FTR - Flight Test Report Dieser Prütbericht darf ohne schriftliche Zustimmung der EAPR nicht, auch nic

Manufacturer	SWING	Type testing No.	EAPR-GS-0649/17	
	Swing Flugsportgeräte GmbH An der Leiten 4 D-82290 Landsberied	serial number	proto	
Model	Apus RS Hike 20		Lenggries	
Comment		Location	Achensee	



Rev. 2.3 - 26.11.2014 EAPR GmbH - Marktstr. 11 D-87730 Bad Grönenbach - Germany

Date of testing	22.06.2017	Minimum take off v 65 kg	veight	Maximum take off v 80 kg	veight
Testpilot		Bauer Sepp		Mike Küng	
Harness		EAPR- Lightequipment		EAPR Testequipment	
Pilot's take off weight		65 kg		80 kg	A SA

Classification

Α



Test-criteria		Minimum take off weight	Evaluation	Maximum take off weight	Evaluation
1. Inflation / take-off - 4.4.1		•			
Rising behavior	ising behavior		no pilot correction required A no pilot correction required		Α
Special take off technique required		No	Α	No	А
2. Landing - 4.4.2					
Special landing technique required		I No	Α	No	Α
3. Speeds in straight flight - 4.4.3		1	, ,,		
Trim speed more than 30km/h		Yes	А	Yes	A
Speed range using the controls larger than 10km/h		Yes	A	Yes	A
Minimum speed		Less than 25 km/h	Α	Less than 25 km/h	Α
4. Control movement - 4.4.4		Less than 25 kilvii		Less than 25 kilvii	
Max. weight in flight up to 80kg			-		-
Max. weight in flight 80 to 100kg		Increasing > 60cm	Α		-
Max. weight in flight greater than 100kg			-	Increasing >65 cm	А
5. Pitch stability exiting accelerated flight - 4.4.	.5	'			
Dive forward angle on exit		Dive forward less than 30°	Α	Dive forward less than 30°	Α
Collapse occurs		No	Α	No	Α
6. Pitch stability operating controls during acce	elerated	flight - 4.4.6			
Collapse occurs		No	Α	No	A
7. Roll stability and damping - 4.4.7					
Oscillations		Reducing	Α	Reducing	Α
8. Stability in gentle spirals - 4.4.8		11000011g		Troubling	
Tendency to return to straight flight		Spontaneous exit	l A	Spontaneous exit	l A
			A	Sportalieous exit	А
9. Behaviour exiting a fully developed spiral div	/e - 4.4.			The second state of the late o	
Initial response of glider (first 180°) Tendency to return to straight flight		Immediate reduction of rate in turn Spontaneous exit	A	Immediate reduction of rate in turn Spontaneous exit	Α
Turn angle to recover normal flight		Less than 720°, spontaneous recovery	A	Less than 720°, spontaneous recovery	A
		Less than 720 , spontaneous recovery	_ A	Less than 720 , spontaneous recovery	_ ^
10. Symmetric front collapse - 4.4.10		T ::			
Folding lines used		No Rocking back less than 45°	Α	No Rocking back less than 45°	
Entry	~ 30%	· ·		Hocking back less than 45°	Α
Recovery	peeds	Spontaneous in less than 3 sec	Α	Spontaneous in less than 3 sec	Α
Dive forward angle on exit	trim s	0° - 30° Keeping course	A	0° - 30° Entering a turn of less than 90°	A
Cascade occurs		No	A	No Decline healt less than 450	A
Entry Recovery	%09 < p	Rocking back less than 45° Spontaneous in less than 3 sec	A	Rocking back less than 45° Spontaneous in less than 3 sec	A
Dive forward angle on exit	paads	0° - 30° Keeping course	Α	0° - 30° Entering a turn of less than 90°	Α
Cascade occurs	ij.	No Reeping course	A	No Entering a turn or less trian 90	A
Entry	*	Rocking back less than 45°	A	Rocking back less than 45°	Ä
Recovery	accelerated > 50%	Spontaneous in less than 3 sec	Α	Spontaneous in less than 3 sec	Α
Dive forward angle on exit	elera	0° - 30° Entering a turn of less than 90°	Α	0° - 30° Entering a turn of less than 90°	А
Cascade occurs	acc	No	A	No	Α
11. Exiting deep stall (parachutal stall) - 4.4.11					
Deep stall achieved		Yes		Yes	
Recovery		Spontaneous in less than 3 sec	Α	Spontaneous in less than 3 sec	Α
Dive forward angle on exit		0° - 30°	Α	0° - 30°	Α
Change of course		Changing course less than 45°	A	Changing course less than 45°	A
		No	A	No	

