



**FAI Aerobatics Commission (CIVA)
Annual Plenary Meeting 2023
Polish Aviation Museum, Krakow**

Chief Judge's Report – the 22nd FAI EAC

Pavullo nel Frignano, Italy
September 8th to 16th, 2023

Chief Judge: Nick Buckenham (GBR) with Leif Culpin and Jen Buckenham.

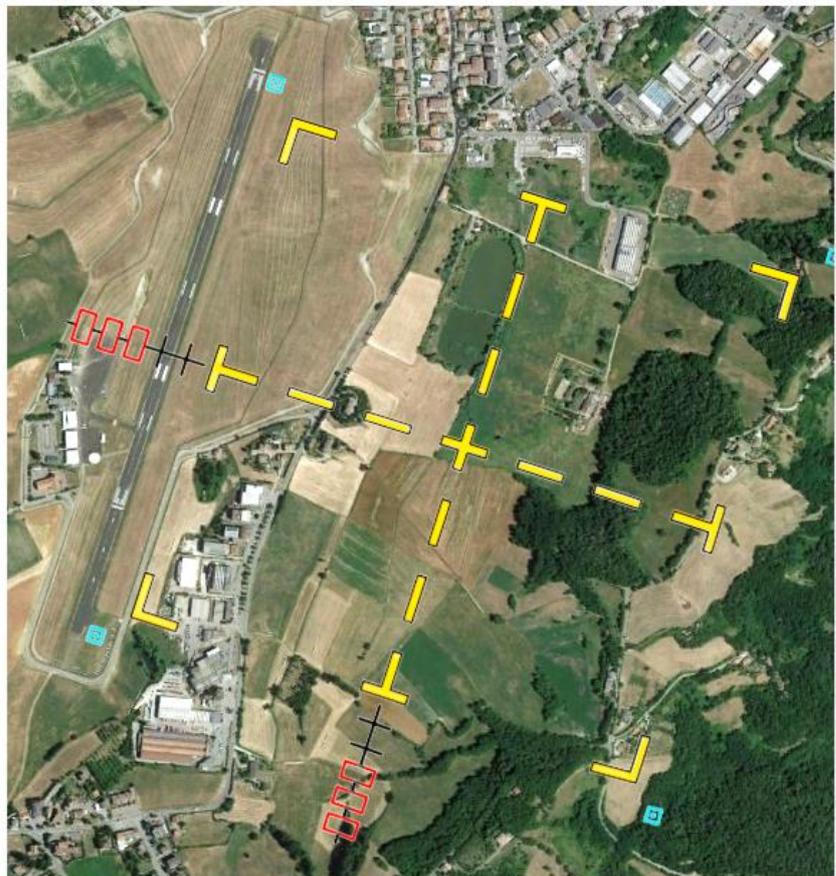
Judges: Guy Auger (FRA) + Willy Gruhier, Quintin Hawthorne (RSA) + Laszlo Liskay,
Timo Bartholdi (FIN) + Tuula Bartholdi, Gabor Talabos (HUN) + Karoly Magistrak,
Esteban Moulin (BEL) + Alain Dugas, Eladi Lozano (ESP) + Gonzalez Rodriguez,
Luca Andraghetti (ITA) + Gilles Guillemard.

Competitors and Registrations

There were 24 competitors registered for this championship from 10 nations, comfortably exceeding the required minimum for a continental championship though this total was somewhat less than had been expected. In addition we were pleased to work with two warm-up pilots – from France experienced unlimited pilot Geoffrey Denis, and from Italy the extremely helpful Riccardo Cresci who flew less complex warm-up sequences designed for him on each occasion by jury president Pierre Varloteaux.

The Performance Zone

The box location for programmes 1-4 of this event had been the subject of lengthy review by the organisers and the jury president, the result being generally as shown here. The airfield lies in a shallow valley that runs roughly NNE to SSW with high ground along the east side. Due to this the minimum "Low" height for the event was set at 200m above the runway level and the "Low-Low" or disqualification height at 150m. When the box lines were flown by the warm-up pilots the Low-Low line to the east side of the box was little more than 100m from the high ground there.



