

Editorial and Acknowledgments

"New Hope"

EVERY eight years, at this season, there is a resurgence of hope and expectations in the hearts and minds of all Americans. This is associated with that wonderful American phenomenon, a change in administration. President Carter has hinted at beneficial programs for all segments of our society, apparently without falling into the trap of one-shot panacea cures. With respect to the areas that affect our readership, we are all acutely aware of the deficiencies in our present programs for energy, defense, transportation, and conservation of our environment. These deficiencies have occurred for a variety of reasons, including world-wide inflation; a slow-down of the economy which decreased federal tax revenues; the needs for rapidly expanding the coverage of social and medical programs which diverted funds; and the rapid time rate of change of the forcing functions which produced a lag in the response, and which occurs in many feedback servo loops. The rate of change of the input has decelerated considerably so that the presently existing gaps are clearly discernible. We find ourselves left with increasing oil imports, an enlarged defense gap, a deficiency in electrical generation capacity, gaps in health care delivery, and a lack of grain reserve. For each of these there is no simple solution; alternate plans need to be established and evaluated, not only on the basis of the benefit from each, but on the resources needed to implement each plan and the competition for the common resources between diverse programs.

It is clear that there will be a resurgence of research and development during the next eight years. I believe that the research will have to be directed more toward areas of high potential payoff. There should be much less room for baroque areas of research, which I define as unnecessary improvements of either theory or measurements, and more emphasis on discovery of new phenomena and the innovations needed to make them useful to society. We need to learn how to conserve our resources more effectively than ever before, while increasing our productivity, particularly for essential products for export, in order that the rest of the world can afford them.

We also need to reassess our structure for research and development. We currently have four chief institutions engaged in these activities: the national and government laboratories; the federally supported research centers; universities; and private industry. Each has a role to play and, in fact, each has many roles to play. One must avoid the trap of

attempting to stereotype their images, but one must recognize the shifting of funds and technical personnel away from private industry laboratories to the national laboratories. This trend needs to be studied from the cost-benefit aspect, including why it is presently occurring and to what extent it is unplanned. Perhaps the universities need strengthening to assure future generations of technical capability. Perhaps the investment tax credit policy requires revision in order to put more emphasis on product development and improvement as opposed to expanded production capability. (As an aside, why not expand job capacity as well?) These are just some of the R&D issues that the new administration must deal with effectively. We hope that the AIAA and its members will be able to provide help in formulating the new policies.

Acknowledgments

We have completed successfully our transition to in-house photographic composing and also have been able to reduce the backlog with some help from our newcomer, the *Journal of Energy*. Our major publication delay of manuscripts at present is the review and technical editing time and, of course, the time for authors to revise their manuscript. We hope to take steps this year to decrease those times as well.

Credit is due Ruth F. Bryans and Anne Huth, Director and Assistant Director of Scientific Publications, respectively and the production staff, particularly David L. Staiger, Director of Production and Carol Ohrbach, who put us back on the timetable.

We are indebted to our retiring Associate Editors who have given their time and effort so generously: Charles D. Babcock (structural stability), Nelson H. Kemp (boundary layer and unsteady flows), and Louis A. Povinelli (combustion). We likewise welcome as new Associate Editors Harvard Lomax (computational fluid mechanics), Marvin Goldstein (aeroacoustics and combustion) and David Bushnell (structural stability). Richard H. Battin has agreed to serve another term as Associate Editor for control theory, for which we are very thankful.

Finally, we 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.

George W. Sutton
Editor-in-Chief