



## Flight test report: EN



|                |  |                       |              |
|----------------|--|-----------------------|--------------|
| Manufacturer   | <b>Gin Gliders Inc.</b>  | Certification number  | PG_0316.2010 |
| Address        | 285-1 Galdam-Ri, Mohyun-Myun,<br>449-855 YongIn-City,<br>Kyunggi-Do<br>Korea | Date of flight test   | 01. 03. 2010 |
| Representative | Seyong   | Place of test         | Villeneuve   |
| Glider model   | <b>Boomerang GTO ML</b>  | <b>Classification</b> | <b>D</b>     |
| Trimmer        | no   |                       |              |

**Test pilot** Thurnheer Claude                      Zoller Alain  
**Harness** Gin Gliders - Gingo M                      Gin Gliders - Gingo 2 L  
**Total weight in flight (kg)** 95    115

|  |  |   |  |   |
|--|--|---|--|---|
| <b>1. Inflation/Take-off</b>   | <b>A</b>                                 |   |  |   |
| Rising behaviour   | Smooth, easy and constant rising         | A | Smooth, easy and constant rising         | A |
| Special take off technique required                                    | No                                       | A | No                                       | A |
| <b>2. Landing</b>  | <b>A</b>                                 |   |  |   |
| Special landing technique required                                     | No                                       | A | No                                       | A |
| <b>3. Speed in straight flight</b>                                     | <b>B</b>                                 |   |  |   |
| Trim speed more than 30 km/h   | Yes                                      | A | Yes                                      | A |
| Speed range using the controls larger than 10 km/h                     | Yes                                      | A | Yes                                      | A |
| Minimum speed  | 25 km/h to 30 km/h                       | B | Less than 25 km/h                        | A |
| <b>4. Control movement</b>   | <b>C</b>                                 |   |  |   |
| <i>Max. weight in flight up to 80 kg</i>                               |  |   |  |   |
| Symmetric control pressure / travel                                    | not available                            | 0 | not available                            | 0 |
| <i>Max. weight in flight 80 kg to 100 kg</i>                           |  |   |  |   |
| Symmetric control pressure / travel                                    | Increasing / 45 cm to 60 cm              | C | not available                            | 0 |
| <i>Max. weight in flight greater than 100 kg</i>                       |  |   |  |   |
| Symmetric control pressure / travel                                    | not available                            | 0 | Approximately constant / 50 cm to 65 cm  | C |
| <b>5. Pitch stability exiting accelerated flight</b>                   | <b>A</b>                                 |   |  |   |
| Dive forward angle on exit   | Dive forward less than 30°               | A | Dive forward less than 30°               | A |
| Collapse occurs  | No                                       | A | No                                       | A |
| <b>6. Pitch stability operating controls during accelerated flight</b> | <b>A</b>                                 |   |  |   |
| Collapse occurs  | No                                       | A | No                                       | A |
| <b>7. Roll stability and damping</b>                                   | <b>A</b>                                 |   |  |   |
| Oscillations   | Reducing                                 | A | Reducing                                 | A |
| <b>8. Stability in gentle spirals</b>                                  | <b>A</b>                                 |   |  |   |
| Tendency to return to straight flight                                  | Spontaneous exit                         | A | Spontaneous exit                         | A |
| <b>9. Behaviour in a steeply banked turn</b>                           | <b>B</b>                                 |   |  |   |
| Sink rate after two turns  | More than 14 m/s                         | B | More than 14 m/s                         | B |
| <b>10. Symmetric front collapse</b>                                    | <b>D</b>                                 |   |  |   |
| Entry  | Rocking back less than 45°               | A | Rocking back less than 45°               | A |
| Recovery   | Spontaneous in less than 3 s             | A | Spontaneous in less than 3 s             | A |
| Dive forward angle on exit / Change of course                          | Dive forward 30° to 60° / Keeping course | B | Dive forward 30° to 60° / Keeping course | B |
| Cascade occurs   | No                                       | A | No                                       | A |
| <i>With accelerator</i>  |  |   |  |   |

