

Aerospace's Golden Age

IT seems as if the golden age of aerospace has arrived. The 1960's saw a tremendous explosion of aerospace activity—supersonic aircraft, the moon landings, the perfection of many types of missiles, and the era of U.S. dominance in jet passenger aircraft. The momentum was able to carry the American aerospace technology through the 1970's, in spite of damage and attrition caused by a decrease in programs. And now there has been a marvelous resurgence, culminating in the successful recovery by the space shuttle of two misorbited satellites. In addition to third-generation military hardware, American commercial aviation dominates the world with new, efficient jet liners and general aviation aircraft. The future will see a U.S. manned space station, more direct satellite-to-home television reception, and possibly a viable missile defense.

This has been made possible by a large investment in America's technology, and a technical establishment that is on the forefront with a sufficiently large number of technical personnel to perform these feats.

There are, of course, some clouds on the horizon. In the education area, there are reports that college engineering laboratories desperately need upgrading, and that there is a dearth of both graduate students and young faculty due to the disparity in industrial vs academic salaries. Many of these positions are being filled by foreigners and/or immigrants to this country. We should welcome this insofar as this country is concerned; after all, we are all gratified that there were opportunities here for our forebears. With respect to foreign brain drain, we should encourage other countries to provide a creative and productive environment for their own technical people; but in the absence of that, being here is better than being underutilized abroad.

In our area of technical dissemination, Department of Defense directive 5230.25 (Nov. 6, 1984) contains some disquieting provisions. The purpose of this directive is to withhold technical data from dissemination to foreign adversaries if these data "disclose critical technology with military or space application." We all know that, for most contracted work with the Defense Department, public release approval must be obtained to publish or disseminate a report. In the past, the contracting officer consulted his classification guide and generally, if the work was unclassified, approval was received. More recently, a classified Military Critical Technology List appeared which suggested nonforeign release of certain unclassified data, leading to a few instances of disapproval. But now there is a new unclassified MCTL which must be consulted by the contracting officer for *general guidance* for public release approval. Qualified U.S. contractors will still be able to obtain copies of such data (if their existence is known).

What are the consequences of this new directive? In the aerospace field it is hard to find any technical data which do not have either military or space applications. Thus, one possibility is that published aerospace journals simply will disappear because they are in the public domain, e.g., exportable without restriction.

There is no question but that would have disastrous results on American technology for two reasons: namely, review and dissemination.

The papers in our journals are reviewed by two or three peers prior to publication. The reviews generally lead to improvements in the presentation or interpretation of the results. About 30% are declined, generally for being either incorrect

or misleading. Although no system of peer review is perfect, it does increase the accuracy of published manuscripts. Following publication, there is further opportunity for discussion of the work, in our case by means of technical comments. The result is a body of credible, accurate, and useful data. Occasionally we reject a paper that should have been published. Fortunately there are many overlapping journals, and if a paper is worth publishing it usually appears eventually.

Work performed under contract is usually handled differently. For basic research there is generally no review; for others, a contract report is reviewed by the officer or his team prior to printing. And, although many technical contract officers are very competent, it is not the same as anonymous peer review. The consequence of this could be a *lowering* of U.S. technology standards. After all, many of the 30% rejected papers were approved for public release by a cognizant Government agency. It is personally difficult for me to see how technical pre-eminence can be maintained with a 70% reliability. Could our aerospace vehicles operate if each component had only a 70% reliability? I think not. It seems to me that the fatal erroneous assumption being made is that all data are valid and useful. We all know that is far from true.

With regard to dissemination, we all know the difficulty of keeping abreast in our own field. Fortunately every technical library maintains a fairly complete set of technical data within the covers of the journals on its shelves. With the use of modern computer key word searches, one is never more than about an hour from the data one wants. If the material is only in report form, one has to first search for the material through NTIS and then send for it, which takes two to three weeks. There is also motivation—one generally writes a report as preparation for publication. If publication is prohibited, the motivation for writing a complete report will be decreased. U.S. technology has forged ahead of the world by a combination of generous sponsorship and uninhibited dissemination of data. To inhibit the latter is analogous to trying to do business without a telephone.

