

VERTICAL BUSINESS JET | PROFILE



PEGASUS[®]
Universal Aerospace



WELCOME



Pegasus Universal Aerospace has brought life to the idea of our very own Vertical Business Jet (VBJ). What makes this invention incredibly unique is its capability of true Vertical Take-Off & Landing (VTOL) which has previously only been seen and used in the military air space.

This exceptional master piece, is the world's first civil aviation VTOL aircraft that incorporates many other world firsts that are not only designed to make the aircraft light, easy to operate, safe, efficient, affordable, ensuring optimal performance and most importantly attractive to investors. The VBJ has a range of 2,129 nautical miles at 796 kilometers per hour (429 kts), with an endurance of six and a half hours flying time. This state of the art performance is unmatched by any rotary solution helicopters, piston engine fixed wing aircraft and / or even tilt-rotor VTOL aircraft.

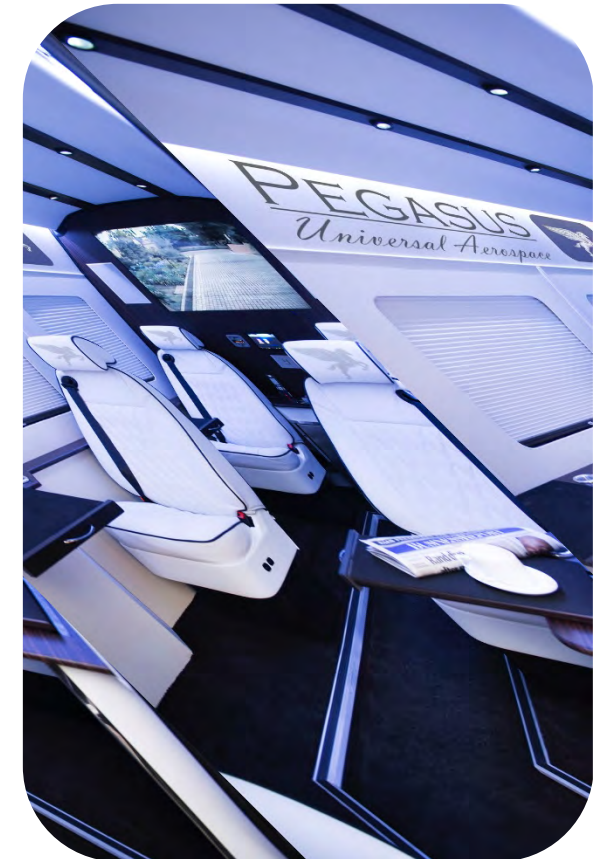


INTRODUCTION AND SCOPE

Pegasus Universal Aerospace was ultimately established to design and manufacture the first of type Vertical Business Jet (VBJ) in the world, operating in the civil aviation space. On route this journey of creativity, the Pegasus Road Jet was birthed.

What inspired Dr Reza to start the company and the story behind its name is inspiring! Dr Reza has always wanted to design his own aircraft, based on his personal work travel experiences, a genuine passion for the future of aviation solutions that save “time”, coupled with the determination and a clear vision, led to the initial concept of the VBJ.

What makes Pegasus Universal Aerospace’s VBJ so different and unique, is that it surpasses rotary solution convenience with up to three time more range, true business jet speeds, better performance and most importantly, enhanced safety features. One of its most impressive design characteristics - the VBJ can fit onto a helipad, land on unpaved surfaces and on conventional runways.





COMPANY OVERVIEW

Pegasus Universal Aerospace is a registered in South Africa company with its head office based in Johannesburg.

Our Motivation: *We choose to leave a legacy for future generations of humankind. We don't just develop neoteric aircraft, we sell "time"!*

Vision: *"To revolutionise air transportation"*

Mission: *"The company is founded to advance and transform private passenger air travel with the goal of increased mobility, performance, safety and convenience."*

Strategy: Ensure FAA & EASA certification. Co-operate with an international partners with an existing network to manage sales, maintenance infrastructure and a worldwide service footprint. Maintain a culture of continuous improvement and advancement of new technologies.

Business/Project Description: The company is designing new aircraft, to manufacture them in South Africa, North America or Europe (TBD) and to supply these VBJ's to customers around the world.

Pegasus has invested heavily into the establishment of local & global relationships with governments, aviation OEM's, suppliers, maintenance organizations and regulatory bodies such as the SA CAA, FAA and EASA.





BACKGROUND

Dr Reza Mia | Chairman & Founder

Dr Reza Mia, serial entrepreneur & broad minded businessman is well known for being diversified in his expertise in medical aesthetics, art, science and new generation hybrid propulsion aircraft.

Having graduated from the University of Witwatersrand with a medical degree at the age of 23, Dr Reza sought to enhance his studies by pursuing a MBA from the University of Liverpool, having obtained multiple distinctions. Dr Reza was awarded the Dean's Scholarship for Entrepreneurship from the London School of Business & Finance for a MSc Finance & Investment degree, where he majored in investment banking and capital markets, graduating with Merit. In 2012 he became a member of MENSA.

Most notably, Dr Reza completed a dissertation in Aerospace OEM analysis. Recently he obtained his Advanced Diploma in Aesthetic Medicine from the Centre of Higher Education with a further qualification from Harvard online in Negotiation Skills.

Dr Mia has earned a finalist award from the Technology & Innovation Agency (under the Department of Science & Technology) for his VBJ as well as the Minara Chamber of Commerce's Young Entrepreneur of the Year Award 2017 together with the Innovation Award from the Congress of Business & Economics.





EXECUTIVE TEAM



Dr Reza Mia
*Chairman &
Founder*



Robbie Irons
CEO



Nasrin Ebrahim
COO



Jason Wolverson
Board Advisor



Matthew Buttle
Chief Engineer



Zaakir Mia
Chief Financial Officer



Capt. Andrew Dietrich
*Chief Pilot & Head of
Flight Operations*

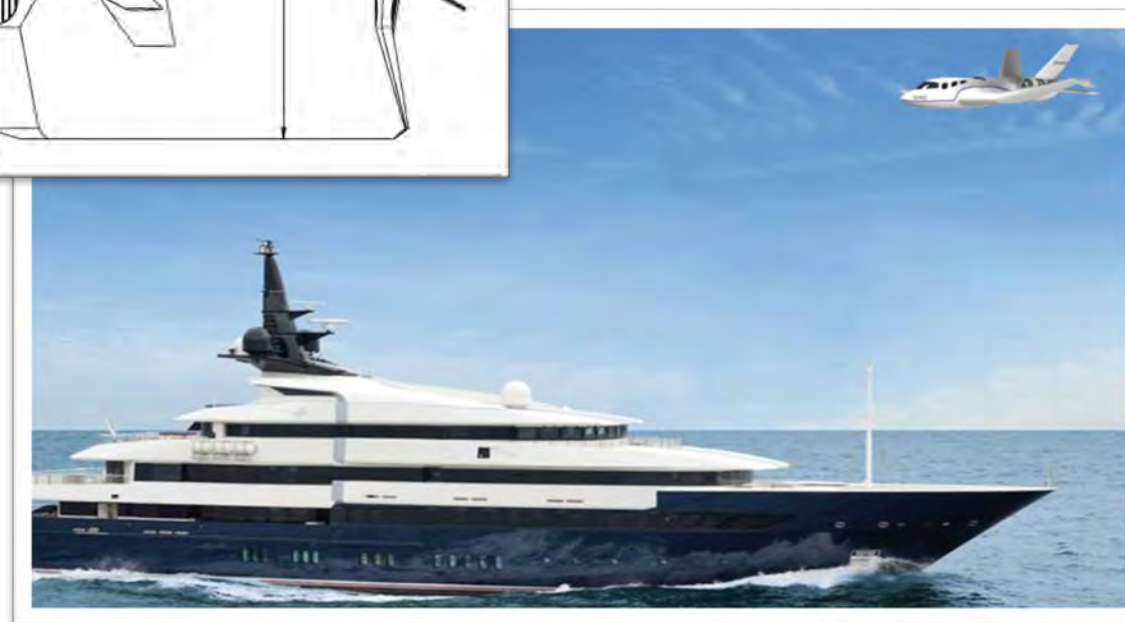
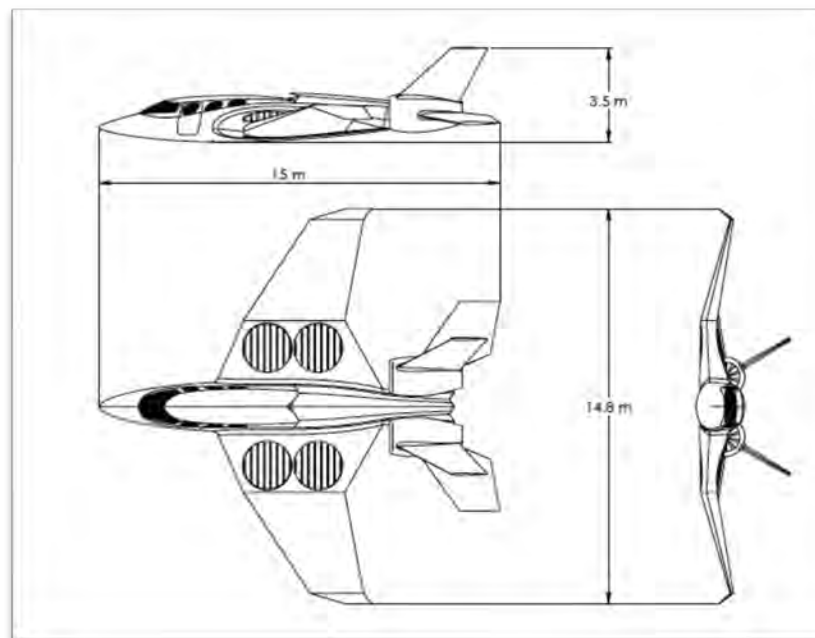


DESIGN CONCEPT

The VBJ is designed specifically around ease of access to helipads / heliports and conventional runways.

This dual application positions the VBJ aircraft in a market segment that very few can compete with, especially when considering the multiple redundancies incorporated from the hybrid power source, flight control and stability systems.

The comfortable interior cabin offering 6 PAX + PIC, an on-board lavatory, galley and baggage compartment all support a great relaxing experience exuding comfort and style.

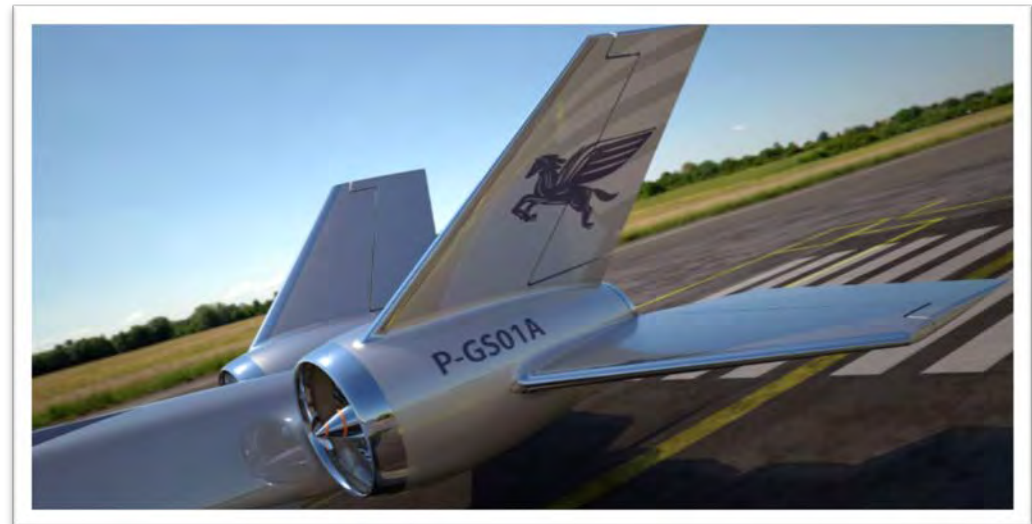


ANALYSIS & FINDINGS



NASA studies have shown an airliners average passenger 'door-to-door' speed on trips undertaken (of less than 1,287 kms), equates in real passenger experience time to approximately 128 km/hour, decreasing as the traveled distance decreases. This highlights the inefficiency of time management for each passenger travelling commercial.

Conventional turbine combustion engines produce intense heat signatures, dangerous hot gases and high frequency noise abatement challenges. The VBJ produces only cool air from the lift and forward thrust fans which enhances the appeal of the hybrid electric power source application.





AIRCRAFT SPECIFICATION

PEGASUS VBJ

Applications: Corporate, VIP, Offshore, Yacht, Rescue / Medevac.

