

## Flight test report

Recovery



|  |                                       |   |    |   | 1820 |
|--|---------------------------------------|---|----|---|------|
| Manufacturer                                       | Gin Gliders Inc.                      | Certification number                    |    | PG_0216.2009                            |      |
| Address  | 586-5, Ilsan-Ri, Mohyun-Myu           | n, Date of flight test                  |    |   |      |
|  | 449-855 YongIn-City, Kyungg           |   |    |   |      |
|  | Do                                    |   |    |   |      |
| <b>D</b>   | Korea                                 |   |    |   |      |
| Representative                                     |                                       | Place of test                           |    | Villeneuve                              |      |
| Glider model                                       | Boost S                               | Classification                          |    | В                                       |      |
| Trimmer  | no                                    |   |    |   |      |
|  |                                       |   |    |   |      |
|  | Test n                                | ilot Fukuoka Seiko                      |    | Thurnheer Claude                        |      |
|  | •                                     | ess Sup'Air - Altiplume S               |    | Gin Gliders - Gingo Airlight N          | Л    |
|  |                                       |   |    | 80                                      | VI   |
| 1. Inflation/Take-c                                | Total weight in flight (              | A A                                     |    | 80                                      |      |
| Rising behaviour                                   | ,                                     | Smooth, easy and constant rising        | А  | Smooth, easy and constant rising        | А    |
| Special take off tec                               | hnique required                       | No                                      | A  | No                                      | A    |
| 2. Landing   |                                       | A                                       | ~  |   | ~    |
| Special landing tec                                | bnique required                       | No                                      | А  | No                                      | А    |
| 3. Speed in straig                                 |                                       | A                                       | ,, |   | ,,   |
| Trim speed more th                                 |                                       | Yes                                     | А  | Yes                                     | А    |
| Speed range using the controls larger than 10 km/h |                                       | Yes                                     | Α  | Yes                                     | A    |
| Minimum speed                                      |                                       | Less than 25 km/h                       | А  | Less than 25 km/h                       | А    |
| 4. Control movem                                   | ent                                   | А                                       |    |   |      |
| Max. weight in fligh                               | nt up to 80 kg                        |   |    |   |      |
| Symmetric control pressure / travel                |                                       | Increasing / greater than 55 cm         | А  | not available                           | 0    |
| Max. weight in flight 80 kg to 100 kg              |                                       |   |    |   |      |
| Symmetric control pressure / travel                |                                       | not available                           | 0  | Increasing / greater than 60 cm         | А    |
| Max. weight in flight greater than 100 kg          |                                       |   |    |   |      |
| Symmetric control pressure / travel                |                                       | not available                           | 0  | not available                           | 0    |
| 5. Pitch stability e                               | exiting accelerated flight            | Α                                       |    |   |      |
| Dive forward angle on exit                         |                                       | Dive forward less than 30°              | А  | Dive forward less than $30^{\circ}$     | А    |
| Collapse occurs                                    |                                       | No                                      | А  | No                                      | А    |
| <ol> <li>Pitch stability of<br/>flight</li> </ol>  | operating controls during accelerated | Α                                       |    |   |      |
| Collapse occurs                                    |                                       | No                                      | А  | No                                      | А    |
| 7. Roll stability an                               | nd damping                            | A                                       | ,, |   |      |
| Oscillations                                       |                                       | Reducing                                | А  | Reducing                                | А    |
| 8. Stability in gen                                | tle spirals                           | A                                       |    | 5                                       |      |
| Tendency to return                                 |                                       | Spontaneous exit                        | А  | Spontaneous exit                        | А    |
| 9. Behaviour in a                                  | steeply banked turn                   | В                                       |    |   |      |
| Sink rate after two                                | turns                                 | 12 m/s to 14 m/s                        | А  | More than 14 m/s                        | В    |
| 10. Symmetric fro                                  | nt collapse                           | А                                       |    |   |      |
| Entry  |                                       | Rocking back less than 45°              | А  | Rocking back less than 45°              | А    |
| Recovery   |                                       | Spontaneous in less than 3 s            | А  | Spontaneous in less than 3 s            | А    |
| Dive forward angle                                 | on exit / Change of course            | Dive forward 0° to 30° / Keeping course | A  | Dive forward 0° to 30° / Keeping course | А    |
| Cascade occurs                                     |                                       | No                                      | А  | No                                      | А    |
| With accelerator                                   |                                       |   |    |   |      |
| Entry  |                                       | Rocking back less than $45^{\circ}$     | А  | Rocking back less than $45^{\circ}$     | А    |
| -  |                                       |   |    |   | •    |

