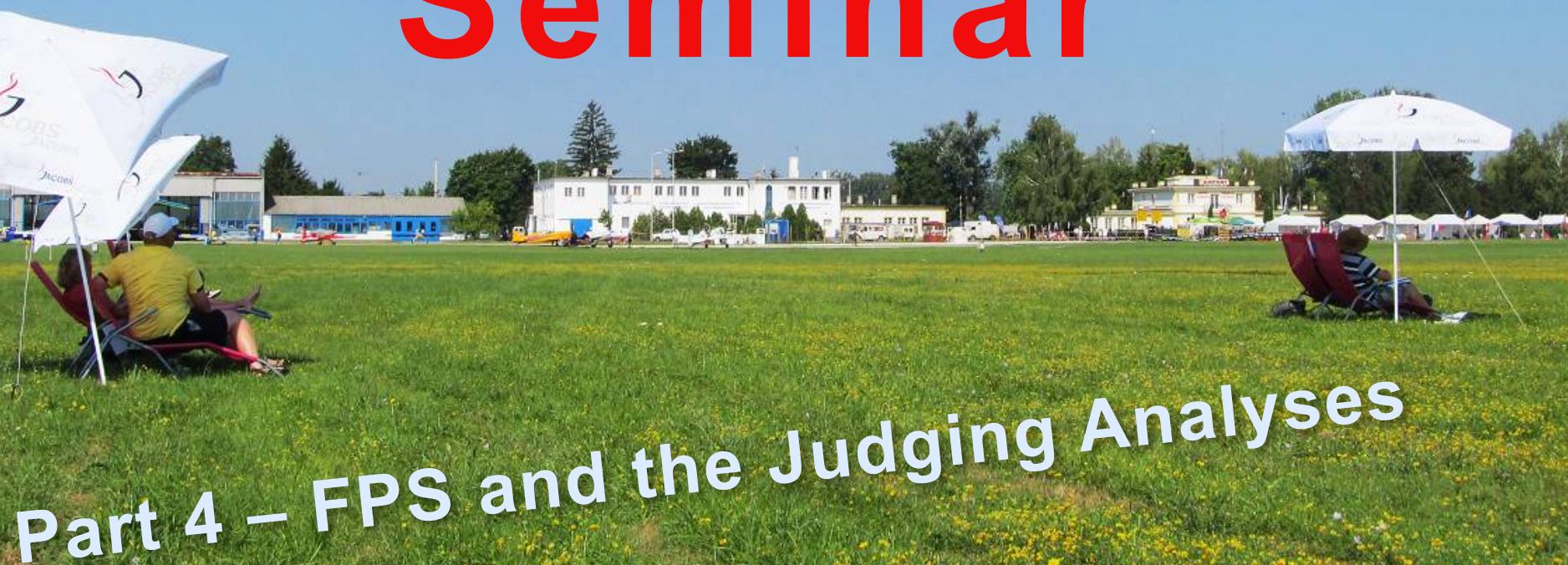


CIVA / FAI International

Aerobatic Judging Seminar



Part 4 – FPS and the Judging Analyses

Remember! a Judge is ...

- ***Detective***
- ***Examiner***
- ***Analyst***
- ***Interpreter***
- ***Reviewer***
- ***Theatre critic***
- ***Commentator***
- ***Pilot ...***

A competition aerobatic sequence is a demonstration of aircraft control requiring extreme levels of technical ability and discipline from the Pilot.

The Pilot attempts to convince the Judges that the figures are flown exactly according to the rules.

The Judges view the performance to discover where the rules are not fully met. They award downgrades for imperfections and errors seen.

An aerobatic Judge uses ALL of these skills to mark the performance properly.