Number of Seats: 6 Pax + PIC

Type of Construction: Composite

Order Lead Time: 18-24 months post FAA certification

Power Plant: Dual Turboshaft & Electric Hybrid Propulsion

Fuel Burn (kilograms per hour): 309

Fuel Capacity: 2,040 kg

Range: 3,943 km (runway) 2,703 km (VTOL)

Endurance: 6.6 hrs (runway) 3.18 hrs (VTOL)

Speed in Knots (Kts): Cruise = 329 / Stall = 66 / V_{NE} = 460

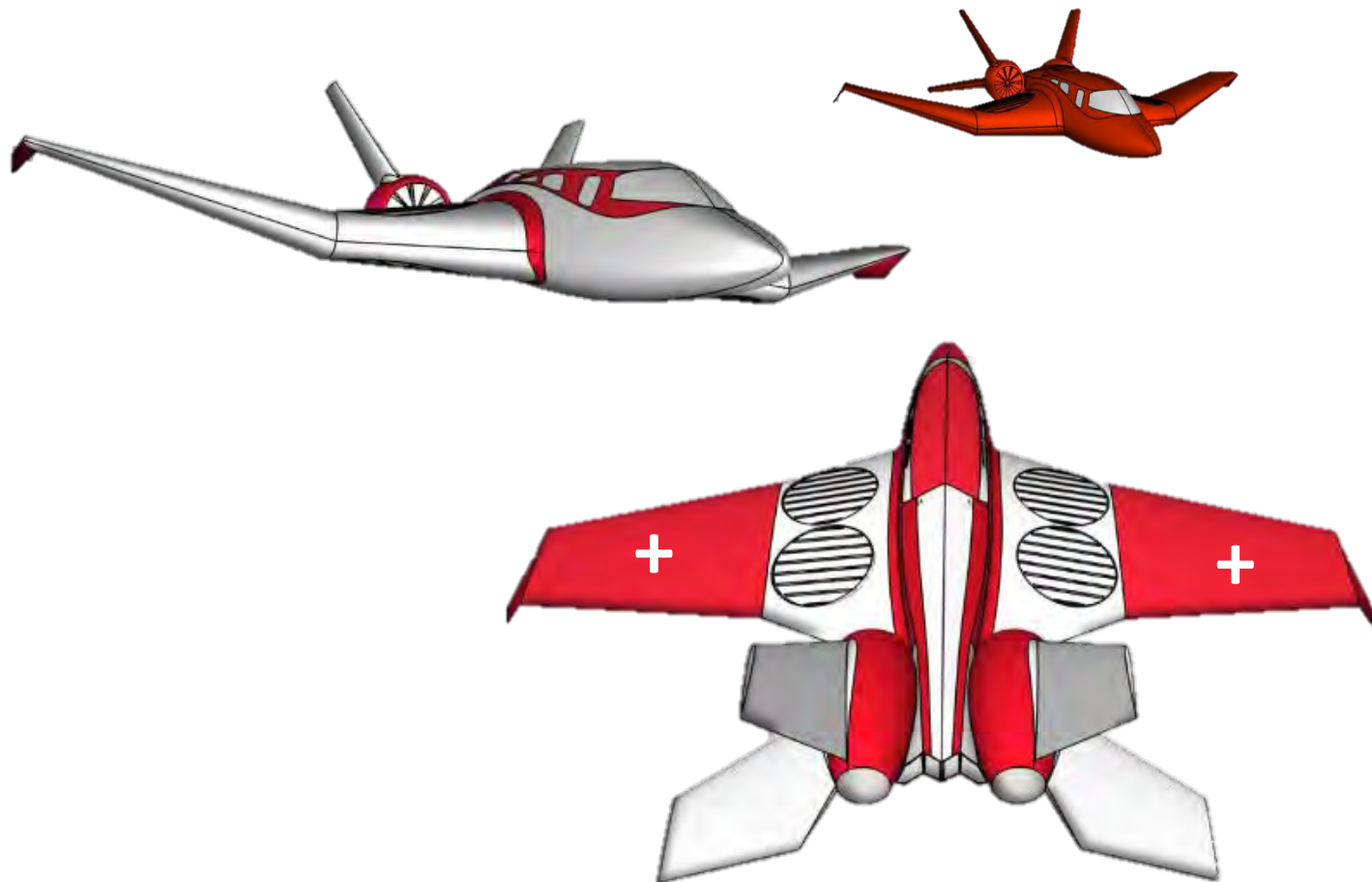
Size: Length = 15m / Wingspan = 14.38 m / Height (gear retracted) = 3.6 m

Weight: MTOW = 5,700 kg / Empty = 3,040 kg / Useful Load = 2,660 kg





VARIOUS APPLICATIONS- MEDIVAC OIL AND GAS PLATFORMS





VARIOUS APPLICATIONS- MEDIVAC OIL AND GAS PLATFORMS





RANGE MAPS

RANGE MAPS



California: VTOL and Standard Runway



London: VTOL and Standard Runway



Dubai: Standard Runway



Johannesburg: VTOL and Standard Runway



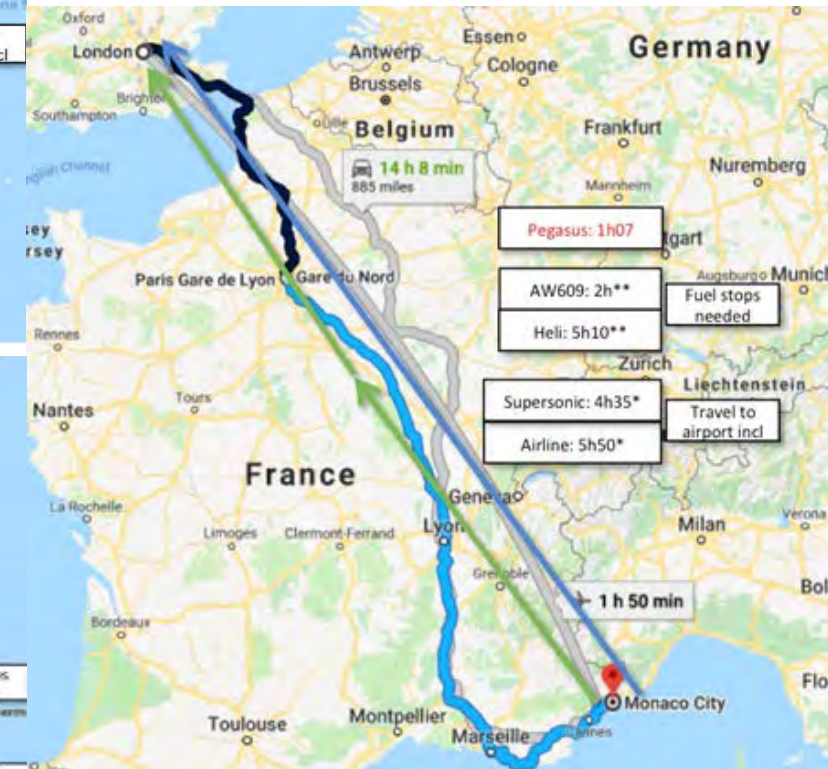
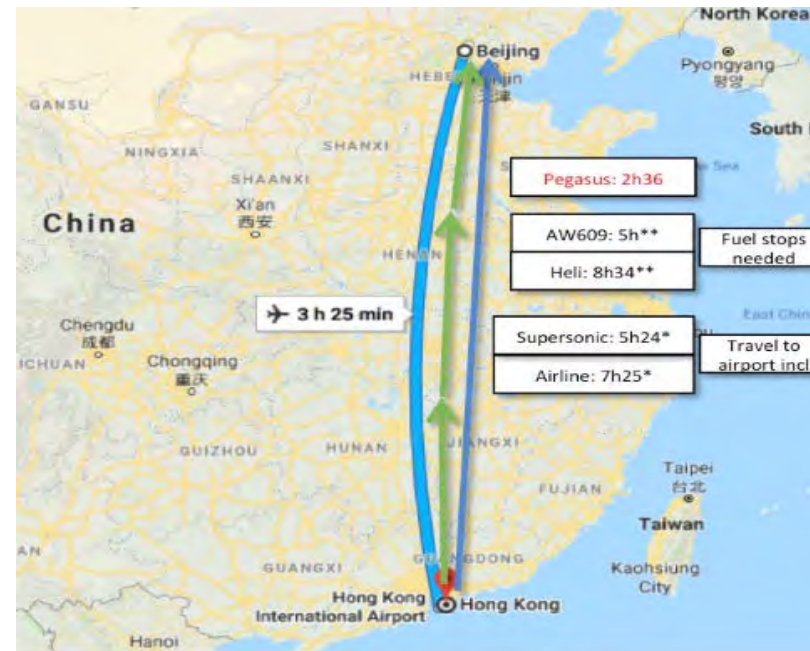
PEGASUS VBJ EFFICIENCY

These maps compare the real time taken to complete specific 'door to door' journeys in three city pairs.

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 30 min for each stop. (The \$22M Airbus H160 helicopter statistics have been used here).

Even the possibility of **supersonic** business travel result in **slower** journey times because one must travel to, from and through airports or FBO's. (This adds on average four hours to journey times).

The Pegasus VBJ saves "time" like no other form of transport available. What is your time worth?

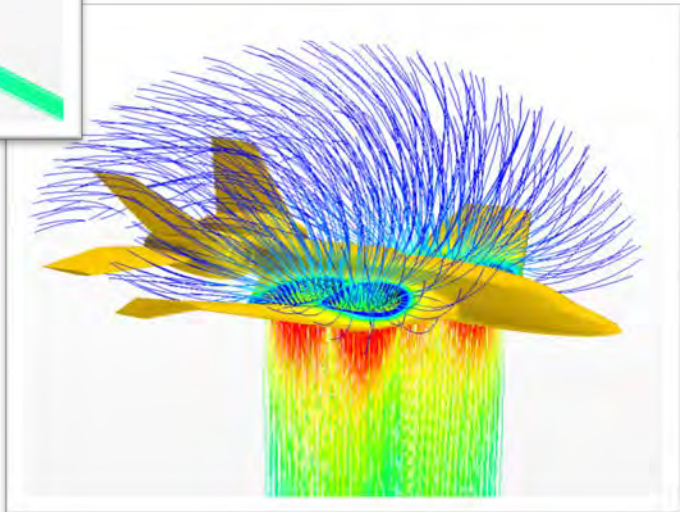
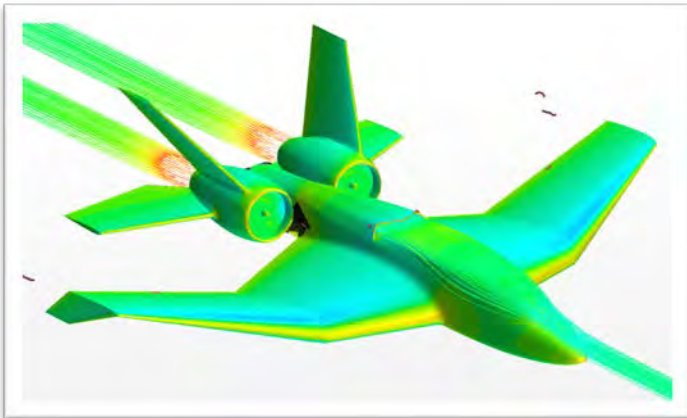




FEASIBILITY

Independent Design Review

Conducted to verify the information produced in the Conceptual Design Phase and to further investigate the airframe and its capabilities.



Epsilon Engineering Services (Pty) Ltd
Reg. No: 1988/05452/07
1001 Ergon Road
Johannesburg X6



Our Ref: 14/064_01

To: Pegasus Universal Aerospace.
P O Box 2640
Houghton
Johannesburg
South Africa
2041

Attention: DR Reza Mia

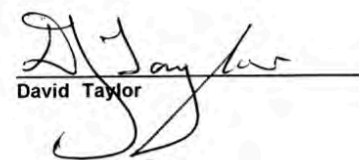
Re: Vertical Business Jet.

Dear Reza,

Our company, Epsilon Engineering Services (Pty) Ltd, has investigated the Pegasus Vertical Business Jet design concept and has found the concept to be feasible and that based on general aeronautical engineering development processes, there are no major technical hurdles that cannot be overcome.

We have studied the Conceptual Design Study performed by Aerostruct Engineering, as well as the various CAD designs submitted with the study. From there, we explored the general concept, the airframe and in particular, the lift fan system. Whilst detailed design is still to be carried out on the airplane, from the evidence on hand, we believe that it will be possible to design and build this airplane to function as a safe and useful vehicle.

