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## MAINTENANCE MANUAL

### AIRCRAFT MODEL: PIONEER 300



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**THIS MANUAL ONLY APPLY FOR:**

- P300 AND P300FG;
- FIXED AND VARIABLE PITCH PROPELLERS;
- ENGINE ROTAX 912 ULS, 912IS SPORT, 915IS;
- SHORT AND NORMAL WINGS.

## LIST OF VALID PAGES

This Manual is made by 34 pages (including the annexes), original and emended pages are herein listed:

<b>DOCUMENT REVISION SUMMARY</b>		
<b>REVISION</b>	<b>DATE</b>	<b>CHANGES</b>
<b>0</b>	1/07/2019	-Document issue
<b>1</b>	17/06/2020	-Definition of primary and secondary structures -List of materials for quick repairs
<b>2</b>	25/06/2020	- aircraft TBO definition at 2000h
<b>3</b>	23/07/2020	Definition of special tools , placard and markings

Table 1: history of document revisions

### CAUTION

THIS MANUAL IS VALID ONLY IF IT CONTAINS ALL OF THE ORIGINAL AND REVISED PAGES LISTED ABOVE. EACH PAGE TO BE REVISED MUST BE REMOVED, SHREDDED AND LATER REPLACED WITH THE NEW, REVISED PAGE IN THE EXACT SAME PLACE IN THE MANUAL.

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## GLOSSARY

°C	Degrees Celsius (Centigrade)
°F	Degrees Fahrenheit
AOD	Aft of Datum
ASI	Air Speed Indicator
ASTM	American Standard for Testing & Materials
Aux	Auxiliary
BHP	Brake Horse Power
CG	Center of Gravity
CHT	Cylinder Head Temperature
EGT	Exhaust Gas Temperature
EGT-Split	Difference between the actual highest EGT value and the actual lowest EGT value
EOM	Engine Operators Manual
FG	Fixed Gear
fpm	Feet per minute
ft	Feet
FTS	Flight Training Supplement
gal	Gallons
h	hour
IAS	Indicated Air Speed
IFR	Instrument Flight Rules
KCAS	Calibrated Air Speed in Km/h (and in Kts)
Kg	Kilograms
KIAS	Indicated Air Speed in Km/h (and in Kts)
kt	Knots
KTAS	Calibrated True Air Speed
L	Left
l	Liters
lb	Pounds
LE	Leading Edge
LMM	Line Maintenance Manual
MAC	Mean Aerodynamic Chord
MAUW	Maximum All UP Weight
max	Maximum
MRA	Major Repair and Alteration
MTOW	Maximum Takeoff Weight
nmi	Nautical Miles
OAT	Outside Air Temperature
ODDP	Owner Delivery Documentation Package
OEM	Original Equipment Manufacturer
OPT	Optional

OS	Operational Sheets
POH	Pilot Operating Handbook
R	Right
RON	Research Octane Number
RPM	Revolution per Minute
sec	Seconds
SI	International System of Units
STD	Standard
VFR	Visual Flight Rules



## **A. INTRODUCTION**

The Maintenance Manual here presented provides the guidelines for the qualifications to accomplish the various levels of maintenance on Pioneer 300 aircrafts. It also represents a continuous part of the Pilot's Operating Handbook delivered together with this manual. For this reason, some arguments will be just recalled instead of being fully re-written. A careful reading of the engine and propeller manuals is strongly recommended in any case because it will give you more information about safe maintaining and hence it will ensure a safer flight.

This manual contains very detailed indications about maintenance, repairs and alterations providing illustrative sketches on how to do that. Furthermore, indications about periodic inspections and advice about the right care of the overall Pioneer 300 aircrafts are also provided into this manual in order to give you all the satisfactory indications towards the correct operations.

Pioneer 300 aircrafts are built with some parts not manufactured by Alpi Aviation, for those it is necessary to refer to the original manufacturer's manual in order to get complete information.

Pioneer 300 aircrafts legal WARRANTY is guaranteed only if:

- 1) the herein prescribed maintenance is carried out by the appropriate personnel, recorded in the Table of ANNEX F and stored in the aircraft logbook;
- 2) the Mandatory Service Bulletins are applied and recorded in the Table of ANNEX E and stored in the aircraft logbook.

### ***A.1 Document references***

This manual has been prepared according to the standard ASTM F2483-12, while Pioneer 300 aircrafts have been shown to comply with standard ASTM F2245. This aircraft must be maintained following the standard ASTM F2295, Standard Practice for Continued Operational Safety Monitoring of a Light Sport Aircraft. Please note that this standard describes the responsibilities of the Owner/Operator.

Pioneer 300 aircrafts are included into a wider family of P300 aircraft types, mainly divided into Fixed and Retractable landing gear, and for this the airplane only one P300 Maintenance Manual exists.

In details the following ASTM standards have been used to demonstrate compliance and therefore to prepare this document:

- 1) F2483-12 Standard Practice for Maintenance and the Development of Maintenance Manuals for Light Sport Aircraft;
- 2) F2245-12d Standard Specification for Design and Performance of Light Sport Aircraft;
- 3) F2279-06 Standard Practice for Quality Assurance in the Manufacture of Fixed Wing Light Sport Aircraft;
- 4) F2295-06 Standard Practice for Continued Operational Safety Monitoring of a Light Sport Aircraft;
- 5) F2746-12 Standard Specification for Pilot's Operating Handbook (POH) for Light Sport Aircraft;
- 6) F2930-12 Standard Guide for Compliance with Light Sport Aircraft Standards.

### ***A.2 Original Equipment Manufacturer***

The Pioneer 300 aircrafts have been manufactured by Alpi Aviation Srl whose contact information are herein listed:

Name: Alpi Aviation Srl;  
Location: Via dei Templari 24, 33080, San Quirino (PN), Italy  
Phone N°: +39 (0) 434 370496  
Fax N°: +39 (0) 434 360713  
Email: [info@alpiaviation.com](mailto:info@alpiaviation.com)  
Website: [www.alpiaviation.com](http://www.alpiaviation.com)

### ***A.3 Lifecycle Management***

The aircraft owner shall comply with all requirements, procedures and limitations with respect to the Maintenance Manual instructions prescribed in this manual. It is responsibility of the aircraft owner to maintain this manual up to date and to report the date of incorporation and his signature on the Amendment Record Sheet. Whenever the revision status of his manual could be in question, each owner should contact the local Alpi Aviation Dealer, or directly Alpi Aviation Srl in Italy. No entries or endorsements may be made to this Manual except in the manner and by persons authorized for the purpose. In case of aircraft damage or personal injury resulting from noncompliance to instructions in the manual, Alpi Aviation Srl denies all responsibility. All text, design, layout and graphics are owned by Alpi Aviation Srl. Therefore, this manual and any of its contents may not be copied or distributed in any manner (electronic, web or printed) without the prior consent of Alpi Aviation Srl.

