

Reflections on *Journal of Aircraft*

TO serve the members of AIAA, the aircraft industry, and especially the subscribers, the editorial staff of the *Journal of Aircraft* (JA) needs to be aware of the trends and currents within the aerospace community. Being editors does not give us any special insight into the future although we might claim that the future of the aircraft industry is built on the technology reported in the pages of JA in 1974 and prior years. There are many unpredictable patterns in economic, political, and military events which preclude a confident forecast of trends for 1975. We can review 1974, which in January a year ago looked as random and turbulent as 1975 does now. Although there were many problems, 1974 was not a bad year. Exports of aircraft were booming. Export of technology was accelerating; in fact, many spokesmen cautioned against exporting the nation's technological advantages. As this editorial goes to press, the AIAA and the National Science Foundation's Science and Technology Policy Office are planning a workshop meeting in December 1974 on "The Role of Technology in Commercial Aircraft Policy Formulation."

Energy limitations and staggering fuel price increases had major impacts on the balance sheet and on aircraft operations. Regular passengers on airlines noticed that the schedules were trimmed and the adjoining seat was always full. For the airlines, the increased load factors were offset by rising costs, notably for fuel. For the international airlines, increased fuel costs were more serious. As a consequence of the energy crisis, fuel burned per passenger mile has become a high-priority specification for transport aircraft. Ways to conserve fuel were sought. Many of the proposed solutions sprang from the technology wellspring recorded in AIAA publications. The question of aircraft as an energy-efficient means of transporting people was answered in the affirmative by AIAA paper 74-959 in 1974 (published in *Astronautics & Aeronautics*, December 1974). Under the leadership of Jerry Grey, AIAA completed a study, "Aircraft Fuel Conservation: An AIAA View." Testimony based on the report was given before the Senate Committee on Aeronautical and Space Sciences on July 18, 1974.

The supersonic Concorde passenger aircraft will soon enter regularly scheduled service. Setting aside nationalist feelings, the Concorde should be recognized as a significant advancement in transportation. One who has visited the Concorde manufacturing facilities in Toulouse or seen the aircraft at air shows must acknowledge it is an impressive achievement. Unfortunately, the Concorde was designed at a time when the thirst for jet fuel was not as important as it is today.

Compared to 1970, general aviation was booming in 1974. The manufacturers of business and recreation aircraft were adopting many of the techniques pioneered by military and commercial aircraft companies. For example, computer controlled machine tools are common. General aviation faces the same environmental problems, noise and emissions, as do the military and commercial aircraft operators. Solutions frequently are applicable to all three classes of aircraft; many of these solutions are published in JA.

The AIAA General Aviation Committee, under the leadership of Bill Chana, continued in 1974. The Committee has been exploring ways in which AIAA can better serve general aviation. The *Journal of Aircraft* has published articles of value to engineers in general aviation. A new Associate Editor, Dr. Roy E. Reichenbach, of the Institute for Defense Analyses, has been appointed to the staff of JA to edit papers related to general aviation.

Shifting attention to military aircraft and tactical missiles, several new aircraft had first flights in 1974. The YF-16 and YF-17 fighters recorded many flight hours in 1974. Work on the B-1 bomber, one vertex of the Triad (Poseidon, B-1, and Minuteman), continued. Likewise, the flight testing of the Harpoon and Phoenix missiles progressed. One new aircraft, the F-15, and one old aircraft, the SR-71, were hits at the Farnborough Airshow. Even experienced military pilots have been impressed with the performance of the F-14 and F-15. Several RPVs (remotely piloted vehicles) were first flown in 1974.

The technology for the design of future general-aviation, commercial, or military aircraft is published in JA today. Examples include aerodynamics articles on asymmetric aircraft, supercritical wings, and high-lift airfoils. In avionics, topics include integrated circuits, integrated optics, and new radar technology. In propulsion, emphasis is on materials and mechanical design aspects of aircraft gas turbines. Fuel economy of engines is being stressed. New cooling techniques to permit higher turbine inlet temperatures are under development. Answers to environmental problems are reported in JA. In structures, composite materials remain an active area. Versatile computer programs for structural analysis and design have been developed.

