



HERMES The Airtanker

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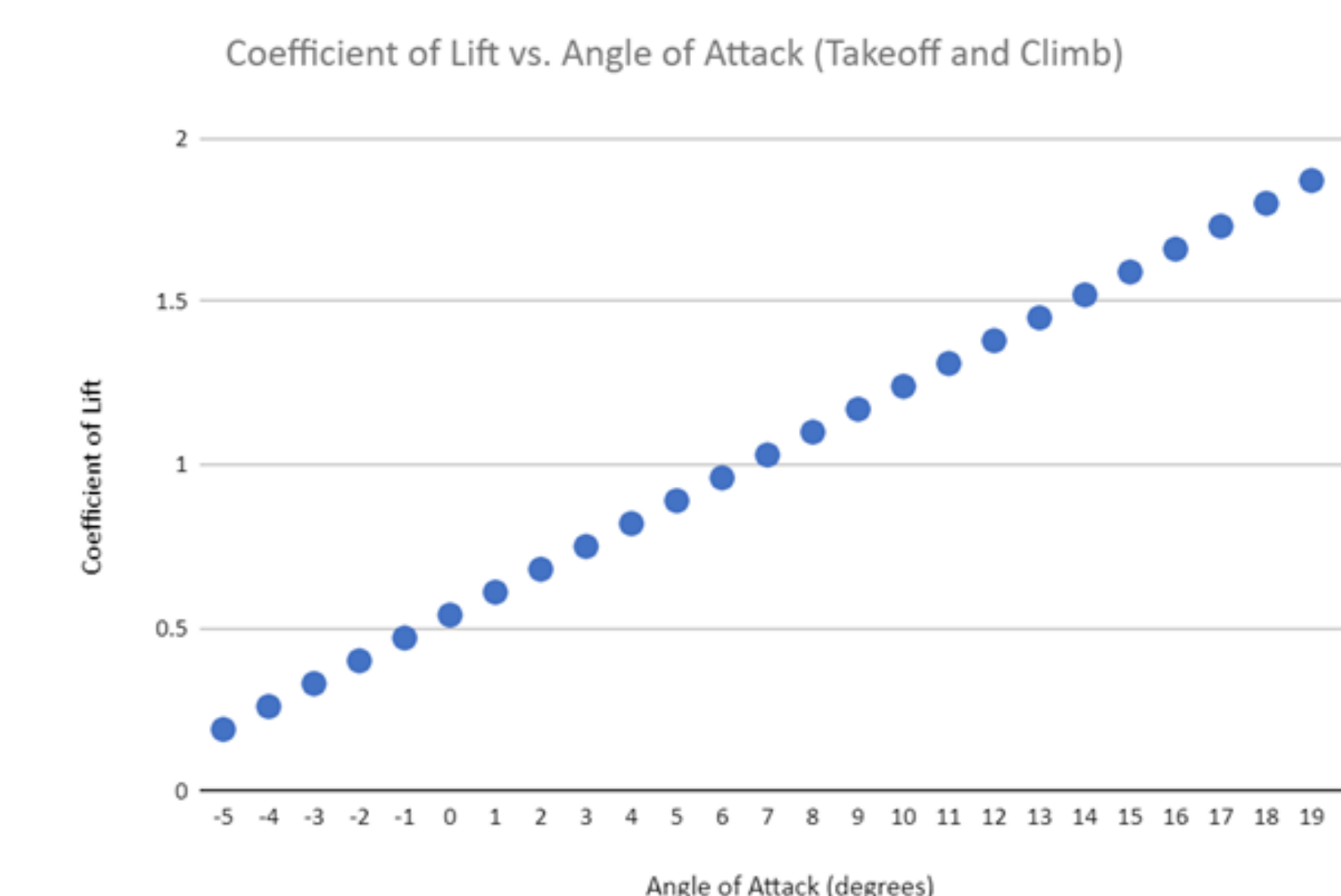
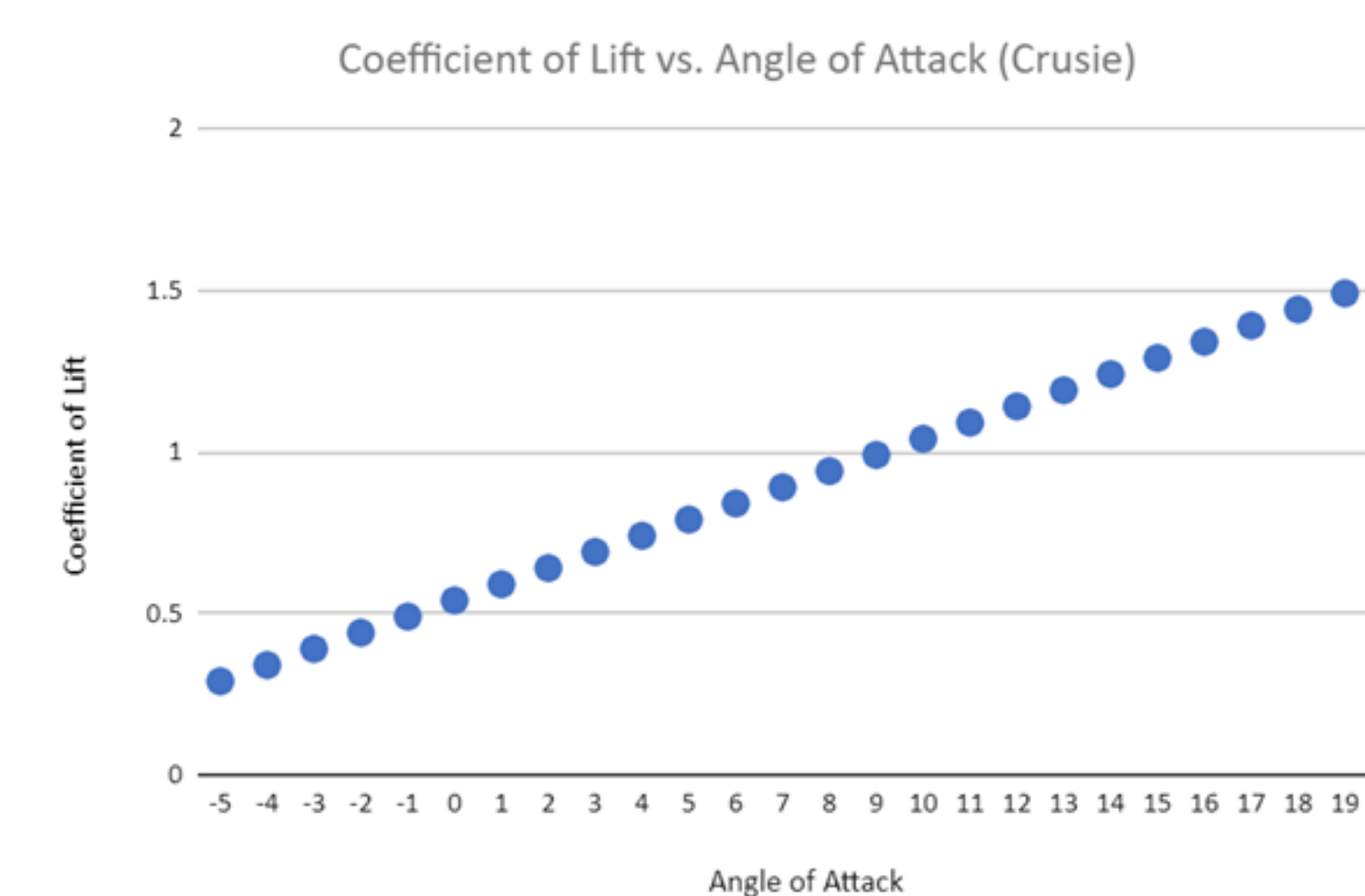
