para-test.com

Flight test report: EN



Manufacturer	ADVANCE Thun AG	Certification number	PG_0334.2010
Address	Seestrasse 14 3602 Thun Switzerland	Date of flight test	04. 06. 2010
Representative	None	Place of test	Villeneuve
Glider model	Omega 8 29	Classification	D
Trimmer	no		

-	Thurnheer Claude Niviuk Gliders - Hamak M		Zoller Alain Gin Gliders - Gingo 2 L	
Total weight in flight (kg)			130	
1. Inflation/Take-off	A			
Rising behaviour	Smooth, easy and constant rising	А	Smooth, easy and constant rising	А
Special take off technique required	No	А	No	А
2. Landing	Α			
Special landing technique required	No	А	No	А
3. Speed in straight flight	В			
Trim speed more than 30 km/h	Yes	А	Yes	А
Speed range using the controls larger than 10 km/h	Yes	А	Yes	А
Minimum speed	25 km/h to 30 km/h	В	25 km/h to 30 km/h	В
4. Control movement	С			
Max. weight in flight up to 80 kg				
Symmetric control pressure / travel	not available	0	not available	0
Max. weight in flight 80 kg to 100 kg				
Symmetric control pressure / travel	not available	0	not available	0
Max. weight in flight greater than 100 kg				
Symmetric control pressure / travel	Increasing / 50 cm to 65 cm	С	Increasing / 50 cm to 65 cm	С
5. Pitch stability exiting accelerated flight	Α			
Dive forward angle on exit	Dive forward less than 30°	А	Dive forward less than 30°	А
Collapse occurs	No	А	No	А
6. Pitch stability operating controls during accelerated flight	Α			
Collapse occurs	No	А	No	А
7. Roll stability and damping	Α			
Oscillations	Reducing	А	Reducing	Α
8. Stability in gentle spirals	Α			
Tendency to return to straight flight	Spontaneous exit	А	Spontaneous exit	А
9. Behaviour in a steeply banked turn	В			
Sink rate after two turns	More than 14 m/s	В	More than 14 m/s	В
10. Symmetric front collapse	D			
Entry	Rocking back greater than 45°	С	Rocking back less than 45°	А
Recovery	Spontaneous in 3 s to 5 s	В	Recovery through pilot action in less than a further 3 s	D
Dive forward angle on exit / Change of course	Dive forward 0° to 30° / Keeping course	A	Dive forward 0° to 30° / Entering a turn of less than 90°	A
Cascade occurs	No	А	No	А
With accelerator				
Entry	Rocking back greater than 45°	С	Rocking back greater than 45°	С

Dive forward angle on ext / Change of course Dive forward 0* to 30° / Keel ext and 0° to 30° / Entering a A Cascade occurs No A No A No A Cascade occurs No A Yes A No A Dive forward 0*to 30° / Keel ext and 0*to 30° A Yes A No A Dive forward or on 30° Spontaneous in less than 3 s A Spontaneous in less than 3 s A Dive forward 0*to 30° A No A No A Cascade occurs No A No A A Cascade occurs No A No A A Contrage occurs No A No A A Contrage occurs No A No No A A Contrage occurs No No A No A A Contrage occurs No No No No A A Contrage occurs <t< th=""><th>Recovery</th><th>Spontaneous in less than 3 s</th><th>A</th><th>Recovery through pilot action in less than a further 3 s</th><th>D</th></t<>	Recovery	Spontaneous in less than 3 s	A	Recovery through pilot action in less than a further 3 s	D
Canada courseNoANoA11. Exiting dep stall parch that stall)ASpontaneous in less than 3 sASpontaneous in less than 3 sADive forward ongo on extDive forward for b 30"ADive forward for b 30"AChanage or courseDive forward for b 30"ADive forward for b 30"AChanage or courseDive forward for b 30"ANoACascade occursNoASpontaneous in less than 3 sASpontaneous in less than 3 sACascade occursNoANoAACascade occursNoANoAADive forward angle on extDive forward for 10 30"ANoAACascade occurs (other than collapses)NoANoAAACascade occurs (other than collapse)CollapseANoAAACascade occurs (other than collapse)CollapseSinte 10"AAAACascade occurs (other than collapse)CollapseSinte 10"AA <t< td=""><td>Dive forward angle on exit / Change of course</td><td></td><td>А</td><td>Dive forward 0° to 30° / Entering a</td><td>А</td></t<>	Dive forward angle on exit / Change of course		А	Dive forward 0° to 30° / Entering a	А
It Exiting deep stall (parachutal stall) A Deep stall achieved Yes A Recovery Spontaneous in less than 3 s A Dive forward 0 "10 30" A Dive forward 0 "10 30" A Change of course Changing ocurse less than 4 s" A No A Cancade occurs No A No A Cancade occurs (other than collapses) No A No A Cancade occurs (other than collapses) No A No A Cancade occurs (other than collapses) No A No A Cancade occurs (other than collapses) No A No A Chalps of course until re-inflation / Maximum dive forward or 10 3" A Less than 90" / Dive or roll angle C	Cascade occurs		А		А
