



Special Interest Report

Earning Merit Awards for Cars and Structures: Another Look

by Mat Thompson

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Editor's Note: This Special Report is a compilation of the three-part series Mat wrote for the Potomac Flyer in 2017. It was edited by Randolph Ghertler

INTRODUCTION

My challenge in gaining Master Model Railroader (MMR) certification has been earning the required Merit Awards in the Cars and Structures Categories. To earn a Merit Award a model must receive 87.5 of 125 possible points (70%) using the *AP Judging Guidelines for Motive Power, Cars and Structures*.

Category	Factor	Point Range
Master Builder Motive Power	Construction	0-40
Master Builder Cars	Detail	0-20
Master Builder Structures	Conformity	0-25
	Finish & Lettering	0-25
	Scratchbuilt	0-15

For Cars, you must build eight cars total. At least four must be scratchbuilt while the rest can be built from kits. Four must be merit-judged and earn at least 87.5 points. For Structures, you must build 12 models. At least six must be scratchbuilt. The remainder must be super detailed. Six must earn Merit Awards.



The first car I had judged was this 50-foot stock car kitbashed from two Proto2000 Mather stock cars. The prototype ran on the Nickel Plate Road. Since I didn't read the judging matrices for each factor, I didn't know what the judges were looking for and got a terrible score: 64 points. The model is fine, even the judges liked it. The problem is that the model doesn't demonstrate the craftsmanship expected to earn a Merit Award.

So what's wrong?

- Construction Factor: The car is basically a kit; only the middle section required extra work. The modeling is nicely done, it just wasn't very complex. Result: 16 of 40 possible points.
- Detail Factor: Except for the middle, where I created new doors from molds, all the detail on the car is from the kit. It has no added detail from my modeling work. Result: 10 of 20 possible points.
- Conformity Factor: The prototype is a double deck stock car for carrying hogs.

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It had upper and lower deck doors where I have single doors for cattle traffic on my layout. That may be a believable modification but no cars were made that way, so the model is not prototypical. Result: 11 of 25 possible points.

- Finish & Lettering Factor: Painting and decaling are good; the model only lost a few points because the paint scheme is not complex. Result: 20 of 25 possible points.
- Scratchbuilt Factor: This model is mostly a kit with the cast doors and extended underbody piping being the only scratchbuilding. Result: 7 of 15 possible points.

That rocky start taught me the value of understanding the judging factors matrices. I hope describing my experiences will make the journey easier for others. I will tell the story in three parts:

- Part 1: Judging - understanding the process
- Part 2: Lessons Learned in Structures
- Part 3: Lessons Learned in Cars

PART 1 - Judging - Understanding The Process

Who judges your work? Judges are model railroaders just like you who are typically asked to serve by the Division Achievement Program Coordinator or contest chairmen for conventions. Judges are experienced modelers but may not be MMRs or have earned Achievement Certificates in the category they are judging.



Ed Price, Brian Sheron, and Mark Anderson are judging models on my layout. Merit judging always has at least three judges.

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Conventions have training sessions for judges. If the judging is at your home or another location, the person in charge of the effort keeps the team focused. Judging leaders use NMRA forms and published guidance to ensure consistency and fairness in the program. In my experience, judges have done a conscientious job. I have not always agreed with the scores, but the differences have been minor. My models that did not earn Merit Awards just weren't good enough.



Both the Bar Mills station and Branchline milk reefer kits are highly detailed models if carefully constructed. But neither would earn a Merit Award, since there is no scratchbuilding, neither kit is complex and neither kit has details other than those supplied as part of the kits.

Both the Structures and Cars categories require a combination of highly detailed and scratchbuilt models. If you are an experienced enough model railroader to be interested in the Master Model Railroader program, building “highly detailed” or “superdetailed” models is probably a skill you have already:

- A car is superdetailed if it has separate grab irons and ladders, underbody detail, and air hoses and/or similar items.
- A structure is superdetailed if it has weathering, roof details, electrical fixtures and similar things.

