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ABSTRACT

In July 1982, 10 member libraries of the Association of Research Libraries (ARL) were surveyed to obtain information on their existing budget practices. Libraries participating in the study were the University of California, Santa Barbara; University of Chicago; University of Colorado; University of Florida; Iowa State University; Notre Dame University; Oklahoma State University; Stanford University; University of Wisconsin; and York University. This report examines how library budget allocations are determined at the 10 institutions, particularly in the areas of personnel, acquisitions and binding, and operations expenditures. The budget process for base budgets as well as annual increases is described, and details of budget administration and flexibility are reported. In a review of issues underlying the budget practices in use, a compromise between the development of absolute standards and the present system of adherence to historical allocation levels is suggested. It is proposed that ratios of library support related to library use be utilized to calculate an index of relative library support. Report appendices comprise: (1) a sample survey form; (2) a list of 11 suggested readings and resources; and (3) a copy of the March 1975 Report of (the) ARL-ACRL (Association of College and Research Libraries) Joint Committee on University Library Standards (Revised), which provides additional perspectives on budget allocation systems. (Author/ESR)

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Budget Allocation Systems For Research Libraries

Occasional Paper Number 7
January 1983
by John Vasi

Office of Management Studies
Association of Research Libraries
Washington, D.C.

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BUDGET ALLOCATION SYSTEMS FOR RESEARCH LIBRARIES

by John Vasi

ABSTRACT

The aim of this publication is twofold. A primary goal is to document existing budget practices at a sample of ARL libraries as points of comparison and contrast for other institutions. The paper examines how library budget allocations are determined by universities or other funding agencies at ten institutions and addresses the budget process for base budgets as well as annual increases. A second aim is to review some of the issues which underlie the budget practices in use. A compromise between the development of absolute standards and the present system of adherence to historical allocation levels is suggested: Ratios of library support related to library use could be used to calculate an index of relative library support. Appendices include suggested readings and a 1975 report from a joint ARL/ACRL committee on university library standards.

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INTRODUCTION

The declining funds available to higher education in recent years have focused administrators' attention on academic library budgets and making the most effective use of available resources. Generally, libraries are not able to buy as many books or employ as many staff as in past years. The literature has given some attention to managing resources within the library; studies and recommendations are available to guide libraries in book budget allocation and some other aspects of library budget management.

This paper addresses a more basic issue: How does a library determine and justify its basic annual budget from a funding agency? The focus is not the internal allocation of the budget within the library, but rather the budget practices in use today which determine the total annual allocation for a research library.

The disparity in funding among research libraries of similar size and scope indicates that library budgets are not determined by common factors or formulas. If commonly accepted budget practices or standards were used as a basis for setting library budgets, one would expect operating budgets to be relatively equal for libraries having similar sized user populations and supporting similar academic programs. This is not the case, as even a brief review of the ARL Statistics indicates. The size of operating budgets for ARL libraries is not correlated to any single factor or set of factors describing library use.

The aim of this publication is twofold. A primary goal is to document existing budget practices at a sample of ARL libraries as points of comparison

and contrast for other institutions. The paper examines how library budget allocations are determined by universities or other funding agencies at ten institutions and addresses the budget process for base budgets as well as annual increases. A second aim is to review some of the issues which underlie the budget practices in use: Are budgets responsive to the needs of libraries? Are they flexible enough to accommodate change? Are there alternate approaches for determining library budgets that might better serve libraries and their users?

THE STUDY

In July 1982, ten ARL libraries agreed to participate in a study of budget processes and to provide information for this publication. The libraries were selected to represent a range of collection sizes, funding levels, geographic location, and academic emphases; some are state institutions, some private. There was no preliminary information available to predict what types of budget allocation systems exist at the institutions selected.

Libraries participating in the study were: University of California, Santa Barbara; University of Chicago; University of Colorado; University of Florida, Iowa State University; Notre Dame University; Oklahoma State University; Stanford University; University of Wisconsin; and York University.

A written survey form (see appendix) requested budget allocation information for the three basic areas of library expenditures: personnel, acquisitions, and operations. There also were questions about the extent of flexbility in administering budget allocations.

It was expected that formal documentation on budgeting procedures would not be readily available in many instances. In order to cut down the time spent by respondents in completing the questionnaire, the format required short answers with opportunities to add narrative information to clarify a response or to provide additional explanation. Follow-up telephone calls were made to obtain further information when needed.

The initial question for each section of the questionnaire was: "Is there a formula used to determine the base budget for your library's staff size? (or acquisitions budget? or operations budget?) If a formula existed, respondents were asked to briefly describe its major components. If there was no formula, respondents were asked to describe the process used annually by the university administration or other funding agency to determine allocations.

BUDGET PRACTICES

STAFFING

Nine of the ten libraries indicated that they use no formula to determine the number of permanent staff allocated to the library. Staff size at those libraries is based on historical allocation by the funding agency. The responses of the nine libraries indicated that although there may be adjustments year-to-year in staffing level for permanent positions, there is no review of the basic annual allocation of staff. Requests could be made annually for additional staff by offering specific justifications in some cases; and staffing levels might be reduced during some years, but the basic process is one of making relatively minor adjustments to a historical base allocation, rather than a process which considers the appropriateness of the base allocation.

One library uses a formula addressing the total staffing allocation. The formula recommends a staffing level based on several factors: student enrollment and faculty FTE, number of branch libraries, and hours of operation of the branch libraries. Differing levels of students are weighted to generate library staff in proportion to the projected demands each category of students makes on library staff. As an example, an upper level graduate student generates six times more staff in the formula than a lower division undergraduate student. Similarly, a lower division faculty member generates only about one-fifth the amount of library staff than is recommended for a "Graduate II" faculty member. There is an additional factor in the formula which is intended to award staff to the library to compensate for library use generated by grant or research personnel who use library services but are not

part of the university staff. This portion of the formula has never been used to obtain funding, however. This same formula is used to recommend levels of staffing for all academic libraries in the state, but formula recommendations have not been fully funded.

Temporary Staffing (Student Assistants)

None of the libraries surveyed uses a formula to determine the number of temporary positions allocated to the library. Almost all libraries responded that levels of temporary help are determined basically by historical allocation, adjusted year-to-year by minor increases or decreases dependent upon the fiscal resources of the funding source.

In follow-up questions, several libraries noted that the use of student assistants is a significant factor in the operation of the library program, and that students are called upon to perform increasing numbers of library tasks, especially during evening or weekend hours. Despite the reliance on this component of total library staffing, methods for determining appropriate levels of temporary help are not in use at any of the surveyed libraries. The percentage of student positions within the total staff (as measured in FTE) at the surveyed libraries ranged from a low of 10% at one institution to a high of 35% at two institutions. (The 1980/81 ARL Statistics show the median percentage of student assistants to total staff for the 101 university library members as 21%, with a high of 57% and a low of 6%).

STAFFING BUDGET ISSUES

The majority of responding libraries do not have base staffing levels justified or reviewed annually during the budget process. There is no formal connection between user statistics or library productivity and staff size. Staff size has been determined through a process of historical allocation. While one library did tie annual staff adjustments to public service workload statistics, total staff size was not reviewed. Additionally, the library reported that recommended increases have not been funded in recent years. At one library where historical allocation was not used and staff size was reviewed through a complex formula, the formula proved unsatisfactory to the funding agency (in this case, the state legislature) which was unable to allocate funds at the recommended levels.

One possible reason for the lack of a formal budget process might be that efforts to tie funding to stated quantitative goals is not possible in the difficult fiscal climate of higher education at this time. Another view is that the mission and/or effectiveness of research libraries is only minimally tied to quantitative goals.

While there is surely some truth to both statements, one may also note that other educational operations are measured and budgeted through the application of quantitative data. For example, a basic measure of relative support for instruction is the student/faculty ratio. Ratios for instructional support differ by level of instruction -- graduate vs. undergraduate -- and faculty positions are budgeted accordingly. However, libraries do not base requests on ratios, although the possibilities for creating measures of relative support are available and might prove useful. Only one of the ten surveyed libraries used a factor which took into account the number of users in relation to the number of library staff.

There are surely complex interrelationships between library staff and users, and it would be difficult to recommend a specific number of library staff to serve a given number of users. Factors which would affect library staffing ratios include: type of university, subject area, level of students, number of branch libraries, and others. However, such variables apply to student/teacher ratios as well, and those ratios are useful as measures of relative support despite the admitted problems which exist when one uses any purely quantitative measures to gauge support of educational activities.