Deep stall achievedYesAYesAYesARecoverySportaneous in less than 3 sASportaneous in less than 3 sASportaneous in less than 3 sAChang of ocurseChanging course less than 45"AChanging course less than 45"AChanging course less than 45"ACascada ocoursNoASportaneous in less than 3 sASportaneous less than 45"ARecovery form developed full stallB			~		~
RecoverySpontaneous in less than 3 sASpontaneous in less than 3 sADue forward 0'to 30''ADive forward of to ourseChange occurse loss than 45'ANoNoACascade occursNoANoAACascade occursSpontaneous in less than 3 sASpontaneous in less than 3 sASpontaneous in less than 3 sACascade occursNoANoANoACascade occursNoANoAACascade occurs (other than collapses)NoANoACascade occurs (other than collapses)NoANoACollapseCascade occurs (other than collapses)ALess than 45'ACollapseCascade occurs (other than collapses)Cascade occurs (other than collapses)ALess than 50'' Dive or coll angleAChange of course until re-inflation / Maximum dive forwardCascade occursALess than 30'' Dive or coll angleACollapse of course until re-inflation / Maximum dive forwardNoALess than 30'' Dive or coll angleACollapse on the opposite side occursNoANoAACascade occursNoANoAACascade occursNoANoAACascade occursNoANoAACascade occursNoANoAACascade occursNoANoAA			Δ	Ves	Δ
Dive forward on solvDive forward 0 (* 30)*ADive forward 0 (* 30)*AChange occurseChanging course less than 45AChanging course less than 45ACascade occursAANoA12. High angle of attack recoveryAASportaneous in less than 3ASportaneous in less than 3ACascade occursNoANoANoACascade occursCascade occursNoANoADive forward 0 'to 30'ADive forward 30'to 60'to 30'ACascade occurs (other than collapses)No collapseANo collapseACascade occursANo collapseACascade occurs (other than collapses)CLess than 45'to 40'to 30'to 60'to 50'to 40'to 40'to 40'to 50'to 40'to 40'to 40'to 40'to 50'to 40'to	•				
Change of courseChanging course less than 45°AChanging course less than 45°ACascade occursNoANoARecoverySportaneous in less than 3 sASportaneous in less than 3 sACascade occursNoANoNoA13. Recovery from a developed full stallBCollapseNo collapseANo collapseB-CollapseNo collapseANo collapseANo collapseACollapseNo collapseANo collapseAA-CollapseNo collapseANo collapseACollapseNo collapseANo collapseACollapseNo collapseAMoscillapse High AACollapseNo collapseChange of course until reinflation / Maximum dive forward of rol fol col folAIses than 360° -A <td></td> <td></td> <td></td> <td>•</td> <td></td>				•	
Casacda occursNoANoANoA12. High angle of attack recoverySportaneous in less than 3 sASportaneous in less than 3 sACasacda occursNoANoAACasacda occursNoADive forward 30" to 80"BCallapeeNo collapseANo collapseACasacda occurs (other than collapses)NoNoANoARocking backLess than 45"ALess than 45"ALine tensionMost lines tightALess than 45"AChange of course untill re-inflation / Maximum dive forward of "of 15"CollapseALess than 90" / Dive or roll angle 0" to 15"ALess than 90" / Dive or roll angle 15" to 45"ACallapse on the opposite side occursNoNoANoAACallapse on the opposite side occursNoANoAACallapse on the opposite side occursNoANoAACallapse on the opposite side occursNoANoAACollapse on the opposite side occursNoANoAACollaps					
12. High angle of attack recovery A Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s A Cascade occurs No A No No A 13. Recovery from a deviloped full stall B	-				
Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s A Spontaneous in less than 3 s A Cascade occurs No No A No A Dive forward angle on ext Dive forward 0'to 30' A No collapse A Callage No collapse No A No A Cascade occurs (other than collapses) No A No No A Cascade occurs (other than collapses) Ko Less than 45' A Less than 50' A Less than 50' A Cabrage of course cours (other than collapses C F F C F F C F F C F F C F F C F F C F F C F F C C F F C C C C C C C C C C C C C C C C			A	No	A
Scacade occursNoANoANoA13. Recovery from a dovloped full stallDive forward and gelo exitDive forward and gelo exitADive forward and gelo exitACollapseNo collapseANo collapseANoACascade occurs (other than collapses)NoALess than 45°AAEne tensionMost lines tightALess than 45°AA14. Asymetric collapseC					
