

THE TIN LIZZIE

A Model-Making Book

FRANK ROSS, JR.



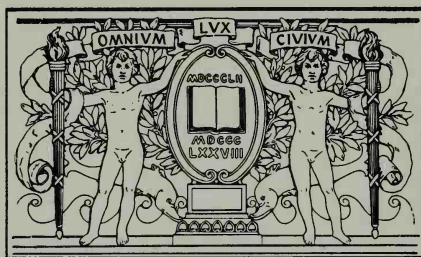
THE TIN LIZZIE

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The Model T Ford, affectionately known as the Tin Lizzie, reigned supreme with America's car buyers and fanciers for almost twenty-five years. Now you can make your own miniature cardboard and construction paper Tin Lizzies based upon the design of four representative Model T's—the 1909 Touring Car, the 1913 Pickup Truck, the 1913 Runabout, and the 1914 Speedster. These handsome and unique creations are all clearly described in step-by-step directions supplemented by easy-to-follow diagrams and photographs of the finished models.

Here's a sure-fire winner to please the author's numerous model-making fans.



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THE TIN LIZZIE

A Model-Making Book

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THE TIN LIZZIE

A Model-Making Book

FRANK ROSS, JR.

Lothrop, Lee & Shepard Books
New York

*To Christopher,
Meredith,
and Kyle*

*Illustrated with diagrams by the author
and photographs by George A. Haddad*

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INTRODUCTION

The Model T was Henry Ford's dream car. For five years, beginning in 1903 when he established the Ford Motor Company in Detroit, this mechanical and industrial wizard had been thinking about a low-priced car for the general public. The automobile was a revolutionary vehicle at the turn of the century and one that not too many people could afford. Various makes at the time sold for as much as \$5,000 and \$7,500, sums that put the motorcar out of reach of most Americans.

During his company's early years, Ford had been successful building relatively expensive automobiles, which were identified by letter designations as Models A, B, C, F, K, N, R, and S. But Henry Ford was not content with his automotive achievements. He saw a vastly greater market for the motorcar if one could be built for a price that the majority of Americans would be able to afford. Thus began his plans for the Model T.

After working long hours for many months with a small group of engineering colleagues and shop workmen, Henry Ford was finally satisfied with the finished design of this low-priced car. The first factory-made Model T made its debut in October 1908. Its price tag read a respectable \$850, thanks to Ford's simplified design and construction and the almost total elimination of hand-made parts that had been featured on earlier cars.

Orders for the Model T, an overnight success, soon flooded the offices of the Ford Motor Company. Lowering the price barrier was not the only reason for the Model T's instant acceptance. Henry Ford and his engineering assistants had created a motorcar that was ruggedly built, simple to operate, dependable, and

easy and economical to maintain. All these factors counted heavily with people who, up to that time, did most of their traveling by railroad, trolley car, horse and buggy, or bicycle.

Henry Ford did not skimp on the Model T despite its low cost. The car was built of the best materials and with many advanced mechanical features for its day. Vanadium steel, just coming into use and stronger and lighter than the steel commonly employed, was used for many of the Model T parts that were subject to strain, making the new car sturdier and lighter than many automobiles costing twice as much. And unlike most of the automobiles during the early 1900s, the Model T's steering wheel and controls were on the left instead of the right side. In England and some other countries, driving was and still is on the left side of the road, but Ford's arrangement was more convenient for American driving and eventually became standard on American cars.

Lightweight and powered by a dependable, peppy engine, the Model T performed on the road like a spirited colt. Hills were no problem nor were rutted, muddy roads. As an advertising stunt to demonstrate its agility, the bouncy little car was once driven up the steps of a state capitol building.

Repairs were easy on Ford's dream car. He insisted throughout the years of the vehicle's existence that parts should be interchangeable—not a new idea but his application of it was on a greater scale than previously done by other car manufacturers—even though a modest number of changes were made from year to year. If a Model T broke down on the road, few tools were needed to get it running again. And the driver did not have to be a mechanical genius to accomplish the feat. Half-jokingly it was said that the only tools needed were some wire, a hairpin, and a screwdriver.

Ford's Model T was not without its faults, however, in spite of its fantastic popularity. It rattled and bounced, often forcing its occupants to hold on for dear life. Starting it in cold weather required a good deal of ingenuity on the driver's part. One solu-

tion was to put a flaming, gasoline-soaked rag on the cylinder block to heat and persuade the engine to start. Other drivers employed a safer ritual of removing the spark plugs, dashing into the house to warm them on the stove, then running to the Model T to put the plugs back as quickly as possible. Another method used even in warm weather was to jack up one of the rear wheels and then crank the engine.

Whatever its drawbacks, which were really few, no other car made in America during the first two decades of this century could come close to the Model T in popularity. It was a common sight in rural areas as well as city streets throughout the country. And millions of Americans welcomed the Model T almost as a member of the family. Indications of this affection were the names given Ford's dream car, "Tin Lizzie" and "Flivver" being two of the most popular. No one is sure how these originated but they were used nearly as often as "Model T."

Scores of jokes, humorous stories, and songs were told and composed about the Tin Lizzie. Some were based on actual experiences but most were pure fiction. One of the frequently told tales described the Model T driver as being both a sprinter and an acrobat when starting the car. Before the self-starter was devised, the Tin Lizzie had to be cranked by hand. First a spark and gas lever under the steering wheel had to be adjusted. Then after a number of vigorous turns of the crank handle (the driver was lucky if the engine caught on after two or three turns), he had to dash around the car, hop into the driver's seat, and frantically move the two levers before the engine stalled. Sometimes the car would start with surprising suddenness and begin moving forward. If the driver wasn't quick enough to jump out of the way when this happened, he would find himself pinned against the garage wall.

For nearly two decades the Model T Ford was the queen of the American automobile world. By the end of this era, it was appearing in a variety of models. In addition to the four included in this book, there were the Coupe, a two-passenger closed car;

the Coupelet, similar to the Coupe but with a roof that could be raised and lowered; a Depot Wagon, forerunner of today's popular station wagon; the Sedan; and the Town Car. The Town Car became a popular city taxicab. As the company became more expert and efficient at building and assembling the Tin Lizzie, its price tag was steadily reduced. The cost of the 1924 Touring Car, for example, was \$295, astonishing even by the purchasing standards of that era. Today that sum would hardly cover the cost of a set of four good tires on a mid-size car.

With the mid-twenties, however, came the decline of Ford's previously successful car. Automobiles by this time had changed drastically in design, comfort, power, and performance and the taste of the American motorist had also changed, a fact Henry Ford found difficult to accept. Now Americans were eager to move on to more luxurious and attractive cars than the simple Tin Lizzie. In May 1927, the last of the Model T's rolled out of the Ford factory. Over fifteen million of this wondrous vehicle had been manufactured.

More than any other early automobile, the Model T made America a nation on wheels. It created a revolution in land transportation. Perhaps more significantly, Ford's Tin Lizzie helped establish a new mobility for millions of Americans. People in rural areas, for example, no longer felt isolated. They could hop in the Flivver and be off to the city quickly and as often as they wished. Farmers were able to haul their produce to markets in Model T trucks a good deal faster and more conveniently than with the horse-and-wagon. City people happily packed the family in the Model T and rattled and bounced their way to the lakes and forests of the countryside. Life, in short, was made infinitely more varied and, in many respects, pleasurable by this affectionately held motorcar.

These were by no means the only effects brought about by the Model T. Industrial life for the workers producing this automobile, and eventually a good portion of factory help in America, also felt its impact. The Ford Motor Company made a mountain

of money from the Tin Lizzie and to Ford's credit, he shared some of this with his workers. He paid them five dollars a day, double the prevailing wage scale, and introduced the eight-hour day (during the early 1900s, the work day was ten hours long). Industrially, Ford contributed significantly to mass production methods. Adapting the moving assembly line for faster, and less costly, production was an especially important advance.

The Model T has long disappeared from American highways. Its place has now been taken by sleek, high-powered cars that, although far more comfortable to ride in, lack the great fun often given by the Tin Lizzie. Today, this historic automobile is a museum piece, a reminder of a colorful chapter in America's industrial past and a major milestone in the development of land transportation. The Henry Ford Museum in Dearborn, Michigan, has one of the country's best collections of Model T cars. The Model T also survives in the hands of antique car hobbyists, who collect and restore the automobile to its original beauty.

In the following pages, there are directions for making the 1909 Touring Car, the 1913 Pickup Truck, the 1913 Runabout, and the 1914 Speedster, representing just a few of the different types of Model T's that were manufactured. Although these paper-and-wood models are in no way intended to be exact replicas of the real cars, they do accurately convey the style and basic construction of the originals.

Even though the era of the Tin Lizzie is over, my affection for this innovative automobile was rekindled while researching and writing this book. I hope by reading about and constructing these four models that you will share this feeling with me.

MATERIALS AND TOOLS

The Ford Tin Lizzies that you will make as models are constructed from easy-to-find materials and tools. Stiff cardboard, semi-rigid colored paper, and wooden matchsticks are the basic materials you'll need. A pencil, ruler, scissors, and sharp knife are the most important tools used.

To avoid having to clean up the mess after every work session, try to use a table or other work space on which you can leave your tools, materials, and partly finished model until the job is done. Make sure the table is sturdy and has a flat surface. And to protect it from glue spills, paint spatters, and scratch marks, cover the tabletop with strong, smooth-coated paper like Oaktag, which is available at any stationery or craft supply store.

Here is a detailed list and description of all the materials and tools you'll need for the models in this book.

MATERIALS

Construction paper—The two kinds of paper required for the Tin Lizzie models are semi-rigid and rigid. An excellent choice for semi-rigid paper is construction paper, which comes in a variety of colors, bends easily, and glues perfectly. Construction paper will give your finished models a much more attractive appearance than if you use pieces of scrap. A generous pack of this paper can be bought at reasonable cost from most stationery stores, paint shops that have art supply departments, and hobby or craft shops.

Rigid cardboard—Rigid cardboard is used for making the chassis as well as such smaller parts as the wheels and running boards. This can be scrap material and found in your own home. A good source of supply is a shoe box. It does not matter if the cardboard has printing on it or if it is a different color from your model since it can be easily painted or covered with construction paper.

Cigar boxes are another good source for rigid paper. Shopkeepers where cigars are sold are often only too happy to let you have their surplus empty boxes.

The best material for the chassis of your models, however, is matting board. Picture framing shops, art supply stores, and photographic supply shops carry matting board at reasonable cost. This material has a number of advantages besides its rigidity: it comes in a variety of colors, can be cut easily, and glues very well. Sometimes owners of picture framing shops will let you have as much as you want of their scraps left over from mounting pictures. These should be more than enough to make the four chassis patterns.

Wooden matchsticks—The axles, steering posts, and roof frames are the most important wood parts of the Tin Lizzie models. For these, the wood of extra-long matchsticks (often used for lighting fires in fireplaces) is ideal. Practically every well-stocked hardware shop offers these matches for sale. Make certain, however, to remove the flammable tips before working with the wood.

You can also buy strips of wood, balsa or basswood especially for model-making, from a good hobby or craft supply shop. In most cases, these strips will be smoother, stronger, and more accurately shaped since they are intended for model construction. Because you will need only a few strips, the cost will be minimal.

Round toothpicks—Brake handles, crank handles, and tiny decorative pieces on the Tin Lizzie models are made from lengths

of round toothpicks. These parts are made after the pointed tips have been removed. Do not try to substitute flat toothpicks, since they are too weak and are not the proper shape.

Wire—With the exception of the Speedster, all the Tin Lizzie models have windshield frames made of wire. Use paper-covered wire for this purpose, not the plastic-coated kind, since it glues far better. Paper-covered wire can be purchased inexpensively at hobby shops, art supply stores, and some florist shops where the wire is used for making flower arrangements. About 50 inches of it will be ample for all three models.

India ink, crayons, and poster paints—All four Tin Lizzie models require a considerable amount of design work and a good deal of painting. Black India ink will be needed for drawing designs on such body parts as the engine hood and wheels. A 1-ounce bottle of Higgins or Grumbacher will be more than ample. Poster paints are mainly used for the axles, windshield frames, and brake handles. Yellow, red, blue, white, and black are the primary colors you'll need. Purchase the smallest amount ($\frac{3}{4}$ ounce) of ink and paint that you can. Some of the more popular and reliable brands are Grumbacher, Koh-i-noor, and Pelikan.