However, the dramatic changes in library operations and staff responsibilities in the past decade may militate against formula approaches. Even if staff/workload measures were developed to recommend library staffing levels, would they be workable even a few years after development, considering the increasing use of automated systems in research libraries? A formula developed in the 1970's would probably recommend more original catalogers than libraries need today, but it would not address the need for on-line bibliographic searching. One can cite numerous examples of this type. As evidence of this difficulty, the one staffing formula now in use has very complex and specific factors which were required to justify the library's existing staffing levels at the time the formula was instituted. This complexity does not allow the formula to adapt to the changing needs of today; the formula's recommendations have not been fully funded in recent years, nor does the library allocate its staff internally in accordance with the formula. Perhaps staffing formulas, with their quantitative basis, are incompatible with the dynamic environment in academic libraries today and the changing patterns of staffing.

ACQUISITIONS AND BINDING

The survey also sought information on how base allocations for acquisitions and binding budgets are determined and how year-to-year increases or adjustments are made. In replying to the question, "Is there a formula used to determine your library's acquisitions budget?", seven libraries indicated that no formula exists. The remaining libraries rely on formulas in different ways.

The formulas in use have somewhat different assumptions behind them and different factors which drive them. The annual acquisitions needs for a research library relate to either the user population served by the library or the academic programs and research needs to be supported. In some formulas, more users generate more volumes; in other formulas, higher level programs (master's or doctoral level) demand more library materials for in-depth research. In addition, some formulas recommend a basic collection of essential materials which any research library needs for its core collection before consideration is given to any other factors. The formulas used at the surveyed libraries demonstrate these basic approaches, both singly and in combination.

1. At one library, a relatively elaborate formula is in effect, determining the acquisitions budget recommendation by factors for number and level of degree programs offered as well as number of titles published annually in specific academic disciplines. Additionally, unit costs for the previous year's book purchases are factored into the formula recommendation. For example, if the institutuon offers a PhD. program in a certain discipline, the formula enables planners to recommend that the library purchase a specific percentage of materials published in that discipline each year. (The higher level degrees warrant higher percentage levels to be purchased.) The number of volumes required under the formula in each degree area is multiplied by the average price per title for each respective discipline (as determined by the previous year's cost data), and a dollar allocation is determined. Since the inception of the formula in the mid 1970's, full funding has not been available. In the last several years, funding has been at only 50-60% of formula recommendation. In the most recent budget cycle, the formula recommendation has been considered only as advisory information by the funding agency rather than as a formal indicator of library acquisitions needs.

2. At another library, a formula addressing academic programs as well as number of students is in use. The formula was applied rather strictly several years ago to recommend the number of volumes to be purchased annually. In recent years, formula recommendations have not been fully funded to cover the total number of recommended volumes. Additionally, adjustments to the formula have not been made year to year to reflect actual changes in the formula categories; variations in enrollments and changes to academic degree offerings have not been factored consistently into each year's calculations.

3. At the third institution which is part of a state university system, a formula is used to divide the state's total acquisitions allocation among the nine state schools. However, the state does not use any formula to determine the total amount of acquisitions dollars available for all nine schools.

For those seven libraries which have no formula, the most common method of determining acquisitions budgets is historical allocation. Several libraries have budgets set by campus decisions, while others are based on decisions at the state level. Adjustments are made (or requested) year to year by a variety of methods designed to justify changes to the base budget. Several respondents noted that justifications are most effective when documenting new programs or new degrees offered at the university. Conversely, requests for acquisitions increases based on what the library believes to be generally inadequate funding are not successful.

Annual price increases for acquisitions budgets are justified at all ten libraries by using some form of publishing and book price statistics. There are several techniques that derive price increase requests for inflation from manipulation of in-house cost statistics, published statistics, or other information which addresses past years' inflationary increases for library materials. In combination with retrospective price statistics, several libraries justify their requests in part on predictions of future book price inflation, though this is less common. Three respondents noted that their practice of using the past year's inflation data results in an anomalous situation where inflation increases are based on two-year-old prices. For most libraries, 1981 book price inflation figures will be used in some part as the basis for the 1983 acquisitions increase request. In an attempt to refine price increase requests further, one library uses book price inflation statistics in conjunction with publisher's predictions of increases, current and probable foreign exchange rates, and regression analyses of the past 8-10 years' costs of materials. Several libraries volunteered the information that the actual increases received, while based on book price inflation data, are usually less than the data would seem to justify.

Binding

Compared to other budget categories, binding budgets are quite flexible. All ten libraries indicated that the amount of money spent on binding is an internal library decision. In four of the ten libraries, funds for binding are included as part of the acquisitions allocation, while in the other six libraries, the binding allocation is made separately. Whether a separate allocation or imbedded in the total acquisitions allocation, binding funds are closely related to acquisitions funds, as one might expect. Several respondents noted that their libraries aimed at budgeting binding expenditures at 10% of the acquisitions budget. Decisions on the type or format of materials to be purchased directly affect the amount of material that requires binding. This close relationship between binding and acquisitions budgets is recognized; all the libraries have flexibility in transferring funds between these categories.

ACQUISITIONS BUDGET ISSUES

Acquisitions budgeting follows a pattern similar to that used for staffing. Historical allocation provides the base budget level for most libraries surveyed. At those two libraries following a formula approach that relates acquisitions budget to degree programs or number of users, formula recommendations are not strictly followed; both libraries receive less funding than needed to purchase the recommended number of volumes. Also, most surveyed libraries agreed that annual inflationary increases actually received were insufficient to maintain purchasing power over the years, despite the availability of commonly accepted measures for calculating book trade inflation.

Libraries are not purchasing as many volumes as they did in past years. The fiscal climate today may again be cited as the reason, but surely libraries' inability to document the effects of adding fewer volumes plays a part as well. As with staffing, there are not commonly agreed-upon ratios for a number of books per student or books per program. There is no objective method of relating the quality of education a student receives to the size of a library's collection. There does exist the possibility of "disaccrediting" a degree program because insufficient library resources exist, but such drastic action is rare and addresses a problem of different scope than the present discussion.

An issue of ever-increasing importance cited by one library is the view held by its state legislature that the statewide university system constitutes a

unified library resource. Certain research materials, it is said, need not be duplicated at multiple locations when they are available through interlibrary loan. With greater numbers of libraries participating at some level in shared acquisitions programs and consortia with reciprocal borrowing privileges, formula approaches to acquisitions funding will be more in question. The basic premises of library collection building are undergoing critical review through analyses such as the Research Libraries' Group's Conspectus, which formalizes the understanding that some libraries can devote their energies and dollars to certain collection areas while other libraries cover other subjects.

As with staffing, the formula approach of straight correlations between volumes added and users does not work at the libraries surveyed. The reasons are multiple: less funding than was available in past years; greater possibilities for resource sharing; easily searchable online databases; the realization that not every library can collect everything desired. These new understandings and developments question past tenets of formula approaches. If formula recommendations cannot be fully funded or need significant tinkering each year to adjust for change, it is of little use. The state using a full formula approach for acquisitions found that its libraries needed about $60,000,000 to catch up to what the formula recommended for state academic libraries over the past decade. Since the libraries continue to function, and the academic degrees are still awarded, one can assume that the accumulated shortfall will not be forthcoming from a legislature which cannot take such an approach seriously anymore. Therefore, while formulas may be in limited use at some libraries, one would assume their adoption and use is in decline. They are based on older concepts of more liberal funding and greater self-sufficiency for libraries.

Perhaps a formula approach may be devised which takes into account the realities of 1980's funding and resource sharing. However, if one assumes that some basic premises of library collection building will continue to undergo change, the rigidity of a formula approach may be inappropriate.

OPERATIONS

The remaining large budget category is generally known as the "operations budget" or the "supplies and expense budget." Funds in this category are used for the remaining library expenditures that are not covered by the staffing or acquisitions and binding funds. Operations budgets are used for such expenses as supplies, equipment, contractual services, travel, and recruitment.

None of the ten libraries uses a formula to determine the operations budget request. Similarly, no library uses a zero-based budget approach to justify operations funds. As in the other major budget categories, historical allocation modified by annual adjustments is the process by which most operations budgets are determined. Several respondents outlined situations which are somewhat different, however, from other budget areas.

Acquisitions and personnel budgets might be considered basically as allocations to meet annual goals of adding specific numbers of books to the collection or funding the salaries of a specific number of FTE. In theory, those budgets are generated by multiplying unit costs (for personnel or books) by a desired level of books to be added or staff to be employed. In simpler terms, the personnel and acquisitions budgets represent an attempt to fund specific and itemized targets. Operations budgets, on the other hand, are not allocated in response to a budget request which identifies the items or services a library hopes to purchase during the year. In practice, the operations budgets of most responding libraries might best be characterized as the funds available after other budget categories are funded.

While libraries do tend to have a fair amount of flexibility in administering their total budgets, and frequently can move funds among budget categories depending on need, the operations budget is the least well defined of the three major categories. This lack of definition is evident in the manner by which annual price increases are requested and awarded for operations budgets.

