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F.Y. 1972 fund request for F-8 Supercritical Wing Research Airplane modifications and construction of new sting support system for the Langley 8-foot transonic pressure tunnel

Initial flight tests of the F8-Supercritical Wing Research Airplane, scheduled for late calendar 1970, are intended to demonstrate the basic wing concept. In follow-on phases of the program, and in F.Y. 1971, funds are requested for design of a more efficient and representative high lift system which would be employed to determine practical aspects of the application of such a system to the supercritical wing and its aerodynamic performance. An additional effort would be the design of forward fuselage area additions, the use of which would allow the wing to reach its optimum performance.

The funds requested for F.Y. 1972 are associated with construction of the noted high lift system and fuselage modifications. Estimated construction costs for the high lift system and fuselage modifications totals $1,500,000 and is shown under RTR 737-54-10-03-23.

The present support system for the Langley 8-foot transonic pressure tunnel is capable of variations in the pitch plane only. Sideslip variations are obtained by the use of offset couplings which require separate tunnel entries. In addition, the model translates from the tunnel centerline by an appreciable amount at high angles of attack. The new sting support system will have the capability for variations of pitch, roll, and sideslip while maintaining the model reasonably close to the tunnel centerline. The cost for the construction of the new sting support system is estimated to be $250,000 and is shown under RTR 737-54-10-03-23.

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