PEGASUS VBJ 1

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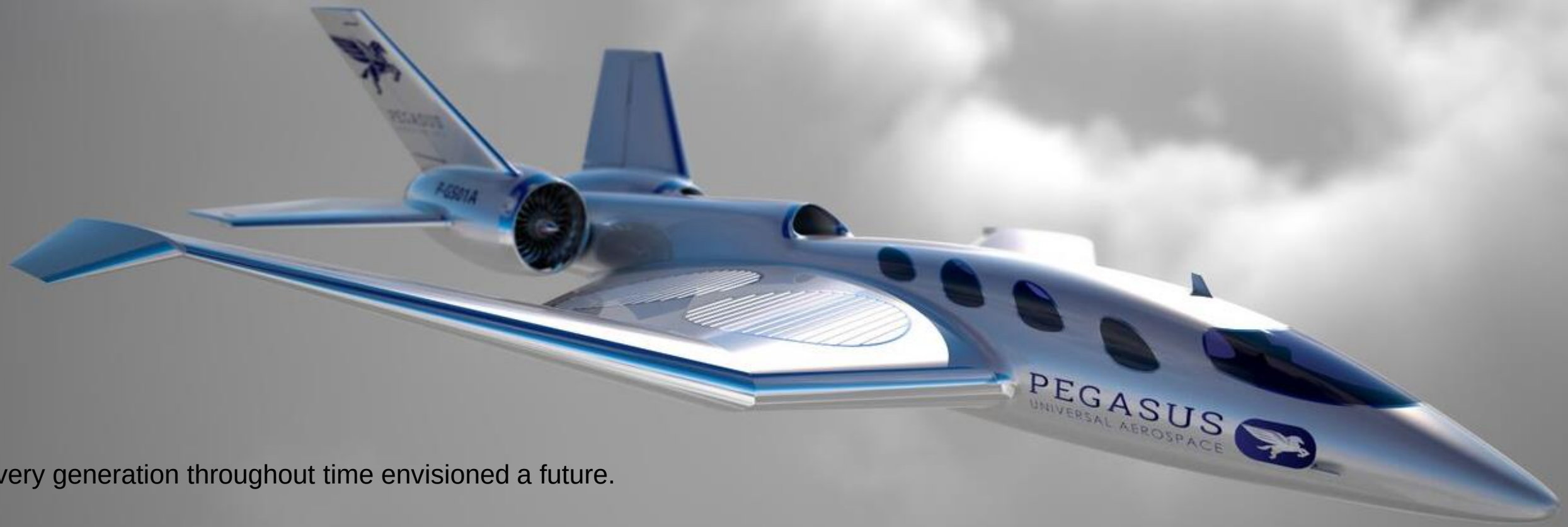
Introduction



Every generation throughout time envisioned a future.

Drawing inspiration from Nikola Tesla.

Unmanned ships and automation.

The future is NOW.

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Introduction to Pegasus

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So What makes Pegasus Universal Aerospace so unique in the VTOL space you may ask?

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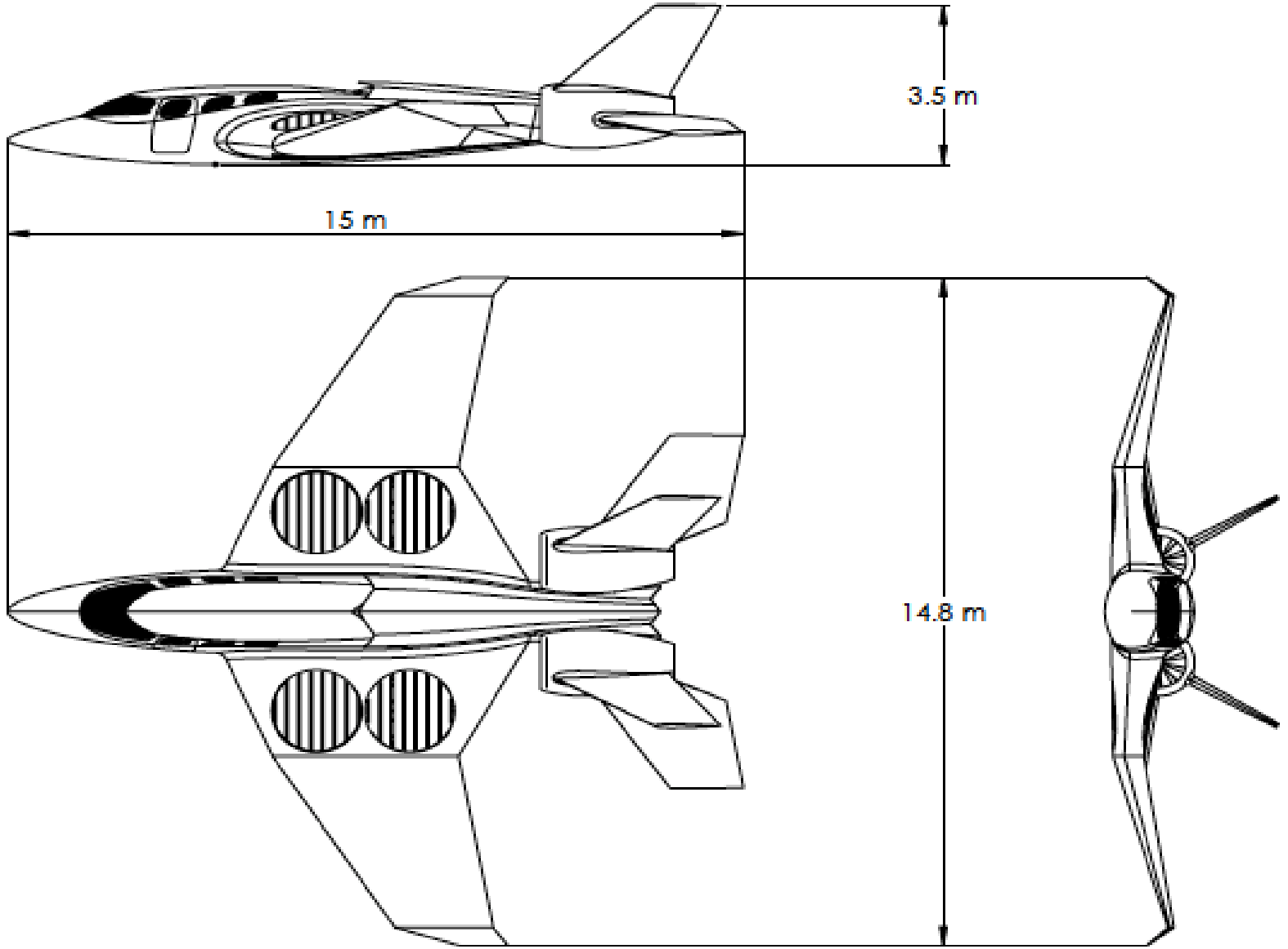
Product Review and Design- Summary tables

WEIGHT	SPEEDS	SIZE
MTOW - 5700KG Maximum Take Off Weight	STALL SPEED (FLAPS EXTENDED) 66 KTAS	LENGTH – 15 METERS
USEFUL LOAD – 2660 KG Disposable Load	STALL SPEED (FLAP RETRACTED) 73 KTAS	HEIGHT – 3.6 METERS
FULL FUEL PAYLOAD – 620KG Carrying Capacity of Pegasus	CRUISE 410 KTAS	WINGSPAN – 14.38 METERS
EMPTY- 3040KG	VNE – 460 KTAS (Never Exceed Speed)	

Product Review and Design- Summary tables

Aircraft Name	Pegasus Vertical Business Jet (VBJ1)
Number of Seats	6 – 8 with the Pilot (This can be tailored as per application need)
Engine Type and Horse Power	Turbo shaft x 3 (2300shp)
Fuel Burn in litres per hour	309
Tank capacity in litres	2040
Range in KM's	4400 (Runway) & 2124 (VTOL)
Endurance in hours	6.6 (Runway) & 3.18 (VTOL)
Fixed or Retractable Undercarriage	Retractable
Type of Construction	Composite
Lead Time for Ordering	5 years
Applications	Business Jet, Medical evacuation, Anti Poaching, Policing, Intercounty and Urban Travel



