AIP annual report 1959

Submitted by the Director and accepted by the Governing Board of the American Institute of Physics as its Annual Report to the Member Societies of the AIP, March 26, 1960.

THE end of one decade and the beginning of another is a particularly appropriate time for the American Institute of Physics to take stock of itself and to plan for the future. With this in mind, many of the statistics given in this report cover the past ten years. To make reading of the report easier, graphical presentation is used where possible. The numbered sections concern primarily the going activities of the Institute while the introductory paragraphs are devoted to a consideration of possible future responsibilities of physicists and the role the Institute should play in assisting physicists in meeting these responsibilities.

The decade just past has seen extraordinary activity in physics. Particle physics has received enormous stimulation from the development of giant accelerators. New particles and antiparticles have been discovered, and the closer study of weak interaction between particles makes it evident that the law of the conservation of parity, after long and faithful service, can no longer be relied upon. During the same period, solid-state physics has prospered following a clearer understanding of semiconductors and superconductivity. In the realm of optics, new materials, ingeniously combined, have given rise to ultraspeed lenses, phase microscopes, and a new world of fiber optics. Particularly striking in the field of acoustics has been the progress in the generation of intense ultrasonic waves and in our understanding of their propagation through various media.

Developments in applied physics have kept close pace with those in basic research. The harnessing of the energy of nuclear fusion has given rise to the fascinating and rapidly growing branch of physics known as plasma physics. Great strides in electronic technology have followed the extensive introduction of transistors, masers, electron multipliers, and parametric amplifiers. Semiconductors also are finding wide application in large-scale power generation, and in computing equipment to say nothing of rockets and guided missiles. Almost daily, a new industrial application in the field of ultrasonics is reported. The incessant drive to reduce the time lag between discovery and application has drawn an increasing number of physicists into industry and applied science. The old-fashioned engineer with a smattering of physics can no longer cope with the needs of a modern technological age. Instead, physicist engineers with a thorough grounding both in classical physics and modern physics are in demand far beyond the supply. In the past ten years the fraction of physicists in industry has probably doubled. Since the total available number of physicists increased relatively slowly during this period, colleges, particularly the smaller ones, are finding it increasingly difficult to hold their staffs and almost impossible to attract new staff members to teach the great postwar influx of new students.

Thus, one problem requiring immediate attention of physicists is that of recruiting more physicists particularly for teaching in the smaller colleges. Most physics graduates nowadays will not go to a teaching position unless there is some opportunity to do research and keep up with new research developments. Unfortunately, agencies with funds for the support of research are not willing to risk funds at a small college unless the college has staff competent to do research. A way must be found to break into this vicious circle. Some suggestions have been made but an imaginative program vigorously prosecuted is necessary if there is to be a substantial flow of top-flight young physicists to the smaller colleges.

The pace at which research activity in physics is expanding is readily apparent in the number of archive pages published in 1959, which is nearly twice as large as in 1950. The volume of publication combined with the growing number of journals present problems both to the physicist and to the publisher. The physicist finds it increasingly difficult to keep up with new advances and is beginning to rely more than ever on abstract journals and indexes. As a result, he has become more critical of the coverage of these journals and their indexes. With National Science Foundation support, the Institute has established a documentation research project to examine these services critically and to study other publishing problems. One possible way of extending the coverage and reducing the time lag between appearance of an article and a reference to it, is to issue regularly a title list in which the items would be carefully classified and well indexed. Unfortunately little quantitative information is available concerning the efficacy of various indexing methods, and much more needs to be learned before we become too firmly entrenched with one particular method. To continue and extend the present work a further grant has been requested, but long-range financing is essential if the In-

stitute, with a $2 million publishing program, is to keep abreast of new technical developments in documentation and publication.

The recruitment just mentioned of new physicists and the maintenance of high educational standards for them, as well as the strengthening of research journals, are responsibilities which the physicist faces which are directly related to his profession. In addition, however, he has deep responsibilities as a citizen associated with his special competence in science. It is clear, for example, that science will not thrive in a democracy unless the public and its elected representatives understand what is going on in science and the motivation of the scientist in his work. It is clear also that the nation will grow intellectually impotent unless the real intellectuals take an active role in making education at all levels more rigorous and better matched to the needs of society. These are two areas in which the Institute can act for physicists and make their efforts more effective. With respect to the first, unusually good contacts with the working press have been established by the Institute's Public Relations Department and a continuous stream of authoritative information about research developments in physics (expressed in lay language) is given to the public via newspapers, magazines, radio, and television. Every effort is made to give the public a sense of participation in the advance of science. As Dr. W. C. Kelly has said, "You can't follow the game without a program." It is the Institute's job on behalf of, and with the assistance of physicists, to supply the "program". Any appreciable effort in this area is expensive but in the long run should yield immeasurable dividends to the progress of science in this country.

Likewise, the Institute with its full time staff can assist physicists in carrying out effectively, well-thought-out programs for strengthening physics education at the elementary, secondary, and collegiate levels. The Institute budget for education last year was greater than the entire nonpublishing budget of the Institute only a few years ago and many times the direct contributions of physicists to the Institute through their membership dues.

With this increased emphasis on education, on public information services, and on publication projects and with the increased effectiveness of *Physics Today* as a medium serving all physicists, the costs of operating the Institute have risen sharply. Fortunately, there has been a corresponding increase in advertising income and assistance from industry through Corporate Associate dues to offset this increased expense. As we go into the new decade, it is the considered policy of the Governing Board and administrative staff of the Institute to attempt in every way possible to meet new responsibilities as they see them, with the firm conviction that the necessary funds can be raised, rather than to place an arbitrary limit on the Institute's activities because of a preconceived notion that only certain funds will be available.

