

Faller Car System Articulated Bus

N Scale

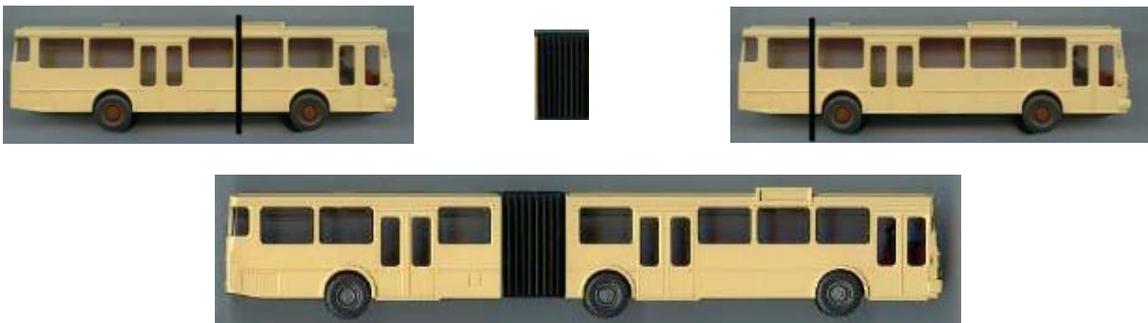
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On a particularly hot Sunday afternoon I started noodling out how to convert the N scale FCS "MB O 305 Stadtbus" (Nr.162032) into a working articulated bus (Gelenkbus). Comparing photographs of the Wiking HO models of the *Stadtbus* and *Gelenkbus*, it's easy to see how two N scale busses can be cut to provide the basic body pieces. The trick is reconnecting the two parts with a good looking and functioning articulation joint and diaphragm.



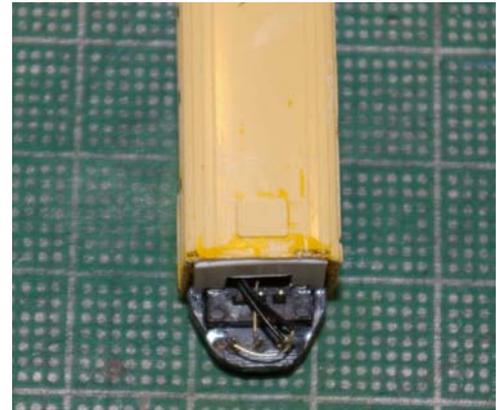
A few years ago, I built a static model of an N scale articulated bus using two Wiking *Stadtbus* models, so rather than cut up two more body shells, I disassembled my kitbashed model and reused its parts. Obviously, the FCS mechanism replaces the chassis from the front part of the bus; the remainder of the bus can be built using the Wiking parts.

One feature that contributes to FCS vehicle reliability is its three-point suspension. On the basic vehicle this is accomplished by allowing the front axle to swing around a longitudinal pivot point thereby keeping all four wheels in contact with the road and allowing sufficient vehicle weight to remain on the drive axle. When I built

the trailer to go with my Fiat (ex-Mercedes) truck, I allowed for some slop in its kingpin connection to help keep all four wheels on the road, though this is more for appearance than for operational reliability. On the *Gelenkbus* the pivoting for the trailing unit will occur at the articulation joint, thereby permitting the rear portion to be solidly suspended on its single axle.

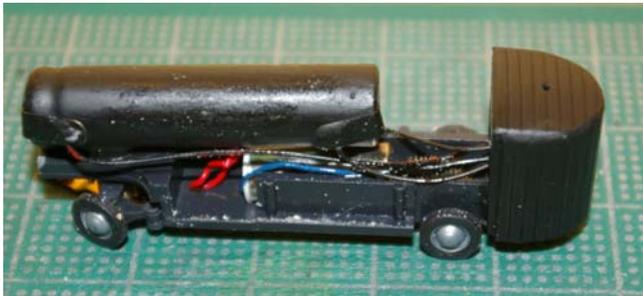
At first I thought I might have to relocate the chassis-mounted charging socket and perhaps even the on-off switch, but after trimming the surrounding area to a semi-circular shape and test fitting pieces, it appears that these can be left alone as they fit within the area that would be covered by the articulation joint and do not interfere with the clearances needed to allow the trailing portion of the bus to follow in a curve.

