Flight Safety Solutions

SOCIAL MEDIA
&
IT'S EFFECT ON AVIATION SAFETY

MAINTENANCE DATA EDITION

BAD ATTITUDE Advanced Flight Training

STRIKE Aviation Training

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STRIKE Aviation Training

Grade 1 Flight Instructor

- Tail Wheel
- MPPC
- Retractable
- Aerobatics
- Formation
- Spinning
- UPRT Specialist

RAAus Flight Instructor (Previously CFI)

- Tailwheel
- Manual Propeller
- Low Performance
- High Performance
- 2 Stroke
- Formation

GLIDING AUSTRALIA

Tow Pilot

Air Experience Instructor (Not Current)

HOO - CASR Part 138

- Banner Towing

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RAAus and CASR Part 141
FLIGHT TRAINING

STRIKE Aviation Training

DESIGN FEATURE & FLIGHT ACTIVITY TRAINING

SPECIALISING IN
LOSS of CONTROL InFlight PREVENTION TRAINING
(UPRT)

BAD ATTITUDE
Advanced Flight Training

BAD ATTITUDE Advanced Flight Training

STRIKE Aviation Training

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MAINTENANCE

16 Years - RAAF Avionics Technician

GSE
F111
Caribou
RAAF Museum
Maintenance Planning Specialist

2 Years - Royal Air Force of Oman

Maintenance Planning Specialist
PC9, C130, BAC111, SC7, Jaguar
Paper Records – Full Electronic Records

6 Years – CANADA

Airlines & GA
QA & Avionics Maintenance Manager

8 Years - PNG National Jet/Cobham

(OKTEDI) FIFO
SBE for three DASH 8-100

LAME – Australia, Canada, PNG

DASH 8 – Classic & 400
GA Fleet Management

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Aircraft Owner/Operator Support
Sport & Recreational Aviation Maintenance Training
Fully Compliant Electronic Aircraft Records System
(CASR43 Ready)

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LSA & EXPERIMENTAL AIRCRAFT MAINTENANCE TRAINING

CASR Part 43

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AIRCRAFT OWNER 101 TRAINING

CONTINUING AIRWORTHINESS MAINTENANCE ORGANISATION (CAMO)

BREEZYLOG

EFB Aircraft Record Keeping

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THIS PRESENTATION

IS NOT 2ND OR 3RD HAND

IS 100% PERSONAL EXPERIENCE

IMPROVEMENT OF THE SYSTEM FOR SAFER AVIATION IS THE DESIRED OUTCOME

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Photo by T. L. Fuller
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WHAT IS AIRWORTHY?

According to ICAO Annex 8, the term airworthy means

"The status of an aircraft, engine, propeller or part when it conforms to its approved design and is in a condition for safe operation."

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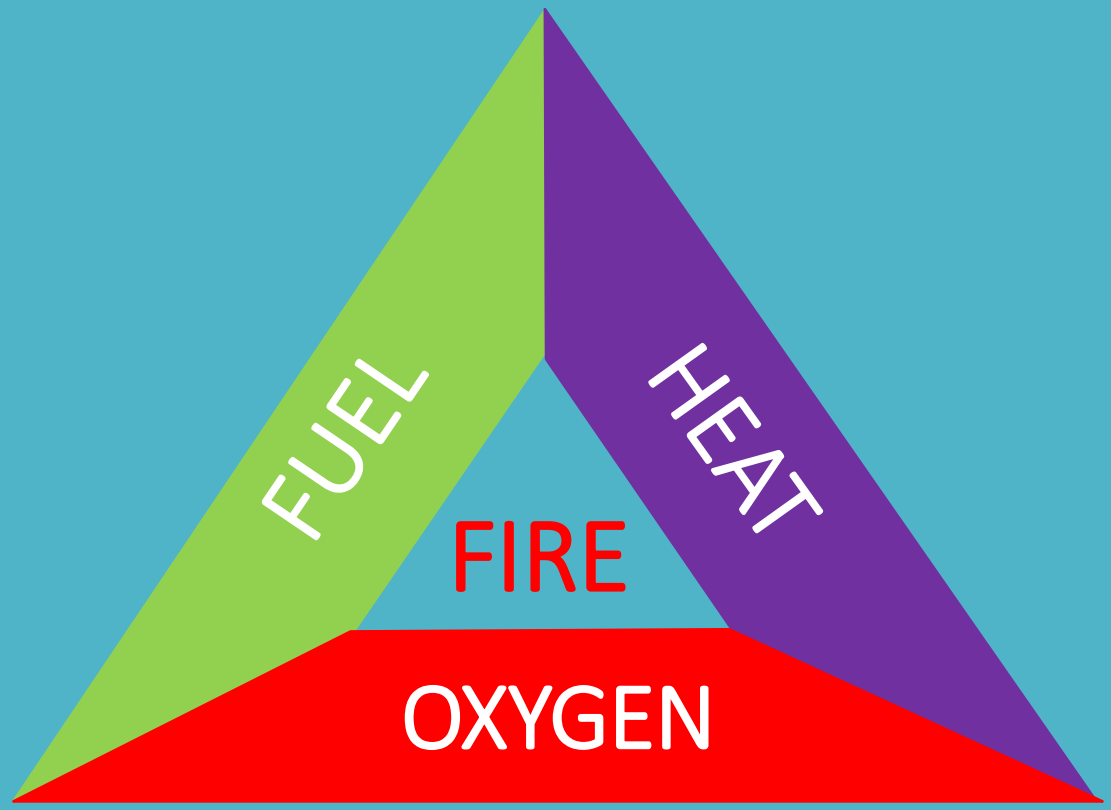
FIRE TRIANGLE



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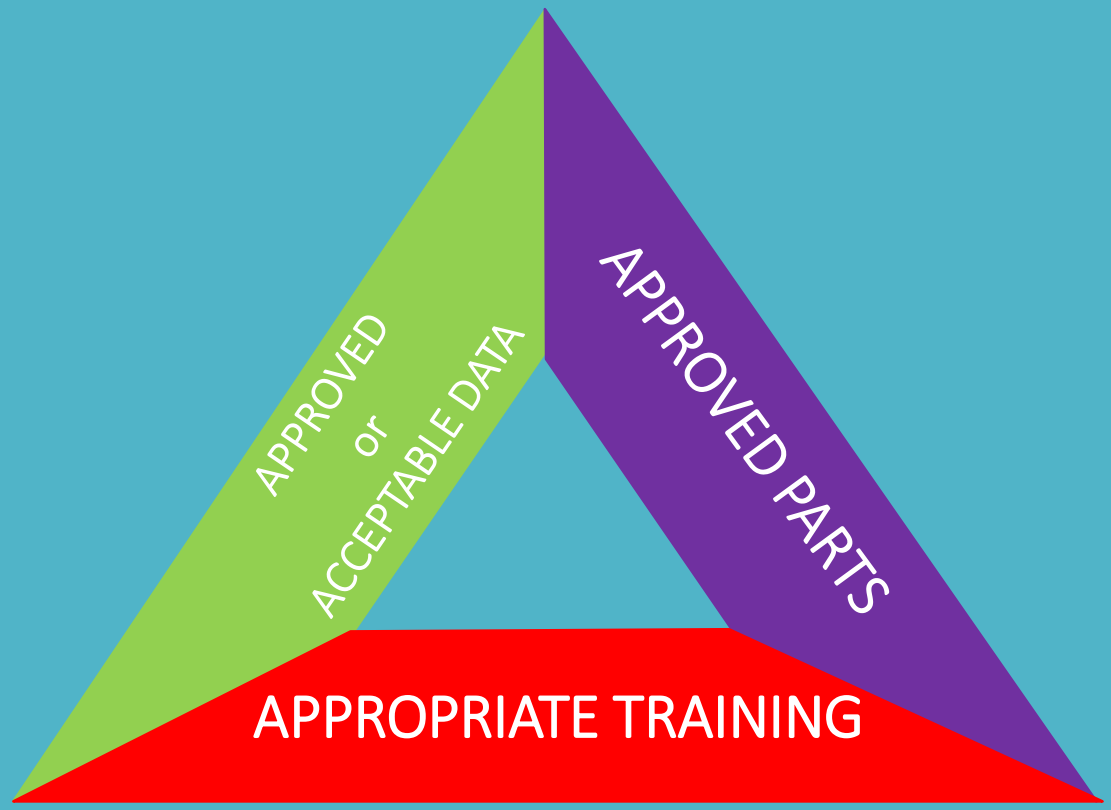
COMPONENTS FOR MAINTENANCE INTEGRITY



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MAINTENANCE SAFETY CIRCLE

AIRWORTHINESS

Manufacturer builds aircraft/component to a "STANDARD" & monitors airworthiness, issuing "ICAW"

Owner/Operator selects and monitors the appropriate maintenance program "WHAT"

Maintainer performs maintenance IAW the appropriate standards of airworthiness "HOW"

Pilot ensures ALL maintenance "HAS" been performed before flight

ALL aviators keep accurate and visible records and adhere to a "JUST" reporting culture

Regulators and Administrators review reports, liaise with the Manufacturer to issue "ICAW"

Flight Safety Solutions

Manufacturer builds aircraft/component to a "STANDARD"

TYPE CERTIFIED	SPORT AIRCRAFT	EXPERIMENTAL	LIMITED
FAR23 FAR25 Approved by a Regulator	ASTM ASTM International *formerly known as* *American Society for Testing and Materials* "SELF CERTIFYING"	KITS Must be built exactly per the plans to produce a clone copy of the manufacturers production built SLSA to be eligible for ELSA certification. NAPKIN Modification to KITS or CAO 95-10	WARBIRDS Ex-Military

Flight Safety Solutions

Owner/Operator selects and monitors the appropriate maintenance program "WHAT"

AIRCRAFT OWNER 101 TRAINING

FLIGHT TRAINING PROVIDERS

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Maintainer performs maintenance IAW the appropriate standards of airworthiness "HOW"

Standards – Removal of CAR 30

- CASR Part 43

- RAAus L2 Training

Standards

Hard to make a buck – “Grey Maintenance”

Inadequate documentation

KIEV PROPELLER IMPORT - FIRST OF TYPE

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Pilot ensures **ALL** maintenance "HAS" been performed before flight

1.2 Maintenance includes all of those actions which are carried out on a recreational aircraft to ensure the aircraft is fit for flight and includes inspection, adjustment, repair and the incorporation of modifications. Maintenance **excludes** the design or redesign of modifications.

The pilot- in-command of a recreational aircraft must ensure that the aircraft is fit for flight, currently registered and correctly maintained before each flight.

RAAus Technical Manual 4.1

"I just want to go flying" - Blind Trust

Changing Standards –Maintenance Releases

ALL aviators keep
accurate and visible
records and adhere to a
"JUST" reporting culture

“Do I have to report that?”

What’s the point??

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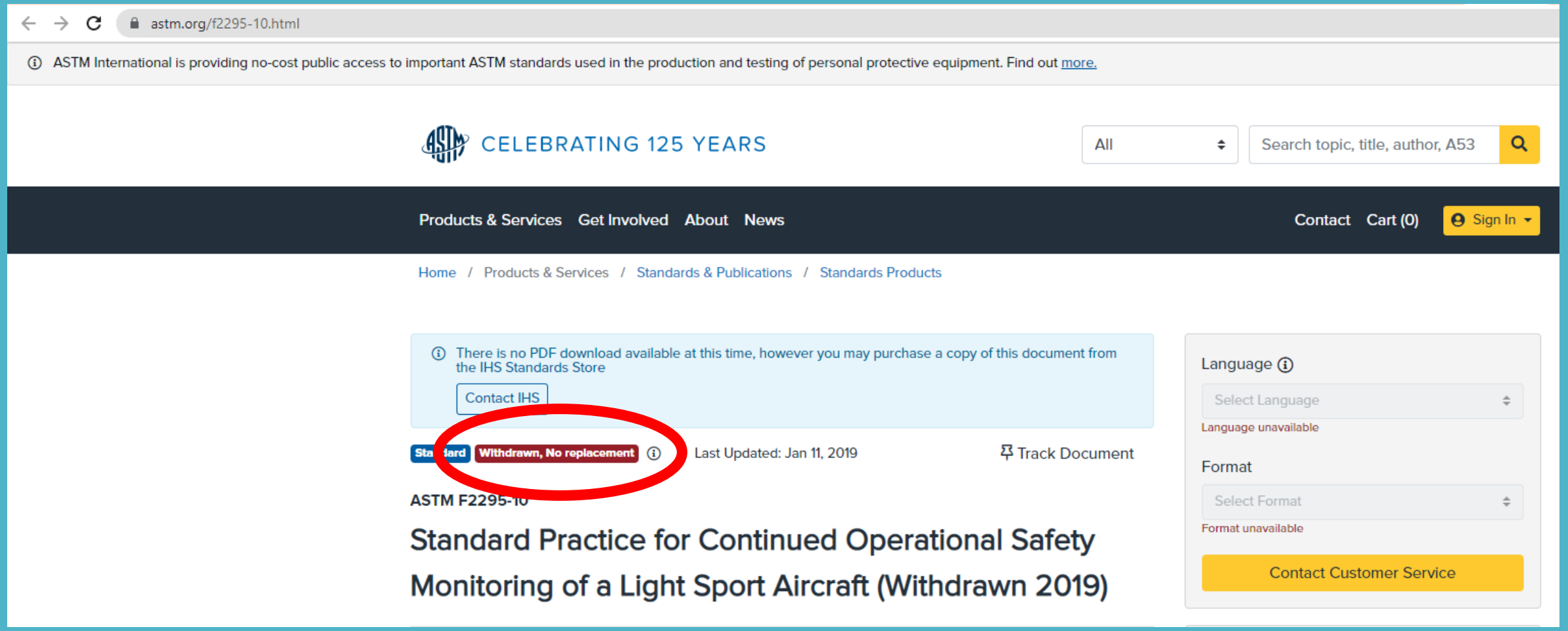
Regulators and Administrators review reports, liaise with the Manufacturer to issue "ICAW"

Manufacturers ***REQUIRED*** to monitor airworthiness, issuing "ICAW"

2.4 Continued operational safety monitoring of light sport aircraft

2.4.1 CASA requires the manufacturer to use a system to monitor and correct safety-of-flight issues in accordance with an approved LSA standard. For as long as an LSA is registered in Australia, it remains the manufacturer's responsibility to monitor for unsafe conditions in aircraft and notify owners/registered operators of corrective actions. It is incumbent on the manufacturer to evaluate all significant defects and correct any unsafe condition that may exist in the remaining fleet. To achieve this, the manufacturer should provide a method for the aircraft owner/registered operator to report any in-service difficulty.


astm.org/f2295-10.html
ASTM International is providing no-cost public access to important ASTM standards used in the production and testing of personal protective equipment. Find out more.
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Track Document
ASTM F2295-10
Standard Practice for Continued Operational Safety Monitoring of a Light Sport Aircraft (Withdrawn 2019)
Language
Select Language
Language unavailable
Format
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Format unavailable
Contact Customer Service

MAINTENANCE SAFETY CIRCLE

AIRWORTHINESS

Manufacturer builds aircraft/component to a "STANDARD" & monitors airworthiness, issuing "ICAW"

Process for "IMPORT"

Owner/Operator selects and monitors the appropriate maintenance program "WHAT"

Understanding "RESPONSIBILITY"

Maintainer performs maintenance IAW the appropriate standards of airworthiness "HOW"

Avoiding "GREY MAINTENANCE"

Pilot ensures ALL maintenance "HAS" been performed before flight

Understanding the "RISK"

ALL aviators keep accurate and visible records and adhere to a "JUST" reporting culture

The importance of reporting "CULTURE"

Regulators and Administrators review reports, liaise with the Manufacturer to issue "ICAW"

The absence of "OVERSIGHT"

#HARDTODOTHERIGHTTHING

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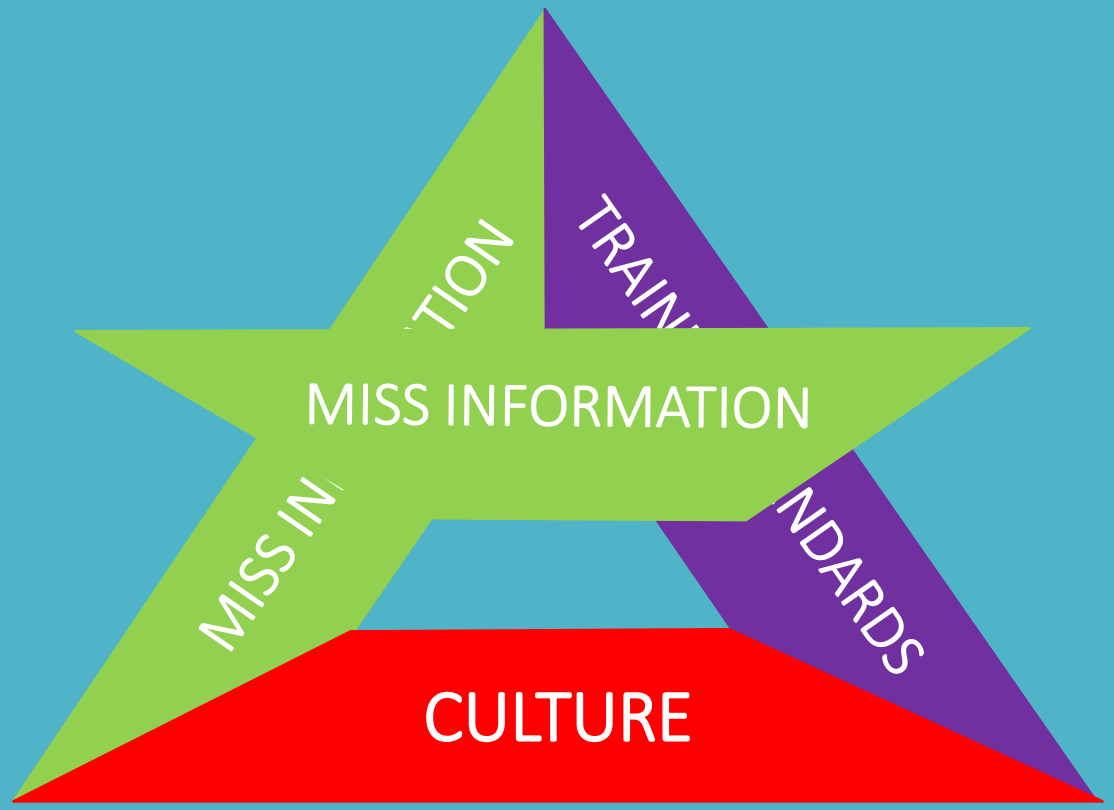
CONTRIBUTORS TO LOSS OF MAINTENANCE SYSTEM INTEGRITY



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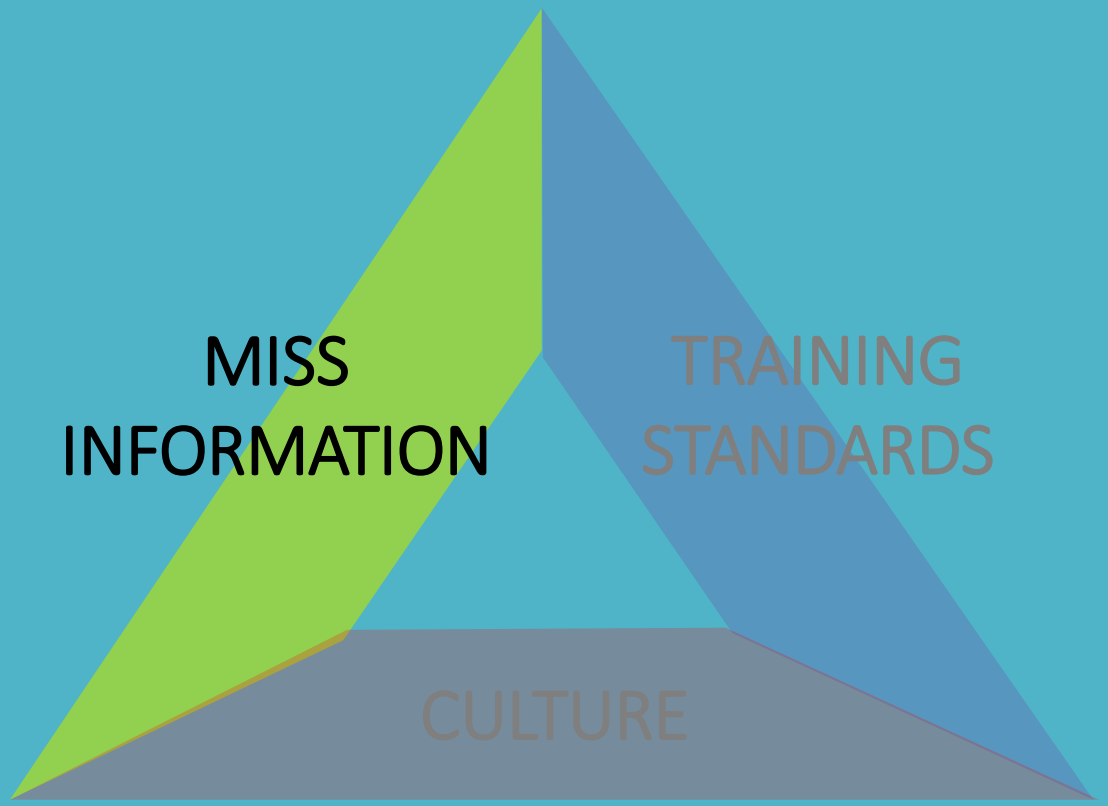
Are Social Media Platforms a Reliable Source for Information?



ACCESSIBILITY

- Manufacturers Data – Hard to find
- Social Media - Easy

CONTENT

- Anything is fair game

SOURCE DATA

- Whatever the individual feels like posting

VALIDATION

- There is no authentication of data

CREDIBILITY

- The more “Followers”, the more the credibility.

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WHY ARE PEOPLE TURNING TO SOCIAL MEDIA FOR HELP TO FIND AIRWORTHINESS DATA?

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WHAT DID WE DO BEFORE THE INTERNET??

WHERE DID WE FIND MAINTEANCE DATA??

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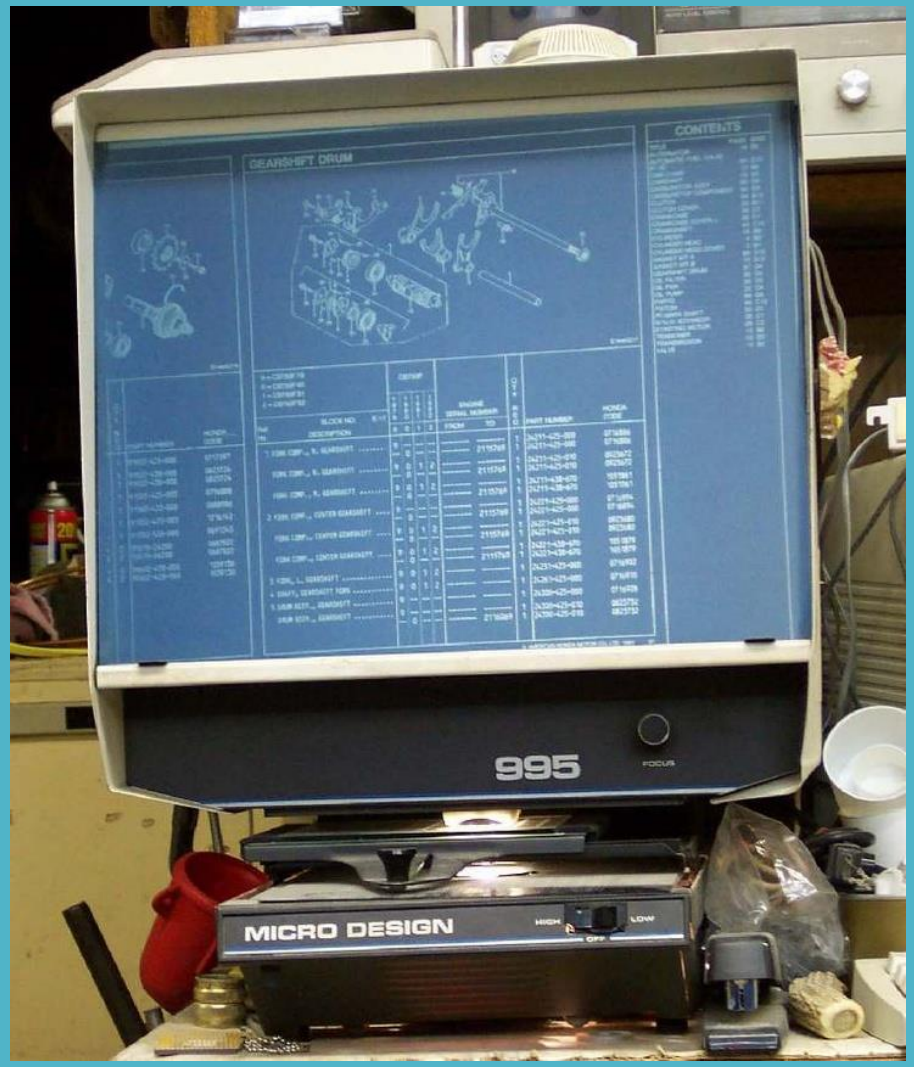
TRANSPORT CATEGORY AIRCRAFT



SORTED BY ATA CHAPTERS

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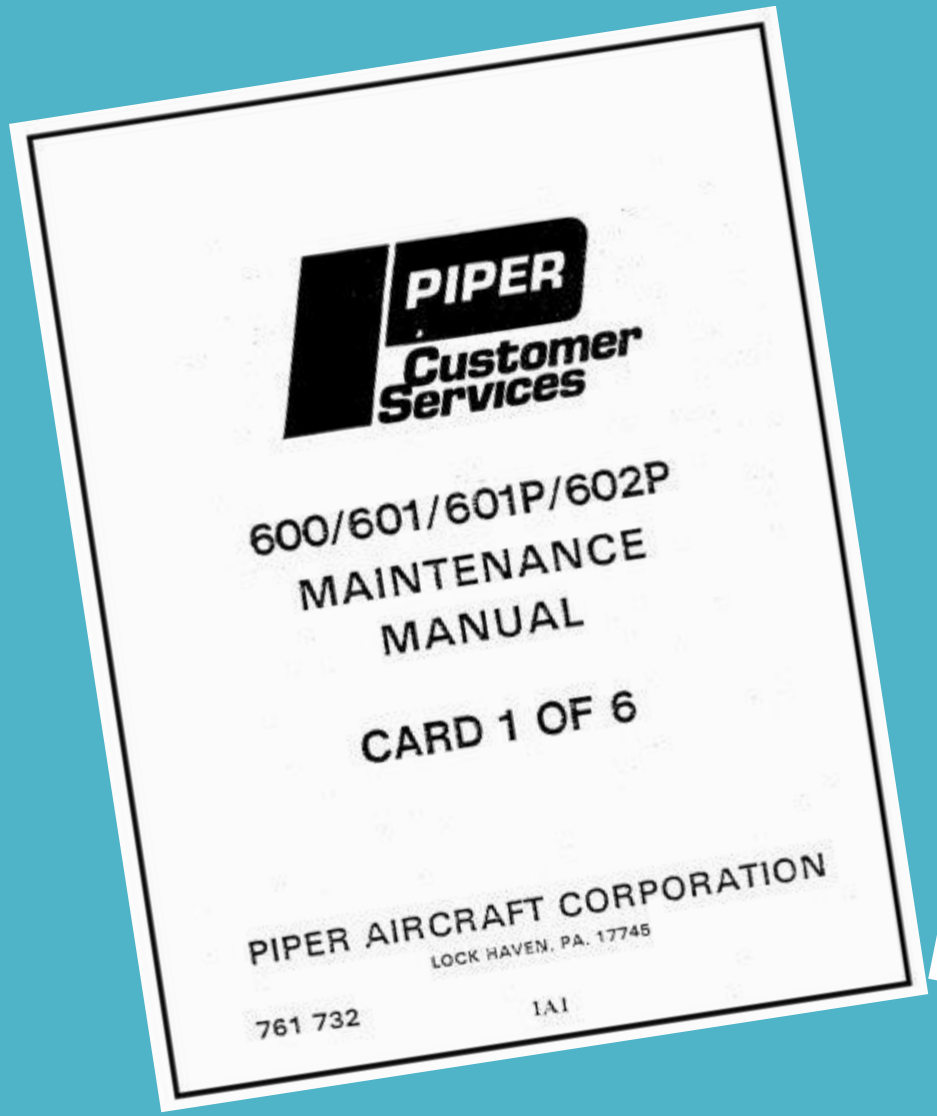
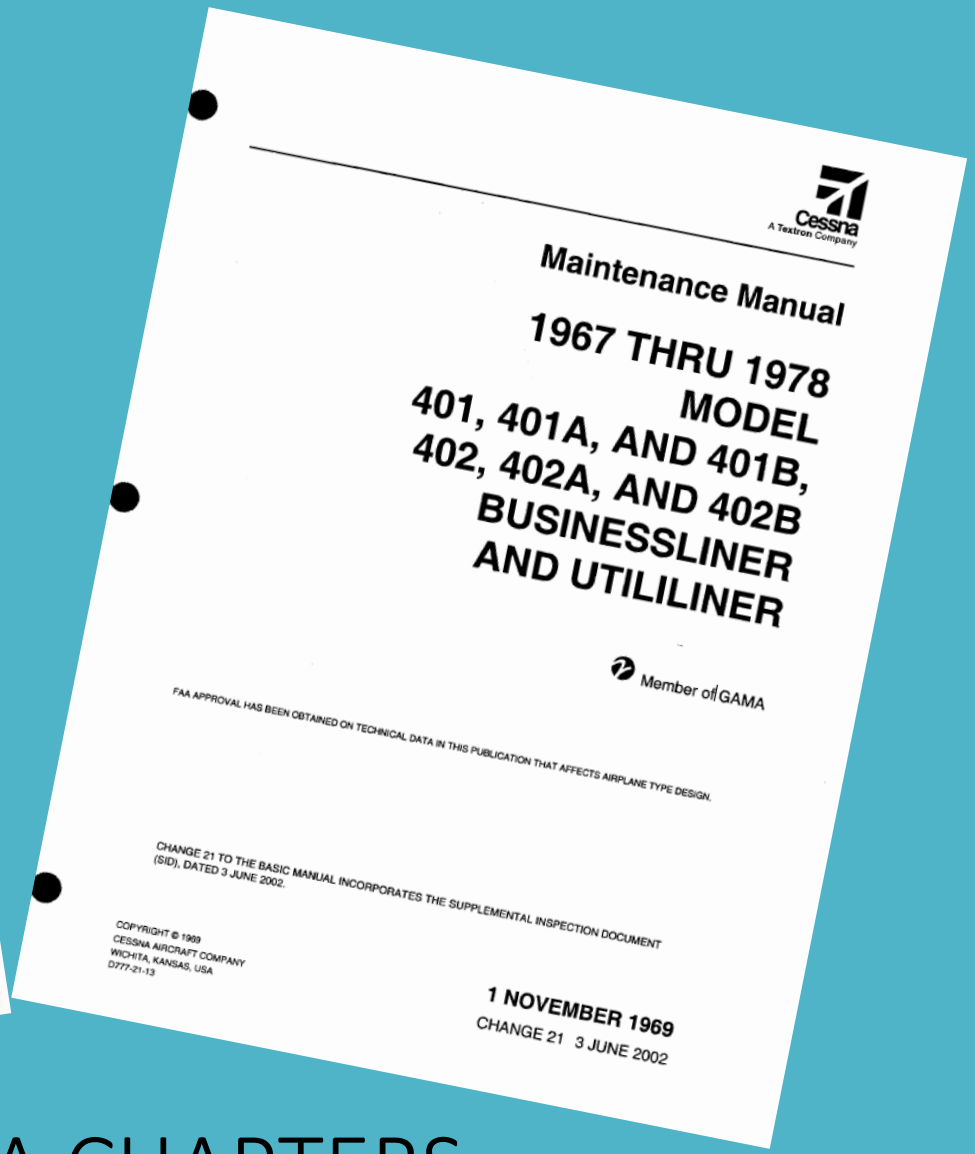
GENERAL AVIATION AIRCRAFT



