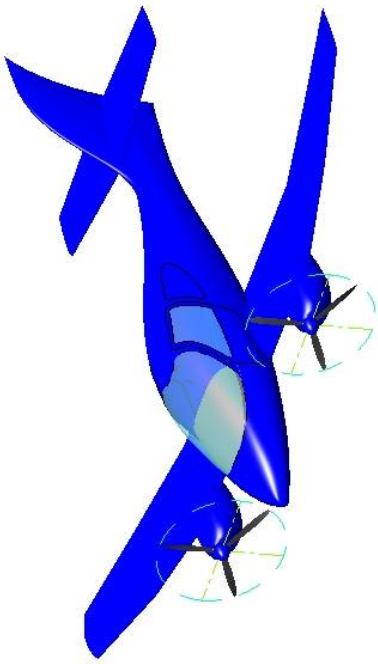
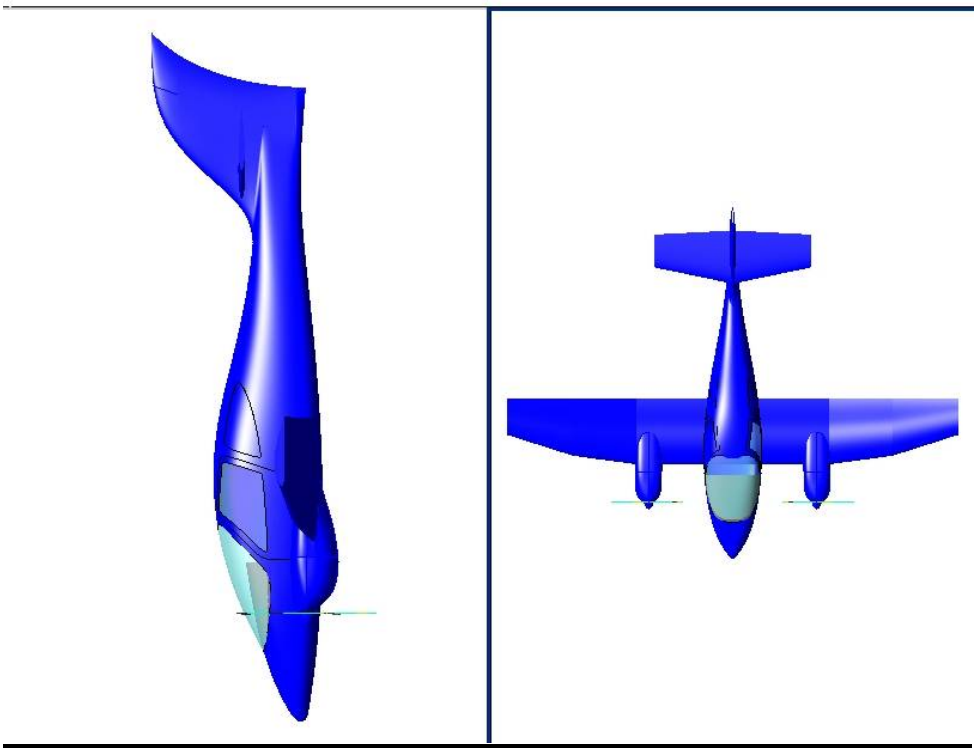
Subject of negotiations: the aicraft SHARK – twinengine





Specifications

Wing Area	16,2 m^2	174 ft^2
Wing Span	11,4 m	37,4 ft.
Length	8,9 m	29,2 ft.
Empty Weight	1221 kg	2354 lbs.
Gross Weight	1500 kg	3300 lbs.
Stall Speed	140 km/h	56 KIAS
Maneuvering Speed	216 km/h	117 KIAS
Cruising Speed	260 km/h	140 KIAS
Never Exceed Speed	330 km/h	178 KIAS
Engines		160 HP Lycoming O-320D1A
Propeller		MTV
Diameter	178 cm	70 inch.
Governor		MTV

Main sizes

Overall length	8 900 mm	350 inch
Height	3 070 mm	121 inch
Wingspan	11 400 mm	449 inch
Track of the main landing gear	4 000 mm	157,5 inch
Wheel base chassis	2 040 mm	78 inch
Wide fuselage	1 400 mm	55 inch
Height fuselage	1 400 mm	55 inch
MTOW net	1 221 kg	2359 pound

Wing

Wingspan	11 400 mm	449 inch
Surface	16,2 m^2	174 ft^2
Tenacity wing λ		8,02
Main aerodynamic chord	1 458 mm	27,4 inch
Main geometrical chord	1 421 mm	55,9 inch
X coordinate Aerodynamic center $_{AC}$	506 mm	20 inch
Angle of the establishment wing fuselage		2,5 degree
Profile center		Jd 17 (40) 157
Profile end of Centro wing		Jd 16 (40) 162
Profile end of wing tip		Jd 15 (35) 136
Kink ear		- 1,0 degree
Root chord	1 600 mm	63 inch
Motor chord end of center wing	1 600 mm	63 inch
Wrapping the ear in the leading edge	1 400 mm	55,1 inch
Tail chord theoretical	840 mm	33,1 inch
Kink of ear		1 degree.

