



COMPANY PRESENTATION

Core business:

- ❑ Aircraft Manufacturing, Production of Airframes, Subassemblies & Machined Parts
- ❑ Design & Development in Aerospace & Automotive industry
- ❑ Design in General Engineering, Consumer and Building Industries

Evektor Group - 50 year Aircraft Production Experience, 350+ employees, sales network in 40 countries



Evektor Structure, Employees & Branches



EVEKTOR spol. s r.o.
(Aviation & Engineering Division)



250+

EVEKTOR-AEROTECHNIK a.s.
(Aircraft Manufacturing & Sales)



110+

Branch office Mladá Boleslav

- Automotive Design

Branch office Kvasiny

- Automotive Design

Branch office Ostrava

- SPACE – Design & Calculations for Satellites (ESA)
- AVIATION – Design of Aircraft Interiors (Airbus)
- MEDICAL – Design & Calculation analysis

Branch office Zlín

- Development of consumer technical products
- CFD analyses
- Styling studio

Production plant Moravská Třebová

- CNC Machining

Headquarters in Kunovice

- Airframes, Subassemblies & Machined parts Production
- Assembly Jigs & Tools Production
- Aircraft design and development
- Automotive design
- Stress analysis
- Rapid Prototyping

Branch office Brno

- Stress Analysis
- Design studio

Evektor Certificates & Software Equipment



Evektor Certificates & Approvals

- ❑ EASA Part 21 Section A, Subpart J Design Organization Approval
- ❑ EASA Part 21 Section A, Subpart G Production Organization Approval
- ❑ Ministry of Defence Approval for Production of Military Technology
- ❑ Czech CAA Approvals for Aircraft testing, Maintenance and Repairs
- ❑ CAAC China Production Approval Certificate
- ❑ LAMA USA Production Approval Certificate



Evektor Software Equipment

DESIGN

CATIA V5
NX
PRO/ENGINEER / CREO
SOLIDWORKS
ICEM SURF
ALIAS
INVENTOR
MECHANICAL DESKTOP
ANSYS / DESIGNSPACE
RHINOCEROS
RUPLAN/KABI
MODO
BLENDER

MANUFACTURING

SIEMENS TECNOMATIX

ANALYSES

MSC/NASTRAN
ANSYS
MSC/MARC
PAM-CRASH
MSC/PATRAN
ANSA
FEMAP
ANIMATOR
SAVLE
MATLAB, MATHCAD
CETOL
MITCALC
GID
CST STUDIO SUITE
CONCEPT II
CRIPTE, POWERBALANCE
MINISTATIK
FORTRAN
OPEN FOAM
ENSIGHT

