

BAeA 2014 Judging Seminar

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 this 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 course 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 2014
- 📖 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.

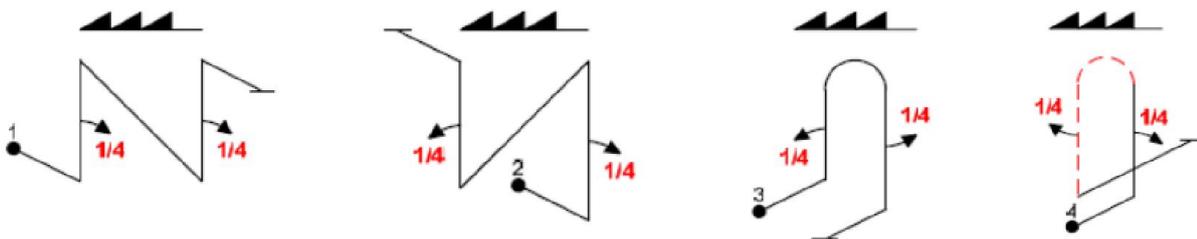
- Do you need glasses?
- If you wear them, be sure the prescription is up to date!
- Take some sun glasses – either separate ones or photo-chromic
- It is always a good idea to have a spare pair...
- Take a comfortable chair
- Take sun screen
- Have a good sun hat
- Make sure you have plenty of water 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

We need to be sure that we understand and KNOW the RULES. If you do not really understand the rules, and judging criteria, you cannot judge properly!

Figures that start and end on the cross-box axis and contain main-axis elements

Family 1 and 8 figures must be flown in relation to the official wind strictly as they are shown on the form-B/C.

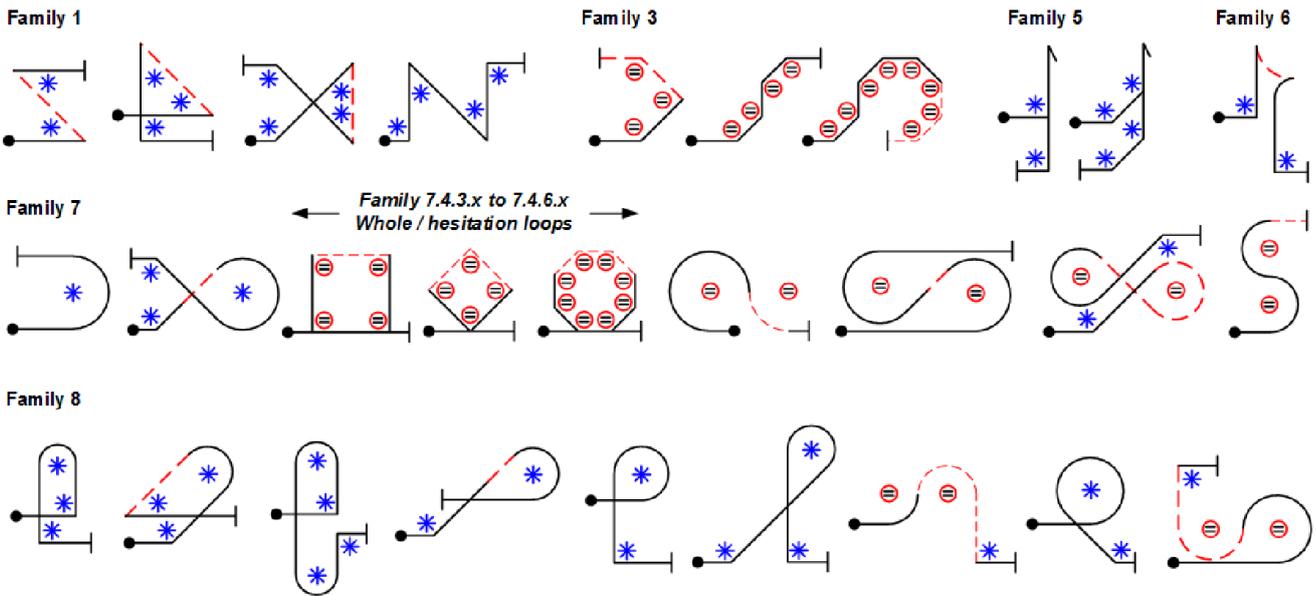


Thus the central element in the above example figures 1 and 3 must now be flown into wind, figures 2 and 4 downwind, or they will be regarded as 'wrongly flown' and awarded an HZ. Cross-box to cross-box 180° and 360° turns and rolling turns however are exempted from this obligation, the L/R direction of the turn being at the pilots' discretion. Stall turns and tail slides are also unaffected by the above, the orientation of the aeroplane in their main-axis elements remains entirely dictated by other natural choices or constraints. A key effect of this ruling is that extra care must now be taken when drawing sequences, as the orientation of affected figures does determine the way they must be flown.