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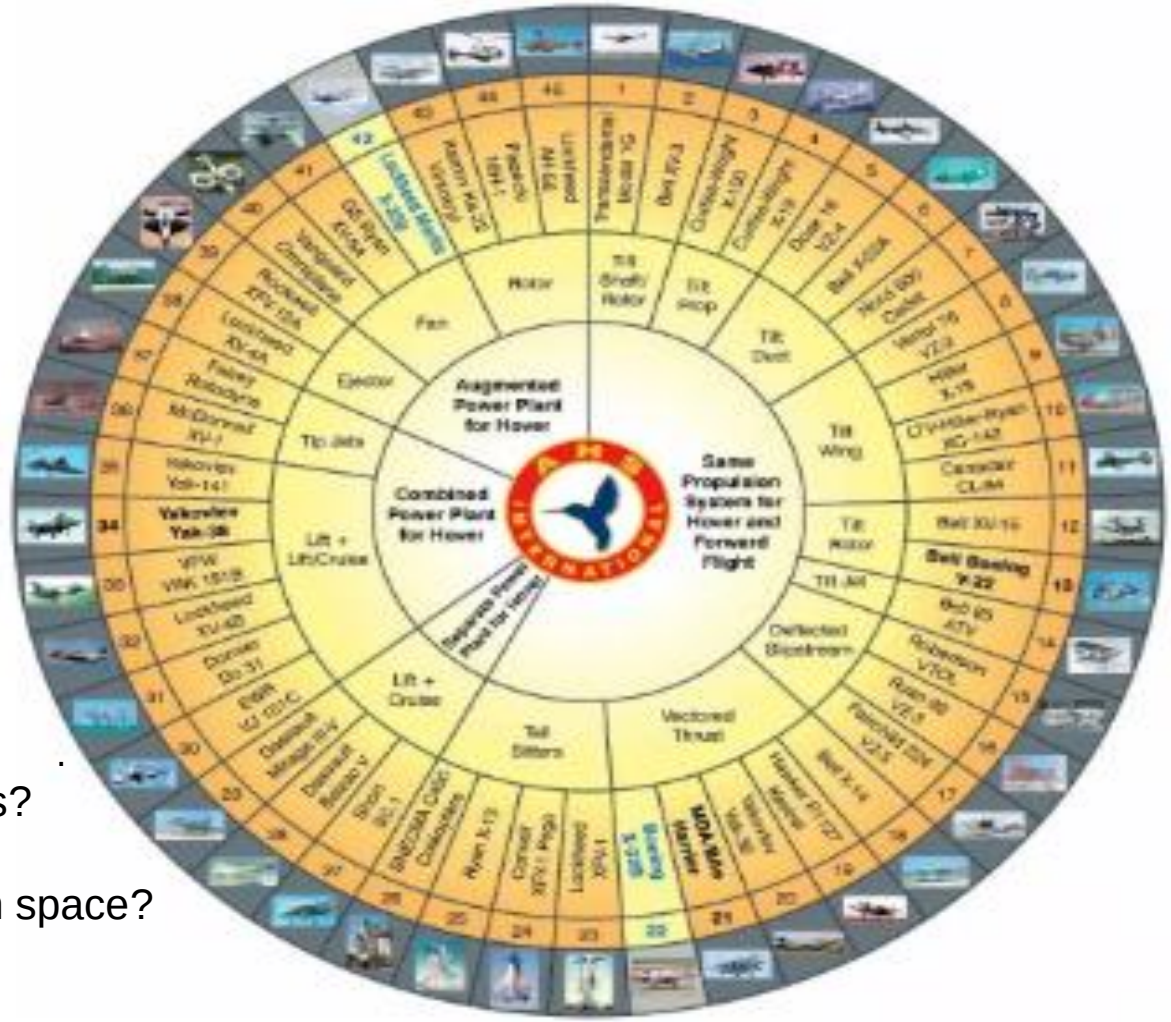
What has changed?



What has changed since the 50s and 60s in VTOL attempts?

What benefits have these changes brought into the aviation space?

The role of technology advances on VTOL.

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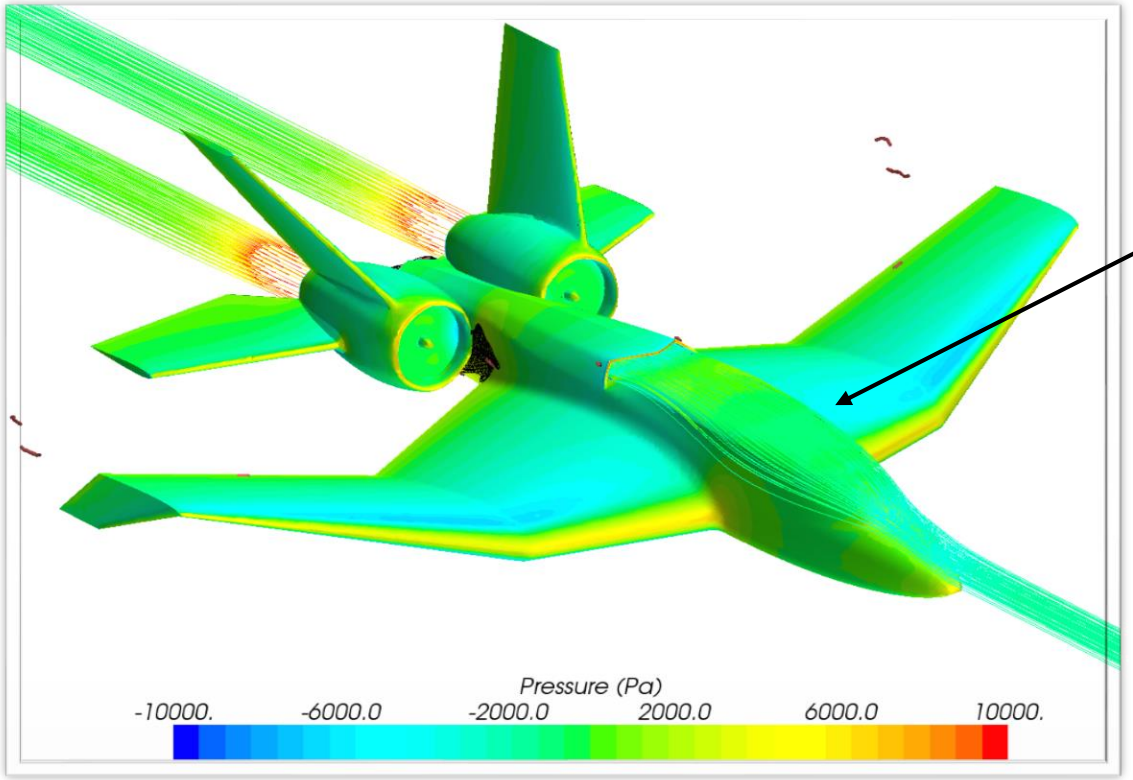
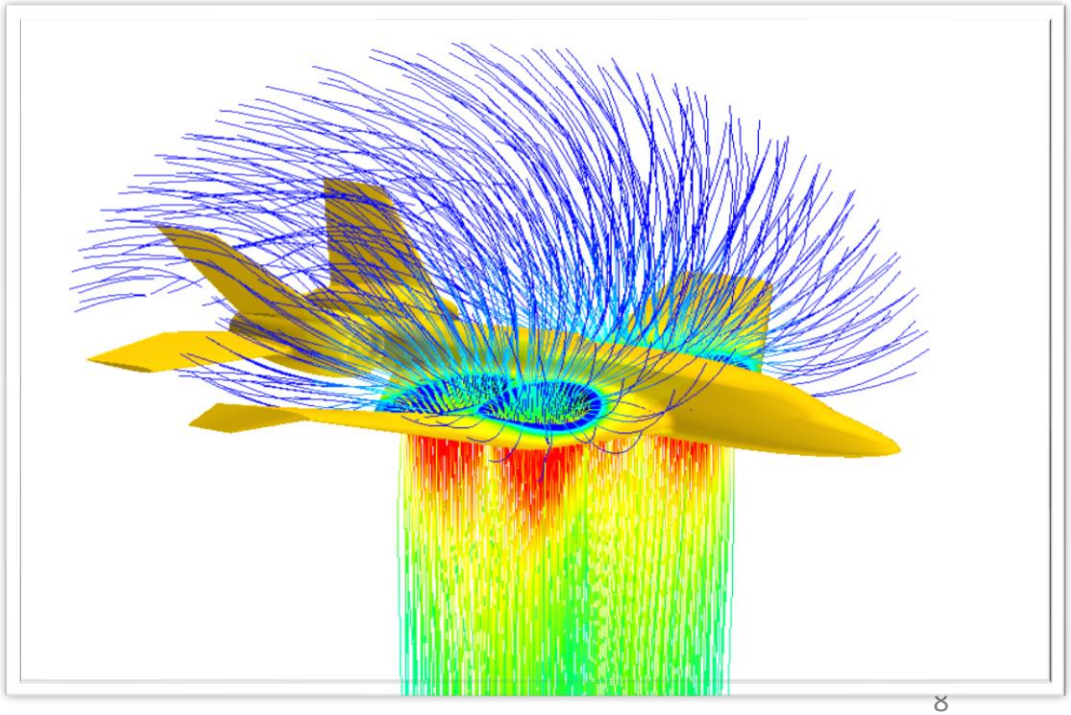
Independent Design Review

