A. APPENDIX A : LIST OF FIGURES FOR PROGRAMMES 2, 3 AND 4

This appendix illustrates those figures that may be nominated for the compilation of unknown programmes at each type of contest.

A.1. Colour Coding

A.1.1. Yak 52

A.1.1.1. Yak 52 figures are shown throughout in blue and are marked with a blue Y symbol. Textual comments relating to Yak 52 figures are also in blue.

A.1.2. Advanced

A.1.2.1. In Advanced contests, all the Yak 52 figures may be flown (unless otherwise noted in the text), plus those shown in red and marked A with a red symbol. Textual comments relating to Advanced figures are also in red.

A.1.3. Unlimited

A.1.3.1. In Unlimited contests, all the Yak 52 and Advanced figures may be flown, plus those shown in black. Unlimited figures are not marked with a symbol. Textual comments relating to Unlimited figures are also in black.

A.2. Roll, Flick and Spin Combination

A.2.1. Yak 52 and Advanced

A.2.1.1. Unlinked and opposite rolls are permitted only on straight horizontal lines, with a maximum of 10 stops.

A.2.1.2. No roll element, neither aileron nor flick roll, may be added after a spin.

A.2.2. Unlimited

A.2.2.1. Unlinked and opposite rolls are permitted on straight horizontal lines, with a maximum of 10 stops.

A.2.2.2. On vertical and 45° up lines, opposite aileron rolls may be added as long as neither the total extent of rotation nor the number of stops exceed the limits shown in the table below.

Line Direction	Total Rotation	Stops
Vertical Up	450°	4
45° Up	540°	4
Vertical Down	360°	3

A.2.2.3. Unlinked and opposite rolls are not permitted on 45° down lines.

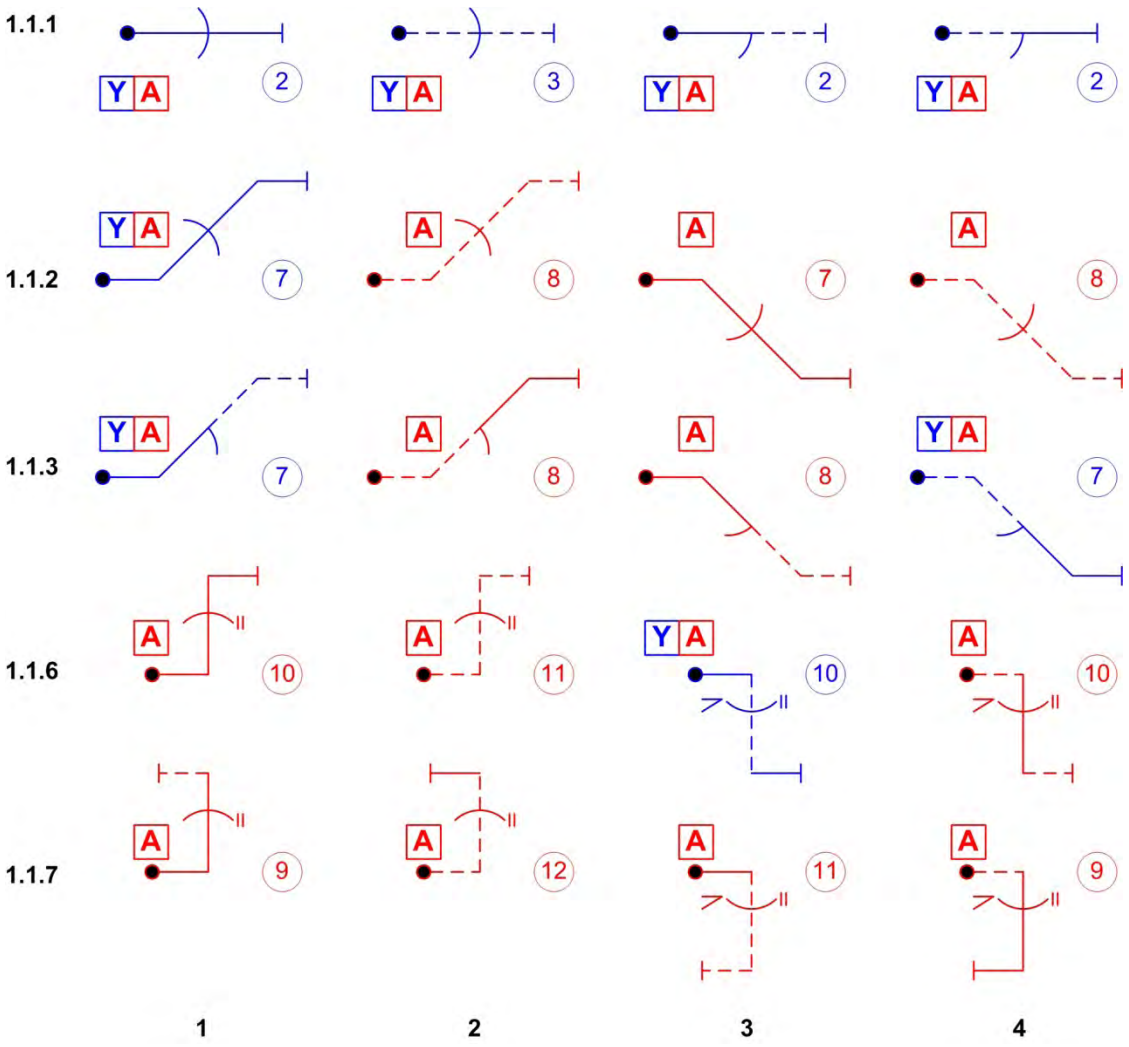
A.2.2.4. Combinations of aileron roll first, and then flick roll, may be added in Families 1, 7 and 8 on 45° up lines set initially with a positive attitude from a positive looping segment. Flick rolls must be from wings level and have the lower co-efficient. The combined extent of rotation shall not exceed 540° with not more than 3 stops.

A.2.2.5. An aileron or flick roll element may be added after a spin.

A.2.3. All Categories

A.2.3.1. Any of the figures illustrated with a 360° optional roll sign may be performed without that roll.

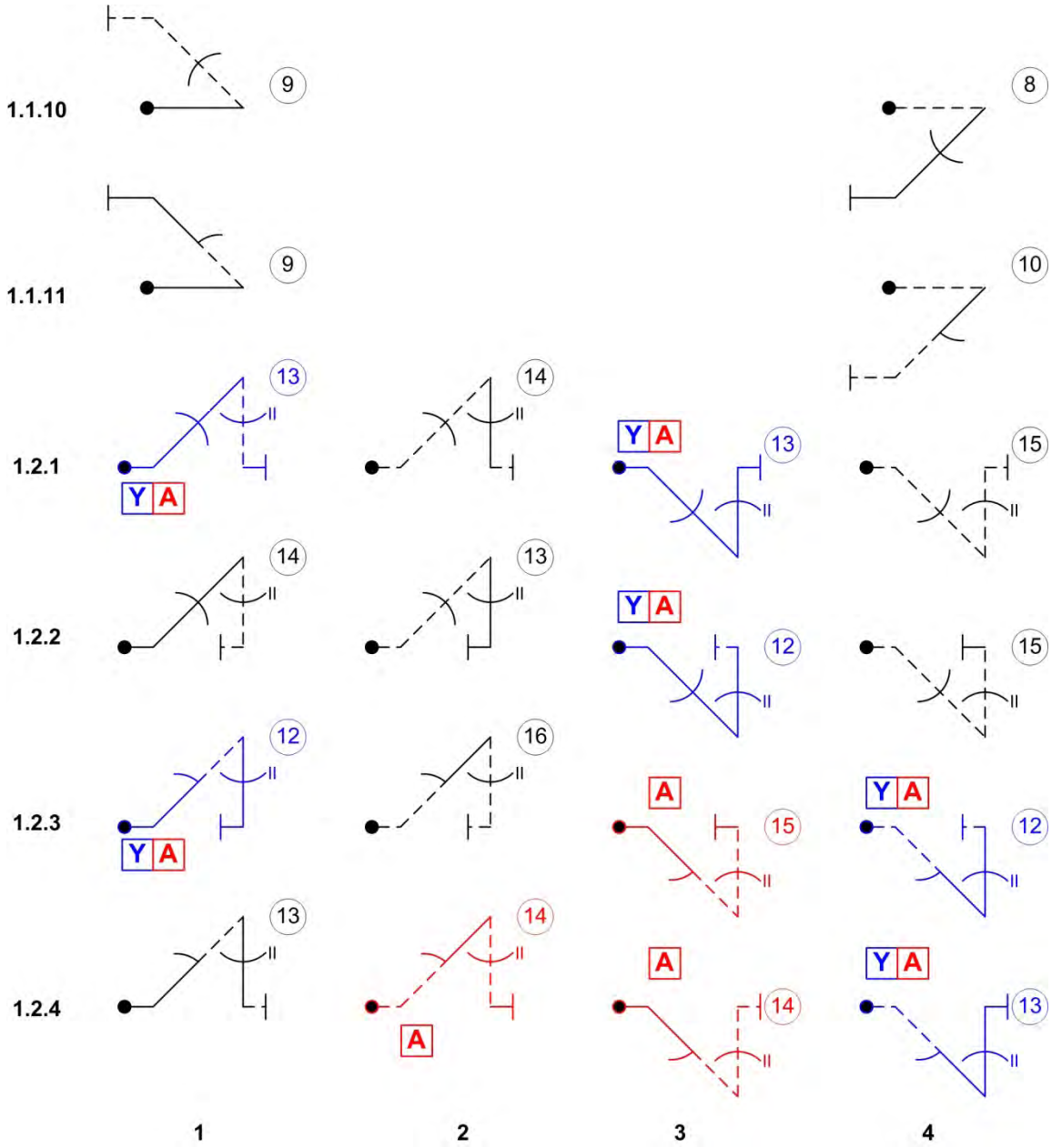
A.3. Family 1.1.1 To 1.1.7



A.3.1.1. Yak 52: Figure 1.1.6.3: Spin only.