13. Recovery from a developed full statil B Dive forward angle on exit Dive forward 0° to 30° A Dive forward 30° to 60° B Collapse No collapse A No collapse A Cascade occurs (other than collapses) No A No A No Rocking back Less than 45° A Less than 45° A Line tension Most lines tight A Most lines tight A 14. Asymmetric collapse C F F F With 50% collapse Less than 30° / Dive or roll angle A Less than 30° / Dive or roll angle A Re-inflation behaviour Less than 30° / Dive or roll angle A Less than 30° / Dive or roll angle A Collapse on the opposite side occurs No A No A Collapse of course occurs No A No A Charge of course until re-inflation / Maximum dive forward or for 180° / Dive or roll angle C 90° to 180° / Dive or roll angle C Charge of course occurs No A No A A Collapse or the opposite side occurs No A No A Charge of course occurs No A No A <td< td=""><td>Recovery</td><td>Spontaneous in less than 3 s</td><td>A</td><td>Spontaneous in less than 3 s</td><td>Α</td></td<>	Recovery	Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	Α
Dive forward of to 30°ADive forward 30° to 60°BCollapseNo collapseANo collapseANo collapseANoCascade occurs (other than collapses)NoANoANoARocking backLess than 45°ALess than 45°ALess than 45°ALine tensionMost lines tightALess than 5°'ALess than 5°'AAt Asymetric collapseCVertice of CollapseALess than 3°' Dive or roll angleACChange of course until re-inflation / Maximum dive forward of of to 15°Inflates in less than 3 s from of to 15°CInflates in less than 3 s from start of pilot actionACollapse of the opposite side occursLess than 30°ALess than 30°' Dive or roll angleACollapse of the opposite side occursNoANoANoCollapse of the opposite side occursNoANoACollapse of the opposite side occursNoALess than 30°' Dive or roll angle ACollapse of the opposite side occursNoALess than 30°' Dive or roll angle A			А	No	А
CollapseNo collapseANo collapseACascade accurs (other than collapses)NoANoARecking backLess than 45"ALess than 45"ALine tensionMost lines tightAMost lines tightA14. Asymmetric collapseCFFFChange of course until re-inflation / Maximum dive forward or of loi 15"Less than 30" / Dive or roll angle of 10 15"ALess than 30" / Dive or roll angle of 15" to 45"ATotal change of courseLess than 30"ALess than 360"AACollapse on the opposite side occursNoANoAACollapse on the opposite side occursNoALess than 30"ACCollapse on the opposite side occursNoALess than 30"AACollapse on the opposite side occursNoALess than 30"AACollapse on the opposite s	13. Recovery from a developed full stall	В			
Cascade occurs (other than collapses)NoANoARocking backLess than 45°AMost lines tightALine tensionCState State	Dive forward angle on exit	Dive forward 0° to 30°	А	Dive forward 30° to 60°	В
Rocking back Line tensionLess than 45°ALess than 45°ALess than 45°ALine tensionMost lines tightAMost lines tightA14. Asymmetric collapseCChange of course until re-inflation / Maximum dive forward or linal reliancieLess than 90° / Dive or roll angle 0° to 15°ALess than 90° / Dive or roll angle 15° to 45°ARe-inflation behaviourInflates in less than 3 s from start of pilot actionCInflates in less than 3 s from start of pilot actionACollapse of courseLess than 360°ALess than 360°ALess than 360°ACollapse of the opposite side occursNoANoAACollapse on the opposite side occursNoANoAAChange of courses until re-inflation / Maximum dive forward or roll angle90° to 180° / Dive or roll angle 45° to 60°C60° to 180° / Dive or roll angle 45° CCRe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursNoANoACollapse on the opposite side occursNoANoACollapse and acceleratorLess than 30° / Dive or roll angle 15° to 45°AACollapse on the opposite side occursNoALess than 30° / Dive or roll angle 15° to 45°ACollapse on the opposite side occursNoA <t< td=""><td>Collapse</td><td>No collapse</td><td>А</td><td>No collapse</td><td>А</td></t<>	Collapse	No collapse	А	No collapse	А
Line tensionMost lines tightAMost lines tightA14. Asymmetric collapseCWith 50% collapseCWith 50% collapseLess than 90° / Dive or roll angle 0° to 15°ALess than 90° / Dive or roll angle 0° to 15°ARe-inflation behaviourInflates in less than 3 s from start of pilot actionCInflates in less than 3 s from start of pilot actionCTotal change of courseNoANoACollapse on the opposite side occursNoANoACascade occursNoANoACascade occursNoANoAChange of course until re-inflation / Maximum dive forward or oll angle90° to 180° / Dive or roll angle 45° 45° to 60°CChange of course until re-inflation / Maximum dive forward or oll angle of courseSpontaneous re-inflationACollapse on the opposite side occursNoASpontaneous re-inflationACollapse on the opposite side occursNoANoACollapse on the opposite side occursNo <td>Cascade occurs (other than collapses)</td> <td>No</td> <td>А</td> <td>No</td> <td>А</td>	Cascade occurs (other than collapses)	No	А	No	А
