105, which indicates that an optimum thrust-to-weight ratio exists for thermal rockets and is nearly independent of mission choice. This results directly from the fact that all these missions involve passage through the earth's gravitational field. Values of \( \frac{F}{W_0} \) much less than the optimum result in increased mission \( \Delta V \) requirements, while values much greater than the optimum lead to increased engine and structure weight requirements.

The nuclear rocket program has expanded its support of universities for research related to nuclear rockets. Rensselaer Polytechnic Institute and the Univ. of Arizona are conducting control-theory research, the Univ. of Miami has received a grant for two-phase flow research, and Princeton Univ. is conducting studies and research on advanced propulsion concepts.

In conclusion, it is clear that much work remains to be done before actual flight tests of nuclear engines become possible. The dominant technical problems continue to be those associated with reactor structural and temperature requirements.

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