IJMC scale documentation tips

Introduction

The quality of the models over the last Jet World Master competitions has been raised to a very high standard; many of them have become true scale masterpieces. Unfortunately, the scale documentation, which the static judges have to work from to judge fidelity to scale, has not followed the same trend. **The whole idea of static judging is to rank the models with regard to degree of fidelity to scale and craftsmanship, and that's the very difficult task we ask from the static judges.** This task is only possible when the judges receive a **complete** and **accurate** proof of scale documentation. Following some discussions at the 4th Jet World Masters in Thailand, a static judging workshop was held there and a few articles on scale documentation in the press have appeared lately. By publishing the following tips, the IJMC wishes to go a step further and inform competitors, press and public about the **official IJMC views** regarding scale documentation. This publication has evolved from the Judges Seminar held in Grenchen, Switzerland 23-24 November 2002 and has been **approved by the judges** specialised in static judging. Both the F4J Rules and the Judges' Guidelines already point out in detail what is required in terms of scale documentation, but we hope this publication will aid in putting together first class documentation.

Completeness, accuracy and some reflections

The two main requirements for proof of scale documentation are **completeness** and **accuracy**. The completeness requirement is really your own responsibility. The Rulebook points out what the minimum requirements are, and that's exactly what it says: **minimum** requirements! In general, a more complete and detailed documentation will allow the judges to award more points. The idea is that everything not shown in the documentation is considered as an effort in "trying to hide inaccuracies". More on this later. The accuracy requirement is the most difficult to meet, especially in terms of 3-view drawings. Therefore the May 2002 revision of the rulebook, approved by the 2002 IJMC AGM, incorporates an **important change**, which is to put more emphasis on **photographs** than on 3-view drawings. During the Judges Seminar, it was agreed that the scale accuracy (side view, front/end view and top/bottom view) would be judged from photographs as opposed to 3-view drawings as has been the case in the past. The 3-view drawings can be used as a back-up. Some explanation is in order here: scale accuracy accounts for 45% of the static points and for 22.5% of the whole competition score. With the high standard of models nowadays, it is no longer fair to make this high score percentage dependant on 3-view drawings which are notoriously inaccurate.

Why 3-view drawings are not ideal

Scale accuracy judging based on 3-view drawings is a legacy of the F-4C competitions where all kind of scale models, even from actual subject aircraft almost a century old, need

to be judged on an equal basis. As we are judging only jets, which are recent aircraft and of which photographs are mostly available in abundance, the need for 3-view drawings is of far less importance. Below is a summary of reasons why 3-view drawings are not ideal in judging the critical and decisive scale accuracy points:

1. 3-view drawings are made by human beings and are very **prone to error**. Most of the time, a 3-view drawing is made to order for a magazine by a professional draughtsman who does the job in one day or even less. Even official manufacturer 3-view drawings are almost exclusively intended as renderings for the press and do not accurately represent the real aircraft. In short: a 3-view drawing is never made with scale competitions in mind and is a bad source for accurate information.
2. 3-view drawings show the aircraft in a **parallel perspective**, not in a conical perspective as the human eye sees the aircraft. Only a camera (typically 50 mm focal length lens for 35 mm format) can show an identical view as the human eye.
3. Competitors have the natural tendency to select their 3-view drawings based on how they **match the model**, rather than how they match the real aircraft. This is especially the case with models built from kits with higher degrees of prefabrication.
4. The **system of approval** by an authoritative source of unpublished 3-view drawings **has failed** to prove their authenticity and accuracy, is impossible to verify and opens a door to manipulation.
5. With commonly available computer software, it has become **ridiculously easy to manipulate** 3-view drawings. In a high level competition, it is an almost natural tendency to get the best out of it and "correcting" the 3-view drawings is an easy way to get points. Even the approval system mentioned in point 4 above falls victim to this practice.

Are photographs better?

Yes, no doubt; not in all respects, but in most of them. Here's why:

1. **Photographs don't lie**, they are not an artist rendering but they are the **real thing** captured by the lens of the camera.
2. The camera shows the real aircraft **as seen through the human eye**, i.e. in a **conical perspective**. Of course, the lens of the camera shouldn't distort, ideally a 50 mm lens will show the aircraft in the same angular proportions as a model, at the normal judging distances. Just avoid photographs taken with a wide-angle lens.
3. Selection based on the model is not an issue, **the photo always shows the real aircraft**.
4. **Approval is not necessary** and hence is not a source of controversy.
5. **A photograph is very difficult to manipulate**. It is possible with modern computer techniques and a skilled operator, but compared to manipulating a 3-view drawing, it is at least 100 times more difficult to do in a way that doesn't show (pixel by pixel, shades, lighting etc.).

