Physical Technical Institute, Sergei Vernov, chief of the Physical Institute of the Academy of Science, and Mikhail Lavrentiev, all of whom received first prize awards, and Giorgi Grinberg, Leonid Kantorovich, and Ivan Khvostikov.

SIGMA XI

Three scientists of the Washington, D. C. area have been elected to honorary membership in the Society of Sigma Xi, national honorary scientific fraternity. They are George A. Ellinger and Robert Simha, both of the National Bureau of Standards, and Charles S. Piggot, consultant to the Research and Development Board of the National Defense Establishment.

Two Union College physics instructors, James Nicol and Jerome M. Rehr, have been elected to associate membership in Sigma Xi, national honorary scientific society, according to an announcement by the Union College chapter of the society.

IRE

The Institute of Radio Engineers recently presented its Fellow Award to John N. Dyer, supervisor of radar and air navigation research and development for Airborne Instruments Laboratory, Mineola, L. I., for administrative and technical contributions to radio, including polar expedition communications, and important wartime radio counter-measures.

GEOPHYSICAL OBSERVATORY

Henry G. Booker, professor of electrical engineering at Cornell University, has been elected Honorary Fellow of the Geophysical Observatory, University of Alaska. The citation was made in recognition of his contributions to basic knowledge in the field of geophysics by his work on electromagnetic wave propagation in the upper atmosphere and by his work on microwave propagation.

CHAMBER OF COMMERCE

Harold Lyons, chief of the microwave standards laboratory of the National Bureau of Standards, has received the Arthur S. Flemming Award, presented by the Washington Junior Chamber of Commerce, for outstanding government service.

IRVING S. LOWEN

Irving S. Lowen, 38, associate professor of physics, who was at Washington Square College of Arts and Science of New York University for fifteen years, died on April 23 after an illness of six weeks. He was a research associate with the Manhattan Project. He achieved distinction for his work on cosmic rays and quantum theory of radiation. He directed a cosmic ray project under the auspices of the ONR at New York University.

HARRY M. DAVIS

Harry M. Davis, 38, science editor of Newsweek magazine was drowned in the Gulf of Mexico on May 16th. A student of engineering and physics, Mr. Davis was later a Nieman Fellow and, before serving in the Signal Corps during the war, was a Sunday feature and science writer for the New York Times.

INSTITUTE DOINGS

For several years the annual reports to the members of the American Institute of Physics have begun by reviewing the general position of physics in America. Principal postwar adjustments appear to have been made by 1948 and the report for the year just past, presented at the March meeting of the Governing Board, was devoted entirely to the functioning of the American Institute of Physics. I shall summarize it here, taking rather more than my usual space to present the more important information it carries. Members of the American Institute of Physics who wish the complete reports may have them for the asking.

Any comprehensive discussion of the Institute falls naturally into three parts. The first deals with the Institute as an agency for general service and cooperation. The second deals with the Institute as a joint publishing house. The third deals with the financial aspects of the first two.

GENERAL SERVICE

It is an important part of the director's duties to follow closely the affairs, problems, and aspirations of the member societies, to encourage each to consider the interests of the others, and to provide the general community of information and reasoning which is essential as a foundation for agreement. By this process the societies are somewhat guided by each other, and the Institute is automatically guided by all. The Institute also represents the societies in external relationships and obligations with many other organizations. In this there is, in addition to the value of such service, a great saving to the societies in officer-time and expense.

Direct service to physicists and their societies includes the maintenance and administration of the joint "publishing house" and associated problems which will be treated further below. In addition there is the maintenance of associates (company memberships) partly for support of the journals; and there is the development of considerable continuing income from sources other than the societies for publishing and other operations. The amount currently received is in addition to, and also greater than, the total of dues paid by all members of all five member societies.

The Institute, because of its broad representation, is in a favorable position to solicit grants for special projects. It also promotes membership in the societies and nonmember subscriptions to the journals, handles a large volume of general mail, provides legal and public relations counsel, a placement service, and maintains a headquarters building for the economical housing of Institute and society activities. It is a tangible center of adherence and a symbol of unity and strength.

The Institute exists also to help honor the obligation of physics to the community and the general culture. In many important respects the objectives and obligations of

physics are identical with those of other fields of science and the Institute is specifically associated with the National Research Council's Division of Mathematical and Physical Sciences as the best avenue for cooperation with other sciences.