Judging positions

With the dominant wind generally from the east the south judging position was used throughout for programmes 1 to 4, the sole alternative position being close to the north-west corner of the marshalling apron. The position used during P5 on the last day however was at the west side of the apron below a spectator gallery.



The south position was located just over 150m from the box south boundary in a sloping field, with the judging positions spaced as shown in this overhead view. It was not possible to see the runway from this location however due to a cluster of industrial buildings that obscured direct line-of-sight, the obstruction they caused also preventing exchanges with the starter via vhf air-band radios from this position. To overcome this problem a pair of dedicated mobile phones were quickly provided and used throughout, an unusual substitute arrangement which was not 'instant' but worked well enough.

Video recordings

The organisers had secured the services of an experienced sports videographer who was stationed about 5m from the CJ's desk. While the video camera was of good quality the tripod he used had an ordinary swivelling camera attachment rather than a specialised fluid head, leading from the very start to a jerky action which took time to rectify. After some discussion (he did not speak English ...) a generous application of lubricant eventually helped to substantially rectify this problem, and the recordings became steadier, more closely zoomed-in and thus more useful.

A tv monitor was available in the CJ's tent but this was difficult to see in broad daylight, thus recordings were reviewed on return to the judge's room via projection at a good size onto the wall. In the early stages with a wide zoom setting to overcome tripod friction it was frequently difficult to determine whether competitors had for example properly displayed the appropriate elements of a flick-roll to avoid – or receive – a confirmed hard zero as these subtle aspects were often extremely hard to resolve. When the tripod friction was later reduced the zoom was set narrower and finer details of the performance more readily assessed. By comparison stall -> spin elements provided few queries and generally escaped assessment for hard zero.

Score-sheet management at the judging position

By using a local mobile phone Wi-Fi hotspot in the CJ's tent the scorer was able to update the online results frequently from the judging position, except for occasions where HZ's had been awarded, a video conference was necessary and judges score sheets were withheld for later review. These reviews, often to resolve HZ grades associated with flick rolls, were considerably more frequent than had been experienced in previous years, applying to as much as 60% of all flights during the early stages. Bearing in mind the early video zoom and stick-slip issues which encouraged the operator to use a wider zoom angle, many of these "pitch -> yaw -> autorotation"

judging criteria were very tricky to prove or disprove – even when the tripod head lubrication was suitably improved.

