

ACHIEVEMENT PROGRAM JUDGING GUIDELINES May 2006 For Motive Power, Cars and Structures ONLY



Prepared by Rick Maier, MMR - 31 January 1996. Revised by Pete Moffett, MMR/Rick Maier, MMR - 31 March 1997. Revised by Frank Koch – May 2006

The purpose of the AP is to recognize and reward good model building. The purpose of contest judging is to choose the winning models in each category. The primary purpose of these guidelines is to help the judges choose the winners. Their secondary purpose is to encourage consistency in scoring. The judges' aim should be to evaluate the models both to inform the modelers of their success and to help them to improve their modeling skills.

The key questions to be answered in judging are:

1. What did the modeler try to do?
2. How well did the modeler do it?

Most judging categories have aspects of both difficulty and quality. Scores go up as the modeler attempts more difficult modeling projects and methods. Scores also go up as the modeler is more successful with the chosen project and methods. The highest scores go to the most successful results with the most difficult modeling projects and methods. Guidelines for the categories include tables with suggested scoring ranges to help in weighing the two aspects and achieving consistency. Judging is basically positive in that points are awarded for what has been done, rather than subtracting for shortcomings compared to a theoretical perfect model. But, in practice, judging requires striking a balance between the model's good points and the model's flaws, or between what has been done and what was left undone.

Your main sources of information are the entry form and the model itself. Read the write-up for the category you are judging, but remember that there may be helpful information on other parts of the form. Examine each model thoroughly to see what the modeler has done and how well. Judge what you see as well as what you read, since many entrants are better modelers than writers. Handle the models carefully, and only as much as necessary for judging. If the entrant has provided photos, plans or other documentation, look it over for prototype or model information that will help you judge the model. It is important to remember that it is the model that is being judged, not the ancillary supporting documentation. The amount and quality of any supporting documentation must have no affect on the judging of the model. AP judges are obligated to read through the documentation, unlike contest judges who may view the supporting documentation as optional supplements to the information provided on the contest judging form.

Judge the model, not the modeler. You may know or guess who built the model and think the modeler was

capable of better, but you must judge only what is before you. Whether it is the best or worst that a modeler has ever done is irrelevant.

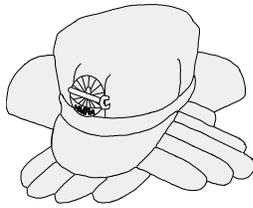
Judges are divided into teams of two or three, with each team assigned to judge one category (construction, detail, conformity, finish & lettering or scratchbuilding) across all classes (locomotives, cars, structures, etc.). Judge one class at a time (all the steam locomotives, for example, before moving to diesels). Write preliminary scores on scratch paper for the whole class. If there are differences of opinion, discuss why each judge thinks the way they do before averaging or otherwise agreeing on a score. If there is a wide range of opinion, one judge may be seeing things that the others do not. When you are satisfied with the scores for the class, transfer them to the entry forms.

Judge's comment sheets should be used in all NMRA events. Comments by judges should explain unusual scores, special situations, areas for improvement and features that were well done. All models should receive some comments from the judges, such as the good parts of the model and the parts where improvement is possible. It is in this fashion that we provide benefit to the entrants.

When providing comments, use pencil, a removable note, or a separate comment sheet so the entrant can use the form again. All entrants should receive some comments from the judges. These comments might indicate where and why points were deducted, and how to improve the model.

Judge different scales alike. Modeling difficulty generally comes from the actual size of parts and materials, not scale size, so judge accordingly. Do not permit a larger scale to have larger flaws because they are less obvious, or assume modeling in smaller scales is always more difficult.

If you have questions on a specific prototype or modeling technique, ask other judges. If you have questions on rules, interpretation, or scoring, ask the Head Judge or the Committee Chairman.



