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## **New York Airways Collection - Report of the Task Force on National Aviation Goals (Project Horizon), FAA, 9/61**

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control, stability, etc. In this regard, particular attention should be given to determining the preferred means of achieving the variable wing geometry needed to permit efficient operations at subsonic and supersonic flight - particularly as regards the practicability of using variable sweep.

Another area of importance in the applied research program is the determination of the preferred materials for meeting the high-temperature conditions associated with the mach 3 speeds and for the long lifetime required for economical commercial transport aircraft.

Still another area of critical uncertainty that should be investigated at an early date has to do with the so-called sonic boom. Presently available data with respect to the effect of the sonic boom on the ground environment are sparse, and present evidence indicates that there may be no straightforward approach to a solution of the problem. Until more definite information is available, regarding the effects of the sonic boom on the ground environment, and the degree to which the boom may be reduced by attenuation in the atmosphere and/or by aerodynamic arrangements, it is not possible to assess the operational limitations that will have to be placed on supersonic transport service.

Although the above are critical areas of research, there are many other elements associated with the supersonic transport which will require extensive research and development. The supersonic transport will require such large research, development, test, and production costs as to make impractical any course other than direct Government financial assistance. It does not lie within the province of this report to delineate in precise detail the nature or the extent of Government assistance to the supersonic transport program. It is our opinion, however, that the broad general lines of such a program should embrace competitive design submissions with some financial participation on the part of the competitors in the costs incurred prior to the selection of the preferred design and contract order. The costs involved in the research, development, initial production, and testing probably should be borne by the Government as an expenditure in the national interest, with consideration given to the recovery of such expenditures or a por-

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