



**LAA TYPE ACCEPTANCE DATA SHEET**  
**TADS 050: PIEL, SCINTEX, CP301, A, B, C, S, C1, -C2, -C3**  
**EMERAUDE, (MODIFIED), SCINTEX CP1315-C3**  
**TADS 216: SUPER EMERAUDE**  
**TADS 821: SCINTEX CP1310-C3, CP1315-C3, CAARP**  
**CP1330 SUPER EMERAUDE**  
**TADS 837: GARLAND BIANCHI & FAIRTRAVEL LINNET**

|            |                                  |                |    |
|------------|----------------------------------|----------------|----|
| Issue 1    | Initial Issue                    | Dated 02/01/18 | JP |
| Revision A | Addition of Safety Spot articles | Dated 21/08/19 | JH |

This TADS is intended as a summary of available information about the type and should be used during the build, operation and permit revalidation phases to help owners and inspectors. Although it is hoped that this document is as complete as possible, other sources may contain more up to date information, e.g. the manufacturer's website.

Section 1 contains general information about the type.

Section 2 contains information about the type that is **MANDATORY** and must be complied with.

Section 3 contains advisory information that owners and inspectors should review to help them maintain the aircraft in an airworthy condition. If due consideration and circumstances suggest that compliance with the requirements in this section can safely be deferred, is not required or not applicable, then this is a permitted judgement call. This section also provides a useful repository for advisory information gathered through defect reports and experience.

## **Section 1 - Introduction**

### 1.1 UK contact

At the present time there is no UK based agent.

The marketing of the Piel range of aircraft is provided by Sylvie Littner who took over the task from her father, Gene Littner. Sylvie Littner can be contacted at: [S. Littner Aircraft Plans](#)

There is also a Piel aircraft owner's forum: [Le Forum Avions Piel](#)

### 1.2 Description

The Piel/Scintex CP301 (and variants of) is a two-seat (side by side), low-wing, cantilever monoplane incorporating a conventional fixed undercarriage with a tailwheel. The aircraft is a ply and fabric covered, all wood construction with a one piece wing incorporating a laminated box spar.

In addition to being available as an amateur built aircraft, factory built aircraft are also available. Over the years, examples have been built by a number of different manufacturers, including amongst others: Piel, Scintex and Coopavia. There are a number of examples of the factory built Emeraudes operating on LAA Permits to Fly in the UK and several amateur built examples. LAA Engineering do have copies on file of various air tests carried out for magazines in the 1980s and 90s.

The Scintex variants feature a sliding canopy with a fixed windshield. Amateur built versions normally have a fixed canopy with twin hinged doors. There is a baggage area in the cockpit, behind the seats. Conventional controls are fitted, operated by push-pull rods and stranded steel cables.

The main fuel tank (approximately 80 litres depending on variant) is located aft of the firewall with a second (40 litre) fuel tank situated under the cockpit baggage area.

Various powerplants have been installed over the years depending on the variant. These include the Continental C90 and O-200, Lycoming O-235 and O-320 and the Potez 4E.



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There are various 2-blade, fixed pitch, wooden propeller options approved by the LAA for installation, from a number of different manufacturers. Note that the only propeller(s) approved for an individual aircraft are those listed on the individual aircraft's Operating Limitations document or in the [PTL/1](#) (Propeller Type List) for the type.

Most of the different Emeraude variants are detailed in the following table (note: \* indicates that the LAA has examples of the variant and these are covered by this TADS):