Four of the eight cars required to earn the Car Certificate and six of the twelve structures required to earn the Structure Certificate must earn Merit Awards. In the documentation submitted for each Certificate you explain that the other models are superdetailed but the models don't need to be judged.

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TIP: If you are unsure how your models will hold up to Merit Award, a good strategy is to scratchbuild your first models for either category. If they receive Merit Awards when judged, good. But, even if they don't, you will have learned a lot about judging results and you can count them as highly detailed models.

Each of the five factors has a scoring matrix which is explained in the AP Judging Guidelines document

(<http://www.nmra.org/sites/default/files/education/achievement/pdf/2006-judging-guide-lines.pdf>).

TIP: Remember, judges are looking to see the craftsmanship skills you have shown building a model. For instance, commercial grab irons look good but bending your own from wire is a better display of your modeling skills.

CONSTRUCTION JUDGING POINTS MATRIX

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

The Construction Matrix considers the complexity of building the model and how well it was built. Complexity is determined by the model construction methods, not the size of the model. For instance, a plastic kit is a "Simple Model" so there is little

workmanship to judge. However, the same car, scratchbuilt with individual pieces of wood, wire, and plastic might be “Somewhat Complex.” If you cut your own dimensional lumber and create parts from sheet brass, it might be “Very Complex.”

DETAIL JUDGING 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
Hard-to-Add Complex	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

The Detail Matrix rates added detail and the complexity of added detail. Adding a commercially-made vent to a roof is a simple detail. Adding a scratchbuilt or kit-bashed cooling unit is more complex.

TIP: Detail on a kit that is provided by the manufacturer as part of the product is not counted, only detail added by the modeler.

TIP: There is a relationship between judging factors. The more detail added, the more complex the construction of the model. Conversely, if you don’t add details, it can impact the point score in both the Construction and Detail categories.

CONFORMITY JUDGING 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
Minimal	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
	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
Extensive	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

The Conformity Matrix looks at how well the model duplicates the prototype and follows normal architectural practices. For structures, prototype references are helpful, especially if there are unique features of the structure. But, since all of us have some sense of how real structures are built, following common architectural practices is just as helpful. For cars, prototype references are critical. There is great variety in the methods, materials and placement of features between railroads, series of cars and periods of time. Without diagrams and photos, judges have no way of knowing how well the model duplicates the prototype.

TIP: Without good prototype information, judges cannot fully score Conformity. That will decrease the points awarded because the judges have no way to know if the model is correct.

FINISH AND LETTERING JUDGING 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	21	22	23
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
2		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Moderate	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
Complex	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	

The Finish and Lettering category judges how well painting, weathering and lettering are done. A “Complex” finish would typically involve multiple colors requiring masking between the application of colors. Commercial decals or other lettering and signs can be used with no point deduction. If you do make your own lettering or decals, that would be considered in the Scratchbuilt category.

TIP: On cars, adding lettering less often modeled (the small print) can also help the score in the Details and Conformity categories.