So photographs are better, but are they ideal? No, certainly not. The requirement in the rulebook is a **minimum of three** differing photographs. The biggest problem is that they should ideally show a side view, a front/end view and a top/bottom view. Most of the photographs are not taken that way. Especially, a top/bottom view is hard to find, but it is not impossible. It is your task to find photographs of the subject aircraft that allow the judges to judge the scale accuracy from most sides. This doesn't mean you need perfect side views etc., even if an aircraft is shown as a ¾ side view, this will still allow the judges to do their work. The bottom line here is that judges now can make use of the rotary table to have the model oriented in the way it is shown on the photographs. If you are able to make your own photographs and you have good access to the subject aircraft, you will be able to make ideal photographs to include in your documentation. Another good source of photographs is the **Internet**. Bear in mind that the judges need good photographs! **If you don't include decent photographs, the judges will think you try to hide something!**

A good scale documentation

The judges only have the scale documentation from which to judge. In the true spirit of the IJMC, this means that this documentation must be **complete** and **accurate.** It must be complete in the sense that it must allow the judges to judge the model according to all the criteria laid down in the rulebook:

1. Scale accuracy: side view
2. Scale accuracy: front/end view
3. Scale accuracy: top/bottom view
4. Colour
5. Markings (accuracy and complexity)
6. Surface texture (accuracy and complexity)
7. Craftsmanship (general and structure complexity)
8. Scale detail (accuracy and complexity)

It must also be accurate because the model needs to be judged against the real subject aircraft and this can only be done in an objective way when accurate documentation is presented.

Very important advice: sort your documentation in the same order as the judging criteria. Number the pages. Make the documentation an instrument to make judges life easier, they will appreciate that! Make a caption below each photograph with a number, stating whether it is the master or a copy and then mention whether it is the **actual** subject aircraft or a **similar** subject aircraft. If it is not the actual subject aircraft, mention for what purpose you have included the photograph (e.g. "only for top view", "only for surface texture", "only for scale detail" etc.). Be advised that a photograph of the actual subject aircraft can always be used for any criterion, unless specifically mentioned (e.g. "not to be used for colour due to lighting", "picture taken after modification to pitot tube", "shown here with external stores" etc.). All photographs must be of the real aircraft, don't waste your time with photographs of the model. One exception: if you want to prove the colour

of the model, you can use a photograph where the model **is shown together** with the actual subject aircraft. A good size for photographs is 13 X 18 cm (5" x 7") or bigger. Scale detail photographs can be smaller, but the bottom line is that the judges can do their work. It is quite natural for the judges to interpret the submission of poor photographs of modern jets as "trying to hide inaccuracies".

For most of the criteria, you need specific proof of scale, mostly based on photographs. Some criteria can be judged from other sources of proof of scale. We will cover each item in turn.

1,2 and 3. Scale accuracy: side view, front/end view and top/bottom view

These three criteria have been taken together as they roughly need the same documentation requirements. Bear in mind that these criteria alone account for 45% of the static points and for 22.5% of the whole competition score, hence the importance! First you will need the infamous 3-view drawing, which the judges may need as a back-up, supplied in 3 identical copies. Although the 3-view drawings have lost in importance, they must still meet the requirements as laid down in the rulebook/judges guidelines. **One very important** aspect often overlooked is the fact that you may **point out errors on the 3-views**. Mark the errors with a red cross or circle with a short explanation of the error (e.g. "canopy shape not correct") with referral to one of the photographs supplied (e.g. "see photograph number 7 on page 4").

Now the most important: the photographs! As said before, these should be taken from positions where it is possible to judge the side view (left or right), the front/end views and the top/bottom views. As said before, each photograph should be numbered and have a caption indicating whether it shows the actual subject or not and, possibly, remarks. This makes it easy for the judges and avoids unnecessary discussions. Although the rulebook does not say this explicitly, we recommend the supply of photographs in 3 identical copies, so each judge has his own set of photographs and 3-view drawings: less reason for judges conferring! The copies of the photographs should be of good quality (good photo shops or colour copiers are no problem nowadays!).