1. PUBLICATIONS IN PHYSICS

Archive Journals

THE publishing of physics journals continues to be the Institute's major endeavor. As in all years in the past decade, 1959 showed increased growth in the number of pages published, as well as in the number of subscriptions to the journals. Figures 1 and 2 chart the upward growth. For 1959 the total number of pages published by the Institute (exclusive of the translated journals and the *Physical Review Letters*) was 23 022, an increase of 7.6 percent over 1958. Total paid subscriptions, excluding translations, in 1959 was 114 186. The total circulation of all periodicals reached 119 500,

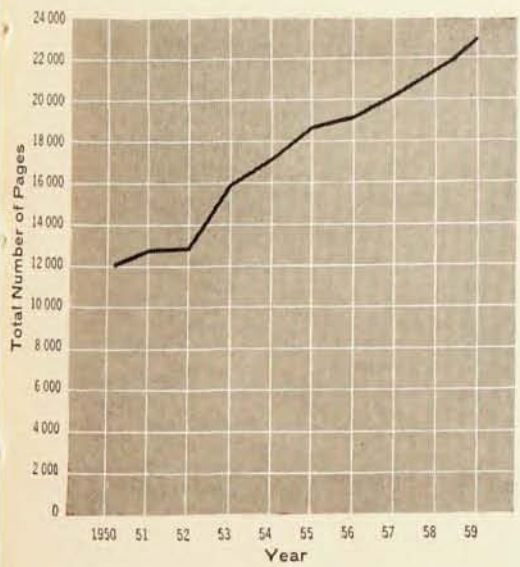

Fig. 1. Growth in AIP and Member Society journal pages published. Translated journals and *Physical Review Letters* are excluded.

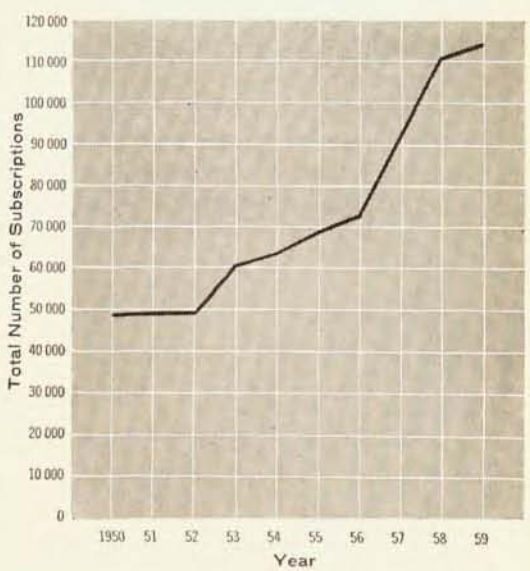

Fig. 2. Growth in total circulation of journals, including *Physical Review Letters* but not the translated journals.

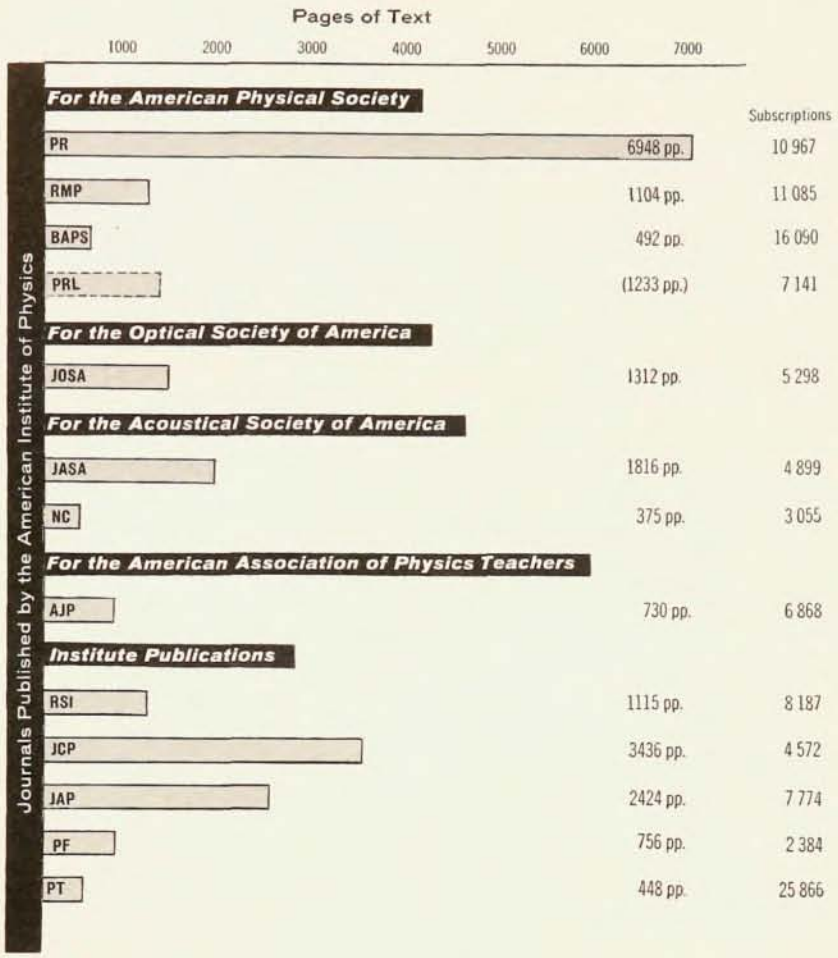

Fig. 3. Pages of text and numbers of subscribers for 1959 journals (exclusive of translated journals). Advertising pages carried in the various journals are not included here. The subscription figures do not include complimentary or exchange copies.

a count which includes society bulletins, the translated journals, and the *Physical Review Letters*. The comparable figure in 1958 was 115 000. A more detailed presentation of actual text pages published in 1959 in the journals of the Institute and its member societies is given in Figure 3.