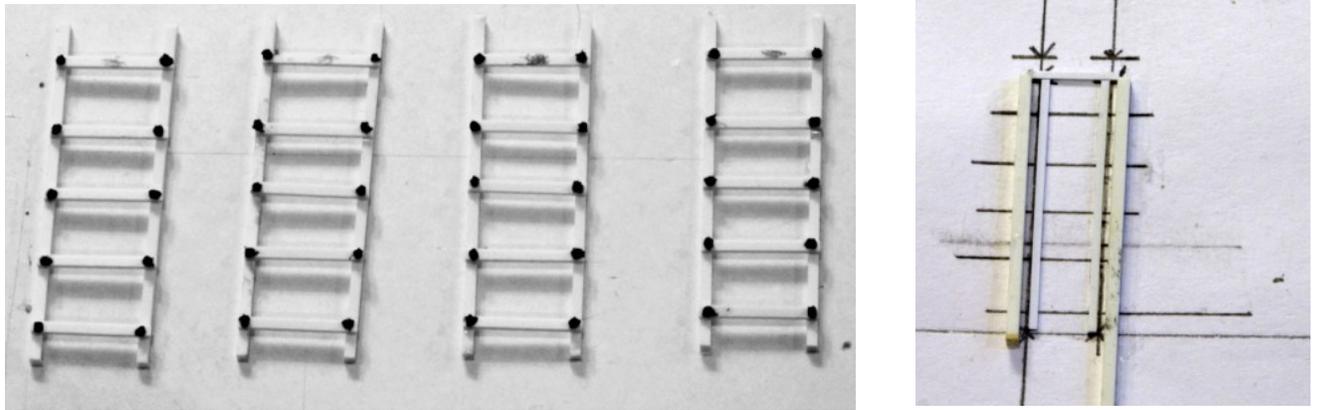
SCRATCHBUILT CATEGORY

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

A model in which more than 90% of the parts are made from basic shapes such as scribed siding, wood and plastic strips and wire is scratchbuilt and will earn scratchbuilding points based on the complexity of the model. A model which is not scratchbuilt can still have scratchbuilt parts and subassemblies and earn points in this category. Some parts are excluded from being considered as commercial parts. They don’t count against the 90% parts criteria for scratchbuilt models. These parts include trucks, couplers, brake appliances, decals, lights and nut/bolt/washer castings.

TIP: Scratchbuilding windows, doors, ladders and similar items can increase the Construction and Detail category scores while keeping the part count within the Scratchbuilt definition.

Judges don't count part by part to establish a number, but seeing numerous commercial parts on a model may cause them to consider a model as not being scratchbuilt.



Ladders provide an example of how scratchbuilding can help in earning Merit Awards:

- Each car ladder has 17 pieces, increasing the car's part count by 68 parts.
- Building the ladders instead of using commercial ladders increases the complexity of the model in the Construction factor. Adding the NBW castings improves the model for the Detail category
- Building the ladders improves the score in the Scratchbuilt factor.
- Painting worn spots on the ladder rungs improves the model in the Finish and Lettering factor.

PART 2 - Lessons Learned in Structures

When I first became interested in the Master Model Railroader program, the only Merit Award models I saw were also prize winners in National and Regional NMRA Conventions. I didn't find photos and scoring information of less illustrious Merit Award models typical of my best modeling efforts. This article uses pictures and brief text to explain the points given to several of my structures so you gain a sense of what's needed to earn Merit Awards. Remember that a model needs to score 87.5 points or more out of a possible 125 to receive a Merit Award.

This chart is a reminder of the Judging Factors:

Category	Factor	Point Range
Master Builder Motive Power	Construction	0-40
Master Builder Cars	Detail	0-20
Master Builder Structures	Conformity	0-25
	Finish & Lettering	0-25
	Scratchbuilt	0-15

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- Six structures must be scratchbuilt.
- Six structures must be highly detailed.
- One structure must be a bridge.
- Six structures must earn Merit Awards. They can be any combination of scratchbuilt and super detailed models.

Twelve structures are needed to earn the Structures Certificate. A structure can be a building, a signal bridge, a ship or virtually anything man-made that isn't a railroad car or engine. Four of my structures illustrate the expectations for super detailed models. Each of these models is nicely done and well detailed but they don't demonstrate the craftsmanship required to earn a Merit Award.



The manufacturer cut walls and many other parts to size. Window and door openings were cut and the tug's hull was a cast piece. All these steps the manufacturer has taken to make a good kit have taken much of the work out of building the model. The store is scratchbuilt but not as defined by the NMRA judging criterion, which is that a model is considered "scratchbuilt" if at least 90% of the model's pieces/parts

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are fabricated by the modeler. My model didn't meet that criterion because I used commercial door and windows castings and other detail parts.