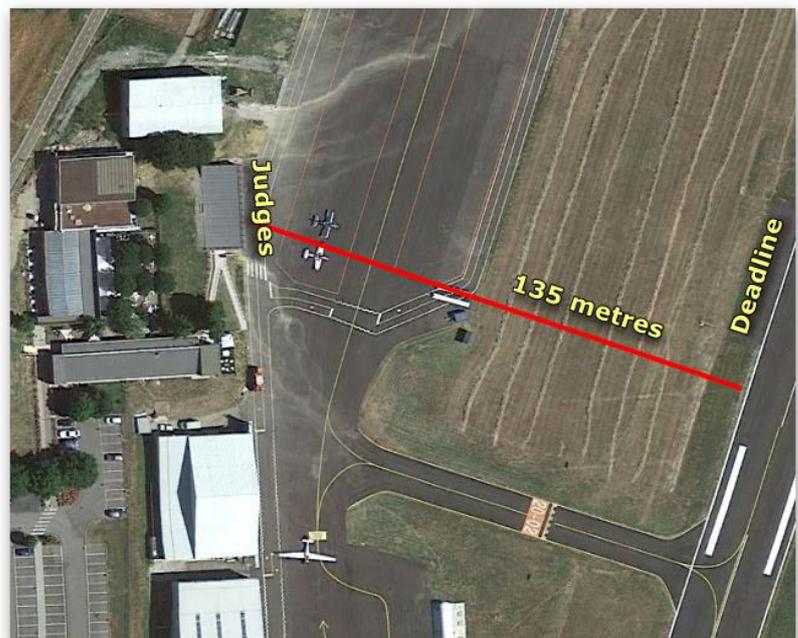
Flying standards and problems

Through programmes 1-4 the standard of figure execution and of positioning was generally high, though as usual if a pilot ran into problems at some stage this tended to cause a domino effect of further errors. The sole item of significant concern came from a pilot who inadvertently tripped his safety harness ratchet during P3; he called that he had a problem and immediately elected to land in the (northerly) direction he had previously taken-off. Unknown by him the runway direction had just then been reversed and the next pilot, on seeing the wing-rocks of this competitor's break, took off in the other direction. This danger flash-point was not detected by us until we briefly saw both aircraft travelling in opposite directions, though the starter evidently issued several 'Go around' calls. The pilot landed safely and the jury allowed him to re-fly his sequence.

A 'cut' was announced for P4 but it became apparent that the order of flight did not set pilots high-to-low scoring as expected, leading to a need to fully complete this programme despite time pressures on the final day.

For the Final Freestyle the judges were relocated to a position immediately below a public viewing gallery at the west side of the marshalling apron. The French warm-up pilot flew the deadline at 200m and a demonstration freestyle for the judges, which was not marked.

During this programme the competitors were able to hear their music on the safety frequency, transmission start/stop being controlled by someone in the admin/control area. Three pilots however were clearly assessed by me and confirmed by the jury member situated with us to fly above and behind the judging panel, at least 135m across and therefore behind the official deadline and directly overhead the spectator gallery and adjacent restaurant area. On each occasion I instructed my assistant to give an immediate "Land-Land-Land" radio call, but this could not be received by the competitor because it was blocked by the music transmission and consequently each pilot



continued to fly their full performance. The judges were instructed to mark their sheets 'Disqualified' and these were submitted bearing only the pilot's recorded flight time.

One other pilot was assessed by a majority of judges to fly Low, though by only two judges (a minority) as Low-Low and the flight was not therefore stopped. This performance was subsequently disqualified by joint decision between the contest director and the jury.

Quality of Judging

At our initial briefing, in addition to the usual general review, the panel was guided carefully through the Section-6 Part-1 Flick-Roll pitch -> yaw -> autorotation and Stall -> Spin judging criteria to clarify what is acceptable compared with instances when the Hard Zero should be applied. I emphasized the constant need to 'judge what you see' but always to maintain a fresh view during subsequent video reviews. Many other topics were examined, and I am satisfied that the judging assessments and techniques applied were to a high standard.



During programmes 1-4 a significantly

wider range of harsh (HZ) grades were recorded by judges for figures including Flick Rolls than I have experienced at any previous power championships. In the early part of P1 this amounted to over 70% of all performances, though after many video reviews this proportion fell to less than half. Through the subsequent video reviews however only a small proportion of these HZ's were confirmed via agreement by a majority of judges, though clearly in each case the awarding judge(s) opinion had been that a downgrade for displaying unacceptable quality flight characteristics was appropriate. By comparison the spin entry techniques that we saw were generally to a good standard and largely free of significant criticism.

Due to the above Flick Roll concerns the panel held two lengthy and valuable debate sessions with the aim of defining better downgrade procedures for Flick Roll initiation, and also by inference to Stall -> Spin elements. In their view the primary requirement must always be to judge detected errors in a proportionate manner, importantly to match the degree of incorrectness noted during these figure elements. They concluded unanimously that awarding a Hard Zero when the required criteria had been partially but not fully met would inevitably lead to conflicting conclusions across the panel and increased likelihood of distrust by competitors. In their opinion use of the Hard Zero 'bomb' or indeed any size of fixed downgrade is not appropriate for these considerations. The most supported solution that emerged was to allow judges the flexibility to set the amount of downgrade in direct proportion to the degree of error(s) seen, as is normally the case with other Aresti elements. I therefore propose that this topic should provide the basis for further consideration by the RC/JC and presentation at the 2024 plenary conference.