OTHER SOFTWARE

CNC-PROGRAMMING

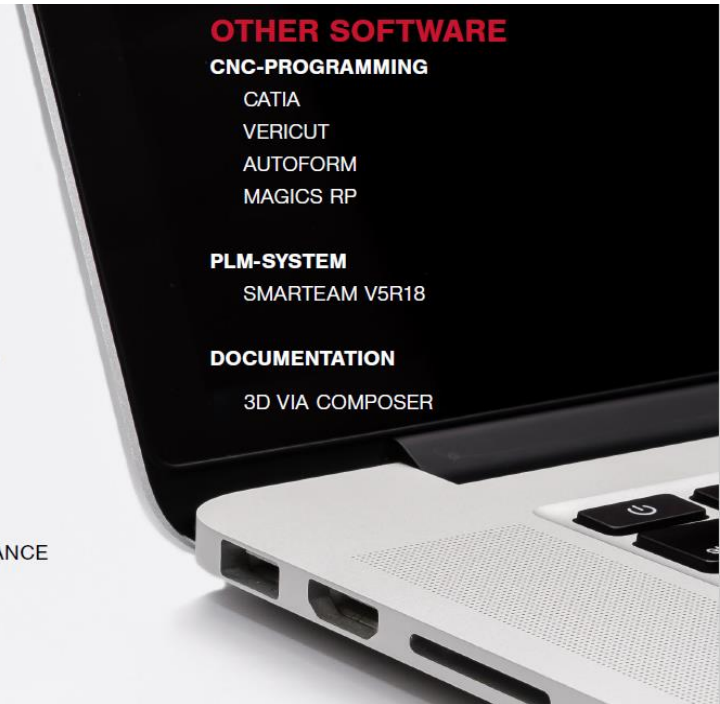
CATIA
VERICUT
AUTOFORM
MAGICS RP

PLM-SYSTEM

SMARTTEAM V5R18

DOCUMENTATION

3D VIA COMPOSER

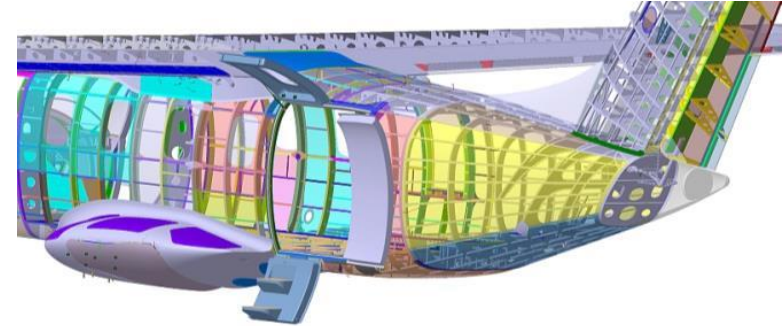
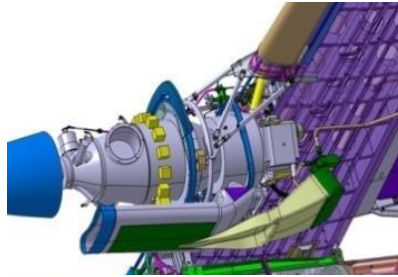


Evektor Design & Development in Aerospace



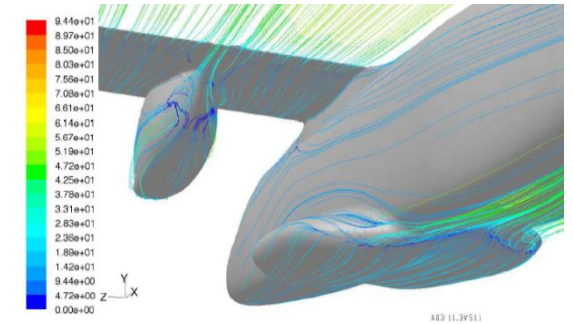
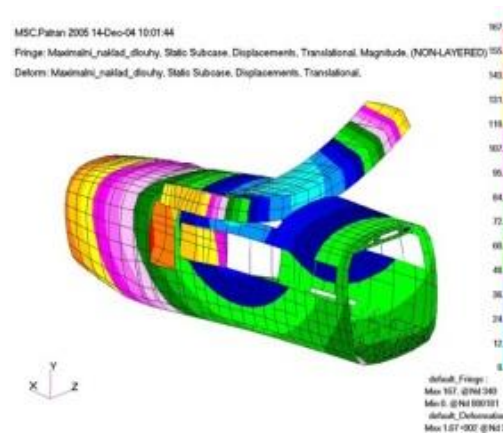
Complete Aircraft Development

- ❑ Airframes & Aerostructures
- ❑ Aircraft systems & Mechanisms
- ❑ Electrical systems, Avionics, Interiors
- ❑ Assembly lines, Jigs and Tools
- ❑ Metal, Composite & Plastic parts



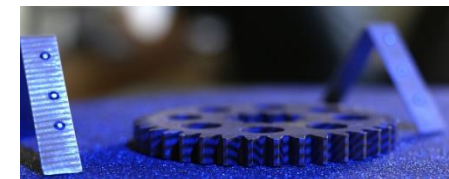
Engineering Analysis

- ❑ Strength, Dynamic & Aerodynamic
- ❑ Failure Cause Eliminations
- ❑ Fatigue Life Calculations
- ❑ Simulation of Crash Tests
- ❑ Electromagnetic Field & EMC Analyses



Rapid Prototyping

- ❑ 3D Printing, Vacuum casting, 3D scanning



Certifications

Aircraft Manufacturing

– Complete Aircraft Production Cycle



Evektor Aircraft Product Line

- ❑ Twin-engine Turboprop Aircraft for 9–14 pax / cargo (up to 3915 lb)
- ❑ 4-Seat Aircraft (CS-23 / FAR-23)
- ❑ Light Sport Aircraft (1400+ delivered to 50 countries)

Complete Aircraft Production Cycle

- ❑ Airframes & Aerostructures
- ❑ CNC Machined parts
- ❑ Sheet metal forming
- ❑ Assembly Jigs & Tooling production
- ❑ Interiors & Upholstery production
- ❑ Aircraft systems installations
- ❑ Testing, Inspection & Certifications



CNC MACHINING

CNC 5-AXES CONTINUOUS MILLING
CNC 3-AXES CONTINUOUS MILLING
CNC TURNING WITH DRIVEN TOOLS
CNC MILLING OF DEVELOPED SHAPES
GRINDING