ACHIEVEMENT PROGRAM JUDGING GUIDELINES CONSTRUCTION (0-40 POINTS)



May 2006

For Motive Power, Cars and Structures ONLY

**This category has two dimensions:
THE DIFFICULTY OR COMPLEXITY OF THE ATTEMPTED MODEL AND
HOW WELL THE MODEL IS CONSTRUCTED
Construction is 32% of the total score.
Each point is 2.5% of the 40 Construction points.**

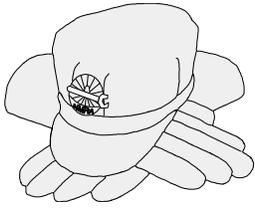
The CONSTRUCTION category focuses on the *quality of workmanship* as demonstrated by proper handling of materials, applied labor, modeling skill, and craftsmanship as demonstrated by the finished model. Reward the attempted complexity and how well it was accomplished. The entry form should show the starting point for the model, the materials and techniques used, and perhaps the major steps in construction. There are many ways to build a good model and the score should reflect how well the chosen method succeeded without favoring one method over another. Examine the model thoroughly, and think through the construction process. Consider the steps required to fabricate, kitbash, alter, or otherwise prepare individual pieces of the model. Consider the accuracy of their alignment and attachment, and the neatness and quality of joints. Consider the work

required to prepare masters or patterns for casting, photo-etching, or similar techniques, and the quality of the duplicates. You are not judging the *quantity* of detail or scratchbuilding, but you do judge the *quality* of the construction involved. Conformity to prototype and finish quality are judged elsewhere. Judge all scales equally. Consider the difficulty of making individual small parts, regardless of whether they are minor details on a large model of major details on a smaller one. Conversely, while construction flaws are more obvious on smaller models, treat similar flaws equally in all scales.

A properly designed load should be judged for its construction and attention to detail. Is it properly bolted, nailed, wedged, banded, chained, braced, etc.

POINTS TO PONDER ABOUT CONSTRUCTION

- Consider quality, skill, workmanship, and complexity only.
- Consider the proper handling and selection of materials.
- Check quality of assembly of components and pieces.
- Check neatness of glued parts, ladders square, roof walk centered, etc.
- Check fit of components (there should not be any open joints).
- Look for mismatched scribed siding, off-vertical or off-square siding.
- Check for uneven roofs and/or eaves overhang.
- Check for unsanded, fuzzy wood, excessive wood fibers, saw or file marks, badly cut ends, dents.
- Check for windows, doors, hatches, etc. out-of-plumb.
- Check that repeats of multiple parts are evenly spaced, e.g. grab irons, gingerbread, roof rafters.
- Check for excess glue or solder, glue cobwebs, glue on windows.
- Look for fingerprints.
- What did the modeler try to do?
- How well did the modeler do it?



ACHIEVEMENT PROGRAM JUDGING GUIDELINES CONSTRUCTION CONTINUED



May 2006

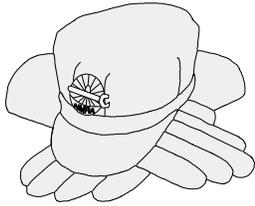
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POINTS TO PONDER ABOUT COMPLEXITY

- Consider the amount of effort, or hours to fit multiple parts.
- Consider the difficulty of the model and/or construction techniques.
- Consider the number of roof valleys.
- Consider multiple walls compared to a simple structure.
- Consider multiple sides compared to a round or square structure.
- Consider the complexity of a center flow hopper compared to a simple boxcar.
- A 4-6-6-4 would be more complex than a 4-6-4.
- The repeat use of the same part is not necessarily more complex, but does indicate additional effort.

CONSTRUCTION JUDGING POINTS MATRIX

Quality & Workmanship	Simple Model					Somewhat Complex					Moderately Complex					Very Complex or Difficult				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Poor to Mediocre	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Ordinary	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Good	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Very Good	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Outstanding	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
Exceptional	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44



ACHIEVEMENT PROGRAM JUDGING GUIDELINES DETAIL (0-20 POINTS) May 2006



For Motive Power, Cars and Structures ONLY

**HOW MANY DETAIL PARTS ARE ADDED TO OR INCORPORATED IN THE MODEL?
HOW COMPLEX WAS THE DETAILING JOB?**

Detail is 16% of the total score.

