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The following is taken directly from CIVA Section 6, sub-sections 5 and 7, with minor local amendments (deletions only). Reference should also be made to AAC Regulations, Appendix 2-1.

5. EVALUATION OF COMPETITION FLIGHTS

5.1. Evaluation Of The Performance

5.1.1. Judges

5.1.1.1. Each flight program will be marked by the Judges using a standardised system as described in Appendix 2-1 and the following.

1

5.1.1.3. Where the majority decision of the Panel of Judges is required, in a case of disagreement about the penalisation of the flight of a competitor, the Chief Judge shall have a casting vote in the event of a tie.

5.1.2. Marks for Figures

AAC REGULATIONS - Appendix 2-2 - Evaluation of Competition Flights and Code of Practice for Judges

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5.1.2.1. The Judges will independently assess the quality of each figure and its components as performed in the sequence, marking with numbers from 0 to 10, in intervals of 0.5; for Programme 5 the assessment will be in accordance with 5.1.5.1 of CIVA Section 6. A hard zero (HZ) mark will be awarded if the figure is incorrect or missing, in accordance with Section 5.3 .

2

5.1.2.2. The scores will be calculated by multiplying the coefficient (K) for each figure by the mark given to each.

3

5.1.2.3. When marking the quality of the performance of individual figures, the Judges have to consider the following general principles:

a) the geometry of the figures (including shape, radii, angles, plane of flight, direction of flight), which must be in compliance with the prescribed characteristics;

b) the precision of the performance, for which there are Marking Criteria set out in Appendix 2-1;

c) the distinctly recognizable start and finish of each figure with a horizontal line;

d) note also that the figure flown must be in accordance with the pre-stated figure in the original sequence;

e) that in judging a figure which comprises a combination of manoeuvres, the marking criteria of its various components continue to apply, but the combined manoeuvres are to be taken as a unit;

f) that the length of lines and the size of radii caused by the flying characteristics of an aircraft are not to be taken into account in the marking;

g) that inverted figures are judged by the same criteria as upright figures.

5.1.2.4. Once horizontal flight path is established at the end of a figure in a sequence, the beginning of the next figure is considered to have occurred. This rule is not to be interpreted to mean that a competitor will incur penalty points for performance zone infringements (see 5.2.3) if the next figure is actually performed inside the 50 m boundary of the performance zone

5.1.2.5. If a judge misses seeing a figure, or any part of a figure such that a grade cannot be given with full confidence, the Judge will give a mark of "Average" or "A" to that figure.

1

5.1.3. Calculation of Scores

The calculation of scores for a competitor's programme will be as follows:

1

5.1.3.1. The marks given by a Judge are processed according to Sporting Code, Section 8 , with the final scores being determined for a programme as a whole. A CIVA-approved software programme must be used.

2

5.1.3.2. It shall be a duty of the organiser to arrange for the publication of the competition results in accordance with Rule 5.1.3.1 . The marking sheets must be made available to the competitors and Contest Officials for information and/or checking before the start of the subsequent programme.

3

5.1.3.3. A copy of the files generated by the CIVA-approved Computer Scoring System must be available to any official or pilot upon request. The media used for that copy will be supplied by the requester and has to be compatible with the computer being used by the contest organisers. A complete copy of all the files must be sent to the AAC Club Captain after the contest is finished.

4

5.1.4. Marking of flight Positioning and Symmetry

5.1.4.1. If an electronic, radar or radio-controlled tracking instrument is operated, the observance of the performance zone and the positions of the individual figures are recorded.

5

5.1.4.2. Positioning refers to the 3D placement of each figure relative to the judges.

6

5.1.4.3. The positioning mark will be given by the Board of Judges.

7

5.1.4.4. Depending on the aircraft's height and on the nature of the figure being flown, there is an optimum range from the judges for the placement of each figure. At this range, the geometrical errors in the figure, and the precise nature of the figure, are both clear and easy to assess.

8

5.1.4.5. The highest marks will be given if the central point of a competition flight is above the secondary axis, and if each figure is optimally placed inside the performance zone. The judge's final decision on a grade for positioning must take into account deductions for asymmetry of the sequence, and non-optimal placement of individual figures.