MEASUREMENT

CNC 3D MEASUREMENT
3D SCANNING
LASER TRACKER FARO

SHEET METAL PROCESSING

CNC SHEET ROLL-BENDING
SHEET METAL PRESSING - RUBBER PRESS
CNC PRESS BRAKE
SHEET METAL BENDING
SHEET METAL CUTTING

RAPID PROTOTYPING

3D PRINTING
VACUUM CASTING

AEROSTRUCTURES & TOOLING

AIRFRAMES AND SUBASSEMBLIES -
- PRODUCTION
ASSEMBLY JIGS & TOOLS PRODUCTION

OTHER PRODUCTION

PUNCHING MACHINE
HEAT TREATMENT
PAINTING
WELDING
NON-DESTRUCTIVE TESTING
CNC WATER JET CUTTING
UPHOLSTERY & INTERIOR PRODUCTION
CNC TUBE BENDING



Evektor Tier 1 Supplier in L39NG, L159 Alca and Ae-270 Programs



L39 NG Program (Trainer / Combat Jet Aircraft)

- ❑ Fuselage nose production
- ❑ Aircraft tail, stabilizer, rudder and elevator production
- ❑ Aerodynamic brakes production
- ❑ CNC machined parts production



L159 ALCA Program (Trainer / Combat Jet Aircraft)

- ❑ Aircraft nose section production
- ❑ Assembly fixtures design and production
- ❑ Design of fuselage structure, aerodynamic covers, bay for avionics



Ae-270 IBIS Program (Turboprop for 8 passengers)

- ❑ Rear fuselage, fin, rudder and doors production
- ❑ Design of airframe, aircraft systems, airframe stress analysis
- ❑ Jigs & tools design & production



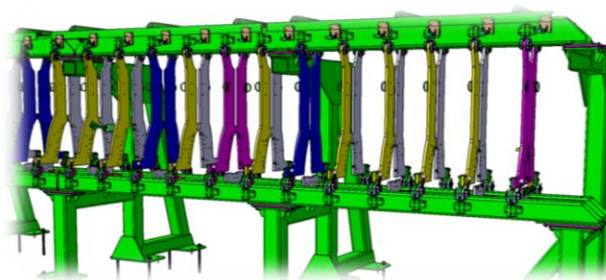
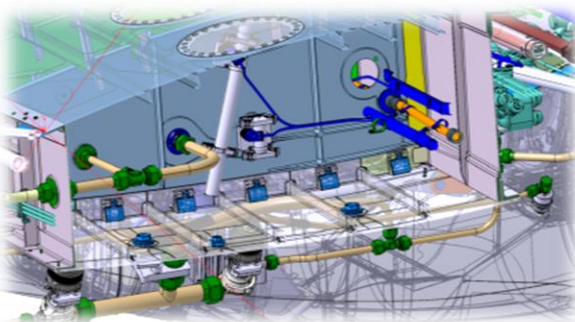
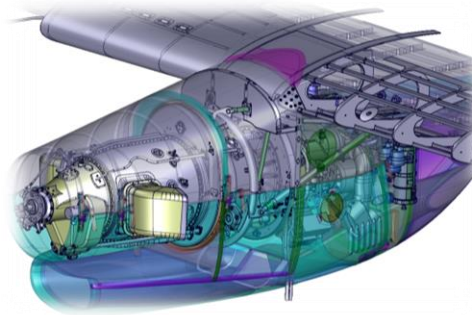
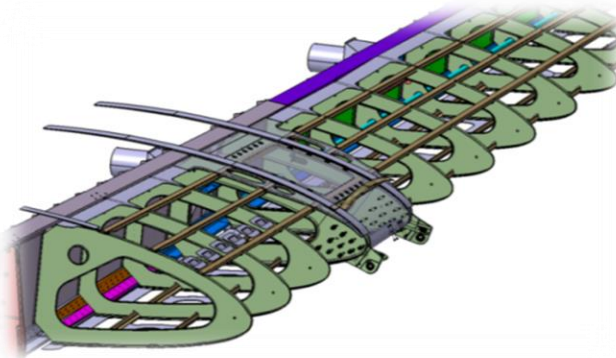
Evektor Tier 1 Supplier in Aircraft Industries L-410 NG Program



L-410 NG Program

(Twin-engine commuter for 19 passengers)

- ❑ Wing structure design
- ❑ Structural design
- ❑ Fuel system design
- ❑ Engine composite nacelle design
- ❑ Interior design, interior styling
- ❑ Design & production of jigs & tools for wing



