	1.00	.29	.30	.29	1.04	1.01
Communication equipment.....	.89	1.00	.24	.21	.20	.90	.97
Electrical equipment.....	1.08	1.00	.20	.21	.20	1.04	1.01
Motor vehicles and trailers.....	1.05	1.03	.57	.60	.59	1.04	1.03
Aircraft and parts.....	.56	.72	.61	.34	.44	.71	.82
Ships and boats.....	.74	.72	.21	.16	.15	.11	1.10
Leisure and railroad cars.....	1.07	1.02	.06	.07	.06	1.02	1.01
Photography equipment.....	1.32	.83	.31	.41	.29	1.12	.99
Miscellaneous manufacturing industries.....	1.00	1.02	.40	.41	.41	1.01	1.02
Electric light and power.....	.97	1.21	.55	.54	.67	1.00	1.14
Gas utilities.....		1.04	.16		.17	1.00	1.01
Railroads, trucking.....	1.03	1.05	.07	.70	.71	.99	1.04
Overseas transportation.....	1.21	.93	.09	.11	.08	1.08	1.01
Air transportation.....	1.25	1.04	.11	.14	.12	1.03	.99
Local and highway.....	.95	.99	.31	.30	.31	1.01	1.01
Trade.....	1.03	1.00	.92	.95	.92	1.03	1.00
Auto and other repair.....	1.09	1.05	.30	.32	.31	1.06	1.03
Printing and publishing.....	1.03	1.05	.47	.48	.49	1.04	1.04
Advertising.....	1.08	1.00	.09	.09	.09	1.04	1.03
Telephone and telegraph.....	1.04	1.02	.77	.79	.78	1.04	1.02
Banking, finance, and insurance.....	1.10	1.02	.84	.84	.79	1.10	1.02
Real estate and rent.....	1.08	1.00	.92	1.00	.93	1.00	1.01
Motion picture and other.....	1.05	1.00	.40	.42	.40	1.06	1.00
Service industries.....	1.05	1.01	.59	.62	.59	1.05	1.01
Medical, dental, professional.....	1.18	1.04	.72	.84	.74	1.14	1.03

Source: Table II.

IV. CONCLUSIONS AND RECOMMENDATIONS

1. CONCLUSIONS

(1) A 50-percent reduction in defense outlays, offset by compensating increases in expenditures within either the private or public sector will affect the industries producing weapons substantially, but will have little effect on supporting industries. This is true since the production bases of the supporting industries are common to other elements of final demand besides the military establishment. Furthermore, within the classification system used there is a large amount of compensation in the indirect effects, and the net result is not very startling.

(2) The magnitude of the shift in final demand postulated (approximately 5 percent of gross national product) was not large enough to pose structural problems. Granted a more detailed aggregation would have produced more dramatic variations, the significance of these variations is doubtful with respect to the magnitudes involved. To be sure, a 400 order industry aggregation would have revealed and identified substantive impacts. But from the pattern of results shown in the 66 order aggregation, it was reasoned that further impacts would occur only in supporting industries closely allied to the aircraft and electronics industries.

(3) The derivation of the indirect pattern of demand shows that the economy is heavily consumer oriented. Indeed, this dependence is so strong that substantial shifts between other categories of final demand are dampened considerably.

(4) Industry sensitivity to variations in final demand patterns is diminished markedly by the pattern of accompanying intermediate demands.

(5) The effect of public policy is not significant to the output levels of industries supporting the military oriented industries. Furthermore, if expenditures for space are treated as defense outlays, it is doubtful whether policy variations have any effect.

2. RECOMMENDATIONS

The most important consideration in determining the impact on the economy of a large reduction in defense outlays is concealed in the assumptions made for the model. These relate to how the postulated compensating changes in demand will be initiated. The detail which would be made available by highly disaggregated regional input-output models would be a tremendous aid to the analysis of how aggregate demand could be maintained.

The leverage effects on investment of shifts in final demand would be of urgent importance in analyzing the effects on aggregate demand of given shifts in final demand. Very detailed product models on a regional basis, together with adequate measures of existing plant capacities, would afford a means of estimating the relative investment needs for different programs. It would also provide much needed information on potential imbalances in production that might then be corrected before becoming bottlenecks to a rapid shifting of production.

The time-phasing of the transition and the time scheduling of the detailed impacts is of course a very important determinant of the efficiency of the transition. Here again the detailed flows are necessary for analysis since averages are not very useful for this purpose.

It is in this respect that the strongest recommendation for future research in the application of input-output analysis to the economics of disarmament concerns the design and implementation of time-phased regional models.

SUMMARY

To investigate some of the major structural problems which might arise from disarmament, an input-output model was constructed specifying three full-employment patterns of end product deliveries which might reasonably be expected for the year 1970. The purpose of the model was to measure the impact of varying compositions of final demand accompanying a reduction in defense expenditures on the production capabilities of 66 processing sectors. Each disarmament pattern was stipulated with respect to a specific level and composition of defense expenditures in conjunction with a compensating policy offset.

The relative impact on total industry requirements was discerned by comparing the derived output levels of each industry under the alternative policy formulations. An analysis of the computational results lead to the following five major conclusions:

1. A 50 percent reduction in defense outlays, offset by compensating increase in expenditures within either the private or public sector, will affect the industries producing weapons substantially but will have little effect on supporting industries.
2. The magnitude of the shift in final demand postulated was not large enough to pose structural problems.
3. The derivation of the indirect requirements indicated that the processing sectors are quite consumer oriented. Indeed, this dependence was so strong that substantial shifts between other major categories of final demand were dampened considerably.
4. Industry sensitivity to variations in final demand patterns was diminished markedly by the pattern of accompanying intermediate demands.
5. The effect of public policy was not significant to the output levels of industries supporting the military oriented industries.

ZUSAMMENFASSUNG

Der vorliegende Artikel behandelt an Hand eines Input-Output Modells die wichtigsten Strukturprobleme, die sich im Zuge der militärischen Abrüstung ergeben können. Das Modell bezieht sich—unter der Annahme der Vollbeschäftigung—auf drei verschiedene hypothetische Niveaus der Produktion von Endprodukten im Jahre 1970; es soll die Auswirkungen der als Folge der Abrüstung variierenden Endnachfrage in 66 verarbeitenden Sektoren untersuchen. Jedem "Abrüstungsniveau" entspricht eine bestimmte Höhe und eine bestimmte Struktur der Verteidigungsausgaben in Verbindung mit einer entsprechenden Politik.

Ein Vergleich der so abgeleiteten Output-Niveaus jeder Industrie bei alternativen verteidigungspolitischen Verhaltensweisen ermöglicht es, die relativen Auswirkungen auf die gesamte Industrie aufzuzeigen. Im einzelnen lassen sich daraus fünf Schlüsse ziehen:

1. Durch eine fünfzigprozentige Reduktion der Verteidigungsausgaben werden zwar die eigentlichen Rüstungsindustrien relativ schwer betroffen; sofern die Reduktion aber durch eine entsprechende Ausweitung des öffentlichen oder privaten Konsums kompensiert wird, ergeben sich auf die vorgelagerten Sektoren nur geringe Auswirkungen.

2. Die erhaltenen Verschiebungen der Endnachfrage sind nicht gross genug, um strukturelle Probleme hervorzurufen.

3. Die untersuchten Branchen sind überwiegend konsumorientiert; diese Abhängigkeit vom Konsum ist so ausgeprägt, dass Verschiebungen bei anderen Nachfragekategorien dadurch nicht ins Gewicht fallen.

4. Die Reaktionen der Industrie auf die Änderungen der Endnachfrage werden durch die parallele Nachfrage nach Zwischenprodukten bedeutend gedämpft.

5. Die öffentliche Politik hat kaum signifikante Auswirkungen auf die Output-Niveaus der die Rüstungsindustrien geliefernden Branchen.

RÉSUMÉ

Cet article traite à l'aide d'un modèle Input-Output les problèmes structurels principaux pouvant résulter du désarmement. Le modèle, en supposant le plein-emploi, se réfère à trois structures hypothétiques différentes de production finale pour l'année 1970. Il veut mesurer les répercussions de la demande finale, qui à la suite du désarmement a varié, dans soixante-six secteurs de fabrication. A chaque niveau de désarmement correspond un degré et une structure spécifiques des contributions à la défense en relation avec une politique correspondante de compensation.

L'influence des différentes politiques de défense sur la production industrielle était dérivée d'une comparaison des niveaux de production alternatifs de chaque secteur. On peut en tirer cinq conclusions:

1. Une réduction de cinquante pour cent des dépenses pour la défense affectera les industries d'armement assez gravement; mais si la réduction peut être compensée par une expansion équivalente de la consommation publique ou privée, les répercussions pour les secteurs précédents seront faibles.

2. Les modifications obtenues de la demande finale sont trop faibles pour pouvoir poser des problèmes structurels.

3. Les secteurs analysés produisent principalement des biens de consommation; cette dépendance est si grande, que les déplacements entre les autres catégories de demande ont peu d'importance.

4. Les réactions de l'industrie sur les modifications de la demande finale sont amorties par la demande parallèle de produits intermédiaires.

5. La politique a peu d'effet sur les niveaux d'Output des branches approvisionnant les industries d'armement.

ECONOMIC IMPACT ANALYSIS: A MILITARY PROCUREMENT FINAL-DEMAND VECTOR*

VOLUME I: RESULTS AND METHODOLOGY

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE,
Washington, D.C., January 27, 1967.

DEAR SIR: The enclosed study, "Economic Impact Analysis: A Military Procurement Final Demand Vector, Volume I," is the first of two volumes prepared by the Research Analysis Corp. under contract with the Department of Defense.

These two volumes present the methodology and results of a study which provides, for the first time, an interface between DOD data systems and 4-digit Standard Industrial Classifications (SIC). Specifically, they provide a statement of military procurement requirements (bill of goods) in terms that are compatible with interindustry economic models and the national income accounting concepts used in these models. Volume I presents estimates developed for 1963; volume II will present an analysis of the detailed results.

Your comments and suggestions on this exploratory research effort are invited.

Sincerely,

VERNON M. BUEHLER,
Colonel, U.S. Army.

FOREWORD

This memorandum reports on research performed in 1966 by RAC's Economic Impact Group for the Office of the Assistant Secretary of Defense for Systems Analysis. The Economic Impact Group under the direction of Donald J. Igo is continuing both the refinement of methods and the development of impact estimates for the Office of the Secretary of Defense, the Bureau of Labor Statistics, the Office of Emergency Planning, and the Arms Control and Disarmament Agency.

Volume I presents a military procurement final-demand vector, or "bill of goods," developed for applications in interindustry studies of the US economy. Volume II presents a comparison of RAC results with estimates derived by other estimating techniques, discusses some of the methodological problems involved in developing final-demand estimates, and indicates directions for future research.

Earlier publications of the Economic Impact Group are "A Case Study in Industry Impact Patterns: The F-4 Aircraft," RAC-T-451, January 1965; "Methodology for Industry Impact Analysis," RAC-TP-190, volume I, "Methodology and Summary Results," March 1966, and volume II, "Procurement Documentation," July 1966 (Secret); and "Industrial Classification and Economic Impact Analysis," RAC-TP-207, May 1966.

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Head, Economics and Costing Department.

*Economics and Costing Department, Technical Paper RAC-TP-248, published March 1967, by Research Analysis Corp., McLean, Va; Donald J. Igo, Irving Moder, Elwyn M. Bull, William Lindsay, Jr. and Ken R. Gramza.

ACKNOWLEDGMENTS

General policy guidance for the study was provided by Dr. Stephen Enke, Deputy Assistant Secretary of Defense, Systems Analysis (Economics), and Dr. Herschel Kanter and Col. Vernon M. Buehler of his staff. Mr. Richard Oliver, Division of Economic Growth, Bureau of Labor Statistics; Mr. Irving Stern, Office of Business Economics, Department of Commerce; and Mr. Wallace Oliver, National Resource Evaluation Center, Office of Emergency Planning also provided valuable guidance. Numerous individuals in the Department of Defense were of assistance in our data-collection efforts.

The authors benefited from comments by a RAC review board, including Dr. G. Pettee, chairman, Mr. L. Dondero, and Mr. B. Sobin.

RAC staff members Messrs. Lucius Henderson, Paul Hinkes, and Walter Johnson and Mrs. Geraldine Sica assisted the authors in the preparation and analysis of statistical data for the study. Mrs. Sica also performed much of the preliminary editorial work required in preparing this report.

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ABBREVIATIONS

AFLC	Air Force Logistics Command.
AGE	Aerospace ground equipment.
AMP	Army materiel plan.
A&OGFAE	Armament and other government-furnished aerospace equipment.
ASD(C)	Assistant Secretary of Defense (Comptroller).
CFE	Contractor-furnished equipment.
DOD	Department of Defense.
E&C	Electronics and communications.
FSC	Federal supply classification.
FY	Fiscal year.
FYFSFP	5-year force structure and financial program.
GFE	Government-furnished equipment.
GFM	Government-furnished materiel.
GNP	Gross national product.
GSE	Ground support equipment.
ICBM	Intercontinental ballistic missile.
n.e.c.	Not elsewhere classified.
OASD	Office of Assistant Secretary of Defense.
OBE	Office of Business Economics.
OEP	Office of Emergency Planning.
OPN	Other procurement, Navy.
OSD	Office of Secretary of Defense.
PAMN	Procurement of aircraft and missiles, Navy.
PEMA	Procurement of equipment and missiles, Army.
PMC	Procurement, Marine Corps.
R&D	Research and development.
RDTE	Research, development, test, and evaluation.
SCN	Shipbuilding and conversion, Navy.
SIC	Standard industrial classification.
TOA	Total obligatory authority.

INTRODUCTION

BACKGROUND OF ECONOMIC IMPACT STUDIES

This report presents a military procurement final-demand vector, or "bill of goods," developed by RAC for applications in interindustry studies of the US economy. The military bill of goods in an interindustry economic model is a statement of military requirements for material and services from the civilian economy in terms that are compatible with the industry definitions in the model. This introductory section discusses the background of the RAC economic impact project and describes the general characteristics of interindustry analysis and some of the uses for which the final-demand vector is intended. The major portion of this volume presents the final-demand estimates and methodology. A second volume will (a) present a comparison of the RAC results with estimates based on other sources of Department of Defense (DOD) procurement data; (b) discuss some of the methodological problems involved in deriving military final-demand estimates; and (c) indicate directions for future research.

Origin of economic impact studies

In a memorandum dated December 21, 1963, to heads of departments and agencies primarily concerned with national security and economic affairs, President Johnson directed the formation of a committee on the economic impact of defense and disarmament. In this memorandum the President stated:

It is therefore important that we improve our knowledge of the economic impacts of [defense] spending, so that appropriate actions can be taken * * * to minimize potential disturbances which may arise from changes in the level and pattern of defense outlays.

On March 31, 1964, Secretary of Defense Robert S. McNamara issued a memorandum to the heads of the military departments, initiating studies designed to measure the impact of current and future defense programs on US industries and geographic areas. A committee composed of representatives of each Service Secretary and chaired by the Assistant Secretary of Defense (Comptroller) [ASD(C)], was organized within DOD to monitor the economic impact studies. Financial contribution and representatives to the monitor group were also provided by the Arms Control and Disarmament Agency. Shortly after the committee was organized, RAC was asked to participate in the study program.

RAC economic impact project

The first task undertaken by RAC was the development of a methodology to quickly produce estimates of economic impact of the current 5-year program, i.e., rough approximations of the value added and employment that would be generated. This "rough-cut" approach was designed to provide DOD the first relatively complete picture of the economic impact of the 5-year force structure and financial program (FYFSFP). The research was organized in terms of appropriation categories. In the procurement category, to which primary attention was devoted, specialized military end-items were divided into major classes, and representative items or prototypes from each class were selected and studied, utilizing DOD component

information and contract sources. Information was sought that would allow the measurement of in-house effort by contractors in order to approximate value-added distributions. Generally the tracing efforts permitted identification of second- and third-tier suppliers of prime contractors responsible for the delivery of major end-items such as aircraft, missiles, ships, and tanks. Analyses of impact of the other appropriation categories (e.g., RDTE, military personnel, operations and maintenance) were also conducted. The completed estimates were transmitted to OASD(C); methodology and summary results were presented in a two-volume RAC publication.¹

With this work completed, the Office of Secretary of Defense (OSD)* requested that RAC integrate its efforts with interindustry economic research being performed by the interagency Growth Studies Project (whose central staff is in the Bureau of Labor Statistics), the Office of Business Economics (OBE), Department of Commerce, and the Office of Emergency Planning (OEP), Executive Office of the President.

A requirement for estimates of military final demand for use in interindustry (input-output) models of the U.S. economy was accorded high priority by representatives of these agencies. The need for military final-demand estimates had also been cited by the President's Committee on the Economic impact of Defense and Disarmament.² The Committee identified the lack of such estimates as one of seven major gaps in impact information and recommended research to overcome this deficiency.

Because previous RAC work on stratification of procurement funding had provided the required data base, RAC was requested by OSD to develop estimates for the procurement portion of DOD final demand. RAC also provided preliminary bill-of-goods distributions—based on previous economic impact work for OSD—for the operations and maintenance, military personnel, and RDTE appropriations to be used in conjunction with other data in developing the complete military final-demand vector, but primary responsibility for estimates in these appropriation areas was assumed by the agencies involved in interindustry studies. Brief discussions of the interindustry economic models in which the final-demand estimates will be used and the programs of the agencies for which the final demand estimates were developed are presented in the following paragraphs.

INTERINDUSTRY ECONOMIC MODELS

The basis of interindustry analysis is the input-output table, which describes in quantitative terms the interdependencies existing among industries in the U.S. economy. The table shows how the output of each industry is distributed among other industries and sectors of the economy; at the same time it shows the inputs to each industry from other industries and sectors. The final-demand sector of the table represents expenditures by which goods and services are acquired for final use by consumers and the Government and for investment and exports. In the input-output tables, final-demand estimates are grouped to indicate where they originate (e.g., households, Federal Government, State and local government) and the industries on which they fall.

* Responsibility for OSD economic-impact studies was transferred from ASD(C) to ASD systems analysis (economics) in November 1965.

Using interindustry computational techniques, a hypothetical or projected final demand can be translated into total output requirements for each industry in the model. A given industry's total output includes not only output in direct response to final demand, but also output required as a consequence of final demand on other industries to which the given industry supplies inputs, and of final demand on still other industries to which its customers deliver inputs.³

In the U.S. economy many industries deliver a large proportion of their output not to final users but to other industries. For example, in order to determine how much the demand for bauxite would increase if the Air Force increased its purchases of military aircraft by a given amount, one must determine how much ore the nonferrous metals industry requires for producing primary aluminum; how much primary aluminum is used in producing a given amount of aluminum plate, sheet, wire, and other fabricated products; and how much of the fabricated products is used in production of military aircraft. The interindustry relations incorporated in the processing sector of the input-output table permit the tracing of such indirect effects of changes in final demand for end products.

In late 1964 OBE published an interindustry table of the U.S. economy based on 1958 data. This table breaks down the economy into 81 industries or functional economic sectors. The 1958 interindustry table was constructed as a complement of the national income and product accounts published by the Department of Commerce, so that the measurement of total final demand (or gross national product) and of the flows to each final market is the same in the two sets of accounts.⁴ Preparation of an input-output table based on 1963 data, showing considerably more industry detail than the 1958 model, has been under way since 1965.

The industry sectors in the interindustry tables are defined in terms of the standard industrial classification (SIC) system, which was developed under the supervision of the U.S. Bureau of the Budget, and to which all government agencies are expected to conform in gathering and publishing economic statistics. The SIC industrial structure defines a system of four-digit industry codes of which the first two digits represent a "major group" and the first three digits a "group." For example, in the manufacturing industries, two-digit major group 37 is transportation equipment, three-digit group 372 is aircraft and parts, and four-digit industry 3722 is aircraft engines and engine parts. The entire system is divided into 10 divisions representing general areas of economic activity, e.g., agriculture, mining, manufacturing.

In classifying products the Bureau of the Census extends the four-digit SIC industry classification. Beyond the first four digits the Bureau of the Census defines a five-digit product class plus unique sixth and seventh digits. Thus a seven-digit product code carries within its numbering structure the product class, industry, group, and major group of which it is a part, i.e., in which it is a primary product. A list of SIC census manufactured products was made up for use in the 1939 Census of Manufactures, and these lists have been expanded and revised for each census thereafter. The current list, "Numerical List of Manufactured Products, 1963 Census of Manufactures,"⁵ includes approximately 7,500 seven-digit product codes, 1,130 five-digit product classes, and 425 four-digit industries.

Applications of interindustry analysis

Interindustry analysis is being used in a wide range of applications, including evaluation of the effects of long-range government programs (e.g., public works, farm programs, defense expenditures, space, and urban renewal) on the rest of the economy.⁶ The effects of both increases and decreases in defense programs are being analyzed. For example, in the case of industrial mobilization the competing demands generated by a military buildup may be traced through the intricate network of the economy by use of interindustry models, and determination may be made of the production levels for all industries that are consistent with a given schedule of end-product deliveries. Decreases in defense expenditures may result from changes in U.S. military commitments, from changes in the product mix of defense procurement, or from implementation of international arms-control agreements. Here interindustry analysis is being used for identification of major impacts on specific industries so that policies to assist in required readjustments can be formulated and implemented. For example, projections of the demand for labor, by industry and by occupation, can be developed based on input-output analyses and used for occupational guidance and formulation of plans for long-term retraining programs.

Interagency growth study project. This project was organized to develop a comprehensive framework for analyzing the long-term implications of economic growth in a number of problem areas. The central project staff is in the Bureau of Labor Statistics Division of Economic Growth; overall coordination is provided by a committee of representatives from each participating agency (including OBE, Department of Agriculture; and Bureau of Mines, Department of the Interior) chaired by a member of the Council of Economic Advisors. Alternative projections of the U.S. economy through 1970 are being developed around the Department of Commerce Interindustry Model of the U.S. economy in 1958.⁴ Projections of interindustry relations through 1970 will reflect anticipated changes in technology and, if possible, changes in relative costs. The interindustry model will be used to convert projections of final demand to estimates of total output requirements by industry. Industry output requirements generated by the interindustry model, in conjunction with additional data, will provide a basis for projections of the demand for labor by industry and by occupation.

The growth study project will provide a capability for analyzing the implications of various policy proposals on programs that involve consideration

METHODOLOGY FOR DEVELOPMENT OF THE PROCUREMENT FINAL-DEMAND VECTOR

SUMMARY OF FINDINGS

Table 1 presents the RAC procurement bill of goods for 1963 in the form of a percentage distribution of DOD procurement by four-digit SIC⁵ product codes. The RAC results are presented in percentage terms rather than in dollars; OBE is developing in dollar terms a DOD expenditures estimate for 1963 adjusted to the national income

accounting definitions used in interindustry models. The Department of Commerce estimate will provide a control total for converting the RAC percentage distribution into a bill of goods in dollar terms, as required for interindustry model applications.*

The distribution in table 1 indicates that on the basis of first-order (prime contractor) impact the five largest codes accounted for 68 percent of total procurement, and the 15 largest codes accounted for 89 percent of the total. The largest code was 3721, aircraft, with 21 percent. SIC 3662, radio, TV communication equipment, with 20 percent, was the next largest code. Shipbuilding and repairing, SIC 3731, represented about 10 percent of DOD procurement funds, and SIC 3722, aircraft engines and parts, constituted about 9 percent. Approximately 8 percent of the total was SIC 1925, complete guided missiles, and almost 5 percent was SIC 1929, Ammunition, n.e.c.† Some 78 codes representing 97 percent of total procurement are identified in table 1. Each of the codes ranked below the 13 largest accounted for less than 1 percent of the total.

TABLE 1.—*First-order distribution of DOD procurement, by 4-digit SIC product codes*

[Fiscal year 1963 expenditure weights]

Rank	SIC code	Product	Percent	Cumulative percent
1	3721	Aircraft.....	21.05	
2	3662	Radio, TV communication equipment.....	19.71	
3	3731	Shipbuilding and repairing.....	10.24	
4	3722	Aircraft engines and parts.....	9.22	
5	1925	Complete guided missiles.....	7.66	68
6	1929	Ammunition, n.e.c.....	4.62	
7	3729	Aircraft equipment, n.e.c.....	4.05	
8	1931	Tanks and tank components.....	2.39	
9	3717	Motor vehicles and parts.....	2.35	
10	3571	Computing and related machines.....	2.15	
11	3621	Motors and generators.....	1.18	
12	3811	Scientific instruments.....	1.16	
13	8911	Engineering and architectural services.....	1.12	
14	3541	Metal-cutting machine tools.....	.94	
15	3443	Boiler-shop products.....	.93	89
16	3661	Telephone, telegraph apparatus.....	.84	
17	3723	Aircraft propellers and parts.....	.75	
18	3531	Construction machinery.....	.71	
19	3861	Photographic equipment.....	.67	
20	1999	Ordnance and accessories.....	.53	92
21	3611	Electric measuring instruments.....	.48	
22	1951	Small arms, 30 mm, and under.....	.47	
23	1941	Sighting and fire-control equipment.....	.46	
24	1961	Small-arms ammunition.....	.39	
25	1911	Guns, howitzers, and mortars.....	.36	
26	2892	Explosives.....	.31	
27	3511	Steam engines and turbines.....	.30	
28	3537	Industrial trucks and tractors.....	.25	
29	3545	Machine-tool accessories.....	.25	
30	3715	Truck trailers.....	.20	96
	3599	Miscellaneous machinery.....	.17	
	1511	General building contractors.....	.17	
	3613	Switchgear and switchboards.....	.15	
	3679	Electronic components, n.e.c.....	.12	
	1731	Electrical work.....	.09	
	3842	Surgical appliances and supplies.....	.08	
	3542	Metal-forming machine tools.....	.08	
	2205	Coated fabric, not rubberized.....	.07	
	3732	Boat building and repairing.....	.06	
40	3357	Nonferrous wire drawing, etc.....	.05	
	2399	Textile products, n.e.c.....	.05	
	3559	Special-industry machinery, n.e.c.....	.05	
	3536	Hoists, cranes, and monorails.....	.04	

* A preliminary control total for DOD procurement expenditures for calendar year 1963, \$15,722 million, is presented in the section on national income accounting in vol. II of this report. The derivation of control totals for subcategories of total procurement (e.g., aircraft, missiles, ships), for use with the percentage distributions by subcategory presented in this volume, is also discussed in vol. II.

† Not elsewhere classified.

TABLE 1.—*First-order distribution of DOD procurement, by 4-digit SIC product codes—Continued*

[Fiscal year 1963 expenditure weights]

Rank	SIC code	Product	Percent	Cumulative percent
50	2499	Wood products, n.e.c.	.04	
	3491	Metal barrels, drums, and pails	.04	
	3899	Chemical preparations, n.e.c.	.04	
	3446	Architectural metal works	.03	
	3561	Pumps and compressors	.03	
	3691	Storage batteries	.03	
	3642	Lighting fixtures	.02	
	3069	Rubber products, n.e.c.	.02	
	1799	Special-trade contractors, n.e.c.	.02	
	3449	Miscellaneous metal work	.02	
	3494	Valves and pipe fittings	.02	
	3461	Metal stampings	.02	
	3585	Refrigeration machinery	.02	
	2911	Petroleum refining	.01	
	3429	Hardware, n.e.c.	.01	
60	3821	Mechanical measuring devices	.01	
	2328	Work clothing	.01	
	3589	Service-industry machines, n.e.c.	.01	
	3582	Commercial laundry equipment	.01	
	3519	Internal combustion engines	.01	
	3548	Metalworking machinery, n.e.c.	.01	
	2599	Furniture and fixtures, n.e.c.	.01	
	3555	Printing trades machinery	.01	
	3564	Blowers and fans	.01	
	3622	Industrial controls	.01	
70	3141	Shoes, except rubbers	.01	
	3999	Miscellaneous products, n.e.c.	.01	
	2394	Canvas products	(1)	
	3431	Metal plumbing fixtures	(1)	
	3315	Steel wire drawing, etc	(1)	
	2731	Books, publishing, printing	(1)	
	3079	Plastic products, n.e.c.	(1)	
	3612	Transformers	(1)	
	3651	Radio and TV receiving sets	(1)	
	3532	Mining machinery and equipment	(1)	
		Total identified	97.41	97
		Miscellaneous	2.59	3
		Total	100.00	100

Less than 0.005 percent.

GENERAL METHODOLOGY

The goal of the analysis was the development of a statement of military procurement requirements for materiel and services for use in interindustry models. To achieve compatibility with the sector definitions used in current interindustry models, procurement requirements as stated in DOD programing and budgetary documents had to be reclassified to SIC terms. A substantial data-collection effort was necessary to obtain the procurement detail required for this reclassification. At the request of the user agencies, military final demand was defined as direct procurement by the government, and, to the extent possible, data permitting identification of the interface between government and the private economy were obtained. However, in the case of industrially funded activities such as government-owned and operated shipyards and arsenals the RAC distribution reflects the end-item procured by the relevant appropriation account from the government plant (e.g., ships, ammunition) rather than the shipyards' and arsenals' purchases of raw materials, intermediate products, and services from the private economy. Since time and resources were not available for identification of the activities of

these government plants, it was assumed that the purchases of these plants from the economy could be approximated by those of counter-part private plants; the private-plant purchase patterns are embodied in the processing sectors of interindustry models.

Major category composition

The first step in the development of the SIC distribution was the division of total DOD procurement into six major categories: Aircraft, ships, missiles, electronics and communications, ammunition, and weapons, vehicles and other. Table 2^{8,9} presents the composition of the six major categories, by appropriation title and budget activity code.⁸ Each budget activity (in some cases aggregations of budget activities were studied) was then analyzed to determine its first-order product composition. For example, the missiles category shown in table 2 is composed of a number of budget activities for each military service. For the Marine Corps it is the "Procurement, Marine Corps (PMC)" appropriation, budget activity 2, guided missiles and equipment. The SIC percentage distribution of the dollar total for that activity is shown in the accompanying tabulation:

	SIC	Percent
1925	Complete guided missiles.....	51
3662	Radio, TV communications equipment.....	22
3722	Aircraft engines and parts.....	17
3729	Aircraft equipment, n.e.c.....	10
Total.....		100

The percentage distributions for each code were then aggregated, using fiscal year 1963 expenditures as weights,* into a total bill of goods for all services and categories to construct the distribution for DOD shown in table 1.

The primary sources of data were the Army,¹⁰ Navy,⁹ and Air Force^{11,12} procurement lists submitted by the military departments to OSD as part of the FYFSFP. The line items in these procurement lists display considerable diversity with respect to levels of aggregation; for example, one line item such as missile modifications may represent a multimillion-dollar aggregation of products and services covering many SIC codes; in other areas a line item may be as detailed as "Truck, forklift, gasoline-engine driven, 4,000 pounds, 144-inch lift." Further product detail breakdown was based on DOD budgetary, programing, and systems-management data for all procurement-list line items representing aggregations of products (more than one four-digit SIC code). The detailed sources used for this disaggregation are cited in the following sections.

*The fiscal year 1963 expenditures data by budget activity code were developed from DOD budgetary sources by the Bureau of Labor Statistics, Division of Economic Growth, and represent expenditures in DOD accounting terms. They are not adjusted to national income accounting concepts. Although the Department of Commerce model is for calendar 1963, calendar year weights were not available, and fiscal 1963 data had to be used in weighting the distributions.

TABLE 2.—*Procurement categories, by appropriation title and budget activity class*¹

RAC category: Aircraft		RAC category: Missiles		RAC category: Ships	
Appropriation title	Budget activity	Appropriation title	Budget activity	Appropriation title	Budget activity
AIR FORCE					
Aircraft procurement.	1. Combat aircraft	Missile procurement.	1. Ballistic missiles	Not available....	Not available
	2. Airlift aircraft		2. Other missiles		
	3. Trainer aircraft		3. Modification of inservice missiles		
	4. Other aircraft		4. Spares and repair parts		
	5. Modification of inservice aircraft		5. Other support		
	6. Spares and repair parts				
	7. Other support				
NAVY AND MARINE CORPS					
PAMN.....	1. Combat aircraft	PAMN.....	8. Ballistic missiles	SCN.....	1. Polaris ships
	2. Airlift aircraft		9. Other missiles		2. Other warships
	3. Trainer aircraft		10. Modification of missiles		3. Amphibious ships
	4. Other aircraft		11. Missile spares and repair parts		4. Mine, warfare, and patrol ships
	5. Modification of aircraft		12. Other support equipment and facilities		5. Auxiliaries and craft
	6. Aircraft spares and repair parts				
	7. Aircraft support equipment and facilities				
OPN.....	3.—1940 aircraft support equipment	PMC.....	2. Guided missiles and equipment	OPN.....	1. Ships support equipment
					2.—1960 Polaris support equipment
ARMY					
PEMA.....	1. Aircraft	PEMA.....	3. Missiles		
	2. Aircraft spares and repair parts		4. Missile spares and repair parts		

RAC category: Electronics		RAC category: Ammunition		RAC category: Weapons, vehicles, and other support	
Appropriation title	Budget activity	Appropriation title	Budget activity	Appropriation title	Budget activity
AIR FORCE					
Other procure- ment	3. Electronics and telecommu- nications equipment —Crypto and SIGINT equipment —Electronics and telecommunications modulations	Other procure- ment	1. Munitions and associated equip- ment	Other procure- ment	2. Vehicular equipment 4. Other base maintenance and sup- port equipment —Industrial facilities
NAVY AND MARINE CORPS					
OPN.....	2. Communications and electronic equipment 3.—1960 Ground electronics 6.—2210 Equipment, personnel sup- port	OPN.....	3.—1910 Expendable ordnance 3.—1920 Ordnance equipment	OPN.....	3.—1950 Other support equipment 4. Civil engineering support equip- ment 5. Supply support equipment 6.—1110 Equipment, command sup- port 1. B Artillery 1. C Weapons 1. D Combat vehicles 4. Support vehicles 5. Engineer and other equipment
PMC.....	3. Communications and electronics equipment	PMC.....	1.A—Ammunition	PMC.....	
ARMY					
PEMA.....	7. Communications and electronics equipment	PEMA.....	9. Ammunition	PEMA.....	5. Weapons and combat vehicles 6. Tactical and support vehicles 8. Other support equipment 10. Production-base support

The appropriation titles and budget activity codes shown in the tables are defined in the Budget of the United States, 1966—Appendix (see footnote 8 at end of section). In the case of Navy activities, the 4-digit numbers following the budget code numbers represent further subdivisions of the activity codes, as shown in Navy procurement lists (see footnote 9 at end of section).

Product-code assignments

As indicated earlier, the goal was to identify and assign SIC codes to products directly procured by DOD. For example, if a private shipyard responsible for basic construction and integration of equipment into a destroyer escort were to purchase a generator for installation in the ship, the generator would not be separately identified. Its value would be included in the funding coded to SIC 3731, shipbuilding and repairing. If, however, the Navy procured the generator and furnished it to the private shipyard for installation the value of the generator would be coded to SIC 3621, motors and generators. Since the procurement lists used as primary sources usually did not identify items to be supplied as government-furnished equipment (GFE) additional DOD data had to be obtained before first-order SIC product distributions could be developed.

Much of the data-collection effort required for deriving the military bill of goods was performed in the course of an earlier project concerning selection of representative procurement items for tracing industry impact at second, third, and lower tier levels of contracting. Since the earlier project was directed toward analysis of the impact of DOD procurement projections for the 1965-70 time period, the data available for the bill-of-goods distribution were primarily for fiscal year 1965 and later years, although in some cases fiscal year 1963 and fiscal year 1964 data had been obtained. Because of the time and manpower requirements involved in retracing data collection to provide complete coverage for 1963, the sponsor requested that data already available be utilized. The percentage distributions by budget codes were derived from analyses of DOD procurement data primarily for the fiscal year 1963 to fiscal year 1965 time period. It was necessary to use total obligational authority (TOA) data to obtain the detail needed for these percentage distributions. For combining the separate SIC distributions by budget activity code, weights based on expenditures for fiscal year 1963 were used, since expenditures more closely approximate measures of activity used in interindustry applications than obligations do.