#### **WARNING**

**IT IS MANDATORY TO CAREFULLY STUDY THIS MANUAL PRIOR TO USE OF AIRCRAFT. IT IS ASSUMED THAT THE OWNER THAT WILL NOT NOTIFY ANY “REQUEST OF CLARIFICATION/MODIFICATION” USING THE ATTACHED FORM IN ANNEX C WITHIN 30 DAYS FROM THE AIRCRAFT PURCHASE, WILL FULLY AGREE ON THE CONTENT.**

#### **WARNING**

**IT IS MANDATORY TO FILL THE MAINTENANCE LOG SHEETS IN ANNEX F WITH ALL THE USEFUL RECORDS THAT PERMIT TRACKING OF THE AIRCRAFT MAINTENANCE HISTORY. THIS LOG MUST BE SIGNED BY THE PERSON IN CHARGE FOR THE SINGLE TASK ACCOMPLISHED.**

### ***A.4 Continuous Airworthiness***

It is a Pilot/Owner responsibility to get access to continuous airworthiness NOTICES by registering himself into the Company website (Customer page), in order to get a Customer account. NOTICES include:

- Safety Alert;
- Service Bulletin;
- Notification.

### ***A.5 Document Organization***

The document has been organized in sections as herein summarized:

**CHAPTER 1**            general information,  
**CHAPTER 2**            inspections,

<b>CHAPTER 3</b>	primary structure,
<b>CHAPTER 4</b>	engine and power plant,
<b>CHAPTER 5</b>	fuel system,
<b>CHAPTER 6</b>	propeller,
<b>CHAPTER 7</b>	utility systems,
<b>CHAPTER 8</b>	instrument and avionics,
<b>CHAPTER 9</b>	electrical system,
<b>CHAPTER 10</b>	structural repair approach,
<b>CHAPTER 11</b>	painting and coating aspects,
<b>CHAPTER 12</b>	feedback form
<b>ANNEX A</b>	Checklist of maintenance operation
<b>ANNEX B</b>	reporting flight/safety concerns format
<b>ANNEX C</b>	improvements, corrections and feedbacks format
<b>ANNEX D</b>	changing the address or ownership format
<b>ANNEX E</b>	notices application format
<b>ANNEX F</b>	maintenance log format

## **B. WARNING, CAUTION AND NOTE**

### **WARNING**

**MEANS THAT THE NON-OBSERVATION OF THE CORRESPONDING PROCEDURE LEADS TO AN IMMEDIATE OR IMPORTANT DEGRADATION OF THE FLIGHT SAFETY.**

### **CAUTION**

**MEANS THAT THE NON-OBSERVATION OF THE CORRESPONDING PROCEDURE LEADS TO A MINOR OR TO A MORE OR LESS LONG TERM DEGRADATION OF THE FLIGHT SAFETY.**

### **NOTE**

Draws the attention of any special item not directly related to safety but which is important or unusual.

# 1 General

Pioneer 300 aircrafts are twin seat, single engine, low wing, hybrid composite/wood structure monoplane with tricycle landing gear and steerable nose gear. It is an ASTM compliant aircraft designed to be flown by Sport Pilot rated pilots or higher rated pilots. Additional information on your particular aircraft type is provided into related POH strictly connected to this maintenance manual.

## **WARNING**

**THIS MAINTENANCE MANUAL CANNOT BE SOLD AND/OR DISTRIBUTED WITHOUT ITS RELATED PILOT'S OPERATING HANDBOOK BECAUSE THIS LATTER CONSTITUTES AN ITS FUNDAMENTAL PART.**

### **1.1 ASTM F2483-12 Terminology**

The following items aim to resume the definitions of ASTM F2438-12 standard that are invoked into this maintenance manual:

- **Heavy maintenance**  
Any maintenance, inspection, repair or alteration a manufacturer has designed that requires specialized training, equipment or facilities.
- **Line maintenance**  
Any repair, maintenance, scheduled checks, servicing, inspections or alterations not considered heavy maintenance that is approved by the manufacturer and is specified in the manufacturer's maintenance manual.
- **LSA repairman inspection**  
U.S. FAA-certified repairman (light sport aircraft) with an inspection rating as defined by 14 CFR Part 35, authorized to perform the annual condition inspection on experimental light sport aircraft or an equivalent rating issued by other civil aviation authorities.
- **LSA repairman maintenance**  
U.S. FAA-certified repairman (light sport aircraft) with an inspection rating as defined by 14 CFR Part 35, authorized to perform line maintenance on aircraft certified as special LSA aircraft.
- **MRA: Major repair, alteration or maintenance**  
Any repair, alteration or maintenance for which instructions to complete the task excluded from the maintenance manual supplied to the consumer are considered major.
- **100-h inspection**  
Same as an *annual condition inspection*, except the interval of inspections is 100 h of operation instead of 12 calendar months. This inspection is utilized when the LSA is being used for commercial operations such as flight instruction or rental, or both.

### **1.2 How to read the operational sheets in the annexes**

Illustrative instructions are given through accurate operational (OP) sheets listed into the "*Checklist of Maintenance Operational Sheets*" attached to ANNEX A. This checklist resumes all the time intervals and modalities for the correct maintaining of the aircraft and shows the relative OP sheet required to accomplish a particular task.

Each OP sheet contained in that table follows an Alpi Aviation internal standard, according to which important preliminary information is written at the header of the document.

Starting from the left, just below the Alpi Aviation logo, are indicated some maintenance instructions regarding:

- The person who can perform the actions illustrated in the document;
- The type of the maintenance;
- Special training requirements to accomplish the tasks.

The nomenclature follows the definition adopted by the ASTM F2483-12 standard practice for maintenance and development of maintenance manuals for light sport aircraft, see para. 1.1.

Just beside the Alpi Aviation logo, are listed different information such as:

- The identification code name of the document, enclosed into a red coloured box;
- The argument of the document, at the header of the blue table;
- The aircraft model applicability;
- The history revisions list.

### **WARNING**

**EACH OPERATIONAL SHEET APPLIES ONLY TO THE ITEMS MARKED WITH A FULL BLUE COLORED DOT.**

### **WARNING**

**SOME OPERATIONAL SHEETS ARE REFERRED TO “P300 KITE” MODEL THAT IS THE OLD DESIGNATION FOR THE ACTUAL P300FG CONFIGURATION.**

## **1.3 Standard equipment list**

Table 2 represents the standard format of components installed on a Pioneer 300 aircraft. Usually this table is used to perform the weight & balance operation before each flight. For this reason, in the present manual has been reported a most general format of the standard equipment list in which the engine and propeller types are left blank because dependent on the required configuration.

Anyway, the complete standard equipment list is provided into related POH.

ITEM	CHK
<b>Powerplant</b>	
Engine	X
Propeller	X
<b>Flight Instruments</b>	
Airspeed Indicator	X
Altimeter	X
Turn & Bank Indicator	X
Compass	X
Vertical Speed Indicator	X
<b>Digital Engine Instruments and Avionics</b>	
Includes:	-
- 2 x CHT	
- 2 x EGT	
- Oil Temp Indicator	
- Oil Press Indicator	
- Airbox temp indicator + O.A.T.	
- voltmeter	
- ammeter	
- fuel press	
- MAP	
- fuel computer	
- RPM indicator	

- hour-meter	
<b>Miscellaneous Equipment</b>	
4 Points Seat Belts	X
Engine kill switch	X
Fuel Valve	X
Cabin Fresh Air Intake	X
Key Canopy Lock	X
Aileron Electric Trim	X
Elevator Electric Trim	X
Electronic Flaps Controller	X
Gas Nose landing gear	X
Gear Legs Fairings	X
Wheels Fairings	X
Toe Brakes Pilot's Side	X
Plus Cabin Heating	X
Oil Inspection Door	X
Landing Lights inside E. Cowling	X
Strobe and Nav Lights	X
Radio Prewiring	X
Auxiliary Electric Socket	X
Fiber Panel and Console	X
White Paint with Sticker Livery	X
Pioneer Canopy Cover*	X
POH, Maintenance Manual *	X
Tools*	X
*NOTE: those items are not considered part of the aircraft configuration from the empty weight point of view.	
**Special tools are available on request and payment. Please refer to PZ1012A0 attached.	

