

AIP *annual report*

1953

Submitted by the Director and accepted by the Governing Board of the American Institute of Physics as its annual report to the members of the AIP, March 13, 1954.

THE INSTITUTE'S year of 1953 has been marked by a new record in the number of pages published and the number of members and subscribers served. Most of the costs involved in rendering these services reached a new high as did also the number of staff employees required for the volume of work. The Institute's building has reached the point of inadequacy and various recourses for more space are under study. *Physics Today* has successfully come through its first year of free circulation to all members without too much financial strain and is well launched on a second year of progress with increasing advertising support. Beyond direct services to members, the Institute has continued to concern itself with scientific manpower in its many aspects. A number of other specific projects have been undertaken or are being planned.

To begin with the subject of manpower, the Institute has continued its alliance with the American Association for the Advancement of Science, American Chemical Society, American Geological Institute, American Institute of Biological Sciences, American Psychological Association, Federation of American Societies for Experimental Biology, and the Policy Committee for Mathematics in the formal establishment of the Scientific Manpower Commission. The work of the Commission, now well started under the direction of Dr. Howard A. Meyerhoff, is being coordinated with that of the Engineering Manpower Commission established by the Engineers Joint Council. The two Commissions represent a common concern to improve the teaching of mathematics and science in high schools, to revise the rules for the drafting of professionally competent individuals and the call-up of reserve personnel in this category, and generally to develop a public awareness of the need for a more enlightened government policy with regard to professional manpower resources than now exists.

To meet such objectives, the Commission must raise funds and it must acquire a reliable background of statistical and other information with which to make its points convincingly. The necessary program of fact finding is well under way. Then the business of informing the general public, school authorities, government officials, and others can proceed. Various avenues of communication have been opened up and an encouraging receptiveness has been gained in the pertinent executive

offices of the federal government. Nevertheless the goals sought are scarcely even in sight and a long, hard road toward them lies ahead.

One hopes that some day a reasonable fraction of young people with adequate intelligence will be attracted into science, that they will have unrestricted opportunities to develop their aptitudes, that their turn of training or duty for national security will use and further develop their special talents, and that a maximum portion of their most productive age-span will be spent efficiently advancing, applying, and communicating knowledge for the constructive purposes of mankind. Such a goal cannot be achieved by scientists alone but at least they can embrace it in unity, their organizations can cooperate for it, and they can give every encouragement to the Scientific Manpower Commission which they have established as their instrument.

The process of fact finding will be expedited by the new Physics Register, which the Institute is currently setting up under contract with the National Science Foundation. The Register will be based on a questionnaire which has now been mailed to all members of the Institute in the United States and its territories and possessions. Later it will go to other known physicists. The resulting information will be kept by the Institute, much of it in punchcard form. Duplicate copies of the cards will be supplied for the National Register of Scientific and Technical Personnel which it is the duty of the NSF, under its organic act, to maintain.

While the information collected will be much the same, although briefer, this Register will differ from earlier Rosters in a very significant manner. True, it will be a part of a survey of all fields of science coordinated by the NSF, but it is nevertheless primarily the function and responsibility of the physicists' own organization, the Institute.

The Institute will retain the information. For the first time, the Institute will have adequate records, readily available for reference, about the members of the profession. Such knowledge is needed to know what policies to adopt and what services to render. The editorial staff of *Physics Today* frequently needs biographical information about members who have been elected to office or received awards, who have written articles or made speeches, who have changed jobs or are otherwise involved in noteworthy events.

The fact of decentralization of the new Register should do much to insure that the direction of effort of physicists in the event of a national emergency would be determined primarily by physicists. The physicists' own organization would obviously be in the best position to see that the capacities of individual physicists were used in the most effective way. Being in this Register should, therefore, provide an opportunity for sensible assignment which otherwise might be lost in a blind and hurried form of mobilization.

During the continuation of the cold war, it is reasonable to expect, although one cannot be certain, that listings in the Scientific Register will be used by the Selective Service System and those responsible for the military call-up of reserve personnel, as a guide in the difficult job of mobilizing the necessary manpower in uniform without retarding the advance of science or disrupting civilian contributions to the national strength.