A discussion of the stability of the product distribution of DOD procurement over time and the applicability of the RAC distribution for 1963 to DOD procurement for other years is contained in volume II of this report.

DEVELOPMENT OF THE PROCUREMENT FINAL-DEMAND VECTOR

DOD AIRCRAFT PROCUREMENT

Summary of findings

DOD aircraft procurement involved 67 SIC four-digit codes. Table 3 presents the complete listing of the identified codes and the percentage of aircraft procurement attributed to them. Four of the codes accounted for more than 80 percent of the total; no other product code accounted for as much as 3 percent of the TOA.

TABLE 3.—First-order distribution of DOD aircraft procurement, by 4-digit SIC product code

SIC	Product	Percent of procurement
3721	Aircraft.....	54.06
3722	Aircraft engines and parts.....	13.07
3662	Radio, TV communication equipment.....	8.64
3729	Aircraft equipment, n.e.c.....	6.11
3811	Scientific instruments.....	2.49
3723	Aircraft propellers and parts.....	2.11
3571	Computing and related machines.....	2.03
3621	Motors and generators.....	1.65
8911	Engineering and architectural services.....	1.53
1951	Small arms, 30 mm and under.....	1.31
3537	Industrial trucks and tractors.....	.73
3611	Electric measuring instruments.....	.66
3599	Miscellaneous machinery.....	.59
1999	Ordnance and accessories, n.e.c.....	.57
3861	Photographic equipment.....	.55
3821	Mechanical measuring devices.....	.42
3541	Metal-cutting machine tools.....	.37
3569	General industry machines, n.e.c.....	.31
3613	Switchgear and switchboards.....	.27
3717	Motor vehicles and parts.....	.25
3612	Transformers.....	.24
3651	Radio and TV receiving set.....	.21
1941	Sighting and fire-control equipment.....	.17
3679	Electronic components, n.e.c.....	.15
1511	General building contractors.....	.13
3531	Construction machinery.....	.13
3429	Hardware, n.e.c.....	.10
3629	Electric industrial goods, n.e.c.....	.10
2295	Coated fabric, not rubberized.....	.09
3561	Pumps and compressors.....	.09
3536	Hoists, cranes, and monorails.....	.08
3715	Truck trailers.....	.08
3696	X-ray apparatus and tubes.....	.07
1731	Electrical work.....	.06
3443	Boiler-shop products.....	.06
3642	Lighting fixtures.....	.06
3871	Watches and clocks.....	.05
2399	Textile products, n.e.c.....	.04
2499	Wood products, n.e.c.....	.04
3494	Valves and pipe fittings.....	.04
3542	Metal-forming machine tools.....	.04
3585	Refrigeration machinery.....	.04
2731	Books, publishing, printing.....	.02
3011	Tires and inner tubes.....	.02
3694	Engine electrical equipment.....	.02
3831	Optical instruments and lenses.....	.02
1799	Special-trade contractors, n.e.c.....	.01
2599	Furniture and fixtures, n.e.c.....	.01
3069	Rubber products, n.e.c.....	.01
3449	Miscellaneous metal work.....	.01
3461	Metal stampings.....	.01
3511	Steam engines and turbines.....	.01
3545	Machine-tool accessories.....	.01
3566	Power-transmission equipment.....	.01
3622	Industrial controls.....	.01
3643	Current-carrying devices.....	.01
3681	Storage batteries.....	.01
3731	Shipbuilding and repairing.....	.01
1929	Ammunition, n.e.c.....	(1)
2241	Narrow-fabric mills.....	(1)
2392	Housefurnishings, n.e.c.....	(1)
2851	Paints and enamels.....	(1)
3499	Fabricated metal products, n.e.c.....	(1)
3564	Blowers and fans.....	(1)
3661	Telephone, telegraph apparatus.....	(1)
3841	Surgical and medical instruments.....	(1)
3999	Miscellaneous products, n.e.c.....	(1)
	First destination transportation.....	.01
	Total.....	100.00

1 Less than 0.005 percent.

Definition of aircraft procurement

The aircraft and associated equipment procurement funds covered in the analysis are shown in table 4. As indicated in the table, funds from Air Force, Navy, and Army appropriations for relevant budget activities were included. For analysis of product composition, however, the total aircraft and associated equipment funds were categorized as follows: Weapon systems costs, spares and repair parts, modifications of inservice aircraft, and other. (See table 5.)

TABLE 4.—*Appropriations and budget activity classes included in aircraft procurement*

Department	Appropriation title	Budget activity
Air Force-----	Aircraft procurement-----	1. Combat aircraft. 2. Airlift aircraft. 3. Trainer aircraft. 4. Other aircraft. 5. Modifications of inservice aircraft. 6. Spares and repair parts. 7. Other support.
Navy-----	Procurement of aircraft and missiles, Navy (PAMN).	1. Combat aircraft. 2. Airlift aircraft. 3. Trainer aircraft. 4. Other aircraft. 5. Modification of aircraft. 6. Spares and repair parts. 7. Support equipment and facilities.
Army-----	Other procurement, Navy (OPN)----- Procurement of equipment and missiles, Army (PEMA).	3. 1940 aircraft support equipment. 1. Aircraft. 2. Aircraft spares and repair parts.

Methodology

The general methodology used to estimate the first-order impact consisted of determining and assigning SIC codes to the products directly procured by DOD. It was necessary to determine whether items were to be contractor-furnished equipment (CFE) or government-furnished equipment (GFE) before the first-order product distribution could be developed. There were, however, exceptions to this procedure. Certain auxiliary items being supplied by prime contractors were identified in the data sources and assigned product codes relevant to the items. Examples of such items are to be found in the category "Peculiar Ground Support Equipment." These items, required to make an aircraft subsystem or end-item of equipment operational in its own environment, are usually supplied by the airframe prime contractor.

The necessary data collection began with the Air Force, Navy, and Army procurement lists authorized by the Military Departments to OSD as part of the FYFSEP.^{9,10,11} These lists showed the service distribution of the fiscal year 1964 aircraft TOA as follows: Air Force, 56 percent; Navy, 35 percent; and Army, 9 percent.

The line items relating to aircraft and associated equipment in these procurement lists are highly aggregative. For example, a line item such as Spares and repair parts may represent a multimillion-dollar aggregation of products covering many SIC codes. Consequently the data from these sources were used primarily to establish control totals, and further product detail breakdown was attempted wherever necessary.

The procurement lists' line items were categorized as shown in table 5. SIC distributions were derived for these categories, and when they were weighted by the appropriate values as shown in table 5 the distribution shown in table 3 resulted.

TABLE 5.—*Categorization of Aircraft Procurement TOA for Analysis of Product Composition*

<i>Category</i>	<i>Percentage of DOD aircraft procurement TOA, fiscal year 1964</i>
Weapon system costs (or aircraft program costs)	58.71
Spares and repair parts	19.99
Modifications of inservice aircraft	14.06
Other	¹ 7.24
Aircraft support equipment (OPN3—1940)	2.97
Component improvement	1.19
Common aerospace ground equipment	.93
Other production charges	.92
Industrial facilities	.67
Avionic/airmanent support equipment	.20
War consumables	.15
Miscellaneous	.20
First destination transportation	.01
Total	100.00

¹ Sum of remaining percentages.

Weapon system costs. The service distribution of the 58.71 percent of aircraft procurement TOA covered by the aircraft program cost was Air Force, 31.91 percent; Navy, 20.60 percent; and Army, 6.20 percent.

Weapon system costs consist of all procurement TOA associated with the procurement of specific aircraft. As defined in the Air Force "Program Data and Cost Detail,"¹³ aircraft weapon system cost consists of the gross flyaway and peculiar support costs associated with each type of aircraft. The government, however, does not contract with a single company for the complete weapon system. The usual procedure is to issue separate contracts for major items and to have the airframe producer integrate and assemble the items into a completed aircraft. Consequently, Weapon system cannot be product-coded per se. It was necessary to disaggregate this category into the items being procured by the government before product codes could be assigned.

The subdivisions given in table 6, obtained from budget backup exhibits,¹⁴⁻¹⁶ represent the first stage in the disaggregation of the aircraft program cost.

The airframe subcategory covers the activities of the prime integrating contractor, i.e., the production of the airframe and the integration of airframe and equipment into completed aircraft. The SIC product code 3721, aircraft, was assigned to this category.

TABLE 6.—*Subdivisions of aircraft weapon system costs*

Subdivision	Percentage
Flyaway.....	89.2
Airframe.....	64.1
Engine and engine accessories.....	13.6
Electronics and communications.....	7.8
Armament and other government-furnished aerospace equipment (A&OGFAE).....	3.7
Peculiar ground support equipment (peculiar GSE).....	5.4
Training equipment.....	4.6
Preproduction costs.....	.8
Total.....	100.0

¹ Sum of items in subdivision "Flyaway."

The additional subcategories of aircraft flyaway cost, i.e., engine and engine accessories, electronics and communications, and armament and other government-furnished aerospace equipment (A&OGFAE), are such aggregates of end-items furnished to prime aircraft integrating contractors as GFE. Examples of major end-items included under these headings are turbofan engines; gas turbine compressors and voltage regulators in engine accessories; radios, radars and navigation computer sets in electronics and communications; flight instruments, wheel and brake assemblies, and armament items in A&OGFAE. Disaggregation of these subcategories was therefore necessary to derive product-coded distributions.

The four-digit SIC-product-coded distribution for government-furnished Aircraft engines and engine accessories given in table 7 was derived from unpublished data obtained from the Department of the Navy.¹⁷ The data consisted of a list of the values of specific items being supplied as GFE for each Navy aircraft being procured with fiscal year 1965 funds. The dollar totals correspond to the totals shown in the Navy's exhibit P-5 covering fiscal year 1965 aircraft procurement issued May 20, 1964.¹⁸

TABLE 7.—*Engine and engine accessories product-coded distribution*

SIC	Product	Percentage
3561	Pumps and compressors.....	0.12
3611	Electric measuring instruments.....	.05
3612	Transformers.....	.53
3613	Switchgear and switchboards.....	.66
3621	Motors and generators.....	2.99
3691	Storage batteries.....	.04
3694	Engine electrical equipment.....	.03
3722	Aircraft engines and parts.....	90.60
3723	Aircraft propellers and parts.....	4.89
8911	Engineering and architectural services.....	.09
	Total.....	100.00

Similar detail was not obtained for Air Force and Army aircraft. The assumption was made that the distribution obtained from the Navy data was also applicable to the other services' procurement of items in this area. Aircraft engine costs accounted for about 87 percent of the distribution obtained from the Navy data, and since such costs are undoubtedly the major cost component in this subcategory for the Air Force and the Army, it is unlikely that the use of the Navy data to represent all three services introduces any sizable distortion of

the distribution that would have been obtained if data for all three services had been available.

Tables 8 and 9 present the 4-digit SIC-product-coded distributions for Aircraft electronics and communications GFE and for aircraft A&OGFAE. These distributions were derived from unpublished data obtained from the Department of the Navy¹⁷ and the Department of the Air Force.¹⁹

TABLE 8.—*Electronics and communications product-coded distribution*

SIC	Product	Percentage
1941	Sighting and fire-control equipment.....	3.49
1999	Ordnance and accessories, n.e.c.....	2.96
3461	Metal stampings.....	.01
3571	Computing and related machines.....	12.75
3611	Electric measuring instruments.....	(1)
3621	Motors and generators.....	.01
3642	Lighting fixtures.....	.14
3651	Radio and TV receiving sets.....	.24
3661	Telephone, telegraph apparatus.....	.07
3662	Radio, TV communication equipment.....	69.97
3679	Electronic components, n.e.c.....	.17
3729	Aircraft equipment, n.e.c.....	.30
3811	Scientific instruments.....	3.04
3821	Mechanical measuring devices.....	.01
3861	Photographic equipment.....	5.24
3871	Watches and clocks.....	.21
8911	Engineering and architectural services.....	1.39
	Total.....	100.00

¹ Less than 0.005 percent.

TABLE 9.—*Armament and other government-furnished aerospace equipment product-coded distribution*

SIC	Product	Percentage
1929	Ammunition, n.e.c.....	0.07
1941	Sighting and fire-control equipment.....	.05
1951	Small arms, 33 mm and under.....	17.79
1999	Ordnance and accessories, n.e.c.....	4.42
2241	Narrow-fabrics mills.....	.01
2392	Housefurnishings, n.e.c.....	.02
2399	Textile products, n.e.c.....	.59
2731	Books, publishing, printing.....	.26
2851	Paints and allied products.....	.07
3011	Tires and inner tubes.....	.29
3069	Rubber products, n.e.c.....	.12
3429	Hardware, n.e.c.....	(1)
3443	Boiler-shop products.....	(1)
3461	Metal stampings.....	.13
3493	Valves and pipe fittings.....	.56
3511	Steam engines and turbines.....	.15
3561	Pumps and compressors.....	.10
3564	Blowers and fans.....	.02
3571	Computing and related machines.....	4.31
3599	Miscellaneous machinery.....	.02
3611	Electric measuring instruments.....	.01
3612	Transformers.....	.29
3613	Switchgear and switchboards.....	.33
3621	Motors and generators.....	2.69
3629	Electric industrial goods, n.e.c.....	1.17
2642	Lighting fixtures.....	.01
3651	Radio and TV receiving sets.....	2.80
3662	Radio, TV communication equipment.....	5.10
3679	Electronic components, n.e.c.....	1.70
3722	Aircraft engines and parts.....	8.23
3723	Aircraft propellers and parts.....	2.91
3729	Aircraft equipment, n.e.c.....	9.80
3811	Scientific instruments.....	29.71
3821	Mechanical measuring devices.....	5.83
3831	Optical instruments and lenses.....	.03
3824	Surgical appliances and supplies.....	.01
3871	Watches and clocks.....	.35
3909	Miscellaneous products, n.e.c.....	.01
8911	Engineering and architectural services.....	.04
	Total.....	100.00

¹ Less than 0.005 percent.

The data obtained from both services related to fiscal year 1965 procurement funding. For the Navy the product detail obtained was similar in coverage to that of Engines and engine accessories. For the Air Force, coverage was incomplete on most of the major aircraft included in the aircraft buy shown in the Air Force procurement list.¹¹ On the average, the detail provided in the P-5 exhibit of October 1, 1965,²⁰ accounted for 55 percent of the values shown for these aircraft in the electronics and communications subcategory and 59 percent in the A&OGFAE area. The product detail provided was used to distribute the corresponding totals shown for these aircraft. Further, the P-5 totals for the few major aircraft buys for which no product detail was supplied in the Air Force procurement list were distributed by the product detail supplied for aircraft matched on the basis of similarity of mission and aircraft characteristics as described in the Air Force Weapons Dictionary.²¹

In a like fashion, Army aircraft electronics and communications and A&OGFAE P-5²² totals were distributed by using available data for Navy aircraft selected on the basis of similarity of mission and aircraft characteristics as described in the Army and Navy Weapons Dictionary.^{23, 24} The product-coded distributions derived for each service were then combined into the DOD distributions shown above, using the values shown in the P-5 exhibits as weights.

An aircraft flyaway 4-digit SIC-product-coded distribution was derived by weighting the airframe, engines and engine accessories, electronics and communication, and A&OGFAE distributions. The relative weights used for this combination were based on the values given in table 7 for these subcategories of aircraft program costs. The flyaway distribution, as will be noted, was used to distribute categories of aircraft procurement for which no product composition was obtained.

Table 10 presents the four-digit SIC-product-coded distribution for aircraft peculiar ground support equipment (GSE). Peculiar GSE, as noted previously, includes items associated with particular aircraft that are required to make the aircraft's subsystems, or end-items of equipment, operational in their own environment. The equipment, literally composed of hundreds of items for each aircraft, is in the main supplied by the aircraft's contractors.

TABLE 10.—*Peculiar ground support equipment product-coded distribution*

SIC	Product	Percentage
3429	Hardware, n.e.c.	2.60
3036	Hoists, cranes, and monorails	1.60
3537	Industrial trucks and tractors	6.05
3569	General industry machines, n.e.c.	8.20
3571	Computing and related machines	9.60
3611	Electric measuring instruments	7.45
3662	Radio, TV communication equipment	50.75
3722	Aircraft engines and parts	13.75
	Total	100.00

The basic sources for the distribution shown in table 10 were two documents listing the ground equipment requirements for the C-141A²⁵ and the F-111A.²⁶ The additional information necessary

to permit product-coding of the listed items was obtained through the local offices of the airframe prime contractors.^{27, 28} To reduce the problem to reasonable size, product information was obtained on all F-111A peculiar aerospace ground equipment (AGE) requirements whose budgetary total target price was \$150,000 or more and on all C-141A peculiar AGE requirements for which the item unit cost was \$3,000 or more and whose total cost was \$100,000 or more in fiscal year 1965 or fiscal year 1966. A rough estimate of the coverage obtained by these samples is over 80 percent of the F-111A and almost 50 percent of the C-141A peculiar AGE requirements in dollar terms as shown in the source documents.^{25, 26} The period covered by these distributions was fiscal year 1965-66 for the C-141A and all known or recommended F-111A peculiar AGE requirements as of October 1965. The two distributions were weighted equally to result in the distribution shown in table 10. The rationale for the equal weighting was the almost equal procurement funding for subsonic and supersonic aircraft in the FYFSFP.^{9, 10, 11}

Training equipment consists primarily of weapon system trainers or flight simulators, used to train flight crews, and mobile training units, used to train aircraft maintenance technicians. Preproduction costs seem to be a miscellany of advance-buy items and nonrecurring costs involved in starting up aircraft production, e.g., tooling, engineering. No usable detail could be obtained for either of these aircraft program cost subcategories. They were assumed to have the flyaway product-coded distribution.

The product-coded distribution for the weapon system cost category was obtained by weighting the product-coded distribution of the aircraft flyway subdivision, the peculiar GSE subdivision, and the training equipment and preproduction costs subdivisions, by the values shown in table 7, subdivision of aircraft weapon system costs.

Spares and repair parts. The service distribution of 19.99 percent of aircraft procurement TOA covered by the aircraft spares and repair parts category was Air Force, 11.51 percent; Navy, 7.08 percent; and Army, 1.40 percent.

TABLE 11.—*Subdivisions of aircraft spares and repair parts procurement*

<i>Subdivision</i>	<i>Percentage</i>
Aircraft components.....	26.0
Engines.....	13.3
Engine components.....	20.0
Instruments and components.....	17.6
Electronics and communications components.....	14.6
Fire-control components.....	1.6
Other aircraft components.....	6.9
Total.....	100.0

Aircraft spares and repair parts consist of initial spares and replenishment spares. Initial procurement spares include spare engines and air-vehicle, peculiar AGE, and training-device spares.¹³ Replenishment spares include all items procured as follow on support but do not include engines procured only through initial procurement spares funding.

The categorization given in table 11 represents the first stage in the disaggregation of the aircraft spares and repair parts funding. The distribution was derived by combining two separate distributions, one for initial spares and the other for replenishment spares. The sources for these basic data were personnel of the Air Force Logistics Command (AFLC).²⁹ The initial-spares distribution was based on the fiscal year 1964 program and required adjusting to compensate for a disproportionate allocation to electronics and communications components in that year. The replenishment-spares distribution reflects the fiscal year 1965 program. The weights used to combine the two distributions were Air Force fiscal year 1964 program dollars for each of these categories, obtained from the same sources.

The aircraft components were coded 3729, aircraft equipment, n.e.c.; the engines 3722, aircraft engines and parts; and the fire-control components 3662, radio, TV communication equipment. Since the product detail needed to derive product-coded distributions for the remaining categories was not available, adjusted aircraft flyaway subcategory distributions were used. Thus an engine components product-coded distribution was derived from table 7, "Engine and Engine Accessories Product-Coded Distribution," by removing the allocation to engines. An electronics and communication product-coded distribution was derived from table 8, "Electronics and Communications Product-Coded Distribution," by removing the allocation to fire-control items. The remaining two spares and repair parts categories, instruments and components, and other aircraft components, were assumed to have the A&OGFAE aircraft flyaway subcategory distribution given in table 9. The distributions for the subdivisions of the aircraft spares and repair parts procurement were weighted by the values in table 11, subdivisions of aircraft spares and repair parts procurement.

Modifications of inservice aircraft. The service distribution of the 14.06 percent of aircraft procurement TOA covered by the modifications of in-service aircraft category was Air Force, 9.66 percent; Navy, 3.71 percent; and Army, 0.69 percent.

This category covers the modifications cost of inservice aircraft AGE, and training equipment and components thereof required as a result of safety of flight or aircraft configuration modifications.¹³ An unpublished Air Force budget-supporting document³⁰ supplied the fiscal year 1964 breakdown shown in the accompanying tabulation.

Item	Percent
Kits (hardware)-----	45.4
Labor and materials-----	43.5
Engineering-----	8.0
Technical data-----	1.6
Related AGE procurement-----	1.5
Total-----	100.0

No information was obtained on the product composition of the kits and the AGE requirements. However, the 1963 Census "Numerical List of Manufactured Products"⁵ lists the five-digit product class 37214, modifications, conversions, and overhaul of previously accepted aircraft. Consequently kits and labor and materials were coded 3721, aircraft. Engineering and technical data were assigned to 8911,

engineering and architectural services. The related AGE procurement was assumed to have the same product-coded distributions as the common AGE procurement, described later in this paper.

Other. The other category as used here is not a DOD classification. The DOD classification shown in the procurement lists^{9, 10, 11} contains the subdivisions shown for this category in table 5.

TABLE 12.—*Aircraft support equipment product-coded distribution*
[OPN3-1940]

SIC	Product	Percent
2295	Coated fabric, not rubberized	2.92
2499	Wood products, n.e.c.	1.60
2599	Furniture and fixtures, n.e.c.	.38
3443	Boilershop products	1.88
3449	Miscellaneous metal work	.38
3499	Fabricated metal products, n.e.c.	.09
3531	Construction machinery	4.42
3537	Industrial trucks and tractors	8.75
3541	Metal-cutting machine tools	1.22
3542	Metal-forming machine tools	.09
3561	Pumps and compressors	1.03
3566	Power transmission equipment	.47
3569	General industry machines, n.e.c.	.94
3571	Computing and related machines	10.07
3585	Refrigeration machinery	1.41
3599	Miscellaneous machinery	18.16
3611	Electric measuring instruments	10.72
3621	Motors and generators	4.33
3622	Industrial controls	.47
3629	Electrical industrial goods, n.e.c.	.38
3642	Lighting fixtures	1.22
3643	Current-carrying devices	.28
3662	Radio, TV communications equipment	7.15
3693	X-ray apparatus and tubes	.38
3694	Engine electrical equipment	.38
3715	Truck trailers	2.54
3717	Motor vehicles and parts	8.28
3722	Aircraft engines and parts	4.14
3729	Aircraft equipment, n.e.c.	.56
3731	Shipbuilding and repairing	.38
3811	Scientific instruments	2.07
3831	Optical instruments and lenses	.85
3861	Photographic equipment	1.79
3999	Miscellaneous products, n.e.c.	.09
8911	Engineering and architectural services	.28
	Total	100.00

The product-coded distribution of OPN3-1940, aircraft support equipment, is given in table 12. The 2.97 percent of the aircraft procurement TOA accounted for by OPN3-1940 is solely Navy procurement. The product-coded distribution was derived from three source documents, the procurement list,⁹ the P-1 exhibit,³¹ and the budget backup justification to the fiscal year 1967 budget submission.³² The first two documents provided a mix of line items of which some could be product-coded on the basis of the information provided and others required additional product detail. This additional detail for products being funded under fiscal year 1965 or fiscal year 1966 TOA was obtained from the budget backup justification.

Of the total DOD aircraft procurement accounted for by component improvement, other production charges, and miscellaneous categories, the service distributions are shown in the accompanying tabulation. Component improvement, as defined in the Air Force "Program Data and Cost Detail,"¹³ covers the procurement of items and other costs incurred for production-component improvement incident to

aircraft, including funds for manufacturing studies. Since no product detail was obtained for the other two categories, they were assumed to have the aircraft flyaway product-coded distribution.

Category	DOD total	Percent		
		Air Force	Navy	Army
Component improvement.....	1.19	0.69	0.43	0.07
Other production charges.....	.92	.52	.40	
Miscellaneous.....	.20			.20

The service distribution of the 0.93 percent of aircraft procurement TOA attributable to the common AGE category was Air Force, 0.60 percent, and Navy, 0.33 percent. The product-coded distribution for this category shown in table 13 was derived from unpublished data obtained from the Department of the Air Force.³³ The source data supplied product detail for items over \$500,000, accounting for approximately 50 percent of the total fiscal year 1966 requirements. Table 13 is the distribution derived from the product-coding of the over-\$500,000 items.

TABLE 13.—Common aerospace ground equipment product-coded distribution

SIC	Product	Percent
3537	Industrial trucks and tractors.....	23.87
3611	Electric measuring instruments.....	6.77
3612	Transformers.....	1.99
3621	Motors and generators.....	13.80
3662	Radio, TV communication equipment.....	39.62
3693	X-ray apparatus and tubes.....	4.64
3722	Aircraft engines and parts.....	5.67
3861	Photographic equipment.....	3.64
	Total.....	100.00

The service distribution of the 0.67 percent of aircraft procurement TOA accounted for by the industrial facilities category was Air Force, 0.42 percent; Navy, 0.18 percent; and Army, 0.07 percent.

Industrial facilities funding provides for the procurement and nonrecurring maintenance of industrial machinery, equipment, and facilities required for expansion of government-owned or private plants necessary for fabrication, modification, or maintenance of aircraft and aircraft components and equipment. The funding also includes the costs of preparation for shipment of industrial machinery, equipment, and tools and the modernization (replacement) of machine tools.¹³ The product-coded distribution for this category (see table 14) is the distribution relevant to the subcategory industrial facilities of the Army's budget activity 10—Production-base support, described in the section "DOD Weapons, Vehicles, and Other Support Procurement."

TABLE 14.—*Industrial facilities product-coded distribution*

SIC	Product	Percent
1511	General building contractors.....	18.50
1731	Electrical work.....	9.25
1799	Special trade contractors, n.e.c.....	1.45
3536	Hoists, cranes, and monorails.....	3.47
3541	Metal-cutting machine tools.....	49.71
3542	Metal-forming machine tools.....	5.20
3545	Machine-tool accessories.....	2.31
3599	Miscellaneous machinery.....	7.51
8911	Engineering and architectural services.....	2.60
	Total.....	100.00

The avionic/armament support equipment, which accounted for 0.20 percent of the aircraft procurement TOA, was an Army procurement line item.¹⁰ No information on the product composition of the item was obtained. The product-coded distribution for peculiar GSE, table 10, was assumed applicable for this category.

The war consumables category, which accounted for 0.15 percent of the aircraft procurement TOA, was an Air Force procurement line item.¹¹ The funding is for procurement of items of equipment involved in the stockage requirements for war consumption including auxiliary fuel tanks, pylons, and ejector racks.¹³ The product-coded distribution for this category (0.6 percent assigned to 1999 and 99.4 percent to 3729) was derived from an unpublished 1965 budget-support document.³⁴

The 0.01 percent of aircraft procurement attributable to first destination transportation reflects an Army procurement line item.¹⁰ This item is identified in the summary table but is not product-coded, since no information was obtained on which coding could be based.

As noted previously, the summary DOD aircraft procurement distribution is shown in table 3. This summary distribution is the result of weighting the distributions of the aircraft categories given in table 5, by the values shown in the same table.

MILITARY SHIP PROCUREMENT

Summary of findings

The total ship procurement distribution is presented in table 15. The two largest codes, SIC 3731, shipbuilding and repairing, and SIC 3662, radio, TV communication equipment, accounted for 76 percent of the total. The six largest codes represent 88 percent of ship procurement, and the remaining 12 percent involved 33 additional codes.

TABLE 15.—*First-order distribution of DOD ship procurement by 4-digit SIC product code*

SIC	Product	Percent
3731	Shipbuilding and repairing.....	60.48
3662	Radio, TV communication equipment.....	16.44
3443	Boiler-shop products.....	6.12
1941	Sighting and fire-control equipment.....	2.25
3511	Steam engines and turbines.....	1.80
3571	Computing and related machines.....	1.71
1911	Guns, howitzers, and mortars.....	1.44
3732	Boat building and repairing.....	1.17
1999	Ordnance and accessories, n.e.c.....	.99
3541	Metal-cutting machine tools.....	.85
3559	Special-industry machinery, n.e.c.....	.73
3542	Metal-forming machine tools.....	.53
3811	Scientific instruments.....	.51
3519	Internal-combustion engines.....	.49
3531	Construction machinery.....	.45
3613	Switchgear and switchboards.....	.45
3691	Storage batteries.....	.45
3621	Motors and generators.....	.39
3569	General-industry machines, n.e.c.....	.36
3564	Blowers and fans.....	.30
3629	Electric industrial goods, n.e.c.....	.27
3561	Pumps and compressors.....	.22
3332	Primary lead.....	.18
3566	Power-transmission equipment.....	.18
3599	Miscellaneous machinery.....	.18
3661	Telephone, telegraph apparatus.....	.18
3494	Valves and pipe fittings.....	.14
3391	Iron and steel forgings.....	.09
3585	Refrigeration machinery.....	.09
3651	Radio and TV receiving sets.....	.09
3821	Mechanical measuring devices.....	.09
2599	Furniture and fixtures, n.e.c.....	.08
3555	Printing-trades machinery.....	.08
3622	Industrial controls.....	.08
3548	Metalworking machinery, n.e.c.....	.05
3357	Nonferrous wire drawing, etc.....	.04
2653	Corrugated shipping containers.....	.03
3831	Optical instruments and lenses.....	.02
3611	Electric measuring instruments.....	(1)
	Total.....	100.00

¹ Less than 0.0005 percent.

Definition of ship procurement

Two budgetary classifications were included in the RAC ship-procurement category. The shipbuilding and conversion, Navy (SCN) appropriation is the largest and accounted for 90 percent of TOA in the RAC category in fiscal year 1965. The other budget component included is budget activity 1, ship support equipment, other procurement Navy (OPN) appropriation, which funds equipment for ships currently in the fleet.⁹ It includes ships-support equipment, shipboard components, other support equipment, and Polaris-support equipment.

Methodology for shipbuilding and conversion, Navy

The analysis of SCN TOA dollars involved several steps. Steps 1 to 3 and 4 to 6 are independent operations that are combined in step 7 to yield the final estimates. Further description of the budget categorization used is presented later in this section.

Step 1: TOA costs from the Navy procurement list¹⁰ were divided by ship type, e.g., destroyer escorts (DE), ammunition ships (AE), nuclear attack submarines (SSN). The ship types were then combined into groups—auxiliary ships, attack ships, amphibious ships, logistic

ships, carriers, submarines, and miscellaneous ships—on the basis of general technical and functional characteristics and similarity of budget component cost distributions. Bureau of Ships personnel assisted in establishing the groupings shown in table 16.

Step 2: TOA for each ship type was then divided into four "budget categories"—basic construction, electrical and mechanical equipment, electronics, and weapons—using percentages obtained from P8-8a exhibits.³⁵ Approximately 93 percent of SCN could be accounted for by using these data. For the other 7 percent, ship types for which backup data were not available, the average percentage distribution for other ships in the same group was applied to TOA to yield the dollar distribution by budget category.

Step 3: The dollar figures by budget category for each ship type obtained in step 2 were combined across all ship types to yield a total dollar figure for each budget category. Each total was then divided by the sum of the four budget categories (TOA for all ships) to obtain a percentage breakdown of TOA for all ships into the four budget categories. The budget-category weights derived were 66.6 percent for basic construction, 13.9 percent for electrical and mechanical, 12.1 for electronics, and 7.4 for weapons.

Step 4: Lists of prime products and prices for items procured within the electrical and mechanical, electronics, and weapons categories were obtained for one ship of each ship type based on historical data for completed ships.³⁶ Basic construction dollars were coded to SIC code 3731, shipbuilding and repairing. The prime product lists for individual ships were assumed to be representative of all ships of the same type.

TABLE 16.—*Ship groupings*

Category	Group
Auxiliary.....	AD, destroyer tender. AB, ammunition ships. AFS, combat store ships. AGC, icebreaker. AGOR, oceanographic research. AGS, surveying ships. T-AK, cargo ship, large. AKA, cargo ship, attack. AO, oiler, fleet. T-AO, tanker. AOR, oiler, fleet replenishment. AS, tender, sub, non-FBM. ATS, tug, salvage. MCS, mine countermeasures, support ship. MSS, mine sweeper, special. T-AG (FDL), logistics, fast deployment.
Logistic.....	LSV, cargo ship, vehicle.
Carrier.....	CVA, carrier, attack aircraft.
Attack.....	DD, destroyer. DE, escort ships. DLG, frigate, guided missile. CG, cruiser, guided missile.
Amphibious.....	LPD, amphibious transport dock. LSD, landing ship, dock. LST, landing ship, tank. LPH, amphibious assault ship. AGC, amphibious force flagship. AOE, combat support ship, fast.
Submarines.....	APSS, transport, submarine. SSN, submarine, nuclear.
Miscellaneous surface ships.....	MSO, mine sweeper, ocean. PGH, gunboat, hydrofoil. PGM, gunboat, motor. Small boats.

Step 5: For each budget category the amount spent per ship type on each prime product was obtained by multiplying the cost of each product on the representative ship by the number of ships of that type being built. The total cost of each prime product within each budget category was then obtained by summing the amount spent per ship type over all ship types (many prime products appeared in more than one ship type).

Step 6: The prime products in each budget category were coded to SIC product codes, and dollars were aggregated by four-digit SIC code. A percentage distribution by SIC code was developed for each budget category by dividing the dollar figure for each code by the sum of the prime product costs within that budget category. (See table 17.)

TABLE 17.—*First-order distributions for electrical and mechanical, electronics, and ordnance budget categories*

Category	SIC	Percent	Category	SIC	Percent
Electrical and mechanical	3443	45.93	Electrical and mechanical—Con.	3651	.45
	3511	14.30			
	3662	5.02	Total		100.00
	3613	3.94			
	3811	3.94	Electronics	3662	84.37
	3531	3.41		3571	13.45
	3519	2.91		3661	1.74
	3569	2.50		3651	.31
	3629	2.27		3611	.13
	3632	1.97	Total		100.00
	3621	1.79			
	3566	1.73	Ordnance	1941	33.16
	3731	1.70		3662	27.51
	1999	1.62		1911	21.97
	3332	1.37		1999	10.78
	3564	1.32		3571	3.80
	3691	.97		3599	2.73
	3561	.92		3811	.05
	3391	.73	Total		100.00
	3585	.63			
	3821	.58			

TABLE 18.—*First-order distribution of shipbuilding and conversion, Navy, procurement by 4-digit SIC product codes*

SIC	Product	Percent
3731	Shipbuilding and repairing	66.8
3662	Radio, TV communication equipment	13.0
3443	Boiler-shop products	6.4
1941	Sighting and fire-control equipment	2.5
3511	Steam engines and turbines	2.0
3571	Computing and related machines	1.9
1911	Guns, howitzers, mortars, and related equipment, over 30 mm	1.6
1999	Ordnance and accessories, n.e.c.	1.0
3531	Construction machinery	.5
3613	Switchgear and switchboards	.5
3811	Scientific instruments	.5
3519	Internal-combustion engines	.4
3569	General-industry machines, n.e.c.	.4
3621	Motors and generators	.3
3629	Electric industrial goods, n.e.c.	.3
3732	Boat building and repairing	.3
3332	Primary lead	.2
3564	Blowers and fans	.2
3566	Power-transmission equipment	.2
3599	Miscellaneous machinery	.2
3661	Telephone, telegraph apparatus	.2
3391	Iron and steel forgings	.1
3561	Pumps and compressors	.1
3585	Refrigeration machinery	.1
3651	Radio and TV receiving sets	.1
3691	Storage batteries	.1
3821	Mechanical measuring devices	.1
Total		100.0

Step 7: The percentage figure thus obtained for each SIC code within the four budget categories was then multiplied by the appropriate percentage figure for its budget category obtained in step 3, to yield the percentage that each SIC code was of the TOA for all ships. Codes appearing in more than one budget category were aggregated. Table 18 gives the SIC product-code distribution for SCN.