14. Asymmetric collapse C With 50% collapse Less than 90° / Dive or roll angle A Less than 90° / Dive or roll angle A Change of course until re-inflation / Maximum dive forward or Inflates in less than 3 s from start of pilot action C Inflates in less than 360° A Re-inflation behaviour Inflates in less than 3 s from start of pilot action A Less than 360° A Collapse on the opposite side occurs No A No A Collapse on the opposite side occurs No A No A Change of course until re-inflation / Maximum dive forward or rol to 180° / Dive or roll angle C 90° to 180° / Dive or roll angle 45° to 60° C 90° to 180° / Dive or roll angle 45° to 60° C Re-inflation behaviour Spontaneous re-inflation A No A A Collapse on the opposite side occurs No A No A Collapse and accelerator C 90° to 180° / Dive or roll angle 45° to 60° C Spontaneous re-inflation A Collapse on the opposite side occurs No A No A Collapse and accelerator C Chascade occurs No A	Rocking back	Less than 45°	А	Less than 45°	А
With 50% collapse Less than 90° / Dive or roll angle 0° to 15° A. Less than 90° / Dive or roll angle 15° to 45° A. Re-inflation behaviour Inflates in less than 3 5 from start of pilot action C. Inflates in less than 3 5 from pilot action C. Total change of course Less than 360° A Less than 360° A Collapse on the opposite side occurs No A No A Collapse on the opposite side occurs No A No A Collapse on the opposite side occurs No A No A Cascade occurs No A No A Change of course until re-inflation / Maximum dive forward of all angle 5° to 60° C. 90° to 180° / Dive or roll angle A Colapse on the opposite side occurs No A Spontaneous re-inflation A Spontaneous re-inflation A Colapse on the opposite side occurs No A Ids to 45° A Cascade occurs A Colapse on the opposite side occurs No A No A Colapse on the opposite side occur	Line tension	Most lines tight	А	Most lines tight	А
Change of course until re-inflation / Maximum dive forward or roll angleLess than 90° / Dive or roll angleALess than 90° / Dive or roll angleARe-inflation behaviourInflates in less than 3 s from start of pilot actionCInflates in less than 3 s from start of pilot actionCTotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursNoANoACascade occursNoANoAChange of course until re-inflation / Maximum dive forward or roll angle90° to 180° / Dive or roll angleC90° to 180° / Dive or roll angleARe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationACollapse on the opposite side occursNoALess than 360°ACollapse on the opposite side occursNoANoACollapse and acceleratorNoANoACollapse and acceleratorLess than 90° / Dive or roll angleANoAChange of course until re-inflation / Maximum dive forward or roll angleLess than 90° / Dive or roll angleANoACollapse and acceleratorLess than 90° / Dive or roll angleALess than 90° / Dive or roll angleACollapse and acceleratorLess than 90° / Dive or roll angleALess than 90° / Dive or roll angleACollapse and acceleratorSpontaneous re-inflationANoAACollapse on the opposite side occursNoA	14. Asymmetric collapse	С			
roll angle0° to 15°16° to 45°Re-inflation behaviourInflates in less than 3 s from start of plot action start of plot actionInflates in less than 3 s from start of plot actionTotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursNoANoACascade occursNoANoAACascade occursNoANoAAChange of course until re-inflation / Maximum dive forward or langle00° to 180° / Dive or roll angle 45° to 60°C90° to 180° / Dive or roll angle 45° 	With 50% collapse				
Index of pilot actionpilot actionpilot actionTotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursNoANoATwist occursNoANoACascade occurse until re-inflation / Maximum dive forwardSo [*] to 60°So [*] to 180° / Dive or roll angleSo [*] to 60°So [*] to 180° / Dive or roll angleSo [*] to 60°ALess than 360°ARe-inflation behaviourCascade occursSo [*] to 180° / Dive or roll angleSo [*] to 60°ALess than 360°ACollapse on the opposite side occursNoASon tam reversalACollapse on the opposite side occursNoANoACollapse on the opposite side occursNoANoACollapse on the opposite side occursNoANoACollapse on the opposite side occursNoASontaneous re-inflationACollapse on the opposite side occursSontaneous re-inflationANoACollapse on the opposite side occursNoASontaneous re-inflationACollapse on the opposite side occursNoANoAACollapse on the opposite side occursNoANoAACollapse on the opposite side occursNoANoAACollapse on the opposite side occursSontaneous re-inflationAAAColacade occursNoANo <td< td=""><td>Change of course until re-inflation / Maximum dive forward or</td><td></td><td>A</td><td></td><td>Α</td></td<>	Change of course until re-inflation / Maximum dive forward or		A		Α