In response to the question: "How are price increases determined for (your library's operations) budget?", there were ten different answers from the ten libraries. Responses indicated that in several libraries, the increase is a library decision based on available funding or library manipulation of the total budget to produce workable allocations. Other libraries' price increases for operations are based on factors such as gross national product, overall average for all university operations, statwide inflation statistics, factors determined by the university business office, or a straightforward justification for any increase. One library simply answered "they aren't".

As a quantitative measure of the differences among the operations budgets of the responding libraries, the percentage of total library budget used for "operations" ranged from a low of 6.5% to a high of 17.0%. The average percentage of total library funding devoted to operations was 10.4%. This compares to the 1980/81 ARL Statistics for 90 university library members which shows a median of 10% for 1980/81 (up from 8-9% over the past 5 years).

OPERATIONS BUDGET ISSUES

Because libraries finance automated systems for public and technical services from the operations budget, its importance is great even though in the past it has been the smallest of the three major budget categories. Individual libraries are required to fund different types of expenditures from the operations budget: Some pay for computer services, while others pay only in part; some pay for building utilities, while others have such services paid by the university; travel and recruitment expenses paid by the library or the university also vary. For these reasons, comparisons of actual expenditures or even percentages of expenditures by libraries would not be particularly meaningful or aid in justifying budgets.

However, operations budgets are intended to fund specific program needs (circulation systems, bibliographic utilities, etc.) and regularly occurring expenditures (supplies, travel, contractual services, equipment); they would seem to be good candiates for detailed, itemized budget justifications each year. This need will become even more important, since the 1981/82 ARL Statistics show a steep rise in operations budgets. Zero-based budget requests identifying essential and desirable expenditures might be appropriate in justifying annual requests. No surveyed library uses such a procedure, however, and the historical base adjusted annually for inflation is the norm.

The difficulty observed in determining a correct budget for personnel or acquisitions should not be a problem with the operations budget. Specific levels of funding can be tied to planned expenditures rather easily, yet libraries do not treat the operations budget request differently than the other budget areas. Due to the dramatic changes in expenditures in the operations area in recent years, basing the operations budget on historical allocation has little relevance. However, that practice is in effect at all surveyed libraries, several of which supplement the operations budget with funds from other major budget categories.

BUDGET ADMINISTRATION AND FLEXIBILITY

A series of questions explored the flexibility or constraints associated with library budget administration. Responses ranged from almost total ability to move, save, and carry over funds at some institutions to very restrictive procedures at other institutions which allowed little manipulation

of funds between categories or even reuse of unspent funds within the personnel budget. As an example, five libraries reported no restrictions in transferring funds between budget categories and three libraries could transfer funds between only selected categories. The remaining two libraries were not allowed any transfer of funds. Considering the wide range of institutions surveyed, such differences are not unexpected.

A trend may be observed, however, in the tightening of library budgets in general. One-half of the libraries surveyed are required to return part of the total allocated budget to the funding agency, while the other five libraries have no such requirement. Those libraries volunteering information on the amount of the required return mentioned sums of from 1% to 3% of total budget. Four of these five libraries noted that this return is a recent development of the past several years. In response to a question on whether libraries received extra funds at year's end for special purchases, there was again an even split--five have never received such funds and five have. For those libraries receiving funds, the frequency and the amount of the year-end supplements have lessened in recent years.

Respondents believe that the drying up of year-end funds and the required return of initially allocated money are indicators of fiscal difficulty in general for higher education, and not necessarily a reflection on the status of libraries. When asked to rate the budget treatment of their libraries relative to other academic operations on campus, nine replied that their libraries have been treated equally or favorably, while only one believed the library has been treated unfavorably.

A final question was whether respondents could readily supply documentation to explain their budget process in sufficient detail to reconstruct their library's current allocation. Only three libraries could supply such documentation for the total budget. This finding is disturbing, but not surprising in view of the information obtained on how library budgets are allocated. The budget process at most libraries surveyed might best be described as static rather than dynamic. The allocation systems are long-established and they lean heavily on historical allocation as the basis for budget justification.

An optimistic view of this process is that historical allocations have been made correctly, and minor annual modifications are enough to tune up the budget. A more pessimistic view of current budgeting practices is that historical allocations do not adequately represent the needs of libraries today and, in addition, there is no clear evidence that historical allocations were made initially in response to the specific needs of individual libraries. Although the questionnaire did not request information on how historical allocations were determined, follow-up information received from respondents

reveals that most historical allocations were not based on a formal analysis of need. Allocations merely reflected the amount of support available over the years.

The present methods of budget allocation perpetuate the historical base -- those libraries which were funded at a high or low level in past years remain in the same positions year to year compared to other libraries. Since most budgets are not correlated directly to academic programs or definable measures of use, there is little objective basis for significant changes year to year in levels of support. It is therefore not surprising that most libraries surveyed did not have detailed documentation available. If budget allocation systems responded to annual changes in use patterns, there would be considerably more interest among libraries in reviewing and understanding the basis for all funds received. With the present situation of static allocation systems, there is little need for libraries to have documentation available.

ARE THERE OTHER WAYS?

A review of the data collected in the survey on current budget practices reveals a predominant pattern of funding based on little analysis, either in the past or at present. The factor that influences library budgets most significantly is the amount of funding available, rather than perceived library need. To determine the adequacy of a library budget, one must ask whether the budget is sufficient to accomplish the aims or responsibilities of the library. This question, unfortunately, may be impossible to answer.

The question of library adequacy cannot be answered in yes or no terms: The success of a library in meeting its responsibilities to users is measured in degrees and not absolutes. This holds true for its levels of service as well as its collections. Trying to measure the adequacy of a library by its staff size or collection size reveals the same problems as the application of a formula to the budget process -- i.e., quantitative measures are not sufficient to evaluate the success of the educational process. Moreover, if a quantitative approach is used as a gauge of adequacy, does this mean that there are levels of support below which a library becomes inadequate? Any quantitative approach leads eventually to standards of acceptability or absolute numbers which higher education has not accepted as viable indicators of library adequacy. A further complication in attempting to establish minimum standards for budgets is the rapid development of resource sharing and automation.

Another approach to assessing library budgets would be to develop correlations of library support as related to user data or academic programs. Some work has been done in this area (see 1975 report in Appendix for example), and despite the difficulties, the development of relative user

support tables at this time could be helpful in several ways. First, the process could identify standard areas of comparison relevant for establishing budgets. Possible library indicators -- which would have to be agreed upon by ARL libraries -- could include:

Library staff/user ratios

Acquisitions dollars per FTE student

Acquisitions dollars per PhD program

Total library expenditures per FTE student

Technical services staff per volume processed

Public services staff related to user statistics

Aside from identifying relative budget support, these comparisons would also allow libraries to compare selected areas of library productivity with other libraries--e.g., are there differences in processing capability with different bibliographic utilities; are there trends in movement of staff between technical services and public services; do library expenditures rise geometrically with the size of the user population? The basis for thoughtful analysis of a library's operations could be presented through such an approach.

A second benefit could be the compilation of data into an index of library support similar to the present ARL Library Index. However, the new index could present library staffing expenditures in relation to the students and programs a library supports. The index would be an indicator of library budget adequacy rather than an indicator of size. Again, there would be no absolute values to indicate whether a library has "enough" support, but there would be data indicating how ARL libraries compare with each other in terms of support related to library users.

A final benefit could come from constructing an index as a first step in defining acceptable levels of budget support for research libraries. Budget comparisons could be made which take into account user populations, graduate programs, volumes added and other variables which are included in present rank order tables but are of limited use in analysis of library budget adequacy.

Given the problems of establishing indexes for such correlations, some groundwork has been laid, and some helpful data are already available. Many libraries refer to standings in the ARL Statistics as measures of the support they receive from budget agencies. These compilations provide an exhaustive and valuable source of gross statistics on budget and staffing data. The

recently installed ARL Library Index calculates a composite for each ARL library based on ten variables, although the Index is a pure measure of size and includes no factors for what a library has to support through its budget.

A 1980 ARL report (The ARL Library Index and Quantitative Relationships in the ARL, by Kendon Stubbs for the Committee on ARL Statistics) provides information on relationships between selected variables through calculation of correlation coefficients. These correlations allow the prediction of specific variables from other variables. The methodology used in preparing those correlations could be the basis for comparing annual budget support for ARL libraries with programs and users that need to be supported. The data needed to make such comparisons already have been collected through the ARL Statistics and could be further analyzed to produce information useful to budget officers and library directors in preparing and justifying annual budget requests.

SUMMARY

Without development of relative measures of library support, there is little data that budget officers can present to funding agencies to support library budget requests. In the past ten years or so, the staffing and book budget purchasing power for research libraries has followed a downward path. An index of relative support tied to the specific users that a library needs to serve could be a first step in producing objective data that document budget support in a relevant way. Too often, libraries have portions of their budgets lopped off because they are convenient targets for funding agencies; the effects of the cuts are more difficult to document than cuts in other academic areas.