12. High angle of attack recovery - 4.4.12									
Recovery		Spontaneous in	less than 3 sec		Α	Spontaneous in less than 3 sec			Α
Cascade occurs		No			Α	No	No		
13. Recovery from a developed full stall - 4.4.	13				•				Α
Dive forward angle on exit		0° - 30°			Α	0° - 30°			Α
Collapse Cascade occurs (other than collapse)		No collapse No			A	No collapse No			A
Rocking backward		Less than 45°			Α	Less than 45°			A
Line tension		Most lines tight			Α	Most lines tight			Α
14. Asymmetric collapse (trim speed) - 4.4.14		No				No			
Folding lines used		< 90°		00 150		< 90°	Dive or roll angle	150 450	^
Change of course until re-inflation	bse	< 90°	Dive or roll angle	0° - 15°	Α	< 90°	Dive or roll angle	15° - 45°	Α
Re-inflation behavior	colla	Spontaneous re	-inflation		Α	Spontaneous re	-inflation		Α
Total change of course	trim speed, max 50% collapse	Less than 360°		Α	Less than 360°			Α	
Collapse on the opposite side occurs Twist occurs	max rt	No No			A	No No			A
Cascade occurs		No			A	No			A
Change of course until re-inflation	φ	< 90°	Dive or roll angle	15° - 45°	Α	< 90°	Dive or roll angle	15° - 45°	Α
Re-inflation behavior	trim speed, max 75% collapse	Spontaneous re	-inflation	l	Α	Spontaneous re	-inflation	l	Α
Total change of course	trim speed x 75% colla	Less than 360°	-iiiiatioii		A	Less than 360°	-IIIIatioii		A
Collapse on the opposite side occurs	trim IX 75	No			A	No			A
Twist occurs	E	No			Α	No			Α
Cascade occurs		No			Α	No			Α
Change of course until re-inflation	Φ.	< 90°	Dive or roll angle	15° - 45°	Α	< 90°	Dive or roll angle	15° - 45°	Α
Re-inflation behavior	accelerated, max 50% collapse	Spontaneous re	inflation	1	Α	Spontaneous re	-inflation	I	Α
Total change of course	accelerated, x 50% colla	Less than 360°	auuii			Less than 360°	milation		A
Collapse on the opposite side occurs	acce × 50°	No			A	No			A
Twist occurs	ma	No			Α	No			Α
Cascade occurs		No			A	No	1		A
Change of course until re-inflation	9SC	< 90°	Dive or roll angle	15° - 45°	Α	< 90°	Dive or roll angle	15° - 45°	Α
Re-inflation behavior	accelerated, max 75% collapse	Spontaneous re	-inflation		Α	Spontaneous re	-inflation		Α
Total change of course	Seler 5% c	Less than 360°			Α	Less than 360°			Α
Collapse on the opposite side occurs	aco lax 7	No			A	No			A
Twist occurs Cascade occurs	=	No No			A	No No			A
15. Directional control with a maintained asym	metric co								
Able to keep course straight		Yes			Α	Yes			Α
180° turn away from the collapsed side possible is	n 10 sec	Yes		Α	Yes			Α	
Amount of control range between turn and stall or spin		More than 50% of the symmetric control travel A			Α	More than 50% of the symmetric control travel			Α
-	- p	1			, ,				, ,,
16. Trim speed spin tendency - 4.4.16 Spin occurs		No			A	No			l A
17. Low speed spin tendency - 4.4.17		140		, ,,					
Spin occurs		No			Α	No			Α
18. Recovery from a developed spin - 4.4.18									
Spin rotation angle after release		Stops spinning in	n less than 90°		Α	Stops spinning i	n less than 90°		Α
Cascade occurs		No		Α	No			Α	
19. B-line-stall - 4.4.19									
Change of course before release		Changing course	e less than 45°		Α	Changing cours	e less than 45°		Α