**Table 2: Standard configuration equipment.**

### 1.3.1 Approved engine types

Table 3 lists the engine types that are allowed to be installed on the Pioneer 300 aircrafts and for those it is available the necessary documentation aimed to the maintenance.

<b>MANUFACTURER: ROTAX GmbH&amp;Co KG</b>	
TYPE	MAX. RATED POWER
912 ULS	100 hp
912iS SPORT	100 hp
915iS	141 hp

**Table 3: Approved engine types**

### 1.3.2 Approved propeller types

Table 4 lists the engine types that are allowed to be installed on the Pioneer 300 aircrafts and for those it is available the necessary documentation aimed to the maintenance.

<b>MANUFACTURER: DUC</b>	
Model	3-BLADES
Type	SWIRL INCONEL
Diameter	1730 mm (68 inch)
Pitch	Fixed – Ground adjustable
<b>MANUFACTURER: AVTEK</b>	
Model	2-BLADES
Type	AVY 2HS (or AH140)
Diameter	1760 mm (69 inch)
Pitch	Variable
<b>MANUFACTURER: WOODCOMP</b>	
Model	2-BLADES

Type	KW-20W
Diameter	1709 mm (67 inch)
Pitch	Variable
<b>MANUFACTURER: MT-PROPELLER</b>	
Model	2-BLADES
Type	MT-21-A/175-51
Diameter	1750 mm (69 inch)
Pitch	Variable

Table 4: Approved propeller types.

## 1.4 Sources to purchase parts

Spare parts can be requested to Alpi Aviation Srl using the contact information listed in paragraphs A.2 and A.3 or directly to the nearest local dealer. Dealers list is published into the company web site [www.alpiaviation.com](http://www.alpiaviation.com) under the “Dealers” sub menu. Illustrated Part Catalogs are available as well as Spare Parts Order Form after registration inside the company web site under the “Customer Area”. Registration requires a new account creation following the step-by-step procedure described into the web site.

## 1.5 List of disposable replacement parts

Table 5 lists the disposable spare parts:

PART	SUPPLY DATA
Air Filter	Alpi Aviation
Fuel Filter	Alpi Aviation
Oil Filter	Alpi Aviation or Rotax
Nose Wheel tire	Sava 4,00-4” tire&tube or may be replaced with eq. aircraft tire or tube
Main wheel tire	Sava 4,00-6” tire&tube or may be replaced with eq. aircraft tire or tube
Oil	See Notes in Para. 1.4 & refer to Rotax Manuals
Coolant	See Notes in Para. 1.4 & refer to Rotax Manuals

Table 5: Disposable spare parts.

## 1.6 Weight and balance information

A detailed explanation of weight and balance calculation can be found in the related POH, at Chapter 6. Anyway, additional indications are given in ANNEX A (Fuselage Body group).

## 1.7 Handling

### **WARNING**

**NEVER HANDLE FUEL IN AN ENCLOSED AREA OR WHERE FUMES COULD REACH IGNITION POINT. DO NOT SMOKE OR ALLOW OPEN FLAMES OR SPARKS IN THE VICINITY. NEVER ADD FUEL WHILE THE ENGINE IS RUNNING.**

### **WARNING**

**NEVER REFUEL AN AIRCRAFT IF FUEL COULD BE SPLIT ON HOT ENGINE COMPONENTS.**

### **WARNING**

**USE ONLY APPROVED FUEL CONTAINERS AND NEVER TRANSPORT FUEL IN AN UNSAFE MANNER.**

### **WARNING**

**ALWAYS CHECK FOR FUEL CONTAMINATION. CONTAMINATION IS A MAJOR CAUSE OF ENGINE FAILURE. ONCE YOUR FUEL IS IN THE CONTAINER A VERY HAZARDOUS POTENTIAL EXISTS. USE A CLEAN SAFETY APPROVED STORAGE CONTAINER. DO NOT OVERFILL THE CONTAINER - ALLOW FOR EXPANSION.**

**WARNING**

**THE ENGINE IS DESIGNED FOR USE WITH UNLEADED MOGAS HAVING AN OCTANE RATING OF 95 RON OR 91 AKI OR ASTM D4814 (OR GREATER). USE AVIATION GASOLINE ONLY FOR SHORT PERIODS AND INSPECT FREQUENTLY FOR CYLINDER DEPOSITS. BE SURE TO USE PRODUCTS OF AT LEAST THE STANDARD SHOWN IN SECTION 1.**

**WARNING**

**ALWAYS GROUND THE AIRCRAFT THROUGH THE EXHAUST PIPE BEFORE REMOVING THE FUEL CAP.**

**WARNING**

**BEFORE THE FIRST FLIGHT OF THE DAY, AND AFTER EACH REFUELING, USE A SAMPLER CUP AND DRAIN A SMALL QUANTITY OF FUEL FROM THE FUEL TANK SUMP QUICK DRAIN VALVE - CHECK FOR WATER, SEDIMENT AND CONTAMINATION.**

### **1.7.1 Ground handling**

Move the aircraft on the ground by pulling on the propeller blades close to the hub. An optional tow bar can be attached to fittings. Aircraft can be steered using the rudder or, for sharp turns, by lowering the tail to raise nose wheel off the ground. In this case, towing to the favourable CG location, a gentle push on the tail cone just ahead of empennage surfaces is all that is needed. Avoid dragging nose wheel sideways and do not attempt to counter any movement of the aircraft by handling it by its wing tips.

**CAUTION**

AS A GENERAL RULE, APPLY FORCE TO AIRCRAFT STRUCTURE ONLY ON MAIN STRUCTURAL ELEMENTS SUCH AS FRAMES, RIBS OR SPARS.

See ANNEX A (Document & Miscellaneous group) to better understand how perform do this operation.

### **1.7.2 Parking and tie down**

It is recommended to use chocks when parking outdoors or in a hanger. If chocks are not available, use the parking brake. If possible, park the aircraft into the wind. Tie down points are located under the wing, use them in order to attach the aircraft to the ground using belts or ropes.

Whenever the aircraft needs to be parked or tie down, the following checks are required:

<b>ITEM</b>	<b>DEVICE</b>	<b>VALUE</b>
1	Radio/Intercom	OFF
2	Ignition Switches	OFF
3	Master Switch	OFF
4	Controls	LOCK with seatbelt
5	Fuel	OFF

**Table 6: Final securing procedure.**

### **1.7.3 Jacking**

See ANNEX A (Document & Miscellaneous group) for more details about this operation.

**CAUTION**



AS A GENERAL RULE, APPLY FORCE TO AIRCRAFT STRUCTURE ONLY ON MAIN STRUCTURAL ELEMENTS SUCH AS FRAMES, RIBS OR SPARS.

### 1.7.4 Towing

The aircraft can be towed pulling it by the propeller. Never push it by the tail surface or the tail cone as well. When pulling by the propeller, the nose wheel will rotate freely following the direction decided by the pilot permitting to address the aircraft to the desired place.