| Variant                      | Remarks   | Note |
|------------------------------|---|------|
| Piel CP30 Emeraude           | A basic prototype, equipped with the Continental A65  | n/a  |
| Piel CP301A Emeraude *       | The basic production version of the airplane, equipped with a Continental C90 (95 hp) engine  | 1    |
| Piel CP301B Emeraude *       | Modified version with improved interior and a number of minor technical amendments  |      |
| Piel CP301C Emeraude *       | An improved version of the aircraft with some design changes including: wingspan, tail section                                      |      |
| Piel CP301S Emeraude *       | A modernised version of the aircraft  |      |
| Piel CP304 Emeraude          | Equipped with a Continental C85 engine  | n/a  |
| Piel CP305 Emeraude          | An improved version of the Piel CP304 Emeraude  |      |
| Piel CP308 Emeraude          | An upgraded version of Piel CP305 Emeraude with minor technical changes that do not affect the aircraft's performance               |      |
| Piel CP315 Emeraude          | An improved version of the aircraft equipped with the Potez engine (105 hp)   |      |
| Piel CP320 Emeraude          | Modified version with a different wing profile  |      |
| Piel CP320A Emeraude         | An improved version of Piel CP320 Emeraude  |      |
| Piel CP321 Emeraude          | A Piel CP320 Emeraude with the Potez engine   |      |
| Piel CP323 Emeraude          | Version with the Lycoming O-320 (140 to 160 hp)   |      |
| Piel CP323A Emeraude         | A Piel CP323 Emeraude with a modified interior  | 2    |
| Piel CP328A Emeraude *       | A modernised version of the version Piel CP323 Emeraude   |      |
| Piel CP1310 Super Emeraude   | Technically and structurally upgraded version of the aircraft, equipped with a Continental O-200 (100 hp) engine                    | 3    |
| Piel CP1315 Super Emeraude   | Version of the Piel CP1310 Super Emeraude with the Potez engine   |      |
| Piel CP1330 Super Emeraude * | Version equipped with the Lycoming O-235-C2A (118 hp) engine  |      |
| Scintex CP1315-C3 *          | CP301 with stronger wing spar and longerons, decreased wing setting angle and increased tail surfaces. Powered by a Potez 4E engine |      |
| Scintex CP1310-C3 *          | As per the CP1315-C3 but powered by a Continental O-200   |      |
| Garland-Bianchi Linnet *     | Modification of the engine equipped Continental C-90-14F  |      |



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|                     |  |  |
|---------------------|--|--|
| Fairtravel Linnet * | A modified version of the engine Rolls Royce Continental O-200-A |  |
|---------------------|--|--|

Note:

1. The first production Emeraudes were equipped with a 90 hp Continental C90-14F. Changing model designations reflect different manufacturers and progressive incorporation of modifications including a sliding canopy, smaller control surfaces, pointed wingtips, wheel spats, modified tail and numerous other constructional improvements. The various manufacturers included Coopavia, Rousseau, Scintex and Menavia in France and Binder Aviatik in Germany (CP301S).
2. When homebuilt from plans the CP1330 is designated the CP320, and when this is built incorporating a swept tail then the designation becomes CP328. Only one has been completed in the UK (G-BPRT) but unfortunately this aircraft was written off in an accident in 1997.
3. Evolved from the CP301 and re-named the Super Emeraude, this range benefited from a strengthened airframe, generally cleaned-up external layout, and a revised canopy and cowling. CP1310C3 had a Continental O-200, the CP1315C3 was fitted with a Potez 4E-20 and a Lycoming O-235-C2A engine was installed in the CP1330.
4. This is an UK factory built version of the CP301A. Only five were built, the first two by Garland-Bianchi at White Waltham and the last three by Fairtravel Ltd of Fair Oaks. Two of the last three are still flying with LAA Permits, G-ASMT and G-ASZR. For continuing airworthiness purposes the Linnet should be viewed as a CP301A.

The aircraft is only available as an SEP Aeroplane under LAA administration. There are no specific requirements or changes required for examples operating on an LAA Permit to Fly.

**Section 2 – Mandatory information for owners, operators and inspectors**

At all times, responsibility for the maintenance and airworthiness of an aircraft rests with the owner. Condition No 3 of a Permit to Fly requires that: *'the aircraft shall be maintained in an airworthy condition'*.

2.1 Fast Build Kit 51% Compliance

There are no kit options for the Emeraude series of aircraft, so it is only available as a plans built design.

2.2 Build Manual

In the past, plans were available from Madame Piel but UK builders should obtain an English language version from [S. Littner Aircraft Plans](#).

S. Littner Aircraft Plans  
 432 Hamel  
 St-Eustache, Québec  
 J7P 4M3 Canada



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2.3 Build Inspections

Build Inspection Schedule 1 for wooden aircraft is to be used for amateur built aircraft.

Inspector approval codes A-A or A-W for the airframe and E for the engine. For the inspector to sign off the final inspection, this also requires a 'first flight' endorsement.

2.4 Flight Manual

Factory built variants should have the original flight manual for the aircraft. Further information is available from LAA Engineering as various Fiche for some of the variants are held on file. Flight manuals for factory built aircraft may be of use for operating amateur built machines with due caution for any differences that might apply (engines, propellers and systems etc).