Behaviour before release		Remains stable	with straight spar	1	Α	Remains stable with straight span			Α
Recovery		Spontaneous in	less than 3 sec		Α	Spontaneous in	less than 3 sec	_	Α
Dive forward angle on exit		0° - 30°			Α	30° - 60°			A
Cascade occurs		No			Α	No			A
20. Big ears - 4.4.20									
Entry procedure		Standard technic	que		Α	Standard techni	que		Α
Behaviour during big ears		Stable flight			Α	Stable flight			Α
Recovery		Spontaneous in	less than 3 sec		Α	Spontaneous in less than 3 sec			Α
Dive forward angle on exit		0° - 30°			Α	0° bis 30°			Α
21. Big Ears in accelerated flight - 4.4.21									
Entry procedure		Standard technic	que		Α	Standard techni	que		Α
• •		Stable flight			Α	Stable flight		Α	
Behaviour during big ears			Spontaneous in less than 3 sec		Α	Spontaneous in less than 3 sec		Α	
• •		Spontaneous in				0° bis 30°		Α	
Behaviour during big ears		Spontaneous in			Α				
Behaviour during big ears Recovery Dive forward angle on exit Behaviour immediately after releasing the accelar	ator while				A A	Stable flight			Α
Behaviour during big ears Recovery Dive forward angle on exit Behaviour immediately after releasing the accelar maintaining big ears		0° - 30°							А
Behaviour during big ears Recovery Dive forward angle on exit Behaviour immediately after releasing the accelar maintaining big ears 23. Alternative means of directional control -		0° - 30° Stable flight			А	Stable flight			
Behaviour during big ears Recovery Dive forward angle on exit Behaviour immediately after releasing the accelar maintaining big ears 23. Alternative means of directional control - 180° turn achievable in 20 sec		0° - 30° Stable flight Yes			A	Stable flight Yes			A
Behaviour during big ears Recovery Dive forward angle on exit Behaviour immediately after releasing the accelar maintaining big ears 23. Alternative means of directional control - 180° turn achievable in 20 sec Stall or spin occurs	4.4.22	0° - 30° Stable flight Yes No		00	А	Stable flight			
Behaviour during big ears Recovery Dive forward angle on exit Behaviour immediately after releasing the accelar maintaining big ears 23. Alternative means of directional control - 180° turn achievable in 20 sec Stall or spin occurs 23. Any other flight procedure and/or configur	4.4.22	0° - 30° Stable flight Yes No		23	A A A	Stable flight Yes			A A
Behaviour during big ears Recovery Dive forward angle on exit Behaviour immediately after releasing the accelar maintaining big ears 23. Afternative means of directional control - 180° turn achievable in 20 sec Stall or spin occurs 23. Any other flight procedure and/or configur Procedure works as descibed Procedure suitable for novice pilots	4.4.22	0° - 30° Stable flight Yes No		23	A A A NA NA	Stable flight Yes			A A NA NA
Behaviour during big ears Recovery Dive forward angle on exit Behaviour immediately after releasing the accelar maintaining big ears 23. Alternative means of directional control - 180° turn achievable in 20 sec Stall or spin occurs 23. Any other flight procedure and/or configure	4.4.22	0° - 30° Stable flight Yes No		23	A A A	Stable flight Yes			A A