***Calculating
and
Measuring***

Contest Results Judge Performance

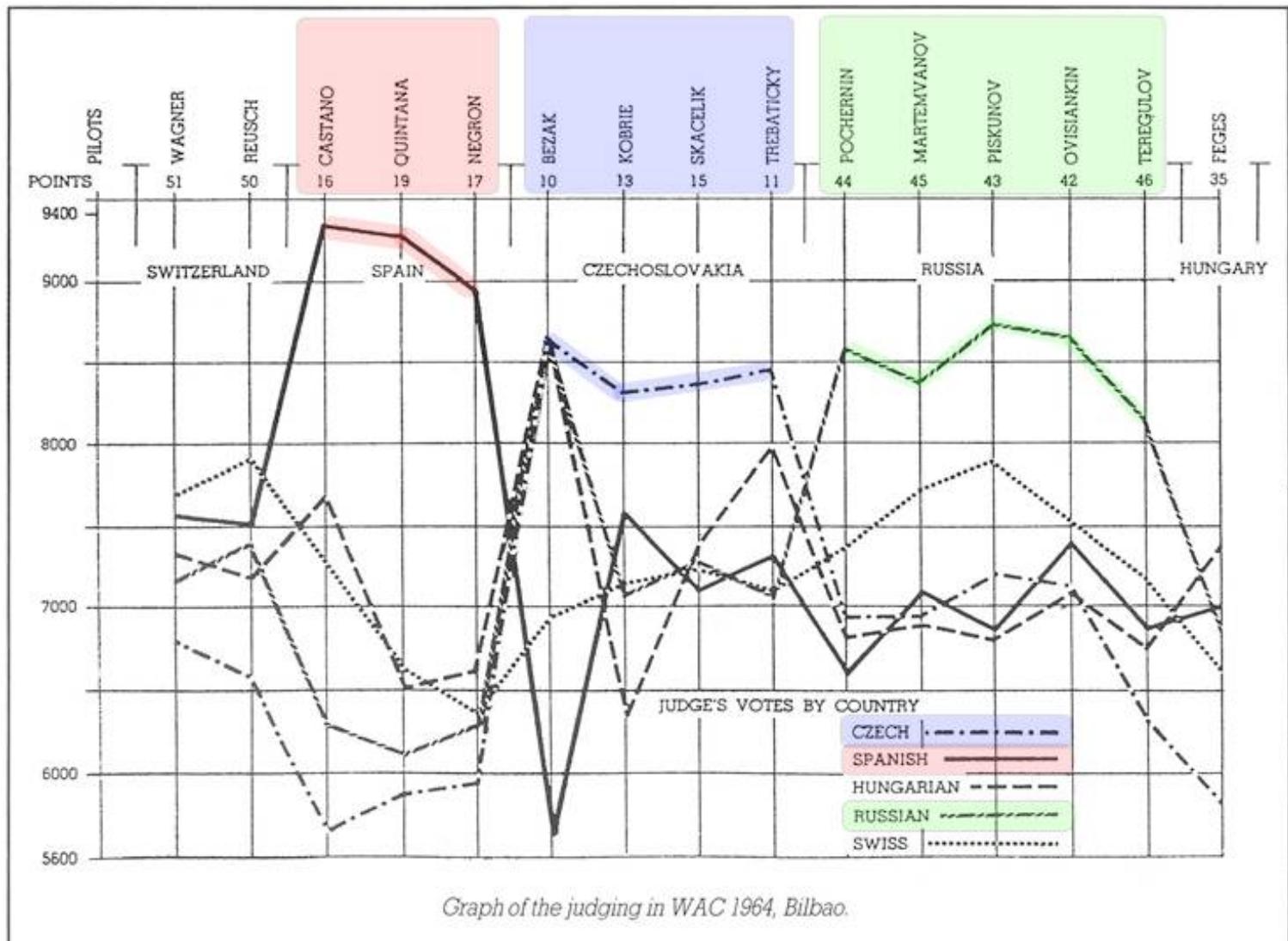
Let's look at:

- 1. Why and how CIVA calculates the Pilots scores so that they are FAIR**
- 2. How we review the performance of each Judge, comparing their marks with the statistical “average” of the output from whole judging panel**

Why 'FairPlay' and ACRO?



Is this what you'd call “Fair play” ?



The FairPlay Statistical System

Why do we need it?

- Judges don't all see the same things all the time
- We must eliminate style and unconscious bias
- Small differences are OK
- Major differences are problems to be resolved in a sensitive and appropriate manner

Causes:

- Poor team work
- Poor understanding
- Poor application of the rules

How does FPS work? It:

