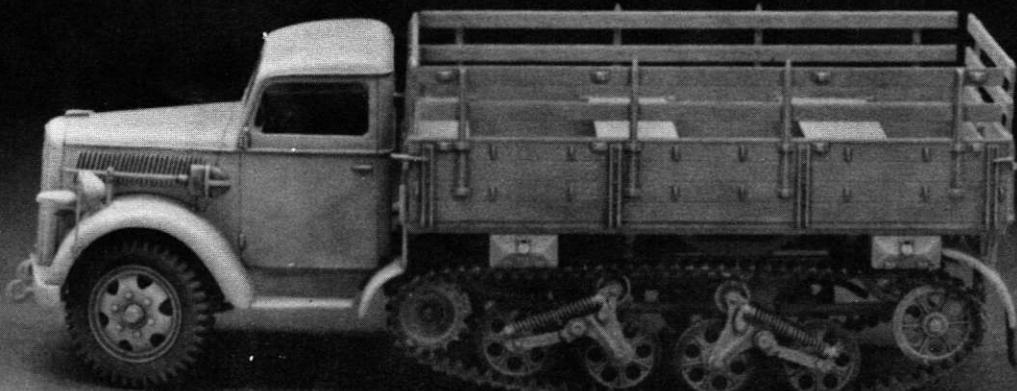


MAULTIER

No. 814



HISTORY

The *Maultier* (German for mule) was developed to handle the immobilizing road conditions encountered by the German Army on the Eastern Front. Conventional wheeled transport vehicles were useless on the unpaved roads; the supply columns could not get through the mud and snow. To remedy this problem, a field workshop of the 2nd SS Division removed the rear suspension and wheels of a standard 3-ton truck and replaced them with the running gear taken from a captured Soviet light tank. This improvised halftrack proved superior to the regular trucks in rough conditions, and several more were converted. The *Maultier* then went into production by a number of manufacturers. 6,000 were produced.

The best known *Maultier* conversion was built by Opel, who reclassified their sturdy, reliable "Blitz" 3-ton 4x2 truck (Testor kit #824) as 2-ton because of the tracked suspension. Some *Maultiers* were fitted with an enclosed house-type body and were used as ambulances, command vehicles, and radio vans. Because of the critical shortage of raw materials toward the end of the war, many late-production *Maultiers* were built with cabs made of cardboard and wood.

Almost 600 Opel *Maultiers* were produced with an armored body. Half of that number were mobile rocket launchers, and the other half ammunition carriers. The armor was from 6mm to 10mm thick, and the vehicle weighed 7.1 metric tons.

Though designed for use on the Eastern Front, the *Maultier* saw service in North Africa, Italy, and Western Europe, and was employed by the German Air Force and the Army and Waffen-SS. Though a stop-gap solution, the *Maultier* proved useful and reliable, despite its limited speed and load-carrying ability. After the war, a few *Maultiers* were used briefly in civilian service.

SPECIFICATIONS

Crew	2 (driver and assistant)
Weight	8,664 lbs. (3930kg.)
Length	236" (6000mm)
Width	90" (2280mm)
Height	107" (2710mm)
Engine	Opel 3.6 liter, 6-cylinder, water-cooled. 68bhp @ 3120 rpm

Transmission	Manual, five forward, one reverse
Speed	Maximum: 10 mph (16 kph)
Brakes	Hydraulic (on front wheels only)
Load capacity	2 tons cross-country

Reference Sources

Directory of Wheeled Vehicles of the Wehrmacht, Chris Ellis (Ducimus Books)
The Observer's Fighting Vehicles Directory, W.W.II, Bart H. Vanderveen (Frederick Warne)
"Militarfahrzeug:" German Soft-Skin Vehicles of W.W.II, Spielberger und Fiest (Aero Books)
Military Transport of W.W.II, D. Bishop (MacMillan)
Bellona Military Vehicle Print Series 12 (Bellona)

BEFORE STARTING

1. Study the illustrations and sequence of assembly before beginning.
2. Decide how much detail you wish to add to your model and whether or not you intend to modify or "convert" the basic model in any way. Study carefully all available reference material before beginning to ensure an authentic model.
3. Due to the amount of parts in this kit, do not detach the parts from the runners (sprue) until you need them. This helps avoid confusion and lost parts.
4. When cementing the parts together, check the way in which one part fits together with another. This ensures a neat job.
5. Always remember, when working with plastic model cement and paint, make sure your work is well-ventilated. The fumes from plastic modeling products can be harmful if inhaled.

PREPARATION OF PARTS

1. Never tear parts off the runners (sprue). Use a Testor Hobby Knife, nail clippers, or small wire cutters.
2. It is possible some parts may require a little attention with a file or sandpaper to ensure a proper fit and neat appearance. Hobby files and Testor Hobby Sandpaper appropriate for model-building are available in most good hobby shops.

3. If you desire, you may fill any seams (where parts go together) or imperfections with Testor Contour Putty for Plastic Models which is also available at good hobby shops.

PAINTING

You can obtain an excellent finish on your model using Testor Enamels. Parts of the model are painted individually, and then the entire model is oversprayed when you have finished construction.

First of all, be sure your brushes are soft, clean and flexible. (Keep them that way by cleaning them thoroughly with Testor Paint thinner.) Never use inexpensive brushes! A selection of Testor Shed-Proof Brushes will serve you well.

Wash plastic parts before detaching them from the sprue. Warm water and liquid detergent remove the oils left from the manufacturing process. Let the parts dry and avoid excessive handling. Immediately before painting, wipe the parts with a "tac rag" (available at automotive centers) to remove dust and lint.

Most parts are best painted while still attached to the sprue or they may be detached and held with tweezers or "magic" type transparent tape. Paint in one direction only. If your paint is the correct consistency, brush strokes will disappear as the color dries. If the paint seems too thick, thin it with Testor Paint Thinner. Wheels may be detached from the sprue and fit onto toothpicks or matchsticks for painting. Then just hold the paintbrush against the edge of the wheel and rotate the wheel to obtain a neat clean finish.

