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ABSTRACT

Indirect costs of sponsored research projects and educational programs are as necessary as are the direct costs. This report demonstrates that they are real costs and that sponsors such as the Federal Government receive more than equitable treatment in the computation and application of indirect costs. The areas discussed include: the computation of allowable indirect cost rates under Federal Management Circular No. 73-8; unallowable costs; audit, negotiations and application; the question of equities; variation in rates; federal limits on indirect cost rates and cost sharing; attitudes of nonfederal sponsors; indirect costs in industry and not-for-profits; recent increases in indirect cost rates; and use of indirect cost reimbursements. (JMF)

AMERICAN COUNCIL ON EDUCATION

INDIRECT COSTS IN UNIVERSITIES

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ACE SPECIAL REPORT

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I. INTRODUCTION[1,2]

Indirect costs at universities are a subject that has been widely and even sometimes acrimoniously discussed both inside and outside the academic community. Much of this discussion has involved misunderstandings and misconceptions of various kinds. Among many faculty members engaged in research, particularly sponsored research, there is a lack of understanding which can only be called unfortunate. Even some university business officers sometimes seem to be confused. Representatives of sponsoring organizations, particularly program-type representatives, both public and private, have many misconceptions. It is apparent from the transcripts of hearings before congressional committees that indirect costs, sometimes called "overhead," are somehow mistakenly related to a profit or at the very least to a measure of efficiency.

In actual fact, however, indirect costs are in concept relatively simple. There appear to be primarily two sources which give rise to the difficulties in understanding. First, the basic

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[1]This report was prepared with support from the President's Biomedical Research Panel under contract number NO1-PP-5-2159 between the American Council on Education and the National Institutes of Health.

[2]Some of the material contained herein was based on information gathered by the author under Research Management Improvement Grant NM 42893 from the National Science Foundation.

assumption underlying indirect costs may not be clear. Second, the details of proceeding from the basic assumption to the final computation and application of indirect cost rates constitute a maze that is all but impenetrable. The basic assumption and its application and ramifications are set forth in subsequent chapters.

At the present time the subject of indirect costs in universities appears to be of particular importance. The financial condition of these institutions has deteriorated significantly. Their research activities are impacted by rising costs, both direct and indirect, while at the same time financial support, particularly when measured in real dollars, is declining, and is declining substantially for some disciplines. Some might say that the advancement of knowledge, and particularly of science, needs only an adequate support of the direct costs of sponsored projects. It is in large part an objective of this paper to demonstrate that indirect costs of such projects are as necessary for the research as are the direct costs, that they are real costs, and that sponsors such as the Federal Government and others receive more than equitable treatment in the computation and application of indirect costs. Without indirect costs, research in universities would as surely fail as if there were no direct cost support. Although the dollar volume of sponsored activities is substantially less for educational programs than for research programs, the same precepts apply.

It is not a purpose of this paper to provide a comprehensive treatise covering all of the refinements which do or may enter into the computation of a particular institution's indirect-cost rate. Some of the references provided (1, 16, 17, 18, 19, 20, 21, 22) contain more detail on this subject as well as on other aspects of university accounting. The objective here is to provide a discussion of the principles involved, together with enough detail so that the application of those principles can be understood. Furthermore, as will be evident from the table of contents, the subjects covered here are broader than just the computation of indirect-cost rates at universities, and they extend as well to other related areas.[3]

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[3]Information from and comments by the following individuals have been most helpful in completing this paper, and their assistance is gratefully acknowledged: P.V. Cusick, Massachusetts Institute of Technology; A.B. Hicks, University of Michigan; Charles Hilly, Stanford Research Institute; L.H. Lanier, American Council on Education; F.G. Riddle, Stanford University; P.J. Webb, Headquarters, Naval Material Command; and H.P. Wile, National Association of College and University Business Officers. However, no implication is intended that they necessarily agree with everything that is said here.

II. CONCEPTS AND PRINCIPLES

As stated in the preceding chapter, there is a basic assumption underlying the computation of indirect costs. The same assumption applies equally well to all types of organizations, whether they be universities, industry, not-for-profit, etc. From this assumption the generalized but simple formulae can be derived in order to compute and apply indirect cost rates. These require the definition of two kinds of costs, as follows:

1. Direct costs are those which can be identified and charged to a specific project relatively easily with a reasonable[4] degree of accuracy and without an inordinate amount of accounting. Examples include such items as the salary of a technician working full time on a project, or the purchase of chemicals for the project, or travel costs for the purpose of the project, or computer time billed to the project, etc.

2. In contrast with direct costs, indirect costs are those that have been incurred for purposes common to a number or all of the specific projects, programs or activities of an institution but which costs cannot be identified and charged directly to such projects, programs or activities relatively easily with a reasonable degree of accuracy and without an inordinate amount of accounting. Examples include

[4] Reference 13 states "high" degree of accuracy but the same document's requirements on charges for professional personnel are better interpreted as a "reasonable" degree of accuracy.

such items as heating, lighting, air conditioning, and janitorial services of buildings, administrative services such as accounting, purchasing and personnel, library services, etc.

The assumption is that the indirect costs associated with or benefitting in some way a group of projects, programs or activities (hereafter referred to as projects), can equitably be prorated to a specific project in proportion to its size in relation to the size of all affected projects. Thus,

$$\text{(a) indirect costs for project} = \frac{(\text{indirect costs of all projects}) \times (\text{size of project})}{\text{size of all projects}}$$

If we define

$$\text{(b) indirect cost rate} = \frac{\text{indirect costs of all projects}}{\text{size of all projects}}$$

then

(c) total cost of project = direct costs of project + (indirect cost rate) x (size of project).

The relative size of projects, both for the determination of an indirect cost rate in (b) above and for the application of the rate in (c), is almost always measured in terms of some part or all of the direct costs of the projects, although other forms of measurement are possible. Such other forms of measurement could be population, full-time equivalents, square feet of space used, number of purchase orders issued, etc. In fact, some of these measures are used, not for the measurement of project size but for the allocation of overall

activity costs such as libraries and operation and maintenance of physical plant.

The three most commonly used measures of size of projects, generally called the base or bases, are:

Total direct salaries;

Total direct salaries plus personnel benefits;

Total direct costs (generally excluding capital costs and major subcontracts).

Insofar as the Government is concerned, total direct salaries is preferred as a base unless some other base can be justified.

It will be reasonably obvious from the above that the indirect cost rate in (b) will be significantly lower if total direct costs are used as the base or measure of size than if total direct salaries (only a component of total direct costs) are used, even though the dollar amount of total indirect costs remains the same. The indirect costs assessed to any one project by formula (c) will be the same or somewhat higher or lower (again, the average will be the same) depending upon the project mix of salaries and other direct costs compared with the mix for all projects.

The basic assumption underlying the computation of indirect cost rates relies to a major degree upon the principle of averaging. Since indirect costs cannot be charged directly to specific projects, they are averaged over the benefiting projects in proportion to relative size. Indirect costs, as will be evident from later discussion, are not monolithic, but

they consist of a number of elements each of a different type. Thus, a group of projects or activities, or one very large project, may have sufficiently different indirect cost services so that different indirect cost rates are equitable and necessary. It is because the averaging principle cannot be applied too broadly that both the direct costs and the indirect costs of major research universities are now separated out for at least three basically different functions or activities as will be discussed below.

The computation and application of indirect costs rates are clearly not an exact science. Nor are they exact in the sense that accounting is usually exact. A form of the scientific method is necessary to understand them, since each bit of costs, whether direct or indirect, has an interacting effect upon other types of costs. The maze, as it has been called earlier, can only be penetrated to the end if careful attention is paid to the steps along the way.

III. HISTORY OF FEDERAL INDIRECT COST POLICIES

Before World War II there was very little sponsored activity, research or otherwise, in colleges and universities and thus there was little need for or attention devoted to accounting procedures to separate and identify direct costs and indirect costs. During the war, when many universities undertook vital research and development, some rough approximations were developed to reimburse universities for the indirect as well as the direct costs of war-related R & D. For example, the Office of Scientific Research and Development used for some time rates of 50% of salaries and wages for universities and 100% of salaries and wages for industry to reimburse indirect costs, except in the case of major laboratories like the MIT Radiation laboratory where specific rates were carefully computed and applied.

When it became evident after the war that Government-sponsored research would continue on a significant scale at colleges and universities, the first formal document setting forth principles for the determination of applicable costs was negotiated between Government and university representatives. Secretary of the Navy Forrestal was a prime mover. The result was entitled "Explanation of Principles for Determination of Costs under Government Research and Development Contracts with Educational Institutions", War Department - Navy Department,

August, 1947(25). It was often known as the "Blue Book" to distinguish it from the "Green Book" which applied to commercial organizations.

The "Blue Book" was based heavily upon the averaging principle to the extent that a single indirect cost rate was computed for an institution for all instruction and research activities. The computation did not require a great deal more than the regular university financial report. A most important compromise, based somewhat on the averaging principle, was that departmental administration costs (not available from any financial report) were not included in the numerator of the indirect cost formula given in (b) of Part II. However, as an offset, student administration and services such as dean of college, dean of students, registrar, etc. (which were available from regular financial reports) and which primarily benefited instruction, were included in the numerator along with other recognized applicable indirect costs such as general administration, operation and maintence of physical plant, library, etc. The denominator of the formula was total direct salaries for both instruction and research. Other compromises and offsets were also employed in the interests of simplification.

By 1957, ten years after the Blue Book was introduced and when the volume of Government-sponsored research in colleges and universities had grown substantially, some Goverment agencies felt that greater refinements were necessary

than were provided for by the Blue Book. The latter's averaging principles, compromises and offsets were no longer acceptable. An interagency committee headed by the Bureau of the Budget was established to negotiate with a working group of university representatives operating under the aegis of the American Council on Education. Extensive negotiations and drafts and redrafts of a new set cost principles followed. After sixteen months, there was finally issued in September 1958 Bureau of the Budget Circular No. A-21, "Principles for Costing Research and Development under Grants and Contracts with Educational Institutions" (2). It needs to be recognized that, although university recommendations were taken into consideration, Circular A-21 as issued (and later changes also) represented a Government position as to what would be paid for Government-sponsored projects. A-21 instituted a great deal more refinement into the computation of indirect cost rates at colleges and universities. No longer was a single rate possible for both instruction and research. The work of computing and justifying indirect cost rates was magnified greatly. For example, at Princeton University for fiscal year 1957-58, the last year under the Blue Book, a thirteen-page submission in addition to the regular financial report was all that had to be submitted to Government auditors. For the next year, 1958-59 under A-21, a 71-page submission plus financial report were required. The amount of work increased by more than the pages did, because of the necessity

of collecting cost data not in the regular financial report in areas such as departmental administration, library, etc.

