

# Journal of Spacecraft and Rockets

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## Our Brave New World

### An Announcement and Appreciation

It is my great pleasure to announce that your new Editor-in-Chief for the *Journal of Spacecraft and Rockets* will be Ralph R. Ragan. Ralph, who is now Deputy Director of the Draper Laboratory of MIT, Cambridge, Massachusetts, served as one of the first group of Associate Editors for this Journal (1964-1966). He earned the respect of the staff with his clear instructions initialed "R<sup>3</sup>," and authors appreciated the perceptive suggestions and positive criticisms that were transmitted to them via the staff. His return to take the helm is most fitting. This Journal, embarking with our other journals on new ventures discussed below, should make great progress under Ralph's sure and steady hand.

On behalf of the AIAA and the readers and authors of this Journal, it is my privilege to extend a warm "thank you" to a retiring associate editor, Bernard P. Miller.

It is also fitting to express here the deep sorrow felt by hundreds of members of AIAA, and particularly by this writer, at the death of William R. Mickelsen last June. Bill was one of AIAA's most active and productive members, a prolific author, outstanding teacher, meeting organizer, committee man, and associate editor. We shall remember him well.

On the brighter side of our brave new world we have some more "thank you" and "chin up" notes. Ruth Bryans, Anne Huth, and the entire editorial staff have continually amazed me by their very high batting percentages and equanimity in handling the massive flow of work that faces them. They have kept our standards high and published beautiful journals with remarkably few errors or complaints. Though assignments change, new journals or functions are added, people get sick or leave, or the mails or transportation systems break down, the journals must go on, and when a serious fall-back did occur as a result of a printers' strike, the trying catch-up process went rather smoothly. Now they face with all of us the two major innovations discussed below. Let us all cheer them on!

I wish to thank, too, some people at my end of the line. Jacqueline Hentgen, my untiring secretary, has kept the Journal's records straight and mail flowing the seven years of my tenure as editor-in-chief. Both she and other secretaries at APL—Anne Mack and Karyn Davis—as well as my beloved wife, Mary Louise, have even retyped pages or complete manuscripts from time to time to accommodate my strong urges for editing for conciseness and clarity. Their efforts are warmly appreciated.

No list of thanks for our publications would be complete without recognition that others have led us, most capably and with great dedication. Our Vice Presidents-Publications have been Martin Summerfield, who presided so illustriously over the birth of our AIAA publications and still edits the AIAA Progress Series and *Astronautica Acta*, Robert A. Gross, who launched much of our advance planning and continues to edit the popular Selected Reprints series, and Jerry Grey, who has skillfully guided us through two arduous terms (4 years) of growth and innovations and will surely continue to play a great role in our activities. All AIAA officers and

directors, the AIAA staff officers (particularly Jim Harford and Bob Dexter), and John Newbauer, Editor-in-Chief of *Astronautics & Aeronautics*, have shown and continue to show strong interest in the health and success of our journals. Some unsung and seldom thanked heroes of our total picture have been the members of Publication Committees through the years, too numerous to mention but all deserving much appreciation. Two current members intimately associated with new ventures are Benjamin Pinkel, who conceived and is still helping us to refine the Synoptic, and Julius Lukasiewicz, whose committee boldly proposed the move to author-prepared copy to keep the wolves from our doors. A grateful salute to all of you!

On to new business.

### The Synoptic

The Synoptic is to be a concise presentation of the key ideas and results of a significant investigation or work unit, in an easily grasped and usable form, including all definitions, assumptions, and input data essential to the understanding and use of the product (output) presented. The product may be an equation, a design, a concept, a figure, a table, a design criterion, a technique, or a combination of such things.

The requirement to present the *product* of the work in *directly usable form* sets the Synoptic apart from the Abstract or the traditional Conclusions section of a paper. The Synoptic is required to be backed up by a full paper or report, and it is reviewed by experts before publication; these facts set it apart from the Notes published in our journals.

In our fast-moving world a well prepared Synoptic should find more readers and more users than a full paper. Consequently, it should receive more citations by others than the full paper would have. *Thus, the author who does a first-rate job on a Synoptic should gain as much or more prestige than he would have gained by publishing a full paper.*

The Synoptic requires only  $\frac{1}{6}$  to  $\frac{1}{3}$  the space of the average full paper. The author will be billed for less page charges accordingly. The subscriber will use less shelf space. The specialist will file individual Synoptics in less space. The AIAA costs per item published will be reduced, and the members will benefit. Substantial use of the Synoptic should permit the AIAA either to reduce subscription costs, or at least to hold the line while costs of other journals continue to rise. Libraries of limited or shrinking means should get the message.

With all these advantages, how can the Synoptic miss? *We believe it will be a rousing success if authors, reviewers, and editors approach it with the zeal and determination necessary to a first-rate effort.* Please look at it as an opportunity for real service to your fellows and yourself. Let's make it move!

### On Writing and Reviewing the Synoptic

The value of a particular Synoptic will depend mainly on 1) the technical value of the work from which it is drawn, and 2)

the ability of its author(s) to identify and illuminate the more useful results of that work. Editors and reviewers will do their best to offer positive criticisms and specific suggestions for improvements, but the author generally is in the best position to establish and *communicate* his key findings accurately and clearly.