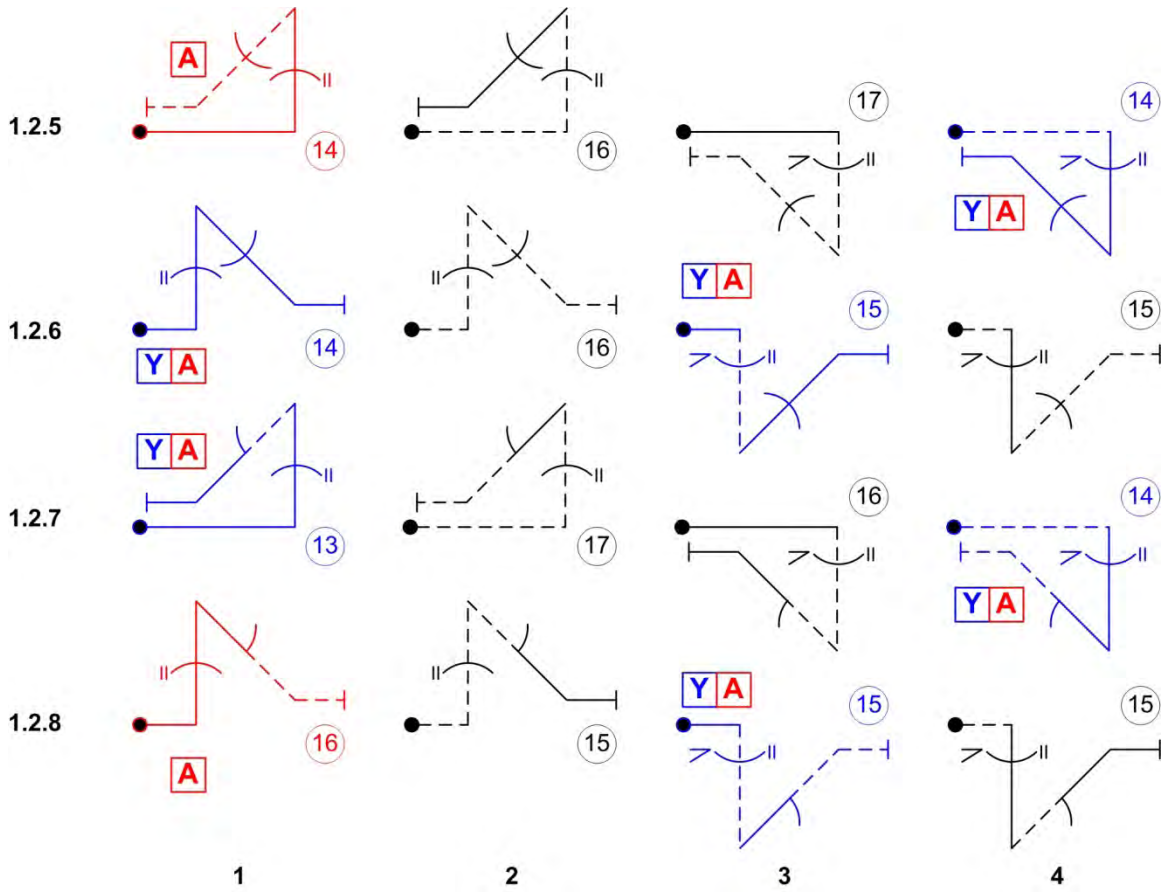
A.3.1.2. Unlimited: Family 1.1.1 used for linking figures only.

A.4. Family 1.1.10 To 1.2.4



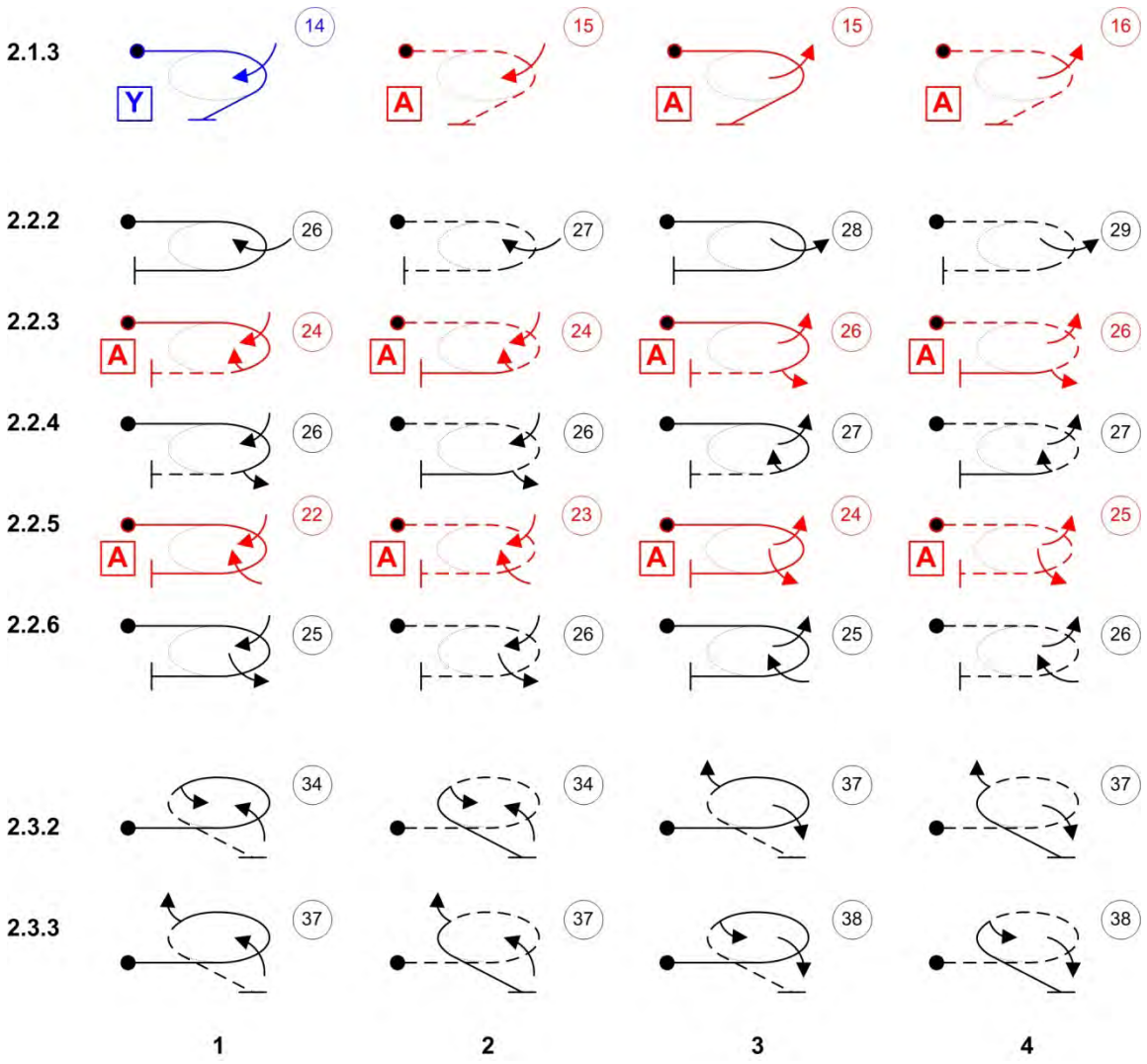
A.4.1.1. Yak 52: Figures 1.2.1.x to 1.2.4.x: No vertical roll elements.