To the surprise of many, the indirect cost rates computed under A-21 were higher than the rates under the Blue Book. The greatly increased refinements of A-21 provided a higher reimbursement to universities for Government-sponsored research than they had previously experienced.

As will be evident from what has been said about the negotiation of A-21, it was a compromise between what Government representatives believed was equitable and desirable and what university representatives believed was equitable and desirable. As time progressed there have been five revised versions of A-21 issued, each of which incorporated changes and some of these changes were requested by universities, some were mandated by Government. In the September 1970 version and subsequent versions of A-21, provisions for educational, i.e., teaching agreements, were incorporated for the first time and the title was changed to "Principles for Determining Costs Applicable to Research and Development and Educational Services under Grants and Contracts with Educational Institutions". As of December 1973, the General Services Administration took over from the Office of Management and Budget (which had superseded the Bureau of the Budget) responsibility for the cost principles under A-21 and reissued them with no substantive changes as Federal Management Circular

No. 73-8 (13). The principles also now appear without changes as subparts 1-15.3 and 1-15.8 of the Federal Procurement Regulations (15) and as part of the procurement regulations of operating agencies (8).[5]

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[5]As of January 1, 1976, administrative responsibility for FMC 73-8 was reassigned to the Office of Management and Budget--thus far without any redesignation of the title or number of the document.

IV. THE COMPUTATION OF ALLOWABLE INDIRECT COST RATES UNDER FEDERAL MANAGEMENT CIRCULAR No. 73-8

To paraphrase in part and to interpret in part from the stated objectives of Circular FMC73-8, it provides principles for determining the allowable costs (both direct and indirect) applicable to research, development and educational services performed by educational institutions under grants from and contracts with the Federal Government. The principles are confined to the subject of cost determination and no attempt is made to identify the circumstances or dictate the extent of agency and institutional participation in the financing of a particular project. The principles are designed to provide recognition of the full costs which are acceptable to the Government for a project which is sponsored by the Government. No provision for profit or other increment above cost is intended. FMC73-8 uses, instead of the words underlined above, the words "under generally accepted accounting principles", but theunderlined words "acceptable to the Government" are believed to be more accurate as may be clear from the ensuing discussion.

Costs under FMC73-8 can be grouped into three categories, namely: direct costs, indirect costs, and unallowable costs. As defined in Part II of this paper, direct costs are those which can be identified and charged directly to a

specific project, program or activity relatively easily with a reasonable degree of accuracy and without an inordinate amount of accounting. Indirect costs are those that have been incurred for purposes common to a number or all of the specific projects, programs and activities but whose costs cannot be charged directly to such projects, programs or activities relatively easily with a reasonable degree of accuracy and without an inordinate amount of accounting. Unallowable costs are those which the Government will not accept as either direct costs or indirect costs of performing a Government grant or contract. Direct and indirect costs are discussed below, together with the cost pools into which they are grouped or to which they are allocated. Unallowable costs are covered in Part V.

A. Direct Costs:

Classification by "Objects" of Expenditure

Salaries and wages of persons fully employed on an identifiable project, program or activity, and a percentage of the salaries of those so employed part time are a direct cost. A greater amount of space in FMC73-8 is devoted to the charging of personnel salaries than to any other subject. This is particularly true for faculty members who are charged part time to Government projects. One of the really difficult problems which universities have in properly allocating and

computing indirect costs is that a single member of the faculty may have several functions which he or she is performing at about the same time. These functions may include instruction, research, administrative responsibilities, committee duties, and, particularly in a state institution, public service. Each of these may be in a different direct cost pool (see Section B following) or, in the case of administrative responsibilities or committee duties particularly, it may be treated as an indirect cost.

Personnel fringe benefits such as social security, retirement contributions, insurance, etc., are sometimes made a direct charge as a percentage of salaries and are sometimes directly charged on an item by item basis with each salary. Occasionally personnel fringe benefits are treated as indirect costs and are included in the indirect cost rate (under the Blue Book this was the general practice).

Supplies and materials used exclusively for the project are always a direct charge.

Travel and communication are generally a direct charge but long distance telephone calls under a system called Centrex may be too difficult to separate out as direct charges so they are included in indirect costs.

Equipment to the extent approved by the sponsor is a direct charge.

Computer use is covered by a special section in FMC73-8

and may be treated under some circumstances as an indirect cost but is more regularly made a direct cost.

Miscellaneous other direct costs.

B. Direct Costs:

Classification by Cost Pools for Major Institutions

Normally, direct costs in major research institutions must be separated into at least three primary cost pools, since separate indirect cost rates must be computed for those pools. The word "pool" as used herein is not intended to imply a separate geographical entity but rather a grouping together of the direct costs of those projects, programs or activities that are sufficiently similar so that the same indirect cost treatment can be applied.

Organized research (hereafter called research) means research which is separately budgeted and accounted for, sponsored by the Federal Government and by other outside sponsors, plus such research paid for from the institution's own funds.

Instruction and departmental research (hereafter called instruction) means all instructional activities plus all other research in departments which is not separately budgeted and accounted for.

Other institutional activities include residence halls, dining halls, student hospitals, student unions, athletics, book stores, faculty housing, chapels, theatres,

public museums and other similar activities or auxiliary enterprises. Also included here by Government fiat are all activities whose costs are unallowable to the extent that indirect costs are properly allocable to such activities.

Other cost pools may be needed where the averaging principle does not apply equitably, as may be the situation for off-campus projects, a medical center, etc. (See Section D following.)

C. Indirect Costs For Three Primary Cost Pools for Major Institutions

The doctrine set forth in this Section applies to major institutions which are defined by FMC73-8 as those having more than $1,000,000 per year in Federally supported research and educational service agreements (for smaller institutions see Section F). The direct costs for each of the three primary cost pools described in Section B above having been separated out and aggregated for each pool, the computation of an indirect cost rate for each pool, the that total university indirect costs be separated out and aggregated for each pool. Figure 1 on the next page shows how this is done for the three primary cost pools. A description of the elements of allowable indirect costs and how each is allocated to the pools follows.

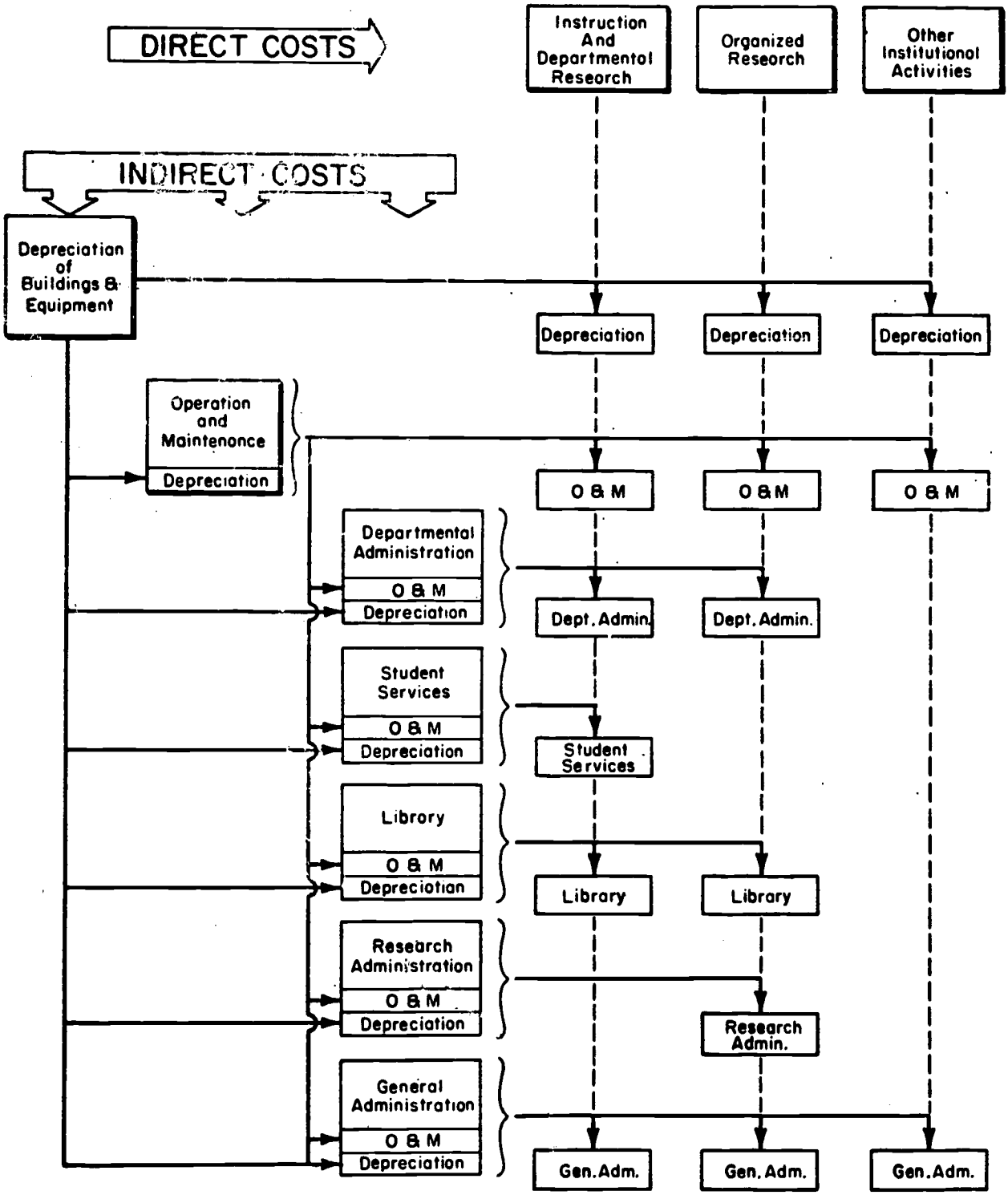

Figure 1. Diagram Showing Three Primary Cost Pools for Major Universities

Depreciation or Use Allowance for Buildings is considered a cost, even though it is not immediately out of pocket, because a reserve is essential to pay for replacements, major repairs and renovations. Depreciation may be claimed on the basis of a recognized and accepted depreciation schedule. Use allowance in lieu of depreciation is the method employed by most institutions and the amount is computed at 2% of the original cost of buildings. Neither depreciation nor use allowance may be claimed for the cost or a fraction of the cost of a building paid for by the Federal Government. Depreciation or use allowance must, per FMC73-8, be allocated to all direct cost pools and also to other elements of indirect costs. There are several allocation procedures that can be used. "Other institutional activities" are almost always housed in separate buildings, so that their depreciation or use allowance can often be directly allocated. For jointly used facilities, such as for instruction, research and administration, the preferred Government method is allocation on the basis of square feet occupied, with weighting factors allowed for relative costs if such factors can be justified. The simplest solution for jointly used facilities is allocating on the basis of salaries of those occupying the space, but this method must be justified as being equitable.