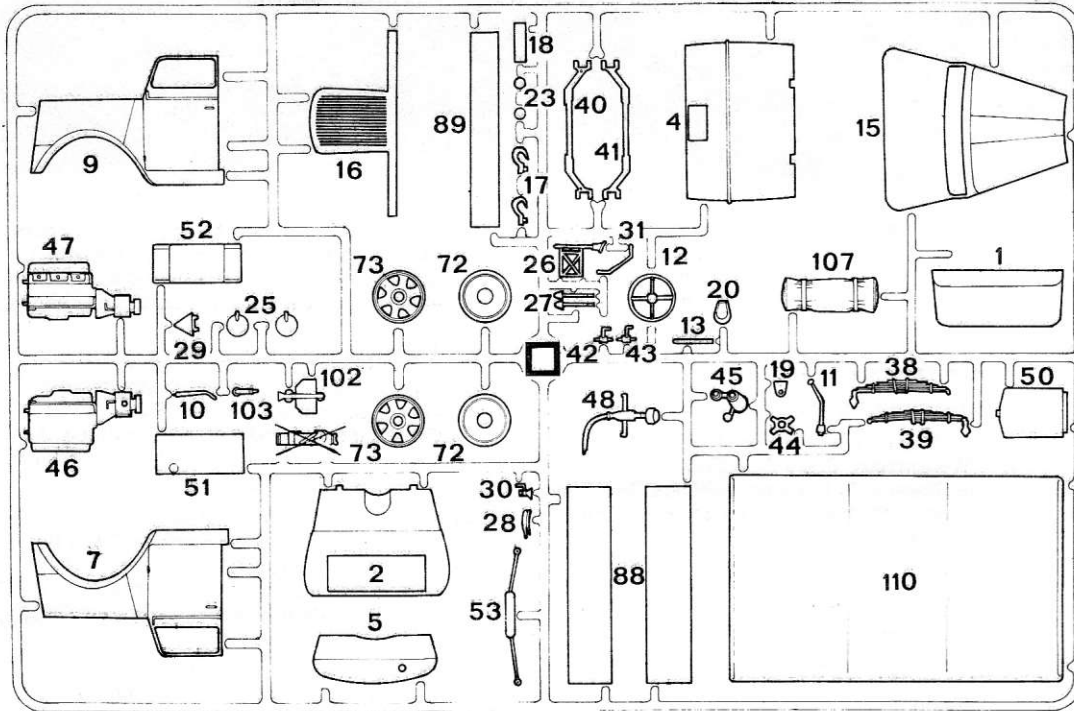
Let the paint dry completely before handling. When the parts are dry, assemble the model, following the directions closely. Remember cement will not stick to painted surfaces. Using your Testor Hobby Knife, carefully remove paint from all surfaces to be cemented. After you have assembled your model you may touch up areas where cement has marred the finish.

When your model is completed, apply a coat of Testor Dullcote #1260 to the entire model. This will give it an authentic, dull finish and protect the surface of the model.

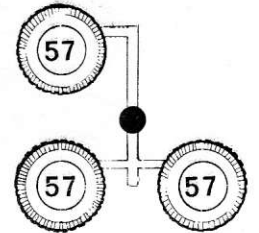
Remove this page from the instruction sheet by cutting along indicated line. Use the drawings of the complete sprue as a part-locating reference when building the model.

Tweezers will be useful in assembling the many small parts in this kit. The type used by postage stamp collectors is recommended.

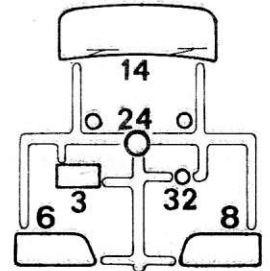
Liquid cement, Testor #3502, is recommended for construction since it can produce the neatest, quickest, and strongest glue joints. Apply small amounts of cement, using the tip of a 00 brush, to the surfaces to be joined while holding the parts in place. Do **not** use large amounts of cement.



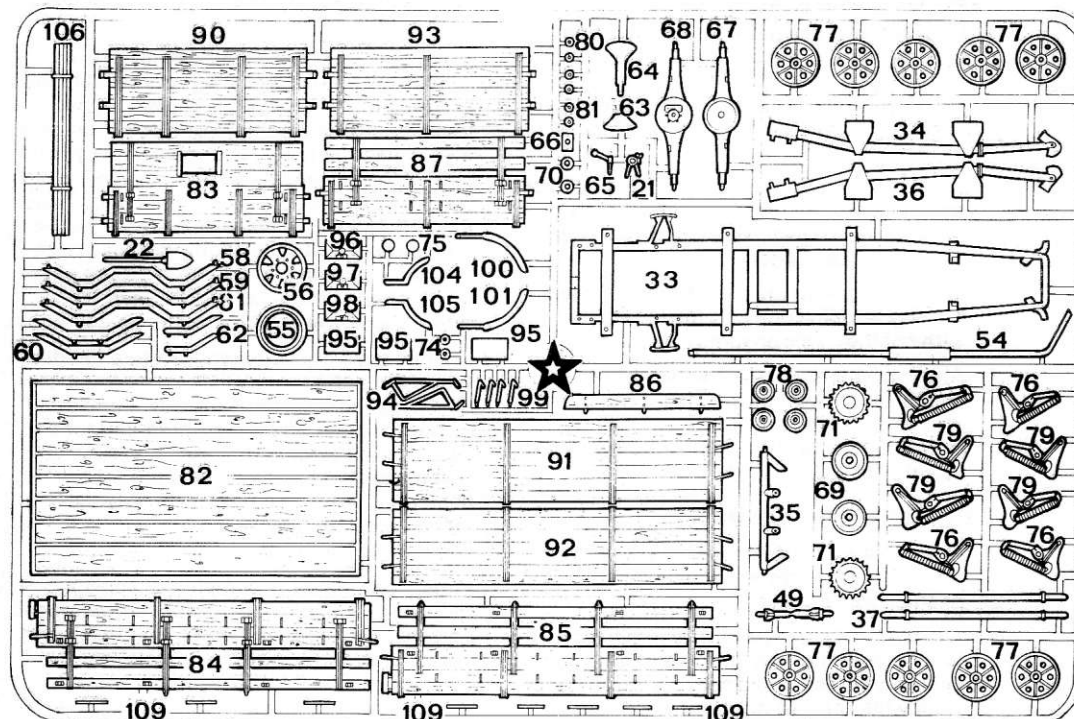
Parts from this section are identified with this symbol: □



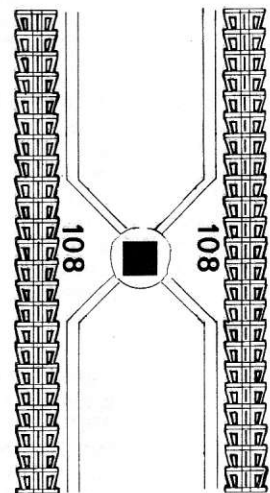
Parts from this section are identified with this symbol: ●



Parts from this section are identified with this symbol: ○



Parts from this section are identified with this symbol: ☆



Parts from this section are identified with this symbol: ■

NOTE: The *Opel Maultier* may be painted "Desert Sand," "Primer Yellow," or "Panzer Gray." Instructions for mixing these colors are given in the **APPLYING DECALS** section. All parts not singled out in **Preliminary Painting** should be painted the primary body color before removing them from the parts tree. Select your color scheme now. Refer to insert.

NOTE: Position the doors without applying cement, and move them only when the cab is assembled, by cutting the corner indicated in Drawing A. The thin plastic allows the doors to swing several times without breaking.

