

APS reviews refereeing procedures

Patricia Dehmer

Probably all of us in the physics community recognize that effective and timely communication of our research results is of fundamental importance. If we lacked reliable mechanisms for the screening and dissemination of significant findings, we could anticipate little advancement in physical research. To a great extent, the continued existence of the present scientific communications system depends upon the knowledge, promptness, professionalism, and goodwill of our fellow physicists who act as referees on papers submitted for journal publication. The least hint that this system is not functioning as it should is cause for concern.

That is why the receipt of less than a dozen complaints from persons who had failed in the attempt to publish their work in *Physical Review* or *Physical Review Letters* prompted the Publications Committee of The American Physical Society, in March of 1980, to appoint a subcommittee to review the refereeing procedures of those publications. Named to the Subcommittee on Refereeing were Kenneth L. Kliewer (then at Iowa State University and presently at Argonne National Laboratory), Maurice M. Shapiro (Naval Research Laboratory), Albert Wattenberg (University of Illinois at Urbana-Champaign), and myself (as chair). The approach we took and the results obtained have been reported to the Publications Committee. I now wish to share this information with the readers of PHYSICS TODAY.

We began by trying to assess the attitudes of the physics community toward the present refereeing system. An announcement in the *Bulletin of the American Physical Society*,¹ as well as local Divisional announcements, solicited comments from all interested persons—authors, readers, and referees—about their experiences with the refereeing process and their suggestions for its improvement.

Next, we met with the editors of

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Physical Review and *Physical Review Letters* and inquired about the following:

- Standard procedures for handling incoming manuscripts;
- Methods for choosing referees;
- Methods for assimilating new referees into the existing pool;
- Time spent by a typical manuscript in various stages of the editorial and refereeing processes;
- Statistical distribution of manuscripts sent to one, two or more than two referees;
- Schedules and techniques for obtaining reviews from tardy referees;
- Adequacy of the standard form letter sent to referees with the manuscripts;
- Use of the Editorial Advisory Board (*Physical Review*) or Divisional Associate Editors (*Physical Review Letters*);
- Authors' appeal mechanisms and authors' rights; and

- Prospects for double-blind refereeing.

Two things became evident at once: First, there is no such thing as a "typical" manuscript; and second, we needed far more detailed information than could be provided conveniently in the course of our meeting. We therefore sent each of the editors a follow-up questionnaire requesting information on the following:

- Time between receipt of a manuscript and its being sent to a referee;
- The fraction of papers recommended for acceptance by the first referee (two referees are required for *Physical Review Letters*) and the number of times a manuscript is returned to the author before acceptance;
- The fraction of papers sent to a second or to a third referee; and
- The fraction of papers sent to the Editorial Advisory Board or the Divisional Associate Editors.

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sional Associate Editors for resolution of conflicts.

In response to the questionnaire, we received from Peter D. Adams, APS Deputy Editor-in-Chief, a detailed report summarizing the existing data for *Physical Review A-D* and *Physical Review Letters*. The editors of the various journals also helped us by providing specific information based on their individual experiences. The following picture of the refereeing system emerged from our meeting and correspondence with the editors and from letters written to us by members of the physics community.

All persons who have served as referees for *Physical Review* or *Physical Review Letters* are included on a computerized list. At the time of our inquiries, nearly 10 000 names were listed in this file, and about 85% were active (available) referees. New referees are added using yearly update forms sent to those already listed, lists of authors of contributed papers to conferences, and lists of recent contributors to *Physical Review* and *Physical Review Letters*.

During the 1979-80 period, approximately half the active referees were called upon to review one or more manuscripts. The distribution of manuscripts among referees is by no means uniform. In the year just cited, for example, 1300 persons each received a single manuscript for review, while fewer persons received more than one assignment. The 100 busiest referees, many of whom were members of an Editorial Advisory Board, commented on ten manuscripts apiece during this time.