The shortage of physicists continues in spite of reported cutbacks in industrial activity and reductions in federal research budgets. The first Placement Register held in the new year (January, 1954) has again recorded more positions open than registrants looking for them. It is again a fact that most of the registrants are already employed and are shopping for something better. Parenthetically, it may be mentioned that the Placement Register has become a much appreciated major activity of the Institute.

The Scientific Manpower Commission requires no space in the Institute Building, its office being located at 1530 P Street, N.W., Washington, D. C. The Physics Register does require some space at 57 East 55th Street, as do several projects to be mentioned later, but these do not add up to much. Primarily because of the sheer bulk of journal pages to publish and subscriptions to handle, the AIP is outgrowing its quarters. Statistics will be given later. The staff has spent a lot of time exploring ways of getting more space, under the general guidance of a Committee appointed by the Governing Board. Sentiment is strong to retain the present building which, it will be recalled, was bought with the generous contributions of a large number of physicists. It is believed, however, that the real interest of these donors was in a suitable headquarters, rather than in a particular building, and it is good sense to consider various alternatives. Some of these are:

1. Extension of the present structure to the rear and upward, together with interior changes to gain effective space from currently unusable space. The estimated cost of additional construction is unfortunately high per square-foot gained.
2. Removal to a larger existing building in New York if one can be found in a suitable location at a price that can be justified.
3. Transfer to another city where good space might be bought cheaper.
4. Transfer out of urban areas entirely, thus joining a current trend, and construction of a simple building if necessary.

There are other alternatives and those mentioned can

be combined or modified. For example, a decision could be postponed for several years by temporarily renting some space nearby. Or, a part of the organization, whose work is largely done by mail, could be permanently located elsewhere, leaving enough room for the main office in the present building without additions. The Governing Board would welcome expressions of opinion by members.

Most of the floor area used for publishing work is devoted to that done for the five journals owned by the Member Societies. Nevertheless, the Institute's own four journals are also big jobs. *The Journal of Chemical Physics* is entirely archival and devoted to a specific field. Proud though the Institute can be of its role in inaugurating and publishing this fine journal, it is questionable whether its management should continue to be vested in the Institute. For best financial health and editorial development, such a specialized journal should be edited and supported by the group specifically interested in its field. The Institute with its many interests cannot justify providing more JCP pages than can be paid for by the Journal's own earnings, approximately 2200 pages in 1954.

Dr. Gaylord P. Harnwell, upon election to the Presidency of the University of Pennsylvania late in the year, was forced to submit his resignation as Editor of *The Review of Scientific Instruments*. The *Review* is the oldest instrument journal in America and the only one of primary interest to scientists. Physics is the science of measurement and it is no accident that this *Review*, devoted to the science of instruments, is one of the most valuable and financially the best supported in the physics lineup. Its future standards must live up to its traditions, consequently the choice of a new editor is being made with great care.

Dr. Harnwell became editor in November 1940. During his term of office both the number of pages published and the number of subscribers served doubled. The improvement of the quality of the *Review* has kept up with its growth.

The Journal of Applied Physics unfortunately also needs a new editor, Dr. Elmer Hutchisson being increasingly involved in the administration of the Case Institute of Technology. The *Journal*, founded on the APS publication, *Physics*, has swung from its role of protagonist of physics in industry to that of an archival journal. It is open to question whether it should not retain more of its original purpose than it does. If so, more editorial time will have to be provided.

The *Journal* has been very successful as it is. Founded in 1937 under the editorship of Dr. Hutchisson, it attained a circulation of 1900 in the first year. This has now been tripled and the volume of material published has been doubled.

Physics Today seems to be well established in its role as the "house organ", the national bulletin board of physics and the medium for discussion of matters not scientific but of concern to physicists. These aspects of *Physics Today* are continually pressing for space and it may be that they should be assigned a greater share



Governing Board of the American Institute of Physics. *Front Row:* R. M. Sutton, Mark W. Zemansky, Brian O'Brien, F. Seitz, *chairman*, George R. Harrison, *past chairman*, William F. Meggers, Karl K. Darrow. *Back Row:* Eric Rodgers, J. H. Van Vleck, J. W. Buchta, W. H. Markwood, Jr., Philip M. Morse, Robert F. Bacher, S. A. Goudsmit, Deane B. Judd, Harry F. Olson, Hugh S. Knowles. (C. C. Lauritsen, G. B. Pegram, Ralph A. Sawyer, and William Shockley are not included in the photograph.)

of the nonadvertising space in the journal. This would mean that the readable articles on special fields of physics would be restricted. This is a matter of editorial policy on which the opinions of members would be gratefully received.

