

1978

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Recommended Citation

Hanson, Robert W. (1978) "From Manuscript to Publication: The History of a Proceedings Article," *Proceedings of the Iowa Academy of Science*, 85(3), 103-105.

Available at: <https://scholarworks.uni.edu/pias/vol85/iss3/9>

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From Manuscript to Publication: The History of a Proceedings Article

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Most Academy members are unfamiliar with how a manuscript eventually becomes a printed article. Because of recent changes in the reviewing and editorial procedure, and because of profound changes in the production of the PROCEEDINGS, an account of both aspects seems appropriate.

The publication of a paper in the PROCEEDINGS involves many and often slow steps, starting with the receipt of a manuscript by the Editor-in-Chief, Dr. Nels Lersten. If he feels that the paper has been prepared according to the guidelines on the inside front cover and that it should be considered for publication, it is sent to the Associate Editor for the discipline, who in turn submits it to one or more experts in the subject matter of the paper. These reviewers scrutinize the paper and judge whether it is acceptable for publication in the PROCEEDINGS. After several weeks (the actual time often depends on the schedules and priorities of the reviewers, who do this service without compensation) the manuscript and reviewers' comments are returned to the Associate Editor, who also reads them and makes comments.

A revision of the text and/or figures is usually indicated and the paper goes back to the author. After a major revision the manuscript is returned to the appropriate Associate Editor for further review. If only minor changes are indicated, the author sends the revised paper directly to the Editor-in-Chief. If he is satisfied that it is ready for typesetting and composition he will send it to the Managing Editor.

The Managing Editor will ask the author to provide information concerning the page charges that he or she should be expected to pay. Under certain circumstances, no charge at all is made to the author. The maximum charge per composed page, under a new policy set by the Academy's Board of Directors in December, 1977, is \$25.00. For papers that deal with studies that are unsupported or that do not qualify for the "no charge" rate, the rate is \$10.00 per page. (The details of these charges and the requirements for them are stated inside the front cover of each issue of the PROCEEDINGS.)

The charges that authors are asked to pay cover only a part of the total cost of publishing their work. For example, the June 1978 issue of the PROCEEDINGS cost the Academy \$1299 for composition and paste-up (including illustrations) and \$1153 for printing of 2175 copies. This comes to \$32.48 per page for composition and paste-up and \$28.82 per page for printing. The total of page charges billed to authors came to \$350. This is only 13.5% of the actual cost of the issue, not including the cost of clerical time involved in management and editing. The balance of the cost was paid in 1977-78 about equally from a state appropriation of \$4500 and member dues; roughly one-third of the Academy's dues income goes to pay for the PROCEEDINGS. Since page charges vary from zero to \$25 per page, some authors pay more than other authors; some pay no more than the non-publishing member. A student author, for example, paying dues of only \$4.00 and usually paying no page charges, is actually being subsidized by the professional members. This, of course, is in keeping with the Academy's goal of encouraging young scientists as much as possible.

When the author returns the form entitled "Acceptance of Page Charge Policy," the Managing Editor checks the general format, the instructions for illustration work, and Editor's markings. He then delivers the completed manuscript to the typesetting shop, where the most modern facilities are available to complete the composition of the paper and its illustrations. "Typesetting" is a misnomer, since keyboards, computers, and other electronic devices have replaced older printing methods.

A copy of the manuscript with Editor's markings is made and used to write in special notations for the "keyboarding" operation, which puts the text of the paper on punched paper tape (Fig. 1). Combining these



Fig. 1 Keyboard for coded paper tape

special keying operations with regular typewriting, all of the information is coded on the tape: type style and size, line length, line spacing, bold face, italics, capitalization, tabulation. The punched tape then goes into a "VIP" (variable input photo-typesetter) which converts the code contained in the punched tape into printed words (Fig. 2). This is done by an optical system that projects an image of each letter onto photographic paper; the "font" is actually a plastic strip containing all



Fig. 2 Variable input photo-typesetter ("VIP")

¹Managing Editor, PROC. of the I.A.S.



Fig. 3 Editing Terminals

the letters and characters. (A standard font does not ordinarily contain special symbols needed for some articles. Additional hand work is required in some cases and the composition costs are understandably higher.)

The product of the *VIP* is called a "take" and is a photographic image of the set type. These "takes" are used for proofreading against the manuscript. Corrections are made by feeding the tape into an *Editing Terminal*, (Fig. 3) which stores the content of the tape in a computer memory. The tape is discarded. The text is then displayed on a video screen (Fig. 4) several lines at a time. The operator can



Fig. 4 Editing Terminal video display

proofread each line and operate a keyboard to erase one or more characters or whole lines, immediately "typing" back the corrected version into the memory. Spacing corrections are taken care of automatically line by line, but extensive alterations require a repetition of the original keyboarding operation and a new punched tape. This, of course, entails additional charges. When all corrections have been made, a special key causes a new corrected tape to be punched. This corrected tape is again fed into the *VIP*, from which a "shop-corrected proof" emerges. Copies are made of all such proofs; the originals are stored until the author has had a chance to check them.

Two copies of all shop-corrected proofs are then sent off to the author for inspection, along with copies of the illustrations, which in the meantime have been converted into photographic form (Fig. 5). Photographs are converted into halftones with or without reduction, depending on original size. Graphs and other line drawings are reduced photographically to appropriate size and converted into "PMT's" (photomechanical transfers) which are eventually used to make the final page paste-ups. In the shop the latter are referred to as "repro proofs."

