



Project Morpheus: Supersonic Jet Transport

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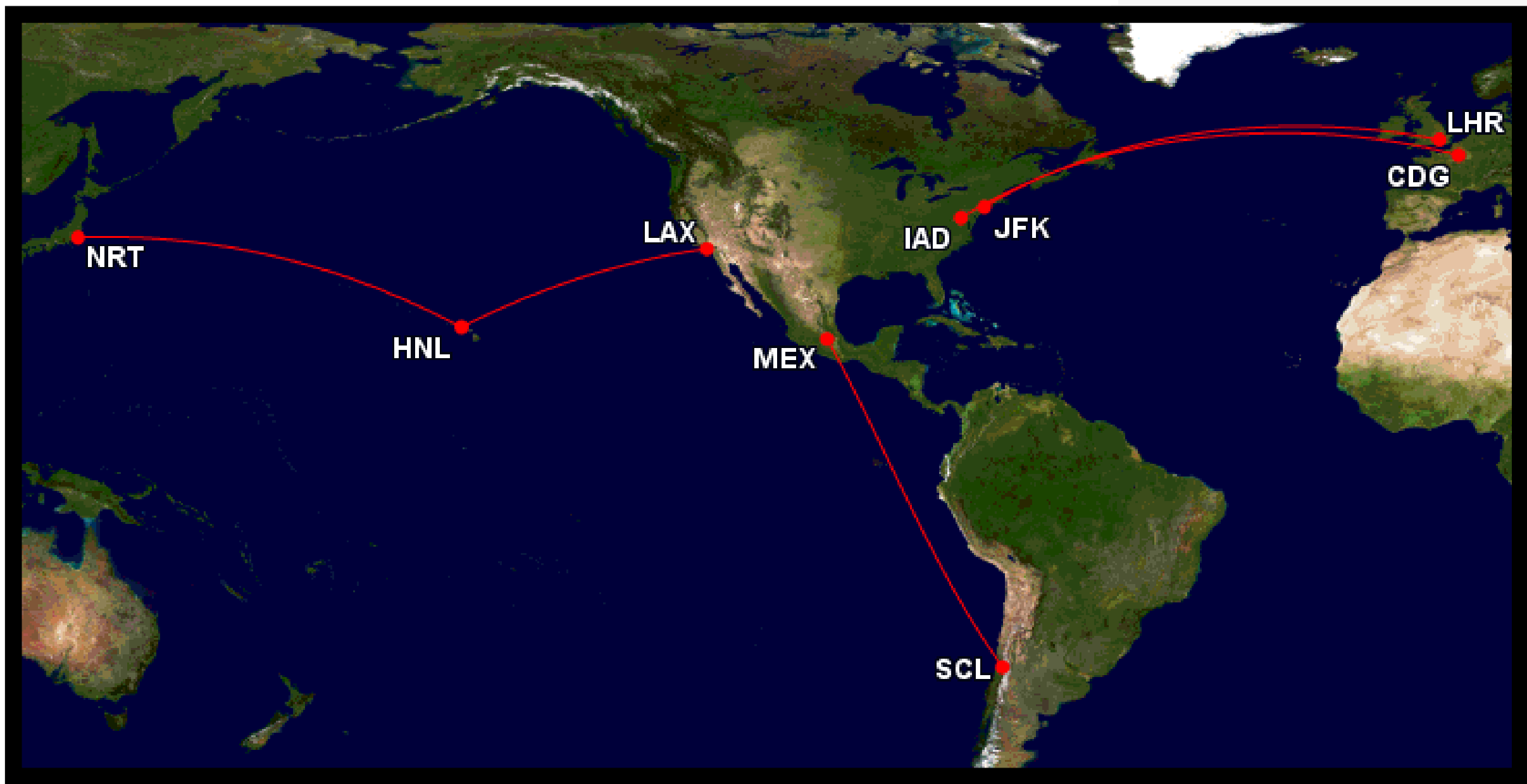
