CIVA Judging Seminar 2023

Supplementary Notes

KEY ATTRIBUTES AND SKILLS FOR JUDGES:

- **THE ABILITY TO DEDUCT MARKS ACCURATELY AND QUICKLY WHILST WATCHING A SEQUENCE**
- **FULL KNOWLEDGE OF THE RULES**
- **KEEN EYESIGHT**
- **TEAMWORK**

Everything in the Seminar is aimed at the above.

These notes are structured to remind us of the basics (glider and power), but they do assume that you are a judge with some experience. They comprise the combined input of a number of Chief Judges, Unlimited pilots and internationally experienced Judges.

The aim of the seminar is to bring as much objectivity and consistency into judging and to help judges to develop an effective "Judging Team." Much emphasis is placed on the functions of all the members of the judging team.

You will have the opportunity to discuss and review all aspects of judging as well as practice your art with actual judging.

Topics covered in this review are:-

- 🕮 The basics
- 🕮 The rules and rule changes for 2023
- 🕮 The Process of judging
- 🕮 Creating time for the judge
- 🕮 Handling mistakes, and video
- 🕮 Rules for Zero's
- 🕮 Tips for better judging
- 🕮 Positioning
- 🕮 Practice unlimited judging calling
- 🕮 Explanation of the FP system and ACRO, and their use as a training tool

1. The basics

Eyes are our most precious tools, so we need to make sure they are up to standard.

- Do you need glasses?
- If you wear them, be sure the prescription is up to date!
- Take some sun glasses – either separate ones or photo-chromic
- It is always a good idea to have a spare pair…
- Take a comfortable chair
- Take sun screen
- Have a good sun hat
- Make sure you have plenty of water available
- Get up and walk around regularly between sequences
- Have your own pens and pencils ready as back up
- Always have a copy of the appropriate rules

2. The Rules

There are some important CIVA Rule changes and/or additions for Judges in 2023 -

- **The "Perception Zero" (PZ) has gone!**
  Every situation where the PZ has been used in the past has been revised, as follows:

  a. A flick-roll never stated proper autorotation: HZ
  b. A spin never started proper autorotation: HZ
  c. A rolling turn included a flick roll: HZ
  d. A tail-slide does not move backwards by the required amount: -4.0 points
  e. An excessively long line is shown between looping segment and adjacent roll, or roll and adjacent looping segment: -4.0 points
  f. More than 45° of roll is flown on the exit line of a rolling turn: HZ

- **The Yak-52 World Championship series has been scrapped**
  This one-make aircraft competition has now been removed from CIVA events**.**
- **The Chief Judge may now declare a Confirmed Hard Zero (CHZ)**
  If there is a mix of scores and HZ's for a figure, if the Chief Judge's view is that a CHZ is necessary he may now tick the CHZ box and refer this decision to the Jury.

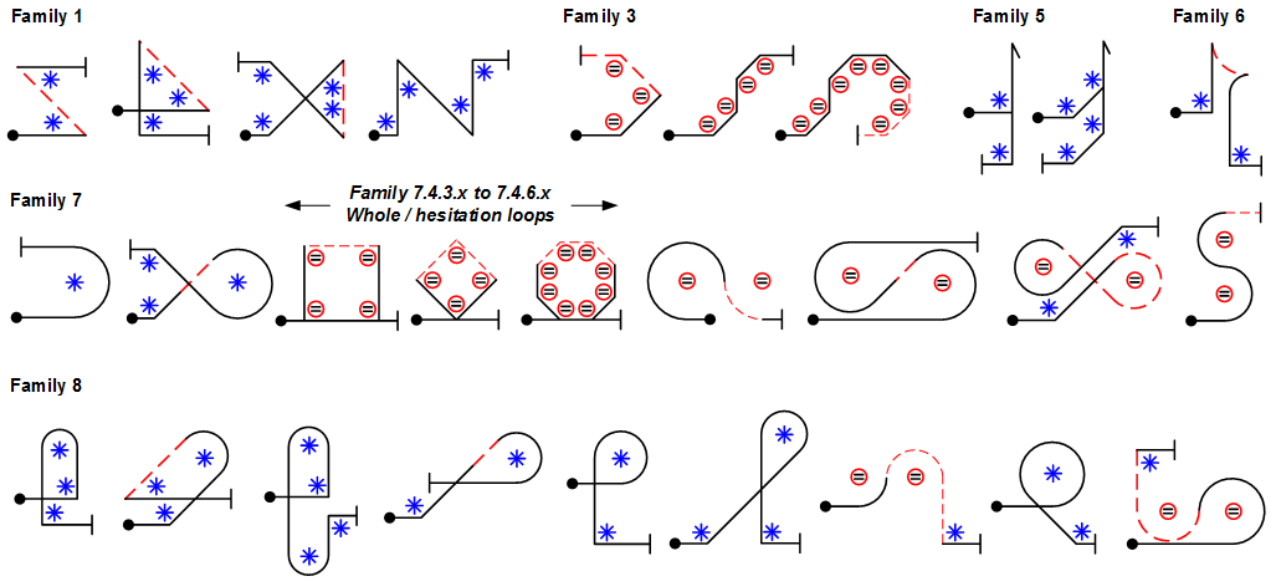
On the judging line you MUST have a copy of the most up to date CIVA rules with you. Check the CIVA website for rule changes each year – the 2023 files you need are at:

https://www.civanews.com/the-civa-document-store/
https://www.fai.org/civa-documents

Radii in Judging

- ✳ These corners and looping segments must have a constant and smooth radius, but they do ***not*** need to match any other radius in the same figure
- ⊜ These looping segments must have a constant and smooth radius that ***must*** match each other size-for-size, or the figure must receive an appropriate downgrade

Here is a range of examples selected from all of the affected Families. Note the different treatment for Family 3 and Family 7.4 (whole loops)



3. The process of judging

- The three person team is the secret of a good start to judging.
- The Judge usually sits in between the “caller” and the “scribe”.
- The judge should have ONLY a pencil or ruler to use as a guide to lines and angles. As a judge, you should have NO paperwork - the caller and scribe will handle this for you.
- Familiarise yourself (especially with the freestyle) with the sequences before flights, together with your caller. Note the tricky parts of the sequence. Inside / outside rolls, opposite rolls etc. **Mark radii that should be the same on the Form-B or C** or the **Left or Right form** - this is an area often missed, even by experienced judges.
- The judge should NEVER take his eyes of the aeroplane during the performance of a flight, from box entry to box exit. In addition, remember that you and your caller must also look for training violations before and after the “wing rocks”.
- The basic process is for the caller to call, the judge to judge, and the scribe to note down the marks and - where possible - any relevant comments by the judge. It is especially important that you record the reasons for zeros and Hard Zero’s – this is a mandatory.