Yours sincerely


David Taylor
Director



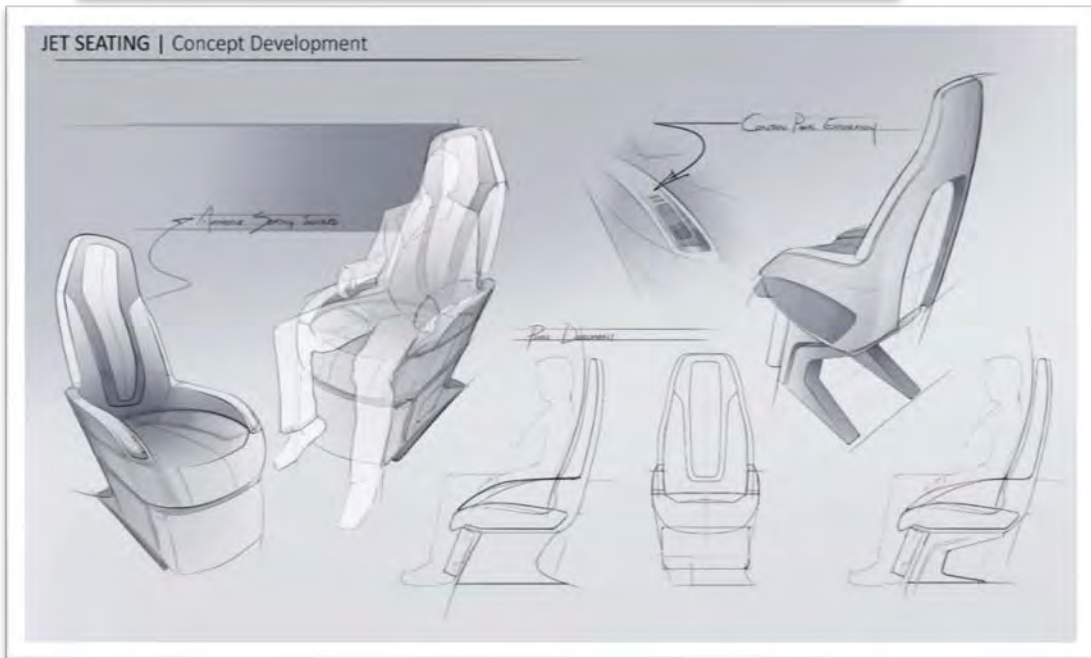
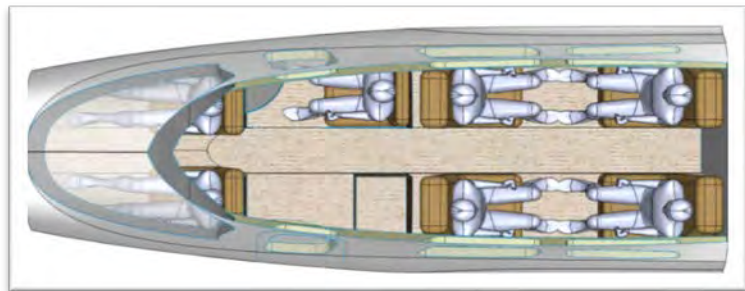
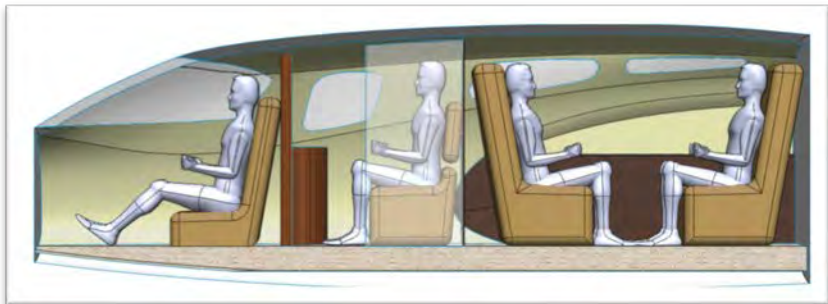
COMPOSITE MOULD – EARLY DAYS

Small 1/8th Scale Model Manufacturing Process





INTERIOR FEATURES





PRODUCT REVIEW AND DESIGN

IMPORTANT ACHIEVEMENTS TO DATE



Independent design review

Concept Computational
Fluid Dynamic Validated

Thrust Fan & Drive Train
feasibility studies in
progress

IMMEDIATE ACTION PLAN

Develop 1:1 Scaled
VBJ – Hover Test

CONTINUE DESIGN
ACCORDING TO CAA
AND FAA STANDARDS.

CONTINUE FUND
RAISING
ACTIVITIES.

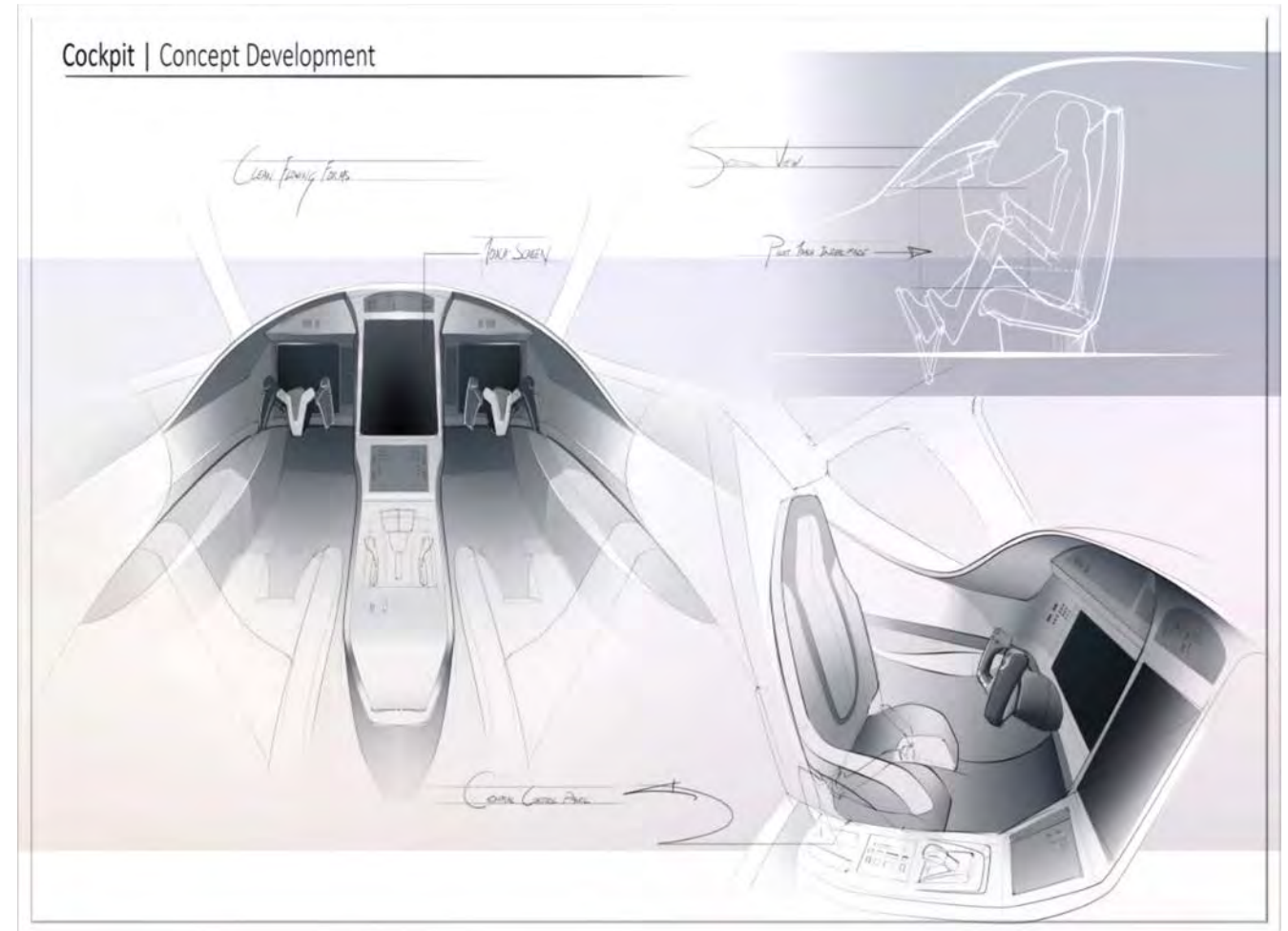


FLIGHT CONTROL SYSTEM (FCS)



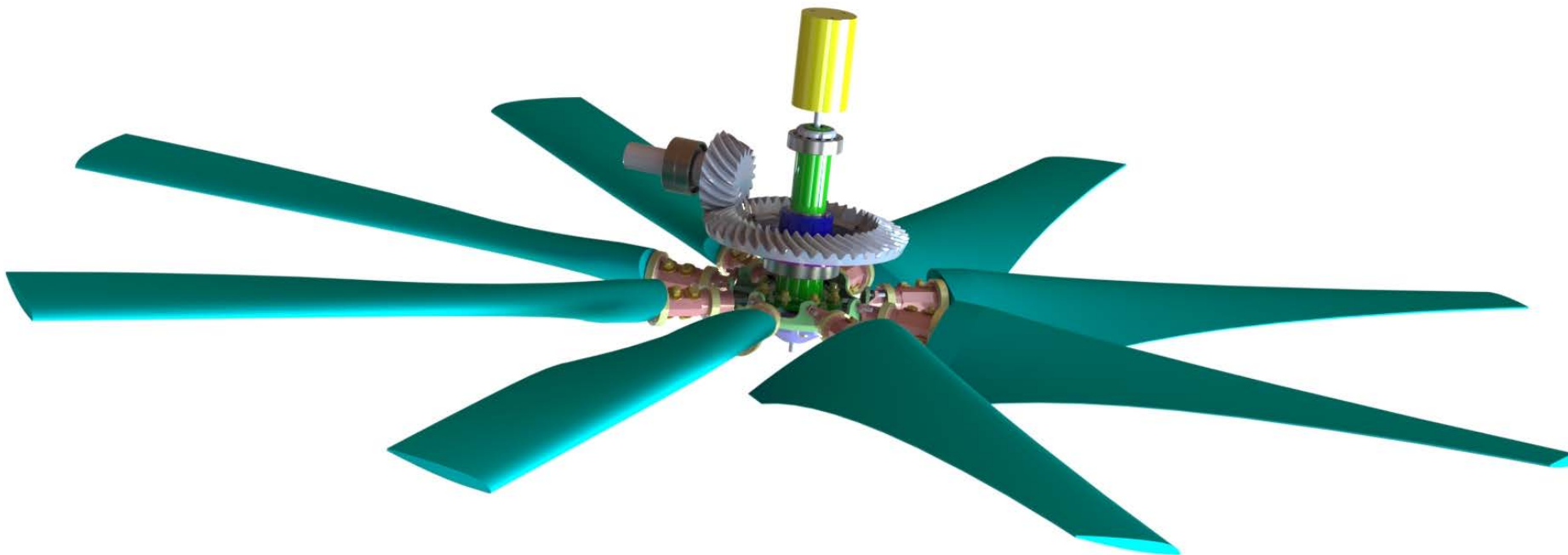
Callen-Lenz

- FCS is the most important transition technology applied to the VBJ
- PUA and Callen-Lenz (UK based) entered into formal agreement 3Q2019 to design and implement the FCS on the VBJ
- FCS will enhance safety, improve efficiency, ensure simplicity and intuitive application of flight controls, maximize ease of operations and deliver new levels of capability and situational awareness





RISK ANALYSIS



The first step in the comprehensive detailed design de-risking exercise is the Lift Fan (in wing design) Hover Test along with its FCS integration and application. The fan indicated hereabove has been developed by our in-house engineers.





PRODUCT MAINTENANCE

Pegasus Universal Aerospace is engaging with several leading global product support companies to ensure a cost effective, efficient and well structured maintenance program that is designed around the VBJ requirements with specific attention to service delivery and reduced AOG time.





RISK ANALYSIS

TECHNICAL RISK

In order to remove as much of the perceived technical risk as possible, the 5 major sub systems must be investigated and the results of these studies integrated to provide a widely accepted, irrefutable conclusion that will provide greater details of the estimated time, skill and financial resources required to deliver the aircraft to market.

The following five areas are being studied:

1. **Airframe** (underway)
2. **Lift Fans** (underway)
3. **Thrust Fans** (underway with OEM global leader)
4. **Drivetrain** (underway with OEM global leader)
5. **Flight Control Systems** (FCS), software & automation
– Callen Lenz (underway)

Each of these categories will be carried out in collaboration with the global experts in their respective fields to take advantage of their experience and knowledge in the subject matter, applying it to this novel concept to produce a unique offering. All IP produced is wholly owned by Pegasus Universal Aerospace.

The cost, skill, manpower and time estimates will be revised following this de-risking phase and the accuracy of these estimates will no doubt, be greatly improved.





CURRENT DEVELOPMENT PHASE

Aim: To de-risk the VBJ project to enable the market to fully support the project with the greatest of confidence.

Hypothesis: The Pegasus VBJ project is highly likely to succeed and to overcome both the residual marketing and technological risks.

Justification: To date, all market and feasibility information has been positive. Where challenges were encountered or discovered, these were overcome or are likely to be overcome using the resources at hand.

Methods:

1. Marketing risk:
 - “Agency” interviews.
 - FlightGlobal Ascend.
 - Avinode.
2. Technological Risk:
 - 5 Sub system study.
3. Industrial Design:
 - Functional aesthetic improvements and creation of photo-realistic images and videos intended to facilitate fund raising.

Desired outcomes: Confirmation of all previous market research and greater understanding of the complete development program with significant de-risking.

Continuity: Following the completion of the studies noted above, the company will complete detailed design, certify and deliver the VBJ aircraft to the market.

Project Insurance: Pegasus is working with a technology de-risking company that might provide project insurance to investors and buyers paying deposits for aircraft, to protect them from the risk of non completion or non delivery of a fully certified airplane.





Strengths

A high level of management skills and experience in all the requisite disciplines already exists within the company. The creative input and problem solving ability has been greatly contributed to by the entire executive team.

In addition, an Advisory Committee is being prepared to represent experienced military and civil test pilots to mitigate operational issues through the VBJ development program.

The company has a flexible equity and shareholding model making it attractive to potential investors.

Unique Product offering featuring many “world firsts” giving the company a considerable first-to-market advantage.

Significant interest from international markets will derive the future growth of the organization

Weaknesses

The large capital injection required to make the project succeed. (High barrier to entry). This is both a strength and a weakness of the project.

The 3-5 year period between start-up and delivery of the first aircraft resulting in an extended period without cash flow from sales. Competitors and potential competitors will face the same time delay & maintenance and finance income is an early source of funds.

The costly and complicated FAA and EASA certification process which cannot be circumvented.

The development of new technology will be both lengthy and expensive. Once completed, this will improve the company's competitive advantage significantly.



Opportunities

The technical global expertise to design, build and certify the aircraft is available to the company.

The revolutionary safety features will set a new benchmark for the GA industry globally. The first to market advantages are not to be ignored.

Increasing the local content ratio of the aircraft by securing the manufacture and supply of certain aircraft components from participants in the micro finance and mentoring project.

Establishing South Africa as a global leader in aviation technology and manufacturing.