When corrected proofs are returned to the typesetter all changes marked by the author are made, and the corrected second set of proofs goes out to the author for another check. When the author indicates satisfaction with the proofs, they are sent to the Editor-in-Chief by the shop (not the author). The Editor cuts up the corrected proof of the article (without page numbers) and pastes the pieces on *PROCEEDINGS*-size sheets in the desired format (Fig. 6) for use by the typesetter as a model to make the final page paste-up or "repro proofs."



Fig. 5 Camera work using computer-controlled exposures

The review process and these composition steps provide several opportunities to catch errors, but there is still one more chance for the author to spot mistakes that may have been missed earlier. When the final page paste-up is completed by the typesetter, page proofs are sent to the author and to the Editor-in-Chief. Page proofs show the article in exactly the way it will appear in the *PROCEEDINGS*. The Editor arranges the articles for the next issue, adds page numbers and a Table of Contents and returns the set to the Managing Editor. At this point it is imperative that the author waste no time in approving of the page proofs or pointing out corrections that will have to be made. A firm deadline is set at which time the issue will go to press.

The Managing Editor inspects the assembled page proofs carefully, checks the accuracy of the Table of Contents and other printed material appearing on the covers, then delivers the completed issue to the shop. Eight-page sets are assembled into large sheets called "signatures" and negatives are made of these for the printer. This completes the work of the typesetting shop. Charges are calculated for each article by the typesetting shop and the Academy is billed for this stage of production.

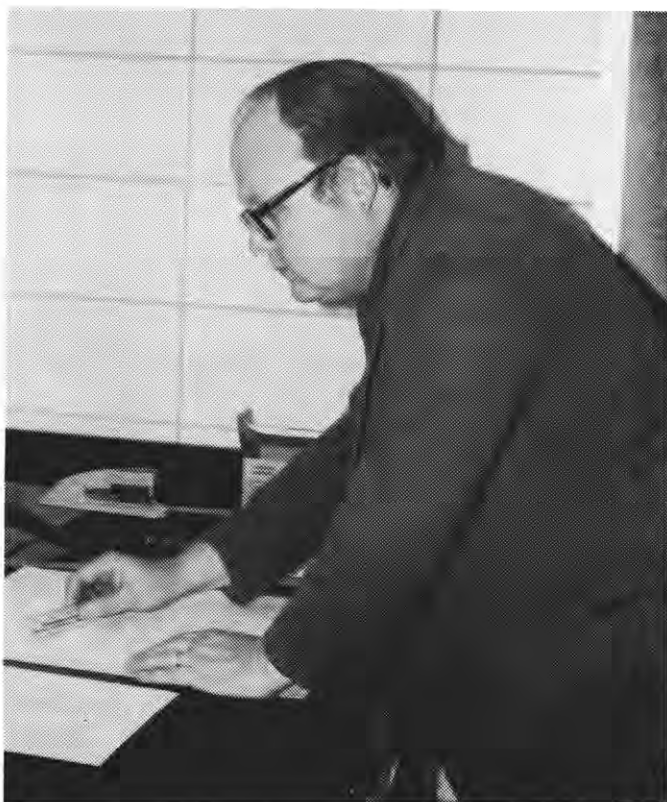


Fig. 6 Editor Nels Lersten pasting up "dummy"

The Academy has the freedom to choose any printing firm that can do

quality offset work. Ordinarily the same printer is used because the flow of work is expedited if scheduling can be done on a regular, predictable basis. Quality control is once more possible before the printing plates are made when the Managing Editor inspects a proof of the negatives called a "blue-line" to spot obvious unevenness of exposure, loss of detail in line drawings, etc. Once this is done, plates can be made and the PROCEEDINGS can be printed, collated, trimmed, and delivered for mailing in about two weeks. The actual printing of the PROCEEDINGS is a relatively simple, straightforward mechanical operation compared with the complex steps that precede it.

Modern photo-composition and offset printing technology have made it possible to put the PROCEEDINGS on a regular schedule. Prior to 1970 the PROCEEDINGS came out as an annual clothbound volume, printed entirely at State expense and scheduled at the pleasure of the State Printer. Even though it cost about \$25,000 a year, the annual issue often appeared a year late, through no fault of the Editor. It was perhaps a blessing in disguise when the legislature chose to revise the Code of Iowa, relieving the State Printer of the obligation to see that the PROCEEDINGS got published. This move left the Academy with no support from the State for the PROCEEDINGS during the 1969-71 biennium, but there was some success in getting \$8,000 per year through special legislation during 1971 to 1977. It was during this period that the PROCEEDINGS went from an annual issue to its present quarterly format. The cost was trimmed to the \$10,000-12,000 level, but delays were experienced until the whole operation was moved to Cedar Falls in 1976.

Since that time, state support has dropped to only \$4500 per year, necessitating the current schedule of charges to authors. They are minimal compared to many other publications. If it were not for the great amount of volunteer service performed by the editors and reviewers, the cost of getting to the printing stage would be several times what it is. The PROCEEDINGS OF THE IOWA ACADEMY OF SCIENCE is one of the best and most current publications of its kind, thanks to the quality of work submitted by the members of the Academy and the modern approach taken in producing this publication.

Editor's Note: Some procedural changes were made between the time this article was written and the time it was ready for the printer. Starting immediately, the first proof that an author will see will be an uncorrected page proof. This proof will come to the author from the Editor-in-Chief who will have prepared a "dummy" of the article from shop-corrected galleys. The author will proofread this dummy in the usual way and return it to the typesetter.