There seem to be at least three possibilities for developing methods for assessing library budgets. One could attempt to develop absolute numbers that prescribe the amount of staffing or volumes needed by a library to serve its users. This has been tried and is in use at a minority of research libraries, but it presents problems because of fiscal difficulties in higher education and because the factors included in the formulas are subject to question as library practices change and develop. A second possibility is the approach employed at a majority of libraries today. This approach relies on historical allocation to define the levels of service and collection building. While this method is in widespread use, its suitability is difficult to assess and it does not provide an ability for libraries to respond to changing needs brought about by developments in technology and changing attitudes in areas of resource sharing.

This paper suggests a third avenue--a type of compromise between the development of absolute standards and the present system of adherence to historical allocation levels. Ratios of library support related to library use could be used to calculate an index of relative library support. This index would allow meaningful comparisons of budget support among research libraries and could be a first step in analyzing research library budgeting at the national level.

APPENDIX: THE SURVEY FORM

NOTE

When answering this questionnaire, please consider only your "main" source of budget funds. We are attempting to get information on the basic budget processes at work for your library. There may be special sources of minor amounts of money which are allocated and expended differently from your basic budget (e.g. grant money, special project money, special campus funds). In general, do not consider those funds in your responses. We are interested in the main source of your funds and how those allocations are figured.

If you believe your library has special circumstances in its funding that do not allow you to respond as outlined above, please include an explanation if you feel it is needed to clarify your budget situation, or call me to discuss your situation.(805) 961-2674

Name of Library_____

Staffing Budget

The intent of this section of the questionnaire is to gather information on how your staff size is determined and what factors are used annually to add or take away staff from your library's personnel allocation. The term "staff" is used here to include all permanent positions allocated to your library. . .

1. Is there a formula used to determine your staff size? Yes___ No___

2. If there is no formula, what determines the basic number of staff in your library? e.g. historical allocation? annual zero-based budget request? etc.

3. If there is a formula, what are the basic components of it? For example, is your staff allocation based on factors for student enrollment? branch libraries? hours of operation? etc. Explain in a paragraph or two how your formula works in general.

4. Is there a formula used to determine the number of temporary FTE or the amount of money allocated for your library's temporary help (basically, your student assistant budget)? Yes___ No___ If yes, please explain how the formula works; if no, please explain how the amount is determined.

5. Once your staff allocation has been determined through formula or some other approach, does your library receive full funding to fill all positions, as opposed to partial funding or "frozen" positions? Please explain if it would be helpful in understanding how your allocation is made.

(continue responses on reverse if needed)

Name of Library_____

Acquisitions Budget

The intent of this section of the questionnaire is to gather information on how the size of your acquisitions budget is determined from year to year.

1. Is there a formula used to determine the amount you receive for your library's acquisitions budget? Yes___ No___

2. If the answer is yes, what are the main components of the formula? For example, is it based on the number and level of academic degree programs offered at your university? on the student enrollment? other factors? Briefly outline in a paragraph or two how the formula works. If there is no formula, how is your base acquisitions budget determined? e.g. historical allocation? annual budget request? etc.

3. Is your binding budget included in your acquisitions budget (as opposed to a separate binding allocation)? Yes, it is included___ No, it is allocated separately___

4. How is the amount of your binding budget determined? e.g. library decision? percentage of acquisitions budget? specific allocation from the university?

5. How are annual price increases (for inflation) determined for your acquisitions budget?

(continue responses on reverse if needed)

Name of Library_____

Operations Budget

The remaining portion of most library budgets is variously described by such terms as: operations budget; supplies and expense budget; other than personal services budget; etc. This is the portion of the budget expected to cover purchase of supplies, equipment, contractual services, or other goods and services that are not personnel or acquisitions expenses.

1. Is there a formula used to determine your library's allocation for the operations budget? Yes___ No___

2. If the answer is yes, please describe how the formula works.

3. If there is no formula, how is this portion of your budget determined? e.g. annual budget request? historical allocation? etc.

4. How are price increases determined for this area of your budget each year?

 (continue responses on reverse if needed)

Name of Library_____

Miscellaneous Questions on Budget Administration

1. Are there any restrictions which prohibit your library from transferring funds from one category of the budget to another, if you desire? (For example, could you use part of your acquisitions allocation to supplement your personnel allocation?) No, there are no restrictions___ Yes, there are restrictions___ If yes, please outline briefly the restrictions.

2. Is there an amount of money you are required to return to your funding agency each year? This might be called a "savings target" or might be a percentage of your budget. No___ Yes___ If yes, explain briefly

3. Is your library allowed to "keep" funds for library use that are generated by unfilled personnel positions, leaves, or positions that become vacant during the fiscal year? Yes___ No___

4. Not considering your acquisitions budget, are you able to "roll over" funds from one fiscal year to the next (as opposed to losing unspent funds at the end of the fiscal year)? No___ Yes___ If yes, in what areas can you do this?

5. Has your library regularly received funds near the end of the fiscal year for special purchases of materials or equipment? These funds would be in addition to your general budget allocation for the fiscal year. Yes___ No___

6. Are there any other funding formulas in use at your library that are not covered here? (Perhaps for computer services, equipment replacement; etc.) No___ Yes___ Describe briefly, if yes.

(continue responses on reverse if needed)

Name of Library_____

7. In your opinion, has your library fared better or worse than the majority of academic operations on your campus with respect to fiscal support? For example, if your university/campus receives a general cut or increase, does the library share equally, or has it been treated with favor or disfavor?

___Library has shared equally

___Library has been treated favorably

___Library has been treated unfavorably

___Cannot answer

8. Your library will not be asked to supply any documentation of budgeting systems for this study. However, if your library were asked to supply documentation that explains your budget process in sufficient detail to reconstruct your current allocation, could you provide such documentation readily? Yes___ No___

DEADLINE FOR RETURN OF QUESTIONNAIRE IS AUGUST 15, 1982

Please return this questionnaire in the enclosed envelope to:

John Vasi
Assistant University Librarian
Administrative Services and Planning
3589 Library
University of California
Santa Barbara, CA 93106

APPENDIX

REPORT OF ARL-ACRL JOINT COMMITTEE ON UNIVERSITY LIBRARY STANDARDS (REVISED) MARCH 1975

This report, originally distributed to the ARL Membership in 1975, has proven a useful discussion of the issue of qualitative and quantitative standards for university libraries. It is included as an appendix to provide additional perspectives on budget allocation systems. No formal action has been taken as a result of the report.

Report of ARL-ACRL Joint Committee on University Library Standards

(Revised)

Significance of University Libraries

The rapid growth of American university libraries since World War II is one of the most remarkable changes that has occurred in higher education during the present century. An explanation of the emphasis on strong libraries is contained in a report issued by the American Council on Education. In its An Assessment of Quality in Graduate Education, the report states: "The library is the heart of the university; no other single nonhuman factor is as obviously related to the quality of graduate education. A few universities with poor library resources have achieved considerable strength in several departments, in some cases because the universities are located close to other great library collections such as the Library of Congress and the New York Public Library. But institutions that are strong in all areas invariably have major national research libraries."

The reasons for the explosion of academic library collections in all the American states and Canadian provinces are complex, including such important factors as the establishment of numerous new institutions, the transformation of former agricultural and engineering colleges to the status of general universities, the enrollment of millions of additional students in colleges and universities, emphasis on faculty research and scholarly productivity, changing methods of instruction, expansion of book budgets, extensive foreign acquisition programs, the steadily growing rate of publication of books and journals, and, perhaps not least, the prestige accruing to a university possessing an outstanding library.

Era of Library Cooperation

In recent years, university and other research libraries have sought for ways and means to hold in check the mounting flood of printed materials. National, regional, and local union catalogs have been created to locate books in other libraries, there are cooperative purchasing agreements, on-going plans for subject specialization among libraries, programs for the centralized housing of little-used books, projects for microfilming large masses of material for preservation and to reduce bulk for storage, and a widespread system of interlibrary loans has developed.

As a general principle, individual university libraries are no longer regarded as separate and independent entities, the development of each proceeding without consideration of its neighbors. Instead, libraries have come to view their holdings within a larger frame of reference, as elements of a national resource, the sharing of which can be of immense mutual benefit. Large cooperative enterprises during the past 30 years have demonstrated several facts: university libraries are able and willing to support programs for the improvement of library resources, the concept of libraries combining for the acquisition of research materials is feasible and desirable, and the research resources of American university libraries are a matter of national concern.

In relation to interlibrary cooperation, it must be recognized that currently there are serious imbalances in borrowing and lending among university and research libraries. The load and corresponding expense borne by the largest libraries are disproportionate. The most equitable solution to the dilemma appears to be a system of state subsidies, such as prevails in Illinois and New York.

The foregoing facts are directly or indirectly relevant to the matter of standards for university libraries.