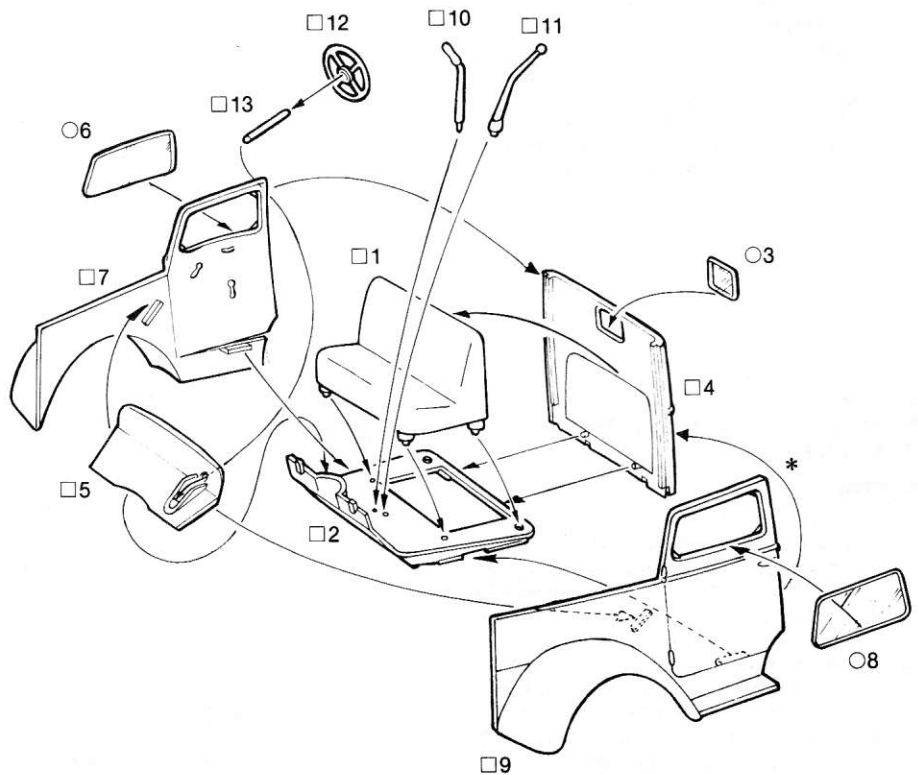
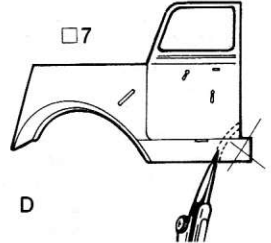
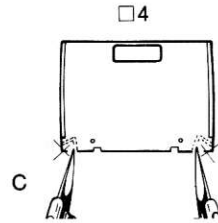
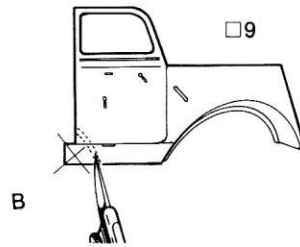
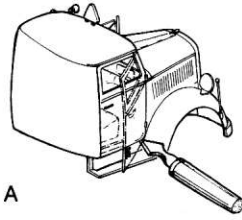
1 PARTS 1-13 ASSEMBLY OF CAB

Preliminary Painting

- 1: "Fieldgray" (Mix 5 parts #1164 Flat Olive Drab Green and 3 parts #1163 Flat Battle Gray)
- 5 dials on dashboard only: #1168 Flat White
- 5 numbers and pointers on dashboard only: #1149 Flat Black
- 11 handle only, □12: #1147 Gloss Black

Assembly

- 1. Using your hobby knife with a new, sharp blade, cut off the sections of □4, □7, and □9 as shown in the diagram. These parts are scribed on the inside in the appropriate places. After the parts have been cut away, smooth the edges with your files and sandpaper. These modifications must be made before any assembly begins or the other parts will not fit properly.
- 2. The cab doors (attached to □7 and □9) are molded in such a way that they may be opened and closed. They need not be cemented. Cement seat □1 to floor □2. Cement window ○3 into opening in □4, and then cement □4 to rear of □2 as shown.
- 3. Carefully cement window ○6 into door □7, and then cement the right edge of □5 to □7. When dry, cement □7 to floor □2 and back of cab □4 as shown. Cement window ○8 into door □9, and then cement □9 to □2, □4, and □5. Allow all parts to dry.
- 4. Cement brake □10 and gearshift □11 to cab floor as shown. Cement steering wheel □12 to □13 and then cement □13 into hole in □5.



* Do not cement

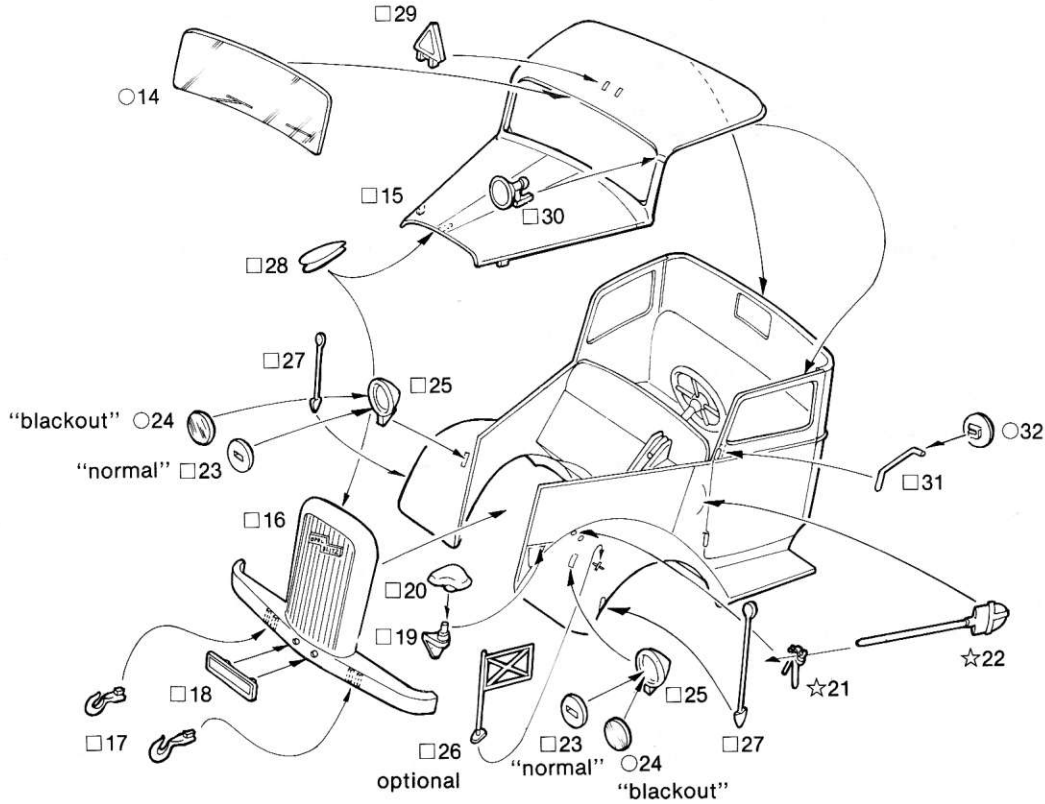
2 PARTS 14-32 FINAL ASSEMBLY OF CAB

Preliminary Painting

- 14 windshield wiper arms only:
primary body color
- 14 windshield wiper blades only:
#1149 Flat Black
- ☆22 handle of shovel:
#1166 Flat Military Brown
- ☆22 blade of shovel:
#1180 Steel
- 25 inner area of headlight only, □30 lens
only, ○32 face of mirror only:
#1146 Silver
- 27 "ball" on tip only, □29 inside only:
#1168 Flat White
- 29 (outer edge only):
#1150 Flat Red