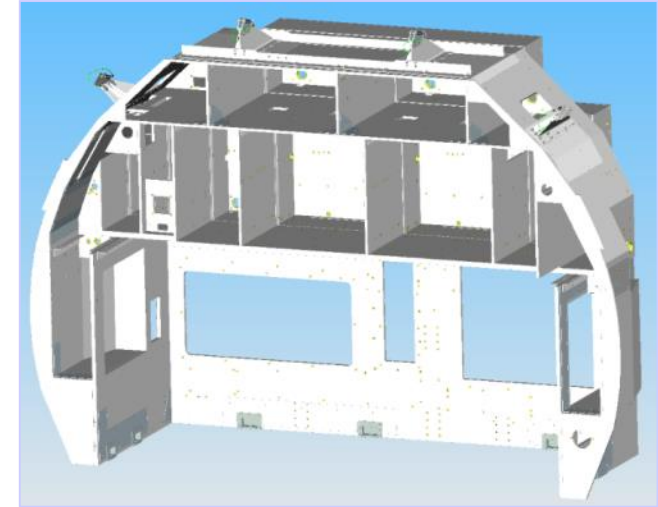
Evektor Tier 2 Supplier for Airbus aircraft crew rest interiors & parts for cabin kitchens



Airbus A320 Program

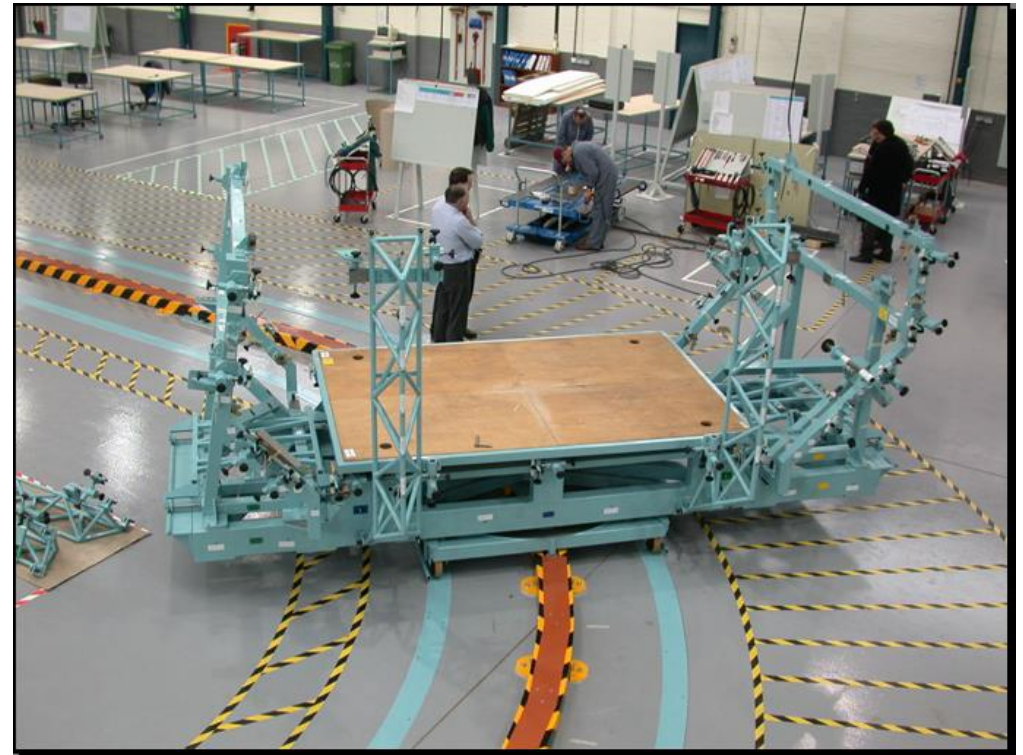
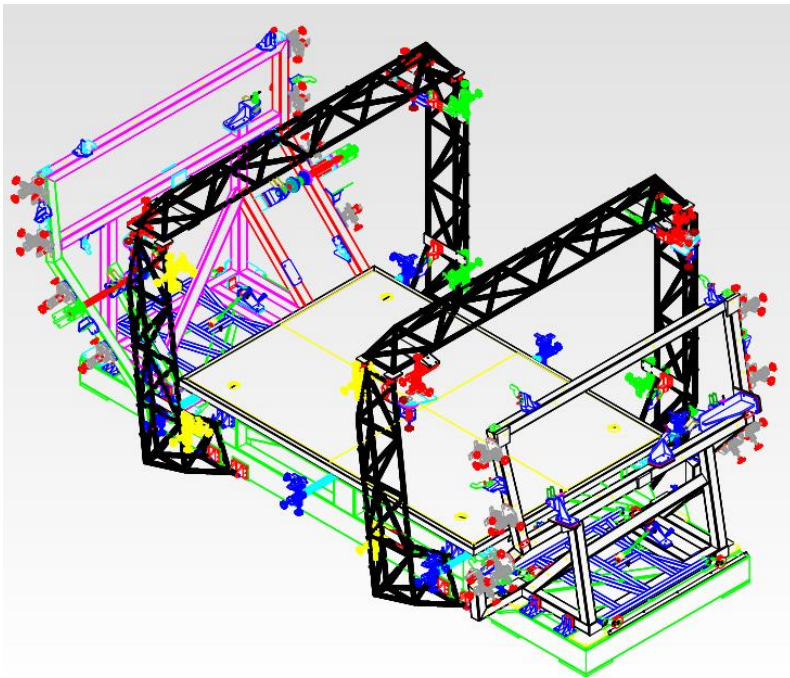
- ❑ Upholstery parts for LDMCR
- ❑ Design & production of metal parts for LDMCR
- ❑ Design & production of metal parts for cabin kitchens