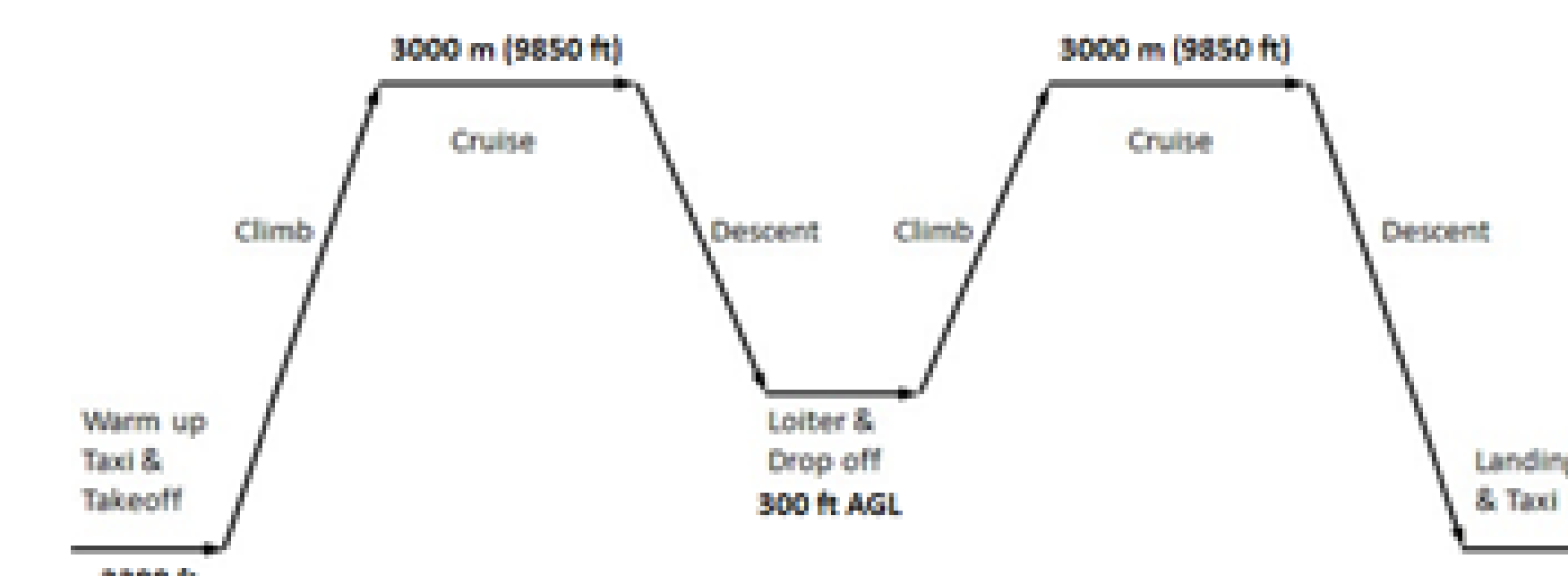
MOTIVATION