Assembly

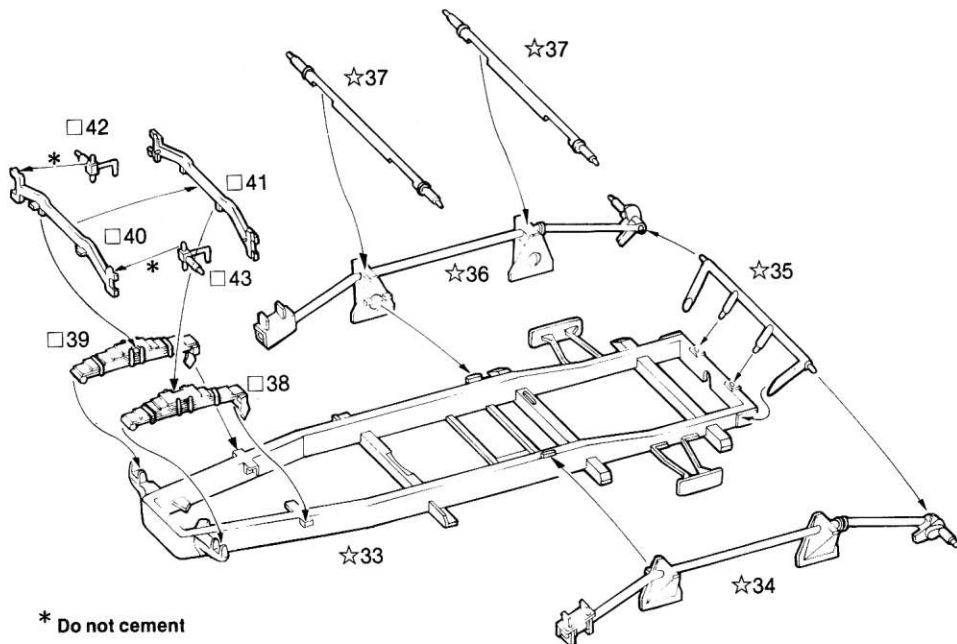
- 1. Cement windshield ○14 carefully into □15. Cement □16 to front of engine compartment. Cement two hooks □17 to underside of bumper, and cement □18 to front of bumper. Cement □19 to □20, and then cement □19 to side of hood as shown.
- 2. Cement ☆21 to left-front fender, and then cement ☆22 into ☆21 and to side of hood. Two types of headlight lenses are provided — "normal" (□23) and "blackout" (○24); decide which type you wish to use, and then cement one of them to each of the two □25 as shown. Cement one □25 to each front fender. □26 is a command pennant, and is optional; some trucks had them, some did not. If you use this part, cement it to the left-front fender as shown.
- 3. Cement one □27 to each front fender and cement □28 to front of hood. Refer to box photos for placement of these parts. Cement □29 and □30 to top of hood □15 as shown, and then cement □15 to top of cab and hood. Allow to dry. Cement □31 to ○32, and then cement □31 to left door as shown.



3 PARTS 33-43 ASSEMBLY OF CHASSIS AND SUSPENSION

Assembly

- 1. Cement ☆34 to chassis ☆33 as shown. Cement ☆35 to rear of ☆33, and then cement ☆36 to ☆33 and ☆35. Cement two ☆37 to ☆36 and ☆34 as shown, and allow this assembly to dry before going on.
- 2. Cement □38 and □39 to front of chassis. Place □42 and □43 into the brackets at the ends of □40 as shown, and secure in place by cementing □41 to □40. Do not allow the cement to touch □42 or □43, or the front wheels will not "steer."



4 PARTS 44-66 ASSEMBLY OF DRIVE-TRAIN, CHASSIS DETAILS

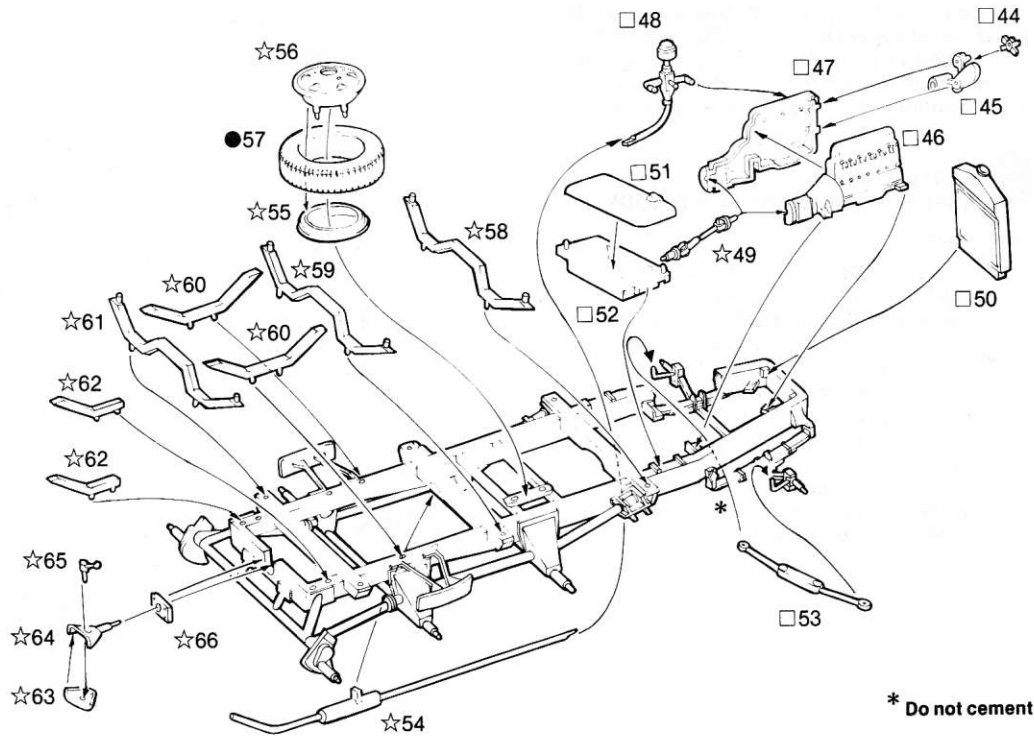
Preliminary Painting

- 50:
#1149 Flat Black

NOTE: Although the tires are molded in black vinyl and do not require painting, a realistic look may be given them by spraying them with Testors #1260 **Dullcote** either before or after assembly.