Collapse on the opposite side occursNoANoATwist occursNoANoACascade occursNoANoACascade occursNoANoAChange of course until re-inflation / Maximum dive forward or roll angle90° to 180° / Dive or roll angle 45° to 60°C90° to 180° / Dive or roll angle to 60°C90° to 180° / Dive or roll angle 45° to 60°CRe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationACollapse on the opposite side occursNoAYes, no turn reversalCTvist occursNoANoACascade occursNoANoACascade occursNoASpontaneous re-inflationACascade occursSpontaneous re-inflationASpontaneous re-inflationACascade occursSpontaneous re-inflationASpontaneous re-inflationACollapse on the opposite side occursNoALess than 90° / Dive or roll angle 15° to 45°ACollapse on the opposite side occursNoALess than 300°ACollapse on the opposite side occursNoANoACascade occursNoANoACollapse on the opposite side occursNoANoACollapse on the opposite side occursNoANoAChal change of courseLess than 30° / Dive or roll angle 15° to 45°G	Re-inflation behaviour		С		С
Twist occursNoANoACascade occursNoANoACascade occursNoANoAWith 75% collapseO' to 180° / Dive or roll angleC0° to 180° / Dive or roll angle 45° to 60°CChange of course until re-inflation / Maximum dive forward or roll angleO' to 180° / Dive or roll angle 45° to 60°C0° to 180° / Dive or roll angle 45°ARe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursNoAVes, no turn reversalACollapse and acceleratorNoANoAChange of course until re-inflation / Maximum dive forward or roll angleLess than 90° / Dive or roll angle 15° to 45°AChange of course until re-inflation / Maximum dive forward or roll angleLess than 90° / Dive or roll angle 15° to 45°ACollapse and acceleratorLess than 90° / Dive or roll angle 15° to 45°ASpontaneous re-inflationCollapse on the opposite side occursNoANoACollapse on the opposite side occursNoANoACollapse and acceleratorLess than 90° / Dive or roll angle 6° 15° to 45°ANoACollapse and acceleratorLess than 90° / Dive or roll angle 6° 15° to 45°ANoACollapse and acceleratorLess than 90° / Dive or roll angle 6° 10° 10°A	Total change of course	Less than 360°	А	Less than 360°	А
Twist occursNoANoACascade occursNoANoACascade occursNoANoAWith 75% collapseO' to 180° / Dive or roll angleC0° to 180° / Dive or roll angle 45° to 60°CChang of course until re-inflation / Maximum dive forward or roll angleO' to 180° / Dive or roll angle 45° to 60°CSpontaneous re-inflationARe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursNoAYes, no turn reversalACollapse and acceleratorNoANoAChange of course until re-inflation / Maximum dive forward or roll angleLess than 90° / Dive or roll angle 15° to 45°AChange of course until re-inflation / Maximum dive forward or roll angleLess than 90° / Dive or roll angle 15° to 45°ACollapse and acceleratorLess than 90° / Dive or roll angle 15° to 45°ASpontaneous re-inflationACollapse on the opposite side occursNoALess than 360°AACollapse and acceleratorLess than 90° / Dive or roll angle 45° to 60°NoAACollapse and acceleratorLess than 90° / Dive or roll angle 60°ANoACollapse and acceleratorLess than 90° / Dive or roll angle 60°ANoACollapse and acceleratorLess than 90° / Dive or roll angle 60°Sponta	-	No	А	No	А
With 75% collapseWith 75% collapseSo ta 160° / Dive or roll angleSo ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45°So ta 160°So ta 160°So ta 160°So ta 160° / Dive or roll angle 45°So ta 160°So ta 160°<		No	А	No	А
With 75% collapseWith 75% collapseSo ta 160° / Dive or roll angleSo ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45° to 60°So ta 160° / Dive or roll angle 45°So ta 160°So ta 160°So ta 160°So ta 160° / Dive or roll angle 45°So ta 160°So ta 160°<	Cascade occurs	Νο	А	Νο	А