Each point is 5% of the 20 Detail points.

This category includes the refinement of the model and the addition of subordinate parts. Details that are integral parts of the prototype (parts that are necessary for the prototype to hold together and function) should receive more weight than details that are added for appearance (such as tools on a locomotive or clutter around a structure). Working details (sliding doors, functional brake gear) should receive more points than non-working details of the same type. Ordinarily details are separate parts, but also consider the detail added to masters or patterns for castings or photo-etchings for the model. It makes no difference if the details were scratchbuilt, included loose in a kit, or purchased separately, but focus on the detail added to the model rather than on what the

manufacturer may have incorporated in major kit castings. Do consider details that have been added to replace cast-on versions.

Although the entry form should tell you what details were added, examine the model closely to see the significance of the details and to note any added details not listed on the entry form.

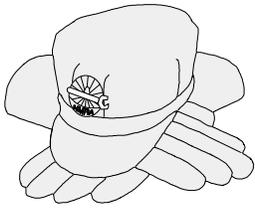
Judge all scales alike. Do not add points to an entry in a smaller scale just because it is harder to detail (that is considered in Construction). The quality and conformity of detail is being considered elsewhere.

POINTS TO PONDER ABOUT DETAIL

- Consider the amount and complexity of the detail and the number of subordinate parts added.
- Consider the refinement of the model.
- Remember to evaluate the quantity of detail and not quality
- Consider the amount of underbody detail, air lines, brake rigging, brake cylinders, etc.
- Is there coupler cut lever detail and are there appropriate safety devices?
- Check for board-by-board construction instead of scribed siding.
- Look for fascia boards, eaves, troughs, downspouts, gutters.
- Examine model for bolt heads, nail heads, door knobs.
- Consider the accuracy, completeness and placement of both the colors and the lettering on the model.

DETAIL JUDGING POINTS MATRIX

Complexity of Detail	Little Added		A Few Details				Moderate Detail				More Extensive				Extensive & Complete	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Simple Easy-to-Add	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Hard-to-Add Complex	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20



ACHIEVEMENT PROGRAM JUDGING GUIDELINES CONFORMITY (0-25 POINTS)



May 2006

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HOW WELL DOES THE MODEL REPRODUCE THE PROTOTYPE?

**Conformity is 20% of the total score.
Each point is 4% of the 25 Conformity points.**

Conformity deals with achieving prototypical appearance or following prototype practice in construction and application of parts. Look for the efforts made to replicate prototype features, including adherence to dimensions, simulation of actual construction materials and practices, choice of components, and arrangement of details. Conformity can be achieved through scratchbuilding, through kitbashing, or through adding and replacing details. The amount of detail is secondary. Consider how well what has been included conforms to the prototype. If the model has been selectively compressed from a large prototype, consider how well the compression has captured the features of the original. Consider the trouble taken to determine, achieve, and demonstrate conformity.

High scores ordinarily require the support of reference photos and/or plans. Prototypical models lettered for fictitious railroads ("proto-freelanced") should be supported with references to the corresponding prototype. Freelanced models of imaginary prototypes, including structures, should be supported with evidence of conformity to prototype practices (such as photos or drawings of prototypes with similar features) to be awarded more than a few points. If the model has a load it should have an accompanying plan or photograph.

Judge the work accomplished, the effort made, and the steps taken beyond what may have been done by a manufacturer or provided in a kit. You should not need to guess about conformity. While you can and should ask other judges who may have the needed knowledge, it's up to the entrant to explain and demonstrate conformity.

CONFORMITY EVALUATION

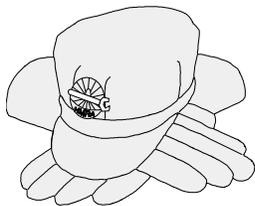
This factor deals with what is commonly known as prototype practice. A model that is logically built and having the design features of a particular prototype being modeled is considered to be conforming to the prototype. The same considerations are given to freelanced and cross-kit models. If the model was built full size, would it do the intended job? Each point awarded for conformity represents 4% of the total available. A score of 20 points can be taken to mean that the model is 80% correct.

