

We're Changing

WHEN the AIAA was founded in 1963 as a result of the merger of the Institute of Aerospace Sciences and the American Rocket Society, initially a single journal, the *AIAA Journal*, emerged. In the negotiations relating to the merger, there was considerable discussion of the types of technical journals which should be published by the new society, and it was the consensus that there should be only one cohesive journal, as opposed to a whole series of different specialized disciplinary journals, each of which would cater to a different group of special technical interests. Hence, the AIAA was born with one journal. Soon afterward, in 1964, one vocal, dissident group which was interested primarily in aircraft design and evolution was granted its desire to have a separate applications-oriented journal (the *Journal of Aircraft*); at the same time the counter-balancing *Journal of Spacecraft and Rockets* was started; and finally, in 1967, the *Journal of Hydronautics* was created for those interested in marine technology. These three journals became the natural outlet for publications which emphasized the application of previous research results or technology to specific functional concepts, and each normally included relevant aspects of fluid mechanics, solid mechanics, thermophysics, propulsion, motion, and guidance and control. Thus, they were interdisciplinary, not disciplinary journals, since they cut across disciplinary lines. The *AIAA Journal* continued to be the major outlet for more basic research results which could be used in one or more application areas. Thus, in one journal, one could find the research results of all disciplines which were applicable to aerospace needs. The *AIAA Journal* grew in size during the 1960s as a result of the emphasis on space and hypersonic research and development. Its increasing size caused it to become cumbersome; since it contains about six different disciplines, members with more narrow specialized needs found that they were receiving five times as much printed material as they really cared to receive, which required additional shelf space. Other journals suffered the same problem. In the 1960s, the AIAA formed an ad hoc committee to determine alternate techniques for rapid distribution of technical material: the so-called Selective Dissemination of Documents system. In this concept, papers and reprints were to be mailed directly to subscribers, based on preselected key words relating to the areas of interest to each subscriber. With this in mind, an experiment was conducted. Although the experiment per se was successful, it pointed out three shortcomings. First, individual papers received by technical people are more difficult to store and find later than are journals, unless one has a very excellent, cross-indexed filing system. Second, it did not permit information retrieval of a subject at a later date. Most technical professionals are constantly *expanding* their areas of interest, and a problem of no interest to them today may become vital tomorrow. Finally, the economics of an SDD system were not attractive; that is, it is quite costly compared to the present journal subscription costs. On the other hand, journals stacked on a shelf, in chronological order, plus a good journal index, permit someone not only to find a familiar paper, but also to perform his own searches. Thus, the journal system appeared "best," with the improvement of the additional Combined Index of all journals, to ease such searches, and to document the publications more fully.

With the appearance of the energy crisis, and a growing involvement of aerospace companies in energy systems and research, a new need was perceived for an application journal in the field of energy, which could stand side-by-side with the other application-oriented journals; thus, the *Journal of Energy* was created to fill a vacuum for energy-oriented

developments. At the same time, it appeared that the control aspects of aerospace applications had been somewhat neglected by the AIAA. It is true that each journal had papers on dynamics, control, and guidance, but very little on the hardware developments with which to accomplish these functions. In this sense, the AIAA was not fully serving that sector of our membership who are specialists in that area, and it was necessary for them to find the needed technical data elsewhere; similarly, they had to publish elsewhere to insure wide dissemination of their results. At the same time, a group of specialists in dynamics and control theory felt that they would be better served by AIAA if they had their own disciplinary journal, even if small, to focus AIAA's interest in this area more clearly. It appeared that the intersection of these two somewhat different needs could justify the establishment of a single *disciplinary* journal which covered both basic science and applications. Thus, we now have the *Journal of Guidance and Control*, starting publication in January 1978. It will emphasize both basic dynamics and control and guidance theory, as well as developments applicable to aerospace needs, such as the attitude control of spacecraft, spacecraft orbit prediction and control, aircraft flight control, the influence of wind on aircraft control, active flutter control, control logics, engine control, radar tracking, and inertial guidance.

The dilemma created, of course, is, for example, that aircraft designers will now have to search at least *three* journals to stay abreast: *Journal of Aircraft*, *Journal of Guidance and Control*, and *Journal of Energy*, whereas previously they could find most of the relevant papers in a single journal. But energy specialists and guidance and control specialists will have to search fewer journals. Thus, the classical paradox of application vs discipline is not resolved by the present division. (It could be solved, of course, by having only *one* journal for the entire AIAA.) Nevertheless, it is hoped that this new arrangement will satisfy the greatest number of AIAA members. The creation of new journals also raises the specter of even more journals, with ever-diminishing scopes. The present sentiment continues to be against further fractionization. To help maintain cohesiveness in the AIAA, it has been proposed to make available to all AIAA members the Tables of Contents of all journals on a monthly basis, perhaps in *Astronautics & Aeronautics*, and a Subcommittee of the Publications Committee is studying the matter. This should help to keep the AIAA from becoming a loosely bound organization of six different technical societies. In summary, while the *AIAA Journal* has lost its scope in dynamics and control, it is believed that the overall membership will gain.