Ship support equipment (OPN-1)

Analysis of ship support equipment (OPN) consisted of assigning SIC codes to itemized lists of prime products. These lists were obtained from two sources: the Navy procurement list,⁹ and P-1 backup sheets.³¹ The procurement list contains three types of line items: specific products that could be coded directly; miscellaneous groupings of smaller products combined under the line item Items less than \$2 million, and other aggregative categories such as spares and repair parts.

A partial itemization of items less than \$2 million was obtained from the P-1 backup sheets.³¹ These sheets contained lists of all equipment being procured in excess of \$500,000. These lists were coded, and their percentage distribution by SIC code was applied to the control totals for items less than \$2 million given in the procurement list. The dollar figures obtained for SIC codes for items less than \$2 million were combined with dollar figures for specific products in the procurement list. TOA for aggregative categories for which product detail was not available was allocated by SIC in the same proportions as the previously derived distribution. The distribution for total ship support equipment is presented in table 19. The distribution was combined (using TOA weights) with the distribution obtained for SCN to yield the distribution for total ship procurement shown in table 15.

TABLE 19.—*First-order distribution of ship support equipment (OPN-1) procurement by 4-digit SIC product code*

SIC	Product	Percent
3662	Radio, TV communication equipment.....	47.7
3732	Boat building and repairing.....	9.1
3541	Metal-cutting machine tools.....	8.6
3559	Special industry machinery, n.e.c.....	7.4
3542	Metal-forming machine tools.....	5.3
3691	Storage batteries.....	3.6
3443	Boiler shop products.....	3.5
3731	Shipbuilding and repairing.....	3.1
3494	Valves and pipe fittings.....	1.4
3519	Internal-combustion engines.....	1.3
3561	Pumps and compressors.....	1.3
3564	Blowers and fans.....	1.2
3621	Motors and generators.....	1.2
1999	Ordinance and accessories, n.e.c.....	.9
2599	Furniture and fixtures, n.e.c.....	.8
3555	Printing-trades machinery.....	.8
3622	Industrial controls.....	.8
3811	Scientific instruments.....	.6
3548	Metalworking machinery, n.e.c.....	.5
3357	Nonferrous wire drawings, etc.....	.4
2653	Corrugated shipping containers.....	.3
3831	Optical instruments and lenses.....	.2
	Total.....	100.0

TABLE 20.—Percentage distribution of cost items, by ship type ¹

Cost category	Submarine tender, AS	Amphibious transport, dock, LPD	Destroyer escort, DE	Fast combat support ship, AOE
1. Hard core:				
Lead costs.....	10	2	0	3
Basic construction or conversion.....	52	69	37	70
Change orders.....	3	3	5	6
Electronics GFM.....	2	5	17	1
Nonelectronics GFM.....	7	3	16	4
Post delivery.....	3	2	4	5
Other costs.....	0	1	0	0
Weapons GFM.....	19	1	7	(?)
Total.....	96	86	86	89
2. Projected growth:				
Future characteristics changes.....	1	2	7	1
Projected escalation.....	1	7	3	8
Electronics growth.....	(?)	2	0	(?)
Other growth.....	1	3	3	2
Weapons growth.....	1	(?)	1	(?)
Total.....	4	14	14	11
Total end cost.....	100	100	100	100

¹ Based on cost estimates per ship, derived from fiscal year 1963 data from P8-8a budget backup sheets.

² Less than 0.5 percent.

Additional detail on SCN budget categorization

SCN budget component outline:

1. Total hard core:

A. Basic construction.

B. Government-furnished materiel:

Nonelectronics.

Electronics.

Weapons.

2. Total projected growth:

A. Basic construction:

Projected escalation.

B. Government-furnished materiel:

Electronics growth.

Weapons growth.

Description of categories. Ship cost can be divided into the categories just shown in the budget component outline. Category 1 represents current price estimates of the planned ship type, given its present design characteristics. Category 2 is used to incorporate expected price increases over the period between funding and completion of the ships. This category attempts to provide for anticipated changes in ship characteristics, shipboard electronics, weapons, etc.

The P8-8a backup sheets contain cost summaries by ship type. Hard core (category 1) costs are divided into eight subcategories: Lead costs, basic construction or conversion, change orders, electronics GFM, nonelectronics GFM, post delivery, other costs, and weapons GFM. Total projected growth (category 2) was divided into future characteristics changes, projected escalation, electronics growth, other growth, and weapons growth. Table 20 presents examples of the type of cost categorization contained in the P8-8a exhibits.

Because prime product lists were given on a budget category basis, it was necessary to relate the cost classification given in the P8-8a to the four major budget categories. To accomplish this it was necessary to investigate the contents of the cost items shown in table 20. A brief description of each category follows.

Lead costs: These costs generally may be divided into two types: test and instrumentation, and development of working drawings. Test and instrumentation funds are usually established to account for the government effort involved in providing shock tests, weapon evaluation, etc. The development of working drawings usually is performed by the shipbuilding contractor. The composition of lead costs varies with respect to contracting policy and ship type. This item was distributed proportionately to the final budget categories.

Basic construction. Dollars in this category represent the prime contract award for the shipbuilding effort. This category includes costs associated with CFE, basic materials purchased, shipyard overhead, and profits.

Nonelectronics (GFM): This category represents electrical and mechanical equipment that the government has decided to supply to the contractor. There is basically little difference between the types of equipment being furnished under this category and the electrical and mechanical items usually found in CFE.

Electronics (GFM): Dollars in this category represent items that are always supplied by the government. Within a given ship type and "ship-group" category there is usually a great deal of stability with respect to electronics package dollars. Integration of systems found on other ships (such as sonar detecting and fire control) but previously foreign to the type in question may introduce changes.

Weapons (GFM): Ordnance items, like electronics, are always furnished by the government. The stability of this category is usually determined by considerations of mission and state of the art.

Change orders and post delivery: Dollars in this category are associated with shipbuilding contract activity and are intended to account for changes in design criteria or equipment selection initiated by the government and to cover the cost of repairing material and equipment damaged during test and evaluation. These cost items were assigned to the basic construction budget category.

Other costs: Navy management activities concerning engineering, quality control, equipment integration, material programing, etc., are included in this category. Assignment of these costs varies with ship types and contract policy. These costs were distributed in the same manner as lead costs.

Future characteristics changes: Growth costs are estimated in an effort to account for changes in mission requirements and ship characteristics. The purpose of this account is to provide funds for anticipated changes in ship construction, nonelectronic (electrical and mechanical) items, electronic equipment, or weapons. Costs under this heading were allocated proportionately to the four budget categories in the same manner as lead costs.

Projected escalation: Anticipated changes in the cost of basic construction generated over the long leadtime of a ship type provide the basis for this budget category. Escalation costs were included in the basic construction budget category.

Electronics growth and weapons growth. These items represent anticipated changes in the costs of electronics and ordnance items. TOA for these items was assigned to the electronics and weapons budget categories.

Other growth: Anticipated costs associated with change orders are included here. Costs were proportionately distributed to the four budget categories.

The distribution of cost items to major budget categories is summarized in figure 1.

Cost item	Budget category				
	Basic construction	Electronics GFM	Nonelectronics GFM	Weapons GFM	Miscellaneous*
1. Lead costs					●
2. Basic construction and conversion	●				
3. Change orders	●				
4. Electronics GFM		●			
5. Nonelectronics GFM			●		
6. Post delivery	●				
7. Other costs					●
8. Weapons GFM				●	
9. Future characteristics changes					●
10. Projected escalation	●				
11. Electronics growth		●			
12. Other growth					●
13. Weapons growth				●	

Fig. 1—Distribution of Cost Items to Budget Categories

*Distributed proportionately among the preceding four budget categories.

DOD MISSILE PROCUREMENT

Summary of findings

The complete distribution of DOD missile procurement by SIC product code is presented in table 21. As indicated, the three largest codes accounted for 82 percent of the total, and the five largest represent 93 percent. Eighteen additional codes are included in the remaining 7 percent.

TABLE 21.—First-order distribution of DOD missile procurement by 4-digit SIC product code

SIC	Product	Percent
1925	Complete guided missiles.....	34.97
3662	Radio, TV communication equipment.....	28.47
3722	Aircraft engines and parts.....	19.39
3729	Aircraft equipment, n.e.c.....	8.81
3545	Machine tool accessories.....	1.70
3541	Metal-cutting machine tools.....	1.65
2892	Explosives.....	1.40
3611	Electric measuring instruments.....	.93
1999	Ordnance and accessories, n.e.c.....	.46
3717	Motor vehicles and parts.....	.36
3537	Industrial trucks and tractors.....	.21
3357	Nonferrous wire drawing, n.e.c.....	.20
3461	Metal stampings.....	.17
3679	Electronic components, n.e.c.....	.17
3585	Refrigeration machinery.....	.17
3691	Storage batteries.....	.16
3661	Telephone, telegraph apparatus.....	.16
3694	Engine electrical equipment.....	.16
3613	Switchgear and switchboards.....	.16
3491	Metal barrels, drums and pails.....	.15
3571	Computing and related machines.....	.06
3323	Steel foundries.....	.06
3621	Motors and generators.....	.03
	Total.....	100.00

Definition of missile procurement

The missile procurement funds covered in the analysis are shown in table 22. Funds from Air Force, Navy, Army, and Marine Corps appropriations for relevant budget activities are included. For analysis of product composition, total missile procurement funds were categorized as follows: Flyaway, modifications, spares and repair parts, missile support equipment, procurement support, and miscellaneous. (See table 23.)

TABLE 22.—*Appropriations and budget activity classes included in missile procurement*

Department	Appropriation title	Budget activity
Air Force.....	Missile procurement.....	1. Ballistic missiles. 2. Other missiles. 3. Modification of in-service missiles. 4. Spares and repair parts. 5. Other support.
Navy and Marine Corps.	Procurement of aircraft and missiles, Navy (PAMN).	8. Ballistic missiles. 9. Other missiles. 10. Modification of missiles. 11. Missile spares and repair parts. 12. Other support equipment and facilities.
Army.....	Procurement, Marine Corps (PMC). Procurement of equipment and missiles, Army (PEMA).	2. Guided missiles and equipment. 3. Missiles. 4. Missile spares and repair parts. 10. Production-base support (part).

TABLE 23.—*Categorization of missile procurement TOA for analysis of product composition*

Category	Percent
Flyaway.....	¹ 47
Nonflyaway:	
Modifications.....	2 6
ICBM.....	3
Other than ICBM.....	3
Spares and repair parts.....	2 7
Flyaway spares.....	3
Nonflyaway spares.....	4
Procurement support.....	7
Missile support equipment.....	2 19
ICBM.....	14
Other than ICBM.....	5
Other.....	14
Total.....	100

¹ Based on fiscal year 1963 data except for Air Force nonballistic missiles, for which fiscal year 1965 data were used.

² Subtotal for items in category.

Methodology

The starting points of the analysis were the Air Force,³⁷ Navy,³⁸ and Army³⁹ procurement lists submitted by the military departments to OSD as part of the FYFSFP. The line items in these procurement lists display considerable diversity with respect to levels of aggregation. For all procurement-list line items representing aggregations of products (more than one four-digit SIC product code), further breakdown was attempted.

Procurement line items were first divided into the general categories shown in table 23, utilizing Air Force,⁴⁰⁻⁴⁴ Navy,⁴⁵⁻⁴⁷ and Army⁴⁸⁻⁵¹

budget backup exhibits. Because of differences in the composition of missile procurement between fiscal year 1963 and fiscal year 1965, fiscal year 1963 data were used for the categorization as the best approximation of the calendar year 1963 distribution required for interindustry applications. Methods used for deriving SIC distributions for each of the categories shown in table 23 are described below. Since fiscal year 1963 data at the required level of detail were not available for disaggregation of many of the categories, fiscal year 1964 and fiscal year 1965 data were used.

Flyaway.—Flyaway TOA was further divided into funding for ballistic missiles (ICBM's and Polaris) and for all other missiles. Ballistic missile funding was subdivided into TOA for airframe, assembly, and checkout, guidance, propulsion, and payload. TOA for all other missiles was divided into costs for guidance, control, and airframe, propulsion, and payload. The data for these subdivisions of missile flyaway costs were from budget backup exhibits.⁴⁰⁻⁵¹

An attempt was made to assign SIC codes to products directly procured by DOD. For ballistic missiles, examination of the Minuteman program indicated that major components are procured separately by DOD and shipped to a central location to be assembled. In the case of Minuteman, Boeing as prime contractor manufactures the airframe and performs assembly and checkout of the complete missile. Associate prime contractors produce the other major components for DOD (Autonetics—guidance; Thiokol, Aerojet General, and Hercules—propulsion; AVCO—reentry vehicle). It was assumed that DOD also procured major components separately for other ballistic missiles. The following SIC code assignments for ballistic missile funding were made: Assembly and checkout (including airframe), SIC 1925; guidance, SIC 3662; propulsion, SIC 3722; and payload, SIC 3729.

For all other missiles it was assumed for coding purposes that the guidance, control, and airframe portion of missile flyaway was procured as a unit from a prime contractor and that the propulsion system and payload were procured separately by DOD. Examination of Sparrow, Terrier, Pershing, Bullpup, and Shillelagh contracting patterns shown in the *Weapons Dictionary*^{21, 23, 24} indicated that this procedure is generally representative. Since SIC 1925 includes complete missiles, excluding propulsion and since nuclear warhead costs are not included in DOD funding, the following SIC code assignments were made: Guidance, control, and airframe, SIC 1925; propulsion, SIC 3722; and payload, SIC 3729.

Modifications. Modifications funding was divided into two categories for analysis: ICBM modifications and other missile modifications. Each category accounted for 50 percent of total TOA for missile modifications in fiscal year 1963. The two analyses are discussed in the next paragraphs.

ICBM modifications: A breakdown of Minuteman II modifications (fiscal year 1965) was used to represent all ICBM modifications. Identification of item and service components of the Minuteman II modifications program was based on unpublished tabulations obtained from Headquarters Air Force, Directorate of Production,⁴² and on Boeing⁵² and Autonetics⁵³ publications. The distribution derived for ICBM modifications is shown in the accompanying tabulation:

<i>SIC Code</i>	<i>Percent</i>
Hardware.....	64
1925.....	4
3323.....	2
3571.....	2
3611.....	13
3662.....	43
Nonhardware.....	36
3662 Assembly and checkout.....	30
1925 Technical data.....	6
Total.....	100

Other missile modifications: TOA for non-ICBM modifications in fiscal year 1963 was divided as follows: Army, 82 percent; Air Force, 15 percent; Navy, 3 percent. Army modifications were distributed by SIC code based on data from the Army materiel plan (AMP)⁴⁹ and supplement.^{50, 51} Distribution of Air Force totals were based on data from Air Force form 1300g.⁵⁴ (See table 24.) Non-hardware items shown later in table 27 were coded as follows: Engineering, SIC 1925; technical data, SIC 1925; and related AGE, SIC 3729.

TABLE 24.—*Air Force missile modifications, non-ICBM*

<i>Category</i>	<i>Percent</i>
Engineering.....	31.7
Technical data.....	1.0
Related AGE.....	.6
Hardware.....	66.7
Kits, group A.....	.8
Kits, group B.....	52.0
Fuze conversion.....	.5
Container modifications.....	.1
New containers.....	.4
AGE modifications.....	1.4
Spares modifications.....	.9
Class IV modifications.....	10.6
Total.....	100.0

Hardware costs were primarily for modification of the Falcon AIM-4 missile. The hardware modifications distribution for the Falcon was coded and used to represent all Air Force non-ICBM modifications. The distribution for the Falcon is shown in table 25.

TABLE 25.—*Distribution percentages for Falcon modifications*

<i>Category</i>	<i>Percent</i>	<i>SIC</i>
Kits, group B 1.....	93	-----
Guidance and control modifications.....	76	3662
Propulsion modifications.....	13	3722
Payload modifications.....	4	3729
Fuze conversion.....	1	3722
Container modifications.....	(?)	3491
New containers.....	1	3491
AGE modifications.....	3	1925
Spares modifications.....	2	1925
Total hardware costs.....	100	-----

¹ Distribution of group B kits was estimated, based on data for the Sparrow AIM 7-E, from Air Force cost analysis sheets. (See footnote 22 at end of section.)

² Less than 0.5 percent.

No data permitting examination of the composition of Navy modifications were discovered. The Army and Air Force distributions described above were combined (weighted by fiscal year 1965 TOA) and applied to the Navy total.

Spares and repair parts. This category includes spares for the missiles themselves (flyaway spares) and for missile support equipment (nonflyaway spares). In fiscal year 1963 the Air Force accounted for 67 percent of total DOD funding for missile spares and repair parts, the Navy, 23 percent; the Army, 7 percent; and the Marine Corps, 3 percent.

Sources of data for identification of first-order impact were AFLC machine printouts of missile spares procurement by missile and by materiel program code (MPC) for fiscal year 1963⁵⁵ and the AMP.⁵⁶ Investigation of data sources at the Navy Bureau of Weapons and at the Ships Parts Control Center, Mechanicsburg, Pa.,⁵⁶ indicated that deriving breakdowns of Navy missile spares procurement would require a level of effort not justified by the quality of the data that could be obtained. The Air Force distribution, with minor alterations, was applied as the best available substitute to the funding total for Navy spares.

Total spares procurement was divided into flyaway and nonflyaway categories for coding purposes. Flyaway spares were divided into airframe spares, guidance and control spares, propulsion spares, and payload spares, based on data from AFLC⁵⁵ and from the AMP.⁴⁸ The following SIC code assignments were made: Airframe, SIC 3729; guidance and control, SIC 3662; propulsion, SIC 3722; and payload, SIC 3729.

Even less detail is available for nonflyaway spares. The AFLC computer printouts⁵⁵ lump the bulk of Air Force dollars in this category into one line item, AGE spares. The AMP⁴⁸ provides a division by Federal supply classification code: 1430 remote control spares, 1440 launcher spares, and 4935 specialized test equipment spares. Since these data were inadequate for assignment of SIC codes, the SIC distributions derived for missile support equipment (described in the following paragraphs) were applied to nonflyaway-spares procurement dollars, based on the assumption that the spares for missile support equipment would be distributed by SIC in approximately the same fashion as the equipment itself.

Missile support equipment. This category was further subdivided into ICBM support equipment' and missile support, other than ICBM. Coding techniques for these categories are discussed in the following paragraph.

ICBM support equipment. This category represents TOA for Air Force ICBM support. A breakdown was derived for Minuteman II support equipment and used to distribute all TOA assigned to ICBM support equipment. Minuteman II support equipment procurement includes the categories shown in the accompanying tabulation:⁴²

Category	Percent
Sets of equipment for launch facility (LF) and launch control facility (LCF)	50
Maintenance ground equipment (MGE)	32
Tooling and production support	5
Engineering change orders	13
Total	100

Boeing⁵² and Autonetics⁵³ contract data and Air Force ground equipment listings^{42, 57} were used to distribute the launch facility and launch control facility equipment and maintenance ground equipment totals. Tooling and production support were coded SIC 3541; engineering change orders were coded SIC 1925.

Missile support other than ICBM: Separate examination and coding were performed for Navy, Air Force, and Army funding in this area. Navy distributions were based on data from budget backup exhibits.^{45, 46} Navy missile support consisted primarily of technical engineering services, SIC 1925; publications, SIC 1925; depot checkout equipment, SIC 3662; and special handling equipment, SIC 3537. The Air Force missile support distribution was based on data from budget backup exhibits⁴⁰⁻⁴⁴ and included depot checkout and special handling equipment, SIC 3662; and engineering services, publications, etc., SIC 1925. Army missile support was distributed based on AMP data.⁴⁸⁻⁵¹ Approximately 23 percent of total funding represented technical engineering services, documentation, quality assurance, and testing, all of which were coded SIC 1925. The remaining 77 percent, which represented hardware costs, was distributed based on detail available for Hawk ground equipment.⁴⁸ The Hawk distribution is shown on table 26.

TABLE 26.—Distribution percentages for Hawk ground equipment

Category	Percent	SIC
Launcher.....	18	1999
High-power illuminator.....	16	3662
Rails, launching and handling.....	16	1925
Carrier.....	14	3717
CW acquisition radar.....	12	3662
Pulse acquisition radar.....	5	3662
Battery command console.....	5	3662
Confidence checker.....	4	3662
Loader.....	4	3537
Assault fire command console.....	3	3662
Cable.....	1	3357
Maintenance sets.....	1	3611
Generators.....	1	3621
Total.....	100	

Procurement support. The procurement support category includes TOA for items identified in the missile budget backup exhibits cited previously as product engineering, special tools and inspection gauges, evaluation services and materials, production proof, containers, product improvement, and documentation. Table 27 presents the distribution and coding that were derived.

Other. This category includes the heterogeneous items shown in table 28.

Site activation related solely to the Air Force Minuteman program, and consisted primarily of contractor support activities, including administrative and other services.⁴² All site activation funding was coded to SIC 1925. Missile industrial facilities were not separately identified but were considered to represent tooling costs primarily and were coded to SIC 3541. Training equipment was not completely identified at the individual item level; where detail was available the items were primarily electronic, and all TOA in this category was

coded to SIC 3662. Information in the Navy Weapons Dictionary Materiel Annex²⁴ concerning the astronautics category (which appeared only in Navy procurement data) indicated that it also consisted primarily of electronic equipment; all astronautics funding was coded SIC 3662. The Air Force propellants category was coded to SIC 2892.

TABLE 27.—*Distribution percentages for procurement support*

Category	Percent	SIC
Product engineering.....	47	1925
Special tools and inspection gauges.....	31	3545
Evaluation services and production proof.....	17	1925
Containers.....	2	3491
Documentation.....	2	1925
Product improvement.....	1	1925
Total.....	100	

TABLE 28.—*Distribution percentages for other items of missile procurement*

Category	Percent
Site activation.....	81
Missile industrial facilities.....	5
Training equipment.....	1
Astronautics.....	3
Propellants.....	10
Total.....	100

METHODOLOGY EMPLOYED FOR ELECTRONICS AND COMMUNICATIONS AMMUNITION AND WEAPONS, VEHICLE, AND OTHER PROCUREMENT

The general methodology used to derive the first-order impact of these procurement activities consisted of (a) developing a list of items being procured under each budget activity; (b) assigning product codes to the items; and (c) consolidating the associated TOA to four-digit levels and aggregating the results over the group. Procurement items were originally coded on a seven-digit SIC product-code basis to meet an earlier assignment dealing with the improvement of exemplar selection. For purposes of this study, products were aggregated to provide estimates of first-order impact.

The primary sources used in deriving the necessary product detail were the materiel annex procurement lists of each service.^{9, 10, 12} Line items in these primary sources were generally of two types: end-items, i.e., items that could be directly coded, and miscellaneous generic categories requiring disaggregation before product-coding could be performed. Examples of the generic categories are items less than \$2 million and spare parts. For items less than \$2 million, procurement support documents^{31, 58} were used for disaggregation. The support documents provided sample lists rather than complete coverage for the following reasons: (a) supporting data did not include items less than \$500,000 so that a complete accounting of items less than \$2 million could not be made; (b) owing to the difference in submission dates between the primary data sources^{9, 12} and the supporting documents, variations existed between the TOA totals for given pieces of equipment. Sample-based distributions were adjusted to control totals from the materiel annex procurement lists.

DOD electronics and communication procurement

Summary for findings. The complete product-coded distribution for DOD electronics and communications procurements is shown in table 29. As shown in table 29, six major product codes accounted for 97 percent of fiscal year 1965 electronics and communications procurement. The remaining 3 percent was distributed among 21 separate four-digit product codes. Almost 80 percent of the total was represented by one four-digit code—3662, radio, TV communication equipment—and the three largest codes accounted for 94 percent of the total.

Definition of electronics and communications procurement. The budget activity categories included in the distribution are shown in table 30. Only parts of OPN, budget activities 3 and 6, are included.

TABLE 29.—*First-order distribution of DOD electronics and communication procurement by 4-digit SIC product code*

SIC	Product	Percent
3662	Radio, TV communication equipment.....	77.92
3571	Computing and related machines.....	8.29
3661	Telephone, telegraph apparatus.....	7.83
3621	Motors and generators.....	1.25
3357	Nonferrous wire drawing, etc.....	1.16
3679	Electronic components, n.e.c.....	1.04
1941	Sighting and fire-control equipment.....	.59
3861	Photographic equipment.....	.36
3611	Electric measuring instruments.....	.34
3651	Radio and TV receiving sets.....	.21
3461	Metal stampings.....	.19
2731	Books, publishing, printing.....	.13
3629	Electric industrial goods, n.e.c.....	.10
3729	Aircraft equipment, n.e.c.....	.09
3717	Motor vehicles and parts.....	.08
3441	Fabricated structural steel.....	.07
3585	Refrigeration machinery.....	.07
3613	Switchgear and switchboards.....	.07
3694	Engine electrical equipment.....	.06
3315	Steel wire drawing, etc.....	.04
3691	Storage batteries.....	.04
3811	Scientific instruments.....	.02
3351	Copperrolling and drawing.....	.01
3572	Typewriters.....	.01
3642	Lighting fixtures.....	.01
3731	Shipbuilding and repairing.....	.01
3831	Optical instruments and lenses.....	.01
	Total.....	100.00

TABLE 30.—*Appropriations and budget activity classes included in electronics and communications procurement*

Department	Appropriation title	Budget activity
Air Force.....	Other procurement.....	3. Electronics and telecommunications equipment. — CRYPTO and SIGINT equipment. — Electronics and telecommunications modifications.
Navy and Marine Corps.	Other procurement, Navy (OPN).....	2. Communications and electronic equipment. 3—1930 Ground electronics. 6—2210 Equipment, personnel support.
	Procurement, Marine Corps (PMC)....	3. Communications and electronic equipment.
Army.....	Procurement of equipment and missiles, Army (PEMA).	7. Communications and electronic equipment.

Methodology. General methodology is described at the beginning of this section. Of the basic sources ^{9, 10, 12} the Army end-item list ¹⁰ was in sufficient detail to eliminate the need for identifying lower-cost items, with the exception of the aggregation, miscellaneous electronics. Its product distribution was identified from data in volume II of the AMP.⁵⁸ An Air Force procurement support document ⁵⁹ was used to identify items less than \$2 million and organizational and base support equipment. This document provides lists of equipment in excess of \$500,000. The remaining values for items less than \$500,000 were relatively small and further product identification was not attempted.

Electronics and communications procurement lists included generic "systems" categories (generic titles for aggregations of equipment). Examples of systems line items are missile communications support; 412L, air weapons control system; and 433L, weather observation and forecast system.

Identification and quantification of end products involved in electronics systems proved to be difficult because of limitations of published data sources. Although AMP ⁵⁸ did include information about some Army systems, a major portion of "system" dollars remained for product identification, and additional data collection was required. The PEMA development division ⁶⁰ provided shopping lists and technical product information pertaining to air defense operating centers and fire-direction systems and procurement lists for communications and cryptographic systems such as Alternate National Military Command Center and Strategic Army Communications.

Several offices supplied Navy system procurement lists. Dollar values for the category items less than \$500,000 were large enough to warrant further product search, and the following information was obtained: a computer listing of all items being procured as ground electronics in budget activity 3, weapons and support equipment;⁶¹ shopping lists of equipment being procured for the CAESAR sonar system;⁶² shopping lists of equipment (representing prime contracts) being procured for naval tactical data system (NTDS) and operational control centers (OPNCON);⁶³ shopping lists for Atlantic Fleet Weapons Range and items less than \$500,000;⁶⁴ technical advise on SISS II sonar system procurement;⁶⁵ detailed shopping lists of personnel support equipment;⁶⁶ and added information pertaining to Navy electronics spares procurement and Marine electronics shopping lists.⁶⁷

Collection of data on Air Force systems involved visits to a number of systems project offices in the Boston and Los Angeles areas. Data on the major portion of missile communications support, namely, Minuteman⁶⁸ and space systems,⁶⁹ were obtained from offices in the Los Angeles area. The Minuteman Special Projects Office ⁷⁰ provided Minuteman electronics data. Individual systems project offices at Electronic Systems Division, Bedford, Mass., provided the necessary shopping lists of prime products being procured in fiscal year 1965 for Air Force L-systems, e.g., 412L, air weapons control system; 433L, weather observation and forecast system. Dollars for Eastern and Western Test Ranges under missile communication support were

identified to prime products based on data obtained from Air Force Systems Command Headquarters at Andrews Air Force Base.⁷¹

No other documents were used for reduction of budget categories to end products; however, for determining and assigning specific product codes such documents as the Army Materiel Annex,²³ the Navy Materiel Annex,²⁴ and the Air Force Weapons Dictionary²¹ were used. In addition, six unclassified manuals containing descriptions of telecommunications, fire-control computers, search and detection apparatus, and electronics training equipment are listed under "Additional References."

DOD ammunition procurement

Summary of findings. The complete distribution of DOD ammunition procurement by SIC product-code is presented in table 31. The largest code, SIC 1929 (ammunition, n.e.c.), accounted for 80 percent of the total. The five largest codes accounted for 98 percent of the total, and five additional codes were represented in the remaining 2 percent.

Definition of ammunition procurement. The composition of the ammunition procurement group is presented in table 32 in terms of budget activities within appropriation categories by service. As indicated in the table, only those subcategories of OPN, budget activity code 3, that relate to ammunition procurement are included.

TABLE 31.—*First-order distribution of DOD ammunition procurement by 4-digit SIC product codes*

SIC	Product	Percent
1929	Ammunition, n.e.c. ¹	79.94
1961	Small-arms ammunition	6.03
3662	Radio, TV communication equipment ²	5.37
1999	Ordnance and accessories, n.e.c.	4.42
3729	Aircraft equipment, n.e.c. ³	2.53
2899	Chemical preparations, n.e.c.	.58
3722	Aircraft engines and parts	.49
1951	Small arms, 30 mm. and under	.32
2818	Organic chemicals, n.e.c.	.18
2911	Petroleum refining	.14
	Total	100.00

¹ Includes bombs, rockets, depth charges, mines, torpedoes.

² Time and proximity fuzes (electronic) and sonar mines.

³ Includes bomb lugs and racks.

TABLE 32.—*Appropriation and budget activity classes included in ammunition procurement*

Department	Appropriation title	Budget activity
Air Force	Other procurement	1. Munitions and associated equipment.
Navy and Marine Corps	Other procurement, Navy (OPN)	3—1910 Expendable ordnance. 3—1920 Ordnance equipment.
Army	Procurement, Marine Corps (PMC) Procurement of equipment and missiles, Army (PEMA).	1.A Ammunition. 9. Ammunition.

Methodology. General methodology is described at the beginning of this section. For all generic categories except items less than \$2 million (Air Force spares and repair parts, Navy expendable ordnance support parts, and ORDALT material, general, Army miscellaneous, and other items) products detail was not available, and TOA amounts for these items were distributed proportionately over the previously derived product distributions.

Documents used for determining and assigning specific product codes include the following: The Army Materiel Annex;²³ The Navy Materiel Annex;²⁴ The Air Force Weapons Dictionary;²¹ Picatinny Arsenal, "Information Pertaining to Fuzes";⁷² Bureau of Naval Weapons, "Torpedo MK46 Illustrated Parts Breakdown";⁷³ Bureau of Naval Weapons, "Snakeye I Weapon."⁷⁴ In addition, six unclassified manuals containing descriptions of explosives, chemical agents, and ammunition were used.⁷⁵⁻⁸⁰

DOD weapons, vehicles, and other support procurement

Summary of findings. The complete distribution of DOD weapons, vehicles, and other support procurement is presented in table 33. The two leading codes, SIC 3717,* motor vehicles and parts, and SIC 1931, tanks and tank components, accounted for 57 percent and the remaining eight codes accounted for 26 percent of the group's total procurement TOA. In all, 97.5 percent of the group's TOA was distributed over 61 4-digit SIC codes. Of the remaining 2.5 percent, 1.4 percent was identified as first destination transportation of Army procurement items and 1.1 percent was not coded because of lack of information. It should be noted that first destination transportation costs in Air Force and Navy procurement could not be separately identified and are therefore included in the product distribution.

*The Bureau of the Census classification code 3717, motor vehicles and parts, was used in place of the constituent SIC codes 3711; motor vehicles, 372; passenger car bodies; and 3714, motor vehicle parts and accessories.

TABLE 33.—*First-order distribution of DOD weapons, vehicles, and other support procurement by 4-digit SIC product codes*

SIC	Product	Percent
3717	Motor vehicles and parts ¹	36.54
1931	Tanks and tank components.....	20.71
3621	Motors and generators.....	4.29
3531	Construction machinery.....	4.08
3715	Truck trailers.....	3.24
3571	Computing and related machines.....	3.22
3861	Photographic equipment.....	3.10
3662	Radio, TV communications equipment.....	2.83
3537	Industrial trucks and tractors.....	2.56
3611	Electric measuring instruments.....	2.43
3541	Metal-cutting machine tools.....	2.08
3731	Shipbuilding and repairing.....	1.84
8911	Engineering and architectural services.....	1.18
3842	Surgical appliances and supplies.....	.93
1911	Guns, howitzers, and mortars.....	.75
1511	General building contractors.....	.63
2399	Textile products, n.e.c.....	.63
2499	Wood products, n.e.c.....	.55
3542	Metal-forming machine tools.....	.41
3446	Architectural metal work.....	.32
1731	Electrical work.....	.31
2295	Coated fabrics, not rubberized.....	.30
1999	Ordnance and accessories, n.e.c.....	.28
3069	Rubber products, n.e.c.....	.28
3429	Hardware, n.e.c.....	.26
3599	Miscellaneous machinery.....	.26
3679	Electronic components, n.e.c.....	.26
3561	Pumps and compressors.....	.25
3585	Refrigeration machinery.....	.25
3811	Scientific instruments.....	.22
1951	Small arms, 30mm. and under.....	.21
3642	Lighting fixtures.....	.21
3449	Miscellaneous metal work.....	.18
3443	Boiler-shop products.....	.16
3582	Commercial laundry equipment.....	.14
1929	Ammunition, n.e.c.....	.12
3494	Valves and pipe fittings.....	.12
2328	Work clothing.....	.11
2394	Canvas products.....	.11
3536	Holsts, cranes, and monorails.....	.11
3729	Aircraft equipment, n.e.c.....	.11
3079	Plastics products, n.e.c.....	.09
3141	Shoes, except rubber.....	.09
3589	Service industry machines, n.e.c.....	.09
3545	Machine-tool accessories.....	.08
3431	Metal plumbing fixtures.....	.06
3519	Internal-combustion engines.....	.06
3999	Miscellaneous products, n.e.c.....	.06
3315	Steel wire drawing, etc.....	.05
1799	Special-trade contractors, n.e.c.....	.04
3549	General-industry machines, n.e.c.....	.04
3612	Transformers.....	.04
3821	Mechanical measuring devices.....	.04
2298	Cordage and twine.....	.02
2819	Inorganic chemicals, n.e.c.....	.02
3548	Metalworking machinery, n.e.c.....	.02
3831	Optical instruments and lenses.....	.02
3532	Mining machinery and equipment.....	.01
3555	Printing-trades machinery.....	.01
3564	Blowers and fans.....	.01
3693	X-ray apparatus and tubes.....	.01
	First destination transportation.....	1.43
	Unallocated.....	1.14
	Total.....	100.00

¹ Includes SIC 3717411, combat vehicles, wheeled tactical vehicles or carriers.