When/if backwards movements are required, lower at first the tail raising the nose wheel and then pull backward the aircraft or turn it as necessary.

See ANNEX A (Document & Miscellaneous group) for more details about this operation.

### 1.7.5 Taxiing

When taxiing, it is important that speed and use of brakes are minimized and that all controls are utilized to maintain directional control and balance. Taxiing over loose gravel or cinders should be done at low engine speed to avoid abrasion and pebbles damage to the propeller.

#### NOTE

DO NOT accelerate over loose gravel or cinders or propeller damage will result.

## 1.8 Tire inflation pressures

DESCRIPTION	VALUE
Standard Mains	2.2 bar (32 psi)
Nose	2 bar (29 psi)

Table 7: Tire inflation pressure.

## 1.9 Approved oil and capacities

DESCRIPTION	VALUE
Specification	RON 424
Oil Tank capacity	3 l (0.8 gal)
Motorcycle oil of a registered brand with gear additive	
NOTE: apply to all Rotax Engine types.	

Table 8: Approved oil grades and tank capacity.

## 1.10 Recommended fastener torque values

All satisfactory information about the fastener torque values are provided into ANNEX A (Document & Miscellaneous group).

## 1.11 General safety information

Complete information about safety devices such as seat and seat belts, parachute system, baggage compartment, canopy handling and ELT have already been provided into related POH (ANNEX C of POH).

For what concern the maintenance of these safety elements, see ANNEX A (Fuselage Body group).

## **1.12 Instruction for reporting information after maintenance**

### **1.12.1 Instruction for reporting possible safety/flight concerns**

The form in ANNEX B must be used by the owners to report safety of flight concerns found during inspection/maintenance. Please copy that page, cut out along the marked borders and send it to the Company contacts indicated in paragraphs A.2.

### **1.12.2 Manual Improvements and feedbacks**

The form in ANNEX C must be used by the owners to report improvements or corrections to this Manual. Please copy that page, cut out following the borders and send it to the Company contacts, see paragraph A.2.

### **1.12.3 Aircraft assembly**

In case it is necessary to disassemble or assemble the aircraft after or for transportation or maintenance activities, follow the indications provided into ANNEX A (Aircraft Assembly group).

### **1.12.4 Change in ownership**

The form in ANNEX D must be used by the owners to report a change of address/ownership. Please copy this page, cut out following the borders and send it to the Company contacts, see paragraph A.2.

## **2 Inspections**

Alpi Aviation considers the inspection schedule outlined below compulsory for safety operation on the airframe and systems over an extended period of time.

The described servicing requirements pertain to operation in non-extreme climatic conditions.

- ✓ For all the prescribed Rotax engines, unless otherwise stated, it is compulsory to adhere to maintenance requirements as listed in the latest revision/release applicable, at the time of maintenance, in the Engine Operators Manual and Engine Maintenance Manual.
- ✓ For all the prescribed propeller types, refer to the latest revision/release applicable, at the time of maintenance, of its Instruction Manual.

### **2.1 Inspection panels**

Inspection points that are not in plain view may be accessed through specific inspection panels or fairings described below and shown in the ANNEX A (Fuselage Body group):

Inspection panels on wing underside - access to:

- ✓ aileron bell cranks;
  - cabin (main spar and torque box);
  - inspection of the wing tank drains;
  - flap actuation bar
- ✓ Tail cone underside inspection panel - access to:
  - Main structure frame/control cables;
  - elevator relay to control lever;
- ✓ Tail cone end-fairing access to:
  - elevator relay to control lever;
  - attachment of vertical stabilizer aft spar;
  - elevator pushrod.

- ✓ Aft cabin bulkhead and baggage compartment floor – access to:
  - inspection of aft fuselage section and attachments;
  - inspection of elevator/rudder control system and of cable pulleys for rudder control;
  - access to flap actuator.
- ✓ Forward cabin central fairing - access to:
  - the fuel valves;
  - the rudder control cables;
  - retractable landing gear mechanism (if applicable).
- ✓ Instrument panel cover - access to instrumentation and radio;
- ✓ Engine cowling - access to:
  - engine and related systems;
  - access to main components of electrical system;
  - access to nose gear strut and steering assembly mechanism.
- ✓ Propeller spinner - access to propeller hub.
- ✓ Main and nose landing gear fairings – access to:
  - Wheel and tires;
  - Wheel installation bolts;
  - Brakes pad and discs;

## ***2.2 Airframe and systems inspection schedule***

Airframe and systems inspection schedule is as follows:

- ✓ Inspections for airworthiness before first flight of day as specified in POH;
- ✓ First inspection at 25 hours (In order to improve the maintenance attention and the overall safety, based on the company experience and mainly based on the engine early operation issue, the company, in addition to the 100 hr inspection, requires the first scheduled maintenance at 25 hours);
- ✓ Periodic inspections at every 100 hours;
- ✓ Special inspections, added to normal periodic inspections;
- ✓ Singular inspection, when aircraft has been exposed to conditions that may have damaged one or more of its components;
- ✓ If aircraft is rarely used, a “100-hour inspection” must be performed yearly;
- ✓ Replacement of parts subjected to usage limitations are specified in the ANNEX A;

## ***2.3 Inspections and checks***

Inspections and checks, unless specifically indicated, apply the following:

- ✓ Structures in general: Condition of panel covers, ribs, frames, stringers etc., absence of cracks, deformation, corrosion and any other apparent sign of damage;
- ✓ Moving parts: Lubrication, security of attachment, securing of bolts, absence of excessive play, proper adjustment, proper travel, condition of attachments and hinges, absence of corrosion, deformation, cleanliness;
- ✓ Fluid lines and hoses: Absence of leaks, cracks, dents, chafing, proper radius, deterioration;
- ✓ Bolts and attachments: Proper tightening and securing, absence of cracks or nicks, damage to thread, wear and excessive play, absence of any corrosion form.

## 2.4 100 hour/annual check list

After this first 25 hours maintenance, all other scheduled maintenances actions follow the 100 hours intervals. The check list for the maintenance actions are listed in the ANNEX A that clearly reports the prescribed actions subdivided in:

- ✓ I: Inspections actions;
- ✓ M: Maintenance actions;
- ✓ R: Replacements actions;
- ✓ C: On condition (check and replace if necessary) actions.

For each of the prescribed actions and for each functional group, the OS point out when and what to do, referring to detailed sheets that are part of the document as well.

## 2.5 Corrosion prevention

Keeping the aircraft in cleaned conditions and removing any collection of corrosive agents such as oil, grease, dregs and other foreign matter it is of crucial importance for the integrity of the structure. To avoid damage to the surface finishing, do not use polishing detergents. Composite materials or polymer related parts are subjected to degradation if not properly protected from environmental factors. Any undesirable change in properties or appearance of a composite material can be considered such as a form of degradation.

One of the first indicators of degradation is the change in the surface appearance or gloss, followed by a change in the color of the surface resin. Wood parts are not strictly affected by corrosion but may be affected by excess and prolonged exposition to humid environment hot and cold both.

In order to avoid premature degradation of wood characteristics, the aircraft must be stored within the prescribed limitations, see POH. Original or equivalent corrosion/degradation prevention must be re-applied after any alteration or repair.

