



FIRST EDITOR, David A. Katcher, was largely responsible for name, content and format.

Historians should find this an impressive list.

From the first issue the contents included news of physicists, their meetings and activities and other news of interest to physicists: honors, fellowships, laboratories, calendar of events, book reviews, obituaries. For a while there was a "Washington Letter" by Merriam H. Trytten. Digests of notable journal articles were begun at once. For a few months an attempt was made to cover physics news abroad. Nevill F. Mott, Edoardo Amaldi and Cornelius J. Gorter, among others, contributed. Colorful features included "Take Away Your Billion Dollars," words and music by Arthur Roberts; "Physics of Chimneys," Paul Achenbach; "Food Physics," Thomas M. Rector and A. Cornwall Shuman and "Physics in the USSR," a translation of a speech by D. N. Nasledov

printed in *Leningrad Pravda*, 2 June 1950.

In late 1949 David Katcher's resignation as editor was accepted with regret. Fortunately he had acquired, as assistant to the editor, Robert R. Davis, who had been editor of the postwar "Technical Series" produced at Los Alamos. Davis was now made managing editor under Harnwell as editorial director. He got along so well that Harnwell was able gradually to reduce his participation until, in July 1953, Davis became editor.

By this time manuscripts had become a little easier to pull than teeth, and some even were volunteered. An editor's job never becomes easier for any cause, however. *PHYSICS TODAY* operated for years on a shoestring and with an almost incredibly small editorial staff. This may or may not have loaded the editor more, but I observed great concentration, hard and painstaking work, long and usually late hours, expectedly hectic deadline crises and much need for sandwiches and coffee. (Often the coffee was forgotten after it was brought in. I recall once seeing three coffee cartons at different stages of asymptotic approach to room temperature!) Physicists owe Bob Davis a great debt of gratitude.

A rough road

The early financial road of *PHYSICS TODAY* was really rough. First the journal was sent gratis to all members of the five founder societies. In 1950 money became too tight for this free

circulation. Certain, but not all, of the societies then generously bought their members group subscriptions (half price), and many individual subscribers paid \$4. In 1951 group subscriptions were abandoned, and the price to individuals who were members was set at \$3.50.

These plans of 1950 and 1951-52 did little to help circulation, encourage the avidity of advertisers or otherwise improve finances. Moreover the main aim of having a medium going to all members was lost, and no one was happy. Fortunately by 1953 the overall finances of the institute had improved, and it became at last possible to start the since unbroken policy of sending *PHYSICS TODAY* to all members without cost to either them or their societies. As it became evident that this policy was firm and enduring, advertising support grew by leaps and bounds. The circulation became the largest of any physics journal in the world.

At the end of one decade *PHYSICS TODAY* was well established as a useful and informative service for physicists throughout America and many other parts of the world. Through publication of official reports and other news of the societies and the institute, it has focused the general attention of physicists on the affairs of the physics organization to a very desirable extent. It has helped much to foster a community of interest and to direct effectively coordinated efforts toward the advancement of our science. It should now continue increasingly to do so. □



TWENTY YEARS OF PHYSICS TODAY

THE RECENT YEARS

By ELMER HUTCHISSON

WHEN AT THE suggestion of the editors, Henry A. Barton and I each agreed to contribute a brief article for this 20th-anniversary issue of *PHYSICS TODAY*, we found it quite natural to divide the subject matter by decades since Barton was director of the American Institute of Physics during the

first decade of *PHYSICS TODAY* and I was director for more than two thirds of the second decade. We were asked to look back over the issues for these years and, if appropriate, relate the development of *PHYSICS TODAY* to that of AIP. We probably would have followed this suggestion instinctively

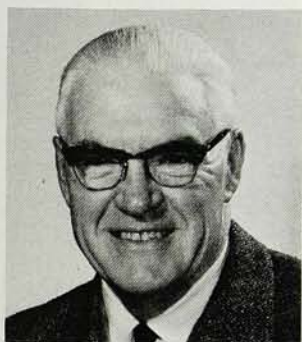
since from the beginning the basic role of *PHYSICS TODAY* has been to further the objectives set for AIP itself. Also, since the *PHYSICS TODAY* budget is an integral part of the AIP budget, financial support of the magazine is inextricably tied to that of AIP. However, since we are helping to celebrate

an anniversary, it seems more fitting, at least in discussing the second decade of *PHYSICS TODAY*, to put primary emphasis on the magazine as an entity in itself. It is only at the end, in envisaging future opportunities, that I will speak briefly about the role of *PHYSICS TODAY* in the development of AIP.