Depreciation or Use Allowance for Equipment is similar in principle to the same costs for buildings and the

allocation principles are also similar. As for buildings, the use allowance method is the one most frequently employed. Use allowance is generally computed at 6 2/3% of the acquisition cost of "usable and needed" equipment. No equipment paid for by Federal funds can be included. Equipment depreciation or use allowances are needed for a reserve to replace worn-out or obsolete equipment.

Operation and Maintenance Costs include utilities, janitorial services, routine maintenance and repairs, etc. As is the case for depreciation or use allowances for buildings and equipment, operation and maintenance costs must be allocated to all cost pools and also to other elements of indirect costs. Separate costing, as in the case particularly of "other institutional activities", may often be employed where facilities are geographically separate. For jointly used facilities the Government gives heavy emphasis to allocation on the basis of square feet used, sometimes with weighting for relative costs per square foot. However, if justified, allocation can be made on the basis of salaries.

Departmental Administration was, as mentioned above in Part III, not calculated nor included in indirect costs in the "Blue Book", because of an estimated offset with Student Administration and Services which are discussed below. At the present time in many institutions departmental administration is the largest single component in indirect costs. Since much

of departmental administration costs does not appear in the normal university financial reports, the amount of care used by an institution in determining and justifying the costs that should be included has a substantial bearing upon the indirect cost rates finally negotiated. Departmental administration costs include administrative and supporting services and expenses at the school and departmental level which benefit both instruction and research, such as the salaries and expenses of deans, departmental chairmen, other staff engaged in administrative duties, personnel in supporting activities such as stockrooms and stenographic pools, etc. Since universities are to a large extent managed by committees, faculty effort devoted to committees, faculty meetings and departmental meetings may be included if it is properly documented. Office expenses, applicable personnel benefits, building and equipment depreciation or use allowances and operation and maintenance costs are included.

Since departmental administration usually does not benefit "other institutional activities", it only has to be prorated between the two cost pools of instruction and research (unless other cost pools are needed). The two most commonly employed methods of allocation are on the basis of relative amounts of total direct costs (excluding capital costs such as equipment and subcontract costs) or total direct salaries.

Student Administration and Student Services (hereafter called student services) include costs such as deans of students, registrar, student advisors, student health and infirmary services, etc., together with applicable personnel benefits, depreciation or use charges, and operation and maintenance expenses. Student services were included as part of the indirect cost rate applicable to research under the Blue Book as part of the compromise. Under FMC73-8 they must be allocated entirely to instruction, except that a portion may be allocated to research on the basis of the relationship between hours of work by all students on research and the total hours of all students.

Library costs include the cost of books (excluding "rare books"), other library materials and salaries of library personnel together with applicable personnel benefits, depreciation or use allowances and operation and maintenance expenses. The allocation of library costs to the instruction and research cost pools is not easy. If no special studies are made FMC73-8 requires an allocation among students, faculty and other users strictly on the basis of population head count. The librarians of any university with a substantial research volume will certify that a member of the staff, particularly for his or her research, uses the library much more heavily than does a student, especially an undergraduate. Institutions that believe it is important to obtain

a more adequate reimbursement for library costs for research than the un-weighted headcount would provide have made various types of studies, some fairly elaborate, to justify weighting factors. The resultant weighting factors have been about two to four to one for the allocation of library costs to faculty and research staff vs. students. Institution to institution weighting factors vary depending upon the emphasis on library services to research.

In one type of practice that is often followed, after an allocation of library costs is made to the instruction cost pool for student use employing whatever weighting factor is developed, the remaining faculty and staff library costs are allocated between the instruction cost pool (which thus gets two allocations) and the research cost pool on the basis generally of the direct salaries of each.

Research Administration Costs are for a separate organization or identifiable administrative unit established to administer research, together with the applicable personnel benefits, depreciation or use allowances and operation and maintenance expenses. Under the Blue Book this element of indirect costs was buried in general administration. If a research administration office is entirely devoted to the administration of organized research, then it is entirely allocated to the research cost pool. If, as is increasingly the case across the country, the office also handles other activities

such as sponsored instruction projects, then a portion of the office costs must be allocated to those projects which may have to be collected into another and new cost pool. Total direct costs is generally the allocation base used.

Some state universities have affiliated and privately incorporated research foundations that perform the research administration function for sponsored projects, and often some other functions as well in areas such as accounting, purchasing, etc. The reasons for having such foundations vary, but some of them include the avoidance of state regulations that apply to the institution itself, retention of indirect cost reimbursements, management of inventions and patents, etc. Generally the costs of a research foundation of this kind are merged with university costs for the computation of indirect cost rates. There are about fifty such research foundations in the country today.

General Administration and General Expenses (hereafter referred to as general administration) include costs for general executive and administrative offices among which are the president, vice presidents, university deans, accounting, purchasing, personnel, etc., together with the applicable personnel benefits, depreciation or use allowances, and operation and maintenance expenses. General administration by definition applies to all activities of the institution. These costs are therefore prorated to all cost pools of the

university. The basis of allocation is generally the sum of the total direct costs (excluding capital costs and major subcontracts) in each cost pool, plus the indirect costs already allocated to that pool, excluding depreciation and use charges.

Miscellaneous Costs include items such as personnel benefits to the extent that these are treated as indirect costs, computers to the extent that the Government approves their treatment as indirect costs, etc.

D. Indirect Costs For Additional Cost Pools at Major Institutions

Additional cost pools besides the three primary ones are frequently required if indirect costs are to be equitably allocated. The type perhaps most often encountered is a cost pool for off-campus projects. These are generally defined as projects which are off-campus at a sufficient distance and for a sufficient period of time so that the same indirect costs are not incurred as they would be had the project been on the campus. Off-campus projects in general would not be allocated any depreciation or use charge for campus buildings or equipment, no campus operation and maintenance expenses, little or no library costs, and perhaps only a fraction of departmental administration costs.

Separate cost pools may also be called for where several campuses are involved, or where there is a medical center to be considered, and where the mix of direct and indirect costs is substantially different from one campus to another, or from the campus to the medical center. In such cases it should be possible, without too much difficulty, to separate out thecosts of buildings and equipment so that separate depreciation and/or use allowances can be computed. Operation and maintenance can presumably also be determined from accounting records. Several possible treatments could be used for departmental administration costs: a single institution-wide group of departmental administration costs; completely separate groups; or a composite group composed of an element common to all groups and an element peculiar to each. Other elements of indirect costs should follow patterns similar to those already discussed. The allocation of building and equipment depreciation or use allowances and operation and maintenance expenses to the other elements of indirect costs should obviously be based upon the campuses or centers where those elements are housed.

Still another type of situation arises where a project or group of projects have provided as a direct cost some of the services which are normally provided and charged for as an indirect cost. Examples include a project whose building and equipment are completely paid for by the Government,

in which case no building or equipment depreciation or use allowance may be included in the project's indirect cost rate. A similar procedure would apply if a project paid directly for normal operation and maintenance costs, although here a part of total operation and maintenance costs such as that devoted to roads, sewers and other items external to the building can be included. If a project pays for purchasing, then purchasing needs to be excluded from the indirect cost amount for general administration and general expenses. These adjustments can become quite complicated and may not be necessary if the averaging principle is reasonably well satisfied or if the differences are not substantial.

E. Calculation of Rates for Major Institutions

Falling back upon the general principles set forth in Part II above, the indirect cost rates for each cost pool are calculated by taking the aggregate of all indirect cost elements allocated to that pool and dividing by the total direct cost base or measure of size used. The indirect cost rate is then used for each project, program or activity in the pool by using formula (c) in Part II which is repeated here for ready reference:

total cost of project = direct costs of project +
(indirect cost rate) x
(size of project).

Obviously the indirect cost rate and the measure of size for a project must both use the same base, i.e., total direct

costs, salaries plus benefits, salaries, etc.

F. Abbreviated Procedure for Smaller Institutions

An abbreviated procedure, somewhat like the old "Blue Book", is available under FMC73-8 for institutions that have less than $1,000,000 in a fiscal year for Federal Government research and educational service grants and contracts. This procedure requires that direct salaries be used as the base or measure of size of projects, whereas for larger institutions salaries are preferred. The major elements of indirect costs compared with the "long form" version are:

Depreciation or use allowances for buildings and equipment are not permitted;

Operation and maintenance of physical plant is substantially the same as for the long form;

Departmental administration is limited to 20% of the salaries and expenses of deans and departmental heads;

Library requires no allocation for student use;

No provision is made for research administration;

Student services must be deleted;

General administration is about as in the long form;

Unallowables are the same.

There are no separate cost pools for the computation of a "short form" indirect cost rate. The rate is computed by taking the total of the indirect cost elements listed

above and dividing by total institutional salaries minus the salaries in the indirect cost elements. The short form rate is applicable to all Government-sponsored projects both for teaching and for research.

V. UNALLOWABLE COSTS

Under Circular FMC73-8 a number of costs are unallowable as either direct or indirect costs. Most of these would normally be treated as indirect costs. All are important for a university to function as a university. Without them institutions would not be in a position to perform adequately Government-sponsored projects.

