Transcend Air and the Vy 400R: VTOL for VIP Transport
The Reserved Edition Vy 400R Bespoke Luxury Tiltwing VTOL Aircraft

https://www.youtube.com/watch?v=CIIYWtFYuWM
The Canadair CL-84 Tiltwing VTOL from 1968

https://www.youtube.com/watch?v=EWhabyOsiK8
What makes for a successful aircraft program?
DEMAND

Lots and lots of demand...
Lots and lots of demand...that is real, not imagined
Most Aircraft That Can Be Built, Won’t Be Built

Beyond demand, you need a design that can meet it while being

• Certifiable without excessive cost
• Certifiable without excessive risk
• Certifiable in a timeframe that enables a competitive ROI
• Manufacturable at a more than competitive profit
• Operable at a more than competitive profit or cost
• Upgradable as needed for the foreseeable future, 20-40 years
It’s hard.
Most Aircraft That Are Certified, Profit Someone Else, If At All

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What if you don’t want to go bankrupt and let someone else make all the money off your aircraft?
Target Already Proven Markets With A High TRL Design

We have designed an aircraft that will:

- Fill two proven market needs: VIP & Airline
- Be manufacturable and certifiable
- Be profitable for the manufacturer
- Be profitable for the operator
- Be liked and trusted by passengers
- Enable LOWER prices for aircraft and fares

Gregory Bruell
Co-founder & CEO

- Co-founder Elytron Aircraft – VTOL aircraft developer
- "It’s a mistake to bet your success on future technology developed by ‘someone else.’ The Vy 400 is buildable and certifiable now."

Peter H. Schmidt
Co-founder & COO

- President & COO Linear Air – Part 135 air carrier
- "People who haven’t sold air travel have nothing but wrong notions about how customers buy – I sure did! The Vy embodies what I learned the hard way."
Why Will the Vy Program Succeed? Three Aircraft Markets – Two Already Proven

$4.5B TAM
VIP Helicopter Disruption

$9.6B TAM
Regional Airline Service Disruption

$?B TAM
Military Applications

*TAM: worldwide Total Addressable Market for annual aircraft sales
The R’s Market Has Lots and Lots of Demand All by Itself

$4.5B TAM
VIP Helicopter Disruption

*TAM: worldwide Total Addressable Market for annual aircraft sales
**Simple Math: \( \frac{1}{2} \) Price \( \times 3 \) Speed \( \times \frac{1}{4} \) Op Costs = 24x Value vs Medium Twin**

Range, passengers, and cabin of a medium executive helicopter, faster than turboprops

<table>
<thead>
<tr>
<th>Helicopter</th>
<th>Passengers</th>
<th>Cruise Speed</th>
<th>Range</th>
<th>Cabin Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>BELL 407GXP</td>
<td>5</td>
<td>141mph</td>
<td>372mi</td>
<td>84cuft</td>
</tr>
<tr>
<td>AIRBUS H125</td>
<td>5</td>
<td>152mph</td>
<td>330mi</td>
<td>61cuft</td>
</tr>
<tr>
<td>LEONARDO AW139</td>
<td>6</td>
<td>181mph</td>
<td>400mi</td>
<td>238cuft</td>
</tr>
<tr>
<td>SIKORSKY S-76D</td>
<td>4</td>
<td>157mph</td>
<td>413mi</td>
<td>234cuft</td>
</tr>
<tr>
<td>PILATUS PC-12</td>
<td>6</td>
<td>328mph</td>
<td>2,123mi</td>
<td>356cuft</td>
</tr>
<tr>
<td>BEECHCRAFT KING AIR C90GTX</td>
<td>6</td>
<td>313mph</td>
<td>1,864mi</td>
<td>267cuft</td>
</tr>
<tr>
<td>TRANSCEND VY 400G</td>
<td>5</td>
<td>405mph</td>
<td>550mi</td>
<td>252cuft</td>
</tr>
</tbody>
</table>

**List Price – USD, millions**

<table>
<thead>
<tr>
<th>Helicopter</th>
<th>List Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>BELL 407GXP</td>
<td>$3.10</td>
</tr>
<tr>
<td>AIRBUS H125</td>
<td>$2.40</td>
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<tr>
<td>LEONARDO AW139</td>
<td>$11.00</td>
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<tr>
<td>SIKORSKY S-76D</td>
<td>$10.00</td>
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<tr>
<td>PILATUS PC-12</td>
<td>$4.96</td>
</tr>
<tr>
<td>BEECHCRAFT KING AIR C90GTX</td>
<td>$3.80</td>
</tr>
<tr>
<td>TRANSCEND VY 400G</td>
<td>$5.00</td>
</tr>
</tbody>
</table>