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FTR - Flight Test Report Dieser Prütbericht darf ohne schriftliche Zustimmung der EAPR nicht, auch nic

Manufacturer	swing	Type testing No.	EAPR-GS-0660/17	
	Swing Flugsportgeräte GmbH An der Leiten 4 D-82290 Landsberied	serial number	proto	
Model	Apus RS Hike 20	Landin	Achensee	
Comment		Location	Gerlitzen	



Rev. 2.3 - 26.11.2014 EAPR GmbH - Marktstr. 11 D-87730 Bad Grönenbach - Germany

Date of testing	11.06.2017	Minimum take o 80 kg		Maximum take of 110 kg	weight
Testpilot		Mike Küng		Pascal Purin	
Harness		EAPR-Testequipmen	1	EAPR Testequipment	
Pilot's take off weight	t	80	kg	108 kg	

Classification C



est-criteria		Minimum take off weight	Evaluation	Maximum take off weight	Evaluatio
1. Inflation / take-off - 4.4.1		Smooth, easy and constant rising,			
Rising behavior	ing behavior		Α	no pilot correction required	Α
Special take off technique required		No	Α	No	Α
2. Landing - 4.4.2		1 -			
Special landing technique required		No	А	No	Α
3. Speeds in straight flight - 4.4.3		TWO		110	
Trim speed more than 30km/h		Yes		Yes	Α
Trim speed more than 30km/n			Α		
Speed range using the controls larger than 10km/h		Yes	Α	Yes	Α
Minimum speed		Less than 25 km/h	Α	25 km/h to 30 km/h	В
4. Control movement - 4.4.4					'
Max. weight in flight up to 80kg			-		-
Max. weight in flight 80 to 100kg			-		-
Max. weight in flight greater than 100kg		Increasing 50cm - 65cm	С	Increasing 50cm - 65cm	С
5. Pitch stability exiting accelerated flight - 4.4.5					
Dive forward angle on exit		Dive forward less than 30°	Α	Dive forward less than 30°	l A
Collapse occurs		No	A	No	A
6. Pitch stability operating controls during accel	erated	flight - 4 4 6			
Collapse occurs	oratoa	No	Α	No	l A
		140		140	
7. Roll stability and damping - 4.4.7		I Budular		Distriction.	
Oscillations		Reducing	Α	Reducing	Α
8. Stability in gentle spirals - 4.4.8					
Tendency to return to straight flight		Spontaneous exit	Α	Spontaneous exit	Α
9. Behaviour exiting a fully developed spiral dive	e - 4.4.	9			
Initial response of glider (first 180°)		Immediate reduction of rate in turn	Α	No immediate reaction	В
Tendency to return to straight flight		Spontaneous exit	Α	Spontaneous exit	Α
Turn angle to recover normal flight		Less than 720°, spontaneous recovery	Α	1080° to 1440°, spontaneous recovery	С
10. Symmetric front collapse - 4.4.10					
Folding lines used		No		No	
Entry	%	Rocking back less than 45°	Α	Rocking back less than 45°	А
Recovery	%0c ~ pa	Spontaneous in less than 3 sec	Α	Spontaneous in less than 3 sec	Α
Dive forward angle on exit	paeds u	0° - 30° Keeping course	Α	0° - 30° Entering a turn of less than 90°	Α
Cascade occurs	trim	No	Α	No	Α
Entry	> 20%	Rocking back less than 45°	Α	Rocking back less than 45°	Α
Recovery	g < paeds	Spontaneous in less than 3 sec	Α	Spontaneous in less than 3 sec	Α
Dive forward angle on exit		0° - 30° Keeping course	Α	0° - 30° Entering a turn of less than 90°	Α
Cascade occurs	ři	No	Α	No	Α
Entry	.50%	Rocking back less than 45°	Α	Rocking back less than 45°	Α
Recovery	accelerated > 5	Spontaneous in less than 3 sec	Α	Spontaneous in less than 3 sec	Α
Dive forward angle on exit	celer	0° - 30° Entering a turn of less than 90°	Α	30° - 60° Keeping course	В
Cascade occurs	ao	No	Α	No	Α
11. Exiting deep stall (parachutal stall) - 4.4.11					
Deep stall achieved		Yes		Yes	
Recovery		Spontaneous in less than 3 sec	Α	Spontaneous in less than 3 sec	Α
Dive forward angle on exit		0° - 30°	Α	0° - 30°	Α
Change of course		Changing course less than 45°	A	Changing course less than 45°	A