During the past year, a grant was secured from the National Science Foundation which will enable the Institute to establish a new journal—*Journal of Mathematical Physics*. The new journal will report novel methods of mathematical physics as well as original research furthered by use of such methods. In the past, it has been extremely difficult to accommodate papers in these areas in existing journals. It will start as a bimonthly, the first issue being that for January–February, 1960. Dr. Elliott Montroll has been appointed editor. Also in 1960, the Institute will assume the management of *The Astronomical Journal* for the American Astronomical Society of which Dr. Dirk Brouwer is editor.

At the request of the Acoustical Society, the Institute undertook the compilation and publication of a ten-year cumulative index of that society's journal, which will include also contemporary papers on acoustics published elsewhere and acoustical patents. A grant from the National Science Foundation was obtained to help finance the project. The index, a volume of approximately 1100 pages, is expected to be ready for distribution in the summer of 1960.

Translations

TURNING to the translated journals, the Institute in 1959, under grants from the NSF, added two additional Soviet journals to the list translated in a further effort to assist physicists in keeping abreast of Soviet developments. The two are "Fizika Tverdogo Tela" appearing as *Soviet Physics—Solid State*, and the review journal "Uspekhi Fizicheskikh Nauk", published under the title *Soviet Physics—Uspekhi*. Thus the total number of journals translated was brought to eight. The size of the effort is given in the following table of Russian pages translated in each calendar year of the original journal:

Russian Pages Translated

Year	*Pages*	*No. of Journals*
1955	1 684	1
1956	6 202	4
1957	8 590	6
1958	10 041	7
1959	12 900 (estimate)	8

A vigorous promotion campaign resulted in greatly increased circulation of the translations in 1959. The table below shows the result.

Subscription Count for Translated Journals

Journal	*1957*	*1958*	*1959*
	Fourth Quarter		
JETP	818	747	874
Technical Physics	283	270	442
Doklady	370	358	490
Acoustics	225	224	405
Crystallography		146	428
Astronomy		89	159
Uspekhi			427
Solid State			484
	1696	1834	3709

The translations of books and journals are carried out under the general supervision of the Institute's Advisory Board on Russian Translations under the chairmanship of Professor Robert T. Beyer. *Wave Propagation in Layered Media* by L. M. Brekhovskikh should appear in the spring of 1960. Also, a proposal has been made to the National Science Foundation for the translation of some Soviet physics laboratory manuals.

Production and Circulation

THE Institute has a primary concern for problems of journal production. Efforts were directed toward maintaining production schedules, toward shortening review time, toward improving circulation handling, and toward simplifying the bookkeeping involved in subscription records. With the exception of one journal there was fairly good adherence to schedules for most of the journals during 1959, and steps are being taken to secure even better performance in 1960. In the interest of improving manuscript preparation, the new edition of the *Style Manual,* completed in 1959, was distributed as a supplement to the December issue of *Physics Today.*

To increase speed of allocating dues and subscription payments and to improve the accuracy of the membership and subscription records (as well as address changes which now number over 30 000 annually), the decision was made to convert to a punch card system of operation in the circulation department. The necessary equipment has been ordered. Transition to the new methods is scheduled to start in the spring of 1960.

Documentation Research

WITH so large a publication operation, it is clear that certain "basic research" is necessary if the Institute's purpose of "diffusion of knowledge of the science of physics" is to be fulfilled effectively. A comprehensive documentation research project was initiated in November, 1958, under a grant from NSF. In 1959 attention was given to the problems and studies briefly delineated in Figure 4. The activities were conducted in cooperation with three AIP committees, namely: the Committee to Study Physics Publishing Problems under the chairmanship of Professor E. U. Condon; the APS-AIP Committee on Science Abstracts, of which Dean F. G. Brickwedde is chairman; and the AIP Publication Board, of which Professor J. A. Krumhansl is chairman. Results have been reported in a bimonthly *Documentation Newsletter,* initiated for that purpose.

The principal emphasis in the Documentation Research project in 1959 was on indexing and information retrieval problems. In order to provide background data, staff papers on indexing and on abstracting services were prepared. To gain experience with more rapid methods of indexing production, the index to the *Journal of Chemical Physics* was prepared by the filming of tabulating cards. In order to investigate the optimal type of index, graduate physics students were asked to retrieve information from various types of indexes in a timed test. Significant information of a preliminary nature was obtained from this test. In a continuing survey of *Physics Abstracts*, a study was made of (1) the opinions on *Physics Abstracts* of the Division of Solid-State Physics of the American Physical Society and (2) of the coverage of solid-state physics literature by *Physics Abstracts*. One result of all of these studies is expected to be a proposal to be made to NSF for a single, monthly title and author index to all AIP and Member Society journals and possibly the translated