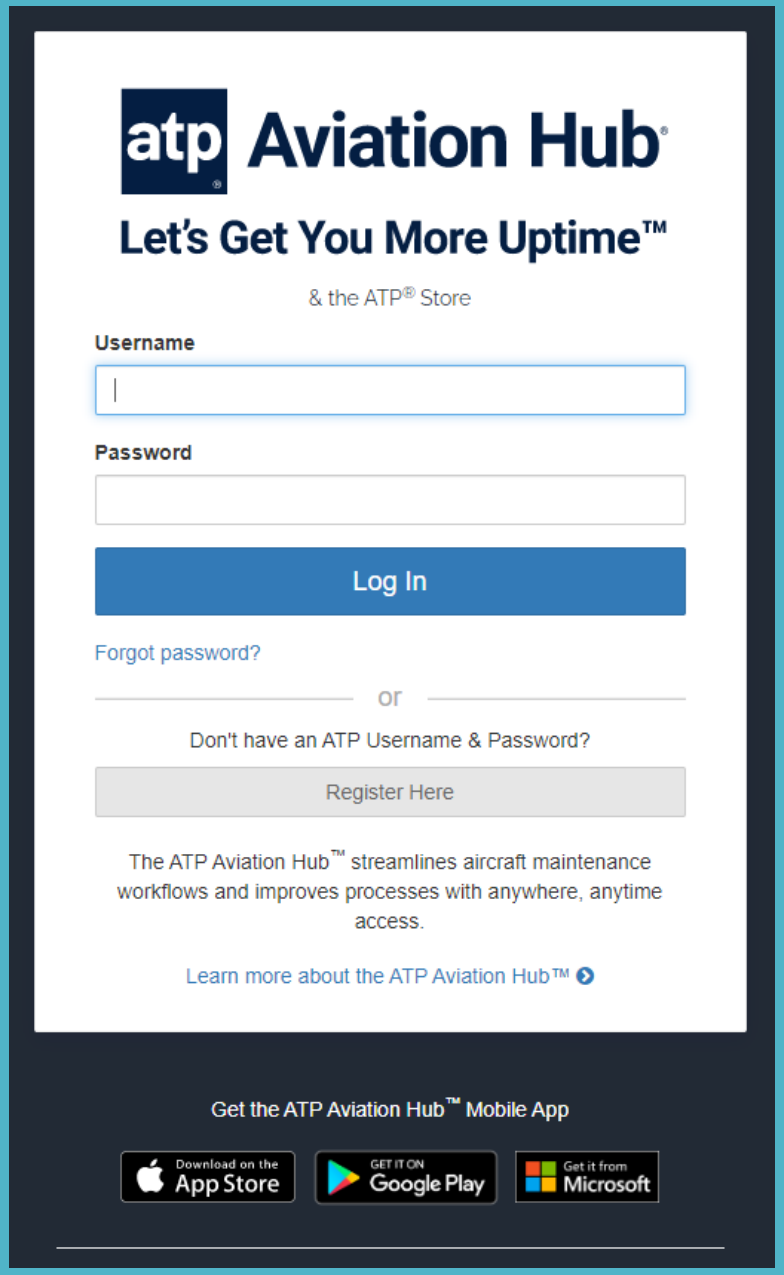


NO ATA CHAPTERS

BAD ATTITUDE Advanced Flight Training

STRIKE Aviation Training

WELCOME TO THE 21ST CENTURY



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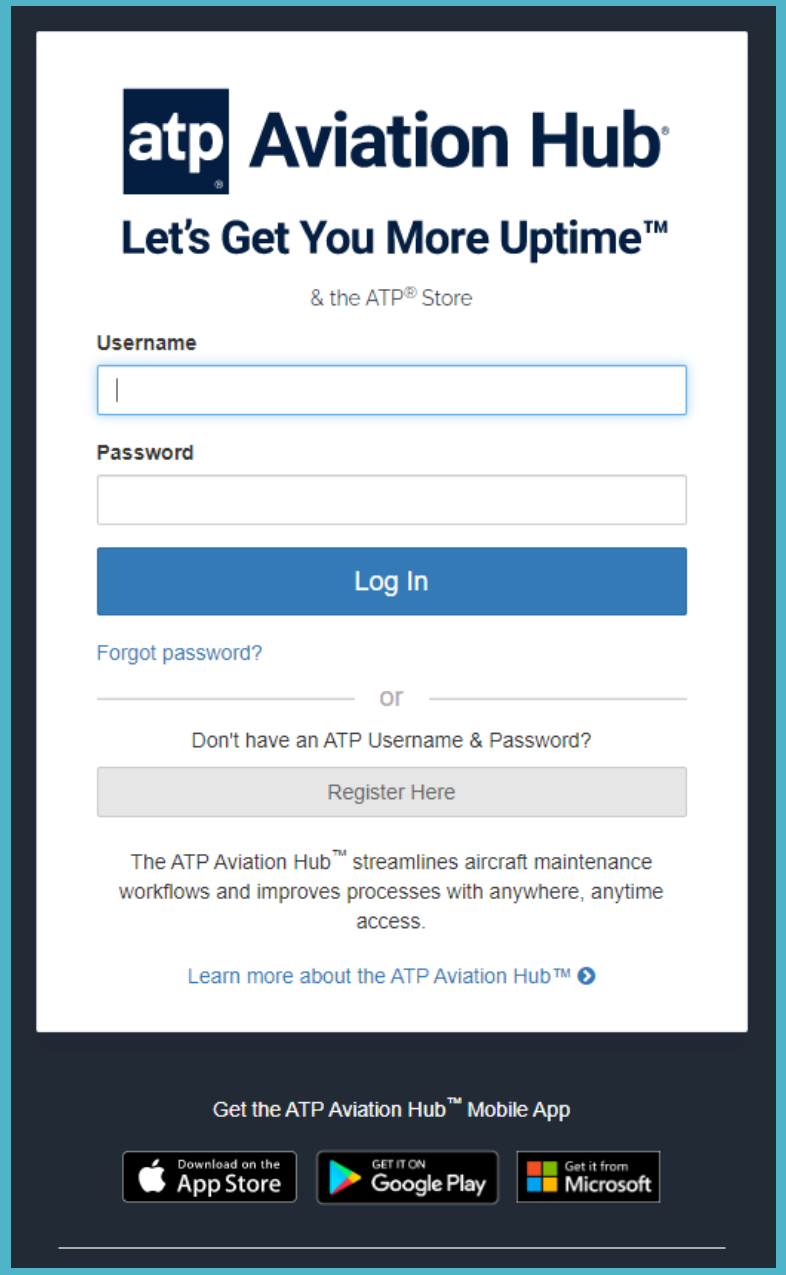
WELCOME TO THE 21ST CENTURY



CERTIFIED AIRCRAFT

- Expensive to subscribe
- Packages

OLDER AIRCRAFT

- Scanned .pdf of original manuals (no search)
- Manufacturers not likely to update
- ICAW by Service Bulletins

NEWER AIRCRAFT

- Interactive and searchable manuals

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AIRCRAFT MAINTENANCE MANUALS
&
ILLUSTRATED PARTS CATALOGS

BRAKES

BAD ATTITUDE Advanced Flight Training

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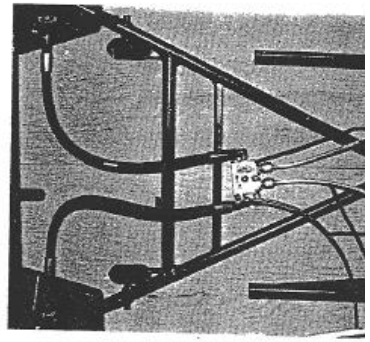
CERTIFIED AIRCRAFT -



BOTTOM VIEW

BRAKE RESERVOIR

PEDAL ASSEMBLY

MASTER CYLINDER

VIEW FUSELA(

6-8. REMOVAL OF BRAKE HYD

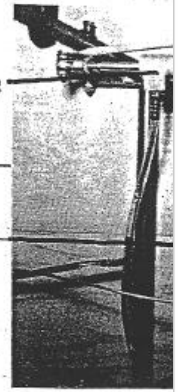
a. Brake system is
Disconnect hydra
parking brake va

b. The master cylin
brake pedal and

bolt heads, w
c. On aircraft e
(Gerdes), rem
control wire,
floorboard su

6-9. REPLACEMENT OF "O
(See Figure 6-4)

a. Remove snap r
Note directio
respect to va
move inlet an
Replace "O" r
outlet fittin
into body so
surfaces. Ins
assembly. (Se



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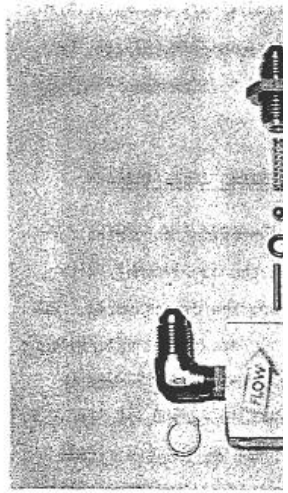

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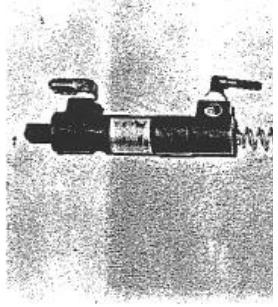

MAS

6-10. REPLACEMENT OF "O" RINGS IN MASTER CYLINDER (GERDES)
(See Figure 6-5)

a. If aircraft has Gerdes master cylinder (see identification label on cylinder body). Remove snap ring on forward end of body. Remove piston rod assembly. Clean and replace any defective parts. Replace all "O" rings and teflon piston seal. Reassemble.

6-11. INSTALLATION OF MASTER CYLINDER

a. Install master cylinder in reverse order of removal.

6-12. INSTALLATION OF PARKING BRAKE VALVE (GERDES)

a. Install valve in reverse order of removal.

b. Connect park brake control wire temporarily. Check travel on control to maintain 2 inch travel on control.

c. Connect all hydraulic lines.

6-13. ASSEMBLY AND INSTALLATION OF MAIN WHEEL (See Figure 6-2)

a. Pack bearing with grease.

b. Install tire and tube on proper wheel halves. Install three thru bolts and nuts.

c. Install bearings, felts and retainer rings.

d. Reinstall wheel on axle. (Axle brake torque plate and wheel pant mounting bracket must be attached to gear leg previous to installing wheel assembly.)

e. Install axle nut to allow wheel to turn free yet not fit loose on axle. Cotter key nut. Install dust cover or wheel pant.

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CERTIFIED AIRCRAFT IPC

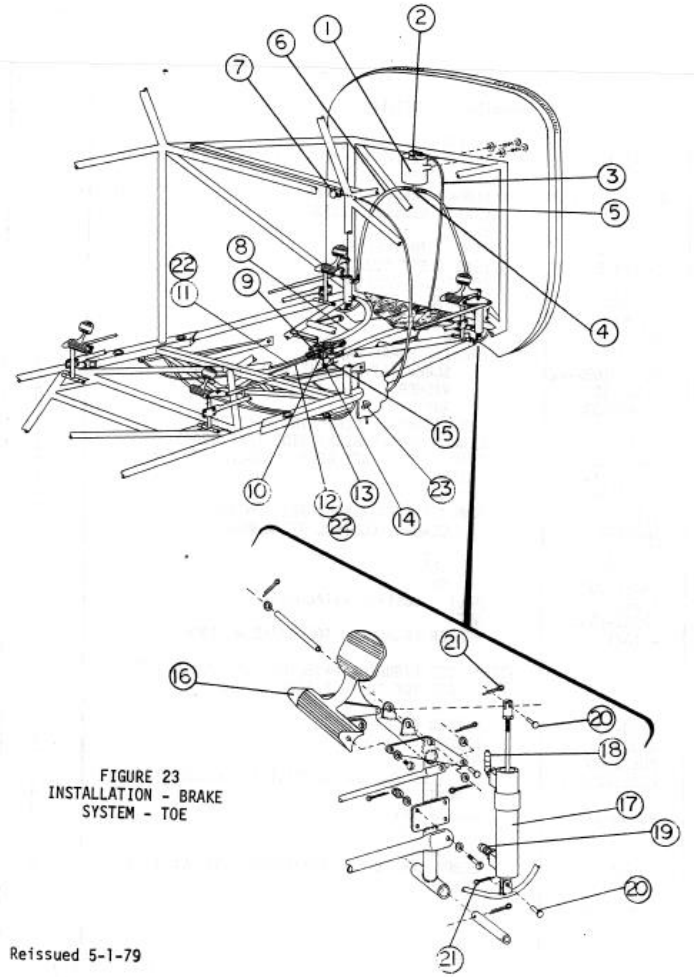

FIGURE 23
INSTALLATION - BRAKE SYSTEM - TOE

FIGURE AND INDEX NUMBER	PART NUMBER	DESCRIPTION	UNITS PER ASS'Y
23-	4-1624	DRAWING - INSTALLATION TOE BRAKE	
1	A-315	RESERVOIR - GERDES	1
	AN526-1032-6	SCREW (ATTACHMENT - FIREWALL)	2
	AN936-A10	WASHER (LOCK)	2
2	69F 1/8 x 1/8	ELBOW - RESERVOIR VENT	1
3	4-1624-1	LINE - RESERVIOR VENT	1
4	62056	TEE	1
5	4-1624-2	LINE (RIGHT SIDE)	1
6	4-1624-3	LINE (LEFT SIDE)	1
7	1-10399	CONTROL - PARKING BRAKE	1
	1-10180	PLACARD - PARKING BRAKE	1
8	2-2162	HOSE	2
9	AN822-4D	ELBOW	2
10	A-850-1	PARKING BRAKE VALVE	1
	AN526-1032-22	SCREW (ATTACHMENT TO FLOORBOARD)	2
	AN960-10	WASHER	2
	AN365-1032	NUT	2
11	2-2111-5	LINE ASSEMBLY LEFT SIDE (AFT GEAR)	1
12	2-2111-6	LINE ASSEMBLY RIGHT SIDE (AFT GEAR)	1
13	AN837-4D	ELBOW (REQ'D AFT GEAR INSTALLATION ONLY)	2
	AN960-716	WASHER	2
	AN924-4D	NUT	2
14	1-10181	BRACKET - PARKING BRAKE CONTROL	1
	AN742-4	CLAMP - CONTROL ATTACHMENT	1
	AN3-3A	BOLT	1
	1-2577-1	SHIM	1
	AN365-1032	NUT	1
15	1-2584	BOLT - CONTROL ATTACHMENT	1
	AN365-1032	NUT	1
16	4-1621	RUDDER PEDAL AND TOE BRAKE ASSEMBLY	1L/1R
		NOTE: SEE FIGURE 6 PAGE 18, FOR RUDDER PEDAL AND TOE BRAKE ASSEMBLY PARTS.	
17	A110-10	MASTER CYLINDER	2
18	62029	ELBOW	2
19	AN816-4D	NIPPLE	2
20	MS20392-2C17	PIN (TOP AND BOTTOM MASTER CYLINDER ATTACHMENT)	4
21	AN380-2-2	COTTER KEY	4
22	2-2111-8	LINE ASSEMBLY (REQ'D FOR WRAPAROUND INSTALLATION)	2
23	AN833-4D	ELBOW (REQ'D FOR WRAPAROUND INSTALLATION)	2
	AN960-716	WASHER	2
	AN924-4D	NUT	2

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LIGHT SPORT AIRCRAFT - AMM

Seats are made out of metal tubing framework with fabric covered f
adjusted by sliding backward and forward along rails fixed to cabin
below seat cushions.
Cabin floor is constructed of light alloy and features matting.
Entire fuselage, wing and other exposed surfaces are finished with a
Wash using only water, mild detergent and chamois. All parts in Per
with lukewarm soapy water. In any case, never use, on this kind of
of solvent.

4.8 Landing Gear

The main landing gear (see fig. 4-12) consists of two special steel sp
elastic cushioning of landing loads.
The two steel spring-leaf struts are attached to the fuselage undersid
Two rawhide liners (2 3) are inserted between each spring-leaf and t
spring-leaf to the edge of the girder via a light alloy clamp (4) while
leaf-spring to the girder.

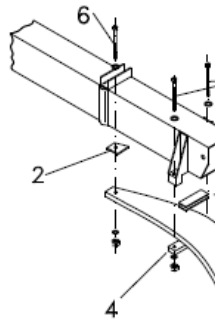

Figure 4-12 Main lan

Wheels are cantilevered on gear struts and feature hydraulically actu
located on cabin tunnel between seats. Main gear wheels mount Air-

Hydraulic circuit shut-off valve (2) is positioned between seats. Witl
activates parking brake function.

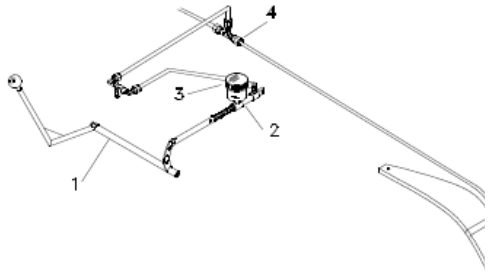

Figure 4-13 Hydraulic Brake Circuit

To remove the leaf-spring struts proceed as follows:
Remove cabin seats by sliding them forward
Hoist aircraft onto supports
Disconnect brake fluid line unscrewing the upper link of the external line tract near fuselage bott
on lines to prevent spillage
Loosen bolts (part.5 fig. 4-12) of the aluminum clamp (part 4 fig. 4-12) that secure spring-leaf to
Remove bolt connection between inboard end of spring-leaf (part.6 fig. 4-12) and main girder
Remove gear strut by pulling outward from fuselage
Reinstall using reverse procedure. It is however necessary to eliminate any trapped air: once the
in reservoir is at normal level, bleed air through dedicated valve. For best results, use external pu
valves allowing trapped air to escape through open reservoir.
If braking action appears degraded, check and eventually replace main gear brake pads
Refer to Periodic Inspection Chart in Section B for any service operation to main gear

4.8.1 Main Gear

Removal of main gear wheel (see fig. 4-16a and 17)
Removal of a single wheel is carried out as follows:

- Hoist aircraft onto supports
- Release parking brake
- Remove fairing (1) by releasing bolt (2) and the three Phillips screws (3) that hold fairing to plate
- Remove bolt (4) and cup (5)
- Remove wheel lock nut (6)
- Unscrew 4 brake disc assembly bolts (See Figure 4-14 and Figure 4-15 (8))
- Carefully remove wheel assembly with both hands

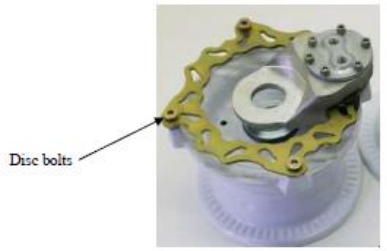

Figure 4-14
Figure 4-15 Removal of main gear wheel

Main Gear

4.8.2 Removal of cup-bearing from main gear wheel

Revision Date: 11-27-2008
Revision Number: 1.00

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LIGHT SPORT AIRCRAFT - IPC

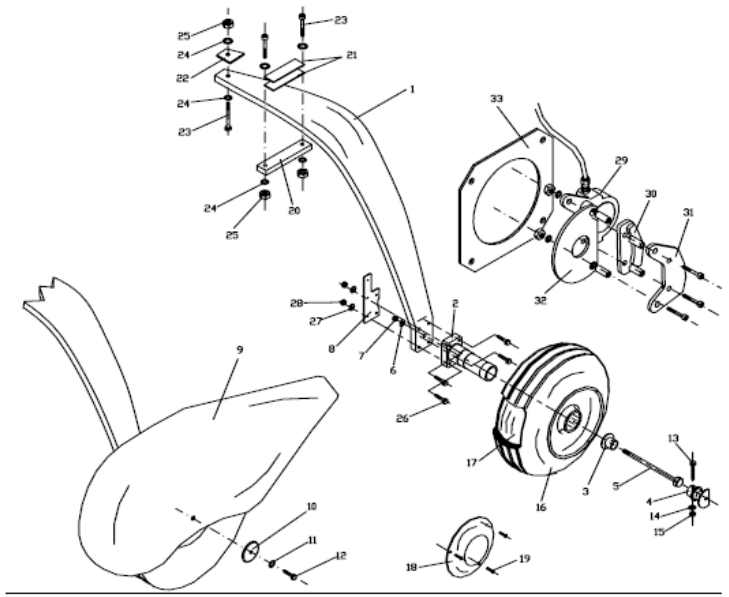

Fig. 4.4 CARRELLO POSTERIORE
FRENO "MARC-INGEGNO"

CARRELLO POSTERIORE – FRENO "MARC-INGEGNO"

FIG.	P/N	DESCRIZIONE	Q.tà
	92-8-002-000	COMPLESSIVO CARRELLO PRINCIPALE	2
1	92-8-300-1	BALESTRA	2
2	92-8-202-1	ASSALE	2
3	92-12-301-3	BICCHIERE FERMA RUOTA	2
4	92-12-301-2	ATTACCO CARENATURA (OPT.)	2
5	UNI 5737	VITE A T.E. CR8.8 M8 L=150 MM	2
6	UNI 6592	RONDELLA PIANA D=8	2
7	UNI 7473	LOBO M8 MB	2
8	92-12-301-4	STAFFETTA FISSAGGIO CARENATURA	2
9	92-8-410-1	CARENATURA RUOTA SX (OPT.)	1
	92-8-410-2	CARENATURA RUOTA DX (OPT.)	1
10	92-12-301-1	PASTICCA FERMA CARENATURA (OPT.)	2
11	UNI 1751	RONDELLA ELASTICA D=6	2
12	UNI 5739	VITE A T.E. M6 CR8.8 L=16 MM	2
13	UNI 5737	VITE A T.E. M4 CR8.8 L=35 MM	2
14	UNI 6592	RONDELLA PIANA D=4	2
15	UNI 7473	DADO AUTOBLOCCANTE M4	2
16		PNEUMATICO 5.00-5	2
17		CAMERA D'ARIA	2
18	157-00800	PIATTO COPRI-RUOTA	2
19	102-00600	VITE A T.T. M3.16 L=6 MM	6
20	92-8-204-1	CRAVATTA ANCORAGGIO BALESTRA	2
21	92-8-206-1	SPESSORE IN COMPOSITO	4
22	92-8-205-1	SPESSORE	2
23	UNI 5737	VITE A BRUCOLA M8 CR8.8 L=60 MM	6
24	UNI 6592	RONDELLA PIANA D=8	12
25	UNI 7473	DADO AUTOBLOCCANTE M8	6
26	UNI 5737	VITE A T.E. M6.35 CR8.8 L=39 MM	8
27	UNI 6592	RONDELLA PIANA D=6	8
28	UNI 7473	DADO AUTOBLOCCANTE M6.35	8
29		PINZA FRENO	2
30		PASTICCA INT.	2
31		PASTICCA EST.	2
32		SUPPORTO PINZA	4
33		DISCO FRENO	2

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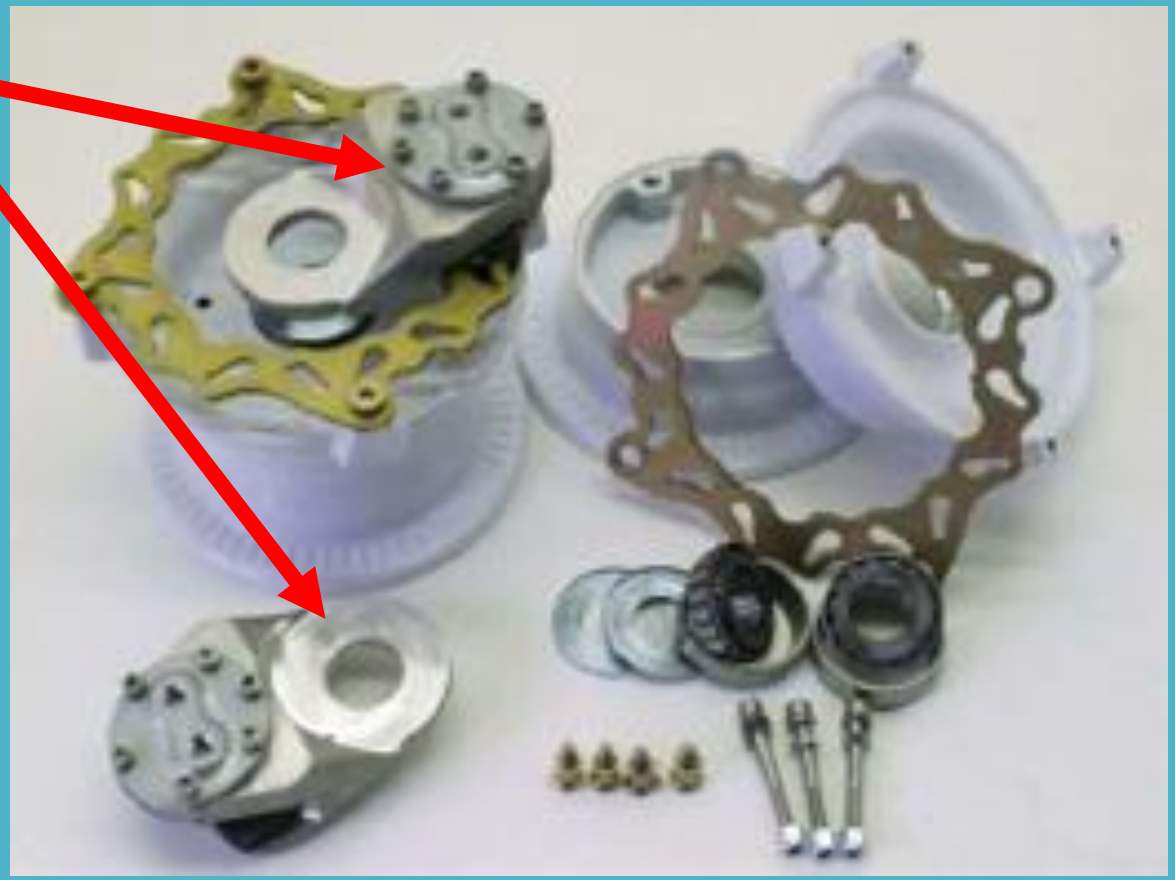
LIGHT SPORT AIRCRAFT - AMM

BRAKE CALIPER



Flight Safety Solutions

LIGHT SPORT AIRCRAFT -

5 Brake system

The main wheels are equipped with Matco n
includes: expansion tank, master cylinder wit
supporting plates, brake disks, copper tube
brake system is filled with transmission fluid A
mfg. The amount of the fluid in the system c
tank that must be not less than half of the tan

When servicing the brake system it may be r
disconnection air gets into its cavities whi
necessary to fill the brake system with fluid to

To fill the brake system with braking fluid
following:

- check the level of the braking fluid in th

  WARNING! Use only the fluid that is
  the fluids of different grade. This may
  of the brake system.