An analysis of all judges' performances starts on the next page.

Nick Buckenham
EAC-23 Chief Judge

Analysis of Judges Combined Anomalies

Sequences: Seq01 Programme 1: Free Known, Seq02 Programme 2: Free Unknown #1 (UNP), Seq03 Programme 3: Free Unknown #2 (UNP), Seq04 Programme 4: Free Unknown #3

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8 -16 September 2023

	All Judges		FIN		BEL		RSA		FRA		ITA		HUN		ESP	
	No	%	Timo Bartholdi		Esteban Moulin		Quintin Hawthorne		Guy Auger		Luca Andraghetti		Gabor Talabos		Eladi Lozano	
			RI 5.30 [4]		RI 8.04 [4]		RI 8.05 [4]		RI 10.02 [4]		RI 10.71 [4]		RI 11.74 [4]		RI 29.66 [4]	
HZ - Hard Zeros	306	3.3	39	2.9	41	3.1	44	3.3	40	3.0	44	3.3	57	4.2	41	3.1
PZ - Perception Zeros	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Marks from 0.0 to 6.5	2190	23.3	423	31.5	370	27.5	251	18.7	113	8.4	412	30.7	238	17.7	383	28.5
Marks from 7.0 to 10.0	6902	73.4	882	65.6	932	69.3	1048	78.0	1191	88.6	887	66.0	1045	77.8	917	68.2
AV - averages	10	0.1	0	0.0	1	0.1	1	0.1	0	0.0	1	0.1	4	0.3	3	0.2
Total marks Pilots/Judge	9408		1344	96	1344	96	1344	96	1344	96	1344	96	1344	96	1344	96

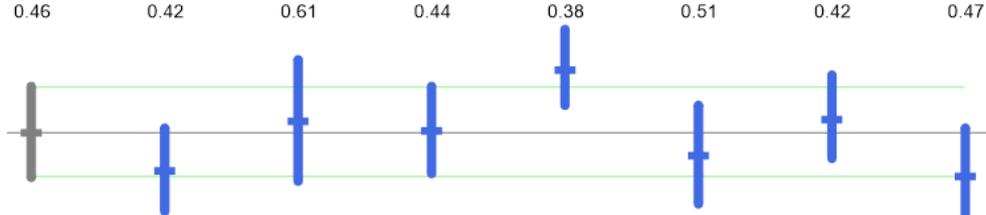
Use of Marks:

HZ - Hard Zeros	306	3.3	39	2.9	41	3.1	44	3.3	40	3.0	44	3.3	57	4.2	41	3.1
PZ - Perception Zeros	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
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Style Comparison:

Average:	1.88	1.78	1.91	1.88	2.04	1.82	1.91	1.77
Style:	0.46	0.42	0.61	0.44	0.38	0.51	0.42	0.47

Average and Style of Judges Raw Marks compared to normalised all-Judges average
Style \heartsuit 2 x Raw SD



Vertical axis scale:
1 mark = 82mm

Raw Marks Factors:	Average %:	100	- 4.83	+ 1.95	+ 0.39	+ 8.86	- 2.86	+ 2.09	- 5.60
	Style %:	100	- 8.77	+ 32.50	- 5.55	- 18.36	+ 9.24	- 10.26	+ 1.20

Figure anomalies

HZ to fitted value	80	0.9	6	6	8	15	8	22	15
Mark to confirmed HZ	42	0.4	6	4	2	14	2	3	11
PZ to confirmed HZ	0	0.0	-	-	-	-	-	-	-
PZ to fitted value	0	0.0	-	-	-	-	-	-	-
AV to confirmed HZ	5	0.1	-	-	1	-	1	1	2
AV to fitted value	5	0.1	-	1	-	-	-	3	1
Lo to fitted value	103	1.1	2	12	13	12	22	24	18
Hi to fitted value	29	0.3	4	3	2	3	3	4	10
The 60% Rule	0	0.0	-	-	-	-	-	-	-
Total figure anomalies	264		18	26	26	44	36	57	57