|  |  |   |   |   |
|--|--|---|---|---|
| Entry  | Rocking back less than 45°                           | A | Rocking back greater than 45°                 | C |
| Recovery   | Spontaneous in less than 3 s                         | A | Spontaneous in less than 3 s                  | A |
| Dive forward angle on exit / Change of course                            | Dive forward 30° to 60° / Keeping course             | B | Dive forward 60° to 90° / Keeping course      | D |
| Cascade occurs   | No   | A | No  | A |
| <b>11. Exiting deep stall (parachutal stall)</b>                         | <b>A</b>   |   |   |   |
| Deep stall achieved  | Yes  | A | Yes   | A |
| Recovery   | Spontaneous in less than 3 s                         | A | Spontaneous in less than 3 s                  | A |
| Dive forward angle on exit   | Dive forward 0° to 30°                               | A | Dive forward 0° to 30°                        | A |
| Change of course   | Changing course less than 45°                        | A | Changing course less than 45°                 | A |
| Cascade occurs   | No   | A | No  | A |
| <b>12. High angle of attack recovery</b>                                 | <b>A</b>   |   |   |   |
| Recovery   | Spontaneous in less than 3 s                         | A | Spontaneous in less than 3 s                  | A |
| Cascade occurs   | No   | A | No  | A |
| <b>13. Recovery from a developed full stall</b>                          | <b>A</b>   |   |   |   |
| Dive forward angle on exit   | Dive forward 0° to 30°                               | A | Dive forward 0° to 30°                        | A |
| Collapse   | No collapse  | A | No collapse                                   | A |
| Cascade occurs (other than collapses)                                    | No   | A | No  | A |
| Rocking back   | Less than 45°  | A | Less than 45°                                 | A |
| Line tension   | Most lines tight                                     | A | Most lines tight                              | A |
| <b>14. Asymmetric collapse</b>   | <b>C</b>   |   |   |   |
| <i>With 50% collapse</i>   |  |   |   |   |
| 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                             | A | Spontaneous re-inflation                      | A |
| Total change of course   | Less than 360°                                       | A | Less than 360°                                | A |
| Collapse on the opposite side occurs                                     | No   | A | No  | A |
| Twist occurs   | No   | A | No  | A |
| Cascade occurs   | No   | A | No  | A |
| <i>With 75% collapse</i>   |  |   |   |   |
| Change of course until re-inflation / Maximum dive forward or roll angle | Less than 90° / Dive or roll angle 45° to 60°        | C | 90° to 180° / Dive or roll angle 60° to 90°   | C |
| Re-inflation behaviour   | Inflates in less than 3 s from start of pilot action | C | Spontaneous re-inflation                      | A |
| Total change of course   | Less than 360°                                       | A | Less than 360°                                | A |
| Collapse on the opposite side occurs                                     | Yes, no turn reversal                                | C | Yes, no turn reversal                         | C |
| Twist occurs   | No   | A | No  | A |
| Cascade occurs   | No   | A | No  | A |
| <i>With 50% collapse and accelerator</i>                                 |  |   |   |   |
| 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                             | A | Spontaneous re-inflation                      | A |
| Total change of course   | Less than 360°                                       | A | Less than 360°                                | A |
| Collapse on the opposite side occurs                                     | No   | A | No  | A |
| Twist occurs   | No   | A | No  | A |
| Cascade occurs   | No   | A | No  | A |
| <i>With 75% collapse and accelerator</i>                                 |  |   |   |   |
| Change of course until re-inflation / Maximum dive forward or roll angle | Less than 90° / Dive or roll angle 45° to 60°        | C | 90° to 180° / Dive or roll angle 60° to 90°   | C |
| Re-inflation behaviour   | Inflates in less than 3 s from start of pilot action | C | Spontaneous re-inflation                      | A |
| Total change of course   | Less than 360°                                       | A | Less than 360°                                | A |
| Collapse on the opposite side occurs                                     | Yes, no turn reversal                                | C | No  | A |
| Twist occurs   | No   | A | No  | A |
| Cascade occurs   | No   | A | No  | A |
| <b>15. Directional control with a maintained asymmetric collapse</b>     | <b>A</b>   |   |   |   |
| Able to keep course  | Yes  | A | Yes   | A |
| 180° turn away from the collapsed side possible in 10 s                  | Yes  | A | Yes   | A |

|   |  |   |  |   |
|---|--|---|--|---|
| Amount of control range between turn and stall or spin                                    | More than 50 % of the symmetric control travel           | A | More than 50 % of the symmetric control travel           | A |
| <b>16. Trim speed spin tendency</b>   | <b>A</b>   |   |  |   |
| Spin occurs   | No   | A | No   | A |
| <b>17. Low speed spin tendency</b>  | <b>D</b>   |   |  |   |
| Spin occurs   | Yes  | D | Yes  | D |
| <b>18. Recovery from a developed spin</b>   | <b>A</b>   |   |  |   |
| Spin rotation angle after release   | Stops spinning in less than 90°                          | A | Stops spinning in less than 90°                          | A |
| Cascade occurs  | No   | A | No   | A |
| <b>19. B-line stall</b>   | <b>A</b>   |   |  |   |
| Change of course before release   | Changing course less than 45°                            | A | Changing course less than 45°                            | A |
| Behaviour before release  | Remains stable with straight span                        | A | Remains stable with straight span                        | A |
| Recovery  | Spontaneous in less than 3 s                             | A | Spontaneous in less than 3 s                             | A |
| Dive forward angle on exit  | Dive forward 0° to 30°                                   | A | Dive forward 0° to 30°                                   | A |
| Cascade occurs  | No   | A | No   | A |
| <b>20. Big ears</b>   | <b>A</b>   |   |  |   |
| Entry procedure   | Standard technique                                       | A | Standard technique                                       | A |
| Behaviour during big ears   | Stable flight  | A | Stable flight  | A |
| Recovery  | Spontaneous in less than 3 s                             | A | Spontaneous in less than 3 s                             | A |
| Dive forward angle on exit  | Dive forward 0° to 30°                                   | A | Dive forward 0° to 30°                                   | A |
| <b>21. Big ears in accelerated flight</b>   | <b>C</b>   |   |  |   |
| Entry procedure   | Standard technique                                       | A | Standard technique                                       | A |
| Behaviour during big ears   | Stable flight  | A | Unstable flight  | C |
| Recovery  | Recovery through pilot action in less than a further 3 s | B | Recovery through pilot action in less than a further 3 s | B |
| Dive forward angle on exit  | Dive forward 0° to 30°                                   | A | Dive forward 0° to 30°                                   | A |
| Behaviour immediately after releasing the accelerator while maintaining big ears          | Stable flight  | A | Stable flight  | A |
| <b>22. Behaviour exiting a steep spiral</b>   | <b>A</b>   |   |  |   |
| Tendency to return to straight flight   | Spontaneous exit   | A | Spontaneous exit   | A |
| 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]  | 18   |   | 20   |   |
| <b>23. Alternative means of directional control</b>                                       | <b>A</b>   |   |  |   |
| 180° turn achievable in 20 s  | Yes  | A | Yes  | A |
| Stall or spin occurs  | No   | A | No   | A |
| <b>24. Any other flight procedure and/or configuration described in the user's manual</b> | <b>0</b>   |   |  |   |
| 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 |
| <b>25. Comments of test pilot</b>   |  |   |  |   |
| Comments  |  |   |  |   |