A.5. Family 1.2.5 To 1.2.8



A.5.1.1. Yak 52: Columns 3 and 4: No vertical rolling elements. Column 3: Spin only.

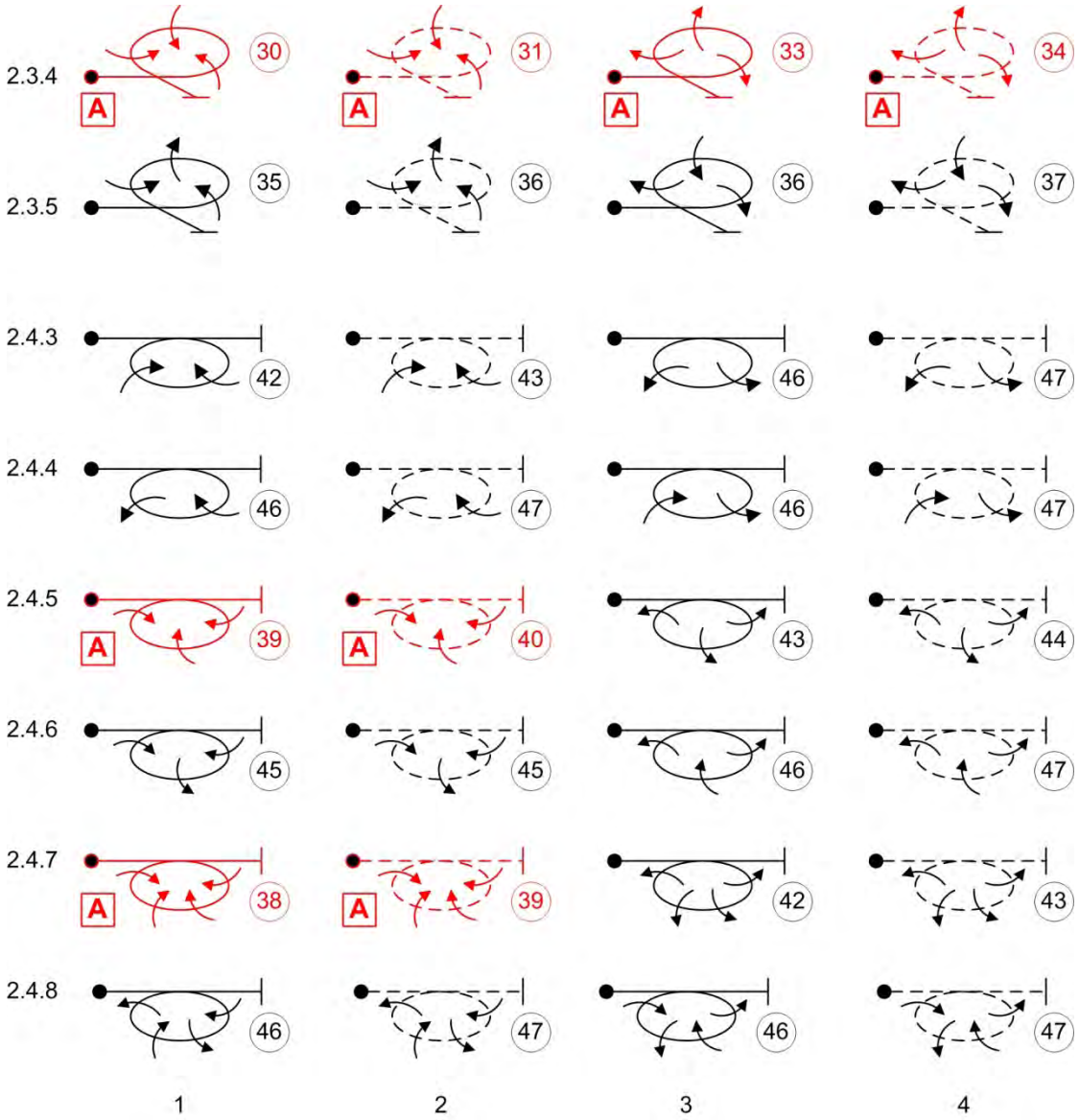
A.6. Family 2.1.3 To 2.3.3



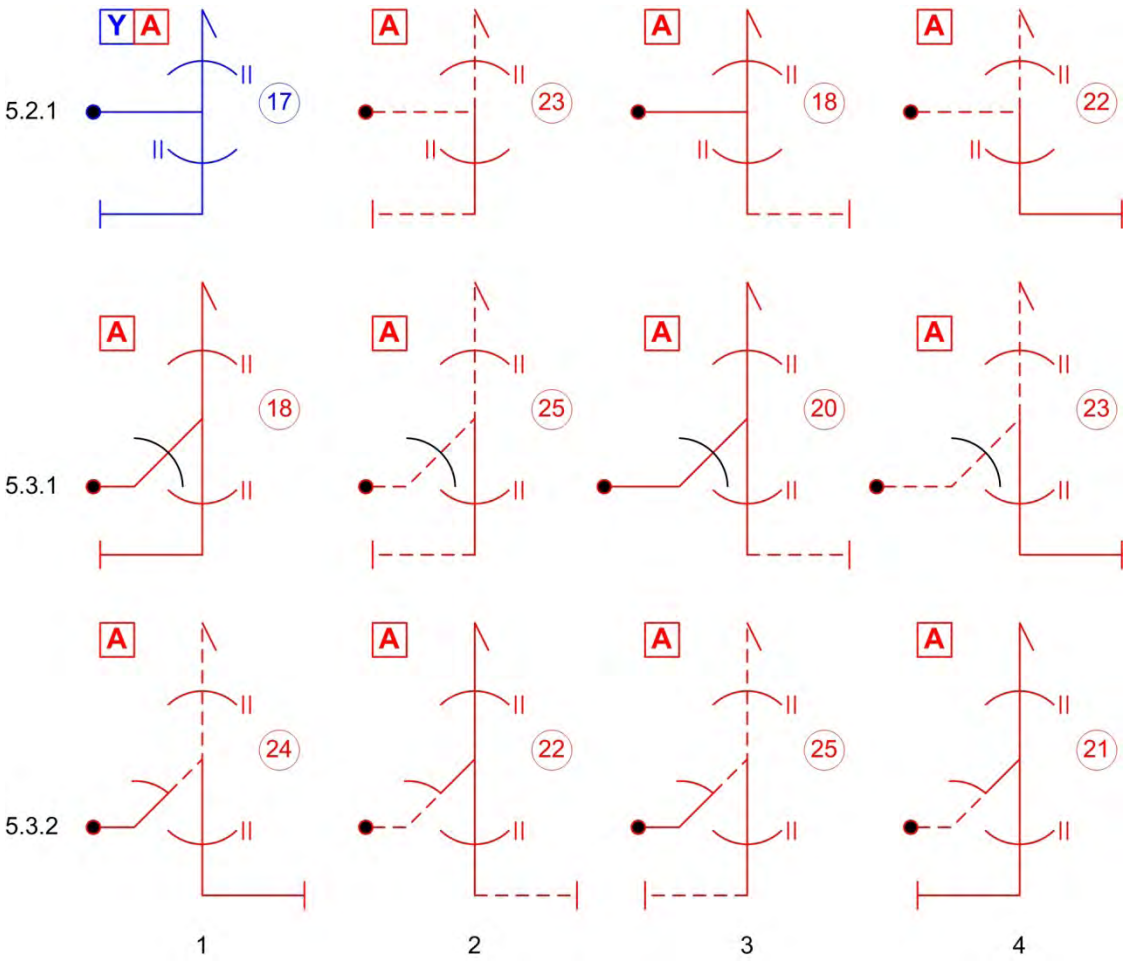
A.6.1.1. Figure 2.1.3.1 : only for Yak 52 (according to minimum K requirement in rule 2.3.1.1).

A.6.1.2. Figures 2.1.3.2 to 2.1.3.4 : not for Unlimited (according to minimum K requirement in rule 2.3.1.1).

