

The "Tail-less" Gee Bee R-1

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The Gee Bee R-1 is one of the most famous of the racing planes of the Golden Age. It was built in 1932 by Granville Brothers Aircraft Inc. in Springfield, Massachusetts, and it won the Thompson Trophy the same year, flown by the famous Jimmy Doolittle. He also broke the absolute speed record for land aircraft in September 1932.

Williams Brothers have produced an excellent kit of the plane in 1/32 scale. Since the R-1 and its sister ship, the R-2, were modified a number of times, there are lots of ideas for interesting conversions. One of the most eye-catching is to build it as it looked when it flew for the first time, with Russell Boardman at the controls, on September 13th, 1932. During the first test flight of the 'tail-less' plane, it was discovered that the directional stability was marginal. Therefore, the plane was equipped with a small fin and the size of the rudder was increased. The modifications which need to be done to the kit in order to depict the plane as it looked on its first flight are listed below.

Williams Brothers are very humble in their marketing, and constantly point out that their kits are not intended for "rank beginners or instant gratification kit assemblers". In my view, this is rather exaggerated and seems like some typically American way of avoiding product liability lawsuits. I guess they don't want to be sued by someone who didn't manage to make the kit look like the box art! I find most (but not all) Williams Brothers kits very good, and especially very accurate. Few other kit manufacturers would put a correction slip in the box to inform the builder that there is a mistake in the historical part of the kit instructions about the person who painted the original plane! There is always a bit of flash on the kit parts, and almost always some parts which fit really badly, but most of their kits are good basic material for a very good model. I think this is more important than the amount of filler you have to use. I especially like the fabric detail of most of the kits.