Surface of ailerons ..... 0,41 m^2 .... 4,41 ft^2
Angle of ailerons ..... up 23 degree, down 17
In tolerance 2 degree

Landing flaps

Surface inside landing flap ..... 0,553 m^2 ..... 5,952 ft^2
Surface outside landing flap ..... 0,478 m^2 ..... 5,145 ft^2
Total surface of landing flaps ..... 1,031 m^2 ..... 11,0976 ft^2
Max. Angle down ..... 50 deg.

Horizontal tail

Wingspan ..... 3 840 mm ..... 12,6 ft.
Surface stabilizer and elevator ..... 3,895 mm ..... 41,925 ft^2
Profile .... NACA 009
The depth profile in the root ..... 1 400 mm ..... 55,1 inch
The depth profile in end of elevator ..... 790 mm ..... 31,1 inch
Geometrical λ 3,786

Elevator

Max. Angle of elevator ..... up 30, down 30 dg.
With tolerance 2 degree.
Max. Angle of trim surface ..... up 15, down 15 dg.
In tolerance 2 degree

Vertical tail

Surface ..... 2,821 m^2 ..... 30,365 ft^2
Profile .... NACA 0009
Geometric λ 1,92

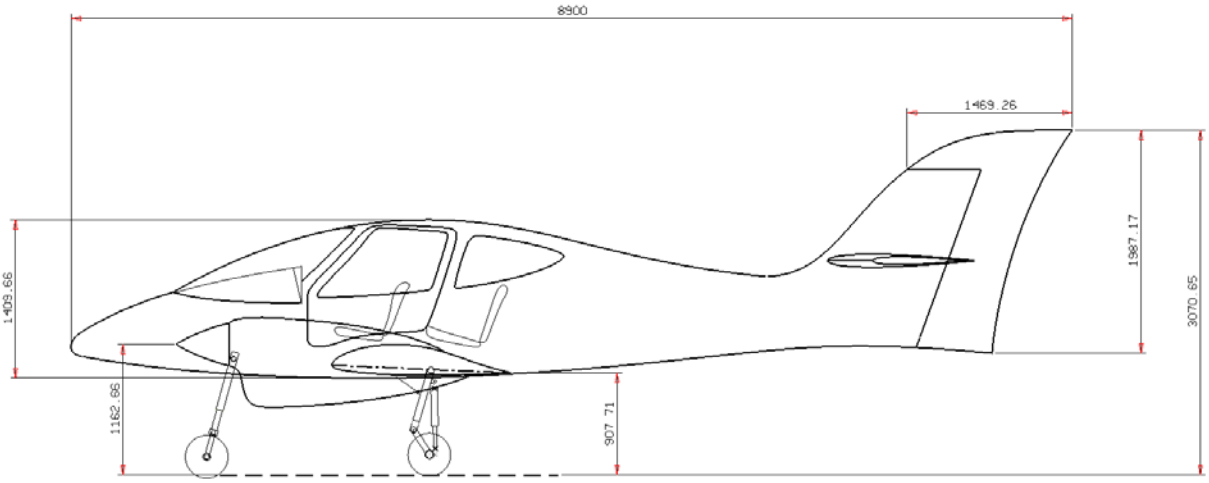
Rudder

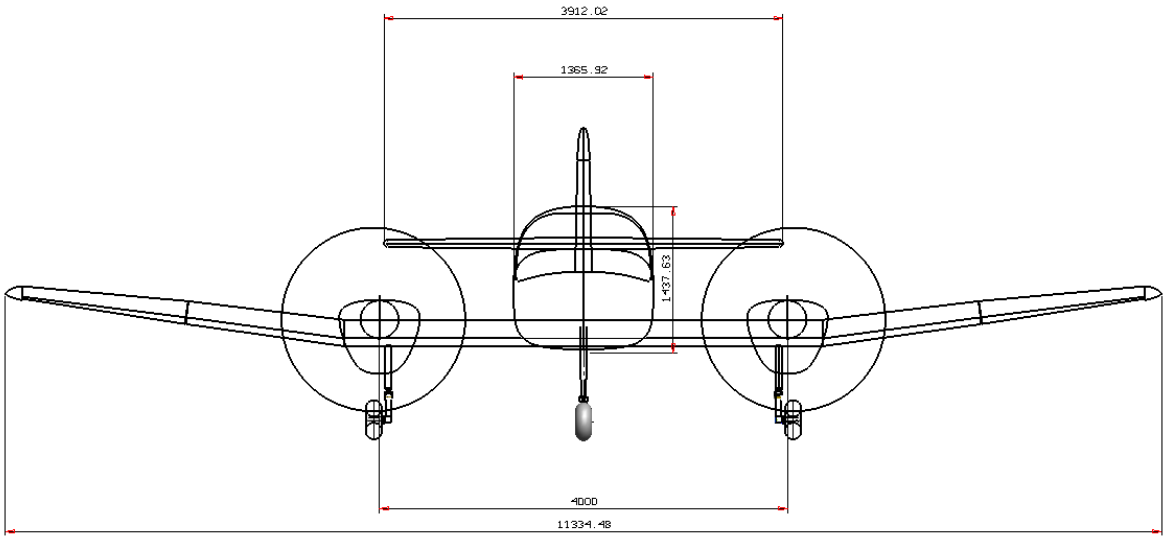
Rudder deflection..... right 30 dg., left 30 dg.
In tolerance 2 dg.