Standards

Interest in and the need for university library standards have long been evident. Equally apparent have been the obstacles in the way of developing a set of criteria acceptable to professional university librarians. Among the difficulties are the lack of agreement on the definition of a university, skepticism among librarians as to the desirability of setting up formal standards, and the question of whether standards should be primarily quantitative or qualitative.

A solution to the first dilemma--what is a university?--appears to have been provided by the recently published classification of the Carnegie Commission on Higher Education, based on several years' research. A total of 18 categories of institutions of higher education are defined in the Commission's classification. For the purposes of the ARL-ACRL Joint Committee on University Library Standards, it is proposed to restrict a code of standards to the first four categories, all doctoral-granting institutions, described as follows:

1. Doctoral-granting institutions, with heavy emphasis on research. These are the 50 leading institutions in terms of federal financial support of academic science in at least two of the past three years, provided they awarded at least 50 Ph.D.'s (plus M.D.'s if a medical school was on the same campus) in the last year.
2. Doctoral-granting institutions with moderate emphasis on research. These institutions were on the list of 100 leading institutions in terms of federal financial support in at least two out of three of the above three years and awarded at least 50 Ph.D.'s (Plus M.D.'s if a medical school was on the same campus) in the last year.

3. Doctoral-granting institutions with moderate emphasis on doctoral programs. These institutions awarded 40 or more Ph.D.'s in the last year (plus M.D.'s if a medical school was on the same campus) or received at least $4 million in total federal financial support in the last year.
4. Limited emphasis on doctoral programs. These institutions awarded at least 10 Ph.D.'s in the last year, with the exception of a few new doctoral-granting institutions which may be expected to increase the number of Ph.D.'s awarded within a few years.

A further limitation is proposed. A "university" for the purposes of the recommended standards will offer doctoral programs in not less than three of the four major areas adopted by the American Council of Education for classifying doctoral degrees: humanities, biological sciencea, physical sciences, and social sciences. Further, in groups 1 and 2 above, doctoral programs will be offered in not less than 20 of the 30 areas, and in groups 3 and 4, not less than 15 areas as defined by the National Research Council:

Areas of Graduate Study[1]

Mathematics
Physics and Astronomy
Chemistry
Earth Sciences
Engineering
Agriculture and Forestry
Health Sciences
Biochemistry, Biophysics, Physiology and Biostatistics
Anatomy, Cytology, Entomology, Genetics, Microbiology, Embryology
Botany, Zoology, General Biology
Psychology
Anthropology and Archeology
Sociology
Economics and Econometrics
Political Science and International Relations
History
English and American Language and Literature
Modern Foreign Language and Literature
Classical Language and Literature
Philosophy
Speech and Dramatic Arts
Fine Arts and Music
Business Administration
Home Economics
Journalism
Law, Jurisprudence
Library and Archival Science
Architecture
Education
Other Professional Fields (Count as 1 field of study)

1 Source: National Academy of Sciences. National Research Council. Doctorate Recipients from United States Universities, 1958-1966. Washington: National Academy of Sciences, 1967, pp. 5-11.

Another reason for the suggested cut-off point is that collegiate institutions below the above four categories are within the province of the ACRL's Ad Hoc Committee to Revise the 1959 Standards for College Libraries, now actively at work.

Concerning the second roadblock to the adoption of a statement of university library standards--the resistance and even downright opposition to any formally stated criteria--the following points seem relevant: (1) Standards exist for college, junior college, school, public, professional, and other types of libraries; why should university libraries be an exception? (2) Failure by university librarians to participate in the preparation and adoption of standards is resulting in the task being taken out of their hands by budgeting, appropriating, and governing bodies--such as state boards of higher education, state departments of education, and regional accrediting associations--which make their own standards, usually unsatisfactory in nature to librarians. (3) University librarians, especially in newly developing institutions, need basic criteria and guidelines to follow as goals, internally and externally, for planning growth, for dealing with university administrators, etc. (4) All standards should be stated as minimal to avoid the criticism that standards level down instead of upgrading.

The matter of choosing between quantitative and qualitative standards is complex. Ideally, perhaps, qualitative criteria are preferable. Measuring quality, however, is far more difficult than measuring quantity, involving, for example, detailed checking of standard bibliographies, judgements by subject experts, comparisons with similar collections elsewhere, analyzing in detail the content of collections, and, not infrequently, simply using subjective opinions. Often, so-called qualitative standards turn out to be rhetorical exercises, largely meaningless in applications to practical situations. Furthermore, as Clapp and Jordan stated, "When standardizing authorities omit or refuse to set standards in

quantitative terms, the budgeting and appropriating authorities, who cannot avoid quantitative bases for their decisions, are compelled to adopt measures which, though perhaps having the virtue of simplicity, may be essentially irrelevant"--another argument for librarians to develop relevant measures.

For the foregoing reasons, the standards for university libraries proposed for adoption by the ARL and the ACRL are stated concretely. To make the recommended criteria even more specific and down to earth, the proposed standards are based primarily upon the best current practices as reported by leading American university libraries in University Library Statistics (ARL, 1969), supplemented by such sources as Clapp-Jordan's "Quantitative Criteria for Adequacy of Academic Library Collections," Metcalf's Planning Academic and Research Library Buildings, the Washington State Model Budget Analysis System for Libraries, and the ARL's annual Academic Library Statistics.

An important factor, affecting both quality and quantity, is location, though its impact may be difficult to determine. A university placed in the center of major library resources may be able to rely extensively upon the holdings of other institutions, while a university remote from large libraries will have to depend mainly on its own resources. An example of the first situation is the ambitious cooperative program recently announced by Columbia, Harvard, Yale, and the New York Public Library. Examples of isolated institutions are numerous, e.g., University of Colorado, University of Illinois, and University of Texas. In any case, cooperation has limitations. Every great research library must maintain a large degree of independence. A university library that leans too heavily on its neighbors is unlikely to provide satisfactory service to its students and faculty.

The basic areas in which the Joint Committee is proposing adoption of standards are as follows: resources, personnel, space, finances, public service, and administration.

I. Resources. At least 10 criteria may be used in measuring a library's resources: (1) total volume holdings, (2) total volume holdings in relation to student enrollment, (3) volume holdings in relation to graduate student enrollment, (4) volume holdings in relation to number of faculty members, (5) volume holdings in relation to major subject fields for undergraduates, (6) volume holdings in relation to fields of concentration at the masters level, (7) volume holdings in relation to fields of graduate concentration at the doctoral level, (8) number of volumes added annually--average of last five years, (9) number of current periodical subscriptions, (10) number of current serial subscriptions. It would also be practicable to look at volumes added in relation to total holdings. For certain fields requiring currency of information, a volumes-added figure may be more significant than volumes held--a factor which tends to measure retrospective strength.

A majority of these criteria was adopted by Clapp-Jordan and in somewhat modified form by Washington State's Model Budget Analysis System, in measuring library holdings. The general formula developed by Clapp-Jordan has been widely applied for nearly a decade and for the most part has demonstrated its validity as a practical device for testing the strength of a library's collections. With certain simplifications and modifications, as specified below, therefore, the basic formula is recommended as the ARL-ACRL standard:

1. Basic collection (undergraduate level) . . . . 85,000 volumes
   (Clapp-Jordan: 50,750 volumes)
2. Allowance per F.T.E. faculty member. . . . . 100 volumes
3. Allowance per F.T.E. student . . . . . 15 volumes
   (Clapp-Jordan: 12 volumes)
4. Allowance per field of undergraduate concentration . . . . . 350 volumes
   (Clapp-Jordan: 335 volumes)

5. Allowance per master's field, when no doctorate offered in field . . . . . 6,000 volumes
   (Clapp-Jordan: 3,050 volumes)
6. Allowance per master's field, when doctorate is offered in field . . . . . 3,000 volumes
7. Allowance per doctoral field*. . . . . 24,500 volumes

A standard for total holdings would also be reasonable. In the ARL's Academic Library Statistics for 1973-74 the median number of volumes held was 1,553,192 for the 82 ARL members. A median of 1,500,000 volumes is recommended for university libraries in groups one and two; 1,000,000 volumes in group three; and 750,000 in group four. If cataloged, or otherwise processed for use, government publications should be included in the volume count.

Rate of Increase.