4. Creating Time

The Caller

- The secret is for the judging team to remain calm. This is vital at unlimited where the speed of elements within figures happen with ever increasing speed and complexity.
- The caller is as important as the judge. If he calls correctly and at the right speed with minimum of words he creates time for the judge to concentrate on looking for all the minute errors. The caller also has a key responsibility to spot gross errors.
- The caller and the judge should have a standard and much abbreviated language to convey to the judge exactly what he is expected to see. The principle is to use minimum words for maximum information. The process of calling is to give a general outline (if necessary) of the figure first then a running commentary giving the detail to be expected.

The caller will call the elements in real time just before each event happens. For example:-

- **Figure one. Stall turn.** (this is the basic figure) **Pull to vertical … 2 point roll up ... positive snap down ... push out. END.**
- **Figure two. "N"… push to vertical … full roll up … pull to 45 … 1/2 negative snap … pull to vertical … push out. END.**

The ***figure number*** is essential to tell the scribe which figure is being judged, otherwise continuity in recording the marks on the Form-A may go astray.

The ***type of figure*** to be flown tells the judge roughly what to expect.

The ***individual figure elements*** should be spoken just ahead of the aeroplane executing them, so the judge has them clearly in mind and cannot "forget" what to look for.

The word "END" is important to tell the judge when to stop assessing the figure, decide how many points must be deducted, calculate the mark and give the result to the scribe.

Before sequence flying starts – or before every flight if it is a Free sequence – the caller and the judge should make clear notes on Form B or C (see the sequence on page-8) so that important aspects are correctly judged. This will greatly assist the caller's instructions for radii, in/out and same/opposite rolling, and trigger the caller to look up and cross-check for "Gross Errors".

"Gross Errors" can be subtle and are easily missed – the aeroplane may fly some rolls accurately but, for example, does the pilot roll inwards instead of outwards in a rolling circle, are the number of turns correct, do rolls go the in correct same/opposite directions in multiple roll figures? With hesitation rolls the caller should check (preferably count out loud) that the correct number of hesitations is flown. The judge should always request the callers' confirmation on all such issues – two sets of eyes are much better than one.

REMEMBER: AS A JUDGE YOU ARE CONCENTRATING ON ALL THE ERRORS LARGE AND SMALL IN ORDER TO ARRIVE AT THE CORRECT MARK. THE EXTRA PAIR OF EYES CONFIRMING ERRORS OF FACT IS A VITAL PART OF THE ASSISTANT JUDGE OR CALLER.

The scribe

The prime function of the scribe is to record the judges' marks correctly, and to note why zeros and Hard Zeros are given. It will also be helpful if the judges' comments can be added that will give the pilot some idea as to why he has received the individual marks for each figure. This usually easier with practice, but pilots really appreciate your remarks.

The scribe should clearly repeat the mark called by the judge after each figure. This way no marks can be missed or wrongly recorded. The scribe must also listen for the caller's "End" statement, and if the judge does not give the mark should call "Mark!" to remind him.

A good and practiced scribe can also assist, especially in the "Q" and unknown programs in looking for gross errors. Judges – manage your scribes properly, they're there for you!

Finally – make sure that the judge signs the Form-A sheet after each flight.

IN JUDGING, ALWAYS: MARK ***ONLY*** WHAT YOU SEE

Judging must be as "objective" as possible. Remember that you can only mark and judge what you see. If the aeroplane does not demonstrate the required criteria then an appropriate downgrade, a zero or a Hard Zero must be given.

For example, you must NOT mark a flick on the basis of "I know that aircraft and how it flies" and still give it a mark if it did not present the required criteria – you must downgrade or zero the figure.

5. Handling Mistakes

If for any reason there is a mix-up whilst the sequence is in progress, the judge should avoid trying to solve the problem immediately but should ask the caller to give the number of the next figure so the scribe knows that the next mark given will apply to that figure.

Keep calm. Muddles happen to all of us, don't let them cause a real crisis. With luck the judge will be able to sort it out immediately after the sequence. However – if there is any doubt about a figure then it must be given an "A".

Never just "give" a mark! The final mark that you arrive at must be ten minus the total of downgrades from the errors that you have seen. If in doubt you must give an "A".

However …. Judges should be prepared for every flight in a professional manner, and an "A" should only be given only if the judge has been distracted from seeing the figure.

Pilot mistakes - be prepared. Major errors within a figure should be relatively easy to spot and resolve (same, not opposite roll element missed, pulled instead of pushed etc.). A problem sometimes occurs when the pilot starts a figure which bears no relation to the next figure on form B/C. The most likely reason for this is that the pilot has missed a figure or even a full row from his sequence – the caller should look ahead and see if he can spot what is being flown. If it is a valid figure from further down the sequence (and it is being flown the right way round) then it and the following (correct) figures can and should be marked (Rule 5.3.3.1). BUT if the pilot realises the

mistake he may revert back to the original sequence, thereby making the figure an insertion. Be sure that you know the correct rules for what to mark as HZ and what to mark as normal…

Video

The video is only there to confirm *matters of fact*. Any judge has the right to see the video if he believes that a factual error has occurred that has been missed by the majority of judges. This applies even if he is the only judge who believes that there is an error of fact.