Radii in Judging – 2013 onwards

- * 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)



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 2014 files you need will shortly be at:

<http://www.fai.org/civa-documents>

Click on Section 6 aerobatics

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** - this is an area often missed, even by inexperienced judges
- The judge should NEVER take his eyes off 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 PZs 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 PZs 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 PZ 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

The video may *not* be used for matters of perception, for example flicks, spin entries, length of a tail slide, errors in pitch, roll and yaw of around 45°. It may be used to confirm gross over rotation, pitch etc. exceeding 90°, and tail slide canopy-up or down decisions. 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".
- **Perception Zero:** In flick-rolls, spins and tail-slides, and some specific moments for gliders, an error of perception (flick / spin did not auto-rotate, slide didn't slide enough) must be graded PZ (a Perception Zero). The judges’ decision here is not changeable in post-flight discussion *except* where the CJ instructs *all* judges to give an HZ - CIVA 5.3.4.3. If a PZ is subsequently rejected by the FairPlay System then it will automatically be replaced by a normal judge’s “AV” and thus that judges RI will be completely unaffected.
- **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 PZ
- 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 PZ or 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 PZ 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.

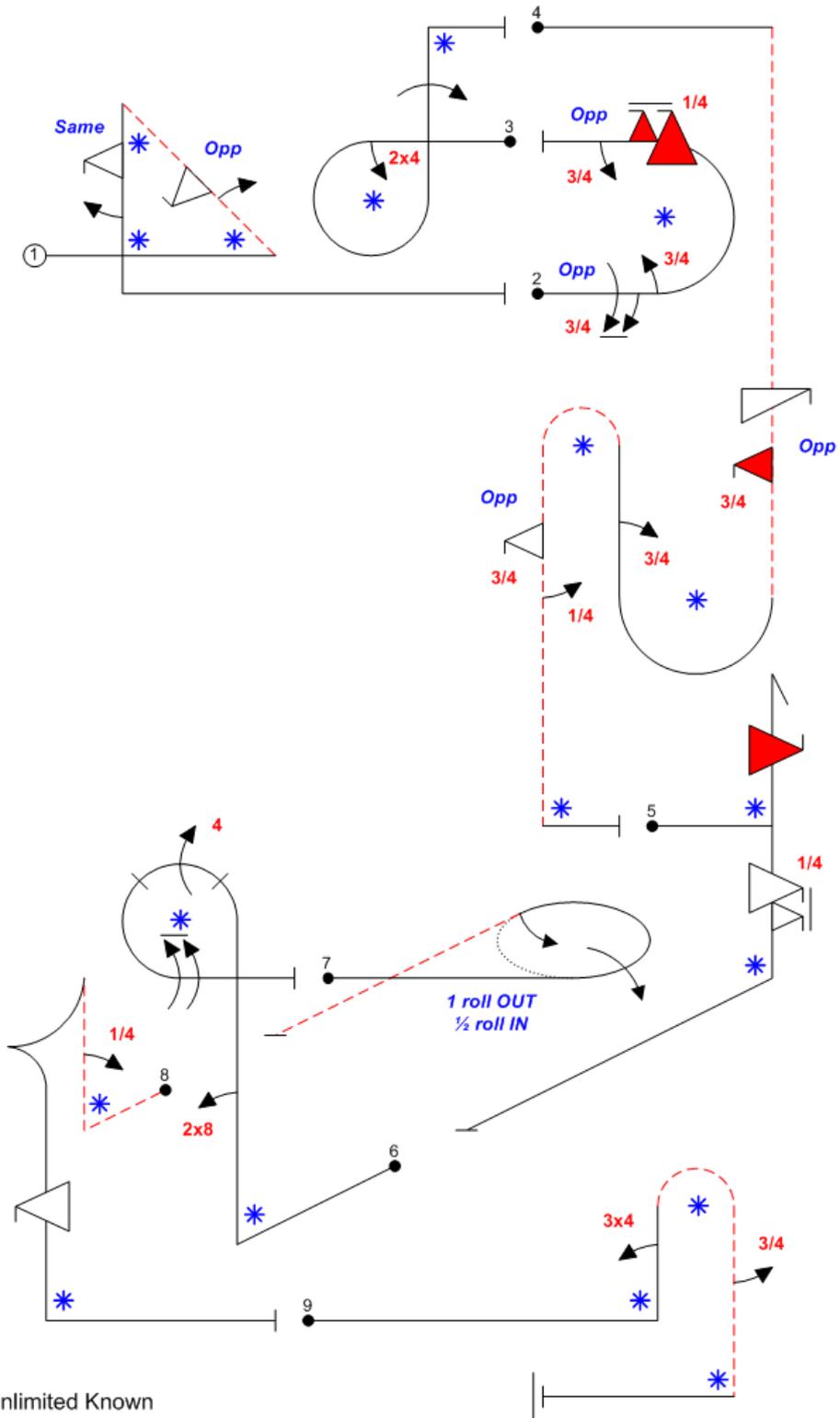
Now – we must also consider Symmetry

The left / right symmetry of the whole flight is also a part of the positioning mark. Ignoring all the Fars and Nears, look through the Left and Right positioning letters you have recorded. If there are more of one than the other, the difference should be added to the general positioning downgrade above.

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:



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 PZ ... three quarters good. Position right, Perception Zero.

SCRIBE

PZ 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

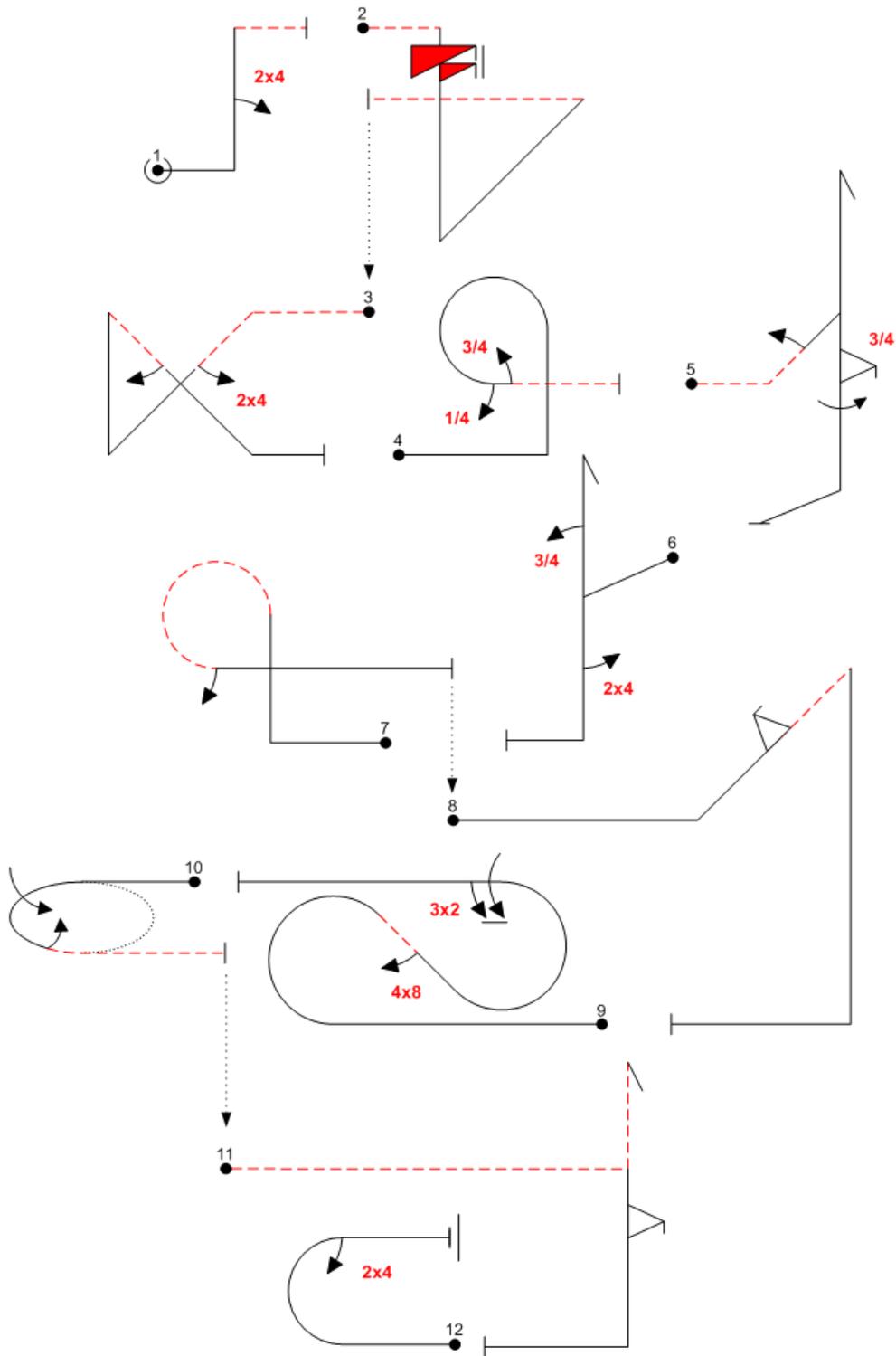
Figure seven. Two-seventy rolling turn with one roll out and half roll in (*looks up to check, says "OK"*), exit cross-box inverted. End