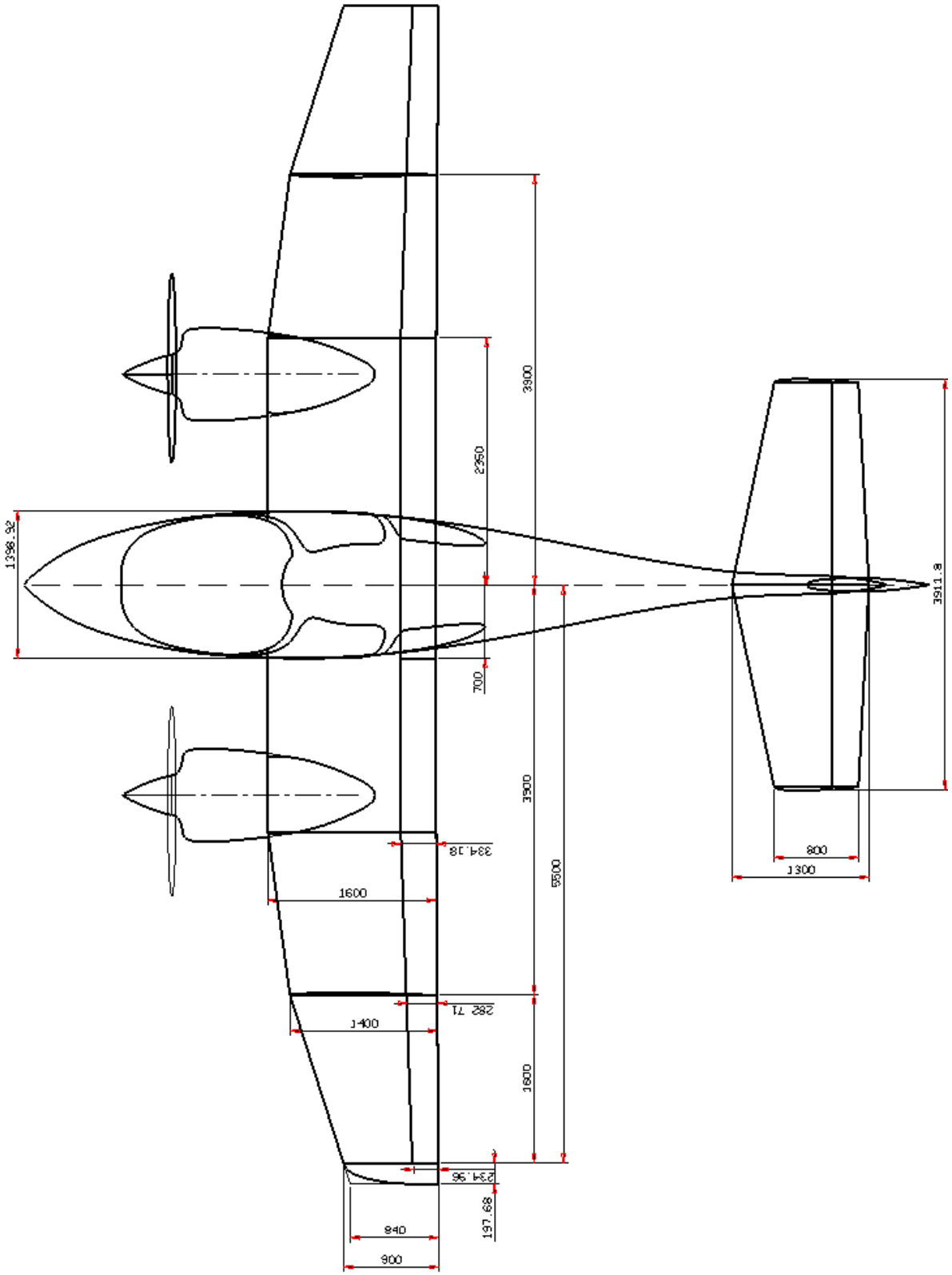
Motors

Type Lycoming O-320 D1A
Max power ..... 160 HP=119 kW
At RPM ..... 2 700 ot/min
Cruiser power ..... 120 HP=89 kW
Consumption of fuel ..... LL100 10 g/HP
Economic power ..... 104 HP=78 kW
Consumption of fuel ..... 8,8 g/HP
Weight of motor ..... 129 kg=285 pound

THREE-VIEW DRAWING OF THE AIRPLANE



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3900
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700
3900
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334.18
1600
282.71
1400
1600
234.96
197.68
840
900
2911.8
800
1300

INTRODUCTION

Door frame

Door Frame is reinforced by a separate cavity completed divinicel and it is laminated with carbon layers, so this frame creates cavity of dimensions 40 mm x 40 mm. Nothing stronger can not be made in this case of door frame. Door hinges are standard pressure casting of zinc alloy with matt black epoxy coating.

Pivot is of stainless steel. Attach the sling is true using two pairs of holes for bolts with the head imbedded in the door frame. The angle of rotation of doors represents max. 270°.

Door

Door are made of aircraft carbon fabrics. The door consists of two mutually glue products which form a mutually supporting torsionally cavity. Outer part of the door is affixed glass material from Plexiglas GS 241 thickness 2.5 mm with an appropriate adhesive.

Internal door opening is secured floating mechanism from car Peugeot 307 and through bowden tensile strength is transmitted to the main, there is a common mechanism for opening and locking the door from company Volkswagen.
The main mechanism for opening and close tract Bowden is associated with a closing door mechanism which is again from company Volkswagen.

That door closing mechanism to close the door pin affixed to the door frame of steel 10.8.

Seat