Thus, while we all wish to prevent critical technology from falling into the wrong hands, the MCTL appears to be a Draconian method to accomplish this, which will undermine our aerospace technology base if fully implemented. The golden age may tarnish.

As for the *AIAA Journal*, the unfortunate increase in publication delay was caused by a combination of the move of the New York office, loss of compositor personnel, and composition equipment which has begun to show its age by more frequent malfunctions. On the plus side, the *AIAA Journal* is in the black, possibly because more manuscripts were printed in 1984. The move is now over, additional personnel have been obtained, and new typesetting hardware has been purchased; all of this should help in 1985.

The planned decrease in the backlog for 1985 will mean that promptness will be needed from all associated with the Journal, which functions only because of cooperation of the team of authors, associate editors, and reviewers. We must rely on the good will, commitment, and responsiveness of our reviewers to return manuscripts within the allotted month. We then must rely on authors to make the requested revisions within a month also to assure timeliness of publication. For the reasons given above, we do not want pressure to abandon the review process in favor of expediency. We also plan to implement computerized tracking of papers, to automate the

reporting of excessively slow responsiveness so that prompt corrective action can be taken.

Thanks are due to all members of the AIAA Scientific Publications Department, including Norma Brennan, Elaine Camhi, and Mildred Daniels for the timely production of our issues; Professor Jack R. Vinson, retiring Associate Editor, for his many hours; and to all of our reviewers (whose

signatures we could read) listed below. And, welcome to our new Associate Editor, Dr. Keith Kedward. Finally, I am looking forward to an exciting new year in which all of our problems and disputes are resolved.