Although crayon can be used as a substitute for paint, it does not do the job as well. However, if this is what you have on hand and you do not wish to buy paint, crayons will serve your purpose.

TOOLS

Scissors—For cutting construction paper, a pair of strong, sharp scissors is necessary. Along with a sharp knife, this will be your most important model-making tool. A number of parts have small, sharp curves. To cut these properly, a pair of straight, sharp cuticle scissors is most helpful.

Knife—A sharp-pointed knife is a necessity for cutting stiff cardboard parts and lengths of wood, and for scoring construction

paper. Almost all the dotted lines in the diagrams indicate fold edges to be scored with the point of the knife. To score, draw the knife along the dotted lines once or twice until the edge bends easily. Take care not to press too heavily with the blade or you will slice through the paper. Scoring will make the folds sharp and straight.

Although just about any small, sharp penknife is acceptable, an X-acto knife is excellent for model-making. It is perfect for cutting cardboard, construction paper, and even strips of wood. An X-acto knife is also easy to hold, but because of its sharp cutting edge, extra care must be taken when scoring with it.

Glue—A strong, quick-drying glue is needed to hold the model parts together. Elmer's Glue-All or Sobo are two of the best. Both make a firm bond and are nearly colorless when they dry. Whatever brand you choose, make certain that it forms a tight bond and that it works on both paper and wood. A 4-ounce bottle is all you'll need for all four models.

Pencil—Before any of the model parts can be cut out, their patterns must be measured and drawn. A medium-soft pencil (#2½) with a well-sharpened point is good for this job, while a soft lead pencil is best for drawing designs on painted parts. It may also be helpful to have a white or yellow pencil on hand for outlining parts on dark paper.

Drawing pen—A pen with black drawing ink is the best tool to use for drawing the designs on the car model parts. A black ball-point or felt-tip pen will also do the job. You can use black crayon but the results will not be nearly as good.

Ruler—A 12-inch ruler, preferably one with a metal edge, is necessary for measuring all diagrams and drawing straight lines.

Hammer—Unless you can cut the wood strips simply by pressing downward firmly with your knife, a hammer will be useful. A single sharp blow on the back edge of the knife makes a clean, sharp cut.

Compass—There are almost as many curved parts on the models as there are straight ones. For drawing some of these parts, a good compass is essential. An inexpensive pencil compass is fine for this purpose.

Plastic curve—Although a compass is helpful for drawing many of the curved parts, a plastic curve such as draftsmen use is better for others.

Tweezers—A number of the model parts are quite small, particularly those forming the headlights and taillights. It's a lot easier to handle these tiny parts with tweezers than with your fingers.

Masking tape—This is helpful for holding your construction paper firmly to the work table while you draw the patterns or designs. It is also good for holding the wood parts in place until the glued portions are tightly joined.

Nail—In a few instances, holes will have to be made in stiff cardboard parts. Use a sharp-pointed nail for this purpose.

Block of wood—Using a small block of smooth wood as a base for cutting wood strips protects your work surface from unnecessary damage.

Paintbrush—For painting such model parts as axles and lamps, you will need a small, soft-bristle brush. Remember to clean it after every use, otherwise you will end up mixing colors and damaging the brush as well.

Hair clip—A clamp-type hair clip is a useful tool for holding together glued parts until they are firmly attached.

GENERAL DIRECTIONS

Making any model requires patience and stick-to-itiveness. Building the models in this book is no exception. However, since they are not precisely scaled or detailed, no super skills are needed to put them together. Anyone with an interest in making models can build these with very little difficulty. How quickly you put them together will mostly depend upon how much time you want to devote to their construction. The time element is not really important but you will probably discover that building the second or third model will be easier and faster than the first. Not only are drawing, cutting, and gluing skills the same for all four models, but many of the model parts are the same as well.

The following general instructions will help make your model-making easier and more enjoyable. These are not musts, merely suggestions. If you find it easier to cut and glue in your own way, by all means use that method. Just make certain, however, that your method will produce the same results.

1. Before attempting to build any of the models, skim through the book and choose which model you want to construct. The models are listed in chronological order not degree of difficulty. No one requires more skill than any other, though you may find the roofless Speedster a good opener, so select any model that suits your fancy. After making your choice, read the directions thoroughly to be certain you understand all the construction procedures. Gather your materials and tools and decide what color construction paper and paint you want. Follow this same

organization technique as you go from one model to the next.

2. For drawing and cutting the patterns, use the measurements given in the diagrams. Measure and cut as accurately as possible to make sure the parts will fit together well. All diagrams, except for Diagrams 13 and 14 for the Touring Car, are drawn to scale.

3. The parts made of rigid cardboard are the most difficult to cut out. Those with straight edges, like the chassis and dashboard, are best cut with a knife. To cut a straight edge, run the knife several times along the metal edge of the ruler, pressing the knife firmly into the cardboard and going deeper with each cut. Be sure to keep the ruler firmly aligned with the pattern line to prevent the knife from veering in the wrong direction. After a deep cut has been made, bend the cardboard along the cut. To make the final cut, either hold the cardboard vertically and finish cutting, or leave the cardboard flat on the work surface and run the knife repeatedly along the cut line until the pieces separate. If you choose the second method, be careful not to cut into your work surface. You can use scissors to cut rigid cardboard, but it is more difficult and will not produce a straight, clean edge.

Matting board is easy to cut with a sharp knife. Scrap cardboard may be more difficult. Also, if your scrap cardboard has printed material on it or is an undesirable color, paint it the primary color of the finished model or cover it with construction paper before or after cutting.

The rigid cardboard wheels are among the more difficult parts to make. Draw the circular wheel pattern using the diameter measurement given in the diagram. Go over this circle several times with your compass pencil, pressing as firmly as possible each time and forming an indented circular track.

Before cutting the shape, draw the wheel design as shown in the pattern. Hold the cardboard firmly to your work surface with masking tape while drawing the design. Make sure the tape does not cover any part of the wheel to be drawn or already drawn

in case removal of the tape takes some of the cardboard with it.

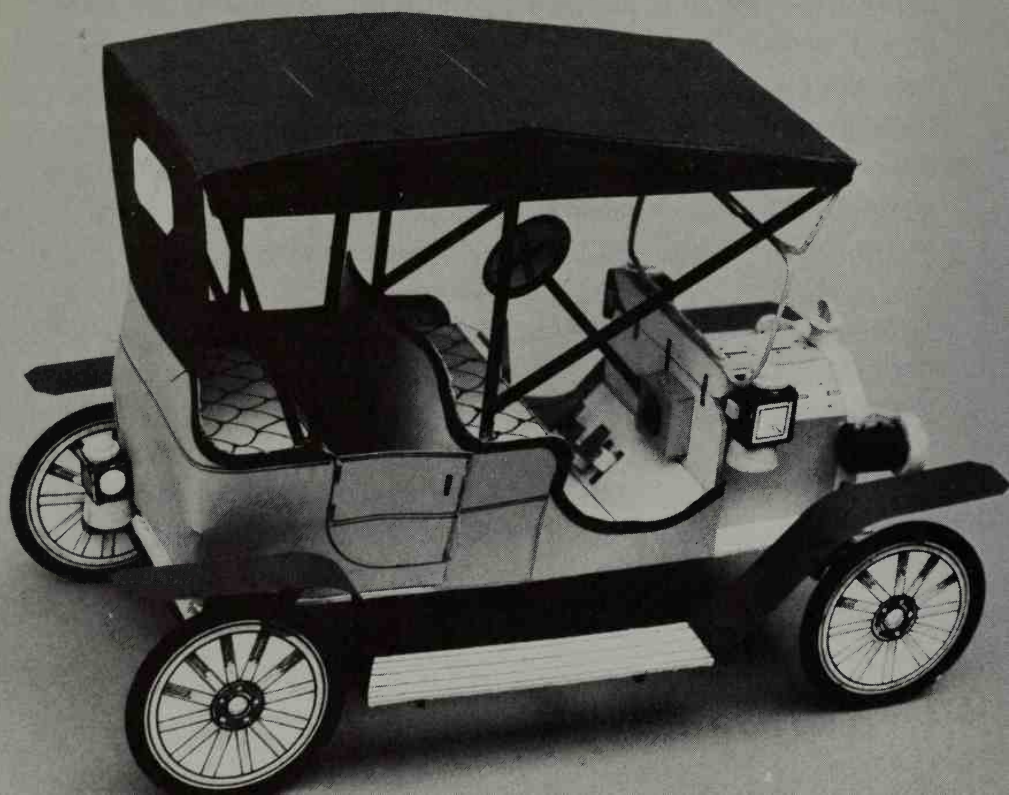
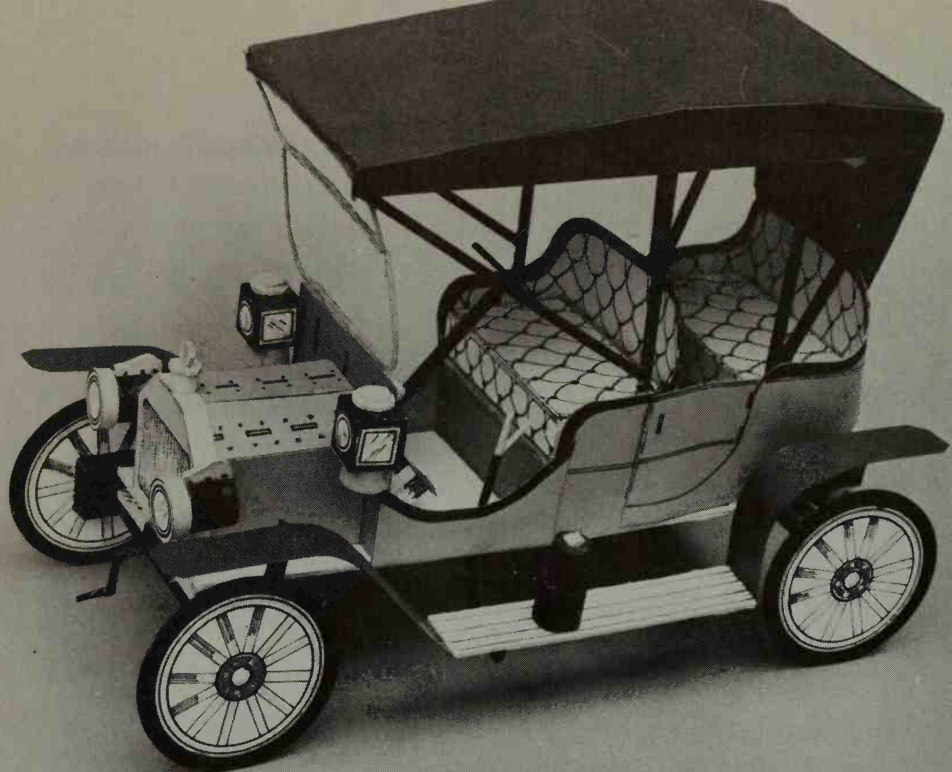
Now carefully cut out the wheel shape with the scissors, beginning your cut on the penciled circular track. Turn the wheel pattern continuously into the scissors to avoid making flat edges along the rim of the wheel.

4. Some of the model parts are curved, the fenders for example, while others, like the headlights, are cylindrical in shape. To help curve these pieces, pull the cut-out pattern over the edge of your ruler or work surface. Pull with a steady, strong motion with one hand while the other presses the paper against the edge of the table or ruler. Going over this two or three times is enough to give the paper a permanent curve or to make it easier to roll into a cylindrical shape.

For very small cylinders, such as the radiator caps and gauges, forming and fastening the shapes over a pencil protects them from being flattened as you glue the ends.

5. All models have wood parts of various lengths. The wood you use may be large matchsticks, bought strips of wood, or round toothpicks. The large matchsticks and round toothpicks are made of soft wood and can be cut simply by pressing down on them with your knife. The bought strips of wood are harder to cut, but a single tap of a hammer on the back of your knife usually does the trick. In all cases, make certain you place a small block of wood under the wood to be cut. This not only makes it easier to cut the wood but also protects your work surface.

One final word. Keep cool. There are sure to be times when parts do not turn out the way you had in mind. Just remember that you are working with paper and low-cost wood so it is easy to start over. If you are still discouraged and ready to sweep everything into the wastebasket, try making another part that may be more successful, then return to the problem piece. When your models are finished, I am sure that you will feel your time, effort, and patience were well spent.