Through this association the Institute takes part in and helps direct pre-doctoral and post-doctoral fellowship programs of the N.R.C., currently providing several hundred thousand dollars per year, and enters into a general day-to-day advisory relationship of science to government. Steps are taken to expedite projects in various fields including calculating machines, mathematical tables, various aspects of the atomic nucleus, the solid state, and the fundamental physical constants; also participation of the United States in international organizations, including the International Union of Pure and Applied Physics and UNESCO.

The Institute is also concerned with a project of the N.R.C. to determine what fraction of the whole population in America could, under ideal conditions, be trained to competence for advanced professional work. Early results indicate that it will not be possible to more than double the number of professional workers now available. If this is true, existing national plans for improvement of education, research, and medical care can scarcely be manned. Public realization of this shortage might result in better attention to able students, more scholarship help at all levels, more appropriate training of intellectually able men in the interests of national security, better methods of recruiting and employing professional persons for industry, education and government and an up-grading of the facilities and rewards for professional work. A valuable by-product of this study will be better methods of determining special capacity—useful in awarding fellowships, making appointments, and otherwise.

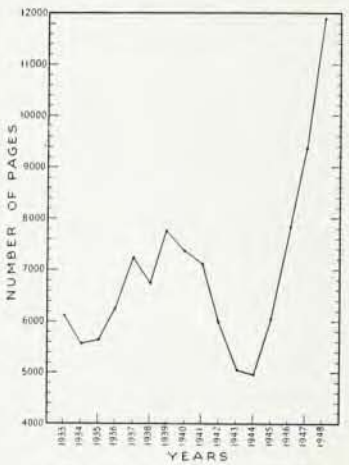
Although time and money are lacking for many projects, an attempt at the progressive improvement of the Institute's services is being made by such projects as a study of physics abstracting, of alternatives to the systems of accrediting as employed in other fields, the holding of special symposia (seven large ones in recent years), encouragement of book publication, the preparation of vocational guidance information, possibility of establishing a library of foreign physics literature in the Institute building, study of method of stimulating physics students to affiliate, and an attempt to develop a more adequate basis of financial support for research journals.

Some of the cooperative services and developmental projects referred to in this and earlier annual reports were begun as a part of the Policy Committee's program. Most pertinent, however, has been the reorganization of the Institute reported in a special memorandum to the members on February 14, 1947. This included the amendment of the by-laws to provide that members of the member Societies would also be members of the Institute as a whole, and to establish a grade of associate membership in the Institute. As an essential factor in achieving the purposes of the reorganization and as a needed service to physicists, the new journal Physics Today was developed and established under the supervision of the Policy Committee.

In 1948 the three year grant by the Rockefeller Foundation of $29,300 to support the activities of the Policy Committee guiding the Institute and the profession in its post-war adjustment came to an end. The Policy Committee, having successfully carried the Institute through these transitions and developments, was disbanded.

PUBLISHING HOUSE

The graph shows the tremendous increase in the volume of publication; there was an increase of twenty-seven percent in 1948 over 1947. In addition to the 11,900 pages published in one hundred issues of all journals published by the Institute, ten bulletins and one directory were issued. The year 1949 is expected to show a continuation of this trend.



Number of pages published.

The maintenance and administration of the joint "publishing house" function of the Institute involves not only the physical duties of producing the journals but the necessary exercise of foresight and the taking of emergency measures as necessary to provide for the publication of research results. In this line the Institute has already developed the per page publication charge system, secured a grant to cushion loss of foreign subscription income when the war started, and introduced a number of publishing economies.

The increased cost of printing has been very serious and in 1948 the Institute undertook a survey of printing costs. A committee appointed in November conducted a thorough survey of comparative costs of every aspect of the problem. Briefly, they reported that except for certain economies made possible by sacrificing quality of paper and appearance, the methods of publication and printing presently in effect are about as economical as can be obtained, all things considered. The committee recommended economy measures for an anticipated overall saving of approximately $20,000 per year for all the journals. The major steps to effect this are to reduce the

Continued on page 38

DOINGS *Continued from page 30*

grade of paper used from coated stock to the lighter, cheaper, 45-pound English finish, and increase the amount of material which can be carried on any one page by using a narrower type, less space between lines, and wider and longer columns. These economy measures have been adopted for the Institute owned journals (with the exception of Physics Today) and these recommendations have been forwarded to the member societies.