George W. Sutton
Editor-in-Chief

Reviewers for the *AIAA Journal*—1984*

Adamczyk, J.	Brunner, M.	Culick, F.	Fried, I.	Hetrick, M.
Adamson, T.	Bryson, A. E. J.	Cumpsty, N.	Friedmann, P.	Ho, C.
Addy, A.	Brzustowski, T.	Curry, D.	Fung, K.	Hobbs, D.
Adrian, R.	Buch, S.	Dailey, J.	Gad-El-Hak, M.	Hockley, B.
Adrian, R. J.	Buggeln, R.	Daric, W.	Galanga, F.	Hodson, H.
Agarwal, R.	Buning, P.	Darrell, L.	Garabedian, P.	Hoffman, A.
Akay, H.	Burns, P.	Dash, S.	Garbo, S.	Hoffman, J.
Alperin, M.	Bush, R.	Davis, R.	Garg, D.	Hohn, T.
Alpert, R.	Bushnell, D.	Davis, S.	Gatski, T.	Holdeman, J.
Amimito, S.	Butler, T.	Davis, T.	Gelinas, R.	Holmes, D.
Anderson, D.	Bywater, R.	Davy, W.	Geller, E.	Homicz, G.
Anderson, J.	Cady, H.	Dawes, W.	George, W.	Horstman, C., Jr.
Anderson, O.	Calarese, W.	Daywitt, J.	Gessner, F.	Houbolt, J.
Ash, R.	Camarda, C.	De Ris, J.	Ghia, N.	Hounjet, H.
Atassi, H.	Carey, G.	Dean, P.	Ghia, U.	Howe, M.
Atencio, A.	Carmichael, R.	Deese, J.	Gibson, G.	Howe!, J.
Atta, E.	Carr, L.	Deiwert, G.	Gilman, B.	Huang, C.
Autric, M.	Carter, J.	Delaney, R.	Glass, I.	Huang, T.
Bailey, C.	Caspar, J.	Demetriades, A.	Glick, R.	Huerre, P.
Baker, A.	Caughey, D.	Dennis, S.	Goldman, A.	Hui, D.
Balasubramanian, R.	Caulfield, H.	Denton, D.	Goldschmidt, V.	Hung, C.
Ballantyne, A.	Cebeci, T.	Dhingra, A.	Goldstein, R.	Hunter, L., Jr.
Barnwell, R.	Chaderjian, N.	Dimotakis, P.	Goodman, J.	Hussain, A.
Baron, J.	Chamis, C.	Dinson, L.	Goorjian, P.	Hussaini, M.
Barthelemy, J.	Chang, S-C.	Dobyns, A.	Gottlieb, D.	Ingebo, R.
Batdorf, S.	Chapman, D.	Dolling, D.	Gouldin, F.	Inger, G.
Beam, J.	Chase, C.	Dong, S.	Greber, I.	Inoue, O.
Bearman, P.	Chen, H.	Dosanjh, D.	Green, M.	Irvine, T.
Bechtel, J.	Chen, J.	Doss, E.	Greene, W.	Isaacson, L.
Beck, J.	Chen, L.	Dougherty, F.	Greszczuk, L.	Isogai, K.
Beckstead, M.	Chen, T.	Dowell, E.	Griffin, O.	Ives, D.
Beltner, J.	Cheng, H.	Dowler, W.	Groenewig, J.	Jagoda, J.
Benecker, R.	Cheng, S.	Dryer, F.	Grossman, B.	Jagoda, J.
Bennett, R.	Cheng, W.	Dryer, H.	Guderley, K.	Jagoda, J.
Benson, T.	Chesson, E.	Duckstein, L.	Guenther, A.	Jay, R.
Berchet, D.	Cheung, Y.	Dugundji, J.	Guruswamy, P.	Jenney, D.
Berlad, A.	Chigier, N.	Dulikravich, G.	Hackett, C.	Jennions, I.
Berman, A.	Childs, M.	Duncan, J.	Hafez, M.	Jespersen, D.
Bershafer, D.	Chinitz, W.	Dunn, M.	Haftka, R.	Johnson, F.
Bert, C.	Chou, T.	Durbin, P.	Hahn, T.	Johnson, W.
Bertin, J.	Choudhury, P.	Durst, F.	Hale, A.	Johnston, J.
Bevilaqua, P.	Christensen, R.	Dwoyer, D.	Hall, D.	Johnston, W.
Biefeld, T.	Chung, B.	Dwyer, H.	Hall, R.	Joshi, M.
Birch, S.	Clark, S.	Dyer, M.	Hall, W., Jr.	Kahawita, R.
Blake, J.	Coakley, T.	Dywer, D.	Hallauer, W.	Kamat, M.
Blazowski, W.	Cohen, N.	Edwards, J.	Ham, N.	Kang, X.
Blevins, R.	Coles, D.	Eighobashi, S.	Hanagud, S.	Kassoy, D.
Blottner, F.	Colwell, J.	Eisemar, P.	Hardin, J.	Kaufman, H.
Bogdonoff, J.	Condon, J.	Emanuel, G.	Harris, W.	Kaza, K.
Boggs, T.	Cooper, M.	Emery, A.	Hassan, A.	Kazakia, J.
Boni, A.	Coppolino, R.	Erdmann, J. C.	Hassan, H.	Keck, J.
Booth, T.	Cordell, T.	Erdos, J.	Hassig, H.	Keefer, D.
Boppe, C.	Correa, S.	Erickson, L.	Haug, E.	Keffer, J.
Borland, C.	Covert, E.	Ericsson, L.	Hedgepeth, J.	Kemp, N.
Bracco, F.	Craig, R.	Eshleman, R.	Hegde, U.	Kemp, W., Jr.
Bradbury, L.	Craig, R., Jr.	Etkin, B.	Hegemier, G.	Kennedy, L.
Bragg, M.	Cremers, C.	Faeth, G.	Heidner, R.	Kentfield, J.
Briley, R.	Crespo da Silva, M.	Farmer, W.	Henne, P.	Kerner, E.
Briley, W.	Crimi, P.	Fearn, R.	Herbert, M.	Khosla, P.
Brill, T.	Crosbie, A.	Fendell, F.	Herbert, T.	Kibens, V.
Bristow, D.	Crossman, F.	Flaggs, D.	Herm, R.	King, M.
Browand, F.	Crouch, S.	Floryan, J.	Hermesen, R.	Kinney, R.
Brundige, W.	Crowder, J.	Forester, C.	Hersh, A.	Kitchens, C.
Brunelle, E.	Crowe, C.	Foster, M.	Hesselink, L.	Kleis, S.

*This list represents those names supplied by the Associate Editors and Editor-in-Chief.