

CONCLUSIONS/RECOMMENDATIONS

Working Group 18, "Hypersonic Experimental and Computational Capability, Improvement and Validation", was composed of a circle of senior managers and researchers from the United States and Western Europe; its four-year study, summarised herein, has led to a sharing of experiences and the development of trust through well-defined cooperative projects.

Conducting experiments on standard test models in a wide range of hypersonic facilities provided a unique opportunity for facility and code validation. An important contribution was made by the Working Group to the success of the initial calibration and "shake-out" of four new real-gas facilities on both side of the Atlantic.

The studies performed by the various teams have resulted in a better identification of the risks involved in hypersonic vehicle design and have led to a wide range of recommendations to reduce these risks. In broad terms, Working Group 18 urges that resources be allocated within the NATO nations to:

- resolve facility, computational, and modeling deficiencies with targeted research efforts.
- accelerate the multiple facility/multiple computation strategy with standard models

Only in this way will we be ready to meet the inevitable challenges that will arise. In conclusion, the need for sustained hypersonic flight has been expressed by a number of NATO member states. Working Group 18 and other AGARD activities have demonstrated that many member states possess not only the intellectual and physical resources necessary to accomplish this goal, but have shown their ability and readiness to collaborate efficiently at the R & D level. Let us capitalise on these facts and move ahead by supporting the above recommendations and by defining specific NATO wide projects which will serve as drivers for increased collaboration in the future.