Cooperation with **SAFRAN Cabin CZ** – manufacturer & Tier 1 supplier of aircraft crew rest facilities for AIRBUS



Auxilliary Fuel Tank Program for Boeing B747 (Marshall Aerospace, UK)

- ❖ Design, production and installation of the assembly moving line for B747 Auxilliary Fuel Tank Program



Evektor Participation in Aerospace Programs

Boeing 747-8 Program

- ❖ Cooperation with Aernnova (Spain) on fuselage design of the Boeing 747-8



Airbus A350, A340 500/600, A3XX Programs

- ❖ A350 XWB – damage tolerance stress analyses of fuselage
- ❖ A340 500/600 – analyses of belly fairings interface
- ❖ A3XX family aircraft – damage tolerance analyses of doors



Evektor Aircraft Product Line



Trainer / Personal



SportStar, Harmony LSA, EuroStar SL

- ❖ Light Sport Aircraft for Pilot Training and Personal Flying
- ❖ Fleet of 1400+ Aircraft Operated in 50 Countries Worldwide
- ❖ EASA, FAA and CAAC Type Approved
- ❖ Popular for PPL training among flight schools & air clubs in the European Union, USA, Australia and other countries



SuperCobra / Cobra JF

- ❖ High performance 4-seat aircraft with retractable landing gear
- ❖ Models:
 - Cobra - 200 hp Lycoming IO-360-A1B6
 - SuperCobra - 315 hp Lycoming IO-580-B1A

Commercial



EV-55 Outback

- ❖ New generation utility twin engine turboprop
- ❖ Pratt & Whitney PT6A-21 engines
- ❖ Passenger 9-14 seat / Cargo / Combi versions.
- ❖ Low Operating Costs, STOL characteristics at hot & high conditions.

Evektor SportStar

Type Certified / Approved by EASA / FAA / CAAC



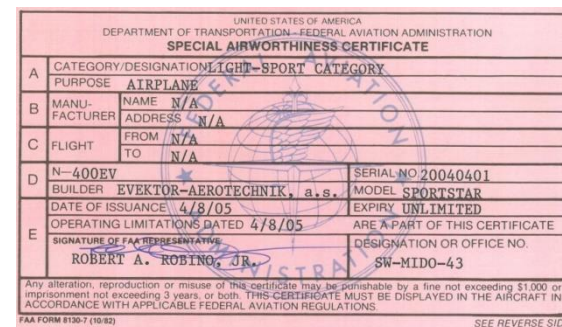
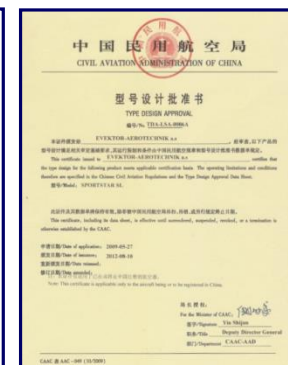
❑ EASA Type Certified (CS-LSA)

- PPL / LAPL, Night rating, single engine CPL Training, PIC time building,
- VFR Day & Night Operation

❑ FAA Type Approved

- Very first aircraft in the world FAA approved in LSA category
- PPL, Night, single engine CPL and IFR Training
- VFR Day & Night Operation

❑ CAAC China Type Approved



SportStar

New Benchmark for Pilot Training & Air Club Flying



360° panoramic view
perfect situation awareness

Parachute system
for additional safety

Best operation
economy in industry
15,5 l/h Mogas fuel,
easy maintenance

Comfortable cockpit
wider than Cessna trainers
1,18 m width, 25 kg baggage

Outstanding control &
flying characteristics
18 kts cross wind capability

Highest useful load
in its category
120 l fuel capacity
1300 km range

Steerable nose wheel
easy taxiing, no risk of shimmy

Night & Day VFR Operation
EASA Certified

Robust metal construction
Proven in flight school operations
riveted and bonded construction