Wildfires have always presented an enormous risk to human lives, property, and wildlife. The rapidly fluctuating temperatures have resulted in more frequent and much more catastrophic wildfires. The need for a specifically-designed aircraft that is uniquely suited to combat this issue has never been more prominent. Hermes was designed in order to fulfill this mission while employing new state-of-the-art ideas and design considerations.

DESCRIPTION

Hermes is a fixed-wing air tanker that is purposefully built to fight relatively large wildfires. It is equipped with 2 retardant tanks, each capable of holding 4,000 gallons of retardant. It is propelled by 2 turbofan engines, which create a combined thrust of 490 Kilonewtons. The wing has a span of 33 meters and the aircraft has an overall length of about 30 meters. The large wing-to-body ratio is designed to allow for slow drops, while also maintaining high lift.

	Ferry mission	Firefighting mission
Cruise Altitude [ft]	30,000	9850
Max Range [nmi]	2900	1400
R/C Max, [ft/s]	303	303
Velocity, cruise [kts]	293	221
Velocity, dash [kts]	382.7	382.7
Stall speed [kts]	110	103



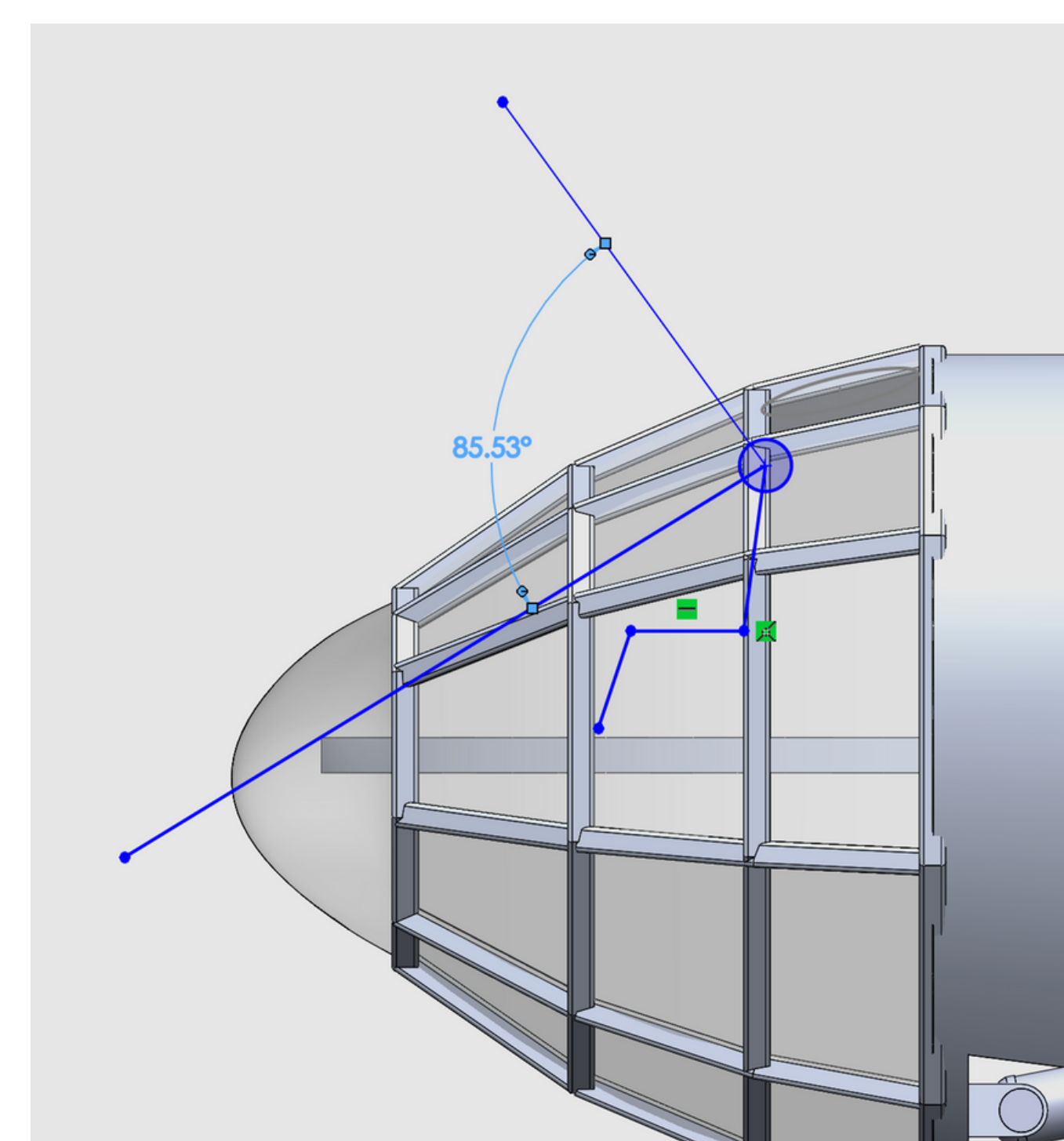
Multi-Sensor Pod

The Multi-Sensor Surveillance Pod is capable of retrieving real time footage in high definition and night vision, and is also equipped with a thermal imaging camera.

CAPABILITIES

Hermes is able to perform multiple fire missions at an altitude of fewer than 300 feet and can perform these drops at a speed of around 144 miles per hour, all at a rate of at least 500 gallons of water or retardant. Each drop is at least 2,000 gallons.