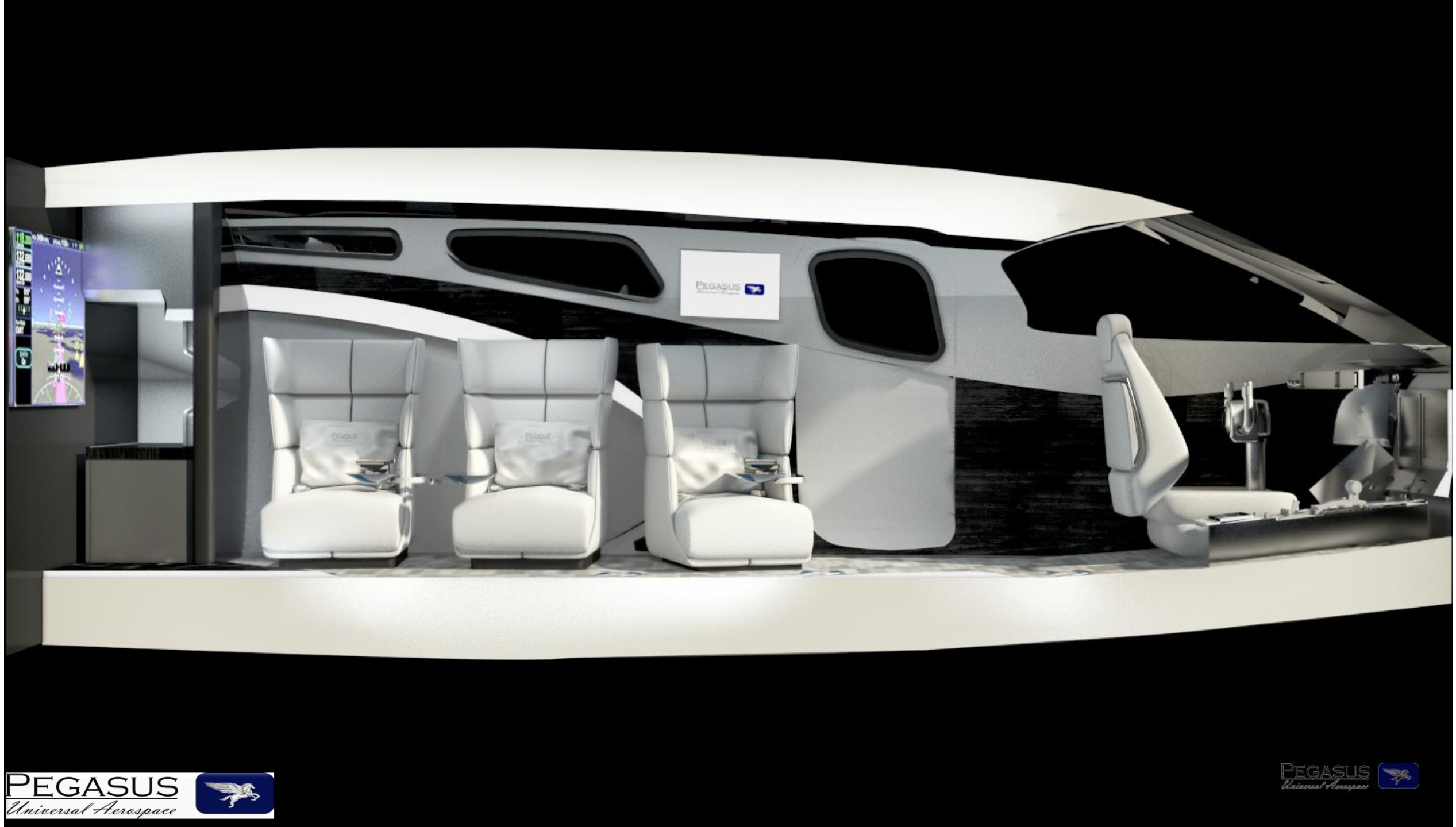


Laminar flow over closed wing fan louvers in forward flight mode.

No re-circulation of air at low altitudes in VTOL to reduce FOD.



What is it like to be a passenger on our VTOL plane?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STAND UP HEIGHT

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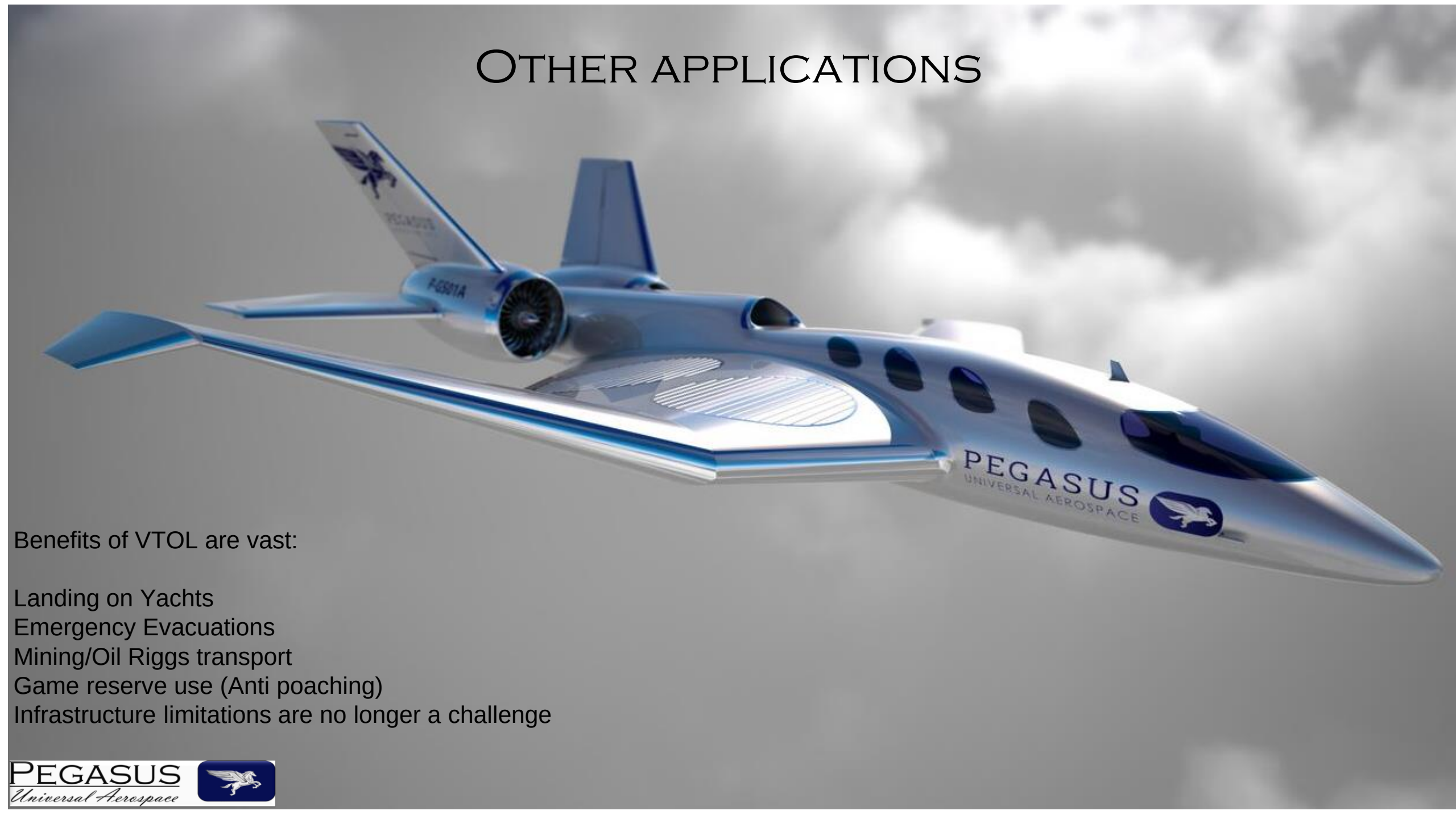
Other applications



Benefits of VTOL are vast:

Landing on Yachts
Emergency Evacuations
Mining/Oil Riggs transport
Game reserve use (Anti poaching)
Infrastructure limitations are no longer a challenge

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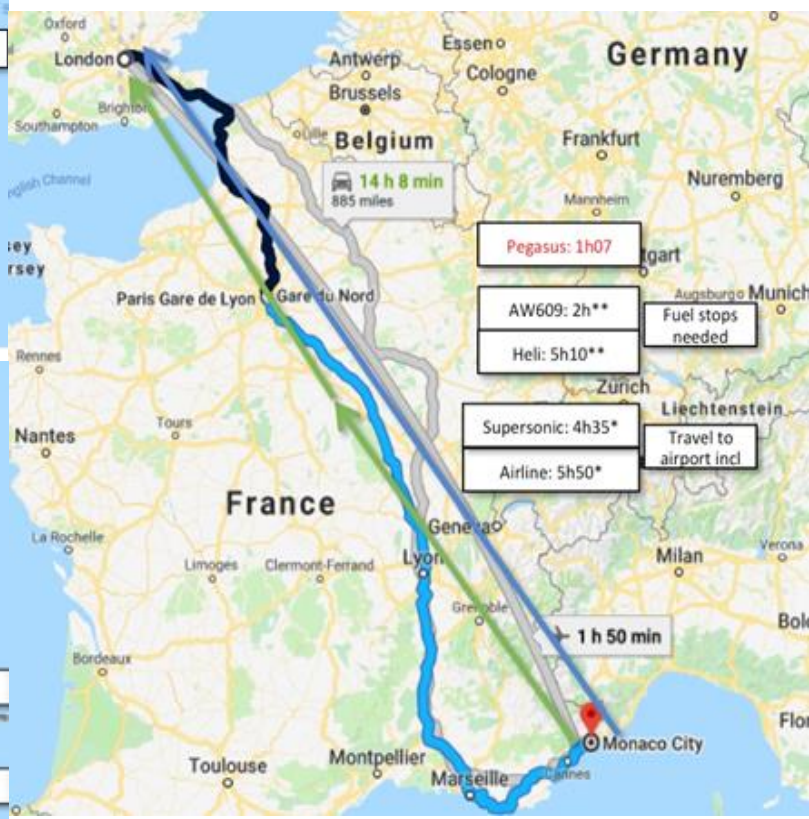
Pegasus VTOL Efficiency

The VBJ outperforms all other forms of transport.