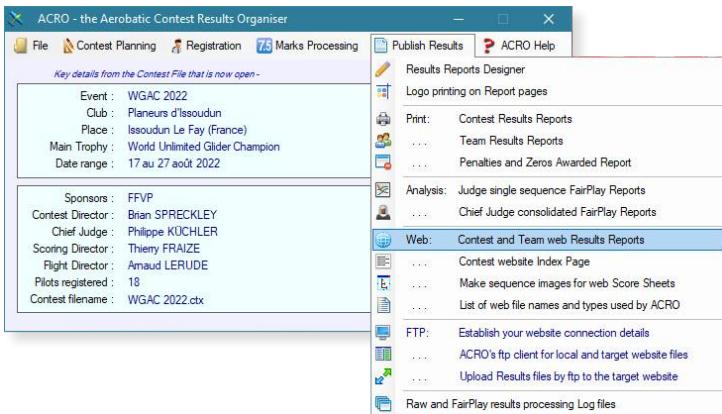
1. Divides the figures into suitable groups by K-factor & figure type
2. Normalises the groups of marks to eliminate individual judging style
3. Sets 'wrong' HZ's and marks and also any 'AV's to "*Missing*"
4. Tests every mark, and if any are not acceptable or "*Missing*" it replaces them with a calculated Fitted Value
5. Makes a table of scores, normalises them and tests again for BIAS
6. Subtracts the penalties to give the sequence **Final Results**

The ACRO scoring software includes both Raw Grade scoring and the CIVA FairPlay System



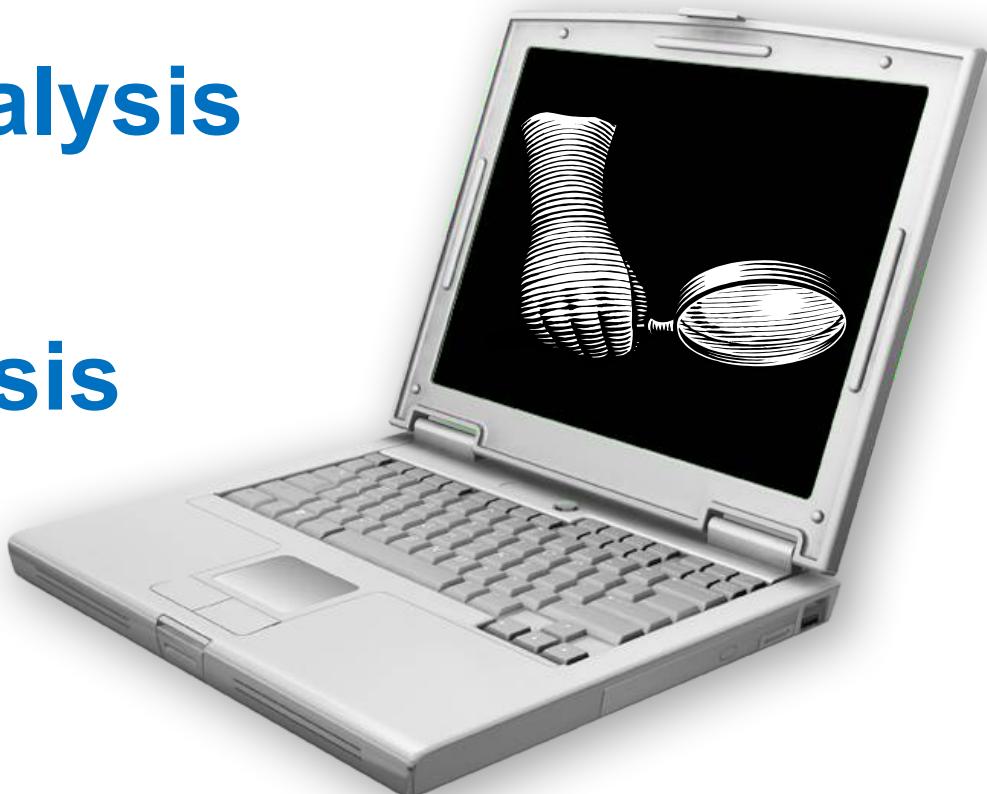
For ACRO – look at:
<https://www.acro-online.net/>

*Includes a very detailed explanation
of the complete FairPlay system*



In ACRO - Two useful analyses:

- The Judges
Individual Analysis
- The Judges
Overall Analysis



Judge Individual Analysis example

The standard data describing the event, judge, place, date, level and sequence.

Pilots are presented in the rank order of their final FPS scores PRIOR to the deduction of penalties.

Where an FPS fitted value is substituted for the judges grade it is boxed in red and the anomaly identified.

Reasons are:
 Hi – the grade is too high
 Lo – the grade is too low
 6R – the 60% rule is applied

Pilots with the same nationality as the judge have a different back-colour to show this association

The FPS Ranking Index (RI) for this judge.