Change of course until re-inflation / Maximum dive forward or roll angle90° to 180° / Dive or roll angle 45° to 60°C90° to 180° / Dive or roll angle 45° to 60°CRe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursNoAYes, no turn reversalCTwist occursNoANoAACascade occursNoANoAAChange of course and acceleratorLess than 90° / Dive or roll angle 15' to 45'ALess than 90° / Dive or roll angle AAChange of courseSpontaneous re-inflationALess than 90° / Dive or roll angle 15' to 45'ALess than 90° / Dive or roll angle AAChange of courseSpontaneous re-inflationALess than 90° / Dive or roll angle 15' to 45'ALess than 90° / Dive or roll angle 15' to 45'ARe-inflation behaviourSpontaneous re-inflationALess than 360°AACollapse on the opposite side occursNoANoACollapse on the opposite side occursNoANoACascade occursNoANoAAWith 75% collapse and acceleratorLess than 90° / Dive or roll angle 45' to 60°ANoAChange of course until re-inflation / Maximum dive forward or roll angleLess than 90° / Dive or roll angle 60°CA <t< td=""><td></td><td></td><td></td><td></td><td></td></t<>					
Total change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursNoAYes, no turn reversalCTwist occursNoANoACascade occursNoANoAChange of course until re-inflation / Maximum dive forward or roll angleLess than 90° / Dive or roll angle 15° to 45°ALess than 90° / Dive or roll angle 15° to 45°ARe-inflation behaviourSpontaneous re-inflationALess than 90° / Dive or roll angle 15° to 45°ATotal change of course until re-inflation / Maximum dive forward or loll angleLess than 360°ALess than 90° / Dive or roll angle 15° to 45°ARe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursNoANoATwist occursNoANoAAChange of course until re-inflation / Maximum dive forward or oll angleLess than 360°ANoAChange of course until re-inflation / Maximum dive forward or oll angleLess than 360°ANoAAChange of courseLess than 360°ALess than 360°AAACollapse on the opposite side occursSpontaneous re-inflationASpontaneous re-inflationACollapse on the opposite side occursYes, no turn reversalCYes, no turn reversal<	Change of course until re-inflation / Maximum dive forward or		С		С
Total change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursNoAYes, no turn reversalCTwist occursNoANoACascade occursNoANoAWith 50% collapse and acceleratorLess than 90° / Dive or roll angle of course until re-inflation / Maximum dive forward or 15° to 45°ALess than 90° / Dive or roll angle of 15° to 45°ARe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of course until re-inflation of Maximum dive forward or 15° to 45°ASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursNoANoACollapse and acceleratorNoANoAWith 75% collapse and acceleratorLess than 90° / Dive or roll angle 60°AChange of course until re-inflation / Maximum dive forward or 145° to 60°ASpontaneous re-inflationAWith 75% collapse and acceleratorLess than 360° / Dive or roll angle 60°CSpontaneous re-inflationAChange of course until re-inflation / Maximum dive forward or 145° to 60°Less than 360°ALess than 360°ACollapse on the opposite side occursLess than 360°ALess than 360°ALess than 360°ACollapse on the opposite side occursKoNoALess than 360°ALess than 360°AC<	-	Spontaneous re-inflation	А	Spontaneous re-inflation	А
Collapse on the opposite side occursNoAYes, no turn reversalCTwist occursNoANoACascade occursNoANoAWith 50% collapse and acceleratorLess than 90° / Dive or roll angle 15° to 45°ALess than 90° / Dive or roll angle 15° to 45°ALess than 90° / Dive or roll angle 15° to 45°ARe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursNoANoATwist occursNoANoAACascade occursNoANoAAChange of course until re-inflation / Maximum dive forward or coll angleLess than 90° / Dive or roll angle 60°ANoATwist occursNoANoAAAACascade occursNoANoAAChange of course until re-inflation / Maximum dive forward or coll angleLess than 90° / Dive or roll angle 60° to 90°C90° to 180° / Dive or roll angle 60°CRe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationAACotacade occursLess than 360°ALess than 360°AACotal change of courseLess than 360°ALess than 360°AACotal change of courseLess than 360°ALess than 360°<	Total change of course	•	А		
Twist occursNoANoACascade occursNoANoACascade occursNoANoAWith 50% collapse and acceleratorLess than 90° / Dive or roll angleALess than 90° / Dive or roll angleAChange of course until re-inflation / Maximum dive forward or roll angleLess than 90° / Dive or roll angleALess than 90° / Dive or roll angleARe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursNoANoATwist occursNoANoACascade occursNoANoAWith 75% collapse and acceleratorLess than 90° / Dive or roll angle of sofo*CChange of course until re-inflation / Maximum dive forward or collangleLess than 360°ANoRe-inflation behaviourMaximum dive forward or sof* to 60°Spontaneous re-inflationACollapse on the opposite side occursSpontaneous re-inflationASpontaneous re-inflationARe-inflation behaviourMaximum dive forward or sof* to 60°Spontaneous re-inflationAACollapse on the opposite side occursSpontaneous re-inflationASpontaneous re-inflationACollapse on the opposite side occursNoALess than 360°AACollapse on the opposite side occursNo <td< td=""><td>-</td><td></td><td></td><td></td><td></td></td<>	-				