Assembly

- 1. Cement □44 to □45. Cement □46 to □47, and then cement □45 to the assembled engine halves □46-47 as shown. Cement □48 to □47 and then cement ☆49 to □46-47. Cement the completed engine assembly to the chassis.
- 2. Cement radiators □50 to the front of the chassis. Cement top of gas tank □51 to □52 and then cement □52 to the chassis. Carefully push (but *do not cement*) □53 over the pins on the axle assemblies as shown. Cement exhaust pipe ☆54 to the end of □48 and to underside of chassis.
- 3. Push ☆56 through tire ●57, and secure in place by cementing ☆55 to ☆56. Cement the completed spare tire assembly ☆55-●57 to the chassis as shown. Cement ☆58 and ☆59 to the chassis cross-members as shown. Cement two ☆60 to chassis, and cement ☆61 to rear-most chassis cross-member. Cement two ☆62 to rear of chassis.
- 4. Cement ☆63 to ☆64. Cement ☆64 to ☆66 and cement ☆66 to the chassis. Cement ☆65 to ☆64.



* Do not cement

5 PARTS 67-81 ASSEMBLY OF AXLE AND WHEELS

Preliminary Painting

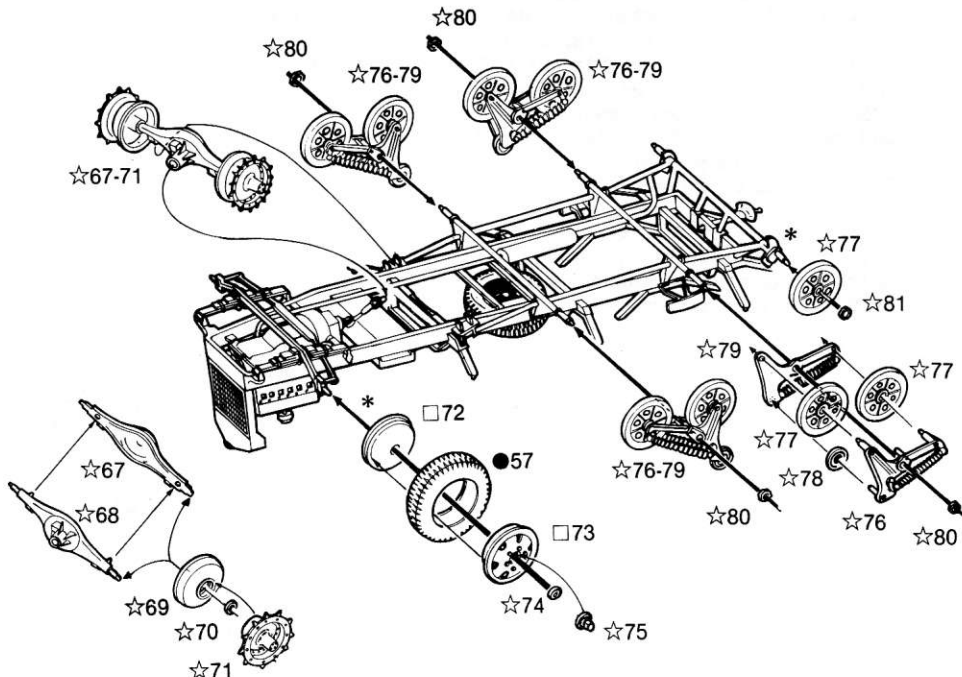
- ☆77 (rubber tire around edge of wheel only):
#1183 Rubber

Assembly

- 1. Cement ☆67 to ☆68. Slide (but *do not cement*) one ☆69 over each end of the axle as shown, and secure in place by carefully cementing one ☆70 to the tip of each end of the axle. Do not allow the cement to touch ☆69 or the wheels will not turn. Carefully cement one ☆71 to ☆69 as shown. Do not allow the cement to touch the tip of the axle or ☆70. Cement the completed axle ☆67-71 to the brackets on the chassis and to the tip of the drive-shaft as shown.
- 2. Carefully press □72 into ●57 and secure in place by cementing □73 to □72. Push (but *do not cement*) the completed wheel □72-●73-●57 over one of the front axles and secure in place by carefully cementing ☆74 to the tip of the axle. Finally, cement ☆75 to □73, being careful that cement does not touch axle tip or ☆74. Repeat this step for the other front wheel.
- 3. Carefully slide (but *do not cement*) two ☆77 over the two longer shafts on ☆76. Slide ☆78 over short shaft of ☆76, and secure in place by cementing ☆79 to ☆76 as shown. Be certain that the cement does not touch the wheels or they will not turn freely. Push this assembly over one of the bogey axles as shown,

and secure in place by carefully cementing ☆80 over the axle tip as shown. Repeat this procedure three more times.

- 4. Slide (but *do not cement*) one ☆77 over each of the two rear-most axles, and secure in place by carefully cementing one ☆81 over the tip of each axle. Be careful not to allow the cement to touch ☆77 or the wheel will not turn freely.



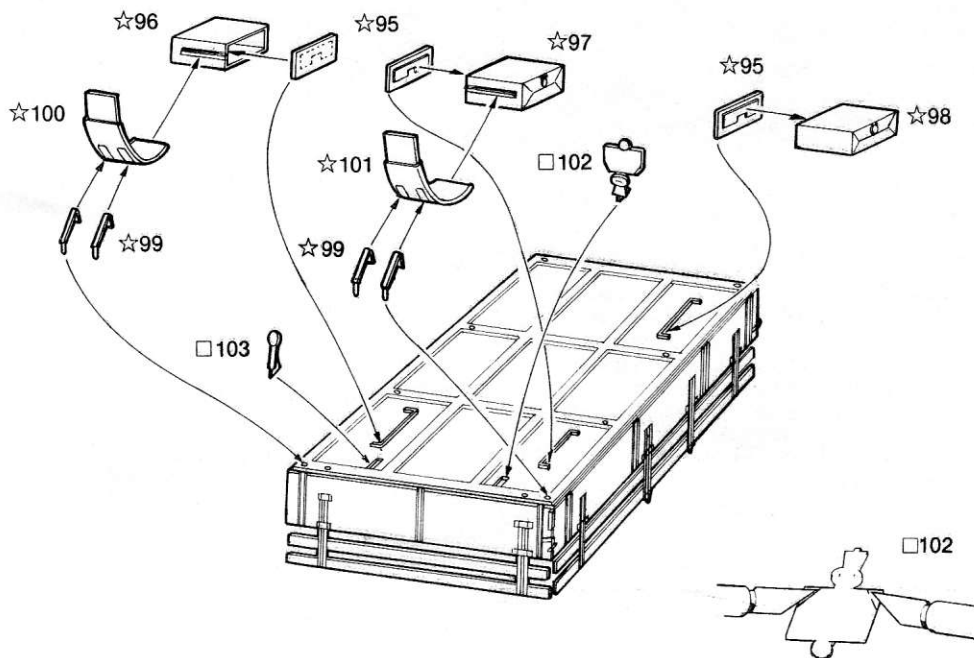
8 PARTS 95-103 ASSEMBLY OF UNDER-BODY DETAILS