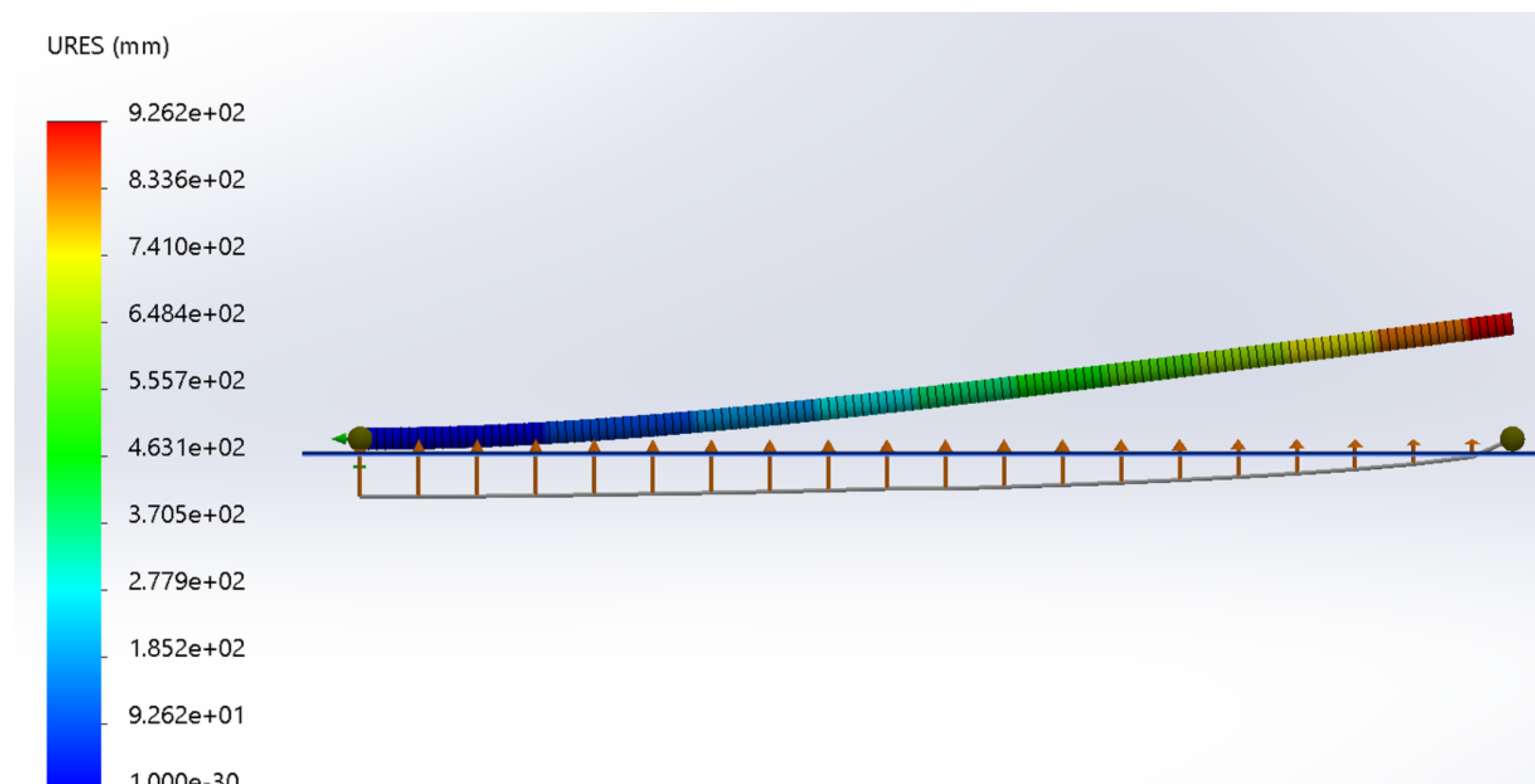
SPECIAL FEATURE: COCKPIT



Hermes' cockpit was designed with one goal in mind: visibility. The glass dome look provides the pilot and co-pilot optimal viewing of the area in question. No more trying to look out of a small window, as Hermes' entire cockpit is transparent.

Wing-Spar Deflection

The lift distribution of our NACA 4418 airfoil along with the spar distribution creates a maximum deflection of 962 millimeters, which is about 3 feet.



Life Cycle Cost for 70 Aircraft

Activities	Work Hours Required	USD Required
Airframe Engineering	12,647,395	\$2,054,569,462
Development Support	N/A	\$321,270,755
Flight Tests	N/A	\$20,355,827
Tooling	7,279,366	\$1,244,771,689
Manufacturing	21,847,885	\$3,015,178,591
Quality Control	2,600,600	\$406,236,636
Engine and Avionics	N/A	\$1,066,969,573
TOTAL		\$8,139,268,314

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