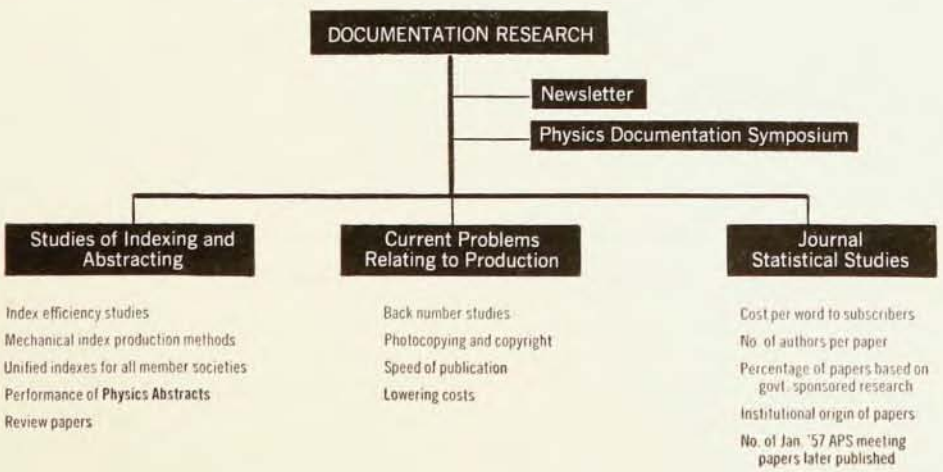

Fig. 4

journals. Such an index would provide very wide and very prompt coverage of American physics literature.

It is impossible to present results of all the documentation studies in this brief report. A few however may be mentioned. Comparative statistical data on cost per word show that the AIP is offering its journals to subscribers at very reasonable rates compared to other society and commercial publishers. Other data showed that 47 percent of papers in the AIP and Member Society journals for 1958 were by single authors. This would indicate the continuing importance of individual research as compared to team research. Data on the percentage of papers based on Government-sponsored research are also being collected.

The problem of extensive photocopying in spite of copyright is one that received preliminary consideration in 1959. The inroads being made by photocopying on the copyright status of scientific journals as well as the effects of photocopying on journal sales will receive additional study in 1960.

2. PUBLIC INFORMATION SERVICES

NINETEEN hundred and fifty-nine was a year of considerable public interest in scientific information. The Institute's Public Relations Department was actively engaged in furnishing authoritative information in the field of physics to the press through releases and press conferences scheduled at the society meetings. A new activity which aroused considerable interest and favorable comment was a seminar for science writers. Devoted to solid-state physics, the seminar is expected to serve as a model for future meetings to provide science writers with factual knowledge in various fields of physics. The department also filled numerous requests for career and general information on physics. It is through all these activities that the AIP acts as the public relations arm of the member societies and physicists generally on a year-round basis.

Information to the Press

THE meetings of the member societies provide an excellent medium for dissemination of information about physics and physicists. This year a record number of nine scientific meetings were serviced by the AIP Public Relations Department. Press rooms were established, press conferences scheduled, radio and television interviews arranged, and many releases were distributed by mail and by hand. Those included "lay language" versions of papers prepared by the physicists themselves specifically to make the reporter's lot easier and thus aided in getting more authoritative information to the public. Another phase of the activity before and during meetings, as well as at other times of the year, was the issuance to special mailing lists of news releases, covering such subjects as changes of officers, the AAPT high-school awards in physics, new educational developments, and AIP affairs. In 1959, over 400 releases were issued often in as many as 750 copies to various news media.

Included in these releases were those devoted to the AIP-AAPT Visiting Scientists Program. In addition to preparing news reports on the 125 visits of physicists to colleges and universities, the Public Relations Department originated preparation of an article sent out by the Associated Press through science writer John Barbour to 2000 newspapers. Also, articles were prepared that were widely used on the high-school visiting scientist program and announcements were made on the 1959–60 visiting foreign scientist program.

Mention must also be made of the handling of calls from newspaper writers, magazine editors, free-lance writers, book publishers, and others for background information on physics research, suggestions on interview subjects and people, and even assistance in mapping out an extensive writing project. The volume of such queries has been mounting.

Career Information Requests

CONSIDERABLE time was spent by the Public Relations Department in answering requests for career booklets prepared by the Institute. The two most popular items were "Physics as a Career" and "Why Should You Study Physics in High School?" A second printing of the former was required since a supply of 20 000 of the latest edition had been almost exhausted by the end of 1959. The latter, encouraging study in the high school, appeared in 1959 with a print order of 100 000 copies. Booklets on available assistantships and on graduate specialities were also popular. Some 2500 requests were answered for the 1959 edition of the list of those institutions which offer degrees in physics.

Solid-State Physics Seminar

ON October 30, 1959, the AIP sponsored an all-day seminar on solid-state physics for science writers. Over fifty writers, public relations people in the field, and others attended the symposium presided over by Dr. Conyers Herring, 1959 Buckley Prize Winner. Four participants, in addition to Dr. Herring, surveyed the field, answered questions, and conducted discussions. Most of the speakers prepared papers in advance for distribution, and the AIP, with the aid of Professor William Miller, issued a glossary both by newswriters and by others of terms commonly used in the field. There has been considerable demand for the glossary. The seminar was sponsored jointly by the AIP and the National Association of Science Writers.

Public Information Newsletter, Physics in the News

THE Public Relations Department continued to issue its newsletter in 1959 to inform and assist physicists and their organizations in public relations activities. The "Physics in the News" publication, issued twice a year, has attracted widespread attention by its visual presentation of clippings of newspaper articles reporting on physics. Both publications illustrate clearly the AIP program to promote a wider public understanding of physics.

3. EDUCATIONAL PROJECTS

THE responsibilities of the Institute for assisting in the improvement of physics education are indeed expanding as the nation's concern for excellence in education deepens and as the capabilities of the Institute become better known. The Institute has moved to meet its educational responsibilities by means of a variety of educational projects, outlined in Figure 5, and can report considerable progress. Three of the major educational projects carried on at the Institute are jointly sponsored by the American Association of Physics Teachers and the Institute. Cooperation between the Association and the Institute has been fruitful.