9

5.1.4.6. The K factor accorded to positioning marks will be as follows

10 a) Unlimited – Programmes 1, 2, 3 and 4: 40K

b) Advanced & Intermediate CIVA – Programmes 1, 2, 3 and 4: 30K

5.1.4.7. A column headed “Pos” on the Form A marks sheet shall be used to record by exception the positions of figures that are not ideally placed, as they are flown.

5.1.4.8. When dictating the mark for each figure to the scribe, the judge shall where appropriate add a comment in the “Pos” column regarding the placement of the figure if this is considered to have been not ideal. In arriving at this comment the shape and size of the basic figure and the location of any manoeuvres within it shall be assessed against the ‘ideal’ placement of the whole figure in the context of the positional scope of the sequence. Where the judge assesses that figure placement is sufficiently sub-optimal to be recorded then the following annotations shall be used:

<i>Figure placement:</i>	<i>‘Pos’ annotation:</i>
Somewhat:	
<u>left</u> of the ideal position:	“L”
<u>right</u> of the ideal position:	“R”
too <u>near</u> to the judge:	“N”
too <u>far</u> from the judge:	“F”
Considerably:	
<u>left</u> of the ideal position:	“LL”
<u>right</u> of the ideal position:	“RR”
too <u>near</u> to the judge:	“NN”
too <u>far</u> from the judge:	“FF”

5.1.4.9. At the end of the sequence the annotations in the “Pos” column shall be used by each judge to determine a sequence positioning downgrade based on these recorded observations. Each single letter is taken as equivalent to a halfmark and each double letter equivalent to a full mark downgrade. For example, the figure “Pos” annotations L, R, N, FF, LL and R would combine as a downgrade of 4.0 marks.

1

5.1.6. Official Video Recording

5.1.6.1. An official video recording from the Judges' position should be made of every individual competition flight in an Australian Aerobatic Championship. The official recording must be available to the Jury to assist their decision on any

protests regarding the evaluation of a competition flight. The recording shall not be available to competitors except in conjunction with the Jury's decisions on protests and with their agreement. After the completion of the championships, the recording may be released by the organisers for use in training.

2

5.1.6.2. The official recording shall also be available to the Chief Judge and the Board of Judges to assist their discussions on matters of fact.

3

5.1.6.3. Organisers must provide quality equipment with qualified operators to insure useful information is provided to the judges and International Jury for their decisions.

5.2. Penalty Points Deductible From Total (Averaged) Scores

5.2.1. Time Limits for the Programmes

5.2.1.1. Figures of Programmes 1, 2, 3 and 4 finished beyond the prescribed time for climbing and flying the programme (see Rule 4.2.6.1) will not be marked by the Judges. The end of the time allowed will be signalled by the Chief Judge.

1

5.2.2. Infringement of Height Limits

5.2.2.1. Unlimited: For every obvious and visually recognised infringement of the lower height limit during the performance of Programmes 1, 2, 3, 4 and 5, the competitor will be given 250 penalty points; an additional 250 penalty points will be given for each figure flown completely below the lower height limit; for an infringement of the upper height limit 50 penalty points are given. A competitor flying lower than 50 metres (150 feet) will be disqualified (from the current programme) for causing a dangerous situation.

5.2.2.2. Advanced and Intermediate: For every obvious and visually recognised infringement of the lower height limit during the performance of any programme, the competitor will be given 200 penalty points; an additional 200 penalty points will be given for each figure flown completely below the lower height limit. For an infringement of the upper height limit, 30 penalty points will be given. A competitor flying lower than 100 metres will be disqualified (from the current programme) for causing a dangerous situation.

5.2.2.3. If a precision height measuring device is not available, infringements of the lower height limits will be estimated by the Judges and will be penalised only if a simple majority has recognised the violation and duly recorded this on their marking sheets. In case the required simple majority could not rise from a vote within the Board of Judges, the Chief Judge shall have a casting vote. An

infringement of the disqualification level (see 4.2.4.1) must be agreed by at least a two-thirds majority of the Judges, whether the precision height measuring device is available or not.

5.2.3. Infringements of the Performance Zone

5.2.3.1. Definitions

a) When Boundary Judges are used, an infringement is considered to have occurred if the fuselage of the aircraft is seen by the Boundary Judges to have crossed the line being observed (as per rule 5.2.3.2), even if this occurs more than once in a single figure.

b) When an electronic tracking system is operated, an infringement is considered to have occurred if the position of the aircraft is indicated by the system as crossing the limits defined in rule 5.2.3.2 , even if this occurs more than once in a single figure.