If any trace of corrosion is detected it must be removed as soon as possible and immediately treated with the aim to prevent dangerous degradation of the affected component and related parts that could compromise the safety of overall flying operations. The general guidelines to prevent corrosion/degradation of various materials are:

**For steel parts:** with the exception of highly stressed components or stainless steel, it is possible to use abrasives, power brushes, steel brushes if operated manually and steel wool. Removing corrosion by products from highly stressed steel components (main gear steel spring) requires particular care.

**For aluminum parts:** treatment consists in mechanically removing as much as possible corrosion by products, applying corrosion inhibitor and replacing original finish. Steel wool, emery or steel brushes (unless stainless steel) along with other highly abrasive material should not be used since steel or emery particles become embedded in the softer material causing corrosion.

After cleaning surface corrosion, parts must be treated with an anti-corrosion finish prepared as follows:

- ✓ Applying corrosion inhibitor;
- ✓ Accurate brushing with a sturdy fiber brush will rid most of the corrosion and insure that the anti-corrosion agent will penetrate completely in the cracks;
- ✓ Leave the corrosion inhibitor on the part for at least five minutes and then remove excess with water or a damp cloth;
- ✓ Apply protective finish the same day in which treatment begins.

**For composite parts:** composite material or polymeric material degradation treatment is particularly difficult and requires special skill. If any composite or polymeric material degradation is

found, the owner or the maintenance technician must get in touch with the company or the dealers in order to find out the applicable MRA operating procedure.

**For wood parts:** wood material degradation treatment requires special skill. If wood material degradation is found, the owner or the maintenance technician must get in touch with the company or the dealers to find out the applicable MRA operating procedure.

See ANNEX A (Document & Miscellaneous group) for illustrative sketches.

## 2.6 Servicing

Some operations have to be made day by day, before to use the aircraft. They are listed below and connected with the related subject to be inspected.

SUBJECT	ACTION
Pitot and static ports	Check for obstructions
Oil	Check oil level
Coolant	Check coolant level
Fuel strainer	Drain fuel from wing tanks for water and sediment release; if water is present, drain also from the Gasgolator.
Fuel tank vents	Check for obstruction
Tires	Check condition and maintain proper tires pressure

**Table 9: Daily servicing**

Details on how perform the above mentioned operations are listed in ANNEX A and subdivided in their functional group.

## 2.7 Lubrication

Periodic lubrication of moving parts insures proper operation and considerably extends the life of the parts. Lubrication type, points and intervals are listed in the next paragraph and detailed in the ANNEX A (Document & Miscellaneous group).

Avoid excessive lubrication as this may cause external surfaces of hinges and bearing to collect dirt and dust. If part is not lubricated using a grease gun, grease part by hand removing excess. No maintenance operations are allowed on the wheel bearings because they are sealed and, thus, only replacement is prescribed as indicated in ANNEX A (FIXED or RETRACTABLE Landing Gear).

### NOTE

Use grease type Svitol Silikon Spry or equivalent. Mobil grease 27 is a Synthetic aviation grease that can be alternatively be used in substitution of the above mentioned Silikon grease.

### NOTE

Lubrication intervals strongly depends on use and environmental conditions. Generally speaking, lubrication intervals need to be more frequent as aircraft use increases and when environmental conditions are dry and hot.

### 2.7.1 Lubrication points

The following points needs to be properly lubricated, refer to ANNEX A (Document & Miscellaneous group) for detailed illustration about how to manage lubrications:

- Rudder hinges
- Trim-tab hinges
- Elevator hinges
- Elevator push rod end
- Elevator relay

- Aileron hinges
- Aileron bellcrank
- Aileron control pushrods
- Flap hinges
- Flaps control pushrods
- Flap actuator constraints
- Rudder pedals support
- Control stick lever and support
- Steering pushrod terminals
- Canopy sliding rails
- Retractable landing gear mechanisms (if applicable and with graphite grease only)

### 3 Structures

The Pioneer 300 aircrafts have a high-performance aerodynamics.

The P300 Primary Structures are: Wing wood structure, Fuselage wood, Aileron, Flap, Rudder, Elevator, Stabilisor Composite structure, main and Nose Landing gear, Engine Mount, Control System and Seats.

The P300 Secondary Structures are: Canopy, wing tips, engine cowlings, spinner, landing gear doors/fairings, dashboard, windshield, fuselage tail cone fairing,

The overall aircraft layout consists of:

- Traditional tail configuration;
- Low tapered wing platform;
- Tricycle landing gear, Fixed or Retractable;
- Steerable nose landing gear;
- 2 place, side by side arrangement with dual control sticks and a single central throttle;
- Tractor propeller;
- Hybrid structure made of wood and composite material, glued together;
- Horizontal stabilizer and vertical fin made of composite material;
- Wood control surfaces fabric covered;
- Detachable wing;
- Good visibility;
- Blue polycarbonate fully transparent canopy.

The expected aircraft (TBO) life is 2000h.

Additional information about Pioneer 300 aircrafts primary structure, could be found into relative POH, Chapter 7.

#### 3.1 Airframe

The aircraft has a hybrid wood-composite material structure organized in a conventional layout. Moreover, the main engine cowling, the wing skin, stabilizer and the landing gear fairings are made of glass/carbon fiber composite material. The wing structure main structural components are not made out of composite material.

The fuselage structure is made of a spruce trussed composite material covered layout including the fin structure itself. The wing, instead, consists of a single main spar layout with trussed ribs and

a rear spar that transfers the aileron and flap loads to the wing structure and react to the drag and torsion forces transmitted to the torque box.

Each part of the aircraft structure is made of spruce wood for high quality aircraft and the skins are made of birch plywood, introducing where needed also okumè, ash and poplar hard wood to spread out the concentrated loads as well as glass and carbon fiber skins.

### 3.1.1 Wing

The main lifting surface is a cantilevered wing designed in two pieces. These parts are connected using a docking structure placed exactly under the crew knees.

This kind of connection has two advantages: on one hand it allows for easy removal of the main wing, and on the other hand it permits a high degree of structural integrity of the main wooden beam.

Besides, this arrangement allows a great strain concentration in a limited area, where several external forces have to be counteracted. So it is possible to have a robust aircraft with a relatively little weight.

The wing's trailing edge is entirely movable. The inboard part is occupied by the slotted flap, while the outboard part is dedicated to the ailerons. The same kind of structure has been adopted for all the trailing edge devices.

Information about wing maintenance are given into ANNEX A (Wings and Control Surfaces group).

### 3.1.2 Tail

The tail has a classic cruciform arrangement. The horizontal tail surface (attached part) is a one-piece carbon composite part while the movable surface is a wood fabric covered part. Fin is composite made too and is integrated in the fuselage skins while rudder is a wood fabric covered part too. Trim control is achieved by an electrical actuated trim tab for both rudder and elevator.

Information about tail maintenance are given into ANNEX A (Wings and Control Surfaces group).

### 3.1.3 Landing gear (FIXED)

The Pioneer 300 aircrafts can be equipped with a standard tricycle Landing Gear System which could be divided into two component groups: main gears and nose gear.

**The main landing gear** is fixed and fully faired by glass fiber fairings. The gear legs are made of aeronautical grade aluminium alloy. The main landing gear legs are supported and installed in the fuselage by interfacing them to the wood structure by an aeronautical grade steel alloy structure. Main wheels are of the size 4.00-6".

The main wheels are equipped with disk brakes. Brakes are activated by a common lever at the cockpit center console and by toe brakes also.