TOURING CAR: 1909

With room for five passengers, the Model T Touring Car was a popular and economical choice for the family pleasure car in the early twentieth century. When it first appeared in 1909, it sold for \$850, far below other cars of its day, and by 1916, thanks to Ford's design simplification and improved mass production methods, the Touring Car was being offered at the astonishing low price of \$390.

In the 1920s, however, Ford's Model T's in general and the Touring Car in particular began to lose their favored position with the American motorist. Car buyers wanted models with greater power and speed and that were more attractively designed. So in 1927, in spite of its low \$380 selling price, production of the Touring Car was discontinued along with the rest of the Model T line, ending an era of basic design, low-priced automobiles.

BUILDING THE MODEL T TOURING CAR OF 1909

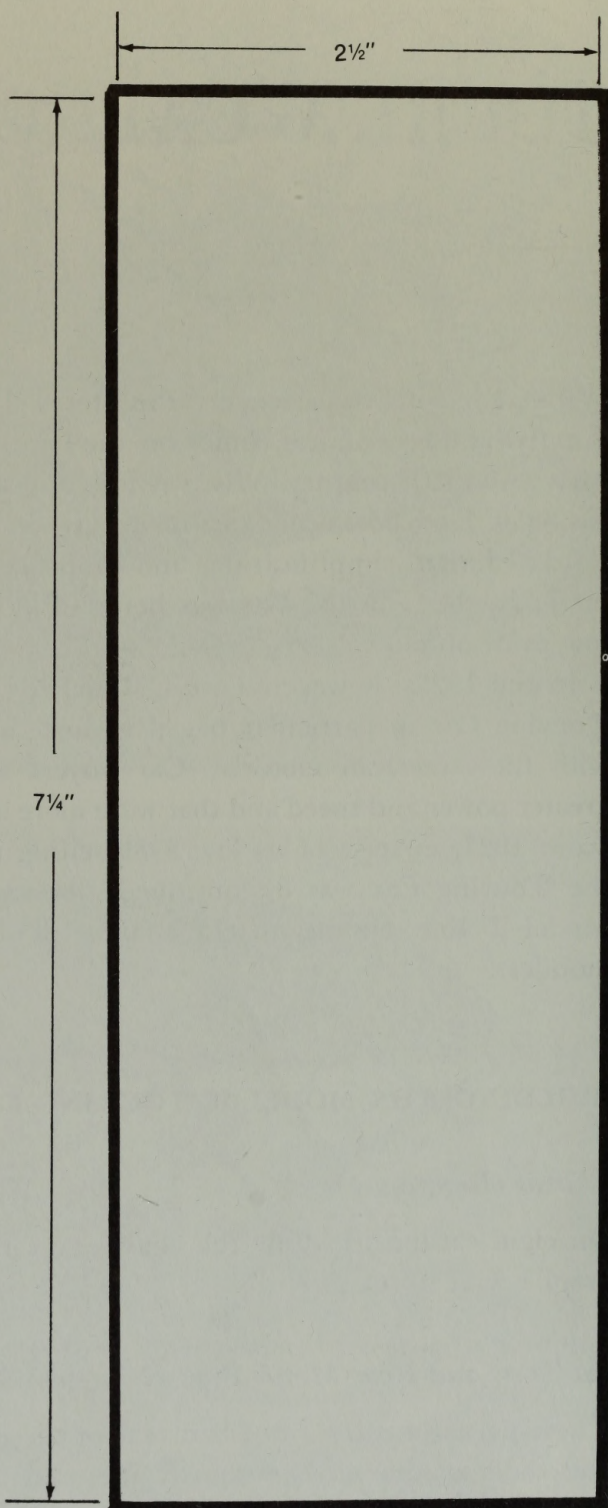
Chassis (Diagram 1)

On rigid cardboard, draw the chassis pattern as shown in Diagram 1. Cut it out carefully.

Radiator and Rear Motor Wall (Diagrams 2 and 3)

These parts form the front and rear of the engine compartment and their shapes are the same. Draw and cut out these pieces

DIAGRAM 1
Chassis



Make 1.

from white rigid cardboard as shown in Diagrams 2 and 3. With pencil, label the edges A, B, and C as shown. On one side of the radiator pattern, draw the design shown in Diagram 2 with pen and black ink. Paint the plain outside edge yellow. With a sharp-pointed nail, poke the hole for the steering post in the rear motor wall as shown in Diagram 3.

Engine Hood (Diagram 4)

The engine hood consists of a series of panels that are glued to the radiator and rear motor wall to form a single closed unit. Draw and cut the panels as shown in Diagram 4. Use whatever color construction paper you have selected for the car body. Label the panels A, B, and C as shown with pencil. On one side of panels B and C draw the design indicated in Diagram 4 using pen and black ink.

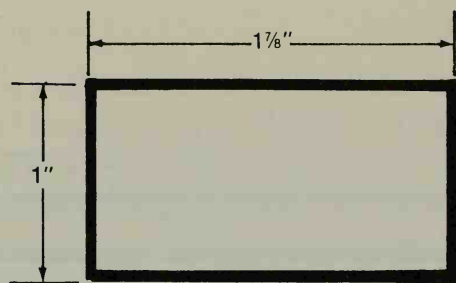
Match the panels with the identically lettered edges of the radiator and rear motor wall to form the engine hood. Glue in place, making sure the radiator design is facing forward and that the edges are even and tight.

After the engine unit is glued together, it can be attached to the chassis. To do this, put glue on the bottom edge of the radiator and bottom edge of the rear motor wall. Then place the engine unit on the chassis so the radiator is even with one short edge, or chassis front, and the sides parallel to and equally distant from the chassis sides.

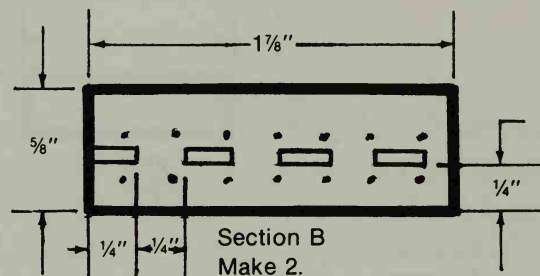
Radiator Trim (Diagram 5)

The radiator trim is a narrow strip of yellow construction paper that is glued to the front edge of the engine hood. The yellow color is preferable since this piece represents the brass trim of the radiator on the real Model T. Draw and cut this part carefully as shown in Diagram 5. Wrap it around the front edge of the engine hood, keeping its forward edge even with and not overlapping the edge of the radiator.

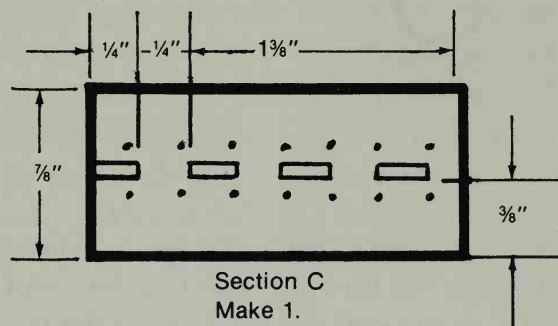
DIAGRAM 4
Engine Hood



Section A
Make 2.



Section B
Make 2.

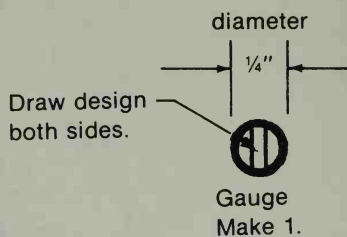
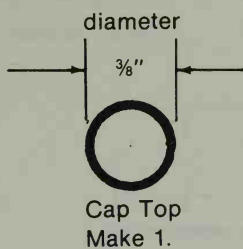
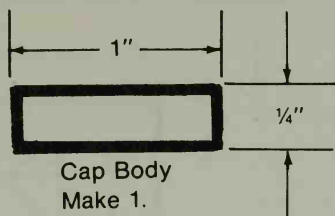
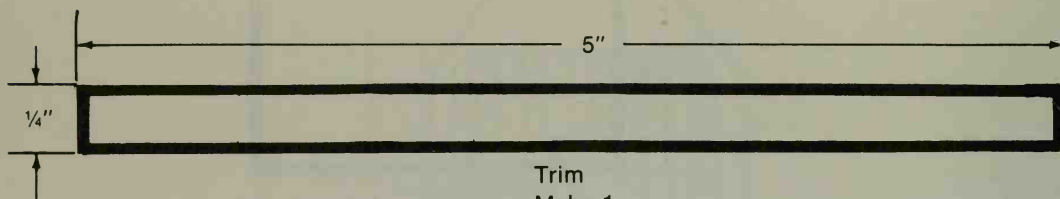


Section C
Make 1.

If the long sides of this piece are crooked, then the finished unit will be lopsided.

Pull the body piece lengthwise over the edge of your ruler or

DIAGRAM 5 Radiator



work table several times to curve. Wrap the pattern around a pencil and roll into a cylinder $\frac{1}{4}$ inch in diameter. Glue closed. Then glue the radiator cap body to the top center of the radiator even with its front edge. See the photographs of the finished model.

The radiator cap top is made from rigid cardboard and cut slightly larger than the diameter of the body piece. Use your compass to draw the circular pattern as shown in Diagram 5. Cut the disc carefully and paint one side yellow. When the paint is dry, glue this piece to the top of the cylinder.

Radiator Gauge (Diagram 5)

The radiator gauge is also made from rigid cardboard. Use your compass to draw the circular shape as shown in Diagram 5 and, again, cut it out carefully. Paint both sides of this piece yellow. When dry, draw the gauge design in pencil on both sides of the disc. Do not use pen and black ink for this because it will smear. Finally, glue the radiator gauge perpendicular to the top of the radiator cap and parallel to the radiator front. The gauge design should also be at right angles to the radiator cap.

Dashboard (Diagram 6)

The dashboard is made in two sections, A and B. Draw and cut these pieces as shown in Diagram 6 from brown rigid cardboard (or paint the unit brown after both sections are glued together). Be especially careful cutting the bottom edge of section A, since this is glued to the chassis floor. If it is crooked, the dashboard unit will also be crooked.

Glue dashboard sections A and B together along the round-cornered edges as shown. Section B will be the top edge of the dashboard. Be sure the side edges of the two sections are even.

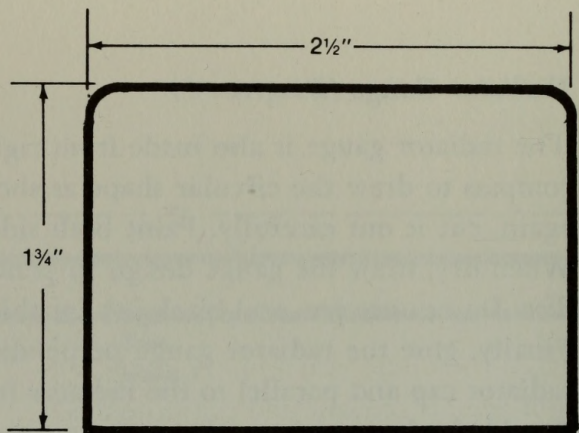
After they are firmly glued, draw the three brackets on both sides as shown in Assembly Diagram 6 using pen and black ink. Make each bracket $\frac{1}{8}$ inch wide and $\frac{3}{8}$ inch long. Then with your sharp-pointed nail, poke the hole for the steering post as shown in the diagram. Set the dashboard aside until the coil box is completed.

Coil Box (Diagram 7)

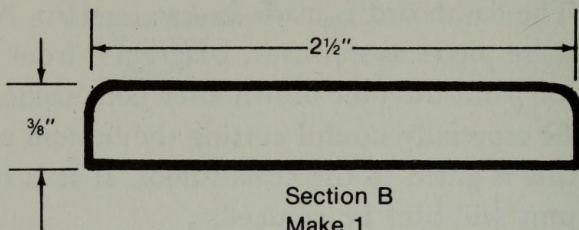
The coil box is made of blue construction paper. Draw and cut the body pattern as shown in Diagram 7. Score along the dotted line with your knife, pressing lightly. Fold along the scored line to form a boxlike shape. Glue to hold at the marked tabs.