A deficiency in the Clapp-Jordan formula is the lack of provision for growth of the collection. It is a truism that constant growth is essential

*For standardization purposes, the fields defined in the American Council on Education's statistical compilation of earned doctorates can serve. They are as follows:

Humanities	Biological Sciences	Physical Sciences	Social Sciences
Architecture	Agriculture	Astronomy	Anthropology
Classical Languages	Anatomy	Chemistry	Business and Commerce
English	Bacteriology	Engineering, Aeronautical	Economics
Fine Arts	Biochemistry	Engineering, Chemical	Education
French	Biology	Engineering, Civil	History
German	Botany	Engineering, Electrical	International Relations
Journalism	Entomology	Engineering, Mechanical	Law
Music	Forestry	Engineering, Other	Library Science
Philosophy	Home Economics	Geography	Political Science
Religious Education and Bible	Nursing	Geology	Public Administration
Russian	Pharmacy	Mathematics	Social Work
Spanish	Physiology	Metallurgy	Sociology
Speech and Dramatic Arts	Psychology	Meteorology	Social Sciences, Other
Theology	Public Health	Physics	
Foreign Languages, Other	Veterinary Medicine	Physical Sciences, Other	
	Zoology		
	Biological Sciences, Other		

to keep a library alive. This factor is recognized in the Washington standard, with a provision stating that "A minimum number of acquisitions per year shall be established equal to five percent of the estimated number of units [volumes] of library resources held at the start of each fiscal year." The 5 percent figure is intended to serve as a "floor factor" and "would come into effect when 100 percent of formula was reached and the institution's growth in enrollment or programs would allow for an increase of less than the five percent."

The experience of our largest university libraries indicates that the five percent figure may be unrealistic when collections exceed a certain size. For example, in 1973-74, Harvard University Libraries, with 9,028,385 volumes, added 297,283 volumes (gross). The five per cent formula would have called for the addition of 451,420 volumes. Similarly, Yale, with 6,350,824 volumes, should have added 317,541 volumes; actual additions were 190,750 volumes (gross). For the largest libraries, an alternative would be to adopt the Washington State formula on rate of growth and after 100 per cent of the formula has been reached, continue to add 5 per cent annually to the target size.

The net number of volumes added among the 82 libraries included in Academic Library Statistics ranged from 198,724 to 28,733, or gross figures from 297,283 to 32,132 volumes. The median for the 82 institutions was 78,671 volumes gross and 71,525 volumes net. It is proposed that the minimum standard be set at 100,000 volumes annually for the first two categories of the Carnegie Commission's classification, and 50,000 volumes for categories three and four.

An important factor that should not be overlooked is that the growth of

collections should bear a close relationship to the development of academic programs. Some areas make greater demands than others, and new offerings will require an immediate library response.

Periodicals.

In actual application, the Clapp-Jordan formula for current periodicals has been found low, producing figures substantially under the holdings of strong libraries. A more realistic formula is proposed herewith for periodical titles:

1. Undergraduate collection 500
   (Clapp-Jordan: 250)
2. Per F.T.E. faculty number. 2
   (Clapp-Jordan: 1)
3. Per field of undergraduate concentration 6
   (Clapp-Jordan: 3)
4. Per field of graduate concentration--master's. . . 20
   (Clapp-Jordan: 10)
5. Per field of graduate concentration--doctoral. . . 200
   (Clapp-Jordan: 100)

Among the university libraries included in Academic Library Statistics for 1973-74, the number of current periodicals received ranged from a low of 7,631 to a high of 100,000--the latter figure suspect because it probably did not differentiate between periodicals and serials. The median was 19,343. As a standard, 20,000 titles are recommended as a minimum total for institutions in categories one and two and 10,000 in groups three and four.

Also calling for standardization is usage of the terms "periodical" and "serial." In some university libraries, the two are not differentiated; instead, all are reported as "periodicals," producing grossly distorted figures. Serial publications in a university library collection may outnumber periodicals by more than two to one. An acceptable definition is

offered by the U.S. Office of Education's National Center for Educational Statistics, as follows:

> A periodical is a publication that is issued in parts which usually contains articles by several contributors. It generally has a distinctive title and the successive numbers or parts are intended to appear at stated intervals and usually for an indefinite period. Serials include periodicals, newspapers, annual reports, yearbooks, memoirs, proceedings, transactions of societies, and may include monographic and publishers' series.

An alternative is the definition of periodicals used in LIBGIS' "Library General Information Survey," and adopted for the ARL's annual summary of "Academic Library Statistics":

> A periodical is a publication constituting one issue in a continuous series under the same title published at regular or irregular intervals, over an indefinite period, individual issues in the series being numbered consecutively or each issue being dated. Newspapers as well as publications appearing annually or less frequently are included in the definition.

It should be noted that this definition does not differentiate between periodicals and serials, and for that reason the first definition is preferable.

Microforms.

Several formulas for measuring the size of collections attempt to include microforms in the volume count. The problem is of great complexity because of the varied nature of microforms: microfilm rolls, microfiche, microcards, microprint, ultramicrofiche, etc. Clapp-Jordan propose that "fully-cataloged material in microform will be measured in volumes as though it were in

original form." The Washington State formula states that "one reel of microfilm or eight micro-cards or microfiche" should be counted as a volume. The U.S. Office of Education's Library Statistics of Colleges and Universities uses another method of counting microforms: one reel of microfilm is equal to a unit [volume] of library resources; for all other microtext material, five pieces equal one volume. Even more complicated is a plan proposed by the New York State Education Department's Advisory Committee on Planning for the Academic Libraries of New York. In the Committee's "Guidelines for Assessing the Adequacy of Academic Libraries of New York State" (1973), microforms are counted as volumes, using this formula for counting a unit or volume of library resources: one reel of microfilm, eight microcards, eight sheets of microfiche, four sheets of microprint, and one-seventh sheet of ultrafiche.

It is all too obvious that these various schemes add up to total confusion, leading libraries into a dense thicket from which there is no escape, resulting in astronomical figures which make comparisons between individual libraries impossible. Adoption of such plans is apparently a consequence of the pressure on newer libraries to acquire large numbers of "volumes" quickly.

The Annual Report of the Library of Congress has continued to separate various categories of material in its statistical analysis of holdings. Three types of microforms are recognized in the breakdown: micro-opaques, microfiche, and microfilm (reels and strips). This topic was debated at some length in the ARL meeting in Washington, D.C., on January 6, 1969. (See: ARL Minutes of the Seventy-Third Meeting, p. 35, 53-56.) At the conclusion of the discussion, the ARL membership voted approval for continuing to count microforms as a separate category.

It is proposed, accordingly, that the 1969 action of the Association of Research Libraries be reaffirmed, and that the annual ARL Academic Library Statistics continue to include analyses of microform holdings under four categories: reels of microfilm, number of microcards, number of microprint sheets, and number of microfiches.

(A strong supporter of the idea of counting microforms as volumes proposed that only complete bibliographical units be included in such a count, e.g., whole volumes of periodicals and entire books, eliminating single periodical articles, chapters in books, and ephemeral pamphlets. In short, one should apply the same criteria for defining a volume as for material in traditional formats. The logic of such a scheme is obvious, but the administrative difficulties are too serious for the Committee to recommend it.)

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II. Personnel. Personnel standards may involve such factors as (1) Ratio of professional to non-professional staff; (2) Size of staff in relation to student enrollment; (3) Size of technical staff in relation to acquisition rate or to growth of collections; (4) Length of work week and work year; (5) Status of professional librarians; and (6) the influence of centralizational and decentralization on size of staff.

Professional-Nonprofessional Ratio.

Research studies have demonstrated that two-thirds or more of the work in an academic library can be done successfully and economically by non-professional personnel, including student assistants. That appears to be the prevailing distribution among American university libraries at present, though ratios as high as four or five clericals to one professional have been proposed. The compilation of Academic Library Statistics for 1972-73 for ARL

members revealed that the percentage of professional librarians ranged from 21.9 to 48.6 with an average of 33.3 and a median of 32.6. As a university library standard it is recommended that the professional staff should not exceed one-third of the total staff. (In Canada, the current range is from 16.5 to 29.6, with an average of 21.4 per cent.)

A further refinement is proposed, that is, the creation of two groups of staff members aside from the professional librarians. In addition to the professional and clerical categories there should be a "professional specialist" staff, composed of systems analysts, planning officers, photo-reproduction specialists, information scientists, business managers, and other specialized technical personnel, who do not require graduate library school education, but whose training has been at a high level in another area.

Following the recommendations of Asheim's manpower study for the American Library Association, which defines five levels of library personnel, it is suggested that the clerical staff be divided into two categories: (1) technical assistants, who perform "simple, routine tasks and special skills tasks" for which technical-assistant courses and post-secondary training in special skills may be required; and (2) library clerks who are assigned typing, filing, and operation of business machines, for which business school or commercial training will constitute proper preparation.

Staff in Relation to Enrollment.

In the Washington State standards, elaborate formulas have been developed for determining the number of staff required for public services and for technical processes. The public service standard is derived from the number of FTE students at various levels: underclassmen, upperclassmen, masters candidates, doctoral candidates, and registered outside users. The size of the technical processes staff is obtained by this formula: "Add the number

of units of library resources estimated to be added in the year to which the calculation applies, to the total units held at the beginning of that year plus the number of units estimated to be deleted." A rather complex mathematical formula is then applied to the "weighted units to be processed" to gain a total FTE technical processes staff. A similar scheme was devised by the University of California library system to establish staffing needs for public services and technical processes. Similar formulae are being developed for the SUNY libraries in New York and the Nebraska state colleges.