An interest expressed by an international service provider, to manage after sales support and maintenance globally using their international network

Threats

Any disruption to the supply chain of imported components such as the power plant could impact on delivery dates to the customers. Supplier influence could lead to higher prices. This is addressed below in the Porter 5 forces model.

New entrants to the market attempting to replicate the company's offering. This is also expanded upon in the Porters 5 forces model.

Existing competitors developing competing products, as above.





PESTLE ANALYSIS

The PESTLE analysis allows one to identify the applicable external forces, that is, the opportunities and threats to be considered as part of a SWOT analysis.

Political: The current ruling party infighting and inability to revive the economy is creating poor foreign investor sentiment in SA. Having said this, the South African constitution is among one of the best in the world. Government policy is in line with the objectives of the project, including the aviation sector development plan and the broader governmental goals regarding the promotion of South African exportation, manufacturing and capital projects.

Recent labour unrest has not extended into the skilled and semi-skilled sectors.

Economic: the price of raw materials and factors of production may fluctuate and affect the profitability of the project, however, the trend in the aviation sector has been a decrease in the relative, inflation adjusted costs of avionics, engines and composite materials. Foreign exchange fluctuations will not affect the project as much as one may expect given that the income and major purchases of the project are priced in US dollars.

Social: Industry globalization makes it more acceptable for individuals and companies in developed countries to purchase aircraft from South Africa. Educating and uplifting the employees will lead to a general improvement in the South African socio-economic status.

Technological: New advances in technology have made airplanes safer, cheaper, lighter and more fuel efficient. Technological advances in computers, lightweight materials, engineering and robotics, contribute to more appealing, safer airplanes which could be built and designed more cheaply than in the past. Control software makes the airplanes easy to fly. Ballistic parachutes act as a backup to increase safety and perhaps more importantly, the perceived safety.

Legal: Legislation regulating the safety of airplanes is managed through the Department of Transport and the CAA. International regulations will apply to this project by way of the certification process of the FAA and EASA.

Environmental: Lighter, more fuel efficient airplanes will reduce the impact of travel on the environment. The ability to land without an airport will remove the need for additional travel as well the construction of runways. Environmental impact studies will be conducted at the site of proposed construction before commencement.



PORTER'S 5 FORCES

An industry analysis is conducted through the Porters 5 forces model.

Existing competitors: A description of the relevant competitors is carried out below.

New entrant threats: The threat of new entrants, given the strength of current airplane manufacturers and the large equity required to start a venture of this nature, is low. Without the developmental advancements in our possession, the design and manufacture of a true competing project is not possible.

Supplier influence: The inputs required by the project include easily available raw materials, as well as off the shelf avionics, integration systems and engines. Suppliers exist in a competitive environment and as such are not likely to use their influence to exert negative pressures on the company. In fact, the trend has been for suppliers to offer favourable terms to companies with an above average chance of success given the potential for long term co-operation.

Customer influence: Each individual customer makes little difference to the company on their own. However, collectively, the customer has a choice of airplane to purchase, and poor service or bad reputation may cost the company dearly. No matter how big the company grows, customer service, safety and quality must always remain top priorities. Of course, being first to market with a VTOL jet will allow the company to enjoy a monopoly in that sector for a period. Governments, corporates and larger customers who may place large orders would gain leverage over the company as the size and frequency of their purchases grows relative to the total company revenue.

Threat from substitutes: The substitutes to the company products include helicopters and light turbo-prop aircraft. However, the only real substitute is the Augusta 609 featured below, however this plane is too large to land on a yacht, at intersections or general or emergency helicopter landing pad. The other airplane types have unique capabilities designed to compete with substitutes and competitors.

Relevant risks: Market risks are unavoidable as far as an aviation company is concerned, the company must respond to these as they arise, but contingency planning is always of value.

Credit risk, or counterparty risk may be a problem for Pegasus, non-refundable deposits and personal sureties will reduce this risk. Credit default insurance should be obtained where payment terms are offered to customers.

Business risk is best avoided by keeping to a lean operating structure and doing everything possible to keep the company profitable. Just in Time manufacturing techniques will reduce inventories on hand. The large gap between the predicted IRR, even under very conservative predictions, and the required rate of return on available debt, reduce the financial risk of the business.

Liquidity: the cash flows forecasted are able to meet the cash requirements of the business as well as the debt repayments.

Operational risks occur as a result of the operations of the company; it is important and in some cases a legal requirement, for companies to obtain public liability insurance amongst other types of insurance. General care and attention to safety coupled with these insurances will reduce these risks.

External risks, are another type of uncontrollable risk which may be mitigated by intelligent design and relevant insurance.

In addition, JLT (2012) identifies the following risks:

Foreign exchange risk, affects the company indirectly, large fluctuations in currency strengths relative to the home currency of foreign customers will affect the perceived affordability of the airplanes. Rough predictions may be made as to the future direction of the currency versus any particular country's currency by comparing the inflation rates of the two countries. Differing inflation rates would lead to a relative change in the amount of money available and the actual value of that money, (Hill, 2011). Countries with lower inflation rates should be

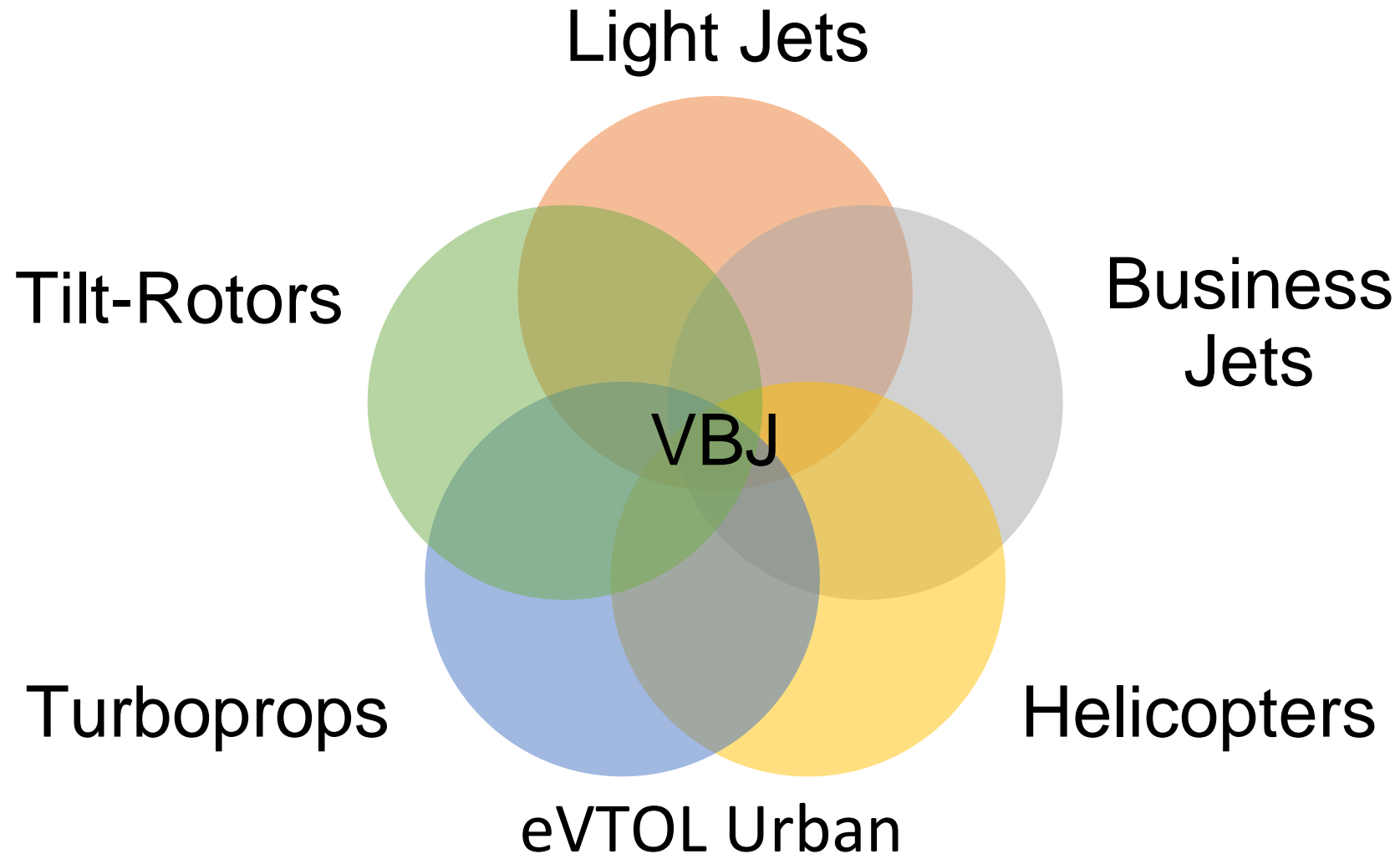
targeted, theoretically the costs of purchasing an airplane will become cheaper as time progresses.

Interest rate risk, this rate will be fixed in advance for debt as well as invested equity.



ANALYSIS AND FINDINGS

TARGET MARKET OVERLAP

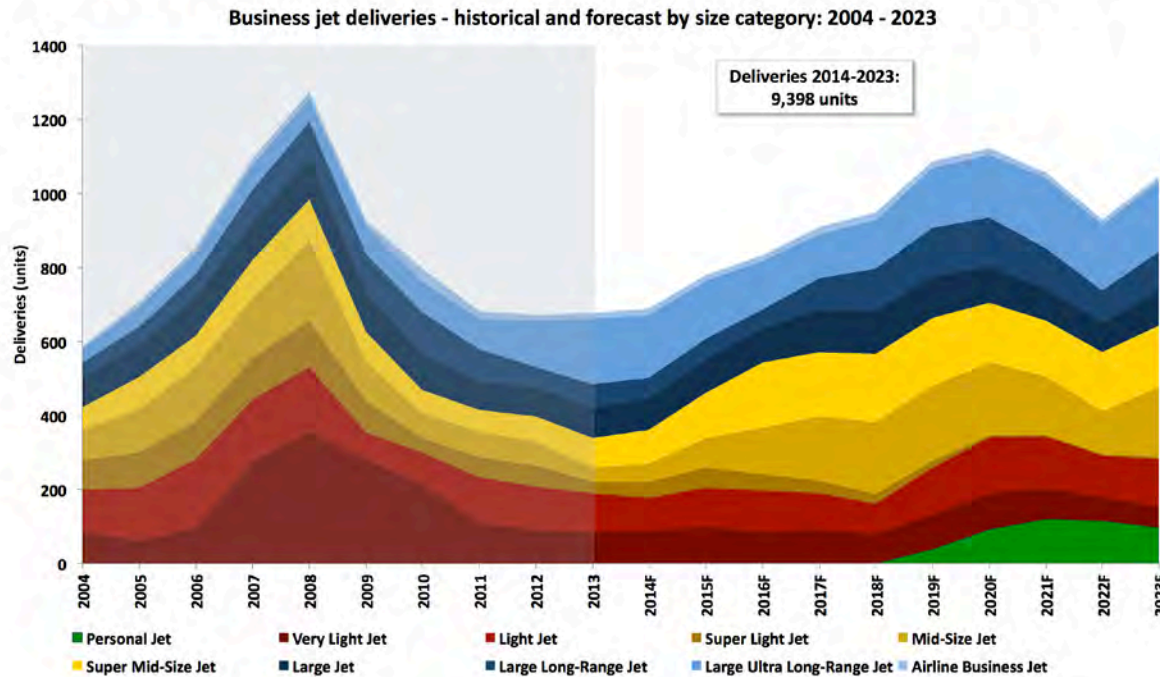




ANALYSIS AND FINDINGS

JETNETIQ

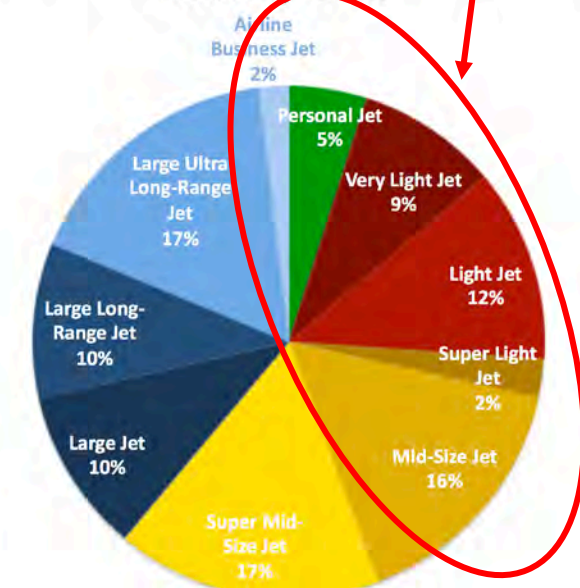
Business Jet Delivery History and Forecast



Pegasus Vertical Business Jet accessible market.