Several special projects and smaller items of business are currently adding up to considerable AIP activity. For example, during 1953, plans were started for a Temperature Symposium co-sponsored by the Office of Ordnance Research, the National Bureau of Standards, and the American Institute of Physics to be held in Washington in October 1954. Funds to cover expenses of participants are to be furnished by OOR and the Institute will handle the business management of the Symposium. The Institute will also be responsible for publication of the proceedings which should result in a companion volume to *Temperature, Its Measurement and Control in Science and Industry*, which was edited by the Institute and published by the Reinhold Publishing Corporation after a similar symposium held in 1939.

The work of editing the American Institute of Physics *Handbook*, begun in 1952, is making satisfactory progress. Manuscripts for some sections have already been completed and expectations are that all manuscripts will be ready for the publisher, The McGraw-Hill Book Company, by the Fall of 1954. The composition, checking of proof, printing, and binding will take about a year, but we hope and expect that the *Handbook* will be on the market before the Institute's 25th Anniversary Meeting early in 1956.

The journal *Acta Metallurgica* has completed its first year under the business management of the Institute. Its circulation has already risen to 2000.

Mention should be made of the increasing amount of

work the Institute is being asked by the Societies to do on the arrangement and holding of meetings. This work involves negotiations with hotels, manning of registration desks, arrangement of exhibitions, etc. In some respects such work can and should be done with no specific charge to the Societies, but when it becomes extensive, the costs of time and out-of-pocket expense are reimbursed to the Institute by the Society.

Mention was made earlier of the bulk of pages published through the Institute. This meant only our regular journals and meeting programs, since the *Handbook* will be published elsewhere. The Institute was not prepared for the extent of the 1953 increase in journal and program pages. There had been a rapid growth since the war, and then 1952 scarcely exceeded 1951 in pages published. A continuation of slow growth was expected, but actually 1953 exceeded 1952 by 3254 pages, an increment of 23%.

This was much the largest increase in a single year that the publishing department has ever had to adjust to, and presumably reflects a record increase in the output of research results.

The chart on page 12 shows the trend of journal pages for a number of years. The points represent the total of the nine (before *Physics Today*, eight) journals published by the Institute, but do not include pages in the printed programs of meetings which in 1953 totalled 428.

The circulation department load increased also in 1953, even disregarding the automatic increase caused by circulating *Physics Today* to all members.

Work of this nature was also greatly augmented in the middle of the year when the Institute undertook the collection of dues and the handling of subscriptions of members of the American Physical Society. This was

done at the request of the Society on an estimated cost basis to be adjusted as experience dictates. More or less work of this sort is done for all of the Member Societies now except the Optical Society.

Fortunately it has been possible to give the editorial and subscription departments more house room by reshuffling other departments in the building and renovating certain basement areas.

Much to the regret of all who know her, Mrs. Eileen Neuberger retired as head of the Circulation Department on July 1, 1953. She was the second of the AIP staff in seniority of employment, having completed more than 21 years of service, and merits a special word of appreciation and commendation. She is continuing, as a part-time employee, to make her competence and experience valuable to the Institute.

It is timely to note that the Governing Board has now grown to twenty members from the original fifteen. This has resulted partly from the addition, in 1948, of three members-at-large elected by ballot of the whole membership and partly by additional representation from two Member Societies. The American Association of Physics Teachers and the Optical Society of America have passed the 2000 member mark so are entitled each to have four instead of three Board members.

Reflecting the enlargement of the Board, the Executive Committee was, in 1953, increased from five to seven. Since the affairs of the Institute must largely be left by the Board to this smaller and more frequently

convened group, the increase in its size is a safeguard that all points of view will be represented.

The Institute's financial condition at December 31, 1953, is shown on the accompanying Balance Sheet. Cash on hand at the end of the year was less by roughly \$50 000.00 than at the end of 1952. On January 14, 1953, upon instructions from the Finance Committee, the Institute purchased \$50 000 United States Two Per Cent Treasury Certificates due August 15, 1953. At the maturity date the Treasury offered to exchange on a par for par basis these certificates for 25% percent certificates maturing August 15, 1954. This exchange was made and is reflected by the item "Investments" on the balance sheet which shows an increase over the 1952 figure of such amount.

