

# PHYSICS INFORMATION

## at

# BARGAIN PRICES

*By R. E. Maizell*

**A**RE the American Institute of Physics and its Member Societies offering their research journals to subscribers at rates comparable to those of the publishers of other journals? This question is often asked not only by physicists but by those responsible at the AIP for the publishing of journals. In order to suggest an answer, a comparison has been made of the cost per word, based on subscription rates, for those journals published by the AIP and Member Societies with major physics journals not published by the AIP or Member Societies. Findings from the present study are given in the accompanying table.

Cost per word is perhaps the most satisfactory basis for an economic comparison of this nature. The price per volume is not a good criterion because volumes vary considerably in number of pages. Similarly, the price per page is not a good criterion because different journals have different page sizes and different type sizes.

In this study, the count was made on a sampling basis. For each journal the number of words in ten lines each from five consecutive articles was counted. Items printed in smaller than usual type, such as letters to the editor, were counted separately. This gave the average number of words per line, which was then multiplied by the number of lines per page to give the average number of words per page. The latter figure was then multiplied by the number of pages to give the total number of words per year or per volume in some cases. In the total page count, types of material such as the following were not counted: advertisements, indexes, book reviews, meeting paper abstracts, and meeting announcements. For convenience in tabulation, results were calculated in terms of cost to subscriber per 10 000 words.

Data were collected for ten Member Society and AIP journals and for fifteen other major physics journals. These other journals included three journals published in the US and twelve journals published abroad. Of the total of fifteen, six are published by societies and the balance by commercial publishers.

There are shortcomings to the use of cost per word

data and these should be frankly recognized. For example, how does one measure the value of a page which is largely filled with graphs and with mathematical formulae? This has been handled in the present study by assuming that the space taken up by graphs, formulae, and illustrations is completely filled with words. If anything, this throws a favorable light on the journal which is filled with graphs and formulae because such a journal is given credit for a larger number of words than are actually present.

Another disadvantage of the use of cost per word data is the fact that different languages may typically use more or fewer words to express the same thought. Thus, it may not be proper to compare German, French, and English journals because one language or another may characteristically use more or fewer words.

A third disadvantage of the use of number of words as a criterion is that the journals compared may not be in the same field and hence the terminology may vary. Also, one journal may be tightly edited with emphasis on compactness and may present the same material in fewer pages or words than a journal which may be loosely edited with more pages or words. Finally, cost per word data tell nothing about the quality of the material published.

The itemizing of this list of disadvantages makes it evident that cost per word is, at best, a rough measure, but no better measure has yet been proposed for this economic comparison.

The results show that AIP and Member Society journals were offered in 1958 to members at subscription rates which amounted to one fifth the cost per word of other major physics journals and to nonmembers at subscription rates which amounted to one third the cost per word of other major physics journals.

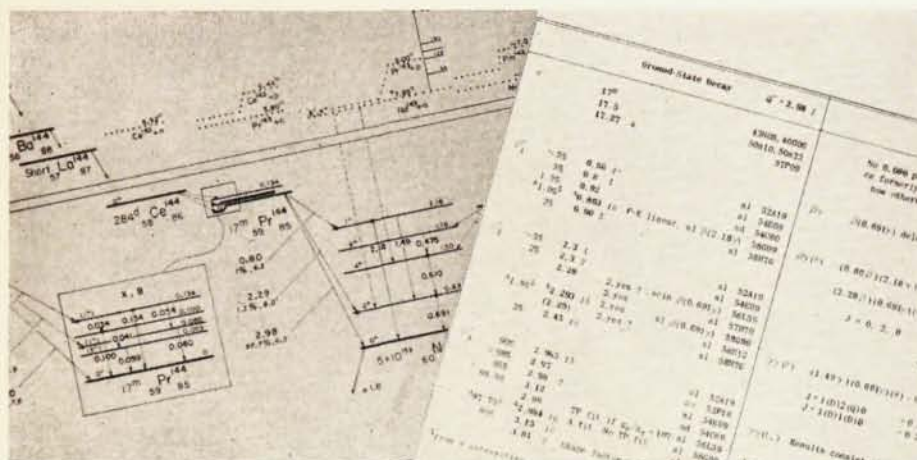
In the case of non-AIP journals published by societies, it was found that these journals were offered to subscribers at rates 25 percent less per 10 000 words than journals not published by societies. These data clearly suggest that society publications generally (both