The key to conformity is whether or not the model is logical?

EXEMPTIONS: Couplers for cars and locomotives are exempt from conformity judging. No points are to be given for the presence or absence of any style of coupler. Wheels and axles for cars and locomotives are also exempt from conformity judging. No points are to be given for insulated or properly gauged wheelsets or for correct wheel contours. In judging trackwork, no points are to be given for adherence to prototypical dimensions. (NMRA Standards require deviations from the prototype in these items.) Do not consider any operational aspect of the model in judging Conformity.

LOCOMOTIVES: Look for overall conformity, scale, logical piping and placement of components with respect to the prototype.

CARS: Look for proper roof section, number and spacing of windows, trucks, brake rigging, interiors, out-of-era parts such as K-1 brake systems on a 60' bulkhead flat car, or Timken roller bearing trucks on a narrow gauge car, etc.



ACHIEVEMENT PROGRAM JUDGING GUIDELINES CONFORMITY CONTINUED



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STRUCTURES & DISPLAYS: Consider architectural practices of construction, scale thickness of exposed walls, window and door construction.

BRIDGES: Consider the size of members, proper span lengths, bracing and support details.

Points to remember at all times: Be sure of your prototype practice. If in doubt, **do not guess!** Confer with the Senior or Technical Judge.

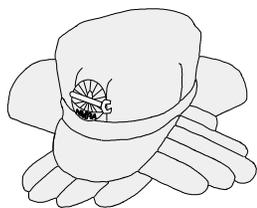
Be sure of what you mean when you score this factor. Remember to ask yourself: Is it logical? Moreover, do not confuse Conformity with Detail or Construction factors.

Determine if the attachment of parts is appropriate to the prototype: ie. riveted, pin connected, bolted, etc.

A maximum of 15 points is suggested for models that do not have any Conformity documentation such as plans or photographs.

CONFORMITY JUDGING POINTS MATRIX

Conformity	Partly Prototypical										Largely Prototypical										Completely Prototypical				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Minimal	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25			
Extensive	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25				



ACHIEVEMENT PROGRAM JUDGING GUIDELINES FINISH & LETTERING (0-25 POINTS)



May 2006

For Motive Power, Cars and Structures ONLY

**THIS FACTOR HAS TWO DIMENSIONS:
THE COMPLEXITY OF FINISH AND LETTERING,
AND THE QUALITY AND SKILL OF ITS' APPLICATION.
Finish & Lettering is 20% of the total score.
Each point is 4% of the 25 Finish & Lettering points.**

This factor deals with the general appearance and proper application of finish and lettering to achieve a specific effect. Consider what was required to reproduce multicolored paint schemes, stripes over irregular surfaces, or other complex finishes. Consider the finish quality. Are the coats smooth and even, the stripes straight, and color separations sharp? Consider the difficulty of applying the lettering. Was the lettering pieced together, awkward to apply, or particularly elaborate and complex? Consider lettering quality. Are the decals neatly applied and straight, without trapped air or apparent film? Flaws in commercial decals, dry transfers or pre-lettered parts are not to be considered as defects in the model. Do not deduct for flaws in commercial decals or pre-lettered parts, but give credit for correcting flaws or improving commercial finishes and lettering.

The presence or absence of weathering is not a factor in judging. Weathering should be judged as part of the total finish of the model; its' complexity and quality contributing to the total point score.

The accuracy of the paint scheme and lettering is considered under Conformity, the Finish & Lettering category concentrates on quality.

Judge all scales alike. Do not allow a larger scale entry to have larger finish flaws for the same score. Judge the difficulty of finished lettering by actual size rather than scale size: consider the difficulty of applying a 1/32" stripe or letter, whether it is 1.5 scale inches or 5 scale inches wide.

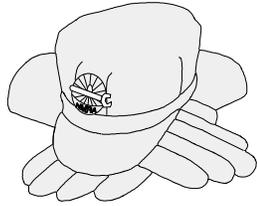
FINISH & LETTERING EVALUATION

This factor is concerned with the painting or surface finish of the model. It is the amount and quality of the work of the finish and applied lettering that are being judged.