- remove the cover set the parking brake
- remove protecting cap from the brake
  tube with the inner diameter of 3 mm (
  The other end of the tube put into a
  completely submerged into the fluid;
- while holding the tube loosen the nipple
- pump the braking fluid through the sys
  appearing completely in the transparer
  time of such pumping); while doing i
  expansion tank to avoid air inflow into t
- after air bubbles disappear, tighten th
  and put on the protecting cap;
- repeat above actions for the other whe

To fill the brake system with braking fluid in t
following:

- remove the stick cover;
- remove the stick from the roll torque tu
- remove the parking brake;
- remove the clamps holding the brake s
- put the stick on the longitudinal beams
  up and pump the brake system through
  with yokes;
- re-assemble everything in the reversed

WARNING! When filling the brake system it
in the amount of 1 to 2 volumes of the expans

For more detailed information about maintena
visit its manufacturer web site: http://www.mat

Recommended special tools: none.

Necessary parts/materials: 300 mm of

INSPECTIO

Part No.	Description
-	Expansion tank
See Matco P/N	Master cylinder
See Matco P/N	Parking brake valve
See Matco P/N	Brake unit assembly, right
See Matco P/N	Brake unit assembly, left
See Matco P/N	Brake disk, right
See Matco P/N	Brake disk, left
-	Copper tubes
-	Reinforced rubber hose

Instructions:

5.1 Remove the top engine cowling. Inspect
cracks in its housing and cap. If the tan
brake system must be filled with braking
the beginning of this section.

Check the fluid level in the tank and refil
half of the tank. Make sure the tank attac
plastic cable ties if necessary.

Recommended special tools: none.

Necessary parts/materials: none.

5.2 Remove handles from the control levers
the horizontal panel. Inspect the master
are detected, it must be removed for repa

In order to remove the master cylinders, c

- remove the left seat;
- remove the panel between pilot seats;
- disconnect the control cables of the e
  engine and trim tab ends, and then from
- undo the screws of the control lever unit
- block the reinforced rubber hose near
  clamp and disconnect it from the master
- disconnect the copper tube connecting t

WARNING! When disconnecting the bra
fluid may spill out.

- remove the control lever unit assembled
- detach the master cylinder from the con

To install the master cylinder perform th
re-assembling fill the brake system follow
this section. Then adjust the control sys
described in the corresponding sections c

If no defects were detected in the mas
reversed order.

Recommended special tools: none

Necessary parts/materials: none.

5.3 Remove the handles from the contr
and the horizontal panel. Inspect t
fluid.

If any leak is detected the valve mus

In order to remove the parking brake

- block the reinforced rubber hose
  cylinder by squeezing the hose with
- cut the plastic cable ties fixing the v
- undo the screws attaching the valv
- disconnect the copper tubes from t

To install the parking brake valve t
order. After assembling fill the bra
instructions described in the beginni

If no defects are detected in the pa
reversed order.

Recommended special tools: none

Necessary parts/materials: none.

5.4 Remove the wheel fairing. Inspect t
any leak is detected the brake unit m

To remove the brake unit, do the foll

- put the wheel chokes under the nos
- lift the airplane using a jack place
  fuselage bottom skin for the MLG s
- unlock and undo the brake disk scr
- remove the wheel and brake disk;
- disconnect the copper tube from th
- disconnect the brake unit from t
  screws of the brake unit) and remo

To re-install the brake unit perform
assembling fill the brake system foll
of this section.

Check the brake pads for integrity
2.54 mm (0.1 in). The wear may be
the braking pad. In case of seriou
replaced. In order to do that, detach
the brake pads (the braking syster
brake unit). For more detailed instru
pads contact the manufacturer (Matc

If the wear is within the permissibl
order. Before re-installing the attach
on their thread.

Recommended special tools: none

Necessary parts/materials: Loctite

5.5 Define the nature and degree of the brake disk wear. For that remove the brake disk as described in 0. Measure the brake disk thickness at its working surface. It must be at least 3.3 mm (0.13 in). If the disk thickness is less than that, the brake disk must be replaced. For more detailed instructions on servicing and replacement of the brake disk contact the manufacturer (Matco mfg).

If the wear is within the permissible limits, re-assemble everything in the reversed order. Before re-installing the attachment screws of the brake disk apply Loctite 222 on their thread.

Recommended special tools: none.

Necessary parts/materials: Loctite 222.

5.6 Remove the handles from the control levers of the throttle, elevator trim tab and brakes, horizontal panel, main wheel fairings and pilot seats. Inspect the tubing of the brake system for leaks and damage. Pay special attention to the joints. If leaks and damage is detected replace the corresponding portion of the tubing. To obtain additional technical support contact the manufacturer.

After re-assembly fill the brake system following the instructions described in the beginning of this section.

After inspection (repair) re-assemble everything in the reversed order. Before re-installing the pilot seats apply Loctite 222 on the thread of the attaching bolts.

Recommended special tools: none.

Necessary parts/materials: Loctite 222.

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LIGHT SPORT AIRCRAFT - IPC

NAME: **Main wheel mud-screen**
PART NO.: **A22LS-02-3001 R**
A22LS-02-3001 L
WEIGHT: **0.37 kg**

НАИМЕН.: **Щиток основного колеса**
НОМЕР: **A22LS-02-3001 R**
A22LS-02-3001 L
ВЕС: **0.37 кг**

NAME: **Set of 6x6 wheels with brakes**
PART NO.: **A22LS-02-4000**
WEIGHT: **13.5 kg**

НАИМЕН.: **Комплект колес 6х6 с тормозами**
НОМЕР: **A22LS-02-4000**
ВЕС: **13.5 кг**

NAME: **Master brake cylinder**
PART NO.: **A22LS-02-5000**
WEIGHT: **0.2 kg**

НАИМЕН.: **Главный тормозной цилиндр**
НОМЕР: **A22LS-02-5000**
ВЕС: **0.2 кг**

NAME: **Braking system fittings (a set)**
PART NO.: **A22LS-02-5001**
WEIGHT: **0.13 kg**

НАИМЕН.: **Фитинги тормозной системы (комплект)**
НОМЕР: **A22LS-02-5001**
ВЕС: **0.13 кг**

NAME: **Braking system tubing (a set)**
PART NO.: **A22LS-02-5002**
WEIGHT: **0.25 kg**

НАИМЕН.: **Трубка тормозной системы (комплект)**
НОМЕР: **A22LS-02-5002**
ВЕС: **0.25 кг**

NAME: **Braking system expansion tank**
PART NO.: **A22LS-02-5003**
WEIGHT: **0.04 kg**

НАИМЕН.: **Тормозной расширительный бачок**
НОМЕР: **A22LS-02-5003**
ВЕС: **0.04 кг**

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LIGHT SPORT AIRCRAFT - AMM

II. INSTRUMENTS

	Type	Serial No.
Airspeed indicator		
Altimeter		
Vertical speed indicator		
Bank indicator		
Magnetic compass		
Radio		
Atitude indicatore		
Transpomder		
Fuel pressure		
Engine instruments - Turn-indicator		
Engine instruments - Oil pressure		
Engine instruments -Oil temperature		
Temperat. head cylinder		
Engine-hour meter		

III. STORAGE BATTERY

Type	DRYFIT A512/16G5	
Voltage	12 V	
Capacity	16 Ah	

The storage battery is located behind the right-hand pilot's seat.

2.5 Landing Gear

Landing device is a type of trigear undercarriage with a controllable nose wheel.

The main landing gear is formed of lever-type swinging legs of laminat. Wheels with low-pressure tires of 14x4 size are provided with hydraulic disc brakes operated from the left-hand pilot's seat. As custom-tailored, the brakes may be interconnected mechanically to be operated from the right-hand seat as well.

The nose-wheel landing gear is welded of steel tubes. The nose wheel is equipped with a tire of 12x4 size.

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LIGHT SPORT AIRCRAFT

37B	BMP Brake & Fitting Lubricant		4.00
38B	Set of O-rings gaskets for brake cylinder / Evektor		5.50
	Set of O-ring for old version of master brake cylinders		11.00
39B	Set gaskets for brake cylinder / Evektor		-----
40B	Springs under the balls for brake cylinder / Evektor		3.30
41B	Set of rubber O-rings and pistons for old brake system for master cylinders on pedals.		135.30
42B	"Bleed screws" for our brake callipers M3 – old version of callipers		1.10
43B	metal balls – valve for bleed screws M4		3.30

	496.40
	457.30
	12.10
	35.00
	141.90
	1.10
	0.70
	6.60
	54.60

	39.40
	7.70
	1.10
	4.90
	522.40
	760.70
	202.90
	392.20
	104.80

	54.60
	2.10
	19.70
	41.50
	41.50
	1.10
	12.10

	348.70
	424.80
	424.80
	83.00
	4.40
	6.60
	91.70

	596.20
	685.00
	500.80
	78.60
	901.20
	348.70
	348.70
	348.70

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THE IMPORTANCE OF USING AIRCRAFT ILLUSTRATED PARTS CATALOG

AIRCRASH INVESTIGATORS BAC111 – WINDSHEILD BOLTS

BAD ATTITUDE Advanced Flight Training

STRIKE Aviation Training

COSTRUZIONI AERONAUTICHE TECNAM

NOTICE OF CORRECTIVE ACTION

N°06-LSA

Issue Date: 17-05-2012

NOTIFICATION	☒	***SERVICE BULLETIN***	☐	***SAFETY ALERT***	☐

A/C and s/n AFFECTED	All models
TIME OF COMPLIANCE	Nil
WORKING PLACE	Nil

Subject: Use of not original spare parts for Tecnam airplanes.

Scope: Tecnam became aware that some aircraft owners/operators sometimes do not use original spare parts; in particular, Tecnam would like to notify that recently an operator replaced fuel hoses, in accordance with time limits reported on the AMM, but he used NOT original fuel hoses, that, after investigation, have been shown being incompatible with approved fuels.

In this case, safety of flight has been affected and this event originated the present communication that has the scope of making sensitive all owners/operators about this subject.

Tecnam takes care of customer's safety and strongly recommends using only original spare parts, tested and selected over 20 years of experience and, at the same time, informs the customers that it shall not be liable for aircraft damages due to the use of not original spare parts.

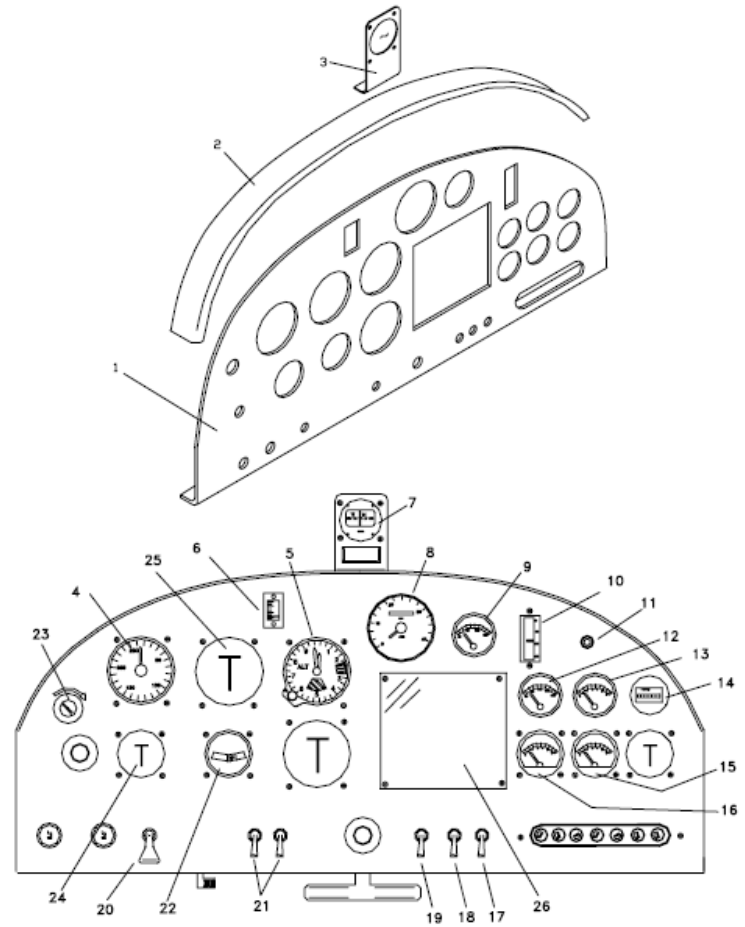

Fig. 7.7 CRUSCOTTO

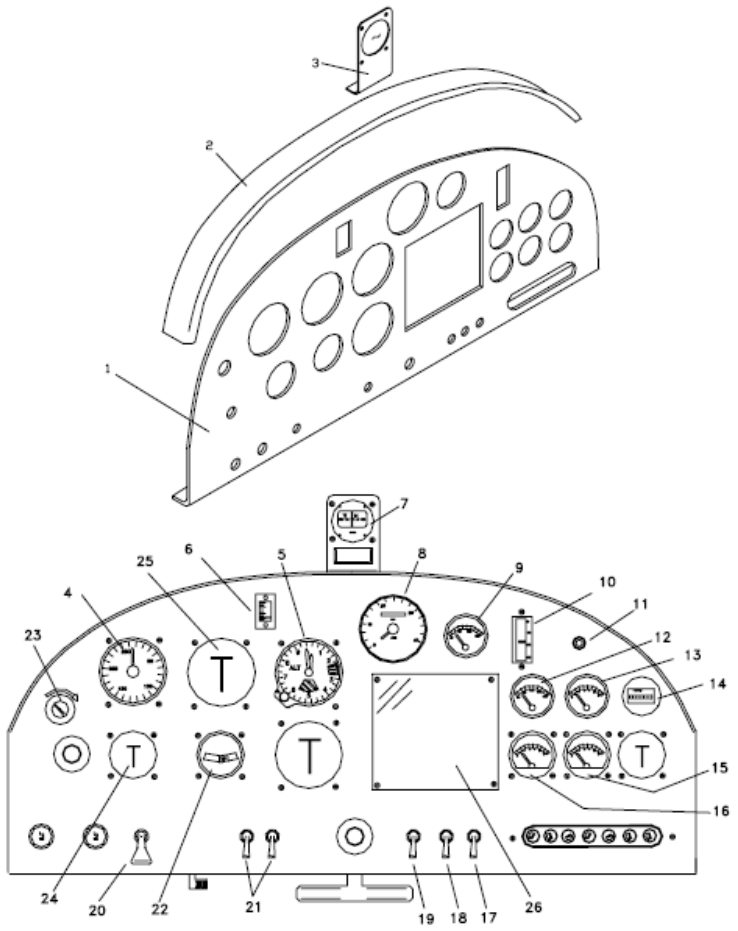

Fig. 7.7 CRUSCOTTO

COSTRUZIONI AERONAUTICHE TECNAM s.r.l.
P92-ECHO
PARTS CATALOG
GRUPPO 7
IMPIANTI

CRUSCOTTO

FIG.	P/N	DESCRIZIONE	Q.tà
1	92-12-106-1	CRUSCOTTO	1
2	92-9-907-1	PALPEBRA	1
3	92-12-113-1	SUPPORTO BUSSOLA	1
4		INDICATORE VELOCITA'	1
5		ALTIMETRO	1
6		INDICATORE TRIM	1
7		BUSSOLA MAGNETICA	1
8		CONTAGIRI MOTORE	1
9		TEMP. TESTA CILINDRI	1
10		INDICATORE POSIZIONE FLAP	1
11		LUCE GENERATORE	1
12		TEMPERATURA OLIO	1
13		PRESSIONE OLIO	1
14		CONTAORE	1
15		LIVELLO CARBURANTE DX	1
16		LIVELLO CARBURANTE SX	1
17		INTERRUTTORE LUCI NAVIGAZIONE	1
18		INTERRUTTORE LUCE STROBE	1
19		INTERRUTTORE FARO ATTERRAGGIO	1
20		INTERRUTTORE FLAPS	1
21		INTERRUTTORE MAGNETI	1
22		VIROSBANDOMETRO	1
23		STARTER CON CHIAVE	1
24	92-12-111-1	TAPPO PICCOLO	2
25	92-12-111-2	TAPPO GRANDE	2
26	92-12-123-1	COPERCHIO VANO RADIO	1

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TECNAM CORROSION

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TECNAM CORROSION

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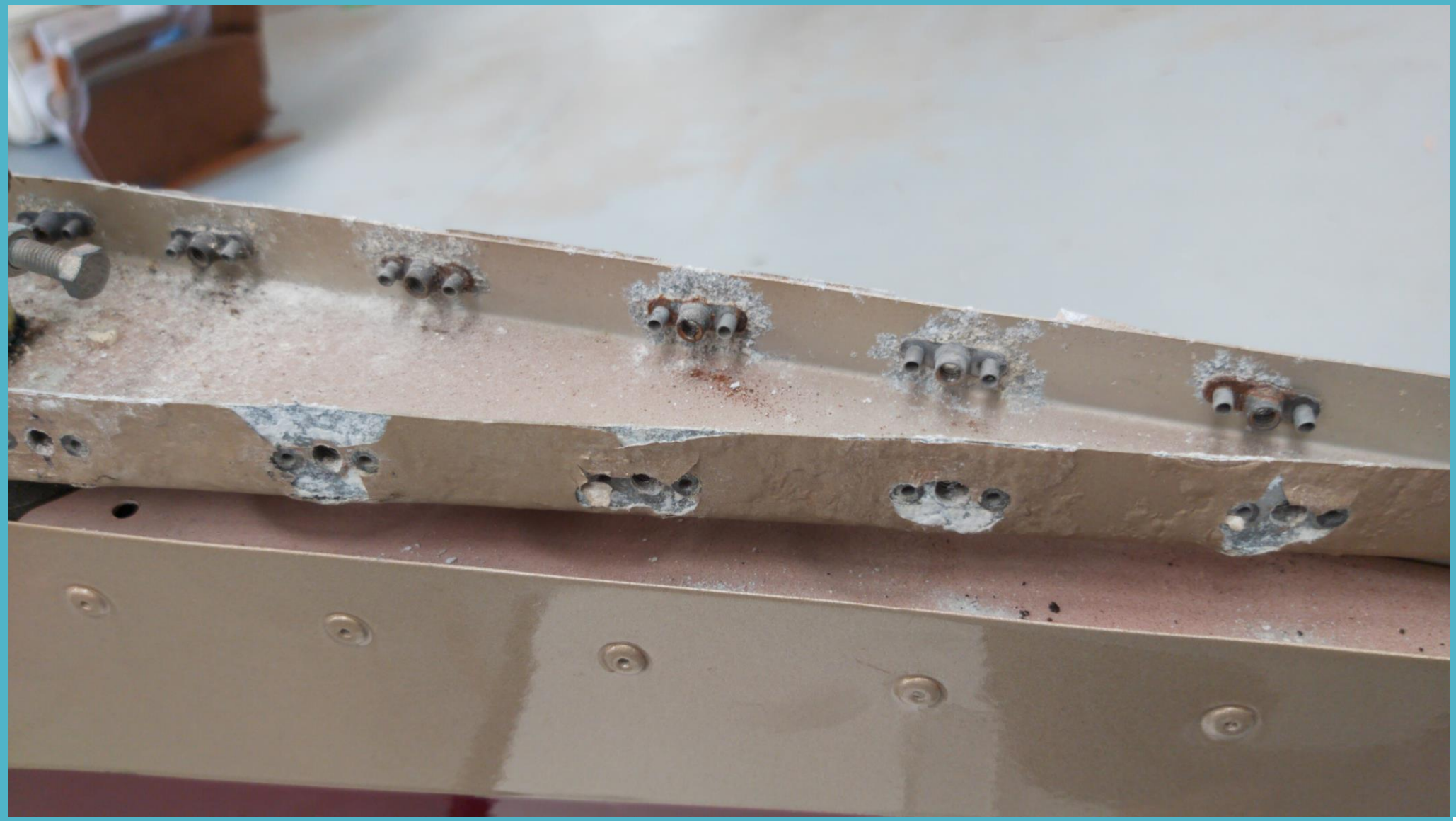
TECNAM CORROSION



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TECNAM CORROSION

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TECNAM CORROSION

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TECNAM RIVETS

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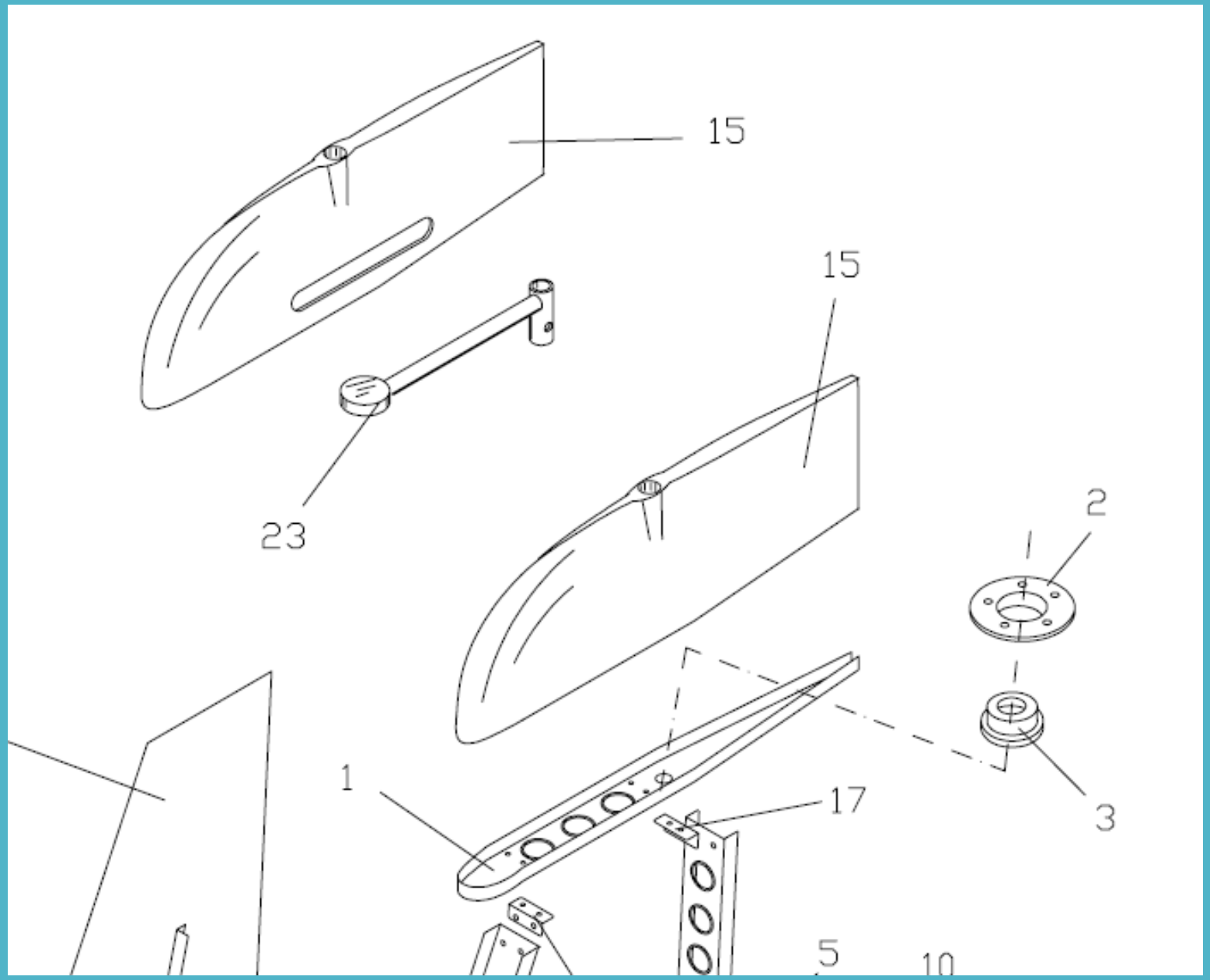
TECNAM CORROSION



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WHICH RIVETS SHOULD BE USED?

Is there a Structural Repair Manual?

How does the maintainer know what rivet to use in what location?

Didn’t you see Air Crash Investigators BAC111 windshield??

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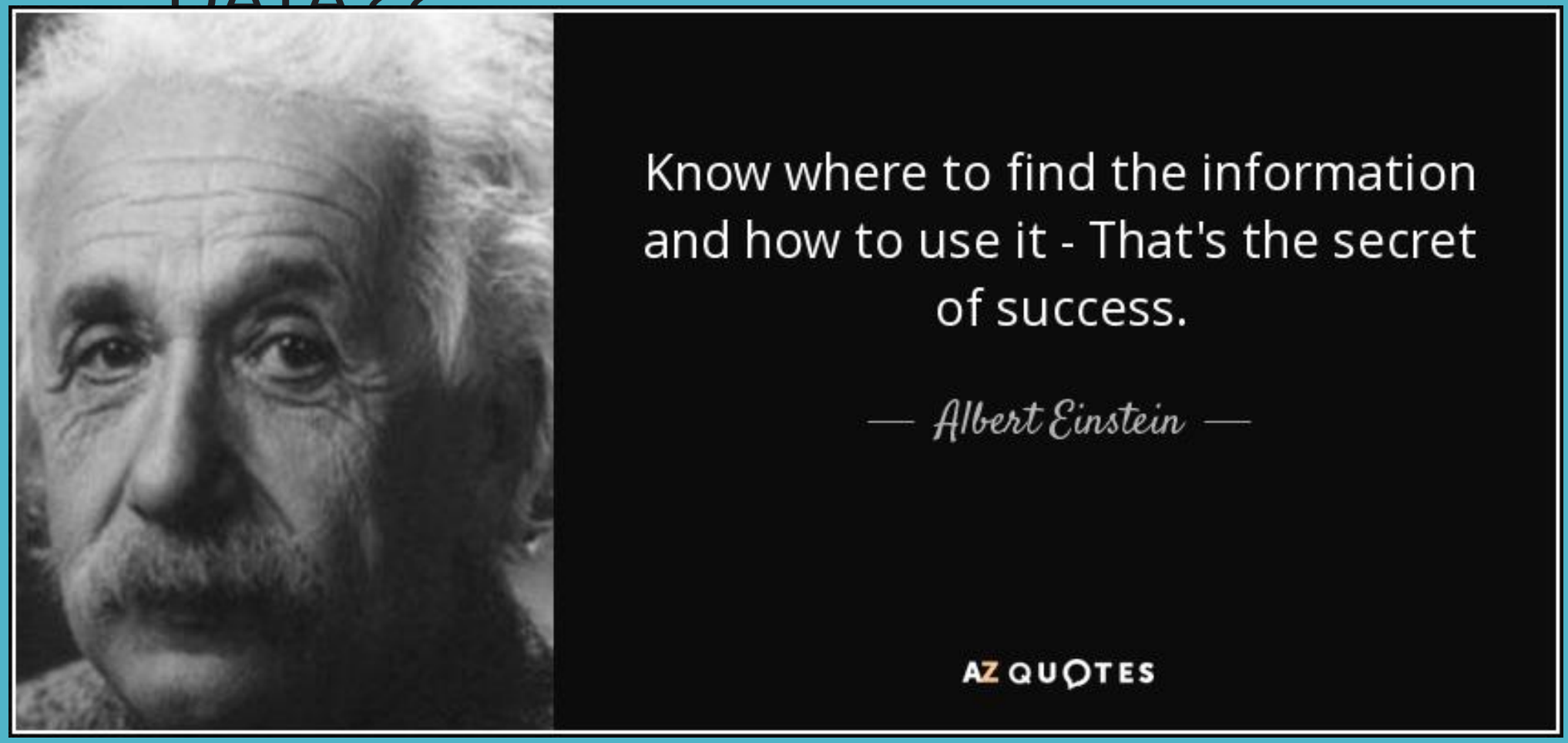
WHERE DO I FIND MAINTEANCE DATA??