On another front, the AIAA's journals have received approval to proceed to assemble international boards of editors. This group, perhaps one from each country which has major aerospace industries, would perform an advisory function of directing our attention toward more noteworthy foreign developments and attracting papers describing these for publication in the various AIAA journals. This concept, originated by Dr. Allen Fuhs, Editor-in-Chief of the *Journal of Aircraft*, appears equally applicable to the *AIAA Journal*. I am therefore inviting our membership to suggest to me the names of individuals who could help fulfill this function.

On still another front, we are once again taking steps to reduce the time from submission to publication, primarily by tightening the already tight time schedule for both editors and reviewers. In journals, the meaning of archival is *not* synonymous with extinct; we must disseminate data rapidly while they are still useful.

Finally, we have come to a point for which our system of education and training can be truly proud. With modern analysis and computers, plus their excellent background and training, modern technical specialists can solve a large variety of technical problems virtually from basic principles. This is an important capability and one which should continue to be nurtured and developed. Unfortunately, the results do not always justify archival publication. This phenomenon manifests itself in that we are receiving an excessive number of papers whose technical content has, in fact, been previously published. Archival publication requires, in addition to the solution, a competent background search and an exposition of previous related work so that the new results can be placed into proper technical context. Technology is a thread, and each person adds to it.

Lastly, a word concerning the conversion to the metric system. My original note requires the MKS system of units. Additional study of various publications on the standards of the MKS system has persuaded me to relax the requirements slightly. The existing metric system standards seem to be both too strict on the one hand and, on the other hand, to contain some other requirements that are technically not justified. The suggested relaxation is to permit the use of grams, or even milligrams, or centimeters or even millimeters, when appropriate, in *addition* to kilograms and meters. I will even accept grads. English units, such as inches, feet, pounds,

or slugs, can be used in parentheses, following their metric values.

Acknowledgments

We are indebted to our retiring Associate Editors who have worked so hard during the past three years to help maintain our standards of excellence: Lloyd Back (boundary-layer flows), Paul E. Rubbert (transonic flow and wing aerodynamics), Joseph A. Schetz (turbulent flow), Allie M. Smith (thermophysics), and Ronald O. Stearman (aeroelasticity). We also have lost the excellent talents of John V. Breakwell, Richard H. Battin, and Kennell J. Touryan. Dr. Battin has transferred to the new *Journal of Guidance and Control* and Dr. Touryan has transferred to the *Journal of Energy*.

Particular credit for keeping the *AIAA Journal* on its correct vector is due Ruth F. Bryans, Director, Scientific Publications, and Anne Huth, Assistant Director of Scientific Publications of AIAA journals.

We also express our most sincere gratitude to the many reviewers, listed on the following pages, whose time and effort have helped our authors to maintain the high quality of papers published. Finally, we wish to thank our authors and readers, for whom the *AIAA Journal* actually exists.

