

Dear CIVA Delegates:

NAC submissions of Figure-sets for the Free Knowns for 2025 in all categories were received as follows:

- 7 proposals for Unlimited (A to G)
- 9 proposals for Advanced (A to I)
- 5 proposals for Intermediate (A to E)

Many thanks to the NAC's who submitted those interesting proposals.

CIVA's KAWG Experts have now reviewed the proposals and have returned their opinions and rankings.

You will find below the Experts review/comments table and ranking for Power figure sets in Unlimited, Advanced and Intermediate. The last column contains the comments of the CIVA Safety Working Group.

Unlimited set C and Advanced set E were discarded by one of the Experts because of high negative g-load in one or more figures of these sets. The SWG made the same comments on those figure sets. Other comments were on the good or not so good balance of figure K-factors.

The SWG's comments are mainly on concerns with figures with high and prolonged negative g-load, which could lead to health issues for the pilots when practiced repeatedly.

The KAWG hopes that the review tables will help you to make a well-informed choice.

KAWG Experts Power:

Coco Bessière

Rob Holland

Nigel Hopkins

Castor Fántoba

Louis Vanel

KAWG Chair Power:

Hanspeter Rohner

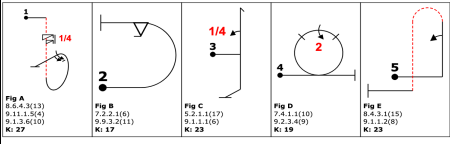
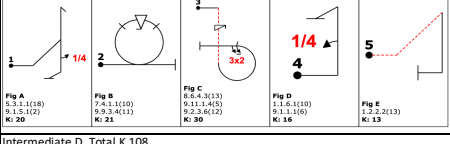
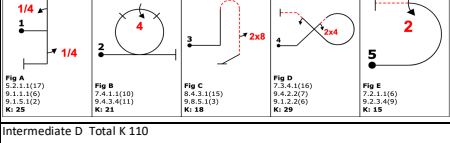
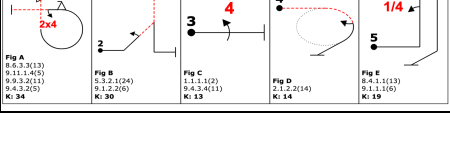
Expert's analysis of Unlimited Free Known Figure-sets for 2025

Free Known figures proposals for 2025 Unlimited		Claude Coco Bessiere		Rob Holland		Nigel Hopkins		Castor Fantoba		Louis Vanel		Safety Working Group																																	
		Notes	Order of preference	Notes	Order of preference	Notes	Order of preference	Notes	Order of preference	Notes	Order of preference	Comments with regards to safety only																																	
A	Unlimited A Total K 236		Good balance of points in the sequence. B. High K for the spin	2	Good Variety of figures Easy to build a sequence out of Nothing dangerous Appropriate K value for the set Interesting figures	1	Good balance of figures and easy sequence design	1	A. Correct B. Correct C. Correct D. Correct E. Correct	1		5	E. Prolonged negative g-load																																
	Unlimited B Total K 228													B. A bit physical. C. Lots of points, high K	4	Figure 2 is an altitude loser Good variation Not the best to link figures together or build a sequence from	4	Low complexity. Negative G to long pull fig 1	5	A. Correct B. Correct C. Correct D. Correct E. Correct	2		3	B. Potentially high speed for the 45° down line positive snap, followed by push out with relatively high negative g-load																					
	Unlimited C Total K 226																								Good balance of points. Interesting	3	Good for sequence design, many multiple snap rotations	5	Good for sequence design, many multiple snap rotations	2	Discarded		1	A. Speed and high negative g-load on the double snap on the 45° down line D. High negative g-load on the 1 3/4 negative down snap. Not recommended for FK because the programme will be flown and repeated over and over during the season, exposing the pilot to repetitive high negative g-load											
	Unlimited D Total K 233																																		Interesting set of figures	1	Good figures	3	Good for sequence design, figures not complex, only 2 snaps	4	A. Correct B. Big altitude loss C. Correct D. Good management of speed required E. Correct	3		4	
	Unlimited E Total K 227																																												
Unlimited F Total K 235		Interesting figures D. Very high K	5	good figures. Good variation	2	Fig 1 has complexity. Fig D high K factor.	3	A. Correct B. Correct C. Big altitude loss D. Correct E. Correct	X		2	D. High negative g-load in the 1 1/2 negative flick on the 45° down line. Not as prolonged as double snap in figure A of proposal C																																	
Unlimited G Total K 230													A. Random tailslide B. The 3/4 positive snap needs to be flown with high speed to execute the 3x4 roll and to pull afterwards		figure 2 is difficult to draw a round loops after the flicks/rolls on the 45. not in consideration for me		Repetitive snaps	6	A. Correct B. Flick before roll and partial loop up later need good control of speed and energy C. Correct D. Correct E. Correct	X	B. Several type of aircraft will have problems to fly the figure correctly - energy loss during the 3/4 positive snap followed by 3x4 roll	7																							