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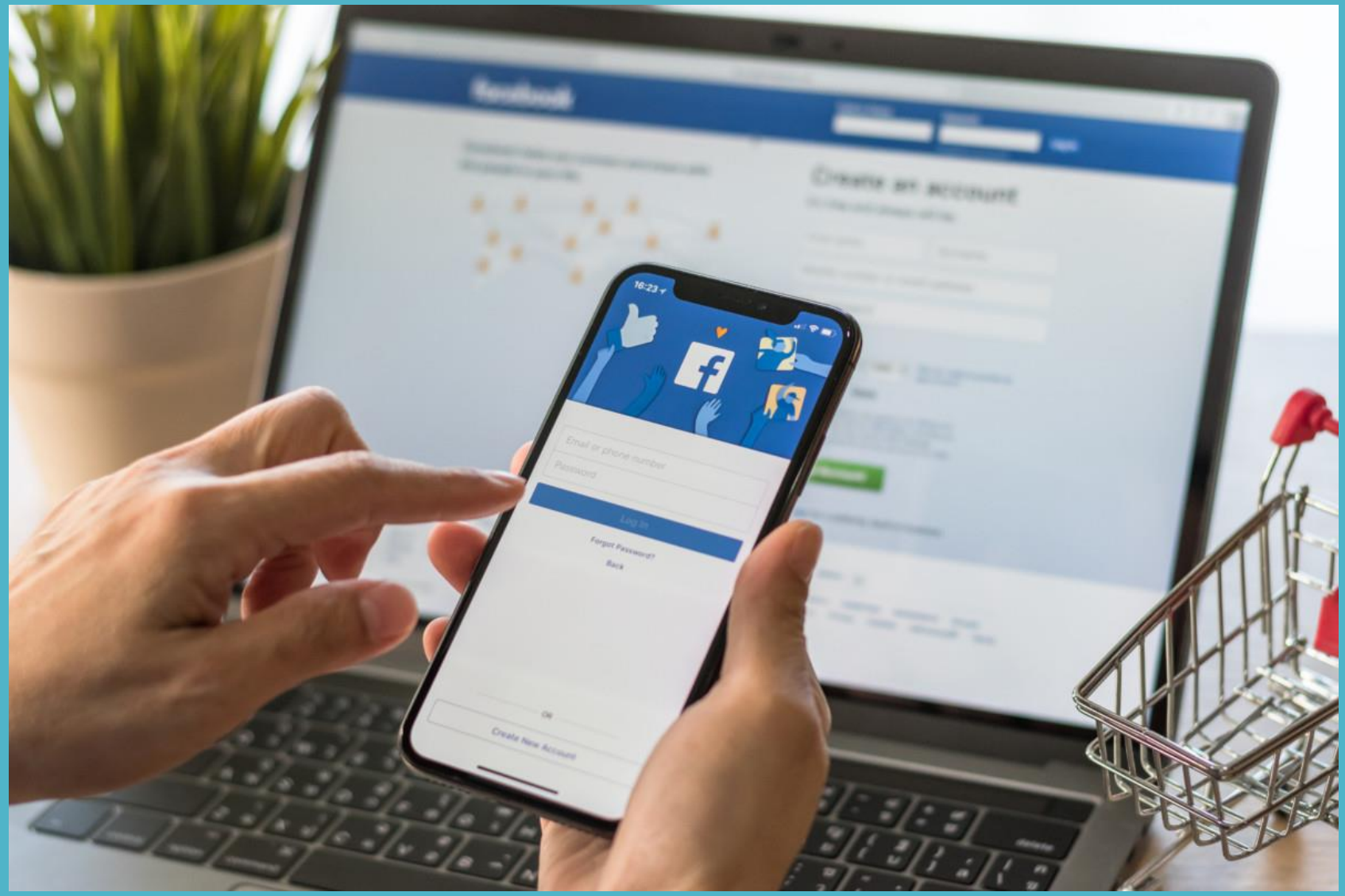

Citing Facebook as a reference – Harvard Style

https://www.youtube.com/watch?v=uYUvsuJsR0k

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DISCLAIMER

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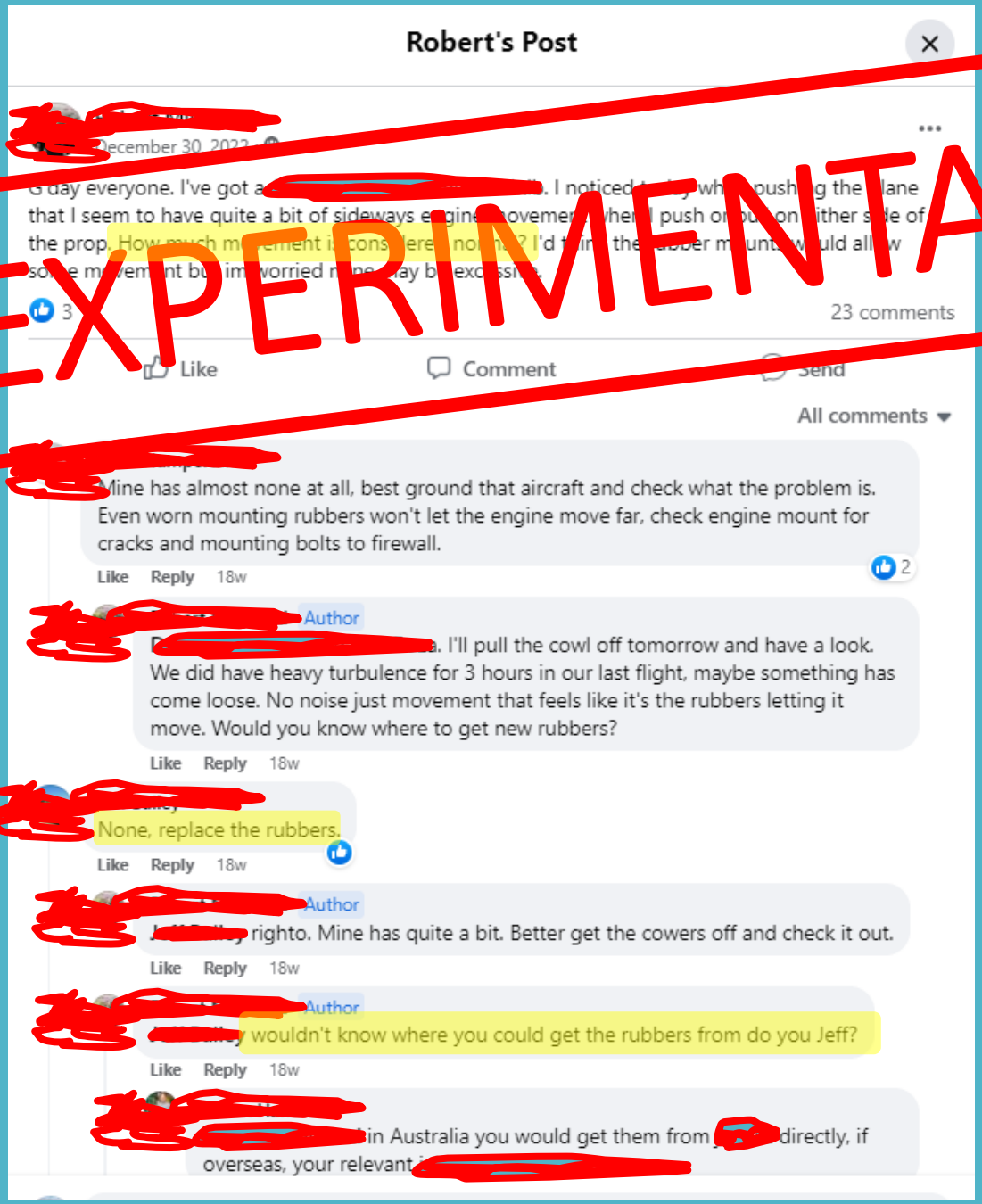
[redacted] ebruary 19 ·

Hello fellow aviators. I have a starter motor problem and would like to replace it. I live in Italy and spare parts are not available quickly here. Does anyone know if the starter motor is the same as in a car? do you know if a different version of moped was mounted compared to mine? thank you all. I attach photos.

1 3 comments

Like Comment Send



Robert's Post

December 30, 2022

G day everyone. I've got a [redacted]. I noticed today when pushing the plane that I seem to have quite a bit of sideways engine movement when I push on it on either side of the prop. How much movement is considered normal? I'd think the rubber mounts would allow some movement but im worried maybe it may be excessive.

3 23 comments

Like Comment Send

All comments

[redacted] Mine has almost none at all, best ground that aircraft and check what the problem is. Even worn mounting rubbers won't let the engine move far, check engine mount for cracks and mounting bolts to firewall.

Like Reply 18w 2

[redacted] Author

[redacted]. I'll pull the cowl off tomorrow and have a look. We did have heavy turbulence for 3 hours in our last flight, maybe something has come loose. No noise just movement that feels like it's the rubbers letting it move. Would you know where to get new rubbers?

Like Reply 18w

[redacted] None, replace the rubbers.

Like Reply 18w

[redacted] Author

[redacted] righto. Mine has quite a bit. Better get the cowers off and check it out.

Like Reply 18w

[redacted] Author

[redacted] wouldn't know where you could get the rubbers from do you Jeff?

Like Reply 18w

[redacted] in Australia you would get them from [redacted] directly, if overseas, your relevant [redacted]

EXPERIMENTAL

[redacted]
March 23 ·

What size socket fits this bolt head? It is two bolts that attach the tailwheel leaf spring. It's somewhat difficult to access, but doable, is it a 5/8" or 9/16 or?

9 comments

Like Comment Send

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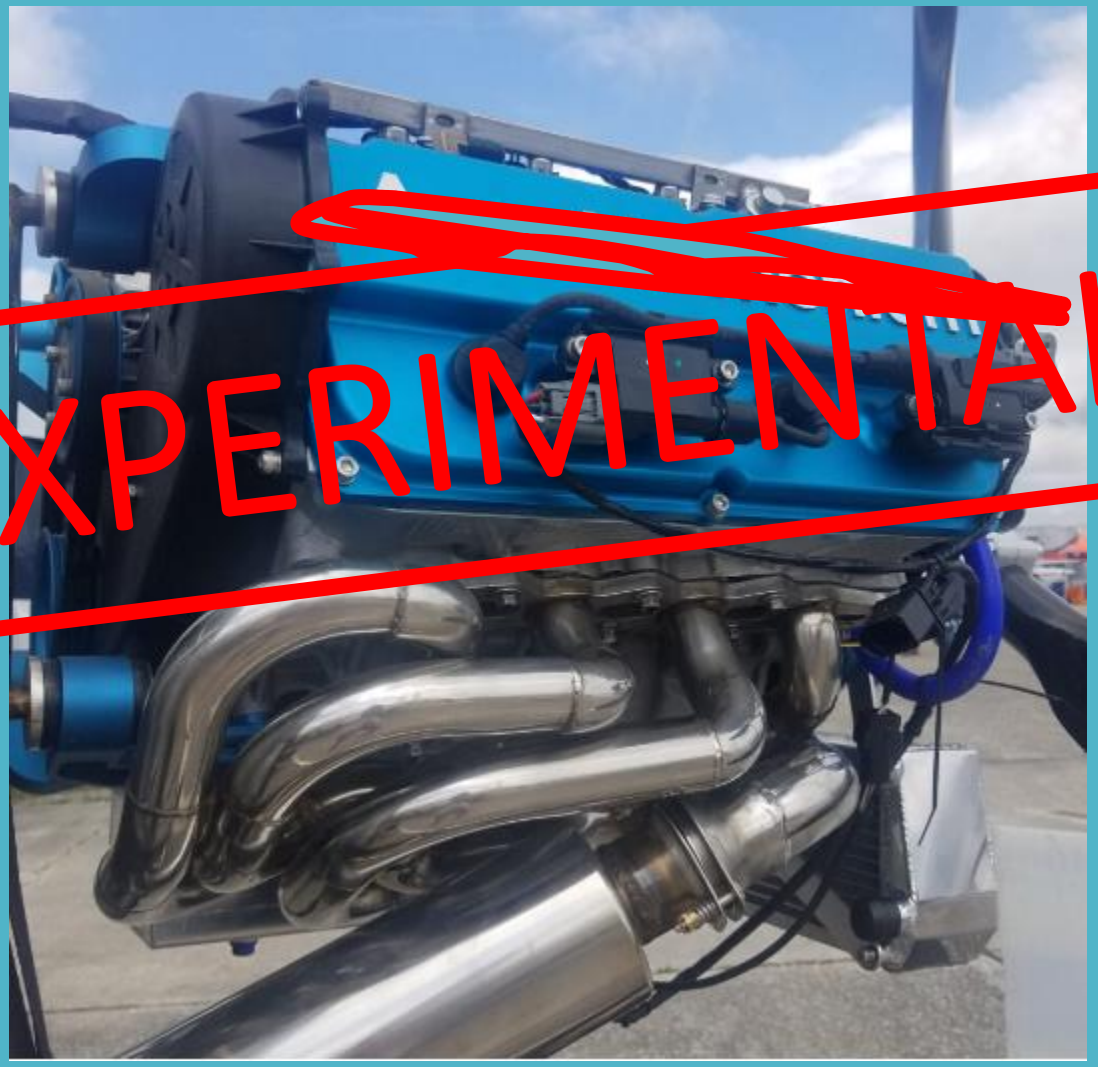
EXPERIMENTAL AIRCRAFT ENGINES



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EXPERIMENTAL AIRCRAFT ENGINES

ICAW

- No published Maintenance Schedule
- No IPC
- No Service Bulletin structure

COMMUNICATION

- Long reply period for emails
- Difficult to get on the phone

PARTS SUPPORT

- Shopping list
- List not updated when parts proven to be inadequate

[redacted] Admin Top contributor · July 12, 2022 ·

Hi AM Owners

I also have experienced a partial alternator failure on my engine. Just noticed over the last few flights the alternator dropping offline for random lengths of time, sometimes 1 min to 20 mins. I have also experienced from new a huge load (60 amps) everytime I bring on the alternator online after start. This high load gradually unloaded over 30 to 60 seconds, but it caused the engine to drop over 200rpm and it would not of been good for my batteries or other electrical components. My new Alternator hardly effects my engine rpm now. I replaced it wth this new OEX brand alternator from Repco Australia https://www.repco.com.au/.../oex-alternator.../p/A9614552

The original alternator had no branding, no serial numbers. I now have 37 hours on the engine.

I suggest all owners to consider this upgrade as we require electrical power to remain in the air !!!

I have filed a safety notice with https://flightsafetysolutions.com.au/manufacture-support/
I encourage everybody who has had the same problem to do the same no matter where you are in the world.

REPCO.COM.AU

OEX Alternator 12V 40A Denso Style - DXA4035

It starts with the parts - At Repco we have a wide range of Alternators. OEX Alternator 12V 40...

EXPERIMENTAL

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[redacted]
July 26, 2022 ·

Denso alternator is what we use. The number is 16678-64014. Please check alternator belt tighteness every 10 hours. It has to be tight to make alternator work. Also check alternator connection and wire when alternator is not providing electric.

Starter replacement will work from Metro, Swift.

EXPERIMENTAL

BAD ATTITUDE Advanced Flight Training

STRIKE Aviation Training

[redacted] Admin Top contributor · May 24, 2022 ·

Today Dad and I changed out our run in oils from the engine and gearbox. While unwinding the oil sump plug by hand it broke away from the thread. I admit that I did not use a torque wrench when I last installed this plug but it was not stupidly tight. In my opinion the plug is too lightly manufactured, there is very little structure to the plug outside of the magnet. I don't want to use a sump plug that has the ability to break easily even if it is slightly over torqued. This is what I now have in my aircraft https://www.supercheapauto.com.au/.../pre.../SPO1851048.html

EXPERIMENTAL

[redacted] and 11 others 9 comments

Like Comment Send

[redacted]
June 5, 2022

Laying my lack of knowledge bare here, chaps. Couldn't find these bits of plumbing in the manual. Please advise:

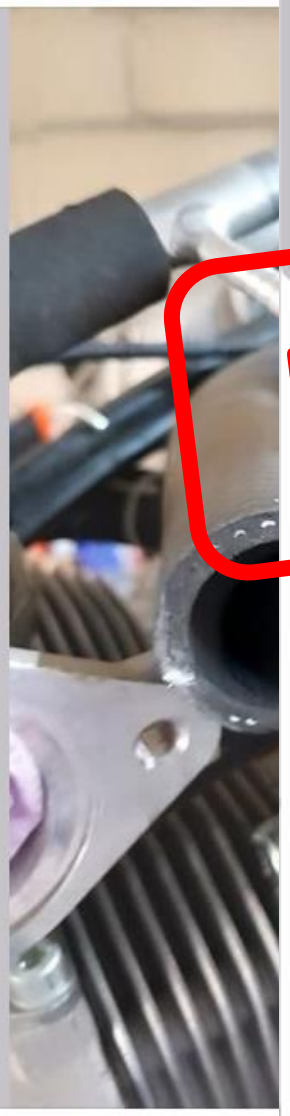
10 15 comments

Like Comment Send

EXPERIMENTAL

[redacted] March 12

On the subject of hoses, the ID o
pipe is about 25mm, with the ba
quite tight to seal it. Is this norm
different to everyone else?



LSA

EXPERIMENTAL

2

Like Comment Send

Top comments

[redacted] Group expert

The hoses are not really the high point of the kit....clamp onto the barb usually helps sealing, but you will likely have a few iterations before it is coolant tight. Having said that once it is all set up it seems to remain leak free.

Like Reply 7w

[redacted] Author

[redacted] that's no good 😖 the barbs are really only for a clamp to sit behind to stop a hose pulling off. Did you have to do that to the hose on the aluminium pipes as well, or just the expansion bottle? What I might do is 'double clamp' so that there is a clamp in the correct position and a clamp on the barb 🙂

Like Reply 7w

[redacted] Author

I'll answer my own question- the expansion bottle pipe turns out to be the same size as the ali pipes in the kit, so it must be ok 🙂

Like Reply 8w

OD fittings. I had a bit
0 and 01-0007 does
ose as it bends to
either.

2 comments

Send

2

[redacted]

Question for the ones using the uavionix tail beacon. Are you guys just trimming the inside of the light hole until the tail beacon fits?

If so, are you using a dremel?

CERTIFIED

6 19 comments

Like Comment Send

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[redacted] 15, 2022 ·

CERTIFIED

[redacted] Chesapeake, VA, United States.

[redacted] 2022 ·

$450
18 gallon tanks and installation ribs from 1967 gcaa.

4 2 comments

Like Comment Send

Flight Safety Solutions

[redacted] April 28 at 2:18 AM

Can someone post of picture of their quick release pin for the backseat stick? I ordered that part fro[redacted] and it wasn't what I was expecting. But it's also missing parts, so I want to see what the setup is supposed to look like. I've been calling [redacted] but they must be busy this week. Thanks!

4 comments

Like Comment Send

Top comments

[redacted]
Go ahead for the rear seat quick disconnect while you are at it.

Like Reply

[redacted]
Don't drop it into your plane while installing. You c[redacted] whe[redacted] I ha[redacted] to emery c[redacted]h my stick so it will come in an[redacted]. M[redacted] wife [redacted]ants it out [redacted]hen [redacted]'s riding b[redacted]k ther[redacted]

Like Reply 1w

[redacted]
Nothing but a pin and clip

Like Reply 1w

[redacted]
I just went to local hardware store and bought a pit pin

CERTIFIED

BAD ATTITUDE Advanced Flight Training

STRIKE Aviation Training

Flight Safety Solutions

Erika's Post

[redacted]
2d ·

Looking for a part number/potential causes/advice:

This is the front bulkhead inside the spinner of my [redacted] -- one of the nut plates? Rivnuts? broke off.
1) Does anyone know the part number for this and the rivets?
2) Any thoughts why this would happen?
3) Any thoughts about whether it is easier to replace the bulkhead or just the nut? We have a second one cracking as well.

Have reached out to A&P and [redacted] but checking here in parallel while I wait for them to get back to me

CERTIFIED

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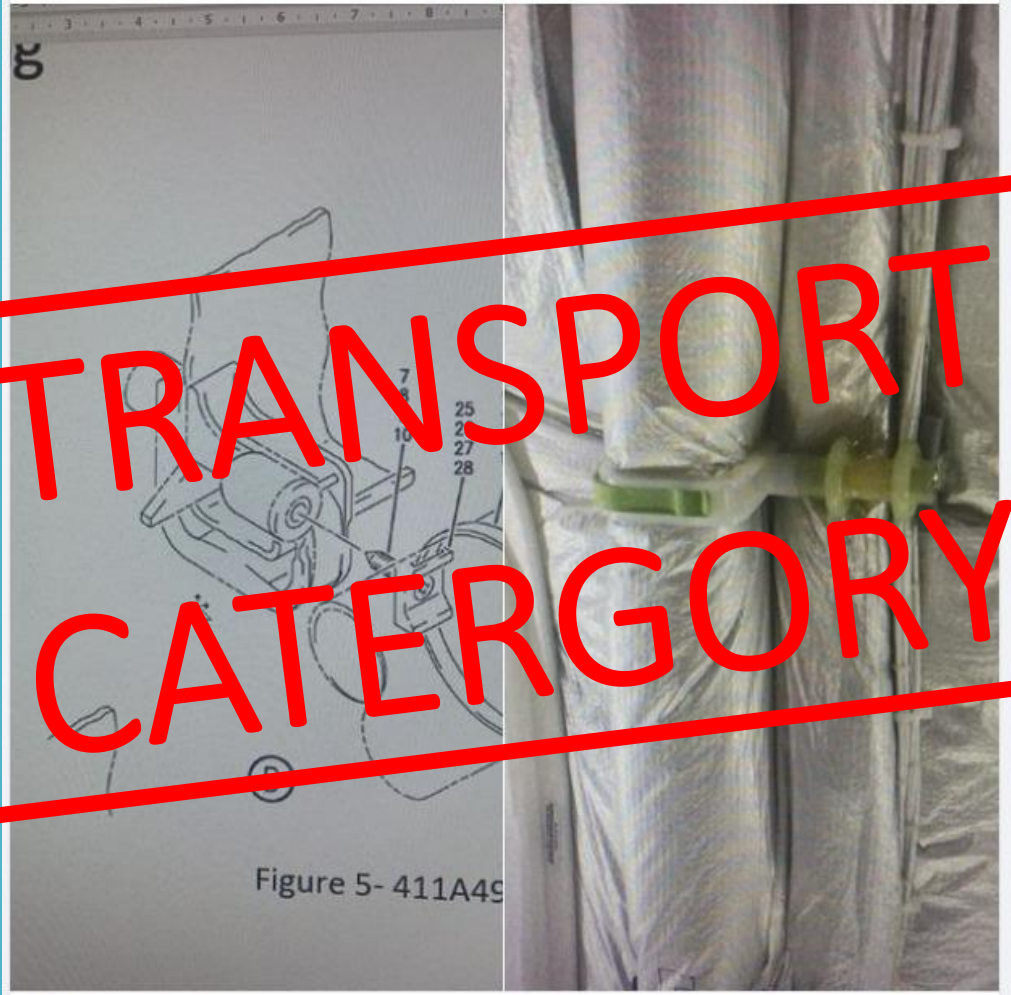
[redacted]
3h ·

Any Boeing Aircon people able to help?
With a Boeing frame clamp, does the clamp go over or under the insulation? Does it matter?



TRANSPORT CATERGORY

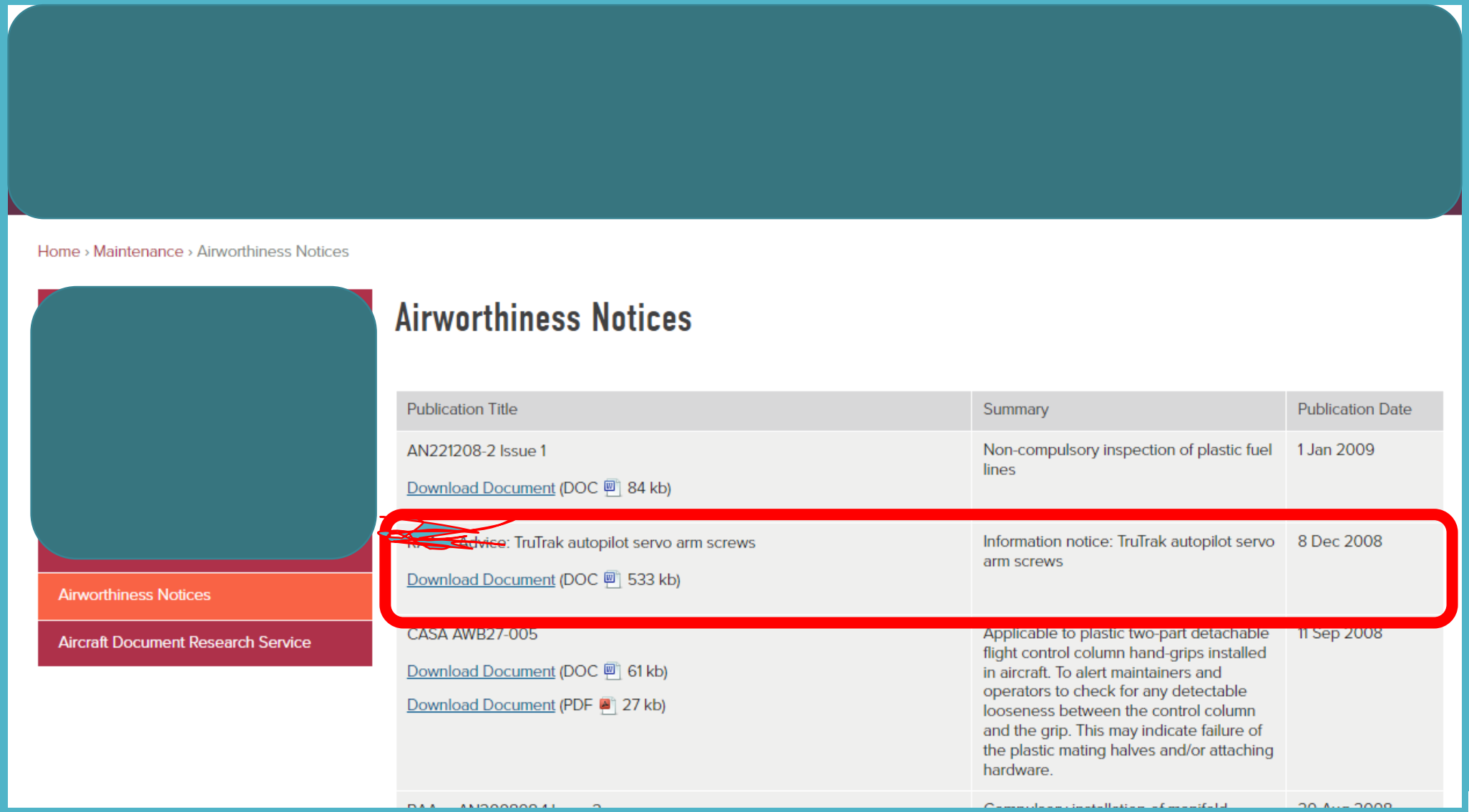
3 9 Comments

Like Comment Send

Top comments

Flight Safety Solutions

COMMUNICATION OF MAINTENANCE ISSUES



Home › Maintenance › Airworthiness Notices

Airworthiness Notices

Aircraft Document Research Service

Airworthiness Notices

Publication Title	Summary	Publication Date
AN221208-2 Issue 1 Download Document (DOC 84 kb)	Non-compulsory inspection of plastic fuel lines	1 Jan 2009
Advice: TruTrak autopilot servo arm screws Download Document (DOC 533 kb)	Information notice: TruTrak autopilot servo arm screws	8 Dec 2008
CASA AWB27-005 Download Document (DOC 61 kb) Download Document (PDF 27 kb)	Applicable to plastic two-part detachable flight control column hand-grips installed in aircraft. To alert maintainers and operators to check for any detectable looseness between the control column and the grip. This may indicate failure of the plastic mating halves and/or attaching hardware.	11 Sep 2008

BAD ATTITUDE Advanced Flight Training

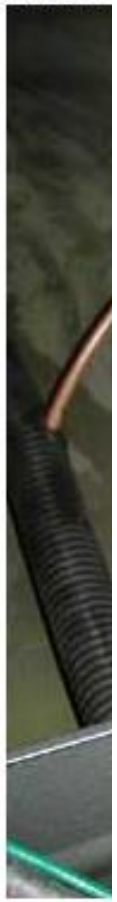
STRIKE Aviation Training

COMMUNICATION OF MAINTENANCE ISSUES

Please
contin
lock o

Please

Here i



Here is the fix.

The screw in the photo is secured with both locktite and safety wire.

I used a MS24677-14 which is a socket head cap screw with a drilled head in place of the original screw. I had to use three washers because of the length of the screw. A MS35265-41 1/4 in filister head screw would be a better choice, but I couldn't find one locally.

I discussed the situation with TruTrak this morning, and Lucas said that they would be investigating the problem.