A.7. Family 2.3.4 To 2.4.8



A.8. Family 5 Stall Turns

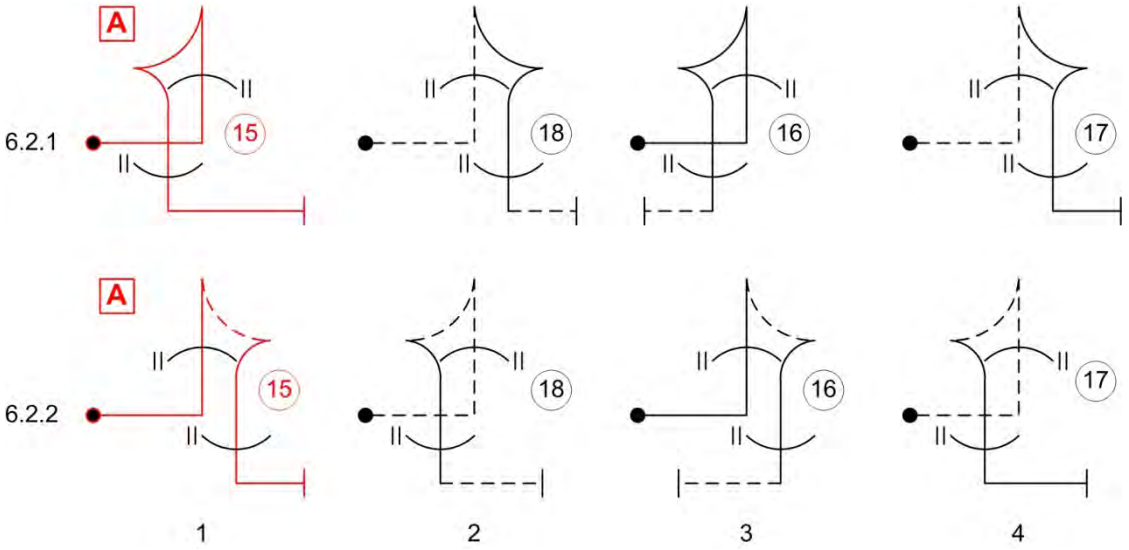


A.8.1.1. All categories: In Family 5, Flick Rolls are not permitted on ascending vertical or 45-degree lines, except in Family 5.2.1.

A.8.1.2. Advanced: Rotations allowed: on all 45-degree lines, limited to 9.1.2.2 or 9.4.2.2; and on ascending vertical lines in Families 5.3.1 and 5.3.2, limited to 9.1.1.1.

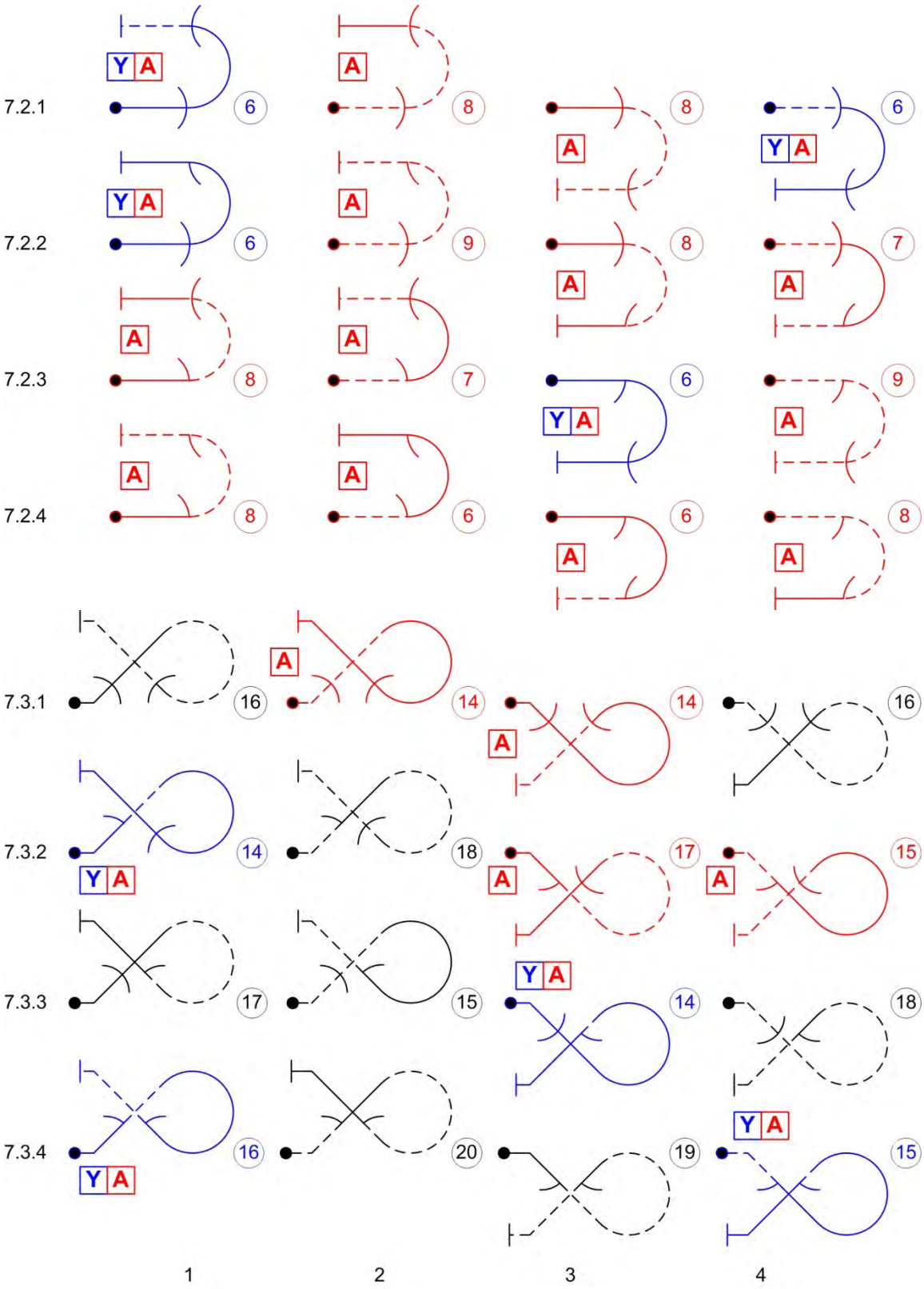
A.8.1.3. Unlimited: The combined total for all aileron roll elements on either or both the 45-degree and vertical up lines in Families 5.3.1 and 5.3.2 must not exceed 450° of rotation and 4 stops.

A.9. Family 6 Tail Slides



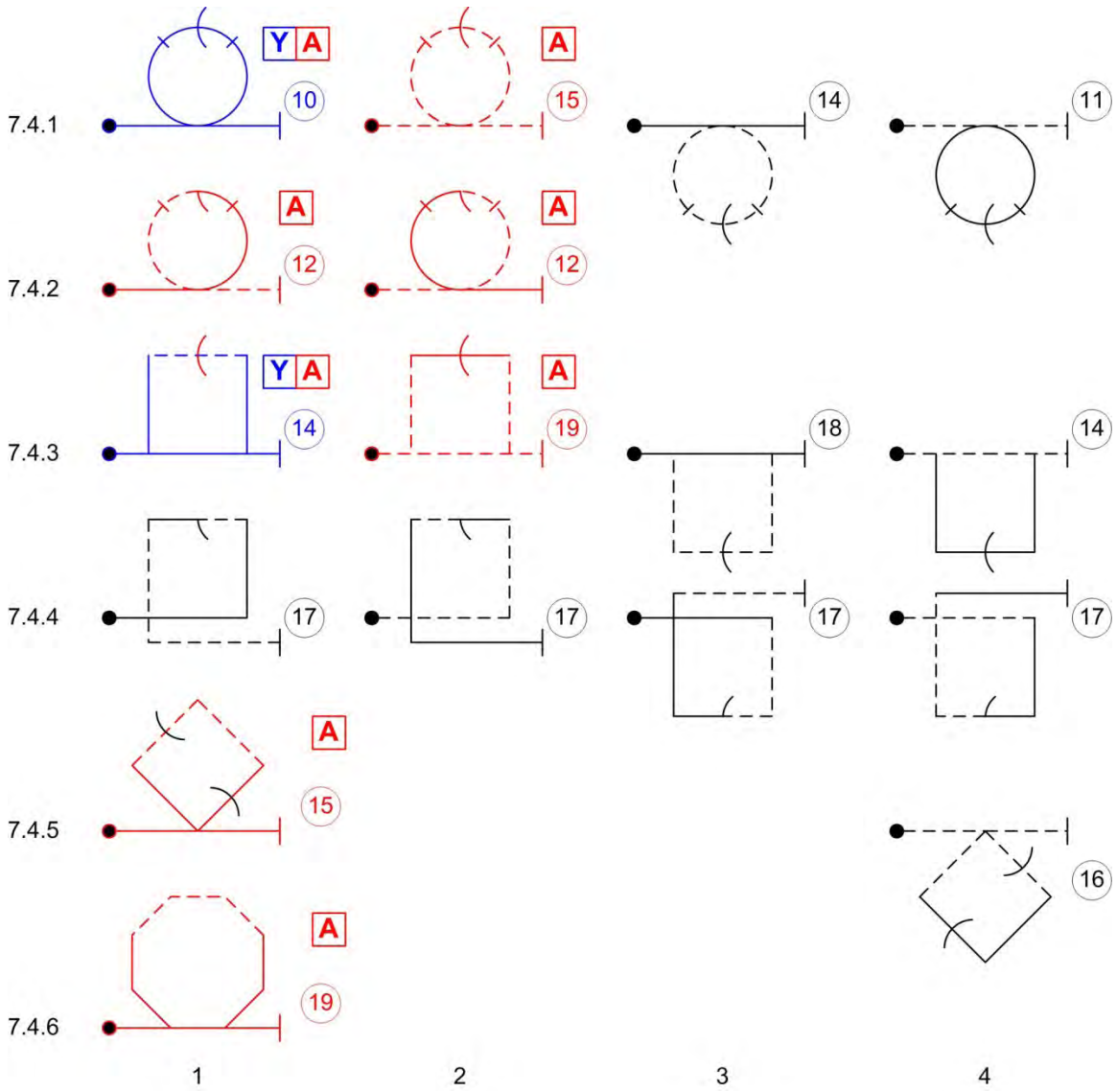
A.9.1.1. Advanced: Rolls are not permitted, neither on the upward nor on the downward lines.