**The nose landing gear** is fixed and fully faired by glass fiber fairings and supported by the engine mount frame. Steering is direct controlled by the rudder pedals.

The nose landing gear incorporates the air/oil damper system. Nose wheels are of the size 4.00-4".

Maintenance of both groups is described into many operational sheets collected into ANNEX A (Fixed Landing Gear group).

### 3.1.4 Landing gear (RETRACTABLE)

The Pioneer 300 aircrafts can be equipped with a retractable tricycle Landing Gear System which could be divided into two component groups: main gears and nose gear.

**Main landing gear.** The gear legs are made of aeronautical grade alloy. The main landing gear legs are supported and installed in the fuselage by interfacing them to the wood structure by an aeronautical grade steel alloy structure. Main wheels are of the size 4.00-6".

The main wheels are equipped with disk brakes. Brakes are activated by a common lever at the cockpit center console and by toe brakes also.

**Nose landing gear.** The gear leg is made of aeronautical grade alloy. Steering is direct controlled by the rudder pedals. The landing gear incorporates the air/oil damper system. Nose wheels are of the size 4.00-4”.

Maintenance of both groups is described into many operational sheets collected into ANNEX A (Retractable Landing Gear group).

### 3.1.5 Control system and aerodynamic surfaces

A brief discussion about the control systems and aerodynamic surfaces is given here below. Maintenance procedures are described by operational sheets provided into ANNEX A (Wings and Control Surfaces group).

- The **rudder control system** consists of a closed loop made up of steel cables which are preloaded to keep them taut.
- The **aileron control system** is actuated by push rods so it is “rigid” and directly connected to the control surface without any cable interface but connected with Uni Balls.
- The **Elevator control system** consists of a closed loop of steel cables that run between the control sticks and the aft relay bellcrank. There is a single push pull rod connecting the aft relay bellcrank to the elevators.
- The **Flap control system** is an electromechanical actuator motor which simultaneously controls both flap. It is electronically controlled by the pilot using an accurate switch. The installed configuration includes a flap computer that permits to set the flaps in stages at pre-configured values.
- The **Trim control system** consists of two trims in the standard configuration while a third one (the rudder) that is optional. All the trim tabs are actuated by an electrical push-pull actuator controlled by the pilot through a suitable switch located in the center tunnel inside the cockpit.
- The **braking system** refers to the toe brake control configuration inside the cockpit. The system allows individual control of the brakes through the toe brakes located only on the left rudder pedals and also allows simultaneously locking of both brakes using the locking valve inside the cockpit. Additionally, the system includes a T-handle in the center console which permits the co-pilot to apply the brakes either simultaneously (with the T-handle) or separately using toe brakes.

## 4 Engine

Maintenance operations about engine components described below are illustrated in the Operational Sheets of ANNEX A (Fuselage Body and Engine groups).

### 4.1 Engine & Engine Mount

The Pioneer 300 aircrafts are powered by a single Rotax engine with 4 cylinders, liquid cooled cylinder heads with an integrated water pump and expansion tank. The engine power is regulated by a throttle that controls the engine RPM.

If the installed engine, such as a Rotax 912 ULS, has a carburetor there is the possibility to apply a choke for the regulation of the cold start-up.

The engine mount structure is made of high-strength steel and the engine is attached to the engine mount through rubber mounts that help reduce vibration.



## **4.2 Engine cowling**

The engine cowling is made of composite material; the upper cowl can be simply removed for inspections. Additionally, there is an oil access door located in the upper, right-hand portion of upper engine cowling that allows easy access to the oil fill neck/dip stick, making removal of the cowl unnecessary during pre-flight inspections. The lower cowl is attached to the fuselage frame but is easily removed for any necessary maintenance (see Maintenance Manual for more details).

## **4.3 Exhaust/Muffler system**

The exhaust system is made of stainless steel. Muffler is also covered with a shroud that is used as a heat exchanger to draw hot air for the cabin.

## **4.4 Air induction system**

A suitable amount of air is guaranteed by the presence of different air intakes which have been designed in order to improve their functioning during the flight operations and speed increasing.

In fact, there is a vent on the top-left (pilot view) of the engine cowling which provides air to the engine (or directly to the airbox when this latter is installed).

Another vent is applied on the left side (pilot view), in correspondence of the engine firewall bulkhead, with the aim to provide air into the cabin.

A very exhaustive description of the air induction system is given by the engine manufacturer in the Engine Operators Manual.

## **4.5 Oil system**

The oil system is an integral part of the engine, except for the cooler that is mounted on the top right (pilot view) of the engine cooling plenum, above the engine. Moreover, the air flow is forced by a dynamic duct that ensure a suitable air induction during the flight for best oil cooling. The oil filler is on the right side of the engine too.

## **4.6 Cooling system**

The cooling system is an integral part of the engine, except for the cooler that is mounted on the bottom (pilot view) of the engine gearbox, below the engine sump.

The coolant expansion box is located in the upper engine area, just behind the gear box while the coolant tank is located on the firewall right side (pilot view).

## **5 Fuel system**

The fuel system is equipped with two fuel tanks integrated within the wing leading edge and eventually an auxiliary fuel tank installed just in front of the dashboard.

In the cabin, between the two pilots, there is a fuel valve that permits the actual fuel tank selection and also to stop the fuel flow to the engine. The fuel flows from this valve (when open) to the gascolator which contains both a strainer screen and a drain valve.

Starting from the gascolator, the fuel passes through the electric pump/pumps that push it through a distribution fitting towards the fuel injectors or the carburetors (see Rotax applicable EOM).

Excess fuel is routed back to the fuel valve and from it there is returned to the tank in use. Each tank is vented to balance the internal pressure.

Each fuel tank is equipped with individual float-sensor that measures the fuel level and is connected with its gauge located on the panel. A pressure indicator on the instrument panel is also connected to the fuel line. Each main fuel tank has a dedicated vent that is located just underneath the wing lower skin while the auxiliary fuel tank has a dedicated vent that is connected to the fuselage front floor.

Fuel drains are located just underneath the main fuel tanks and are accessible from the lower wing leading edge. Draining can simply be done when necessary by using standard Aircraft Fuel Testers.

See ANNEX A (Fuel System group). for details on the basic propeller maintenance. For all other information about this component, please refer to the engine manufacturer.

## **6 Propeller**

The Pioneer 300 aircrafts may be equipped with different propeller types (see Table 4).

See ANNEX A (Engine Group) for details on the basic propeller maintenance. For all other information about this component, please refer to the propeller manufacturer.

## **7 Utility systems**

### **7.1 Cabin heat and cooling**

Cabin ventilation is achieved by conveying ram air through a NACA air intake located on the lower left side of the engine cowling (pilot's view). This air intake also ducts the ram air through the system to the heat exchanger to provide heat to the cockpit if required.

Both the fresh air and the heated air can be opened, closed and adjusted by the pilot by using the controls/devices described in the POH.

See ANNEX A (Cockpit and Interiors group) for details about maintenance and repair actions.

## **8 Instruments and avionics**

The instrument panel adopted for a generic Pioneer 300 aircraft changes on the basis of the chosen engine type and the preferences of the aircraft holder. The maintenance actions about this instrument are well described into ANNEX A (Electrical and Avionics group).

Individual instruments may be accessed for removal by releasing a screw and sliding instrument panel. Before removing individual instruments, use particular care in disconnecting wires, hoses or other links as the case applies.

