Manufacturer		Type testing No.	EAPR-GS-7450/11	
	MAGPARA	Date of testing		AEAPRIL
Model	Marvel 25	Location	Achensee	LBA Musterprüfstelle Gleitschirm - Motorschirm - Fallschirm

EAPR e.V - Marktstr. 11 - D-87730 Bad Grönenbach - Germany

	Minimum take off we	eight	Maximum take off weight		
Testpilot	Mike Küng	A	Hannes Tschofen	1	
Harness	Academy-Equipment	120	Academy Test Ewuipment		
Pilot's take off weight	80 kg		98 kg		

Classification

С



st-criteria		Minimum take off weight	Evaluation	Maximum take off weight	Evaluation	
1. Inflation / take-off - 4.1.1						
Rising behavior		Smooth, easy and constant rising	А	Smooth, easy and constant rising	А	
Special take off technique required		No	A	No	А	
2. Landing - 4.1.2				•		
Special landing technique required		No	A	No	A	
3. Speeds in straight flight - 4.1.3						
Trim speed more than 30km/h		Yes A Yes		Yes	A	
Speed range using the controls larger than 10km/h		Yes	А	Yes	А	
Minimum speed		Less than 25 km/h	А	Less than 25 km/h	А	
4. Control movement - 4.1.4						
Max. weight in flight up to 80kg		Increasing > 55cm	А		-	
Max. weight in flight 80 to 100kg			-	Increasing 45cm - 60cm	С	
Max. weight in flight greater than 100kg			-		-	
5. Pitch stability exiting accelerated flight - 4.1	.5			•		
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 acc	elerated f	light - 4.1.6				
Collapse occurs No		No	А	No	А	
7. Roll stability and damping - 4.1.7						
Oscillations		Reducing	А	Reducing	А	
8. Stability in gentle spirals - 4.1.8						
Tendency to return to straight flight		Spontaneous exit	А	Spontaneous exit	А	
9. Behaviour in a steeply banked turn - 4.1.9						
Sink rate after two turns		More than 14m/s	В	More than 14m/s	В	
10. Symmetric front collapse - 4.1.10						
Entry	σ	Rocking back less than 45°	А	Rocking back less than 45°	А	
Recovery	trim speed	Spontaneous in 3 to 5 sec	В	Spontaneous in 3 to 5 sec	В	
Dive forward angle on exit	Eri P	0° - 30° Entering a turn of 90° to 180°	С	0° - 30° Entering a turn of 90° to 180°	С	
Cascade occurs		No	A	No	A	
Entry	þ	Rocking back less than 45°	A	Rocking back less than 45°	A	
Recovery	accelerated	Spontaneous in 3 to 5 sec	В	Spontaneous in 3 to 5 sec	В	
Dive forward angle on exit	acce	0° - 30° Entering a turn of 90° to 180°	С	0° - 30° Entering a turn of 90° to 180°	С	
Cascade occurs		No	A	No	A	

11. Exiting deep stall (parachutal stall) - 4.1.11	l i								
Deep stall achieved	Yes				Yes				
Recovery	•		ess than 3 sec		А	Spontaneous in	ess than 3 sec		А
•		-							
hive forward angle on exit Change of course		0° - 30° Changing course	less than 45°		A	0° - 30° Changing course	less than 45°		A
Cascade occurs		No	1633 (1011 45		A	No	1633 (11411 45		A
12. High angle of attack recovery - 4.1.12		<u>.</u>							
		0			•				•
Recovery		Spontaneous in less than 3 sec		A	Spontaneous in less than 3 sec			A	
Cascade occurs		No			A	No			А
13. Recovery from a developed full stall - 4.1.	13								
Dive forward angle on exit		30° - 60°			B	30° - 60°			B
Collapse Cascade occurs (other than collapse)		No collapse No Less than 45°			A	No collapse No Less than 45°			A A A A
Rocking backward					A A A				
Line tension		Most lines tight		Most lines tight					
14. Asymmetric collapse (trim speed) - 4.1.14									
Change of course until re-inflation		< 90°	Dive or roll angle	15° - 45°	А	< 90°	Dive or roll angle	15° - 45°	А
	trim speed, max 50% collapse	< 00		10 40	~	< 50		10 40	~
Re-inflation behavior	colla	Inflates in less th	an 3 sec from sta	art of pilot action	С	Inflates in less th	an 3 sec from start	of pilot action	С
Total change of course	ds (	Less than 360°		A	Less than 360°			A	
Collapse on the opposite side occurs	trin tx 50	No			A	No			A
Twist occurs	шe	No			A	No			Α
Cascade occurs		No			A	No	<u>г</u>		A
Change of course until re-inflation	Φ	< 90°	Dive or roll angle	15° - 45°	А	90° - 180°	Dive or roll angle	15° - 45°	В
	trim speed, max 75% collapse	1.0			-	1.0		at all the literation	
Re-inflation behavior	bee col		an 3 sec from sta	art of pilot action	С		an 3 sec from start	ot pilot action	С
Total change of course	m s 75%	Less than 360°			А	Less than 360°			А
Collapse on the opposite side occurs	ax .	Yes, no turn reve	ersal		C	No			A
Twist occurs Cascade occurs	E	No No			A	No No			A
		L · · -			~	. ····	· ·		