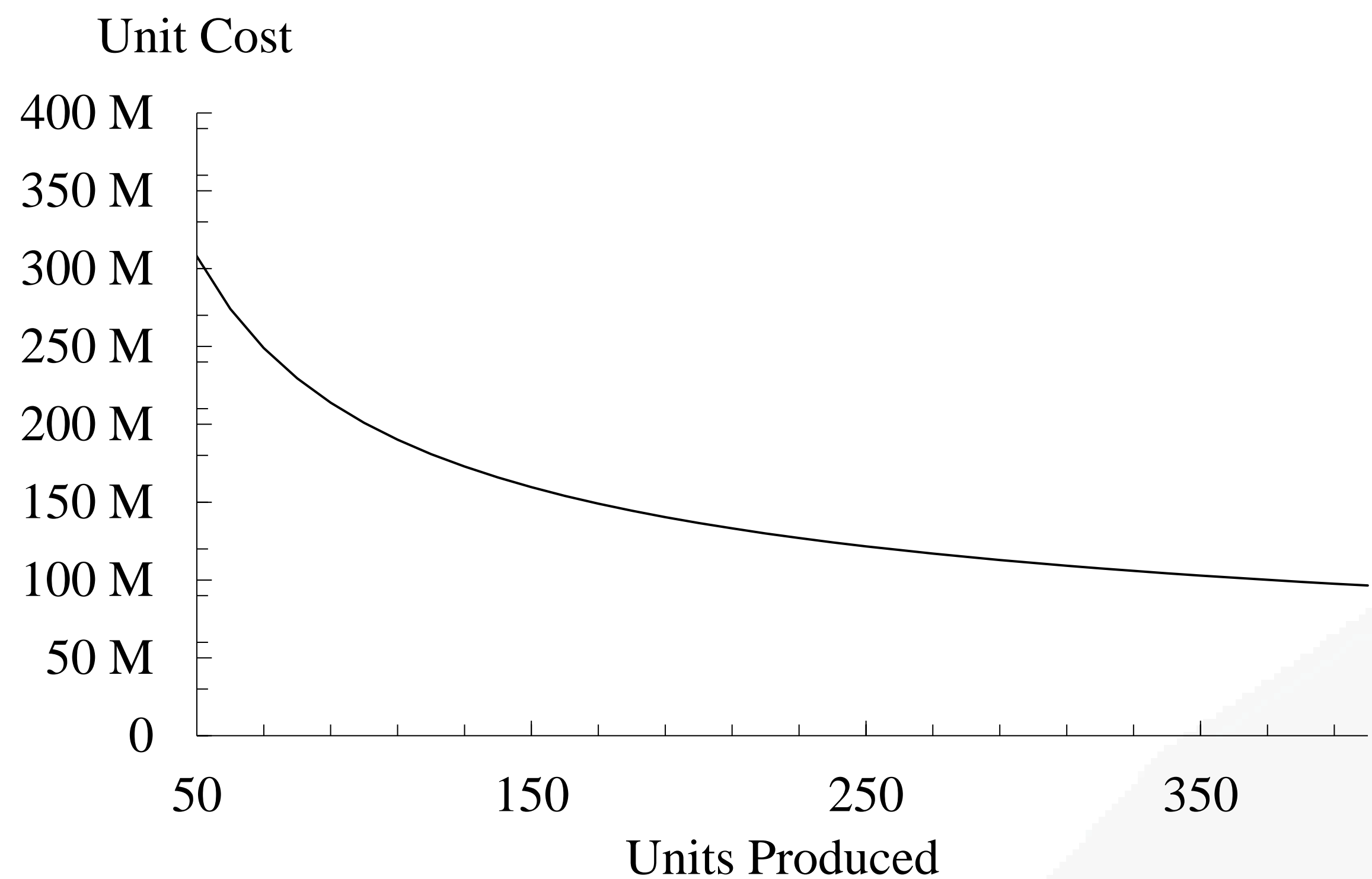
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INTRODUCTION