Visiting Scientists

THE first of the jointly conducted programs is the well-known Visiting Scientists Program in Physics, whose objectives are the stimulation of interest in physics and the provision of opportunities for discussion of teaching and research in the visited institutions. In 1958–59 two-day visits by 82 distinguished physicists were arranged to 117 colleges and universities and briefer visits took place in over 200 high schools. Support for continuation of the program of visits to colleges and high schools in 1959–60 was provided by the National Science Foundation. In addition, a Visiting Foreign Scientists Program, under which distinguished physicists from other countries will be invited to visit the United States, received support from NSF for 1959–60.

Design of Physics Buildings

TO assist physics departments in planning an anticipated $250 000 000 worth of new buildings in the next few years, the AAPT-AIP Project on the Design of Physics Buildings, supported by a grant from the Educational Facilities Laboratories, Inc., got under way early in 1959 under the direction of Professor R. Ronald Palmer of Beloit College. Mr. William M. Rice is the staff architect for the Project. Professor Palmer and Mr. Rice visited over 40 colleges and universities last year to inspect physics buildings and determine the strengths and weaknesses of the various designs of physics building facilities. A reprint volume, containing reprints of the best articles that have been published on the design of physics buildings, was published by the Project and is now available to provide immediate assistance to physics departments that are working on plans for a new building. The final report of the Project on the Design of Physics Buildings will be a volume containing chapters devoted to the physics lecture room, instructional laboratories, research laboratories, shops, and so on. Publication is scheduled for the fall of 1960.

Apparatus Drawings

THE AAPT-AIP Apparatus Drawings Project, supported by a grant from the National Science Foundation, will produce between 40 and 50 sets of shop drawings which describe physics teaching equipment developed in physics department shops and not avail-

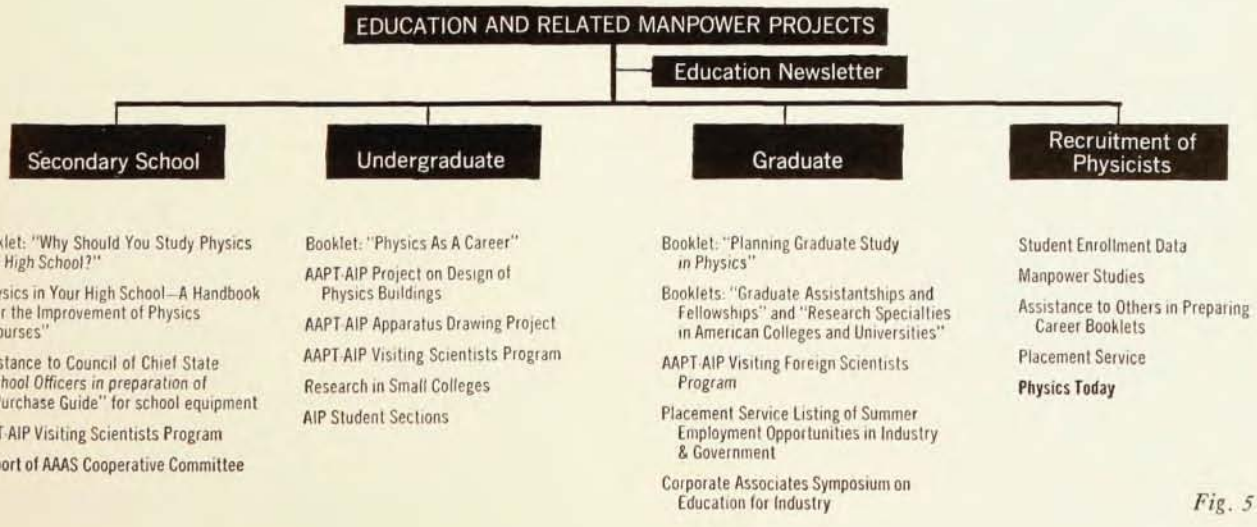

Fig. 5

able commercially. Mr. Robert G. Marcley is the project technician. Mr. Marcley visited approximately 10 physics departments last year, collecting sketches and instructional notes about interesting physics apparatus. The drawings are now appearing in abbreviated form in the *American Journal of Physics* and will be available in a portfolio of complete drawings to be sold by Consultants Bureau, 227 West 17th Street, New York 11, N. Y.

Career Booklets

IN addition to the joint AAPT-AIP projects, the Institute has engaged in a program of publishing career booklets and other booklets of interest in physics education. The booklet *Why Should You Study Physics in High School?*, written by Franklin Miller, Jr., and published by AIP last year under an NSF grant to interest children in the ninth and tenth grades in taking high-school physics, has proven popular and useful to school guidance counselors and teachers. At the other end of the educational spectrum, a booklet on graduate study in physics was written by George E. Pake, and scheduled for publication in early 1960. *Physics as a Career* is under revision, and several career booklets in special fields are being planned.

To stimulate local action in the improvement of high-school physics courses and to provide sound recommendations and information for the persons responsible for high-school programs—school board members, school officials and teachers, civic leaders—the Institute completed the writing of *Physics in Your High School—A Handbook for the Improvement of Physics Courses* in 1959 and scheduled it for publication early in 1960. A booklet of about 150 pages, the handbook discusses the recommended preparation of a physics teacher, the need to increase enrollments in physics, the content of physics courses, equipment needed, scheduling, and many other topics that affect the quality of high-school physics.