Chalk Creek Water Tank – kit



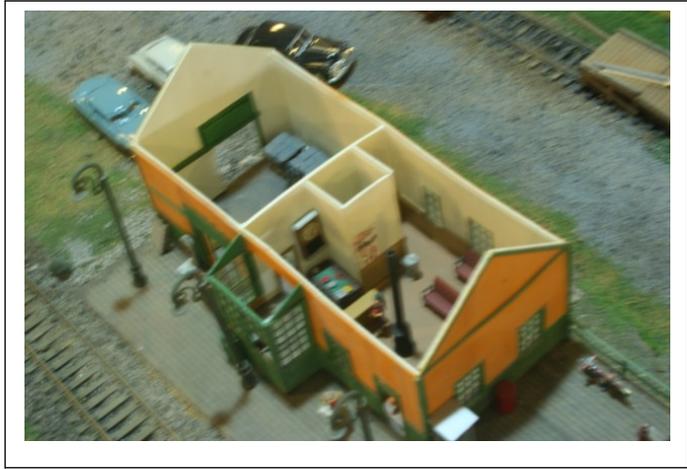
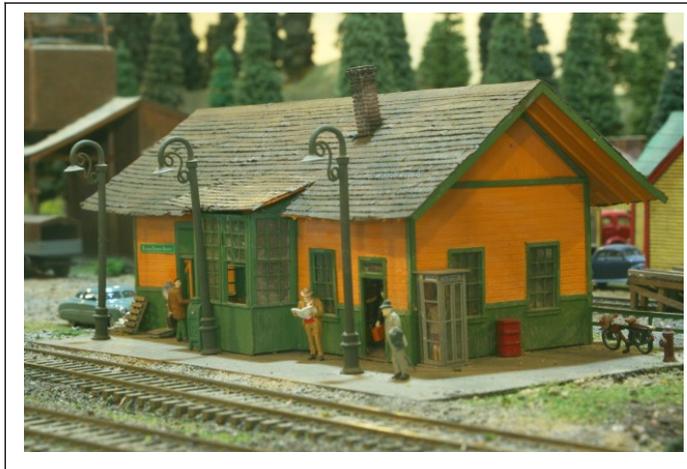
Store - scratchbuilt

The next several models earned Merit Awards. All but one was judged at home in place on my layout. They were built to satisfy my modeling interests and needs of my railroad. Evaluation for Merit Awards came much later. So, even if the scores aren't high, I learned that structures can make the grade if you model decently.

TIP: If your models are judged at home, you can have structures already on a layout judged and there is more opportunity to talk with the judges, which makes it easier for them to understand what you have done and for you to understand their scores.

MODEL:	Jefferson Station – Scratchbuilt		SCORE: 89
Factor	Points		Good Bad
	Possible	Awarded	
Construction	40	28	No joint gaps, added interior and removable roof
Detail	20	17	Station interior, completeness of details
Conformity	25	17	Functionally believable Station details varied from prototype
Finish & Lettering	25	17	Smooth paint, roof weathering Simple paint scheme
Scratchbuilt	15	10	Interior and removable roof Commercial casting doors and windows

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Jefferson Station was scratchbuilt from magazine plans for an ornate Colorado narrow gauge station. Eliminating some of the fancy trim to more fit the environment of my railroad cost some Conformity points. Without the scratchbuilt interior, this model would not have earned a Merit Award. The score could have been increased by adding the Colorado trim, scratchbuilding the doors and windows (not hard with styrene), and making the platform from individual planks.

TIP: Structures do not have to be big to earn Merit Awards.



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MODEL:	Tillamook Cheese – Kitbash		SCORE: 94
Factor	Points		Good Bad
	Possible	Awarded	
Construction	40	35	Complex building, used multiple building materials and structure has many roof lines
Detail	20	13	Gutters, downspouts, electrical meter not modeled
Conformity	25	16	Building is believable but not model of a prototype
Finish & Lettering	25	22	Light weathering typical of food plants, complex painting of doors and windows, protoptype signs
Scratchbuilt	15	8	Scratchbuilt platform, created decals for signs

Tillamook Cheese is another example of the value of scratchbuilding. Additional points could be earned by adding interior details visible through open doors, detailing the second story room and making it visible with removable roof. Potential additions include additional chimneys and roof vents, downspouts and gutters, and an electricity meter.