Accounts receivable from Member Societies reflect the unpaid portions of expenses incurred in publishing the Societies' journals and for miscellaneous services performed for them during 1953 but not billed until 1954. Accounts payable to Member Societies show the net amounts due to those Societies for the collection of dues on their behalf less expenses for publication and miscellaneous services. These amounts are normal for this time of year.

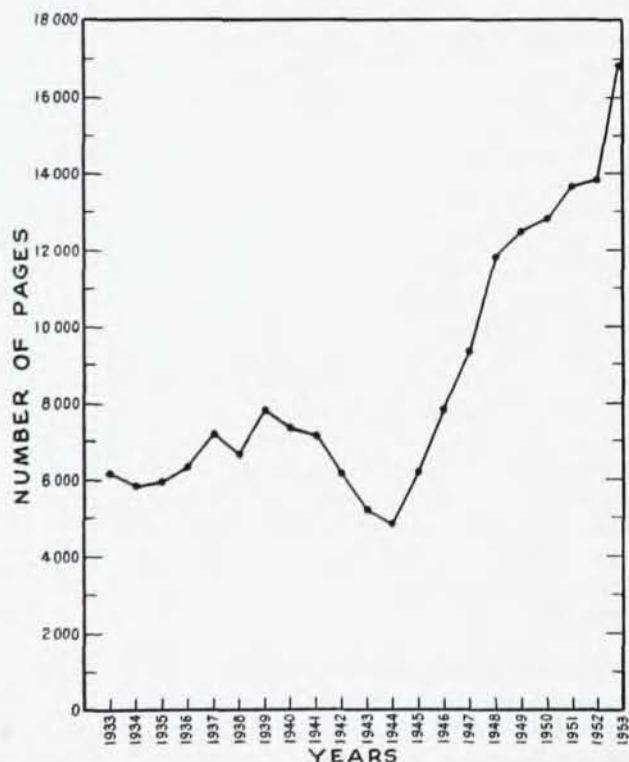
The Institute's Surplus, a cushion equal in amount to several months' expenditures, was increased by \$15 784.64. This is the net result of the following steps: (1) Return of \$35 000 reserved for general circulation of *Physics Today* which did not have to be used, (2) receipt of an anonymous donation of \$5 000 for air conditioning south offices, (3) transfer of \$22 500 to reserve for building improvements, and (4) deduction to cover the operating loss of \$1 625.36.

The accompanying Summary Statement of Income and Expense for the year ended December 31, 1953, shows, in the second column, the operations for which the Institute is itself financially responsible and, in the third column, those for which it is agent to the Societies and for which they are financially responsible.

Subscription income showed a slight increase over 1952 which was not significant. Income from publication charges and sales of reprints showed an increase of approximately 54 percent. Several factors contributed to this increase: (1) the large increase in the number of pages published, (2) a full year's experience for the *Physical Review* and *The Journal of Chemical Physics* with a \$15.00 per page charge, and (3) the revised schedule of reprint prices which was effective for approximately half the year. The post-war boom in the back number sales has slackened as was anticipated, income from this source being off 30% from the abnormal year 1952.

In general, expenses increased during 1953. Printing costs reflected for the entire year the 5 percent increase in price scale which became effective with the November 1952 issues, plus an additional 2 percent effective with the October 1953 issues.

The Institute's gratitude is due for the services of the following members of the Governing Board who now retire after serving for the periods indicated:



Number of pages published in the journals handled by the American Institute of Physics. *Physics Today* is included for the first time in the 1948 totals.

G. J. Dienes	1952-54
George R. Harrison	1940-42; 1947-54
Frederick V. Hunt	1951-54
I. I. Rabi	1951-54
Duane Roller	1951-54

The Institute now welcomes, to membership on the Board, Messrs: Robert F. Bacher, W. H. Markwood, Jr., Harry F. Olson, Eric Rodgers, and Ralph A. Sawyer.