When the video is used to review flicks, spin entries, length of a tail slide, errors in pitch, roll and yaw of around 45° it can be very difficult to determine whether a Hard Zero or a downgraded score should be awarded, and the Chief Judge may have to make the final decision. However the judge must already have given and written down his mark before calling to see the video.

6. The Zero rules

The biggest change for some time has been to the "Zero" Rule.

General description of the rule:-

- **Numeric Zero**: When the number of downgrades in any figure reaches ten, the result is a numeric zero (0.0). You should refer to this simply as "ZERO" or "NUMERIC ZERO".
- **Hard Zero**: Any gross error (a wrong direction by 90° or 180°, a wrong figure – i.e. one which does not correspond to the Aresti sequence on form B or C) must be given a Hard Zero, and the error will be always identifiable by video.

When can a Numeric Zero become a Hard Zero?

Reasonably, an error in pitch roll and yaw that is double the 45° limit can be considered a "wrong figure" and therefore attracts a Hard Zero.

NOTES

a) Any deviation from the prescribed, attitude, flight path, or rotation (pitch roll yaw) that exceeds 45° but not 90° will be graded 0.0 but a deviation exceeding 90° will be graded Hard Zero (HZ). Note that on most occasions an error very close to 90° which isn't immediately corrected by rolling back means that a different and clearly identifiable Aresti figure has been flown (1½ spins instead of 1¼, a ¾ roll instead of a ½ roll). This should be marked Hard Zero (HZ) – see also [d] below.

b) Any perceived error, (no flick, not spun) will be graded Hard Zero (HZ)

c) Any element of any figure executed in the wrong direction will be graded Hard Zero (HZ).

d) It should be possible to verify with video if a deviation is in excess of 90° and apply a Hard Zero if dispute exists. Whatever the result, there will be clearly a 0.0 or Hard Zero (HZ) for that figure.

e) Finally if for example a pilot should have flown a 45° (attitude) up line but in fact flies vertically he will receive a Hard Zero (HZ) because he has now performed a different and recognizable Aresti figure. If he over pitches to the vertical but corrects back to the 45° he will receive a 0.0. See rule 5.3.4.3/4 for treatment of a mix of HZs and 0.0s

7. A FEW TIPS

- Have the confidence to give the mark you know is right.
- Your job is to "nit-pick" and not (necessarily!) to be liked by the pilots.
- I think we all know that the best pilots like honest judging ….
- Use a finger and pencil, pen or ruler to help with horizontal (lay down some call them) eights, a) to define the entry level, and b) the height of the first loop.
- First use a finger to establish the entry level for the first loop, and then use a pencil to check the height of the first loop and use this as a reference for the second loop.
- Against a clear sky it is impossible to judge accurately the height of two loops without some reference point!
- A correctly held pencil will help correct for parallax with 45° attitude flight, either when uncomfortably near or too far left or right. Remember that it is ATTITUDE for 45° lines and vertical flight - not FLIGHT PATH.
- Do volunteer to check sequences for the free programs! This is very instructive … !

8. POSITIONING

The importance of the positioning mark is often left behind in discussing consistent judging. The rules give good guidance as to the approach.

I am sure we all recognise the situation where the scribe says “You haven’t given a mark for positioning” or the Chief Judge sends back the marks sheet for the addition of the forgotten position mark! We then have the impossible task to think back and give a mark based on our impression of between 9-14 figures.

The position mark can be the highest “K” factor on the sheet and so needs just as much discipline in ARRIVING AT A MARK as do the individual figures

The guidance for marking for position is quite clear and there *is now the requirement to use the “Near Near” “Far Far” system.*

It is a practical and simple system based on the guidance originally given in Appendix one**.** It helps you to arrive at a mark based on practical observations of each figure, and will bring a disciplined approach to arriving at the position mark.

If a figure is not *ideally positioned* (as per Appendix 1) then :-

- ✈ If it is somewhat too far away – call “Far” (F).
- ✈ If it is very far away – probably out of the box – call “Far far” (FF).
- ✈ If it is uncomfortably near – call “Near” (N).
- ✈ If it is just about overhead and not really judgeable – call “Near near” (NN).
- ✈ The same applies to right (R) and (RR), and left (L) and (LL).