Helicopters fly at a quarter the speed and require fuel stops due to their limited range. We've added 30m for each stop. (we've used the $22m Airbus H160 helicopter stats here).

Even the possibility of supersonic business jets result in slower journey times because one must travel to, from and through airports. (This adds four hours to journey times). A NASA study showed the average speed of an airline trip to be 128km/h door to door.



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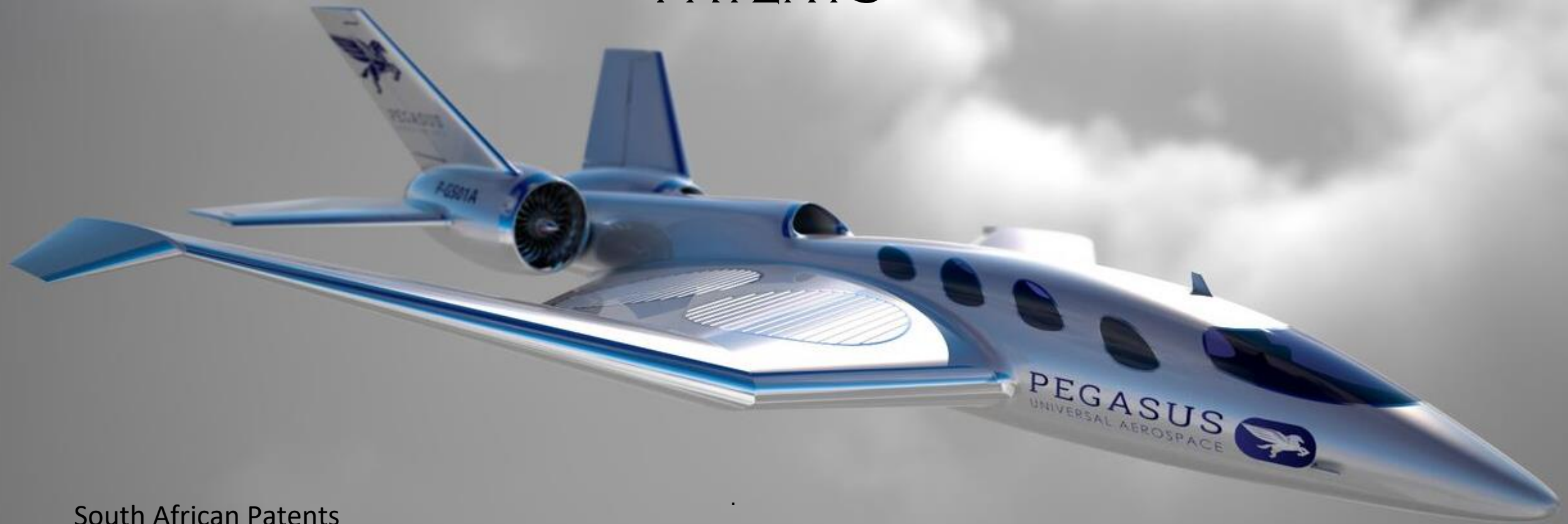
PATENTS



South African Patents

EU Patents

USA Patents

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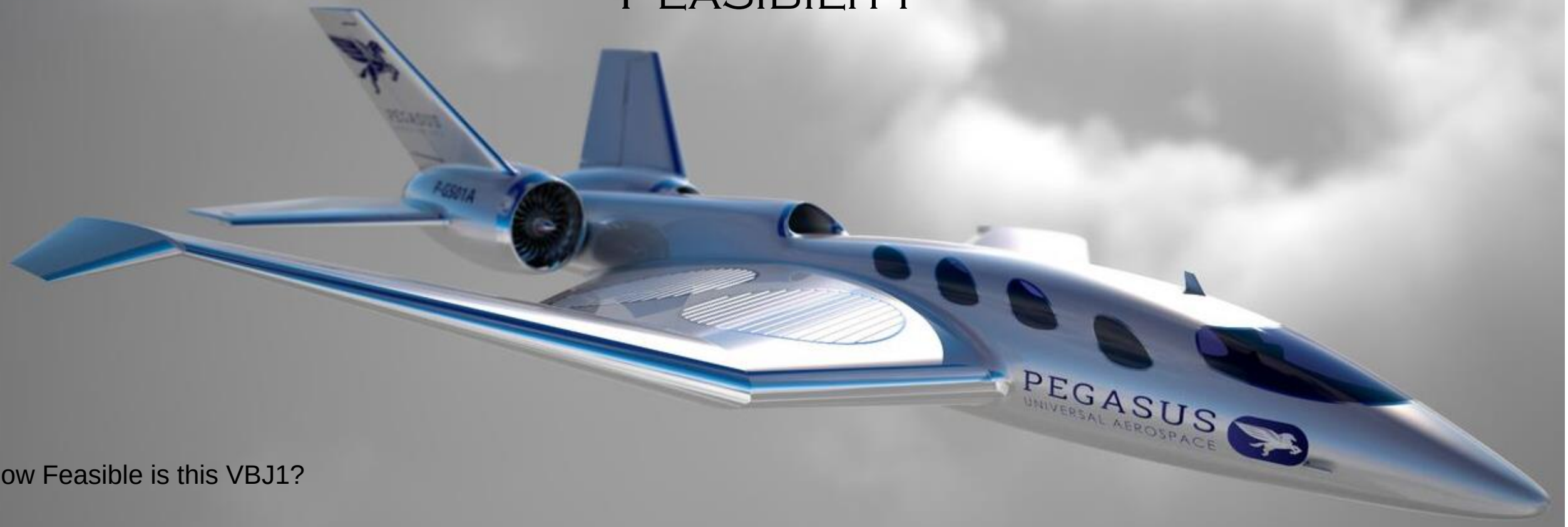
Feasibility



How Feasible is this VBJ1?

Our market studies have shown that if people are willing to pay up to 24million dollars for a AW609 or 22 million dollars for a H160. So the willingness to pay 20 million dollars for a VTOL plane that can fly 4 times the speed and 4 times the range of a helicopter has a greater likelihood. Which leads us to the financial model

Feasibility continued

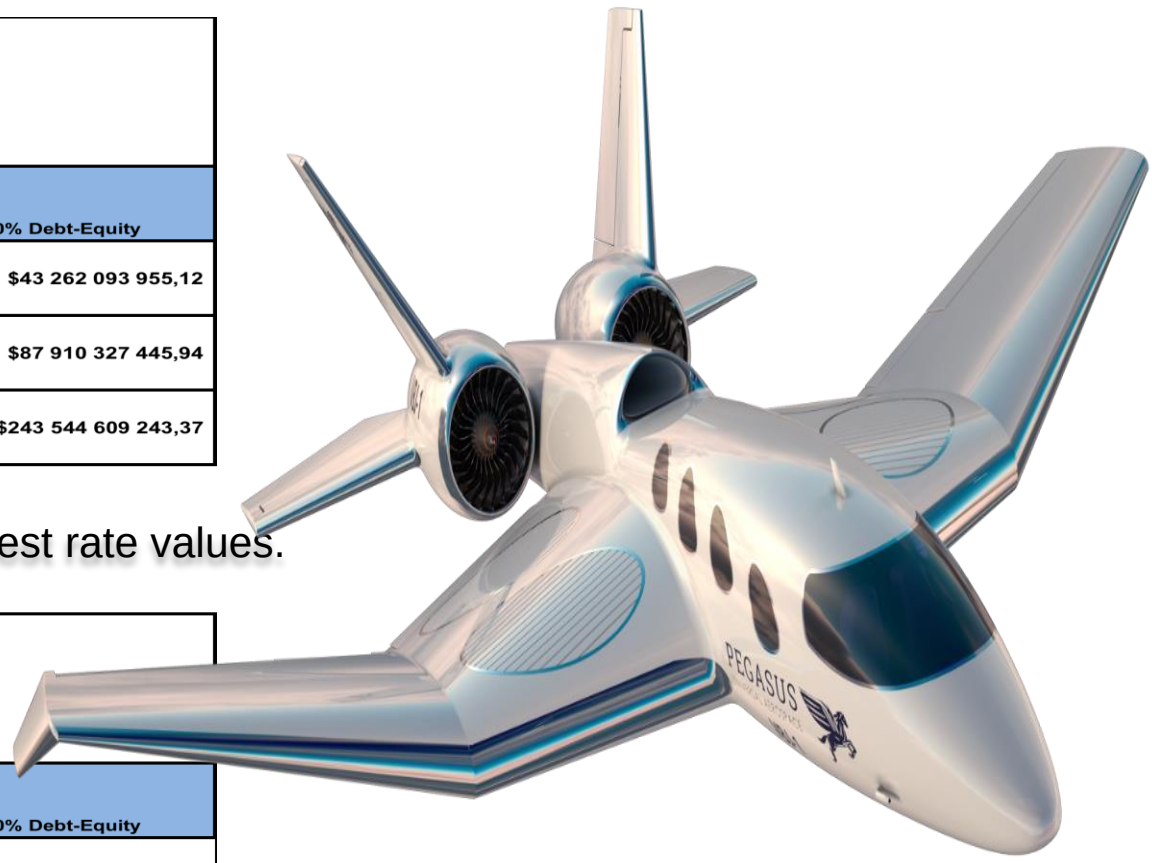
Even under conservative estimates the company is forecasted to achieve very positive NPV and IRR numbers.