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 "Practice Calling" session, using the sequence below:
First – mark the sheet!

Judging Seminar – Sequence to Call



The CIVA FairPlay system used in the ACRO and ACMS software

This is extracted from the explanation in the “Help” section of the ACRO program, and neatly describes what both ACRO and Michel DuPont’s ACMS systems do.

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

Aerobic sequences are usually judged by 5-8 judges, and it is unlikely that each judge will see the same 'faults' and assess them in precisely the same way. Also each judge’s experience and perhaps their prior time as a competitor will influence their personal style to favour or disadvantage some pilot, aeroplane and flight characteristics. Because in our marking system we subtract the faults we see from a bank of ten marks, the ‘kind’ or inexperienced judge will tend to give higher marks and so be more influential than his harsher colleagues – the reverse of what we would like to see!

These unavoidable human characteristics create marks variations that can be significant and will put the fairness of the result in doubt. While minor anomalies can be casually left to 'average out' between the judges, in instances where one or more judges marks clearly do not fit the overall panel view or even 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 foundation for a thorough analysis of the performance of each judge in comparison to his or her peers, a vital tool in judge assessment and longer term training.

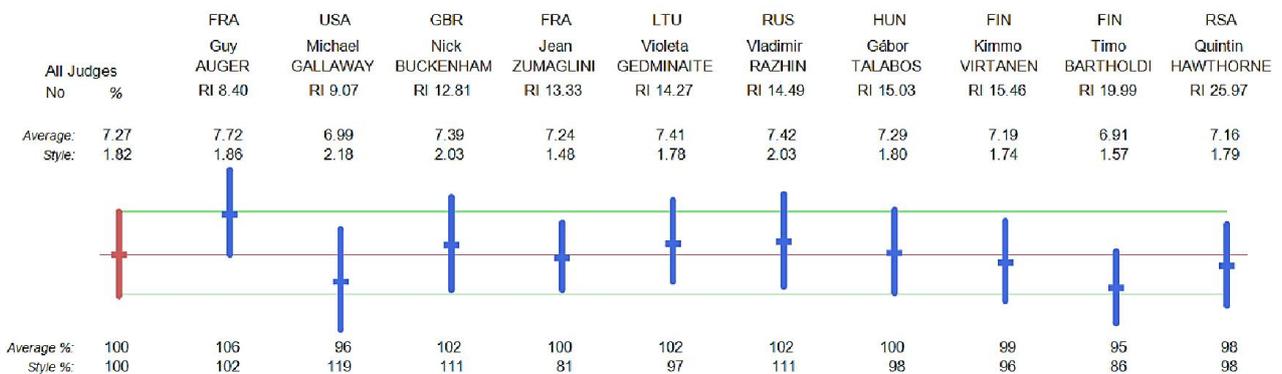
What does FairPlay do?

1. It divides the marks into suitable “Groups” for analysis:

First the system uses figure type (Aresti family and SuperFamily) and figure complexity (K factor) to divide all the Judges' marks into tabular groups of data, so that within each group the pilots have all executed identical or very similar figures. This ensures that the judging expertise applied to each figure was confined to a relatively narrow range, and the marks should be very similar. In this way the system strives always to compare like with like.