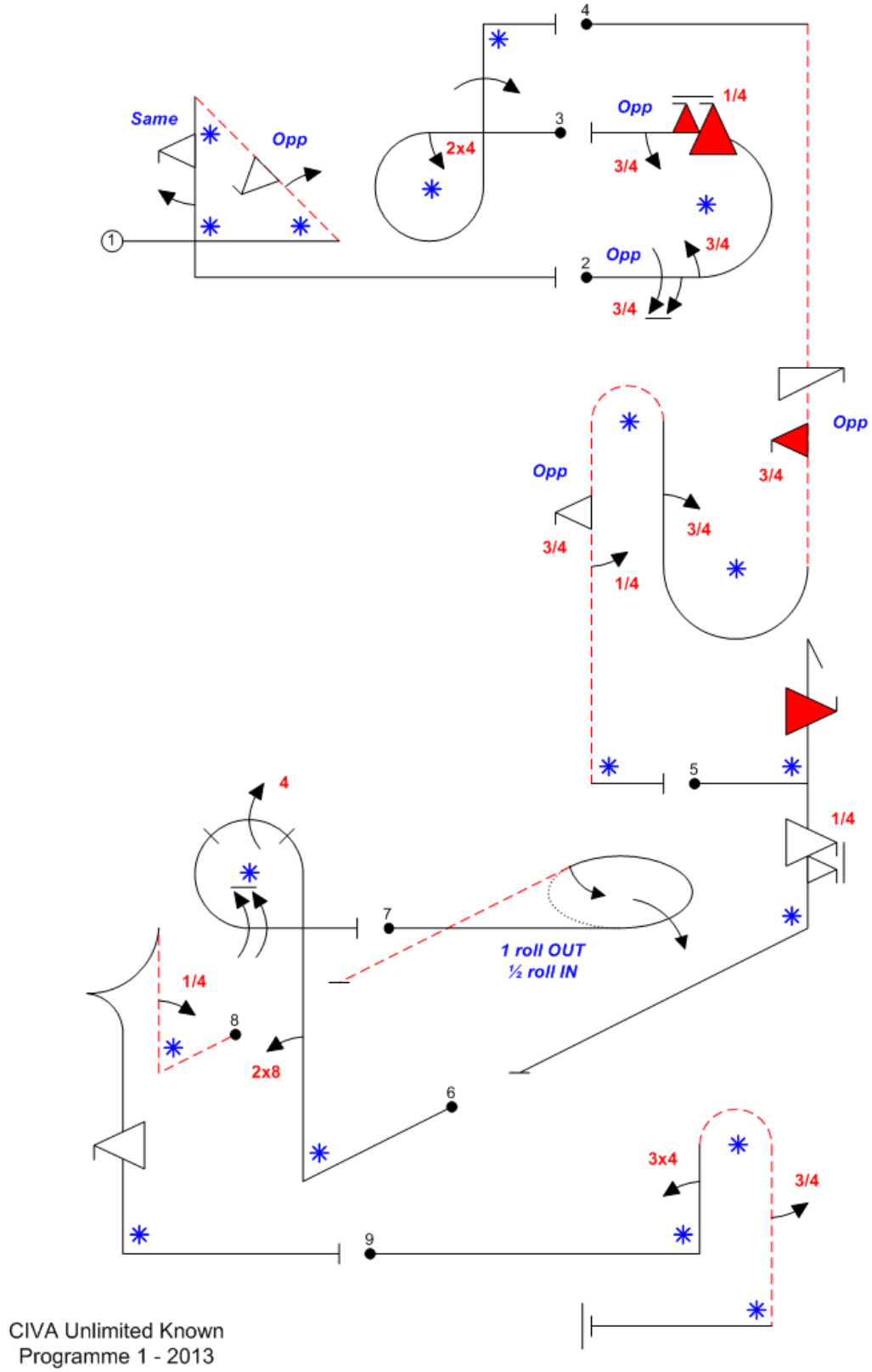
After each sequence

Look down through the marks sheet and add up the total number of L, R, N and F letters on the basis of ½ point for each single letter and 1 point for each double letter.

You have now quickly and easily reached an overall Positioning Mark that reflects how well the pilot has positioned each figure and how well the sequence was balanced in a left / right sense.

By looking at your positioning notes (FF, NN etc.) you will have a solid basis to arrive at your considered Positioning mark.

A "Practice Calling" example, using the sequence below:



CIVA Unlimited Known
Programme 1 - 2013

Remember - the objective of good calling is to use *minimum* words for *maximum* information.

CALLER

Figure one. Pull to 45° inverted, opposite half roll then half positive flick, *(looks up and says "opposite was OK")*, pull down to vertical, same direction half positive flick then half roll, pull erect, exit right. End.

JUDGE

45° OK … roll good … flick 10° over and corrected … vertical OK … snap and roll good … short line after … last radius bigger at end … position OK. Five point five.

SCRIBE

Five point five

CALLER

Figure two. Opposite one and three quarters roll then three quarters roll back, pull half loop up *(waits till near the top of loop),* opposite one and a quarter flick then three quarters roll, exit left erect. End.

JUDGE

5° over 1st roll … snatched into loop … flicked early but hardly any yaw … it's all aileron so HZ … three quarters good. Position right, Hard Zero.

SCRIBE

HZ because not snapped ... Right

CALLER

Figure three. Two by four roll to inverted, three quarters loop down *(waits until nearly vertical),* full roll, push off right erect. End

JUDGE

Line after two by four roll … second roll was early … Position left. Six point five.

SCRIBE

Six point five … Left

And so on … Only the Callers words are given for the rest:

Figure four. Double humpty starting with one turn erect spin then opposite three-quarter negative flick *(watches, says "Opposites OK")*, pull half loop to vertical up, three-quarter roll, push half loop to vertical down, opposite three-quarter flick then quarter roll *(watches, says "Opposites OK")*, pull erect – exit right. End

Figure five. Pull to vertical, full negative flick up, stall turn, one and a quarter positive flick down, pull erect – exit cross box. End