Summary of the grades revised to fitted values.

The Histogram shows judges use of each raw grade compared to post-FPS all judges average use.

Histogram key.

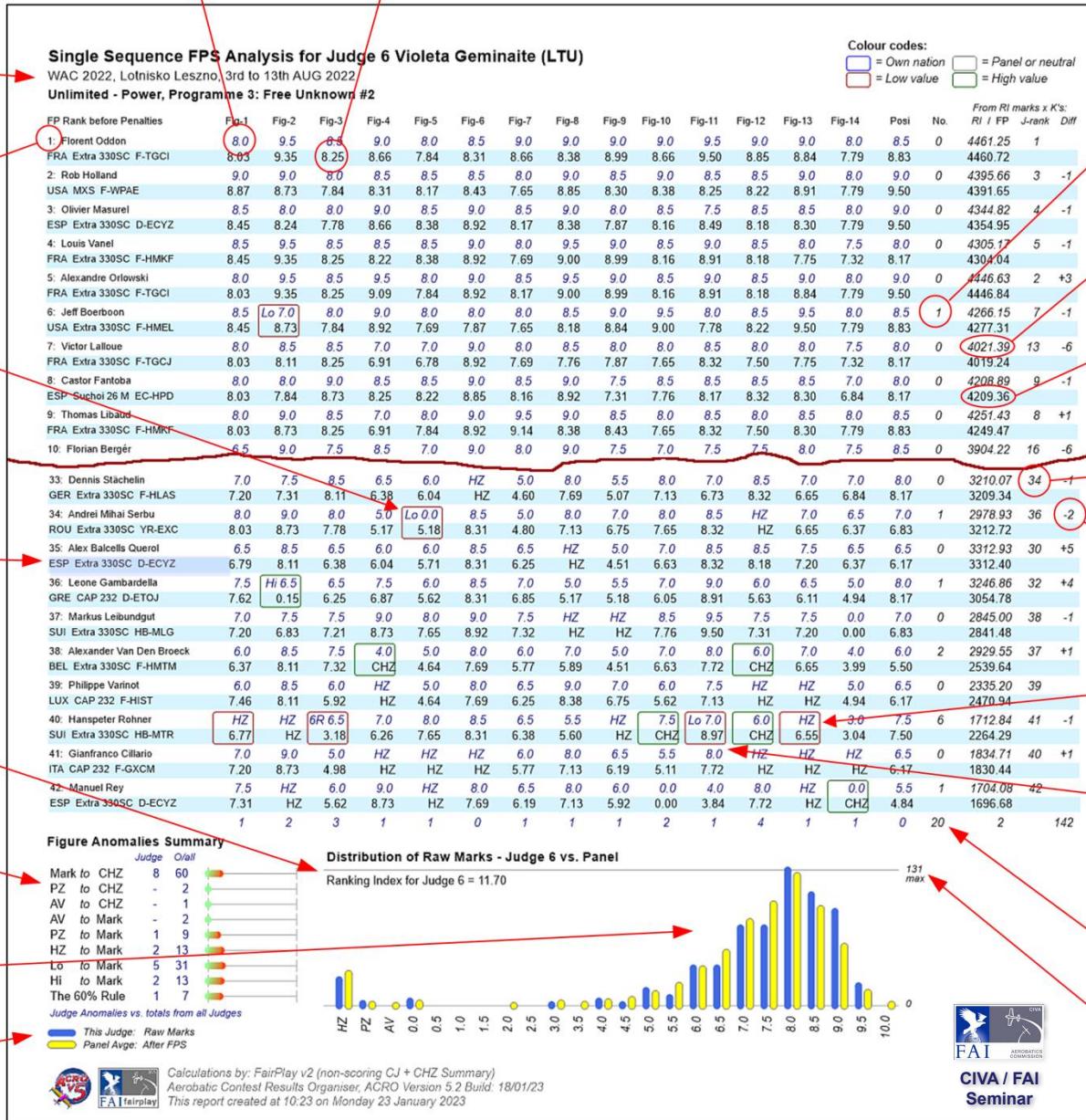
The judges raw grade for each pilot is shown in italic type.

The normalised grade is shown below the raw grade, rounded to 2 decimal places. ¶

¶ Note the system works in double-precision mode using 16 significant characters, for example 123.456789012345

The printed output is rounded to two decimal places for clarity.