Not only are these costs unallowable, they must be assigned a portion of the university's allowable indirect costs to the extent that these are properly allocable, which thus reduces the indirect costs and indirect cost rates for Government projects. The indirect costs for non-Government activities thus become the sum total of the allocated allowable indirect costs, plus all of the unallowables, plus the allowable indirect costs assigned to unallowables. It is at least in part because of this treatment that FMC73-8 has been described as imposing a form of "byproduct accounting" (21), instead of the unit or joint costing concept applied to other kinds of organizations such as industry and not-for-profits (see Part XI).

Major unallowable costs include:

Independent Research and Development (IR&D) is allowable to industry and not-for-profits in accordance with Government cost principles (7, 14) and is treated as a part of

allowable overhead expense. FMC73-8 does not make it allowable for universities, so, except to the extent it may be part of the scope of work (possible in a major Government-sponsored laboratory), it is unallowable. The purposes for which it is important to universities and for which it should be important to Government include (29):

(1) Laying a foundation of research experience, expertise and knowledge in areas where there may be Government interest or Government projects in the near or more distant future.

(2) Research involving radical new concepts that are too "far out" for reviewing panels to accept at the present time (who would have funded Einstein's early work?).

(3) Funding young researchers who have not achieved the stature to succeed as yet as principal investigators.

(4) Carrying forward research too inexpensive at present to justify a formal proposal.

(5) Performing the essential initial research necessary to prepare a convincing proposal.

(6) Carrying out the scientists' "search for truth, wherever the truth may lie".

Interest (or Imputed Interest) is unallowable to universities under FMC73-8 but is provided at present to industry and not-for-profits as part of the fee paid on a contract. Interest to a university is clearly a cost if it is

paid. Imputed interest is generally much more important and is defined as "the interest income foregone by an institution, which could have been earned if the funds utilized for a particular activity had been invested" (20). Besides the inequity, one of the absurdities of the interest disallowance is that it is better financially for an institution to rent equipment or facilities because the rent (on which the renter gets a return on his investment) is allowable, but the interest sacrificed if the institution invests its own money is lost.

Fund Raising and Investment Management are unallowable despite the fact, particularly in private institutions, that the facilities and the faculty would not be available to perform Government projects had the funds not been raised to pay for the facilities or to provide the endowment for a faculty. Current fund-raising pays for many of the activities not paid for from Government projects, and it can be argued that this should be an offset under the averaging principle for the added indirect cost of obtaining and administering Government funds.

Public Information and Public Relations costs are unallowable to universities but not to industry or not-for-profits (except advertising). Also included under this category are functions such as community relations, Governmental relations, news bureaus, etc. Government operations presumably

benefit from Government public relations, so it is reasonable to expect that Government projects in universities will suffer without some university public relations.

Patent Costs (except disclosures) are unallowable to universities unless patents are owned by the Government (in which case why incur patent costs). Industry is reimbursed for patent costs if the Government has a royalty free non-exclusive license with commercial rights remaining with the contractor. A recent report of the university Patent Policy Ad Hoc Subcommittee of the Federal Council for Science and Technology (9) has emphasized the importance of retention of patent rights by universities, so that the results of Government-sponsored university research can be put into use. The Department of Health, Education and Welfare, followed more recently by the National Science Foundation, inaugurated the practice of Institutional Patent Agreements which have objectives similar to those recommended by the Subcommittee.

Catalogs (which are the directories for university organization and programs), Commencements and Convocations, Entertainment (even a meal for official guests). Scholarships and Student Aid (except as staff benefits or otherwise approved) are also generally unallowable.

VI. AUDIT, NEGOTIATION AND APPLICATION

Indirect cost rates are practically all computed based on data for the most recently completed fiscal year of an institution.

Once indirect cost rates have been computed, the resulting computation is officially submitted to a "cognizant" Government auditor or audit group. Under Federal Management Circular 73-6 entitled "Coordinating Indirect Cost Rates and Audit at Educational Institutions"(11) each university is assigned to a single federal agency for audit and for negotiation of indirect cost rates applicable to all Government grants and contracts from all agencies. Assignment of audit and negotiation responsibility is made by an interagency committee, although the cognizant agency is often the one with the largest amount of Government project support. At present the Department of Health, Education and Welfare has cognizance of by far the largest number of universities, followed at some distance by Department of Defense, National Science Foundation, Interior and ERDA.

Up to several years may elapse after submission of an indirect cost computation, particularly for smaller institutions, before an audit is actually performed. A site visit by the auditors is almost always required, and backup working papers and other documentation as well as personal interviews

will generally be necessary. Audit agencies generally have their own internal audit manuals to interpret FMC73-8. Unfortunately the requirements of FMC73-8 and the requirements of internal agency audit manuals do not seem to coincide in all respects.

The delays in audit mentioned in the preceding paragraph can create quite severe problems unless fixed indirect cost rates have been negotiated to last through the intervening period. More frequently a "billing" or "provisional" rate is used which is expected to be retroactively adjusted to a fixed rate once the latter has been audited and negotiated. If the finally negotiated rates turn out to be lower than those billed "provisionally", then major refunds must be paid to the Government. However, if finally negotiated rates are higher than billed, it is almost impossible to obtain payment for the amounts properly due.

Negotiation after audit can take several courses. If the institution accepts the audit report (generally reducing the indirect cost rates below those computed by the institution), then the rates can be settled promptly by agreement with the cognizant agency. Second, a rate or rates can be settled by negotiation with the finance or contract representatives (not audit representatives) of the cognizant agency. Third, a formal negotiation can be arranged at a conference attended by representatives of all agencies having

grants or contracts at the institution. Finally, an institution if it believes it is being treated unfairly, may file under the "disputes" procedures of affected agencies; disputes are settled under processes somewhat similar to court cases, with either an appeals board or hearing examiner making the final decision (a further appeal may be made to the courts under some circumstances).

Once a final indirect cost rate or rates are negotiated, they can be applied to grants or contracts in one of the following ways:

1. The final indirect cost rate can be substituted retroactively for a provisional or billing rate which had previously been agreed to for the year covered. The provisional or billing rate is often but not necessarily the same as the final rate negotiated for a previous fiscal year. The difficulties in retroactive adjustments have been discussed above.

2. A predetermined fixed rate may be negotiated, and it will often be the same as the last negotiated rate. Predetermined fixed rates may be established to cover periods of one, two or several years if both the Government and the institution agree that this will probably be equitable to both parties.

3. A predetermined fixed rate with roll forward may also be negotiated, and in this case the over-or-under recovery

for the year or years to which it applies will be included as an adjustment to the next indirect cost rate computed and negotiated. There is an increasingly wide acceptance of this procedure because of its long-term equity.

4. Finally, a negotiated lump sum for indirect costs may be negotiated, instead of an indirect cost rate, generally for a self-contained or off-campus project where the applicable indirect costs are difficult to determine. The amount so negotiated must be treated as an offset to applicable indirect cost elements before the latter are allocated to the rest of the university's operations. The use of a negotiated lump sum for indirect costs is generally confined to large research laboratories called Federally Financed Research and Development Centers or FFRDC's. Often such a Center may have in addition internal indirect cost rates to prorate internal indirect costs among the activities of the Center.

VII. THE QUESTION OF EQUITIES

The fundamental assumption underlying the computation and assessment of indirect costs to projects, programs and activities, and the formulae that result, will be equitable only if each project is charged with approximately the same amount of indirect costs as it would have been were it possible to charge the indirect costs as a direct cost. From the nature and definition of indirect costs there cannot be any exact proof. Nor is it necessary to be equitable that each element of indirect costs be assessed accurately, only that the overall amount be reasonable. For example, more than average library costs for a theoretical project may be offset by larger operation and maintenance costs for an experimental project.

This doctrine of equity applies in a variety of ways. In the first instance it is used to determine whether or not additional direct cost pools should be established. For example, it would be inequitable to allocate campus building and equipment use allowance and operation and maintenance costs to off-campus projects which are assigned no campus laboratories or offices. A separate direct cost pool may be required for a medical center which has its own research administration component and a quite different ratio of operation and maintenance costs and use allowances in

proportion to direct salaries.

The "doctrine of equity" can also be used to determine what base or measure of size should be used in the indirect cost formula. If the elements of indirect costs which are more nearly related to direct salaries are greater than those which are more nearly related to direct costs, then direct salaries may be the more equitable base. If the reverse is true, then total direct costs (generally modified) may be the more equitable base. Generally total direct costs minus capital expenditures and major subcontracts is chosen as a direct cost base because capital expenditures and major subcontracts (i.e., individual subcontract costs in excess of an amount such as $25,000 or $50,000) do not require significant indirect costs.

Finally, there is the often-abused concept of incremental indirect cost rates. There are some, and perhaps more than some, in particular among university faculty members and the representatives of private foundations, who argue that a project of moderate or small size when added to a university having millions of dollars of research should not be charged for indirect costs at the computed rate "because it does not cost that much". How much does it cost? Even though nothing is added in the way of costs affecting any of the indirect cost elements, there is still a squeezing in of buildings (university buildings are practically never

vacant), heavier use of university equipment, and a diminution of the services provided from other indirect cost elements to all other projects in order to accommodate the new one. Should not the new one pay its share? Under FMC73-8 cost principles the project will be assessed its share anyway by being included in the direct cost base for computing the indirect cost rate, so the university cannot collect from other projects the indirect costs assessed to the new project.

There are many step-functions in indirect costs. The addition of a building is a major step-function. The employment of an additional accountant, secretary, or librarian are minor step-functions. A good example of the step-function effect is an institution which has a switchboard or switchboards to handle telephone lines. Only one space is left on one switchboard, which Project A comes along and uses. Project B comes in and needs a new telephone, but this means a whole new switchboard, telephone operator and perhaps even building addition. Should Project A pay nothing for telephone service and Project B pay for the entire new switchboard and associated costs? The answer is clearly no. Average costs, not incremental costs, are generally the most equitable answer.

Finally, a university does not only have one small project; it has many such projects. When the total of these

is considered, indirect costs have had to increase as a result. Were the incremental indirect costs themselves to have been proportionally less than the previous indirect costs, then the average indirect cost rate should have decreased when direct cost volume was increasing. Exactly the reverse has been true, although there have been other factors as well that have influenced the trend.

VIII. VARIATION IN RATES

There are wide variations in the indirect cost rates of different universities and also for parts of universities.