Expert's analysis of Advanced Free Known Figure-sets for 2025

Free Known figures proposals for 2025 Advanced		Claude Coco Bessiere		Rob Holland		Nigel Hopkins		Castor Fantoba		Louis Vanel		Safety Working Group
		Notes	Order of preference	Notes	Order of preference	Notes	Order of preference	Notes	Order of preference	Notes	Order of preference	Comments wit regards to safety only
A	<p>Advanced A Total K 172</p> <p>Fig A: 8.2.4(12), 9.2.1(140), 9.4.3.3(8), 9.8.3.1(5), K: 29</p> <p>Fig B: 9.1.3.1(23), 9.1.1.1(8), 9.9.4.4(11), K: 41</p> <p>Fig C: 8.6.9.3(21), 9.1.5.1(21), 9.1.1.1(10), 9.9.1.1(19), K: 46</p> <p>Fig D: 8.9.9.1(24), 9.4.2.2(7), 9.1.2.2(4), K: 35</p> <p>Fig E: 7.2.3.1(8), 9.4.3.2(5), 9.1.3.4(9), K: 21</p>	No problems	1			Positioning requires good sequence design	3	A. Correct B. Correct C. Correct D. Correct E. Correct	x	I would avoid crossbox spin entry	7	
B	<p>Advanced B Total K 173</p> <p>Fig A: 5.2.1(24), 9.1.1.2(20), 9.1.1.1(5), 9.9.3.3(11), K: 47</p> <p>Fig B: 1.2.6.3(15), 9.4.4.4(25), 9.1.2.1(4), 9.8.2.1(5), K: 27</p> <p>Fig C: 7.5.7.1(15), 9.4.4.4(25), 9.2.3.4(12), 9.9.3.4(11), K: 43</p> <p>Fig D: 8.8.1.1(8), 9.4.3.3(8), 9.1.4.4(8), 9.1.4.4(8), K: 30</p> <p>Fig E: 1.1.3.3(18), 9.1.4.4(8), 9.1.4.4(8), 9.1.4.4(8), K: 30</p>	No problems	2			Low complexity and K fig B,D,E	6	A. Correct B. Correct C. Correct D. Correct E. Correct	1	A. Very technical figure for a low K value D. K value very high	3	
C	<p>Advanced C Total K 172</p> <p>Fig A: 8.6.1.4(12), 9.12.1.4(7), 9.9.3.4(11), K: 34</p> <p>Fig B: 8.6.1.5.2(16), 9.8.2.2(9), 9.1.2.4(9), 9.2.4.4(9), K: 34</p> <p>Fig C: 9.1.1.4(12), 9.1.1.4(12), 9.2.1.4(13), 9.2.1.4(13), K: 46</p> <p>Fig D: 2.2.3.1(24), 9.1.3.3(12), 9.1.3.3(12), 9.1.3.3(12), K: 34</p> <p>Fig E: 5.2.1.2(24), 9.4.2.2(7), 9.1.3.5.2(4), 9.1.3.5.2(4), K: 35</p>	B. A little too physical C. UNL level for rolls				Negative G to long pull fig 1. High neg G fig 2	5	A. Correct B. Correct C. Correct D. Correct E. Correct	2		5	
D	<p>Advanced D Total K 161</p> <p>Fig A: 5.3.1(18), 9.1.4.4(10), 9.1.4.4(10), 9.9.4(11), K: 39</p> <p>Fig B: 8.3.4.1(11), 9.3.4.1(11), 9.1.3.3(7), 9.1.3.3(7), K: 31</p> <p>Fig C: 9.4.3.1(15), 9.1.3.3(7), 9.1.3.3(7), 9.1.3.3(7), K: 28</p> <p>Fig D: 7.2.4.2(5), 9.1.3.3(10), 9.1.3.3(10), 9.1.3.3(10), K: 41</p> <p>Fig E: 9.1.3.3(12), 9.1.3.3(12), 9.1.3.3(12), 9.1.3.3(12), K: 22</p>	Low K for the complete figures set D. But very high K in this figure	4			Good balance of figures	2	A. Correct B. Correct C. Correct D. Correct E. Correct	3		1	