Example ONLY !



Judge Overall Analysis example

The standard data describing the sequences in this analysis and the event, place and date.

The use of marks by each judge, cumulated in 5 categories.

Cumulative totals in each analysis area from all judges.

Comparison of Judges marking style against the Panel Average style

The FPS figure anomalies from each judge, cumulated in 9 categories.

The FPS sequence anomalies from each judge, cumulated by pilots nationality.

Analysis of Judges Combined Anomalies

Sequences: Programme 1: Free Programme (UNL), Programme 2: Free Unknown (UNL)

17th FAI EAC

Touzim CZE

02. - 12.Sep.2010

Use of Marks:

HZ - Hard Zeros

PZ - Perception Zeros

Marks from 0.0 to 6.5

Marks from 7.0 to 10.0

AV - averages

Total marks ... (Pilots/Judge)

Style Comparison:

Average and Style

of Judges Raw Marks

compared to normalised

all-Judges average

(Style = 2 x SD)

Vertical axis scale:

1 mark = 31mm

Raw Marks Factors:

Average %:

Style %:

Figure anomalies

HZ to fitted value

Mark to confirmed HZ

PZ to confirmed HZ

PZ to fitted value

AV to confirmed HZ

AV to fitted value

Lo to fitted value

Hi to fitted value

The 60% Rule

Total figure anomalies

Sequence anomalies

CZE Czech Republic

FRA France

GER Germany

GBR Great Britain

HUN Hungary

RUS Russia

SUI Switzerland

ISR Israel

EXP Spain

Total sequence anomalies

All Judges

No

%

RUS

Vladimir

Kotelnikov

FRA

Francis

Ukr

Lyudmila

M.

RUS

Gabor

HUN

Georges

SUI

Algis

LTH

Orlickas

RI 4.61 [2]

RI 5.00 [2]

RI 5.44 [2]

RI 5.68 [2]

RI 6.34 [2]

RI 7.94 [2]

RI 10.37 [2]

11 1.1

6 0.6

1 0.1

3 0.3

7 0.7

15 1.5

2 0.2

11 1.1

1 0.1

61 6.1

1 0.1

2 0.2

10 1.0

10 1.0

10 1.0

100 100

110 110

875 87.5

925 92.5

1000 ... (81)

1000 ... (81)

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1000 ... (81)

Number of sequences judged by each judge.

The FPS RI for each judge, either for a single sequence or averaged for multiple sequences.

Total data in this category per judge.

Percentage that this category represents of each judge's marks.

Totals of figure anomalies in each category per judge.

Grand total of figure anomalies per judge.

Totals of sequence Hi's and Lo's per nationality from each judge.

Data is boxed in blue where the judge and pilot nationalities match.

Grand total of sequence Hi's and Lo's from each judge.

Example ONLY!



Aerobatic Contest Results Organiser, Version 3.0 build 28-12-10
Calculations by: FairPlay (non-scoring CJ + CHZ Summary) method
This report created at 14:56 on 29 December 2010



How to 'de-code' your Pilots ACRO Raw Marks sheet

The bold header shows the pilot, nationality, team flag and aeroplane details, the level and sequence being flown and the event, place and date.

Figure numbers and K-factors and (for Free programmes) the SuperFamily for each figure.

For a non-scoring Chief Judge, the gradable figures are labelled "OK" whilst figures given a Confirmed Hard Zero are shown as "CHZ".

The Chief Judge has awarded this figure a "Confirmed Hard Zero" and any non-HZ Judges marks are accordingly boxed.

The Positioning mark and if applicable the Harmony mark are shown by their first 4 characters.

Each of the Penalty categories is listed together with the quantity given, the value of the penalty, the deduction(s) to be made in each case, and the total awarded.

The ACRO version and FairPlay settings are shown above the time and date of the report.

Example
ONLY !