Pat

COMMUNICATION OF MAINTENANCE ISSUES

BendixKing

Markets Products Services Contact Support Dealer Sign In

Autopilots & Indicators / xCruze

xCruze for Experimental Aircraft

xCruze 100/110 Autopilot for Experimental Aircraft

Overview Specifications Resources

The xCruze 100 is an affordable and flexible digital autopilot system for the experimental aircraft cockpit. Designed to interface with popular experimental EFIS solutions, the xCruze 100 provides a seamless integration with the xVue Touch as well as a variety of other manufacturers.

ACQUIRED 2019

TruTrak is now a part of BendixKing

COMMUNICATION OF MAINTENANCE ISSUES

Task ID	When was defect detected?	ATA Chapter	ATA Subchapter
[redacted]	On Ground	22: AUTO-FLIGHT	

Auto pilot not operational in pitch

ARN:	[redacted]
NAME:	[redacted]
TTAF:	8439.0
DATE:	2 Nov 2019
TIME:	09:08

RESOLUTION

REPAIRED IAW WHAT PAT WROTE ON THE SAAA FORUM

ARN:	[redacted]
NAME:	[redacted]
CERT. DATE:	2 Nov 2019
CERT. TIME:	09:14
TTAF:	8439.0
AMO Approval:	05082
Log Book:	aircraft, propeller

Flight Safety Solutions

TECNAM STRUCTURAL CORROSION

BAD ATTITUDE Advanced Flight Training

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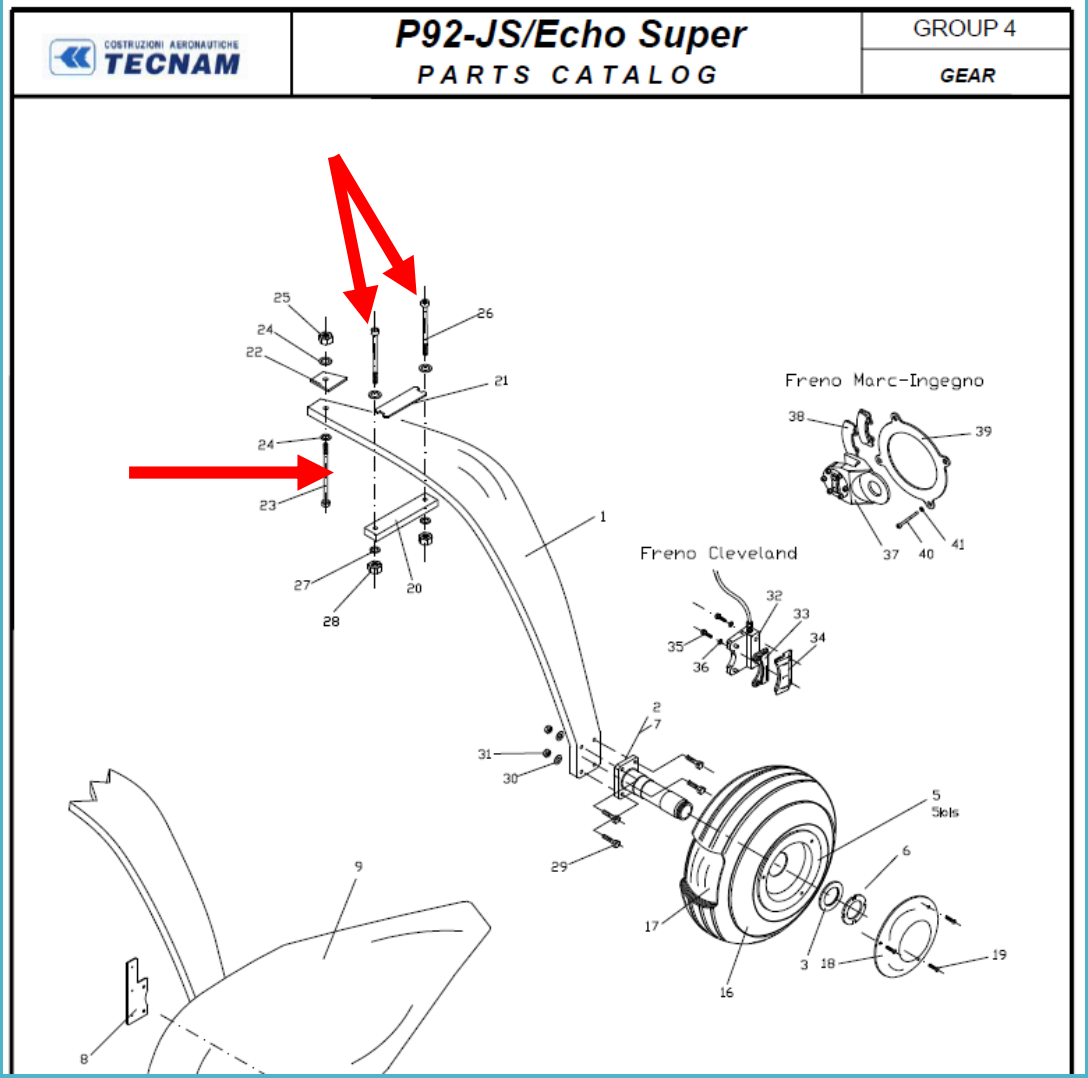
Flight Safety Solutions

TECNAM STRUCTURAL CORROSION



20	21-8-210-1	LEAF SPRING CLAMP PLATE	2
21	92-8-206-3	LEATHER SHIM	2
22	92-8-205-1	SPACER SHIM (ALI)	2
23	UNI5737-D8L60	HEX SOCKET HEAD BOLT M8 CR8.8 L=60 MM	6
24	UNI6592-D8	FLAT WASHER D=8	12
25	UNI7473-D8	SELF LOCKING NUT M8	6
26	UNI5737-D6L39	BOLT T.E. M6.35 CR8.8 L=39 MM	8
27	UNI6592-D6	FLAT WASHER D=6	8
28	UNI7473-D6	SELF LOCKING NUT M6.35	8
29		BOLT T.E.	4
30		WASHER	4
31		NUT	4

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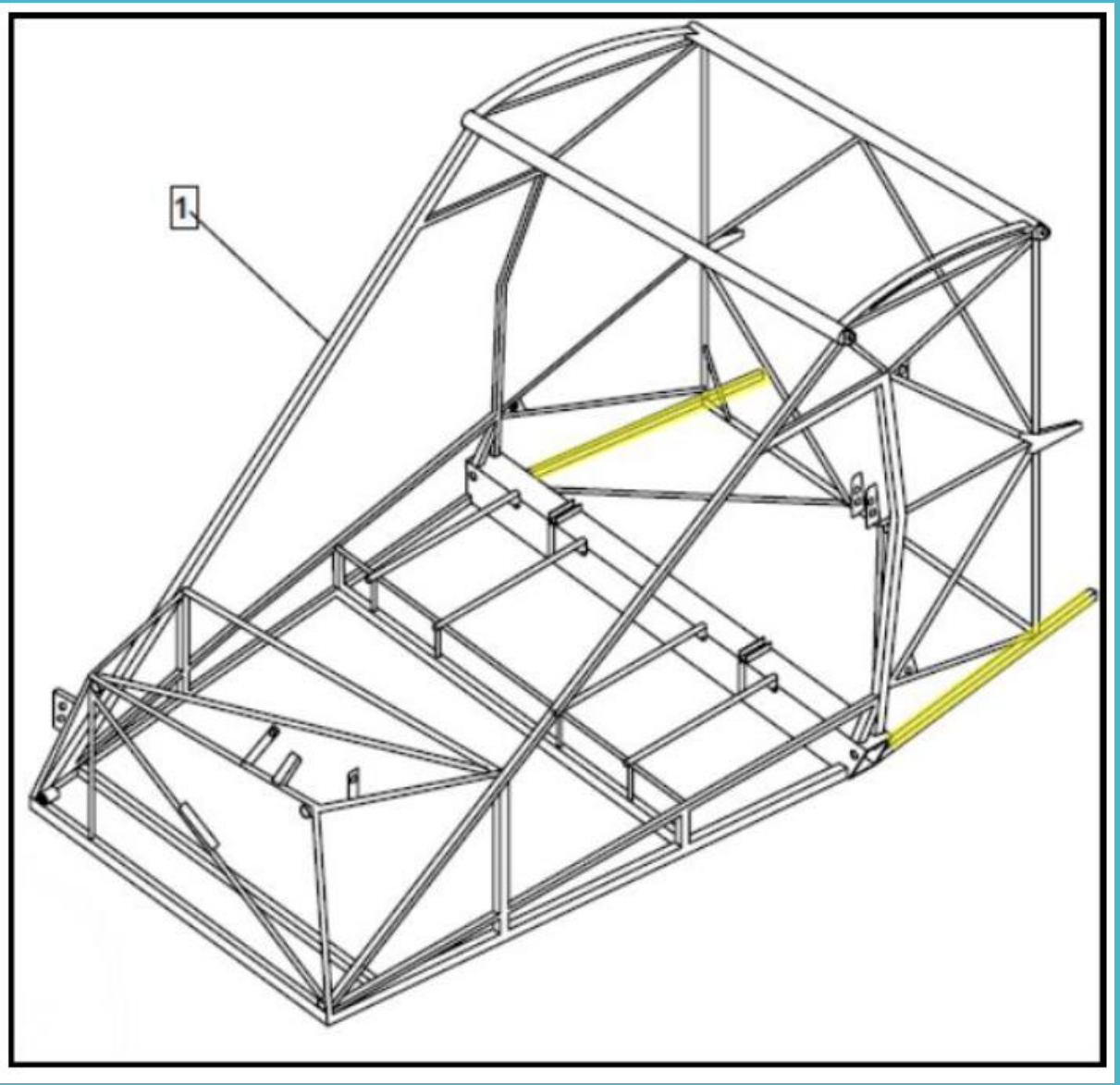
TECNAM STRUCTURAL CORROSION

BAD ATTITUDE Advanced Flight Training

STRIKE Aviation Training

TECNAM STRUCTURAL CORROSION



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TECNAM STRUCTURAL CORROSION

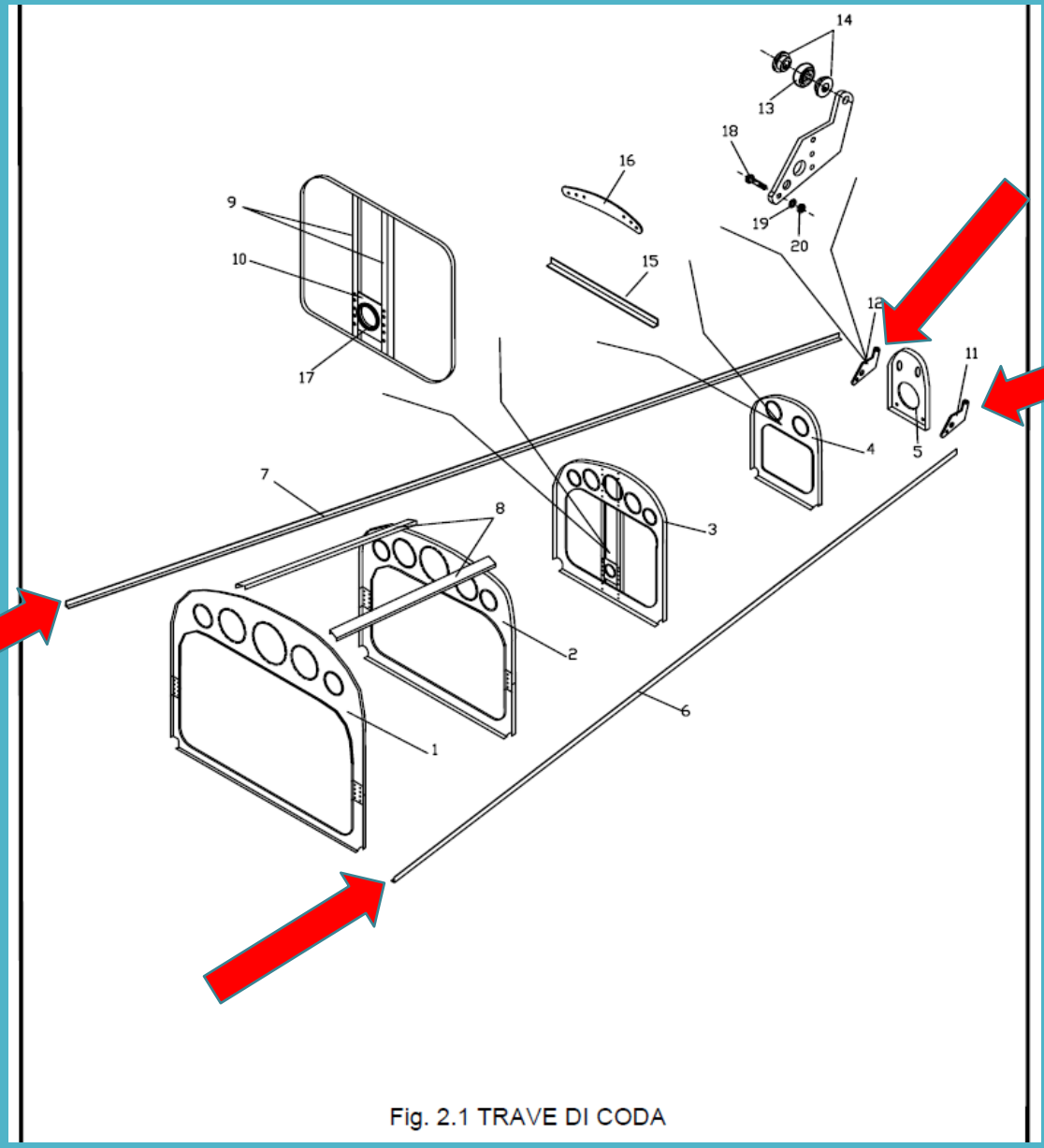

Fig. 2.1 TRAVE DI CODA

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TECNAM STRUCTURAL CORROSION

BAD ATTITUDE Advanced Flight Training

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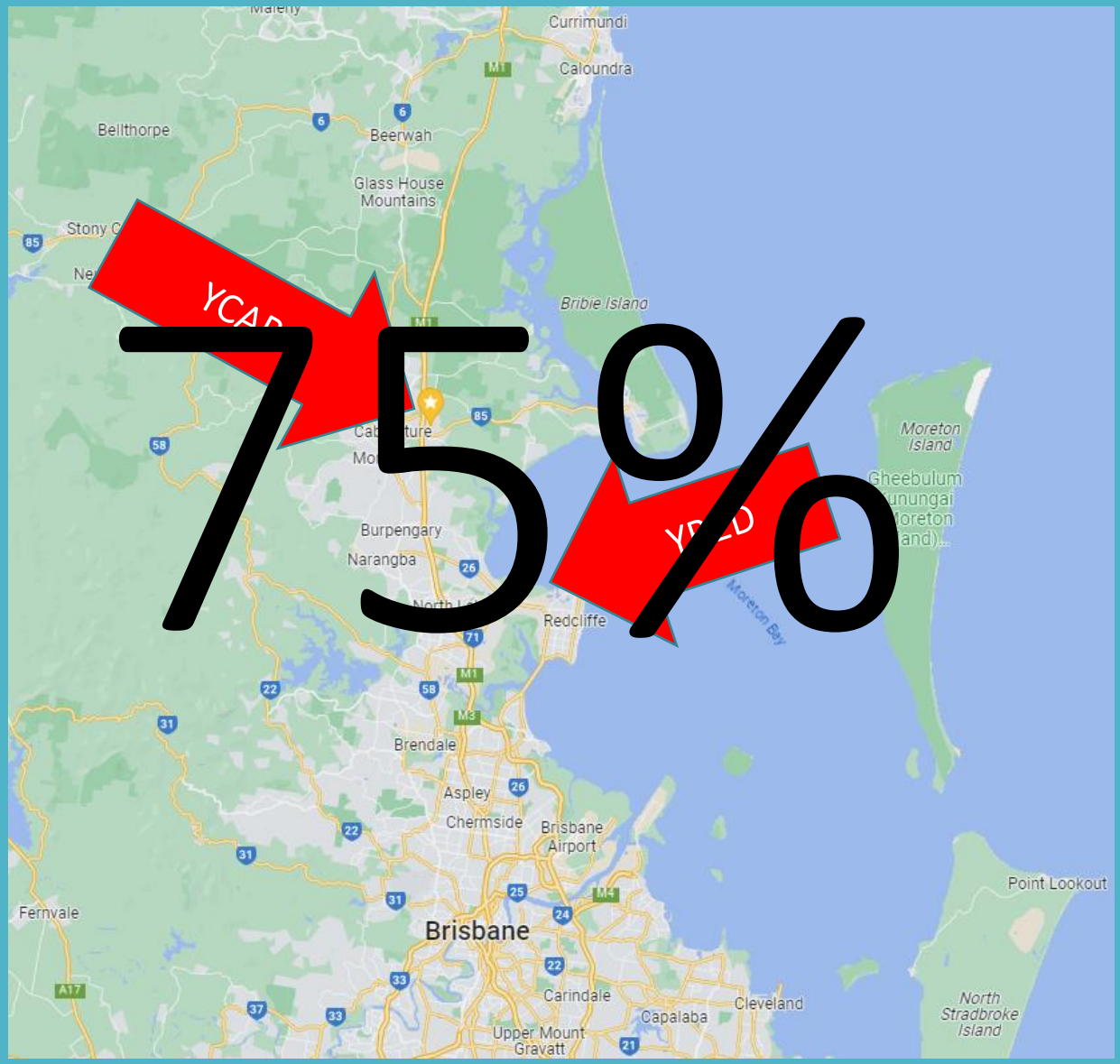
TECNAM STRUCTURAL CORROSION



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TECNAM STRUCTURAL CORROSION

RAAus

Reported via OMS

TECNAM

Communicated with local distributor

CASA

TALK TO RAAus

BAD ATTITUDE Advanced Flight Training

STRIKE Aviation Training

Flight Safety Solutions

IT'S HARD TO DO THE RIGHT THING

#ITSHARDTODOTHERIGHTTHING

SOCIAL MEDIA IS HERE TO STAY – EMBRACE IT

HUMANS WILL ALWAYS LOOK FOR THE EASIEST ROUTE

BAD ATTITUDE Advanced Flight Training

STRIKE Aviation Training

Flight Safety Solutions

IT'S HARD TO DO THE RIGHT THING

BAD ATTITUDE
Advanced Flight Training

STRIKE
Aviation Training

Flight Safety Solutions

DECISION TIME

BAD ATTITUDE Advanced Flight Training

STRIKE Aviation Training

Flight Safety Solutions

DECISION TIME

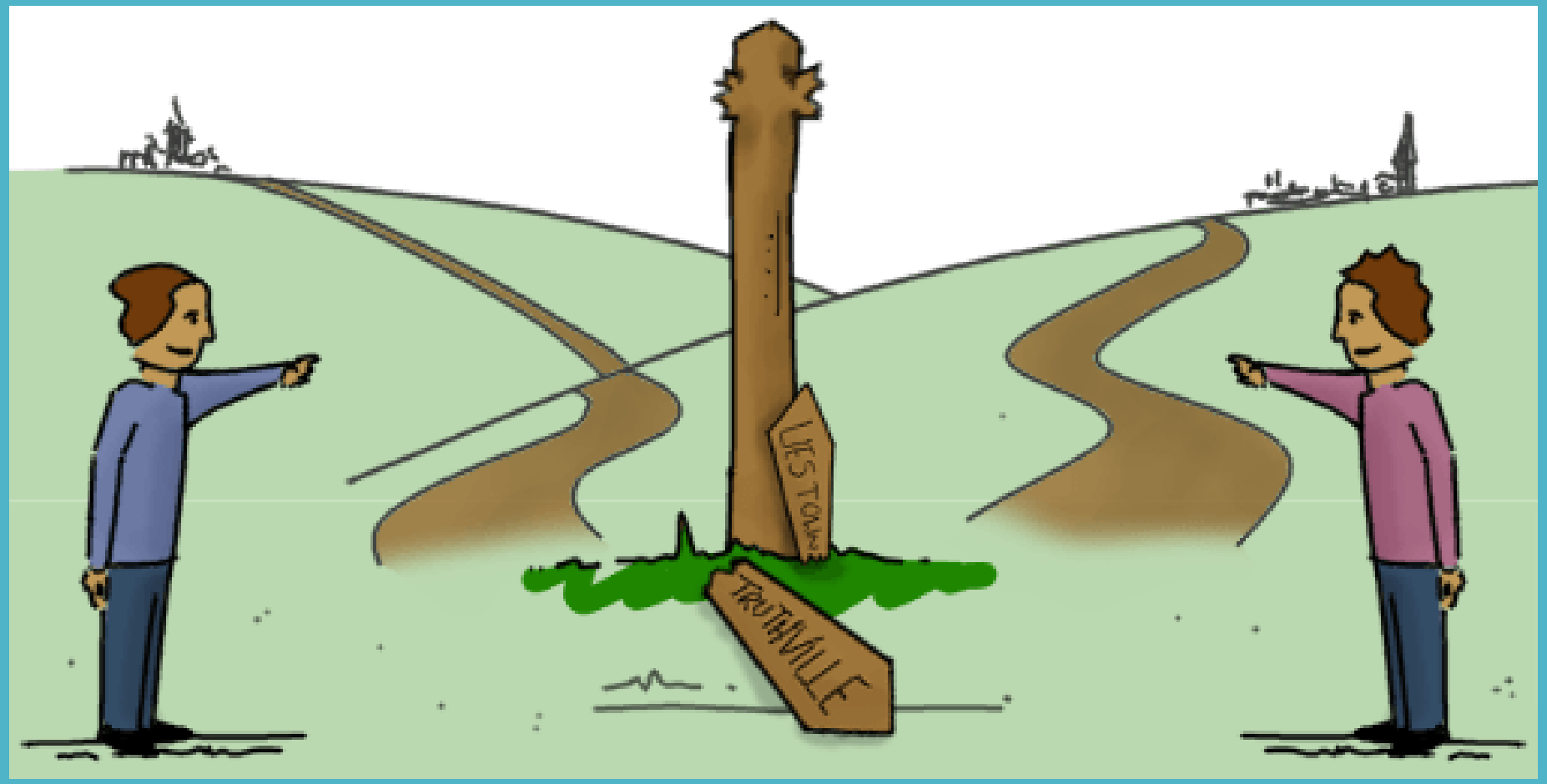
BAD ATTITUDE Advanced Flight Training

STRIKE Aviation Training

Flight Safety Solutions

DECISION TIME

Safety Circle Breakdown –
WHO IS MAINTAINING THE SIGNPOSTS?



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RED ALERT

CONFIRMATION BIAS

TRUST BUT VERIFY

BAD ATTITUDE Advanced Flight Training

STRIKE Aviation Training

Flight Safety Solutions

THE BUBBLE FILTER

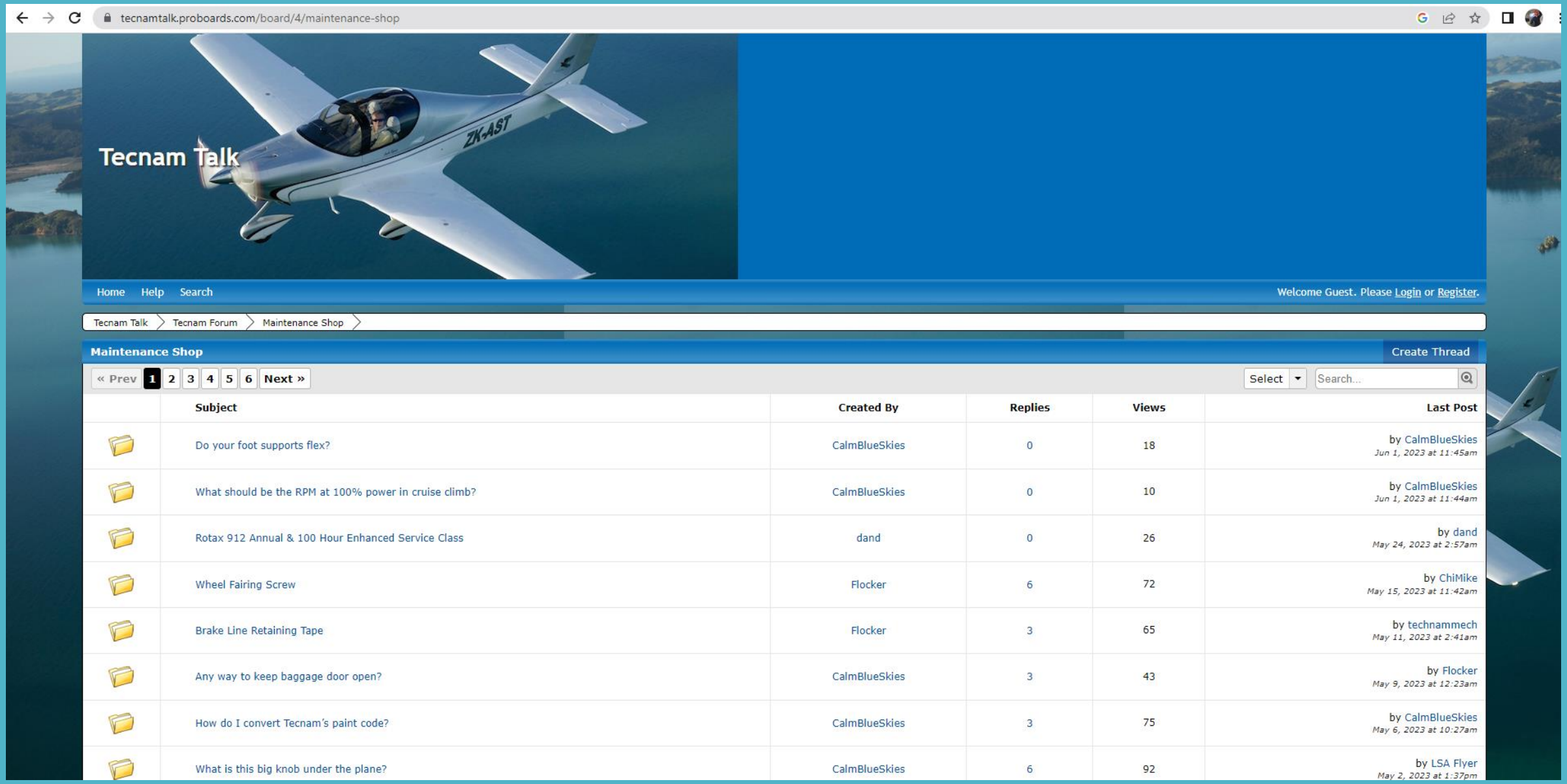
This applies to Google search results too!