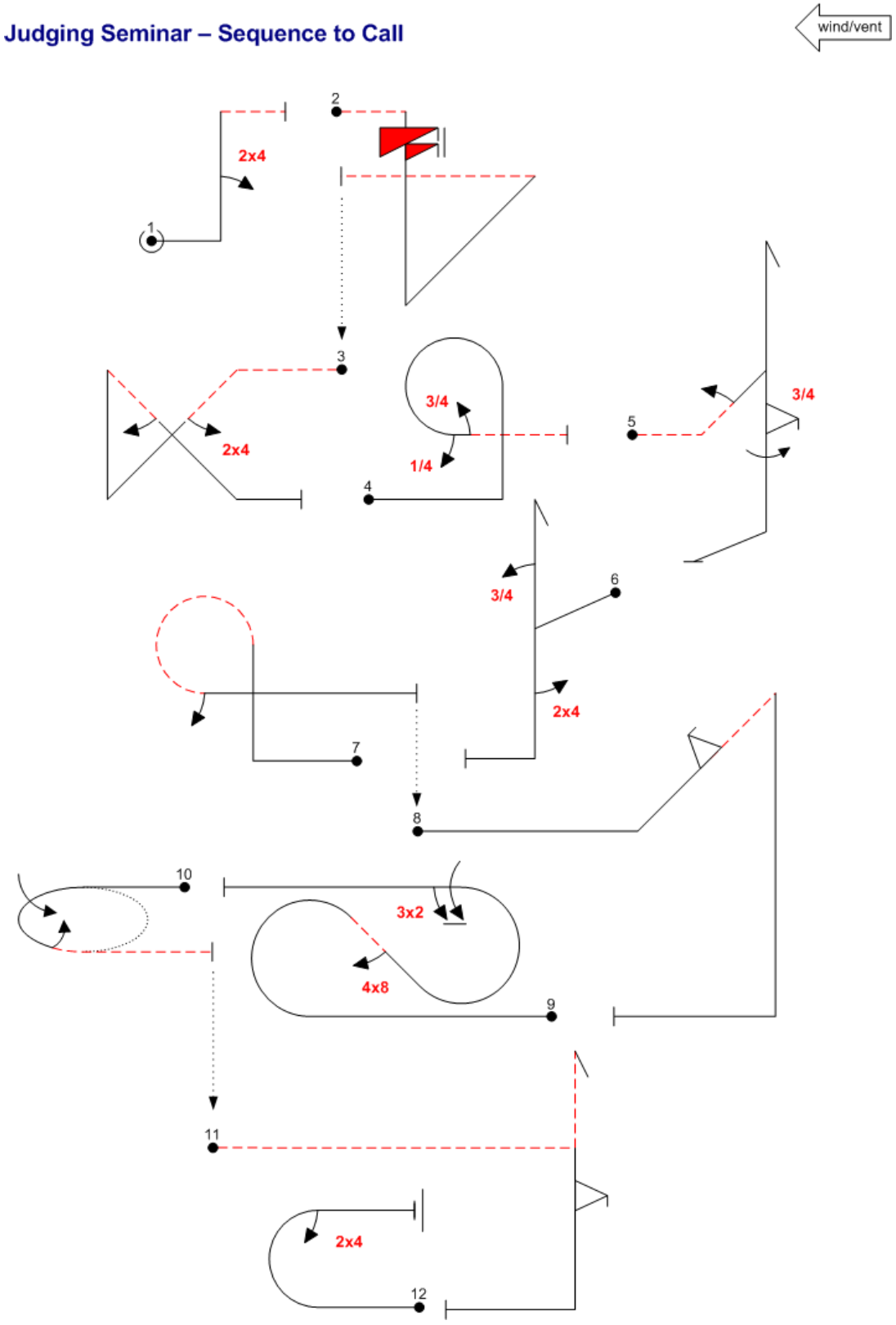
Figure six. Pull vertical, two by eight roll up into three quarter positive loop with 4-point roll at the top, double roll when horizontal, exit right erect. End

Figure seven. Two-seventy rolling turn with one roll out and half roll in *(looks up to check, says "OK")*, exit cross-box inverted. End

Figure eight. Push to vertical, quarter roll up to canopy-up tailslide, full positive flick down, pull erect – exit right. End

Figure nine. Pull-push-pull humpty, three-by-four point roll up, three-quarter roll down, pull erect – exit left. End of sequence.

Here's your own "Practice Calling" sequence, using the diagram below:
First – mark the sheet!



The CIVA FairPlay system used in the ACRO scoring software

This is extracted from the "Help" section of the ACRO program, describing what FPS actually does. See also https://www.acro-online.net/ACRO-Format-Explanations.htm for more info on this topic.

The FairPlay System (FPS) - why do we need a "system" at all?

Aerobatic sequences are usually judged by 5-8 judges, and it is unlikely that each judge will see the same inaccuracies or even assess them in precisely the same way. Each judge's experience and possibly their time as a competitor will influence their personal style to favour or disadvantage some flight characteristic, pilot or aeroplane. Because in our marking system we subtract the faults we see from a bank of ten marks for each figure, a generous or inexperienced judge will tend to give higher marks and can be more influential than his stricter colleagues. This is a normal and unavoidable human characteristic – nothing is wrong, it is simply a reflection of the differing ways we are all learn to run our lives.

These individual responses create marks variations that can be significant, and will affect the fairness of the result. Minor anomalies can be left to 'average out' between the judges, but in instances where one or more judges marks clearly do not fit the overall panel view or even perhaps their own style of marking it would be unreasonable to ignore them. For these 'unusual' marks a carefully engineered detection and resolution system is essential. This can also provide the raw material for a thorough analysis of the performance of each judge in comparison to other panel members, a vital tool in judge assessment and longer term training.

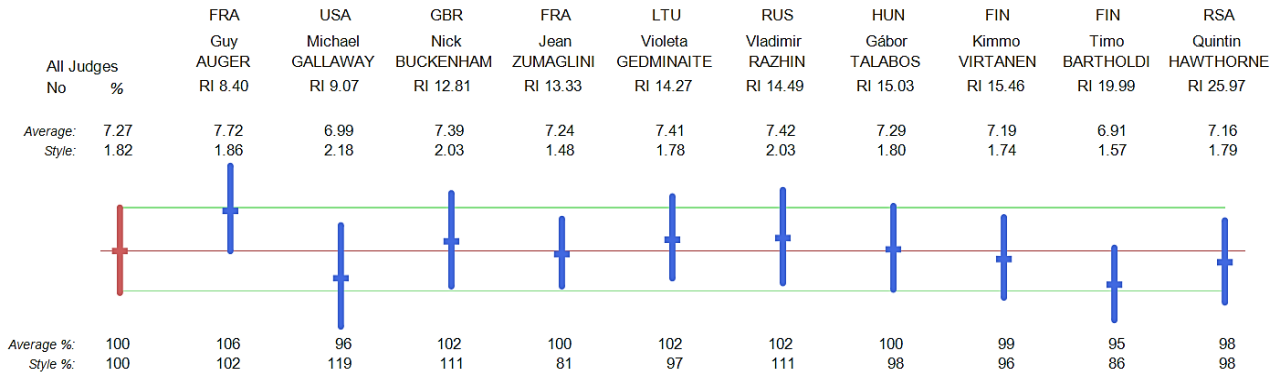
What does FairPlay do?

1. <u>It separates the marks into suitable "Groups" for analysis</u>:

First the system divides all the Judges' marks into tabular groups of data, using the figures themselves in Free Known and Free Unknown sequences or the figure type (Aresti family and SuperFamily) for Free sequences or if necessary simply the figure K-factor values, so that within each group the pilots have all executed the same or very similar figures. The judgements applied to each figure should now be confined to a relatively narrow range, and the marks recorded by the panel should be similar. In this way the system strives always to compare like with like.