Other Activities

THE staff of the Education Department took part in a variety of other activities during 1959 including the project to prepare a *Purchase Guide* to assist schools in ordering equipment under the National Defense Education Act, a program to encourage research in the smaller physics departments, work with the AAPT Committee on Apparatus to improve the supply of teaching equipment, and exploration of the advisability of preparing a catalog of educational films in physics.

4. MANPOWER AND MEMBER SERVICES

National Physics Register

THE National Register of Scientific and Technical Personnel, which the Institute maintains under NSF sponsorship for physics and astronomy, has proven a source of many useful statistics. An analysis of data on 17 946 physicists was reported in the December issue of *Physics Today*. Such facts as the following appear on educational training:

8169 (or 45.5%)	have doctoral degrees
4999 (or 27.9%)	have master's degrees
4405 (or 24.5%)	have bachelor's degrees
373 (or 2.1%)	misc. (M.D., O.D., less than bachelors, other)

Distribution by type of employer indicated 45% of physicists are now employed by industry. Education institutions account for another 32%. Government agencies employ over 13% and nonprofit research organizations under 5%.

A revised Register questionnaire is scheduled to be mailed to all physicists in the spring of 1960. With the aid of many physicists, the Institute took an active role in the preparation of a new physics specialties list. At present the physics section of the Register numbers approximately 23 000 individuals.

Also in 1959, with the assistance of the Register, information was gathered for a Directory of Academic Physicists which will be published by AAPT-AIP in 1960. This compilation revealed 78 additions to be made to the Institute's list of colleges and universities offering physics majors, bringing the total to 627.

Student Enrollment

THE 1959 Institute survey of student enrollment from 627 institutions showed:

		BS	*MS*	*PhD*
1958–59	Physics Degrees Granted	4343	913	499
1959–60	Estimated Number of Degrees	5194	1204	713
1959–60	Physics Majors Enrolled Undergraduates	3rd yr.—Full Time		6504
		4th yr.—Full Time		5172
	3rd and 4th year	Part Time		1663
1959–60	Enrolled Graduate Students			8575

The number of bachelor's degrees awarded in physics in 1959 was up 23.8% from that of 1958; the increase in master's degrees was 8.5% over 1958; and that of PhD's, 7%. However, in noting the increase, particularly at the BS level, it must be remembered that 78 additional smaller colleges and universities were included in the 1959 survey, thus leading to figures showing a somewhat increased percentage rise above that which actually occurred.

Placement Service

MOST physicists and their employers are by now familiar with the Placement Service put at their disposal by the Institute. It has been very useful in bringing the qualifications of registrants to the attention of employers, and descriptions of available positions to

physicists who are seeking employment. A new, descriptive placement booklet was made available at the January 1960 joint meeting of the American Physical Society and the American Association of Physics Teachers. This joint meeting remains the scene of greatest placement activity. The statistics relating to the Placement Register at the January meetings are brought up to date below:

Placement Register Activity

	January 1958	*January 1959*	*January 1960*
Physicists registered	433	350	333
Employers registered	273	415	415
Positions open	333	1523	1372
Interviews scheduled	1556	3378	3486
Salary ranges offered	$3900–12 000	$4316–24 000	$4500–16 000

The Placement Register also functions at the Washington meeting of the American Physical Society in April of each year.

The Placement Service is also concerned with gathering and distributing summer job listings for students and teachers.

A booklet of special interest to physics students, published in 1959 by the Placement Service, was a compilation of *Graduate Assistantships and Fellowships in Physics*. It is intended to encourage and assist qualified students of physics in finding support for their graduate studies. Information was also gathered for a companion booklet entitled *Graduate Physics Specialties in American Educational Institutions*. This booklet serves as an index of the principal fields of research in physics being carried on by the physics departments of institutions offering advanced degrees.

AIP Student Sections

IN 1959, in accordance with the recommendations of the special advisory committee mentioned in last year's report, a more vigorous development of student sections was undertaken. A student section advisor was added to the Institute's staff on a part-time basis to visit sections and to determine how the Institute could be of maximum help to students majoring in physics. A growing interest in student sections on the part of member societies was also noted since such sections provide a natural source of future members.

As a result of this more vigorous program, a record of 26 new student sections were added in 1959, as well as the reactivation of four others. Thus there are now 78 student sections with nearly 2000 members. One of these is outside the confines of the United States (Beirut, Lebanon) and one is composed entirely of women (Smith College). Plans were made for a pamphlet which will describe the services available to all Student Sections and for a *Newsletter* devoted specifically to the problems of the undergraduate and graduate student of physics.

Member Society Services

JOINT dues bills covering membership in the societies and subscriptions were sent out in 1959 to approximately 19 500 members. Numerous mailings were made including ballots, announcements, promotional material, etc. The purchase of a Multilith machine is making it possible for the Institute to handle a greater variety of the societies' work.

Physics Today

PHYSICS TODAY, the medium which serves the entire physics community, received a distribution in 1959 of 26 232, including individual members of the AIP Member Societies, Student Sections, nonmember subscribers, and 366 complimentary and exchange copies. There was considerable growth in both text and advertising pages as well as in circulation over the previous year as indicated below:

	No. of Pages		
	Text	*Advertising*	*Circulation*
1958	366	414	24 702
1959	448	609	26 232

The editor's most constant endeavor is to provide in *Physics Today* the kind of material which physicists want. He and the staff will welcome comments and suggestions at any time.

5. INSTITUTE ORGANIZATIONAL DEVELOPMENT

A SIGNIFICANT organizational development in 1959 was the implementation of the provision in the Constitution, as amended January 28, 1958, establishing a class of membership in the Institute to be known as Associate Member Societies. On May 6, 1959, the American Crystallographic Association, and on October 29, 1959, the American Astronomical Society, were elected as Associate Member Societies of the Institute. We are most happy to welcome these distinguished societies to our federation.