Don't be this person

IADT LIBRARY

Image from Chainsawsuit by Kris Straub

Flight Safety Solutions



Subject	Created By	Replies	Views	Last Post
Do your foot supports flex?	CalmBlueSkies	0	18	by CalmBlueSkies *Jun 1, 2023 at 11:45am*
What should be the RPM at 100% power in cruise climb?	CalmBlueSkies	0	10	by CalmBlueSkies *Jun 1, 2023 at 11:44am*
Rotax 912 Annual & 100 Hour Enhanced Service Class	dand	0	26	by dand *May 24, 2023 at 2:57am*
Wheel Fairing Screw	Flocker	6	72	by ChiMike *May 15, 2023 at 11:42am*
Brake Line Retaining Tape	Flocker	3	65	by technammech *May 11, 2023 at 2:41am*
Any way to keep baggage door open?	CalmBlueSkies	3	43	by Flocker *May 9, 2023 at 12:23am*
How do I convert Tecnam's paint code?	CalmBlueSkies	3	75	by CalmBlueSkies *May 6, 2023 at 10:27am*
What is this big knob under the plane?	CalmBlueSkies	6	92	by LSA Flyer *May 2, 2023 at 1:37pm*

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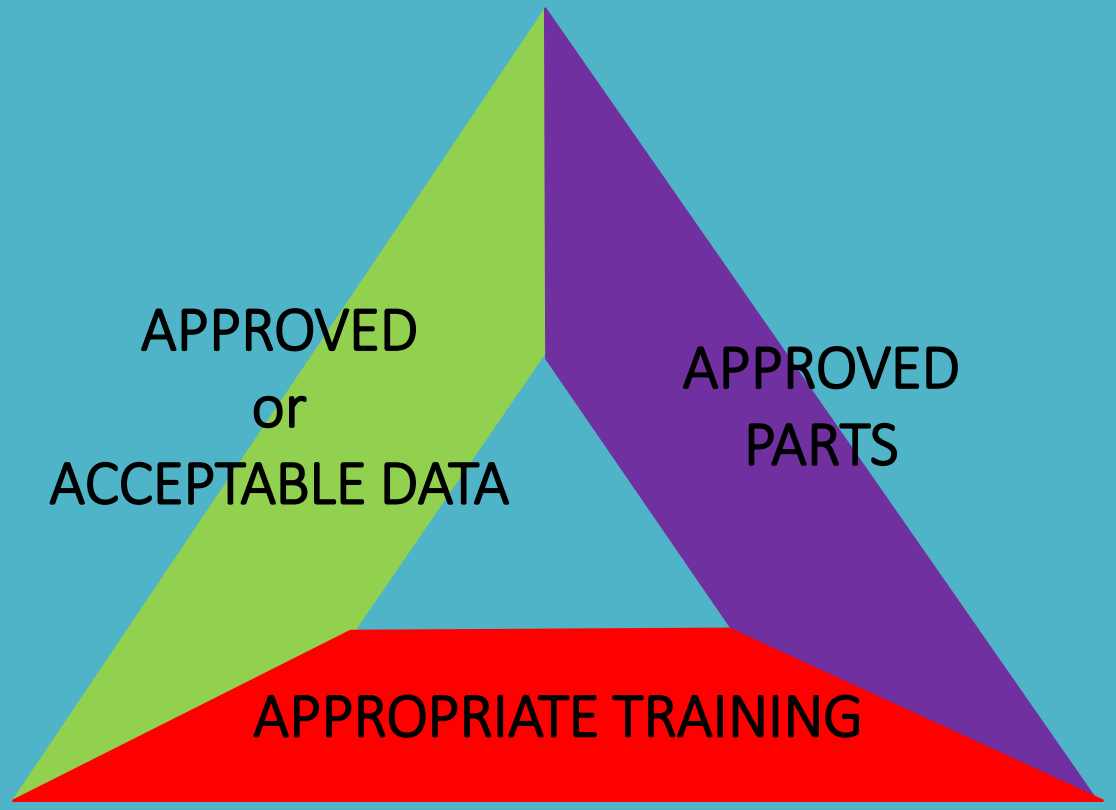
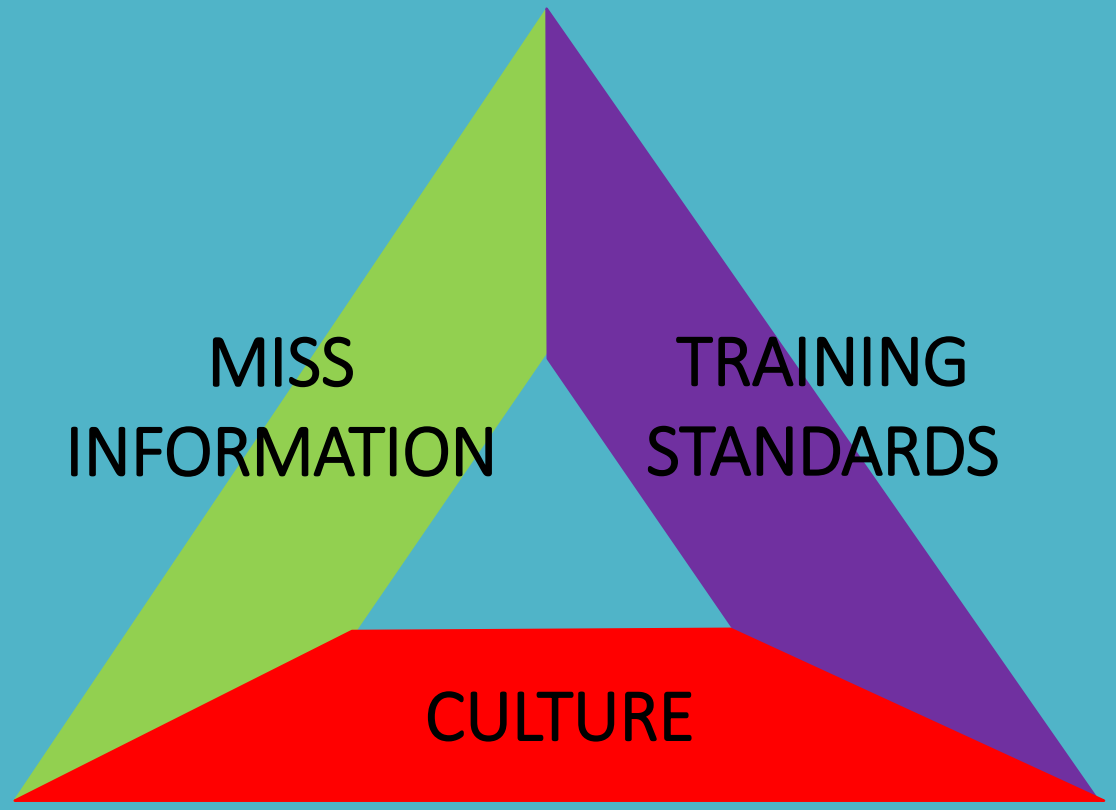
CONTRIBUTORS TO LOSS OF MAINTENANCE SYSTEM INTEGRITY





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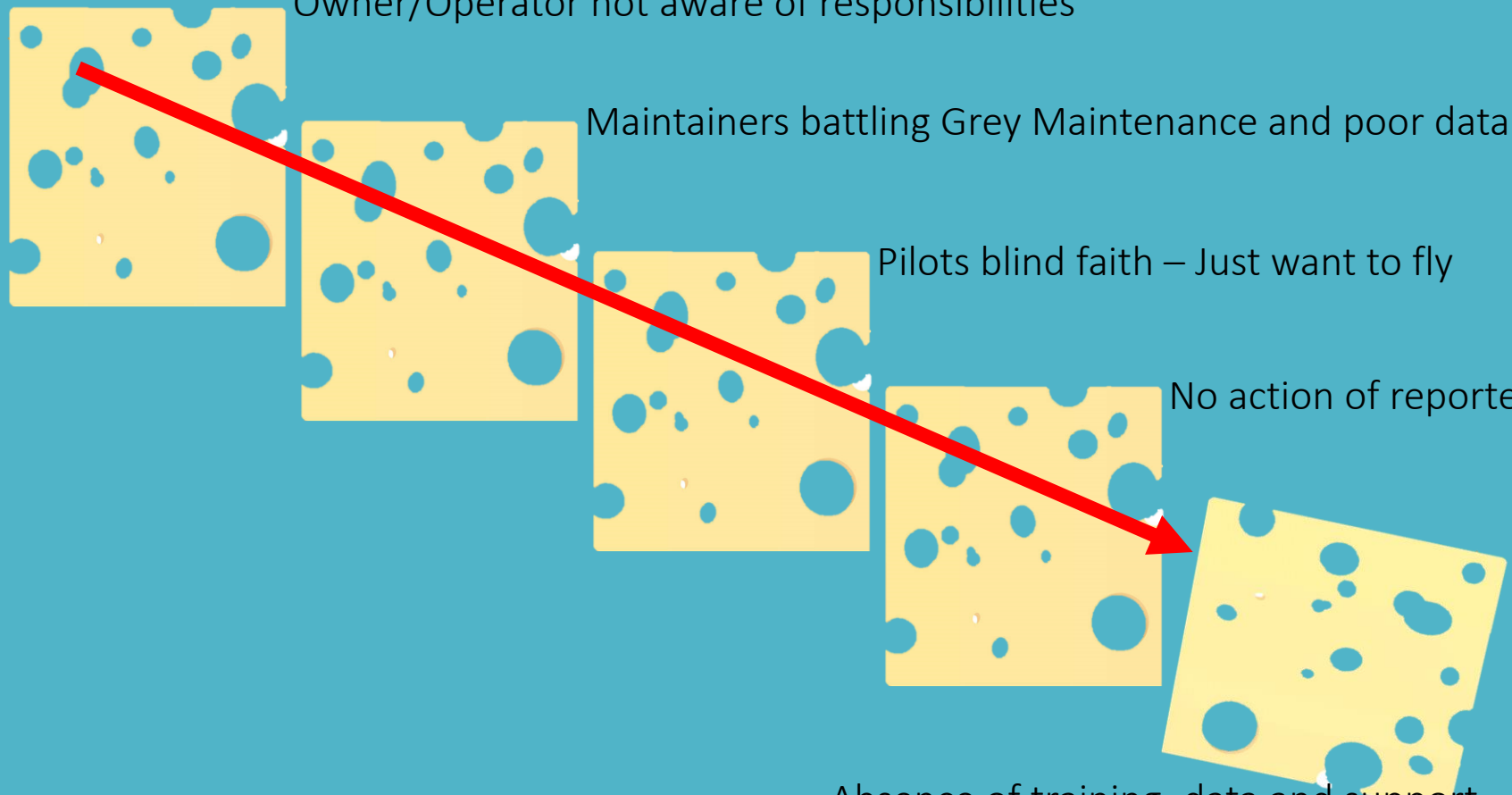
Flight Safety Solutions

SWISS CHEESE ROULETTE



BAD ATTITUDE Advanced Flight Training

STRIKE Aviation Training

Flight Safety Solutions

DON'T BRING PROBLEMS – BRING SOLUTIONS

OVERSIGHT

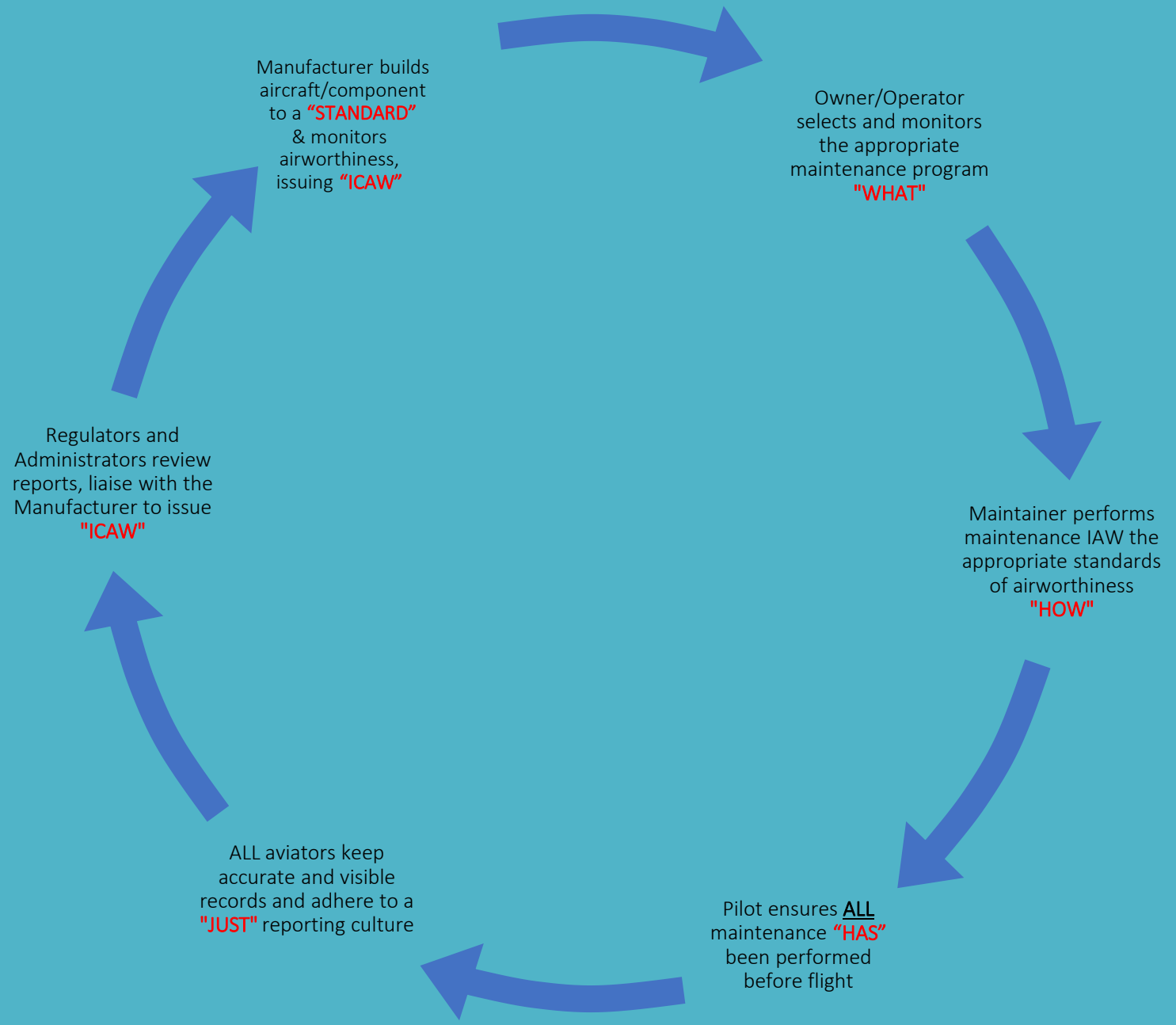
of all parts of the
Maintenance Safety Circle

Simply do the job everyone is supposed to do.

BAD ATTITUDE Advanced Flight Training

STRIKE Aviation Training

MAINTENANCE SAFETY CIRCLE



Flight Safety Solutions

DON'T BRING PROBLEMS – BRING SOLUTIONS

OVERSIGHT

of all parts of the
Maintenance Safety Circle

Simply do the job everyone is supposed to do.

CAMO

For GA and RA

Cost, Culture and Desire.

BAD ATTITUDE Advanced Flight Training

STRIKE Aviation Training

Flight Safety Solutions

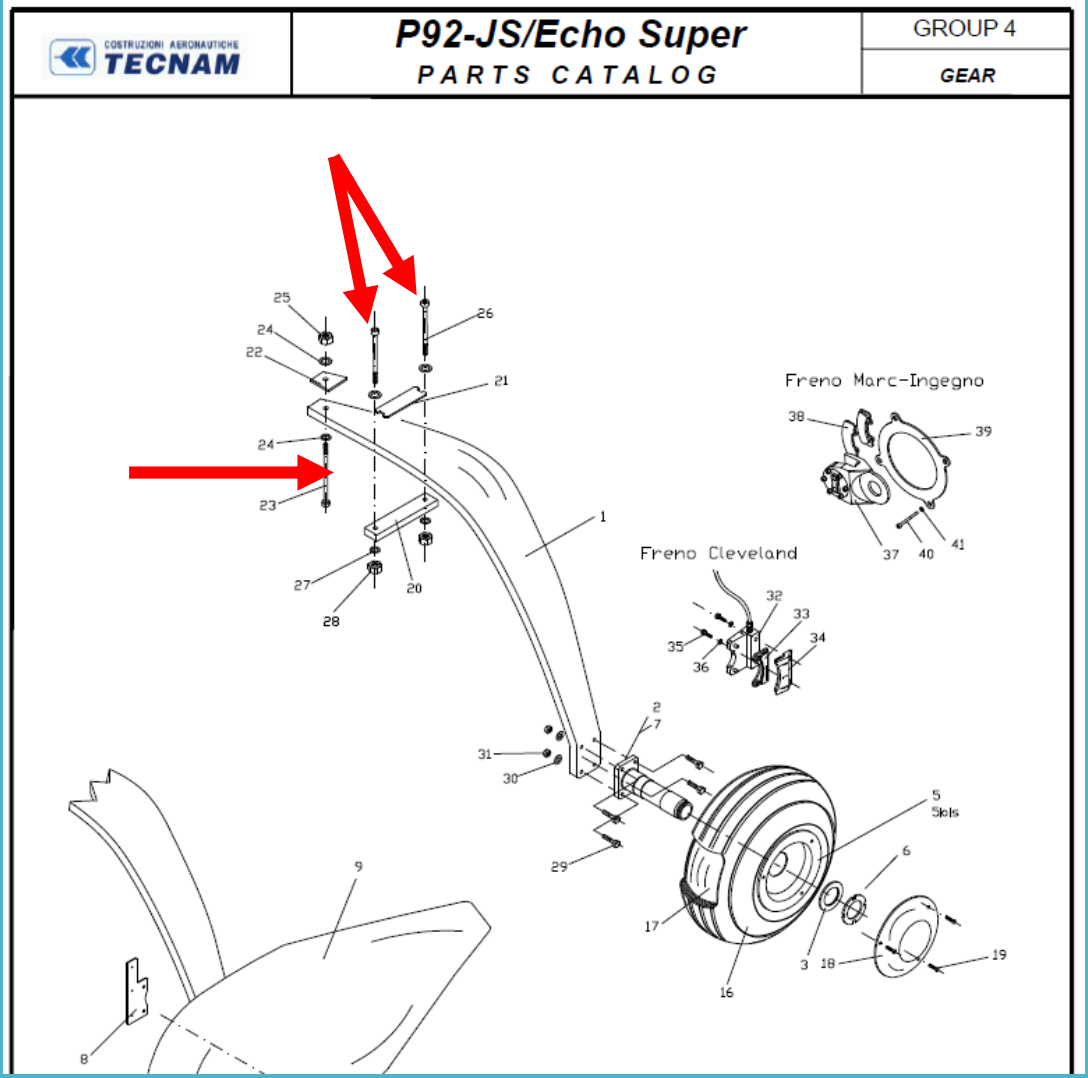
QUESTIONS

BAD ATTITUDE Advanced Flight Training

STRIKE Aviation Training

TECNAM STRUCTURAL CORROSION

TECNAM STRUCTURAL CORROSION



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30		WASHER	4
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TECNAM STRUCTURAL CORROSION

COSTRUZIONI AERONAUTICHE TECNAM

LSA SERVICING BULLETIN
N° P92/001
N° P2004/001
page 1 of 1

Information	☐	*Recommendation*	☐	*Mandatory*	☒

DATE ISSUED	August 7, 2007
DATE EFFECTIVE	August 7, 2007
SCOPE	TECNAM LSA airplanes models: P92 Echo Super – P2004 Bravo
SUBJECT	Landing Gear attachment bolts

DISCUSSION:
A US flight training school LSA aircraft P92 Echo Super had an incident where the landing gear leg folded back under braking as the aircraft was rolling out after landing. The possible cause is the uncorrect torque value of the interested bolt or a defective bolt.
During the inspection of the aluminium alloy clamp an ovality was found in the attachment bolt hole: although this ovality is normal in order to permit some accomodation during the assembly.

APPLICABILITY:
TECNAM LSA airplanes models:

- *P92 Echo Super*
- *P2004 Bravo*

CORRECTIVE ACTION:
At the next service interval or within the next ten hours of flying, a LSA mechanic, A&P mechanic, FAA Reapir Station, or an authorized factory representative must inspect the landing gear attachment bolts.
The visual inspection includes:
- Attachment bolts (inspect the conditions and the torque value - 24.6Nm – 217lb in)
- Aluminium alloy clamp inspection for deformation or cracks;

If the bolts must be replaced, please request to your TECNAM dealer the following P/N:

P/N	Description	Q.ty
MS20005-24	Attachment bolts	4
MS21042-5	Self-locking nut	4
MS20002C5	Countershank washer	4
MS20002-5	Plain washer	(as required, 4 min.)

DO Design Office	OoA Office of Airworthiness	HDO Head of Design Organization
Prepared	· Document release · Approval of the whole modification Compliance C.L.	Declaration of Compliance
Mr. Fabio Russo	*Mr. Michele Oliva*	*Mr. Luigi Pascale Langer*

If the bolts must be replaced, please request to your TECNAM dealer the following P/N:

P/N	Description	Q.ty
MS20005-24	Attachment bolts	4
MS21042-5	Self-locking nut	4
MS20002C5	Countershank washer	4
MS20002-5	Plain washer	(as required, 4 min.)

TECNAM STRUCTURAL CORROSION

COSTRUZIONI AERONAUTICHE TECNAM

LSA SERVICING BULLETIN

N° **P92/001**

N° **P2004/001**

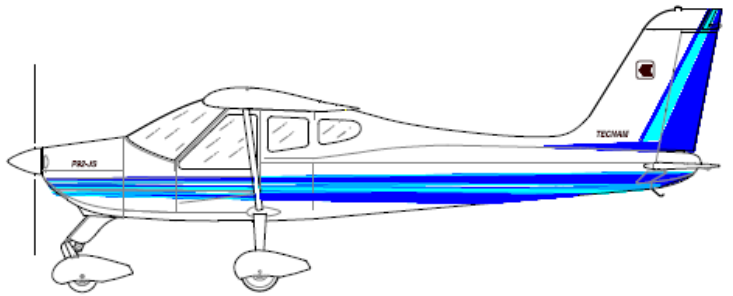
page 1 of 1

Information	☐	*Recommendation*	☐	*Mandatory*	☒

DATE ISSUED	August 7, 2007
DATE EFFECTIVE	August 7, 2007
SCOPE	TECNAM LSA airplanes models: P92 Echo Super – P2004 Bravo
SUBJECT	Landing Gear attachment bolts

ILLUSTRATED PARTS CATALOG

P92 - JS & Echo Super



Doc. 92/65 Ed:1 Revision:3
February 2009

TECNAM STRUCTURAL CORROSION

COSTRUZIONI AERONAUTICHE TECNAM

SERVICE BULLETIN

N°18-LSA

Date: 12th September 2011

Rev. 2 of 13th September 2011

page 4 of 11

3. MLG nuts substitution

Replace the laterals and central nuts according to following figure 2 and applying the torque values indicated in table 1:

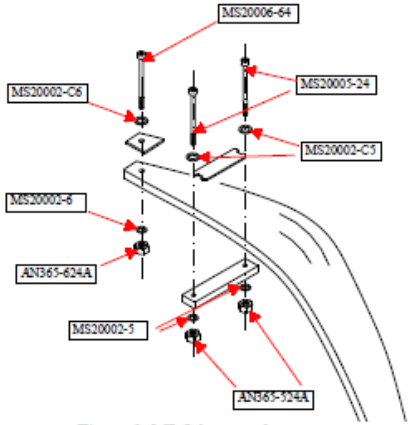


Figure 2. MLG leg attachment

Description	*Part number*	*QTY*	*Torque value*
Central bolts	MS20006-64	2	//
Lateral bolts	MS20005-24	4	//
Stop nut for lateral bolts	AN365-524A	4	15 +/- 1 Nm
Stop nut for central bolts	AN365-624A	2	25 +/- 2 Nm
Washer under Lateral bolts	MS20002C-5	4	//
Washer under Central bolts	MS20002C-6	2	//
Washer under Lateral Stop Nuts	MS20002-5	4	//
Washer under Central Stop Nut	MS20002-6	2	//

Table 1

NOTE

To avoid a main landing leg detachment from the fuselage Tecnam recommend that the nuts must be replaced one at a time and the correct torque value must be applied at end of all nuts installation.

Description	*Part number*	*QTY*	*Torque value*
Central bolts	MS20006-64	2	//
Lateral bolts	MS20005-24	4	//
Stop nut for lateral bolts	AN365-524A	4	15 +/- 1 Nm
Stop nut for central bolts	AN365-624A	2	25 +/- 2 Nm
Washer under Lateral bolts	MS20002C-5	4	//
Washer under Central bolts	MS20002C-6	2	//
Washer under Lateral Stop Nuts	MS20002-5	4	//
Washer under Central Stop Nut	MS20002-6	2	//

Table 1

NOTE

To avoid a main landing leg detachment from the fuselage Tecnam recommend that the nuts must be replaced one at a time and the correct torque value must be applied at end of all nuts installation.

TECNAM STRUCTURAL CORROSION

COSTRUZIONI AERONAUTICHE TECNAM

P92 Echo Super de luxe
SERVICE MANUAL

Section B
INSPECTIONS AND SERVICING

	TYPE OF INSPECTION	INSPECTION INTERVAL (HOURS)	
		100	Special
	MAIN GEAR		
1	Check brake system (tank, pump, pipes and calipers)	●	
2	Replace brake pads		600(a)
3	Check at sight leaf spring force struts, connection tie and clamping pivot	●	
4	Remove gear struts and check camber and condition		1200
5	Inspect principal wheel for good state and clamping	●	
6	Remove wheels, clean and lubricate bearings		600(b)
7	Integrity fairing and relative attachments *(if installed)*	●	

(a) When brake pad thickness is below 2.4 mm

(b) initially at 100 hours

TECNAM STRUCTURAL CORROSION

COSTRUZIONI AERONAUTICHE
TECNAM

SERVICE BULLETIN

N°**17-LSA**

Date: 11th August 2011

page 1 of 3

Information ☐	*Recommendation* ☒	*Mandatory* ☐

A/C AFFECTED	*P2002 (series with fixed gear) all serial numbers* *P92 (series): all serial numbers* *P2004 Bravo: all serial numbers*
TIME OF COMPLIANCE	*Within 10 flight hours if total flight hours less than 100, then every 100hrs*
WORKING PLACE	*On place.*

Subject: *Main landing bolts torque values check*

Scope: *In order to ensure a better connection between the main landing gear leaf-springs and the fuselage, it is recommended to perform a torque values check of the MS bolts in time of compliance provided in this bulletin.*

TECNAM STRUCTURAL CORROSION

COSTRUZIONI AERONAUTICHE
TECNAM

MAINTENANCE MANUAL

1st Edition rev. 0

P92 Echo Super de luxe

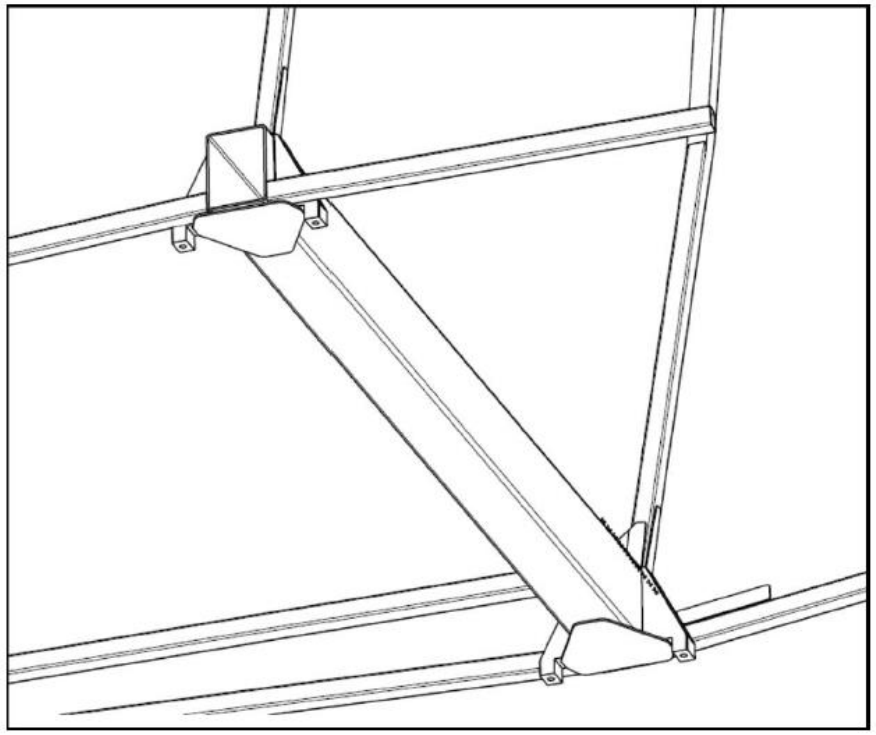
SERIAL NUMBER .....
BUILD YEAR .....
REGISTERED MARKINGS .....