The retirement of Dr. Harrison from the Board and from the Chairmanship is particularly regretted by the Board, the staff, and all who know him. His was the difficult task of guiding the Institute through the years of post-war adjustment. In these years, the Institute tripled its publishing work and overcame a two-fold increase in printing and other costs. The Federal Government and many public and private institutions increased their dependence on the Institute's advice, cooperation, and special services. Even the freedom of science and the integrity of scientists had on occasion to be defended during this period. In all these respects the wise and effective words and actions of Chairman Harrison gave strength and direction to the Institute and to everyone who joined with him in furthering the Institute's objectives on behalf of physics.

Respectfully submitted,
Henry A. Barton
Director

AMERICAN INSTITUTE OF PHYSICS, INC.

Balance Sheet, December 31, 1953

Assets

Current Assets:			
Cash in commercial accounts	\$145 955.62		
Cash in savings banks	41 526.92		
Petty cash funds	650.00		
Investments:			
U. S. Government securities	\$151 597.86		
Other securities—nominal value	1.00	151 598.86	
Due from member societies:			
American Physical Society	12 272.15		
Optical Society of America	5 453.42		
Acoustical Society of America	2 420.17	20 145.74	
Accounts receivable:			
Publication charges	\$ 28 920.70		
Reprints	10 324.14		
Advertising	11 989.89		
Employees	423.06		
Miscellaneous	3 020.12	54 677.91	\$414 555.05
Fixed Assets:			
Land and building—nominal value	\$ 1.00		
Furniture and fixtures—nominal value	1.00		2.00
Deferred charges:			
Engraving costs applicable to 1954 issue	\$ 7 731.49		
Contribution to employees retirement plan applicable to 1954	7 533.78		
Fire insurance premium	2 025.00		
Expenditures in re Physics Handbook	2 335.72	19 625.99	
			<u>\$434 183.04</u>

Liabilities and Capital

Current Liabilities:			
Trade accounts payable	\$ 85 731.75		
Commissions payable—advertising	2 032.96		
Due to member societies:			
American Association of Physics Teachers	\$ 4 324.44		
Society of Rheology	1 048.64	5 373.08	
Sundry creditors		10 563.37	\$103 701.16
Reserves:			
Building repairs and improvements	\$ 18 532.51		
Furniture and fixtures	506.07		19 038.58
Deferred credits:			
Subscriptions for future years	131 098.38		
Dues for 1954	394.14		
Receipts in re Instrument Society International Exhibit applicable to 1954	3 369.66	134 862.18	
Surplus			176 581.12
			<u>\$434 183.04</u>

AMERICAN INSTITUTE OF PHYSICS, INC.

Summary Statement of Operations

Including Activities Carried on for Account of Member Societies

Year Ended December 31, 1953

	Total	American Institute of Physics, Inc.	For Account of Member Societies
Income:			
Subscriptions to journals	\$326 521.30	\$170 507.58	\$156 013.72
Publication charges and reprint sales	182 217.76	56 476.67	125 741.09
Back number sales	42 642.20	17 727.75	24 914.45
Advertising	125 651.07	114 533.28	11 117.79
Special projects	10 916.28	10 916.28	—
Contributions from member societies	21 524.67	21 524.67	—
Dues from associates and sustaining members and corporations	6 200.88	6 200.88	—
Receipts for account of member societies	146 606.54	—	146 606.54
Miscellaneous income	1 166.46	1 166.46	—
Income from investments	4 378.04	4 378.04	—
Total income	\$867 825.20	\$403 431.61	\$464 393.59
Expenses:			
Printing, engravings, and mailing of journals	\$498 221.64	\$184 124.66	\$314 096.98
Printing and mailing of reprints	37 324.41	13 285.12	24 039.29
Handling publication charges and reprint sales	11 710.38	4 479.73	7 230.65
Back number handling and distribution	13 379.58	5 835.00	7 544.58
Advertising printing, distribution, and sales	64 335.32	55 805.53	8 529.79
Administrative and organizational services	56 809.29	56 809.29	—
Editorial and editorial mechanics	76 675.35	52 697.15	23 978.20
Circulation handling	42 173.76	22 543.97	19 629.79
Special projects	9 476.52	9 476.52	—
Disbursements for account of member societies	8 437.58	—	8 437.58
Total expense	\$818 543.83	\$405 056.97	\$413 486.86
Net paid to societies to balance accounts	50 906.73	—	50 906.73
	<u>\$869 450.56</u>	<u>\$405 056.97</u>	<u>\$464 393.59</u>
Net expense	\$ 1 625.36	\$ 1 625.36	—