This model did receive a Merit Award but I feel the point count is low. The problem is that my documentation did not show the judges the complexity of construction.

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MODEL:	Farm House – Scratchbuilt		SCORE: 93
Factor	Points		Good
	Possible	Awarded	Bad
Construction	40	32	Clean joints, complex roof lines
Detail	20	13	Detail are complete but structure only required moderate details
Conformity	25	15	Rain gutters some places bend in under the roof
Finish & Lettering	25	18	Smoothly painted, clear definition between colors
Scratchbuilt	15	15	Windows, doors, chimney and back porch lattice scratchbuilt

You are required to fill out a judging form or attachment describing the scratchbuilt and commercial parts used and explain the work you did. My suggestion is to use pictures and bullet lists – things that are easy and quick to digest.

TIP: Scratch building windows and doors from styrene is not difficult and is an easy way to improve scores and show your modeling ability.

TIP: This is NOT a construction article for the model press; you are just giving the judges a handy guide to understand your work. Page after page of dense text doesn't help your cause. Judges are supposed to read it but that doesn't mean they understand it or find it useful.

If you used a unique construction process such as creating your own decals or uncommon technology such as 3D printing, explain what you did and how you did it in detail. It could add to scores in several factors, but if the judges are not familiar with what you have done, they won't know to give you credit for your work.

TIP: Include pictures of the work in progress so the construction process becomes obvious. I did not do that for this farmhouse, so the judges may not have understood all the things I did to build this model.

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One common question is whether commercial kits can receive Merit Awards. There is no rule against it, and I have seen Fine Scale Miniature models awarded more than 87 ½ points, but you may find it is hard to get the points needed because much of the quality of a kit is from the manufacturer's work, not the work of the modeler.



This station is from South River Model Works. Materials and instructions are first class. With some modeling skills and patience, it builds into a beautiful model. It has never been judged but here's my estimate of the point count it might receive.

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MODEL:	Station – kit		SCORE: 58 to 75
Factor	Points		Good / Bad
	Possible	Awarded	
Construction	40	25 to 30	Clean joints, complex roof, Roof seams are too large
Detail	20	5 to 7	Limited additional detail
Conformity	25	15 to 20	It's believable and the instructions show a photograph of the prototype No prototype diagrams or drawings to check dimensions
Finish & Lettering	25	13 - 18	Brick painting is good, all painting is neat Roof weathering too dark
Scratchbuilt	15	0	No scratchbuilt elements
How to increase score	Repaint and weather roof, review photo for detail that could be added, add rafter tails, open freight door and add interior details by door, add birds and bird droppings to roof, model some windows in open position		

TIP: Judge your own models against the Factors to ensure your success.

PART 3 - Lessons Learned in Cars

A model needs a total score 87.5 points or more out of a possible 125 to receive a Merit Award.

Category	Factor	Point Range
Master Builder Motive Power	Construction	0-40
Master BuilderCars	Detail	0-20
Master Builder Structures	Conformity	0-25
	Finish & Lettering	0-25
	Scratchbuilt	0-15

- Eight cars are needed to earn the Cars Certificate.
- There must be four different types of cars.
- One car must be a passenger car.
- Four cars must be scratchbuilt.
- Four cars must be superdetailed.
- Four cars must earn Merit Awards. They can be any combination of scratchbuilt and superdetailed models.

As with earning the Structures Certificate, meeting the requirement of building superdetailed models for the Car Certificate probably isn't difficult for hobbyists involved enough in modeling to be interested in becoming Master Model Railroaders.

However, earning a merit award for a superdetailed kit, even if well constructed, is difficult to do. Consider the judging results my Branchline Coach kit received.

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In terms of **Construction**, as a kit it is only somewhat complex since the manufacturer provided the car body with sides and ends as a single piece. The body piece came with window and door openings, drilled holes for proper placement of ladders and stirrups, and the body's rivet detail cast into the car sides.