- The Concorde made its maiden flight in 1969 and its last flight in 2003; since then, no other supersonic transport aircraft has entered service
- Project Morpheus delivers supersonic travel in an all-business class configuration with a targeted entry-into-service (EIS) date of 2030
- Business passengers and high net worth individuals are less sensitive to ticket prices than most travelers
- Project Morpheus leverages improvements in engine performance, aerodynamics, and design technology to redefine operation of supersonic air travel
- Our project's niche routes are high-volume trans-Atlantic city pairs, like London/New York and Washington, D.C./Paris, some of the most popular in the world

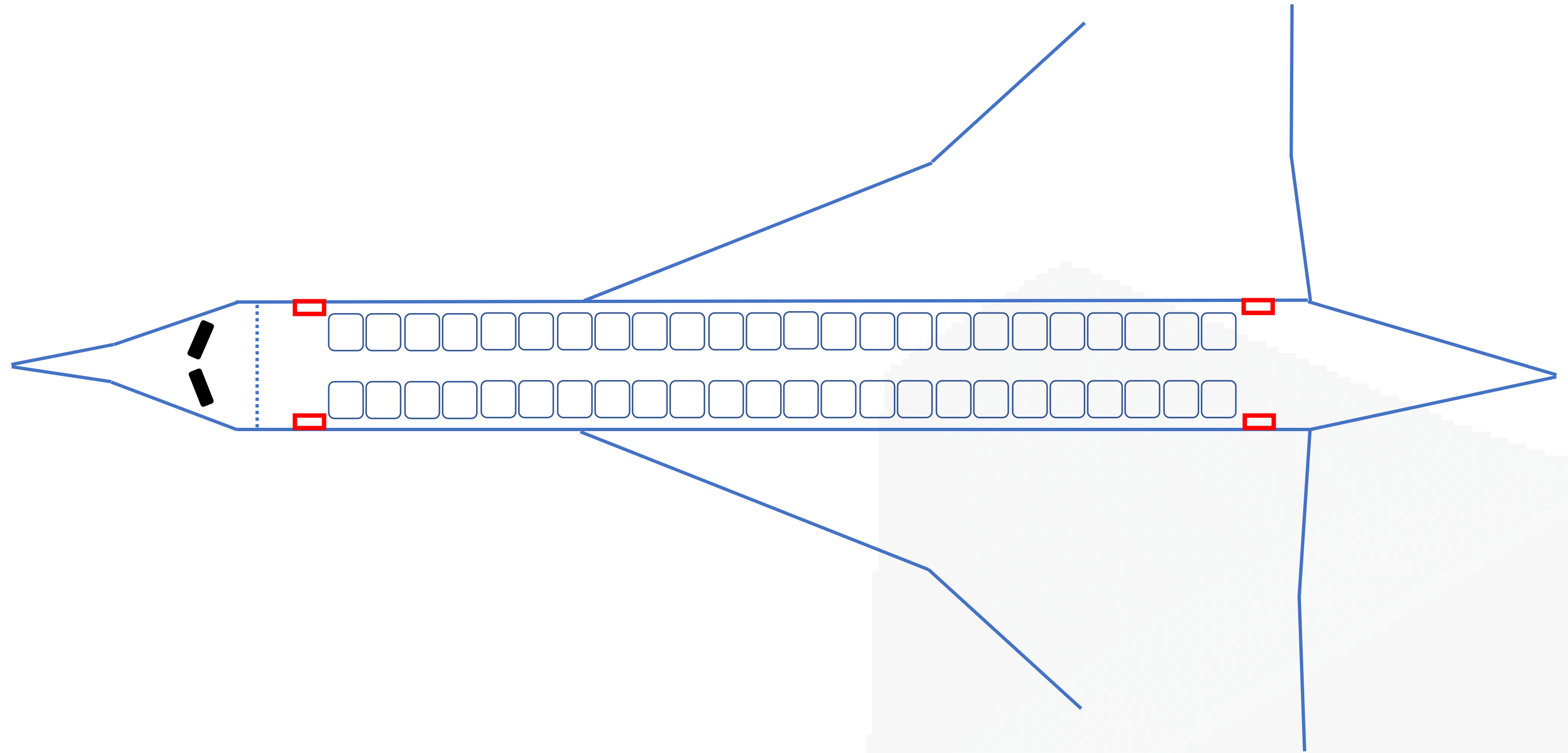
COST ANALYSIS

- We predict a fleet-wide positive return-on-investment
- Cost estimating relations (Nicolai/Carichner model) for recurring and non-recurring costs
- All rates and costs were adjusted to 2022 USD
- At 200 aircraft produced, unit cost is \$136.6 mil
 - 20% less expensive than Concorde; 33% less expensive than Boom Overture