When installing instruments, also follow these general recommendations:

- ✓ Do not over-tighten bolts as plastic instrument casing may break;
- ✓ Ensure hoses are free of any foreign matter and that no tight radius turns are present as this may choke hose or cause malfunction;
- ✓ Insure proper grounding and tightening of all electrical instruments.

### **8.1 Instruments that require sensors**

The instruments that requires specific sensors/gauges to operate are:

- 1) Oil temperature indicator;

- 2) Coolant/Cylinder head temperature indicator;
- 3) Oil pressure indicator;
- 4) Fuel pressure indicator;
- 5) Engine Rpm indicator;

Sensors related to the above mentioned instruments are located as follow, see ANNEX A (Engine group):

- 1) Oil temperature sensor is located on the Engine oil pump tube and is marked with “TO” on the pump flange;
- 2) Coolant/Cylinder head temperature sensors are located on cylinders 2 or 3;
- 3) Oil pressure sensor is located on oil tube;
- 4) Fuel pressure sensor is shown in ANNEX A (Engine group);
- 5) Engine Rpm sensor shown in ANNEX A (Engine group).

## **8.2 Pitot-static system**

The Pitot system senses dynamic pressure through a custom tube that is aligned with the flow of air and is located under the leading edge of the right wing. The pitot installation and layout is described in ANNEX A (Dashboard & Instrument group).

The static pressure source for each instrument is derived by a dedicated tube used to measure only static pressure and not dynamic pressure. Because of this, the indications for airspeed, altitude, and rate of climb are not affected by opening the windows, door, or cabin air vents.

Because of moisture formation possibility into the airspeed system, a drainage operation should be performed very frequently. It is made by disconnecting the cap that closes the “T” fitting just outside the fuselage lower skin, below the right wing root.

Servicing the system is very effortless and, according to the checklist reported in ANNEX A (Dashboard and Instruments group), it can be carried out by simply removing the tubes from the instruments and blowing air in the direction of the ports and never vice versa, clearing possible obstructions and checking line condition.

Visually and frequently check the pitot tube and static ports to assure they are clear of possible obstructions.

For safety reasons and in order to ensure correct airspeed readings, it is important to check the airspeed system for leaks adopting the following procedure:

- ✓ connect a piece of rubber hose approximately 30 centimetres (12 inches) long to the pitot tube,
- ✓ close off the opposite end of the hose,
- ✓ slowly roll it up until the airspeed indicator shows cruise speed.

A steady reading is an indication the system has no leaks.

### **WARNING**

**AVOID BLOWING AIR THROUGH PITOT OR STATIC PORTS, AS THIS CAUSES IMMEDIATE DAMAGE TO THE AIRSPEED INDICATOR.**

## **9 Electrical system**

The main sources of electrical energy are a 12-volt DC battery and a 14-volt DC alternator.

The system has over voltage protection and an integral voltage regulator. The main battery is located inside the engine cowling and positioned on the firewall left bottom area (pilot view). The relevant electric powered devices get their direct power through the circuit breakers.

By turning ON the Master Switch, while the engine is running, a red warning light, located just above the Ignition Switch, will flash on if the generator has failed or the regulator/rectifier is not operating. Just alongside the red light there is a green light that will flash on when the battery is rightly connected.

Breakers and switches are listed into ANNEX C12 of your POH, within the panel description.

The schematic diagram of the electrical system including the typical legend of electrical components is shown in ANNEX A (Electrical & Avionics group).

## **9.1 Battery check, removal and installation**

Battery check should be performed every 100 hours or more frequently if operating in warm climates. See ANNEX A (Electrical & Avionics group) for detailed maintenance procedures and information.

## **9.2 Internal AC Generator**

The generator is a permanent magnet type and supplies alternate current to a regulator/rectifier. Servicing or repair of the generator must be carried out only by Rotax authorized personnel and based on the Rotax approved Maintenance Manuals.

## **9.3 Exterior lights**

Exterior lights, whose electric wiring drawing is illustrated by many operational sheets into ANNEX A (Electrical & Avionics group), consist of:

- ✓ **Navigation Lights**  
Navigation lights are installed on the wing, controlled by a single switch located on instrument panel and protected by a breaker. A green light is located on right wing tip, whilst a red light is on the left wing tip;
- ✓ **Landing lights**  
The landing lights are located on the lower engine cowling. Each light is protected by a breaker. Switches and breakers are located on the instrument panel;
- ✓ **Strobe lights**  
The strobe lights are installed in the wing tips. Strobe lights are activated by a switch and are protected by a breaker. Switches and breakers are located on the instrument panel. A test of the strobe light may have to be done while the engine is running since the battery may or not have enough voltage to power the strobe lights.

## **9.4 Stall warnings (if installed)**

The stall warning system consists of an airflow sensor and of an electric horn. The airflow sensor is mounted on the leading edge of the right wing. As the aircraft approaches to a stall speed, the sensor activates the acoustic alarm system which is made up of a cabin-installed horn. In case of removal or replacement of the stall sensor, it is recommended to reinstall it so as to be effective in detecting stall condition from 1 to 3 kts before the stall speed indicated in the POH. Never paint the stall-warning sensor under any circumstance. Details are described in the ANNEX A (Electrical & Avionics group).

## **9.5 Flap computer (if installed)**

The flaps are simultaneously actuated by an electromechanical actuator and controlled electrically by the pilot through a special single switch (flap computer) located on the instrument panel. Power entering to the flap actuators is protected by a breaker. The flap computer allows the flaps to be deployed in steps at pre-configured values. The flap computer is pre-set by the company. In case reset is necessary, consult the OEM User Manual. Additional information is included in the in the ANNEX A (Electrical & Avionics group) in order to manage this operation.

## **9.6 External power source (for engine startup)**

Plug the Alpi Aviation standard connector (supplied in bundle with the aircraft) into the cowl port side. Be sure that the red wire connects with the positive and black one with the negative in the external power unit. Start as for normal operation. Be careful about the propeller when removing the external plug. Additional information is included in the in the ANNEX A (Electrical & Avionics group) in order to manage this operation.

### **CAUTION**

WHEELS MUST BE CHOCKED. BRAKES MUST BE ON. FACE AIRCRAFT INTO WIND. ENSURE PROPELLER IS CLEAR. ENSURE QUALIFIED PERSON IS IN THE PILOT'S SEAT.

## **10 Structural repair**

### **10.1 Type of maintenance**

According to ASTM F2483-12 definition, already recalled in para. 1.1, the maintenance, repair or alteration prescribed for this operations are defined **Heavy**.

### **10.2 Minimum level of certification**

- Repairman, Light Sport Aircraft-Maintenance (RLSA-M) or higher;
- For composite and wood components Alpi Aviation task specific training is required;
- Authorized Alpi Aviation Service Centres are equipped to perform this type of repairs.

### **10.3 Repair procedures**

No structural repairs are authorized without further consultation with the manufacturer.

Structural repairs on composites or wood parts of this aircraft cannot be defined by standard procedures. The combination of materials on this aircraft is in some areas unique. Therefore, in any case, the individual repair procedure has to be agreed with the airframe manufacturer upfront. Approval of the manufacturer is also necessary to ensure compliance with applicable standards and regulations.

### **10.4 Materials necessary for small repairs**

The minimum set of materials to accomplish small repairs are herein listed. For further details contact the facility, see A.2 Original Equipment Manufacturer.