A.10. Family 7.2.1 To 7.3.4



A.10.1.1. All Categories: Flick rolls are not permitted on the horizontal entry lines of figures in columns 1 and 2, nor on the horizontal exit lines of figures in columns 3 and 4, of 7.2.1 to 7.2.4.

A.11. Family 7.4.1 To 7.4.6

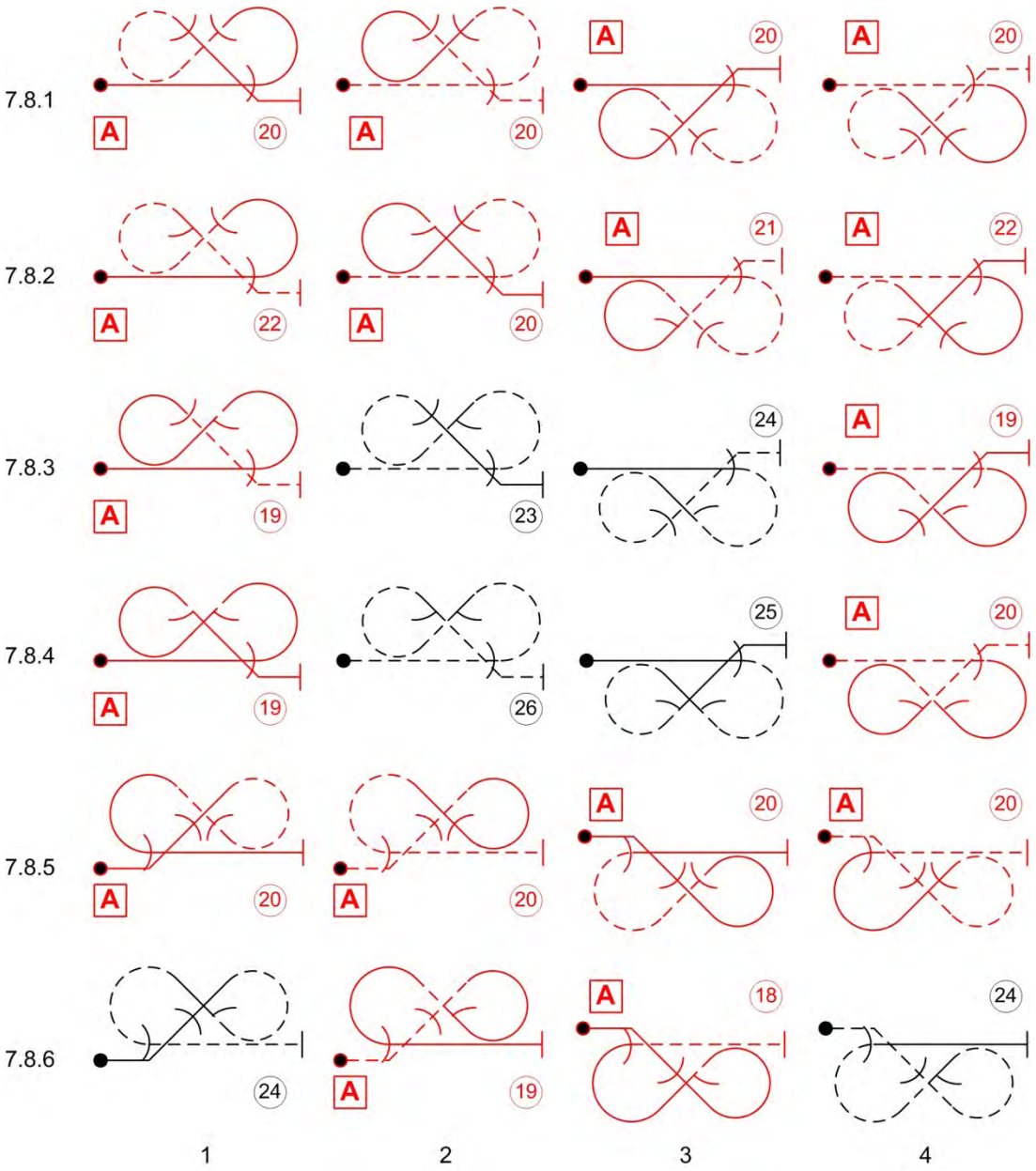


A.11.1.1. Advanced and Yak 52: Maximum 360° roll on 7.4.1.1. Only 9.1.3.4. allowed on 7.4.1.2.

A.11.1.2. Advanced: Opposite or unlinked rolls are not permitted on 7.4.3.1 or 7.4.3.2. No rolls are permitted on 7.4.5.1. Yak 52. No roll on 7.4.3.1.

A.11.1.3. Unlimited: Flick rolls are not permitted in figures in columns 3 and 4 of 7.4.1 to 7.4.4, nor on the lower lines of any figure in 7.4.5. Eight-point rolls (9.8.3.4) are not permitted on 7.4.1.3 or 7.4.1.4.

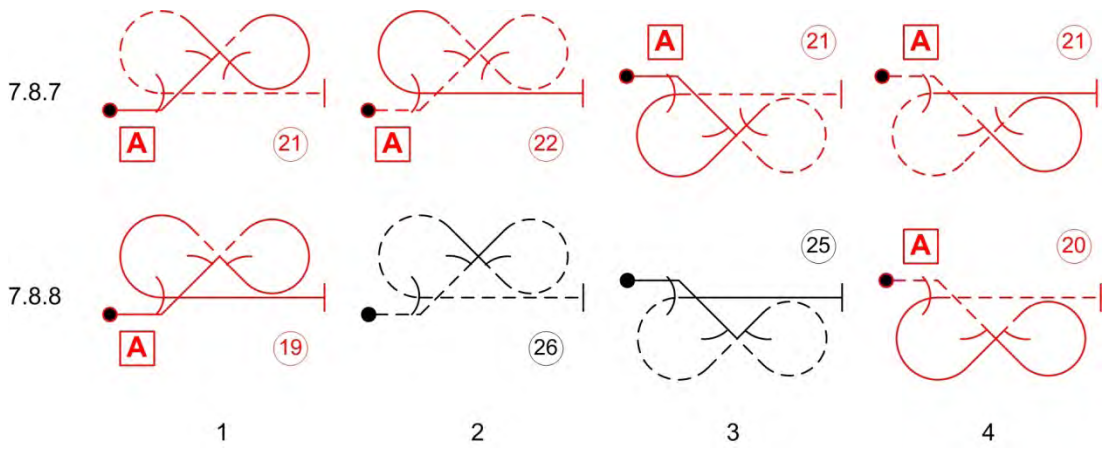
A.12. Family 7.8.1 To 7.8.6



A.12.1.1. All Categories: Flick rolls are not permitted on the horizontal entry lines of figures in columns 1 and 2, of 7.8.1 to 7.8.4.

