TYPE-CERTIFICATE
DATA SHEET

No. EASA.A.310

for
SZD-59 “ACRO”

Type Certificate Holder
Allstar PZL Glider Sp. z o.o.
ul. Cieszyńska 325
43-300 Bielsko-Biała
POLAND

Models: SZD-59 “ACRO”

Issue 01, 15/12/2017
Table of Content

Table of Content ........................................................................................................... 2

Section A: SZD-59 „ACRO“ .................................................................................. 3

A.I. General .............................................................................................................. 3
A.II. Certification Basis .............................................................................................. 3
A.III. Technical Characteristics and Operational Limitations .............................. 4
A.IV. Operating and Service Instructions .............................................................. 6
A.V. Notes: ............................................................................................................... 7

Administrative section .............................................................................................. 8

Acronyms .................................................................................................................. 8
Type Certificate Holder Record .............................................................................. 8
Change Record ........................................................................................................ 8
Section A: SZD-59 „ACRO“

A.I. General

1. Data Sheet No.: EASA.A.310

2. a) Type: SZD-59 „ACRO“
   b) Model: SZD-59 „ACRO“
   c) Variants: SZD-59 „ACRO“, SZD-59-1 „ACRO“

3. Airworthiness Category: Sailplane - Utility (U) and Aerobatic (A) Category

4. Manufacturer:
   1. Przedsiębiorstwo Doświadczalno-Produkcyjne Szybownictwa (PDPSz) „PZL - Bielsko”
   2. Allstar PZL Glider Sp. z o.o.

5. Polish CAA Certification Date: 16 August 1994

6. The EASA TC replaces Polish Type Certificate No. BG-198/1 (TCDS No. BG-198/1, issue 5, dated 18 March 2004).

A.II. Certification Basis

1. Reference Date for determining the applicable requirements: February 1995

2. Airworthiness Requirements:
   a) SZD-59 „ACRO“:
      JAR-22, Change 4, issued on 07 May 1987, with amendments up to 22/94/1 inclusive
   b) SZD-59-1 „ACRO“:
      JAR-22, Change 5, issued on 28 October 1995

3. Special Conditions: None

4. Exemptions: None

5. Deviations: None

6. Equivalent Safety Findings: None

7. Environmental Protection: None
A.III. Technical Characteristics and Operational Limitations

1. Type Design Definition:
   SZD-59 “ACRO”:
   Drawing No. 59-00-10-00
   SZD-59-1 “ACRO”:
   List of Drawings, Document No. 591.5.02, issue 2, 15.09.2016, or later approved revision.

2. Description:
   Single-seater glider designed for flying both in Aerobatic and Utility category. All composite structure (GFRP).
   Cantilever high-wing monoplane with cruciform tail unit arrangement. For Utility category additional wingtips (with or without winglets) are provided, which increase wingspan up to 15 m. Water ballast tanks in wings to be used in Utility category only. Undercarriage consists of retractable main wheel and fixed tail wheel.
   In the SZD-59 “ACRO” variant wings are equipped with airbrakes, extended on upper and lower surface.
   In the SZD-59-1 “ACRO” variant wings are equipped with two-plate airbrakes, extended on upper surface only.

3. Equipment:
   Minimum equipment:
   - airspeed indicator,
   - altimeter,
   - accelerometer,
   - variometer,
   - compass,
   - 5-point safety belts.
   Standard equipment, besides the above listed:
   - side-slip indicator,
   - balancing weights.
   For cloud flying the glider should be equipped with:
   - turn indicator.

4. Dimensions:

<table>
<thead>
<tr>
<th>Category</th>
<th>Aerobatic</th>
<th>Utility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Span:</td>
<td>13,20 m</td>
<td>15,00 m</td>
</tr>
<tr>
<td>Length:</td>
<td>6,845 m</td>
<td>6,845 m</td>
</tr>
<tr>
<td>Wing area:</td>
<td>9,79 m²</td>
<td>10,66 m²</td>
</tr>
<tr>
<td>Mean aerodynamic chord (MAC)</td>
<td>765,4 mm</td>
<td>742,4 mm</td>
</tr>
</tbody>
</table>

5. Launching Hooks:
   - Nose towing hook:
     SZD-III P or TOST E
   - Winch hook:
     TOST G

6. Weak Links:
   Ultimate strength for aero-towing: 677 +10% daN
   Nominal strength for winch launching: 677 ±10% daN
7. Load Factors:
   7.1 Utility category
       +5.3 / -2.65 (up to $V_A$)
       +4.0 / -1.5 (up to $V_{NE}$)
   7.2 Aerobatic category
       +7.0 / -5.0 (up to $V_{NE}$)
   7.3 Airbrakes extended
       +3.5 (up to $V_{NE}$)