All four seats in the aircraft are from SPARCO the highest level of certification. The front are moving in the longitudinal axis of the aircraft, the rear are folding for better access to the luggage compartment of the inside of the hull. Folding options are forward and backward, so called Triple updated.

The front seats are together with the slider mechanism to put strength laminate board and, moreover, under the dashboard as "U" profiles of bent Aluminum sheet thickness 3 mm, which are firmly screw seats. Safety belts are held - anchored to the floor under the seat, while the upper third strap is anchored to the strength carbon frame doors.

Horizontal tail

The main carrier of the stabilizer is the main beam, which is a conglomerate of two spars, top, bottom and center part. The core is formed from divinicel with epoxy carbon and places bearing the core questionnaire “Textit” thick core, 25 mm. It's in places undergoing coupling screws. The left and right main beam is shifted mutually to give these two beams on each slide and screw together.

Cover consists of ballast in the form vacuum divinicel thickness 5 mm into the glass fabric. Coatings are dry brushed to support by a beam in the form of the assistance Epoxy putty in the front of strips.

Elevator

Vertical rudders, left and right are completely identical in production. Only the left elevator have trimming mechanism tower management. Rudder is again produced in vacuum negative forms, which will create a Grid of 5 mm Divinicelu which is reasonably calculations with laminate. Bearing part of the rudder tower it is its own beam, thus spar. This is made of two carbon spars, then the bottom and top, the middle laminate creates a nucleus from Divinicel and Textit.

In vertical rudders are vertical ribs, which are affixed 6/9/6 mm ball bearings. The stabilizers are glue pairs of ribs, which are inserted between the ribs of the rudder bearings, and screw together the whole strength screw M6.