In the interest of promoting greater unity of effort on the part of its Member Societies, the Institute arranged a three-day meeting of the principal officers of all of the societies at the Arden House of Columbia University, September 30–October 2, 1959. This meeting provided a welcome opportunity for society officers to become better acquainted with the program of the Institute and the facilities available for their use in the headquarters building. At the same time, it offered the Governing Board and the administrative staff of the Institute excellent assistance and advice in planning for the future. It is hoped that further meetings of this kind can be arranged on an annual or biannual basis.

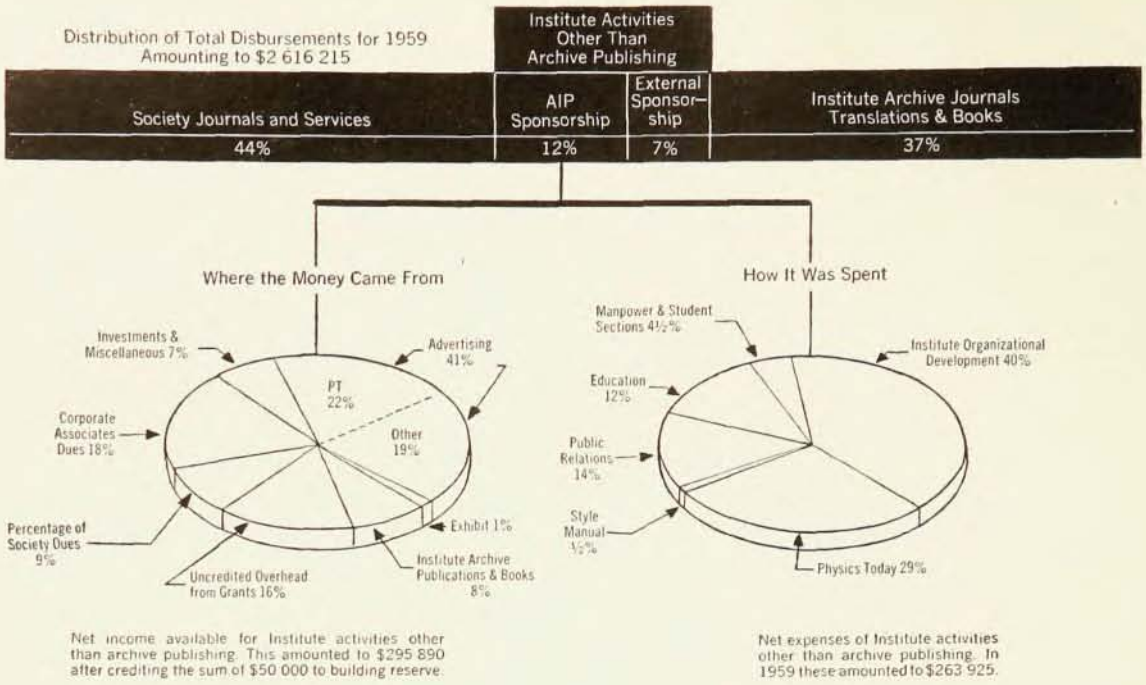

Fig. 6

The Institute's financial condition at December 31, 1959 is shown on the accompanying balance sheets. The operating statement shows the volume of the Institute's activities. However, it is left to the diagrammatic presentation in Figure 6 to show the breakdown of total disbursement between archive publishing activities and the more general activities which the Institute sponsored in 1959. These latter were concerned principally with providing (1) public information services; (2) the core staff needed to carry on the education projects; (3) *Physics Today* gratis to all members of Member Societies; (4) manpower and student section activities; and (5) Institute organizational development which includes those things which make the Institute a going organization, such as the maintenance of relations with various societies and agencies, special member services, expenses of operating committees, and future planning.

Funds for these general activities came largely from (1) a percentage of the dues of the Member Societies; (2) net advertising revenue; (3) Corporate Associates' dues, and (4) miscellaneous income from interest on invested funds, unassigned revenue from special projects, etc. Revenue from advertising and from Corporate Associates' dues showed the greatest rise in 1959 over 1958, as a result of increased efforts and increased rates.

In connection with Corporate Associates activities, every effort was made in 1959 to develop a closer working relation with industry and to improve communication between industry and the academic physicist. This was done through the journals furnished, through the newsletters and other communications, and through the annual Corporate Associates meeting. This year's meeting at Arden House on October 1, 1959, was a stimulating one, emphasizing, as it did, the role and training of the physicist in industry. The Committee on Corporate Associates, under the chairmanship of Dr. C. G. Suits, was instrumental in establishing a graduated dues scale effective in 1959 ranging from $350 to $3500, and in increasing the number of Corporate Associates from 96 in 1958 to 144 in 1959.

Convinced that the necessary funds may be found, the Institute looks forward to greater activity in 1960 and the years immediately ahead. To assist in providing for the building expansion already foreseeable, the Institute credited to its building reserve the additional sum of $50 000 in 1959. The Institute will continue to do its utmost to carry out its purpose, which is, in the words of its constitution—"the advancement and diffusion of knowledge of the science of physics and its application to human welfare".

6. ACKNOWLEDGMENTS

IN meeting the expanding responsibilities of the Institute, extra effort and versatility are called for on the part of everyone connected with the Institute. During the past year, the Institute staff, in particular, worked willingly and diligently to carry out the added tasks and did so in a commendable manner. Sincere appreciation is expressed to them and to the large number of committee members who, by their voluntary help, guided and assisted the Institute in completing a successful year.