MODEL:	Coach - Branchline Kit		SCORE: 72	
Factor	Points		Good	Bad
	Possible	Awarded		
Construction	40	21	Very good, widows excellent	Somewhat complex as a kit - would be highly complex if scratchbuilt
Detail	20	14	Well done underbody	
Conformity	25	14		Kit underbody inconsistent with diagrams
Finish & Lettering	25	19	Good paint and decals	Simple paint scheme
Scratchbuilt	15	4		Kit -windows features are only scratchbuilding.
Comments	Well detailed kit, but because it was a kit, construction was not complex and little scratchbuilding.			
How to increase score	Adding coupler cut lever bars and coupler yoke safety chains would have added detail and improved conformity.			

Detail and **Conformity** both lost points because the few parts I did not add were chains and other very fine details. If I had understood the scoring process better, I would have worked harder to add them, but they were so difficult to add neatly that they may well have detracted from the model's final appearance.

TIP: Detail the underside of the car, whether it is kit built or scratchbuilt. Judges expect it – and it's a good place to add details.

I did spray paint the car, add decals, and lightly weather the car's lower body, underside, and trucks. Considering the car's simple paint scheme, my score for Finish and Lettering was good.

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However, many superdetailed kits come with the body painted and lettering already done, so you can only earn points for weathering. My model received a few **Scratchbuilt** points because I made the decals and window shades. Many superdetailed kits don't leave much opportunity for scratchbuilding unless you discard parts and make your own.

The total possible points is 125. My model was awarded 72 points. Adding a few more detail parts might have raised the score but it is hard to see it reaching the 87 ½ points needed for a Merit Award. Virtually any kit limits the **Construction** and **Scratchbuilt** factors to such a degree that 25 to 35 points are out of reach even before building the model begins. For that reason, except possibly for some resin kits, earning a Merit Award for a kit-built model is uncommon. Even though the coach did not receive a Merit Award, it did count as a superdetailed model and fulfilled the requirement for building at least one passenger car.

Building a kitbashed car can increase the complexity of **Construction** and add the opportunity for **Scratchbuilt** parts. My model of Northern Pacific Boxcar 39538 is a kitbash of a Bowser kit based on a photo of the prototype car.



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MODEL:	Boxcar - Kitbash		SCORE: 81/92
This car was judged and then, after additional work, was judged again - scores show the initial points and points from the second judging			
Factor	Points		Good
	Possible	Awarded	Bad
Construction	40	25/31	Bowser kit with openings cut for doors, molded on detail removed and replaced
Detail	20	15/14	Well detailed, including underbody
Conformity	25	18/20	No air hoses or retainer valves
Finish & Lettering	25	18/18	Excellent weathering and tarred roof - provided color photo of prototype
Scratchbuilt	15	5/9	Discarded kit underbody and made new underbody with extensive piping, created and printed additional decals
Comments	This kit was built, painted, decaled, and weathered to match a color photograph of this car to include the load.		
How to increase score	Add air hoses, retainer valves, scratchbuild walkway		

TIP: If a car does not achieve a Merit Award score, consider additional work on the model and then have it judged again.

Even though kitbashing did earn me a Merit Award, I still needed three more Awards and still needed to complete four scratchbuilt cars to earn the Cars Certificate. I decided to earn the Merit Awards with scratchbuilt cars.

It has been a test of my modeling skills for several reasons. I had never scratchbuilt a car conforming to the NMRA standard, which is that 90% or more of the pieces used to build a scratchbuilt car must be fabricated from basic materials like stripwood and scribed siding. That severely limits the use of commercial parts (trucks, couplers, and brake appliances are not counted as commercial parts for judging purposes). I don't have specialized tools such as precise measuring instruments or skills using metal working tools, which made it hard to duplicate any prototype car features. Examples are latches, grab irons, stirrups, intricate ladders with curved pieces, many types of car ends, and many types of car doors.

My first scratchbuilt car was a disaster. The judges noted the car wasn't square, paint obscured the individual board siding, underbody detail was not complete, and it had too many commercial parts to be considered scratchbuilt. I lost the score sheet but I think this model got around 60 points.