For the flexible connection my initial thoughts were to use either a thin piece of rubber embossed with ribbing or a piece of tissue or light fabric. But each of these materials, once formed into an upside-down 'U' shape, proved to be way too stiff to allow the rear of the bus to swing from side to side.



After failing with the flexible materials, I opted to construct a semi-cylindrical hard plastic shape around which the rear portion of the bus could rotate and mounting it to the rear of the front unit. The material is Evergreen's Car Siding. Note the tiny hole drilled in the top of the piece; this is the pivot point for the rear portion of the bus.

This is also a good time to paint the battery and the wires black to make them less noticeable through the large bus windows.



As one might imagine, a project of this nature involves a lot of trial and error fitting of parts. Here the 'diaphragm' is in its final configuration with the front body shell temporarily affixed to the chassis.

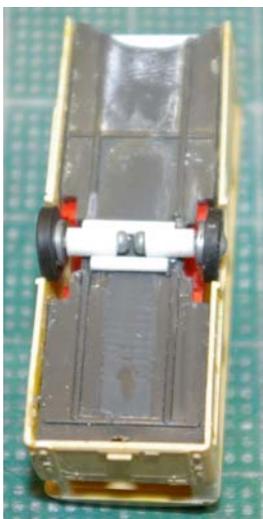
I found that Woodland Scenics' Hob-E-Tac adhesive is good for temporarily assembling things to check the fit and the appearance of the model. The joint can also be repeatedly separated and rejoined without having to add more adhesive; Hob-E-Tac cleans up easily when it's time to assemble the pieces using a more permanent cement.



When I'm brainstorming a project, I have fantasies about building complex miniature parts where everything is perfectly aligned, holes are drilled perpendicular, and the model is straight, level, and wonderfully symmetrical. Reality tells a different story.

The wheels on the trailing portion of the bus need to rotate independently, ruling out a one piece axle (the easiest solution). I discovered that I could thread a #00-90 MicroTrains coupler mounting screw into the hole in the back of the Faller wheel (I had purchased several spares for projects just like this). Eventually I hit upon the idea of using a short length of Evergreen plastic tube as a bushing through which I could attach the screw to the wheel. This allows the wheel (and screw) to spin, keeps the wheel perpendicular to the road surface, and gives the perfect exterior surface (plastic) to glue to the plastic chassis.

Short pieces of plastic ahead of and behind the 'axle' help keep the pieces aligned and provide more gluing surface. Also note the curve cut in the front of the chassis (top of photo). This provides clearance for the rear portion of the bus to swivel around the hard plastic 'diaphragm'.



Here, the mechanical work is mostly done and the bus is ready for its first test drive. Though not attributable to this specific application, I had some problem with the magnetic steering; it would consistently lose contact with the wire at a couple of spots on the layout. I swapped the part out and the problem disappeared; examining the faulty part, I suspect that the magnet is adjusted too high above the road surface.



More critical I found is that the excessive front overhang of the *Stadtbus* (longer than that on any other N Scale FCS vehicle) caused problems on my relatively tight end loops. The mechanism could make the turn okay, but the front right corner of the bumper hits obstructions placed too close to the roadway.



To camouflage the unsightly gap around the semi-cylindrical 'diaphragm' I installed strips of thin rubber to the rear portion of the bus. In the photo above, all of the windows are not yet installed - very tricky at the articulation joint because there's little space left.

The bus is painted in the traditional two-tone green of 1970's era Italian city busses using Floquil BN Green and Southern RR Green paint with non-skid center roof panels in grimy black. The decals are from **decalENNE** – <http://www.decalenne.com/> – item #160-A01.