Cascade occursNoANoAWith 50% collapse and accelerator <td></td> <td></td> <td></td> <td></td> <td></td>					
With 50% collapse and acceleratorLess than 90° / Dive or roll angle 15° to 45°ALess than 90° / Dive or roll angle 15° to 45°ARe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursNoANoATwist occursNoANoACascade occursNoANoAWith 75% collapse and acceleratorLess than 90° / Dive or roll angle 60°AWith 75% collapse and acceleratorLess than 90° / Dive or roll angle 60°So of 00° to 180° / Dive or roll angle 60°Re-inflation behaviourSpontaneous re-inflationANoRe-inflation behaviourLess than 90° / Dive or roll angle 60°So of 00° to 180° / Dive or roll angle 60°CRe-inflation behaviourSpontaneous re-inflationSpontaneous re-inflationASpontaneous re-inflationRe-inflation behaviourSpontaneous re-inflationSpontaneous re-inflationASpontaneous re-inflationRe-inflation behaviourSpontaneous re-inflationSpontaneous re-inflationASpontaneous re-inflationRe-inflation behaviourSpontaneous re-inflationSpontaneous re-inflationASpontaneous re-inflationRotal change of courseLess than 360°Spontaneous re-inflationSpontaneous re-inflationACollapse on the opposite side occursNoANoACascade occursNoA <t< td=""><td></td><td></td><td></td><td></td><td></td></t<>					
Change of course until re-inflation / Maximum dive forward or roll angleLess than 90° / Dive or roll angle 15° to 45°ALess than 90° / Dive or roll angle 15° to 45°ARe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursNoANoATwist occursNoANoACascade occursNoANoAWith 75% collapse and acceleratorLess than 90° / Dive or roll angleCSpontaneous re-inflationAWith 75% collapse and acceleratorLess than 90° / Dive or roll angleCSpontaneous re-inflationAChange of course until re-inflation / Maximum dive forward or roll angleLess than 90° / Dive or roll angle 60° to 90° to 180° / Dive or roll angle 60° to 90° to 180° / Dive or roll angle 60° to 90° to 180° / Dive or roll angle 60° to 90° to 180° / Dive or roll angle 60° to 90° to 180° / Dive or roll angle 60° to 90° to 180° / Dive or roll angle 60° to 90° to 180° / Dive or roll angle 60° to 90° to 180° / Dive or roll angle 60° to 90° to 180° / Dive or roll angle 60° to 90° to 180° / Dive or roll angle 60° to 90° to 180° / Dive or roll angle 60° to 90° to 180° / Dive or roll angle 60° to 90° to 180° / Dive or roll angle 60° to 90° to 180° / Dive or roll angle 60° to 90° to 180° / Dive or roll angle 60° to 90° to 180° to 180° / Dive or roll angle 60° to 90° to 180° / Dive or roll angle 60° to 90° to 180° to 180° / Dive or roll angle 60° to 90° to 180° to 180° / Dive or roll angle 60° to 90° to 180° to 180° / Dive or roll angle		110	~	NO	~
Re-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursNoANoATwist occursNoANoACascade occursNoANoAWith 75% collapse and acceleratorLess than 90° / Dive or roll angle 45° to 60°Spontaneous re-inflationAChange of course until re-inflation / Maximum dive forward or roll angleLess than 90° / Dive or roll angle 45° to 60°C90° to 180° / Dive or roll angle 60° to 90°CRe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursYes, no turn reversalCYes, no turn reversalCCollapse on the opposite side occursNoANoACascade occursNoANoACascade occursNoANoACascade occursNoANoACascade occursNoANoAAble to keep courseYesYesAYesA	Change of course until re-inflation / Maximum dive forward or		A		А
Total change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursNoANoATwist occursNoANoACascade occursNoANoAWith 75% collapse and acceleratorVVVChange of course until re-inflation / Maximum dive forward or roll angleLess than 90° / Dive or roll angle 6°0° to 180° / Dive or roll angle 6°CRe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursYes, no turn reversalCYes, no turn reversalCTotal change of courseNoANoAACollapse on the opposite side occursYes, no turn reversalCYes, no turn reversalCTwist occursNoANoAAACascade occursNoANoAAAble to keep courseYesYesAYesA	5		Δ		Δ