Preliminary Painting

- 102 (small slot in taillight only):
#1149 Flat Black
- 103 (taillight lens only):
#1103 Red

Assembly

- 1. Cement one ☆95 to each of ☆96, ☆97, and ☆98. Cement ☆96, ☆97, and ☆98 to the brackets on the *underside* of the cargo body as shown. Cement four ☆99 to rear edge of body, and, when the cement has dried, cement ☆100 to one of the pairs of ☆99 and to ☆96. Then cement ☆101 to the other ☆99 and to ☆97.
- 2. Using your hobby knife, cut the two top corners at approximately a 45-degree angle off □102 as shown in the sketch. Smooth with files or sandpaper. Cement □102 and □103 to rear of body as shown.



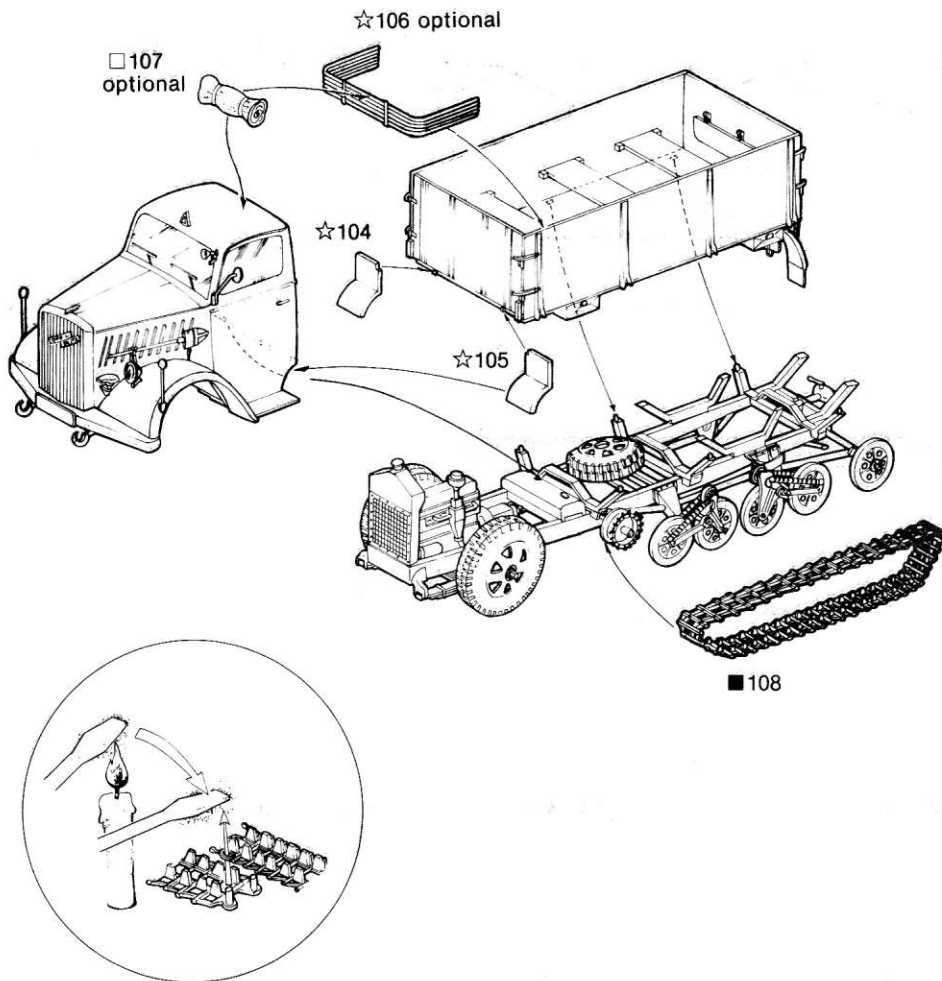
9 PARTS 104-108 ASSEMBLY OF CAB AND BODY TO CHASSIS

Preliminary Painting

- 107 (optional):
#1164 Flat Olive Drab Green or primary body color.
- 108:
#1180 Steel

Assembly

- 1. Cement ☆104 to right-front corner of body. Cement ☆105 to left-front corner of body. ☆106 represents the folded bows for the cloth top and is an optional item. If you plan to fit the erected cloth top (□110 in Step 10), discard this part. If you wish to have your cargo body "open," cement ☆106 to the front and sides of the body as shown.
- 2. Push the holes at one end of the track □108 over the pins in the other end, and secure in place by flattening the pins with the flat blade of a heated screwdriver. Carefully fit the track over the sprocket wheel ☆69-71, then over the rear idler wheel ☆77, and finally over the four bogey wheels. Try to twist and pull the track as little as possible, as too much movement may cause the paint to flake off. (If any paint does come off, it can be easily touched up with a brush after the tracks have been positioned on your model.) Repeat this step for the other track.
- 3. Carefully position the body onto the chassis and when in proper position, cement in place. Allow to dry. When the body has dried, carefully place the cab onto the chassis and cement in place. Again, allow to dry. The rolled-up tarp □107 is optional. If you wish to use it, it may be cemented to the cab roof, as shown, or positioned anywhere else on your model that you choose.