A. Approximate ranges in normal indirect cost rates.

1. For on-campus organized research the rates will range from approximately 45% to 100% of direct salaries.

2. For research as in (1) above, the rates will be from ten to twenty percent (not percentage points) lower if the base is salaries and wages plus personnel benefits, with variations due to differences in personnel benefit plans.

3. For research as in (1), the rates will normally equal one third to one half of those given if the base is total direct costs minus capital costs and major sub-contracts, with variations dependent upon the mix of the items in the direct cost base such as salaries, personnel benefits and other expenses.

4. For instructional projects the indirect cost rate will generally be (although there are exceptions which are not easily understandable) about one-quarter to one-half higher than the rate for organized research.

5. Normal off-campus rates may be as little as one quarter of on-campus rates.

6. There are special rates as for Federally

Financed Research and Development Centers which are unique unto themselves.

B. Reasons for Rate Variations.

1. Different bases may be used for the computation and allocation of indirect costs. Their effects should be obvious from above. It needs to be emphasized, however, that there is no change in the total dollar amount of indirect costs allocated or recoverable. Rates can be converted rather easily from one base to another merely by substituting bases.

2. As described earlier, there are different cost pools, each with its own indirect cost rate. An instruction indirect cost rate, because of a very much higher allocation of library costs and student administration and student services, is often twenty-five to fifty percent higher than a campus research indirect cost rate. An off-campus rate can be one third or less of an on-campus rate because of deletions described earlier. A Federally Financed Research and Development Center may have an indirect cost allowance of only four percent or less of total direct costs, because all normal indirect cost elements, except for some general administration, are made a direct charge.

3. The same type of cost may be treated at one institution as a direct cost while at another institution it will be treated as an indirect cost. Examples include:

Secretaries at the departmental level
Administrative and clerical personnel
Purchasing
Personnel fringe benefits
Vacations, holidays and sick leave
Computer operations
Postage, stationery, and office supplies
Local and long-distance telephone service
Books and periodicals
Electrical power
Office equipment
Research administration
Alterations and renovations

To the extent that one type of costs is moved from indirect costs to direct costs -- i.e., from the numerator to the denominator in the indirect cost rate formula -- there is often a double effect on the indirect cost rates. The denominator of direct costs is increased and the numerator of indirect costs is decreased. In one computation, the indirect cost rate based on salaries would have dropped by twelve percentage points by treating secretaries at the departmental level as a direct cost rather than an indirect cost. Clearly, there would have been little change in total costs, but secretaries would have had time card problems and secretarial services would have

been skewed to the affluent projects. A management decision was made not to direct-charge secretaries but to provide them where needed, not where a project could pay for them. This illustrates the kind of problem which is involved in deciding whether some cost component should be direct or indirect. It should be emphasized that there is generally little change in the total cost of a project when a particular type of item is moved from direct to indirect or vice versa. Direct costs will be increased as indirect costs are decreased, etc.

4. The care and diligence which a university employs in determining and negotiating indirect cost rates can have a major effect. As stated earlier, FMC73-8 (long form) as compared with the old Blue Book requires a substantial amount of data which is not usually included in university books of account and financial reports. Less than adequate care and diligence will not decrease an institution's true indirect costs, but it will certainly decrease the amount that can be recovered for Government-sponsored projects. Two days work by one individual in the Controller's Office is completely inadequate for a thorough job. In state institutions where the state recaptures all or a substantial portion of the indirect cost payments received, there is less incentive to make the efforts necessary for adequate reimbursement. Areas where substantial efforts are particularly rewarding include:

a. The establishment and use of weighting

factors for the increased costs per square foot of building and operating and maintaining research space as compared with instructional space. The use of salaries and wages for the allocation of space costs in effect requires somewhat similar justification, since salary costs per square foot of space occupied are much less for classrooms than for research laboratories, so that auditors will not accept salaries as the basis for apportioning space costs unless they are justified.

b. The documentation of proper departmental administration, particularly the measurement of faculty effort devoted to administrative and general committee activities. Perhaps the best way these costs can be determined is by periodic (once a quarter or semester) surveys via departmental chairmen to get an estimate of each faculty member's salary which should properly be included. Carefully worded explanatory memoranda are generally needed. Up to as much as twelve percentage points in an indirect cost rate based on salaries can be ascribed to the proper inclusion of faculty salaries in departmental administration.

c. The justification of an adequate weighting factor for faculty and staff versus students to apply to library costs. This is a difficult problem and one not subject to a generalized solution. Universities with libraries that are heavily research-oriented will have substantially

higher weighting factors than for other institutions. Generally, the library staff needs to be involved in the necessary studies.

d. The employment of depreciation, sometimes even accelerated depreciation, instead of use allowances for buildings and equipment can have a significant effect. Greater record keeping, inventory control as well as justification of depreciation rates may be required. The advantages of depreciation depend upon the ages of the capital assets acquired, since depreciation cannot be charged after a depreciation period for a particular asset has expired whereas use allowances can presumably be charged ad infinitum so long as the assets are useable and needed. The value of money returned more rapidly through a depreciation approach is one of the factors to be taken into consideration. The 1965 version of Circular A-21 introduced a requirement which discourages (one would say unfairly discourages) conversion from use allowances to depreciation by requiring that the assessed charges for depreciation must not exceed the amounts that would have resulted had the depreciation method been in effect from the date of acquisition of such assets. Repairs and renovations of a capital nature are subject to depreciation or use allowance but are sometimes overlooked. Only amortization but no use allowances (amortization is very much like depreciation) is permitted for capital expenditures for land improvements like paved areas, roads, fences, sidewalks, utility conduits, etc.

5. Finally there are differences in the amount of supporting services provided by different institutions. The climate may require more or less heating or airconditioning. A university may provide a better library with the belief that it is worth the money to build upon rather than to duplicate the work of others. More administrative support may be furnished.

C. Efficiency

As should be clear from what has been said, there is as FMC73-8 prescribes, no provision for profit or other increment over and above costs in the cost principles as they are applied. Because of the "unallowables" one can argue that they provide for less than full costs. However, is there an incentive for efficiency or are inefficient university operations nurtured?

Each element of indirect costs, as evident from Part V, is prorated by one formula or another between university activity and Government-financed activities. Any increase in an element of indirect costs must therefore be paid for, in part, from university funds, and the present state of most university finances makes it certain that increased use of university funds must be fully justified. Of all of the elements of indirect costs, research administration generally has the largest percentage allocated to Government-sponsored

projects, but even it must be allocated in proportion to magnitude to non-Government research which is separately budgeted and accounted for. Furthermore, research administration is most often a small percentage of total indirect costs.

Universities are not like some organizations where an overwhelming proportion of their research and development is performed for the Government and thus a similar proportion of the indirect costs or overhead are paid for by the Government. The allocation of a substantial proportion of all indirect costs to university activities is a very great incentive to efficiency in incurring those costs.

As to indirect cost rates as a measure of efficiency, the variations discussed above in B.1. where different bases are used for computing indirect cost rates, or in B.3. wherecosts are transferred from direct to indirect or vice versa, can result in major changes in rates but no significant changes in total costs of an average project. Where there are separate cost pools as in B.2., the functions are different as in research vs. teaching or other institutional activities, or there is a different mode of operation as in off-campus projects, so that these cannot be used as a measure of efficiency. Inadequate measurement of indirect costs as in B.4. only means a greater and hidden cost sharing by the institution. Only B.5 where the institution provides more costly facilities and indirect cost services is there really

an added cost, but the university must absorb a full share of these costs allocated to its own activities, so that the importance of the costs have been thoroughly scrutinized.

IX. FEDERAL LIMITS ON INDIRECT COST RATES AND COST SHARING

Part III of this paper traces historically the computation of indirect cost rates (or overhead rates) which have been accepted for projects sponsored by the Federal Government. However, this does not mean that they were necessarily the indirect cost rates at which reimbursement was made. For many years a fixed percentage limit applicable to total direct costs was the amount paid to universities for the performance of research grants awarded by Federal agencies. Such limits apply even today to many grants and contracts awarded for the performance of educational services. Research contracts on the other hand have practically never had such limits applied.

The limit for indirect costs began many years ago as a flat amount of eight percent of direct project costs in grants from HEW's National Institutes of Health (4). History has shrouded the bases for the eight percent number. In 1955, as a result of considerable pressure to the effect that this was inadequate, the amount was raised to fifteen percent. In 1958 HEW proposed to increase the amount to twenty-five percent, but Congress entered the picture and the House Committee on Appropriations refused to approve the increase but instead imposed a statutory ceiling or limit on indirect costs for research grants set at fifteen percent of direct project costs.

This fifteen percent and later limits meant that, if an indirect cost computation were to demonstrate a lower indirect cost rate, only the lower rate could be used.

In 1963 Congress increased the limitation on indirect costs for research grants to twenty percent of direct project costs and applied this limit, not only to HEW but to DOD research grants as well, while the independent agencies like NSF and NASA were also getting a limit which was, curiously enough, set at twenty-five percent for one year; for subsequent years the limit dropped back to the same twenty percent as applied to HEW and DOD.

During the period following 1963, a great deal of pressure was brought to bear, primarily by the academic community, as to the inequities of the indirect cost ceilings imposed by Congress on research grants. These ceilings were finally removed in 1965 and in their stead the following type of provision was inserted in pertinent appropriation acts:

> "None of the funds provided herein shall be used to pay any recipient of a grant for the conduct of a research project an amount equal to as much as the entire cost of such project."

Thus was statutory cost-sharing inaugurated.

In considering the appropriation bills for fiscal 1969, the Senate considered, in place of cost-sharing,

returning to a fixed limit on indirect costs. As a result of the debates on the subject, the General Accounting Office, Congress' arm in the accounting field, was asked to make a comprehensive study of the subject. The most pertinent conclusion of the GAO study was:

> "A uniform formula, in the sense of a uniform percentage rate to be applied to direct costs or some element thereof, will not result in a realistic or equitable determination of indirect cost based on sound accounting principles (4)."

The GAO report killed legislative limits on indirect costs, at least up to the present time. However, cost-sharing continues to be required on research grants.

There is no similar history for indirect costs on grants for educational services. Traditionally, and right up until today, indirect costs on DHEW educational grants have been paid for at a rate of eight percent of direct project costs. This is not a legislative requirement but a matter of agency regulation. The argument for it which is almost uniformly advanced is lack of money. What it means is that institutions who accept such grants must share the costs in varying degrees dependent upon their computed indirect cost rates for educational services, which, as pointed out earlier in Part VIII, can be significantly higher than for research

projects.