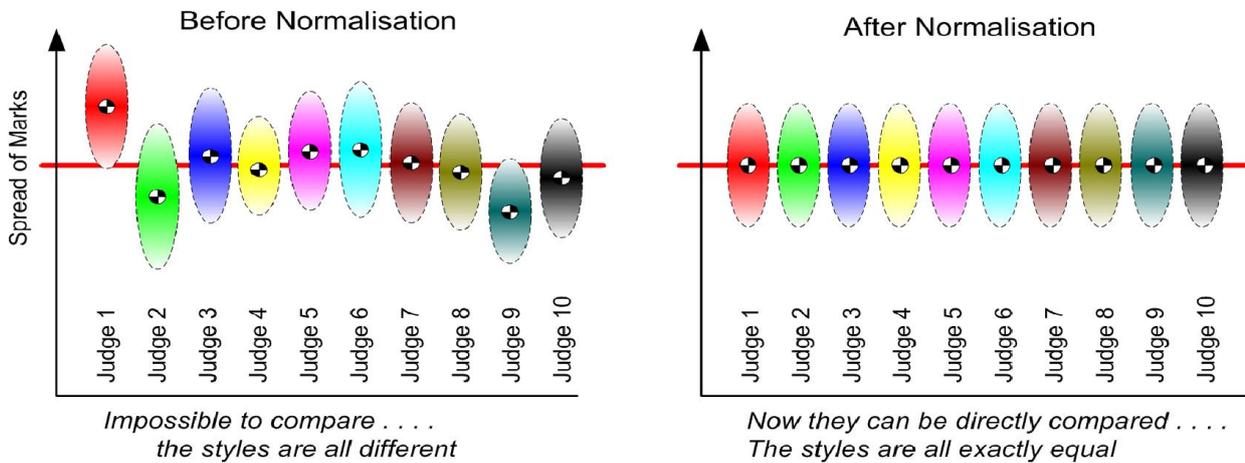
2. It “normalises” the marks in each Group:

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 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 is possible to make direct comparisons between the judges' marks for each figure.

After normalisation therefore each Judge will have equal status within the group, the effects of 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 as a pre-cursor in many areas of statistical analysis, to ensure that apparently similar streams of data are free of embedded style and bias differences and may thereafter be reliably compared with each other.

3. It looks for "odd" numbers and resolves them:

Now FairPlay seeks out unusual or ill-fitting marks within each group on a statistical basis, by testing each against a Fitted 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 are discarded, in each case being replaced by another Fitted Value that is calculated after all the anomalies have been removed – i.e. it is uninfluenced by the discarded "bad" marks.

4. It calculates pilots points totals per judge, then looks for "odd" data and resolves them:

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 is to use the normalisation process 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 completely free of any detectable anomalies, and can reliably be used create the table of results.

5. It subtracts the pilots Penalties:

Finally any penalties that have been given 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 entirely new Judging Analysis formats have been developed in ACRO to complement the Ranking Index required by CIVA. These are the starting point to see if there are any patterns in the judging that clearly differ either from the majority view or the CIVA rule-book, which can be used to guide local advice or more extended training to address the issues seen.

a) The Judges Individual Sequence Analysis:

Here each Judge receives a personal report showing every “raw” mark given for every pilot, together with the FPS handling of each mark and the 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 the minimum processing has been applied to resolve requests for “AV”s. The changed data is summarised and a histogram given that shows the judges use of each possible mark (10.0 to 0.5, SZ and HZ) compared to the FPS panel average – this very clearly reveals for instance the uneven use of marks of whole marks and half marks. The judges’ CIVA indexes are given too.

The report provides a comprehensive resource for each judge to review his/her individual performance by comparison with the FPS view of the panel as a whole. Each judge would not normally see the reports from any other judges!

b) The Overall Judging Analysis:

This report is for the Chief Judge only, and can be produced either for one single sequence or a collection of sequences. It collates the data from all the Judges in the many categories assessed by FPS, as shown in each judges individual sequence analysis sheet. 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 his/her handling of elements that he feels would benefit from additional attention. This is the source for the data that is collated by CIVA and used as the basis for ongoing international judge selections: the Ranking Index for each judge / for all sequences at each event is averaged and added to the CIVA Judging Database to give a rolling three-year average RI for every 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:

<http://www.exploit-design.com/AeroSoftware/ACRO-Format-Explanations.htm>

Judges Single Sequence Processed Marks Analysis for J2 - Some Judge

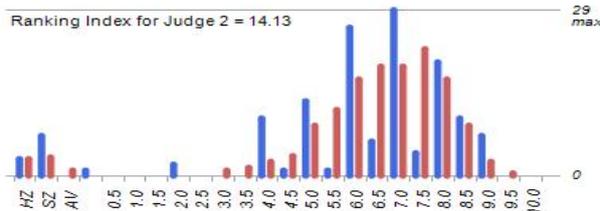
Icicle & Newbold Trophies, Sandtoft, 10th April