Definition of weapons, vehicles, and other support procurement. The composition of the weapons, vehicles, and other support group is presented in table 34 in terms of budget activities within appropriation categories by service. The table also shows the percentage distribution of the fiscal year 1965 TOA group total by budget activity and by service.

It is evident from the table that the Army's procurement, at 69 percent of the group total, is dominant in this group; further, within the Army's procurement the two budget activities, weapons and combat vehicles and tactical and support vehicles, which together comprise 53 percent of the group total and 75 percent of the Army's proportion of the group total, are of major importance in determining the product composition of the group.

TABLE 34.—*Appropriations and budget activity classes included in weapons, vehicles, and other support procurement*

Department	Appropriation title	Budget activity	Percent
Army-----	Procurement of equipment and missiles, Army (PEMA).	5. Weapons and combat vehicles-----	69.23
		6. Tactical and support vehicles-----	22.76
		8. Other support equipment-----	29.87
		10. Production-base support-----	9.54
			7.06
Navy and Marine Corps.	Other procurement, Navy (OPN).	3—1950 Other support equipment-----	11.80
		4. Civil engineering support-----	2.09
		5. Supply support equipment-----	3.52
		6—1110 Command support equipment-----	1.44
			.39
	Procurement, Marine Corps (PMC).	1.B Artillery-----	.75
		4. Support vehicles-----	2.59
		5. Engineer and other equipment-----	1.02
Air Force-----	Other procurement-----		18.97
		2. Vehicular equipment-----	7.41
		4. Other base maintenance and support equipment-----	11.25
		—Industrial facilities-----	.31

Methodology. General methodology is described at the beginning of this section. The material annex procurement lists ^{9, 10, 12} for weapons, vehicles, and other support included such miscellaneous categories as spares and repair parts, survival equipment, and first destination transportation.

The miscellaneous categories were disaggregated into items that could be assigned SIC codes through the use of supporting data from the P-1 exhibits.^{31, 59} Other supporting data subsidiary to the P-1 exhibits were the Navy, fiscal year 1967 budget backup justification,³² which supplied information on OPN; the Air Force, fiscal year 1966-67 buy-budget, budget program 82, vehicular equipment,⁸¹ and the Air Force, fiscal year 1965-66 buy-budget, budget program 8500; other base maintenance and support equipment.⁸²

It was felt that, except for budget activity 10, production-base support, the Army procurement list provided sufficient detail to obviate further search for product detail because the sum of the Army miscellaneous and repair parts and support materiel TOA

constituted 10 percent of the Army's and 7 percent of the three services' weapons, vehicles, and other support budget. Also, Army's first destination transportation costs, which were 2 percent of the Army's and 1 percent of the three services' TOA for this group, were identified but not SIC coded because of lack of necessary information.

The procurement lists provided no detail for the Army's budget activity 10, production-base support, nor for the Air Force's budget activity, industrial facilities. With respect to Army's budget activity 10, production-base support, a sample of the product composition was derived from supporting documents for the *President's Budget: Fiscal year 1965*.⁸³ In addition, relevant data from this source were used to distribute the relatively small amount of TOA in the Air Force's budget activity, industrial facilities.

As noted previously, the above sources were used to disaggregate budget activities to end products. Other classified and unclassified documents, not elsewhere listed, that contained descriptions of the items or items of a similar nature, aided in determining the appropriate product code to be assigned. They are listed under "Additional References."

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DOCUMENT CONTROL DATA - R&D (Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)		
1. ORIGINATING ACTIVITY (Corporate author) Research Analysis Corporation McLean, Virginia		2a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED
		2b. GROUP
3. REPORT TITLE Economic Impact Analysis: A Military Procurement Final Demand Vector, Vol I, Results and Methodology		
4. DESCRIPTIVE NOTES (Type of report and inclusive dates)		
5. AUTHOR(S) (Last name, first name, initial) Igo, Donald J.; Moder, Irving; Bull, Elwyn M.; Lindsay, William; Gramza, Ken R.		
6. REPORT DATE February 1967	7a. TOTAL NO. OF PAGES 97 (manuscript)	7b. NO. OF REFS 130
8a. CONTRACT OR GRANT NO. DA-49-083 OSA-3133-OSD	8b. ORIGINATOR'S REPORT NUMBER(S) RAC-TP-248, Volume I	
a. PROJECT NO.		
c.	9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)	
d.		
10. AVAILABILITY/LIMITATION NOTICES Subject to special export controls and each transmittal to foreign governments or foreign nationals may be made only with prior approval of OASD Systems Analysis-Economics		
11. SUPPLEMENTARY NOTES		12. SPONSORING MILITARY ACTIVITY OASD Systems Analysis (Economics)
13. ABSTRACT This report presents a military procurement final-demand vector, or "bill of goods" developed by RAC for applications in interindustry studies of the US economy. The military bill of goods in an interindustry model is a statement of military requirements for material and services from the civilian economy, in terms that are compatible with the industry definitions in the model. The RAC bill of goods presents the percentage distribution of DOD procurement in terms of the 4-digit Standard Industrial Classification code—the same classification system used to define the industry sectors in current interindustry economic models. For conversion to dollar terms the percentages are to be applied to an estimate of DOD procurement expenditures, adjusted for differences between DOD accounting definitions and national income accounting concepts, being developed by the Office of Business Economics, Department of Commerce. The work was sponsored by the Office of the Assistant Secretary of Defense for Systems Analysis (Economics); agencies involved in interindustry economic studies and to which the estimates have been made available are the Division of Economic Growth, Bureau of Labor Statistics; the Office of Emergency Planning; and the Office of Business Economics, Department of Commerce. At the request of user agencies the estimates were developed for 1963, and military final demand was defined as direct procurement by the government. Only Department of Defense expenditures funded through procurement appropriations (as opposed to RDTE, Operations and maintenance, Military personnel and other appropriations) are covered in this report. The report consists of two volumes. Volume I presents the procurement final-demand estimates and describes the methodology used, in separate sections for six categories of procurement: Aircraft, Ships, Missiles, Electronics and communications; Ammunition, and Weapons, vehicles, and other. Volume II presents a comparison of RAC estimates with results derived by other estimating techniques, examines the applicability of the results for 1963 to procurement expenditures for other years, discusses some of the methodological problems involved in developing final demand estimates, and indicates directions for future research.		

DD FORM 1473
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14. KEY WORDS	LINK A		LINK B		LINK C	
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ECONOMIC IMPACT OF DEFENSE PROGRAMS*

The economic impact of the defense budget may be broadly defined as the degree to which defense programs utilize scarce resources (labor, machines and material) at the national, state and local (labor market area) levels. Impact varies with the change in size and composition of the defense budget. In recent years, the budget has represented approximately 8 percent of the gross national product; however, this percentage increased during the Vietnam buildup in fiscal year 1966. The increase in defense expenditures represented approximately 12 percent of the increase in the gross national product for that period. Expressed in defense-generated employment, the increase represented approximately 25 percent of the increase in civilian labor force during fiscal year 1966. This was a sharp reversal of the trend exhibited from 1963 to June 1965 when concern over defense impact revolved around procurement cutbacks.

Because of the changing size and composition of the defense budget, DOD has initiated continuing studies to determine the economic impact of its spending on geographic areas and industries. Although information delineating the economic impact of the defense budget will not influence procurement decisions, it is desirable that DOD develop the information that will permit it and other Federal, State, and local agencies to take actions to alleviate the adverse consequences of shifts in defense procurement programs. At the industry level such statistics are useful not only to provide information on where the defense dollar goes and for what products, but to better assess future trends and resource demands of the defense budget.

DOD IMPACT STUDY

This article presents a summary of a DOD study prepared by the Economic Impact Studies Division with the assistance of Arnold Franseen, Israel Rubin, and Dr. Roger Riefler. Because of the need to protect military security and proprietary information, the data presented here are highly summarized and are largely statistical and descriptive in nature. The study was based on data collected from large defense contractors during 1966 under the economic information system (EIS) developed jointly by DOD and NASA. These data were supplemented by impact statistics developed from other sources.

EIS is one of several DOD projects designed to measure the economic impact of defense programs. It originated in 1961 as part of an effort to assess the economic impact of defense procurement on plants and communities.

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In May 1966 the Bureau of the Budget (BOB) gave approval to the semiannual contractor reporting requirements prescribed by EIS. BOB's approval followed extensive coordination with industry representatives by DOD and NASA officials.

Contractor reports under EIS consist of the plantwide economic report and the individual project economic report. The plantwide report provides data on total employment according to four major categories: DOD, NASA, other Government, and commercial. The individual project report provides data on employment, costs, cost distribution overtime, and contract information, and is prepared for each individual project (major weapon system or major element thereof) having 150 or more direct workers on the project. (See article, "Economic Information System Reports Approved by Bureau of the Budget," *Defense Industry Bulletin*, June 1966.)

Two EIS reports were submitted by approximately 400 plants during 1966. These reports contained actual data for the 6-month periods ending December 1965 and June 1966, respectively. Forecasts of firm business based on contracts were also reported.

The statistics presented in tables 1 through 13 in this article supplement and extend previously published data, such as the prime contracts awards data by State, compiled by the Office of the Assistant Secretary of Defense (Comptroller). (See *Defense Industry Bulletin*, October 1966.) Although this later statistical series is useful in measuring the geographical impact of defense procurement, it is indicative at best. As stated in these reports:

It is emphasized that data on prime contracts by state do not provide any direct indication as to the State in which the actual production work is done. For the majority of contracts with manufacturers, the data reflect the location of the plant where the product will be finally processed and assembled. If processing or assembly is to be performed in more than one plant of a prime contractor, the location shown is the plant where the largest dollar amount of work will take place. More important is the fact that the report refers to prime contracts only, and cannot in any way reflect the distribution of the very substantial amount of material and component fabrication and other subcontract work that may be done outside the state where final assembly or delivery takes place.

The EIS and the supplementary statistics presented in the aforementioned tables are designed to alleviate these shortcomings with respect to defense impact measurement by geographic area. This is accomplished by surveying and imputing defense-generated industrial employment to the plant level and aggregating by labor market area (standard metropolitan statistical areas or county), State, and Nation, as well as by defense product group.

Also, these EIS statistics on defense-generated industrial employment are more precise than contract awards data with respect to indicating the time of the impact. The latter are reported for the period of contract award whereas the EIS employment statistics generally are associated with the period in which the work was performed under the contracts.

Despite these refinements, the statistics presented have several limitations particularly with respect to the completeness of coverage of employment generated by defense at all contracting tiers, and to the timing of employment impacts. Furthermore, the indirect "multiplier" effects have not been developed in this study. Research is being conducted to alleviate these shortcomings. Meanwhile, the use of the data should be qualified by these limitations.

SCOPE OF STUDY

Table 1 presents a summary of total employment covered by this study and compares this coverage with the estimated total employment generated in the United States by defense obligations for fiscal year 1966. The fiscal year 1966 defense budget is estimated to generate a total U.S. employment (including military) of 5,600,000. It is estimated that this report covers 4,150,000, or 75 percent, of this total.

TABLE 1.—Coverage of estimated defense-generated employment in the United States, June 1966

Source (1)	Obligations, fiscal year 1966 (billions) (2)	Employment generated (millions)		Percent coverage, col. (4) divided by col. (3) (5)
		Estimated from col. 2 (3)	Covered by this report (4)	
Procurement including R. & D., etc.	\$40.3	¹ 2.80	1.35	48
EIS surveyed plants			(.85)	
Imputed to prime contracts			(.50)	
Pay:				
Civilian	7.2	1.00	1.00	100
Military	8.3	1.80	1.80	100
National Guard, Reserve, retired	2.4	(²)	(²)	(²)
Total	³ 58.2	⁴ 5.60	4.15	75

¹ Estimated by using Census Bureau's value added per worker. This gross measure accounts for total employment generated from mining operations through semifinished shapes and forms to finished products including transportation, etc.

² Not available.

³ Excludes approximately \$9 billion obligations for work outside the United States.

⁴ By adding the approximate 1.2 million defense-generated employees and military personnel located outside the United States, the total becomes 6.8 million. This latter number represents approximately 8.7 percent of an adjusted U.S. labor force of 78.6 million derived by adding military personnel in the United States and personnel outside the United States and by deducting the unemployed. Although the 8.7 percent is not inconsistent with the approximate 8 percent of the gross national product devoted to defense, it should be recognized that several items may influence the accuracy of the estimate such as the use of the gross value added per worker factor mentioned in footnote 1 and possible differences in the labor intensity of items procured for defense.

Employment measured in this study is referred to as defense-generated employment and military personnel. The former consists of defense-generated industrial employment in the non-Government economy and DOD civil service employment.

Complete coverage of DOD civil service and military personnel by geographical assignment is accomplished by this study. Of the estimated 2,800,000 defense-generated industrial employees resulting from defense purchases in the civilian economy, including all "indirect" workers generated by subcontracts and vendors purchases, this study covers an estimated 48 percent, or 1,350,000, by geographical area. Coverage in this latter category is subdivided into two subgroups: the 850,000 defense-generated industrial workers employed by the 387 large defense plants surveyed by EIS and the 500,000 workers imputed, using census workers per shipment ratios, to the approximately 17,000 other plants, receiving prime contract awards. These 1,350,000 workers generated by defense procurement are estimated to account for 100 percent of those working on prime contracts and approximately 10 percent of the total indirect employment resulting from these primes. (See table 7.)

Tables 2 and 3 show the size distribution of plants in the EIS and imputed subgroups, respectively.

TABLE 2.—*Concentration of defense-generated industrial employment among EIS plants, June 1966*

Plant size classes (defense employment)	EIS-surveyed plants		Defense-generated industrial employment	
	Number	Cumulative percent	Number (thousands)	Cumulative percent
(1)	(2)	(3)	(4)	(5)
10,000 and over.....	16	4.1	251.8	29.6
6,000 to 9,999.....	16	8.3	121.0	43.8
5,000 to 5,999.....	11	11.1	61.2	51.0
4,000 to 4,999.....	12	14.2	52.6	57.2
3,000 to 3,999.....	18	18.9	60.8	64.3
2,000 to 2,999.....	47	31.0	113.3	77.6
1,000 to 1,999.....	75	50.4	99.6	89.3
Under 1,000.....	192	100.0	90.9	100.0
Total.....	387		851.2	

¹ The EIS survey included 422 plants, 35 of which were NASA plants exclusively.

TABLE 3.—*Concentration of defense-generated industrial employment among prime plants (not surveyed by EIS), June 1966*¹

Plant size classes (defense employment) ²	Prime plants ³		Defense-generated employment	
	Number	Cumulative percent	Number (thousands)	Cumulative percent
(1)	(2)	(3)	(4)	(5)
400 and over.....	104	0.6	102.2	29.6
300 to 399.....	69	1.0	23.4	36.3
200 to 299.....	151	1.9	36.5	46.8
100 to 199.....	401	4.2	56.3	63.1
0 to 99.....	16,582	100.0	127.9	100.0
Total.....	17,307		346.3	
Undistributed.....			⁴ 154.7	
Total.....			501.0	

¹ Employment for June 1966 was imputed to prime contract awards during calendar year 1965, and the results "lagged" 6 months.

² Indicates the number of defense-generated industrial workers imputed to a prime contractor plant.

³ The number of defense plants is a count of prime contractors who supplied manufactured products. It excludes construction contractors and those providing services such as air transportation, communications, and equipment-leasing services.

⁴ Undistributed consists of defense-generated employment imputed to the excluded contracts noted in footnote 3.

Defense impact on the economy can be assessed in both a static and dynamic way. The static or point-in-time estimate of defense impact focuses on the geographic concentration of defense-employed resources and the dependency of an area on defense employment. Tables 4 to 9 illustrate this dimension of defense impact at the State, labor market area, and defense product group levels. The dynamic or trend element of defense impact is concerned with issues such as: Is DOD's utilization of economic resources increasing or decreasing? At what rate and in what areas? The final four tables, tables 10 to 13, present the relevant data for an assessment of this dimension of impact at the State and defense product group levels.

CONCENTRATION OF DEFENSE-GENERATED EMPLOYMENT

Table 4 presents the State distribution of defense-generated employment, military personnel and the total civilian labor force both in absolute terms (cols. 7 to 9) and percentage terms (cols. 2 to 4). Column 5 contains an index expressing the relative concentration of defense-generated employment. An entry of one in this column signifies that the State has the same percent of the U.S. defense-generated employment and the U.S. labor force; an entry greater than one signifies a higher percentage of total defense employment than indicated by the labor force share. California and New York illustrate extremes. The former's share of defense employment is almost twice its percent of the U.S. labor force; New York has a reverse relationship.

Ten States have a significantly greater share of the U.S. defense employment than indicated by their share of the U.S. labor force; 17 have a significantly smaller share.

The 12 Midwestern States, except Kansas and Missouri, have a significantly smaller share of defense employment than their share of the U.S. labor force.

Column 6 presents the relative concentration of the combined total of defense-generated employment and military personnel as measured against the total work force plus military personnel. A comparison of the indexes in column 6 with column 5 shows a shift from less than one to more than one for those States having relatively large military populations, notably North Carolina, South Carolina, and Kentucky.

TABLE 4.—Distribution of defense employment and labor force by State, June 1966

State ranking ¹	Percentage distribution			Index of relative concentration		Number (thousands)		
	Defense-generated employment ²	Labor force	Military personnel	Defense-generated employment col. (2) divided by col. (3)	Defense-generated employment and military personnel ³	Defense-generated employment	Labor force	Military personnel
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. California.....	17.0	9.5	13.5	1.8	1.6	405.0	7,459.0	246.6
2. Texas.....	5.8	5.1	11.3	1.1	1.6	139.6	4,024.6	206.9
3. New York.....	5.7	10.1	1.8	.6	.4	138.0	7,965.0	33.2
4. Pennsylvania.....	5.4	6.0	.8	.9	.6	129.8	4,747.3	14.9
5. Virginia.....	5.2	2.1	3.6	2.4	2.1	125.6	1,638.6	66.3
6. Ohio.....	3.7	5.3	1.1	.7	.5	88.7	4,153.3	19.8
7. Maryland.....	3.6	1.7	2.6	2.1	1.8	85.3	1,307.3	47.5
8. Massachusetts.....	3.6	3.1	1.5	1.1	.8	85.2	2,432.1	28.2
9. New Jersey.....	3.4	3.5	2.7	1.0	.9	80.3	2,753.7	48.8
10. Connecticut.....	3.3	1.6	.2	2.1	1.3	78.9	1,236.8	4.2
11. Florida.....	3.0	2.9	3.8	1.0	1.2	73.3	2,264.3	60.2
12. Missouri.....	2.9	2.5	2.1	1.2	1.0	69.8	1,965.9	38.9
13. Georgia.....	2.9	2.1	6.0	1.4	1.9	69.2	1,684.9	109.4
14. Illinois.....	2.5	6.0	3.3	.4	.5	60.3	4,730.0	60.3
15. Washington.....	2.2	1.5	2.6	1.5	1.4	51.5	1,217.7	47.6
16. Alabama.....	2.0	1.6	1.7	1.2	1.2	48.1	1,273.1	32.1
17. Indiana.....	1.8	2.6	.5	.7	.5	43.6	2,019.5	9.8
18. Oklahoma.....	1.6	1.2	2.1	1.3	1.5	38.6	961.2	37.9
19. Michigan.....	1.5	4.1	1.0	.4	.3	36.0	3,187.9	18.3
20. Utah.....	1.5	.5	.2	3.0	2.0	35.7	390.5	4.5
21. District of Columbia.....	1.4	.6	3.9	2.8	4.0	32.8	396.0	70.5
22. Tennessee.....	1.3	2.0	1.2	.7	.6	29.9	1,584.5	21.9
23. North Carolina.....	1.2	2.5	5.1	.5	1.1	29.1	1,994.0	92.7
24. Colorado.....	1.1	1.0	2.2	1.1	1.5	25.6	778.8	40.5
25. Kansas.....	1.1	1.1	1.9	1.0	1.3	25.6	834.6	34.8
26. Mississippi.....	1.0	1.0	1.5	1.0	1.2	23.9	786.3	28.0
27. South Carolina.....	1.0	1.3	3.3	.8	1.5	23.2	998.8	60.2
28. Hawaii.....	1.0	.3	1.6	3.3	3.0	22.8	273.3	28.7
29. Minnesota.....	.9	2.0	.3	.5	.3	21.5	1,591.3	5.1
30. Arizona.....	.8	.7	1.1	1.1	1.4	19.3	544.5	20.7
31. Kentucky.....	.7	1.4	2.8	.5	1.1	16.7	1,126.2	51.9
32. New Mexico.....	.6	.5	1.0	1.2	1.6	15.1	357.4	18.7
33. Louisiana.....	.6	1.6	2.2	.4	.8	14.6	1,302.5	40.1
34. Wisconsin.....	.6	2.3	.2	.3	.2	14.6	1,787.5	3.4
35. Rhode Island.....	.6	.5	.5	1.2	1.2	13.8	372.3	9.5
36. New Hampshire.....	.6	.3	.3	2.0	1.3	13.5	274.0	5.2
37. Iowa.....	.4	1.5	.1	.3	.2	9.9	1,194.9	1.6
38. Alaska.....	.4	.1	1.6	4.0	9.0	8.8	90.4	29.2
39. Arkansas.....	.3	.9	.5	.3	.4	8.1	685.4	9.2
40. Maine.....	.3	.6	.5	.6	.8	7.2	375.4	10.8
41. Oregon.....	.3	1.1	.2	.3	.2	6.6	826.4	3.6
42. Nebraska.....	.3	.8	.7	.4	.6	6.5	650.0	12.4
43. West Virginia.....	.3	.8	.0	.4	.2	6.4	620.9	.5
44. North Dakota.....	.2	.3	.7	.7	1.3	4.2	267.7	12.2
45. Nevada.....	.1	.2	.3	.5	1.0	3.3	189.9	6.3
46. Delaware.....	.1	.3	.4	.3	.7	3.0	226.7	7.1
47. Vermont.....	.1	.2	.0	.5	.5	2.6	166.5	.3
48. South Dakota.....	.1	.3	.3	.3	.7	1.9	262.9	6.2
49. Montana.....	.1	.4	.5	.3	.9	1.7	263.7	9.4
50. Wyoming.....	.0	.2	.2	0	.5	1.3	144.6	4.0
51. Idaho.....	.0	.3	.2	0	.3	.9	277.9	4.0
Undistributed.....	3.9	-----	2.2	-----	-----	90.4	-----	39.4
Total.....	100.0	100.0	100.0	-----	-----	2,387.3	78,658.0	1,832.5

¹ Arranged in descending order based on State's percent of defense-generated employment.² Includes defense-generated employment in 387 EIS plants, all other prime plants and civil service employment at DOD installation.³ Percent distribution of total of defense-generated employment (col. 7) plus military personnel (col. 9) divided by percent distribution of total of labor force (col. 8) plus military personnel (col. 9).

Closely allied to the index of relative concentration is the concept of defense dependency, which may be defined as defense-generated employment as a percent of the civilian labor force. The average defense dependency of the United States, as shown in table 5, is 3 percent; 22 States and the District of Columbia equal or exceed this figure. A common attribute of the top six entries on this list is the significance of civilians hired by military installations ranging from 53.5 percent of total defense-generated employment in Maryland to over 90 percent in Hawaii.

TABLE 5.—*Defense dependency by State, June 1966*

[Employment numbers in thousands]

State ranking ¹	Work force	Defense-generated employment	Percent defense dependency, col. 3 divided by col. 2
(1)	(2)	(3)	(4)
1. Alaska.....	90.4	8.8	9.7
2. Utah.....	390.5	35.7	9.1
3. Hawaii.....	273.3	22.8	8.3
4. District of Columbia.....	396.0	32.8	8.3
5. Virginia.....	1,638.6	125.6	7.7
6. Maryland.....	1,307.3	85.3	6.5
7. Connecticut.....	1,236.8	78.9	6.4
8. California.....	7,459.0	405.0	5.4
9. New Hampshire.....	274.0	13.5	4.9
10. Washington.....	1,217.7	51.5	4.2
11. New Mexico.....	357.4	15.1	4.2
12. Georgia.....	1,684.9	69.2	4.1
13. Oklahoma.....	961.2	38.6	4.0
14. Alabama.....	1,273.1	48.1	3.8
15. Rhode Island.....	372.3	13.8	3.7
16. Missouri.....	1,965.9	69.8	3.6
17. Texas.....	4,024.6	139.6	3.5
18. Massachusetts.....	2,432.1	85.2	3.5
19. Arizona.....	544.4	19.3	3.5
20. Colorado.....	778.8	25.6	3.3
21. Florida.....	2,264.3	73.3	3.2
22. Kansas.....	834.6	25.6	3.1
23. Mississippi.....	786.3	23.9	3.0
U.S. average.....			3.0
24. New Jersey.....	2,753.7	80.3	2.9
25. Pennsylvania.....	4,747.3	129.8	2.7
26. South Carolina.....	998.8	23.2	2.3
27. Indiana.....	2,019.5	43.6	2.2
28. Ohio.....	4,153.3	88.7	2.1
29. Tennessee.....	1,584.5	29.9	1.9
30. Maine.....	375.4	7.2	1.9
31. New York.....	7,965.0	138.0	1.7
32. Nevada.....	189.9	3.3	1.7
33. North Dakota.....	267.7	4.2	1.6
34. Vermont.....	166.5	2.6	1.6
35. Kentucky.....	1,126.2	16.7	1.5
36. North Carolina.....	1,994.0	29.1	1.5
37. Minnesota.....	1,591.3	21.5	1.4
38. Illinois.....	4,730.0	60.3	1.3
39. Delaware.....	226.7	3.0	1.3
40. Arkansas.....	685.4	8.1	1.2
41. Michigan.....	3,187.9	36.0	1.1
42. Louisiana.....	1,302.5	14.6	1.1
43. Nebraska.....	650.0	6.5	1.0
44. West Virginia.....	620.9	6.4	1.0
45. Wyoming.....	144.6	1.3	.9
46. Oregon.....	826.4	6.6	.8
47. Iowa.....	1,194.9	9.9	.8
48. Wisconsin.....	1,787.5	14.6	.8
49. South Dakota.....	262.9	1.9	.7
50. Montana.....	263.7	1.7	.6
51. Idaho.....	277.7	.9	.3
Undistributed.....		90.4	
Total, United States.....	78,658.0	2,387.3	3.0

¹ Arranged in descending order based on percent defense dependency.

Defense dependency was examined for 292 labor market areas in which there were more than 500 defense-generated workers, or in which the defense dependency rate exceeded five percent. Tables 5(a) and 5(b) summarize the characteristics of those areas with respect to the dominant cause of defense dependency and the size of the area labor force.

Table 5(a) presents the distribution of these 292 labor market areas by defense dependency class intervals and identifies the dominant cause of dependency. If an area's defense employment is 50 percent or more attributable to a military installation or any one product as listed in columns (b) through (g), it is distributed under that column. Of the 292 areas, 129 derived their dependency from military installations and 106 were undistributed under this "dominance" criterion. Of the latter, 64 fall below the 3 percent U.S. average defense dependency ratio. These 64 may be relatively immune to defense impact since they have a low dependency rate and a diversified defense activity base.

Sixteen of the 25 areas in the defense dependency class interval of "15 percent or more" are attributed to the location of military installations and four to commercial shipyards.

TABLE 5(a).—Area distribution by dependency class and type of employment, June 1966

Defense dependency classes (a)	Areas by dominant type of employment						Labor areas	
	Military installa- tions (b)	Aircraft (c)	Missile and space (d)	Ammu- nition (e)	Ships (f)	Undis- tributed (g)	Total (h)	Cumu- lative percent (i)
15 percent and over.....	16	-----	2	1	4	2	25	8
12 to 14.9 percent.....	13	-----	-----	2	-----	2	17	14
9 to 11.9 percent.....	14	4	2	3	1	7	31	25
6 to 8.9 percent.....	23	-----	1	3	-----	8	35	37
3 to 5.9 percent.....	33	5	4	2	1	23	68	60
Under 3 percent.....	30	9	3	9	1	64	116	110
Total.....	129	18	12	20	7	106	292	-----

Table 5(b) presents the distribution of the 292 areas by labor force size groups using the same dependency class intervals. Of the 292 areas, 183, or 60 percent, have a labor force of less than 100,000 workers; 69 have less than 25,000 workers.

The areas with the highest defense dependency rates tend to be associated with the smallest communities (and have a high dependency on military installations). Nineteen of the 25 areas in the "15 percent or more" class have a labor force of less than 50,000.

By contrast the areas with the lowest dependency rates tend to be associated with the largest areas. Of the 116 locations having less than 3 percent dependency, 92 are in areas having a labor force of 50,000 or more. However if a more complete measure of impact could be obtained by tracing lower tier subcontracting and purchases of goods and services, it may be found that the larger areas with a broader industrial base retain more of this secondary impact than the smaller areas.

Column (c) in table 5(b) also shows that 41.6 percent of defense-generated employment in this study is located in 108 areas having a dependency of "6 percent or more" which is twice the 3 percent U.S. average.

TABLE 5(b).—Area distribution by dependency class and labor force size, June 1966

Defense dependency classes	Defense employment		Labor force size groups (thousand)							
	No. (thousands)	Cumulative percent	Under 25	25 to 50	50 to 100	100 to 250	250 to 500	500 to 1,000	Over 1,000	No. of Areas
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
15 percent and over.....	207	8.7	15	4	4	2	-----	-----	-----	25
12 to 14.9 percent.....	124	13.9	7	5	3	1	1	-----	-----	17
9 to 11.9 percent.....	427	31.8	14	4	-----	5	7	-----	1	31
6 to 8.9 percent.....	236	41.6	10	12	6	3	3	1	-----	35
3 to 5.9 percent.....	690	70.5	20	12	13	10	4	5	4	68
Under 3 percent.....	703	100.0	3	21	30	37	13	9	3	116
Total.....	2,387	-----	69	58	56	58	28	15	8	292

Table 6, using the smaller sample of 851,200 EIS-surveyed workers at 387 plants, presents the percentage distribution for this employment both by state and defense product group. The percentage distribution of the total labor force is presented for comparative purposes.

The Pacific region with 26 percent of the EIS-surveyed workers, but only 12.1 percent of the work force, far outranks the next highest regions, i.e., mid-Atlantic and New England with 14.7 and 14.1 percent, respectively. One unique characteristic of the Pacific region is its significant participation in each product group.

California, with 23 percent of the EIS-surveyed workers and 9.5 percent of the labor force, is the dominant State both in total EIS-surveyed workers and for several of the defense product groups. It far outranks Connecticut and New York which have 7.8 and 7.2 percent, respectively, of the total EIS-surveyed employment.

The largest product group, in terms of EIS-surveyed employment, is aircraft with 304,000 workers, or 36 percent, of the total of 851,000 workers. Employment in the aircraft program is rather evenly dispersed; it ranges between 10 and 16 percent in all regions except for mountain and east south central regions, which combined represent only 3.9 percent of the total.

Employment in the electronics and communications product group, which accounts for 27 percent of total EIS-surveyed employment, is concentrated in the middle Atlantic and Pacific regions; each of these two regions account for approximately 29 percent of the total employment in this product group.

Regional concentrations for the remaining six product groups, accounting for the residual 37 percent of EIS-surveyed employment, varies greatly. Ammunition is produced in all nine regions. However, two of these regions, east north central and west north central, account for over half of the EIS-surveyed employment on this product.

Table 7 delineates the State distribution of the 146,000 workers employed on defense subcontracts in plants surveyed by the EIS. It should be explicitly noted that, since the EIS survey was designed to include large defense prime contractors, the subcontracting dispersion shown in table 7 may be somewhat biased. For example, Kansas, a State in which the EIS sample encompassed a relatively high percent of total defense-oriented industries' employment, may rank relatively high while Illinois, where EIS coverage is relatively small, may rank relatively low because of an understatement of subcontracting.

TABLE 7.—*EIS-surveyed employment generated by defense subcontracts by State of performance, June 1966*

State ranking	Number (thou- sands)	Percent- age	State ranking	Number (thou- sands)	Percent- age
1. California.....	37.8	25.9	20. Missouri.....	1.5	1.0
2. New York.....	20.9	14.3	21. Iowa.....	1.1	.8
3. Massachusetts.....	9.4	6.4	22. West Virginia.....	.8	.6
4. New Jersey.....	9.0	6.2	23. Georgia.....	.7	.5
5. Connecticut.....	7.6	5.2	24. Colorado.....	.6	.4
6. Texas.....	6.7	4.6	25. Maine.....	.6	.4
7. Ohio.....	6.4	4.4	26. North Carolina.....	.5	.3
8. Florida.....	5.4	3.7	27. Louisiana.....	.5	.3
9. Kansas.....	4.8	3.3	28. Oklahoma.....	.4	.3
10. Indiana.....	4.7	3.2	29. Alabama.....	.4	.3
11. Pennsylvania.....	4.1	2.8	30. Mississippi.....	.4	.3
12. Tennessee.....	3.9	2.7	31. Vermont.....	.2	.1
13. Michigan.....	3.4	2.3	32. Washington.....	.2	.1
14. Maryland.....	2.9	2.0	33. Wyoming.....	.2	.1
15. Minnesota.....	2.7	1.9	34. Wisconsin.....	.2	.1
16. Arizona.....	2.3	1.6	35. Delaware.....	.0	.0
17. Utah.....	2.2	1.5	Other 15 States.....	.1	.1
18. Illinois.....	1.8	1.2			
19. Virginia.....	1.6	1.1	Total.....	146.0	100.0

To better evaluate this inherent bias, table 8 presents data showing the distribution of subcontracts awarded to the top 10 States as determined by a special study conducted by the Office of the Assistant Secretary of Defense (Systems Analysis). The subcontracting data collected for that study was less biased than the EIS-surveyed data. It can be seen that, although there are significant differences between the two studies, eight of the top 10 appear on both lists.

TABLE 8.—10 top States ranked by defense prime and subcontracts

State (a)	Special defense subcontract study ¹		Subcontracts in EIS plants ²		Defense prime contracts			
	Rank	Percent of United States	Rank	Percent of United States	Awards ³		Employment ⁴	
					Rank	Percent of United States	Rank	Percent of United States
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
California.....	1	30.2	1	25.9	1	22.1	1	18.6
New York.....	2	11.5	2	14.3	2	9.6	2	7.3
New Jersey.....	3	7.0	4	6.2	9	3.5	9	3.8
Ohio.....	4	6.0	7	4.4	8	3.7	6	4.8
Connecticut.....	5	5.6	5	5.2	4	5.1	3	6.0
Pennsylvania.....	6	5.1	11	2.8	7	4.2	5	4.8
Massachusetts.....	7	4.2	3	6.4	5	5.1	7	4.7
Florida.....	8	2.9	8	3.7	11	2.7	10	3.6
Texas.....	9	2.9	6	4.6	3	6.2	4	5.6
Illinois.....	10	2.8	18	1.2	17	1.8	13	2.6
Subtotal.....		78.2		74.6		64.0		61.8
Others.....		21.8		25.3		36.0		38.2
Total.....		100.0		100.0		100.0		100.0

¹ Based on dollars of subcontract awards received.

² Based on June 1966 employment generated by defense subcontracts received by EIS plants.

³ Based on prime contract awards in fiscal year 1965.

⁴ Employment on prime contracts as reported by EIS plants.

This table also presents for comparative purposes an employment and awards series for prime contracts in these same 10 States. The first series, prime contract awards, is published by the Office of the Assistant Secretary of Defense (Comptroller), while the second is derived from the EIS survey of prime contract employment. Comparing all four rankings (two for prime contracts, two for subcontracts), it is noted that eight of the top 10 States, as ranked by the DOD special subcontracting study, appear in all series. This suggests that subcontracting work is more concentrated geographically than prime contracts. Each of the prime contract series indicates that approximately 65 percent of all work is done in the top 10 States while, for subcontracting, the 10 top States account for 77 or 78 percent of all work.