Doc. n° 92-13-004-00
19th March 2008

i

TECNAM STRUCTURAL CORROSION

9. Locate the interested areas and proceed to install the **Support Plate P/N 21-2-1114-1** as shown in the drawings.



TECNAM

7 MONTHS WAIT

RAAus

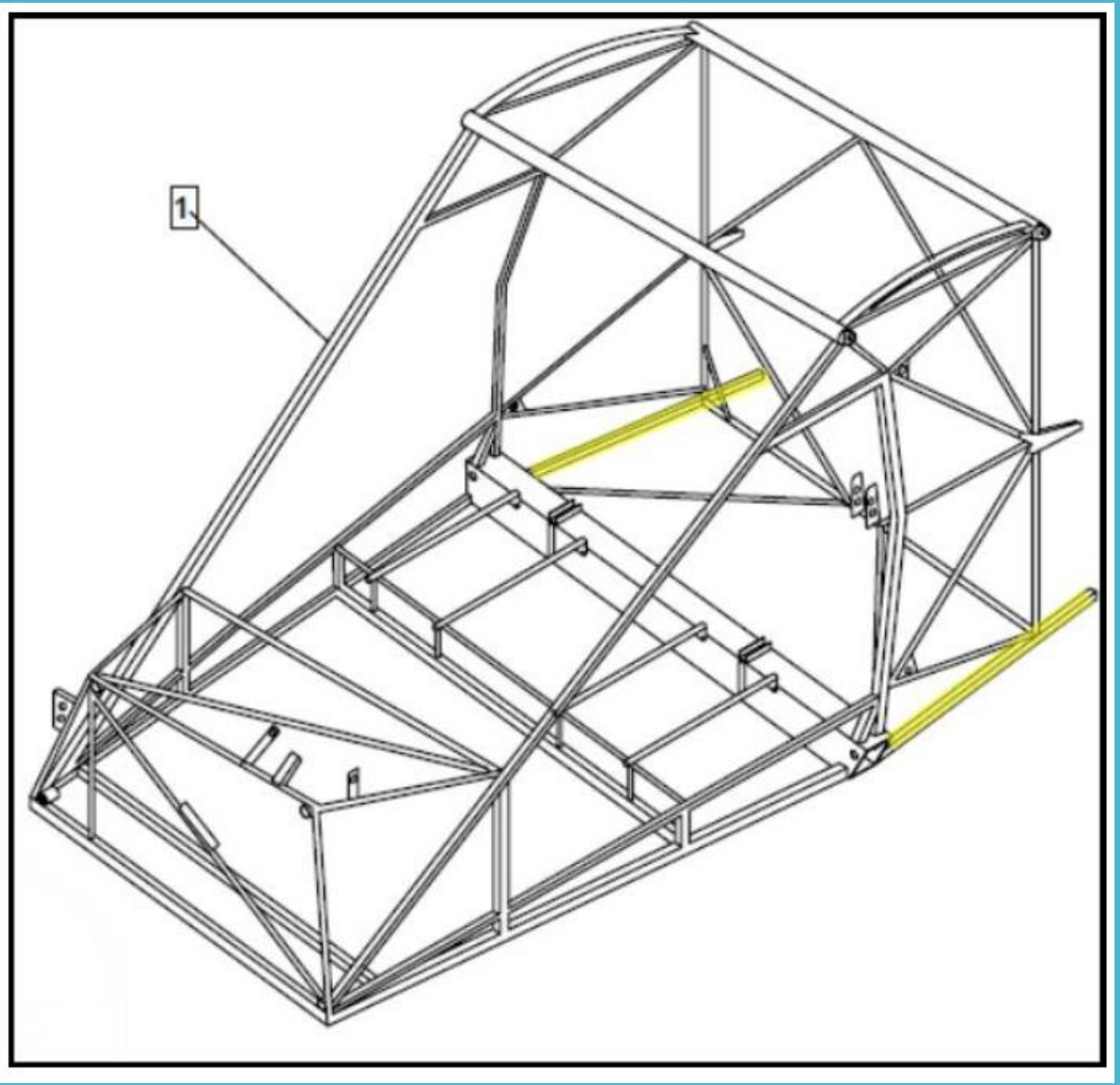
OWNER - MANUFACTURER

CASA

TALK TO RAAus

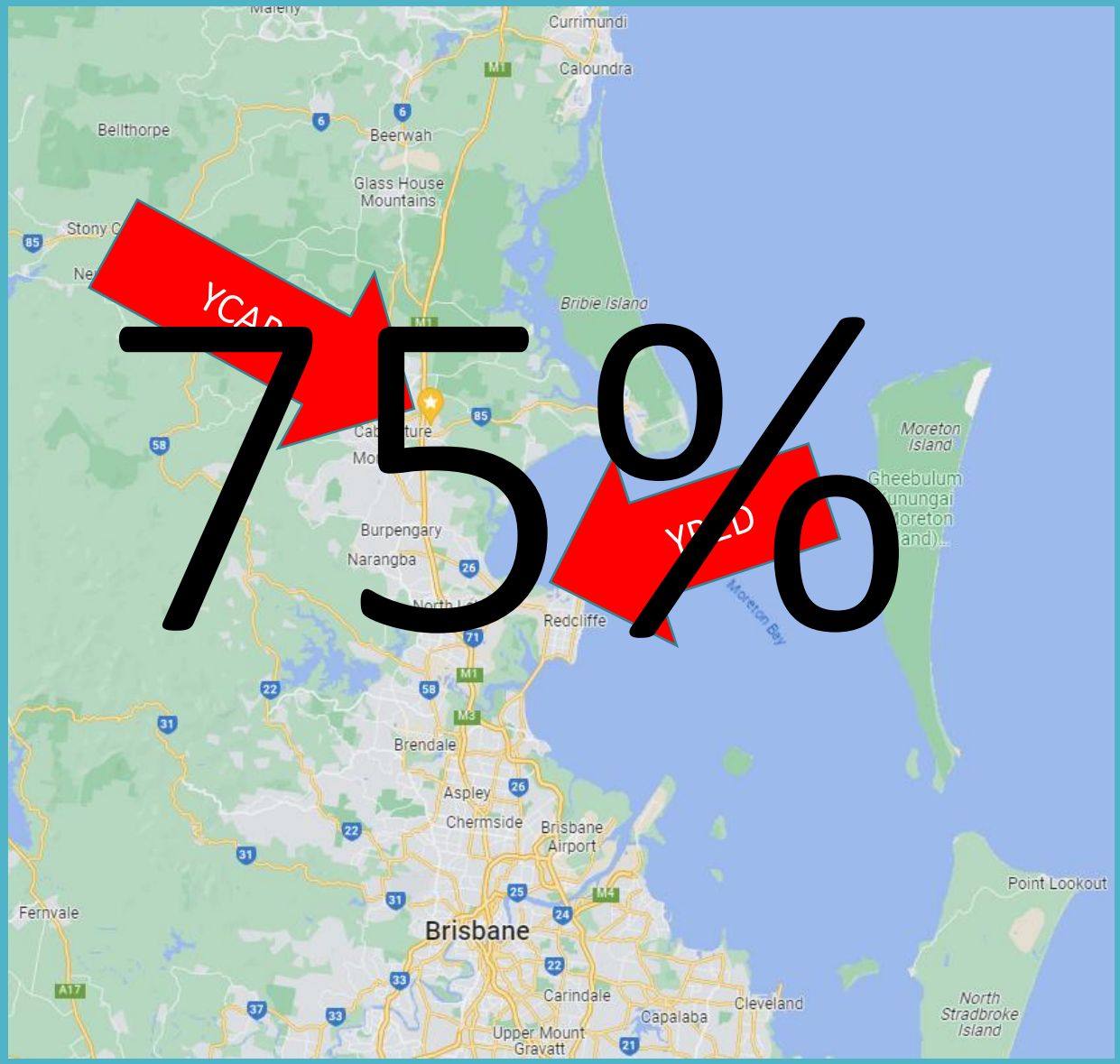
TECNAM STRUCTURAL CORROSION

TECNAM STRUCTURAL CORROSION



TECNAM STRUCTURAL CORROSION

TECNAM STRUCTURAL CORROSION



TECNAM STRUCTURAL CORROSION

RAAus

Reported via OMS

TECNAM

Communicated with local distributor

CASA

TALK TO RAAus

COMMUNICATION OF MAINTENANCE ISSUES

COMMUNICATION OF MAINTENANCE ISSUES

5 DEFECT REPORT AND AIRWORTHINESS NOTICE ADMINISTRATIVE PROCEDURES

5.1 Once the defect report is submitted through the Occurrence Management System the originator will be sent a confirmation of receipt advice. ✓

5.2 Defect reports will be given a reference number for the originators record and all reports will be reviewed by the RAAus HAM. ?

5.3 Every defect report will be reviewed by the RAAus HAM and one or more of the following actions may be taken:

(a) A summary of the defect and its outcome are made available on the RAAus website via the following link https://www.raa. asn.au/safety/accident-and-defect-summaries/ ✓

(b) An Airworthiness Notice will be prepared. Samples are available on the RAAus website www.raa.asn.au under Safety – Technical – Airworthiness. Due to the wide nature of possible subjects, individual Airworthiness Notice format may vary but will generally follow the format of Topic – Background Discussion – Action Required. Airworthiness Notices may be published in "Sport Pilot" magazine. Depending on the significance of the defect, copies of Airworthiness Notices may also be forwarded by the HAM to all RAAus registered owners of the aircraft type by mail or via email. ✗

(c) For other than LSA aircraft, the rectification action specified in the Airworthiness Notice is to be undertaken or arranged to be undertaken by aircraft owners within the period specified in the Notice. ✗

(d) For LSA Aircraft, as no modifications can be made without Manufacturer's approval, RAAus will issue the Airworthiness Notice as an advisory to members, and RAAus will also alert the aircraft manufacturer about the defect found, and request they investigate. ✗

(e) Aircraft/Component manufacturers may be advised of the defect or deficiency and requested to undertake rectification action and advise all known owners of the affected aircraft or component. ?

COMMUNICATION OF MAINTENANCE ISSUES

Occurrence Management

Occurrence Number	Occurrence Type	Occurrence Date	Status	Outcome
OCC2923	Defect	29th August 2022	Outcome Approved	STATUS: Under review OCCURRENCE DETAILS SUBMITTED TO RAAUS: Ordered parts from the manufacturer and found parts or critical systems with varying tolerances.
OCC2919	Defect	20th August 2022	Under Investigation	STATUS: Under review OCCURRENCE DETAILS SUBMITTED TO RAAUS: During pre-flight, the windscreen skylight was found to have multiple rivets pulled out of the screen.
OCC2838	Defect	13th June 2022	Under Investigation	STATUS: Under review OCCURRENCE DETAILS SUBMITTED TO RAAUS: Defect: 42 Vortex Generators fell off the aircraft. The remainder were able to be removed with light finger pressure.
OCC2777	Defect	29th March 2022	Assigned For Delegation	
OCC2751	Defect	24th March 2022	Assigned For Investigation	STATUS: Under review EXTRACT FROM REPORT SUBMISSION: The aircraft was found to have a crack in the plastic skylight.
OCC2680	Defect	12th January 2022	Im Review	STATUS: Under review EXTRACT FROM REPORT SUBMISSION: During pre-flight it was noted that where the elevator cable exits the empennage near the horizontal stabilizer, the aircraft skin has rubbed the protective coating from the cable exposing the strands. Nil strands damaged at this stage
OCC2776	Defect	11th January 2022	Under Investigation	STATUS: Under review EXTRACT FROM REPORT SUBMISSION: The lower longerons for the aircraft frame showed signs of corrosion
OCC2668	Defect	18th December 2021	Sm Review	STATUS: Under review EXTRACT FROM REPORT SUBMISSION: During taxi, the aircraft as unable to turn left with full left rudder applied. Found was RH pedal on LH seat binding on the control arm to the stop. They found the rudder significantly off to the RH side when the pedals centralized. Deflections to the right in excess of the movement noted in the AMM allowing the elevator and rudder to come in contact with each other. This movement MAY, in the right conditions, prevent elevator authority due to binding of the elevator on the rudder trim tab assy. Also found the rudder cable tensions too low with only 0.020" lockwire used on turnbuckles (one of which is not of aviation grade). Adjusted rudder control stops to meet AMM requirements of 155 degrees both left and right. Cable tensions set to AMM requirements. Independent inspection carried out and the aircraft was returned to service.

COMMUNICATION OF MAINTENANCE ISSUES

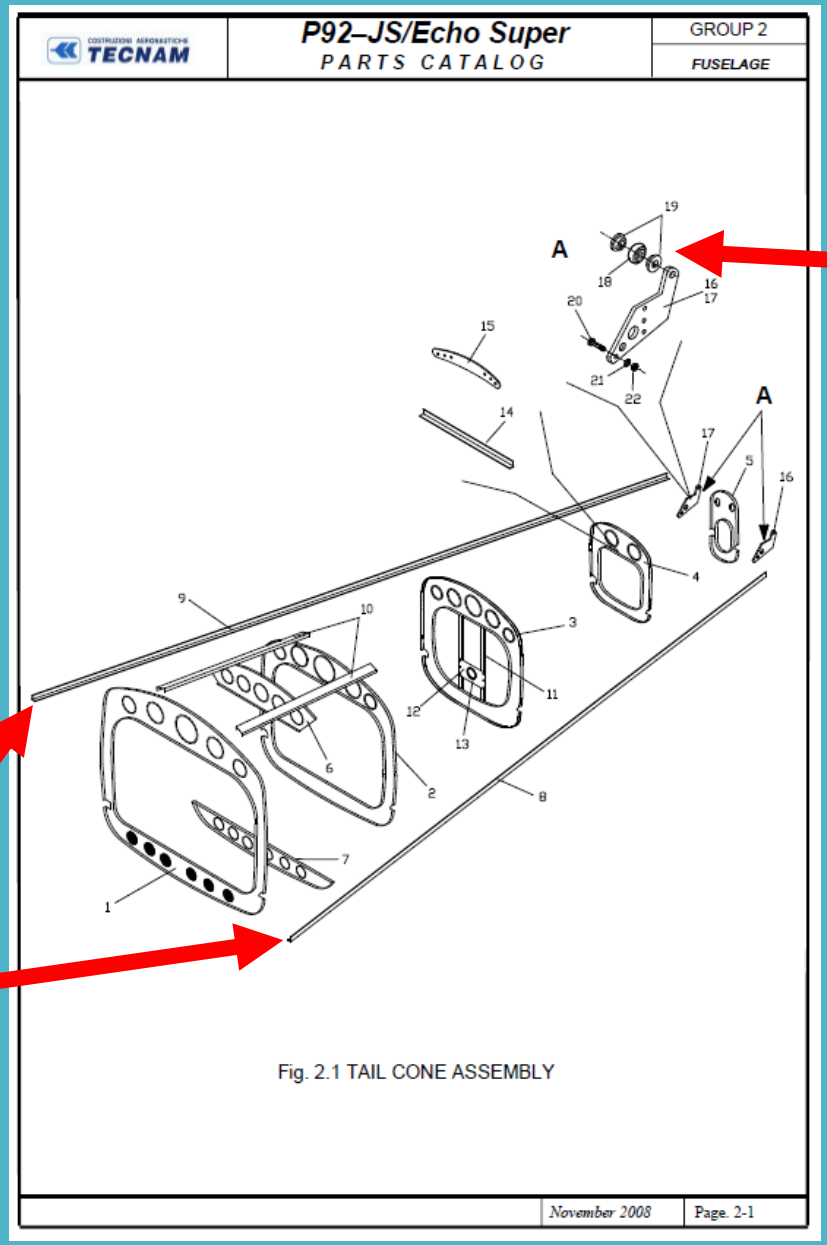
Airworthiness Notices

Publication Title	Summary	Publication Date
AWB 02-066 Issue 1 Maintenance - Aircraft Immersed in Water Download Document (PDF 104 kb)		18 Mar 2022
Safety Notice - Bristell LSA Download Document (PDF 116 kb)		19 Feb 2020
EASA Pipistrel AD 2019-0128 Download Document (PDF 499 kb)	EASA AD 2019-0128 - Pipistrel Virus SW 121 aeroplanes - Seat belt attachment bolts.	6 Jun 2019
Costruzioni Aeronautiche Tecnam P2008 Series Aeroplanes 2018-0072 Download Document (PDF 210 kb)	After an occurrence report of an engine fire, it was identified that, in some locations on the engine firewall, steel patches that had been attached with use of sealant material had, likely as a result of the fire, detached in the engine compartment. The related technical investigation concluded that more aeroplanes might be affected. This condition, if not detected and corrected, could lead to propagation of an engine fire to other critical areas, possibly resulting in loss of the aeroplane.	28 Mar 2018
TL Ultralight SB 3.S.SI.2017 Download Document (PDF 3 mb)	Damage to the flap drive torque tube in the fuselage.	18 Jan 2017

Advisory Notices

Publication Title	Summary	Publication Date
Skyreach Bushcat Seat Belt Harness Inspection • RAAus ADN - Bushcat1.pdf [270 kb]		5 Nov 2021
Safety Notice - Bristell LSA • Safety Notice - Bristell LSA - 20 Feb 2020 (00000002).pdf [116 kb]		19 Feb 2020
Pipistrel Aircraft SB-162-00-80-006_A00 • SB-162-00-80-006_A00 Fuel pump switch retrofit.pdf [260 kb]	SB-162-00-80-006_A00 Fuel pump switch retrofit– This is a recommended SB and applies to all ALPHA Trainer LSA aircraft up to and including s/n 958 AT 912 LSA, that do not already have a dedicated fuel pump switch installed in the switch panel.	19 Nov 2019
Pipistrel Aircraft SB-162-00-80-005_A00 • SB-162-00-80-005_A00 Introduction of POH revision B00.pdf [845 kb]	SB-162-00-80-005_A00 Introduction of POH revision B00– This SB mandates POH replacement and applies to certain AT LSA aircraft (see affected aircraft). Please note that it is a MANDATORY service bulletin.	11 Nov 2019
Zlin Aviation - Mandatory service bulletin • Zlin Safety Alert n.092.pdf [2 mb]	All Savage Planes and models Visual check for possible sleeves corrosion on all stainless steel wires used for ailerons, rudder, stabilizers (*) flaps controls (*). (*) not for Shock Cub and Shock Ultra	20 Aug 2019
Fly Synthesis Texan 550 - Inspection of Nose Gear Steering Plate • RAAus ADN - Texan 550 Nose Gear Steering Plate1.pdf [660 kb]	An inspection is to be performed before next flight on all aircraft to ensure the steering plate has no free-play on the mounting bolt and nut.	10 May 2019
Aeroprakt SA A22LS-16-(inspection of rudder cables) • SA A22LS-16-(inspection of rudder cables).pdf [165 kb]		2 Apr 2018

TECNAM STRUCTURAL CORROSION



CYLINDER HEAD COOLANT HOSES

SCHEDULED MAINTENANCE ACTION
IAW
ROTAX 912ULS LMM

5 Year rubber component replacement.
Includes all required Rotax rubber parts

NOTE: *Airframe maintenance schedule does not specify a life limit for the airframe rubber components*

COOLANT HOSES

IDENTIFIED DEFECT

Airframe replacement rubber parts received from manufacturer were not “Fit for purpose”

COOLANT HOSES

INVESTIGATION

Rubber coolant hoses provided from manufacturer were too large a diameter for the male component

Rubber coolant hoses installation require different size openings at each end.

Rubber coolant hoses provided from manufacturer were identified as Automotive hoses only obtainable from South Africa

Different aviation grade hoses were tested to determine “Form, Fit & Function”

COOLANT HOSES

REPORTING ACTION

RAAus OMS Submission

RESPONSE: NIL

Email to Australian Distributor and the aircraft manufacturer suggesting an AMOC and a recommendation for a Service Bulletin to advise all other owners, maintainers and pilots.

RESPONSE: NIL

COOLANT HOSES

RESOLUTION 1 Owner pestered Aircraft Manufacturer

RESPONSE: LOA for his aircraft only

05/03/2023 **LETTER OF APPROVAL [redacted] CH213C**

This letter serves as an approval for [redacted] to use replacement parts as listed in [redacted] parts List in the Computer Aided Drawing (CAD) attached to this Letter of Approval for the [redacted] Cooling System.

Note: Although these hoses and fittings comply with aviation specs the specific hoses and fittings have not been used/tested by [redacted] and [redacted] can't be held liable for any incidents etc. which may arise from it including replacements.

BUSHCAT COOLANT HOSES

RESOLUTION

EVERY OTHER BUSHCAT OWNER

Will be blissfully unaware of the problem **UNTIL** they have to deal with the issue themselves.

TECNAM CORROSION

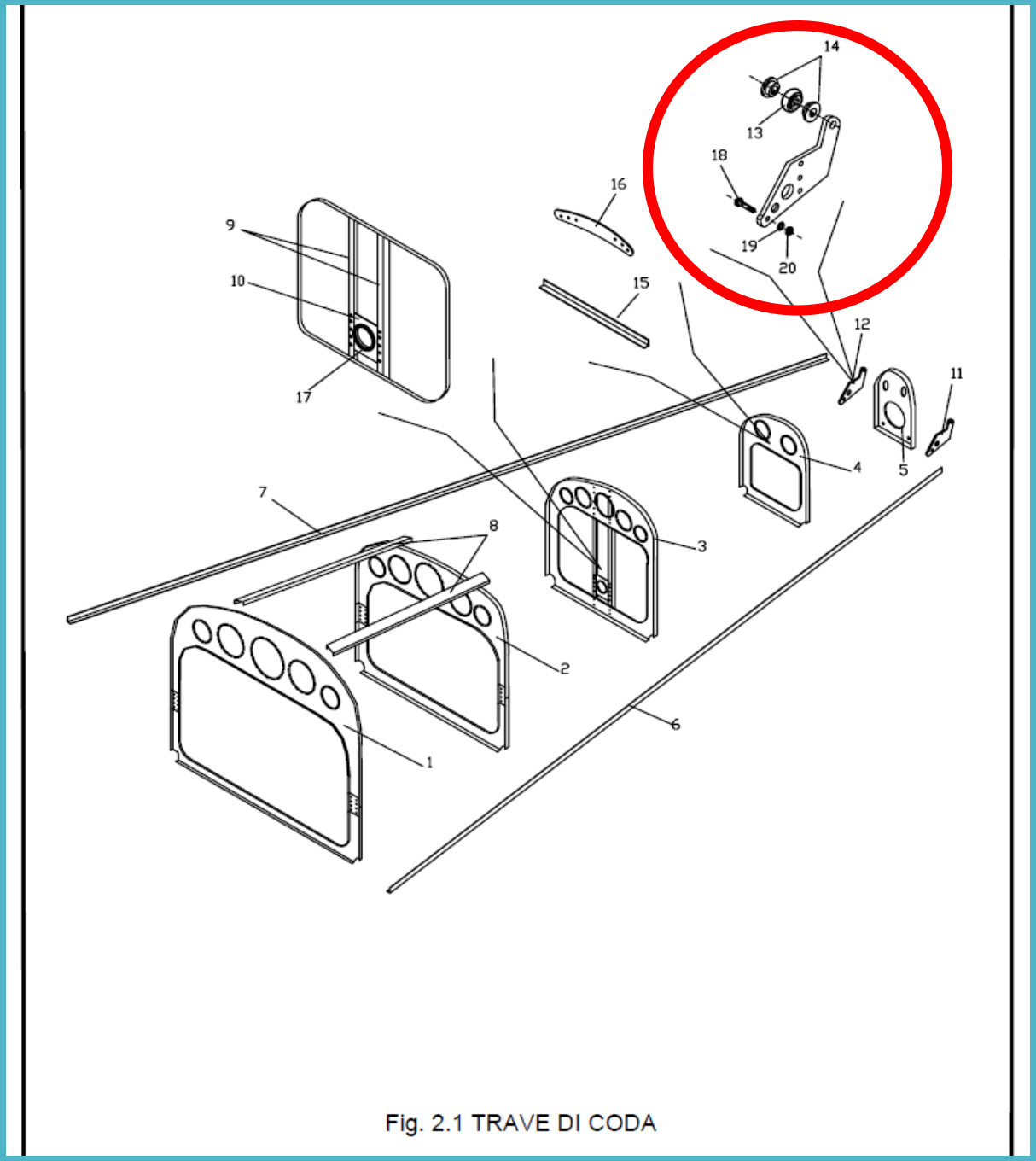
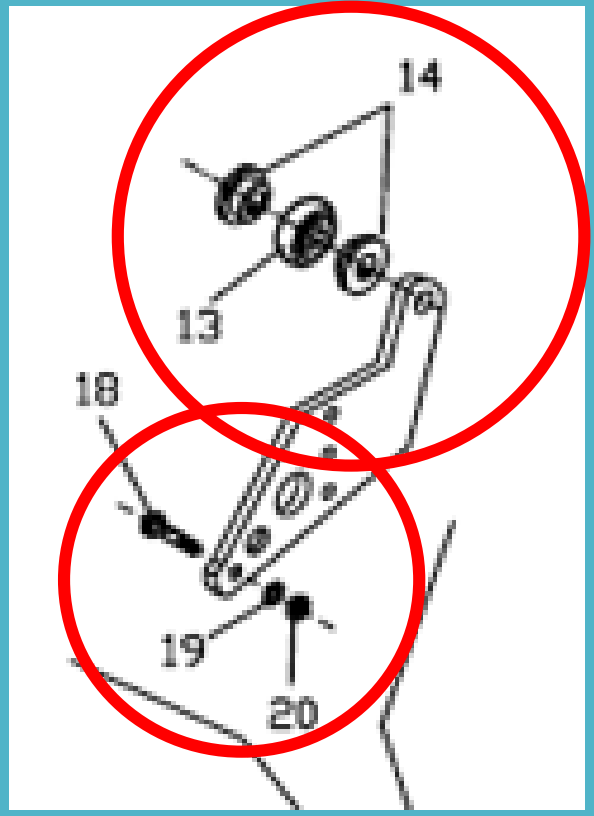


Fig. 2.1 TRAVE DI CODA


14
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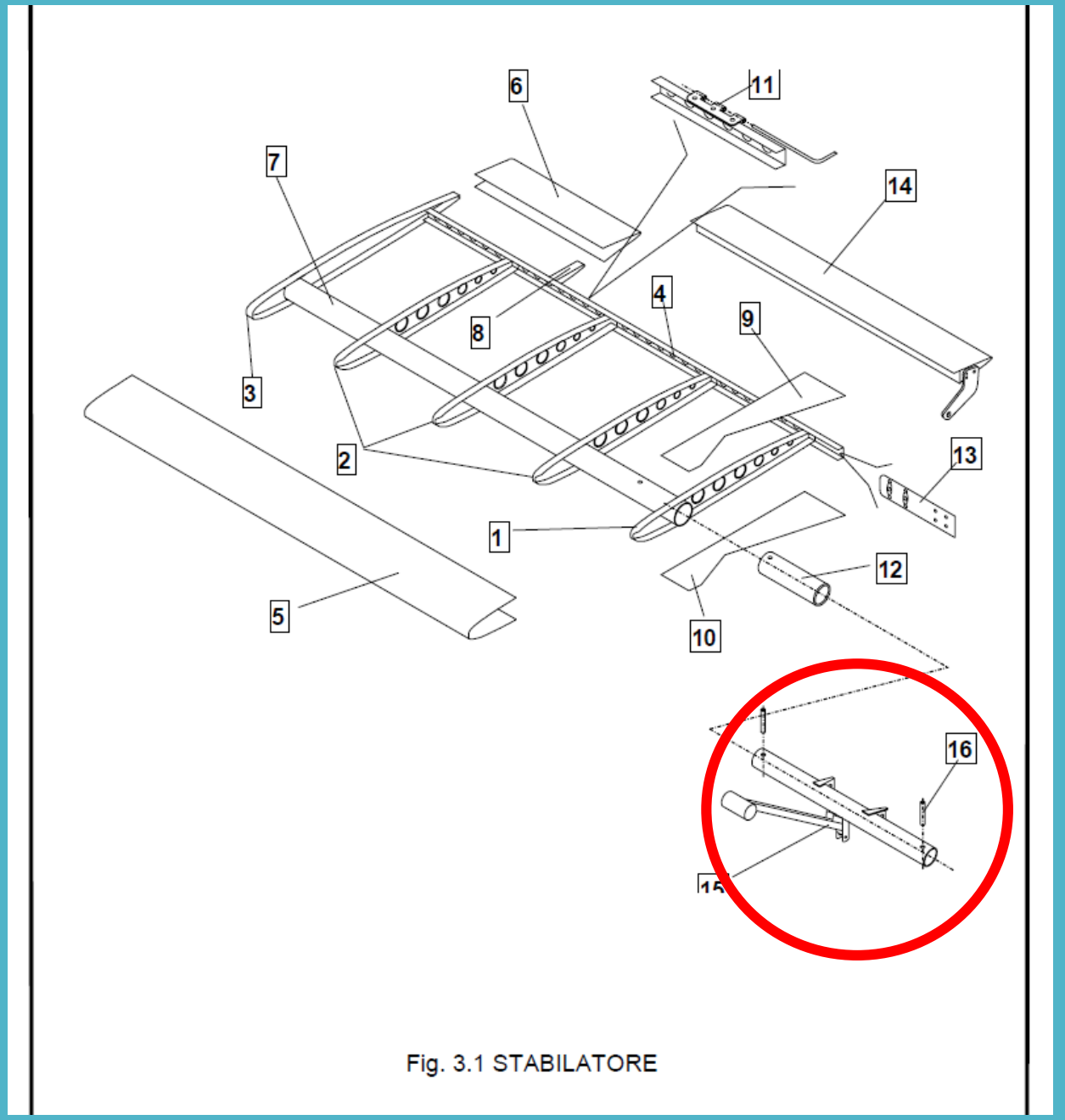