Level: Advanced - Power, Sequence: 1st 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	Posi	No.	From RI marks x K's: RI / FP	J-rank	Diff
1: 007 Alan Cassidy Pitts S-1T N-666BM	7.0	7.0	7.0	6.0	8.5	9.0	8.0	8.5	7.0	6.5	8.0	0	2125.7	1	
2: 010 Nick Wakefield Pitts S-1T G-WILD	7.0	8.0	8.5	7.0	6.5	8.5	6.0	7.0	7.0	7.5	0	2103.8	2		
3: 024 Paul Tomlinson Edge-360 G-ZVKO	7.35	8.17	8.35	7.41	6.53	7.69	6.39	7.23	6.82	6.89	7.42	0	2092.3		
4: 013 Gary Ferriman Extra-230 G-ROMP	6.5	8.0	8.5	7.0	8.0	8.0	7.0	9.0	2.0	8.0	8.5	0	2078.0	3	
5: 027 Marco Kalweit Pitts S-2C G-FDPS	7.04	8.17	8.35	7.41	7.66	7.37	7.03	8.66	2.96	7.31	8.68	0	2068.1		
6: 006 Eddie Goggins Extra-300L G-IJMI	4.0	5.0	9.0	6.0	6.5	Lo SZ 7.44	8.0	6.0	7.0	6.5	8.5	1	1824.3	7	-3
7: 016 Ron Allan Pitts S-2B G-III	5.48	5.72	8.77	6.10	6.53	7.67	6.52	6.82	6.05	8.68	2007.5	0	1931.0	5	
8: 011 Richard Buchan CAP 231 G-OZZO	9.0	8.0	7.0	6.0	8.5	8.0	4.0	4.0	5.5	8.0	0	1924.1			
9: 026 Simon Cattlin Yak-55M G-NOIZ	8.59	8.17	7.09	6.10	8.04	7.37	5.11	5.09	4.51	5.21	8.05	0	Hi 1999.1 1779.8	4	+2
10: 023 Brian McCartney Pitts S-2A G-TIII	8.0	9.0	9.0	7.5	8.5	HZ	8.5	7.0	7.0	6.0	7.0	0	1664.0	8	-1
11: 017 Tony Maxwell Pitts S-2B G-III	7.97	8.98	8.77	8.07	8.04	HZ	7.99	7.23	6.82	5.63	6.79	1	1668.6	10	-2
12: 019 Cas Smith Pitts S-2A G-ICAS	7.0	AV 8.19	7.0	7.0	4.0	5.0	8.0	6.0	SZ	4.0	7.0	0	1608.6	11	+1
13: 028 Andrew Holman-West Yak-50 G-YKSO	6.0	6.0	7.0	6.0	6.0	4.0	5.0	6.0	SZ	5.0	8.0	0	1618.0		
	6.73	6.53	7.09	6.10	6.15	4.84	5.75	6.52	0.00	4.78	8.05	0	1608.6	10	-2
	8.0	7.0	7.5	6.0	7.0	AV 5.64	HZ	AV 7.74	Lo SZ 5.45	AV 4.74	6.0	4	1457.4	12	-3
	7.97	7.35	7.51	6.10	6.91	5.64	5.64	7.74	5.45	4.74	5.53	0	1671.4		
	7.0	7.0	8.0	6.0	6.0	6.0	4.0	7.0	5.0	HZ	6.0	0	1656.7	9	+1
	7.35	7.35	7.93	6.10	6.15	6.10	5.11	7.23	5.28	HZ	5.53	0	1662.6		
	7.0	7.0	8.0	5.0	5.0	5.0	8.0	9.0	4.5	8.0	7.0	0	Hi 1882.5 1663.4	6	+5
	7.35	7.35	7.93	4.79	5.40	5.47	7.67	8.66	4.89	7.31	6.79	0	1663.4		
	8.0	7.0	6.0	6.0	4.0	2.0	6.0	5.0	SZ	6.0	6.5	0	1528.2	11	+1
	7.97	7.35	6.25	6.10	4.64	3.57	6.39	5.80	0.00	5.63	6.16	0	1538.0		
	4.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	SZ	SZ	5.0	0	1266.5	13	
	5.48	5.72	5.41	4.79	6.15	6.10	6.39	6.52	0.00	0.00	4.27	0	1290.8		
	0	1	0	0	0	2	0	1	1	0	6	2	18		