Change of course until re-inflation	Φ	< 90°	Dive or roll angle	15° - 45°	А	< 90°	Dive or roll angle	15° - 45°	А
	accelerated, max 50% collapse								
Re-inflation behavior	rate col	Inflates in less th	an 3 sec from sta	art of pilot action	С	Inflates in less than 3 sec from start of pilot action		С	
Total change of course	cele	Less than 360°			А	Less than 360°		А	
Collapse on the opposite side occurs	ax <del>(</del>	No			A	No			A
Twist occurs Cascade occurs	E	No No			A	No No			A
Change of course until re-inflation	se	< 90°	Dive or roll angle	15° - 45°	A	90° - 180°	Dive or roll angle	15° - 45°	В
Re-inflation behavior	accelerated, max 75% collapse	Inflates in less th	an 3 sec from sta	art of pilot action	С	Inflates in less th	an 3 sec from start	of pilot action	С
	accelerated x 75% colla	Inflates in less than 3 sec from start of pilot action Less than 360° Yes, no turn reversal No				Less than 360° No No			
Total change of course Collapse on the opposite side occurs	cce 75				A C				A
Twist occurs	max				A				A
Cascade occurs		No			А	No			А
15. Directional control with a maintained asym	metric col	lapse - 4.1.15							
Able to keep course straight		Yes			А	Yes			А
180° turn away from the collapsed side possible in	n 10 sec	Yes			А	Yes			А
Amount of control range between turn and stall or spin				More than 50% of the symmetric control travel					
Amount of control range between turn and stall or	spin	More than 50% of	of the symmetric of	control travel	А	More than 50% of	of the symmetric co	ntrol travel	A
Amount of control range between turn and stall or <b>16. Trim speed spin tendency - 4.1.16</b>	spin	More than 50% of	of the symmetric of	control travel	A	More than 50% o	of the symmetric co	ntrol travel	A
-	spin	More than 50% o	of the symmetric o	control travel	A	More than 50% o	of the symmetric co	ntrol travel	A
16. Trim speed spin tendency - 4.1.16	spin		of the symmetric of	control travel			of the symmetric co	ntrol travel	
16. Trim speed spin tendency - 4.1.16 Spin occurs	spin		of the symmetric of	control travel			of the symmetric co	ntrol travel	
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17	spin	No	of the symmetric of	control travel	A	No	of the symmetric co	ntrol travel	A
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18	spin	No		control travel	A	No		ntrol travel	A
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release	spin	No No Stops spinning ir		control travel	A A A	No No Stops spinning in		ntrol travel	A A A
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs	spin	No		control travel	A	No		ntrol travel	A
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs         19. B-line-stall - 4.1.19	spin	No No Stops spinning ir No	) less than 90°	control travel	A A A A	No No Stops spinning ir No	) less than 90°	ntrol travel	A A A A
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs         19. B-line-stall - 4.1.19         Change of course before release	spin	No No Stops spinning ir No Changing course	n less than 90° e less than 45°		A A A A A	No No Stops spinning ir No Changing course	n less than 90° e less than 45°	Introl travel	A A A
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs         19. B-line-stall - 4.1.19	spin	No No Stops spinning ir No Changing course	) less than 90°		A A A A	No No Stops spinning ir No Changing course	) less than 90°	Introl travel	A A A A
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs         19. B-line-stall - 4.1.19         Change of course before release         Behaviour before release	spin	No Stops spinning ir No Changing course Remains stable v	e less than 90° e less than 45° with straight span		A A A A A	No Stops spinning ir No Changing course Remains stable	n less than 90° e less than 45° with straight span	Introl travel	A A A A A A
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs         19. B-line-stall - 4.1.19         Change of course before release         Behaviour before release         Recovery	spin	No No Stops spinning ir No Changing course Remains stable v Spontaneous in I	e less than 90° e less than 45° with straight span		A A A A A A	No No Stops spinning ir No Changing course Remains stable Spontaneous in	n less than 90° e less than 45° with straight span	Introl travel	A A A A A A A