5.2.3.2. For each infringement of the performance zone in Programmes 1, 2, 3 and 4 by more than 50 metres in the direction of the x-axis and/or the y-axis a pilot will be given penalty points in accordance with the table below; this applies to the operation of either Boundary Judges or an electronic tracking system.

Zone Infringement	Unlimited	Advanced or Intermediate CIVA
Penalty point tariff	30	20

5.2.3.3. Thereafter, for every figure started beyond 50 metres outside the performance zone, further penalty points will be given, in accordance with the same table.

5.3.1. Downgrades

5.3.1.1. The absence of a distinct horizontal start or finish to a figure will reduce the mark by 1 point in each case for each figure affected.

1

5.3.1.2. At the initiation or completion of every figure, each deviation from a wings level, horizontal flight path and from a heading parallel to the relevant box axis, in accordance with paragraph 6.6.1.1 , will attract a reduction of 0.5 point per 2.5° of deviation, 1 point per 5° of deviation.

2

5.3.1.3. As there is no "free" space between figures (5.1.2.4) any reduction applied in accordance with 5.3.1.2 must also apply as an error at the start of the subsequent figure.

3

5.3.1.4. All deviations from the correct geometry (plane of flight, direction of flight, angle of bank), and for deviations from the proper flight path or the proper attitude (as appropriate), the mark will be reduced by 1 point per 5° deviation.

4

5.3.1.5. Over-rotating a roll and rolling the wings back again must be penalised by 1 point per 5° of over-rotation, even if the correct geometry is resumed afterwards, and no matter how quickly the correction is made. The same provisions apply when, at the end of a loop or part-loop, the aircraft's nose is pitched beyond the desired line and then brought back again.

5

5.3.1.6. If within a figure two or more lines have to be of the same length, the basis for judging is the first line flown. Any observed variation must be penalised by reducing the marks in accordance with Appendix 2-1.

6

5.3.1.7. Slow rolls flown in combination with a turn (family 2) or loop (family 7.4.1 – 7.4.2) must be smoothly continuous: i.e. there must not be any change in the rate of roll from beginning to end.

7

5.3.1.8. Marking criteria for combinations of rolls with turns and loops will include the even integration of the rolls within the figure. Specific downgrades for rolling turns are noted in paragraph 6.9.3 .

8

5.3.1.9. If the total of downgrades in this section leads to a value lower than the score of 0.5, a valid mark of 0.0 will be given to the figure.

5.3.2. Perception Zero

5.3.2.1. A grade of "perception zero" (PZ) should be given if the Judge considers that the figure is incorrectly flown in respect of a criterion that is a matter of subjective perception, rather than clearly demonstrable fact. For example, if the Judge considers that a flick roll or spin never started proper auto-rotation, that a tail slide did not move backwards by the required amount or that a rolling turn included a flick roll.

9

5.3.2.2. The Chief Judge should check that PZ's are applied only to manoeuvres where a perception error has been seen, and that a plausible reason has been given. The CJ has no other input regarding the presence of PZ's; they are subjective decisions made by individual judges and there is no requirement to review or "Confirm" them.

5.3.3. Hard Zero

5.3.3.1. A grade of "hard zero" (HZ) should be given if the Judge considers that the figure is incorrectly flown in respect of a geometrical error, as listed below, that is clearly verifiable as a matter of fact. A grade of "HZ" will be given to a figure if:

- a) any figure is flown which does not conform to the drawing held by the judges for marking purposes (Form 'B' or 'C'). Note - when a figure is added to a sequence Rule 5.2.5.2 applies;
- b) when rolls are superimposed on a turn or loop (Rule 5.3.1.8), the roll is finished but 90° or more of the turn or loop still remains to be flown, or the turn or loop is finished but 90° or more of the roll remains to be flown;
- c) any deviation from the prescribed direction (Rules 5.3.1.2 and 5.3.1.3) reaches 90°;
- d) any other single deviation in geometry/flight path/attitude/rotation (Rule 5.3.1) reaches 90°;
- e) the pre-stated figure or any part of it is omitted;
- f) any part of the figure was not visible as it was flown in or behind cloud. If the figure was visible to a majority of judges, then the Chief Judge should instruct unsighted judges to revise their mark from "HZ" to "A".

However, if figures subsequent to the hard zero mark are correct and are flown in the correct direction, they shall be marked in the normal way.