As a summary of State distribution of defense impact, table 9 presents the top 10 States ranked by nine separate impact measures. The concentrated nature of defense impact is demonstrated by the fact that only 19 States appear in this table, and four of the 19 (California, New York, Texas, and Ohio) appear in all nine columns.

TABLE 9.—Top 10 States ranked by defense impact measures

Rank	Prime contracts			Subcontracts			Total EIS employment, primes and subcontracts (3+6)	Civilian employment at installations *	Total defense generated employment (3+9) (10)
	Awards fiscal year 1965 ¹	EIS employment ²	Census shipments (MA 175) ³	Awards per DOD study ⁴	EIS employment ⁵	Census shipments (MA 175) ³			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	California.....	California.....	California.....	California.....	California.....	California.....	California.....	California.....	California.....
2	New York.....	New York.....	New York.....	New York.....	New York.....	New York.....	New York.....	Virginia.....	Texas.....
3	Texas.....	Connecticut.....	Connecticut.....	New Jersey.....	Massachusetts.....	New Jersey.....	Connecticut.....	Pennsylvania.....	New York.....
4	Massachusetts.....	Texas.....	Ohio.....	Ohio.....	New Jersey.....	Ohio.....	Texas.....	Pennsylvania.....	Pennsylvania.....
5	Missouri.....	Pennsylvania.....	New Jersey.....	Connecticut.....	Connecticut.....	Connecticut.....	Massachusetts.....	Maryland.....	Virginia.....
6	Pennsylvania.....	Ohio.....	Massachusetts.....	Pennsylvania.....	Texas.....	Massachusetts.....	Ohio.....	Georgia.....	Ohio.....
7	Missouri.....	Massachusetts.....	Missouri.....	Florida.....	Ohio.....	Pennsylvania.....	Pennsylvania.....	Ohio.....	Maryland.....
8	Ohio.....	Missouri.....	Texas.....	Texas.....	Florida.....	Indiana.....	New Jersey.....	New York.....	Massachusetts.....
9	New Jersey.....	New Jersey.....	Pennsylvania.....	Illinois.....	Kansas.....	Illinois.....	Missouri.....	Alabama.....	Connecticut.....
10	Georgia.....	Florida.....	Washington.....	Illinois.....	Indiana.....	Texas.....	Florida.....	Oklahoma.....	New Jersey.....

¹ OSD Comptroller, fiscal year 1965; Data for fiscal year 1965 is considered more comparable to EIS employment data than the fiscal year 1966 awards data.

² Prime contract portion of EIS surveyed and nonsurveyed prime contract generated employment June 1966.

³ Census MA-175, calendar year 1963.

⁴ Special defense subcontract study, 1966.

⁵ Subcontract portion of EIS survey, June 1966.

⁶ OSD Comptroller, June 1966.

CHANGES IN DEFENSE-GENERATED EMPLOYMENT

Between June 1965 and June 1966 defense-generated employment increased by 17 percent as shown in table 10. Of the three components, employment imputed to prime contracts accounted for the largest relative (39 percent) and absolute increase in defense-generated employment. Plants comprising this component generally devote most of their output to commercial-type items such as construction equipment, medical and dental equipment, photographic equipment and supplies, material handling equipment, food, clothing, etc.

TABLE 10.—*Defense-generated employment, June 1965–June 1966*

Components	Employment (thousands)			Percent increase, June 1965 to June 1966	Percent of total employment increase, June 1965 to June 1966
	June 1965	December 1965	June 1966		
EIS-surveyed plants.....	733	774	851	16	33.8
Imputed to prime contracts.....	1 361	408	501	39	39.6
DOD civilians.....	941	983	1,035	10	26.6
Total.....	2,035	2,170	2,387	17	100.0

¹ Based on contract awards for the 6 months, July–December 1964, converted to an annual basis.

Employment in the EIS plants (working primarily on specialized defense products) increased by 16 percent. The largest aggregate increases were in aircraft and ammunition programs as shown in table 11. Defense employment in the aircraft plants increased by 41,000, or 16 percent. The 39,000 increase in employment in the ammunition group represented more than 100-percent increase over 1965.

TABLE 11.—*EIS-surveyed employment changes by product group, June 1965 to June 1966*

[In thousands]

Defense product group	June 1965	December 1965	June 1966
Aircraft.....	263	280	304
Missiles and space.....	126	128	136
Ships.....	63	63	66
Vehicles and weapons.....	19	18	22
Ammunition.....	32	46	71
Electronics and communications.....	209	219	228
All others surveyed.....	21	21	24
Total.....	733	774	851

The geographic distribution of changes in defense-generated employment between June 1965 and June 1966 are delineated by table 12. The total change in defense-generated employment is presented in column 5, while columns 3 and 4 identify the portions of change associated with plants and DOD installations, respectively. Also included in column 6 is the geographic distribution of changes in military personnel.

The nine States indicated by an asterisk accounted for 52 percent of the 353,900 increase in defense-generated employment. Except for Missouri, Connecticut, and Illinois, these nine States also rank

among the States having the largest number of defense workers as of June 1966. Missouri and Connecticut experienced large employment increases in both EIS-surveyed and nonsurveyed plants, while Illinois' increase was predominantly in imputed employment to nonsurveyed plants.

Excluded from these nine States are the large defense-producing States of New York, Ohio, and Massachusetts.

TABLE 12.—Changes in defense generated employment by State, June 1965–June 1966

(In thousands)

State	Defense generated employment ¹		Net changes in employment, June 1965–June 1966				
			Defense civilian employment			Military personnel assigned	Total defense-generated and military, col. (5)+col. (6)
	June 1965	June 1966	EIS and all other plants	DOD installations	Total, col. (3)+col. (4)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Alabama.....	47.2	48.1	1.0	-0.1	0.9	8.1	9.0
Alaska.....	8.8	8.8	-3	.3	0	-1.7	-1.7
Arizona.....	14.9	19.3	3.6	.8	4.4	-5	3.9
Arkansas.....	5.4	8.1	2.2	.5	2.7	-7	2.0
California ²	349.1	405.0	36.4	19.5	55.9	33.7	89.6
Colorado.....	24.2	25.6	.2	1.2	1.4	5.1	6.5
Connecticut ²	66.3	78.9	12.1	.5	12.6	.5	13.1
Delaware.....	2.1	3.0	.8	.1	.9	.1	.8
District of Columbia.....	33.2	32.8	-7	.2	-5	5.7	5.2
Florida.....	68.2	73.3	2.6	2.5	5.1	.8	4.3
Georgia.....	58.3	69.2	4.6	6.3	10.9	15.4	26.3
Hawaii.....	20.8	22.8	.2	1.8	2.0	11.5	-9.5
Idaho.....	.6	.9	.2	.1	.3	-1.4	-1.1
Illinois ²	47.9	60.4	11.1	1.4	12.5	12.9	25.4
Indiana.....	34.5	43.6	6.7	2.4	9.1	1.3	10.4
Iowa.....	7.3	9.9	2.4	.2	2.6	.2	2.8
Kansas.....	19.2	25.6	5.6	.8	6.4	5.0	11.4
Kentucky.....	13.2	16.7	.3	3.2	3.5	3.0	6.5
Louisiana.....	10.5	14.6	2.9	1.2	4.1	5.8	9.9
Maine.....	5.6	7.2	1.5	.1	1.6	-1.4	.2
Maryland.....	69.3	85.3	11.5	4.5	16.0	8.2	24.2
Massachusetts.....	78.7	85.2	6.4	.1	6.5	-2.3	4.2
Michigan.....	29.7	36.0	5.2	1.1	6.3	-1.6	4.7
Minnesota.....	16.2	21.5	5.1	.2	5.3	-1	5.2
Mississippi.....	23.2	23.9	-5	1.2	.7	6.7	7.4
Missouri ²	53.6	69.8	12.7	3.5	16.2	10.3	26.5
Montana.....	1.5	1.7	0	.2	.2	-1	.1
Nebraska.....	5.1	6.5	1.7	-3	1.4	-4.0	-2.6
Nevada.....	3.0	3.3	.2	.1	.3	-1.3	-1.0
New Hampshire.....	12.1	13.5	1.1	.3	1.4	-2.5	-1.1
New Jersey ²	67.5	80.3	9.6	3.2	12.8	11.9	24.7
New Mexico.....	15.3	15.1	-1.0	.8	-.2	-2.9	-3.1
New York.....	130.2	138.0	17.0	-9.2	7.8	-1.9	5.9
North Carolina.....	25.9	29.1	2.1	1.1	3.2	5.9	9.1
North Dakota.....	2.7	4.2	1.7	-2	1.5	-1	1.4
Ohio.....	80.1	88.7	7.6	1.0	8.6	1.1	9.7
Oklahoma.....	31.2	38.6	1.6	5.8	7.4	3.9	11.3
Oregon.....	5.5	6.6	1.0	.1	1.1	-1.4	-.3
Pennsylvania ²	108.0	129.8	16.8	5.0	21.8	-7	21.1
Rhode Island.....	13.5	13.8	-2	.5	.3	2.9	3.2
South Carolina.....	18.7	232.2	2.1	2.4	4.5	10.0	14.5
South Dakota.....	2.1	1.9	-2	0	-.2	-.4	-.6
Tennessee.....	23.1	29.9	6.3	.5	6.8	3.5	10.3
Texas ²	116.7	139.6	13.0	9.9	22.9	41.8	64.7
Utah.....	28.8	35.7	-8	7.7	6.9	-1	6.8
Vermont.....	2.0	2.6	.6	0	.6	0	.6
Virginia ²	112.8	125.5	3.6	9.1	12.7	10.3	23.0
Washington.....	45.9	51.5	3.4	2.2	5.6	1.9	7.5
West Virginia.....	6.0	6.4	.4	0	.4	0	.4
Wisconsin.....	11.6	14.6	2.8	.2	3.0	-8	2.2
Wyoming.....	1.1	1.3	.2	0	.2	-6	-.4
Undistributed.....	54.8	90.4	35.6	0	35.6	14.6	50.2
U.S. total.....	2,033.4	2,387.3	259.9	94.0	353.9	190.8	544.7

¹ Defense-generated employment in 387 EIS plants, all other prime contractor plants, and civil service employment at DOD installations.

² 9 States with largest absolute increases, accounting for 52 percent of the 353,900 increase in col. 5.

Finally, focusing on a longer time span, table 13 presents defense-generated industrial employment trends from 1963 to June 1966 for 150 EIS plants that have been surveyed continuously since 1963. The defense-generated employment for these 150 plants represented 72 percent of the total defense-generated employment in the 387 plants as of June 1966.

Employment totaled 719,000 in June 1963 which was below the peak reached in 1962. The downward trend continued to June 1965 but was reversed during the following year. The most significant employment changes among the defense product groups during 1963-65 were the decreases in missiles (40 percent) and electronics and communications (28 percent).

FUTURE REPORTING

The next cycle of contractor reporting under the EIS covers the period ending December 31, 1966. Improvements in the data are expected particularly with respect to expanded coverage and the reporting of time-phasing profiles for assessing the employment impact of large defense projects. Using these updated reports, statistical summaries similar to those presented in this article are planned for release during mid-1967 and periodically thereafter.

CONCLUSIONS

These statistics, although somewhat incomplete as to coverage, present for the first time an indication of the geographic concentration and dependency of the employment generated by defense programs as well as the change in these dimensions over time. As such they provide a measure not only of "potential impact" as measured by current dependency on defense programs, but, in a historical sense, "actual" impacts (expressed as changes in defense-generated employment) over time.

Employment in military installations appears to be the dominant cause of significantly above-average defense dependency, particularly for labor areas with a small labor force. Large labor areas are generally less dependent on defense-generated employment and typically have a wider defense-oriented base.

Approximately 65 percent of defense-generated industrial workers on defense prime contracts are located in 10 States having approximately half of the total U.S. civilian work force. The data indicate, however, that the distribution of defense subcontract work may be somewhat more concentrated than work performed on prime contracts.

The total magnitude, as well as the geographic and program impact of the defense budget increase during fiscal year 1966, is documented by the data. It is important to note that, although this increase in defense-generated employment accounted for 25 percent of the total increase in the civilian work force, the geographic impact was quite widely dispersed and a significant share of the total increment was focused on firms producing commercial items.

Using data of this nature and supplementary economic statistics now being generated both within and outside DOD, it should be possible to develop improved methods for assessing more accurately the results of major shifts in defense programs. These analyses should be useful both to appropriate Government agencies in their programs for mitigating the adverse effects of such shifts and to industry as the supplier of defense requirements.

TABLE 13.—*Defense-generated employment trends in 150 EIS plants, 1963-66*

[In thousands]

Product group	June 1963	June 1964	June 1965	December 1965	June 1966
Aircraft	255	245	221	233	248
Missiles and space.....	193	162	116	117	123
Ships.....	41	46	51	51	51
Vehicles and weapons ¹	16	11	14	13	15
Ammunition.....	26	23	18	23	33
Electronics and communications.....	188	152	135	139	143
Total.....	719	639	555	576	² 613

¹ Includes only plants where defense work is dominant. Military trucks and vehicles produced or assembled in large automotive complexes are not included in the EIS survey.

² Defense employment for June 1966 for these 150 plants represents 72 percent of the total defense employment generated by the 387 EIS plants. This percent coverage varies by product group as follows: aircraft 81 percent; missiles, 90 percent; ships, 78 percent; vehicles, 69 percent; ammunition, 46 percent; and electronics, 62 percent.

MILITARY PRIME CONTRACT AWARDS

BY

REGION and STATE



FISCAL YEARS

- 1962
- 1963
- 1964
- 1965
- 1966

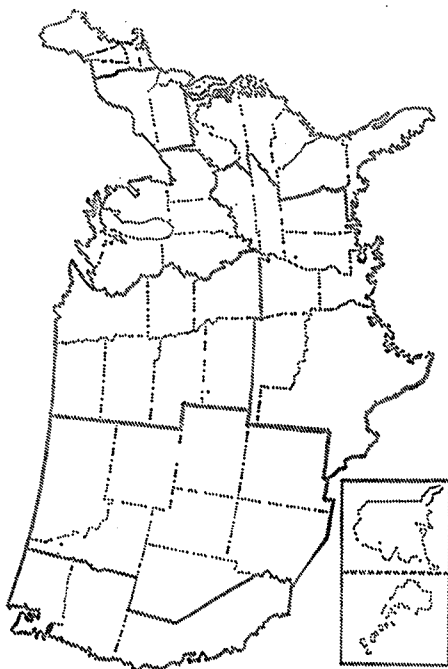


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FOREWORD

This pamphlet contains a record of military prime contract awards of \$10,000 or more in fiscal years 1962 through 1966 which are assignable by state and geographic region.

Two types of information are presented in this pamphlet. In part A, data are shown for all military prime contracts by State and geographic region, and individual tables are shown for each State breaking out total procurement according to 25 major categories of supplies, equipment, and services.

Part B covers procurement for research, development, test, and evaluation (R.D.T. & E.) work by State and region. These amounts are included in part A. The R.D.T. & E. total for each State is subdivided to show awards to educational institutions, other non-profit institutions, and business firms. Beginning with fiscal year 1965, awards to research foundations and nonprofit corporations associated with universities are included in the dollar amounts reported for "other nonprofit institutions." Formerly, such awards were recorded under "schools and their affiliates."

It is emphasized that prime contract data are not a measure of the total volume of defense work that is performed within a State, because they do not reflect the very substantial amount of subcontract funds that may flow into and out of the State. About half of the prime contract dollars for major hard goods, and unknown proportions of other types of procurement, are subcontracted by the prime contractor.

In general, the State data are based on the location of the plant where the product will be finally processed or assembled. For contracts where companies assign the work to more than one plant, the location is the address of the plant where the greater part of the work is done or where the management responsibility is centered. When this cannot be determined, the contracts are assigned to a "not distributed by State" category and are excluded from this report. The amounts not distributed by State consist principally of all contracts and purchases below \$10,000 each but also include other contracts which for security reasons could not be assigned to a state. The amounts not distributed by State were as follows:

Fiscal year—	<i>Billions</i>
1962.....	\$2.8
1963.....	2.9
1964.....	3.1
1965.....	3.4
1966.....	4.0

Some special characteristics of the data on prime contract awards by procurement program category should be noted:

The electronics category includes all electronics and communications equipment which is separately procured under prime contract. In the case of missiles and aircraft, electronics work is often an integral part of the assembly prime contract, and therefore is not separately identified as electronics in the prime contract statistics.

Weapons, whether for use in ships, tanks or aircraft, are separately procured and separately reported.

Contracts for all other types of equipment and parts, and for repair, maintenance, overhaul, modification and other services, which can be identified with one of the specified program categories, are assigned to that category. For example, the installation or checkout of equipment at ballistic missile sites is recorded as missile work in the State where the site is located. (The contract for manufacture of such equipment is reported according to the location of the manufacturer's plant.) Aircraft, missile, or other program contracts, therefore, may be reported in States where there are no weapon assembly plants, but where bases, laboratories, or suppliers of instruments, parts, or support equipment may be located.

The dollar volume shown for each category includes research, development, test, or evaluation (R.D.T. & E.) work associated with it. The scope of R.D.T. & E. includes the following activities:

Research.—All effort directed toward increased knowledge of natural phenomena and solution of problems in the various sciences, but exclusive of efforts directed to prove the feasibility of solutions of problems of immediate military importance or time-oriented investigations and developments. This work is done primarily by universities with some by in-house laboratories and industry.

Exploratory development.—Effort directed toward the solution of specific military problems short of major development projects. This may vary from time-oriented applied research to advanced breadboard hardware, study, programing, and planning efforts. It is pointed toward specific military problem areas with a view toward developing possible solutions and determining their characteristics. This work is widely distributed to in-house laboratories and industry, with some to universities.

Advanced development.—All projects which have moved into the development of hardware for experimental or engineering test.

Engineering development.—Development programs being engineered for service use but not yet approved for procurement or operation. This work is done principally by industry.

Operational systems development.—Effort directed toward development, engineering, and test of systems which have been approved for production and service employment, but otherwise having the same characteristics as engineering development programs.

Management and support.—Effort in support of installations or operations required for general research and development use, such as test ranges and maintenance support of laboratories.

PART - A

U. S. MILITARY PRIME CONTRACT AWARDS BY REGION, STATE AND COMMODITY CATEGORY

FISCAL YEARS 1962 - 1966

TABLE I - MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE AND PERCENT OF U. S. TOTAL--BY REGION AND STATE
FISCAL YEARS 1962-1966

Region and State	Millions of Dollars						Percent of U. S. Total					
	FY 1962	FY 1963	FY 1964	FY 1965	FY 1966	FY 1967	FY 1962	FY 1963	FY 1964	FY 1965	FY 1966	FY 1967
U. S. Total	\$25,039 \$/	\$25,233 \$/	\$24,417 \$/	\$23,268 \$/	\$31,713 \$/		100.0%	100.0%	100.0%	100.0%	100.0%	
NEW ENGLAND	2,736	2,277	2,307	2,599	3,761		10.9	9.0	9.5	11.2	11.9	
Maine	60	58	32	29	51		0.2	0.2	0.1	0.3	0.2	
New Hampshire	59	51	65	53	170		0.2	0.2	0.3	0.2	0.3	
Vermont	16	12	14	22	80		0.1	0.1	0.1	0.1	0.3	
Massachusetts	1,310	1,060	1,179	1,179	1,336		5.2	4.2	4.2	5.1	4.2	
Rhode Island	58	47	38	82	132		0.2	0.2	0.2	0.4	0.4	
Connecticut	1,213	1,049	1,126	1,180	2,051		4.9	4.2	4.6	5.1	6.5	
MIDDLE ATLANTIC	4,684	4,639	4,297	4,039	5,974		18.7	18.4	17.6	17.3	17.6	
New York	2,669	2,500	2,462	2,330	3,319		10.7	9.9	10.2	9.6	8.9	
New Jersey	1,063	1,252	918	820	1,093		4.3	5.0	3.6	3.5	3.4	
Pennsylvania	952	887	883	889	1,665		3.8	3.5	3.6	4.2	5.3	
EAST NORTH CENTRAL	3,168	3,171	2,764	2,626	4,860		12.6	12.6	11.3	11.3	15.3	
Ohio	1,129	1,346	1,039	883	1,593		4.5	5.3	4.2	3.7	5.0	
Indiana	571	487	538	602	1,068		2.3	1.9	2.2	2.6	3.4	
Illinois	531	486	429	422	828		2.1	1.9	1.8	1.8	2.9	
Michigan	678	633	591	533	918		2.7	2.5	2.4	2.3	2.9	
Wisconsin	259	219	177	203	365		1.0	0.9	0.7	0.9	1.1	
WEST NORTH CENTRAL	1,681	1,601	2,209	1,796	2,358		6.7	6.3	9.0	7.7	7.5	
Minnesota	297	274	218	269	408		1.2	1.1	0.9	1.1	1.6	
Iowa	179	130	104	131	248		0.7	0.5	0.4	0.6	0.8	
Missouri	546	686	1,349	1,061	1,113		2.2	2.7	5.5	4.6	3.5	
North Dakota	100	65	192	49	83		0.4	0.3	0.8	0.2	0.3	
South Dakota	113	81	23	35	83		0.5	0.3	0.1	0.1	0.1	
Nebraska	53	33	34	43	80		0.2	0.1	0.1	0.2	0.3	
Kansas	393	332	289	229	313		1.6	1.3	1.2	1.0	1.0	
SOUTH ATLANTIC	2,596	2,862	3,207	3,095	3,975		10.4	11.4	13.1	13.3	12.5	
Delaware	37	48	30	36	83		0.1	0.2	0.1	0.2	0.1	
Maryland	470	606	548	530	813		1.9	2.4	2.3	2.5	2.7	
District of Columbia	182	238	223	248	328		0.7	0.9	0.9	1.0	1.0	
Virginia	446	485	691	469	1,286		1.8	1.9	2.8	2.0	1.3	
West Virginia	144	162	87	98	149		0.6	0.7	0.4	0.4	0.5	
North Carolina	269	259	273	288	442		1.1	1.0	1.1	1.2	1.4	
South Carolina	65	58	52	82	176		0.3	0.2	0.2	0.4	0.6	
Georgia	337	423	526	663	799		1.4	1.7	2.1	2.8	2.5	
Florida	646	583	783	633	767		2.6	2.3	3.2	2.7	2.4	

TABLE I (Cont'd.)
MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE AND PERCENT OF U. S. TOTAL--BY REGION AND STATE
FISCAL YEARS 1962-1966

Region and State	Millions of Dollars						Percent of U. S. Total					
	FY 1962	FY 1963	FY 1964	FY 1965	FY 1966	FY 1967	FY 1962	FY 1963	FY 1964	FY 1965	FY 1966	FY 1967
SOUTH CENTRAL												
Kentucky	\$1,953	\$2,169	\$2,209	\$2,119	\$3,365		7.6%	8.6%	9.0%	10.1%	12.2%	
Tennessee	44	56	40	43	70		0.2	0.2	0.2	0.2	0.2	
Alabama	184	184	194	197	502		0.7	0.7	0.8	0.8	1.6	
Mississippi	154	195	191	165	282		0.6	0.8	0.8	0.7	0.9	
Arkansas	100	186	156	152	162		0.4	0.7	0.6	0.7	0.5	
Louisiana	85	39	30	39	96		0.3	0.2	0.1	0.2	0.3	
Oklahoma	244	195	181	256	303		1.0	0.8	0.7	1.1	1.0	
Texas	1,006	1,203	1,223	1,447	2,292		0.5	0.5	0.5	0.5	0.5	
							4.0	4.8	5.3	6.2	7.2	
MOUNTAIN												
Montana	1,166	1,446	1,055	809	837		4.7	5.7	4.3	3.5	2.6	
Idaho	31	79	16	69	14		0.1	0.3	0.1	0.3	*	
Wyoming	26	9	8	12	20		0.1	0.1	0.1	0.1	*	
Colorado	23	125	49	8	11		0.1	0.5	0.2	0.1	*	
Utah	565	444	390	249	256		2.3	1.8	1.6	1.1	0.8	
Nevada	299	428	340	191	170		1.2	1.7	1.4	0.8	0.5	
New Mexico	8	13	6	19	32		*	0.1	*	0.1	0.1	
Arizona	153	286	72	84	86		0.2	0.2	0.3	0.4	0.3	
							0.6	1.1	0.7	0.8	0.8	
PACIFIC												
Washington	6,960	6,919	6,215	5,739	6,347		27.8	27.4	25.6	24.7	20.0	
Oregon	921	1,041	1,086	545	144		3.7	4.1	4.5	2.3	1.4	
California	46	42	29	40	90		0.2	0.2	0.1	0.2	0.3	
Alaska & Hawaii	5,993	5,836	5,100	5,154	5,813		23.9	23.1	21.0	22.1	18.3	
ALASKA & HAWAII												
Alaska	25	149	154	146	136		0.4	0.6	0.6	0.6	0.4	
Hawaii	63	104	102	74	72		0.3	0.4	0.2	0.3	0.2	
	32	45	52	72	64		0.1	0.2	0.2	0.3	0.2	

NOTE: See Table III for detail in thousands of dollars by state and program, and for footnotes.

TABLE II
MILITARY PRIZE CONTRACT AWARDS OF \$10,000 OR MORE FOR MAJOR MILITARY HARD GOODS - BY GEOGRAPHIC REGION
FISCAL YEARS 1962-1966

Program and Geographic Area	Millions of Dollars					Percent of Program Total				
	FY 1962	FY 1963	FY 1964	FY 1965	FY 1966	FY 1967	FY 1968	FY 1963	FY 1964	FY 1965
AIRCRAFT										
New England	\$5,134	\$5,480	\$6,167	\$5,170	\$7,791		100.0%	100.0%	100.0%	100.0%
Middle Atlantic	966	752	774	850	1,631		18.7	13.7	12.5	14.7
East North Central	1,045	981	841	818	1,133		20.3	17.9	13.6	14.5
West North Central	698	926	765	605	1,018		12.8	16.9	10.5	13.1
South Atlantic	623	749	1,369	1,031	886		12.1	13.7	22.2	17.9
South Central	311	419	515	600	695		6.0	7.6	8.4	8.9
Mountain	365	579	736	838	1,321		7.5	10.2	11.9	14.5
Pacific	132	47	32	35	100		0.6	0.9	0.5	1.3
Alaska & Hawaii	1,134	1,040	1,132	969	1,006		22.0	19.1	13.4	12.9
	D/	1	3	4	1			0.1	0.1	*
MISSILE AND SPACE SYSTEMS										
New England	\$5,827	\$6,855	\$5,807	\$4,436	\$4,432		100.0%	100.0%	100.0%	100.0%
Middle Atlantic	549	433	463	403	422		8.0	6.3	8.1	9.7
East North Central	725	660	557	517	533		10.6	9.3	9.6	12.1
West North Central	256	215	205	201	161		3.8	3.2	3.5	3.7
South Atlantic	125	171	182	126	197		1.8	2.5	3.1	4.5
South Central	607	563	593	480	512		8.9	8.2	10.2	11.8
Mountain	87	152	186	139	132		1.3	2.2	3.2	3.0
Pacific	815	980	650	344	282		11.9	14.3	11.2	7.8
Alaska & Hawaii	3,663	3,680	2,966	2,226	2,123		53.7	53.7	51.1	50.2
	D/	1	D/	D/	1			*	*	*
SHIPS										
New England	\$1,558	\$1,746	\$1,529	\$1,795	\$1,408		100.0%	100.0%	100.0%	100.0%
Middle Atlantic	396	342	275	493	343		25.4	19.6	18.0	27.6
East North Central	394	521	320	245	341		25.3	29.8	20.9	13.7
West North Central	104	104	94	60	106		6.2	6.0	6.2	3.4
South Atlantic	30	5	482	317	6		0.7	0.3	0.1	0.3
South Central	232	343	182	198	270		18.7	19.7	31.8	17.7
Mountain	134	180	182	93	93		7.1	10.3	5.3	11.1
Pacific	267	1	269	463	245		15.6	14.3	17.6	26.1
Alaska & Hawaii	D/	0	D/	D/	1			0.0	*	0.1
	D/									
TANK-AUTOMOTIVE										
New England	\$1,046	\$1,032	\$ 779	\$ 854	\$1,559		100.0%	100.0%	100.0%	100.0%
Middle Atlantic	93	6	4	4	20		0.5	0.6	0.4	0.5
East North Central	710	749	36	69	111		9.0	2.4	4.7	8.1
West North Central	10	8	9	18	32		0.9	0.8	1.2	2.0
South Atlantic	55	120	55	68	123		5.2	11.7	7.0	7.9
South Central	37	31	29	26	57		3.0	3.8	3.0	3.7
Mountain	5	5	1	2	3		0.3	0.5	0.2	0.3
Pacific	133	86	72	22	34		12.8	8.5	9.2	2.2
Alaska & Hawaii	D/	D/	D/	D/	D/				*	*

TABLE II (Cont'd.)
MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE FOR MAJOR MILITARY HARD GOODS - BY GEOGRAPHIC REGION
FISCAL YEARS 1962-1966

Program and Geographic Area	Millions of Dollars					Percent of Program Total						
	FY 1962	FY 1963	FY 1964	FY 1965	FY 1966	FY 1967	FY 1962	FY 1963	FY 1964	FY 1965	FY 1966	FY 1967
WEAPONS												
New England	\$ 222	\$ 216	\$ 213	\$ 301	\$ 597		100.0%	100.0%	100.0%	100.0%	100.0%	
Middle Atlantic	83	52	44	43	188		37.3	24.2	20.7	14.4	37.1	
East North Central	38	41	71	76	82		17.1	19.0	33.3	25.2	16.3	
West North Central	50	55	34	40	74		22.2	25.4	16.0	13.4	14.5	
South Atlantic	7	16	11	64	42		3.1	7.6	5.1	21.1	8.2	
South Central	6	15	10	18	17		2.9	6.9	4.9	6.0	3.3	
Mountain	9	7	9	11	24		4.1	3.2	4.4	3.8	4.7	
Pacific	29	28	1	1	5		0.2	1.0	0.3	0.3	1.0	
Alaska & Hawaii	0	0	0	48	75		13.1	12.7	15.3	15.8	14.9	
AMMUNITION												
New England	\$ 924	\$ 894	\$ 672	\$ 775	\$2,855		100.0%	100.0%	100.0%	100.0%	100.0%	
Middle Atlantic	60	50	67	65	196		6.5	5.6	9.9	8.4	6.9	
East North Central	91	77	86	104	389		9.8	8.6	12.8	13.3	13.6	
West North Central	186	180	141	139	591		20.1	20.8	21.0	18.0	20.7	
South Atlantic	86	112	114	100	467		9.3	12.5	6.9	10.9	5.8	
South Central	139	128	104	97	505		15.1	14.4	15.5	12.6	17.7	
Mountain	3	5	7	8	25		0.4	0.6	1.0	1.0	0.9	
Pacific	161	156	107	178	515		17.4	17.4	15.9	22.9	18.0	
Alaska & Hawaii	0	0	0	0	0		0.0	0.0	0.0	0.0	0.0	
ELECTRONICS AND COMMUNICATION EQUIPMENT												
New England	\$3,343	\$3,142	\$3,012	\$2,981	\$3,791		100.0%	100.0%	100.0%	100.0%	100.0%	
Middle Atlantic	318	302	285	384	435		9.5	9.6	9.5	12.9	11.5	
East North Central	1,291	1,207	1,065	968	1,132		38.6	35.4	32.5	29.9	20.3	
West North Central	941	904	318	300	390		16.2	9.7	10.5	10.1	10.3	
South Atlantic	193	148	114	149	259		5.8	4.7	3.8	5.0	6.8	
South Central	362	371	385	346	535		10.8	11.8	12.8	11.6	14.1	
Mountain	109	139	140	118	296		3.3	4.4	4.6	3.9	6.8	
Pacific	47	41	94	73	88		1.4	1.3	3.1	2.4	2.3	
Alaska & Hawaii	474	563	581	628	694		14.2	17.9	19.3	21.0	18.3	*
	8	67	30	17	2		0.2	2.1	1.0	0.6		

NOTE: See Table III for detail in thousands of dollars by state and program, and for footnotes.