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs         19. B-line-stall - 4.1.19         Change of course before release         Behaviour before release         Recovery         Dive forward angle on exit	spin	No No Stops spinning ir No Changing course Remains stable v Spontaneous in I 30° - 60°	e less than 90° e less than 45° with straight span		A A A A A A A A	No Stops spinning ir No Changing course Remains stable Spontaneous in 0° - 30°	n less than 90° e less than 45° with straight span	Introl travel	A A A A A A A
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs         19. B-line-stall - 4.1.19         Change of course before release         Behaviour before release         Recovery         Dive forward angle on exit         Cascade occurs	spin	No No Stops spinning ir No Changing course Remains stable v Spontaneous in I	e less than 90° e less than 45° with straight span		A A A A A A	No No Stops spinning ir No Changing course Remains stable Spontaneous in	n less than 90° e less than 45° with straight span	Introl travel	A A A A A A A
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs         19. B-line-stall - 4.1.19         Change of course before release         Behaviour before release         Recovery         Dive forward angle on exit         Cascade occurs         20. Big ears - 4.1.20	spin	No No Stops spinning ir No Changing course Remains stable v Spontaneous in I 30° - 60° No	e less than 90° e less than 45° with straight span less than 3 sec		A A A A A A A A	No Stops spinning ir No Changing course Remains stable v Spontaneous in 0° - 30° No	e less than 90° e less than 45° with straight span less than 3 sec	Introl travel	A A A A A A A
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs         19. B-line-stall - 4.1.19         Change of course before release         Behaviour before release         Recovery         Dive forward angle on exit         Cascade occurs	spin	No No Stops spinning ir No Changing course Remains stable v Spontaneous in I 30° - 60°	e less than 90° e less than 45° with straight span less than 3 sec		A A A A A A A A	No Stops spinning ir No Changing course Remains stable Spontaneous in 0° - 30°	e less than 90° e less than 45° with straight span less than 3 sec	Introl travel	A A A A A A A
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs         19. B-line-stall - 4.1.19         Change of course before release         Behaviour before release         Recovery         Dive forward angle on exit         Cascade occurs         20. Big ears - 4.1.20	spin	No No Stops spinning ir No Changing course Remains stable v Spontaneous in I 30° - 60° No	e less than 90° e less than 45° with straight span less than 3 sec		A A A A A A A A A	No Stops spinning ir No Changing course Remains stable v Spontaneous in 0° - 30° No	e less than 90° e less than 45° with straight span less than 3 sec	Introl travel	A A A A A A A A A
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs         19. B-line-stall - 4.1.19         Change of course before release         Behaviour before release         Recovery         Dive forward angle on exit         Cascade occurs         20. Big ears - 4.1.20         Entry procedure         Behaviour during big ears	spin	No No Stops spinning ir No Changing course Remains stable v Spontaneous in I 30° - 60° No Special device re Stable flight	e less than 90° e less than 45° with straight span less than 3 sec equired		A A A A A A A A A A	No No Stops spinning in No Changing course Remains stable Spontaneous in 0° - 30° No Special device re Stable flight Recovery throug	e less than 90° e less than 45° with straight span less than 3 sec		A A A A A A A A A A A
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs         19. B-line-stall - 4.1.19         Change of course before release         Behaviour before release         Recovery         Dive forward angle on exit         Cascade occurs         20. Big ears - 4.1.20         Entry procedure         Behaviour during big ears         Recovery	spin	No No Stops spinning ir No Changing course Remains stable i Spontaneous in I 30° - 60° No Special device re Stable flight Spontaneous in I	e less than 90° e less than 45° with straight span less than 3 sec equired		A A A A A A A A A A A A	No No Stops spinning in No Changing course Remains stable Spontaneous in 0° - 30° No Special device re Stable flight Recovery throug 3 sec	e less than 90° e less than 45° with straight span less than 3 sec		A A A A A A A A A A A B