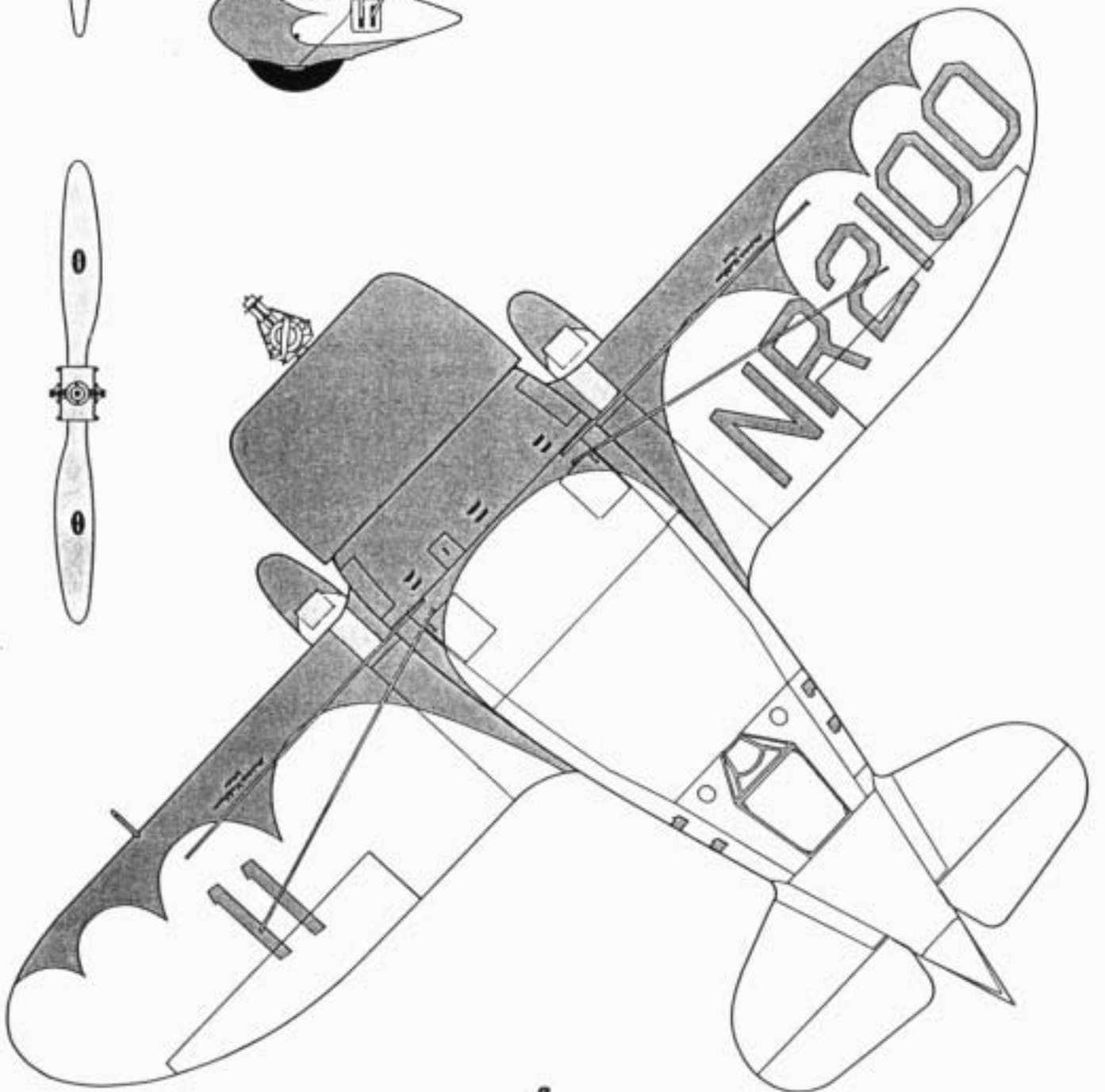
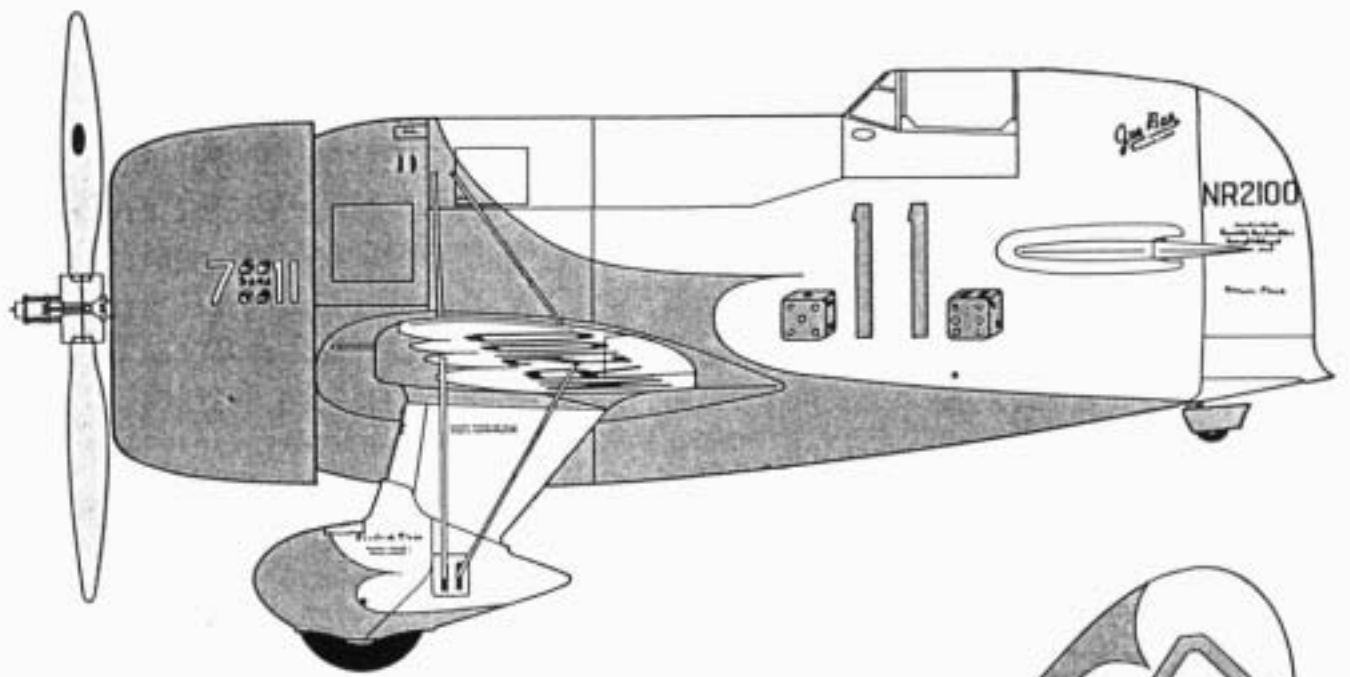
The kit

The engine consists of thirteen parts (plus nine exhaust pipes, which don't look very convincing, and which I have never bothered to use) and looks extremely good after a little dry-brushing with silver paint. The interior is reasonably complete, at least if you are going to build it with a closed canopy. However, some details, like the tubular structure and the rudder pedal attachments, are simplified, and if you want more details, I recommend Harry Robinson's plans. The kit instructions do not give any colour for the fuselage structure, but on Delmar

Benjamin's R-2 replica all the interior tubing is painted red, which surely looks nice enough to convince me! The wing trailing edges are reasonably thin, but could do with a bit of sanding. The fit between the landing gear legs and the wing is very bad, and needs a lot of filler. This is a pity, since it would have been much easier to paint the landing gear fairings and the wings separately, before attaching the landing gear to the wing. You can choose between plastic wheels and rubber tyres, but I think it is easier to get a good result with the plastic wheels.

One of the biggest problems with the kit is that the top of the fuselage is flattened, and has a big low area between the windscreen and the firewall. It is very obvious if you hold a ruler along the top of the fuselage. It takes quite a bit of Milliput to build this up, but at the same time you can fill the louvers on the top of the fuselage, which look quite awful, and cut new ones. The inner ends of the elevators need to be trimmed, in order to give a straight hinge line when you attach the stabilisers to the fuselage. The wing fillets need to be built up in a couple of places, otherwise they will be lower than the wing surface, which looks a bit unlikely. This is easily done by masking with Sellotape along the fillet edges, applying some Milliput and smoothing with a wet finger.