TABLE III

NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

TOTAL: ALL STATES AND THE DISTRICT OF COLUMBIA

(Value in Thousands)	Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$25,038,690	100.0	\$25,233,240 ^{a/}	100.0	\$24,417,107 ^{a/}	100.0
	Airframes & Related Assemblies & Spares	3,178,091	100.0	3,657,508	100.0	4,492,918	100.0
	Aircraft Engines & Related Spares	1,200,986	100.0	1,118,450	100.0	1,121,156	100.0
	Other Aircraft Equipment & Supplies	775,115	100.0	703,846	100.0	553,295	100.0
	Missile and Space Systems	6,827,276	100.0	6,854,957	100.0	5,806,764	100.0
	Ships	1,558,548	100.0	1,745,755	100.0	1,528,797	100.0
	Combat Vehicles	553,916	100.0	573,884	100.0	353,135	100.0
	Non-Combat Vehicles	492,549	100.0	458,692	100.0	425,676	100.0
	Weapons	222,077	100.0	216,522	100.0	213,238	100.0
	Ammunition	923,899	100.0	894,076	100.0	672,257	100.0
	Electronics- & Communication Equipment	3,343,011	100.0	3,141,995	100.0	3,012,120	100.0
	Petroleum	844,187	100.0	838,301	100.0	761,584	100.0
	Other Fuels & Lubricants	36,354	100.0	34,445	100.0	22,272	100.0
	Separately Procured Containers & Handling Equipment	1,106	100.0	779	100.0	1,632	100.0
	Textiles, Clothing & Equipage	419,369	100.0	266,006	100.0	271,860	100.0
	Military Building Supplies	23,175	100.0	40,973	100.0	20,084	100.0
	Subsistence	637,292	100.0	585,715	100.0	582,612	100.0
	Transportation Equipment	3,470	100.0	2,805	100.0	677	100.0
	Production Equipment	102,501	100.0	105,228	100.0	59,964	100.0
	Construction	1,205,142	100.0	1,117,439	100.0	1,296,351	100.0
	Construction Equipment	92,758	100.0	111,114	100.0	91,795	100.0
	Medical & Dental Supplies & Equipment	105,469	100.0	66,557	100.0	77,473	100.0
	Photographic Equipment & Supplies	72,562	100.0	62,313	100.0	65,646	100.0
	Materials Handling Equipment	40,867	100.0	66,319	100.0	53,927	100.0
	All Other Supplies & Equipment	824,096	100.0	735,373	100.0	715,451	100.0
	Services	1,554,874	100.0	1,834,188	100.0	2,216,423	100.0

TABLE III

NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

TOTAL: ALL STATES AND THE DISTRICT OF COLUMBIA

(Value in Thousands)	Procurement Program	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$23,268,080	100.0	\$31,713,303	100.0		
	Airframes & Related Assemblies & Spares	3,993,504	100.0	4,601,870	100.0		
	Aircraft Engines & Related Spares	1,105,576	100.0	2,159,308	100.0		
	Other Aircraft Equipment & Supplies	670,925	100.0	1,030,083	100.0		
	Missile and Space Systems	4,435,592	100.0	4,358,839	100.0		
	Ships	1,785,270	100.0	1,407,691	100.0		
	Combat Vehicles	265,652	100.0	577,452	100.0		
	Non-Combat Vehicles	588,606	100.0	981,738	100.0		
	Weapons	301,276	100.0	506,790	100.0		
	Ammunition	774,703	100.0	2,894,635	100.0		
	Electronics & Communication Equipment	2,983,306	100.0	3,791,544	100.0		
	Petroleum	775,865	100.0	899,520	100.0		
	Other Fuels & Lubricants	29,490	100.0	27,369	100.0		
	Separately Procured Containers & Handling Equipment	7,732	100.0	6,952	100.0		
	Textiles, Clothing & Equipage	367,723	100.0	1,260,930	100.0		
	Military Building Supplies	28,348	100.0	361,314	100.0		
	Subsistence	652,725	100.0	1,047,350	100.0		
	Transportation Equipment	569	100.0	7,573	100.0		
	Production Equipment	63,301	100.0	178,237	100.0		
	Construction	1,272,789	100.0	1,002,866	100.0		
	Construction Equipment	59,549	100.0	214,318	100.0		
	Medical & Dental Supplies & Equipment	112,776	100.0	214,307	100.0		
	Photographic Equipment & Supplies	99,846	100.0	163,787	100.0		
	Materials Handling Equipment	35,872	100.0	104,449	100.0		
	All Other Supplies & Equipment	760,519	100.0	1,387,904	100.0		
	Services	2,096,566	100.0	2,606,477	100.0		

TABLE III

NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

ALABAMA

(Value in Thousands)	Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$ 154,419	0.6	\$ 194,990	0.8	\$ 190,681	0.8
	Airframes & Related Assemblies & Spares	15,494	0.5	28,780	0.8	21,641	0.5
	Aircraft Engines & Related Spares	8,206	1.1	18,661	2.7	5,890	0.5
	Other Aircraft Equipment & Supplies	17,918	0.3	14,830	0.2	21,849	4.0
	Missile and Space Systems	7,632	0.5	13,789	0.8	20,371	0.4
	Ships					4,252	0.3
	Combat Vehicles	83	*	344	0.1	779	0.2
	Non-Combat Vehicles	10,141	2.1	8,475	1.9	8,419	2.0
	Weapons	292	0.1	1,020	0.5	1,281	0.6
	Ammunition	16,484	1.8	12,249	1.4	6,954	1.0
	Electronics & Communication Equipment	3,454	0.1	1,579	0.1	1,549	0.1
	Petroleum	2,709	0.3	2,396	0.3	3,191	0.4
	Other Fuels & Lubricants	431	1.2	951	2.8	183	0.8
	Separately Procured Containers & Handling Equipment						
	Textiles, Clothing & Equipage	21,006	0.0	32	4.1	14,588	0.0
	Military Building Supplies	860	5.0	14,048	5.3	295	5.4
			3.7	8,357	20.4		1.5
	Subsistence	1,622	0.3	3,703	0.6	4,467	0.8
	Transportation Equipment		0.0		0.0		0.0
	Production Equipment	96	0.1	139	0.1	140	0.2
	Construction	19,122	1.6	30,620	2.7	33,879	2.6
	Construction Equipment	102	0.1	59	0.1	110	0.1
	Medical & Dental Supplies & Equipment	58	0.1	24	*	13	*
	Photographic Equipment & Supplies	278	0.4	876	1.4	158	0.2
	Materials Handling Equipment	147	0.4	1,151	1.7	350	0.6
	All Other Supplies & Equipment	4,794	0.6	8,824	1.2	22,899	3.2
	Services	23,490	1.5	24,019	1.3	17,423	0.8

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

ALABAMA

(Value in Thousands)	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Procurement Program						
Total	\$165,176	0.7	\$281,549	0.9		
Airframes & Related Assemblies & Spares	16,721	0.4	17,306	0.4		
Aircraft Engines & Related Spares	170	*	10	*		
Other Aircraft Equipment & Supplies	16,073	2.4	17,884	1.7		
Missile and Space Systems	16,539	0.4	23,204	0.5		
Ships	19,286	1.1	3,438	0.2		
Combat Vehicles	683	0.3	748	0.1		
Non-Combat Vehicles	7,192	1.2	17,798	1.8		
Weapons	696	0.2	4,395	0.9		
Ammunition	3,333	0.4	26,732	0.9		
Electronics & Communication Equipment	2,968	0.1	2,540	0.1		
Petroleum	3,616	0.5	3,220	0.4		
Other Fuels & Lubricants	623	2.1	899	3.1		
Separately Procured Containers & Handling Equipment	1,351	17.4	634	9.1		
Textiles, Clothing & Equipage	20,449	5.6	89,296	7.1		
Military Building Supplies	3,360	11.8	14,072	3.9		
Subsistence	4,501	0.7	5,919	0.6		
Transportation Equipment		0.0		0.0		
Production Equipment	158	0.2	997	0.6		
Construction	21,327	1.7	13,270	1.3		
Construction Equipment		0.0	106	*		
Medical & Dental Supplies & Equipment	42	*	48	*		
Photographic Equipment & Supplies	47	*	949	0.6		
Materials Handling Equipment	69	0.2	1,417	1.4		
All Other Supplies & Equipment	4,793	0.6	10,180	0.7		
Services	21,179	1.0	26,507	1.0		

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE
ALASKA

(Value in Thousands)	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Procurement Program						
Total	\$ 63,320	0.3	\$ 103,476	0.4	\$ 101,545	0.4
Airframes & Related Assemblies & Spares	375	*	444	*	340	*
Aircraft Engines & Related Spares		0.0		0.0	35	*
Other Aircraft Equipment & Supplies		0.0		0.0		0.0
Missile and Space Systems		0.0	559	*		0.0
Ships		0.0		0.0		0.0
Combat Vehicles		0.0		0.0	14	*
Non-Combat Vehicles	44	*	18	*	82	*
Weapons		0.0		0.0		0.0
Ammunition		0.0		0.0		0.0
Electronics & Communication Equipment	7,084	0.2	66,248	2.1	29,337	1.0
Petroleum	672	0.1	54	*	1,672	0.2
Other Fuels & Lubricants	4,540	12.5	4,467	13.0	4,049	18.2
Separately Procured Containers & Handling Equipment		0.0		0.0		0.0
Textiles, Clothing & Equipment	518	0.1		0.0	12	*
Military Building Supplies	42	0.2	19	*	51	0.3
Subsistence						
Transportation Equipment	2,789	0.4	2,295	0.4	2,455	0.4
Production Equipment		0.0		0.0		0.0
Construction		0.0		0.0		0.0
Construction Equipment	24,706	2.1	22,766	2.0	51,572	4.0
Medical & Dental Supplies & Equipment		0.0		0.0		0.0
Photographic Equipment & Supplies		0.0	25	*		0.0
Materials Handling Equipment	13	*		0.0		0.0
All Other Supplies & Equipment	2,236	0.3	2,447	0.3	158	*
Services	20,301	1.3	4,134	0.2	11,768	0.5

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

ALASKA

(Value in Thousands)	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
Procurement Program	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Total	\$74,175	0.3	\$71,666	0.2		
Airframes & Related Assemblies & Spares	144	*	483	*		
Aircraft Engines & Related Spares		0.0		0.0		
Other Aircraft Equipment & Supplies		0.0	11	*		
Missile and Space Systems		0.0	418	*		
Ships		0.0		0.0		
Combat Vehicles		0.0		0.0		
Non-Combat Vehicles	68	*	29	*		
Weapons		0.0		0.0		
Ammunition		0.0		0.0		
Electronics & Communication Equipment	15,797	0.5	366	*		
Petroleum	6,666	0.9	1,098	0.1		
Other Fuels & Lubricants	3,773	12.8	5,467	20.0		
Separately Procured Containers & Handling Equipment		0.0		0.0		
Textiles, Clothing & Equipage		0.0		0.0		
Military Building Supplies	10	*	48	*		
Subsistence	3,162	0.5	2,240	0.2		
Transportation Equipment		0.0		0.0		
Production Equipment	18	*		0.0		
Construction	32,038	2.5	27,125	2.7		
Construction Equipment	16	*	67	*		
Medical & Dental Supplies & Equipment		0.0		0.0		
Photographic Equipment & Supplies	14	*		0.0		
Materials Handling Equipment		0.0		0.0		
All Other Supplies & Equipment	642	0.1	565	*		
Services	11,827	0.6	33,749	1.3		

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

ARIZONA

(Value in Thousands) Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Total	\$ 152,951	0.6	\$ 285,751	1.1	\$ 173,825	0.7
Airframes & Related Assemblies & Spares	5,408	0.2	7,683	0.2	9,280	0.2
Aircraft Engines & Related Spares	1,174	0.1	2,493	0.2	1,530	0.1
Other Aircraft Equipment & Supplies	18,921	2.4	34,992	5.0	19,474	3.5
Missile and Space Systems	50,304	0.7	151,915	2.2	16,394	0.3
Ships	122	*	266	*	273	*
Combat Vehicles		0.0	30	*		0.0
Non-Combat Vehicles	113	*	49	*		0.0
Weapons	74	*	20	*	95	*
Ammunition	1,128	0.1	353	*	1,124	0.2
Electronics & Communication Equipment	34,290	1.0	29,349	0.9	75,116	2.5
Petroleum	283	*	223	*	579	0.1
Other Fuels & Lubricants	173	0.5	329	1.0		0.0
Separately Procured Containers & Handling Equipment		0.0		0.0		0.0
Textiles, Clothing & Equipment	240	*	163	0.1	231	0.1
Military Building Supplies	2,048	8.8	5,263	12.8	2,264	11.3
Subsistence	1,109	0.2	997	0.2	1,298	0.2
Transportation Equipment		0.0		0.0		0.0
Production Equipment	679	0.7		0.0	(-) 259	---
Construction	22,711	1.9	32,398	2.9	18,603	1.4
Construction Equipment	1,500	1.6	42	*		0.0
Medical & Dental Supplies & Equipment		0.0	95	0.1		0.0
Photographic Equipment & Supplies		0.0	12	*	287	1.4
Materials Handling Equipment		0.0	102	0.2		0.0
All Other Supplies & Equipment	4,619	0.6	3,710	0.5	5,674	0.8
Services	8,055	0.5	15,267	0.8	21,628	1.0

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

ARIZONA

(Value in Thousands)	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Procurement Program						
Total	\$176,857	0.8	\$248,228	0.8		
Airframes & Related Assemblies & Spares	13,760	0.4	21,959	0.5		
Aircraft Engines & Related Spares	6,769	0.6	16,357	0.7		
Other Aircraft Equipment & Supplies	32,337	4.8	37,633	3.7		
Missile and Space Systems	28,477	0.6	43,425	1.0		
Ships	644	*	672	*		
Combat Vehicles	28	*	43	*		
Non-Combat Vehicles	27	*	25	*		
Weapons	211	0.1	377	0.1		
Ammunition	2,157	0.3	12,513	0.4		
Electronics & Communication Equipment	46,341	1.6	61,283	1.6		
Petroleum	285	*	147	*		
Other Fuels & Lubricants		0.0		0.0		
Separately Procured Containers & Handling Equipment		0.0	786	11.3		
Textiles, Clothing & Equipment	275	0.1	3,329	0.3		
Military Building Supplies	6	*		0.0		
Subsistence	1,503	0.2	2,031	0.2		
Transportation Equipment		0.0		0.0		
Production Equipment	(-) 17 g/	---	50	*		
Construction Equipment	15,481	1.2	11,081	1.1		
Medical & Dental Supplies & Equipment		0.0	86	*		
Photographic Equipment & Supplies	86	0.1	81	*		
Materials Handling Equipment	77	0.1	383	0.2		
All Other Supplies & Equipment	(-) 43 g/	---		0.0		
Services	9,201	1.2	11,738	0.8		
	19,252	0.9	24,229	0.9		

TABLE III

NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

ARKANSAS

(Value in Thousands)	Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$ 84,798	0.3	\$ 39,114	0.2	\$ 29,731	0.1
	Airframes & Related Assemblies & Spares		0.0	576	*	238	*
	Aircraft Engines & Related Spares		0.0	11	*	18	*
	Other Aircraft Equipment & Supplies	626	0.1	143	*	(-) 796 ^{5/}	---
	Missile and Space Systems	1,529	*	113	*	503	*
	Ships	55	*	147	*	140	*
	Combat Vehicles	72	*			176	0.1
	Non-Combat Vehicles	1,483	0.3	553	0.1	395	0.1
	Weapons		0.0		0.0		0.0
	Ammunition	223	*	1,640	0.2	1,291	0.2
	Electronics & Communication Equipment	992	*	1,628	0.1	3,507	0.1
	Petroleum	2,756	0.3	1,687	0.2	1,194	0.2
	Other Fuels & Lubricants	153	0.4	148	0.4		0.0
	Separately Procured Containers & Handling Equipment		0.0		0.0	494	30.3
	Textiles, Clothing & Equipage	2,529	0.6	4,995	1.9	4,667	1.7
	Military Building Supplies	12	0.1		0.0		0.0
	Subsistence	3,076	0.5	2,218	0.4	2,776	0.5
	Transportation Equipment		0.0		0.0		0.0
	Production Equipment		0.0		0.0		0.0
	Construction	67,611	5.6	22,096	2.0	10,883	0.8
	Construction Equipment	33	*	12	*		0.0
	Medical & Dental Supplies & Equipment		0.0		0.0		0.0
	Photographic Equipment & Supplies		0.0		0.0		0.0
	Materials Handling Equipment	68	0.2	319	0.5	247	0.5
	All Other Supplies & Equipment	1,824	0.2	880	0.1	1,349	0.2
	Services	1,756	0.1	1,948	0.1	2,649	0.1

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE
ARKANSAS

(Value in Thousands)	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Procurement Program						
Total	\$39,284	0.2	\$95,701	0.3		
Airframes & Related Assemblies & Spares	862	*	522	*		
Aircraft Engines & Related Spares		0.0		0.0		
Other Aircraft Equipment & Supplies	1,452	0.2	69	*		
Missile and Space Systems	618	*	488	*		
Ships	139	*	141	*		
Combat Vehicles		0.0	81	*		
Non-Combat Vehicles	803	0.1	2,440	0.3		
Weapons		0.0		0.0		
Ammunition	4,363	0.6	23,969	0.8		
Electronics & Communication Equipment	664	*	8,164	0.2		
Petroleum		0.3	1,288	0.1		
Other Fuels & Lubricants	2,180	0.0		0.0		
Separately Procured Containers & Handling Equipment		0.0		---		
Textiles, Clothing & Equipage	7,501	2.0	22,641	1.8		
Military Building Supplies		0.0	11,310	3.1		
Subsistence		0.5		0.4		
Transportation Equipment	3,540	0.0	3,754	0.0		
Production Equipment		0.0	221	0.1		
Construction	12,258	1.0	3,565	0.4		
Construction Equipment	61	0.1	139	0.1		
Medical & Dental Supplies & Equipment		0.4	199	0.1		
Photographic Equipment & Supplies	473	0.0		0.0		
Materials Handling Equipment	149	0.4	1,715	1.6		
All Other Supplies & Equipment	1,680	0.2	11,967	0.9		
Services	2,541	0.1	3,054	0.1		

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE
CALIFORNIA

(Value in Thousands) Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Total	\$5,993,246	23.9	\$5,835,670	23.1	\$5,100,650	21.0
Airframes & Related Assemblies & Spares	673,210	21.2	676,596	18.5	618,480	13.8
Aircraft Engines & Related Spares	16,195	1.3	21,893	2.0	87,416	7.8
Other Aircraft Equipment & Supplies	148,976	19.2	111,307	15.8	91,942	16.6
Missile and Space Systems	3,215,424	47.1	3,078,650	44.9	2,412,074	41.5
Ships	173,807	11.2	121,812	7.0	147,448	9.6
Combat Vehicles	118,685	21.4	80,696	14.1	58,129	16.5
Non-Combat Vehicles	8,501	1.7	4,795	1.1	8,875	2.1
Weapons	27,743	12.5	26,511	12.2	31,593	14.9
Ammunition	158,741	17.2	150,887	16.9	103,388	15.4
Electronics & Communication Equipment	466,662	14.0	555,089	17.6	574,480	19.1
Petroleum	162,541	19.3	191,565	22.9	180,882	23.8
Other Fuels & Lubricants	5,778	15.9	2,479	7.2	879	4.0
Separately Procured Containers & Handling Equipment	55	5.0	88	11.3	26	1.6
Textiles, Clothing & Equipage	8,311	2.0	5,676	2.1	4,883	1.8
Military Building Supplies	664	2.9	2,511	6.1	5,358	26.7
Subsistence	121,893	19.1	111,146	19.0	111,767	19.2
Transportation Equipment	16	0.5	79	2.8	85	12.6
Production Equipment	28,481	27.8	13,637	13.0	10,161	17.0
Construction	132,060	11.0	164,957	14.7	136,742	10.5
Construction Equipment	5,807	6.3	2,592	2.3	478	0.5
Medical & Dental Supplies & Equipment	3,450	3.3	3,307	5.0	4,496	5.8
Photographic Equipment & Supplies	11,893	16.4	8,485	13.6	9,316	14.2
Materials Handling Equipment	1,625	4.0	3,571	5.4	3,655	6.8
All Other Supplies & Equipment	120,962	14.7	140,441	19.1	107,621	15.1
Services	381,766	24.6	356,900	19.5	390,476	17.6

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

CALIFORNIA

(Value in Thousands)	Procurement Program	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$5,153,639	22.1	\$5,813,078	18.3		
	Airframes & Related Assemblies & Spares	806,304	20.2	751,793	16.4		
	Aircraft Engines & Related Spares	17,066	1.6	23,855	1.1		
	Other Aircraft Equipment & Supplies	121,964	18.2	188,283	18.3		
	Missile and Space Systems	2,029,336	45.8	1,912,787	43.9		
	Ships	230,659	12.9	177,126	12.6		
	Combat Vehicles	5,484	2.1	15,783	2.8		
	Non-Combat Vehicles	14,300	2.4	15,481	1.6		
	Weapons	45,974	15.2	66,429	13.1		
	Ammunition	172,588	22.3	504,442	17.7		
	Electronics & Communication Equipment	618,253	20.7	683,795	18.0		
	Petroleum	173,104	22.3	190,675	22.2		
	Other Fuels & Lubricants	575	2.0	119	0.4		
	Separately Procured Containers & Handling Equipment	4,434	57.3	1,238	17.8		
	Textiles, Clothing & Equipage	6,895	1.9	22,626	1.8		
	Military Building Supplies	4,553	16.1	90,569	25.1		
	Subsistence	122,044	18.7	246,852	23.6		
	Transportation Equipment	99	17.4		0.0		
	Production Equipment	9,325	14.7	27,744	15.6		
	Construction	203,252	16.0	166,876	16.6		
	Construction Equipment	1,288	2.2	2,001	0.9		
	Medical & Dental Supplies & Equipment	6,952	6.2	12,784	6.0		
	Photographic Equipment & Supplies	22,260	22.3	35,587	21.7		
	Materials Handling Equipment	2,374	6.6	7,816	7.5		
	All Other Supplies & Equipment	141,978	18.7	184,027	13.3		
	Services	392,578	18.7	484,390	18.6		

NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

COLORADO

(Value in Thousands)

Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Total	\$ 565,279	2.3	\$ 444,196	1.8	\$ 389,511	1.6
Airframes & Related Assemblies & Spares	712	*	578	*	211	*
Aircraft Engines & Related Spares	560	0.0	77	*	58	*
Other Aircraft Equipment & Supplies	486,074	0.1	291	*	425	0.1
Missile and Space Systems	51	7.1	356,789	5.2	299,110	5.2
Ships		*	14	*	54	*
Combat Vehicles	105	*			47	*
Non-Combat Vehicles	1,361	0.3	2,883	0.6	742	0.2
Weapons	287	0.1	2,064	1.0	279	0.1
Ammunition	1,671	0.2	2,725	0.3	951	0.1
Electronics & Communication Equipment	3,271	0.1	3,671	0.1	9,649	0.3
Petroleum	8,713	1.0	9,823	1.2	3,064	0.4
Other Fuels & Lubricants	1,020	2.8	727	2.1	473	2.1
Separately Procured Containers & Handling Equipment		0.0		0.0		0.0
Textiles, Clothing & Equipage	129	0.0	285	0.1	10	*
Military Building Supplies		0.6	41	0.1		0.0
Subsistence	14,561	2.3	10,005	1.7	10,423	1.8
Transportation Equipment		0.0		0.0		0.0
Production Equipment	13	*	17	*	394	0.7
Construction	19,086	1.6	18,397	1.6	30,651	2.4
Construction Equipment	828	0.9	393	0.4	120	0.1
Medical & Dental Supplies & Equipment	123	0.1	64	0.1	43	0.1
Photographic Equipment & Supplies	66	0.1	105	0.2	140	0.2
Materials Handling Equipment		0.0	61	0.1	2,510	4.7
All Other Supplies & Equipment	7,577	0.9	9,872	1.4	10,176	1.4
Services	19,071	1.2	25,314	1.4	19,981	0.9

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

COLORADO

(Value in Thousands)	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Procurement Program						
Total	\$249,151	1.1	\$255,893	0.8		
Airframes & Related Assemblies & Spares	(-) 120 ^{c/}	---	4,160	0.1		
Aircraft Engines & Related Spares	300	*	209	*		
Other Aircraft Equipment & Supplies	604	0.1	609	0.1		
Missile and Space Systems	157,873	3.6	138,564	3.2		
Ships	162	*	802	0.1		
Combat Vehicles	68	*	92	*		
Non-Combat Vehicles	419	0.1	623	0.1		
Weapons	288	0.1	1,014	0.2		
Ammunition	1,340	0.2	8,212	0.3		
Electronics & Communication Equipment	12,854	0.4	9,521	0.3		
Petroleum	1,703	0.2	2,620	0.3		
Other Fuels & Lubricants	483	1.6	355	1.3		
Separately Procured Containers & Handling Equipment			14	0.2		
Textiles, Clothing & Equipment	265	0.0	1,700	0.1		
Military Building Supplies	17	0.1	2,686	0.7		
Subsistence	16,395	2.5	18,946	1.8		
Transportation Equipment				0.0		
Production Equipment	415	0.6	850	0.5		
Construction	26,987	2.1	36,955	3.7		
Construction Equipment	183	0.3	266	0.1		
Medical & Dental Supplies & Equipment	146	0.1	229	0.1		
Photographic Equipment & Supplies	78	0.1	103	0.1		
Materials Handling Equipment	1,260	3.5	842	0.8		
All Other Supplies & Equipment	9,063	1.2	9,198	0.7		
Services	18,368	0.9	17,243	0.7		

TABLE III

NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

CONNECTICUT

(Value in Thousands)	Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$ 1,213,067	4.8	\$ 1,048,449	4.2	\$1,126,054	4.6
	Airframes & Related Assemblies & Spares	220,774	6.9	130,577	3.6	152,751	3.4
	Aircraft Engines & Related Spares	514,865	42.9	400,010	35.8	419,574	37.4
	Other Aircraft Equipment & Supplies	90,588	11.7	77,789	11.1	61,557	11.1
	Missile and Space Systems	27,268	0.4	50,472	0.7	67,061	1.2
	Ships	221,649	14.2	219,637	12.6	232,124	15.2
	Combat Vehicles	795	0.2	116	*	441	0.1
	Non-Combat Vehicles	1,834	0.4	2,750	0.6	411	0.1
	Weapons	17,365	7.8	24,955	11.5	18,188	8.6
	Ammunition	31,969	3.5	36,786	4.1	45,419	6.8
	Electronics & Communication Equipment	41,690	1.2	43,901	1.4	47,751	1.6
	Petroleum	3,296	0.4	1,207	0.1	584	0.1
	Other Fuels & Lubricants		0.0	377	1.1		0.0
	Separately Procured Containers & Handling Equipment		0.0		0.0		0.0
	Textiles, Clothing & Equipage	7,033	1.7	4,153	1.6	5,140	1.9
	Military Building Supplies	11	*	89	0.2	73	0.4
	Subsistence	569	0.1	641	0.1	507	0.1
	Transportation Equipment	236	6.8	136	4.8	45	6.7
	Production Equipment	3,729	3.6	3,253	3.1	7,196	12.0
	Construction	2,935	0.2	7,000	0.6	4,522	0.3
	Construction Equipment	1,183	1.3	247	0.2	79	0.1
	Medical & Dental Supplies & Equipment	1,313	1.2	644	1.0	1,102	1.4
	Photographic Equipment & Supplies	791	1.1	1,317	2.1	666	1.0
	Materials Handling Equipment	581	1.4	8,684	13.1	1,514	2.8
	All Other Supplies & Equipment	12,795	1.5	15,503	2.1	11,872	1.7
	Services	9,858	0.6	18,205	1.0	47,477	2.1

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE
CONNECTICUT

(Value in Thousands)	Procurement Program	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$1,180,111	5.1	\$2,051,560	6.5		
	Airframes & Related Assemblies & Spares	114,382	2.9	217,084	4.7		
	Aircraft Engines & Related Spares	545,013	49.3	1,104,907	51.2		
	Other Aircraft Equipment & Supplies	49,956	7.5	74,330	7.2		
	Missile and Space Systems	35,020	0.8	54,015	1.2		
	Ships	252,025	14.1	153,315	10.9		
	Combat Vehicles	500	0.2	8,986	1.6		
	Non-Combat Vehicles	1,791	0.3	3,929	0.4		
	Weapons	6,691	2.2	76,277	15.1		
	Ammunition	47,193	6.1	148,081	5.2		
	Electronics & Communication Equipment	65,415	2.2	86,174	2.3		
	Petroleum	676	0.1	341	*		
	Other Fuels & Lubricants		0.0		0.0		
	Separately Procured Containers & Handling Equipment		0.0		0.0		
	Textiles, Clothing & Equipage	9,349	2.5	13,676	1.1		
	Military Building Supplies	49	0.2	80	*		
	Subsistence	980	0.2	1,938	0.2		
	Transportation Equipment	13	2.3		0.0		
	Production Equipment	2,571	4.1	12,742	7.2		
	Construction	10,480	0.8	3,078	0.3		
	Construction Equipment	562	0.9	411	0.2		
	Medical & Dental Supplies & Equipment	1,458	1.3	3,385	1.6		
	Photographic Equipment & Supplies	4,455	4.5	5,134	3.1		
	Materials Handling Equipment	1,214	3.4	6,888	6.6		
	All Other Supplies & Equipment	13,988	1.8	51,047	3.7		
	Services	16,330	0.8	25,742	1.0		

TABLE III

NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

DELAWARE

(Value in Thousands)	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Procurement Program						
Total	\$ 36,666	0.1	\$ 47,483	0.2	\$ 30,424	0.1
Airframes & Related Assemblies & Spares	693	*	2,311	0.1	926	*
Aircraft Engines & Related Spares	101	*		0.0		0.0
Other Aircraft Equipment & Supplies	423	0.1	1,590	0.2	3,212	0.6
Missile and Space Systems		0.0	1,276	*	487	*
Ships	4,574	0.3	1,865	0.1	362	*
Combat Vehicles	2,192	0.4		0.0		0.0
Non-Combat Vehicles	658	0.2	13,779	3.0	7,968	1.9
Weapons	10	*	93	*		0.0
Ammunition	1,699	0.2	1,521	0.2	438	0.1
Electronics & Communication Equipment	79	*	196	*	66	*
Petroleum	12,875	1.5	12,558	1.5	5,144	0.7
Other Fuels & Lubricants	108	0.3		0.0		*
Separately Procured Containers & Handling Equipment		0.0		0.0	14	0.8
Textiles, Clothing & Equipment	84	*	848	0.3	131	*
Military Building Supplies		0.0		0.0		0.0
Subsistence	1,964	0.3	2,757	0.5	3,635	0.6
Transportation Equipment		0.0		0.0		0.0
Production Equipment	2,602	2.5	99	0.1		0.0
Construction	1,692	0.1	650	0.1	1,496	0.1
Construction Equipment	34	*	74	0.1		0.0
Medical & Dental Supplies & Equipment	78	0.1	310	0.5	139	0.2
Photographic Equipment & Supplies	262	0.4	1,095	1.8	1,164	1.8
Materials Handling Equipment	209	0.5	45	0.1		0.0
All Other Supplies & Equipment	3,261	0.4	3,778	0.5	1,711	0.2
Services	3,668	0.2	2,638	0.1	3,531	0.2

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

DELAWARE

(Value in Thousands)	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Procurement Program						
Total	\$38,239	0.2	\$37,445	0.1		
Airframes & Related Assemblies & Spares	1,550	*	913	*		
Aircraft Engines & Related Spares		0.0		0.0		
Other Aircraft Equipment & Supplies	7,651	1.1	365	*		
Missile and Space Systems	55	*	272	*		
Ships	741	*	2,583	0.2		
Combat Vehicles		0.0	70	*		
Non-Combat Vehicles	585	0.1	5,302	0.5		
Weapons		0.0	14	*		
Ammunition	645	0.1	435	*		
Electronics & Communication Equipment	229	*	167	*		
Petroleum	6,036	0.8	9,170	1.1		
Other Fuels & Lubricants		0.0	(-) 13 c/	---		
Separately Procured Containers & Handling Equipment	17	0.2		0.0		
Textiles, Clothing & Equipage	496	0.1	1,959	0.2		
Military Building Supplies	68	0.2	516	0.1		
Subsistence	3,616	0.6	6,672	0.6		
Transportation Equipment		0.0		0.0		
Production Equipment	21	*	210	0.1		
Construction	2,169	0.2	2,216	0.2		
Construction Equipment		0.0	29	*		
Medical & Dental Supplies & Equipment	380	0.3	303	0.1		
Photographic Equipment & Supplies	538	0.5	621	0.4		
Materials Handling Equipment		0.0		0.0		
All Other Supplies & Equipment	9,317	1.2	1,012	0.1		
Services	4,125	0.2	4,629	0.2		

TABLE III

NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

DISTRICT OF COLUMBIA

(Value in Thousands)	Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$ 181,954	0.7	\$ 238,120	0.9	\$ 222,947	0.9
	Airframes & Related Assemblies & Spares	106	*	193	*	10	*
	Aircraft Engines & Related Spares		0.0	268	*	50	*
	Other Aircraft Equipment & Supplies	673	0.1	745	0.1	38	*
	Missile and Space Systems	958	*	8,558	0.1	403	*
	Ships	37,013	2.4	59,034	3.4	27,845	1.8
	Combat Vehicles	34	*		0.0	39	*
	Non-Combat Vehicles	65	*	147	*	31	*
	Weapons	424	0.2	513	0.2	296	0.1
	Ammunition	117	*		0.0		0.0
	Electronics & Communication Equipment	39,399	1.2	41,901	1.3	39,087	1.3
	Petroleum	678	0.1	636	0.1	1,776	0.2
	Other Fuels & Lubricants	284	0.8	429	1.2	494	2.2
	Separately Procured Containers & Handling Equipment		0.0		0.0		0.0
	Textiles, Clothing & Equipage	120	*	11	*	211	*
	Military Building Supplies		0.0	49	0.1		0.0
	Subsistence	2,769	0.4	3,876	0.7	2,694	0.5
	Transportation Equipment		0.0		0.0		0.0
	Production Equipment	61	0.1	14	*	25	*
	Construction	8,255	0.7	9,196	0.8	13,722	1.1
	Construction Equipment	110	0.1	12	*		0.0
	Medical & Dental Supplies & Equipment	195	0.2	185	0.3	25	*
	Photographic Equipment & Supplies	421	0.6	906	1.5	331	0.5
	Materials Handling Equipment		0.0	29	*	16	*
	All Other Supplies & Equipment	21,990	2.7	16,399	2.2	35,465	5.0
	Services	68,282	4.4	95,019	5.2	100,389	4.5

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE
DISTRICT OF COLUMBIA

(Value in Thousands) Procurement Program	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Total	\$247,576	1.0	\$328,111	1.0		
Airframes & Related Assemblies & Spares	56	*	109	*		
Aircraft Engines & Related Spares	36	*	29	*		
Other Aircraft Equipment & Supplies	25	*	103	*		
Missile and Space Systems	1,159	*	2,654	0.1		
Ships	50,007	2.8	89,269	6.4		
Combat Vehicles		0.0		0.0		
Non-Combat Vehicles	358	0.1	98	*		
Weapons	663	0.2	852	0.2		
Ammunition	175	*	246	*		
Electronics & Communication Equipment	35,947	1.2	45,512	1.2		
Petroleum	1,103	0.1	1,184	0.1		
Other Fuels & Lubricants	400	1.4	322	1.2		
Separately Procured Containers & Handling Equipment		0.0	12	0.2		
Textiles, Clothing & Equipage	180	*	462	*		
Military Building Supplies		0.0		0.0		
Subsistence	1,109	0.2	797	0.1		
Transportation Equipment		0.0		0.0		
Production Equipment	164	0.2	28	*		
Construction	17,327	1.4	16,648	1.6		
Construction Equipment	18	*	20	*		
Medical & Dental Supplies & Equipment	71	0.1	2,255	1.1		
Photographic Equipment & Supplies	379	0.4	347	0.2		
Materials Handling Equipment	60	0.2		0.0		
All Other Supplies & Equipment	18,356	2.4	15,693	1.1		
Services	119,983	5.7	151,471	5.8		

TABLE III

NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

FLORIDA

(Value in Thousands)	Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$ 645,478	2.6	\$ 583,237	2.3	\$ 782,591	3.2
	Airframes & Related Assemblies & Spares	15,478	0.5	21,142	0.6	14,208	0.3
	Aircraft Engines & Related Spares	22,299	1.9	14,503	1.3	17,011	1.5
	Other Aircraft Equipment & Supplies	10,450	1.3	4,407	0.6	5,359	1.0
	Missile and Space Systems	277,683	4.1	180,658	2.7	201,854	3.5
	Ships	6,062	0.4	10,040	0.6	9,121	0.6
	Combat Vehicles	147	*	613	0.1	153	*
	Non-Combat Vehicles	368	0.1	1,599	0.4	1,955	0.5
	Weapons	456	0.2	242	0.1	642	0.3
	Ammunition	6,596	0.7	8,063	0.9	5,677	0.8
	Electronics & Communication Equipment	56,639	1.7	56,292	1.8	77,872	2.6
	Petroleum	4,494	0.5	5,343	0.6	5,128	0.7
	Other Fuels & Lubricants	505	1.4	628	1.8	289	1.3
	Separately Procured Containers & Handling Equipment						
	Textiles, Clothing & Equipage	556	0.0	1,080	0.0	1,079	0.0
	Military Building Supplies	30	0.1	15	0.4	63	0.3
	Subsistence	18,129	2.8	19,179	3.3	21,857 ^c	3.8
	Transportation Equipment					(-) 170<sup c	---
	Production Equipment	541	0.0	1,698	0.0	385	0.6
	Construction	52,107	4.3	92,855	8.3	241,131	18.6
	Construction Equipment		0.0	720	0.6	29	*
	Medical & Dental Supplies & Equipment	582	0.6	343	0.5	756	1.0
	Photographic Equipment & Supplies	731	1.0	516	0.8	705	1.1
	Materials Handling Equipment	424	1.0	105	0.2	381	0.7
	All Other Supplies & Equipment	12,985	1.6	8,190	1.1	5,553	0.8
	Services	158,216	10.2	155,006	8.5	171,553	7.7

