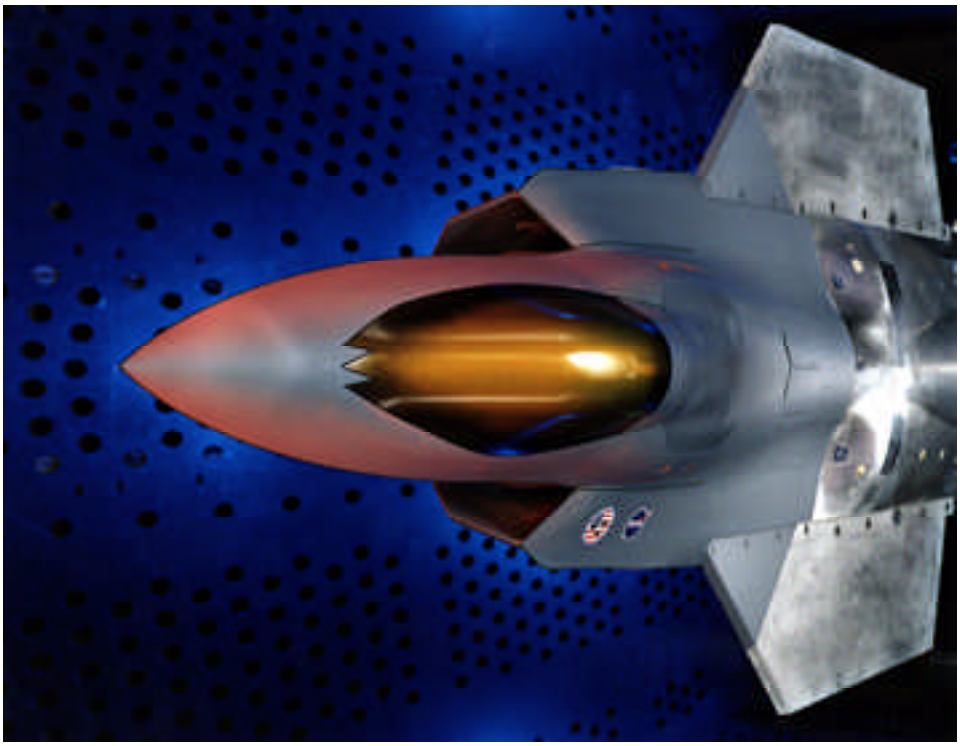
Forebody/Inlet of the Joint Strike Fighter Tested at Low Speeds

As part of a national cooperative effort to develop a multinational fighter aircraft (ref. 1), a model of a Joint Strike Fighter concept was tested in several NASA Lewis Research Center wind tunnels at low speeds over a range of headwind velocities and model attitudes. This Joint Strike Fighter concept, which is scheduled to go into production in 2005, will greatly improve the range, capability, maneuverability, and survivability of fighter aircraft, and (as indicated in ref. 2) the production program could ultimately be worth $100 billion.



Joint Strike Fighter model installed in Lewis' 8- by 6-Foot Supersonic Wind Tunnel.

The photo shows the forebody/inlet model installed in Lewis' 8- by 6-Foot Supersonic Wind Tunnel. The model was tested at low speeds $(0 \le M_0 \le 0.45)$ in Lewis' 8- by 6-Foot wind tunnel and in Lewis' 9- by 15-Foot Low-Speed Wind Tunnel.

The test program was a team effort between Lewis and Lockheed Martin Tactical Aircraft Systems. Testing was completed in September 1997, several weeks ahead of schedule, allowing Lockheed additional time to review the results and analysis data before the next test and resulting in significant cost savings for Lockheed.

Several major milestones related to dynamic and steady-state data acquisition and overall model performance were reached during this model test. Results from this program will contribute to both the concept demonstration phase and the production aircraft, and will

greatly increase and improve both NASA's and Lockheed's technical databases. The program is ongoing and will continue to define the performance and operating characteristics of the concept. Recent modifications to the dynamic data acquisition system led to a substantial reduction in Lockheed's personnel support requirement at Lewis, which translated into a huge cost savings for Lockheed. The program also has had a visible positive effect on NASA Lewis.

References

1. Australia to Join JSF Program Soon. Aviat. Week Space Technol., vol. 147, no. 8, Aug. 25, 1997, p. 52.

2. Morrocco, J.D. : BAe Joins Lockheed Martin in Joint Strike Fighter Bid. Aviat. Week Space Technol., vol. 146, no. 26, 1997, pp. 22-23.

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