In practice: ideally, each judge has one set of photographs (3 to 6 photographs are considered ideal) for judging scale accuracy all grouped on a large single piece of cardboard (so 3 boards in total). The other side shows the 3-view drawing. If you have made copies of the 3-view drawings and/or photographs, you must indicate which is the master and which are the copies.

Remember that at least one photograph must be of the actual subject and at least one photograph must show the aircraft on the ground with the landing gear down. In the event gear doors and flying surfaces **droop down** because of lack of hydraulic pressure, make a

caption on the photograph indicating this. According to the judges' guidelines, you must provide close-up photographs from low viewpoints, showing underside detail.

On whatever photograph you present, make sure to mention anything different such as external stores, modifications etc., so no discussions can arise.

4. Colour

Here you have different options. You can refer to the photographs on the boards, you can include other photographs, you can use a photograph showing the model next to the actual subject aircraft, you can use a published coloured drawing, you can use authenticated colour chips or you can use an authenticated written description (like a certificate of conformity from the paint manufacturer etc.). The colour accounts only for 5% of the static score (2.5% of the total score), so do not expect this to have a major impact. In general, when you can prove the correct colours in any of the ways described above, the score will be appropriate. Be advised that the complexity of the colour scheme is not accounted for!

5. Markings (accuracy and complexity)

Here, complexity comes into play too. If your model is loaded with markings, you will have to prove that to the judges. It is not required that you can prove the exact lettering of each marking if the actual subject aircraft carries literally hundred of markings, the judges wouldn't have the time for it, but it is clear that they need to be able to "feel" from the photographs supplied that these are indeed present. If only a handful of markings are present, they should be properly documented.

In practice: you can use the photographs from the board and you can add other photographs showing the most prominent markings as a minimum. General view photographs showing the "feel" of the markings on complex subjects will allow the judges to award more points. Written descriptions like excerpts from technical orders can **complement** the photographs but not replace them.

6. Surface texture (accuracy and complexity)

For this, you will need **close-up photographs**. This item is judged as close as the judges desire, they can even touch the model, so they need to compare the surface texture with the real thing. If some areas of the actual subject aircraft require special attention (oil or smoke staining, different panel colour etc.) please provide evidence with photographs. More documented surface texture will allow the judges to award more points, remember that the judges take complexity into account as well!

7. Craftsmanship (general and structure complexity)

As judging craftsmanship is mostly based on the modelling knowledge of the judge (he knows from experience how difficult it is to obtain thin, straight trailing edges, to hide panel joints etc.), no special section of your documentation must be dedicated to this. Most often, the judges will refer to all the photographs supplied to check the items described in the judges guidelines. You can however **emphasise the complexity** of your model by adding detailed photographs (e.g. of moving components, like opening canopies etc.).

8. Scale detail (accuracy and complexity)

The idea again is to document every scale detail present on the model. The more detailed photographs, the better the judges will be able to award points, with complexity taken into account. Important aspects of scale detail are the cockpit and the details of the landing gear and wheels. Providing the judges with good photographs of these items will gain you better points.

You can also refer to other photographs in the documentation. Don't forget to mention whether the photograph shows the actual or a similar subject.

Summary

In short, a good scale documentation booklet should contain:

- 3 (foldable) boards (1 for each judge) with something like 3 to 6 photographs of appropriate views used for judging scale accuracy on one side of the board and an accurate 3-view drawing on the reverse side
- Proof of colour (2 to 5 photographs and/or other means)
- Proof of markings (2 to 10 photographs and/or other means, and/or referral to other photographs in the documentation)
- Proof of surface texture (2 to 5 close-up photographs, and/or referral to other photographs in the documentation)
- Proof of craftsmanship (only when not shown on other means of proof and to emphasise complexity)
- Proof of scale detail (typically 2 to 10 detailed close-up photographs, and/or referral to other photographs in the documentation)
- A fourth 3-view drawing on which the Judges can mark the errors that they find.

All pages must be numbered, sorted into sections according to the judging criterion. All photographs must be numbered and labelled "actual" or "similar" subject aircraft, and with a remarks caption whenever deemed necessary.

Finally, use common sense and put yourself in the place of a judge when putting together the scale documentation. Good luck!