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12. High angle of attack recovery - 4.4.12									
Recovery		Spontaneous in	less than 3 sec		Α	Spontaneous in	pontaneous in less than 3 sec		А
Cascade occurs		No			Α	No	No		
13. Recovery from a developed full stall - 4.4.1	13								Α
Dive forward angle on exit		0° - 30°			A	30° - 60°			В
Callapse Cascade occurs (other than collapse)		No collapse No			A	No collapse No			A A
Rocking backward		Less than 45°			A	Less than 45°			A
Line tension		Most lines tight			Α	Most lines tight			Α
14. Asymmetric collapse (trim speed) - 4.4.14		No			1	No			1
Folding lines used		< 90°	1	00 150		< 90°	Dive or roll angle	150 450	
Change of course until re-inflation	bse	< 90-	Dive or roll angle	0° - 15°	Α	< 90°	Dive or roll angle	15° - 45°	Α
Re-inflation behavior	trim speed, max 50% collapse	Spontaneous re	e-inflation		Α	Spontaneous re	-inflation		Α
Total change of course	trim speed x 50% colla	Less than 360° No No		Α	Less than 360°			Α	
Collapse on the opposite side occurs Twist occurs	max <u>tri</u>			A	No No			A	
Cascade occurs		No			A	No			A
Change of course until re-inflation	Φ	< 90°	Dive or roll angle	15° - 45°	Α	90° - 180°	Dive or roll angle	15° - 45°	В
Re-inflation behavior	trim speed, max 75% collapse	Coortonoous ro	inflation		^	Coortonoous ra	inflation		Α
	trim speed < 75% colla	Spontaneous re			A	Spontaneous re	-mation		
Total change of course Collapse on the opposite side occurs	trim x 75	Less than 360° No			A	Less than 360° No			A A
Twist occurs	a a	No			Α	No			Α
Cascade occurs		No			Α	No			Α
Change of course until re-inflation	0	< 90°	Dive or roll angle	15° - 45°	Α	< 90°	Dive or roll angle	15° - 45°	Α
	accelerated, max 50% collapse	Coonterrance	inflation	<u> </u>	^	Coonterror	inflation	<u> </u>	^
Re-inflation behavior	accelerated, x 50% collap	Spontaneous re Less than 360°	-milduon		A	Spontaneous re	r-milation		A
Total change of course Collapse on the opposite side occurs	300e x 50°	No			A	Less than 360° No			A
Twist occurs	ag a	No			Α	No			Α
Cascade occurs		No			Α	No	1		A
Change of course until re-inflation	Se	< 90°	Dive or roll angle	15° - 45°	Α	90° - 180°	Dive or roll angle	45° - 60°	С
Re-inflation behavior	accelerated, max 75% collapse	Spontaneous re	e-inflation		Α	Spontaneous re	-inflation		Α
Total change of course	elera 5% c	Less than 360°			Α	Less than 360°			A
Collapse on the opposite side occurs	acc ax 7.	No			Α	No			Α
Twist occurs Cascade occurs	Ε	No No			A	No No			A
15. Directional control with a maintained asym	metric col					140			
Able to keep course straight		Yes			Α	Yes			Α
180° turn away from the collapsed side possible in	10 sec	Yes		Α	Yes			Α	
Amount of control range between turn and stall or spin		Mara than E09/	of the symmetric	aantral traval	Α	Mara than E09/	of the symmetric	control traval	Α
-	spiri	More than 50%	of the symmetric	control travel	А	More than 50%	of the symmetric	control travel	А
16. Trim speed spin tendency - 4.4.16		T.N.				Ext.			
Spin occurs 17. Low speed spin tendency - 4.4.17		No		А	No			Α	
Spin occurs		No			А	No			А
18. Recovery from a developed spin - 4.4.18		•				•			
Spin rotation angle after release		Stops spinning i	in less than 90°		Α	Stops spinning i	in less than 90°		Α
Cascade occurs		No			Α	No			Α
19. B-line-stall - 4.4.19		1			, ,,				
Change of course before release		Changing cours	e less than 45°		Α	Changing cours	e less than 45°		Α
Behaviour before release		Remains stable	with straight span	1	Α	Remains stable	with straight span	1	Α
Dessure				^	Spontaneous in less than 3 sec			^	
Recovery		Spontaneous in	iless man 3 sec		A	· ·	less man 3 sec		A
Dive forward angle on exit Cascade occurs		0° - 30° No			A	30° - 60° No			A
20. Big ears - 4.4.20									
Entry procedure		Standard techni	ique		Α	Standard techni	que		А
Behaviour during big ears		Stable flight	•		A	Stable flight			A
Recovery			less than 3 sec		A	Spontaneous in less than 3 sec			A
Dive forward angle on exit		0° - 30°	500 0 360		A	0° bis 30°			A
21. Big Ears in accelerated flight - 4.4.21		3 00				3 5/3 50			
Entry procedure		Standard techni	ique		Α	Standard techni	ane		Α
Behaviour during big ears		Stable flight	-7-0		A	Stable flight			A
Recovery			less than 3 sec		A	Spontaneous in less than 3 sec		A	
•		·	i icoo iildii 3 Sec			· ·	icoo iildii 3 SeC		
Dive forward angle on exit Behaviour immediately after releasing the accelarate	ator while	0° - 30°			A	0° bis 30°			Α
maintaining big ears		Stable flight			Α	Stable flight			А
23. Alternative means of directional control - 4	1.4.22	_							
180° turn achievable in 20 sec		Yes			Α	Yes			Α
Stall or spin occurs		No			Α	No			А
23. Any other flight procedure and/or configura	ation desc	cribed in the use	r's manual - 4.4.	23					
Procedure works as descibed Procedure suitable for novice pilots					NA NA				NA NA
Cascade occurs					NA NA				NA NA
24. Remarks of testpilot:									
		L				L			