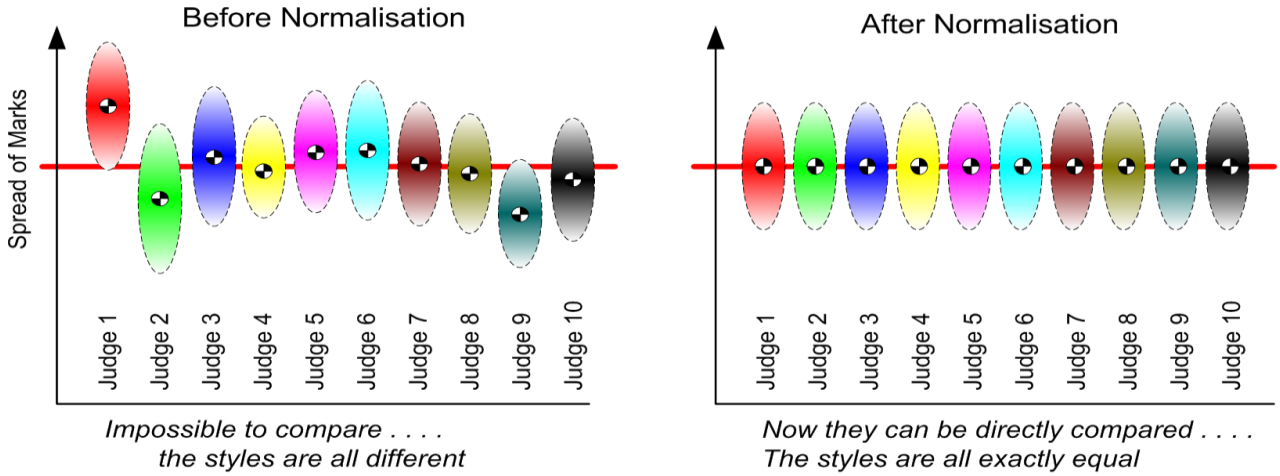
2. <u>It "normalises" the marks in each Group</u>:

In every sequence the judging 'styles' will always be different, even though all judges see the same things and all follow the same downgrading rules to arrive at their marks. For example, here is the Chief Judges Raw Grades graphic for all figures in the 2nd Free Unknown at WAAC 2012:



You can see that their average marks vary from 6.91 to 7.72 (+/- 0.406) and the spread of marks (here shown by 2x the Standard Deviation for each judge) ranges from 1.48 to 2.18 (+/- 0.350).

Within the figure data groups FairPlay 'normalises' each Judges complete set of marks, to level or balance them by comparison with the other Judges. To do this, FPS moves each judges' whole set of marks up or down so that the average of each one becomes the same as the all-judges average, and at the same time it increases or reduces the vertical spread of marks so they all become equal to the all-judges average spread. For each judge this doesn't change the *relative* marking of each



pilot, but as all judges have now been brought to the same 'style' it becomes possible to make comparisons between the judges' marks for each figure.

After normalisation therefore each Judge will have equal status within the group, the effects of their experience and style are effectively eliminated, and the marks can be assessed figure-by-figure / judge-by-judge on a fair and equivalent basis.

This 'normalisation' method is commonly used to precede many types of statistical analysis. It ensures that apparently similar streams of data are free of embedded style and bias differences and the elements they contain can be reliably compared with each other.

3. FPS now looks for "odd" marks and resolves them:
Now the system seeks out unusual or ill-fitting marks within each group on a statistical basis, by testing each against a reference value that has been calculated to represent the ideal mark for each judge and each figure. Any marks that fail this uncertainty test are considered to be unsuitable, and should be replaced by another statistically averaged value calculated after all the anomalies have been removed – i.e. it is uninfluenced by the discarded "odd" marks.

4. Next it calculates the pilots points totals per judge and looks for "odd" scores:
The adjusted marks provided by the above stages can now combined with their K-factors to produce a points total for each judge / each figure flown, and these are totalled to provide an overall score per judge for each pilot. The last stage of FairPlay uses the normalisation technique again, this time on the judges' scores for each pilot, to ensure that any remaining overall bias is

detected and eliminated. The scores are now considered to be completely free of any detectable anomalies, and can reliably be used create the table of results.

Deduction of pilots Penalties
Following the above stages, any penalties that have been approved by the Chief Judge are subtracted from the marks of the pilots concerned, and the final table of results can be published.

Using FairPlay as a training tool
Two Judging Analyses have been developed in ACRO to complement the Ranking Index required by CIVA, which you can see for each judge in section-2 above. These are the starting point to see if there are any patterns in the judging that clearly differ from the majority view. Each year CIVA uses the order of the RI's, i.e. 1, 2, 3 and so on (not the RI values themselves) from each event in the previous year as their initial guide in the selection process for all championship judging panels.

a) The Judges Individual Sequence Analysis:
For each Judge a report is published showing every "raw" mark given for every pilot, together with the FPS handling of each mark and the totalled sequence marks, with boxes added to show data that the system has changed. Pilots are ranked by the panel FPS mark before penalties are applied, and a comparison made with the judges personal ranking after processing has been applied to resolve requests for "AV"s. The changed data is summarised and a graphic shows the judges' use of each possible mark (10.0 to 0.0 and HZ) compared to the FPS panel average – this reveals for instance the uneven use of marks of whole marks and half marks.

These reports provide a comprehensive resource for judges to review their performance by comparison with output from the panel as a whole. The decision taken by CIVA many years ago to publish this information alongside the championship results has undoubtedly helped develop a robust and confident pool of judges respected by everyone associated with these events.

b) The Overall Judging Analysis:
This report is reserved for the Chief Judge only, and can show data for a single sequence or any collection of them. It collates the data from all the Judges in the key categories assessed by FPS. The report allows the Chief Judge to review and compare the performances of each judge within each FPS area, and if necessary to discuss with a judge their handling of elements that he feels could benefit from additional attention. This is the source for the data used CIVA to give a rolling three-year average RI rank (remember it's not the RI itself but the order of judges RI's at each event) for each judge, providing the main criterion used at the initial selection stage each year.