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs         19. B-line-stall - 4.1.19         Change of course before release         Behaviour before release         Recovery         Dive forward angle on exit         Cascade occurs         20. Big ears - 4.1.20         Entry procedure         Behaviour during big ears         Recovery         Dive forward angle on exit	spin	No No Stops spinning ir No Changing course Remains stable v Spontaneous in I 30° - 60° No Special device re Stable flight	e less than 90° e less than 45° with straight span less than 3 sec equired		A A A A A A A A A A	No No Stops spinning in No Changing course Remains stable Spontaneous in 0° - 30° No Special device re Stable flight Recovery throug	e less than 90° e less than 45° with straight span less than 3 sec		A A A A A A A A A A A
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs         19. B-line-stall - 4.1.19         Change of course before release         Behaviour before release         Recovery         Dive forward angle on exit         Cascade occurs         20. Big ears - 4.1.20         Entry procedure         Behaviour during big ears         Recovery	spin	No No Stops spinning ir No Changing course Remains stable i Spontaneous in I 30° - 60° No Special device re Stable flight Spontaneous in I	e less than 90° e less than 45° with straight span less than 3 sec equired		A A A A A A A A A A A A	No No Stops spinning in No Changing course Remains stable Spontaneous in 0° - 30° No Special device re Stable flight Recovery throug 3 sec	e less than 90° e less than 45° with straight span less than 3 sec		A A A A A A A A A A A B
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs         19. B-line-stall - 4.1.19         Change of course before release         Behaviour before release         Recovery         Dive forward angle on exit         Cascade occurs         20. Big ears - 4.1.20         Entry procedure         Behaviour during big ears         Recovery         Dive forward angle on exit	spin	No No Stops spinning ir No Changing course Remains stable i Spontaneous in I 30° - 60° No Special device re Stable flight Spontaneous in I	e less than 90° e less than 45° with straight span less than 3 sec equired less than 3 sec		A A A A A A A A A A A A	No No Stops spinning in No Changing course Remains stable Spontaneous in 0° - 30° No Special device re Stable flight Recovery throug 3 sec	e less than 90° e less than 45° with straight span less than 3 sec equired h pilot action in less		A A A A A A A A A A A B
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs         19. B-line-stall - 4.1.19         Change of course before release         Behaviour before release         Recovery         Dive forward angle on exit         Cascade occurs         20. Big ears - 4.1.20         Entry procedure         Behaviour during big ears         Recovery         Dive forward angle on exit         21. Big Ears in accelerated flight - 4.1.21	spin	No No Stops spinning ir No Changing course Remains stable Spontaneous in I 30° - 60° No Stable flight Spontaneous in I 0° - 30°	e less than 90° e less than 45° with straight span less than 3 sec equired less than 3 sec		A A A A A A A A A A A A A	No No Stops spinning in No Changing course Remains stable Spontaneous in 0° - 30° No Special device re Stable flight Recovery throug 3 sec 0° bis 30°	e less than 90° e less than 45° with straight span less than 3 sec equired h pilot action in less		A A A A A A A A A B B A A