Join stabilizer to fuselage

In the main rib in the elevator area directional stabilizer direction screw the helm are two pairs of metal hinges made of steel strength. Both vertical stabilizers are simultaneously retracted into the hull, check in and move the screws through the two beams up to the hinges, where they are fixed by the save - nut.

Rear stabilizer beams tower to screw together with each other and move the screws through the adjuster spar in the hull, where the screw together with the assistance save nuts. The above spar fixed, thus screwing with four screws to laminating spar in the hull, the hull sides to follow and, moreover, this spar is laminated.

Vertical stabilizer

Cover the direction the rudder is a sandwich structure made of 5 mm Divinicelu, which is laminated with carbon cloth. The main carrier part is spar again laminated carbon cloth. The bearing locations where the screw is hanging again inserted Divinicel.

The lower end is positioned in the lower hanging directional rudder, which consists of two pieces of dural products, which are symmetrical and turned against him.

The hull is laminated two ribs, which are associated with short spars, which is inserted terminative sleeve. Mounting screw is inserted through the top aluminum body, groin, terminative sleeve, rib, aluminum body. Into aluminum bodies are inserted at both ends terminative screws, which is mounted management direction, together with its damping.

The top of the labels are firmly laminated to spar cover and two ribs. Against these ribs on the hull of the rib, which is affixed moving-plain bearings and is mounted between two ribs in the sealed direction. In the upper part of the extended direction, which produces aerodynamic relief is on the bottom of the inside affixed static balancing of rudder.

The top of the labels are affixed two parallel tubes in which the sliding Aluminum pipes affixed in glass upper direction, where is placed a red beacon. On the unfixed bottom of this section are two tension springs, which, after sliding across the withdrawing part to about 50%, it is possible to catch the upper part of the fixed direction and the tensile springs then pull back the glass cover to fixed part. In this position, the spring pre-tension and hold the upper unfixed glass cover.

Description wing structure

Wing aircraft consists of three parts: central and two terminal + right and left sides.

Centroplán (middle part) is made sandwich construction with the assistance of GFK and Divinicelu thickness 8 mm. In the middle part, in place of boarding, of course, the thickness of cover is more robust to resist the weight of pressure down and sharp shoes. This is important from the perspective that the glass is only a soft cloth, coat Divinicelu.

Centroplán includes two beams. Both are carbon, the front width and 100 mm and the rear width 75 mm. These beams are formed as cavities. Sidewall forming vacuum 8 mm Divinicel walls with glass cloth.

The upper part of the two beams form a full carbon spars. Both have metal spar centropláne nipples through which the laminated sides spar screw both to centroplán, both the metal casing help to spread the power to spar in the body and chassis parts carbon spar external wings - the so-called. Ears.

Similar metal casing are in the hull ribs, which are screw spar wings. In the front of the tank centroplán is integrated tank with the theoretical volume of 90 l for each engine separately. In this supported by a beam centroplán cleave separate special tubular frame, to which is screwing the main chassis.

In front part of this frame is screw the separate motor bed. In conjunction - the place screw motor and the actual bed frame chassis are fitted stainless steel trays, sealed motor Fireproof screens made of stainless steel thickness 0.5 mm. On this stainless screens are from the front part screw these devices:

- Engine oil pressure transducer
- Voltage regulator electrical circuit 28 V
- Switch starter relay
- Pressure transducer petrol before entering the carburetor
- Gascolator for gasoline
- Distributors, warm and cold air into the interior of aircraft

For the stainless screens are from the inner side of the chassis screw following devices:

-
- RDAC analog converter output from the engine sensors to digital output suitable for panel Odyssey
- Fuel flow

Terminal part of the wings - the so-called - Ears.

Ears are again produced vacuum technology. It is re-used 8 mm divinicel laminated with glass cloth. Manufacturing is in the negative form with the assistance of vacuum. The leading edge is in bringing together the half-part top and bottom, swallowed a glass strip in several layers, to replace the cover strength. The ends of wings - the ears are again swallowed two beams. This is to cover laminated with carbon spar, front width 75 mm and rear width 50 mm.

These strip the closing spar inserted. These spar are laminated with carbon cloth 8 mm divinicel, which is bearing sites omitted and replaced Textit on the thickness of 8 mm. These are spar again glass strips laminated to spar that connection, and then power was even transmitted to a larger area carbon strip. The constituent parts - reinforced Textit are re-used metal nipples to transfer forces from spar to centroplán.

In the back inside of the ear lobe are again affixed semi ribs. In these semi ribs are affixed ball bearings 6/19/6 mm, which are screw pair of ribs protruding from the wing flaps, which means that the ends of wings are stored external wing flaps.