Economy is but one way of meeting rising costs; developing a more adequate basis of financial support for the journals is another, and among the things which can be reported at this time is the growth in advertising income. A surprisingly good volume of sales in consideration of the amount of sales effort expended, was effected throughout the years. Greater effort was needed and the Institute was faced with additional expense, if it increased its advertising staff, until the fruit of this effort could be harvested. Richard Rimbach Associates were engaged as sales representatives to service all advertisers in Institute publications in an agreement in which the usual terms of twenty-five percent of current gross advertising income was modified so that commission will not be earned until the minimum net advertising income to the Institute shall have exceeded a specified amount in excess of net advertising income for 1948. The Institute has already benefited from these arrangements although results will not be fully apparent for another year.

Building up Physics Today both as an advertising medium and in circulation to outside readers, has been somewhat slower than had been hoped. Circulation promotion effort was somewhat limited, a total of twenty-one lists were tested or used for direct mail solicitation with four mailings totaling approximately twenty-four thousand pieces bringing in slightly under one thousand five hundred subscriptions by the end of the year. This is about a six percent return which compares very favorably with the commercial standard which considers a three percent return for direct mail advertising as profitable. The cost of the promotion was more than paid for by this return.

FINANCES

The operating statements appended hereto show a net income of $4,929.04 for the year ended December 31, 1948. This result compares favorably with the budgeted deficit of $3,410.00. As the total gross income of the Institute amounted to $225,000.00 and the total expenses to $220,000.00, a 2% change in one, together with 2% change in the opposite direction of the other, would result in a variation from the budget estimates of over $8000.00. The variation for 1948 was in the right direction.

While the appended statements reflect only the financial results of those activities which are the responsibility of the Institute alone, it is interesting to note the continued growth of all of the Institute's work including those activities carried on for account of its member societies. Following is a summary comparison for the past three years of the most important items.

Unit Volume	*1946*	*1947*	*1948*
Number of journal pages published	7,123	8,558	10,856
Number of subscriptions—including membership subscriptions	27,350	31,088	46,291
Number of back number orders	6,213	6,572	6,419
Number of reprint orders	1,340	2,212	2,792
Number of advertising pages	757	832	1,044

Dollar Volume	*1946*	*1947*	*1948*
Cost to publish journals	$149,020.00	$217,161.00	$315,294.00
Subscription Income	121,453.00	140,342.00	174,351.00
Back Number Sales	55,400.00	44,821.00	48,811.00
Publication charges and Reprint Sales	23,003.00	39,838.00	51,235.00
Advertising Sales	35,608.00	37,051.00	56,417.00

The Institute faces a substantial deficit in its operations for 1949. This is due mainly to the fact that Physics Today, which is sent to all members without additional charge, is being financed from Institute funds now that the fund with which it was started has been expended. This cost to the Institute, per member, is less than the non-member subscription rate.

The higher printing costs (16% to 20%) which became effective November 1, 1948 are another adverse factor. There is also a strong possibility that certain contemplated legislation with respect to Social Security taxes and higher second class mail rates will become effective in 1949, both of which would add substantially to our expenses.

The Institute has, over a period of years, managed to accumulate a surplus of $87,840.88, as shown by the Balance Sheet. In view of the expected deficit for 1949 and considering the size of the Institute's operations this surplus is none too large.

The cost of performing the general direct and cooperative services of the Institute is included in the total expense for general operations, $41,770, shown in the financial tables reproduced below. Also included in this figure are the costs of "having and administering" the Institute, that is the expenses of board and executive committee meetings, the preparation and circulation of minutes, notices, etc., and of balloting the whole membership for the election of a governing board member. This was about $5,500. Also in 1948 the salary and expenses of the new office of general manager were largely included under general operations pending the gaining of experience as a guide to the more accurate analysis of this expense.

It is fair to say therefore that the services and cooperations discussed above actually cost the Institute less than $30,000. These activities are financed in part by the member societies which pay the Institute fifteen percent of the dues they collect from their members. These supporting payments in 1948 totaled $14,063. It is believed that the minimum unavoidable tasks and obligations which, in the absence of the Institute, would fall on the societies, would require of them a greater expenditure than this.

The conclusion seems to be well supported that the Institute is carrying out the tasks assigned it originally by the societies, that the cost to the societies is low, that this cost actually is less than the cost of effort it replaces and that, in addition, the Institute brings in relatively large amounts of income for the publishing and other purposes of the physics organization.