I first became intimately acquainted with *PHYSICS TODAY* when in July 1957, I was appointed AIP director. Previously, even though I had published infrequently in it, like most physicists I took it very much for granted and read it only casually since it came automatically with membership in one or more of the AIP member societies. I doubt that one can take it so casually today. It has become too much a part of the communication pattern of physicists and, having the largest circulation of any physics journal in the world, it provides a principal avenue of informal communication between American physicists and those of other countries.

The Davis days

In 1958 *PHYSICS TODAY* was much slimmer than it is today. It averaged about 64 pages a month with more than half of the pages devoted to advertising. It had what the printers call a "self-cover," which meant that the cover was printed along with and on the same paper stock as the inside pages. As a result, it was also very flimsy and often, after going through our gentle US mail service, appeared as though the family dog had used it in a tug-of-war with the neighbor's cat. There was, of course, a good rea-



Elmer Hutchisson, former director of the AIP, is now at Stanford University writing a history of a decade at AIP. He has degrees from Minnesota, MIT and Case, where he also was professor, head of the department, dean and acting president. Among his honors is a Presidential Certificate of Merit.



1957 STAFF had grown to five persons. From left: Jacqueline Mirken, Robert R. Davis, chief editor, Toni Harrison (secretary), Heka Davis, Sol Ehrlich, art director.

son for this slim size and flimsy appearance. In spite of substantial advertising, the net cost of the text pages in *PHYSICS TODAY* exceeded the advertising income by over \$7000 in 1957 and by more than \$15 000 in 1958. Economy had to be the watch word.

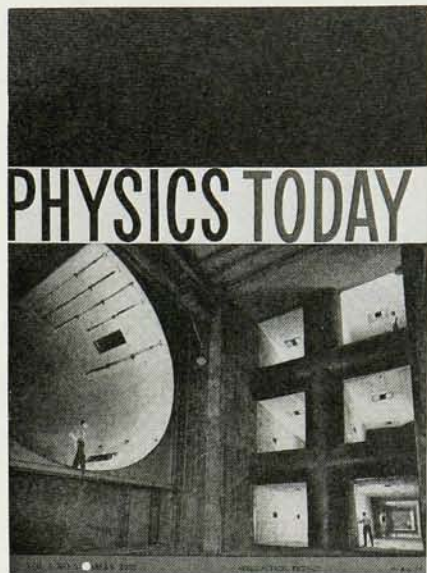
Economy had long been felt in the *PHYSICS TODAY* staff. The entire editorial staff consisted of Robert R. Davis and his wife Regula (more familiarly known among physicists as "Heka") plus an editorial assistant and a few hours a month of part-time consulting service from Sol Ehrlich, a professional artist. As I in my job became better acquainted with the AIP staff, I learned that in Bob Davis we had no ordinary editor. Here was a person with very little physics background who had an uncanny appreciation of what was significant in physics research and of who at the moment were the real leaders in physics. Combined with this ability to sense the truly important advances was Bob's unyielding insistence upon direct, clear and informative writing. Bob and Heka read and blue-penciled every piece that went into *PHYSICS TODAY*. What was not written to their standards they sent back to the authors with suggestions for revision. Many authors accepted Bob's suggested revisions quite reluctantly, but later, when colleagues complimented them on their improved writing skills, they thanked Bob pro-

fusely for his help. Bob's care and attention to detail required many hours of work, and he and Heka were often at the institute long after midnight when the deadline for an issue approached.

Thus, as I now look back at the 1958 issues of *PHYSICS TODAY*, I appreciate again the devotion and rather remarkable accomplishment of our small staff in producing such an informative and attractive magazine. Many features of these early 1958 issues have remained until the present time. Book reviews were and continue to be both critical and authoritative, and excellent coverage has been maintained. News about physicists and their doings was and continues to be timely, concise and interestingly written. High standards for completeness were set for a monthly calendar of national and international physics meetings.

Need for reviews

I am, however, reminded of one difficulty that Bob Davis and his small staff had; that was in getting good review articles. In the months following the launching on 4 Oct. 1958 of Sputnik I, tremendous demands were being made on physicists to develop new programs and assist in governmental projects. Few physicists skilled in writing were able to spare the time to write such review articles as were needed for the broad readership of



PHYSICS TODAY. Bob Davis noticed, however, that a large number of topical conferences were springing up both in this country and abroad to facilitate the informal exchange of ideas in rapidly advancing areas of physics. Bob found that many of the top-flight physicists who were attending these conferences were willing to report on them in **PHYSICS TODAY**. Since such reports did give a reasonably complete picture of the "state of the art" at the time published, they began to a large extent to replace specially written review articles. As the number of conference reports began to multiply over the next two years, however, many physicists became alarmed. They were particularly concerned because, as a result of the rapid growth in AIP Student Sections, **PHYSICS TODAY** was by then going to a large number of students for whom the conference reports, which lacked the tutorial quality of good review articles, were quite unsuitable.