The University of California System approach to budgeting for library staff was selected by the Washington State libraries to serve as a basis for determining needs. According to this analysis, "In technical processes, the approach assumes that it becomes progressively more difficult to process materials as the size of the collection increases. It also assumes that this is partially offset by economies of scale which occur as the size increases. In public services, the assumption is made that demand on library resources increases as the level of the student's program increases."

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According to University Library Statistics, among the 50 libraries surveyed, the ratio of professional staff members to enrollment varied from 1 to 41.64 to 1 to 675.72, with a median of 225.24. These figures included both public service and technical processes personnel. For total staff, professional and clerical, the median figure was 1 to 89. The median figures for professional staff exceeds the one-third maximum previously recommended.

Application of any ratio of library staff to student enrollment should be flexible for these reasons: Investigations indicate that the size of staff is directly affected by a large number of branches, i.e., by institutional policies relating to centralization or decentralization of library services;

the library's rate of growth, which may require more or fewer staff members in technical services; and by the "climate" of a given institution, which may result in far heavier use of one library than another.

Concerning the staffing of technical services, libraries are obviously in a period of transition, and fixed formulas may be of doubtful validity from a long range point of view. The coming of MARC tape-produced cards from the Library of Congress, the computerized, on-line catalog maintained by the Ohio College Library Center (OCLC), and SOLINET, a similar program for the Southeast, are likely to affect drastically the staffing of technical departments in individual libraries in the near future.

Another possible answer to the question of staff size was offered the Committee by a prominent university librarian, who believes that the "only reasonably valid approach" is "to link professional staff size to the number of tenured faculty, because the latter number is perhaps the best indicator of the character of an institution, and it seems logical to link the 'academic' capacity of a library to the most important academic indicator in the institution." No suggestion was made, however, as to proper ratios or percentages, if this device were to be adopted.

Work Schedules.

A table in University Library Statistics, p. 72-74, shows that in the 50 institutions reporting the weekly work schedule for the professional staff varied from 35 to 40 hours, with an average of 38.44. Whether this is a proper sphere for standardization may be debatable. Schedules may be necessary as a component of good management, but they should be matters for local decisions. Experiments in progress in a number of institutions provide flexible arrangements for professional staff members, in harmony with improved

status, a trend which should be encouraged. Rigid work schedules are incompatible with the librarian's research and scholarly activities. Administrators and staff members dedicated to individual research, association activities, writing, and special projects may carry work schedules considerably in excess of the norm.

Staff Perquisites.

A vacation allowance of one month or 31 days should be the minimum for all full-time professional staff members on 12-month appointments. Sabbaticals for research projects, study leaves, hospital and health insurance, tenure, and retirement benefits should be identical to those for which the teaching faculty is eligible. Termination of contracts for professional staff members should be handled in accord with the AAUP's 1940 "Statement of Principles."

Status of Library Staff.

After prolonged consideration, a Membership Meeting of the Association of College and Research Libraries adopted in 1971 a statement of "Standards for Faculty Status for College and University Librarians." A copy of this document is attached to the present report. Subsequently, a committee of the ACRL, the Association of American Colleges and the AAUP drafted a "Statement on Faculty Status of College and University Librarians." The statement has been endorsed by the ACRL, AAUP, and 32 library organizations. The ARL Board voted to "endorse in principle faculty status for professional librarians, and commend to the attention of all college and university administrations the 'Joint Statement on Faculty Status of College and University Librarians.'" In the belief that general adoption of these concepts will upgrade the library profession, help avoid a drift toward unionization of library staffs, and minimize or reduce the troublesome divisiveness

becoming prevalent in many institutions, the Joint Committee recommends endorsement of the principles of the ACRL statement as an important element in its general code of standards. Wherever possible library staff practices should relate to the university's general practices. Individual grievances, for example, should be handled through university grievance channels, after departmental grievance procedures have been exhausted. In the areas of appointment, tenure, promotion, and staff development, the librarians, organized as a faculty, can operate much the same as teaching faculty, though the criteria may vary. In other areas of library policy and practice, on the other hand, there may be many factors, inside and outside the library, that must be considered in decision making. The university librarian (director or dean) should have freedom to take action on the basis of advice from various sources: library faculty committees, department heads, teaching faculty, and other university personnel.

Each library or library system should develop a written personnel policy covering recruiting, employment practices, performance evaluation, grievance procedures, promotion and tenure, and staff development, in conformity with the foregoing principles.

III. Space. University Library Statistics reveals serious discrepancies between ideal or theoretical standards for space and hard existing facts. For example, among the 49 university libraries reporting, the seating capacity as a percentage of enrollment averaged only 16, in contrast to the usually recommended minimum of 25 or 30 per cent. Nevertheless, the failure of many libraries to achieve adequate standards for various types of space is a sound reason for proposing adoption of satisfactory norms. On the basis of the

findings of two leading experts in this field, Metcalf and Ellsworth, therefore, the following basic criteria are proposed for the three chief elements: book, reader, and staff space:

Metcalf declares, in discussing space requirements for book stacks, that the first rule should be: "Beware of formulas." As a tentative suggestion, however, he states that "Not more than 12 volumes per square foot should be used for larger undergraduate collections of up to 100,000 volumes. Thirteen is safe for considerably larger collections and 15 for universities with great research collections and open access for graduate students and faculty only. Up to 20 can be used for a great research library with very limited stack access, narrow stack aisles and long ranges."

An alternative formula is recommended by Bareither and Schillinger: First 150,000 volumes: .1 SF per bound volume; second 150,000 volumes: .09 SF per bound volume; next 300,000 volumes: .08 SF per bound volume; all volumes in excess of 600,000 volumes: .07 SF per bound volume.*

Bareither and Schillinger note that "There are certain materials other than books stored in libraries that require stack space." A conversion basis is recommended for these materials, as follows:

Type of Material	Unit	Conversion Ratio Unit to Volume
Roughly Classified Pamphlets	Item[a]	15 to 1
Music Scores and Parts	Item	15 to 1
Sound Recordings	Record	6 to 1
Microfilm Reels	Reel	4 to 1
Maps	Map	9 to 1
Archival Materials	Cubic Feet	1 to 15

[a] A pamphlet, score, or one grouping in a manila folder equals one item. A grouping in a manila folder may consist of one paper or related papers.

* Bareither and Schillinger, University Space Planning (Urbana: Univ. of Illinois Press, 1968), p. 65.

For reader space, Metcalf concludes that "for undergraduates 25 sq. ft. for each seat in a reading area or for open carrels in a book stack should be adequate.... Thirty sq. ft. for the use of a master's candidate, 35 to 40 sq. ft. for one writing a doctoral dissertation, and from that up to as much as 75 sq. ft. or even more for a private study for a faculty member." Metcalf adds: "In general, it is fair to say that in our State universities, if provision can be made for 25 per cent of the students at one time in the university library, that would be adequate.*

Under the heading of "Space for the Staff," too many variables are present for any fixed criteria for administrative personnel. For the public-service staff, Metcalf recommends a minimum of 125 sq. ft. per person for circulation and reference department heads and "occasionally for some other professional assistants," and "100 sq. ft. per person on duty at one time." For all "groups that can be lumped under the heading 'processing,' 100 sq. ft. per person," Metcalf finds, "is an absolute minimum...for housing and equipment, plus another 25 sq. ft. for the section head of each section with as many as five persons."

The question of lighting has many complex aspects and it may be debatable whether it is practicable to state any standards. Metcalf "is not convinced that anything over 25 to 30 foot-candles is required except in limited areas," though he recommends that "a new library be wired so that 50 foot-candles of light intensity on reading surfaces can be made available anywhere without complete rewiring."

IV. Finances. Various attempts have been made to set up standards for the financial support of university libraries, e.g., relationship of total library

* Metcalf and Ellsworth, Planning the Academic Library, p. 59.

expenditures to total university expenditures for general and educational purposes; relationship of total library expenditures to salaries and wages, to books, periodicals, and binding and to general expense; student per capita expenditures for books, periodicals, and binding and for total library expenditures; financial support in relation to stages of library development; and the distribution of book funds by subject fields and by types of material.

The 1959 ALA Standards for College Libraries states that "The library budget should be determined in relation to the total budget of the institution for educational and general purposes." The program of library service outlined in the standards proposed "will normally require a minimum of 5 per cent of the total educational and general budget." The 5 per cent figure has been widely applied also to university libraries to measure adequacy of support.