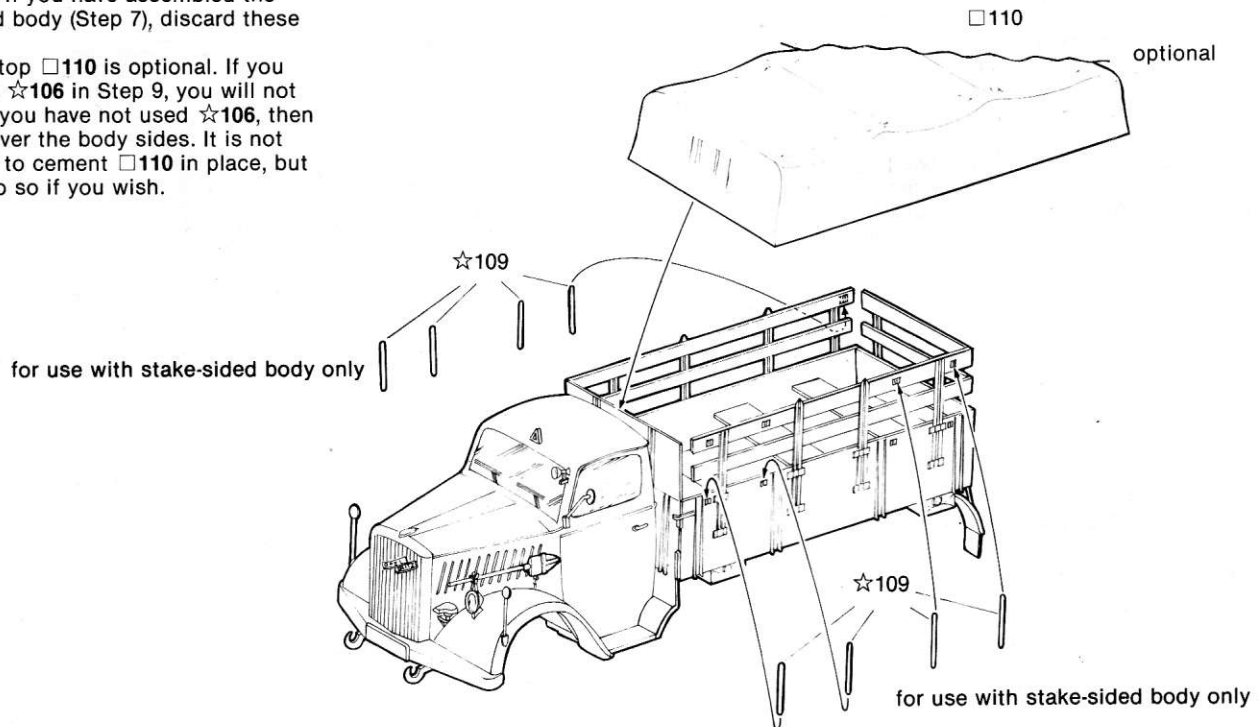
10 PARTS 109-110

Preliminary Painting

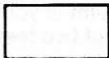
- 110:
#1164 Flat Olive Drab Green or the primary body color.

Assembly

- 1. If you have chosen the *stake-sided* body (Step 6), cement four ☆109 between the small brackets on each side of the body as shown. If you have assembled the solid-sided body (Step 7), discard these parts.
- 2. The cloth top □110 is optional. If you have used ☆106 in Step 9, you will not need it. If you have not used ☆106, then fit □110 over the body sides. It is not necessary to cement □110 in place, but you can do so if you wish.



CAMOUFLAGE



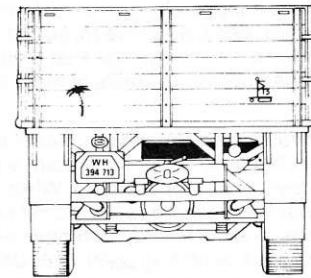
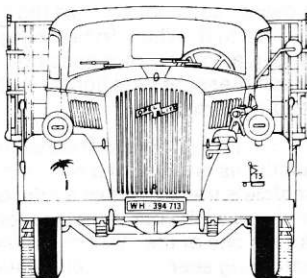
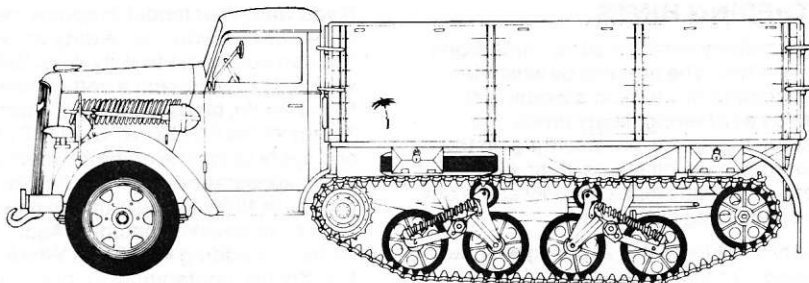
"Desert Sand" (Mix 10 parts #1167 Flat Desert Tan, 8 parts #1168 Flat White and 5 parts #1169 Flat Yellow)



"Primer Yellow" (Mix 10 parts #1167 Flat Desert Tan, 10 parts #1169 Flat Yellow, and 7 parts #1168 Flat White)



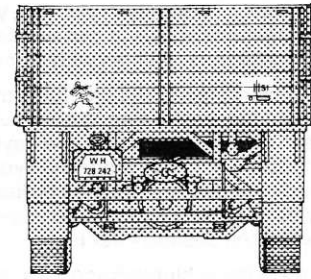
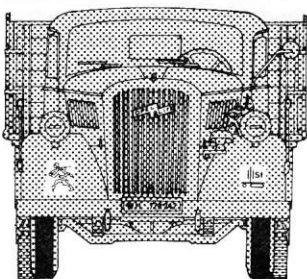
"Panzer Gray" (Mix 10 parts #1149 Flat Black, 10 parts #1163 Flat Battle Gray and 3 parts #1172 Flat Sea Blue)



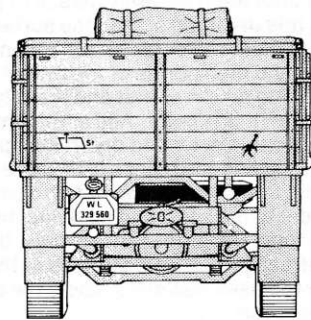
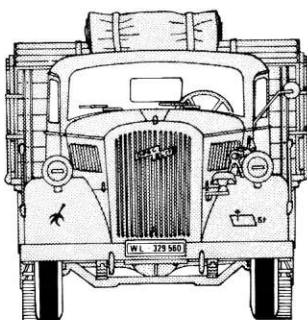
APPLYING DECALS

1. Spray entire model with Testor Glosscote #1261. Decals adhere best to a smooth surface and the shinier the finish, the smoother it is. Allow the Glosscote to dry thoroughly before going further.
2. Select the decals you plan to use, and cut each of them out from the decal sheet with small scissors or Testor Hobby Knife.
3. Working with only one decal at a time, dip the decal in clean water for no more than five seconds, then remove it from the water and place on a dry paper towel for about one minute.
4. When the decal slides easily on the backing paper, slide it to the edge of the paper and onto the surface of the model with a soft paintbrush or tweezers. Remember: the decals are very thin and can be easily ripped if care is not taken. Work slowly and patiently.
5. Once the decal is in the desired position, apply a small amount of Testor Decal Set #8804. This will help the decal to conform to any irregularities in the surface of the model (rivets, curves, etc.). Allow the decal to dry undisturbed. Should you find the decal has moved or should you desire to purposely move it, apply a little Decal Set to a soft brush and push the decal slowly into the desired position.
6. When the decals are completely dry (usually overnight), apply a coat of Testor Dullcote #1260 to the entire model. This will give it an authentic, dull finish and protect the surface of the model.