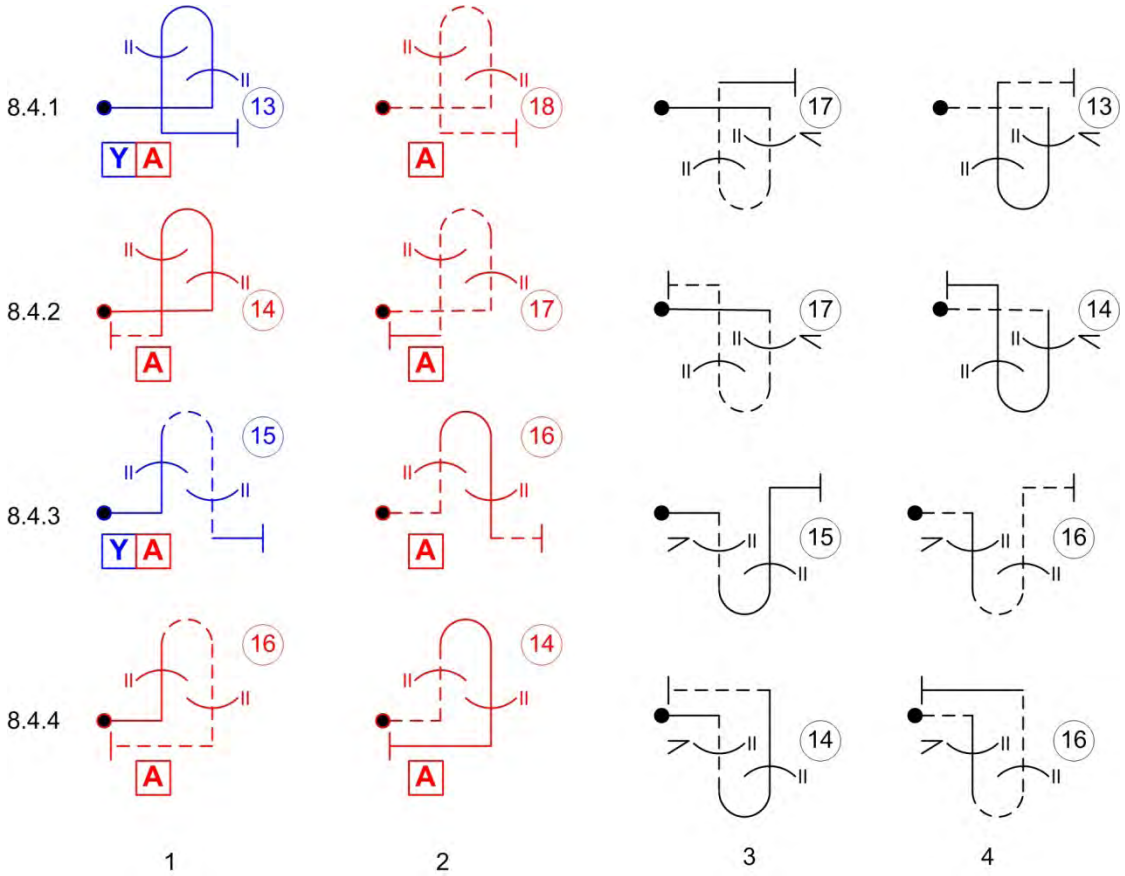
A.12.1.2. All Categories: Flick rolls are not permitted on the horizontal exit lines of figures in columns 1 and 2, of 7.8.5 and 7.8.6.

A.13. Family 7.8.7 To 7.8.8

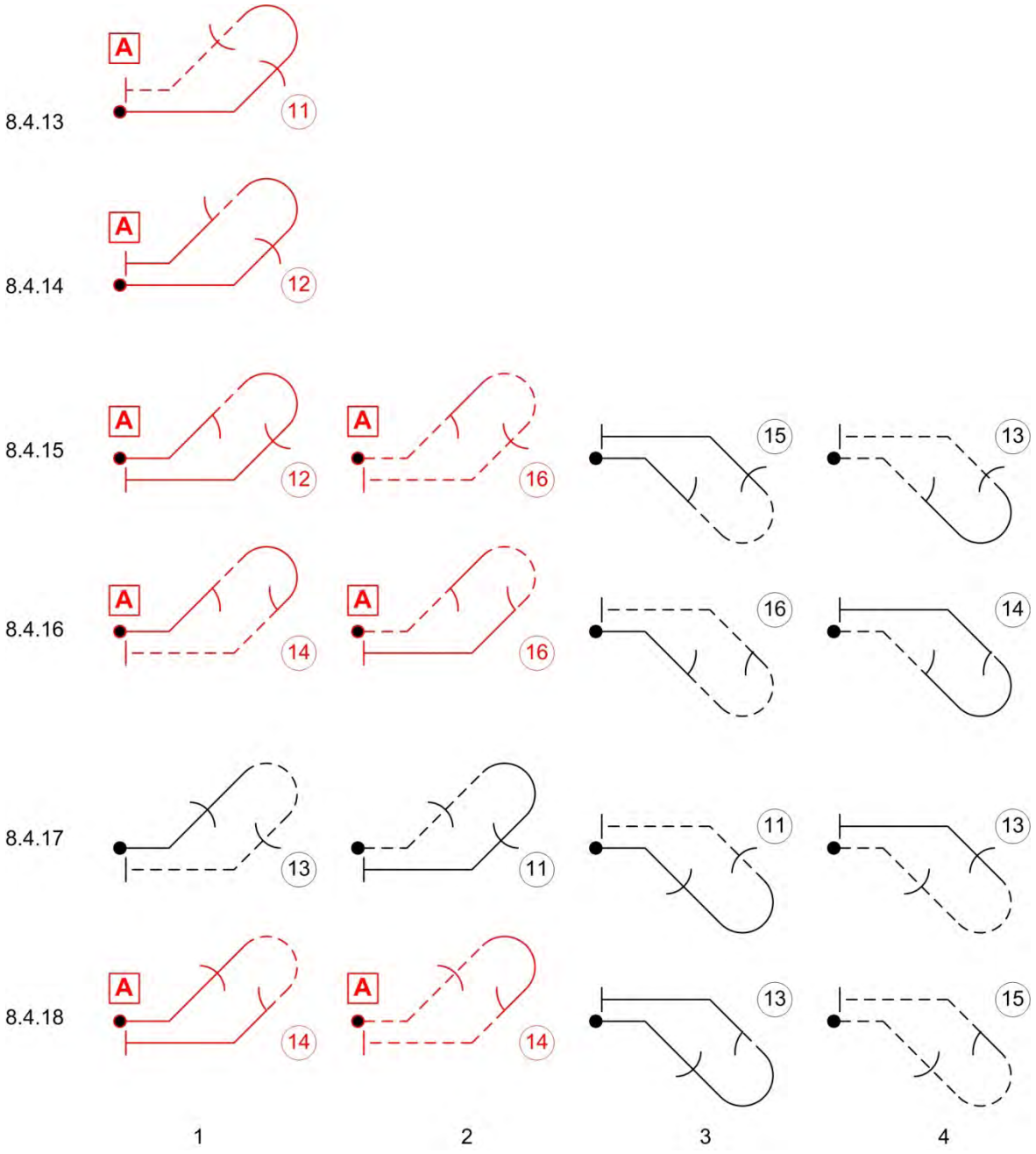


A.13.1.1. All Categories. Flick rolls are not permitted on the horizontal exit lines of figures in columns 1 and 2, of 7.8.7 and 7.8.8.