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs         19. B-line-stall - 4.1.19         Change of course before release         Behaviour before release         Recovery         Dive forward angle on exit         Cascade occurs         20. Big ears - 4.1.20         Entry procedure         Behaviour during big ears         Recovery         Dive forward angle on exit         21. Big Ears in accelerated flight - 4.1.21         Entry procedure         Behaviour during big ears         Recovery	spin	No No Stops spinning ir No Changing course Remains stable to Spontaneous in I 30° - 60° No Special device re Stable flight Spontaneous in I 0° - 30° Special device re Stable flight	e less than 90° e less than 45° with straight span less than 3 sec equired less than 3 sec equired		A A A A A A A A A A A A A A A A	No No Stops spinning in No Changing course Remains stable Spontaneous in 0° - 30° No Stable flight Recovery throug Special device re Stable flight Recovery throug Special device re Stable flight Recovery throug	e less than 90° e less than 45° with straight span less than 3 sec equired h pilot action in less	s than a further	A A A A A A A A A A A A A A A A A A A
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs         19. B-line-stall - 4.1.19         Change of course before release         Behaviour before release         Recovery         Dive forward angle on exit         Cascade occurs         20. Big ears - 4.1.20         Entry procedure         Behaviour during big ears         Recovery         Dive forward angle on exit         21. Big Ears in accelerated flight - 4.1.21         Entry procedure         Behaviour during big ears         Recovery         Dive forward angle on exit         21. Big Ears in accelerated flight - 4.1.21         Entry procedure         Behaviour during big ears         Recovery	spin	No No Stops spinning ir No Changing course Remains stable to Spontaneous in I 30° - 60° Special device re Stable flight Spontaneous in I 0° - 30° Special device re Stable flight Spontaneous in I	e less than 90° e less than 45° with straight span less than 3 sec equired less than 3 sec equired		A A A A A A A A A A A A A A A A A	No No Stops spinning ir No Changing course Remains stable fi Spontaneous in 0° - 30° No Special device re Stable flight Recovery throug 3 sec Stable flight Recovery throug 3 sec	e less than 90° e less than 45° with straight span less than 3 sec equired h pilot action in less equired	s than a further	A A A A A A A A A A B A A A A B A A B A A B A
16. Trim speed spin tendency - 4.1.16         Spin occurs         17. Low speed spin tendency - 4.1.17         Spin occurs         18. Recovery from a developed spin - 4.1.18         Spin rotation angle after release         Cascade occurs         19. B-line-stall - 4.1.19         Change of course before release         Behaviour before release         Recovery         Dive forward angle on exit         Cascade occurs         20. Big ears - 4.1.20         Entry procedure         Behaviour during big ears         Recovery         Dive forward angle on exit         21. Big Ears in accelerated flight - 4.1.21         Entry procedure         Behaviour during big ears         Recovery         Dive forward angle on exit         21. Big Ears in accelerated flight - 4.1.21         Entry procedure         Behaviour during big ears		No No Stops spinning ir No Changing course Remains stable to Spontaneous in I 30° - 60° No Special device re Stable flight Spontaneous in I 0° - 30° Special device re Stable flight	e less than 90° e less than 45° with straight span less than 3 sec equired less than 3 sec equired		A A A A A A A A A A A A A A A A	No No Stops spinning in No Changing course Remains stable Spontaneous in 0° - 30° No Stable flight Recovery throug Special device re Stable flight Recovery throug Special device re Stable flight Recovery throug	e less than 90° e less than 45° with straight span less than 3 sec equired h pilot action in less equired	s than a further	A A A A A A A A A A A A A A A A A A A

22. Behaviour exiting a steep spiral - 4.1.22				
Tendency to return to straight flight	Spontaneous exit	А	Spontaneous exit	А
Turn angle to recover normal flight	Less than 720°, spontaneous recovery	А	Less than 720°, spontaneous recovery	А
23. Alternative means of directional control - 4	.1.23			
180° turn achievable in 20 sec	Yes	А	Yes	А
Stall or spin occurs	No	A	No	A
24. Any other flight procedure and/or configura	ation described in the user's manual - 4.1.24			
Procedure works as descibed		NA		NA
Procedure suitable for novice pilots		NA		NA
Cascade occurs		NA		NA
25. Remarks of testpilot:				
Copyright Ralf Antz 2010	This Flig	ht Test Report	was generated automatically and is valid wit	hout signature