Collapse on the opposite side occursNoANoATwist occursNoANoACascade occursNoANoAWith 75% collapse and acceleratorNoANoAChange of course until re-inflation / Maximum dive forward or roll angleLess than 90° / Dive or roll angle 45° to 60°C90° to 180° / Dive or roll angle 60° to 90°CRe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursYes, no turn reversalCYes, no turn reversalCTwist occursNoANoACoaccade occursNoANoACollapse on the opposite side occursYes, no turn reversalCYes, no turn reversalCTwist occursNoANoAACascade occursNoANoAAble to keep courseYesYesAYesA		•		•	
Twist occursNoANoACascade occursNoANoA <i>With 75% collapse and accelerator</i> KNoAChange of course until re-inflation / Maximum dive forward or ool angleLess than 90° / Dive or roll angle 60° 45° to 60°C90° to 180° / Dive or roll angle 60° to 90°CRe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursYes, no turn reversalCYes, no turn reversalCTwist occursNoANoACascade occursNoANoAScacade occursMoANoAAble to keep courseYesYesAYesA	-				
Cascade occursNoANoAWith 75% collapse and accelerator<					
With 75% collapse and acceleratorChange of course until re-inflation / Maximum dive forward or roll angleLess than 90° / Dive or roll angleC90° to 180° / Dive or roll angle 60° to 90°CRe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursYes, no turn reversalCYes, no turn reversalCTwist occursNoANoACascade occursNoANoA 15. Directional control with a maintained asymmetric collapse AYesAYesAAble to keep courseYesYesAYesAA					
Change of course until re-inflation / Maximum dive forward on coll angleLess than 90° / Dive or roll angleC90° to 180° / Dive or roll angle 60° to 90°CRe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursYes, no turn reversalCYes, no turn reversalCTwist occursNoANoACascade occursNoANoA 15. Directional control with a maintained asymmetric ollapseAYesAYesAAble to keep courseYesYesAYesAYesA		NO	А	NO	А
roll angle45° to 60°to 90°Re-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursYes, no turn reversalCYes, no turn reversalCTwist occursNoANoACascade occursNoANoA 15. Directional control with a maintained asymmetric collapse YesAYesAAble to keep courseYesAYesAYesA			_		-
Total change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursYes, no turn reversalCYes, no turn reversalCTwist occursNoANoACascade occursNoANoA 15. Directional control with a maintained asymmetric collapseAYesAYesAAble to keep courseYesAYesAYesA	roll angle	45° to 60°		to 90°	
Collapse on the opposite side occursYes, no turn reversalCYes, no turn reversalCTwist occursNoANoACascade occursNoANoA15. Directional control with a maintained asymmetric collapseAYesAAble to keep courseYesAYesA					
Twist occursNoANoACascade occursNoANoA15. Directional control with a maintained asymmetric collapseAAVoAAble to keep courseYesAYesA	-		А		
Cascade occursNoANoA15. Directional control with a maintained asymmetric collapseAAYesAAble to keep courseYesAYesA	Collapse on the opposite side occurs	Yes, no turn reversal	С	Yes, no turn reversal	С
15. Directional control with a maintained asymmetric collapseAAble to keep courseYesAYesA	Twist occurs	No	А	No	А
collapse Able to keep course Yes A Yes A	Cascade occurs	No	А	No	А
		Α			
180° turn away from the collapsed side possible in 10 s Yes A Yes A	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 symmetric control travel	A	More than 50 % of the symmetric control travel	A
16. Trim speed spin tendency	Α			
Spin occurs	No	А	No	Α
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	A
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	В			
Entry procedure	Standard technique	А	Standard technique	А
Behaviour during big ears	Stable flight	А	Stable flight	А
Recovery	Recovery through pilot action in less than a further 3 s	В	Spontaneous in less than 3 s	A
Dive forward angle on exit	Dive forward 0° to 30°	А	Dive forward 0° to 30°	А
21. Big ears in accelerated flight	В			
Entry procedure	Standard technique	А	Standard technique	А
Behaviour during big ears	Stable flight	А	Stable flight	А
Recovery	Recovery through pilot action in less than a further 3 s	В	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	А
22. Behaviour exiting a steep spiral	D			
Tendency to return to straight flight	Turn remains constant	D	Turn remains constant	D
Turn angle to recover normal flight	With pilot action	D	With pilot action	D
Sink rate when evaluating spiral stability [m/s]	19		22	
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
r roccuire suitable for novice pilots				
Cascade occurs	not available	0	not available	0
·	not available	0	not available	0