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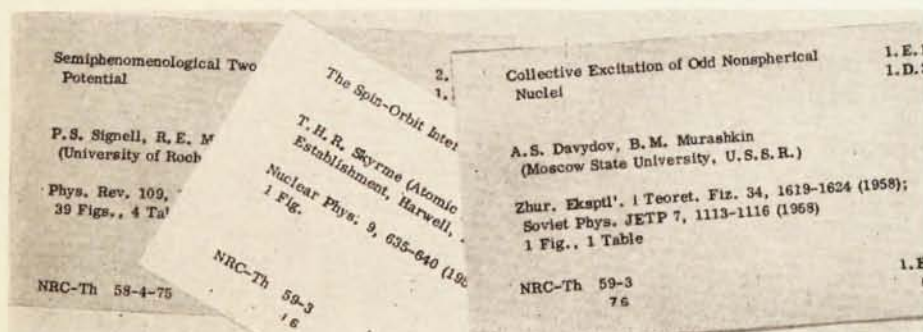
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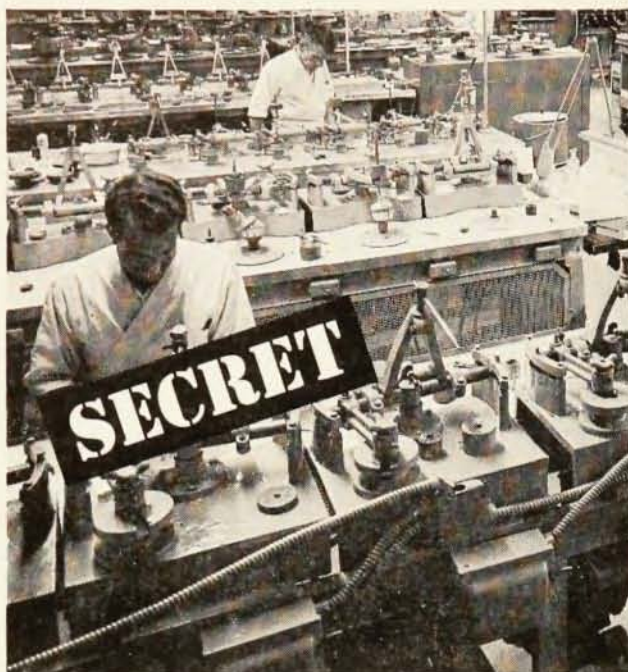
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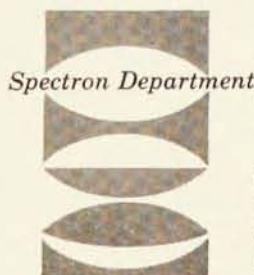
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AIP and non-AIP) offer journals to their subscribers at lower rates than do commercial publishers.

As might be expected, in the case of both the AIP and non-AIP journals, those journals with the most words per year also had the lowest average cost per 10 000 words. Also as might be expected, those AIP journals which had the most number of subscribers had the lowest cost per 10 000 words.

This study was carried out in connection with the Documentation Research Project sponsored by the National Science Foundation at AIP. Mrs. Rosalinde G. Brown compiled the data.

### Cost to Subscribers of Physics Journals (1958)

#### AIP and Member Society Publications

|                                   | <i>Cost per 10 000 Words</i>      |
|-----------------------------------|-----------------------------------|
| Physical Review                   | \$0.013 Member<br>0.053 Nonmember |
| Reviews of Modern Physics         | 0.026 Member<br>0.035 Nonmember   |
| Journal of Applied Physics        | 0.058 Member<br>0.069 Nonmember   |
| Journal of Chemical Physics       | 0.058 Member<br>0.069 Nonmember   |
| Review of Scientific Instruments  | 0.074 Member<br>0.095 Nonmember   |
| Journal of the Optical Society    | 0.111 Nonmember                   |
| Journal of the Acoustical Society | 0.154 Nonmember                   |
| Physics of Fluids                 | 0.166 Member<br>0.208 Nonmember   |
| American Journal of Physics       | 0.167 Nonmember                   |
| Noise Control                     | 0.187 Member<br>0.299 Nonmember   |

#### Publications of Other Organizations

| <i>Society Journals</i>     | <i>Cost per 10 000 words</i>             |
|-----------------------------|------------------------------------------|
| A                           | \$0.140                                  |
| B                           | 0.276                                    |
| C                           | 0.308                                    |
| D                           | 0.328                                    |
| E                           | 0.491                                    |
| F                           | 0.621                                    |
| <i>Non-Society Journals</i> |                                          |
| G                           | 0.149                                    |
| H                           | 0.160                                    |
| I                           | 0.208                                    |
| J                           | 0.404                                    |
| K                           | 0.492                                    |
| L                           | 0.492 (Individuals)<br>0.837 (Libraries) |
| M                           | 0.517                                    |
| N                           | 0.705                                    |
| O                           | 0.890                                    |

#### *Average cost per 10 000 words*

|                                                   |                                   |
|---------------------------------------------------|-----------------------------------|
| AIP Journals (Average for all Titles Studied)     | \$0.083 Member<br>0.126 Nonmember |
| Non-AIP journals (Average for all Titles Studied) | 0.412                             |