Raw Marks Check-Sheet																
Joe Bloggs Extra 330SC G-ABCD (GBR)																
Level: Advanced, Sequence: Programme Q: Known Compulsory																
Aerobatic Championships, Mid-Europe, 10-15 August 2011																
Chief Judge: Nick Buckenham (GBR) - non-scoring																
Judges: 2 - Guy Auger (FRA), 3 - Maciej Blalek (POL), 4 - Bernard Courtois (FRA), 5 - Violeta Gedminaite (LTU)																
6 - Philippe Küchler (SUI), 7 - Vladimir Razulin (RUS), 9 - Gabor Talabos (HUN), 10 - Kimmo Virtanen (FIN)																
11 - Lyudmila Zelenina (UKR), 12 - Algis Olickas (LTU)																
Fig	K	No.	Factor	CJ	J2	J3	J4	J5	J6	J7	J9	J10	J11	J12	Av'ge marks	Equiv. scores
1	41	OK		8.0	9.0	7.5	8.0	5.5	7.5	8.0	6.0	6.5	9.0	7.5	307.5	
2	41	OK		7.5	6.0	6.5	6.0	AV	8.0	6.0	8.0	8.0	6.0	5.6	227.8	
3	14	OK		7.0	8.0	9.0	7.5	5.0	5.0	8.0	6.5	6.0	8.0	7.0	98.0	
4	17	CHZ		HZ	0.0	0.0	4.5	4.5	HZ	2.0	3.5	0.0	4.5	0.0	0.0	
5	31	OK		6.0	7.5	5.0	8.0	8.0	8.0	6.5	7.5	6.5	6.5	7.0	215.5	
6	29	OK		5.0	6.5	6.0	4.5	6.0	5.0	9.0	7.5	8.0	5.0	6.3	181.3	
7	34	OK		5.5	7.0	6.5	7.5	7.5	6.5	5.0	6.5	5.0	6.5	6.4	215.9	
8	28	OK		7.5	6.0	8.0	6.5	HZ	6.0	6.5	7.5	9.0	5.0	6.9	192.9	
9	20	OK		6.5	5.0	7.5	7.5	6.5	6.5	8.0	5.0	8.0	7.5	6.8	136.0	
Posi	40			7.5	5.5	6.0	6.5	5.5	5.5	7.0	5.0	5.0	5.0	5.9	234.0	
Penalties:																
Too Low																
Too High																
Box Outs																
Interruptions																
Insertions																
Missed Slot																
Trg. Violation																
Faulty W/Rocks																
Other Penalty																
Total awarded:																
120.0																
Max. possible score:																
2950.0																
Raw equiv. score total:																
1808.8																
Minus 120 penalty points:																
1688.8																
Pre-FP score estimate:																
57.2%																
Pilots signature:																
<i>Joe Bloggs</i>																



Calculations by FairPlay (non-scoring CJ + CHZ Summary)
Aerobatic Contest Results Organiser, Version 3.1 Build 29-03-12
This report created at 09:03 on 06 April 2012



CIVA / FAI
Seminar

The Chief Judge (here with non-scoring or scoring status) and the Judges details are listed in full.

An "Average" mark has been requested by this Judge, and FPS will subsequently provide a Fitted Value.

For information purposes only and to assist Pilots to quantify the relative value achieved in each figure, the two right-most columns display the average mark for all Judges together with the "equivalent" score.

These are NOT formal FPS steps, nor is this data used in any subsequent calculations.

This Hard Zero (HZ) will be replaced by an FPS Fitted Value because the majority decision for this figure, as recorded by the Chief Judge, was not a Confirmed Hard Zero (CHZ)

This is the maximum possible score for this sequence.

For information purposes only, the three lines in italic script quantify the possible "equivalent" pre-FPS score derived from the raw marks, and a valuation of the percentage that would be achieved by this estimation.

Again ... these are NOT formal FPS steps, nor is this data used in any subsequent calculations.

PILOTS . . .



- **AVOID LOWS: DON'T FLY ANYWHERE NEAR THE LOW LINE !**
- **Don't get clever with the rules**
- **Do not show off – Safety is always crucial**
- **Before you part with your Euros/\$/Roubles
*Read the Rules & Ask for Advice!***
- **Get the opinion of your Team Manager**
- **Check with the Chief Judge if the problem that you have is a technical issue**
- **Be factual . . . NOT emotive !**



JUDGES and PILOTS



- Treat judges fairly even if you think they have an easy job !! They do actually work very hard.
- Do not expect them to favour the “Home Team”
- Remember that during a competition a judge may have looked at as many as 4,500 figures, and He/She will make some mistakes. That is why we have at least 7 judges.



Open Forum

- **Go on – ASK A QUESTION !!**
- **What do you think ?**
- **What can you add ?**
- **What else would you like explained ?**

Feedback ?