Financial Projections - NPV

Debt Interest Rate = 10%

10%	Sales Forecasts	Financing Structure: 100%Equity	100% Debt	50%-50% Debt-Equity
	Conservative	$26 578 076 557,38	$72 011 362 684,11	$43 262 093 955,12
	Probable	$53 270 678 698,44	$148 058 291 935,96	$87 910 327 445,94
	Optimistic	$138 291 900 669,00	$404 010 791 731,34	$243 544 609 243,37

Considering various interest rate values.

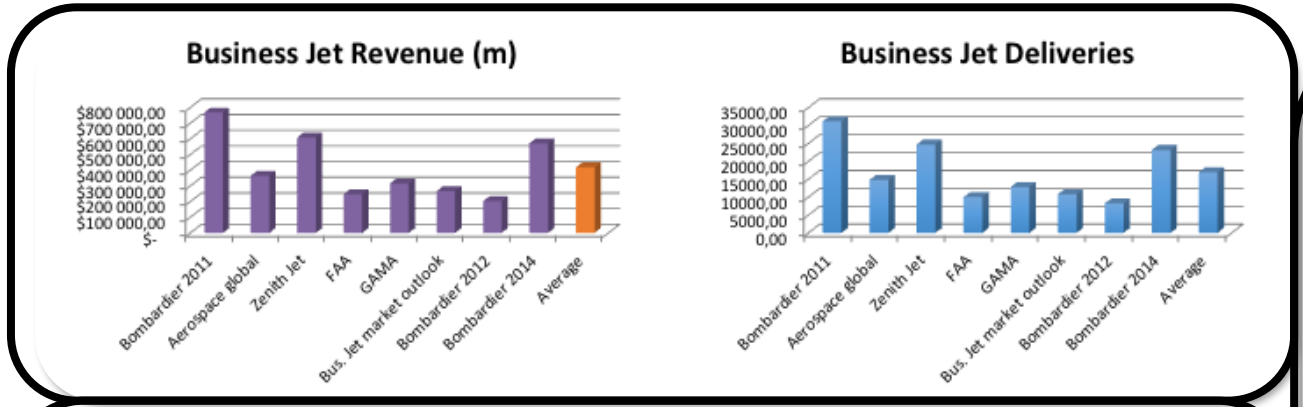


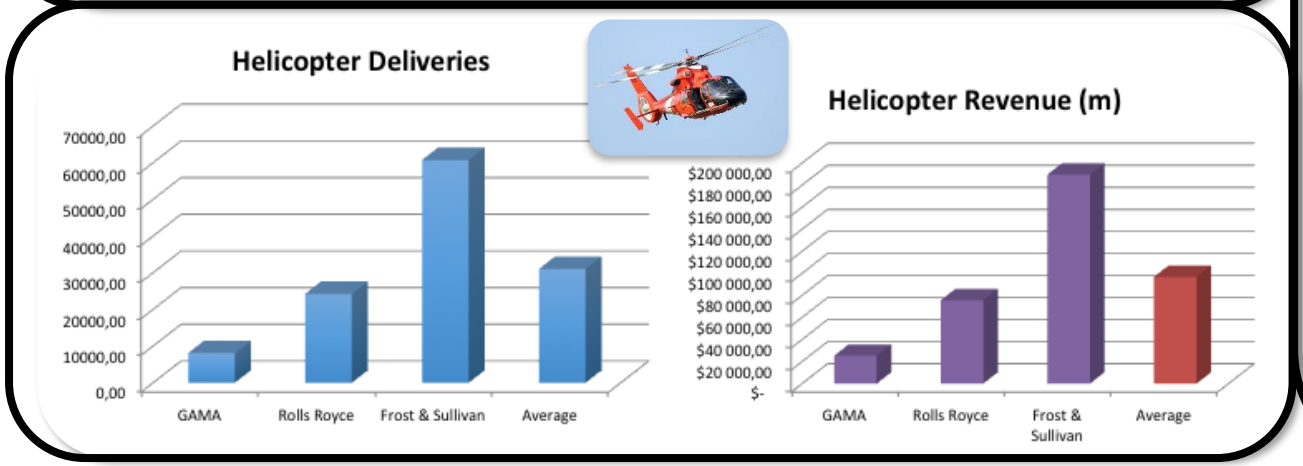
PRIME LENDING RATE (8.5%)

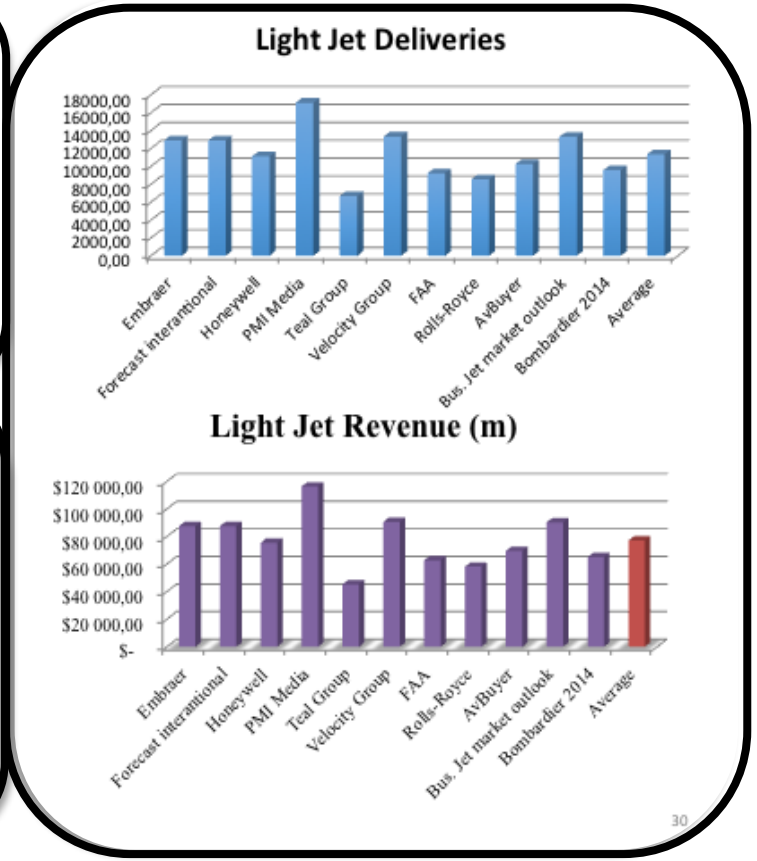
8,50%	Sales Forecasts	Financing Structure: 100%Equity	100% Debt	50%-50% Debt-Equity
	Conservative	$26 578 076 557,38	$79 313 905 018,04	$45 302 473 434,12
	Probable	$53 270 678 698,44	$163 393 366 425,86	$92 163 732 490,90
	Optimistic	$150 231 795 267,99	$444 728 876 131,08	$328 140 828 924,91

Analysis And Findings
Study Integration (2011-2034)

Various studies cover different time frames and place different values on airplanes, making it difficult to integrate and compare these studies. Pegasus has standardized and integrated all these studies to account for such variables to allow for a 20 year industry forecast.