Use of Marks:

Mark to CHZ	-
SZ to CHZ	-
AV to CHZ	-
AV to Mark	4
SZ to Mark	2
HZ to Mark	-
Lo to Mark	-
Hi to Mark	-
The 60% Rule	-



Aerobic Contest Results Organiser, Version 3.0 Build 28-01-11
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Judges Anomaly Review for J2 - Some Judge

Icicle & Newbold Trophies, Sandtoft, 10th April

Level: Advanced - Power, Sequence: 1st Unknown Sequence

Marking anomalies:

	Ch. Judge	Judge 2	Judge 3	Judge 4	Judge 5	CHZ's
013 Gary Ferriman Extra-230 G-ROMP	Fig-6 8.0	Lo SZ 7.44	7.5	7.0	7.0	OK
016 Ron Allan Pitts S-2B G-III	Fig-2 7.0	AVGE 8.19	8.03	7.09	6.72	OK
026 Simon Cattlin Yak-55M G-NOIZ	Fig-6 5.0	AVGE 5.64	8.5	9.5	8.0	OK
026 Simon Cattlin Yak-55M G-NOIZ	Fig-8 5.58	AVGE 5.64	8.15	8.84	7.93	OK
026 Simon Cattlin Yak-55M G-NOIZ	Fig-8 6.0	AVGE 7.74	6.0	6.0	6.0	OK
026 Simon Cattlin Yak-55M G-NOIZ	Fig-9 7.08	AVGE 7.74	8.0	8.5	8.0	OK
026 Simon Cattlin Yak-55M G-NOIZ	Fig-9 5.0	Lo SZ 5.45	7.61	8.05	8.21	OK
026 Simon Cattlin Yak-55M G-NOIZ	Fig-10 6.58	AVGE 5.45	7.31	5.24	5.62	OK
026 Simon Cattlin Yak-55M G-NOIZ	Fig-10 5.0	AVGE 4.74	AVGE	3.0	6.0	OK
	5.12	4.74	4.74	4.03	5.76	

Score anomalies:

006 Eddie Goggins Extra-300L G-IJMI	1767.0	Hi 1999.1 1779.8	1852.2	1776.5	Lo 1591.1 1850.3
017 Tony Maxwell Pitts S-2B G-III	1714.8	Hi 1882.5 1663.4	1560.1	1616.9	1703.7



Aerobic Contest Results Organiser, Version 3.0 Build 28-01-11
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Analysis of Judges Combined Anomalies

Sequence: Programme 2: FreeUnknown Compulsary (ADV)

9th FAI WAAC

Radom

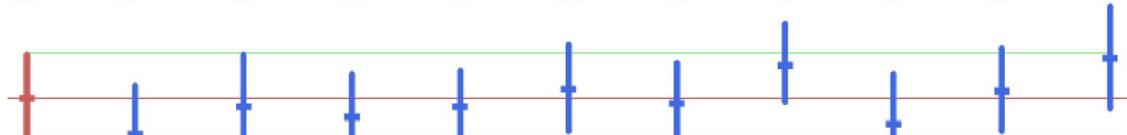
05. - 15. Aug. 2010

Use of Marks:	All Judges		RUS	POL	FRA	UKR	LTU	FIN	DEN	RSA	GER	USA
	No	%	Kotelnikov, Vladimir RI 9.92	Bialek, Maciej RI 15.38	Courtois, Bernard RI 15.59	Zelenina, Lyudmila RI 16.37	Gedminaitė, Violeta RI 16.97	Virtanen, Kimmo RI 17.76	Maxen, Jan RI 18.03	Hawthorne, Quintin RI 19.17	Borowik, Isabella RI 27.52	Adams, Tom RI 29.73
HZ - Hard Zeros	116	1.3	10 1.2	9 1.0	11 1.3	10 1.2	11 1.3	11 1.3	13 1.5	12 1.4	14 1.6	15 1.7
SZ - Soft Zeros	31	0.4	4 0.5	1 0.1	3 0.3	2 0.2	0 0.0	0 0.0	3 0.3	9 1.0	7 0.8	2 0.2
Marks from 0.5 to 6.5	1864	21.5	247 28.5	222 25.6	232 26.8	167 19.3	107 12.3	157 18.1	101 11.6	300 34.6	185 21.3	146 16.8
Marks from 7.0 to 10.0	6650	76.7	606 69.9	635 73.2	620 71.5	688 79.4	747 86.2	699 80.6	748 86.3	546 63.0	660 76.1	701 80.9
AV - averages	9	0.1	0 0.0	0 0.0	1 0.1	0 0.0	2 0.2	0 0.0	2 0.2	0 0.0	1 0.1	3 0.3
Total marks ... (Pilots/Judge)	8670		867 ... (58)	867 ... (58)	867 ... (58)	867 ... (58)	867 ... (58)	867 ... (58)	867 ... (58)	867 ... (58)	867 ... (58)	867 ... (58)