To save the wings in the outer parts are affixed centroplán two pairs semi ribs which are laminated carbon strips on the upper and lower cover from the inside. The wing, which is again produced by vacuum technology with the assistance of 5 mm Divinicelu and carbon fabric are affixed in addition to the central spar and two ribs, which are affixed ball bearings 6/19/6 mm. These ribs are retracted into the pair semi ribs ears protruding from the end of the wings and screws together.

At the end of the ear lobe is affixed sleeve, which is inserted into the tube protruding from the final bend. From the terminal arc of the "wingtip" stand out, so it is firmly affixed glass spar, which is in aid of four screws screwing to the back spar. The end is an arc in front of the ear lobe to screwing one screw M6.

Control of wing flaps

In the middle of fuselage is to the back of the ribs transmitting power from the rear wings to the fuselage truss firmly stuck laminate "U". This laminate is inserted terminative sleeve, which is inserted tube 20 mm in diameter. To this tube are inserted two separate pairs of arms - the transmission levers.

The upper pair transmits power from the linear actuator and its movements, and thus insert or opening travel of 150 mm with a force of 1500 N and is therefore the pivot movement of 20 mm tube. The power of aluminum levers is transmitted distance aluminum cases in which there are two screws with reinsurance tubular end passing up to 20 mm tubes.

At the bottom of the tube with a diameter of 20 mm are re-lever the same structure, which transmit rotary power to sliding left and right. These lower arms are screwing Sphere ending position sensor wing flaps. It is a type of sensor used in POS-12 from Ray Allen com. with 30 mm travel

The transducer position in the electrical signal is formed by potentiometer. Data from this converter is broadcast on the double wing flap position indicators placed in the middle of the bottom of the dashboard. Of course, this also sends a signal to the programmer position wing flaps FPS - Plus from Aircraft Extras Inc.

In this program shall be deposited position wing flaps - can be up to 10 positions, and these are selected with the assistance of 3-position key to controlling wing flaps on the dashboard. Each button eg. Downward, the flaps protrude into any other location by a pre downwards. If you wish to flaps were fully retracted or fully extended, it is

necessary to hold the button in the direction of more than 1 s. Terminal position wing flaps are protected terminal micro switches, which detached and locked position of the movement.
From the middle pair of lower levers is the power to control the wing flaps transmitted through strength M6 screws, ball ending Fluro type GAXSW with static loads up to 9.8 kN with screw M6, which is screw in aluminum part strength in metallic pipes with a diameter of 25 mm and wall 1 mm.
At the end of this tube is again aluminum part rifle and tail, which is inserted in the sign package carrier sliding movement through the next metal pipes with a diameter of 25 mm. This continues into the second tube 90 degree lever transmitting movement to the first internal wing flaps, but transmits and linear movement to the outer wing flaps through triple tube material from the 2024 average of 25 mm to 90 degree last packet, which translates movement of the second short rod to the connection wing flaps.
The first inner lever 90 degree sliding transfer power to the sliding and rotating of the first internal wing flaps is formed pair of aluminum arms on the thickness of 3 mm, which are screw the assistance middle parts Fluro ball terminals M6. Short connecting rod to the first wing flaps is fitted on both ends of ball ends Fluro M6.
A third and final aluminum tube transmitting power to the other, then the outer wing flaps are fitted on the outside of the plug of material 2024.
Last 90 degree lever, transmitting power to the external wing flaps is made from pressed GFK material thickness 6 mm. In this packet are affixed two ball bearings 6/19/6 mm, into which are screw terminals.

Control ailerons aircraft

When rotating the wheel left to right and left movement is transferred through cardan joint rotary movement to the sleeve plugs stored in the management of 40 mm welded light gauge steel tubes. These spin at the bottom of the screws on the average, 8 mm, which serves as a hyphen stringent imposition plugs into the hull by two ball bearings.

At the end of the housing in the front part is square, in which it is screwing the lever of 6 mm laminate. The package is sealed ball 6/19/6, which is aluminum fork to transfer the movement of the connecting tubes with a diameter of 230 mm to the right package. The right lever again rotate through the square sleeve with Universal joint, which is to cleave through the first wheel 20 mm aluminum tube.

On the right side of the housing of copilot is located gear lever, steering wheel movement. On the right side is still balancing the left upright aluminum tube.