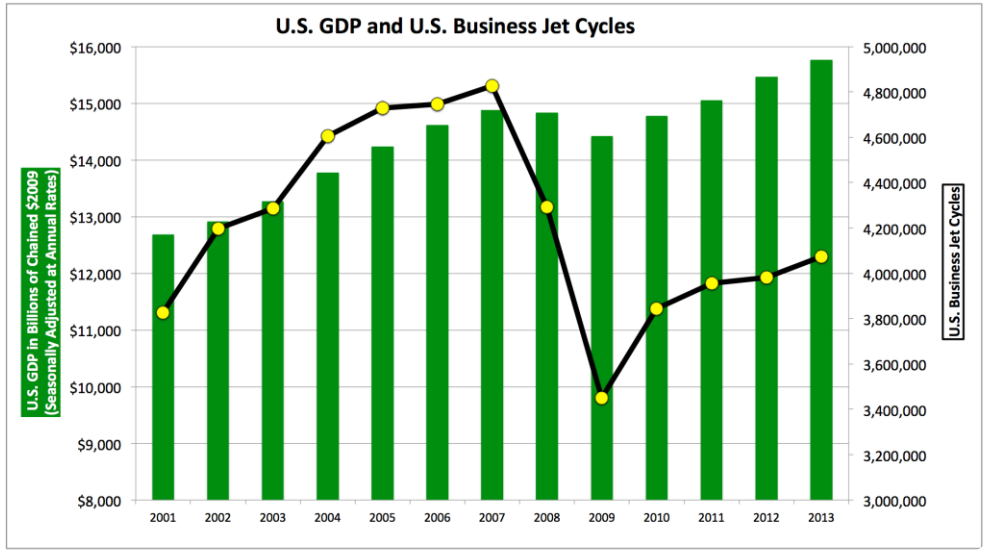


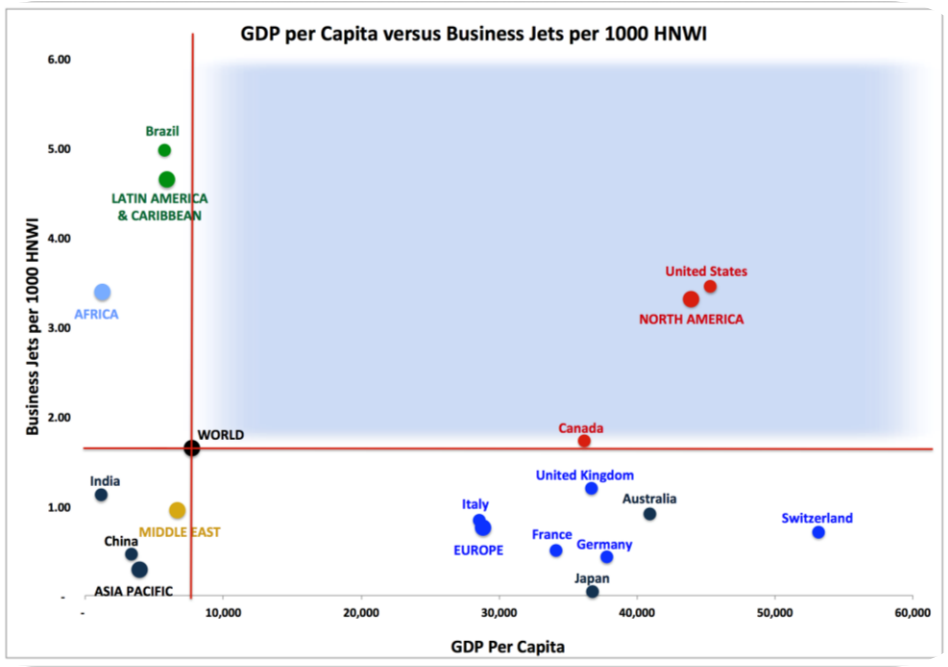




Analysis And Findings-JetNetiQ

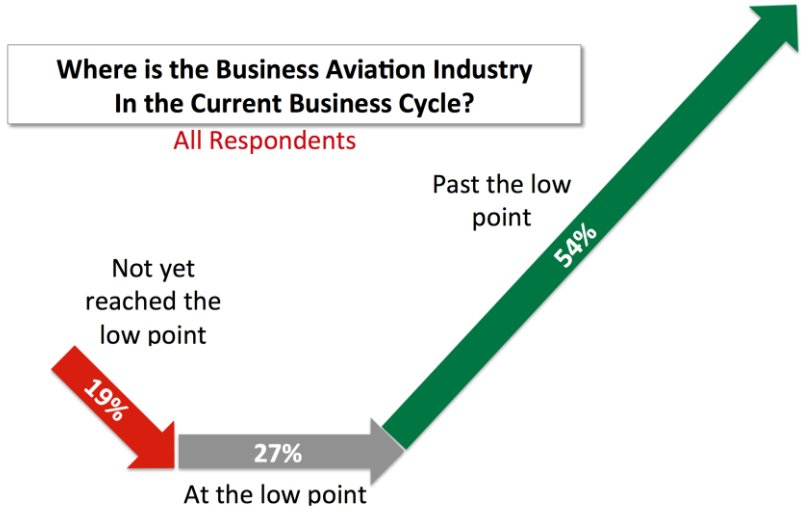
U.S. GDP and U.S. Business Jet Cycles





It is apparent from the top right image, that the market perceives, for the most part, that the business cycle has already started its upward slope, the US GDP and business jet cycle graph supports this. Also, from the GDP per capita versus the number of jets per 1000 HNWI, it is clear that Africa and South America are traditionally high Jet per HNWI territories.

The subjective feeling is that 54% of subjects believe that the market is past its low point and 27% believing that it is at the low point. Objectively, the market is seen to rise with the US GDP as of 2009, shown in the graph above.



Analysis And Findings
Market Outlook Update (2017-2038)

Various studies cover different time frames and place different values on airplanes, making it difficult to integrate and compare these studies. Pegasus has standardized and integrated all these studies to account for such variables to allow for a 20 year industry forecast.

JETCRAFT

2017: The forecast predicts 8,349 unit deliveries representing $252 billion in revenues (based on 2017 pricing) to be realized by 2026.
The forecast projects significantly more revenue during the next business cycle, peaking at $31.4 billion in the year 2025.

Business Wire
A Berkshire Hathaway Company

2018-2023: CAGR of 5.84% forecast for the sector

Honeywell

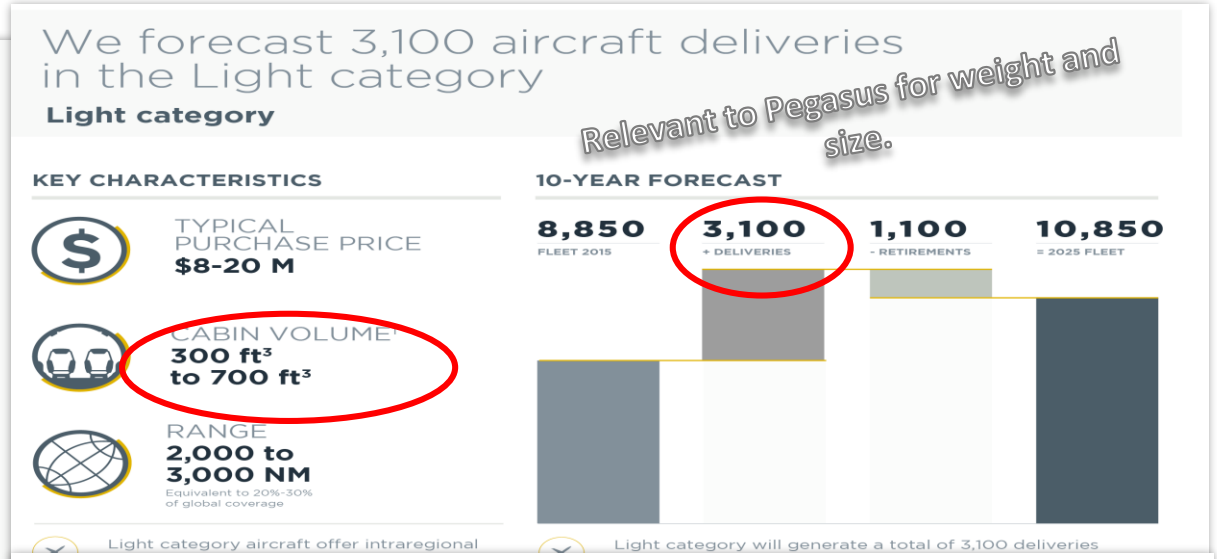
2017-2027: Global outlook for business jets up to 8 300 new deliveries at $249B.

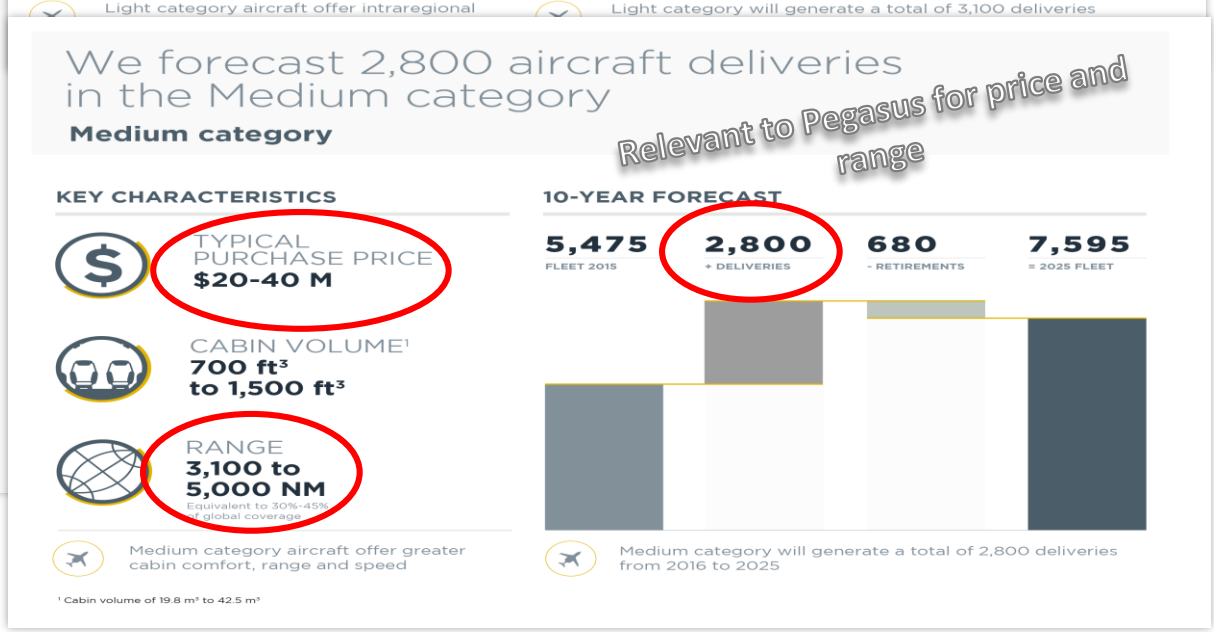
FORECAST INTERNATIONAL

2018-2032: unit production forecasts to be 26 151 rotorcraft, valued at $278.3 billion.