Spontaneous in less than 3 s

А

A Spontaneous in less than 3 s

| Dive forward angle on exit / Change of course                            | Dive forward 0° to 30° / Keeping course                                | A | Dive forward 0° to 30° / Keeping course                         | A |
|--|--|---|---|---|
| Cascade occurs   | No   | А | No  | А |
| 11. Exiting deep stall (parachutal stall)                                | Α  |   |   |   |
| Deep stall achieved  | Yes  | А | Yes   | А |
| Recovery   | Spontaneous in less than 3 s   | А | Spontaneous in less than 3 s                                    | А |
| Dive forward angle on exit   | Dive forward 0° to 30°   | А | Dive forward 0° to 30°  | А |
| Change of course   | Changing course less than 45°  | А | Changing course less than 45°                                   | А |
| Cascade occurs   | No   | А | No  | А |
| 12. High angle of attack recovery  | Α  |   |   |   |
| Recovery   | Spontaneous in less than 3 s   | А | Spontaneous in less than 3 s                                    | А |
| Cascade occurs   | No   | А | No  | А |
| 13. Recovery from a developed full stall                                 | Α  |   |   |   |
| Dive forward angle on exit   | Dive forward 0° to 30°   | А | Dive forward 0° to 30°  | А |
| Collapse   | No collapse  | А | No collapse   | А |
| Cascade occurs (other than collapses)                                    | No   | А | No  | А |
| Rocking back   | Less than 45°  | А | Less than 45°   | А |
| Line tension   | Most lines tight   | А | Most lines tight  | А |
| 14. Asymmetric collapse  | А  |   |   |   |
| With 50% collapse  |  |   |   |   |
| Change of course until re-inflation / Maximum dive forward or roll angle | Less than 90° / Dive or roll angle 0° to 15° $$                        | A | Less than 90° / Dive or roll angle 0° to 15° $$                 | A |
| Re-inflation behaviour   | Spontaneous re-inflation   | А | Spontaneous re-inflation  | А |
| Total change of course   | Less than 360°   | А | Less than 360°  | А |
| Collapse on the opposite side occurs                                     | No   | А | No  | А |
| Twist occurs   | No   | А | No  | А |
| Cascade occurs   | No   | А | No  | А |
| With 75% collapse  |  |   |   |   |
| Change of course until re-inflation / Maximum dive forward or roll angle | $90^\circ$ to $180^\circ$ / Dive or roll angle $0^\circ$ to $15^\circ$ | A | Less than 90° / Dive or roll angle $15^{\circ}$ to $45^{\circ}$ | A |
| Re-inflation behaviour   | Spontaneous re-inflation   | А | Spontaneous re-inflation  | А |
| Total change of course   | Less than 360°   | А | Less than 360°  | А |
| Collapse on the opposite side occurs                                     | No   | А | No  | А |
| Twist occurs   | No   | А | No  | А |
| Cascade occurs   | No   | А | No  | А |
| With 50% collapse and accelerator  |  |   |   |   |
| Change of course until re-inflation / Maximum dive forward or roll angle | Less than 90° / Dive or roll angle 15° to 45° $$                       | A | Less than 90° / Dive or roll angle 15° to 45° $$                | A |
| Re-inflation behaviour   | Spontaneous re-inflation   | А | Spontaneous re-inflation  | А |
| Total change of course   | Less than 360°   | А | Less than 360°  | А |
| Collapse on the opposite side occurs                                     | No   | А | No  | А |
| Twist occurs   | No   | А | No  | А |
| Cascade occurs   | No   | А | No  | А |
| With 75% collapse and accelerator  |  |   |   |   |
| Change of course until re-inflation / Maximum dive forward or roll angle | Less than 90° / Dive or roll angle 15° to 45° $$                       | A | Less than 90° / Dive or roll angle 15° to 45° $$                | Α |
| Re-inflation behaviour   | Spontaneous re-inflation   | А | Spontaneous re-inflation  | А |
| Total change of course   | Less than 360°   | А | Less than 360°  | А |
| Collapse on the opposite side occurs                                     | No   | А | No  | А |
| Twist occurs   | No   | А | No  | А |
| Cascade occurs   | No   | А | No  | А |
| 15. Directional control with a maintained asymmetric collapse            | Α  |   |   |   |
| Able to keep course  | Yes  | А | Yes   | А |
| 180° turn away from the collapsed side possible in 10 s                  | Yes  | А | Yes   | А |
| Amount of control range between turn and stall or spin                   | More than 50 % of the<br>symmetric control travel                      | A | More than 50 % of the symmetric control travel                  | A |
| 16. Trim speed spin tendency   | Α  |   |   |   |
| Spin occurs  | No   | А | No  | А |