On the left side of the gear lever through the bearings is screw two connecting arms, which are transmitted to the power sliding the gear lever rotate management. From this it is directed downward force to 90 degree packet located at the bottom of the fork management so that the fork rocking back and forth went aileron not moved.

At the bottom of the fork is converted to vertical movement of the longitudinal to the longitudinal axis of the hull.

On the back of the hull rib transferring power from the rear beam to the hull centroplán firmly affixed GFK "U" profile. It is rotate metal tube with a diameter of 20 mm connected to the brass bushing strength screw M6. The upper part is fitted GFK lever thickness 6 mm, which are affixed ball bearings. Until this deposit is screwing with aluminum fork transfer through longitudinal movement of the fork tubes aileron

management.

At the bottom of the steel pipes is a pair of levers attached which locked two Fluro ball terminals for the transmission of forces. This transfer of power is implemented through the aluminum reduction in strength aluminum tubes with a diameter of 20 mm. This first centroplán tube transmits movement to the first sign for the package once placed in the hull centroplán. The first sign lever continues through Fluro ball bearing strength in 25 mm aluminum tubes, which ends up in the ear lobe.

At its end is Aluminum "U", which is fixed to GFK laminate sign lever enshrined at the beginning of the ear lobe by means of two ball bearings 6/19/6 and aluminum "U" profile, affixed to the glass covering the internal ear lobe. This continues the lever again through the "U" terminals through the aluminum tube with a diameter of 25 mm power further nod to the wing lever. The swinging lever is to be suspended again for two ball bearings 6/19/6 mm through "U" Aluminum profile to support laminated semi rib sealed in the ear lobe.

Connecting rod of the gear lever has wings on the internal end of the wing Aluminum "U" and the outer end entered into wings Fluro ball at all. This rifle Fluro terminal plugs into pairs GFK laminate ribs in the wing. Here is together M6 screw.
Differentiation ailerons is set to: top 80 mm below 55 mm at the root of wings.

Elevation control aircraft

Pilot controlled through the steering wheel longitudinal aluminum tube with a diameter of 20 mm, which is fitted in the cardan joints, which is embedded in the housing management. This sheath management is stored in an upright fork management. Vertical fork management is attached in the bottommost section with two ball bearings 8/22/8 laminated to the "U" profile firmly affixed in the lower part of the airframe.

120 mm from the axis of rotation plugs management is welded plate, which is sealed ball bearings 6/19/6 mm. Through this box, the movement of the steering wheel transmits the pilot to the longitudinal axis of the hull. Then followed the first longitudinal 20 mm aluminum tube, which is fitted at both ends of aluminum "U". The first tube ending in the first swinging gear packet located at the bottom of the hull before the first main rib of the hull of the centroplán.

The gear lever is again shrinking the size movement and transmits power through the 25 mm aluminum tubes to the next gear packet affixed at the bottom of the hull for centroplán. From here continue the tube diameter 25 mm number 3 next to the swinging packet located at the bottom of the hull before carinate surface. This last gear lever is located 1504 mm from the bottom edge of the rear fuselage. From here, continue No.4 tube. out of aluminum with a diameter of 25 mm to gear level carbon located on the vertical rib, which is mounted the main tower suspension stabilizer.

This last gear lever is again made of GFK pressed laminate thickness 6 mm. For the last swinging lever is controlled by each party elevation rudder alone. Each of them directed an aluminum tube with a diameter of 20 mm. The ends of these tubes have a spherical end Fluro and they are embedded in the metal arms, fitted with two screws M8 to carbon bearer height rudder.

These metal arms while serving in the upper part of the holding of the static balancing of the right, the left rudder alone. These are front of the ballast in front of the rear truss tower stabilizer. Each metal sash-weight is secured by two screws M8.

Electrical installation of aircraft

Battery power is placed under the floor of the left rear passenger. It marks Gill 243, which are 28 V and 10 Ah. Since the battery is charging at the output connectors, which are placed on the floor under the counter for passengers. Power wires from the battery have a cross section of 35 mm2. Less is led directly to the costal screens passengers under the floor where they are located distribution.

Plus it kept the first hull screens, where the switching solenoid 28 V, and where it is also an auxiliary input solenoid boot jack. Of this solenoid power cable is routed to the distribution under the passenger floor. From these distribution is divorced voltage to the engine and the dashboard to the main circuit breaker, which is distribution via separate circuit breakers, supplied all onboard equipment.

Divorces, which are in the aircraft, installed electric cables manufactured according to specifications MIL-W-22759/16. They are tin-coated copper wire protected material TEFZEL / ethylene / tetrafluorbethylene /, which is sufficient up to 600 V and 105°C.

