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FA-11: The Future Design of Fighter Jets

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Driving question

How can we design a next-generation fighter jet that balances stealth, speed, and versatility to dominate in future air combat scenarios?

Introduction

The F-35 is a high-tech stealth fighter made for a wide range of missions. It has a powerful F135 engine that allows it to fly at high speeds and, in some versions, take off and land vertically. The aircraft is packed with advanced systems like radar, cameras, and sensors that all work together to give the pilot a complete view of the battlefield. This information is shown through a touchscreen display and a special helmet that puts data right in front of the pilot's eyes.

The jet's design focuses on stealth, with smooth angles and special materials that make it hard to detect by radar. It also hides its weapons inside the body to stay hidden. The F-35 can carry missiles, bombs, and a cannon, making it ready for both air combat and ground attacks.

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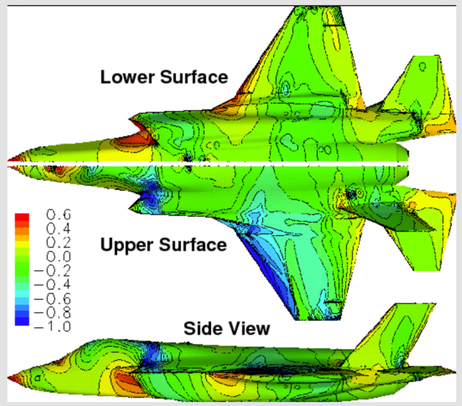
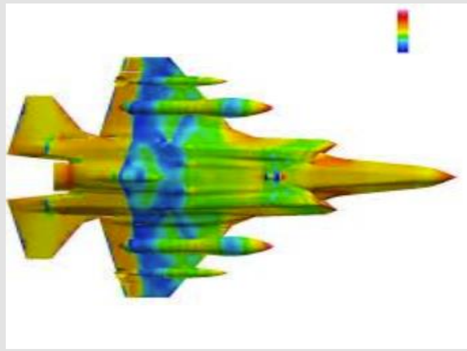
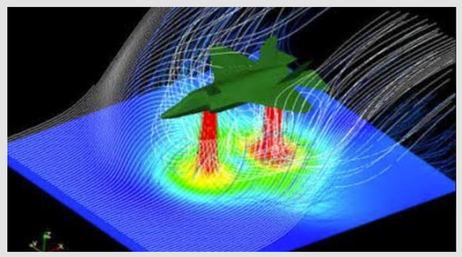
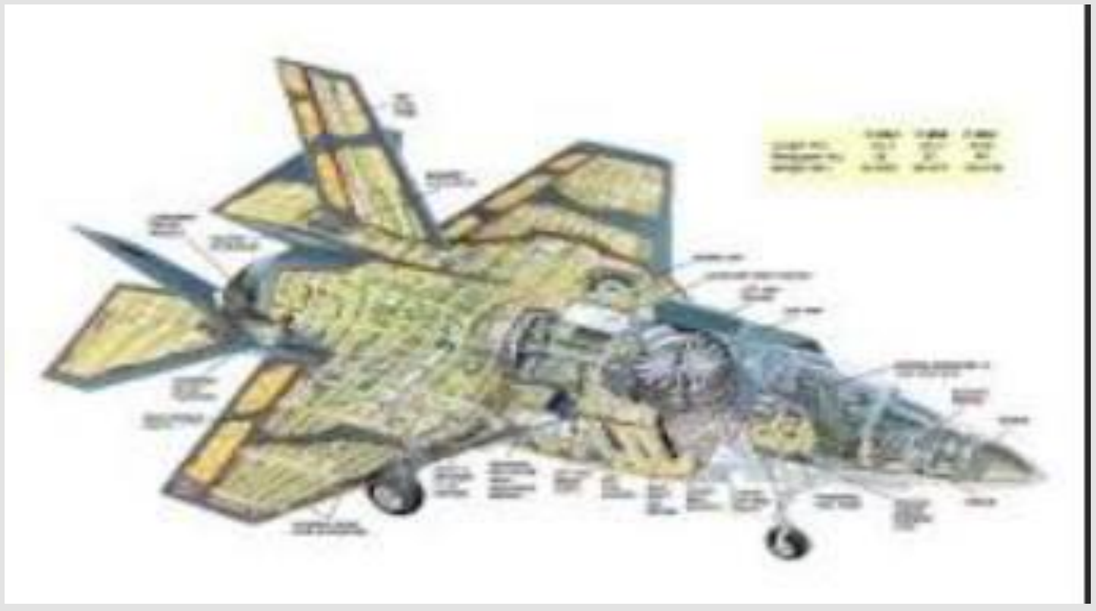
Air Flow Tests/Blueprints









Results

Through all the air flow and extensive CFD tests, we found out that the design is functional and all systems such as the vertical takeoff/VTOL and weaponry is fully functional. This fighter is nearly invisible to radar as the radar cross section of this plane is about the size of a bird.

Recommendations/Conclusion

In conclusion, the fighter jet design was a success. It meets the key goals of stealth, speed, versatility, and advanced technology. The aircraft's shape and internal weapon bays help reduce radar detection, while the powerful engine and smart systems provide excellent performance and situational awareness. With strong offensive and defensive capabilities, the final design is well-prepared for modern air combat and mission flexibility. This project shows how combining innovative thinking with proven engineering can lead to a highly effective fighter jet.

Acknowledgements

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