1

5.3.3.2. During a repetition flight (paragraphs 4.2.2.5.e) or 4.2.7.9) the figures before the break must all be flown correctly. If a competitor omits or flies such a figure incorrectly, so as to gain an unfair advantage, the grade awarded for that figure during the first flight will be reduced to a "HZ".

2

5.3.3.3. When all Form A's have been submitted to the Chief Judge for a flight and difficulties occur in interpreting the correct application of the "HZ" mark:

- a) the Chief Judge shall call for a discussion in the judging area by the Judges;
- b) such discussions shall not interfere with the subsequent flights;
- c) the official video may be used in these discussions to help determine matters of fact, but not of perception;

3

4

5

d) a judge may request a viewing of the video during a discussion if he/she deems it necessary. This request will always be honoured;

6

e) all Form A's shall be retained by the Chief Judge until the final decision is made.

5.3.4. Mix of Zeros

5.3.4.1. The Fair Play System computer software programme will handle a mix of hard zeros, perception zeros or "A" grades in accordance with paragraph 5.3.4.4 . In order for this to function correctly, the Chief Judge, if necessary after a conference as described in paragraph 5.3.3.3 , must fill the Confirmed hard zero (CHZ) field on the judging sheets if a hard zero was in fact flown. If review shows the figure to have been correct, the "CHZ" box must be left open.

7

5.3.4.2. If during this process the Chief Judge establishes that there is a mix of Hard and Numerical Zeros for the same error, i.e. it is only the extent of the error above 45 degrees that cannot be established, and these combined Zeros are in the majority for this error, the Chief Judge shall instruct those judges with the Numerical Zeros to change their score sheets to hard zeros and sign the sheets accordingly. The Chief Judge will then fill the CHZ field. Consequently, no judge will in this instance have a point added to his hard zero Anomaly count (8.8.4.2).

8

5.3.4.3. Should a judge consider that a figure started behind the judges, the judge shall grade the figure regardless, but add the comment, "Behind" in the Remarks section of the Form A. At the end of each flight, the Chief Judge shall determine by a simple majority (with the Chief Judge casting a vote as required), if the figure in question was started behind the judges. If the majority holds that the figure was started behind the judges, each judge shall change his/her mark to 'HZ' and all Form A's shall be countersigned by the Chief Judge. If the figure is deemed by the majority to have been flown in front of the Judges, the original marks shall be handled as with any other figure.

9

5.3.4.4. When a mix of hard and perception zeros, numerical and/or "A" grades exists, the following resolution will take place in the computer scoring programme:

10

a) "A" grades will first be set to "Missing".

11

b) If the "CHZ" box has been filled, then all other grades will be changed to "HZ".

- c) If the "CHZ" box is open then "HZ" grades and any "PZ" grades shown to be anomalous will be set to "Missing".

After normalisation, the "Missing" grades will be replaced with Fitted Values determined by the computer.

7. CODE OF PRACTICE FOR THE CHIEF JUDGE AND BOARD OF JUDGES

7.1. Chief Judge

7.1.1.1. The Chief Judge's primary concern should be the accurate and fair judging of the competition flights, including the monitoring of flights for hard zero marks and penalties. He should place his expertise at the disposal of the Board of Judges, and coordinate and guide their work.

1

7.1.1.2. The Chief Judge oversees administrative matters (correctness of paperwork, recording of penalties, etc.) but must be provided with a competent assistant under his/her supervision who will perform at least the following tasks along with other duties as requested:

- a) calling the manoeuvres and recording the notes of the Chief Judge, to whatever extent he requires;
- b) processing and expediting the flow of paperwork;
- c) receiving and recording the calls of the Boundary Judges;
- d) handling all other radio communications. One of his assistants should assist in monitoring the zero marks and penalties awarded by the Judges after each flight.

7.1.1.3. In addition the Chief Judge shall brief and direct the first pilot to fly the lower box axes prior to the commencement of each programme, after any substantial break and at the beginning of contest flying each day. This demonstration will normally comprise flight along the two main axes, dipping the wing above the 'T's and the centre marker.

The Chief Judge should draw attention to the appearance of the demonstrating aeroplane with particular reference to:

1

- a) its proximity to the ground, to assist later assessments of low flying, and

b) indications of the box boundary with respect to notable local / surrounding features, to provide a sound basis for assessment of the positioning mark.