A.14. Family 8.4.1 To 8.4.4



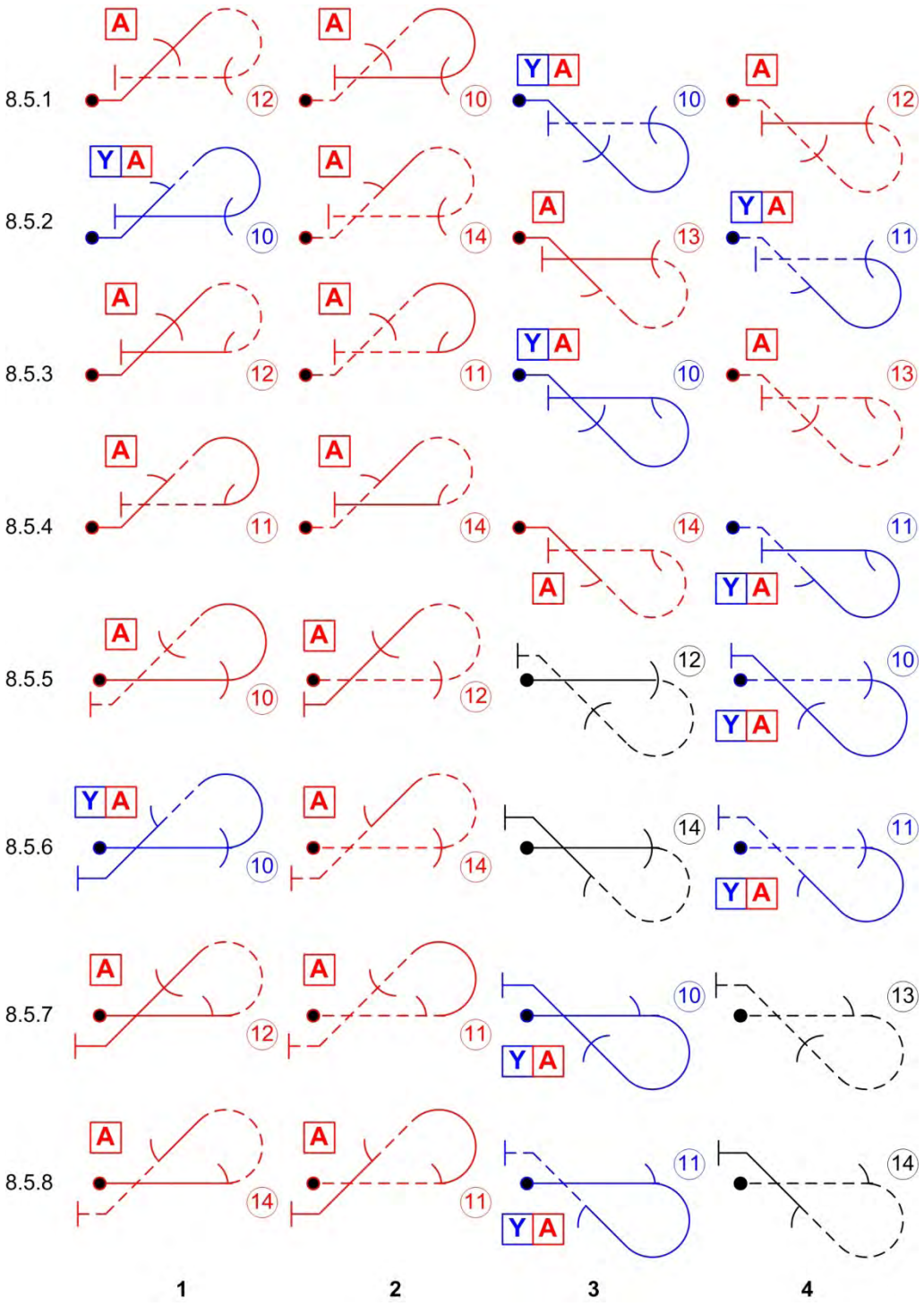
A.15. Family 8.4.13 To 8.4.18



A.15.1.1. Advanced: No flick roll permitted on 8.4.13.1 or 8.4.14.1.

A.15.1.2. Advanced: No flick roll permitted on the 45° down line of 8.4.15 to 8.4.18.

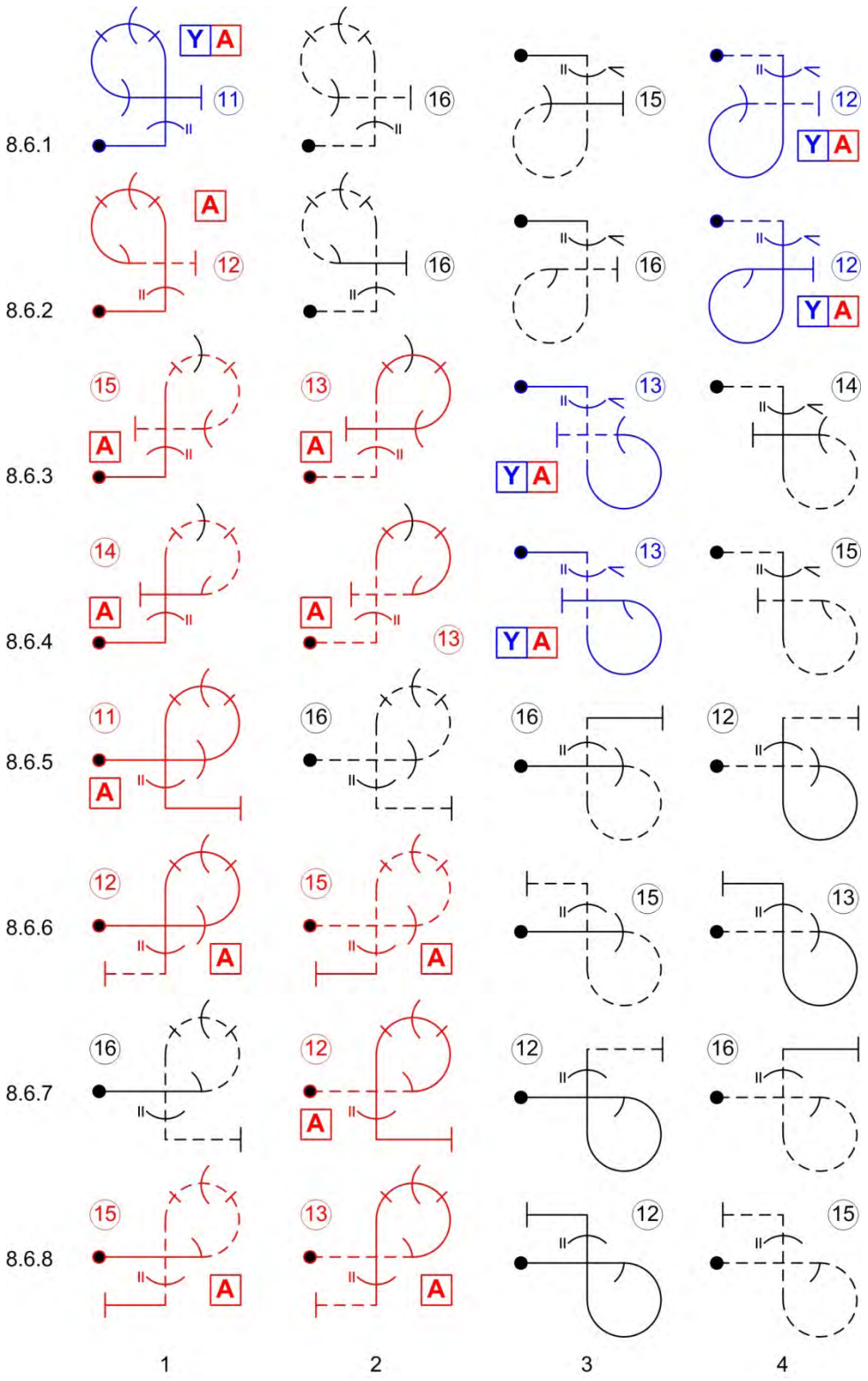
A.16. Family 8.5.1 To 8.5.8



A.16.1.1. Advanced: 9.2.4.4 not allowed on 45° line of 8.5.1.4 and 8.5.3.4.

A.16.1.2. All Categories: No flick rolls on horizontal entry / exit lines of any figure from columns 1 or 2.

A.17. Family 8.6.1 To 8.6.8



A.17.1.1. Yak 52: No vertical rolls; spin only on 8.6.3.3 and 8.6.4.3.

A.17.1.2. Advanced and Yak 52: From 8.6.1 to 8.6.4: No rolls in tops of ¾ looping segments in columns 1 and 2.

A.17.1.3. Advanced: From 8.6.1 to 8.6.4: Not more than ½ vertical roll up in column 1; no vertical roll up in column 2.

A.17.1.4. Unlimited: From 8.6.1 to 8.6.4: Flick rolls not permitted on the top of figures in columns 1 and 2 when preceded by a vertical roll exceeding 3 stops or more than 360 degrees of rotation.

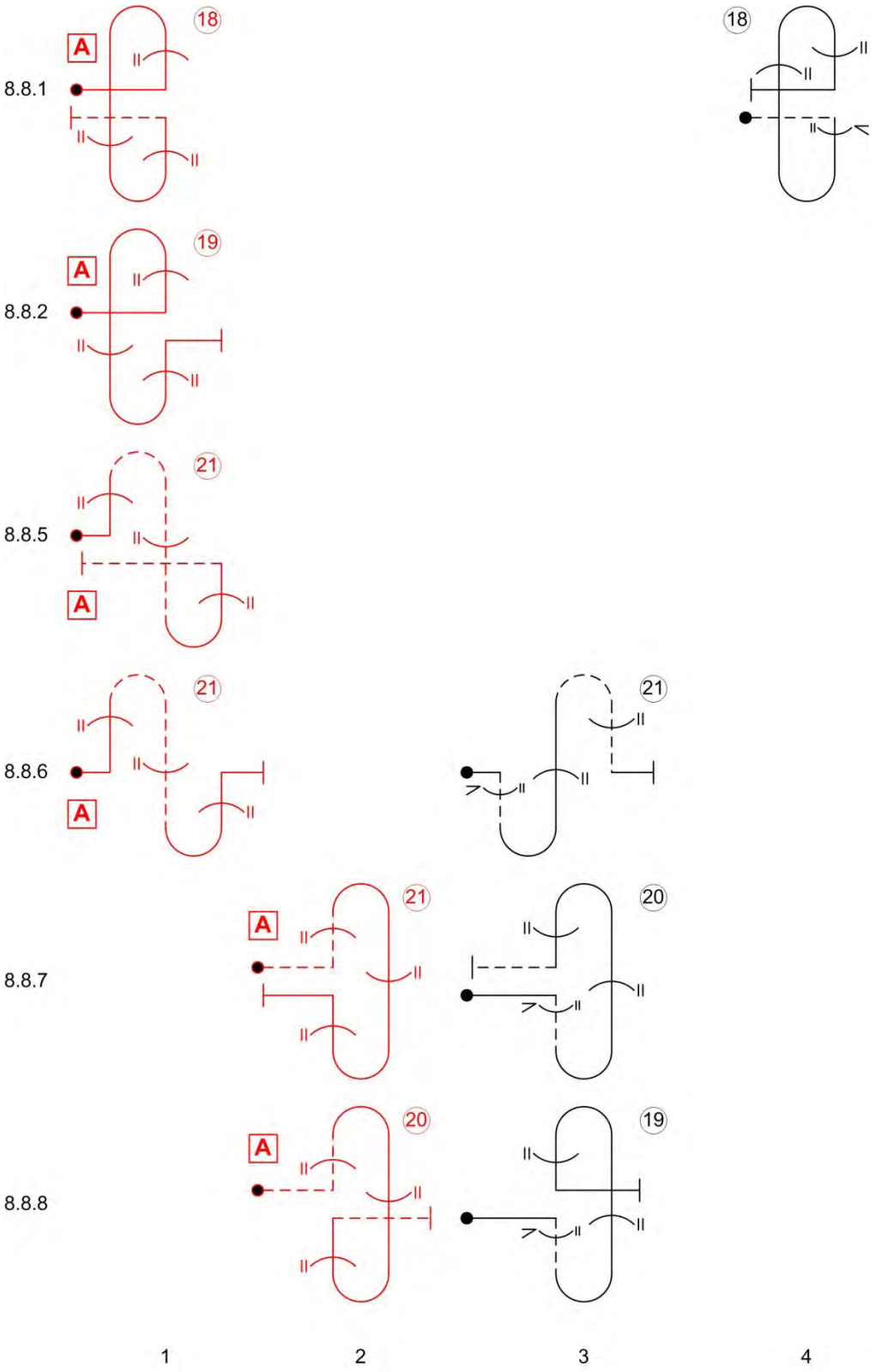
A.17.1.5. Advanced: From 8.6.5 to 8.6.8: No flick rolls on vertical down lines after a roll in the loop.