Costs and advertising

Before recalling further this growing uneasiness of certain physicists, I should mention other important effects that the great upsurge in interest in physics produced after the Sputnik I launching. The number of scientists calling themselves physicists and the membership in AIP member societies began to grow rapidly; correspondingly, since **PHYSICS TODAY** went to each member, the circulation also grew rapidly. Furthermore, the government began to pour considerable money into physics research and physicists found themselves responsible for

spending what was, for them, exceedingly large sums of money. By far the best advertising medium to reach these physicists was **PHYSICS TODAY**. Hence the demand for advertising space went up, and also, because of the larger circulation, considerably larger advertising rates became justified. Thus, within three years, the net advertising income from **PHYSICS TODAY** more than doubled and continued almost to double again in the following three years.

Advertising income has affected publication of **PHYSICS TODAY** but probably not as most people think. From the time of its founding, AIP has followed a policy of treating advertising income as part of its general funds and using these funds to support all activities specified in the AIP constitution. Originally all advertising was carried in a single journal, the *Review of Scientific Instruments*. Later, when we established the *Journal of Applied Physics*, with advertising, in 1937 and when **PHYSICS TODAY** was established in 1948, the same policy was followed. Advertising income contributed to the support of all activities specified by the AIP constitution, many of which, although of great value, have no way to generate their own support.

Meanwhile the editorial budget has always been treated as the cost of performing a service to members, and the magazine was supposed to be worth what it cost—between \$3 and \$5 per member per year. You can easily imagine that this policy of not allocating **PHYSICS TODAY** advertising income exclusively to the magazine was not always well liked by the editor, particularly when the net advertising income became substantial.

Not that the budget was static. As the service improved, per-capita cost was allowed to rise. Since membership lists were also increasing, total production costs for text pages doubled in a three-year period and have more than doubled again since.

A critical evaluation

With a view to ensuring that the service was as good as it could be, the AIP governing board in September 1962 created an ad-hoc committee to study **PHYSICS TODAY**. By this time the already mentioned discontent of many physicists with the large number of conference reports and the

desire to serve better the growing number of students in AIP Student Sections led the board to ask the committee to report on how **PHYSICS TODAY** could best implement its original objectives.

This committee, chaired by William W. Havens Jr, reaffirmed in 1963 the basic purposes of **PHYSICS TODAY**, which were restated as follows:

- to foster unity among physicists and their societies (a) by providing full news coverage of physics activities and (b) by encouraging full expression of individual views on all subjects of concern to physics

- to foster a broader understanding of the contributions and implications of physics (a) by dealing with relations of physics to government and society, (b) by carrying general news stories about physics and related sciences and (c) by publishing readable articles of general interest to physicists of all specialties.

The committee recognized fully the outstanding contribution that Davis was making as editor of **PHYSICS TODAY** with a limited staff. But it suggested that more advanced planning was necessary and that more vigorous solicitation of readable review articles should be undertaken. To assist in this effort the committee recommended the reconstitution of the editorial advisory board with meetings of the board at least twice a year and more active participation of the members in the selection, procurement and review of appropriate articles. The committee also recommended the appointment of an associate editor who could relieve the editor of some of his



growing responsibility and substitute for him in an emergency. (It should be mentioned that in the spring of 1961 Regula Davis had left AIP to become an assistant editor of *International Science and Technology*.)

In accordance with the ad-hoc-committee recommendation the editorial advisory board was reconstituted with Stanley S. Ballard as chairman. The committee became more active and made many useful suggestions to the editor. With the encouragement of the editorial advisory board and a constantly increasing budget, Davis was able to begin a much more active solicitation program, and a marked improvement in the review articles as well as in the general attractiveness and tone of the journal became apparent.

Growth and improvement

The improvements are particularly noticeable in the late 1963 and 1964 issues. During these years issues averaged 128 pages, twice as many as in 1958. A heavier paper stock began to be used for the cover thus making a much more attractive and substantial magazine. In 1964 a larger page format was adopted primarily to permit the use of standard advertising plates; incidentally the change also permitted the use of three columns in many of the special sections of the journal. Illustrations could be larger and more readily adapted to the text in the new format. Reviews, broadly covering the field of physics, included articles on nuclear structure, elementary particles, fusion, crystallography, lasers, superconducting magnets, plasmas, ultrasonics, luminescence. There were many papers on physics and society, including research in underdeveloped countries, information centers, the plight of the four-year colleges, problems of physics education and the need for continued support of basic research. The list of authors included such familiar names as Geoffrey Chew, Murray Gell-Mann, Donald Hornig, Frederick Seitz, John Van Vleck, Victor Weisskopf, Eugene Wigner.