The coil box has a black construction paper gauge on its front

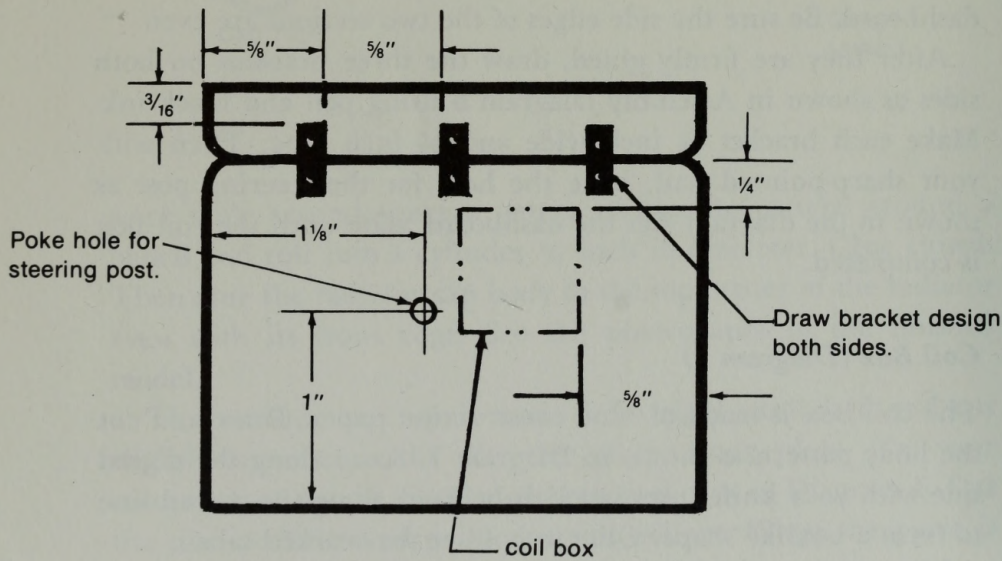
DIAGRAM 6
Dashboard



Section A
Make 1.



Section B
Make 1.



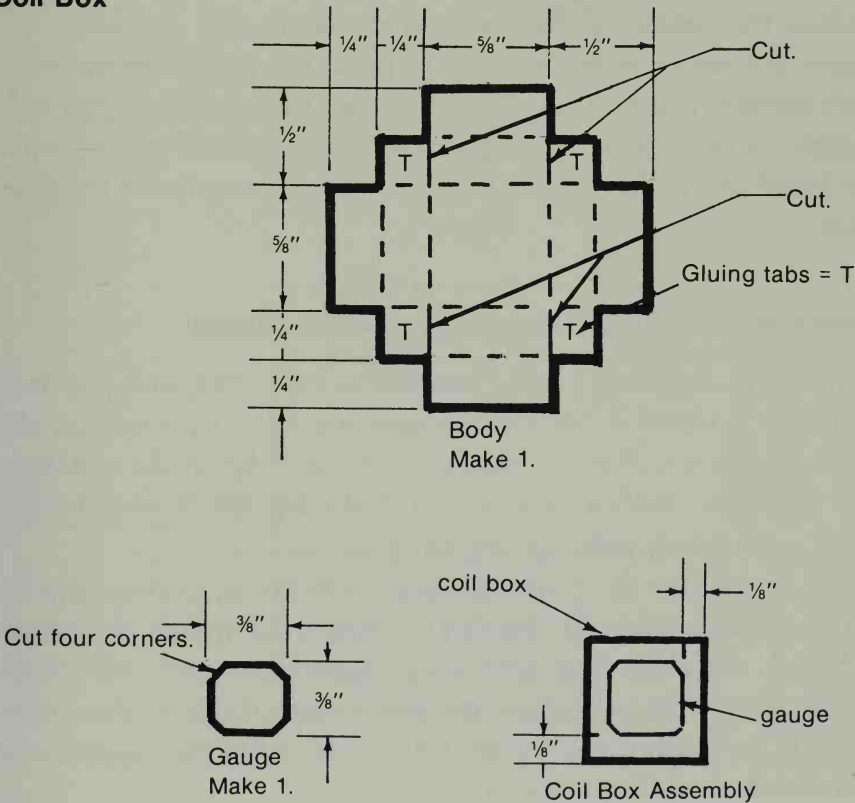
Dashboard Assembly

side. Draw and cut the gauge pattern as shown in Diagram 7. Glue the gauge to the exact center of the front of the coil box (Assembly Diagram 7). Then glue the assembled box and gauge to the dashboard as shown in Assembly Diagram 6.

Dashboard Attachment

Place the dashboard unit against the rear motor wall so its bottom edge is at right angles to the chassis. The bottom corners of the dashboard should be exactly even with the sides of the chassis and the holes for the steering post should be aligned. Glue in place.

DIAGRAM 7
Coil Box



Slanted Footboard (Diagram 8)

Draw and cut the rectangular footboard from rigid cardboard as shown in Diagram 8. Paint it the color you will want for the floor mat (don't use black). Draw the three pedal positions on one side as shown in the diagram, using pen and black ink. Each rectangle is $\frac{1}{8}$ inch wide and $\frac{3}{8}$ long. They are spaced evenly $\frac{3}{16}$ inch apart. Set the footboard aside until the pedals are completed.

Foot Pedals (Diagram 8)

Draw and cut the pattern for the three pedals as shown in Diagram 8. Use brown or black construction paper for these.

Draw and cut the three pedal shafts from white rigid cardboard. Draw the shading on the shafts as shown in the diagram with a soft lead pencil.

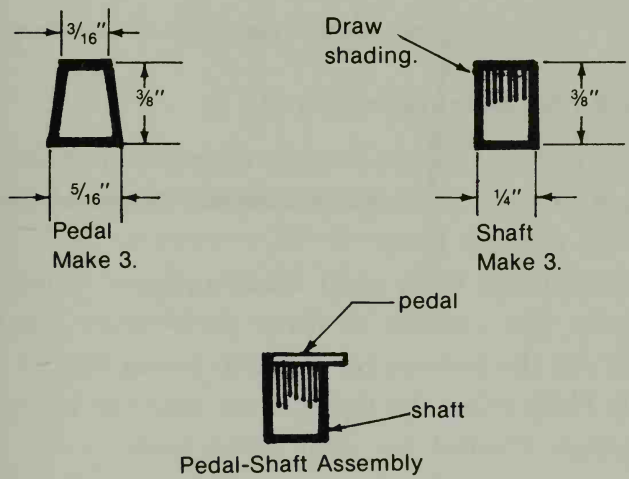
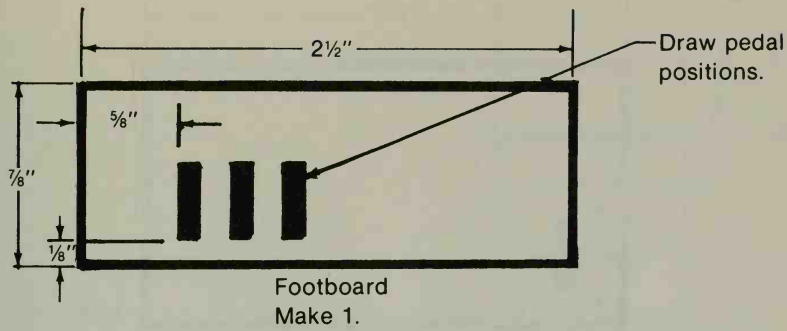
Glue the pedals to the shafts as shown in the Assembly Diagram. An easy way to do this is to place the pedals flat on your work surface. Put glue on one end of the shaft and place this end upright in the center of the pedal so one long side is even with the broad end of the pedal. Hold for a few minutes until the glue is set.

Footboard Assembly (Diagram 8) and Attachment

Glue the three pedals to the footboard at the rectangular positions you have marked in black ink, staggering them by attaching the two end shafts so they are even with the top edge of the rectangle and the center shaft so it is even with the bottom. Make sure the short end of each pedal points upward.

While the glue dries, lightly mark a straight line on the chassis about $\frac{1}{2}$ inch from the dashboard. When the pedals are firmly attached, put glue along both long edges of the footboard. With the pedals on the left, place one glued edge of the footboard on the line marked on the chassis, resting the other end against the dashboard. Press firmly but gently.

DIAGRAM 8
Footboard and Pedals

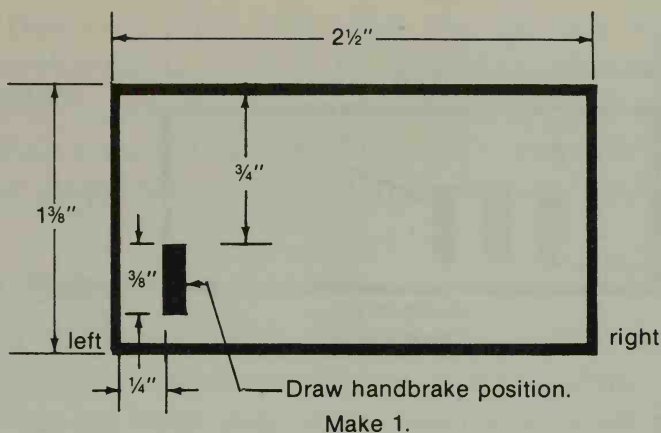


Floor Mat (Diagram 9)

The floor mat is cut from the same or a similar color construction paper as the footboard. Draw and cut this piece as shown in Diagram 9. Draw the handbrake position with black ink as shown.

Glue the mat to the chassis so that its sides are even with the chassis sides and its forward edge is against the bottom edge of the footboard. This portion of the model is the driver's compartment.

DIAGRAM 9
Floor Mat



Front and Back Seat Bases (Diagram 10)

The Model T Touring Car has two sets of seats—front and back. These are made in three parts—base, cushion, back-and-side unit—beginning with the seat base.

Each seat base, made from rigid cardboard and painted any color you choose, also consists of three parts—sides, front, and top. Draw and cut the pattern for the side pieces first as shown in Diagram 10. Notice that the top is wider than the bottom and the back edge slants inward. Set these pieces aside.

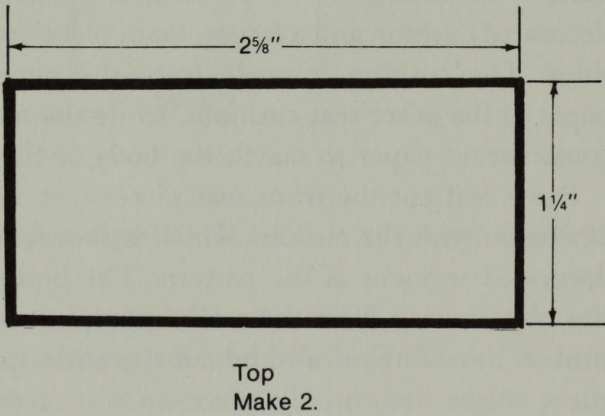
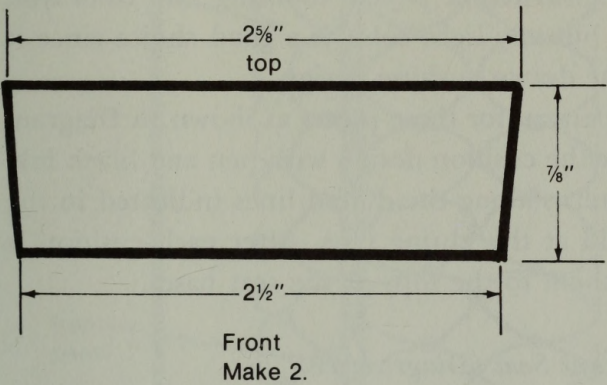
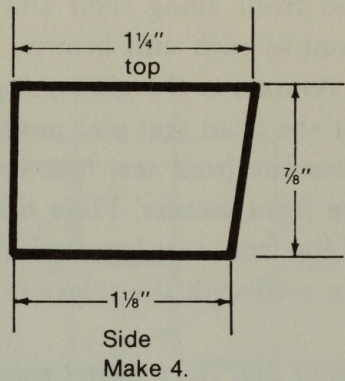
Next draw the pattern for the front of the two seat bases as shown in Diagram 10. Make sure you taper each piece along its sides so that the top edge is wider than the bottom. Set aside.

Finally draw and cut the pattern for the two top pieces as shown in Diagram 10. As soon as all the pieces have been cut, the seat base units can be assembled.

Seat Base Assembly and Attachment

First glue two side pieces at right angles to each front section, matching their short sides. Then attach the top pieces to the sides

DIAGRAM 10
Front and Back Seat Bases



and front along their similar length edges. Paint the top and front of each unit brown.

As soon as the glue and paint have dried, choose one seat base for the front seat and position it $1\frac{3}{4}$ inches from the dashboard. Glue the front seat base to the chassis along the bottom edge of the front section. Place the back seat base 1 inch from the rear of the front seat base and glue to hold. Make sure both seat bases are even with the sides of the chassis.