In choosing appropriate persons to review the numerous manuscripts, the journal editors use various methods that reflect their own style and areas of expertise. Computerized PACS descriptors and key-word files are routinely employed. Other tools used in the selection process are listings of referees for *Physical Review* papers cited in the references, conference abstracts for APS and international meetings, monographs on specialized topics, personal files of editors, and suggestions from the Editorial Advisory Board.

Editors try to avoid author-referee combinations that have sparked bitter or counterproductive exchanges in the past. Occasionally an author requests, at the time a manuscript is submitted, that a specific referee not be given his or her work for review (the referee may be identified by name or by reference to a previous report); such requests are always taken seriously and are usually honored, although the editors are not

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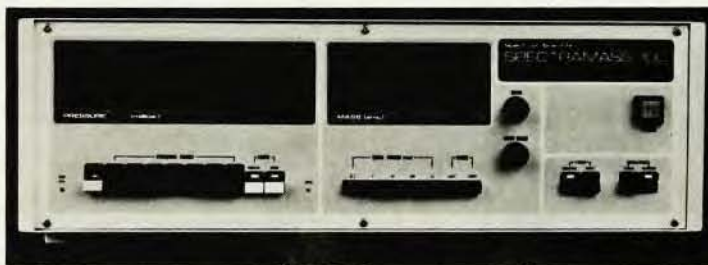
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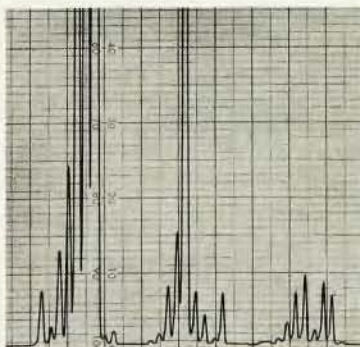
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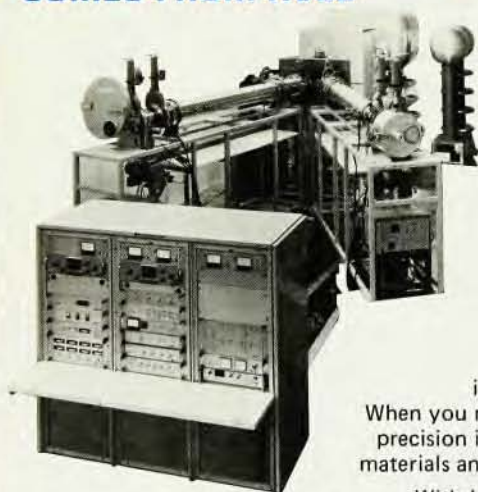
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bound by them. To further safeguard the system's fairness and utility, the journals remove referees from active use for the following practices:

- Consistently responding with only "publish/don't publish" recommendations, unaccompanied by supporting statements;
- Displaying questionable ethics (that is, deliberately obstructing publication for competitive purposes);
- Returning capricious reviews; and
- Creating excessive (needless) delays.

Data obtained in response to our questionnaire show that the mean time between submission and acceptance for a paper accepted after one referee's review and one response by the author is about 70 days. Approximately 30-50% of all manuscripts (depending on the journal) are accepted in this manner. The remaining papers require two or more referees' reports and (sometimes) frequent author-editor communications before being accepted; the mean time between submission and acceptance for *all* accepted manuscripts by all the journals concerned is 125 days, with the tail of the distribution extending well beyond 200 days. Time delays for the individual journals vary widely; manuscripts recently published in the *Physical Review* have been accepted in as few as 16 or as many as 666 days. Further data for 1979 and 1980 scheduled issues are summarized in tables 1 and 2.

Clearly, the journals should seek to shorten the maximum time required for acceptance of papers, but this should not be done at the expense of journal quality or individual attention to each manuscript. Timeliness of publication is one of the factors to be weighed in determining the best system for the journals, but it is not the only factor.