2.5 Continuing Airworthiness Data

a. Mandatory Permit Directives

The following MPDs are applicable to this aircraft type:

[CAA MPD 1995-001 R5](#) Regarding ex C of A aircraft now operating on a Permit to Fly

Also check the LAA website for MPDs that are non-type specific ([TL2.22](#)).

b. Airworthiness Directives

The following Airworthiness Directives apply to various types of the Piel/Scintex variants:

| AD Number                       | Applicable Type  | Description                                |
|---------------------------------|--|--|
| <a href="#">F-1960-016-0032</a> | Part 1: CP301C1 (s/n 545-556)<br>Part 2: CP301C1 (s/n 545-549) | Fuel system and generator switch           |
| <a href="#">F-1960-029-005</a>  | CP301C (s/n 511-544)   | Various subjects                           |
| <a href="#">F-1960-030-006</a>  | CP30/301/301A/301B   | Undercarriage attachment                   |
| <a href="#">F-1962-012-008</a>  | CP301/301A/301B/301C/C1/C2/C3                                  | Control column replacement                 |
| <a href="#">F-1963-006-019</a>  | CP315/1315 (Potez engine)                                      | Propeller installation                     |
| <a href="#">F-1963-009-009</a>  | CP301A/301C/301C1/301C2  | Main undercarriage inspection/modification |
| <a href="#">F-1964-020</a>      | All  | Restriction of aerobatics                  |
| 0878 PRE 78<br>(cancelled)      | All  | Rear fuel tank filler neck modification    |

Explanatory notes on the above:

DGAC AD F-1960-016-0032 Fuel system and generator switch

Part 1 requires replacement of the carburettor aluminium 'rotatable' fuel union for one of steel, and the fitting of longer flexible fuel hoses to the carburettor. Compliance was required by 1961 and applies only to Scintex CP-301C1 aircraft Serial Nos. 545 to 556.



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Part 2 requires fitting of a cover of insulating material to protect the terminals of the generator switch from accidental short circuit. Compliance was required by 1961 and applies only to Scintex CP-301C1 aircraft Serial Nos. 545 to 549.

DGAC F-1960-029-005      Various Subjects

There are a number of subjects covered by this one AD including, briefly, modifications to the generator switch, wing servo-tab, trim tab control, control stops, fuel tank drain, engine cowl, carburettor air intake, fuel system, electrical equipment, battery vents, fuses, placards and instruments.

Compliance was required by 1961 and applies only to Scintex CP-301C aircraft Serial Nos. 511 to 544.

DGAC F-1960-030-006      Inspection of Undercarriage Attachment

With panels removed inspect the undercarriage attachment fittings and surrounding structure for cracking, glue failure, disruption and any other damage.

This AD requires repetitive inspection on the occasion of any heavy landing or ground loop incident, and annually (at the Permit renewal inspection).

DGAC F-1962-012-008      Replacement of Control Columns

Because of insufficient strength, the control columns (originally of specification AU4G, 1 mm thick), were required to be replaced by new columns of AU4G, 2 mm thick. Compliance was required by 1963.

DGAC F-1963-006-019      Propeller installation

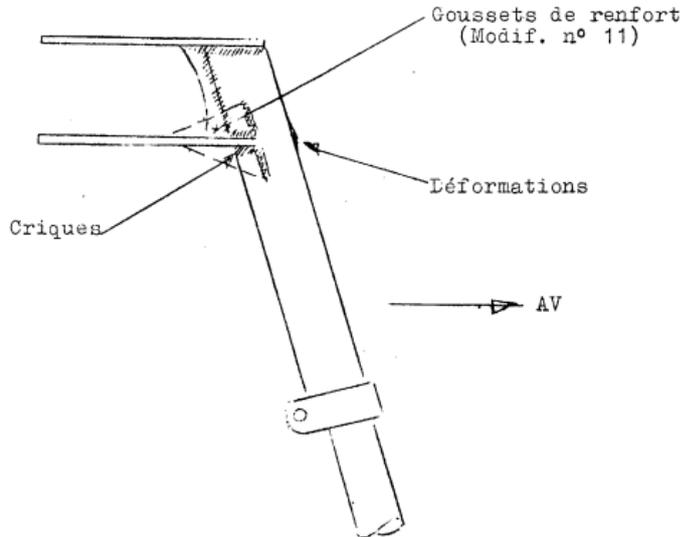
This AD presents various inspection requirements relating to the continued operation of a wooden propeller when mounted on a Scintex 1315 Emeraude (fitted with a Potez 4E20 engine), including a repetitive 50 hour or 2 month inspection.