FINISH: The accuracy and completeness of the painting and lettering is considered here. Its' quality is judged as part of the Finish category. In evaluating color, the accurate placement of the several colors is more important than the replication of an exact hue. Check lettering for proper placement, type style and size. Be sure that all colors and lettering are included and appropriate. If the model is weathered, be sure that the weathering conforms to prototypical effects.

AMOUNT OF WORK: Consider the number of colors and the difficulty in the separation lines between the colors. Check the quality and quantity of fine striping and lettering. Consider both the complexity of the finish and the complexity of the model. Among models finished with equal complexity and quality of finish, the more complex model should receive a higher score.

It is rare to find an item around a railroad without some lettering or at least a number. If a prototype is chosen with little or no lettering, then the model will not be eligible for as many points as one which has complex lettering.



ACHIEVEMENT PROGRAM JUDGING GUIDELINES FINISH & LETTERING CONTINUED



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QUALITY OF FINISH: Check that the surface looks like the medium that it is supposed to represent. Check that the colors are in the proper place and that they are neatly done. Are the letters straight? Hand lettering rates highly with respect to quantity of work but seldom measures up to the appearance of a good decal or dry transfer application. Check that the surface sheen is shiny or flat as the prototype would have been. Make sure that there is no decal shine.

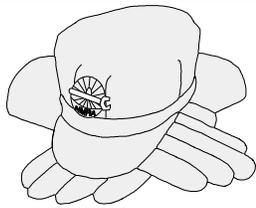
WEATHERING: The following is very important. **There is no requirement that the model be weathered.** Every prototype piece of equipment was new at some point in time. If a weathered finish is chosen for the model it adds to the amount and possibly the complexity of the work. However, weathering adds the risk of doing so incorrectly or poorly. Correct weathering is difficult. It takes knowledge of how nature affects the appearance of the prototype. Be careful here. *This is an area where your personal biases could influence your thinking as an impartial judge.*

POINTS TO PONDER ABOUT FINISH & LETTERING

- Consider the influence of artificial lights on colors when judging the appearance of the colors.
- Consider the quality of application of paint, brush marks, unevenness, runs, thickness.
- Check if the paint is too glossy or flat.
- Consider the amount and method of application of lettering.
- Check decal applications: straight, even spacing, air bubbles, decal sheen and excess film. Close trimmed decals should be the norm for above average scores.
- The quality of the decal itself is not the responsibility of the modeler.
- Check if a stencil was made to letter a portion of the model.
- Consider the amount and appearance of the weathering.
- Make sure separation lines are clean and even.
- Consider the amount of work.
- Consider the number of colors and separation lines.

FINISH & LETTERING JUDGING POINTS MATRIX

Complexity	Poor					Average					Good					Better					Outstanding				
Simple	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21				
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				
Moderate	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24				
Complex	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25				



ACHIEVEMENT PROGRAM JUDGING GUIDELINES SCRATCHBUILDING (0-15 POINTS)



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HOW MUCH OF THE MODEL IS BUILT FROM SCRATCH, AND HOW DIFFICULT WAS THE SCRATCHBUILDING?

**Scratchbuilding is 12% of the total score.
Each point is 7% of the 15 Scratchbuilding points.**

This category deals with all parts of the model which have been fabricated from basic wood, metal, plastic, or other shapes and materials. Credit is given for *quantity* only, *quality* is judged elsewhere. Are major portions of the model built from scratch, or just some parts and details? Consider the amount of effort required to convert basic materials into finished parts. Bending grabirons from wire, for example, is less difficult than soldering together piping or railings. Consider any planning or design work that was necessary. Drawing plans is considered part of scratchbuilding, if the plans are submitted with the model. Scratchbuilding from prototype plans, photos, or measurements is usually

more difficult than scratchbuilding from kit plans or a magazine article.