SportStar RTC - New Benchmark in Pilot Training



SportStar RTC Technical Parameters

❖ Powerplant

Engine	Bombardier Rotax 912 ULS	
Max. take-off power	100 @ 5800 RPM	
TBO	2000 hr	
Propeller	Fixed, ground adjustable	
Fuel consumption	4 U.S. GAL / hr	15,5 l/hr

❖ Dimensions

Length (overall)	19.62 ft	5.98 m
Wing span	28.38 ft	8.65 m
Height	8.13 ft	2.48 m
Cabin width	46.5 in	1.18 m

❖ Weights & Quantities

Max. Take-off Weight	1 320 lbs	600 kg
Empty weight	756 lbs	343 kg
Useful Load	564 lbs	257 kg
Fuel Tank Volume	31.7 USgal.	120 l



❖ Performance

Never Exceed Speed	146 kts	270 km/h
Max. Level Speed	115 kts	213 km/h
Cruising Speed (75% PWR)	92 kts	171 km/h
Rate of climb	876 fpm	4.5 m/s
Service ceiling	15 500 ft	4 720 m
Take-off roll	620 ft	190 m
Landing roll	590 ft	180 m
Maximum range	700 nm	1300 km/h

SuperCobra / Cobra JF – high performance four seater



- ❖ Four-seat, all-metal, CS-23 / FAR 23 airplane with retractable landing gear
- ❖ Designed for VFR & IFR operation and for pilot training according to JAR FCL
- ❖ Superior cockpit comfort for business travel – the widest cabin in its class
- ❖ Models:
 - VUT100-120i Cobra – 200 hp Lycoming IO-360A1B6
 - VUT100-131i SuperCobra – 315 hp Lycoming IO-580B1A



Cobra / SuperCobra – high performance four seater



Trainer

Personal

Commercial

	Cobra	SuperCobra
Engine	200 hp Lycoming 360-A1B6	315 hp Lycoming IO-580-B
Propeller	3-blade, constant speed Muehlbauer	3-blade, constant speed Hartzell
Landing gear	retractable	retractable
Number of seats	4	4
Weight & Quantities		
MTOW	2,932 lb	3,200 lb
Useful load	1,102 lb	1,260 lb
Max. baggage	132 lb	132 lb
Usable fuel volume	90 GAL	90 GAL
Flight Performance		
Max. level speed	150 kts	175 kts
Max. climb rate	1,000 ft/min	1,000 ft/min
Range	1,080 NM	1,000 NM



EV-55 Outback - New Generation Utility Turboprop

- ❖ Multipurpose airplane for transportation of 9 – 14 passengers or up to 3915 lb (1776 kg) cargo
- ❖ Versatile airplane – operation from unpaved runways, STOL airplane (TO distance – 1380 ft / 420 m at SL)
- ❖ Powerful airplane – powered by two PT-6A-21 engines (536 SHP each)
- ❖ Fast airplane – cruising speed 220 kt
- ❖ Economic airplane – low costs of operation and maintenance, single pilot operation
- ❖ Twin engine safety
- ❖ The largest cabin in its category - up to 447 cu.ft of total cabin space
 - ▣ Passenger compartment of 9,5 m³
 - ▣ Baggage compartments up to 3,2 m³
 - ▣ Baggage compartment per 1 passenger up to 0,36 m³
 - ▣ Cabin volume by 18% bigger than in Cessna Grand Caravan



EV-55 Outback – Versatile Cabin Solutions



❖ 9 (14) Seat Passenger Versions

- ❑ Passenger compartment of 325 cu.ft (9.2 m³)
- ❑ Baggage compartments up to 115 cu.ft (3.3 m³)
- ❑ 63.4 inch wide cabin, 33 inch pitch between seats



❖ Up to 3 915 lb weight Cargo Version

- ❑ Transportation of 3 200 lbs (1451 kg) cargo up to 400 nm (730 km)
- ❑ 49.9 inch wide & 54 inch high cargo doors
- ❑ Pallet or container loading by fork lift



❖ 3 – 5 Seat & Cargo Combined Version

- ❑ Combined transport of cargo version
- ❑ Time for interior change from all passenger version to combi version in less than 30 minutes



Time for interior change from all passenger version to combi version in less than 30 minutes

EV-55 Outback - Specification



Engine		
Manufacturer	Pratt & Whitney	
Model	PT6A-21	
Max. power	2 x 536 SHP	2 x 400 kW
TBO	3 600 hrs	

Propeller		
Manufacturer	Avia Propellers	
Model	AV-884	
Type	4-blade	
Diameter	82 in	2.082 m