A.17.1.6. All Categories: No flick rolls on horizontal entry / exit lines of any figure from columns 1 or 2.

A.17.1.7. Unlimited: From 8.6.5 to 8.6.8: No flick rolls on vertical down lines after a hesitation roll in the loop.

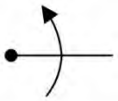
A.17.1.8. Advanced: From 8.6.5 to 8.6.8: Maximum 360° rotation at top of 3/4 loop in columns 1 and 2.

A.18. Family 8.8



A.18.1.1. All categories: In Family 8.8, a maximum of one Family 9 element is allowed on any vertical line.

A.19. Family 9.1, Continuous Rolls

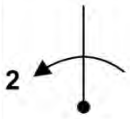
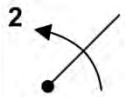
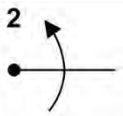
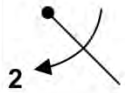
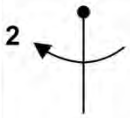
		¼	½	¾	1	1¼	1½	1¾	2
1		6 Y A	8 Y A	10 A	12	14			
2		4	6 Y A	8	10 Y A	11	12		
3		2 Y A	4 Y A	6 A	8 Y A	9	10 Y A	11	12 A
4			4 Y A		8 A		10		
5		2 Y A	4 A	6 A	8				
		1	2	3	4	5	6	7	8

A.19.1.1. Advanced:

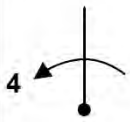
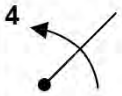
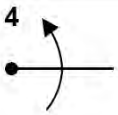
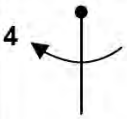
a) No level fly-off after 9.1.1.3.

b) No negative recovery after 9.1.5.3.

A.20. Family 9.2, Two-Point Rolls

					1		1½		2
1					13				
2					11 Y A		14		
3					9 Y A		12 Y A		15 A
4					9 A				
5					9				
		1	2	3	4	5	6	7	8

A.21. Family 9.4, Four-Point Rolls

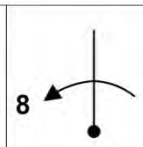
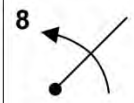
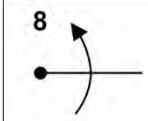
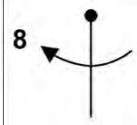
			½	¾	1		1½		2
1			9 A	12	15				
2			7 Y A	10	13 Y A				
3			5 Y A	8 A	11 Y A				
4			5 Y A		11				
5			5 A	8					
		1	2	3	4	5	6	7	8

A.21.1.1. Advanced:

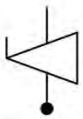
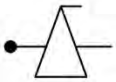
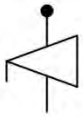
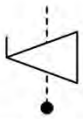
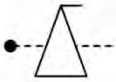
a) No level fly-off after 9.4.1.2.

b) No inverted recovery after 9.4.5.2.

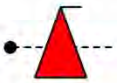
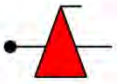
A.22. Family 9.8, Eight-Point Rolls

		¼	½		1		1½		2
1		7 Y A	11						
2		5	9 Y A						
3		3 Y A	7 Y A		15 A				
4			7						
5		3 Y A	7						
		1	2	3	4	5	6	7	8

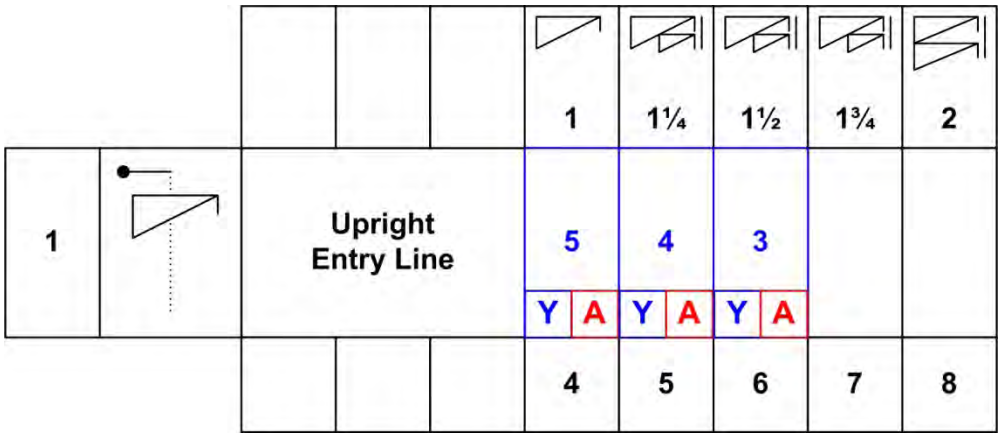
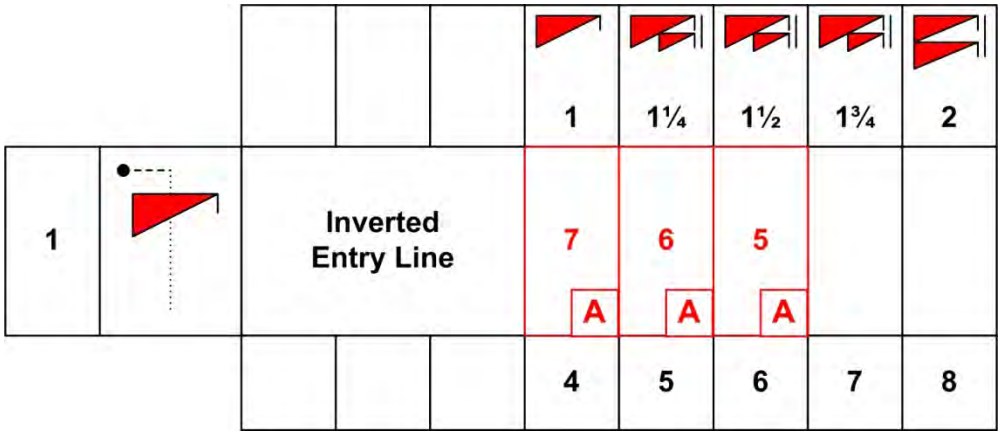
A.23. Family 9.9, Positive Flick Rolls

			½	¾	1	1¼	1½	1¾	2
1			15	15	15				
2			13 Y A		13 A				
3			11 Y A		11 Y A		14 A		
4			11 A		11 A		14		
5			11 A	11 A	11				
6			17	17	17				
7			15		15				
8			13		13				
9			13		13				
10			13 A	13	13				
		1	2	3	4	5	6	7	8

A.24. Family 9.10, Negative Flick Rolls

			½	¾	1	1¼	1½	1¾	2
1			17	17	17				
2			15		15				
3			13		13		16		
4			13		13				
5			13	13	13				
6			19	19	19				
7			17		17				
8			15		15				
9			15		15				
10			15	15	15				
		1	2	3	4	5	6	7	8

A.25. Family 9.11, Upright Spins



A.26. Family 9.12, Inverted Spins