For members of professional organizations, including AIAA, the publications are a tangible benefit; publications are very important to AIAA members. The editorial staff keeps the membership in mind when selecting papers to publish. Something new for JA will be tried in 1975: a special issue of about 250 pages in May or June will be devoted to reviewed papers from the Propulsion System Structural Integration and Engine Integrity Symposium sponsored by NASA Lewis, ASD, AFAPL, AFFDL, AFML, AFOSR, ONR, NAVAIR, and AMRDL.

Inflation impacts AIAA journals as seriously as it does your own personal finances. For that reason, an increase in page charges to \$85 per page has been necessary. Page charges are essential to maintaining a balanced budget; deficits would soon force reduction in the scope of JA. Incidentally, the page charge does not meet the total cost of producing a page. Approximately 60% of the cost is met by member and nonmember subscriptions. As an author, you are urged to see that the page charges are paid; as a subscriber, you are encouraged to be sure that your employer subscribes to JA at the nonmember (multiuser) rate and invite your colleagues to subscribe at the very low member rate of \$5, which is an almost unique bargain in technical literature today.

If one compares the *Journal of Applied Physics* with JA in regard to the number of papers published, it will be noted that about 25 percent of the papers in JAP require revision, while 90 percent of the papers in JA are returned for revision. As a neophyte editor, this appeared to me to be an appalling contrast. After serving a year as Editor-in-Chief, some reasons are apparent. Do physicists write better than engineers? Not really; however, engineers fail to read instructions. Manuscripts are not prepared in accordance with instructions printed on the inside back cover of each issue. Manuscripts are too long, figures have tiny lettering, abstracts read like introductions or promissory notes, etc. We want to publish papers without revision; it saves both the authors and the editors time and emotional strain. Your paper will appear in print sooner. Please read the instructions and avoid the revision chore.

As a matter of policy, Associate Editors are appointed to definite terms; in some cases, Associate Editors are

reappointed. On the average, two openings per year occur on the editorial staff of JA. Service as an Associate Editor is open to any AIAA member; the best qualified individual is selected when a vacancy occurs. If you have an interest in being an Associate Editor, write or call (408-646-2958) the Editor-in-Chief.

Depending on how active you are in AIAA, you become more or less familiar with the AIAA New York staff. This Editor has found that the telephone calls between Carmel and New York are almost daily (on WATTS line, of course, to save money). In addition to JA, the New York staff for scientific publications under Miss Ruth F. Bryans and Mrs. Anne Huth handles three other journals, the Progress Series books, the Selected Reprint Series, and the annual index, as well as copy editing of the AIAA *Student Journal*. Seeing the "inside" operations it is apparent that Miss Bryans, Mrs. Huth, and their assistants are thoroughly competent and efficient. (As an author, if your paper drags out to six months without a publication decision, blame the Editor and Associate Editors; in spite of continuing effort, an occasional paper does stretch for an embarrassing number of months.)

I consider myself fortunate to have been introduced to the duties of an editor under the guidance of Dr. Gordon

L. Dugger, AIAA Vice President-Publications. Gordon served as Editor of the *Journal of Spacecraft and Rockets* for many years. As Vice President-Publications, he shared many excellent ideas and helped me learn policy and an editor's responsibilities.

The Associate Editors work with me and the reviewers to maintain the technical quality of papers published. Through the efforts of the Associate Editors, the balance and sense of direction for JA is established. I express my appreciation for their help. Special thanks are due Sheila Widnall, who has completed her tour as an Associate Editor. James E. Dougherty Jr., John H. Povolny, Edwin B. Stear, and E. Carson Yates are continuing their valued services, and we are pleased to welcome two new Associate Editors, Roy E. Reichenbach and Toshi Kubota.

Reviewers are vital to the success of JA as a quality archive journal; reviewers are anonymous. Once a year, the editorial staff has an opportunity to thank the numerous reviewers who have shared their talent and given their time. Thank you.