1 Assumed pax + luggage @ 250 lbs each, 30 min reserve fuel
VTOL Concept: Transcend Air Vy 400R

Helicopter: Airbus ACH130 Aston Martin Edition
Tiltwings – simple, affordable, certifiable

Vy 400 design targets:

• Simplicity
• Reliability
• Maintainability
• Interoperability
• Affordability
• Adaptability
• Upgradability

Boeing V22 Osprey
351mph
1,011mi
$71M

Bell V280 Valor
322mph
921mi
$30 - $50M

Augusta-Westland 609
316mph
864mi
$24M

Transcend Vy 400
405mph
450mi
$3.5M

Tiltrotors – Complex and Expensive

This document does not contain any export-regulated technical data.
16 Flying Prototypes Have Evolved and Informed the Vy 400R Design Since 2009

https://transcend.aero/story
Physical Prototypes Included a 2,000lb Manned Aircraft
Our 1/5<sup>th</sup> Scale Prototypes Further Validate the Design

https://www.youtube.com/watch?v=OTBcJfIZ19w
The Vy 400
Proven Technology – Disruptive Aircraft

We have designed an aircraft that is:

- **Fast** – 352 kts, 4750/8500 fpm ROC\(^1\)
- **Fuel efficient** – \(\frac{1}{2}\) fuel per km of OH-58D
- **Simple** – No hydraulics, fly-by-wire, tiltwing (not tiltrotor), single turbine
- **Affordable** - $3.5M in airliner trim
- **Effective** – 133% kg/hr of cargo vs K-MAX
- **Future Proof** – Turbine-mechanical to start, fleet is field-convertible to electric

AUTONOMOUS CARGO AND CASEVAC CONFIGURATION

1 Vertically in helicopter mode/conventionally in airplane mode
Vy 400 Overview – VTOL Now, “e” When Batteries Are Ready

**AIRCRAFT LAYOUT, VIP R CONFIGURATION**

- Baggage 5 roll-aboards
- Parachute
- Turbine
- Fuel Tank

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Engine</th>
<th>1 turboshaft</th>
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<tbody>
<tr>
<td>Main propellers</td>
<td>2</td>
</tr>
<tr>
<td>Tailfin prop</td>
<td>1</td>
</tr>
<tr>
<td>Powertrain batteries</td>
<td>NA</td>
</tr>
<tr>
<td>Pax</td>
<td>5</td>
</tr>
<tr>
<td>Pilot</td>
<td>1</td>
</tr>
<tr>
<td>Autonomous capable</td>
<td>Yes</td>
</tr>
<tr>
<td>Max cruise speed</td>
<td>405 mph</td>
</tr>
<tr>
<td>Max forward speed in helicopter mode</td>
<td>75 mph</td>
</tr>
<tr>
<td>Endurance</td>
<td>1.36 hrs, with 30 minute reserve</td>
</tr>
<tr>
<td>Max range</td>
<td>550 miles</td>
</tr>
<tr>
<td>Max range, airline config</td>
<td>450 miles</td>
</tr>
<tr>
<td>Max range, 5-pax airline</td>
<td>300 miles</td>
</tr>
<tr>
<td>Empty weight</td>
<td>4,800 lbs</td>
</tr>
<tr>
<td>MTOW</td>
<td>6,990 lbs</td>
</tr>
<tr>
<td>Usefull load</td>
<td>2,190 lbs</td>
</tr>
<tr>
<td>Max fuel</td>
<td>1,200 lbs</td>
</tr>
<tr>
<td>Max ROC</td>
<td>4,750 fpm</td>
</tr>
<tr>
<td>Max ROO</td>
<td>4,000 fpm</td>
</tr>
<tr>
<td>spoilers</td>
<td>1,800 hp</td>
</tr>
<tr>
<td>Max operational altitude</td>
<td>20,000 feet</td>
</tr>
<tr>
<td>Max HOGE</td>
<td>5,000 feet @ 100° F</td>
</tr>
</tbody>
</table>

- Pressurized cabin altitude 8,000 feet
- Cabin volume 252 cubic feet
- Width, tip-to-tip 41 feet
- Wingspan 25 feet
- Length 34 feet
- Height 9 feet
- Main prop diameter 11.7 feet
- Tailfin diameter 3 feet
- Max prop rpm 825
- Max tip speed 0.54 Mach
- Minimum seat width 23 inches

**INCEPTORS AND CONTROL SURFACES**

- Interior storge 5 + 5 roll-aboards + personal items
- Flight profile < +/− 3° deck angle in pitch
- Actuation electric
- Hydraulics none, possible self-contained electro-hydraulic for collective actuation
- Flight control FBW
- Landing gear feet or skis
- FHg system type electric

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