Front and Back Seat Cushions (Diagram 11)

The cushions for the front and back seats are also identical. Make both of these from construction paper, choosing any color you wish. I chose yellow, but any light color is a good choice since it contrasts well with the drawn cushion design.

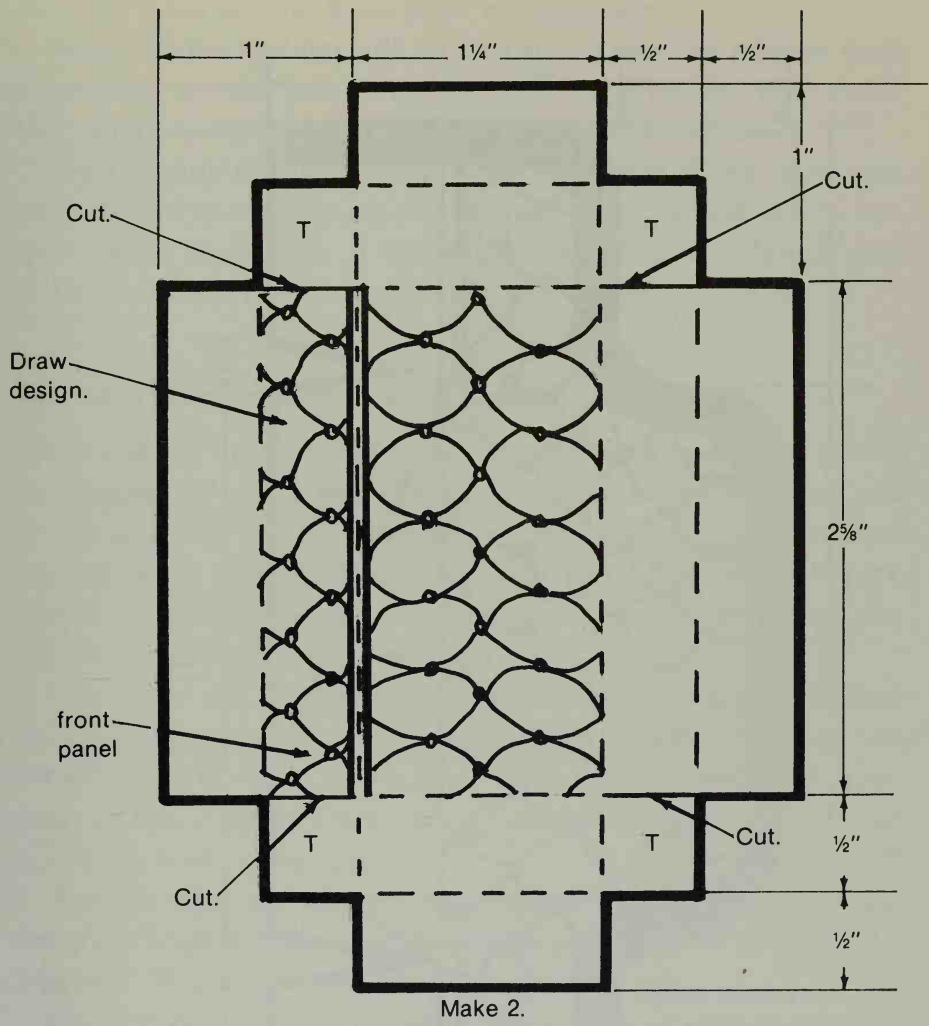
Draw and cut the pattern for these pieces as shown in Diagram 11. On one side, draw the cushion design with pen and black ink. Fold the cushion patterns along the dotted lines indicated in the diagram. Glue to hold at the gluing tabs. After each cushion is firmly glued, attach them to the tops of the seat bases.

Back and Sides of Front Seat (Diagram 12)

The back and sides of the front seat are slightly different from the back and sides of the back seat, although each is a single large pattern consisting of two pieces glued together. These pieces, a decorated cushion and a larger, main piece, form the seat back and sides. The cushion is made from the same color construction paper as the other seat cushions, while the main piece is cut from construction paper to match the body of the car model.

Draw and cut the front seat pieces first, as shown in Diagram 12. Begin with the cushion which is shown in Diagram 12 as the decorated segment of the pattern. The bottom edge of the cushion is $\frac{7}{8}$ inch in from the main body piece and is indicated by a broken line. Then draw and cut the entire pattern or main body piece. Place the cushion piece on top of the main body piece,

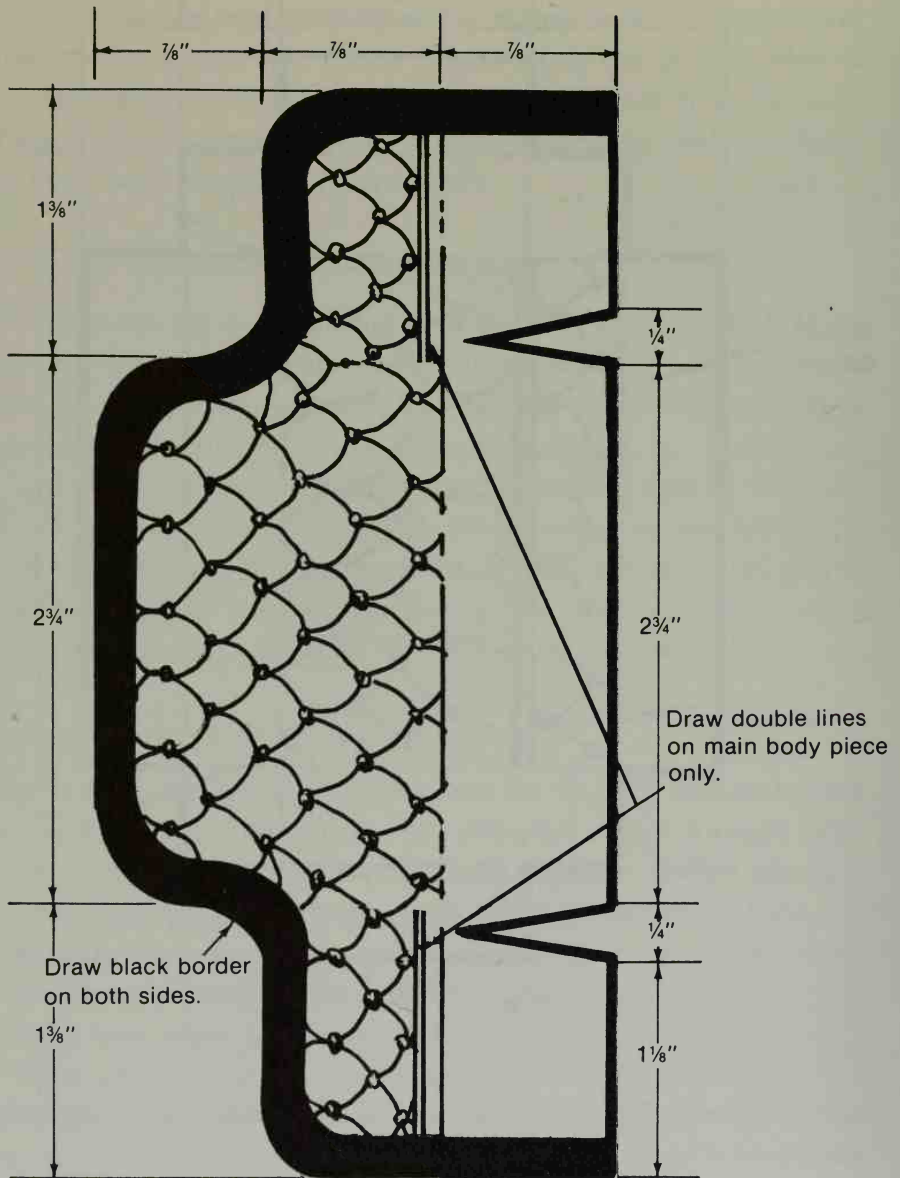
DIAGRAM 11
Front and Back Seat Cushions



matching edges, and glue together. If there is any overhang, trim with your scissors.

With the cushion side face up, draw the black border and cushion design (Diagram 12) using pen and black ink. Notice that the design does not extend past the bottom edge of the cushion piece.

DIAGRAM 12
Back and Sides of Front Seat



Cushion and Main Body Piece
 Make 1 of each and assemble as shown.

Turn the pattern over and draw the black border all around the curved edges and side of the main piece as shown in Diagram 12. Also draw the double black lines on each side.

Now pull the cushion side of the pattern over the edge of your work table or ruler just around the notches. This will help curve the pattern to form the sides and will make gluing easier.

Finally, glue the unit to the sides and back of the front seat cushion and base, keeping the forward edges of the sides even with the forward edges of the seat cushion. See the photographs of the finished model.

Back and Sides of Rear Seat (Diagrams 13 and 14)

Draw and cut the pattern for the rear seat back cushion as shown in Diagram 13. Note that this diagram and Diagram 14 are not drawn to scale. Use the same color construction paper you used for the other cushion pieces. Lay this piece flat on your work surface and draw the black border and cushion design on one side as shown, using pen and black ink.

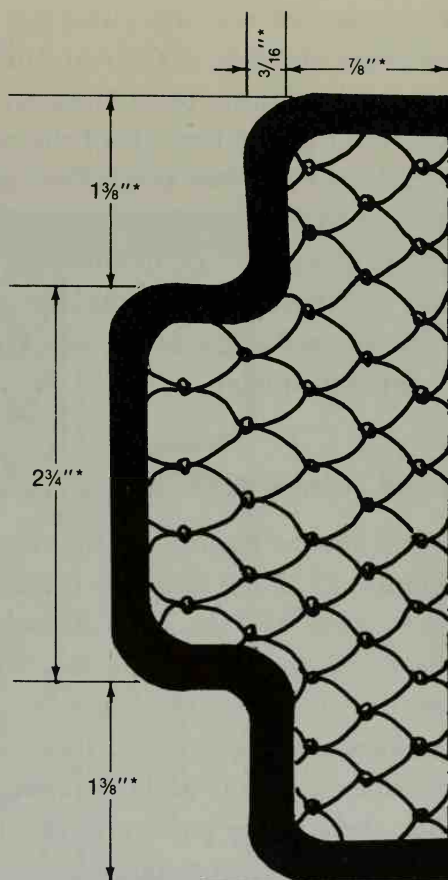
Now draw and cut the large body piece as shown in Diagram 14. Glue the cushion pattern to this larger section, matching the curved edges as much as possible. Trim any overhang with your scissors. Put a heavy book on this sandwiched unit to be sure it will become tightly glued.

Turn the cushion side face down. Draw the black border, door designs, and double lines on the main pattern piece as shown in Diagram 14. Use pen and black ink.

Pull the pattern over the edge of your work table or ruler as you did for the back and sides of the front seat. Be sure to do this only around the notches.

Glue the sandwiched pattern piece to the back seat cushion and base. Make sure the forward edges of the black border are even with the forward edges of the seat cushion. This positioning should also place the doors in their proper location. Glue the bottom edge of the pattern to the sides and back edge of the

DIAGRAM 13
Rear Seat Back Cushion



Make 1.