MISSION REQUIREMENTS

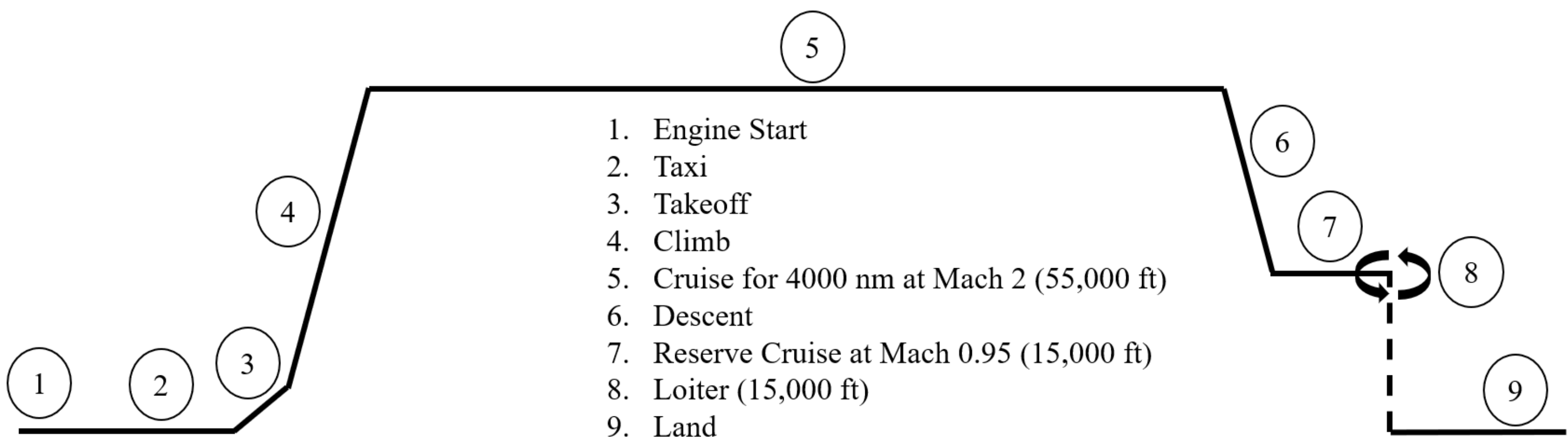
- Payload: 50 – 100 passengers
- Crew: four to six members
- Range: 4,000 nm at supersonic cruise
 - Alternate: Mach 0.95 for 1,000 nm; total mission 4,000 nm
- Speed: Mach 1.4 – 2.0 at 50,000 feet
- Approach speed: 140 kts
- Reserve fuel: typical NBAA IFR reserves
- Certification: 14 CFR Part 25