Business Jet Delivery Forecast: 2014-2023

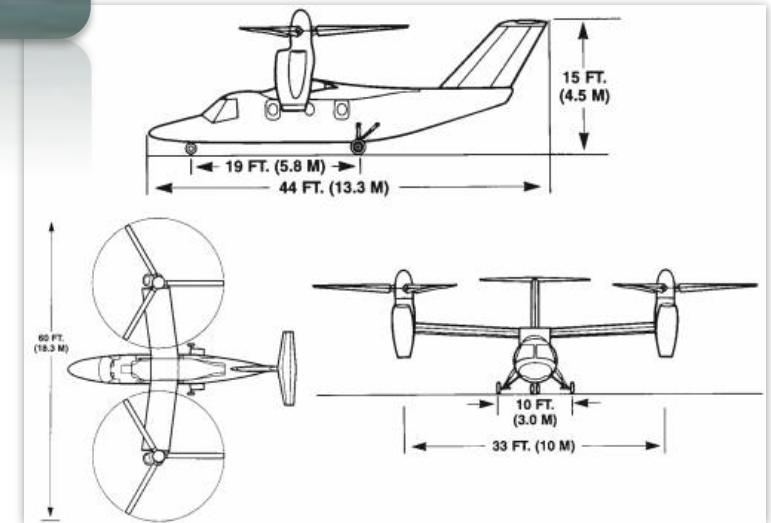
Delivery Units





VTOL COMPARISON: 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



Pegasus VBJ Competitive Advantages:

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

This AW609 tilt rotor is the only civilian aircraft currently that will offer VTOL capabilities. This AW609 is slower, less attractive, heavier and less safe than the Pegasus VBJ. The rotor width on this AW609 makes it unsafe to land on helipads or on roads in the case of emergency airlifts.



EVTOL & AIR TAXIS

Crew:	0
Passengers:	1-4
Cabin Height:	n/a
Cabin Width:	n/a
Engines:	Electric
Range:	Short (inner city) 50-100nm
Speed:	80 -150 km/h
Price:	USD \$2m to \$12m
Mission:	Urban 'point to point' GPS applications



Pegasus VBJ - Competitive Advantages:

- Recent NASA study show most passengers prefer longer “inter-city” trips in the air, versus the inner city eVTOL solution.
- Pegasus services this longer range, higher speeds and more. To be FAA Certified under Part 23 and Part 29.
- Morgan Stanley (Dec 2018) predicts a USD \$1.5 Trillion eVTOL market by 2040.
- Operational criteria not yet fully laid out for Urban eVTOL - still pending, whereas Pegasus adheres to existing established operational rules (heliports / helipads / runways). This facilitates faster flight clearances through normal channels versus TBD for eVTOL.
- eVTOL battery charging time increases time on ground between flights, Pegasus is a hybrid and carries its own power supply.

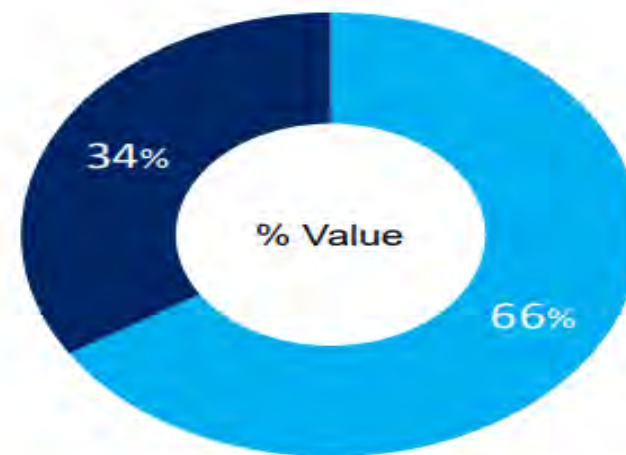
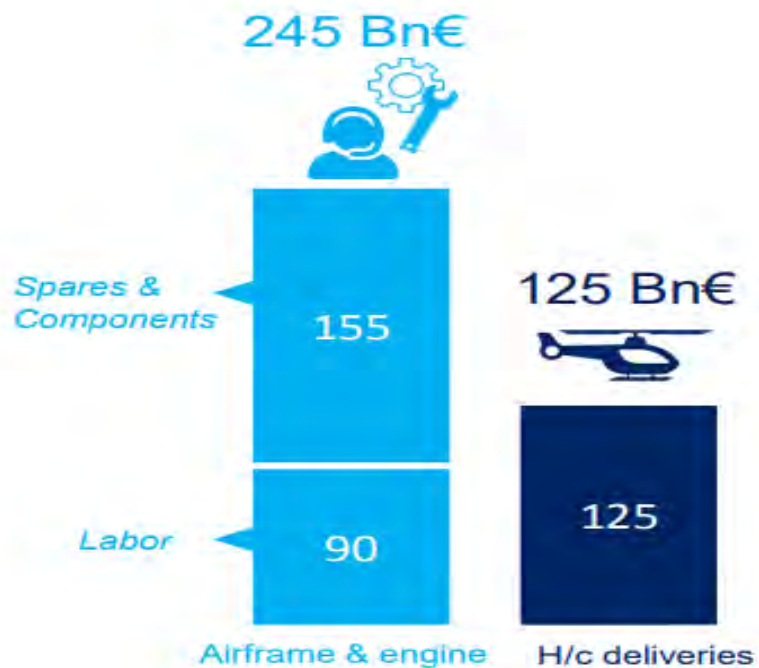




GLOBAL HELICOPTER FORECASTS

All OEMs C&P helicopter business
A global business volume of 370 Bn€

20 year global turbine helicopter business volume (2017 – 2036):



■ Customer service business accounting for an average of 65% of the total C&P market

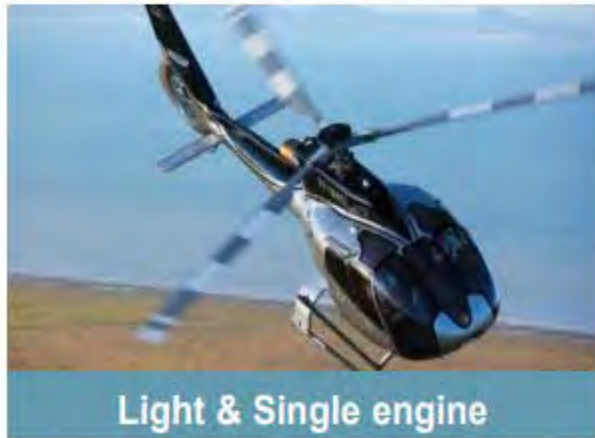




GLOBAL HELICOPTER FORECASTS

Over the next 20 years, the C&P market will represent nearly 22,000 units
Representing 125 Bn€

We expect ~22,000 new helicopters in all market segments by 2036



50% (units)
17% (value)



35% (units)
45% (value)



Illustrates Market Capacity



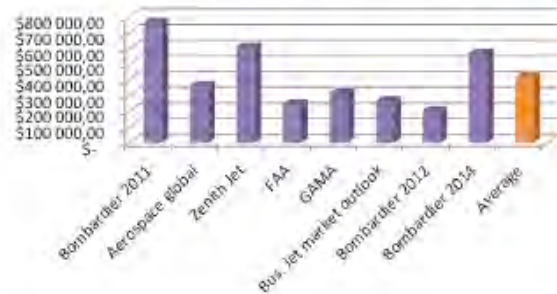


ANALYSIS AND FINDINGS

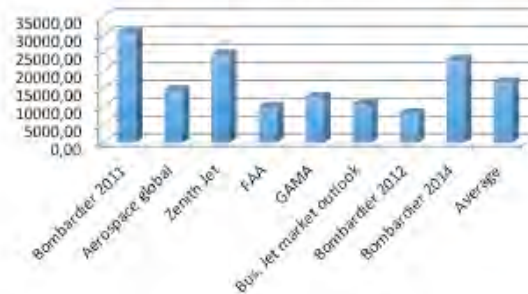
STUDY INTEGRATION (2011-2034)

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.

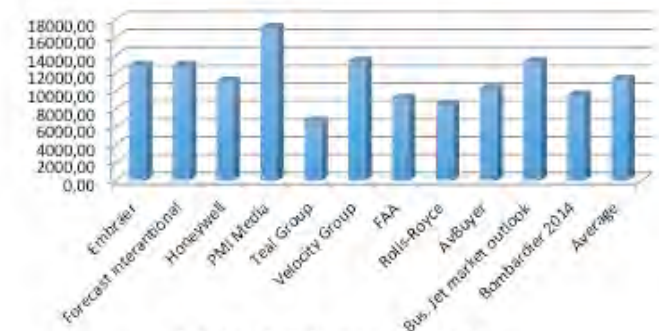
Business Jet Revenue (m)



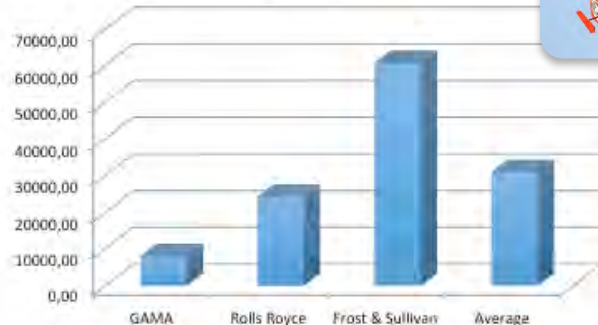
Business Jet Deliveries



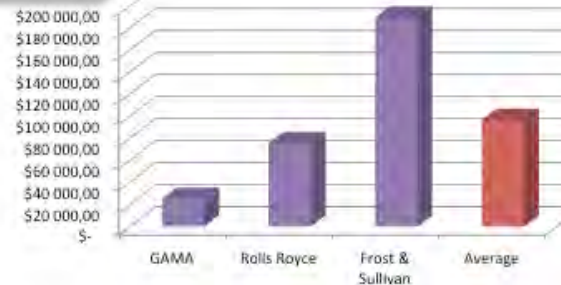
Light Jet Deliveries



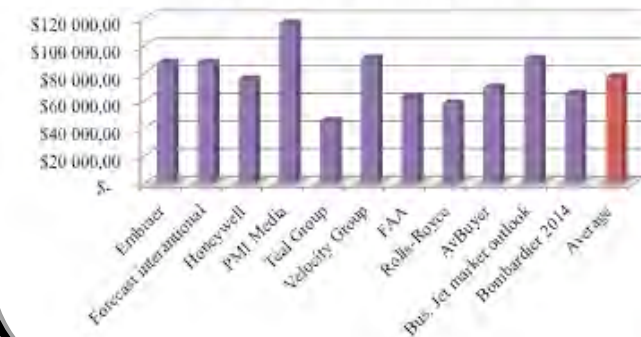
Helicopter Deliveries



Helicopter Revenue (m)



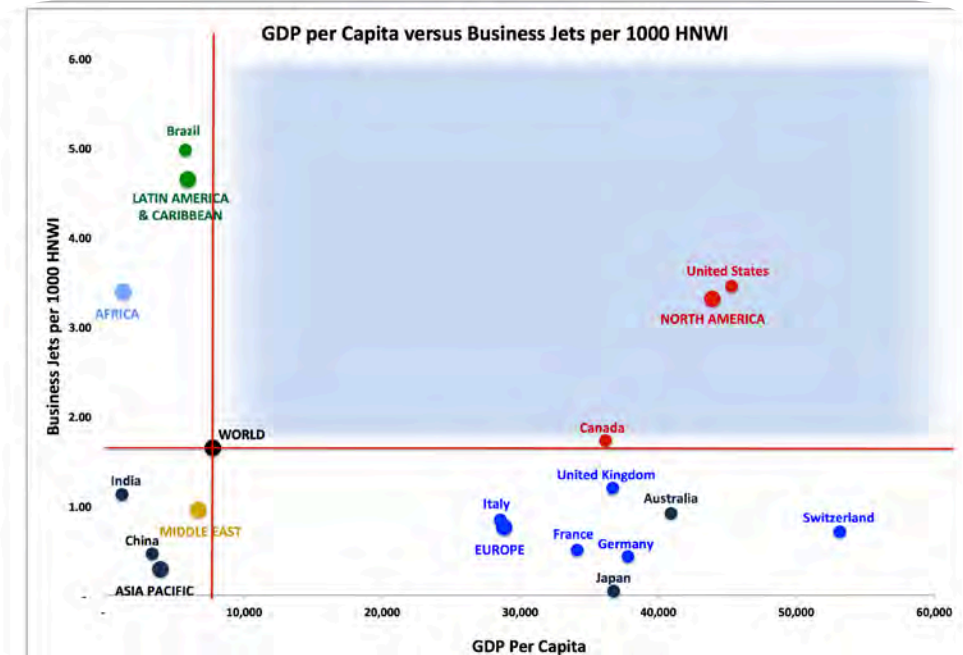
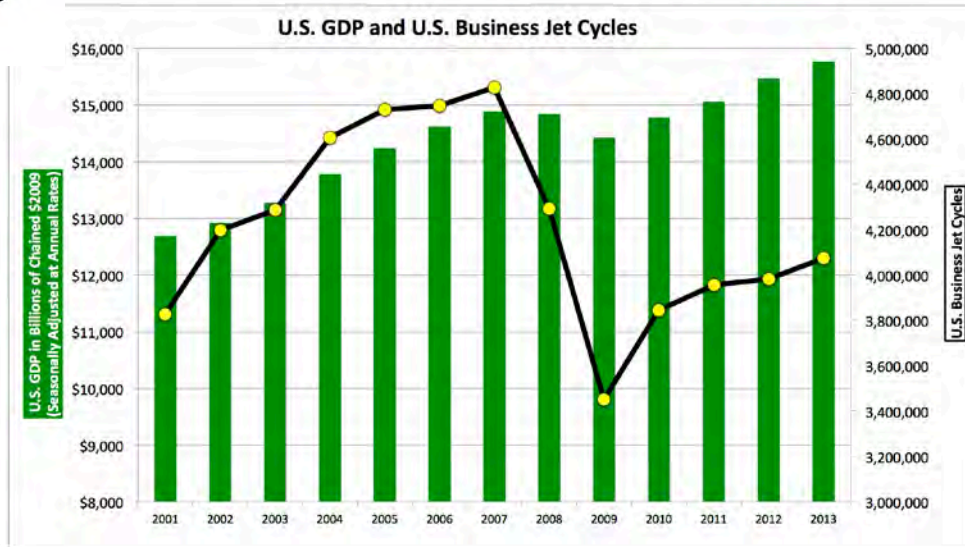
Light Jet Revenue (m)