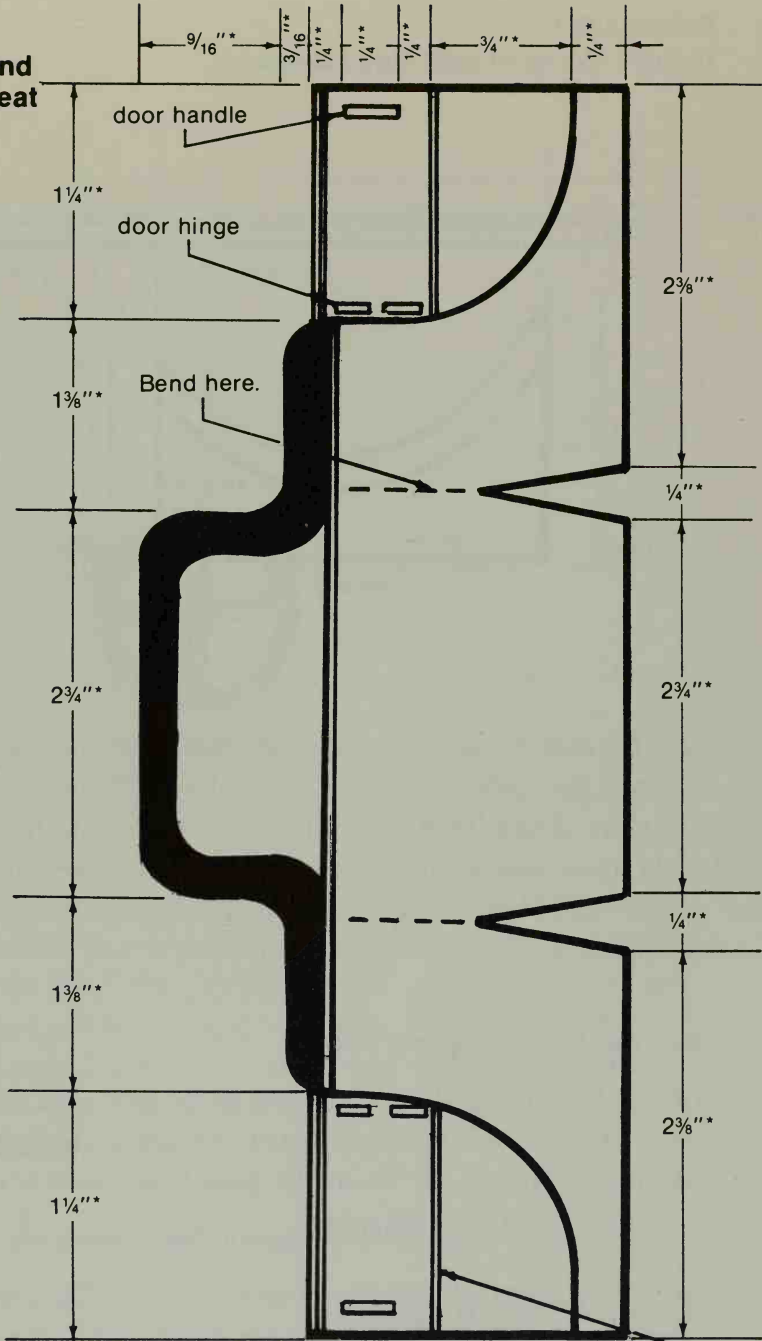
*Please note that these measurements are not to scale.

chassis. Finally, glue the forward edges of the doors to the sides of the front seat. See the photographs of the finished model.

Driver's Compartment Body Sides (Diagram 15)

These pieces complete the body of the Model T Touring Car. Draw and cut the two body sides as shown in Diagram 15. Use construction paper to match the rest of the car body. Draw the black border on one side of each piece as shown, using pen and

DIAGRAM 14
Body of Back and
Sides of Rear Seat

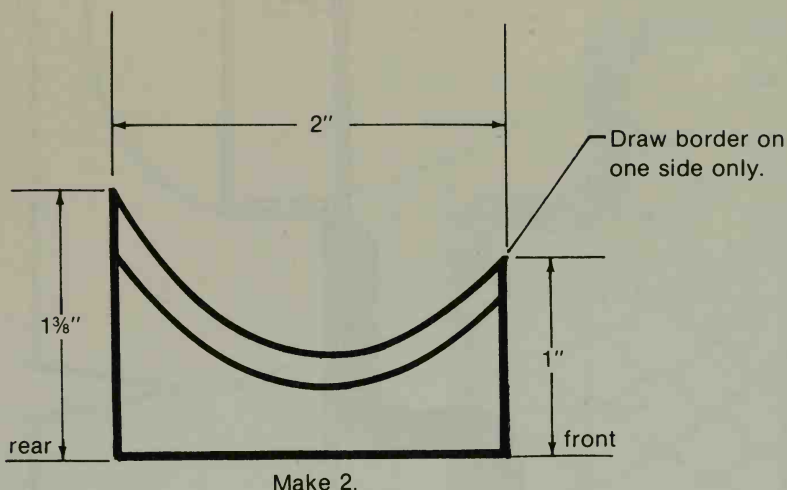


Make 1.

*Please note that these measurements
are not to scale.

Align with double line
of front seat sides.

DIAGRAM 15
Driver's Compartment Body Sides



ink. Be sure to draw on opposite sides so the border will face outward for each. Glue the body sides to the chassis, dashboard, and sides of the front seat, aligning the black borders with those of the front seat as much as possible. Also make sure the bottom edge of each body side is even with the edge of the chassis. See the photographs of the finished model.

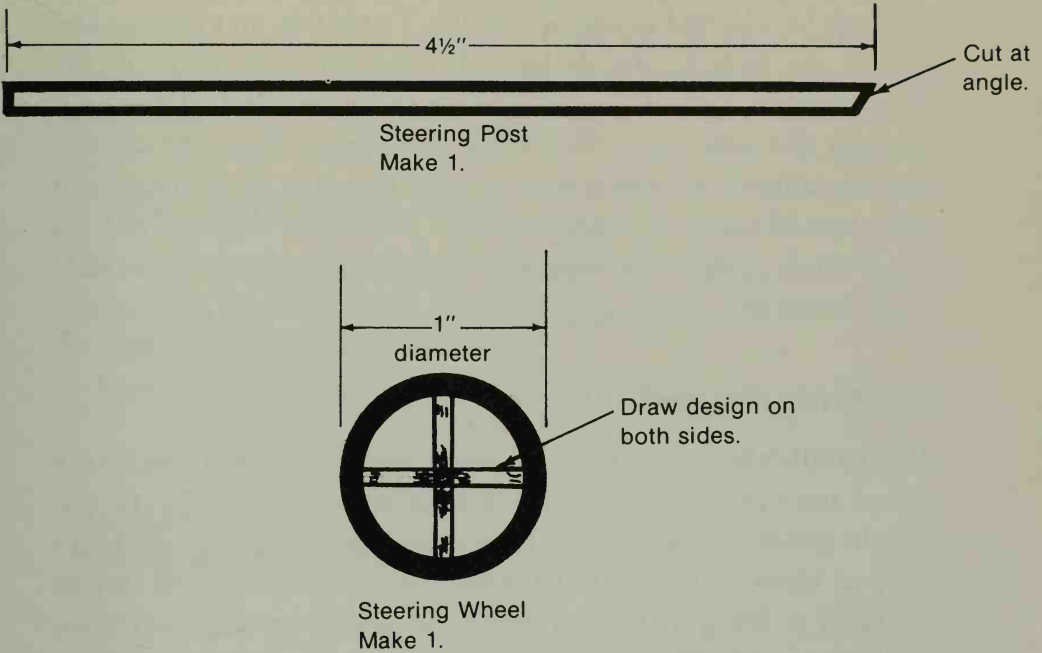
Steering Post (Diagram 16)

This is the first of the wood parts to be made for the car model. From large matchstick wood, cut the post, angling one end as shown in Diagram 16. Paint the post black and, while the paint dries, make the steering wheel.

Steering Wheel (Diagram 16)

Use your compass to draw the steering wheel on rigid cardboard. Run the compass pencil over the circle several times, forming an

DIAGRAM 16
Steering Unit



indented track. This indentation will make cutting and drawing the rim easier. Cut out the wheel, turning the pattern into the scissors as you cut. On both sides of the disc, draw the spokes and rim of the wheel with pen and black ink. A metal-edged ruler may come in handy for drawing the spokes. Fill in the spoke design with yellow pencil or crayon, going over the black outline afterward if necessary.

Steering Unit Assembly and Attachment (Diagram 16)

Place the steering wheel flat on your work surface. Put a generous amount of glue in the center of the wheel where the spokes intersect. Let this set for a few minutes, then press the squared-off end of the steering post into the glue. To make sure the post is exactly

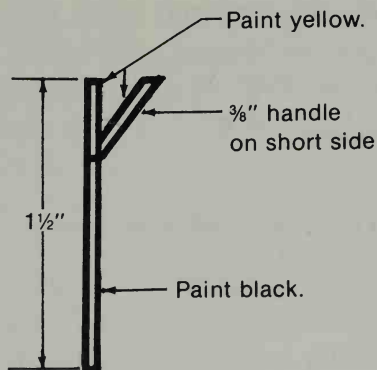
vertical, place your ruler upright next to the post. The edge of the ruler and the post should be parallel.

After the steering wheel and post have been firmly joined, the unit can be attached to the car model. To do this, put glue in and around the hole in the dashboard and a small amount on the diagonally-cut end of the post. Push the glued end of the post through the hole until it touches the chassis floor. Adjust the steering unit so the wheel is even with the edge of the front seat and approximately $\frac{3}{4}$ inch above it. Hold the steering unit in this position, or place a support under the post, until the attachment is secure.

Handbrake (Diagram 17)

The handbrake is also made of wood and in two sections. From round toothpicks, cut the handbrake post and handle to the lengths given in Diagram 17. Below the handle attachment, paint the post black. Paint the remainder and the handle yellow. When the paint is dry, glue the handle to the post at an angle as shown in Diagram 17. Then glue the handle to the left side of the driver's compartment at the forward end of the location you've marked on the floor mat (Diagram 9). Hold the handle vertically in place until the glue sets.

DIAGRAM 17
Handbrake



Make 1.

Running Board Brackets (Diagram 18)

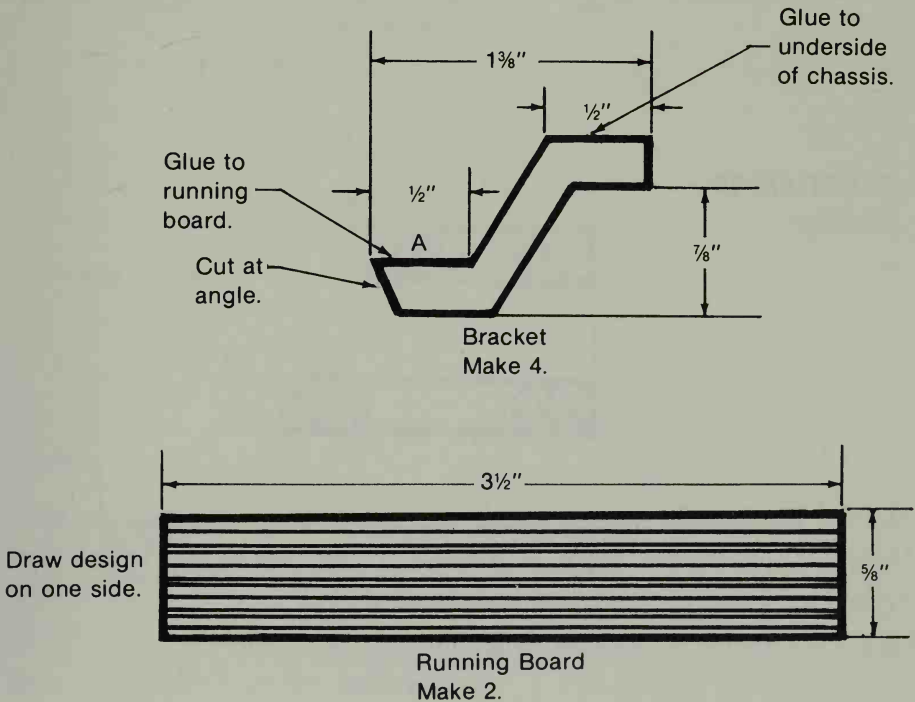
Draw and cut the running board brackets from rigid cardboard as shown in Diagram 18. Use a knife to cut the pattern since a scissors will bend it out of shape. Paint the brackets with black poster paint. While these are drying, you can make the two running boards.

Running Boards (Diagram 18)

Cut the running boards from white rigid cardboard, following the pattern in Diagram 18. Draw the line design shown with pen and black ink on one side only.

Place each running board on the A edge of two brackets, de-

DIAGRAM 18
Running Boards and Brackets



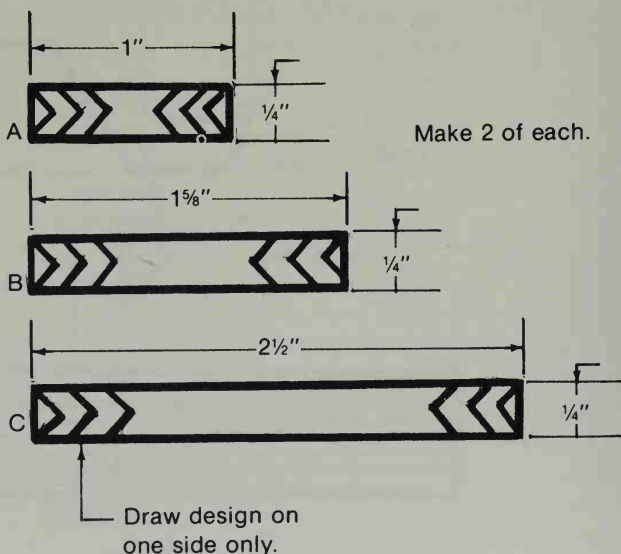
sign side face up. See Diagram 18. Move the brackets so they are $\frac{5}{8}$ inch from each end of the running boards. Glue to hold.