Analysis And Findings
Market Outlook Update (2017-2038)

Excerpts from Bombadier 2016 – 2025 forecasts





BOMBARDIER

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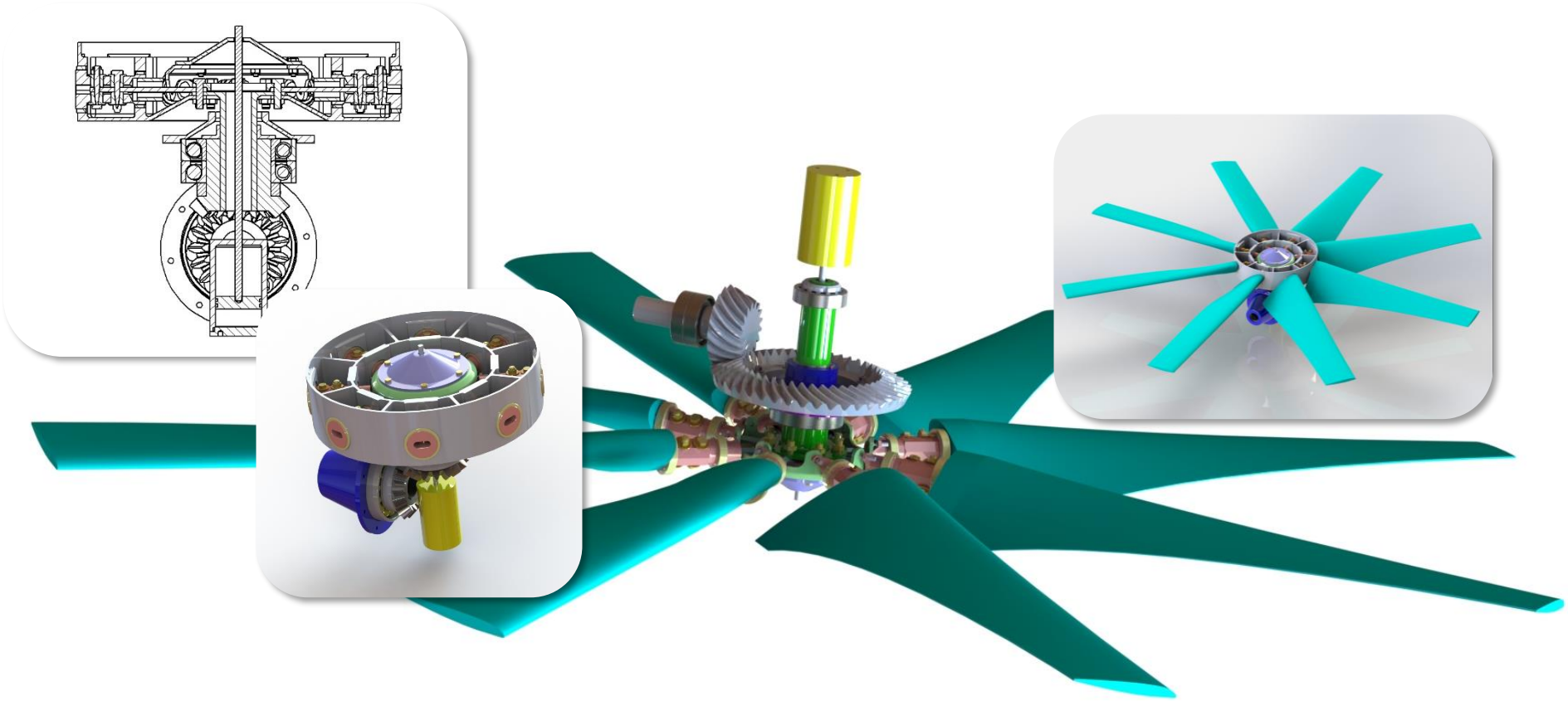
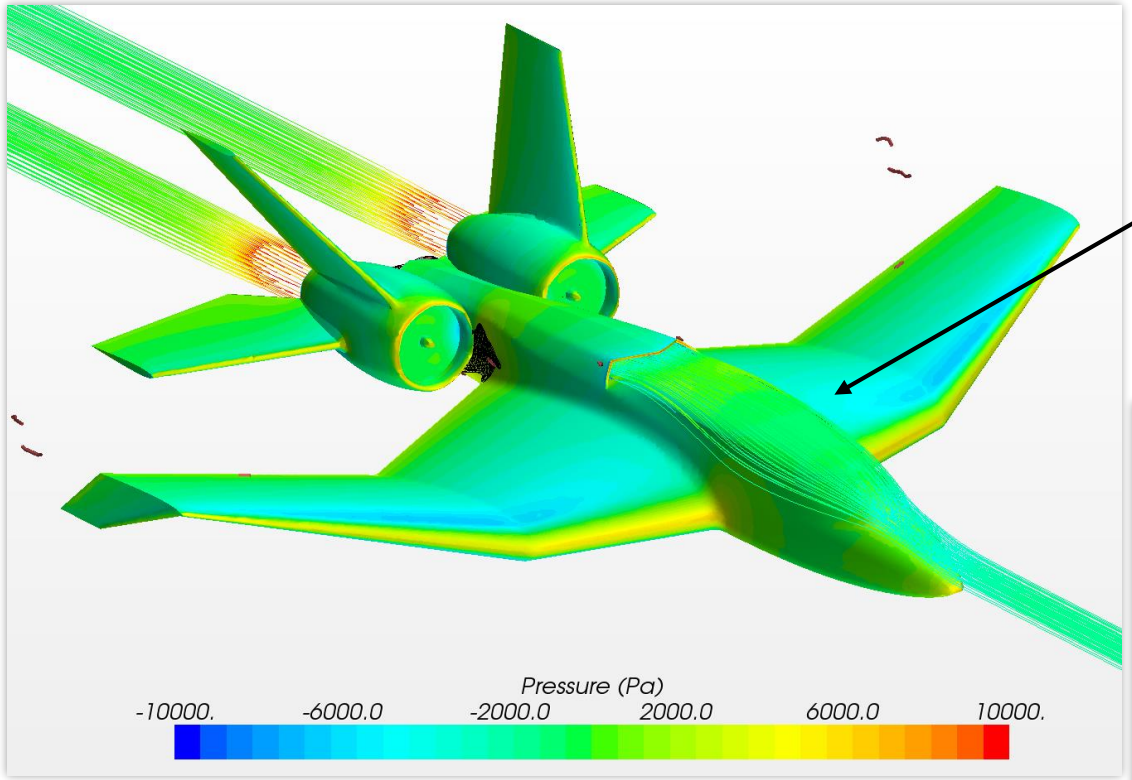
Risk Analysis

Detailed Design: Step one



The first step in the De-risking Exercise is the Fan in wing design along with its control methods. These engineering images attached were developed by our engineers.

Independent Design Review



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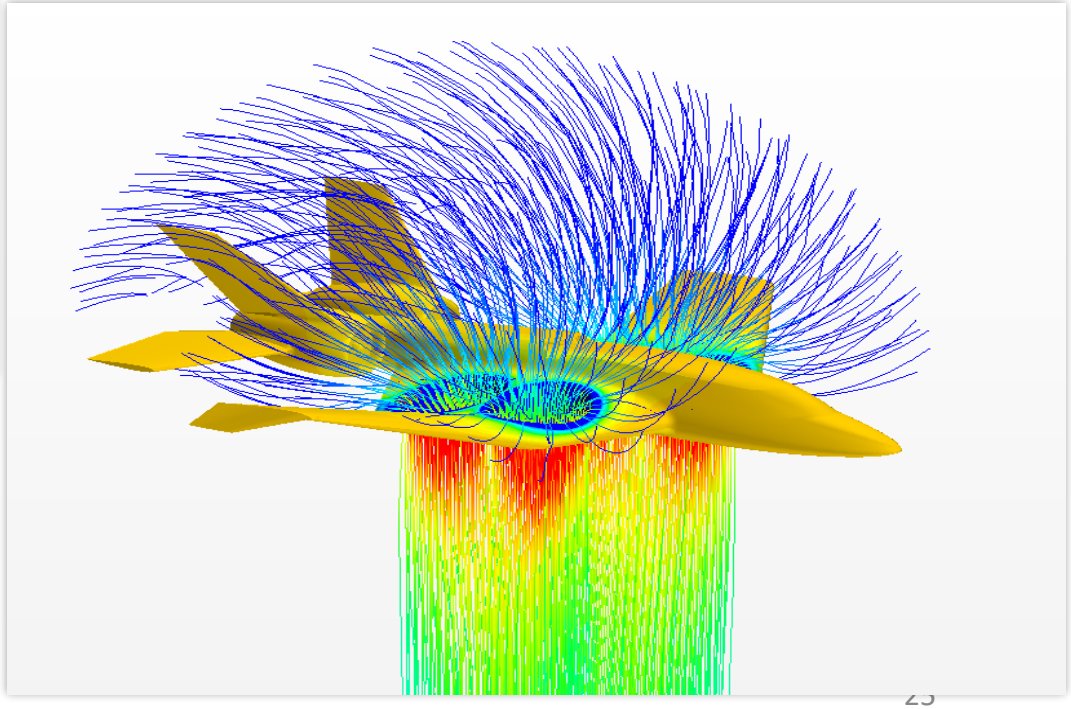
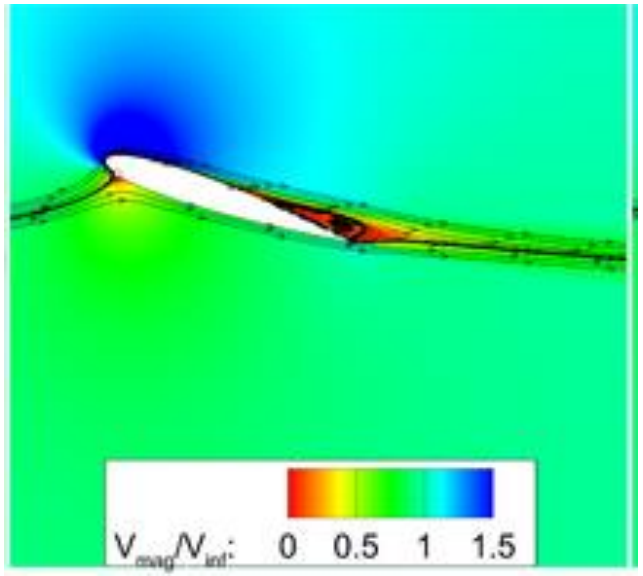
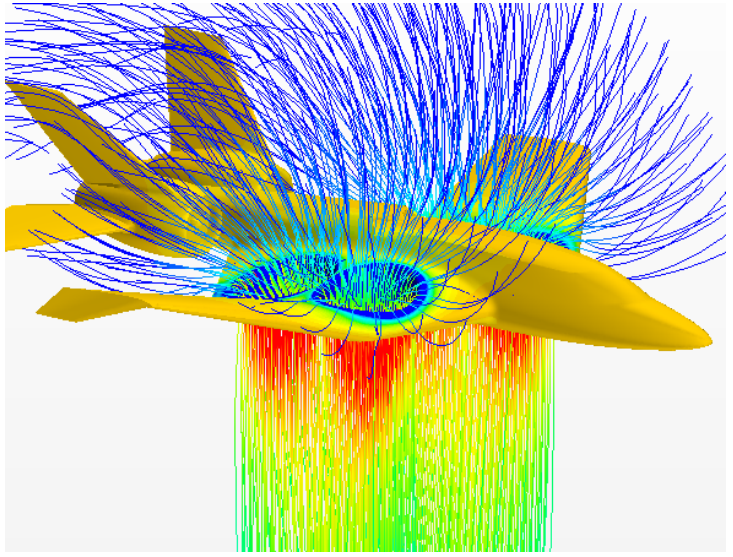