There are several reasons for the Federal practices on indirect cost limits and cost-sharing which can be examined as follows:

1. There is the argument of incremental indirect costs which has been discussed earlier in Part VII.

2. There is also the argument of lower cost or greater efficiency. However, as discussed above in Part VIII, only a fraction of university activities are financed by the Government and, since indirect costs are prorated between Government and non-Government activities, there is a built-in incentive for efficiency.

3. There is the argument that a grant is less expensive to administer and service than is a contract, so a grant somehow should be limited to a lower indirect cost rate than a contract. The only elements of indirect cost upon which the difference between grants and contracts could have a bearing are departmental, research and general administration. Each of these elements are allocated between Government-sponsored activities and university-sponsored activities approximately in proportion to dollar volume. In all three administrative areas, both grant as well as contract requirements are more costly to implement than are the procedures for expenditures of university funds, so that if these differences could be measured, both grants and contracts would end up with

indirect cost rates higher than the computed rate (26). Finally, with the multi-paged manuals now being issued for grants, grants are sometimes more restrictive than contracts.

4. Lastly, there is the cost-sharing concept which is probably the most important since it led from limits on indirect cost reimbursement to legislative cost-sharing requirements. At the heart of cost-sharing is the belief that a grant as compared with a contract has the attributes of a charitable contribution, with no expectation that anything of value will be expected in return. The vast bulk measured in dollar volume of Federal grants or grants-in-aid do have the attributes of charitable contributions. Most are made to states and other political subdivisions. In all such cases, they are contributed on the eminently sound basis that the recipient should pay part of the costs involved.

Grants for scientific research are not like charitable contributions in any sense of the words. There is thus no basic principle which would require cost-sharing, as there is in a charitable contribution. There is a clear-cut quid pro quo. The Federal Government acting as the servant of the people expects, from a grant for research as it does from a contract, something of value either to itself or to the people. In fact, the use of the word "grant" to describe Government sponsorship of research is a misnomer in the context within which the same word is used elsewhere. There have

been efforts to effect a change, perhaps to a "research agreement," but so far to no avail (3, 12, 29). There is a considerable background of literature on the subject of cost-sharing (4, 10, 27, 28, 29). The arguments against mandatory cost-sharing can be summarized as follows:

a. The mutuality of interest between a university and the Government in a grant for research carries with it no obligation for the institution to pay part of the costs of work which has been judged to be of value to the Government or to the nation. The mutuality of interest is no different with regard to cost from that in a contract from the Government to industry; the Government wants the work performed and the industry wants to perform it. A research grant to a university is a form of contract (3, 27, 29) and there is mutuality of interest in all contracts.[6]

b. Sharing of costs does not maintain institutional freedom. Just the reverse is true, with a significant portion of otherwise free institutional funds coming under Government control.

c. The total amount of research performed will not be increased through compulsory cost-sharing unless universities are in essence forced to divert funds from instruction and other necessary activities, or to raise tuitions, or to hold down salaries inequitably, etc.

d. It impugns the integrity of universities to imply that better research will be proposed and research projects will be more efficiently managed if cost-sharing is required.

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[6]The Comptroller General has ruled that "the acceptance of a grant creates a contract between the United States and the Grantee", 42 Comp. Gen. 289, 294 (1962).

e. Finally, neither grants nor contracts are a standard, nor is there any equitable standard, by which the Government can decide what university research will require cost-sharing and what research will not.

Cost-sharing can have an effect upon indirect costs in two ways. In the first, cost-sharing is sometimes accomplished by an arbitrary reduction in the computed indirect cost rate, sufficient in amount to meet the cost-sharing requirements of the sponsoring agency. More frequently, cost-sharing is accomplished by assigning a dollar value to the time or effort devoted by a faculty member to a project, which time or effort is paid for out of the regular instruction (and departmental research) budget. Such contributed time or effort must be verified, generally, in the same manner as the time or effort which is directly charged to the project. Federal agencies are beginning to contend, with resistance being offered by some institutions, that the dollar value of the contributed time which has been budgeted and charged to the instruction cost pool should be moved to the organized research cost pool, thus increasing the denominator in the research indirect cost rate formula (formula b) in Part II. There is some equity in this position, since the measured size of research projects has been increased.

If the numerator in the research indirect cost rate

formula does not show a corresponding increase, then the rate is certain to decrease. However, the numerator of indirect costs will increase also. General administration, departmental administration and library (the allocation for student use already having been made) are apportioned between the instruction and the research cost pools in proportion to some part (i.e., salaries) or all of the dollar volume of each activity, so the transfer of salaries from the instruction to the research direct cost pool will result in moving indirect costs from the instruction to the research cost pool. The same is not true for pure research administration so that this element of the indirect cost rate will decrease. For depreciation or use allowance and for plant operation and maintenance costs, if salaries are used for apportionment between the instruction and the research cost pools, there should be little change in indirect costs because as direct salaries move from one to the other, related indirect costs also move. If square feet are used for apportionment and the square feet measured are not limited to those used only for organized research (i.e., research separately budged and accounted for), then there will clearly be a reduction in computed indirect cost rates.

X. THE ATTITUDES OF NON-FEDERAL SPONSORS

A. Foundations and Voluntary Health Agencies.

Following after Federal funds, private foundation grants are the next largest sector where indirect costs are of real concern. Generally grouped toghether with private foundations, insofar as attitudes towards reimbursement of indirect costs are concerned, are voluntary health agencies like the American Cancer Society, American Heart Association, etc. During 1972 and 1973 several meetings were held on the subject of indirect costs which were attended by representatives of most of the major foundations to confer with a selected group of university representatives.

The foundation people expressed at the outset a lack of understanding of the subject of indirect costs. Explanatory papers were prepared and presented, and then there was dialogue. Understanding of the subject was almost certainly increased, but the prevailing position of reimbursing little or no indirect costs prevailed. The reasons included:

1. A belief that indirect costs properly assigned to foundation grants couldn't be as high as universities compute them to be.

2. A belief in incremental indirect costs as discussed above in Part VII.

3. An unwillingness to accept the formula

allocation processes of FMC73-8. This continues to be true, even though the explanatory papers presented and the discussions seemed to make it clear that any indirect costs assessed to a foundation-sponsored project on the basis of computed indirect cost rates would have to be absorbed by the the university, not assessed to other projects, if the foundation would not pay them. However, a number of foundations have indicated their willingness to pay at least some indirect costs, to the extent that they can be specifically identified and billed as a direct cost (a secretary, for example, where secretaries are normally part of departmental administration costs). This can create some accounting problems, since the cost transferred from what is normally indirect to direct should, when an indirect cost rate is computed, be pulled back into indirect or otherwise the numerator of indirect costs will be too small and the denominator of direct costs will be inflated.

Together with the cost transfers mentioned above, a number of foundations will generally pay a moderate percentage, ranging from zero to about twenty percent of direct costs, to reimburse some of the indirect costs involved. Generally, the foundations are quite individualistic in this regard and often do not have a hard and fast position.

4. Finally, there is the argument for cost-sharing, and reduced indirect cost rates are an easy way to

obtain it. The quid pro quo argument, as in the case of Government research grants, does not have the same validity for foundation grants, and there is more of a charitable contribution flavor. Nevertheless, foundations must, as Government must, spend their funds for the public good, so why should not adequate payment be made? For some reason within the context of cost-sharing, certain foundations have a position that they will not pay full costs if a project is initiated by a university, but they will pay full costs (including indirect costs) if they initiate the project. One would think that a university which initiated a project worthy of funding should be rewarded rather than penalized.

B. Industry

Industry is the next of the significant outside sources of funds where indirect costs become involved. One would think that industrial representatives would be quite willing to reimburse university indirect costs for a project they wish to sponsor. Industry has within itself an elaborate indirect cost or overhead structure, and the overall rates are much higher than for universities. Generally speaking, when a project at a university is financed from an operating part of an industrial organization, there is no problem in obtaining payment for indirect costs. In fact, some universities

have made a practice, and it is accepted, of charging higher than normal indirect cost rates to industry, particularly if the latter asks for title to or exclusive licenses under any patents that may result.

The parts of industry where there is a problem in obtaining reimbursement for indirect costs are those individuals or offices or closely affiliated foundations that have been established for liaison with educational institutions and have some company funds to dispense. Often the staffs are composed of ex-university personnel who don't understand indirect costs anyhow. Here the problem can be even more difficult than with foundations. Individual grants are smaller, and why take away a part of just a $5,000 grant for overhead? But twenty $5,000 grants are assessed just about the same amount of indirect costs as one $100,000 grant, and they are probably more costly to administer. If the applicable indirect costs are not collected, then the university must absorb the costs.

C. States and Political Subdivisions

The largest amount of support to universities from states and political subdivisions obviously comes in the form of general appropriations which pay for overall institutional operations. Indirect cost rates are of essentially no significance here, nor are they for special appropriations such

as for agricultural and engineering experiment stations. Individual project-type grants or contracts which go to state and city universities and also to private universities are where indirect cost rates become important. In other words, indirect cost rates are only needed where there are a number of projects which are separately funded and the indirect costs applicable must be prorated on the basis of an indirect cost formula. There is often a lack of understanding of indirect costs on the part of state and local governments similar to that which existed twenty-five years ago in the Federal Government. The volume of project-type grants has until recently been quite small. Efforts have been and are being made to educate state agencies, with mixed success. Often state grants to universities will pay for indirect costs at fixed rates such as fifteen percent of direct costs. This is true even though the funds may flow through from a Federal agency prepared itself to pay the full audited rate. Occasionally, in a grant to a state university, an agency of the same state will take the position that it should not pay for indirect costs because these are already being paid for out of the regular state appropriation to the institituion. Basically, this is just another variant of the incremental indirect cost philosophy, unless the state increases the appropriation to pay for indirect cost elements in proportion to the added project direct costs.

XI. INDIRECT COSTS IN INDUSTRY AND NOT-FOR-PROFITS

A. Industry

Industrial organizations have their indirect costs and indirect cost rates just as universities, although the term used is more often "overhead" or "burden". The history of the use of indirect costs goes back very much farther for industry than it does for universities. However, the basic assumption and the formulae given in Part II are still valid, although the definition of direct costs may change in the higher order allocation of elements such as general administration (in industry generally referred to as G&A). Industrial indirect costs or overhead or burden do not include profit or any other increment above costs -- the latter are added after all direct and indirect costs have been accumulated.