E	<p>Advanced E Total K 174</p> <p>Fig A: 1.2.5.4(14), 9.12.1.4(7), 9.4.2.4(13), K: 34</p> <p>Fig B: 2.2.5.2(24), 9.1.3.3(11), 9.1.3.3(11), 9.1.3.3(11), K: 24</p> <p>Fig C: 9.1.3.3(11), 9.1.3.3(11), 9.1.3.3(11), 9.1.3.3(11), K: 38</p> <p>Fig D: 7.2.4.2(5), 9.4.3.3(8), 9.1.3.3(10), 9.1.3.3(10), K: 39</p> <p>Fig E: 8.6.1(11), 9.1.3.4(10), 9.1.3.4(10), 9.1.3.4(10), K: 39</p>	C. Very physical with high negative g-load exit				Complex for positioning	7	A. Correct B. Correct C. Interesting to fly it once, but unnecessary to practice it on a daily basis, because of high negative g-load D. Correct E. Correct	Discarded	C. Negative exit crossbox E. Speed/altitude management can be complicated	9	C. High negative g-load exit
F	<p>Advanced F Total K 166</p> <p>Fig A: 1.3.3.3(15), 9.1.1.4(9), 9.1.1.4(9), 9.1.2.3(8), K: 30</p> <p>Fig B: 9.3.3.1(8), 9.2.2.2(11), 9.9.5.3(14), 9.9.5.3(14), K: 46</p> <p>Fig C: 9.6.1.6.1(13), 9.1.1.3(9), 9.1.1.3(9), 9.4.3.4(5), K: 32</p> <p>Fig D: 7.2.1.1(6), 9.1.3.3(10), 9.1.3.3(10), 9.1.3.3(10), K: 34</p> <p>Fig E: 2.2.3.1(23), 9.1.3.3(10), 9.1.3.3(10), 9.1.3.3(10), K: 23</p>	Good and correct set of figures	3			Good balance of figures	1	A. Correct B. Correct C. Correct D. Correct E. Correct	x		2	
G	<p>Advanced G Total K 174</p> <p>Fig A: 8.6.1.4(12), 9.12.1.4(7), 9.4.2.4(13), K: 31</p> <p>Fig B: 8.6.7.2(12), 9.4.3.3(15), 9.1.1.1(8), 9.9.5.3(14), K: 32</p> <p>Fig C: 9.1.1(8), 9.1.1(8), 9.1.1(8), 9.1.1(8), K: 38</p> <p>Fig D: 8.8.1.1(8), 9.1.3.3(10), 9.1.3.3(10), 9.1.3.3(10), K: 37</p> <p>Fig E: 7.2.3.2(9), 9.4.3.3(10), 9.1.4.4(8), 9.1.4.4(8), K: 36</p>	good balance of K values for all figures Good and correct set of figures	5			Fig B,E many rolling elements	4	A. Correct B. Correct C. Correct D. Correct E. Correct	x	I would avoid central figures (entry/exit same direction) for the box	8	E. Prolongued negative g-load
H	<p>Advanced H Total K 172</p> <p>Fig A: 7.2.1.1(6), 9.9.3.2(11), 9.9.3.2(7), K: 24</p> <p>Fig B: 7.2.1.4(22), 9.1.1.1(8), 9.9.3.2(11), 9.9.3.2(11), K: 39</p> <p>Fig C: 9.1.4(26), 9.1.4(26), 9.1.4(26), 9.1.4(26), K: 26</p> <p>Fig D: 9.4.3.4(11), 9.1.3.3(10), 9.1.3.3(10), 9.1.3.3(10), K: 33</p> <p>Fig E: 7.2.1.1(15), 9.2.3.4(9), 9.1.4.4(8), 9.1.4.4(8), K: 90</p>	A. Very technical figure for a low K value very high E. K	6	good figures	1	Fig E complex with high K	9	A. Correct B. Correct C. Correct D. Correct E. Correct	x		4	
I	<p>Advanced I Total K 169</p> <p>Fig A: 7.2.1.1(6), 9.9.3.2(11), 9.9.3.2(7), K: 22</p> <p>Fig B: 5.2.1.4(22), 9.1.1.1(8), 9.9.5.3(14), 9.9.5.3(14), K: 39</p> <p>Fig C: 2.2.4(26), 9.1.4(26), 9.1.4(26), 9.1.4(26), K: 26</p> <p>Fig D: 7.2.1.1(15), 9.2.3.4(9), 9.1.4.4(8), 9.1.4.4(8), K: 90</p> <p>Fig E: 8.5.5.1(12), 9.4.3.3(10), 9.9.3.2(7), 9.9.3.2(7), K: 32</p>	A. Very technical figure for a low K value D. K value very high	6	good figures	2	Fig D complex with high K	8	A. Correct B. Correct C. Correct D. Correct E. Correct	x		6	