Biomimicry

The aerodynamics of avian take-off from direct pressure measurements in Canada geese (Branta canadensis)

James R. Usherwood, Tyson L. Hedrick, Andrew A. Biewener
Journal of Experimental Biology 2003 206: 4051-4056; doi: 10.1242/jeb.00624





VTOL Competition: Leonardo AW 609

Crew:	2	
Passengers:	9	
Cabin Height:	1.4 m	
Cabin Width:	1.47 m	
Engines:	2	
Range:	700 nm	(1296 km)
Speed:	275 kts	(509,3 kmph)
Price:	$24m	

This airplane is the only potential civilian aircraft that will offer VTOL capabilities. This airplane is slower, less attractive, heavier and less safe than the Pegasus VTOL VLJ. This airplane will not be able to land on helipads, unlike the Pegasus plane. The rotor width on this airplane makes it unsafe to land on helipads or on roads in the case of emergency airlifts.

It is also significantly more expensive and has a range that is far below that of the Pegasus VLJ.

Tilt rotors are infamous due to their instability and the number of lives lost to date. The Pegasus control software makes these types of accidents extremely unlikely as the balance of the airplane is taken out of the pilots hands and placed into three dedicated pieces of hardware.

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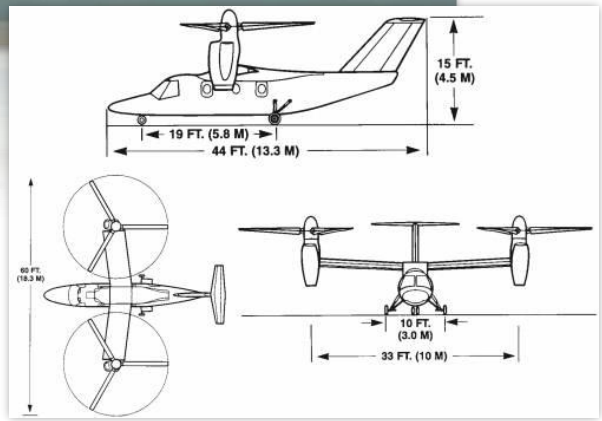

Approx. 20m rotor span.

Pegasus Competitive Advantages:

- **3,3 x the range**
- **1,6 x the speed**
- **Runway capability in addition to VTOL.**
- **Far smaller footprint. (AW 609 Critical rotor-tips require safety clearances).**
- **Competitive Pricing.**

VTOL Competition: Helicopters. H160

Crew:	2	
Passengers:	8	
Cabin Height:	1.4 m	
Cabin Width:	1.47 m	
Engines:	2	
Range:	460 nm	(851.92km)
Speed;	155 kts	(287.06kmph)
Price:	$22m	

Pegasus Competitive Advantages:

- **No vibration in the cabin as a helicopter would.**
- **More space, more luxury.**
- **Less noise (no headphones required)**
- **Larger cabin allows freedom of movement**
- **Smoother flight than in a helicopter**
- **Pegasus has a greater range. Beneficial in the “Golden Hour” in medical evacuations**
- **Safety from website tab**

Pegasus VBJ-Ops Costs

Type of Aircraft	Ops Costs
Pegasus VBJ	10 350 ZAR
Augusta AW139	17 108 ZAR
Embraer Phenom 300	21 224 ZAR

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Based on the above its imperative to keep in mind that helicopters don't fly as far per hour based on fuel usage

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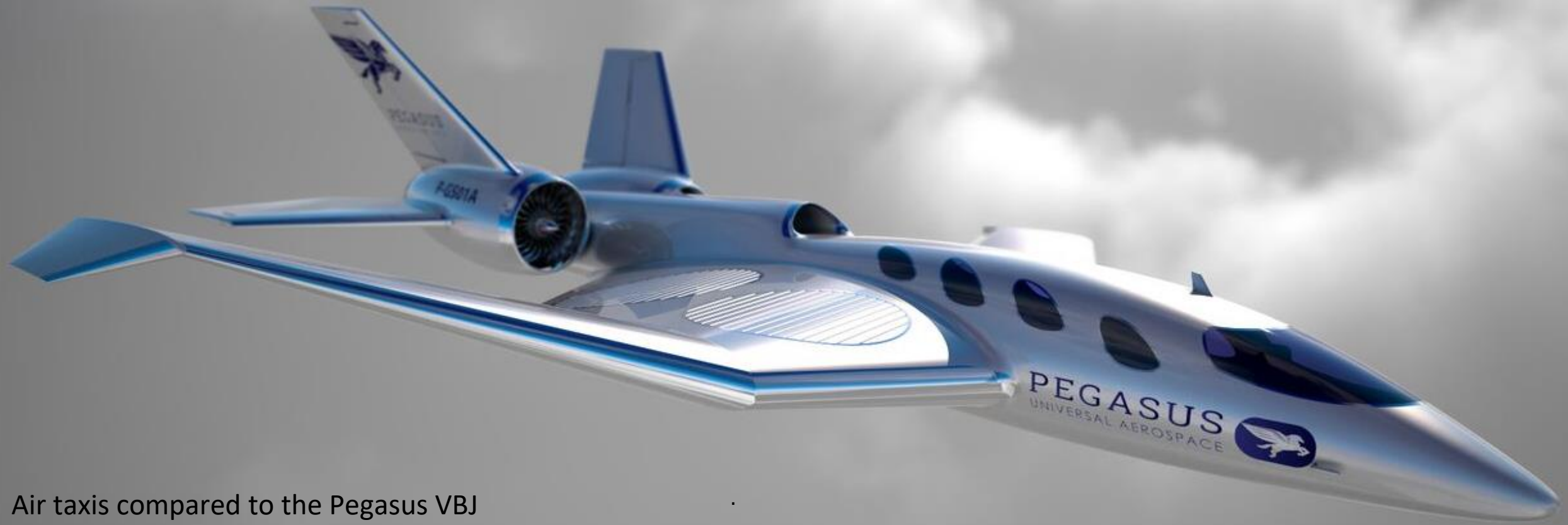
E VTOL TECHNOLOGY



Air taxis compared to the Pegasus VBJ

How does certification affect Pegasus when compared to VTOL air taxis?

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EVTOL & Air Taxis

Crew:	0
Passengers:	1 - 4
Cabin Height:	n/a
Cabin Width:	n/a
Engines:	0
Range:	Short (inner city)
Speed;	80 -150 kmph
Price:	$2m to 12m

Pegasus Competitive Advantages:

- **Recent studies show most people prefer longer "inter-city" trips in the air versus the inner city VTOL range, Pegasus caters to this longer range. eVTOL set to be a $500b market.**
- **Certification criteria not yet laid out for eVTOL, Pegasus will follow an established certification tract. This is vital for flight clearance.**
- **eVTOL battery charging time increases time on ground between flights, Pegasus carries its own power supply.**

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Certification

We will be pursuing Part 23 powered lift and rotor wing certification via the FAA and CAA

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Recent Updates from North American Trip

- General electric has confirmed engine supply: CT7-8
- FAA innovation division will run the certification process
- Transport Canada positive about type acceptance
- National Research Council Canada to provide airborne flight testing & simulation

PEOPLE COLLABORATING TO CHANGE THE WORLD FOR THE BETTER.