Sequence anomalies

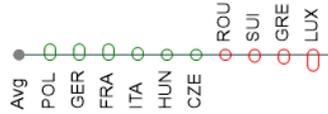
Team	Pilots assessed in FPS pass-2															
CZE Czech Republic	8	1 Lo 0 Hi	-	-	-	-	-	-	-	-	1 Lo	-	-	-	-	-
FRA France	32	13 Lo 6 Hi	-	-	-	-	2 Lo 2 Hi	-	-	2 Lo 2 Hi	4 Lo 1 Hi	5 Lo 1 Hi	-	-	-	-
GER Germany	8	1 Lo 1 Hi	1 Lo	-	-	-	-	-	-	-	1 Hi	-	-	-	-	-
HUN Hungary	4	1 Lo 1 Hi	-	-	-	-	-	-	1 Lo	-	-	-	-	1 Hi	-	-
ITA Italy	4	1 Lo 3 Hi	-	-	-	-	1 Lo 1 Hi	-	1 Hi	-	1 Hi	-	-	-	-	-
LUX Luxembourg	12	5 Lo 3 Hi	3 Lo	-	-	1 Hi	-	-	-	1 Hi	1 Lo 1 Hi	-	-	-	1 Lo	-
POL Poland	8	2 Lo 2 Hi	-	-	1 Lo	-	-	-	-	-	1 Lo 1 Hi	-	-	-	-	1 Hi
SUI Switzerland	8	0 Lo 2 Hi	-	-	-	1 Hi	-	1 Hi	-	-	-	-	-	-	-	-
GRE Greece	4	1 Lo 1 Hi	-	-	1 Lo	-	-	-	-	-	-	-	-	-	-	1 Hi
ROU Romania	8	2 Lo 2 Hi	-	-	-	-	-	-	1 Lo	-	-	-	-	1 Hi	1 Lo 1 Hi	-
Total sequence anomalies		27 Lo 21 Hi	4 Lo	-	2 Lo 2 Hi	3 Lo 4 Hi	2 Lo 2 Hi	5 Lo 6 Hi	4 Lo 3 Hi	7 Lo 4 Hi						

Cumulative RI contributions per Team

Timo BARTHOLDI (FIN)

Judge: max country bias = 0.43 min = -0.94
 Panel: = 2.46 min = -7.63

Most favoured Least favoured



Esteban MOULIN (BEL)

Judge: max country bias = 0.99 min = -1.14
 Panel: = 2.46 min = -7.63

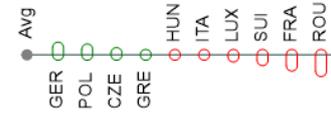
Most favoured Least favoured



Quintin HAWTHORNE (RSA)

Judge: max country bias = 0.58 min = -1.40
 Panel: = 2.46 min = -7.63

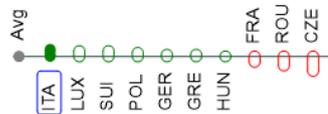
Most favoured Least favoured



Luca ANDRAGHETTI (ITA)

Judge: max country bias = 0.66 min = -1.23
 Panel: = 2.46 min = -7.63

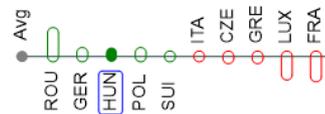
Most favoured Least favoured



Gabor TALABOS (HUN)

Judge: max country bias = 1.98 min = -1.60
 Panel: = 2.46 min = -7.63

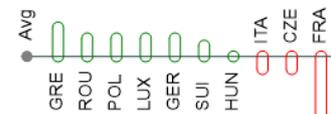
Most favoured Least favoured



Eladi LOZANO (ESP)

Judge: max country bias = 2.46 min = -7.63
 Panel: = 2.46 min = -7.63

Most favoured Least favoured



Guy AUGER (FRA)

Judge: max country bias = 1.50 min = -0.66
 Panel: = 2.46 min = -7.63

Most favoured Least favoured