Fig. 3.1 STABILATORE

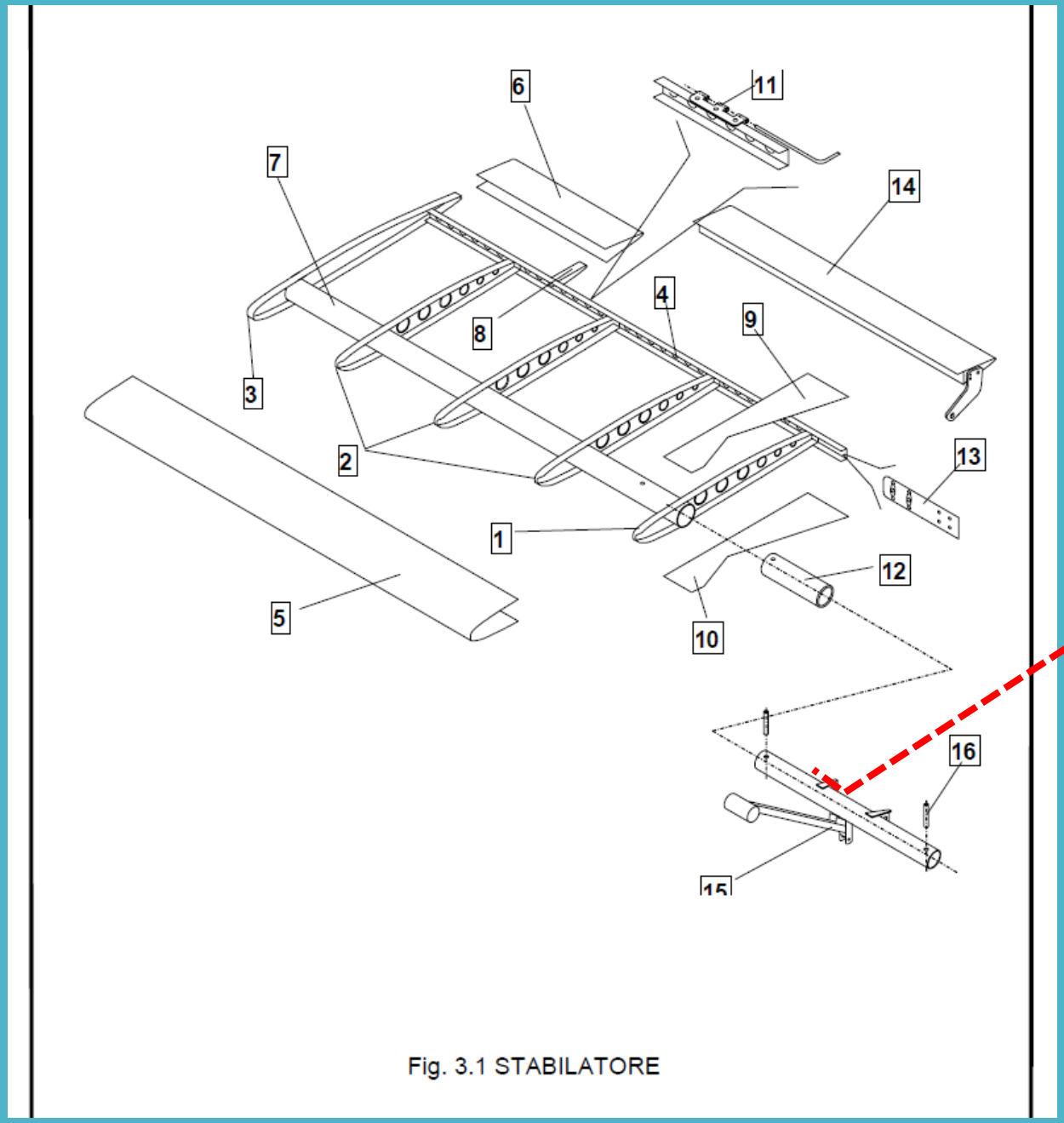
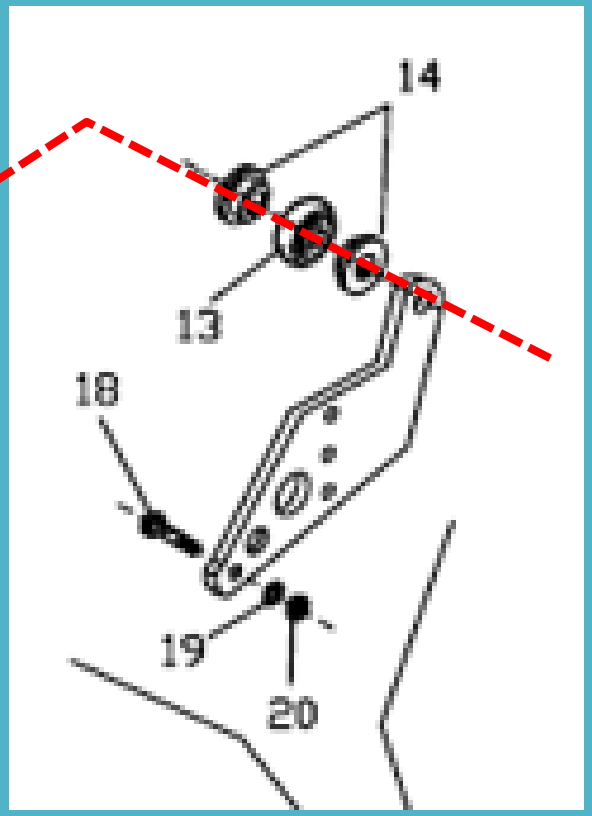
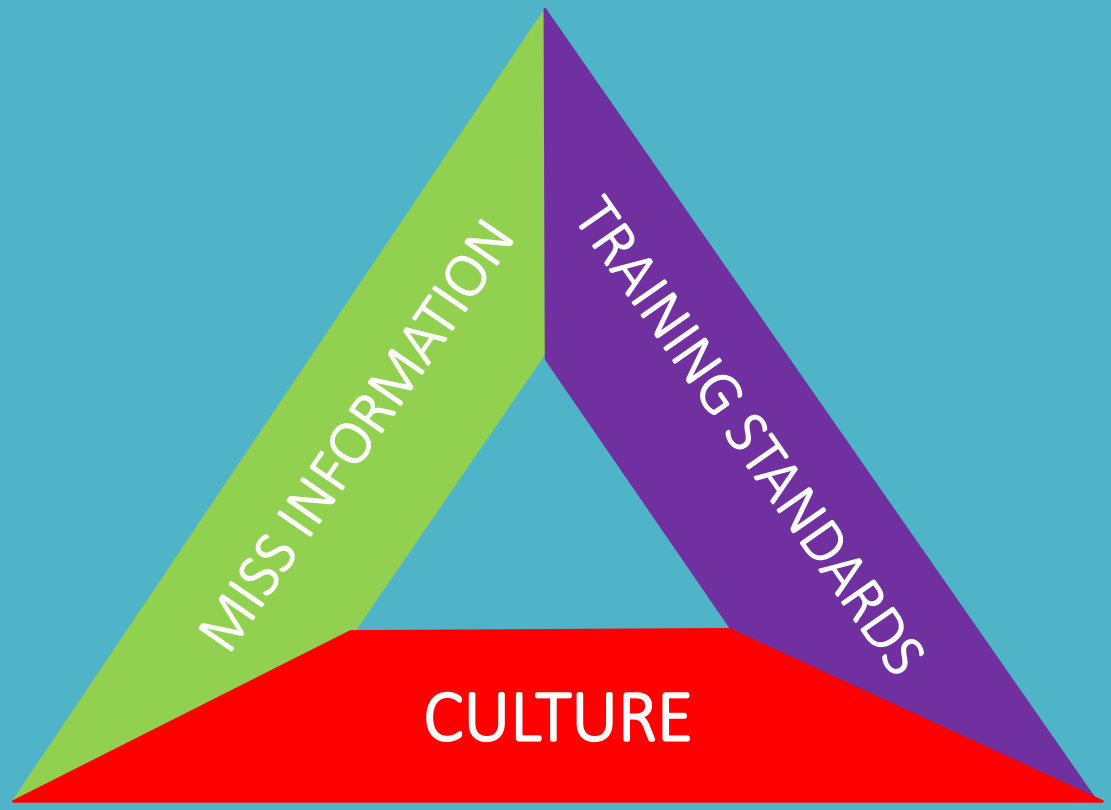


Fig. 3.1 STABILATORE



CONTRIBUTORS TO LOSS OF MAINTENANCE SYSTEM INTEGRITY



MAINTAINER TRAINING STANDARDS

TYPE CERTIFIED

LAME

B1/B2
CASR Part 66 Syllabus
Theory CASR Part 147 – 90Weeks $55K
or Self Study +
Exams – CASA
Practical – Logbook or structured training

CASR PART 43
AMTC

SPORT AIRCRAFT

Approved Maintainers under CASR Part 149

~~RAAus L1~~
Limited Syllabus
Theory – Self Study
Exams – 50 question on-line exam
Practical – Nil Required (Recommended)

NO PUBLISHED INVOLVEMENT WITH CASR PART 43 AMTC

RAAus L2
No Syllabus
Theory – Recognition of Prior Experience
Exams – NIL
Practical – Observed competency by 2 other L2 holders
or LAME

GFA
Defined Syllabus
Mentoring – Club Based (Months)
Theory – Structured Course (7 Days)
Exams – Set by Administrator
Practical – Structured Workbook Course

NO PUBLISHED INVOLVEMENT WITH CASR PART 43 AMTC

EXPERIMENTAL KITS

Owner builder is the "Manufacturer"

CASR PART 43
AMTC

VH Aircraft – Recommended oversight by SAAA during build phase only

Short "Paperwork" course (2 Days)
Open book Exam

RAAus – 19 registered – L4 Check

NAPKIN
Modification to KITS or
CAO 95-10 (RAAus L1 minimum)

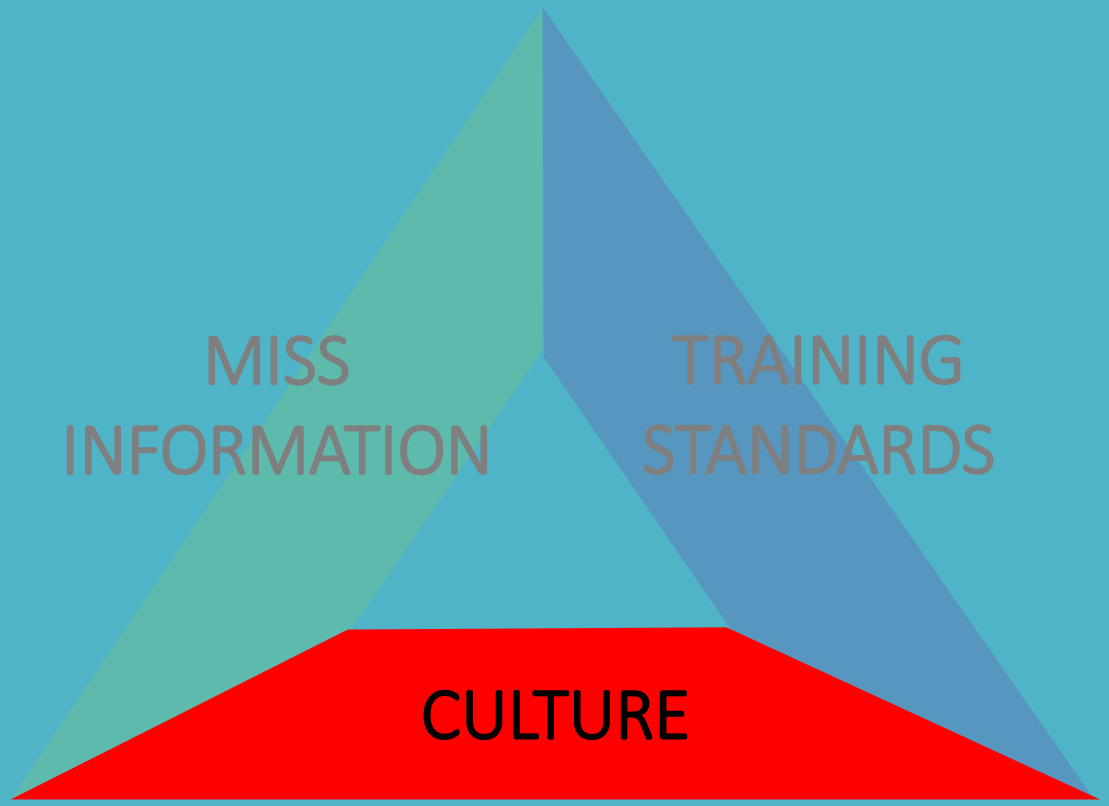
NO PUBLISHED INVOLVEMENT WITH CASR PART 43 AMTC

LIMITED

WARBIRDS

LAME - NIL TYPE TRAINING

CASR PART 43
AMTC



TOPGUN EFFECT

- FIGJAM.

SUPPORT

- Manufacturers don't know who owns their aircraft
- Some Manufacturers websites do not help at all
- Administrators are resource poor

TRAINING

- Don't want to make it too hard or expensive.
- Where to find data – AC43-13?? Facebook!
- Systems knowledge – Why do I need to know that?
- ICAW – I changed my oil? Isn't that enough?

TIME

- I don't have time for that, I just want to fly.

EXPECTATION

- Its supposed to be cheap
- Its like a car right?

PERCEPTION

- Its just for a hobby.
- It's only an RAAus aircraft

DESIRE

- Be a pilot, fly a plane, zoom around the clouds

Insurance Industry 2022

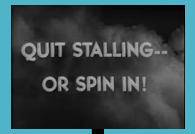
1891
Otto
Lilienthal

1903
Wright Brothers

Gustave Whitehead?

1912
Wilfred Parke

1914
Harry Hawker



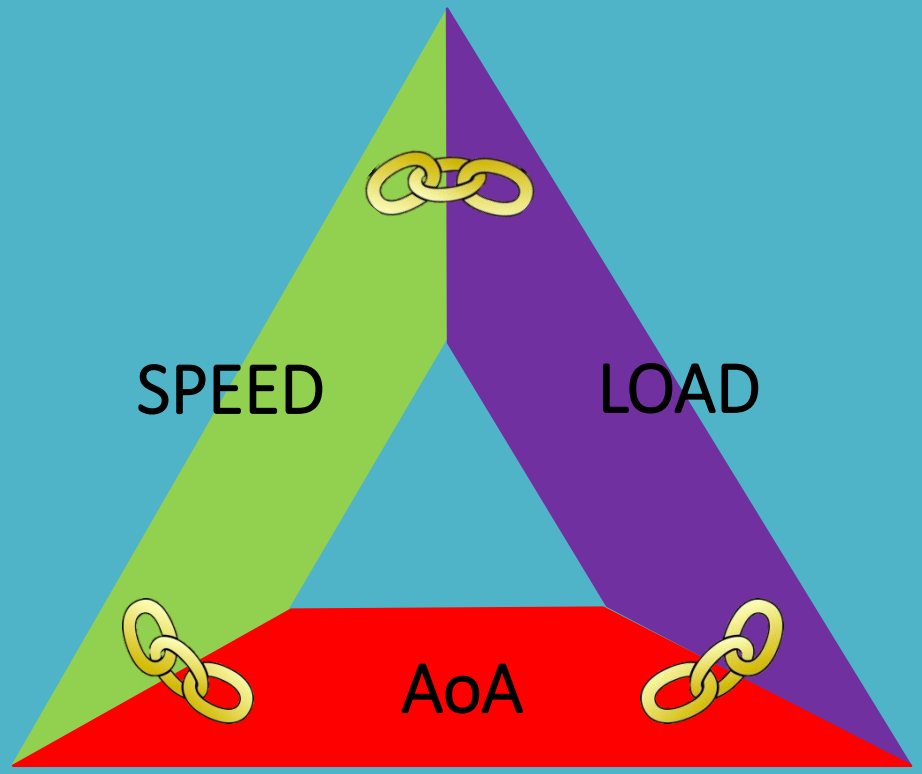
1943
U.S. NAVY
Training Film

2009
Air France 447

2017
DA40
Training Flight

2022
DHC-6
Loss of Control

STALL TRIANGLE



THE FUTURE

Assigning finite resources to achieve a desired outcome in today's world is challenging.

Humans have developed "Risk Assessments" strategies with almost everything we do.

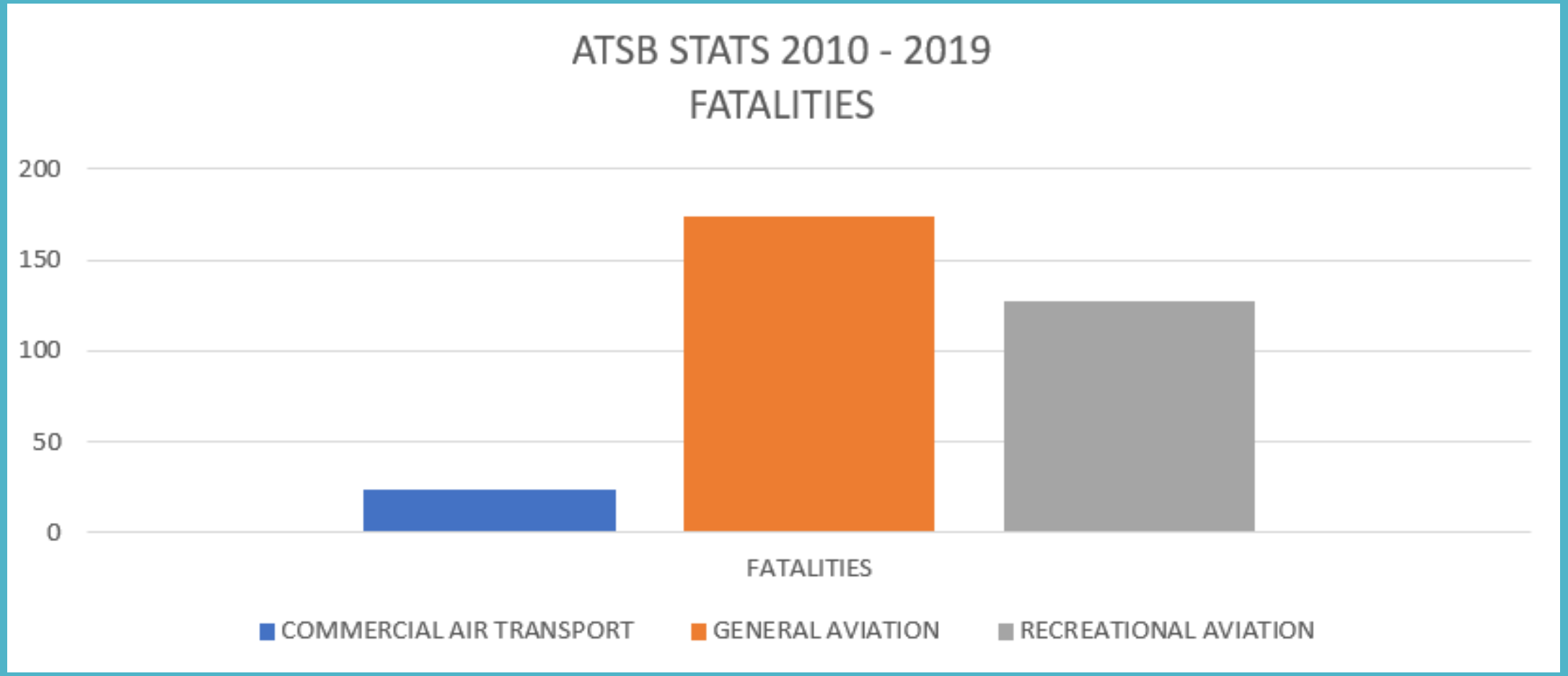
THE FUTURE

Decision makers use the results of these “Risk Assessments” to assign resources to where they believe it can reduce the risk to “ALARP”.

It is common to hear that “loss of life” in a small aircraft is not as big of a risk than in a commercial aircraft.

THE FUTURE

UNLESS YOU ARE THE STATISTIC


ATSB STATS 2010 - 2019
FATALITIES
200
150
100
50
0
FATALITIES
COMMERCIAL AIR TRANSPORT
GENERAL AVIATION
RECREATIONAL AVIATION

THE FUTURE

THE FUTURE

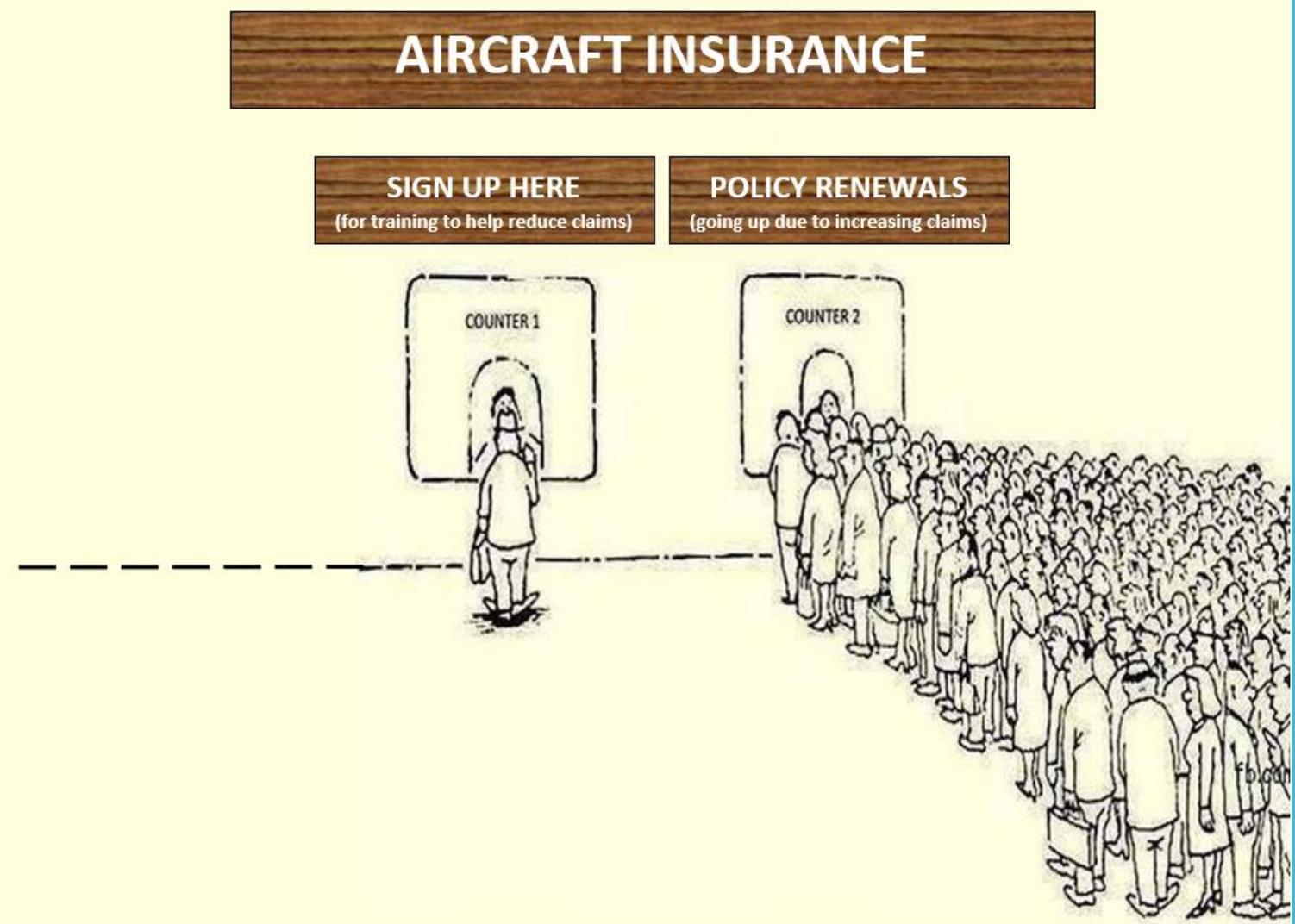
THE FUTURE

=

Appropriate training for emergencies is the insurance policy we hope we never need to claim upon.

OUR INDUSTRY NEEDS A HAND

REWARDS FOR UPRT



REWARDS FOR UPRT

REWARDS FOR UPRT

WHY SHOULD RA/GA UNDERTAKE UPRT

- HAVE TO
- WANT TO
- FINANCIAL ADVANTAGE
- EGO

REWARDS FOR UPRT

OWNERS

- Get to live
- Keep aircraft in 1 piece
- Improve proficiency
- Insurance discounts

OPERATORS

- Staff get to live
- Keep aircraft in 1 piece
- Keep business operating
- Insurance discounts

PILOTS (Renters)

- Get to live
- Improve proficiency
- Cost savings


BAD ATTITUDE
Advanced Flight
Training

ACTIVITIES TO DATE

2014 – Discovered ICAO Doc 10011 and commenced dissecting the document to develop and deliver appropriate training,

2014 – Present – Delivering and continually developing UPRT (LOC-IPT) elements,

July 2019 – 3 Day workshop with RAAus to investigate LOC-I and where components of UPRT can be embedded into initial training,

2019 – 2022 – Identified significant variations to expected flight standards of competency by flight instructors (RAAus, GA, Specialist & UPRT Providers),

Aug 2022 – Hosted the **worlds first** UPRT Providers Conference.
Lightly sponsored by CASA, Agile and AON Insurance,

Oct 2022 – Along with other UPRT Providers and RAAus, invited to speak at the CASA UPRT Workshop in Sydney,

Presently – Working with CASA to develop a UPRT training structure for all levels of pilot (Abinitio through to Instructors),
- Delivered online Stall Workshops (Nov 2022 - Free of charge)
- Addressing inquiries to deliver seminars and workshops Australia Wide.

LOOKING AHEAD

– Interactive On-Line training courses presented by an experienced UPRT Instructor,

– Training videos demonstrating UPRT (LOC-IPT) elements,

– Continue working with CASA/RAAus and Industry to ensure (as best we can) that the data delivered is correct and appropriate,

– Continue working with CASA/RAAus and Industry to develop an effective LOC-IPT and UPRT training structure,

– Roadshows to visit locations Australia Wide to educate both Instructors and Pilots,

– Creation of the “Association for UPRT Instructors”. Establishing standards and liaising with the regulator.

– **Worlds First** – UPRT Flight Instructors Workshop (20 January 2023) – CASA Endorsed.

Aviation Safety

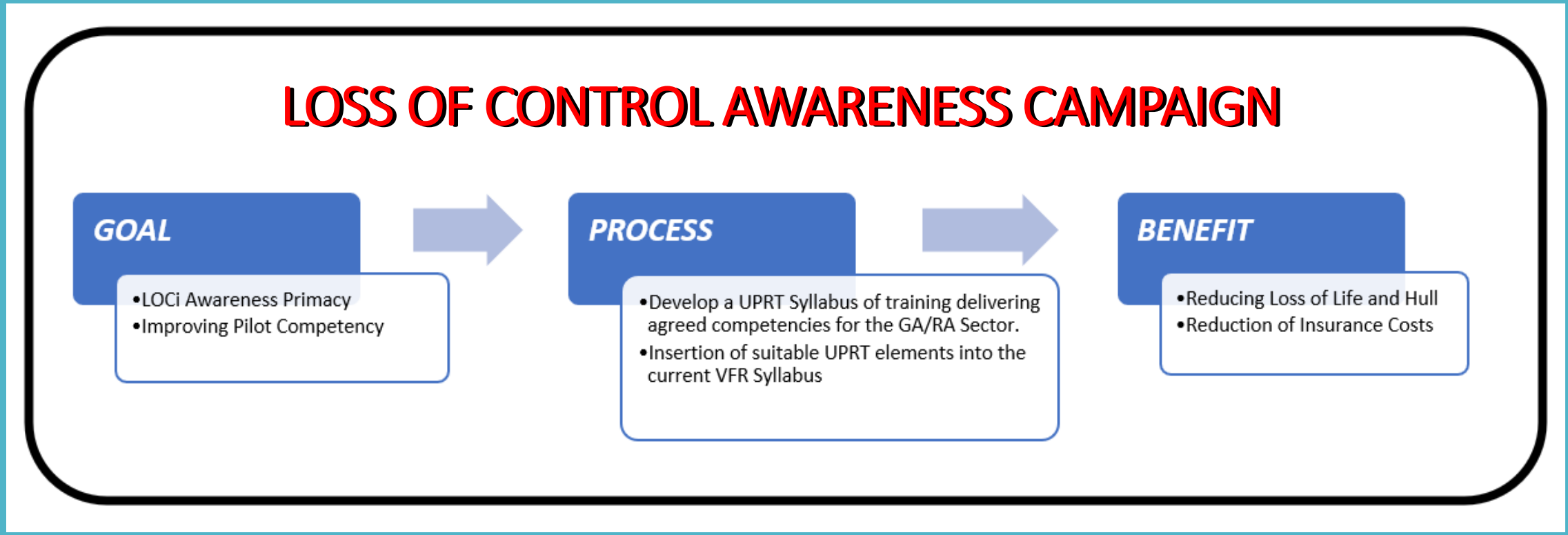
By **R Durden** - **Published:** July 20, 2017 **Updated:** October 29, 2019

https://www.aviationsafetymagazine.com/features/loc-recoveries/?fbclid=IwAR20OOa7XCLGrQDj5T6Te1d6S2AHWD6mY2WkMP7wSjXVJjodOo4wYbcTEsU

Teaching plain vanilla unusual attitude recovery for more than 80 years hasn't been successful in keeping the loss of control accident rate under control.

Moving to LOC avoidance and recovery training that emphasizes the why of LOC, the risk factors leading to it, avoiding it and realistic in-flight simulations and recovery is the logical next step.

Besides, the training is a lot of fun.


LOSS OF CONTROL AWARENESS CAMPAIGN
GOAL
•LOCi Awareness Primacy
•Improving Pilot Competency
PROCESS
•Develop a UPRT Syllabus of training delivering agreed competencies for the GA/RA Sector.
•Insertion of suitable UPRT elements into the current VFR Syllabus
BENEFIT
•Reducing Loss of Life and Hull
•Reduction of Insurance Costs

WANTED

PARTNERS TO HELP DEVELOP CHANGE


I t's M P O S S I B L E