After the brackets and running boards are securely glued, they are ready to be attached to the model. On the underside of the chassis, mark a point 2 inches from the back end of each side of the model. Position the rear brackets at these points and glue the running board units to the chassis. Hold the units in place for a minute or two until they are firmly glued.

Springs (Diagram 19)

The Model T Touring Car has two sets of springs, front and rear. Each set consists of three sections, A, B, and C. Use rigid cardboard to make these sections (or strips of wood if they are of similar thickness). Measure and cut the two sets of springs as shown in Diagram 19. Paint each section yellow. When the paint has dried, draw the V design as shown using pencil or black crayon. When the paint has dried, draw the V design as shown using pencil or black crayon. Draw the design on one side only. Glue the three sections to-

DIAGRAM 19
Springs

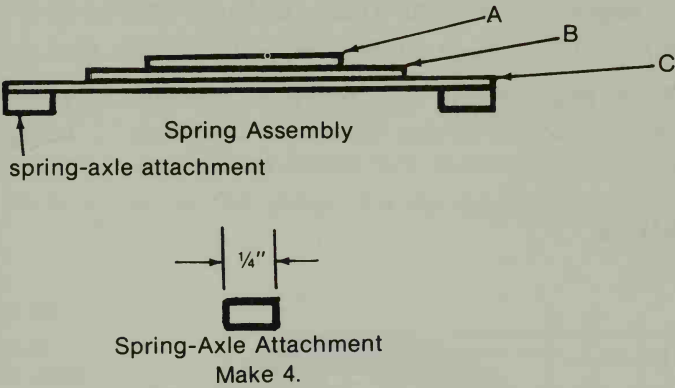


gether, one centered on top of the other, with section C at the bottom and section A on top. See Assembly Diagram 20.

Spring-Axle Attachments (Diagram 20)

Draw and cut the four attachment pieces from rigid cardboard or matchstick wood as shown in Diagram 20. Paint each with black poster paint. When dry, glue two attachment pieces to the underside of each spring unit at opposite ends of section C. Be sure the ends of the attachments are square with the ends of section C. See Assembly Diagram 20.

DIAGRAM 20
Spring Assembly and Spring-Axle Attachments



Axles (Diagram 21)

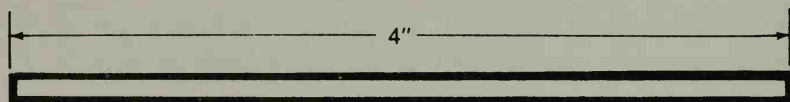
The two axles of the Model T Touring Car are made from 4-inch lengths of large matchstick wood or other similar-sized wood strips. Measure and cut these pieces, tapping the back of your knife with a hammer when cutting if necessary. Paint the two axles with black poster paint.

Spring-Axle Assembly

Place one spring unit on each axle at the attachment pieces. Center the springs on the axles and glue to hold.

DIAGRAM 21

Axles



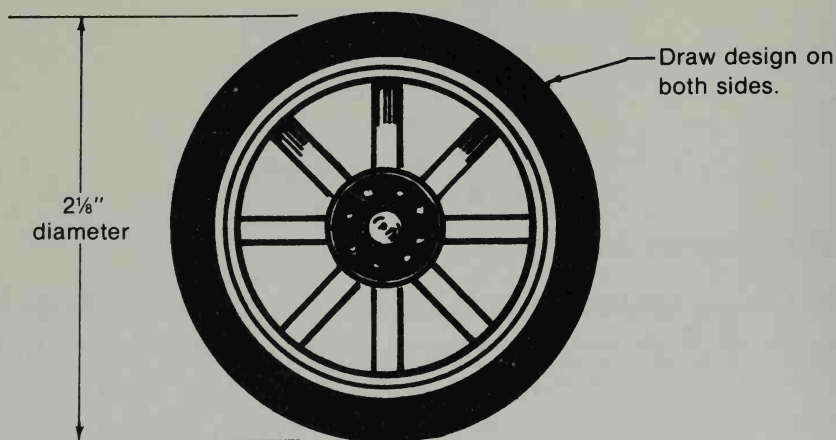
Make 2.

Wheels (Diagram 22)

On rigid cardboard, draw the wheels as shown in Diagram 22, using a compass. Draw the wheel outline several times until the compass pencil has made a track for your scissors. Cut each wheel, drawing the pattern into the blades as you cut. On both sides of the wheels, draw the design shown in Diagram 22 using pen and

DIAGRAM 22

Wheels



Make 4.

black ink or black crayon. Fill in the spokes of each wheel with poster paint or crayon the same color as the car body.

Wheel Boxes (Diagram 23)

Using black construction paper, draw and cut the four wheel boxes as shown in Diagram 23. You might use a light-colored crayon or pencil (such as yellow) for drawing the pattern since lead pencil lines sometimes do not show up clearly on black paper. While the pattern lies flat on your work surface, cut the "X" opening in the center of each piece with the tip of your knife. Carefully score along the dotted lines and fold the pattern into a boxlike shape. Glue together at the gluing tabs T. Place the glued wheel boxes on a flat surface and weight with erasers or similar objects until the glue has completely dried. Then glue one wheel box to the center of each wheel, X-side facing upward.

Wheel-Axle Assembly and Attachment (Diagram 24)

When the wheels and wheel boxes are securely glued, they are ready to be attached to the axles. To do this, place a wheel flat

DIAGRAM 23
Wheel Boxes

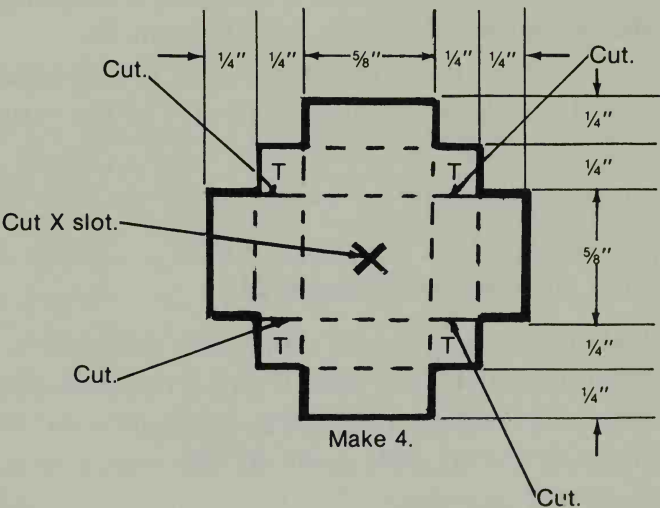
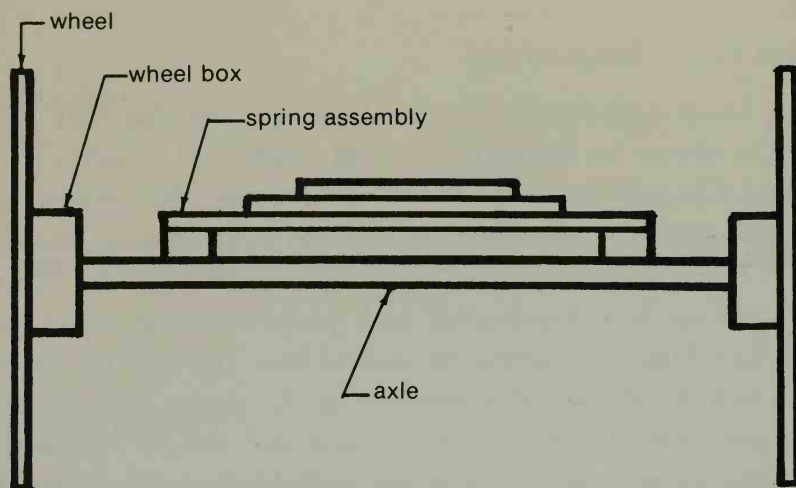


DIAGRAM 24
Wheel-Axle Assembly



on your work surface and put a generous amount of glue on one end of an axle and in the X slot of the wheel box. Push the glued end of the axle into the slot, keeping the axle in a vertical position. Check this position with your ruler, standing it upright next to the axle, and adjust the matchstick piece if necessary. Follow this same procedure for the other axle, then repeat for the second set of wheels. See Diagram 24.

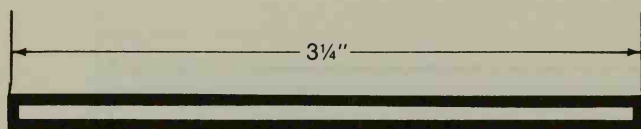
To attach the wheel-axle units to the chassis, turn the car model upside down. Align section A of the springs with the front and rear edges of the chassis. Glue in place, making sure the wheels are the same distance from both sides of the body.

Roof Crosspieces (Diagram 25)

Making the roof and its supporting structure is the most complicated part of this car model. Begin by measuring and cutting the four roof crosspieces from large matchstick wood as shown in Diagram 25. Set aside until the side frames of the roof have been made and assembled.

DIAGRAM 25

Roof Crosspieces



Make 4.

Side Frames of Roof (Diagrams 26 and 27)

Measure and cut the side frame pieces from large matchstick wood, following the measurements given in Diagram 26. Paint each piece with black poster paint and label with the appropriate number 1-10.

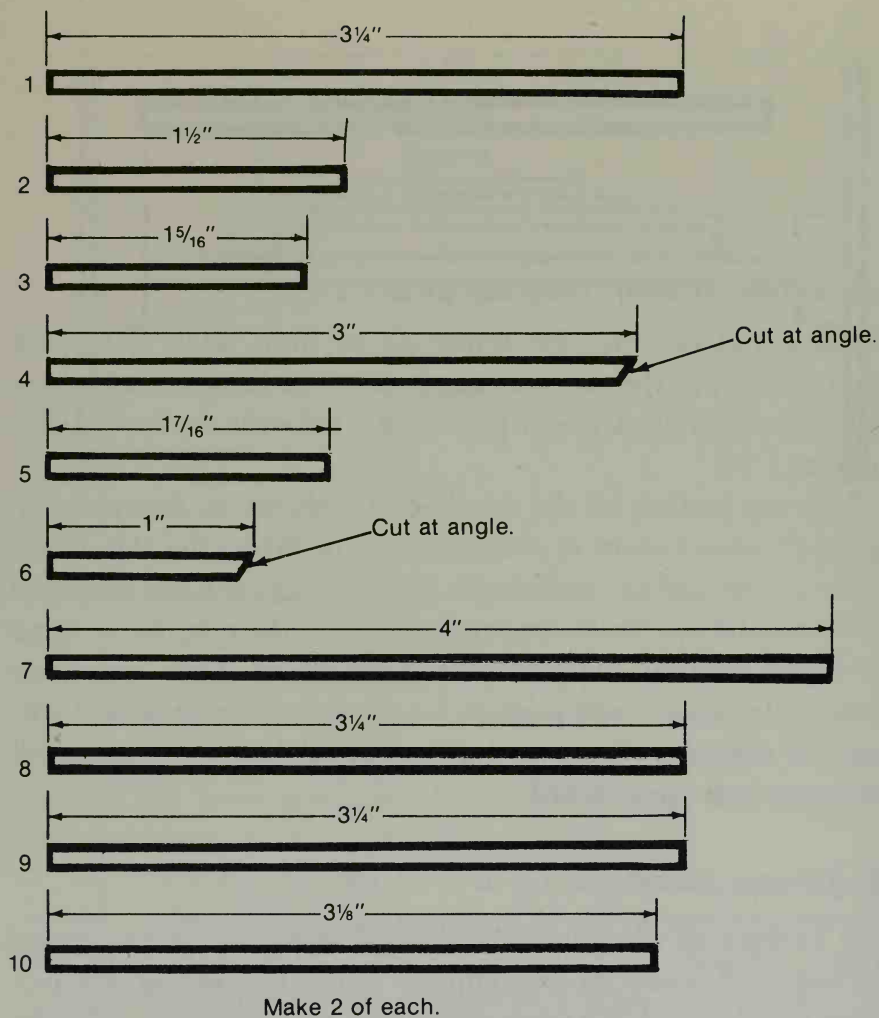
Draw the pattern for the side frames as shown in Assembly Diagram 27 onto a piece of shiny cardboard. When the side frame pieces are dry, place each on its pattern position and glue the pieces together at their connecting points. Do not try to move the frames until all the pieces are firmly glued. Then slide your knife under each glued joint to loosen from the cardboard surface. Do this carefully since the frames will be quite weak until the crosspieces are attached.