HENRY A. BARTON

American Institute of Physics, Inc.
Statement of Budget Operations
Summary

	Budget 1948	*Actual 1948*
General Operations	— $15,400	— $14,213
Building Maintenance	— 5,100	— 4,844
Advertising Department	22,500	21,634
Physics Today	— 2,950	— 3,954
Review of Scientific Instruments	— 1.000	1,804
Journal of Chemical Physics	— 100	2,197
Journal of Applied Physics	640	2,305
Contingency	— 1,000	—
Moving	— 1,000	—
	— $ 3,410	$ 4,929

General Operations

Income		
Support from Societies	$14,150	$14,063
Associate & Sustaining Members Dues	200	304
Associates—(Corporation) Dues	8,850	8,950
Income Investments	2,000	1,852
Miscellaneous	650	2,388
Total Income	$25,850	$27,557
Expenses		
General Purposes:		
Salaries	$24,000	$23,588
Travel	3,000	3,260
Office Expense	2,500	2,973
Building Maintenance	1,650	1,650
Insurance, Legal auditing	500	490
Miscellaneous	650	406
Placement Service	2,500	2,465
Public Relations	1,750	1,617
Special Projects	—	594
Retirement Plan	2,000	1,900
Furniture, Equipment and Repairs	2,700	2,827
Total Expense	$41,250	$41,770
Net Expense	— $15,400	— $14,213

Advertising Department

Income	$50,000	$50,047
Expense	27,500	28,413
Net Income	$22,500	$21,634

Review of Scientific Instruments

Income		
Subscriptions	$31,000	$30,392
Other Income Net	5,000	6,794
	36,000	37,186
Expense	37,000	35,382
Net Expense	— $ 1,000	$ 1,804
Page Budget	1,000	974
Cost Per Page	$ 37	$ 36.30

Journal of Chemical Physics

Subscriptions	$21,000	$20,880
Other Income Net	6,500	7,708
	27,500	28,588
Expense	27,600	26,391
Net Expense	— $ 100	$ 2,197
Page Budget	1,200	1,252
Cost Per Page	$ 23	$ 21

Journal of Applied Physics

Subscriptions	$38,000	$38,374
All Other	5,000	6,103
	43,000	44,477
Expense	42,360	42,172
Net Income	$ 640	$ 2,305
Page Budget	1,200	1,232
Cost Per Page	$ 35.30	$ 34.20

	Budget 1948	*Actual 1948*
Physics Today		
Expenses		
Editorial and Management:		
Salaries	$12,500	$13,304
Office Expenses	2,500	1,837
Travel	500	266
Honoraria	1,600	1,310
Miscellaneous	500	174
Printing & Mailing—360 pages	12,000	11,765
Art Work and Engraving	1,800	2,348
Promotion—Circulation / Advertising	3,950	3,897
Subscription Fulfillment	1,000	981
Total Expense	$36,350	$35,882
Income		
Subscriptions	3,000	2,447
Advertising—Net	5,000	3,804
Back Numbers & Reprints	—	283
Total Income	$ 8,000	$ 6,534
Net Expense	— $28,350	— $29,348
Contributions—Physics Today Fund	25,400	25,394
Net Expense to AIP	— $ 2,950	— $ 3,954
Building Department		
Salaries	$ 5,200	$ 4,814
Heat and Electric	3,600	3,837
Other	1,650	1,543
Total	$10,450	$10,194
Charged to Departments	5,350	5,350
Net Expense	— $ 5,100	— $ 4,844

American Institute of Physics, Inc.
Balance Sheet
As at December 31, 1948

Assets			
Current Assets:			
Cash in Banks		$ 82,733.96	
Petty Cash Funds		863.25	
Securities			
U. S. Government (at market or less)	$100,022.11		
Other—Nominal value	1.00	100,023.11	
Due—from Societies:			
American Physical Society	12,351.93		
Optical Society of America	2,899.84	15,251.77	
Sundry Debtors		23,665.79	
			$222,537.88
Fixed Assets:			
Land and Building—nominal value		1.00	
Furniture and Fixtures—nominal value		1.00	2.00
Deferred charges			6,928.71
			$229,468.59
Liabilities and Surplus			
Current Liabilities:			
Trade Accounts payable		$ 36,232.94	
Due to Societies:			
Acoustical Society of America	$4,219.34		
Amer. Assn. of Physics Teachers	7,067.47	11,286.81	
Sundry Creditors		4,095.44	$ 51,615.19
Reserve for building repairs and improvements			9,703.22
Deferred Credits:			
Subscriptions for 1949		78,767.30	
Dues—Associates for 1949		1,542.00	80,309.30
Surplus			87,840.88
			$229,468.59