Allen E. Fuhs
Editor-in-Chief

Reviewers of *Journal of Aircraft*, September 1, 1973–August 31, 1974*

Abell, Eric E.	Crichlow, Walter J.	Gulrajani, B. K.	Lamar, John E.	Orr, Bob	Siddon, T. E.
Abzug, Malcolm	Crimi, Peter	Hackett, James E.	Lan, C. Edward	Parker, A. G.	Siegel, David
Addy, Alva L.	Crow, Steven C.	Hallock, James N.	Lauver, Dean C.	Parmet, Norman R.	Siegel, Sidney
A'Harrah, Ralph C.	Cubbison, Robert W.	Halsey, N. D.	Lee, Robert	Patierno, John	Simpkin, William E.
Aiken, Thomas	Cunningham, Atlee M., Jr.	Ham, Norman D.	Leehey, Patrick	Paullin, Robert	Sinacori, J. B.
Alag, G. B.	Cunningham, Herbert J.	Harper, Bill	Lew, James N.	Pavelka, Jerry	Smith, A. M. O.
Allen, Robert	Davidson, Kenneth	Harris, Roy V., Jr.	Lewellen, W. S.	Pedersen, George H.	Smithey, William
Anderson, Mel S.	Davis, Randall C.	Hedrick, J. Karl	Libove, Charles	Peters, David A.	Smyth, Richard K.
Anderson, William J.	Dexter, H. Benson	Heiser, William	Lindquist, Dean C.	Peterson, J. P.	Snyder, C. Thomas
Andrews, Wayne R.	Diehl, L. A.	Heller, Honno	Lindsey, Gerald	Pilkey, Walter D.	Soennicksen, E.
Antl, Robert	Dow, Marvin B.	Henderson, Robert E.	Lissaman, Peter	Platzer, Max	Solomon, Robert
Applegate, R.	Dowell, Earl H.	Hess, John L.	List, Bernard H.	Poe, Clarence C., Jr.	Sovran, Gino
Babcock, Charles D.	Doyle, Joseph P.	Hewett, Marle	Little, B. H., Jr.	Poli, Corrado R.	Spier, Edward E., Jr.
Bacon, R. M.	Drake, Douglas E.	Hickey, David H.	Loewy, Robert G.	Post, E.	Stalony-Dobrzanski, J.
Barber, Marvin R.	Duberg, John F.	Hillberry, B. M.	Lorenzini, Dino A.	Povolny, John M.	Stengel, Robert F.
Barlow, Jewel B.	Dvorak, F. A.	Himelblau, Harry	Ludwig, G. R.	Powers, John	Stineman, Russell W.
Baron, Sheldon	Eayot, Jack	Hoblit, Frederic M.	Luidens, Roger	Poyneer, R. D.	Stone, Melvin
Bartley, John B.	Edwards, Glen	Hodapp, Albert E., Jr.	McCormick, Barnes W., Jr.	Pride, Richard A.	Straight, David
Baunbeck, Robert J.	Ellis, Stan	Holdeman, James D.	McCullers, L. A.	Pucci, Paul F.	Sutter, Joseph
Belanger, Raymond G.	Enders, John H.	Holdhusen, James S.	McDougal, Robert L.	Purdy, David M.	Tanner, C. J.
Bencze, Daniel	Engle, R. M.	Horne, Walter	McGowan, William	Quinn, Brian	Tennyson, R. C.
Benefield, Tommie D.	Ericsson, Lars E.	Houbolt, John C.	McQuillen, E. J.	Redd, Tracy	Tennison, R. C.
Bennett, Dwight H.	Etkin, Bernard	Hudson, C. Michael	McRuer, Duane T.	Rediess, Herman A.	Thompson, James K.
Bert, Charles W.	Fenn, Raymond Jr.	Hunn, Spencer S.	McWhitney, Robert R.	Reid, Lonnie	Tiffany, Charles F.
Bierach, Karl	Ferri, Antonio	Huntington, Richard G.	Mace, William D.	Revell, James D.	Tiroshi, Izal
Bilanin, Alan	Findley, W. N.	Igoe, William B.	Mancinelli, D. A.	Reynolds, Phillip A.	Tombach, I. H.
Blaha, B. J.	Fletcher, Herman S.	Ingebo, Robert D.	Mapp, Richard	Reynolds, Thaine W.	Toni, Royce A.