The types of industrial organizations that do business with the Federal Government vary widely. There are firms that do primarily manufacturing, or research and development, or construction, or architect-engineer services and so on. Many times one firm performs two or more of these functions. The organization involved and the costs incurred will vary widely from one type of firm to another, or from firm to firm even of the same type.

Industrial organizations have one major simplifying factor in determining proper indirect costs as compared with universities. They have no students. Students occupy space

and use equipment in the same buildings that are used to house research. Since students do not represent a salary which could be used as an allocation base (which is what is generally used for most of the indirect cost elements in industry), measurements of square feet, weighting factors, and other mechanisms are needed for building and equipment depreciation or use allowances and operation and maintenance of physical plant. Students use libraries, so population counts plus a salary allocation method become necessary. Student administration and student services, really a part of general administration, must be separated out for separate treatment.

Federal Procurement Regulation (FPR) Part I-15.2 (14) and its counterparts in individual agency regulations such as Armed Services Procurement Regulation (ASPR) Section XV, Part 2 (7) are for industry what FMC 73-8 is for universities. As compared with FMC73-8, these regulations contain much less in the way of definitions of what should be a direct or indirect cost, nor do they prescribe very much methodology for the allocation of indirect costs. To a limited extent this may be due to the absence of students. Also, some further methodology is now beginning to be introduced by the standards promulgated by the Cost Accounting Standards Board (5), which was established by Congress in 1970 to promote more consistency and equitability in accounting for Government "defense" contracts; defense contracts were defined as those issued by the

Department of Defense, Atomic Energy Commission (now Energy Research and Development Administration), and National Aeronautics and Space Administration. Universities are also subject to these standards if their contracts with the "defense" agencies are large enough and if they have not been given a blanket examption under the standard itself (which has happened in some cases). An example of a Cost Accounting Standard which prescribes methodology is No. 403 entitled "Allocation of Home Office Expenses to Segments"; universities are exempted.

As is the case for FMC73-8, Government regulations for industry set forth the allowable and unallowable costs for Government contracts. The following types of costs, which can be substantial and which are practically always treated as indirect costs, are allowable for industry but not for universities (see Part V):

1. Independent research and development costs (IR&D) are those costs which lay a foundation for or are related to the performance of Government contracts but are not a part of those contracts. ASPR 15-205.35 for the Department of Defense and FPR 1-15.205.35 for other agencies made independent research and development an allowable cost, but the extent to which it is allowable evidently varies substantially among agencies.

2. The costs of patenting inventions arising from Government contracts is an allowable cost to industry, so

long as the Government has a nonexclusive, royalty-free license, which means that industry retains all commercial rights.

3. Public relations costs (but not advertising) are not unallowable for industry but they are not allowed as part of indirect costs for universities.

4. Sales expenses are allowable to industry if they are related to Government contract work, but no fund raising at all is allowable to universities.

In addition to the question of allowable costs, it needs to be remembered that universities must share the costs of Government grants whereas industry, as described below, receives a fee or profit in analogous contracts.

Turning now to the computation of indirect cost rates for industry, the wide differences make it very difficult to generalize. However, a comparison with universities can be made by assuming a company with a simplified and somewhat stylized organization chart which shows general administration (G&A) at the top and under it three divisions, a research division, an engineering division and a manufacturing division. Each of the divisions represents a cost pool, somewhat like university cost pools. However, the university cost pools of instruction and research are much more interwoven, both geographically and accounting wise, than are the industrial cost pools which are generally housed in their own buildings

and have separate accounts not only for direct costs but also for internal indirect costs. Thus, building and equipment depreciation (industry rarely employs use allowances) and operation and maintenance of physical plant for a division are separately identifiable and do not need an allocation process. Departmental (here divisional) administration is self-contained. Libraries could have mixed treatment, but for most industries libraries are not as important as costs for universities. Generally, fringe benefits are included as indirect costs in industry. These are the primary elements of cost from which a divisional indirect cost rate is computed, which is most often expressed as a percentage of salaries and wages.

G&A is handled differently. Often what is treated as research administration in a university is part of G&A in industry. Industrial G&A is computed and charged as a percentage of the total of the direct costs and the indirect costs of all of the divisions. Thus, the total costs of a project equals the direct costs plus the divisional indirect costs plus a percentage of the two foregoing items for G&A.

As stated earlier, this is a simplified and stylized illustration and anyone can take exception in particular cases. However, it demonstrates the principles involved.

For onsite research and development or engineering

types of work in an industrial company, some typical indirect cost rates (certainly not the highest nor the lowest) range from 75% to 110% of salaries and wages for a division plus 10% to 20% of total costs for G&A. In addition, at the divisional level there is often an overhead rate for material which ranges from 5% to 20%. The divisional and G&A rates are not additive as a simple example will demonstrate. Assume a company with a 100% division rate and a 15% G&A rate, with non-salary direct costs such as material, travel, subcontracts, etc., at the division level equal to salaries. Then for each dollar of salary expenses, total project costs become:

Salaries	$1.00
Divisional Indirect Costs	$1.00
Nonsalary Direct Costs	$1.00
Total Division Costs	$3.00
G&A at 15%	$ .45
Total Project Costs	$3.45

Total indirect costs thus are $1.45, so expressed as a percentage of direct salaries the total indirect cost rate is 145%.

Industrial indirect cost rates for a variety of reasons are generally higher than those in universities for work such as research and development where there is any degree of comparability. The reasons include:

1. There are costs, some important, which are

allowable to industry and not to universities as discussed above.

2. Industries treat more kinds of costs as indirect rather than direct compared with universities. As in the case of universities this has a double effect, increasing the numerator and decreasing the denominator in the indirect cost formula.

3. Industry almost always uses depreciation (often accelerated depreciation) but in some cases may employ a use allowance.

4. Industries are very assiduous and often more competent in obtaining the last dollar of indirect cost reimbursement to which they are entitled, since it is the life-blood of their existence.

Generally, contracts with industry for research and development work are on a cost-plus-a-fee basis (6). The fee can be set at a fixed amount when the contract is negotiated, somewhere between zero and a legally permitted but never attained maximum of fifteen percent of the total estimated cost. Sometimes an incentive fee contract is used, with the actual fee paid decreasing if total cost is more than the initial estimated cost, or increasing if the schedule is better than that guaranteed, or increasing if performance is better than some targeted performance. The law forbids fees that increase

as costs increase (often called cost-plus-percentage-of-costs contracts).

B. Not-For Profits

Not-for-profit organizations are companies that have no stockholders who expect and who are paid a return on their investment in the company out of the profits realized. However, not-for-profits do collect a fee in addition to costs whenever possible on contracts they perform. This is the distinguishing feature from a strictly "non-profit" organization. There are about seven major not-for-profits in the country (those doing more than $5 million in business annually) including organizations such as Stanford Research Institute, Midwest Research Institute, etc. There are also so-called "captive" not-for-profits like Rand and the Institute for Defense Analyses which are primarily organized and operated for the benefit of a Federal agency. In addition, there are a large number of relatively smaller and assorted not-for-profits spread around the country.

The determination of indirect costs at a not-for-profit is covered by the same Government regulations as apply to industry, namely Federal Procurement Regulation Part 1-15.2 (14) and the companion regulations, generally the same in the several sponsoring agencies. Some attention has been given to

the issuance of separate regulations for not-for-profits but these may not be adopted. Use of the same regulations, or similar ones, for not-for-profits as are used for industry means that for Government the same costs, such as independent research and development, are allowable which are unallowable for universities.

As distinguished from industry which normally has composite indirect cost rates, one a divisional rate and the other a G&A rate, not-for-profits have a single rate usually based on salaries plus benefits. There may, of course, be separate rates if there need to be separate cost centers as for on-site and offsite work. Not-for-profits have the same simplifying advantage that industries have in that they have no students.

The usual indirect cost (or overhead) rates for not-for-profits seem to range between 75% and 125% of salaries, plus benefits. These are obviously higher on the average than for universities. The reasons are similar to those for industry, except that not-for-profits are not apt to be as complex from an organizational standpoint as are industries.

As stated earlier, not-for-profits normally receive a fee in addition to costs. The fee is justified for the following reasons (there may be others also):

1. Perhaps of primary importance, it is needed to finance new buildings and equipment. Depreciation is only for replacement or renovation and even here inflation has a

serious effect. There are no investors as in industry, nor states or private donors as in universities, to furnish the funds.

2. There are real risks involved which allowable direct and indirect costs do not cover. Of significant importance are the risks of termination and the risks of costs incurred between the completion of one contract and the beginning of the next.

3. There are unallowable costs which run through a gamut from advertising to entertainment, etc.

4. Some funds are needed for a reserve for contingencies which cannot be foreseen.

5. Operating capital is needed to pay for costs incurred before payment is received.

6. Interest must be paid on borrowed funds, and there is imputed interest on capital invested in facilities.

The legal limits on fees for not-for-profits are the same zero to fifteen percent of allowable costs which are permitted to industry. Normally, the fees will range between four percent and eight percent of total estimated costs, again set at a dollar amount, not a percentage, when the contract is negotiated. Under the "Weighted Guidelines Method" of arriving at fees as given in Armed Services Procurement Regulation 3-808.4 (6), not-for-profits are to be paid, all other things being equal, three percentage points less for fee than a profit-making industry, presumably because of the tax advantage which a not-for-profit enjoys.

XII. RECENT INCREASES IN INDIRECT COST RATES

It is obvious to anyone who has been concerned with Government-sponsored research in universities that indirect cost rates have been increasing for the past decade or more. The following statistics collected by the Committee on Governmental Relations of the National Association of College and University Business Offices shows the trend. The years given are approximate only, since at the time of reporting the year for which computation, audit and negotiation of rates had been completed differed from one institution to another. Seventeen institutions are represented in the 1962 figure, and 69 in the 1966 and 1970 figures. Many, but not all, institutions reporting could be considered to be major research institutions.

Year for Which Rate Computed	Average Indirect Cost Rate Based on Salaries
About 1962	47.30%
About 1966	49.44%
About 1970	55.88%

Based on knowledge of what has been happening together with extrapolation from the above, one would estimate the average for 1974 to be more than 60%.