George W. Sutton
Editor-in-Chief

Reviewers for *AIAA Journal*, September 1, 1976–August 31, 1977*

Abbett, Michael	Batdorf, Samuel B.	Callens, E.E.	DeMarcus, W.	Gerend, Robert P.
Abbott, D.E.	Batt, Richard G.	Cannon, Steve	Dickson, Larry	Giesing, Joseph P.
Adamczyk, John J.	Battin, Richard H.	Carlson, Harry W.	Dobbs, Michael	Gilreath, Harold
Adcock, J.B.	Baumeister, Kenneth J.	Carta, Franklin O.	Dosanjh, D.S.	Glass, I.I.
Aeschliman, Daniel P.	Beam, Richard M.	Carter, James E.	Douglas-Hamilton, D.H.	Glick, Robert L.
Alber, Irwin E.	Beckwith, Ivan E.	Cary, Aubrey M., Jr.	Dowell, Earl H.	Gliebe, P.R.
Allen, Jerry M.	Behrens, Wilhelm	Cassady, Philip E.	Dragoo, Alan L.	Goldstein, Marvin
Almroth, B.O.	Bencze, Daniel	Cassanto, John M.	Draper, J.S.	Gouldin, F.C.
Amazigo, John C.	Bender, David	Caughey, T.K.	Driscoll, James F.	Granville, Paul
Anderson, E. Clay	Bennett, Robert	Cebeci, Tuncer	Dugundji, John	Grose, William L.
Anderson, Gerald M.	Benzley, Steven E.	Cefola, Paul J.	Dunn, Michael G.	Guderley, G.K.
Anderson, John D.	Berndt, Sune B.	Chattot, Jean-Jacques	Duran, S.A.	Gutierrez, Orlando A.
Anderson, Mel S.	Bert, Charles W.	Chen, Allen	Dwoyer, D.L.	Hackett, Colin E.
Anderson, William J.	Bertin, J.J.	Cheng, Hsien K.	Dwyer, H.A.	Hafez, Mohamed
Anthony, Frank M.	Bhatia, Kumar	Chien, John	Dyer, Michael	Haftka, Raphael T.
Aprahamian, R.	Bierman, Gerald J.	Chien, K.Y.	Eckert, E.R.G.	Hall, Ian M.
Arbocz, Johann	Biesiandy, Tom	Chigier, N.A.	Ehrlich, Louis	Hall, J. Gordon
Ardema, Mark D.	Bilanin, Alan	Chin, Wilson	El Raheb, Michael	Ham, Norman D.
Arenstorf, Richard F.	Billig, Frederick S.	Christiansen, Walter H.	Emanuel, George	Hama, Francis R.
Ariaratnam, S.T.	Block, David L.	Chu, M.S.	Emery, Ron	Hancock, G.J.
Arlinger, Bert G.	Blottner, Frederick G.	Chung, Paul M.	Emmerling, John J.	Hankey, Wilbur L., Jr.
Arndt, Roger A.	Bobbitt, Percy J.	Clark, Kenn Edward	Epstein, Melvin	Hart, Franklin D.
Ash, Robert	Bobco, Richard P.	Coe, Charles F.	Erdos, John	Harvey, William D.
Ashley, Holt	Bofah, Kwasi	Cohen, Howard	Erickson, J.C., Jr.	Havner, Kerry S.
Atassi, Hafiz	Boggs, Thomas L.	Cole, Julian D.	Ericsson, Lars E.	Hawks, Roger J.
Aubin, William M.	Borucki, William J.	Collins, Donald J.	Ero, M.I.O.	Hawley, Newton
Austin, Robert E.	Boykin, Richard M., Jr.	Collins, Frank	Ettenberg, Michael	Hecht, Ralph
Avidor, Joel	Boynton, Frederick B., III	Cook, Robert D.	Evans, Donovan L.	Hegemier, G.A.
Azar, Jamal J.	Bradshaw, Peter	Cooley, Dale	Evensen, David A.	Heine, Walt
Babcock, D. Charles	Brandt, Alan	Coppolino, Robert N.	Faery, H.F., Jr.	Hempel, Peter
Bailey, H.E.	Bratanow, Theodore	Corcos, G.M.	Faeth, G.M.	Henderson, Dale B.
Bainum, Peter M.	Briley, W.R.	Cowgill, Donald F.	Farn, C.L.S.	Heppenheimer, T.A.
Baker, Allen J.	Broucke, Roger	Craig, Roy R.	Felippa, Carlos A.	Hickman, R.S.
Baker, J.R.	Brown, Robert S.	Cresci, Robert J.	Felton, Lewis P.	Hidalgo, Henry
Baker, William B.	Brush, D.O.	Crossway, F.L.	Finson, Michael	High, M.D.
Baldwin, Barrett S.	Bryson, Arthur E., Jr.	Cuffel, Robert F.	Fletcher, Clive A.J.	Hill, Jacques A.F.
Ballhaus, William F., Jr.	Brzustowski, T.A.	Cwach, Emil	Fourney, Michael E.	Hill, James C.
Balsa, Tom F.	Bunshah, R.F.	Cyr, Norman A.	Fowler, Wallace T.	Hingst, Warren R.
Bangert, Louis H.	Burt, G.E.	Dabora, E.K.	Francis, John E.	Hitzl, Don
Barba, Peter	Bushnell, Dennis M.	Danby, J.M.A.	Francis, Philip H.	Hogge, Charles
Barbee, Troy	Byers, David C.	Davis, Randall T.	George, Albert R.	Hokenson, Gustav
Baron, Judson R.	Caledonia, George E.	Deissler, Robert G.	George, Daweel	Holmes, Bayard S.

*Because it is difficult to include the reviewers from September, October, November, and December 1977 in this issue of the Journal, they will be listed with the reviewers for 1978, in the January 1979 issue.