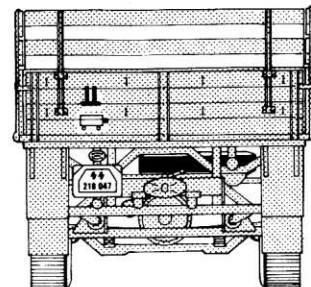
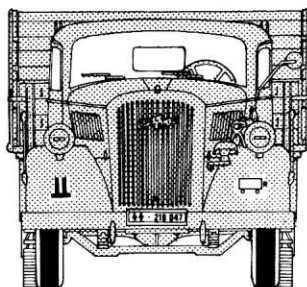
160th Panzer Grenadier Regiment (Motorized), Division Von Manteuffel, 5th Panzer Army. Tunisia, May, 1943. Overall color: **"Desert Sand"**



284th Grenadier Regiment, 96th Motorized Infantry Division, XI SS Army Corps. Ukraine, USSR, September, 1944. Overall color: **"Primer Yellow"**



13th Luftwaffe (Air Force) Field Division, 18th Army. Eastern Front, October, 1943. Overall color: **"Panzer Gray"** (This often had irregular splotches of white paint added as winter camouflage)



11th SS Motorized Infantry Regiment, SS Division "Das Reich," 9th Army. Borodino (near Moscow), USSR, April, 1942. Overall color: **"Panzer Gray"**

WEATHERING HINTS

Nearly all military vehicles show some signs of wear and tear. The process by which the modeler imparts this look to a model is referred to as *weathering*. Many times, the weathering, that is, the representing on the model of rust, mud, oil stains, dust, chipped paint, etc., can really make a model stand out and give it amazing authenticity.

Always try to be logical in applying weathering techniques. For instance, you wouldn't want to show rust on top of mud or dust on your vehicle, nor would you normally want to cover a vehicle supposedly operating in the desert with mud. Vehicles move *through* the land they operate on more than *over* that land, and you must weather your vehicle in such a way that it makes sense.

After you have painted your model in its basic colors, begin by sealing the paint with one or two coats of Testor Dullcote. When this dries, you can add shading to the model using washes. A wash is simply thinner which has been tinted by adding paint to it. Use a broad brush and apply an even wash of #1149 Flat Black (use #1183 Rubber if your model is painted "sand" or tan) over the entire model. Apply this quickly, and before it dries, carefully wipe it off with a soft lint-free cloth. This should leave subtle shadows around all the projections and details. If you like, you can darken these shadows in certain places by adding additional washes with a fine brush.

Always work slowly and carefully, trying not to overdo the weathering. A good rule of thumb is that too little weathering is always preferable to too much. Knowing when you have applied enough is sometimes difficult to determine, so pause often and inspect your model for the desired effect.

The next step is highlighting your model. For this, use a technique called drybrushing. Wide, flat, chisel brushes in various sizes are used. On a scrap of cardboard, mix a small amount of #1168 Flat White with your basic model color and then wipe your brush off on a clean cloth until there is barely a trace of paint left. Drag this drybrush across the surface of your model. Paint will begin to collect on all the edges and high points of the model. Use a scrubbing action at first and literally tint your model with this color. Add a little more Flat White to this color and drybrush again, this time applying the paint a little more subtly. Repeat this process one or two more times, lightening the color and applying more lightly each time. Don't get carried away, though, the effect should be restrained at this point. After the paint has dried, apply the decals and let them dry.

If you want your model to appear new, it can be left as is. If you want a dirty or dusty model, you can now begin to dirty it up. But if your vehicle is to represent a non-combat or peacetime vehicle, be especially light-handed. Use Testor #1166 Flat Brown or #1167 Flat Tan, and apply using the drybrush method. For a dusty appearance, drybrush lightly; for a grubby or filthy look, scrub the paint on in blotchy or streaked patches. Again add further highlights adding #1168 Flat White and #1169 Flat Yellow, lightening your dirt color and pressure on the brush with each succeeding layer. If your dirt color gets too washed out or yellowish, add a touch of #1185 Rust and #1165 Olive to it. When drybrushing always remember, a lighter color goes over a darker, and brush pressure gets lighter with each succeeding layer.

A little rust on mufflers and exhaust pipes is realistic, as is a hint of it on the metal parts of a vehicle's tracks. But as a rule, be sparing with it if you wish your vehicle to look authentic. Rust is one of the most overdone forms of weathering seen on models. Unless your model is supposed to be a wrecked or an abandoned vehicle, go very easy with the rust. To rust out a muffler, first apply a couple of heavy washes of #1183 Rubber. After this dries, mix some #1185 Rust with the Rubber and drybrush liberally. Follow this color with pure Rust, and if you wish you can add a touch of #1169 Yellow to this, drybrushing very lightly.

Dust is difficult to portray on a model unless you have the use of an airbrush. If you do, try shooting a light sand-colored paint at your model, with your airbrush held about two feet away from your model. If you do not have an airbrush dust may be simulated by the use of powdered artist's pastels carefully brushed onto your model a little at a time until the desired effect has been achieved. A similar effect can be had by using barbecue ashes just as they come out of your barbecue.

Occasionally there are areas on a vehicle where paint becomes scraped or scuffed off. Such areas include metal flooring, around hatches, grab handles, gun breeches, etc. Paint only rubs off under extreme wear, so keep this to a minimum. There are two ways to represent this. The first is by drybrushing *very lightly* with #1180 Steel or #1181 Aluminum. The second method is by applying graphite. You can do this by drawing directly on the area with a pencil, or by grinding the lead into a powder and applying with your fingers or a paint brush. This aspect of weathering is the easiest to overdo—so use it sparingly.

If you are building a tank, leave the tracks off until last and paint them separately. Use a touch of #1183 Rubber mixed with some #1166 Flat Brown. After this dries add a wash of #1149 Flat Black between the shoes, then, drybrush the shoes very lightly with #1181 Aluminum. Some tracks have rubber shoes—these areas should be painted Rubber.

Experienced modelers do several things to aid them in their hobby. One of the most helpful is attending meetings of their local International Plastic Modeling Society chapter. Here they see and discuss modeling techniques. Your local hobby shop will help you locate your local I.P.M.S. group. Serious modelers also collect books and photographs to use as reference when they finish their models. Again, your local hobby shop can help. Last, but certainly not least, your own observation will prove helpful. Visit museums. Look at buildings and vehicles around you. Notice how rust streaks a metal roof. See the oil and dirt on a piece of road grading equipment (almost identical conditions in which a tank runs). Study railroad boxcars and locomotives to see what the weather has done to them. Your own observation can be the best aid of all.

Remember: try not to overdo weathering—and *keep practicing*. Be patient, it takes time to discover and master all the tricks of this fascinating hobby.