As *PHYSICS TODAY* became larger and broadened its coverage, a much larger staff became necessary. The job of editor gradually became one also of administrator. This trend disturbed Bob Davis, who at the end of 1965 decided to give up the editorship. His decision to leave AIP after 17

years of devoted service was accepted reluctantly by the late Van Zandt Williams, who was then director of AIP and by the editorial advisory board, then chaired by Elizabeth A. Wood (*PHYSICS TODAY*, December 1965, page 17). R. Hobart Ellis Jr, who had served previously as managing editor of *Nucleonics* and editor of *Nuclear Fusion* and who had joined the *PHYSICS TODAY* staff in 1965, was appointed editor effective with the January 1966 issue.

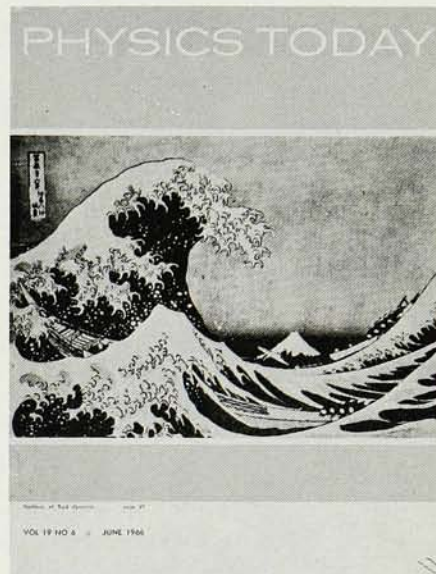
Present and future

The 1966 and 1967 issues show continued improvement. They are thicker, and covers stand up well in spite of the even greater hazards of present-day mail service. I feel that the layout of the pages is improving, and a much more generous use of color is permitted. Recent contributions include such additional distinguished names as Felix Bloch, Richard Feynman, Polykarp Kusch, Tsung Dao Lee and Julian Schwinger. Sections on "Physics and Government" and thoughtful editorials have been added. The old "Research Facilities and Programs" department goes on as "Search and Discovery." Excellent historical articles are being included regularly. In 1967 special issues on physics education and instrumentation and a memorial to Robert Oppenheimer have stimulated much favorable comment. I feel that *PHYSICS TODAY* is in capable hands and well able to take full advantage of the opportunities that lie ahead.

Before concluding it remains to say something of future opportunities. If one looks back at the objectives set originally for *PHYSICS TODAY* and restated in the 1963 ad-hoc-committee report, one phrase stands out, "to foster unity among physicists and their societies." This has been a hard nut to crack. Yet today with restricted national physics budgets and growing controversy concerning public affairs the need for unity is greater than ever and a golden opportunity exists for *PHYSICS TODAY*. In many respects, *PHYSICS TODAY* has a position with respect to AIP quite similar to that of a good alumni magazine with its parent institution. Outstanding examples of such magazines are MIT's *Technology Review* and Cal Tech's *Engineering and Science*. Each of these magazines, like *PHYSICS TODAY*,

has timely and well written articles by distinguished scientists, interesting news about people and notices of coming meetings. Their success derives however from their ability to engender a loyalty and pride in the institutions they represent. This is done subtly by the manner in which they describe new plans of their institutions and their on-going projects.

PHYSICS TODAY, I feel, could do well to emulate these distinguished journals. It could, for example, devote far more



attention to the projects that have been delegated to AIP by member societies such as those related to public education, physics documentation and information retrieval, the improvement of physics education in the schools and colleges and the arousal of interest in the history, philosophy and sociology of physics. In the past few years AIP has been taking active leadership in these areas.

I would ask therefore, in months to come, that *PHYSICS TODAY* no longer remain passive on so many of these professional and human problems of physics. Instead it should assist AIP actively in taking leadership in those areas delegated to it by forcefully and enthusiastically presenting what is going on and by encouraging greater participation and support by physicists generally. In this way *PHYSICS TODAY* could really "foster unity among physicists and societies." To my mind, this is the golden opportunity open to *PHYSICS TODAY* as we congratulate it on its past two decades of distinguished service and wish it God-speed through the decades to come. □