External dimensions		
Wing span	52.82 ft	16.10 m
Length overall	47.47 ft	14.35 m
Height	15.28 ft	4.66 m
Tailplane span	15.75 ft	4.80 m
Wheel track	9.58 ft	2.92 m
Wheel base	13.68 ft	4.17 m



EV-55 Outback – Payload & Weight

Payload	Weight	
Maximum payload	3 915 lbs	1 776 kg
Full fuel payload	830 lbs	376 kg
Maximum baggage weight - rear comp.	551 lbs	250 kg
Maximum baggage weight - front comp.	221 lbs	100 kg

Weights	Weight (lbs)	
Maximum take-off weight	10 140 lbs	4 600 kg
Maximum landing weight	10 140 lbs	4 600 kg
Maximum fuel weight	3 651 lbs	1 656 kg
Basic empty weight (cargo)	5 725 lbs	2 597 kg
Basic empty weight (passenger)	5 860 lbs	2 658 kg



EV-55 Outback – Performance

Take-off performance (MTOW)

Ground run ISA, H=0 ft	1 222 ft	372 m
To 50 ft Obstacle, ISA, H =0 ft	1 378 ft	420 m
To 50 ft Obstacle, ISA, H=0 ft, STOL proc.	1 224 ft	373 m
Ground run ISA+20°C, H=6 562 ft	1 624 ft	495 m
To 50 ft Obstacle ISA+20°C, H=6 562 ft	2 001 ft	610 m

Landing performance (MLW)

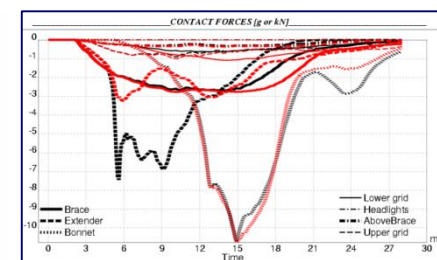
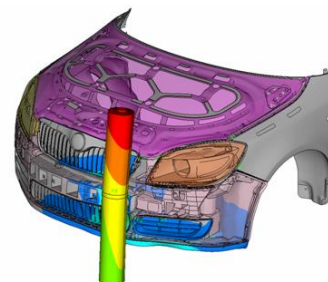
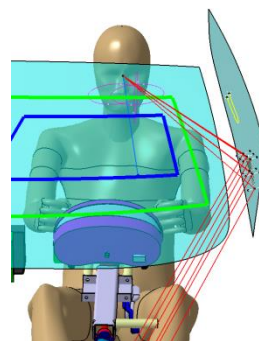
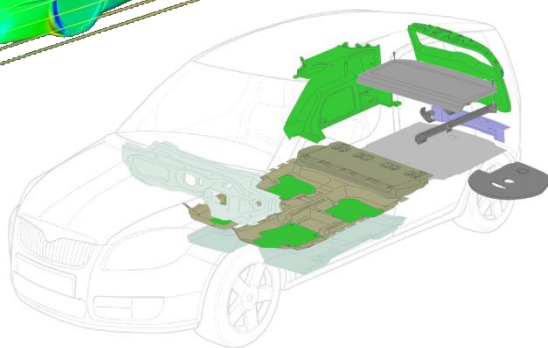
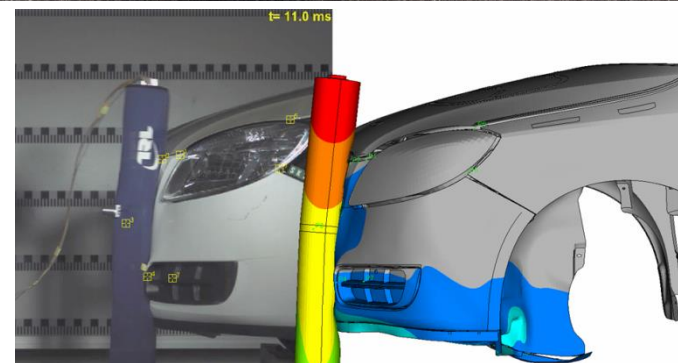
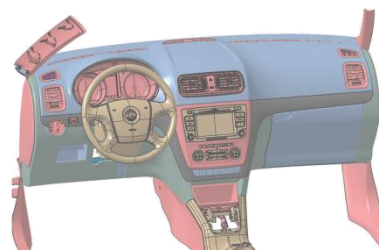
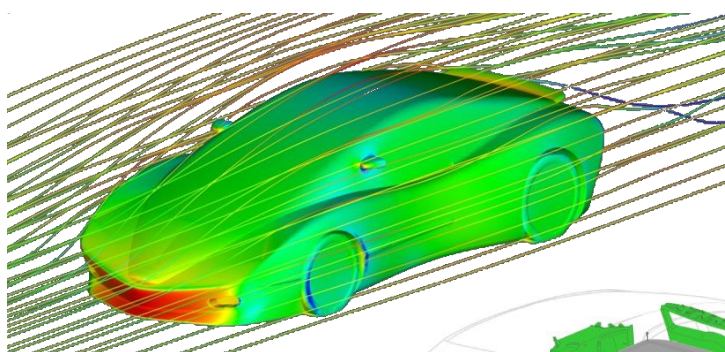
Ground run ISA, H=0 ft	1 014 ft	309 m
From 50 ft Obstacle, ISA, H =0 ft	1 673 ft	510 m
From 50 ft Obstacle, ISA, H=0 ft, STOL proc.	1 391 ft	424 m
Ground run ISA+20°C, H=6 562 ft	1 394 ft	425 m
From 50 ft Obstacle ISA+20°C, H=6 562 ft	2 133 ft	650 m