ANALYSIS AND FINDINGS-JETNETIQ

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

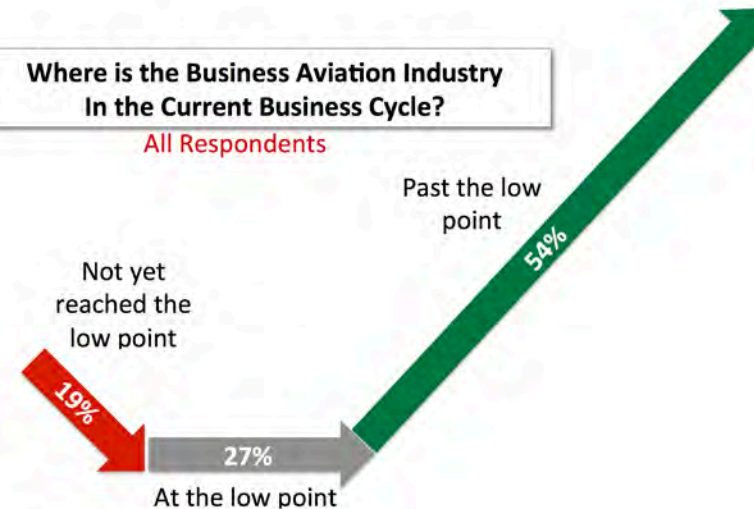


It is apparent from the top right image, that the market perceives, for the most part, that the business cycle has already started its upward slope, the US GDP and business jet cycle graph supports this. Also, from the GDP per capita versus the number of jets per 1000 HNWI, it is clear that Africa and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

Where is the Business Aviation Industry In the Current Business Cycle?

All Respondents





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.



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.



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.



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

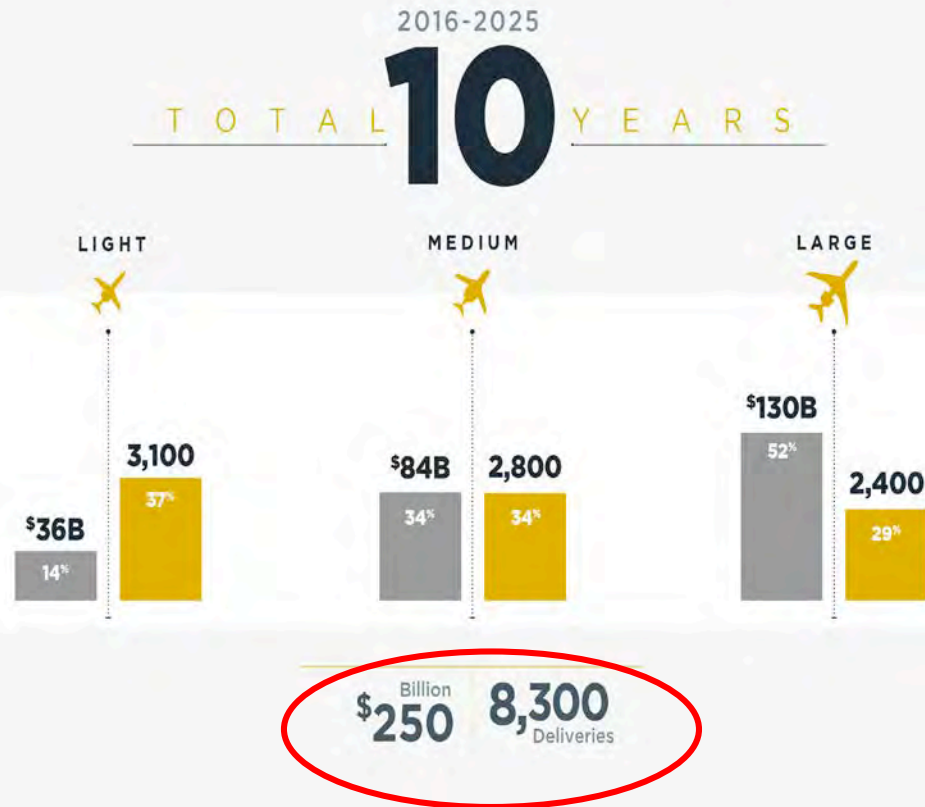


ANALYSIS AND FINDINGS

MARKET OUTLOOK UPDATE (2017-2038)

Excerpts from Bombardier 2016 – 2025 forecasts

We forecast 8,300 aircraft deliveries over the next 10 years



We forecast 3,100 aircraft deliveries in the Light category

Light category

KEY CHARACTERISTICS



TYPICAL PURCHASE PRICE
\$8-20 M



CABIN VOLUME¹
300 ft³ to 700 ft³



RANGE
2,000 to 3,000 NM
Equivalent to 20%-50% of global coverage

Light category aircraft offer intraregional

10-YEAR FORECAST

8,850 FLEET 2015 **3,100** + DELIVERIES **1,100** - RETIREMENTS **10,850** = 2025 FLEET

Relevant to Pegasus for weight and size.

We forecast 2,800 aircraft deliveries in the Medium category

Medium category

KEY CHARACTERISTICS



TYPICAL PURCHASE PRICE
\$20-40 M



CABIN VOLUME¹
700 ft³ to 1,500 ft³



RANGE
3,100 to 5,000 NM
Equivalent to 50%-80% of global coverage



Medium category aircraft offer greater cabin comfort, range and speed

10-YEAR FORECAST

5,475 FLEET 2015 **2,800** + DELIVERIES **680** - RETIREMENTS **7,595** = 2025 FLEET

Relevant to Pegasus for price and range



Medium category will generate a total of 2,800 deliveries from 2016 to 2025

¹ Cabin volume of 19.8 m³ to 42.5 m³





ANALYSIS AND FINDINGS

UNIVERSITY & FET



According to Boeing, by 2036, the world will require the following professionals.

Worldwide:

- 617,000 new commercial airline pilots
- 679,000 new commercial airline maintenance technicians. (ATAG, 2014).

If an educational component is to be included in the project, it may be revenue generating as well.

By offering the following courses, the company would be able to supply its own needs, as well as to fill the gaps in the global requirement. Forecast cash-flows are shown as well.

Year 1	0
Year 2	-R 2 420 370
Year 3	R 432 795
Year 4	R 12 776 056
Year 5	R 29 039 252
Year 6	R 39 801 672
Year 7	R 48 373 748
Year 8	R 49 772 162
Year 9	R 50 831 650
Year 10	R 52 145 846
Year 11	R 53 374 311
Year 12	R 54 560 263
Year 13	R 55 656 635
Year 14	R 56 614 163
Year 15	R 57 471 149

Aerospace subjects

Aircraft maintenance theory
Aircraft technology
Aircraft Metalwork Theory
Aviation Electronics
Aerodynamics
Aircraft Electrical Theory
Aircraft Electronics Theory
Aircraft Instrument Trades Theory

Other aerospace-related subjects

Engineering science
Engineering Technology
Industrial Electronics
Communication Electronics
Motor Electrical Theory
Computer Principles
Control Systems
Motor Machining Theory
Armature Winding Theory
Internal Combustion Engines
Electro-Mechanics Theory
Aluminium Technology
Electronics
Missiles
Radar Systems
Radar Technology
Radar Trades Theory

Group	Sub-group
Engineers	<ul style="list-style-type: none">▪ Mechanical Engineers▪ Aerospace Engineers▪ Electronic Engineers▪ Design Engineers▪ Logistic engineers
Artisans	<ul style="list-style-type: none">▪ Machine▪ Sheet metal▪ Assembly▪ Composite
Computer skilled/Software developers	<ul style="list-style-type: none">▪ Computer aided design packages

Source: personal interviews





ANALYSIS AND FINDINGS

THE CASE FOR AVIATION

- This excerpt from the DIR 2015 study highlights the attractiveness of the aerospace manufacturing sector versus the general U.S. manufacturing sector. There is no data that suggests that this is not the case in other geographical areas.

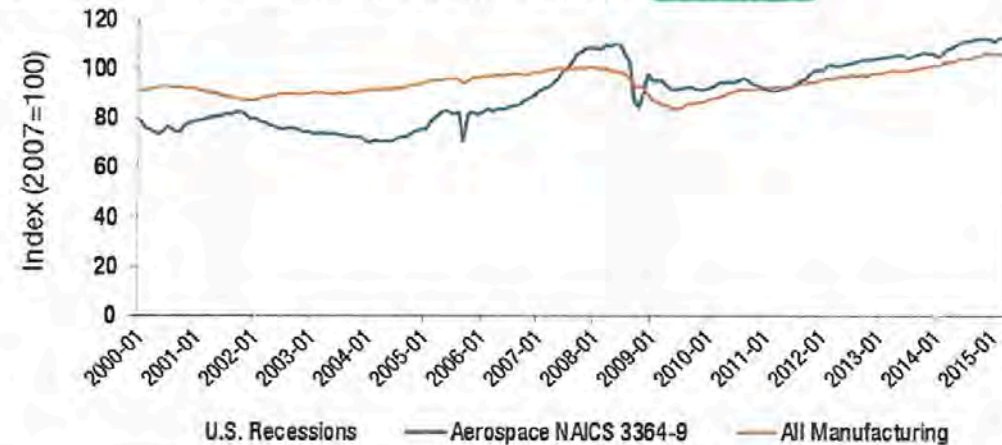
U.S. Manufacturing Industrial Production

In the last recession, industrial production fell by about 20%. Since then, aerospace manufacturing grew steadily, with some ups and downs, but without matching pre-recession levels. Finally, in June 2014, aerospace industrial production surpassed the May 2008 peak of index 109.94 and is now again at record levels. In other words, it took aerospace industrial production six years to recover from the pre-recession level.

Since just prior to the recession, aerospace manufacturing has performed relatively better than other manufacturing industries. Growth in aerospace industrial production lagged behind overall U.S. manufacturing growth before the recession, but has since 2012 consistently stayed ahead. In March 2015, the aerospace industrial production index was at 112.71 (or 12.71% higher than base year 2007), while overall U.S. manufacturing was at 105.22 (or 5.22% higher than the 2007 base year).

Figure 1.3: U.S. Industrial Production | January 2000 – March 2015

[DOWNLOAD](#)



Source: Federal Reserve Bank of St. Louis. (April 2015). *Industrial Production: Manufacturing (IPMAN)*.

ANALYSIS: Aerospace industrial production will continue to grow and reach new record levels in 2015 and beyond. Aerospace industrial production will grow significantly faster than overall U.S. industrial production throughout 2015.





AEROSPACE MANUFACTURING SECTOR

NC Aerospace Manufacturing

Assessment shows passenger growth continues to increase as does global defense spending. The current backlog of aircraft orders will take about 6-8 years to clear even with companies hitting record production levels. The US A&D industry performed especially well in 2018, with exports totaling \$151 billion, an increase of 5.8% from the previous year, accounting for 9% of US exports and yielding a \$90 billion trade surplus.

Although manufacturers have not been immediately hurt by tariffs, they may need to rethink their supply chains longer-term, especially those in the Asia-Pacific region. The trade situation continues to evolve rapidly, and companies should have a plan to deal with the potential ramifications of trade wars with various countries and areas around the world.

Some companies may consider reshoring all or part of their supply chain as business conditions merit.



Top ten countries by rank

Country	Cost rank	Industry rank	Infrastructure/ stability/ talent rank	Overall rank
United States	51	1	21	1
Singapore	7	140	3	2
Hong Kong SAR, China	4	142	5	3
Switzerland	10	141	2	4
United Kingdom	21	122	11	5
Canada	11	134	10	6
Qatar	1	142	19	7
United Arab Emirates	2	142	20	8
Luxembourg	14	142	8	9
Ireland	12	142	22	10

Source: Oxford Economics; World Economic Forum; World Bank, Capital IQ; OECD; EU; PwC analysis

Note: Please find complete study results in appendix.



HIGH PROFILE INTEREST SUGGESTS HIGH MARKETABILITY



John Travolta

May 5, 2016

Dear Reza,

Thank you for the presentation on Pegasus and the Vertical Business Jet. Your aircraft seems incredibly exciting, and certainly what's needed for the future of aviation.

Best wishes to you and your company.

Sincerely,


John Travolta

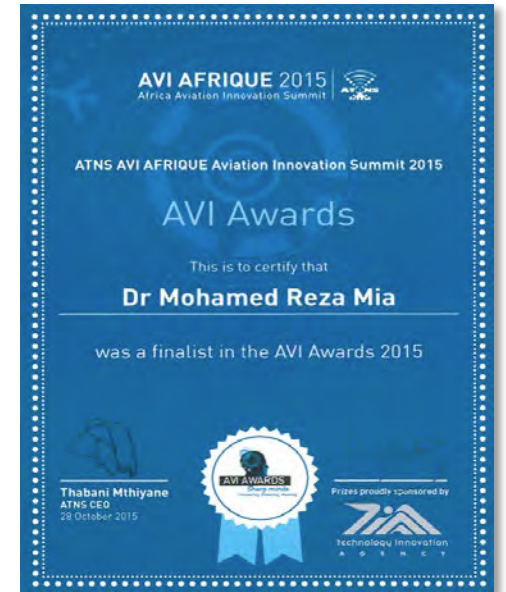


AVIATION INNOVATION AWARD

In addition to the AVI Award (2015) award presented in recognition of the novelty of the Pegasus VBJ, the DST has approved a **150% tax rebate** for Pegasus Universal Aerospace. Although the long term base for the project may not be placed in South Africa, strategic steps will be taken to ensure that the tax rebate is fully exploited.