Some changes in the publication process are already in the works—such as the ongoing shift to more "open" selection criteria for *Physical Review Letters*,² or the recent addition of "Rapid Communications" to the *Physical Review* journals.^{2,3} Other ideas discussed at the time of our review to reduce the time involved in the refereeing process include:

- Enclosing an acknowledgment postcard for return by the referee on receipt of the manuscript. This simple expedient might prevent many of the "no report" cases, but the editors caution that this might also add significantly to the journals' office workload.
- Cutting off tardy referees after a set time. The deadline for referees at *Physical Review Letters* is five weeks, but *Physical Review* has no limit. In opposing a rigid cut-off time, the editors of *Physical Review* note that, on occa-

Table 1. Number of days from receipt to acceptance

	OK on 1st report	One report, One author revision	Two referees, "n" revisions	More than Two referees	Other
No. of Items	192	141	177	59	160
Mean	43.2	81.6	148.3	219.0	138.0
Median	41	73	116	179	120
Std. dev.	20.0	35.5	110.2	143.0	66.6
Low	16	28	30	65	38
High	167	241	641	666	380

sion, the more dilatory referees provide the most thoughtful, valuable reviews.

► Resorting to the journals' editorial advisors on a more regular basis to settle disputes in a timely fashion.

Several of the questions we raised in the course of our discussions with the editors already have been acted upon. APS Editor-in-Chief David Lazarus, together with the editors of *Physical Review* and *Physical Review Letters*, has written an updated policy on the author appeal mechanism.⁴ The individual journals now are studying and planning revision of the standard form letter sent to referees. Lastly, the editors have agreed to accept a voluntary system of double-blind refereeing (authors can request double-blind refereeing, but they must provide copies of their manuscripts suitable for maintaining anonymity).⁵

The level of author discontent with the present system of refereeing appears exceptionally low for *Physical Review*. In spite of the time involved in publication and occasional author/referee disputes, we could not find a sizeable number of scientists who refuse to publish in or referee for these journals. (Indeed, *Physical Review's* editors informed us that, although a very few authors have threatened not to submit papers to them again, these threats have not been carried out.)

Over the years, each *Physical Review* journal has developed its own character, reflecting the style of its editor and the needs of its readers. Where those needs are being met, we believe that changes should be instituted only with great caution and with maximum opportunity for assessing their usefulness and consequences. Since the present level of unhappiness with the *Physical Review* journals as a group appears to

be exceedingly low, this fact should be borne in mind when substantial procedural changes are contemplated.

The situation for *Physical Review Letters* is quite different; discussions within the Publications Committee and throughout the physics community have revealed that the various subfields of physics view the journal quite differently. Proposed changes in the character of this journal were discussed beginning two years ago,⁶ and a new set of acceptance criteria was announced late last year² and was set to go into effect on about 1 January 1982.^{2,7} In view of the major changes now occurring in the character of *Physical Review Letters*, the Subcommittee on Refereeing felt that it would be inappropriate to comment on the refereeing procedures for this journal, except to note that they were consistent with the current acceptance criteria.

Those of us comprising the Subcommittee on Refereeing have concluded that the refereeing procedures followed by *Physical Review* and *Physical Review Letters* are, in general, fair and well managed. The character of each journal evolves with time, reflecting both the style of the current editor and the needs of the scientific community that it serves. Thoughtful comments from authors, readers, and referees help to shape the course of this journal evolution and are always welcomed.

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Table 2. Fraction of papers accepted for Physical Review A-D

Journal	No. of Items	OK on 1st report (%)	One report, One author revisions (%)	Two referees, "n" revisions (%)	More than two referees (%)	Other (%)
A	116	19	11	27	9	34
B1	125	24	19	27	11	19
B15	156	27	30	26	8	9
C	137	28	23	16	<1	32
D1	89	25	15	28	7	25
D15	106	37	12	24	11	16

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