Style Comparison:

Average	7.32	6.99	7.24	7.17	7.24	7.41	7.30	7.65	7.08	7.39	7.70
Style	1.63	1.74	1.90	1.53	1.33	1.64	1.39	1.46	1.84	1.56	1.92

Average and Style of Judges Raw Marks compared to normalised all-Judges average (Style = 2 x SD)



Vertical axis scale: 1 mark = 24mm

Raw Marks Factors:

Average %	100	95	99	98	99	101	100	105	97	101	105
Style %	100	107	117	94	82	101	85	89	113	95	118

Figure anomalies

HZ to fitted value	35	0.4	1	2	2	1	3	2	6	3	6	9
Mark to confirmed HZ	10	0.1	-	2	-	-	1	1	2	-	1	3
SZ to confirmed HZ	0	0.0	-	-	-	-	-	-	-	-	-	-
SZ to fitted value	22	0.3	2	-	2	1	-	-	2	8	5	2
AV to confirmed HZ	0	0.0	-	-	-	-	-	-	-	-	-	-
AV to fitted value	9	0.1	-	-	1	-	2	-	2	-	1	3
Lo to fitted value	114	1.3	9	9	11	10	15	12	9	13	13	13
Hi to fitted value	53	0.6	7	5	4	5	8	7	5	1	5	6
The 60% Rule	20	0.2	2	2	2	2	2	2	2	2	2	2
Total figure anomalies	263		21	20	22	19	31	24	28	27	33	38

Sequence anomalies

CZE Czech Republic	1 Lo 0 Hi	-	-	-	-	-	-	-	-	1 Lo	-	-
FIN Finland	0 Lo 1 Hi	-	-	-	-	-	-	-	-	-	-	-
FRA France	1 Lo 2 Hi	-	-	-	-	-	-	-	-	-	-	-
GER Germany	0 Lo 2 Hi	-	-	-	-	-	-	-	-	-	-	-
GBR Great Britain	2 Lo 2 Hi	-	-	1 Lo	-	-	-	-	1 Lo	-	-	-
HUN Hungary	3 Lo 3 Hi	-	-	-	1 Lo	1 Lo	-	-	1 Hi	1 Hi	1 Lo	-
RUS Russia	1 Lo 2 Hi	-	1 Hi	-	-	-	1 Hi	-	-	-	-	1 Lo
SLO Slovenia	0 Lo 1 Hi	-	-	-	-	-	-	-	-	-	-	1 Hi
RSA South Africa	2 Lo 3 Hi	1 Lo	-	-	-	-	-	1 Lo	1 Hi	-	-	-
USA United States	3 Lo 3 Hi	-	-	-	1 Hi	-	-	-	-	1 Lo	-	1 Lo
POL Poland	1 Lo 0 Hi	1 Lo	-	-	-	-	-	-	-	-	-	-
BLR Belarus	1 Lo 0 Hi	-	-	-	-	-	-	1 Lo	-	-	-	-
UKR Ukraine	4 Lo 2 Hi	1 Lo	-	-	1 Lo	-	-	-	1 Hi	1 Lo	-	1 Hi
LTU Lithuania	2 Lo 0 Hi	1 Lo	-	-	-	-	-	-	1 Lo	-	-	-
Total sequence anomalies	21 Lo 21 Hi	4 Lo 1 Hi	1 Lo 1 Hi	2 Lo 2 Hi	2 Lo 1 Hi	1 Lo 1 Hi	2 Lo 5 Hi	3 Lo 1 Hi	3 Lo 3 Hi	3 Lo 2 Hi	- 4 Hi	



Aerobic Contest Results Organiser, Version 3.0 Build 28-01-11
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