- Filler (suitable for wood, steel, aluminum and plywood);
- Fabric Glue;
- Fabric primer;
- Epoxy resin (with catalyzer);

- White finishing;
- Glass fiber fabric balanced (100 gr/sqm);
- Metric Screws and bolts (M3 to M6);
- Self-tapping screws

## **11 Painting and coatings**

See ANNEX A (Fuselage Body group).

## **12 Feedback form**

See ANNEX C.

## **ANNEX A: CHECKLIST OF MAINTENANCE OPERATIONAL SHEETS, PD9001A0**

The OP sheet attached to this annex is aimed to collect and resume all the time intervals and the practical operations to be performed on the most general Pioneer 300 aircraft family. Each operation scheduled within that document is associated with the proper illustrative operational sheet that explain, by words and images, the correct way to accomplish the maintaining tasks. Instructions to the reading of these technical documents has been given in para 1.2.

Please check only those functional groups regarding your actual aircraft configuration and follow the instructions.

### **WARNING**

**SOME OPERATIONAL SHEETS ARE REFERRED TO “P300 KITE” MODEL THAT IS THE OLD DESIGNATION FOR THE ACTUAL P300FG CONFIGURATION.**

# ANNEX B: REPORTING FLIGHT/SAFETY CONCERNS

<b>FLIGHT/SAFETY CONCERNS REPORTING FORM</b>			
NAME (last, first) .....			
COMPANY/ORGANIZATION .....			
ADDRESS (NUMBER AND STREET) .....			
CITY	.....		
STATE/PROVINCE	.....	POSTAL CODE	.....
COUNTRY	.....		
TELEPHONE N° .....			
EMAIL .....			
DESCRIPTION OF FLIGHT/SAFETY CONCERNS FOUND DURING INSPECTIONS/MAINTEN.: ..... ..... ..... ..... ..... ..... .....			
SIGNATURE .....		DATE .....	
<b>FOR THE COMPANY ONLY</b>			
RECEIVED AND MANAGED BY: .....		DATE RECEIVED: .....	



# ANNEX C: IMPROVEMENTS, CORRECTIONS AND FEEDBACKS

<b>IMPROVEMENTS OR CORRECTIONS, FEEDBACK</b>			
NAME (last, first) .....			
COMPANY/ORGANIZATION .....			
ADDRESS (NUMBER AND STREET) .....			
CITY	.....		
STATE/PROVINCE	.....	POSTAL CODE	.....
COUNTRY	.....		
TELEPHONE N° .....			
EMAIL .....			
DESCRIPTION OF SUGGESTED IMPROVEMENT, CORRECTIONS OR FEEDBACKS: ..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....			
SIGNATURE .....		DATE .....	
<b>FOR THE COMPANY ONLY</b>			
RECEIVED AND MANAGED BY: .....		DATE RECEIVED: .....	

## ANNEX D: CHANGE OF ADDRESS/OWNERSHIP

<b>CHANGE OF ADDRESS/OWNERSHIP FORM</b>			
AIRCRAFT SERIAL NUMBER: .....			
AIRCRAFT REGISTRATION NUMBER: .....			
CURRENT OWNER: (Last, First): .....		NEW OWNER: (Last, First): .....	
PREVIOUS ADDRESS: (STREET, NUMBER): .....		NEW ADDRESS: (STREET, NUMBER): .....	
CITY: .....		CITY: .....	
STATE/PROVINCE: .....	POSTAL CODE: .....	STATE/PROVINCE: .....	POSTAL CODE: .....
COUNTRY: .....		COUNTRY: .....	
TELEPHONE N°: .....		TELEPHONE N°: .....	
EMAIL: .....		EMAIL: .....	
SIGNATURE .....		DATE .....	
<b>FOR THE COMPANY ONLY</b>			
RECEIVED AND MANAGED BY: .....		DATE RECEIVED: .....	

## ANNEX E: NOTICES APPLICATION LOG ( 1 OF ... )

NOTICE N°	ISSUE DATE	INTRODUC. DATE	INTRODUC. BY (NAME/SURNAME)	SIGN
..... - .....	...../...../.....	...../...../.....	.....	.....
NOTE: ..... ..... .....				
NOTICE N°	ISSUE DATE	INTRODUC. DATE	INTRODUC. BY (NAME/SURNAME)	SIGN
..... - .....	...../...../.....	...../...../.....	.....	.....
NOTE: ..... ..... .....				
NOTICE N°	ISSUE DATE	INTRODUC. DATE	INTRODUC. BY (NAME/SURNAME)	SIGN
..... - .....	...../...../.....	...../...../.....	.....	.....
NOTE: ..... ..... .....				
NOTICE N°	ISSUE DATE	INTRODUC. DATE	INTRODUC. BY (NAME/SURNAME)	SIGN
..... - .....	...../...../.....	...../...../.....	.....	.....
NOTE: ..... ..... .....				
NOTICE N°	ISSUE DATE	INTRODUC. DATE	INTRODUC. BY (NAME/SURNAME)	SIGN
..... - .....	...../...../.....	...../...../.....	.....	.....
NOTE: ..... ..... .....				
NOTICE N°	ISSUE DATE	INTRODUC. DATE	INTRODUC. BY (NAME/SURNAME)	SIGN
..... - .....	...../...../.....	...../...../.....	.....	.....
NOTE: ..... ..... .....				

**NOTE:** Add more pages whenever required numbering each page in the field above.

# ANNEX F: MAINTENANCE LOG (1 OF ... )

DATE OF MAINTENANCE	TYPE OF MAINTENANCE	H-METER RECORD	EXECUTED BY (NAME/SURNAME)	SIGN
...../...../.....	.....	.....	.....	.....
NOTE: .....				
.....				
.....				
DATE OF MAINTENANCE	TYPE OF MAINTENANCE	H-METER RECORD	EXECUTED BY (NAME/SURNAME)	SIGN
...../...../.....	.....	.....	.....	.....
NOTE: .....				
.....				
.....				
DATE OF MAINTENANCE	TYPE OF MAINTENANCE	H-METER RECORD	EXECUTED BY (NAME/SURNAME)	SIGN
...../...../.....	.....	.....	.....	.....
NOTE: .....				
.....				
.....				
DATE OF MAINTENANCE	TYPE OF MAINTENANCE	H-METER RECORD	EXECUTED BY (NAME/SURNAME)	SIGN
...../...../.....	.....	.....	.....	.....
NOTE: .....				
.....				
.....				
DATE OF MAINTENANCE	TYPE OF MAINTENANCE	H-METER RECORD	EXECUTED BY (NAME/SURNAME)	SIGN
...../...../.....	.....	.....	.....	.....
NOTE: .....				
.....				
.....				
DATE OF MAINTENANCE	TYPE OF MAINTENANCE	H-METER RECORD	EXECUTED BY (NAME/SURNAME)	SIGN
...../...../.....	.....	.....	.....	.....
NOTE: .....				
.....				
.....				
DATE OF MAINTENANCE	TYPE OF MAINTENANCE	H-METER RECORD	EXECUTED BY (NAME/SURNAME)	SIGN
...../...../.....	.....	.....	.....	.....
NOTE: .....				
.....				
.....				

**NOTE:** Add more pages whenever required numbering each page in the field above

## **ANNEX G: APPLICABLE PLACARD AND MARKINGS**

# ANNEX H: SPECIAL TOOLS

**END OF DOCUMENT**