On the following pages are some typical Judges Analysis print-outs from the ACRO scoring software that is normally used at CIVA Championships. You can find a wide range of championship data files together with some more comprehensive explanations and example print-outs and even download the ACRO scoring system by visiting:

https://www.acro-online.net

Single Sequence FPS Analysis for Judge 2 Martin Sandford

Junior Nationals, Conington Airfield, 1-3 August 2019

Intermediate - Power, 2nd Unknown Sequence

FP Rank before Penalties	Fig-1	Fig-2	Fig-3	Fig-4	Fig-5	Fig-6	Fig-7	Fig-8	Fig-9	Fig-10	Fig-11	Fig-12	Fig-13	Posi	No.	From RI marks x K's: RI / FP	J-rank	Diff
1: Maciej Kulaszewski	8.5	8.0	7.5	7.0	8.5	7.5	8.0	7.0	7.5	8.5	9.0	10.0	8.5	9.0	0	1782.0	1	
Extra 200 G-EEEK	8.03	7.53	7.29	6.53	7.90	7.24	7.50	6.64	7.06	8.23	9.00	9.91	8.07	8.55		1780.1		
2: David Farley	7.0	8.0	7.0	9.0	9.0	9.0	7.5	8.0	7.0	8.0	9.0	10.0	7.0	9.0	0	1769.2	3	-1
CAP 231 G-GKKI	6.47	7.53	6.76	8.64	8.26	8.73	6.93	7.82	6.53	7.74	9.00	9.91	6.36	8.55		1769.7		
3: Adrian Willis	8.5	9.0	8.5	9.0	7.5	8.5	7.0	7.5	8.5	7.0	8.0	8.0	8.5	8.0	0	1771.5	2	+1
Extra 200 G-EEEK	8.03	8.26	8.34	8.64	7.16	8.23	6.36	7.23	8.11	6.74	7.82	7.81	8.07	7.51		1771.5		
4: Tony Walsh	6.5	8.5	8.0	8.5	8.0	6.5	7.0	8.0	7.5	8.5	9.0	9.0	7.5	8.5	0	1700.7	4	
Extra 200 G-OLUD	5.95	7.90	7.81	8.11	7.53	6.24	6.36	7.82	7.06	8.23	9.00	8.86	6.93	8.03		1703.7		
5: Ruth Scott	8.5	7.5	8.0	8.5	HZ	8.0	7.0	7.5	8.0	7.5	9.0	9.0	8.5	9.0	1	1655.8	5	
Pitts S-2A G-ODDS	8.03	7.16	7.81	8.11	3.20	7.74	6.36	7.23	7.58	7.24	9.00	8.86	8.07	8.55		1710.4		
6: David Slater	7.0	8.0	7.0	8.5	7.0	7.0	8.0	6.5	7.0	7.0	8.0	9.0	6.5	8.5	0	1625.4	6	
Pitts S-1T G-BKPZ	6.47	7.53	6.76	8.11	6.79	6.74	7.50	6.05	6.53	6.74	7.82	8.86	5.79	8.03		1631.3		
7: David Hall	5.0	8.0	6.0	8.0	8.5	6.5	9.0	HZ	7.5	8.5	7.0	6.0	8.5	8.0	0	1552.9	7	
Pitts S-2A G-BTTR	4.38	7.53	5.71	7.58	7.90	6.24	8.64	HZ	7.06	8.23	6.64	5.71	8.07	7.51		1555.9		
8: Yair Yaniv	HZ	PZ	8.0	7.0	2.0	HZ	6.5	0.0	8.0	7.0	9.0	8.0	7.0	7.0	2	1151.9	8	
Extra 200 G-EEEK	5.29	6.35	7.81	6.53	3.12	HZ	5.79	0.00	7.58	6.74	9.00	7.81	6.36	6.47		1290.1		
	1	1	0	0	1	0	0	0	0	0	0	0	0	0	3	0		2

Figure Anomalies Summary

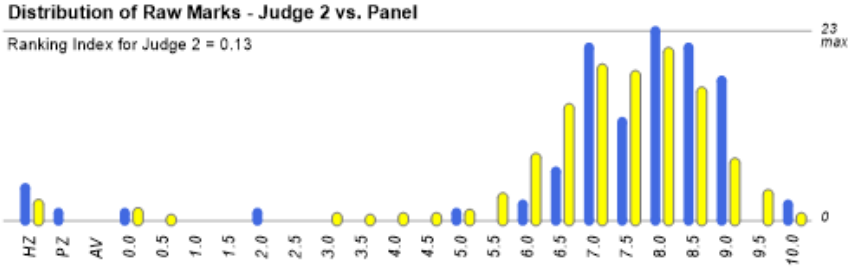
	Judge	Ovall
Mark to CHZ	-	-
PZ to CHZ	-	-
AV to CHZ	-	-
AV to Mark	-	-
PZ to Mark	1	8
HZ to Mark	2	2
Lo to Mark	-	3
Hi to Mark	-	3
The 60% Rule	-	-

Judge Anomalies vs. totals from all Judges

This Judge: Raw Marks
Panel Avge: After FPS

Distribution of Raw Marks - Judge 2 vs. Panel

Ranking Index for Judge 2 = 0.13



Judges Anomaly Review for Judge-2 Martin Sandford

Junior Nationals, Conington Airfield, 1-3 August 2019

Intermediate - Power, 2nd Unknown Sequence

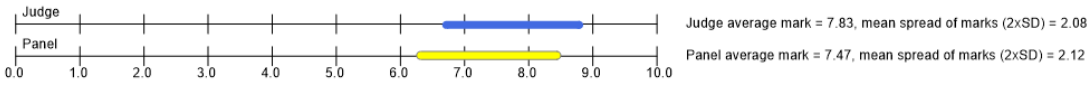
Marking anomalies:		Ch.Judge	Judge 2	Judge 3	Judge 4	Judge 5	Judge 6	CHZ's
015 Ruth Scott	Fig-5	5.0	HZ	4.5	4.0	2.0	0.0	OK
Pitts S-2A G-ODDS		4.81	3.20	3.89	3.83	3.08	0.00	
010 Yair Yaniv	Fig-1	6.0	HZ	5.5	4.5	3.0	6.5	OK
Extra 200 G-EEEK		6.12	5.29	5.78	4.65	3.74	6.17	
010 Yair Yaniv	Fig-2	6.0	Lo PZ	6.5	6.5	6.5	6.0	OK
Extra 200 G-EEEK		5.99	6.35	6.54	6.33	6.71	5.77	