BY THE NUMBERS

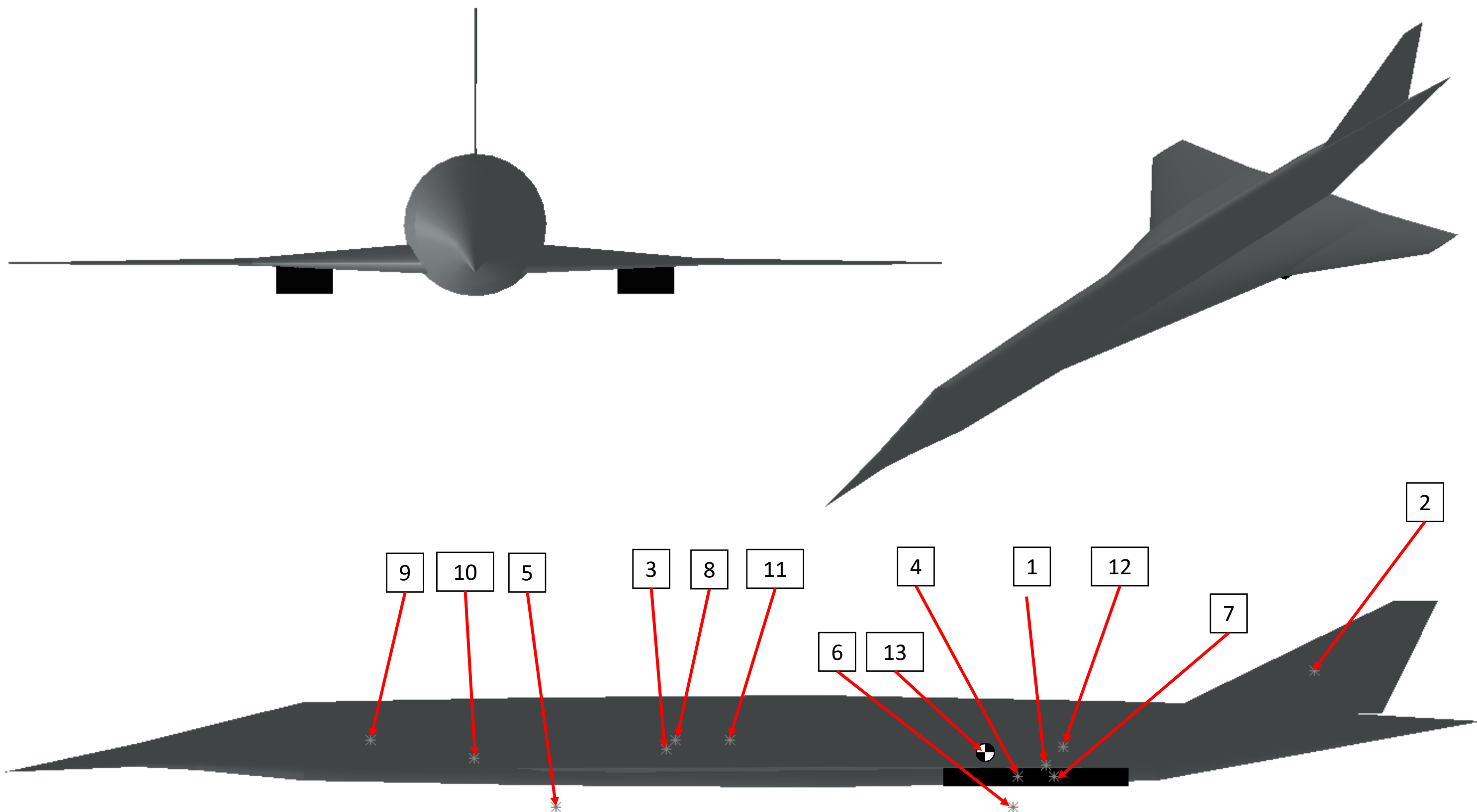
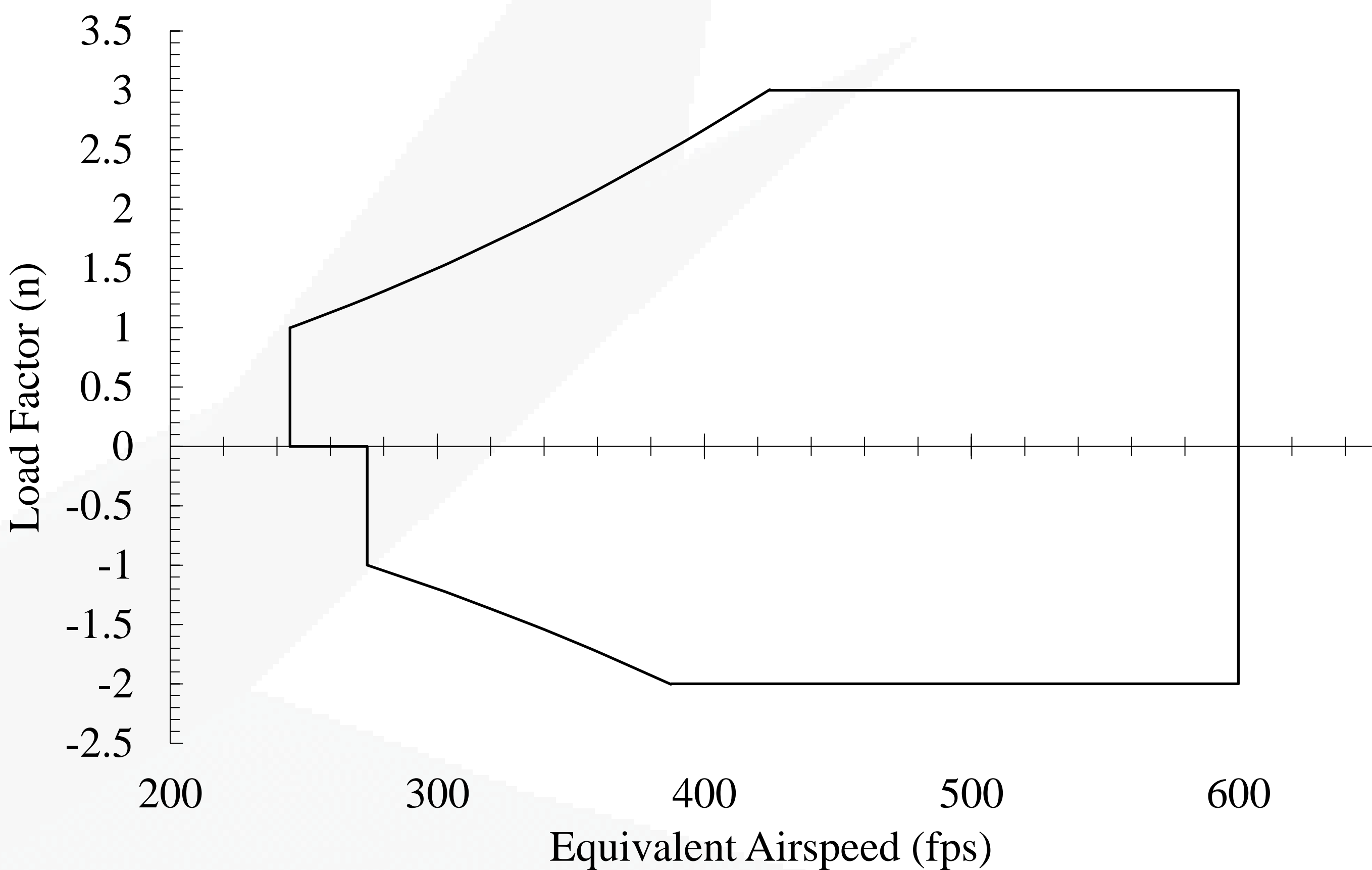
- Aspect Ratio: 1.95
- Wing area: 1,776 ft²
- Maximum takeoff weight: 195,150 lbs
- Cruise Mach number: M = 2.0
- Takeoff thrust: 79,000 lbs
- New York to London: 3 hours, gate-to-gate
 - Conventional aircraft: 7 hours
- Cabin layout: 25 rows, 1x1 configuration
- Seat pitch: 38 inches
- Maximum fuel: 96,550 lbs

Standard Mission Profile



AERODYNAMIC ANALYSIS

- Maximum positive load limit: 3 G
- Maximum negative load limit: -2 G
- Maneuvering speed (V_A): 424 feet per second
- Static margin in % MAC: 4.4% supersonic, -3.7% subsonic
 - Desired balance between stability and maneuverability



Number	1	2	3	4	5	6	7	8	9	10	11	12	13
Component	Wing	Tail	Fuselage	Nacelles	Nose Gear	Main Gear	Power Plant	Fixed Equipment	Crew	Baggage	Passengers	Fuel	Most Aft CG

SPECIAL THANKS

- Dr. Neil Weston and Mr. Carl Johnson for their continuous guidance, support, check-ins, and insight
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- The Blue Donkey Coffee Company