Speeds and climb

Max. horizontal speed at 10 000 ft	220 KTAS 408 km/h TAS
Stall Speed, 0° Flaps	77 KEAS 143 km/h EAS
Stall Speed, 38° Flaps	64 KEAS 118 km/h EAS
Climb with both engines operative	1 673 fpm 8.5 m/s
Climb with one engine operative	453 fpm 2.3 m/s

Evektor Automotive Design activities

- ❖ Car body design
- ❖ Car interior design
- ❖ Aerodynamic optimizations
- ❖ Structural analyses
- ❖ Crash analysis
- ❖ Evektor has been participating almost on all the SKODA cars (Volkswagen Group) developed since 1996

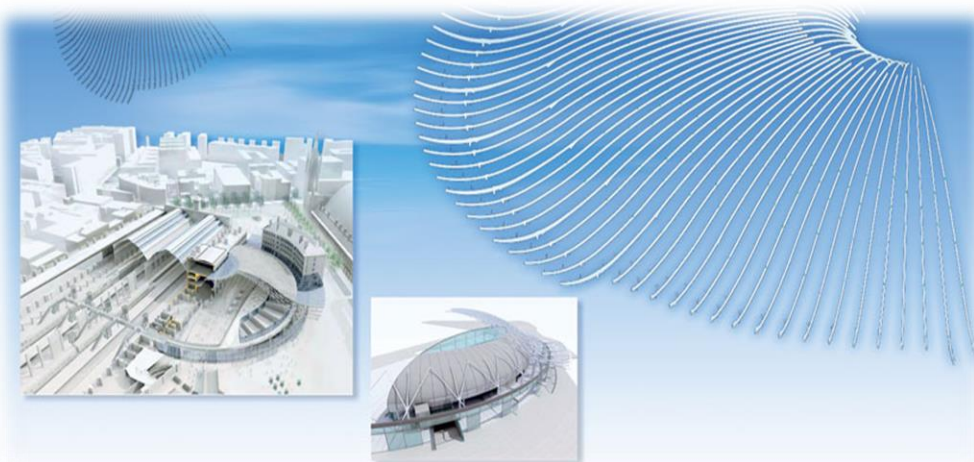
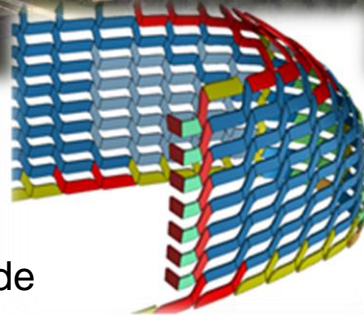
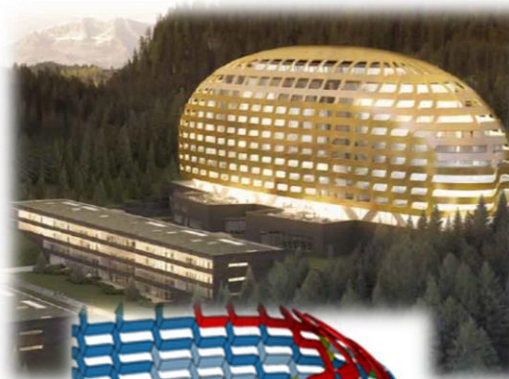


Evektor Activities in Building Industry

- ❖ Design of special steel structures
- ❖ Design of structures made of light metal alloys
- ❖ Model creation and subsequent elaboration of drawing documentation

Evektor involvement in projects:

- ❖ Kings Cross railway station, London, UK - girder
- ❖ King Abdulaziz Center for World Culture, Dhahran, Saudi Arabia – facade
- ❖ InterContinental Hotel, Davos, Switzerland - facade



Contact



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