Judges Style and Ranking Index Analysis for Judge-2 Martin Sandford

Junior Nationals, Conington Airfield, 1-3 August 2019

Intermediate - Power, 2nd Unknown Sequence

Judging style:



Judge average mark = 7.83, mean spread of marks (2xSD) = 2.08

Panel average mark = 7.47, mean spread of marks (2xSD) = 2.12

Judge RI = 0.132

Pilots not ranked correctly

Pilot	*Team*	*Aeroplane*	*Judge score*	*Bias Hi / Lo*	*Panel score*	*Score difference*	*Judge rank*	*Panel rank*	*Rank difference*	*RI element for this pilot*	*Percent of total index*	*RI elements ranked by decreasing size*
Adrian Willis		Extra 200	1770.9	-	1759.9	+ 10.9	2	3	+ 1	0.104	78.30%	
David Farley		CAP 231	1769.1	-	1772.2	- 3.1	3	2	- 1	0.029	21.70%	

Pilots ranked correctly

Maciej Kulaszewski	*Extra 200*	*1778.8*	-	*1803.6*	*- 24.8*	*1*	*1*	*0*	*0*	*0*
Tony Walsh	*Extra 200*	*1717.5*	-	*1719.8*	*- 2.3*	*4*	*4*	*0*	*0*	*0*
Ruth Scott	*Pitts S-2A*	*1683.7*	-	*1677.0*	*+ 6.7*	*5*	*5*	*0*	*0*	*0*
David Slater	*Pitts S-1T*	*1660.8*	-	*1666.3*	*- 5.5*	*6*	*6*	*0*	*0*	*0*
David Hall	*Pitts S-2A*	*1606.1*	-	*1574.8*	*+ 31.3*	*7*	*7*	*0*	*0*	*0*
Yair Yaniv	*Extra 200*	*1304.1*	-	*1317.4*	*- 13.3*	*8*	*8*	*0*	*0*	*0*
							Total Index:	**0.132**	**100%**	

Calculations by: FairPlay (scoring CJ + CHZ Summary)
Aerobatic Contest Results Organiser, ACRO Version 5.0 Build: 05/03/21
This report created at 13:27 on Friday 5 March 2021

Analysis of Judges Combined Anomalies

Sequence: Seq07 2nd Unknown Sequence

Junior Nationals
Conington Airfield
1-3 August 2019

Use of Marks:	All Judges No	All Judges %	Martin Sandford RI 0.13		Ian Scott RI 1.14		Brian McCartney RI 2.89		Leif Culpin RI 3.13		Rod Hervé RI 3.76		Eric Marsh RI 4.50	
HZ - Hard Zeros	10	*1.5*	4	*3.6*	2	*1.8*	2	*1.8*	2	*1.8*	2	*1.8*	2	*1.8*
PZ - Perception Zeros	7	*1.0*	1	*0.9*	0	*0.0*	3	*2.7*	3	*2.7*	0	*0.0*	1	*0.9*
Marks from 0.0 to 6.5	127	*18.9*	10	*8.9*	28	*25.0*	26	*23.2*	26	*23.2*	19	*17.0*	28	*25.0*
Marks from 7.0 to 10.0	416	*61.9*	97	*86.6*	82	*73.2*	81	*72.3*	81	*72.3*	91	*81.3*	81	*72.3*
AV - averages	0	*0.0*		*0.0*	0	*0.0*	0	*0.0*	0	*0.0*	0	*0.0*	0	*0.0*
Total marks *Pilots/Judge*	672		112	*8*	112	*8*	112	*8*	112	*8*	112	*8*	112	*8*

Style Comparison:

Average and Style of Judges Raw Marks compared to normalised all-Judges average

Style ♡ 2 x Raw SD

Vertical axis scale: 1 mark = 24mm

Raw Marks Factors:		Martin Sandford	Ian Scott	Brian McCartney	Leif Culpin	Rod Hervé	Eric Marsh
Average:	7.47	7.83	7.33	7.31	7.15	7.72	7.45
Style:	2.12	2.08	2.16	2.40	1.51	2.35	2.21
Average %:	100	+ 4.94	− 1.86	− 2.08	− 4.18	+ 3.36	− 0.18
Style %:	100	− 2.01	+ 2.06	+ 13.33	− 28.77	+ 11.13	+ 4.27

Figure anomalies

HZ to fitted value	2	*0.3*	2	-	-	-	-	-
Mark to confirmed HZ	0	*0.0*	-	-	-	-	-	-
PZ to confirmed HZ	0	*0.0*	-	-	-	-	-	-
PZ to fitted value	8	*1.2*	1	-	3	3	-	1
AV to confirmed HZ	0	*0.0*	-	-	-	-	-	-
AV to fitted value	0	*0.0*	-	-	-	-	-	-
Lo to fitted value	3	*0.4*	-	-	-	-	1	2
Hi to fitted value	3	*0.4*	-	-	-	1	-	2
The 60% Rule	0	*0.0*	-	-	-	-	-	-
Total figure anomalies	16		3	0	3	4	1	5

Sequence anomalies

Team	*Pilots assessed in FPS pass-2*	Martin Sandford	Ian Scott	Brian McCartney	Leif Culpin	Rod Hervé	Eric Marsh
Totals		1 Lo 1 Hi	- -	- -	- -	1 Lo -	- -	- 1 Hi

Multiple calculation methods used
Aerobatic Contest Results Organiser, ACRO Version 5.0 Build: 05/03/21
This report created at 13:30 on Friday 5 March 2021

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