Expert's analysis of Intermediate Free Known Figure-sets for 2025

Free Known figures proposals for 2025 Intermediate	Claude Coco Bessiere		Rob Holland		Nigel Hopkins		Castor Fantoba		Louis Vanel		Safety Working Group
	Notes	Order of preference	Notes	Order of preference	Notes	Order of preference	Notes	Order of preference	Notes	Order of preference	Comments with regards to safety only
Intermediate A Total K 109  <p>Fig A: 8.6.3, 8(13) 9.2.1, 4(22) 9.9.3, 2(15) Ki: 17</p> <p>Fig B: 5.2.1, 4(22) 8.4.2, 2(9) Ki: 27</p> <p>Fig C: 2.1.2, 1(14) Ki: 14</p> <p>Fig D: 8.5.2, 2(10) 9.5.2, 2(13) Ki: 23</p> <p>Fig E: 8.6.3, 8(13) 9.1.1, 2(8) 9.1.1, 2(8) 9.2.2, 4(9) Ki: 28</p>	Good and correct set of figures	2	Good figures	1	Good balance of figures	1	A. Correct B. Correct C. Correct D. Correct E. Correct	x		1	
Intermediate B Total K 109  <p>Fig A: 8.6.3, 8(13) 9.1.1, 3(4) 9.1.3, 3(10) Ki: 27</p> <p>Fig B: 7.2.2, 1(6) 9.9.2, 2(11) Ki: 17</p> <p>Fig C: 5.2.1, 4(27) 9.1.1, 1(6) Ki: 23</p> <p>Fig D: 7.4.1, 1(10) 9.2.3, 4(9) Ki: 19</p> <p>Fig E: 8.4.3, 1(15) 9.1.1, 2(8) Ki: 23</p>	B. Too technical	4	Good figures	4	Complex for positioning	3	A. Correct B. Correct C. Correct D. Correct E. Correct	2		4	
Intermediate C Total K 100  <p>Fig A: 5.5.1, 1(8) 9.1.5, 1(2) Ki: 20</p> <p>Fig B: 7.4.1, 1(10) 9.9.3, 4(11) Ki: 21</p> <p>Fig C: 8.6.4, 3(13) 9.1.1, 4(5) 9.2.2, 4(12) Ki: 30</p> <p>Fig D: 1.1.6, 1(10) 9.1.1, 1(6) Ki: 16</p> <p>Fig E: 1.2.2, 2(13) Ki: 12</p>	Low K for the figures set	3	good figures	3	Complex for positioning Neg push with low K figure E	4	A. Correct B. Correct C. Correct D. Correct E. Correct	x		3	
Intermediate D Total K 108  <p>Fig A: 5.2.1, 1(7) 9.1.3, 1(6) 9.1.3, 1(2) Ki: 25</p> <p>Fig B: 7.4.1, 3(10) 9.4.3, 4(11) Ki: 21</p> <p>Fig C: 9.4.3, 1(15) 9.8.2, 1(3) Ki: 18</p> <p>Fig D: 7.5.4, 1(16) 9.4.2, 2(7) 9.1.2, 2(6) Ki: 29</p> <p>Fig E: 7.2.1, 1(6) 9.2.2, 4(9) Ki: 15</p>	No problems	1	Good figures	2	Good balance Some simple figures	2	A. Correct B. Correct C. Correct D. Correct E. Correct	1		2	
Intermediate D Total K 110  <p>Fig A: 8.6.3, 8(13) 9.1.1, 4(5) 9.9.3, 2(15) 9.4.3, 2(9) Ki: 34</p> <p>Fig B: 5.1.2, 1(24) 9.1.2, 2(6) Ki: 30</p> <p>Fig C: 1.1.1, 1(2) 9.4.3, 4(11) Ki: 13</p> <p>Fig D: 2.1.2, 2(14) Ki: 14</p> <p>Fig E: 8.4.1, 1(13) 9.1.1, 1(6) Ki: 19</p>	A. Too technical		Good figures	5	FIG B difficult for positioning	5	A. Correct B. Correct C. Correct D. Correct E. Correct	3		5	