Special thanks are due the following members of the Governing Board who retired during 1959 or early 1960 after serving for the periods indicated:

Charles Kittel	1956–59
Walter S. Baird	1956–60
Jesse W. Beams	1957–60
John H. Dillon	1958–60
Walter C. Michels	1957–60

The Institute also takes pleasure in welcoming to the Board, Harvey Brooks, Frederick Seitz, Mary E. Warga, Wallace R. Brode, John H. Elliott, William R. Willets, N. V. Neher, and Francis W. Sears. A particular welcome is extended to the Board members representing the Institute's two new Associate Member Societies: Ray Pepinsky of the American Crystallographic Association and Dirk Brouwer of the American Astronomical Society.

Respectfully submitted,
Elmer Hutchisson, *Director*

AMERICAN INSTITUTE OF PHYSICS, INC.

Summary Statement of Operations

Including Activities Carried on for Member Societies

Year Ended December 31, 1959

	Total	*American Institute of Physics*	*For Account of Member Societies*
Income:			
Subscriptions to journals	$ 603 832.29	$ 286 303.34	$ 317 528.95
Publication charges and reprint sales	518 806.13	201 843.72	316 962.41
Back number sales	72 502.25	27 463.76	45 038.49
Contracts for publication	18 947.39	18 947.39	
Advertising	327 849.64	290 294.28	37 555.36
Support from Member Societies	32 220.81	32 220.81	
Associate (corporation) dues	61 786.00	61 786.00	
Income from investments and rent	25 150.02	25 150.02	
Income from special projects	571 386.10	571 386.10	
Miscellaneous income	44 776.02	44 776.02	
Receipts for accounts of Member Societies	420 923.53		420 923.53
Total	$2 698 180.18	$1 560 171.44	$1 138 008.74
Expenses:			
Printing, engravings, and mailing journals	$ 872 611.33	$ 350 684.68	$ 521 926.65
Printing and mailing reprints	60 076.46	30 434.40	29 642.06
Handling publication charges and reprint sales	22 289.81	9 702.17	12 587.64
Back number handling and distribution	36 244.50	11 502.18	24 742.32
Advertising—printing, distribution, and selling	171 139.95	147 758.97	23 380.98
Editorial and editorial mechanics	187 646.99	148 513.47	39 133.52
Circulation handling	91 596.58	36 589.56	55 007.02
Administrative and organizational services	231 706.22	231 706.22	
Special projects	501 330.06	501 330.06	
Taxes, interest, and investment expense	9 984.92	9 984.92	
Disbursements on behalf of Member Societies	92 167.37		92 167.37
Total	$2 276 794.19	$1 478 206.63	$ 798 587.56
Net to societies to balance accounts	339 421.18		339 421.18
	$2 616 215.37	$1 478 206.63	$1 138 008.74
Net income	$ 81 964.81	$ 81 964.81	
Transferred to building reserve	50 000.00	50 000.00	
Addition to accumulated earnings	$ 31 964.81	$ 31 964.81	

AMERICAN INSTITUTE OF PHYSICS, INC.

Balance Sheet, December 31, 1959

Assets

Operating Funds:			
Cash		$423 866.72	
Investment in US Government securities	$530 560.88		
Add: accrued interest receivable	3 078.07		
	$533 638.95		
Less: special purpose funds included therein	453 835.24		
		79 803.71	
Due from Member Societies:			
Optical Society	$ 3 659.80		
Acoustical Society	9 490.11		
		13 149.91	
Accounts receivable:			
Publication charges and reprints	$125 105.55		
Advertising	25 626.95		
Miscellaneous	18 304.36		
		169 036.86	
Deposits		825.00	
Deferred charges:			
Contribution to retirement plan	$ 22 498.17		
Engraving costs	18 813.80		
Prepaid insurance	3 032.43		
Prepaid group life insurance and major medical	3 810.02	48 154.42	
			$ 734 836.62
Special Purpose Funds:			
Cash—Karl Taylor Compton Fund		$ 12 492.60	
Investment advisory account	$233 107.02		
Add: accrued interest	1 991.55		
		235 098.57	
Special purpose funds investments included in operating fund		453 835.24	
			701 426.41
Building and Equipment Fund:			
Land		$266 535.36	
Building	$619 683.38		
Less: depreciation	74 346.22		
		545 337.16	
Furniture and fixtures	$ 44 693.77		
Less: depreciation	7 616.60	37 077.17	848 949.69
			$2 285 212.72

Liabilities

Operating Funds:			
Trade accounts payable		$244 760.45	
Commission payable		8 848.61	
New York State income tax withheld		3 542.60	
Due to Member Societies:			
American Physical Society	$ 22 961.04		
American Association of Physics Teachers	18 868.32		
Society of Rheology	7 306.93		
		49 136.29	
Sundry creditors		15 207.58	
Deferred credits:			
Subscriptions applicable to future years	$420 860.52		
Dues (corporation) applicable to 1960	35 364.00		
Sundry receipts for 1960	11 461.80		
		467 686.32	
Accumulated earnings		(54 345.23)	
			$ 734 836.62
Special Purpose Funds:			
Karl Taylor Compton Fund		$ 12 492.60	
Fund for future physicists		18 000.00	
Fund for endowment of awards		10 600.00	
Building reserve		124 346.22	
Amounts received for special projects for accounts of others (net after expenditures thereon)		535 987.59	
Building and Equipment Fund			701 426.41
			848 949.69
			$2 285 212.72