The paintwork is a real challenge! It takes quite a while to make all the masks, but cutting them out is much easier if you start by making a plasticard template which matches the kit drawings. The red and white scalloped areas should be separated by a thin black pinstripe. At first sight, this seems impossible, but it is actually not as difficult as it looks. The pinstripes can be cut from black solid decal film by using two razor blades, held together parallel to each other. If the razor blades are not very sharp, or if you press them too firmly against the film, the pinstripes will crack into short pieces. If the decal film is old and brittle, it will also crack. You only need to cut through the decal film itself, not the backing paper. After you have soaked the decal sheet, you can just remove the film beside the stripes. The decal film is not flexible enough to be bent around the curved parts of the scallops, so the pinstripes have to be cut in curves. However, the curves do not need to be perfect, since they can be bent a little. Using SuperSet and a thin paint brush, it is reasonably easy to attach the stripes. The work is in fact made much easier by the difference in level between the white and the red paint, caused by the masking. Do not expect to be



finished with the work in one night, though! The model must be handled carefully during the work, and varnished afterwards, since the pinstripes will come off quite easily.

The decal sheet is very good. I once got one with bad register between the colours, but Williams Brothers immediately sent me a new one when I complained. However, the red colour is rather thin, and it might be difficult to find red paint which is light (and transparent) enough to match the colour of the decals. If you have more than one sheet, put two decals on top of each other in order to get a darker shade of red! The decals should be soaked thoroughly, since I have noticed that the glue has a tendency to yellow.

The plane should be rigged with streamline wire, and the kit includes profile monofilament wire made of something that looks like nylon fishing line. This sounds like a good idea, but I have never managed to get a good result using it. The wire is not straight and it is difficult to tighten, even with the heat of a soldering iron. It is easy to tighten the lines too much, causing them to come loose, and when you have managed to tighten them, they quite often go slack again in a couple of days. I use heat-stretched Contrail profile rods instead, and I usually cement them with five-minute epoxy.

Necessary modifications to the kit:

Fin and rudder: Williams Brothers seem to have planned for this conversion, because there is material enough to just cut and sand the fin and the top of the rudder away, without using any filler. There should be a small hump on the spine, it is not caused by clumsy draughtsmanship!

Propeller: The plane was equipped with a lovely old-fashioned Hamilton Standard constant speed propeller. Anyone who has seen the centrifugal regulator of a steam engine will immediately understand how it works! This propeller will hardly be found in any other kit or on the aftermarket (The Hall Bulldog used a similar propeller, but Williams Brothers have not made a good job of it in their kit), so you will have to scratch-build the hub. The kit propeller blades are a little bit too short, but can be used if you extend them 2 mm by cutting off the cuffs. For the rest, you have to use plasticard and different sizes of plastic rod.

Rigging: One of the good things with this conversion is that the rigging is easier, since the plane was not equipped with wire spreaders or king posts.

Cooling louvers: The plane only had six louvers on the front fuselage, instead of the thirteen ones depicted by the kit, again making things easier if you decide to make new louvers.

Colour scheme: The plates at the attachment points of the flying wires on the outsides (not the insides!) of the landing gear legs were unpainted aluminium. The foot steps on the wheel spats and the walkways on the wing root were larger than the kit decals. They were lighter than the red paint and darker than the white paint. I believe they were unpainted, but it could have been patches of fabric or some anti-slip material. The propeller was unpainted.

Markings: The plane had no "Powered by Wasp" decals on the engine cowling. The texts on the rudder were positioned lower. The registration number was painted on the rudder, and should really be somewhat smaller than the kit decals. The decals can, however, be used, if you haven't sanded away too much of the trailing edge of the rudder. You might need to cut the decals apart in order to put the characters closer to each other. The propeller blades were equipped with red and yellow Hamilton Standard decals, which can be found in several kits and on some SuperScale sheets.

Sources:

- €# **MAP Plan Pack No. 2789.** Good, well-detailed drawings by Harry Robinson, one photo of the plane. The same drawings and photos also (better) reproduced in "Aircraft Archive - Famous Racing and Aerobatic Planes" (Argus Books)
- €# **Henry A. Haffke: "Gee Bee - The Real Story of the Granville Brothers and Their Marvelous Airplanes".** Probably the most accurate source of background information on the Granville Brothers and their company. Includes four photos of the plane, plus incomplete and rather badly reproduced Robinson drawings.
- €# **Reed Kinert: "Racing Planes and Air Races, Vol. III".** Two photos of the plane, useless drawings by D. W. Carter.
- €# **S. H. Schmid and T. C. Weaver: "The Golden Age of Air Racing, Vol. I".** Two photos of the plane, incorrect drawings by R. S. Hirsch.
- €# **Charles Mendenhall: "The Gee Bee Racers".** This book does not contain any information on the R-1 in its original configuration, except for a rather bad drawing by Mendenhall, but it gives a lot of general information about the Gee Bees. It does, however, contain some incorrect old myths and should be read critically (although I hear that a revised edition has been published).