There are several reasons for the increases in indirect cost rates as are discussed below:

1. Most recently in particular there have been the effects of inflation. The following table applicable to colleges and universities has been reproduced from The Chronicle of Higher Education for October 6, 1975 (23).

COST-CHANGE PATTERNS

Yearly change in percent

	Fiscal Years				
	1971	1972	1973	1974	1975
Professional salaries	5.0%	3.9%	4.5%	5.1%	5.7%
Non-professional salaries and wages	7.8%	7.3%	6.0%	6.3%	8.0%
Fringe benefits	10.8%	11.2%	9.7%	12.3%	8.6%
Total	6.2%	5.5%	5.5%	6.4%	6.6%
Services	5.4%	6.9%	4.4%	4.7%	8.8%
Supplies & materials	3.7%	2.1%	3.3%	13.2%	24.8%
Equipment	4.0%	3.7%	3.1%	6.1%	18.0%
Books and periodicals	16.3%	7.4%	2.6%	8.0%	16.0% *
Utilities	10.5%	6.8%	5.4%	22.7%	28.3%
Total	6.9%	5.3%	4.0%	9.6%	17.2%
Higher Education Price Index	6.4%	5.5%	5.2%	7.0%	8.6%

* Estimate

The impact of the changes shown in the above table should be reasonably evident. The top two categories of salaries represent the denominator in the indirect cost rate formula. Most of the other items affect indirect costs (if any are treated as direct costs, they have no effect upon a salary-based indirect cost rate). Indirect costs have clearly increased proportionately faster than direct salaries.

2. In the past decade there have been major increases in university costs, many of which are in indirect cost areas, required for compliance with new Federal legislation and regulations. These have been analyzed and studied in an as yet unpublished report by the American Council on Education entitled "The Costs to Colleges and Universities of Implementing Federally Mandated Social Programs (24). The Chronicle of Higher Education for July 21, 1975, has reported on the results in a preliminary way, describing the legislation and regulations as attempts "to achieve a variety of social ends only marginally related to the educational objectives of colleges and universities". Among the types of Federal requirements cited in the same Chronicle article are: "equal employment opportunity, equal pay, affirmative action, non-discrimination by age, occupational safety and health, minimum-wage and fair-labor standards, unemployment insurance, Social Security, health maintenance organizations, pension-security-act provisions, wage and salary controls, and environmental protection."

The American Council on Education's study which served as a basis for the referenced Chronicle article had tentative small sample results which showed that the types of requirements quoted above resulted in increases in costs from 1965 to 1975 as follows:

Large private university from $110,000 up to $3,600,000;

Medium private university from $2,000 up to $300,000;

Large public university from $438,000 up to $1,300,000.

3. In addition to the above requirements which apply to universities generally, there are other recently imposed provisions which appear, some quite regularly, others less frequently, in grant manuals and contract clauses. These pertain to utilization of labor surplus area concerns, utilization of small business concerns, utilization of minority business enterprises, human subject reviews, animal-care requirements, listing of employment openings for veterans, employment of the handicapped, and control of employees to avoid conflict-of-interest situations. These requirements must almost always be handled as an indirect cost, except for major Government-financed laboratories. Since they are contractually imposed by the Government, the costs of compliance ought properly to be included only in the indirect costs applicable to Government-sponsored projects, but this is quite impractical for a university which integrates its Government-sponsored projects with other educational and research activities.

4. Over the years the regulations of Federal granting agencies as expressed in their grant manuals have multiplied manyfold. Contract requirements have also increased somewhat, but to nothing like the same extent as grant manuals. There are a variety of reasons for these increases in requirements

applicable to grants and contracts accepted by universities. Some result from the types of concerns covered under (2) and (3) above. Sheer size of research appropriations has something to do with it. Many arise from the peccadillos of a few institutions which results in extra regimentation for all. And all result in increased indirect-cost rates, at the departmental administration, research administration or general administration levels.

5. Finally, many universities have become more competent and more assiduous in their computation and justification of indirect cost rates. The shortage of funds, whether from private or state sources, has created a real incentive. The indirect cost rates actually incurred have not increased as a result, but the rates computed have.

XIII. USE OF INDIRECT COST REIMBURSEMENTS

The previous parts of this paper have concentrated almost entirely upon the computation and application of indirect costs and indirect cost rates. The use of funds received to reimburse indirect costs is another matter. It is an area in which there is perhaps as much misunderstanding as there is in the computation area. University presidents, chancellors, deans, faculty and even business officers are sometimes involved in the misunderstandings. Certainly some state legislatures are. Feedbacks to sponsoring organizations create real doubts as to what indirect cost payments are for.

Basically and fundamentally, payments for indirect costs are payments for costs incurred, just as they are for the direct costs of salaries, supplies, etc. If payments are made for a particular indirect cost and that payment is diverted to other purposes, then someone else has to pay for the indirect cost. The same dollar cannot be used twice. This is true even in the nonoperating indirect costs such as depreciation or use allowances for buildings, and equipment. If the payments for the latter are not put into reserves for building renovations or equipment replacement, then someone else will have to pay the bill when the renovation is needed or the equipment is worn out or obsolete.

There are far too many who do not understand these

facts. Misunderstandings can arise when predetermined indirect cost rates are used. If volume increases and if actual indirect costs do not increase proportionately, then there is an increase in payments for indirect costs in excess of the indirect costs incurred. However, in a following year, the rate based on the previous year will decrease, since indirect costs did not increase as fast as direct costs so the excess will disappear. If the roll-forward principle is used, the new rate will decrease even more, since the indirect costs incurred must be decreased by the amount of overrecovery when a new rate is computed. In fact, with indirect cost rates increasing as they are, indirect costs are actually increasing more rapidly than direct costs, so that payments are lagging behind cost when predetermined rates are used, and there is no excess to be distributed, only a deficit to be absorbed.

Most private institutions, at least their responsible officers, seem to understand these facts well enough so that there is not the concept of a bonanza of indirect cost payments to be distributed hither and yon. Private institutions generally take in payments for indirect costs as unrestricted income just as they take in tuitions, unrestricted endowment income and unrestricted gifts; indirect costs are then paid for out of this unrestricted income. Budgets are projected on the basis of justified needs and projected income from indirect costs and all other sources. In institutions where

separate schools or colleges function at least in part on the basis of their own income such as from endowment, tuition or sponsored projects, it is quite consistent with the principles of indirect costs that the reimbursement for at least part of indirect costs be returned to the schools or colleges where that part of the indirect costs were incurred and paid.

State institutions, because of the vagaries of state appropriations it seems, have a wide variety of postures with regard to indirect costs. The states will sometimes recapture all indirect costs paid in, on the logical basis that the state is paying for the indirect costs incurred so it should be reimbursed. Unfortunately, as has been stated earlier, this gives little incentive to the institution to be assiduous in the recovery of costs. Another practice is to incorporate the total anticipated revenue from indirect costs, along with revenues from tuition and other sources, in the total annual budget of an institution. At the other end of the spectrum there may be states that pay the full indirect costs of the institution and permit the latter to retain the payments made to it for indirect costs as essentially free money. Then there are some states in a middle area where some portion of indirect cost payments received can be retained and distributed. If the portion retained is comparable to the amount received for building and equipment depreciation or use allowances and is used for building improvements or equipment replacements, then this is entirely consistent with the purpose for which it was paid.

Additional amounts retained are sometimes distributed as incentives to colleges and departments, often those colleges and departments whose projects bring in the funds. There is much to be said for this incentive practice, but care needs to be taken to avoid the mistaken belief that the payments for indirect costs of themselves are a bonanza. What is happening is that the state is in effect providing more money than is needed to cover its share of the indirect costs. It is this extra payment by the state which makes the incentive payments possible, although political reasons may becloud this fact.

Finally, sponsors should not be misled by the practices of universities, whether public or private, in the ostensible use of indirect cost reimbursements. There are no red dollars and blue dollars. Compensation paid to universities for indirect costs are for real costs actually incurred, which have been computed in accordance with Government regulations and have been audited and approved by a Government agency. If the university wants to act as though payments for indirect costs are being used differently, it should be of no concern to a sponsor.

XIV. CONCLUSIONS

Indirect costs of universities are real costs, just as real as direct costs. They are only different in the sense that they are accounted for differently. They are averaged over a group of projects rather than being charged directly on an item-by-item basis to each project.

Indirect cost principles were first applied to universities in World War II and subsequently when outside-sponsored projects became an important part of university activities. As the volume of sponsored projects, particularly research sponsored by the Federal Government, has grown, so too have the indirect costs grown to pay for the services, functions and facilities which are necessary to accommodate those projects.

As Government-sponsored projects in universities have grown, principles for determining costs, particularly indirect costs, which are acceptable to the Government for those projects have also grown. They now require a complicated computation of indirect cost rates supplemented by working papers, audit and negotiation of indirect cost rates. The Government cost principles do not accept as allowable a number of costs which are allowed to industrial and not-for-profit organizations, such that the reduction in costs for Government projects as compared with non-Government activities has been called a form of byproduct accounting.

Indirect cost rates vary substantially among universities, but most of these variations are a result of different treatments of the same costs as either direct or indirect costs. There is no evidence that indirect cost rates are a measure of efficiency.

Cost-sharing in Government grants for research and educational services is required even though contracts for the same purpose may not require cost-sharing and even though both grants and contracts expect value in return for the Government dollars spent. Non-Government sponsors, particularly private foundations, also ask for cost-sharing, often in the form of reduced reimbursement for indirect costs.

In industry and not-for-profit organizations, indirect cost rates are normally higher than for universities, important costs are not unallowable, cost-sharing is not required and a fee over and above costs is paid.

Indirect cost rates in universities have increased significantly in recent years. Inflation has had a major effect. Government legislation and regulations as well as added requirements in grant manuals and in contracts have increased indirect costs significantly. Many institutions under financial pressure have been more assiduous in computing the indirect costs to which they are rightfully entitled.

The indirect costs paid to universities for Government projects are costs that have been actually and truly

incurred, as verified by Government audit. If an institution prefers to ostensibly use for another purpose the payments received for indirect costs, then some other source must pay for the indirect costs incurred. This is an internal matter.

Finally, as stated in the Introduction, without indirect costs, research in universities would as surely fail as if there were no direct cost support.

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