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DGAC F-1963-009-009 Inspection/modification of main undercarriage outer tube

Welded gussets must be fitted to the main undercarriage outer tubes as shown in the diagram below.



DGAC F-1964-20 Restriction of Aerobatics

This AD presents a withdrawal of permission to carry out aerobatics in CP-1310C3 and CP-1315C3 aircraft. There are no LAA Emeraudes cleared for aerobatics.

CAA AD 0878 PRE 78 Rear fuel tank filler neck modification

In order to prevent fuel starvation occurring on the rear tank due to deterioration of the rubber filler cap which blanks off the vent hole, drill a 3/32" hole on the top face of the filler neck and fit a 1/16" split pin loosely in the hole to prevent entry of dirt. This applies to all Emeraudes.

This was a CAA issued AD that was subsequently cancelled in September 2003 when EASA became the regulating authority.

2.6 LAA Required Modifications (including LAA issued AILs, SBs, etc)

There are no modifications deemed mandatory for aircraft operating on an LAA Permit to Fly.

2.7 Additional Engine Operating Limitations (to be placarded or shown by instrument markings)

Due to the number of different engines installed in the Piel aircraft, reference should be made to the engine manufacturer's latest documentation for the definitive parameter values and recommended instruments.

Note: Where an instrument is not fitted, the limit need not be displayed.



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2.8 Control surface deflections

| Control Surface | Position | CP301A/B/C | CP1310C3/<br>1315C3/1330 | Cable Tensions |
|-----------------|----------|------------|--------------------------|----------------|
| Ailerons        | Up       | 25° ±2°    |                          | 10-20 kg       |
|                 | Down     | 15° ±2°    |                          |                |
| Elevators       | Up       | 25° ±2°    | 26° ±2°                  | 10-20 kg       |
|                 | Down     | 25° ±2°    | 26° ±2°                  |                |
| Elevator tab    | Up       | 30° ±5°    |                          | N/A            |
|                 | Down     | 30° ±5°    |                          |                |
| Rudder          | Left     | 23° ±2°    |                          |                |
|                 | Right    | 23° ±2°    |                          |                |
| Flap            | Up       | 0°         |                          |                |
|                 | Take off | 15° ±2°    |                          |                |
|                 | Down     | 30° ±2°    |                          |                |

Note: The above figures are for reference purposes only. The maintenance manual for the specific aircraft type should be consulted for the definitive range of movements.

2.9 Operating Limitations and Placards

Operating Limitations and placards are specific to individual variants and sometimes even individual aircraft (in the case of different engines or propellers, for instance).

Some examples are detailed below.

Note that the wording on an individual aircraft's Operating Limitations document takes precedence, if different.

1. Maximum number of occupants authorised to be carried: Two
2. The aircraft must be operated in compliance with the following operating limitations, which shall be displayed in the cockpit by means of placards or instrument markings:

a. Emeraude CP301A

2.1 Aerobatic Limitations:

Aerobatic manoeuvres are prohibited.  
 Intentional spinning is prohibited.

2.2 Loading Limitations

Maximum Total Weight Authorised: 610 kg  
 CG Range: 0.255 mm to 0.42 mm aft of datum.  
 Datum Point is: Leading edge of the wing at a point 1.91 m outboard of the aircraft centreline.

2.3 Engine Limitations (Continental C90-14F)

Maximum Engine RPM: 2625  
 Maximum continuous engine RPM: 2475



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2.4 Airspeed Limitations

Maximum Indicated Airspeed ( $V_{NE}$ ): 145 mph  
Max Indicated Airspeed Flaps Extended: 77 mph

2.5 Other Limitations

The aircraft shall be flown by day and under Visual Flight Rules only.  
Smoking in the aircraft is prohibited.

b. Piel CP301B Emeraude (modified)

The following limitations are included for information only as an example of an O-200A powered CP301. This particular aircraft was modified during rebuild by replacing the wing, tailplane, elevator, rudder and undercarriage legs from a Scintex CP1310-C3 Super Emeraude.

2.1 Aerobatic Limitations:

Aerobatic manoeuvres are prohibited.  
Intentional spinning is prohibited.

2.2 Loading Limitations

Maximum Total Weight Authorised: 665 kg  
CG Range: 269 mm to 406 mm aft of datum.  
Datum Point is: Leading edge of the wing at a point 1.91 m outboard from the plane of symmetry.