An important characteristic of any good technical writing is the use of simple, direct, unambiguous language; for a Synoptic, this characteristic is vital. A well-prepared Synoptic should be easily understood by engineers or scientists who are only "speaking acquaintances" of the broad field to which the paper belongs. Jargon, including corrupted meanings of otherwise good English words, should be avoided. An acronym or symbol must be defined at its first point of use. A specialist's term (e.g., one indicating a particular power or propulsion efficiency) should be clearly defined. If results of an analysis depend on particular input assumptions, those assumptions should be unequivocally stated. In brief, when a reader wishes to make use of the information in a Synoptic, he should be able to do so without reference to the original paper.

A major difference between a Synoptic and an Engineering Note is that the Synoptic is backed by a full paper. Thus, readers who need more detail should always be able to find it by requesting the full paper from the author or the library of the AIAA Technical Information Service. However, the authors, reviewers, and editors must not let this fact deter them from the goal of assuring that a Synoptic is directly and immediately useful in itself. The reader may need that one piece of vital information for a study "right now," and he will be frustrated and infuriated if he cannot use the data because one undefined symbol or term leaves him wondering whether a factor of 2 or  $\pi$  or 12 or another part of an efficiency product is needed.

An important function of the back-up paper, of course, is to provide each *reviewer* with a more complete background from which to judge the technical validity of the Synoptic. This certification function will, in fact, be the reviewer's chief responsibility and service, aside from his main recommendation regarding publication or rejection. Our goal is to obtain two careful reviews of each Synoptic by experts in its field, so that the reader *can* apply the information with confidence.

Let's return to the communication aspect. A *good* picture often is worth a thousand words, because it is an efficient way to transmit information. A carefully labeled and/or dimensioned line drawing usually will do this. Photographs rarely do, and they should be used only when they are uniquely suited to a particular task. A few carefully constructed graphs usually will convey information more effectively than tables. A little ingenuity in use of common scales for multiple figure parts, or multiple scales for combined figures, often will permit several times as much data to be presented in a given space with acceptable clarity. Similarly, tables often can be combined or designed better to save space. The overriding objective always should be to present the useful product of the work, together with the input data or assumptions needed to identify that product, in its most usable form, within the allowed space.

The allowed maximum space for the Synoptic is two journal pages. But the name of the game is *effectiveness*. A half-page Synoptic that adequately tells the story is far superior

to a two-page Synoptic that requires more digging or bores the reader. Some analogies may help here. One might think of a "telegraphic style," or, better, the style of a *good* newspaper reporter who tells you how, when, where, etc.—all the main facts—in the first paragraph, or maybe the first sentence. Another analogy that may apply is a 7-minute technical briefing for top management (when a 45-minute briefing would be so much easier!). A successful Synoptic will be a useful tool that a user will save to use again and again and will cite with respect in his publications.

I commend you to a companion editorial by George Sutton in the January *AIAA Journal*, and to Jerry Grey's statement in our December issues, for further information on submittals and policy. The back inside covers of our journals will soon carry the main instructions for preparing a Synoptic.

#### Author-Prepared Manuscripts and Publication Costs

The aforementioned statements by Sutton and Grey also cover the subject of author-prepared manuscripts quite well. The need to reduce costs cannot be denied, and the study by Lukasiewicz's committee showed that no other approach would be nearly as effective in cutting costs without cutting technical quality. However, the amount that will be saved is yet to be established, and it will depend very strongly on the conscientiousness of the authors in following the instructions to the letter and proofing their manuscripts carefully for accuracy, particularly in mathematical material and the preparation and emplacement of illustrations. We will desperately need your help in launching and making a success of this venture. The whole of AIAA will benefit in proportion to its degree of success, with potential savings of \$50,000 to \$200,000 per year at stake.

On the subject of costs, I am aware that many of our colleagues face the most serious career problems, and all in our profession are alarmed and shocked at the turn of the aerospace business. Yet some who are still faring very well indeed have dropped, or threatened to drop, subscriptions and even their memberships because our costs have risen. My favorite professor in college instilled in me a belief that participation in, and support of, professional societies should be a matter of professional pride and a major avenue for professional growth. How can a few dollars, less than 0.1 of 1% of salary in most cases, and corresponding to average costs of inflation everywhere (when viewed over AIAA's 8-yr life span), change all that?

Can we not pull together and find new ways to serve our Institute, our profession *and* our nation's interests? We should be seeking new members and offering constructive ideas as never before. Rest assured that no one in the AIAA wanted to see costs rise, and that those bearing the burdens of offices and committee memberships are working hard for you to find ways to save money and improve efficiency of operations. *Take part. Write to us. But, please, don't turn away from us when we need you most.*

Above all, I hope you will support your journals as authors and reviewers. By these journals shall we of the AIAA and our accomplishments be known to future generations. Will our work be of value to them? We can only do our best to make it so.

Gordon L. Dugger  
Editor-in-Chief