Casting or photo-etching is considered scratchbuilding, although less difficult than making several identical parts from scratch. Did the modeler carry out all the steps from a scratchbuilt master to finished duplicates, or were either the masters or the duplicates created by others?

You are primarily concerned only with the *quantity* of the scratchbuilding. The *quality* is judged under Construction.

SCRATCHBUILDING EVALUATION

The factor of Scratchbuilding is one of the most difficult to judge. Judging must proceed very carefully by reading and carefully evaluating the agreement between statements on the entry form and on the model.

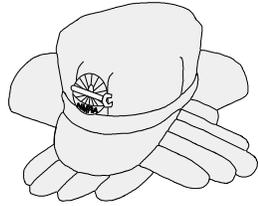
Whatever you do, however, be consistent.

This factor deals exclusively with anything scratchbuilt as opposed to purchased. The objective is to award points for anything the modeler did or made themselves as opposed to purchasing it. Generally speaking, scratchbuilding includes drawing your own plans (these should be submitted) and fabricating wood, plastic, metal, etc. parts. Certain raw materials are allowed to be used for scratchbuilding such as wood, plastic, paper and metal sheets and shapes. Paints and adhesives are also

permitted as are wire and electronic components as well as motors, gears and wheels.

Scratchbuilt cast parts may be equal to or be better than commercial castings available. If scratchbuilt castings are used, then the model should score higher than the model with commercial castings even if those castings are on the exempted list. A model with parts from scratchbuilt masters should be awarded higher points than a model with parts from a commercial master.

Look for extra efforts in scratchbuilding at all times. What at first glance may be just another commercial casting may, on closer examination, be a modified commercial casting or a combination of self-made and commercial castings.



ACHIEVEMENT PROGRAM JUDGING GUIDELINES SCRATCHBUILDING CONTINUED



May 2006

For Motive Power, Cars and Structures ONLY

Judges often confuse Scratchbuilding and Construction factors.

Please remember: Under Scratchbuilt, the judges are evaluating quantity. Quality is considered under Construction.

SCRATCHBUILDING SUBSCHEDULE

This subschedule serves only as a guide for judging this factor. It is not a definition or description of a type of model. Fabrication of any exempted item by the builder may warrant the awarding of points above the group norm.

Category	Group	Definition	Points
Locomotives	1	Everything scratchbuilt except motor, gears, drivers, wheels, couplers, trucks, light bulbs and lettering.	11-15
	2	Everything scratchbuilt except Group 1 above and for steam locomotives: locomotive and tender frames, pilot, smokebox front, main and side rods and cylinder block. For diesel, traction and other motive power: locomotive frame, truck sideframes, trolley poles or pantographs.	6-10
	3	Everything scratchbuilt except Groups 1&2 above and where applicable valve gear, and commercial parts such as domes, stack, pumps, marker lights, brake rigging, window and door castings, other detail castings, etc.	0-5
Cars	1	Everything scratchbuilt except trucks, couplers, car brake fittings and lettering.	11-15
	2	Everything scratchbuilt except Group 1 above and seats, ventilators, door latches, diaphragms, ladders, and plastic or metal window sash, end platforms and steps.	0-10
Structures	1	Completely scratchbuilt excepting metal, wood and plastic sheet and shapes and light bulbs and lettering.	11-15
	2	Everything scratchbuilt except Group 1 above, and metal and plastic doors and windows, interior fittings, figures and animals.	0-10

SCRATCHBUILDING JUDGING POINTS MATRIX

Complexity	Little Scratchbuilt					Partly Scratchbuilt					Completely Scratchbuilt					
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Simple	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
Moderate	3	4	5	6	7	8	9	10	11	12	13	14	15			
	4	5	6	7	8	9	10	11	12	13	14	15				
Complex	5	6	7	8	9	10	11	12	13	14	15					

Note: The scratchbuilding score should not be confused with the quantitative determination of whether a model is considered "scratchbuilt" or not. A model is considered "scratchbuilt" if at least 90% of the pieces/parts (other than those specifically exempted in each category) are fabricated by the modeler. This is a quantitative assessment based on the number of pieces, with no weight given for complexity.