8. Air Speeds:
<table>
<thead>
<tr>
<th>IAS [km/h]</th>
<th>Category</th>
<th>A</th>
<th>U</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never Exceed Speed</td>
<td>$V_{NE}$</td>
<td>285</td>
</tr>
<tr>
<td></td>
<td>Manoeuvring Speed</td>
<td>$V_A$</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>Rough Air Speed</td>
<td>$V_{RA}$</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>Max Aero-tow Speed</td>
<td>$V_T$</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>Max Winch-launch Speed</td>
<td>$V_W$</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>Max Landing Gear Operation Speed</td>
<td>$V_{LO}$</td>
<td>285</td>
</tr>
</tbody>
</table>

9. Operational Capability:
   Approved for VFR-day conditions.
   Cloud flying permitted in accordance with binding regulations.

10. Masses [kg]:
    | Category                        | A  | U  |
    |--------------------------------|----|----|
    | MTOM without water ballast      | 380| 390|
    | MTOM with water ballast         | ---| 540|

11. Centre of Gravity Range:
    Forward limit: 145 mm aft of the datum
                   (19.0% MAC for span 13.2 m or 19.5% MAC for span 15.0 m)
    Rearward limit: 275 mm aft of the datum
                   (36.0% MAC for span 13.2 m or 37.0% MAC for span 15.0 m)

12. Datum:
    Vertical plane going through intersection points of wing leading edge and root rib planes

13. Levelling Means:
    Wing trailing edge 22 mm below leading edge in the plane of wing root ribs

14. Control surface deflections:
    Aileron:
       - up 30° ±1°
       - down 18° ±1°
    Elevator:
       - up 32° ±1°
       - down 28° ±1°
    Rudder:
       - left 34° ±1°
       - right 34° ±1°

15. Minimum Flight Crew: 1 pilot
17. Baggage/ Cargo Compartments: Refer to the Technical Service Manual
18. Lifetime Limitations: Refer to the Technical Service Manual
19. Other Limitations: The following is prohibited:
- night flying,
- flight in icing conditions
- aerobatics in rough air
- spins with water ballast,
- aerobatics with water ballast.

A.IV. Operating and Service Instructions

1. Flight Manuals:
   - English
   - Polish
     - Instrukcja Użytkowania w Locie szybowca SZD-59-1 „ACRO”, Dok. nr 591.4.01, wydanie I – Marzec 2017.

2. Maintenance Manuals:
   - English
   - Polish
     - Instrukcja Obsługi Technicznej szybowca SZD-59-1 „ACRO”, Dok. nr 591.4.02, wydanie I – Marzec 2017.

3. Repair Manuals:
   - English
   - Polish

4. Operating Manuals for the Launching Hooks:
   - Operating Manual for the TOST Release (for release types installed), latest approved revision.
   - Operating manual for SZD-III tow release
A.V. **Notes:**

1. This TCDS, Section A applies to the following S/N:
   - **SZD-59 “ACRO”:**
     - X-150; B-2157 ÷ B-2179;
     - from 590.A.04.001 up to 590.A.14.018
   - **SZD-59-1 “ACRO”:**
     - 591.A.yy.nnn, starting from 591.A.16.019
     - where:
       - yy - the year of an aircraft manufacture,
       - nnn - the successive aircraft number.
     - Aircraft manufactured by Wytwórnia Konstrukcji Kompozytowych Andrzej Papiorek
       have an additional letter „W“ at the end of S/N.

2. All glider outside surfaces must be white painted. No registration number or any colour
   marks on the wings and stabilizer upper surfaces are allowed.
Administrative section

Acronyms

- GFRP: Glass Fibre Reinforced Plastic
- MAC: Mean Aerodynamic Chord
- S/N: Aircraft Serial Number
- VFR: Visual Flight Rules

Type Certificate Holder Record

Allstar PZL Glider Sp. z o.o.
ul. Cieszyńska 325
43-300 Bielsko-Biała
POLAND

Change Record

<table>
<thead>
<tr>
<th>Issue</th>
<th>Date</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issue 01</td>
<td>15 Dec 2017</td>
<td>Transfer from Polish Type Certificate No. BG-198/1 to the EASA TCDS.</td>
</tr>
</tbody>
</table>