In its Guide to University Library Standards (1965), the Canadian Association of College and University Libraries recommended that the following factors be taken into account in assessing the necessary standard of financial support: (a) size and quality of bookstock; (b) total student enrollment; (c) extent and growth of graduate studies; (d) rate of growth of the institution; (3) amount of faculty research; (f) extension projects; (g) introduction of new courses. In a complementary report CACUL recommended these levels of support: (1) "Ten percent of the institutional operating budget should be considered a minimum for the ordinary operation and development of established libraries, in universities with well established curricula, during the next 10 years." (2) "New institutions, and others which are undertaking new programmes, should raise their library expenditures to considerably more than 10 percent of the institutional operating budget until the necessary library services are established." Possible reasons for the relatively high percentage levels proposed by CACUL were that at the

time the standard was set the Canadian libraries had more catching up to do in their development and a number of new universities had been founded.*

It should be noted that some university presidents object to a percentage standard for library budgets on the ground that there is great diversity of "institutional environments" and of "missions" among individual institutions.

In realistic terms, one has to recognize that the university library's share of total funds is generally well under the old ACRL 5 per cent figure and far below the Canadian utopia of 10 per cent. University Library Statistics revealed that among the 50 libraries reporting, the range was from 1.6 to 8.6 per cent for total library expenditures in relation to total university expenditures for general and educational purposes. The average was 3.5 and the median 3.6 per cent. The Joint Committee believes, nevertheless, that the 5 per cent standard is still reasonable as a minimum for the maintenance of high-quality libraries.

On the matter of the relationship of total library expenditures to salaries and wages, to books, periodicals, and binding, and to general expense, reference again to University Library Statistics shows a wide spread. For salaries and wages, the range was from 43.6 to 67.8 per cent (the median was 56); for books, periodicals, and binding, from 21.2 to 50 per cent (median 36.5); and for general expense, from 2.5 to 28.5 per cent (median 5.5). As a standard, it is proposed that the range for salaries and wages should be between 60 and 65 per cent; for books, periodicals, and binding between 30 and 36 per cent; and for general expense, between 5 and 10 per cent. It is recognized that the use of automation and other forms of mechanization may

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* The 1973-74 expenditures of 23 Canadian university libraries ranged from a high of 11.78 to a low of 5.02 per cent of institutional operating expenditures, with an average of 7.61 and a median of 7.49.

require a percentage increase in general expense.*

University Library Statistics reveals far greater differences among libraries in student per capita expenditures for books, periodicals, and binding, and for total library expenditures. Institution A, for example, spent more than ten times as much per capita in both categories as institution B at the bottom of the group. To be meaningful over a period of time, any standard would have to be expressed in an index or constant dollar figure. Without more extended investigation and research, the Joint Committee will defer any recommendation for standards in this area.

Concerning the distribution of book funds by subject fields and types of material, numerous studies exist. In their University Library Administration, Rogers and Weber conclude that "One type of book fund, the departmental allotment, is passing from the scene in most universities. Established at a time when funds were more scarce, such allotments insured a share of meager funds to each department. With greater affluence in book funds and with a more competent library curatorial staff, the raison d'etre for such funding and the very considerable red tape that accompanied it have vanished. Blanket order arrangements have contributed to the relinquishment of the allotment system also because many books are acquired across the whole range of disciplines." (p. 108)

A strong exception is made to this statement by another experienced university library administrator, who maintains that "we have excellent

* The U.S. Office of Education's Library Statistics of Colleges and Universities, 1971, covering more than 2,500 American college and university libraries, found that 57 per cent of operating funds was spent on salaries and wages and 34 per cent on books and other library materials. For comparative purposes, Canadian universities in 1973-74 spent an average of 57.1 per cent on salaries, 30.7 on acquisitions and binding, and 12.2 for other expenses.

backing from our faculty because they have some say in how funds are spent." The happy affluence described by Rogers and Weber has also disappeared, at least temporarily, for many libraries.

Three steps are recommended for the management of available book funds: first, the development and adoption of an acquisition policy statement is recommended for every university library. By specifying the depth of coverage in all subject areas with which the library is concerned, the collections will be built up according to a logical, well-conceived plan, rather than aimlessly and without clear purpose. The extent of coverage will naturally vary widely in different institutions. Second, departmental allocations of reasonable size for current monographic material may be made to insure faculty participation in book selection. Third, emphasis should be placed on the role of librarians as book selectors; collection development should be a partnership between faculty and librarians, but the overall responsibility should rest with library selectors.

V. Public Services. Potential areas for standardization in the public service areas are somewhat limited. Circulation statistics, for example, are generally suspect, mainly because they may indicate a mere fraction of actual library use. Much consultation of open-shelf collections is unrecorded. A research study some years ago, sponsored by the Council on Library Resources, estimated that the non-recorded use of books in libraries may be three to nine times as great as the formal circulation figures, varying according to policies governing stack access and open-shelf collections available to readers.

Readers' services assume a variety of forms: reference and research assistance, circulation of library materials, photographic services, inter-library loans, teaching the use of books and libraries, exhibits, audio-visual

services, etc. Few of these are susceptible to standardization. Most widely accepted is the interlibrary loan code first adopted in 1940 and since revised from time to time to meet changing conditions.

A matter of frequent agitation among students is demands for longer hours. Nothing less than 24 hours per day will satisfy some nighthawks, but practical considerations of expense and staff must influence library administrators. Modern concepts of library architecture encourage self-service on the part of library users and minimum supervision. Well-planned new buildings provide for a single public exit, equipped with turnstiles, through which everyone clears in leaving the library. The need for a full staff throughout the building is eliminated, especially when few readers are present. Reference and circulation services should be provided, however, during all hours in which the library is open, though reduced staff will be able to maintain these services during less active periods, such as late-evening hours.

Among the 50 libraries reported in University Library Statistics, the schedule of hours open ranged from 74 to 121.5 per week, with a median of exactly 100. The median figure would appear to be a reasonable standard.

In the same tabulation, student per capita circulation, general and reserve, varied from 9.55 to 109.18, with a median of 39.41. General circulation alone ranges from 4.31 to 82.98, on an annual basis, with a median of 28.31. Despite skepticism about the validity of circulation statistics, they are somewhat indicative of the extent of library use. If that point is granted, a minimum general circulation (home use) of 30 borrowings per year and of 40 for general and reserve circulation are required to demonstrate that the library is a vital institution on campus. Circulation figures will be influenced, of course, by types of library buildings and length of loans.

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The public service aspects of departmental and divisional libraries have long called for recognition and standardizing principles. On every university campus discussion goes on concerning the relative merits of centralized versus decentralized systems. Practices vary from completely centralized systems, with all library operations in one building, to a central library supplemented by dozens or even scores of departmental libraries located elsewhere. Whatever policies are adopted in reference to centralization or decentralization of library services, the following rules are recommended:

1. Books and other library materials should be purchased or otherwise acquired through the library's acquisition department, and not by individual departments.
2. Materials should be classified, cataloged, bound, or otherwise processed centrally, except certain nonbook materials.
3. Books, pamphlets, periodicals, or other publications received and preserved should be recorded in the central library catalog. Exceptions may be made for certain non-book materials, such as maps, prints, sound recordings, slides, sheet music, and picture collections. Deviations may also be reasonable for the processing of material in non-Western and non-alphabetic languages, and because of local conditions, such as availability of space.
4. Every book acquired by the university or any of its departments should be considered a part of the library's collections. This principle applies also to the numerous "bootleg libraries" which have grown up on university campuses

during the post World War II period, purchased from foundation and government grant funds to individuals and teaching departments.

5. Departmental or college libraries and librarians should belong to the central library organization, and be under the supervision of the chief librarian, who should be responsible for administration of the entire system.
6. There should be free interchange of material among all libraries on a campus.
7. In such matters as hours of service, physical facilities, and qualifications of staff, departmental and divisional library standards should be in general conformance with central library practices.

VI. Administration. Every university library should be governed by a statement of policies, including the following provisions:

1. A clear definition of the relation of the librarian to the university administration.
2. A definition of what constitutes the library resources of the university, specifying that they comprise all books, pamphlets, periodicals, and other materials purchased or acquired in any manner by the university and preserved and used in libraries to aid students and investigators.
3. Placing the administration of all library resources and services wherever located under the university librarian.
4. A description of the librarian's duties, making him/her responsible for the selection, acquisition, and preparation

for use of all library materials; for the selection and direction of the library staff; for the preparation of budgets and reports; and for the performance of such other duties as are commonly included under university library administration.

5. Endorsement of the ALA "Bill of Rights" and "Right to Read" statements.
6. Appointment of a faculty-student library committee to advise the university librarian and library staff on programs of library development and services and to bring faculty-student points of view to the administration of the library. Such a committee should be appointed by the president with advice from the librarian or elected by the faculty senate or comparable body and report periodically to the president and the senate. Its personnel should represent a broad cross section of the faculty, the members should serve staggered terms with regular rotation, and it should function in an advisory and not administrative capacity.

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SUGGESTED READINGS AND RESOURCES

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