2.3 Engine Limitations (Continental O-200A)

Maximum Engine RPM: 2750

2.4 Airspeed Limitations

Maximum Indicated Airspeed ( $V_{NE}$ ): 134 mph  
Max Indicated Airspeed Flaps Extended: 93 mph  
Maximum Indicated Airspeed, Rough Air ( $V_{NO}$ ): 121 mph

2.5 Other Limitations

The aircraft shall be flown by day and under Visual Flight Rules only.  
Smoking in the aircraft is prohibited.

c. Scintex CP301C

2.1 Aerobatic Limitations:

Aerobatic manoeuvres are prohibited.  
Intentional spinning is prohibited.

2.2 Loading Limitations

Maximum Total Weight Authorised: 650 kg  
CG Range: 269 mm to 477 mm aft of datum.  
Datum Point is: Leading edge of the wing at the root.

2.3 Engine Limitations (Continental C90-14F)

Maximum Engine RPM: 2625  
Maximum continuous engine RPM: 2475



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2.4 Airspeed Limitations

Maximum Indicated Airspeed ( $V_{NE}$ ): 148 mph  
Max Indicated Airspeed Flaps Extended: 80 mph

2.5 Other Limitations

The aircraft shall be flown by day and under Visual Flight Rules only.  
Smoking in the aircraft is prohibited.

d. Binder-Aviatick CP301S Smaragd

2.1 Aerobatic Limitations:

Aerobatic manoeuvres are prohibited.  
Intentional spinning is prohibited.

2.2 Loading Limitations

Maximum Total Weight Authorised: 680 kg  
CG Range: 2300 mm to 2450 mm aft of datum.  
Datum Point is: 2 m forward of the wing leading edge at rib 5.

2.2 Engine Limitations

- i. Continental C90-14F  
Maximum Engine RPM: 2625  
Maximum continuous engine RPM: 2475
- ii. Continental O-200-A  
Maximum Engine RPM: 2750

2.3 Airspeed Limitations

Maximum Indicated Airspeed ( $V_{NE}$ ): 171 mph  
Max Indicated Airspeed Flaps Extended: 87 mph

2.4 Other Limitations

The aircraft shall be flown by day and under Visual Flight Rules only.  
Smoking in the aircraft is prohibited.

e. Piel CP328 Super Emeraude

2.1 Aerobatic Limitations:

Aerobatic manoeuvres are prohibited.  
Intentional spinning is prohibited.

2.2 Loading Limitations

Maximum Total Weight Authorised: 682 kg  
CG Range: 267 mm to 482 mm aft of datum.  
Datum Point is: Leading edge of the wing at the root.

2.3 Engine Limitations (Lycoming O-235-L2C)

Maximum Engine RPM: 2800

2.4 Airspeed Limitations

Maximum Indicated Airspeed ( $V_{NE}$ ): 150 knots  
Max Indicated Airspeed Flaps Extended: 81 knots



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2.5 Other Limitations

The aircraft shall be flown by day and under Visual Flight Rules only.  
Smoking in the aircraft is prohibited.

f. Scintex CP1315-C3

2.1 Aerobatic Limitations:

Aerobatic manoeuvres are prohibited.  
Intentional spinning is prohibited.

2.2 Loading Limitations

Maximum Total Weight Authorised: 700 kg  
CG Range: 270 mm to 460 mm aft of datum.  
Datum Point is: Leading edge of the wing at the root.

2.3 Engine Limitations (Potez 4E20)

Maximum Engine RPM: 2750

2.4 Airspeed Limitations

Maximum Indicated Airspeed ( $V_{NE}$ ): 173 mph  
Max Indicated Airspeed Flaps Extended: 94 mph

2.5 Other Limitations

The aircraft shall be flown by day and under Visual Flight Rules only.  
Smoking in the aircraft is prohibited.

Additional Placards:

'Occupant Warning - This Aircraft has not been Certificated to an International Requirement'

A fireproof identification plate must be fitted to fuselage, engraved or stamped with the aircraft's registration letters.

2.10 Maximum permitted empty weight

N/A

**Section 3 – Advice to owners, operators and inspectors**

3.1 Maintenance Manual

A copy of the Emeraude maintenance/owner's manual (English translation) is available on request to LAA Emeraude owners, from the LAA. Whilst it actually relates to the Super Emeraude range, there is little enough difference between the models to still be of positive use. Airworthiness Data Sheets (Fiche) for some types are listed below and include useful type technical information (note that these may not be the most recent versions of these documents).