| 17. Low speed spin tendency  | Α                                    |   |                                      |   |
|--|--------------------------------------|---|--------------------------------------|---|
| Spin occurs  | No                                   | А | No                                   | А |
| 18. Recovery from a developed spin   | Α                                    |   |                                      |   |
| Spin rotation angle after release  | Stops spinning in less than 90°      | А | Stops spinning in less than 90°      | А |
| Cascade occurs   | No                                   | А | No                                   | А |
| 19. B-line stall   | Α                                    |   |                                      |   |
| Change of course before release  | Changing course less than 45°        | А | Changing course less than 45°        | А |
| Behaviour before release   | Remains stable with straight span    | A | Remains stable with straight span    | А |
| Recovery   | Spontaneous in less than 3 s         | А | Spontaneous in less than 3 s         | А |
| Dive forward angle on exit   | Dive forward 0° to 30°               | А | Dive forward 0° to 30°               | А |
| Cascade occurs   | No                                   | А | No                                   | А |
| 20. Big ears   | Α                                    |   |                                      |   |
| Entry procedure  | Standard technique                   | А | Dedicated controls                   | А |
| Behaviour during big ears  | Stable flight                        | А | Stable flight                        | А |
| Recovery   | Spontaneous in less than 3 s         | А | Spontaneous in less than 3 s         | А |
| Dive forward angle on exit   | Dive forward 0° to 30°               | А | Dive forward 0° to 30°               | А |
| 21. Big ears in accelerated flight   | Α                                    |   |                                      |   |
| Entry procedure  | Standard technique                   | А | Dedicated controls                   | А |
| Behaviour during big ears  | Stable flight                        | А | Stable flight                        | А |
| Recovery   | Spontaneous in less than 3 s         | А | Spontaneous in less than 3 s         | А |
| Dive forward angle on exit   | Dive forward 0° to 30°               | А | Dive forward 0° to 30°               | А |
| Behaviour immediately after releasing the accelerator while maintaining big ears   | Stable flight                        | A | Stable flight                        | A |
| 22. Behaviour exiting a steep spiral   | Α                                    |   |                                      |   |
| Tendency to return to straight flight  | Spontaneous exit                     | А | Spontaneous exit                     | А |
| Turn angle to recover normal flight  | Less than 720°, spontaneous recovery | A | Less than 720°, spontaneous recovery | A |
| Sink rate when evaluating spiral stability [m/s]                                   | 14                                   |   | 18                                   |   |
| 23. Alternative means of directional control                                       | Α                                    |   |                                      |   |
| 180° turn achievable in 20 s   | Yes                                  | А | Yes                                  | А |
| Stall or spin occurs   | No                                   | А | No                                   | А |
| 24. Any other flight procedure and/or configuration described in the user's manual | 0                                    |   |                                      |   |
| Procedure works as described   | not available                        | 0 | not available                        | 0 |
| Procedure suitable for novice pilots   | not available                        | 0 | not available                        | 0 |
| Cascade occurs   | not available                        | 0 | not available                        | 0 |
| 25. Comments of test pilot   |                                      |   |                                      |   |
| Comments   |                                      |   |                                      |   |