The results were disappointing, but as I reviewed the judging matrices I understood the judges' assessment was correct, maybe even generous. Still, two good things came from my efforts. First, as bad as it was, I did get credit for a scratchbuilt car. Second, my next models were better because of the lessons I learned.

One key was to find clear, understandable car plans and photos. I needed them to build a model and the judges needed them to evaluate my work. Surprisingly, many of the plans in the hobby press were not detailed enough to model a car. The weak point most often was the interlacing of piping, cables, and wires on the car underbody. I ended up using kit plans because the detail was so much better.

TIP: It is fully acceptable to use the instructions and drawings from a kit to build your models. The Kalmbach book *Detailing Freight Cars* by Jeff Wilson has generic diagrams for brake systems and underbody detail that are easy to follow and good prototype documentation.

I also choose to build older wooden cars. They tend to be board construction, which is more like structure modeling than newer metal cars. Board construction means the car will have many parts which added to construction complexity and increased the number of commercial parts I could add to the models.

S.R. & R.L. Boxcar 52 is an On2 model, not what I normally model. I chose to do it because the older construction style made it easier to fabricate parts and because I had very complete car diagrams. My goal was to demonstrate modeling skills worthy of a Merit Award, not to populate my layout.

Earning Merit Awards for Cars and Structures: Another Look



MODEL:	Boxcar - Scratchbuilt			SCORE: 101
Factor	Points		Good	Bad
	Possible	Awarded		
Construction	40	30	Interior, sliding doors	One end has poorly aligned roof and roofwalk
Detail	20	16	Underbody detail	
Conformity	25	22	Closely adhered to prototype	
Finish & Lettering	25	18		Simple lettering and single color
Scratchbuilt	15	15	Car has almost 400 parts, 16 are commercial parts	
Comments				
How to increase score	More care in making car square			

After receiving a Merit Award for the On2 boxcar, I still needed two more scratchbuilt cars and two more Merit Awards to complete the Car Certificate.

Using plans from long-defunct Taurus Models, I built two stockcars simultaneously, Oregon Short Lines 1250 and Oregon Short Lines 1252. Remember that the requirement to build eight cars also only requires that you build four different types of cars.

Both cars received a Merit Award but notice how losing just a few points in each factor brought down the cumulative score. Having the knowledge of how the factors related helped me to keep all the scores within the needed range.

Earning Merit Awards for Cars and Structures: Another Look



MODEL:	2 Stockcars - OSL 1250 & OSL 1252 - Scratchbuilt		SCORE: 101/98	
Factor	Points		Good	Bad
	Possible	Awarded		
Construction	40	33/33	Each car had over 300 individual parts.	Used commercial grab irons. Roof and walkway not quite square on OSL 1252
Detail	20	13/13	Underbody detail	Coupler cut bars not properly modeled
Conformity	25	23/20	Closely adhered to prototype	OSL 1252 - No documentation for arch bar trucks
Finish & Lettering	25	19/19		Simple lettering and single color
Scratchbuilt	15	13/13		
How to increase score	More care in making car square, make grab irons from wire			

Here is what I learned building models for the Structure and Car Certificates:

- Read the AP Judging Guidelines for Motive Power, Cars, and Structures.
- Have one or two models judged early to understand the judging process.
- Construct the scratchbuilt models first. Even if they don't earn Merit Awards, they help fulfill the requirement for scratchbuilt cars and for superdetailed cars.
- Be aware of how the judging factors are related and build your models to take advantage of that relationship.
- Document model construction with pictures from start to completion. With photos it is much easier for the judges to see how you built the models and give you credit for your work.

If, like me, you are a decent modeler but not a superb modeler, earning Merit Awards will stretch your skills. And that's exactly the point of the Master Model Railroader program.

About the Author



Mat Thompson's Oregon Coast Railroad was featured in Great Model Railroads 2014. Building structures and scenery are his favorite modeling activities. He is also an avid model railroad operator and regularly attends operating sessions.