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

FLORIDA

(Value in Thousands)	Procurement Program	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$633,332	2.7	\$766,955	2.4		
	Airframes & Related Assemblies & Spares	10,719	0.3	28,304	0.6		
	Aircraft Engines & Related Spares	24,567	2.2	32,461	1.5		
	Other Aircraft Equipment & Supplies	6,324	0.9	15,107	1.5		
	Missile and Space Systems	150,878	3.4	184,971	4.3		
	Ships	7,644	0.4	16,794	1.2		
	Combat Vehicles	257	0.1	167	*		
	Non-Combat Vehicles	3,084	0.5	3,768	0.4		
	Weapons	898	0.3	2,662	0.5		
	Ammunition	6,112	0.8	16,600	0.6		
	Electronics & Communication Equipment	55,207	1.9	92,460	2.4		
	Petroleum	4,489	0.6	4,319	0.5		
	Other Fuels & Lubricants	288	1.0	27	0.1		
	Separately Procured Containers & Handling Equipment	364	4.7	217	3.1		
	Textiles, Clothing & Equipage	5,361	1.5	3,646	0.3		
	Military Building Supplies	(-) 13 $\frac{9}{10}$	---	4,749	1.3		
	Subsistence	30,353	4.7	41,362	4.0		
	Transportation Equipment		0.0		0.0		
	Production Equipment	(-) 90 $\frac{9}{10}$	---	856	0.5		
	Construction	155,573	12.2	115,241	11.5		
	Construction Equipment	42	0.1		0.0		
	Medical & Dental Supplies & Equipment	650	0.6	2,115	1.0		
	Photographic Equipment & Supplies	334	0.3	14	*		
	Materials Handling Equipment	242	0.7	199	0.2		
	All Other Supplies & Equipment	6,680	0.9	5,935	0.4		
	Services	163,369	7.8	194,981	7.5		

TABLE III

NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

GEORGIA

(Value in Thousands)

Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Total	\$ 337,478	1.4	\$ 423,290	1.7	\$ 520,169	2.1
Airframes & Related Assemblies & Spares	224,520	7.1	345,550	9.5	430,748	9.6
Aircraft Engines & Related Spares	2,138	0.2	110	*	221	*
Other Aircraft Equipment & Supplies	7,507	1.0	5,897	0.8	3,647	0.7
Missile and Space Systems	566	*	1,429	*	16,365	0.3
Ships	1,957	0.1	2,478	0.1	1,367	0.1
Combat Vehicles	21	*	187	*		0.0
Non-Combat Vehicles	4,923	1.0	363	0.1	1,360	0.3
Weapons	155	0.1	29	*	14	*
Ammunition	3,842	0.4	3,785	0.4	2,840	0.4
Electronics & Communication Equipment	2,668	0.1	2,038	0.1	1,910	0.1
Petroleum	1,562	0.2	1,664	0.2	1,615	0.2
Other Fuels & Lubricants	12	*	194	0.6		0.0
Separately Procured Containers & Handling Equipment						
Textiles, Clothing & Equipage	12,826	0.0	3,214	0.0	13,285	0.0
Military Building Supplies	2,227	3.1	888	2.1	25	0.1
Subsistence	16,157	2.5	13,108	2.2	10,518	1.8
Transportation Equipment		0.0		0.0		0.0
Production Equipment	12,395	12.1	9,687	9.2	138	0.2
Construction	21,911	1.8	14,540	1.3	17,788	1.4
Construction Equipment	223	0.2	1,698	1.5	65	0.1
Medical & Dental Supplies & Equipment	334	0.3	110	0.2	304	0.4
Photographic Equipment & Supplies	51	0.1	80	0.1	207	0.4
Materials Handling Equipment	(-) 18 ^{9/}	---	15	*	26	*
All Other Supplies & Equipment	9,035	1.1	5,512	0.8	4,779	0.7
Services	12,466	0.8	10,714	0.6	12,947	0.6

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

GEORGIA

(Value in Thousands)	Procurement Program	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$662,417	2.8	\$799,362	2.5		
	Airframes & Related Assemblies & Spares	516,674	12.9	551,286	12.0		
	Aircraft Engines & Related Spares	375	*	320	*		
	Other Aircraft Equipment & Supplies	5,332	0.8	794	0.1		
	Missile and Space Systems	7,985	0.2	1,566	*		
	Ships	2,439	0.1	2,858	0.2		
	Combat Vehicles	34	*	35	*		
	Non-Combat Vehicles	385	*	469	*		
	Weapons	815	0.3	1,816	0.4		
	Ammunition	4,803	0.6	42,655	1.5		
	Electronics & Communication Equipment	4,984	0.2	5,005	0.1		
	Petroleum	1,661	0.2	1,541	0.2		
	Other Fuels & Lubricants		0.0		0.0		
	Separately Procured Containers & Handling Equipment	195	2.5	2,052	29.5		
	Textiles, Clothing & Equipage	19,995	5.4	89,866	7.1		
	Military Building Supplies	1,197	4.2	1,950	0.5		
	Subsistence	12,514	1.9	16,269	1.6		
	Transportation Equipment	86	15.1		0.0		
	Production Equipment	53	0.1	448	0.2		
	Construction	58,827	4.6	27,263	2.7		
	Construction Equipment	47	0.1	5,391	2.5		
	Medical & Dental Supplies & Equipment	79	0.1	943	0.4		
	Photographic Equipment & Supplies	292	0.3	435	0.3		
	Materials Handling Equipment	17	*	2,646	2.5		
	All Other Supplies & Equipment	7,735	1.0	29,999	2.2		
	Services	15,893	0.8	13,755	0.5		

TABLE III

NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

HAWAII

(Value in Thousands)	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
Procurement Program	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Total	\$ 31,875	0.1	\$ 45,206	0.2	\$ 52,112	0.2
Airframes & Related Assemblies & Spares		0.0	187	*	279	*
Aircraft Engines & Related Spares		0.0		0.0		0.0
Other Aircraft Equipment & Supplies	73	*		0.0	2,715	0.5
Missile and Space Systems	266	*		0.0	211	*
Ships	65	*		0.0	40	*
Combat Vehicles		0.0		0.0		0.0
Non-Combat Vehicles		0.0	12	*		0.0
Weapons		0.0		0.0		0.0
Ammunition		0.0		0.0		0.0
Electronics & Communication Equipment	926	*	694	*	805	*
Petroleum						
Other Fuels & Lubricants	3,514	0.4	3,043	0.4	98	*
Separately Procured Containers & Handling Equipment	13	*		0.0	16	0.1
Textiles, Clothing & Equipage		0.0		0.0		0.0
Military Building Supplies	25	0.1	442	1.1	468	2.3
Subsistence						
Transportation Equipment	9,549	1.5	10,397	1.8	10,979	1.9
Production Equipment		0.0		0.0		0.0
Construction	8,896	0.7	18,762	0.0	20,296	0.0
Construction Equipment		0.0	27	*		1.6
Medical & Dental Supplies & Equipment						0.0
Photographic Equipment & Supplies	10	*	53	0.1	46	0.1
Materials Handling Equipment	33	0.0	74	0.1		0.0
All Other Supplies & Equipment	915	0.1	2,480	0.0	4,582	0.6
Services	7,610	0.5	9,035	0.3	11,577	0.5

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

HAWAII

(Value in Thousands)	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
Procurement Program	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Total	\$72,213	0.3	\$64,170	0.2		
Airframes & Related Assemblies & Spares	492	*	516	*		
Aircraft Engines & Related Spares		0.0		0.0		
Other Aircraft Equipment & Supplies	4,003	0.6	198	*		
Missile and Space Systems	14	*	954	*		
Ships	1,090	0.1	1,016	0.1		
Combat Vehicles		0.0		0.0		
Non-Combat Vehicles	29	*	23	*		
Weapons		0.0		0.0		
Ammunition		0.0		0.0		
Electronics & Communication Equipment	1,027	*	1,356	*		
Petroleum	1,255	0.2	1,257	0.1		
Other Fuels & Lubricants		0.0		0.0		
Separately Procured Containers & Handling Equipment		0.0		0.0		
Textiles, Clothing & Equipage		0.0		0.0		
Military Building Supplies	201	0.7	974	0.3		
Subsistence	8,422	1.3	12,398	1.2		
Transportation Equipment		0.0		0.0		
Production Equipment		0.0		0.0		
Construction	39,861	3.1	21,687	2.2		
Construction Equipment	48	0.1	101	*		
Medical & Dental Supplies & Equipment		0.0	13	*		
Photographic Equipment & Supplies		0.0	28	*		
Materials Handling Equipment	41	0.1	25	*		
All Other Supplies & Equipment	2,669	0.3	2,346	0.2		
Services	13,061	0.6	21,278	0.8		

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

IDAHO

Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Value in Thousands)	\$ 26,121	0.1	\$ 8,634	*	\$ 7,804	*
Total						
Airframes & Related Assemblies & Spares		0.0		0.0		0.0
Aircraft Engines & Related Spares		0.0		0.0		0.0
Other Aircraft Equipment & Supplies	63	*	691	*	52	*
Missile and Space Systems	51	*	49	*	33	*
Missiles						
Combat Vehicles		0.0		0.0		0.0
Non-Combat Vehicles		0.0		0.0		0.0
Weapons	53	*	(-) 139	---		0.0
Ammunition	28	*		0.0	100	0.0
Electronics & Communication Equipment		0.0		0.0		*
Petroleum	760	0.1	138	*		0.0
Other Fuels & Lubricants		0.0		0.0		0.0
Separately Procured Containers & Handling Equipment		0.0		0.0		0.0
Textiles, Clothing & Equipment		0.0		0.0		0.0
Military Building Supplies						
Subsistence	3,284	0.5	3,707	0.6	4,843	0.8
Transportation Equipment		0.0		0.0		0.0
Production Equipment		0.0	20	*		0.0
Construction	20,973	1.7	2,329	0.2	1,841	0.1
Construction Equipment		0.0		0.0		0.0
Medical & Dental Supplies & Equipment		0.0		0.0		0.0
Photographic Equipment & Supplies		0.0		0.0		0.0
Materials Handling Equipment		0.0		0.0		0.0
All Other Supplies & Equipment	656	0.1	1,333	0.2	350	*
Services	253	*	380	*	585	*

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

IDAH0

(Value in Thousands)	Procurement Program	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$11,724	0.1	\$20,004	*		
	Airframes & Related Assemblies & Spares		0.0		0.0		
	Aircraft Engines & Related Spares		0.0		0.0		
	Other Aircraft Equipment & Supplies	116	*		0.0		
	Missile and Space Systems		0.0		0.0		
	Ships		0.0	38	*		
	Combat Vehicles		0.0		0.0		
	Non-Combat Vehicles	64	*		0.0		
	Weapons	13	*		0.0		
	Ammunition		0.0		0.0		
	Electronics & Communication Equipment	202	*	10	*		
	Petroleum		0.0		0.0		
	Other Fuels & Lubricants		0.0		0.0		
	Separately Procured Containers & Handling Equipment		0.0		0.0		
	Textiles, Clothing & Equipage		0.0		0.0		
	Military Building Supplies		0.0		0.3		
	Subsistence	8,398	1.3		1.4		
	Transportation Equipment		0.0		0.0		
	Production Equipment		0.0		0.0		
	Construction	1,898	0.1		0.1		
	Construction Equipment		0.0		0.0		
	Medical & Dental Supplies & Equipment		0.0		0.0		
	Photographic Equipment & Supplies		0.0		*		
	Materials Handling Equipment		0.0		0.1		
	All Other Supplies & Equipment	394	0.1		0.2		
	Services	639	*	534	*		

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE
ILLINOIS

(Value in Thousands)	Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$ 531,008	2.1	\$ 486,067	1.9	\$ 429,201	1.8
	Airframes & Related Assemblies & Spares	15,984	0.5	18,325	0.5	7,940	0.2
	Aircraft Engines & Related Spares	3,395	0.3	2,766	0.2	3,596	0.3
	Other Aircraft Equipment & Supplies	21,719	2.8	22,881	3.3	22,332	4.0
	Missile and Space Systems	19,208	0.3	13,148	0.2	7,667	0.1
	Ships	10,984	0.7	11,175	0.6	12,117	0.8
	Combat Vehicles	1,853	0.4	2,635	0.5	936	0.3
	Non-Combat Vehicles	18,918	3.8	26,141	5.7	22,951	5.4
	Weapons	4,826	2.2	13,045	6.0	7,445	3.5
	Ammunition	46,350	5.0	36,662	4.1	39,203	5.8
	Electronics & Communication Equipment	156,502	4.7	134,937	4.3	118,127	3.9
	Petroleum	19,733	2.3	15,818	1.9	12,298	1.6
	Other Fuels & Lubricants	745	2.0	1,651	4.8	1,528	6.7
	Separately Procured Containers & Handling Equipment	7,049	0.0	6,392	0.0	18	1.1
	Textiles, Clothing & Equipage	1,788	1.7	4,747	2.4	4,554	1.7
	Military Building Supplies		7.7		11.5	2,883	14.4
	Subsistence	54,647	8.6	39,898	6.8	29,554	5.1
	Transportation Equipment	1,243	35.8	83	3.0	334	49.4
	Production Equipment	1,990	1.9	4,428	4.2	2,697	4.5
	Construction	19,030	1.6	15,027	1.3	14,672	1.1
	Construction Equipment	28,558	30.8	31,437	28.3	42,814	46.6
	Medical & Dental Supplies & Equipment	14,052	13.3	4,296	6.5	4,422	5.7
	Photographic Equipment & Supplies	8,389	11.5	3,470	5.6	5,073	7.7
	Materials Handling Equipment	8,463	20.7	18,962	28.6	8,780	16.3
	All Other Supplies & Equipment	41,389	5.0	29,728	4.1	26,923	3.8
	Services	24,193	1.6	28,415	1.6	30,337	1.4

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

FIGURES

(Value in Thousands)	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
Procurement Program	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Total	\$421,899	1.8	\$919,779	2.9		
Airframes & Related Assemblies & Spares	6,818	0.2	4,213	0.1		
Aircraft Engines & Related Spares	2,221	0.2	6,695	0.3		
Other Aircraft Equipment & Supplies	17,639	2.6	36,506	3.6		
Missile and Space Systems	5,103	0.1	9,124	0.2		
Ships	6,026	0.3	25,335	1.8		
Combat Vehicles	1,959	0.7	6,846	1.2		
Non-Combat Vehicles	7,418	1.3	22,441	2.3		
Weapons	4,995	1.7	14,851	2.9		
Ammunition	42,381	5.4	209,915	7.4		
Electronics & Communication Equipment	121,658	4.1	167,112	4.4		
Petroleum	13,193	1.7	13,227	1.5		
Other Fuels & Lubricants	1,163	4.0	1,795	6.6		
Separately Procured Containers & Handling Equipment	90	1.1	11	0.2		
Textiles, Clothing & Equipage	7,218	2.0	22,632	1.8		
Military Building Supplies	7,385	26.0	45,526	12.6		
Subsistence	35,499	5.4	49,185	4.7		
Transportation Equipment	74	13.0	34	0.4		
Production Equipment	6,095	9.6	15,580	8.8		
Construction	26,710	2.1	23,673	2.4		
Construction Equipment	24,696	41.5	56,090	26.2		
Medical & Dental Supplies & Equipment	7,362	6.5	11,467	5.4		
Photographic Equipment & Supplies	4,441	4.5	8,111	5.0		
Materials Handling Equipment	7,431	20.7	29,125	27.9		
All Other Supplies & Equipment	31,628	4.2	107,935	7.8		
Services	32,896	1.6	32,390	1.2		

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE
INDIANA

(Value in Thousands)	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Procurement Program						
Total	\$ 571,184	2.3	\$ 486,759	1.9	\$ 537,940	2.2
Airframes & Related Assemblies & Spares	10,778	0.3	6,449	0.2	7,423	0.2
Aircraft Engines & Related Spares	142,167	11.8	119,657	10.7	83,280	7.5
Other Aircraft Equipment & Supplies	13,339	1.7	13,564	1.9	2,716	0.5
Missile and Space Systems	52,552	0.8	60,913	0.9	55,636	1.0
Ships	2,650	0.2	2,250	0.1	1,687	0.1
Combat Vehicles	69,323	12.5	63,476	11.1	67,290	19.1
Non-Combat Vehicles	75,114	15.3	81,992	17.9	141,144	33.2
Weapons	6,438	2.9	1,153	0.5	2,031	0.9
Ammunition	57,286	6.2	45,881	5.1	35,830	5.3
Electronics & Communication Equipment	68,930	2.1	34,742	1.1	79,091	2.6
Petroleum	14,744	1.7	12,452	1.5	17,447	2.3
Other Fuels & Lubricants	660	1.8	697	2.0	792	3.6
Separately Procured Containers & Handling Equipment		0.0	30	3.9	24	1.5
Textiles, Clothing & Equipage	8,399	2.0	1,435	0.5	3,241	1.2
Military Building Supplies	33	0.1	168	0.4	15	*
Subsistence	13,746	2.1	10,542	1.8	10,478	1.8
Transportation Equipment		0.0	89	3.2	94	13.9
Production Equipment	1,371	1.3	2,813	2.7	1,791	3.0
Construction	5,785	0.5	1,697	0.2	3,447	0.5
Construction Equipment	1,254	1.4	784	0.7	466	0.5
Medical & Dental Supplies & Equipment	4,855	4.6	3,184	4.8	3,193	4.1
Photographic Equipment & Supplies	66	0.1	30	0.1	227	0.4
Materials Handling Equipment	732	1.8	497	0.7	489	0.9
All Other Supplies & Equipment	15,586	1.9	12,473	1.7	7,221	1.0
Services	5,376	0.3	9,791	0.5	12,667	0.6

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE
INDIANA

(Value in Thousands)	Procurement Program	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$604,925	2.6	\$1,068,259	3.4		
	Airframes & Related Assemblies & Spares	14,740	0.4	17,742	0.4		
	Aircraft Engines & Related Spares	91,787	8.3	169,184	7.9		
	Other Aircraft Equipment & Supplies	7,317	1.1	13,110	1.3		
	Missile and Space Systems	47,409	1.0	23,275	0.5		
	Ships	1,659	0.1	3,095	0.2		
	Combat Vehicles	49,299	18.6	82,025	14.2		
	Non-Combat Vehicles	200,057	34.0	322,824	32.9		
	Weapons	2,895	1.0	9,555	1.9		
	Ammunition	36,269	4.7	140,324	4.9		
	Electronics & Communication Equipment	74,876	2.5	92,590	2.4		
	Petroleum	24,098	3.1	19,147	2.2		
	Other Fuels & Lubricants	462	1.6	636	2.3		
	Separately Procured Containers & Handling Equipment	22	0.3	1,589	22.9		
	Textiles, Clothing & Equipment	2,036	0.6	10,258	0.8		
	Military Building Supplies	114	0.4	28,594	7.9		
	Subsistence	13,059	2.0	26,408	2.5		
	Transportation Equipment		0.0		0.0		
	Production Equipment	1,794	2.8	5,593	3.1		
	Construction	7,129	0.6	8,805	0.9		
	Construction Equipment	2,504	4.2	32,222	15.1		
	Medical & Dental Supplies & Equipment	5,960	5.3	14,821	6.9		
	Photographic Equipment & Supplies	160	0.2	321	0.2		
	Materials Handling Equipment	284	0.8	1,621	1.6		
	All Other Supplies & Equipment	9,059	1.2	30,715	2.2		
	Services	11,936	0.6	13,845	0.5		

TABLE III

NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

IOWA

(Value in Thousands)	Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$ 179,153	0.7	\$ 130,406	0.5	\$ 103,392	0.4
	Airframes & Related Assemblies & Spares	2,328	0.1	2,488	0.1	1,140	*
	Aircraft Engines & Related Spares	475	*	1,196	0.1	48	*
	Other Aircraft Equipment & Supplies	6,856	0.9	6,662	0.9	3,479	0.6
	Missile and Space Systems	548	*	149	*	74	*
	Ships	1,218	0.1	1,123	0.1	320	*
	Combat Vehicles	107	*	19	*	63	*
	Non-Combat Vehicles	1,891	0.4	2,022	0.4	941	0.2
	Weapons	498	0.2	435	0.2	201	*
	Ammunition	42,390	4.6	12,838	1.4	12,106	1.8
	Electronics & Communication Equipment	90,299	2.7	78,565	2.5	56,964	1.9
	Petroleum	5,715	0.7	33	*	5,329	0.7
	Other Fuels & Lubricants	22	0.1		0.0		0.0
	Separately Procured Containers & Handling Equipment	15	1.4		0.0		0.0
	Textiles, Clothing & Equipage	502	0.1	611	0.2	790	0.3
	Military Building Supplies	24	0.1	88	0.2		0.0
	Subsistence	16,271	2.6	18,195	3.1	14,163	2.4
	Transportation Equipment		0.0		0.0		0.0
	Production Equipment	30	*	38	*		0.0
	Construction	3,422	0.3	1,138	0.1	1,775	0.1
	Construction Equipment	1,429	1.6	620	0.6	1,837	2.0
	Medical & Dental Supplies & Equipment	51	*	22	*	29	*
	Photographic Equipment & Supplies	38	0.1	39	0.1	134	0.2
	Materials Handling Equipment		0.0	17	*		0.0
	All Other Supplies & Equipment	3,394	0.4	1,862	0.3	1,468	0.2
	Services	1,630	0.1	2,246	0.1	2,531	0.1

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

IOWA

(Value in Thousands)	Procurement Program	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$133,951	0.6	\$247,619	0.8		
	Airframes & Related Assemblies & Spares	655	*	746	*		
	Aircraft Engines & Related Spares	352	*	318	*		
	Other Aircraft Equipment & Supplies	5,857	0.9	9,301	0.9		
	Missile and Space Systems	150	*	279	*		
	Ships	443	*	438	*		
	Combat Vehicles			176	*		
	Non-Combat Vehicles	378	0.0	2,809	0.3		
	Weapons	61	0.1	328	0.1		
	Ammunition	16,518	2.1	49,830	1.8		
	Electronics & Communication Equipment	77,496	2.6	129,806	3.4		
	Petroleum	5,976	0.8		0.0		
	Other Fuels & Lubricants		0.0		0.0		
	Separately Procured Containers & Handling Equipment		0.0		0.0		
	Textiles, Clothing & Equipment	56	*	847	0.1		
	Military Building Supplies		0.0		0.0		
	Subsistence	19,459	3.0	35,520	3.4		
	Transportation Equipment		0.0		0.0		
	Production Equipment	169	0.3	68	*		
	Construction	743	0.1	586	0.1		
	Construction Equipment	159	0.3	6,301	3.0		
	Medical & Dental Supplies & Equipment		0.0	248	0.1		
	Photographic Equipment & Supplies		0.0		0.0		
	Materials Handling Equipment	28	0.1	145	0.1		
	All Other Supplies & Equipment	2,506	0.3	6,962	0.5		
	Services	2,945	0.1	2,911	0.1		

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

KANSAS

(Value in Thousands)	Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$ 393,507	1.6	\$ 331,687	1.3	\$ 289,045	1.2
	Airframes & Related Assemblies & Spares	200,588	6.3	235,121	6.4	190,356	4.2
	Aircraft Engines & Related Spares	894	0.1	4,266	0.4	5,166	0.5
	Other Aircraft Equipment & Supplies	105,694	13.6	3,253	0.5	7,696	1.4
	Missile and Space Systems	3,411	*	21,796	0.3	14,111	0.2
	Ships	826	0.1	28	*	220	*
	Combat Vehicles	31	*	169	*		0.0
	Non-Combat Vehicles	2,000	0.4	180	*	653	0.2
	Weapons	21	*	107	*	141	*
	Ammunition	3,746	0.4	9,798	1.1	10,376	1.6
	Electronics & Communication Equipment	1,272	*	1,205	*	852	*
	Petroleum	10,049	1.2	13,587	1.6	17,924	2.4
	Other Fuels & Lubricants	1,374	3.8	679	2.0	116	0.5
	Separately Procured Containers & Handling Equipment		0.0	38	4.9	29	1.8
	Textiles, Clothing & Equipage	4,412	1.1	5,536	2.1	3,637	1.3
	Military Building Supplies		0.0	329	0.8	666	3.3
	Subsistence	8,636	1.4	8,462	1.4	8,085	1.4
	Transportation Equipment		0.0		0.0		0.0
	Production Equipment	1,255	1.2	915	0.9	1,059	1.8
	Construction	38,496	3.2	16,488	1.5	19,147	1.5
	Construction Equipment		0.0	23	*	206	0.2
	Medical & Dental Supplies & Equipment	15	*	11	*	178	0.2
	Photographic Equipment & Supplies	42	0.1		0.0	11	*
	Materials Handling Equipment	68	0.2	192	0.3		0.0
	All Other Supplies & Equipment	4,858	0.6	4,365	0.6	2,566	0.4
	Services	5,819	0.4	5,139	0.3	5,850	0.3

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

KANSAS

(Value in Thousands)	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Procurement Program						
Total	\$229,051	1.0	\$312,629	1.0		
Airframes & Related Assemblies & Spares	162,636	4.1	170,804	3.7		
Aircraft Engines & Related Spares	3,167	0.3	6,105	0.3		
Other Aircraft Equipment & Supplies	3,907	0.6	6,824	0.7		
Missile and Space Systems	1,171	*	3,352	0.1		
Ships	146	*	55	*		
Combat Vehicles		0.0	107	*		
Qty-Combat Vehicles	153	*	2,763	0.3		
Weapons	26	*	231	*		
Ammunition	454	0.1	46,955	1.6		
Electronics & Communication Equipment	2,110	0.1	3,053	0.1		
Petroleum	10,890	1.4	13,584	1.6		
Other Fuels & Lubricants	39	0.1	376	1.4		
Separately Procured Containers & Handling Equipment		0.0		0.0		
Textiles, Clothing & Equipage	3,132	0.9	8,605	0.7		
Military Building Supplies	1,469	5.2	4,259	1.2		
Subsistence	9,295	1.4	13,015	1.2		
Transportation Equipment		0.0	293	3.9		
Production Equipment	760	1.2	3,003	1.7		
Construction	11,614	0.9	6,893	0.7		
Construction Equipment	63	0.1	64	*		
Medical & Dental Supplies & Equipment	319	0.3	791	0.4		
Photographic Equipment & Supplies		0.0	34	*		
Materials Handling Equipment	494	1.4	399	0.4		
All Other Supplies & Equipment	5,690	0.7	11,160	0.8		
Services	11,516	0.5	9,904	0.4		

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

KENTUCKY

(Value in Thousands)	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Procurement Program	\$ 43,510	0.2	\$ 55,725	0.2	\$ 40,476	0.2
Total						
Airframes & Related Assemblies & Spares		0.0	142	*		0.0
Aircraft Engines & Related Spares	58	*	21	*		0.0
Other Aircraft Equipment & Supplies	22	*	231	*	289	0.1
Missile and Space Systems	158	*	101	*		0.0
Ships	1,794	0.1	467	*	1,673	0.1
Combat Vehicles	232	*	138	*	162	*
Non-Combat Vehicles	5,085	1.0	1,388	0.3	3,575	0.8
Weapons	170	0.1	188	0.1	204	*
Ammunition	505	0.1	251	*	518	0.1
Electronics & Communication Equipment	5,897	0.2	5,566	0.2	5,504	0.2
Petroleum	7,669	0.9	12,455	1.5	5,117	0.7
Other Fuels & Lubricants	1,228	3.4	1,135	3.3	977	4.4
Separately Procured Containers & Handling Equipment		0.0		0.0		0.0
Textiles, Clothing & Equipment	3,993	1.0	6,237	2.3	1,747	0.6
Military Building Supplies		0.0		0.0		0.0
Subsistence	5,896	0.9	7,037	1.2	6,542	1.1
Transportation Equipment		0.0		0.0		0.0
Production Equipment	214	0.2	242	0.2	67	0.1
Construction	3,369	0.3	10,290	0.9	3,924	0.3
Construction Equipment	216	0.2	1,650	1.5	69	0.1
Medical & Dental Supplies & Equipment	70	0.1	266	0.4	329	0.4
Photographic Equipment & Supplies	11	*	42	0.1	24	*
Materials Handling Equipment	80	0.2	249	0.4		0.0
All Other Supplies & Equipment	3,130	0.4	3,183	0.4	4,862	0.7
Services	3,713	0.2	4,446	0.2	4,893	0.2

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

KENTUCKY

(Value in Thousands)	Procurement Program	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$42,749	0.2	\$70,057	0.2		
	Airframes and Related Assemblies & Spares	14	*		0.0		
	Aircraft Engines & Related Spares		0.0	21	*		
	Other Aircraft Equipment & Supplies	716	0.1	15	*		
	Missile and Space Systems	13	*	31	*		
	Ships	226	*	518	*		
	Combat Vehicles	659	0.2	961	0.2		
	Non-Combat Vehicles	5,649	1.0	8,161	0.8		
	Weapons	245	0.1	94	*		
	Ammunition	300	*	1,370	*		
	Electronics & Communication Equipment	2,929	0.1	7,290	0.2		
	Petroleum						
	Other Fuels & Lubricants	2,263	0.3	3,567	0.4		
	Separately Procured Containers & Handling Equipment	1,274	4.3	657	2.4		
	Textiles, Clothing & Equipage	3,659	1.0	10,591	0.8		
	Military Building Supplies	431	1.5		0.0		
	Subsistence	5,833	0.9	5,925	0.6		
	Transportation Equipment		0.0		0.0		
	Production Equipment	257	0.4	77	*		
	Construction	8,263	0.6	11,632	1.2		
	Construction Equipment	114	0.2	172	0.1		
	Medical & Dental Supplies & Equipment	243	0.2	496	0.2		
	Photographic Equipment & Supplies	40	*		0.0		
	Materials Handling Equipment	100	0.3	426	0.4		
	All Other Supplies & Equipment	4,665	0.6	12,224	0.9		
	Services	4,856	0.2	5,829	0.2		

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

LOUISIANA

(Value in Thousands)	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
Procurement Program	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Total	\$ 244,036	1.0	\$ 195,341	0.8	\$ 181,427	0.7
Airframes & Related Assemblies & Spares		0.0	209	*	2,166	0.1
Aircraft Engines & Related Spares		0.0		0.0		0.0
Other Aircraft Equipment & Supplies	1,014	0.0	10	*	57	*
Missile and Space Systems	43,631	*	826	*	550	*
Ships		2.8	9,975	0.6	13,027	0.9
Combat Vehicles	258	*	25	*	23	*
Non-Combat Vehicles	45	*	294	0.1		0.0
Weapons	199	0.1	799	0.4	72	*
Ammunition	32,470	3.5	21,870	2.5	9,957	1.5
Electronics & Communication Equipment	8,309	0.3	216	*	251	*
Petroleum	113,259	13.4	119,844	14.3	112,634	14.8
Other Fuels & Lubricants	99	0.3	92	0.3		0.0
Separately Procured Containers & Handling Equipment		0.0		0.0		0.0
Textiles, Clothing & Equipage	2,510	0.6	595	0.2	1,593	0.6
Military Building Supplies		0.0	590	1.4	68	0.3
Subsistence						
Transportation Equipment	9,610	1.5	10,698	1.8	12,756	2.2
Production Equipment		0.0		0.0		0.0
Construction	59	0.1	55	0.1	54	0.1
Construction Equipment	5,293	0.4	5,795	0.5	4,481	0.3
		0.0	14	*	10	*
Medical & Dental Supplies & Equipment	145	0.1	16	*	82	0.1
Photographic Equipment & Supplies	55	0.1		0.0	18	*
Materials Handling Equipment		0.0		0.0		0.0
All Other Supplies & Equipment	5,814	0.7	1,470	0.2	3,018	0.4
Services	21,266	1.4	21,948	1.2	20,610	0.9

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

LOUISIANA

(Value in Thousands)	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
Procurement Program	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Total	\$255,834	1.1	\$302,906	1.0		
Airframes & Related Assemblies & Spares	179	*	2,850	0.1		
Aircraft Engines & Related Spares		0.0		0.0		
Other Aircraft Equipment & Supplies	289	*	115	*		
Missile and Space Systems	197	*	38	*		
Ships	85,751	4.8	30,812	2.2		
Combat Vehicles	63	*	173	*		
Non-Combat Vehicles	41	*	58	*		
Weapons	159	0.1	11	*		
Ammunition	8,609	1.1	50,470	1.8		
Electronics & Communication Equipment	(-) 129c/	---	(-) 16 c/	---		
Petroleum	116,271	15.0	132,679	15.5		
Other Fuels & Lubricants	35	0.1	137	0.5		
Separately Procured Containers & Handling Equipment		0.0		0.0		
Textiles, Clothing & Equipage	2,140	0.6	2,482	0.2		
Military Building Supplies	11	*	164	*		
Subsistence	9,749	1.5	15,088	1.4		
Transportation Equipment		0.0		0.0		
Production Equipment	54	0.1		0.0		
Construction	8,538	0.7	5,564	0.6		
Construction Equipment	18	*	253	0.1		
Medical & Dental Supplies & Equipment	126	0.1	333	0.2		
Photographic Equipment & Supplies	12	*	22	*		
Materials Handling Equipment		0.0		0.0		
All Other Supplies & Equipment	2,786	0.4	14,310	1.0		
Services	20,935	1.0	47,363	1.8		

NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

MAINE

(Value in Thousands)	Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$ 79,585	0.3	\$ 58,409	0.2	\$ 31,531	0.1
	Airframes & Related Assemblies & Spares		0.0		0.0	50	*
	Aircraft Engines & Related Spares	108	*	96	*	58	*
	Other Aircraft Equipment & Supplies	49	*	10	*	44	*
	Missile and Space Systems	180	*	290	*	14	*
	Ships	51,817	3.3	35,360	2.0	7,894	0.5
	Combat Vehicles		0.0	21	*	49	*
	Non-Combat Vehicles	66	*	14	*	36	*
	Weapons	7,541	3.4	7,080	3.3	6,518	3.1
	Ammunition	418	*		0.0		0.0
	Electronics & Communication Equipment	557	*	1,047	*	450	*
	Petroleum		0.2		0.2		0.3
	Other Fuels & Lubricants	1,290	0.0	2,019	0.1	1,976	0.1
	Separately Procured Containers & Handling Equipment		0.0	48		13	
	Textiles, Clothing & Equipage	1,539	0.4	2,298	0.9	5,037	1.9
	Military Building Supplies		0.0		0.0		0.0
	Subsistence		0.2		0.2		0.2
	Transportation Equipment	1,343	0.0	1,443	0.0	1,271	0.0
	Production Equipment		0.0		0.0		0.0
	Construction	9,658	0.8	3,806	0.3	4,920	0.4
	Construction Equipment		0.0	35	*		0.0
	Medical & Dental Supplies & Equipment	154	0.1	13	*	22	*
	Photographic Equipment & Supplies		0.0		0.0		0.0
	Materials Handling Equipment		0.0	20	*	37	*
	All Other Supplies & Equipment	3,398	0.4	3,204	0.4	1,827	0.3
	Services	1,467	0.1	1,605	0.1	1,315	*

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

MAINE

(Value in Thousands)	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Procurement Program						
Total	\$68,771	0.3	\$51,340	0.2		
Airframes & Related Assemblies & Spares		0.0		0.0		
Aircraft Engines & Related Spares	391	*	29	*		
Other Aircraft Equipment & Supplies	303	*	23	*		
Missile and Space Systems	14	*	200	*		
Ships	48,425	2.7	2,481	0.2		
Combat Vehicles		0.0	696	0.1		
Non-Combat Vehicles	75	*	953	0.1		
Weapons	4,262	1.4	20,080	4.0		
Ammunition	54	*	24	*		
Electronics & Communication Equipment	759	*	965	*		
Petroleum	1,020	0.1	1,382	0.2		
Other Fuels & Lubricants	10	*	42	0.2		
Separately Procured Containers & Handling Equipment		0.0		0.0		
Textiles, Clothing & Equipage	1,927	0.5	10,977	0.9		
Military Building Supplies		0.0	1,942	0.5		
Subsistence	1,880	0.3	1,802	0.2		
Transportation Equipment		0.0		0.0		
Production Equipment		0.0	18	*		
Construction	5,343	0.4	2,235	0.2		
Construction Equipment		0.0		0.0		
Medical & Dental Supplies & Equipment	89	0.1	98	*		
Photographic Equipment & Supplies		0.0		0.0		
Materials Handling Equipment	13	*		0.0		
All Other Supplies & Equipment	2,894	0.4	5,670	0.4		
Services	1,312	0.1	1,723	0.1		