2

7.1.1.4. It is essential that the Chief Judge follows each flight, with emphasis on recording hard zeros, interruptions, insertions and height penalties. Such infringements and comments should be recorded, as an *aide-memoire*, on a score sheet which should be retained for reference prior to the judges' scoresheets being submitted to the workstation. The official recording of penalties will be on the appropriate section of the score sheet reserved for the use of the Chief Judge and entered prior to submission to the scoring system.

3

7.1.1.5. The Chief Judge must hold seminars with the Judges, at least one of which will be with Team Managers or other team representatives present (CIVA 4.1.7.1). He should give guidance to the Judges as to the current Judging Criteria and rules for judging, on which he should conduct 'question and answer' sessions.

7.1.1.6. The Chief Judge will hold other routine evaluation meetings with the Judges during the contest (CIVA 4.1.7.2). He should ensure that the Code of Practice is understood and operates smoothly, and establish a good working relationship between teams of Judges and Assistants, Timekeepers, and other helpers.

1

7.1.1.7. The Chief Judge is responsible for ensuring that there is enough time between flights for the judging to be unhurried: he should control (by radio) the flow from one contestant to the next.

2

7.1.1.8. At the end of each flight, the Chief Judge should ascertain whether any of the Judges has recorded a hard zero (HZ) mark, height penalty, interruption penalty or insertion penalty. This will be done by perusal of the score sheets collected from the judges, prior to entry into the scoring system.

3

7.1.1.9. In the case of a difference of opinion with regards to a hard zero (HZ) mark, insertion penalty or interruption penalty, a judging conference will always be held to resolve differences. The official video shall be available to assist in such discussions when it concerns a matter of fact. A judge may request a viewing of the video during such a conference. Such a request will be honoured by the Chief Judge.

4

7.2. Hard Zeros

7.2.1.1. The awarding of Confirmed hard zero marks is determined by the Chief Judge, if necessary after a judging conference. When a Judge's vote is over-ruled,

upward correction of a hard zero will be to a Fitted Value determined by the scoring software. When awarding a hard zero, judges are to write down the nature of the error and are not to give a 'reserve' mark.

1

7.2.1.2. A Judge has the right to ask for a video review, if it is determined at a Judging conference that his written score is incorrect and he is not in agreement with this ruling.

2

7.2.1.3. The procedure for handling hard zeros and penalties on the judging line can be broken down as follows:

3

7.2.2. Hard Zeros Given By The Majority Of Judges

The score sheets go to the scorer unchanged, the Chief Judge having checked the Confirmed hard zero (CHZ) box on the score sheet, unless a conference to confirm the facts is demanded by any judge(s). The computer system changes the minority scores to HZ and determines the judges' HZI points for Section 8.8.4 .

7.2.3. Hard Zeros Given By 50% Or Less Of The Judges

The Chief Judge first determines by means of conferencing whether the hard zero is correct or not. If correct, the Chief Judge will check the "CHZ" box on the score sheet; if not he will leave it blank. The judges must not change their score sheets as a result of the discussion. The score sheets will then go to the scanner and the computer system will then change the incorrect grades and determine judges' HZI points for Section 8.8.4 .

7.4. Judges' Performance Evaluation

7.4.1.1. Judges evaluation by flight programme will be conducted by the International Jury using the software programme approved by CIVA (see Section 8.8). The Chief Judge will receive a complete analysis of all Judges from the International Jury after each programme is completed.

1

7.5. The Judges

7.5.1.1. It is required that all Judges use an experienced Judge's Assistant. Judges who do not provide such an Assistant will be excluded.

1

7.5.1.2. All Judges should study copies of all contestants' Free Programmes, provided by the organisers, before flying of the programme is started.

2

7.5.1.3. A Judge may only reconsider his marks so long as his score sheet is still in his possession or if asked to do so at the request of the Chief Judge. Once entered into the scoring system, the scoring sheet comes under the jurisdiction of the International Jury. The judge himself must sign off any changes on the score sheet.

3

7.5.1.5. It is strongly recommended that the Judges record remarks on the score sheets.

4

7.5.1.6. Judges shall not keep or make reference to a flight order sheet, or communicate to third parties by means of cell phone, radio, etc whilst on the judging line or during breaks/lunches. Failure to adhere to this instruction may lead to expulsion from the judging line.