Fiche Number

Aircraft type

[Fiche No 18](#)

Piel CP301A



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|  |                     |
|--|---------------------|
| <a href="#">Fiche No 28</a>                    | Piel CP301B         |
| <a href="#">Fiche No 46</a>                    | Piel CP301C         |
| <a href="#">Airworthiness Data Sheet L-642</a> | Piel CP301S Smaragd |
| <a href="#">Fiche No 75</a>                    | Scintex CP1310      |

Engine and propeller manufacturers should be contacted for the relevant current maintenance manuals. Many manufacturers do provide free access to manuals via the internet. The following links may be useful depending on the aircraft and its engine and propeller configuration:

[Continental Motors Technical Publications](#)

[Lycoming Technical Publications](#)

[Hoffmann Propellers Technical Publications](#)

[Evra Propellers Technical Publications](#)

### 3.2 Standard Options

There are no standard mods listed specifically for the Emeraude variants at this time.

### 3.3 Manufacturer's Information (including Service Bulletins, Service Letters, etc)

There are no continuing airworthiness items for the Emeraude airframe. Engine, propeller and component manufacturers may have issued some that are applicable to the aircraft so their manufacturer's publications should be checked (see links in section 3.1 above).

In the absence of any over-riding LAA classification, inspections and modifications published by the manufacturer should be satisfied according to the recommendation of the manufacturer. It is the owner's responsibility to be aware of and supply such information to their Inspector.

### 3.4 Special Inspection Points

The following notes have been compiled from operational experience gained over the years and were formally listed in LAA Engineering SPARS.

It will be noted that some of the metal components are prone to corrosion and cracking. Due consideration should therefore be given to inspecting these parts in their entirety especially where they are attached to the aircraft structure or other parts. This may mean the removal of major components (ie tailplane, wing etc) or fabric to gain access to areas not normally accessible during normal annual inspections and should be carried out on a regular basis.

#### a. Inspection for cracked tailplane attachment bracket - All Emeraudes

In 1985, following discovery on an LAA Emeraude of a cracked tailplane attachment bracket (possibly caused by over tightening) the LAA published a once-off requirement to inspect the brackets on all CP-301 aircraft, using a dye-penetrant crack detection method. The tailplane is secured by four brackets, each made from aluminium and attached to the fuselage by three bolts, with a single bolt connecting it to the tailplane. Inspection first requires removal of the tailplane, then removal of the brackets from the fuselage, and removal of paint from brackets as necessary. A reproduction of a sketch of the 1985 bracket is shown opposite.



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**CP1330 SUPER EMERAUDE**  
**TADS 837: GARLAND BIANCHI & FAIRTRAVEL LINNET**

Although this was published as a once-off inspection it makes good sense to repeat inspection occasionally, and owners and inspectors are recommended to take account of this in their inspection programme.

b. Flap and aileron bracket – Corrosion

In 1986, following discovery on an LAA Emeraude of severe corrosion occurring to the flap and aileron brackets (aluminium) where they attach onto the spar, the LAA published a once-off requirement to inspect these brackets accordingly. Inspectors and owners should continue to be vigilant for evidence of unacceptable corrosion, especially in hidden areas such as on those surfaces adjacent to wooden structure.

c. Canopy latches

In 1981 an LAA Emeraude came to grief when on take-off the canopy came unlatched and struck the pilot's head while sliding back. The aircraft was 'landed ahead' but was damaged on collision with the boundary fence. Inspectors and owners should pay particular attention to ensuring latching mechanisms are in good order.

d. Spinner backplate cracked

An Emeraude was successfully force-landed after the spinner backplate developed cracks which allowed the spinner assembly to move back until it contacted the cowl and engine. The spinner then broke up and disrupted the fuel pump and fuel supply pipes whilst forcing up the engine cowling which then broke away, breaking the windscreen, but otherwise passing clear of the aircraft. Inspectors and owners should pay particular attention to checking that spinner assemblies are in good order.

### 3.5 Operational Issues

The following Safety Spot articles are relevant to Piel Emeraude aircraft

*Light Aviation* issue [January 2015](#)

*Widespread corrosion*

Piel Emeraude CP301. Found with serious corrosion on trim tab connections and horizontal stabiliser. In group aircraft it is advised to elect a Technical Manager.

### 3.6 Special Test Flying Issues

There no special test flying issues.

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Please report any errors or omissions to LAA Engineering: [engineering@laa.uk.com](mailto:engineering@laa.uk.com)