In 2018, Pegasus Universal Aerospace was honoured by being awarded the AVI Award for Excellence, positioned in 3rd place

For example, parts and components might be manufactured in South Africa and sold to the international subsidiary to allow the portion of the income that qualifies to offset tax and recoup the development costs at 1,5 times the invested capital. This means that the company will **not pay taxes on any profits until net profits exceed \$475m**. This further improves financial performance and ratios but the impact has not yet been included in the calculations and ratios described in this profile.





LETTERS OF INTENT



SCHOOL OF MECHANICAL,
INDUSTRIAL & AERONAUTICAL
ENGINEERING



18 February 2014

Dr Reza Mia
Chief Executive Officer
Pegasus Universal Aerospace

Dear Dr Mia,

COLLABORATION WITH PEGASUS UNIVERSAL AEROSPACE

The School of Mechanical, Industrial and Aeronautical Engineering at the University of the Witwatersrand, Johannesburg offers professional degrees in the aforementioned fields. The School conducts research across a broad front within these areas and welcomes collaborating with industrial partners. Pegasus U A Aerospace could well be such a partner in the future.

Kind regards,

PROFESSOR ROBERT REID

Acting Head, School of Mechanical, Industrial and Aeronautical Engineering
University of the Witwatersrand, Johannesburg
Email: Robert.reid@wits.ac.za
Tel: (011) 717 7309

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<http://www.wits.ac.za/academic/etm/5122/mechanical>



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Fax:
National faxes: 0861 843 888
International faxes: +27 (12) 394 9501

To: Pegasus Aviation

Re: Government Support For Pegasus Aviation

5th of September 2013

Dear Sir

The Department of Trade and Industry has taken a special interest in your aviation project. The DTI would like to extend its full government support for your Aviation Project in Mafikeng Airport. We would package our government support for your project through the following:

1. Regulatory Approval Assistance
2. Funding of Feasibility Studies
3. Capital Investment Incentive Assistance

We would like to meet with your team to discuss the preparation of the Investment Masterplan. Please feel free to contact us if you need any further clearance.

Yours Sincerely

Mr. John Mkhabela
Deputy Director General
Industrial Investment Development Unit

GOVERNMENTAL SUPPORT





PROJECTIONS



It is Pegasus's view the VBJ aircraft will be positioned by the global market with the narrow body business aviation sector and as such should be priced within those cost parameters, despite offering far more from a VTOL perspective. It is also important to ensure the Pegasus VBJ needs to be affordable to maximize ROI.

With this in mind, we anticipate the VBJ will eventually retail between \$12M - \$15M per aircraft. This pricing indicator is well supported by industry experts. (Noting this estimate may vary subject to market demographics and fluctuations with components, manufacturing and assembly). Even at the indicated price point, Pegasus will realize an estimated 100% ROI per aircraft produced.

Considering the Leonardo AW609 is already priced around \$24M, we believe the Pegasus VBJ will be very well positioned for market entry. We anticipate, the VBJ design alone could bring in revenues by year 15 of \$80 billion and create between 7,000 and 11,000 job opportunities (direct, indirect & induced).



FINANCE SUMMARY TABLE

Light Jet Market value	\$75.6 billion
Business Jet & Helicopter Market Value	\$560 billion
eVTOL / Air taxi (anticipated by 2040)	\$1,5 Trillion
Revenue Forecast Realistic (20yr)	\$89 billion
Revenue Forecast Optimistic (20yr)	\$254 billion
NPV (Best case) (20yr)	\$900 billion
IRR: Weighted Average	143%
Required Capital	\$500 million
Full Gross profit Realistic (20yr)	\$79 billion
Full Gross profit Optimistic (20yr)	\$226 billion

Note: The revenue effect on GDP as shown by a multiplier effect (on the direct and indirect revenue) of 2.24, (sector development plan) shows a total revenue effect of between \$ 103.04b & \$ 568.96b. When the induced effect is taken into account, a factor of 3.5 is suggested, resulting in a total positive effect on GDP of between **\$ 161b & \$ 889b.**



FINANCE SUMMARY TABLE (1 OYR)

Revenue Forecast Realistic (10yr)	€8 billion
Revenue Forecast Optimistic (10yr)	€34 billion
NPV (reasonable) (10yr)	€1,41 billion
NPV Optimistic (10yr)	€9 billion
Required Capital	\$100 million
Full Gross profit Realistic (10yr)	€5 billion
Full Gross profit Optimistic (10yr)	€ 21,5 billion

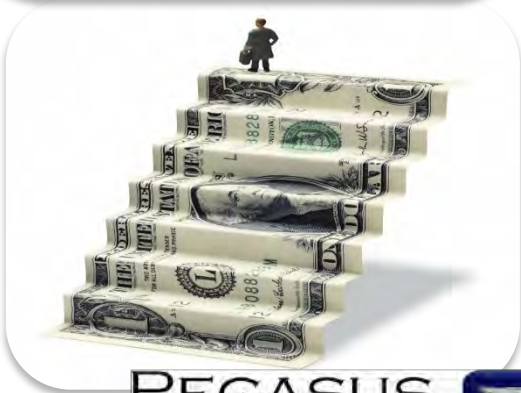
Note: The revenue effect on GDP as shown by a multiplier effect (on the direct and indirect revenue) of 2.24, (sector development plan) shows a total revenue effect of between \$ 103.04b & \$ 568.96b. When the induced effect is taken into account, a factor of 3.5 is suggested, resulting in a total positive effect on GDP of between **\$ 161b & \$ 889b.**



SOURCES OF FUNDING

The project will not be reliant on government or new share issue funding in perpetuity. Potential sources of finance which will benefit all shareholders and increase the ROI include:

- DBSA: the Development Bank of South Africa has shown an interest in financing the infrastructure components of the project.
- CSIR: The CSIR is considering funding future R&D activities through the donation of infrastructure and services.
- DST: Pegasus has been in contact with Dr. Blade Nzimande (Minister) and we await his final feedback. We intend to make use of the R&D 150% tax rebate incentive which has already been granted.
- DTI & Treasury: Pegasus is currently engaging with the Department of Trade & Industry and the National Treasury as part of the Joint Aerospace Steering Committee.
- 5-7 year, zero coupon bond issue. (Primary.)
- Aircraft sales: Following the completion of the Tethered Hover Test, the company will begin to take deposits for aircraft to be delivered post FAA Certification.
- IDC: The IDC has shown an interest in providing funding related to the industrialization phase of the project.
- Income from maintenance & finance operations.
- TIA: The technology and innovation agency provides conditional grants to projects with a proof of concept to allow for applied research, market development and technology development including prototyping as of TRL 4.
- VC / Angel Investors / Innovation Funds – Pegasus is already in the advanced stages of engagement with most of the largest worldwide role players globally to capital raise \$500M for the development and delivery of the VBJ for FAA Certification.





FINANCIAL PROJECTIONS - NPV

Debt Interest Rate = 10%		Financing Structure		
10%	Sales Forecasts	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%)		Financing Structure		
8,50%	Sales Forecasts	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



FINANCIAL PROJECTIONS - NPV

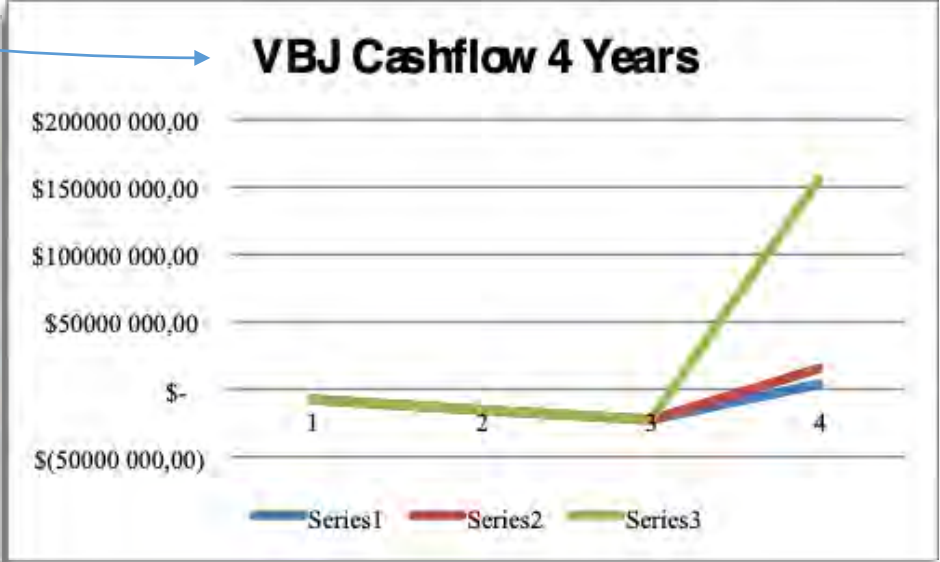
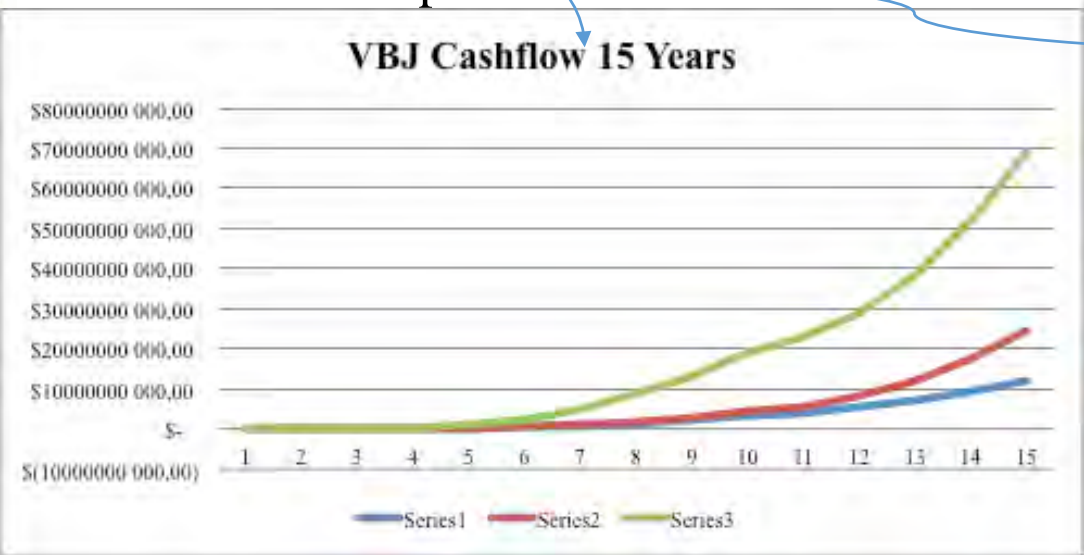
USD LIBOR Lending rate		Financing Structure		
	Sales Forecasts	100% Equity	100% Debt	50%-50% Debt-Equity
1%	Conservative	\$26 578 076 557,38	\$176 898 709 060,27	\$65 955 590 623,97
	Probable	\$53 270 678 698,44	\$369 441 404 118,82	\$135 356 052 769,73
	Optimistic	\$150 231 795 267,99	\$987 994 070 464,82	\$478 914 457 015,41

Debt Interest Rate = 20%		Financing Structure		
	Sales Forecasts	100% Equity	100% Debt	50%-50% Debt-Equity
20%	Conservative	\$26 578 076 557,38	\$28 606 060 208,64	\$27 571 670 402,23
	Probable	\$53 270 678 698,44	\$57 464 645 238,74	\$55 324 762 219,36
	Optimistic	\$150 231 795 267,99	\$161 585 854 813,14	\$199 007 434 610,04



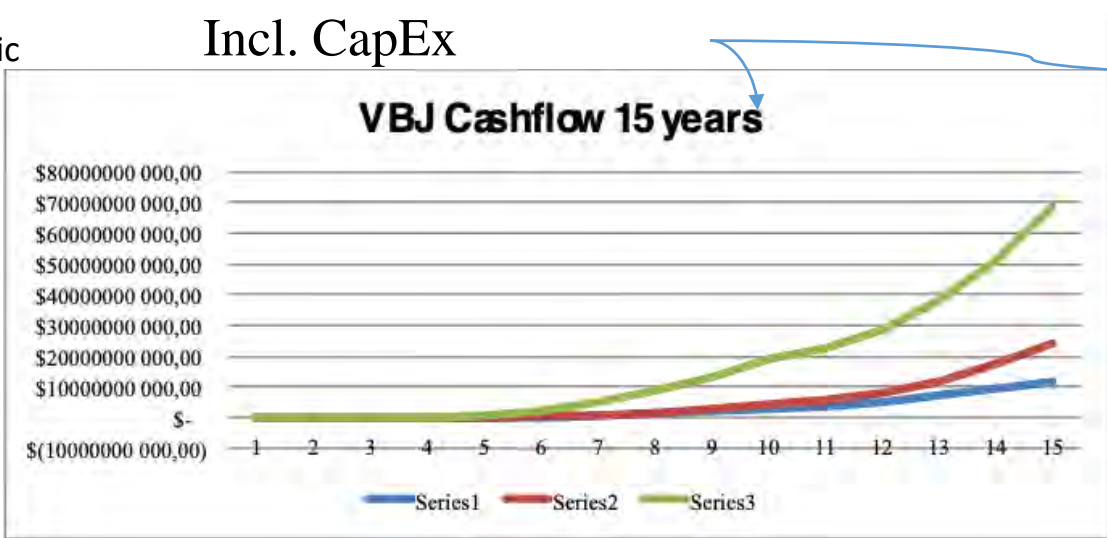
CASH FLOW - BREAK EVEN

Excl. CapEx



- Series:
- 1. Pessimistic
 - 2. Realistic
 - 3. Optimistic

Incl. CapEx





SHARES AND SECURITIES

EXIT OPPORTUNITIES

The company foresees many exit opportunities at various points during the life of the project for each of the various stakeholders should they wish to liquidate their equity for whatever reason. Some of these are listed below:

- Outright sale of the company in totality.
- Share sales to new parties.
- Share sales to other existing shareholders.
- IPO (Listing).
- Compensated Nationalisation.
- Merger with another international manufacturer.
- Listing by reversing into existing public company.
- Expansion and diversification via vertical and horizontal integration.