Blesiadny, Tom	Fonash, Ray	Inger, George R.	Marble, Frank E.	Richey, G. K.	Trent, Warren C.
Blick, E. F.	Forney, A. K.	Israel, David	Marek, Cecil J.	Riddle, Dennis E.	Tuck, D. A.
Blythe, Keith I.	Fossett, W. K.	Jazwinski, Andrew H.	Massier, Paul F.	Roberts, B. W.	Tulinus, Jan R.
Bobbitt, Percy J.	Foster, Charles R.	Johnson, Walter A.	Matoi, Thomas K.	Rodden, William P.	Tymczysayn, Joseph
Bober, Lawrence J.	Fralich, Robert W.	Johnson, Wayne	Matthews, Allen R.	Roeser, Erwin P.	Verdon, Joseph M.
Boroh, J. D.	Franciscus, Leo	Jordan, Peter F.	Maxwell, Robert L.	Rom, Josef	Waddoups, M. E.
Bryson, Arthur E., Jr.	Fuller, James R.	Jorgensen, Leland H.	Messina, Anthony F.	Roskam, Jan	Wasserbauer, Joseph F.
Bush, Harold G.	Gabel, Richard	June, Reid R.	Metzger, Darryl E.	Rossow, Vernon J.	Waterman, Hugh
Butts, Harvey	Gainer, Thomas G.	Kaufman, J. G.	Miller, Rene H.	Rowe, William S.	Weatherill, Warren H.
Butze, H. F.	Garnett, James R.	Kelley, Henry J.	Miller, William B.	Royal, Allen C.	Wei, R. P.
Calogeras, James E.	Gaonkar, G. H.	Kerrebrock, J. L.	Morgenthaler, J. H.	Royster, Dick M.	Weller, Tanchum
Campbell, John P.	Garodz, Leo J.	Kerwin, J.	Morkovin, Mark V.	Rubbert, Paul	Wheatley, John
Carlson, E. F.	Gertsen, W. M.	Kester, Gervis D.	Morris, Everett W.	Salkind, Michael J.	Wheeler, O. E.
Carlson, Neal A.	Giebtowski, Edward J.	Kiel, Joseph	Mose, Kurt	Sandford, Maynard C.	Whitaker, H. Philip
Cheng, Sin I.	Giles, Gary L.	Kimsey, Clay	Moul, Martin T.	Sandor, Bela I.	White, Maurice
Chevalier, Howard L.	Goldburg, Arnold	Kirk, Donald	Musgrove, Max D.	Sandoz, Paul J.	Whitfield, Jack D.
Chyu, Wei Jao	Goldstein, Marvin	Kodis, Ralph	Nagamatsu, H. T.	Santi, Gino	Widnall, William S.
Ciletti, Michael	Grabner, Edwin J.	Koeing, R.	Nerem, R. M.	Sarpkaya, Turgut	Williams, F. A.
Clark, John S.	Graham, Walton	Kohlman, David L.	Netzer, David	Schawman, R. L.	Williams, Robert
Clarke, John	Grantham, William D.	Kom, James O.	Neuman, Frank	Schetz, Joseph A.	Wirsching, P. H.
Clary, Robert R.	Greene, Lawrence	Krackmalnick, Fred	Niedzwiecke, R.	Schjelderup, H. C.	Wolf, D. F.
Condit, Phil	Greenstone, Reynold	Kraft, Gerald	Noll, Thomas E.	Schoenster, James A.	Wood, William
Cooley, Dale	Gregory, Derek P.	Krupitsky, M.	Novotny, Richard	Scruggs, Roy M.	Woolard, Henry W.
Corrales, Jim	Grobman, Jack	Kuo, H. C.	Ojalvo, I. U.	Sears, W. R.	Yen, K. T.
Costakis, William G.	Grosser, William F.	Kurkov, Anatole	Olcott, John W.	Seckel, Edward	Young, Lawrence R.
Covert, E. E.		Lakshminarayana, Budugur	Olsen, William	Seebass, A. Richard, III	Young, Maurice I.
Crawford, R. A.			Oman, Charles M.	Shamroth, Stephen	Zonars, Demetrius
Crews, John H., Jr.				Shen, Eric	Zrakat, Charles A.

*Because it is difficult to include reviewers for September, October, November, and December in this issue of the Journal, they will be listed with the reviewers for 1975 in the January 1976 issue.