TABLE III

NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

MARYLAND

(Value in Thousands)	Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$ 469,491	1.9	\$ 606,365	2.4	\$ 547,936	2.3
	Airframes & Related Assemblies & Spares	5,508	0.2	7,811	0.2	5,960	0.1
	Aircraft Engines & Related Spares	1,621	0.1	731	0.1	101	*
	Other Aircraft Equipment & Supplies	9,950	1.3	6,582	0.9	19,560	3.5
	Missile and Space Systems	125,318	1.8	205,748	3.0	169,528	2.9
	Ships	11,787	0.8	22,165	1.3	17,910	1.2
	Combat Vehicles	498	0.1	1,817	0.3	798	0.2
	Non-Combat Vehicles	9,548	1.9	981	0.2	2,011	0.5
	Weapons	3,032	1.4	6,736	3.1	5,699	2.7
	Ammunition	14,840	1.6	17,081	1.9	14,188	2.1
	Electronics & Communication Equipment	184,892	5.5	189,551	6.0	173,418	5.8
	Petroleum	4,355	0.5	2,597	0.3	2,758	0.4
	Other Fuels & Lubricants		0.0		0.0		0.0
	Separately Procured Containers & Handling Equipment		0.0		0.0		0.0
	Textiles, Clothing & Equipage	1,057	0.3	1,466	0.6	909	0.3
	Military Building Supplies	752	3.3	83	0.2	262	1.3
	Subsistence	13,324	2.1	12,564	2.1	12,029	2.1
	Transportation Equipment		0.0		0.0		0.0
	Production Equipment	773	0.8	451	0.4	531	0.9
	Construction	13,834	1.1	44,252	3.9	29,302	2.3
	Construction Equipment	259	0.3	278	0.2	56	0.1
	Medical & Dental Supplies & Equipment	1,733	1.6	523	0.8	485	0.6
	Photographic Equipment & Supplies	574	0.8	464	0.7	395	0.6
	Materials Handling Equipment	78	0.2	222	0.3		0.0
	All Other Supplies & Equipment	25,634	3.1	35,587	4.8	19,473	2.7
	Services	40,124	2.6	48,675	2.7	72,605	3.3

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

MARYLAND

(Value in Thousands)	Procurement Program	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$584,333	2.5	\$842,527	2.7		
	Airframes & Related Assemblies & Spares	7,856	0.2	25,668	0.6		
	Aircraft Engines & Related Spares	93	*	369	*		
	Other Aircraft Equipment & Supplies	6,427	1.0	18,814	1.8		
	Missile and Space Systems	171,347	3.9	193,295	4.5		
	Ships	45,174	2.5	67,286	4.8		
	Combat Vehicles	395	0.1	1,277	0.2		
	Non-Combat Vehicles	4,380	0.8	23,300	2.4		
	Weapons	6,174	2.0	4,457	0.9		
	Ammunition	21,172	2.7	38,234	1.3		
	Electronics & Communication Equipment	181,469	6.1	271,167	7.2		
	Petroleum	2,971	0.4	3,348	0.4		
	Other Fuels & Lubricants		0.0		0.0		
	Separately Procured Containers & Handling Equipment		0.0		0.0		
	Textiles, Clothing & Equipage	2,298	0.6	18,192	1.4		
	Military Building Supplies	273	1.0	20,400	5.7		
	Subsistence	13,839	2.1	17,196	1.7		
	Transportation Equipment		0.0		0.0		
	Production Equipment	489	0.8	1,639	0.9		
	Construction	29,712	2.3	44,202	4.4		
	Construction Equipment	24	*	34	*		
	Medical & Dental Supplies & Equipment	1,339	1.2	3,343	1.6		
	Photographic Equipment & Supplies	779	0.8	1,306	0.8		
	Materials Handling Equipment	78	0.2	2,930	2.8		
	All Other Supplies & Equipment	19,031	2.5	21,806	1.6		
	Services	69,013	3.3	64,264	2.5		

TABLE III

NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

MASSACHUSETTS

(Value in Thousands)	Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$ 1,310,055	5.2	\$ 1,060,165	4.2	\$ 1,032,062	4.2
	Airframes & Related Assemblies & Spares	9,326	0.3	15,288	0.4	4,266	0.1
	Aircraft Engines & Related Spares	111,944	9.3	114,478	10.3	117,319	10.5
	Other Aircraft Equipment & Supplies	13,406	1.7	10,175	1.5	15,325	2.8
	Missile and Space Systems	519,406	7.6	380,039	5.6	399,574	6.9
	Ships	114,203	7.3	82,396	4.7	30,440	2.0
	Combat Vehicles	550	0.1	1,201	0.2	289	0.1
	Non-Combat Vehicles	1,365	0.3	1,648	0.4	2,067	0.5
	Weapons	43,549	19.6	11,778	5.4	9,454	4.5
	Ammunition	24,767	2.7	12,669	1.4	16,843	2.5
	Electronics & Communication Equipment	220,586	6.6	219,239	7.0	182,337	6.1
	Petroleum	4,648	0.6	4,183	0.5	4,303	0.6
	Other Fuels & Lubricants	1,363	3.7	1,132	3.3	375	1.7
	Separately Procured Containers & Handling Equipment					40	2.4
	Textiles, Clothing & Equipage	21,893	5.2	13,099	4.9	12,806	4.7
	Military Building Supplies	51	0.2	29	0.1	77	0.4
	Subsistence						
	Transportation Equipment	40,538	6.4	31,253	5.3	40,941	7.0
	Production Equipment	2,197	0.0		0.0		0.0
	Construction	19,973	2.1	2,751	2.6	2,720	4.5
	Construction Equipment	353	1.7	12,584	1.1	11,283	0.9
			0.4	727	0.6	178	0.2
	Medical & Dental Supplies & Equipment	3,478	3.3	3,453	5.2	4,580	5.9
	Photographic Equipment & Supplies	1,729	2.4	721	1.2	2,373	3.6
	Materials Handling Equipment	202	0.5	2,255	3.4	122	0.2
	All Other Supplies & Equipment	29,960	3.6	23,863	3.2	18,422	2.6
	Services	124,548	8.0	115,204	6.3	155,928	7.0

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE
MASSACHUSETTS

(Value in Thousands)	Procurement Program	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$1,178,729	5.1	\$1,335,992	4.2		
	Airframes & Related Assemblies & Spares	4,177	0.1	3,159	0.1		
	Aircraft Engines & Related Spares	120,903	11.0	204,777	9.5		
	Other Aircraft Equipment & Supplies	12,963	1.9	18,997	1.8		
	Missile and Space Systems	363,872	8.2	364,963	8.4		
	Ships	188,578	10.6	181,717	12.9		
	Combat Vehicles	200	0.1	1,521	0.3		
	Non-Combat Vehicles	1,360	0.2	2,549	0.3		
	Weapons	4,848	1.6	16,415	3.2		
	Ammunition	17,550	2.3	39,504	1.4		
	Electronics & Communication Equipment	263,926	8.9	246,828	6.5		
	Petroleum	3,066	0.4	5,663	0.7		
	Other Fuels & Lubricants	124	0.4	68	0.2		
	Separately Procured Containers & Handling Equipment			27	0.4		
	Textiles, Clothing & Equipage	16,258	0.4	63,338	5.0		
	Military Building Supplies	96	0.3	1,014	0.3		
	Subsistence	23,412	3.6	30,433	2.9		
	Transportation Equipment	17	3.0		0.0		
	Production Equipment	2,359	3.7	7,491	4.2		
	Construction	17,546	1.4	11,384	1.1		
	Construction Equipment	226	0.4	2,582	1.2		
	Medical & Dental Supplies & Equipment	3,760	3.3	6,059	2.8		
	Photographic Equipment & Supplies	1,809	1.8	2,305	1.4		
	Materials Handling Equipment	372	1.0	1,278	1.2		
	All Other Supplies & Equipment	16,584	2.2	37,656	2.7		
	Services	114,723	5.5	86,224	3.3		

TABLE III

NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

MICHIGAN

(Value in Thousands)	Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$ 677,786	2.7	\$ 633,047	2.5	\$ 591,290	2.4
	Airframes & Related Assemblies & Spares	9,465	0.3	11,483	0.3	7,516	0.2
	Aircraft Engines & Related Spares	11,374	0.9	18,597	1.7	14,016	1.3
	Other Aircraft Equipment & Supplies	29,804	3.8	29,402	4.2	32,071	5.8
	Missile and Space Systems	32,941	0.5	14,997	0.2	45,293	0.8
	Ships	44,961	2.9	38,104	2.2	21,000	1.4
	Combat Vehicles	172,218	31.1	131,854	23.0	94,291	26.7
	Non-Combat Vehicles	152,670	31.0	152,150	33.2	120,718	28.4
	Weapons	6,227	2.8	7,950	3.7	6,326	3.0
	Ammunition	7,674	0.8	9,098	1.0	16,859	2.5
	Electronics & Communication Equipment	91,671	2.8	82,247	2.6	77,248	2.6
	Petroleum	8,411	1.0	6,162	0.7	6,065	0.8
	Other Fuels & Lubricants	42	0.1	141	0.4	33	0.1
	Separately Procured Containers & Handling Equipment	62	5.6	116	14.9	36	2.2
	Textiles, Clothing & Equipage	6,772	1.6	3,890	1.5	9,776	3.6
	Military Building Supplies	2,526	10.9	822	2.0	136	0.7
	Subsistence	8,221	1.3	6,464	1.1	9,821	1.7
	Transportation Equipment	1,321	38.0	47	1.7	(-) 12	---
	Production Equipment	2,060	2.0	7,505	7.2	2,546	4.2
	Construction	18,518	1.5	11,870	1.1	17,062	1.3
	Construction Equipment	12,046	13.0	38,248	34.4	19,722	21.5
	Medical & Dental Supplies & Equipment	2,719	2.6	2,545	3.8	3,374	4.4
	Photographic Equipment & Supplies	1,078	1.5	262	0.4	2	*
	Materials Handling Equipment	5,497	13.4	7,641	11.5	12,104	22.4
	All Other Supplies & Equipment	31,071	3.8	26,087	3.5	48,663	6.8
	Services	18,437	1.2	25,365	1.4	26,619	1.2

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE
MICHIGAN

(Value in Thousands)	Procurement Program	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$532,897	2.3	\$918,426	2.9		
	Airframes & Related Assemblies & Spares	10,583	0.3	10,503	0.2		
	Aircraft Engines & Related Spares	12,832	1.2	15,290	0.7		
	Other Aircraft Equipment & Supplies	23,827	3.6	70,833	6.9		
	Missile and Space Systems	47,365	1.1	62,061	1.4		
	Ships	5,635	0.3	12,756	0.9		
	Combat Vehicles	88,278	33.2	179,211	31.0		
	Non-Combat Vehicles	160,739	27.3	234,800	23.9		
	Weapons	7,952	2.6	19,231	3.8		
	Ammunition	13,182	1.7	31,203	1.1		
	Electronics & Communication Equipment	59,126	2.0	47,032	1.2		
	Petroleum	4,535	0.6	5,669	0.7		
	Other Fuels & Lubricants	10	*	10	*		
	Separately Procured Containers & Handling Equipment	24	0.3	56	0.8		
	Textiles, Clothing & Equipage	4,318	1.2	16,811	1.3		
	Military Building Supplies	772	2.7	3,124	0.9		
	Subsistence	8,918	1.4	15,963	1.5		
	Transportation Equipment	15	2.6	54	0.7		
	Production Equipment	1,467	2.3	2,603	1.5		
	Construction	10,754	0.9	6,021	0.6		
	Construction Equipment	9,368	15.7	57,841	27.0		
	Medical & Dental Supplies & Equipment	3,679	3.3	5,684	2.7		
	Photographic Equipment & Supplies	17	*	62	*		
	Materials Handling Equipment	5,687	15.9	4,874	4.7		
	All Other Supplies & Equipment	25,036	3.3	64,751	4.7		
	Services	28,778	1.4	51,983	2.0		

TABLE III

NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

MINNESOTA

(Value in Thousands)	Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$ 297,306	1.2	\$ 273,757	1.1	\$ 217,941	0.9
	Airframes & Related Assemblies & Spares	715	*	499	*	1,819	*
	Aircraft Engines & Related Spares	998	0.1	434	*	219	*
	Other Aircraft Equipment & Supplies	6,844	0.9	8,095	1.2	6,157	1.1
	Missile and Space Systems	42,786	0.6	27,037	0.4	55,017	0.9
	Ships	1,359	0.1	2,613	0.1	695	*
	Combat Vehicles	558	0.1	1,179	0.2	152	*
	Non-Combat Vehicles	862	0.2	433	0.1	3,272	0.8
	Weapons	3,034	1.4	7,726	3.6	7,513	3.5
	Ammunition	111,239	12.1	111,811	12.5	43,573	6.5
	Electronics & Communication Equipment	75,024	2.3	49,264	1.6	43,190	1.4
	Petroleum	2,900	0.4	3,186	0.4	3,553	0.5
	Other Fuels & Lubricants		0.0		0.0		0.0
	Separately Procured Containers & Handling Equipment		0.0		0.0		0.0
	Textiles, Clothing & Equipage	1,786	0.4	793	0.3		0.4
	Military Building Supplies		0.0	2,020	4.9	1,020	0.0
	Subsistence	18,407	2.9	16,020	2.8	15,386	2.6
	Transportation Equipment		0.0		0.0	38	5.6
	Production Equipment	357	0.3	956	0.9	422	0.7
	Construction	3,123	0.3	5,882	0.5	2,189	0.2
	Construction Equipment	3,324	3.6	525	0.5	49	0.1
	Medical & Dental Supplies & Equipment	1,110	1.1	390	0.6	620	0.8
	Photographic Equipment & Supplies	150	0.2	209	0.3	424	0.7
	Materials Handling Equipment	7,505	18.3	984	1.5	47	0.1
	All Other Supplies & Equipment	10,008	1.2	17,227	2.3	6,914	1.0
	Services	5,217	0.3	16,474	0.9	25,672	1.2

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE
MINNESOTA

(Value in Thousands)	Procurement Program	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$259,500	1.1	\$497,994	1.6		
	Airframes & Related Assemblies & Spares	1,141	*	1,049	*		
	Aircraft Engines & Related Spares	547	0.1		0.0		
	Other Aircraft Equipment & Supplies	10,324	1.5	24,949	2.4		
	Missile and Space Systems	37,185	0.8	42,458	1.0		
	Ships	2,195	0.1	2,656	0.2		
	Combat Vehicles	704	0.3	731	0.1		
	Non-Combat Vehicles	2,905	0.5	1,870	0.2		
	Weapons	44,918	14.9	9,288	1.8		
	Ammunition	31,952	4.1	190,507	6.7		
	Electronics & Communication Equipment	50,744	1.7	75,898	2.0		
	Petroleum	5,923	0.8	6,567	0.8		
	Other Fuels & Lubricants	32	0.1		0.0		
	Separately Procured Containers & Handling Equipment	465	0.0	3,967	0.3		
	Textiles, Clothing & Equipage	782	2.8	1,318	0.4		
	Military Building Supplies						
	Subsistence	21,348	3.3	37,927	3.6		
	Transportation Equipment		0.0		0.0		
	Production Equipment	1,061	1.7	3,287	1.9		
	Construction	2,132	0.2	2,927	0.3		
	Construction Equipment	702	1.2	3,423	1.6		
	Medical & Dental Supplies & Equipment	717	0.6	976	0.5		
	Photographic Equipment & Supplies	418	0.4	560	0.3		
	Materials Handling Equipment	568	1.6	987	0.9		
	All Other Supplies & Equipment	8,870	1.2	27,777	2.0		
	Services	33,867	1.6	58,872	2.3		

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE
MISSISSIPPI

(Value in Thousands)	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Procurement Program						
Total	\$ 100,220	0.4	\$ 186,039	0.7	\$ 155,911	0.6
Airframes & Related Assemblies & Spares	50	*	920	*	345	*
Aircraft Engines & Related Spares	63	*	319	*	123	*
Other Aircraft Equipment & Supplies	81	*	100	*	222	*
Missile and Space Systems	34	*	325	*	348	*
Ships	59,229	3.8	148,928	8.5	57,576	3.8
Combat Vehicles	12	*	4,291	0.7	170	0.1
Non-Combat Vehicles	10,451	2.1	1,600	0.4	689	0.2
Weapons	329	0.1	219	0.1	399	0.2
Ammunition	40	*	303	*	22	*
Electronics & Communication Equipment	999	*	2,187	0.1	1,434	*
Petroleum	1,845	0.2	2,242	0.3	10,963	1.4
Other Fuels & Lubricants	345	0.9	390	1.1	63	0.3
Separately Procured Containers & Handling Equipment						
Textiles, Clothing & Equipage	10,517	0.0	6,794	0.0	4,222	0.0
Military Building Supplies		0.0	99	0.2	172	0.9
Subsistence	6,216	1.0	3,921	0.7	5,072	0.9
Transportation Equipment		0.0		0.0		0.0
Production Equipment		0.0	39	*		0.0
Construction	3,713	0.3	7,868	0.7	68,769	5.3
Construction Equipment	134	0.1	83	0.1	237	0.3
Medical & Dental Supplies & Equipment	819	0.8	662	1.0	402	0.5
Photographic Equipment & Supplies		0.0	(-)	---	(-)	0.0
Materials Handling Equipment		0.0	215	0.3	4 ^{5/}	---
All Other Supplies & Equipment	2,343	0.3	1,978	0.3	1,333	0.2
Services	3,000	0.2	2,572	0.1	3,354	0.2

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE
MISSISSIPPI

(Value in Thousands)	Procurement Program	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$152,188	0.7	\$162,305	0.5		
	Airframes & Related Assemblies & Spares	851	*	2,133	*		
	Aircraft Engines & Related Spares	211	*	603	*		
	Other Aircraft Equipment & Supplies	1,438	0.2	5,459	0.5		
	Missile and Space Systems	382	*	519	*		
	Ships	57,092	3.2	47,507	3.4		
	Combat Vehicles	26	*	378	0.1		
	Non-Combat Vehicles	1,215	0.2	6,450	0.7		
	Weapons	421	0.1	49	*		
	Ammunition	1,737	0.2	3,240	0.1		
	Electronics & Communication Equipment	1,255	*	3,666	0.1		
	Petroleum	6,117	0.8	11,911	1.4		
	Other Fuels & Lubricants	12	*		0.0		
	Separately Procured Containers & Handling Equipment		0.0		0.0		
	Textiles, Clothing & Equipage	7,006	1.9	25,226	2.0		
	Military Building Supplies	242	0.9	2,194	0.6		
	Subsistence						
	Transportation Equipment	9,390	1.4	21,744	2.1		
	Production Equipment		0.0		0.0		
	Construction Equipment	235	0.4	31	*		
		56,579	4.5	18,393	1.8		
		2,592	4.4	3,700	1.7		
	Medical & Dental Supplies & Equipment						
	Photographic Equipment & Supplies	1,180	1.0	1,144	0.5		
	Materials Handling Equipment		0.0		0.0		
	All Other Supplies & Equipment	1,360	0.2	387	0.4		
	Services	2,847	0.1	3,039	0.3		

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

MISSOURI

(Value in Thousands)	Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$ 545,553	2.2	\$ 686,111	2.7	\$ 1,349,071	5.5
	Airframes & Related Assemblies & Spares	290,888	9.2	477,802	13.1	1,143,010	25.4
	Aircraft Engines & Related Spares	(-)	---	195	*	1,314	0.1
	Other Aircraft Equipment & Supplies	6,723	0.9	8,819	1.3	8,612	1.6
	Missile and Space Systems	39,488	0.6	39,832	0.6	65,488	1.1
	Ships	6,622	0.4	1,329	0.1	999	0.1
	Combat Vehicles	464	0.1	109	*	322	0.1
	Non-Combat Vehicles	3,184	0.6	3,386	0.7	3,819	0.9
	Weapons	3,224	1.5	8,033	3.7	2,979	1.4
	Ammunition	37,134	4.0	44,075	4.9	49,315	7.3
	Electronics & Communication Equipment	19,262	0.6	16,246	0.5	9,649	0.3
	Petroleum	3,905	0.5	9,156	1.1	1,697	0.2
	Other Fuels & Lubricants	253	0.7	172	0.5	27	0.1
	Separately Procured Containers & Handling Equipment		0.0	25	3.2	57	3.5
	Textiles, Clothing & Equipage	9,222	2.2	3,018	1.1	6,430	2.4
	Military Building Supplies	55	0.2	4,290	10.4	282	1.4
	Subsistence	13,260	2.1	12,288	2.1	11,441	2.0
	Transportation Equipment	172	5.0	181	6.5	14	2.1
	Production Equipment	1,356	1.3	6,102	5.8	1,019	1.7
	Construction	76,461	6.3	28,901	2.6	19,136	1.5
	Construction Equipment	1,687	1.8	909	0.8	427	0.5
	Medical & Dental Supplies & Equipment	3,056	2.9	622	0.9	538	0.7
	Photographic Equipment & Supplies	1,748	2.4	2,193	3.5	105	0.2
	Materials Handling Equipment	3,540	8.7	66	0.1		0.0
	All Other Supplies & Equipment	15,570	1.9	8,394	1.1	7,271	1.0
	Services	8,801	0.6	9,968	0.5	15,120	0.7

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE
MISSOURI

(Value in Thousands)	Procurement Program	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$1,060,781	4.6	\$1,112,665	3.5		
	Aircrafts & Related Assemblies & Spares	827,098	20.7	650,131	14.1		
	Aircraft Engines & Related Spares	491	*	2,164	0.1		
	Other Aircraft Equipment & Supplies	14,546	2.2	13,034	1.3		
	Missile and Space Systems	47,796	1.0	102,848	2.4		
	Ships	1,585	0.1	2,883	0.2		
	Combat Vehicles	397	0.1	883	0.2		
	Non-Combat Vehicles	12,689	2.2	10,816	1.1		
	Weapons	18,578	6.2	31,161	6.1		
	Ammunition	50,325	6.5	153,788	5.4		
	Electronics & Communication Equipment	13,837	0.5	45,299	1.2		
	Petroleum	1,824	0.2	2,151	0.2		
	Other Fuels & Lubricants	30	0.1	30	0.1		
	Separately Procured Containers & Handling Equipment	80	1.0		0.0		
	Textiles, Clothing & Equipage	3,191	0.9	11,672	0.9		
	Military Building Supplies	139	0.5	9,241	2.6		
	Subsistence	10,235	1.6	18,913	1.8		
	Transportation Equipment		0.0		0.0		
	Production Equipment	859	1.3	189	*		
	Construction	22,867	1.8	7,810	0.8		
	Construction Equipment	266	0.4	250	0.1		
	Medical & Dental Supplies & Equipment	1,612	1.4	2,289	1.1		
	Photographic Equipment & Supplies	900	0.9	886	0.6		
	Materials Handling Equipment		0.0	74	0.1		
	All Other Supplies & Equipment	7,261	1.0	21,788	1.6		
	Services	24,175	1.2	24,365	0.9		

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

MONTANA

(Value in Thousands)	Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$ 31,264	0.1	\$ 79,349	0.3	\$ 16,422	0.1
	Airframes & Related Assemblies & Spares		0.0	86	*		0.0
	Aircraft Engines & Related Spares		0.0		0.0		0.0
	Other Aircraft Equipment & Supplies	13,738	0.2	62,164	0.9	2,864	0.1
	Missile and Space Systems		0.0		0.0		0.0
	Ships						
	Combat Vehicles		0.0		0.0		0.0
	Non-Combat Vehicles	15	*	46	*	62	*
	Weapons	59	*		0.0		0.0
	Ammunition		0.0		0.0		0.0
	Electronics & Communication Equipment	647	*	1,892	0.1	783	*
	Petroleum						
	Other Fuels & Lubricants	3,252	0.4	1,898	0.2	2,912	0.4
	Separately Procured Containers & Handling Equipment	312	0.9	362	1.1	99	0.4
	Textiles, Clothing & Equipage		0.0		0.0		0.0
	Military Building Supplies		0.0		0.0		0.0
	Subsistence	381	0.1	490	0.1	539	0.1
	Transportation Equipment		0.0		0.0		0.0
	Production Equipment		0.0		0.0		0.0
	Construction	11,127	0.9	11,249	1.0	7,656	0.6
	Construction Equipment	686	0.7		0.0		0.0
	Medical & Dental Supplies & Equipment	16	*		0.0		0.0
	Photographic Equipment & Supplies		0.0	25	*		0.0
	Materials Handling Equipment	497	0.0	402	0.0	171	0.0
	All Other Supplies & Equipment	534	0.1	735	0.1	1,336	*
	Services		*		*		*

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

MONTANA

(Value in Thousands)	Procurement Program	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$59,375	0.3	\$13,779	*		
	Airframes & Related Assemblies & Spares		0.0		0.0		0.0
	Aircraft Engines & Related Spares		0.0		0.0		0.0
	Other Aircraft Equipment & Supplies		0.0		0.0		0.0
	Missile and Space Systems	8,997	0.2	1,412	*		*
	Ships	10	*		0.0		0.0
	Combat Vehicles	23	*		0.0		0.0
	Non-Combat Vehicles	255	*	263	*		*
	Weapons		0.0		0.0		0.0
	Ammunition		0.0		0.0		0.0
	Electronics & Communication Equipment	723	*	1,182	*		*
	Petroleum						
	Other Fuels & Lubricants	2,472	0.3	2,878	0.3		0.3
	Separately Procured Containers & Handling Equipment	448	1.5	119	0.4		0.4
	Textiles, Clothing & Equipage		0.0		0.0		0.0
	Military Building Supplies		0.0		0.0		0.0
	Subsistence						
	Transportation Equipment	550	0.1	543	0.1		0.1
	Production Equipment		0.0		0.0		0.0
	Construction Equipment	52,660	0.0	174	*		*
			4.1	4,170	0.4		0.4
			0.0	20	*		*
	Medical & Dental Supplies & Equipment		0.0		0.0		0.0
	Photographic Equipment & Supplies		0.0		0.0		0.0
	Materials Handling Equipment		0.0		0.0		0.0
	All Other Supplies & Equipment	385	0.1	522	*		*
	Services	2,852	0.1	2,496	0.1		0.1

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

NEBRASKA

(Value in Thousands)

Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Total	\$ 53,172	0.2	\$ 33,559	0.1	\$ 33,921	0.1
Airframes & Related Assemblies & Spares		0.0		0.0	(-714) ⁹	---
Aircraft Engines & Related Spares		0.0	34	*		0.0
Other Aircraft Equipment & Supplies	423	0.0	125	*	11	*
Missile and Space Systems	369	*	98	*	14	*
Ships			94			
Combat Vehicles		0.0	39	*	19	*
Non-Combat Vehicles	668	0.2	491	0.1	97	*
Weapons	76	*	86	*	53	*
Ammunition	3,463	0.4	1,280	0.2	(-1,076) ⁹	---
Electronics & Communication Equipment	7,154	0.2	2,193	0.1	3,134	0.1
Petroleum	358	*	262	*	157	*
Other Fuels & Lubricants	701	1.9	604	1.8	15	0.1
Separately Procured Containers & Handling Equipment		0.0		0.0		0.0
Textiles, Clothing & Equipment		0.0		0.0		0.0
Military Building Supplies		0.0		0.0		0.0
Substructure	9,904	1.5	13,084	2.2	12,403	2.1
Transportation Equipment		0.0		0.0		0.0
Production Equipment		0.0		0.0		0.0
Construction	25,942	2.2	10,581	0.9	3,598	0.3
Construction Equipment	68	0.1		0.0		0.0
Medical & Dental Supplies & Equipment	814	0.8	616	0.9	671	0.9
Photographic Equipment & Supplies	10	*		0.0	26	*
Materials Handling Equipment		0.0	11	*		0.0
All Other Supplies & Equipment	1,516	0.2	623	0.1	849	0.1
Services	1,706	0.1	3,338	0.2	14,024	0.6

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE
NEBRASKA

(Value in Thousands)	Procurement Program	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$42,708	0.2	\$80,478	0.3		
	Airframes & Related Assemblies & Spares		*	16	*		
	Aircraft Engines & Related Spares	25	0.0	11	*		
	Other Aircraft Equipment & Supplies		0.0		0.0		
	Missile and Space Systems		0.0	101	*		
	Ships	162	*		0.0		
	Combat Vehicles	18	*	522	0.1		
	Non-Combat Vehicles	204	*	10,204	1.0		
	Weapons	80	*	728	0.1		
	Ammunition	387	*	23,515	0.8		
	Electronics & Communication Equipment	4,186	0.1	4,802	0.1		
	Petroleum	195	*	153	*		
	Other Fuels & Lubricants.		0.0		0.0		
	Separately Procured Containers & Handling Equipment		0.0		0.0		
	Textiles, Clothing & Equipage		0.0	1,448	0.1		
	Military Building Supplies		0.0		0.0		
	Subsistence	13,731	2.1	20,530	2.0		
	Transportation Equipment		0.0		0.0		
	Production Equipment	48	0.1	10	*		
	Construction	5,565	0.4	8,490	0.8		
	Construction Equipment		0.0	44	*		
	Medical & Dental Supplies & Equipment	1,127	1.0	2,383	1.1		
	Photographic Equipment & Supplies	29	*		0.0		
	Materials Handling Equipment	1,144	0.0	908	0.0		
	All Other Supplies & Equipment	15,787	0.2	6,583	0.1		
	Services		0.8		0.3		

TABLE III

NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

NEVADA

(Value in Thousands)	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Procurement Program						
Total	\$ 8,246	*	\$ 13,143	0.1	\$ 6,361	*
Airframes & Related Assemblies & Spares		0.0	702	*	87	*
Aircraft Engines & Related Spares		0.0		0.0		0.0
Other Aircraft Equipment & Supplies		0.0		0.0		0.0
Missile and Space Systems		0.0	90	*		0.0
Ships		0.0		0.0		0.0
Combat Vehicles	15	*	94	*		0.0
Non-Combat Vehicles		0.0	89	*		0.0
Weapons		0.0		0.0		0.0
Ammunition	219	*	1,218	0.1	160	*
Electronics & Communication Equipment	100	*		0.0		0.0
Petroleum	55	*	60	*	77	*
Other Fuels & Lubricants	214	0.6	171	0.5		0.0
Separately Procured Containers & Handling Equipment		0.0		0.0		0.0
Textiles, Clothing & Equipage		0.0		0.0		0.0
Military Building Supplies	20	0.1	11	*		0.0
Subsistence	294	*	474	0.1	471	0.1
Transportation Equipment		0.0		0.0		0.0
Production Equipment		0.0		0.0		0.0
Construction	5,813	0.5	6,281	0.6	3,149	0.2
Construction Equipment		0.0	142	0.1		0.0
Medical & Dental Supplies & Equipment		0.0		0.0		0.0
Photographic Equipment & Supplies		0.0		0.0	15	*
Materials Handling Equipment		0.0		0.0		0.0
All Other Supplies & Equipment	290	*	2,141	0.3	159	*
Services	1,226	0.1	1,670	0.1	2,243	0.1

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

NEVADA

Procurement Program	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Total	\$19,142	0.1	\$32,028	0.1		
Airframes & Related Assemblies & Spares	(-) 17 $\frac{1}{2}$	---	730	*		
Aircraft Engines & Related Spares		0.0		0.0		
Other Aircraft Equipment & Supplies		0.0	79	*		
Missile and Space Systems		0.0		0.0		
Ships	32	*		0.0		
Combat Vehicles	40	*	45	*		
Non-Combat Vehicles		0.0		0.0		
Weapons		0.0		0.0		
Ammunition	74	*	53	*		
Electronics & Communication Equipment	885	*	455	*		
Petroleum	54	*	166	*		
Other Fuels & Lubricants		0.0		0.0		
Separately Procured Containers & Handling Equipment		0.0		0.0		
Textiles, Clothing & Equipage		0.0		0.0		
Military Building Supplies		0.0		0.0		
Subsistence	464	0.1	573	0.1		
Transportation Equipment		0.0		0.0		
Production Equipment		0.0		0.0		
Construction	4,809	0.4	3,293	0.3		
Construction Equipment		0.0	53	*		
Medical & Dental Supplies & Equipment		0.0		0.0		
Photographic Equipment & Supplies		0.0	36	*		
Materials Handling Equipment	2,822	0.0	5,636	0.0		
All Other Supplies & Equipment	9,979	0.4	20,909	0.4		
Services		0.5		0.8		

TABLE III

NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE

NEW HAMPSHIRE

(Value in Thousands)	Procurement Program	Fiscal Year 1962		Fiscal Year 1963		Fiscal Year 1964	
		Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
	Total	\$ 58,926	0.2	\$ 51,174	0.2	\$ 64,857	0.3
	Airframes & Related Assemblies & Spares	19	*		0.0	22	*
	Aircraft Engines & Related Spares	262	0.0		0.0	36	*
	Other Aircraft Equipment & Supplies	467	*	110	*	85	*
	Missile and Space Systems	466	*	1,186	*	909	*
	Ships				0.1	2,441	0.2
	Combat Vehicles		0.0		0.0		0.0
	Non-Combat Vehicles		0.0		0.0		0.0
	Weapons	3,786	1.7	786	0.4	319	0.2
	Ammunition	142	*	58	*	32	*
	Electronics & Communication Equipment	34,193	1.0	25,568	0.8	44,221	1.5
	Petroleum	66	*	85	*	96	*
	Other Fuels & Lubricants	214	0.6	181	0.5		0.0
	Separately Procured Containers & Handling Equipment						
	Textiles, Clothing & Equipage	8,890	0.0	14,800	0.0	9,773	0.0
	Military Building Supplies		0.0		0.0		3.6
	Subsistence	2,289	0.4	2,171	0.4	2,326	0.4
	Transportation Equipment		0.0		0.0		0.0
	Production Equipment	50	*	14	*		0.0
	Construction	3,887	0.3	1,452	0.1	1,080	*
	Construction Equipment		0.0		0.0		0.0
	Medical & Dental Supplies & Equipment	312	0.3	178	0.3	113	0.1
	Photographic Equipment & Supplies		0.0		0.0		0.0
	Materials Handling Equipment	400	*	57	0.1	1,945	0.0
	All Other Supplies & Equipment	3,483	0.2	3,347	0.2	1,459	0.3
	Services						*

TABLE III
NET VALUE OF MILITARY PRIME CONTRACT AWARDS OF \$10,000 OR MORE
NEW HAMPSHIRE

(Value in Thousands)	Fiscal Year 1965		Fiscal Year 1966		Fiscal Year 1967	
	Value	% of U.S.	Value	% of U.S.	Value	% of U.S.
Procurement Program						
Total	\$52,400	0.2	\$109,591	0.3		
Airframes & Related Assemblies & Spares	284	*	416	*		
Aircraft Engines & Related Spares		0.0	32	*		
Other Aircraft Equipment & Supplies	420	0.1	5,269	0.5		
Missile and Space Systems	3,682	0.1	1,617	*		
Ships	1,196	0.1	1,104	0.1		
Combat Vehicles		0.0		0.0		
Non-Combat Vehicles		0.0	22	*		
Weapons	193	0.1	683	0.1		
Ammunition	24	*	35	*		
Electronics & Communication Equipment	26,504	0.9	66,927	1.8		
Petroleum	166	*	339	*		
Other Fuels & Lubricants		0.0		0.0		
Separately Procured Containers & Handling Equipment		0.0		0.0		
Textiles, Clothing & Equipage	13,169	3.6	20,681	1.6		
Military Building Supplies		0.0		0.0		
Subsistence	1,278	0.2	5,123	0.5		
Transportation Equipment	40	7.0		0.0		
Production Equipment	85	0.1	89	*		
Construction Equipment	1,104	0.1	1,571	0.2		
		0.0	15	*		
Medical & Dental Supplies & Equipment	99	0.1	162	0.1		
Photographic Equipment & Supplies	12	*		0.0		
Materials Handling Equipment		0.0		0.0		
All Other Supplies & Equipment	1,781	0.2	2,347	0.2		
Services	2,358	0.1	2,859	0.1		