Each of these methods will provide significant value to each of the stakeholders. However, the current shareholders' intention is to grow the company consistently to ensure its absolute success.

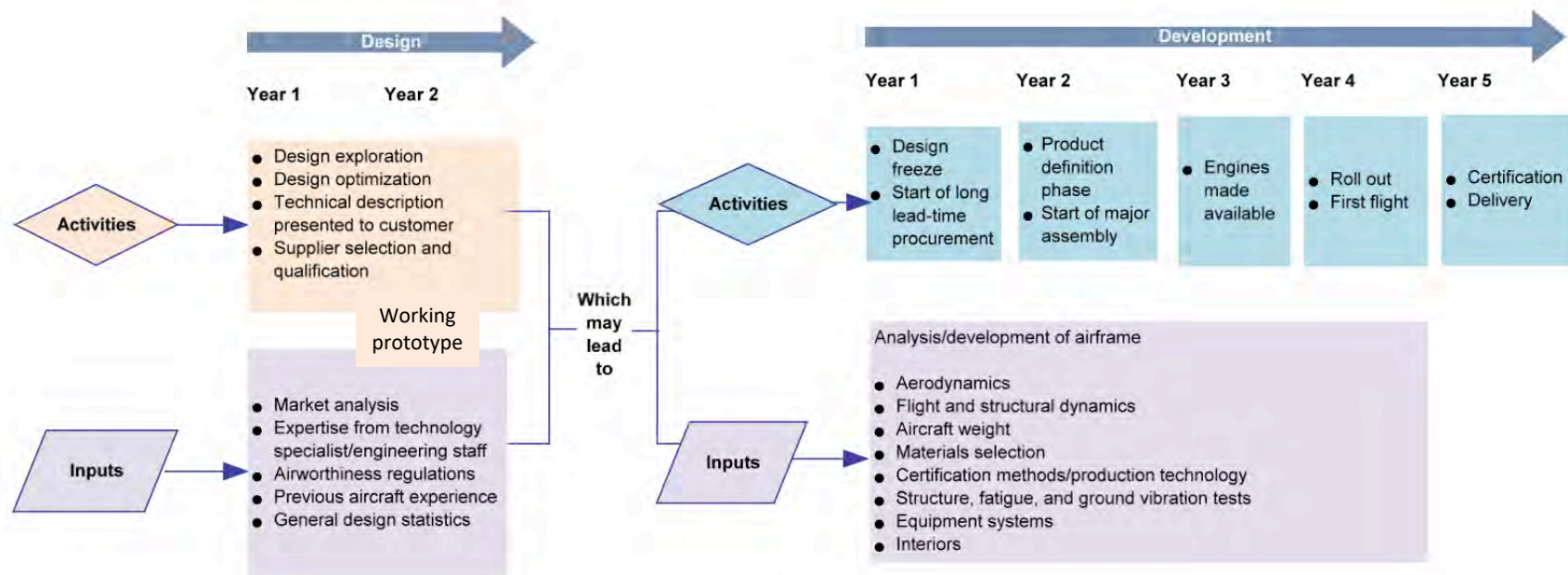




TIMELINE SCHEDULE

TOTAL DEVELOPMENT PROCESS

FIGURE 1.1 Business jet development process



Source: Compiled by the staff of the U.S. International Trade Commission from information gathered from industry sources.

Note: Time frames are estimates.





RISK ANALYSIS

MARKET RISK

1. “Agency” interviews: An independent market research firm will conduct new interviews with relevant market players in addition to the interviews and questionnaires conducted as part of the masters study previously discussed.
2. FlightGlobal Ascend: A well defined table of contents has been formulated by Ascend to assess the business jet market broadly as well as more focused sections specifying the portions of the market applicable to the Vertical Business Jet.
3. Avinode: This study will use existing and forecast hourly utilization figures as well as sales figures to produce best estimates to confirm the company’s sales forecasts.





RISK ANALYSIS

TOTAL PROJECT RISK

Investors and creditors seek to balance the risk of losing their investment, or loan, with required rates of return. The higher the risk, the higher the required return. Therefore, to reduce the cost of capital to PegasusUA, the company must find ways of reducing the perceived risk to the investor or creditor.

Project Insurance allows the company to address the full spectrum of risks faced by a company involved in the development of a novel airplane in today's market. In doing so, the company is able to reduce its exposure to these risks and in so doing, reduce the cost of capital by reducing the required rate of return.

Furthermore, should the risk reduction efforts fail, and if the airplane does not reach a successful end to the development phase, (that is, the airplane is certified and the company is able to produce and sell them to the helicopter and business jet customer) then the project insurance will pay back the creditors and investors.

The same holds true for prospective buyer deposits. The company will be able to take deposits from parties eager to purchase Vertical Business Jets and to use those funds to continue the development of the airplane. These funds will be protected by the project insurance and deposits will be fully refundable.

This insurance is not in place and much negotiation is required before it can be finalised, but the company that Pegasus has engaged is currently providing the same service to another novel aircraft design organizations. This insurance is not confirmed and potential investors are advised **not to factor this** insurance into their decision as to whether to buy the shares or not.



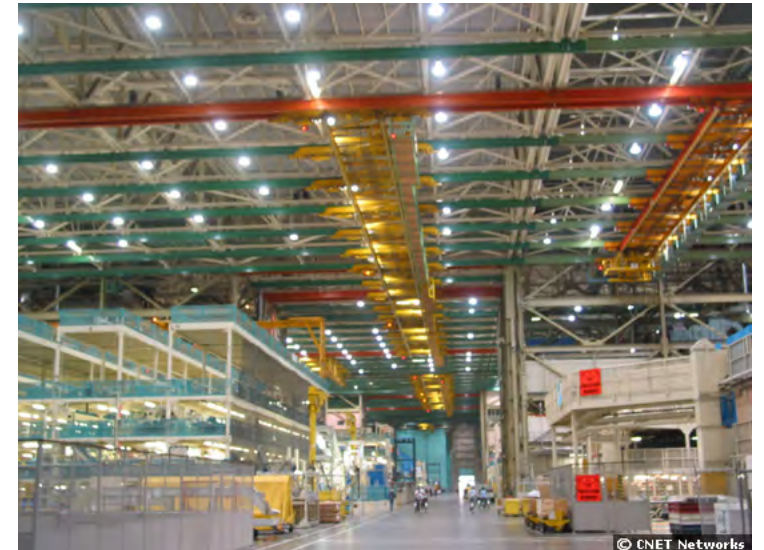


FACILITY REQUIREMENTS



Pegasus Universal Aerospace is able to continue development with basic office space and a workshop of under 850 square meters. The runway required for flight testing should measure at least 1,7km.

At full production capacity, the facility will need to expand to a minimum of 15,000 square meters.





The facilities requirement is broken down into three sections with differing timelines as to when these facilities would be required as discussed in each section.

Design and Management Office

The design and management office requirements are offices of 850 m² (9 150 ft²) to house a minimum of 52 design and development personnel and facility maintenance personnel including a minimum of three boardrooms. The situation of these offices is heavily dependent on the locality of the initial workforce. Due to truncated timelines, it may be necessary to locate this office outside of the country of investment with a small satellite office in country to facilitate administration for the initial period. This will also save on the initial cost in the relocation of personnel for the design and development phase of the program.

Test Facilities

Due to the truncated timelines and the enormous effort in designing and establishing a new production facility, all prototype aircraft manufacture will be sub-contracted to established companies. Therefore initially Pegasus Universal Aerospace would require very little to no manufacturing space. The initial requirement would therefore be for test and evaluation purposes of the prototype aircraft. The required facility is a 480 m² (5 170 ft²) hangar with attached offices of 190 m² (2 050 ft²) to house 12 personnel, technicians and test personnel, with a meeting room. The hangar must have runway access.

Manufacturing and Maintenance Facilities

Once in production, Pegasus Universal Aerospace would require one primary manufacturing facility. Whilst the size of the production facility is very dependent on the final technology chosen and the level of subcontracted manufacturing, assuming bulk manufacture of composite components by PUA, the manufacturing facility required would be approximately 15 000 m² (161 000 ft²). The Parts storage and Repair Facility, a global call Centre to house 24/7 support and assistance, a composite and sheet metal structures, avionics and interiors shops would be approximately 6 500 m² (70 000 ft²). From a MRO perspective, Pegasus would partner with a suitable credible global role player that provides the worldwide footprint that we seek for our Pegasus VBJ clients.





COMPLIANCE

INTELLECTUAL PROPERTY

Pegasus Universal Aerospace currently owns all intellectual property related to the aircraft, their conceptual design studies, and all novel and unique concepts.

New IP and newly developed designs will also be owned by Pegasus in their entirety. All aircraft designs will be protected by worldwide patents and copyrights instituted by Adams & Adams. The first Pegasus aircraft design is under the protection of an international PCT patent application pct/ib2015/055376. In addition:

- USA: 15/327,237 - Pending
- EU: 15771708.3 - Pending
- **RSA: 2017/01274 - Granted.**

The current logo, name, watermark, the terms VBJ and Vertical Business Jet are protected under Trademark applications and are also owned by the company in their entirety.

Any work to be conducted by third party entities will be performed under contracts specifying that Pegasus will own all new developments and designs supplied by such entities.

All strategic partners and allies, suppliers and other service providers are subject to completing and signing a standard non circumvention and NDA.

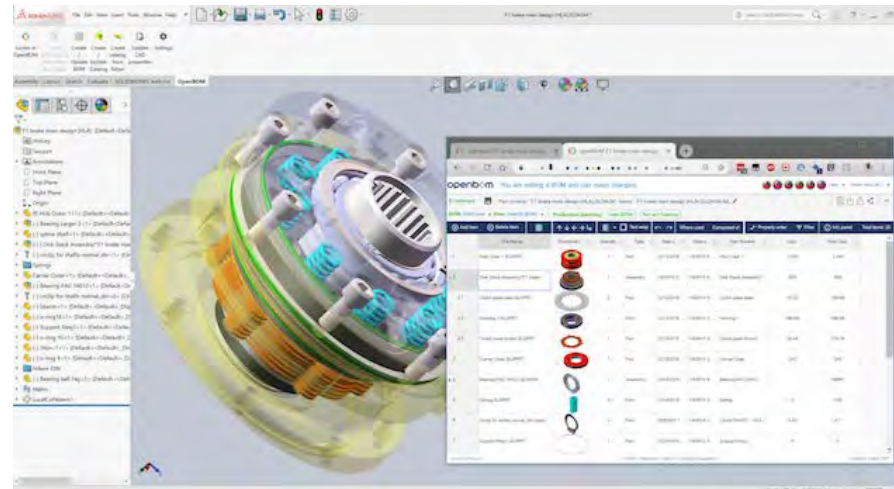
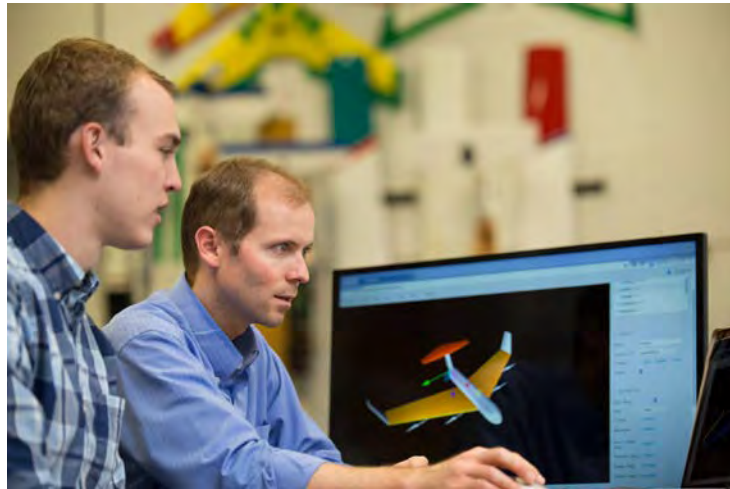
The company's law firms are Werksmans and Adams & Adams. These firm will register local and international patents for Pegasus as required and all formal contracts will be drafted and supplied by the firm in order to provide Pegasus with the highest level of protection.

Where new concepts are developed jointly with third parties where the continued participation of the third party is required, for example in the case of an engine supplier, exclusivity in that regard will be insisted upon.





PEOPLE COLLABORATING TO MAKE THE WORLD BETTER





CONTACT



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DISCLAIMER

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