Carburetor heating

From the front of the engine cover is placed on the inlet supply of cold air into the engine thrust. This air passes through a mechanical sieve and filter paper, replete with special oil to paper filters.

From the entrance part of the cold air passes through the 2-1/2 inch hose from AERODUCT Scat, who has immunity from -50°C to 290°C.

This hose is cold air supplied to the engine under the air distributor. Here is the carburetor air divides either cold or preheat. Preheat air is collected in the exhaust No.1 knee. For this stainless steel collector is re-supplied air hose AERODUCT scat into the air distributor. Distributor of air is controlled from the center console lever with silver paint, which is the first back. Sense of movement: the rear air conditioning, pre-warm air. To transfer power from the steering lever is used with an internal stainless Bowden stainless steel wire diameter 2 mm.

Conditioned internal space the crew

Cold air intake is from the surface of each motor cover so-called right. Broach suction hole. Until distributor of air hose is supplied on an internal diameter of 50 mm. The distributor of air into the cabin is located on the front of the engine screens and on the electrically controlled amount of air entering the mixing and entering the air. Hot air for the crew is gathered from a heat exchanger which is heated by exhaust gases of engine cylinders. From mix equipment air is air from the left engine cover held under the dashboard, where either heat the window in winter or cooled in the summer pilot face. For the right motor enclosure is kept at his feet, the air crew. Again, mixing may be either hot or cold. Management of air from the front console located between the pilots of four drivers.

Divorce is in the air throughout the aircraft Aeroduct scat hose diameter 50 mm.

Motors control

Motor is performed mechanically. On the center console are the mechanisms that are transferred from hand movement to linear movement of the pilot bowden. Bowden this is composed of internal stainless steel wire of 2 mm diameter and an outer threaded stainless steel wire with a diameter of 2 mm. Among these wires are Teflon pad.

The first left-front control black controls permitted No.1 engine. It's basically a simple tilting throttle. Of course, the proportional gain. In the case of movement of the lever forward to increase engine speed to maximum. In the case of movement of the lever backward to reduce speed to idle speed.

The second left-front black driver controls the engine No.2 permitted. The sense of control is completely identical to the engine No. 1.

The third from the left side of the front controller controls the angle of the run-up No.1 propeller. This is blue. This movement is made through Bowden to the motor area, where the tensile strength was converted to linear for 90 degree. Governor packet to the system. In case of damage control the propeller redeveloped for max. Angle of onset. In the event that the override lever forward, makes the movement for max. angle suitable for start-up start. In the case of backward movement of the lever makes travel arrangements for the cruising.

The fourth driver of the left side controls the angle of the engine run-up No.2. The sense of control is completely identical as for the engine No. 1.

The third driver of the rear left side - red is operated rich mixture the engine No. 1. Moving forward is the combination of standard and move backwards until the mixture is impoverish the engine stalls.

The fourth driver left, the red color is controlled by rich mixture the engine No. 2. The sense of movement is completely identical as for the engine No. 1.

STANDARD EQUIPMENT

Avionics

Glass cockpit: 2 x MGL Avionics STRATOMASTER ODYSSEY

- Dimensions: 317x202 mm.
- 10.4" Top quality, direct sunlight viewable TFT screen with non-reflective surface (640x480)
- Primary flight system features:
  - Altimeter -700 to 40.000 ft,
  - Airspeed 16mph to 250mph
  - Vertical speed
  - NMEA autopilot output
  - GPS based navigation engine
  - Moving map
  - 3D Highway in the sky navigation (HITS)
  - 3D runway depiction with runways defined in airport data base
  - 3D GLS approach using HITS technology to show glide slope to threshold in 3D
  - Terrain awareness monitoring (TAWS)
  - Comprehensive, graphical weight and balance calculator
  - PCAS using XRX passive transponder signal, etc.
- Other features:
  - "Black box" style logging of all flight data to SD card with free PC based viewing application including export of flight path to Google Earth.
  - Fully "Enigma" map and database compatible.
  - Connects to I/O extender for applications requiring large amount of additional monitoring and control such as remote control of Odyssey panel.
  - User selectable unts of operation, meters/feet, mph/knots/kmh, liters/galons etc

Altimeter indicator
Airspeed indicator
Electric trim
Trim indicator
Flaps indicator
Transponder GARMIN GTX-327
AUDIO Panel PMA 9000 EX
NAV-COMM GARMIN APOLLO SL30