Roof Frame Assembly

The crosspieces are attached to the side frames at the points marked X in Assembly Diagram 27. Begin by holding one side frame upside down in a vertical position. One at a time, press the glued end of a crosspiece against the frame at the X joints. Hold the crosspiece in position for a few minutes, then proceed to the next and attach in the same way.

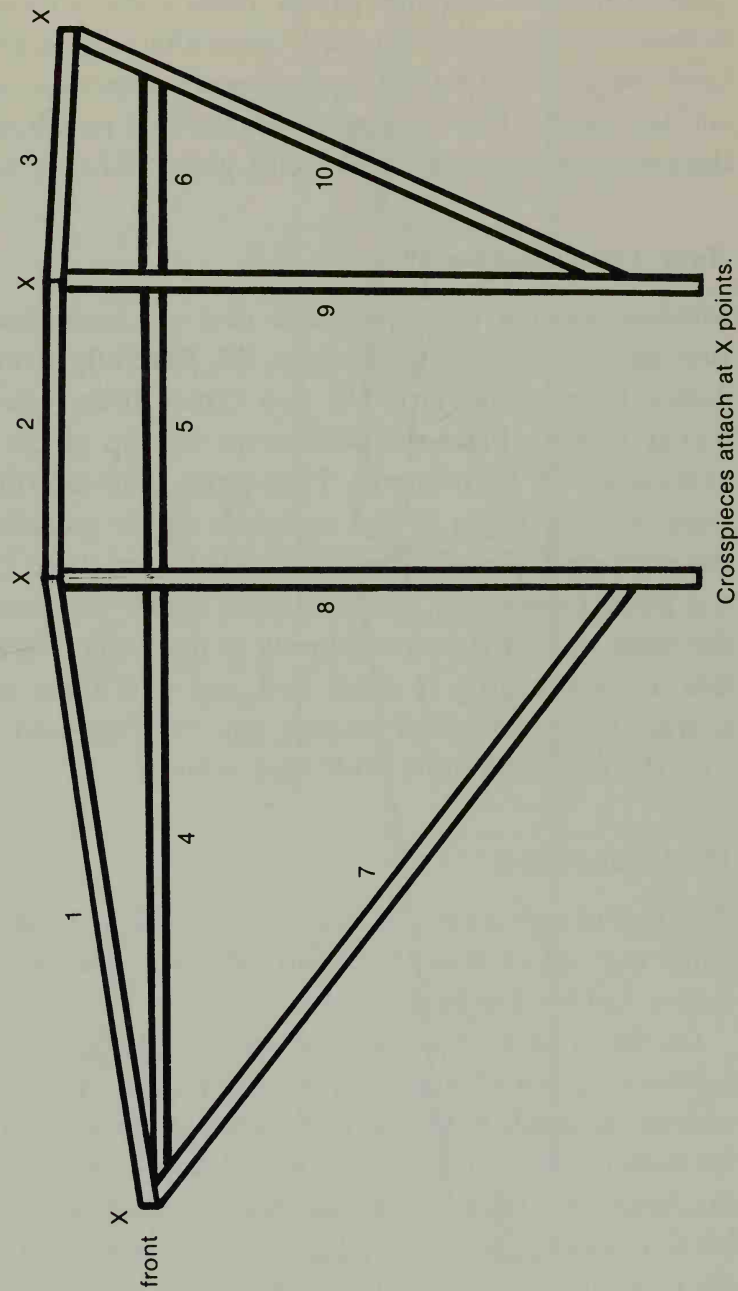
The second side frame can be attached to the opposite crosspiece ends in just one step. Put a generous amount of glue on all four ends and press the second frame against them. Make sure that all crosspieces are parallel and that the side frames are

DIAGRAM 26 **Roof Side Frame Pieces**



aligned with each other. After you've made all necessary adjustments, let the unit dry thoroughly while you make the roof panels.

DIAGRAM 27
Side Frame Assembly



Side Roof Panels (Diagram 28)

The black construction paper roof is made in three sections, beginning with the side roof panels. Draw and cut these two pieces as shown in Diagram 28. Lightly score along the dotted lines and bend the gluing tabs, folding in opposite directions for the right and left panels. Place the panels on the side roof frames, folding the gluing tabs onto the matchstick pieces. Glue to hold.

Roof Top (Diagram 29)

Measure and cut the rectangular roof top from black construction paper as shown in Diagram 29. Carefully score along the dotted lines, particularly the two center lines, which are only lightly creased. Place the pattern on the top of the roof frame to make sure it fits properly. Then put a generous ribbon of glue along all four edges of the underside of the pattern and along the matchstick pieces to which it will be attached. Lay the roof top piece in position, running your finger continuously along the edges until it is fastened firmly to the frame. Fold the gluing tabs T, overhanging at either end, and glue them to the frame as well. If the top panel extends past the frame on either side, trim the excess carefully with your scissors.

Roof Attachment

The roof of this car model is attached to the body before the rear panel is glued in place. Make sure the top panel is tightly glued before making this attachment.

On the lower ends of the four vertical side frame supports, put a generous amount of glue on the outer edges. Attach these glued ends to the inside of the car body, placing the front supports near the back of the front seat and the back supports almost even with the front edge of the back seat. See the photographs of the finished model. Hold these pieces in place with spring-type hair clips, or other clamps, until the glue dries.

Side Roof Panels

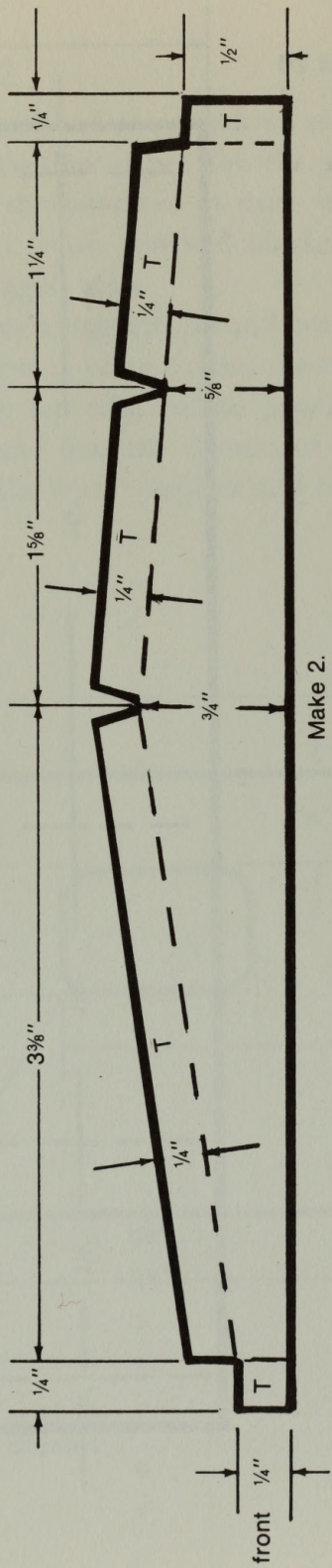
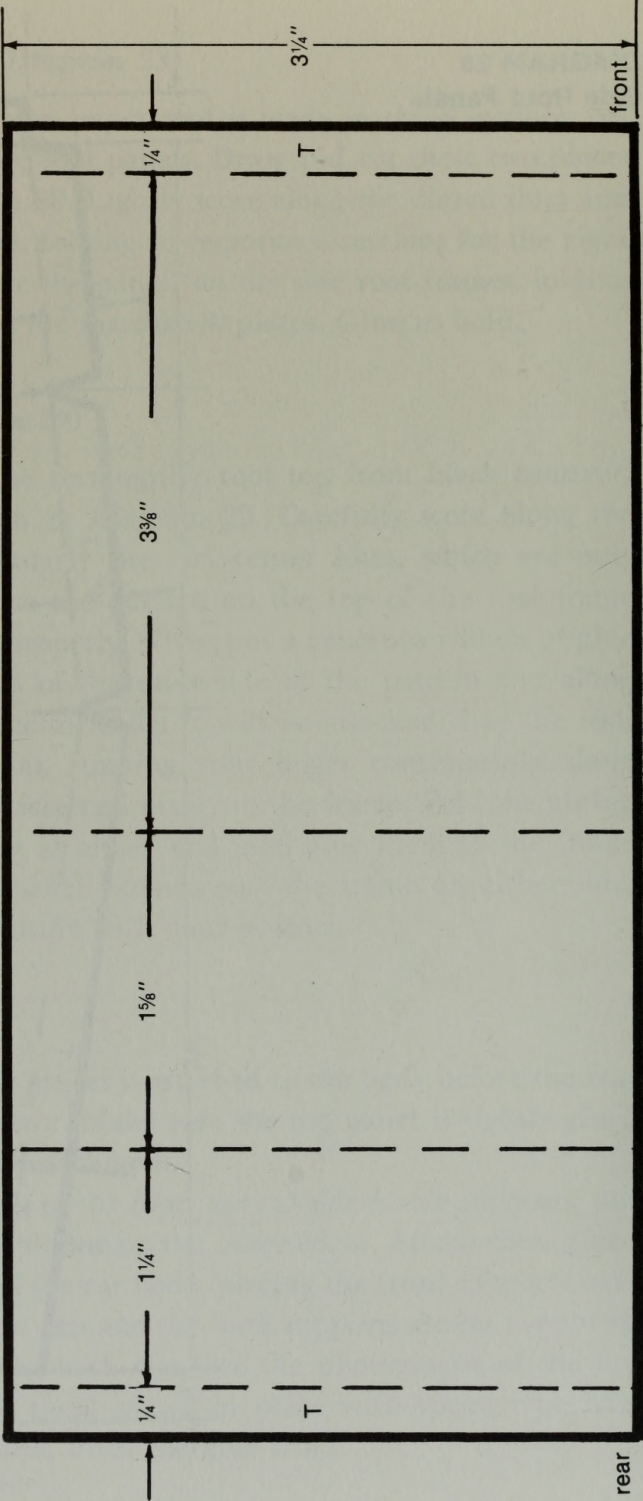


DIAGRAM 29
Roof Top



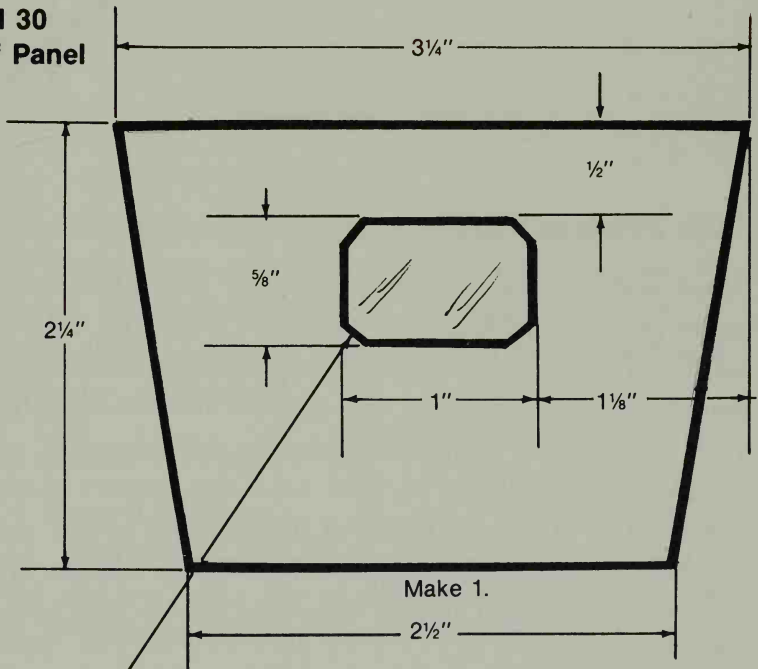
Make 1.

Rear Roof Panel (Diagram 30)

Draw and cut the rear roof panel and two windows as shown in Diagram 30. Use black construction paper for the panel and white for the windows. Glue the windows to each side of the panel as shown in the diagram. With pen and black ink, draw the lines on the windows to suggest glass.

Put a generous amount of glue along the top and bottom edges of one side of the panel and press in place against the rear of the car model. Make sure that the top edge of the panel does not extend above the roof frame and that the corners of the panel are square with the corners of the rear crosspiece and back of the back seat.

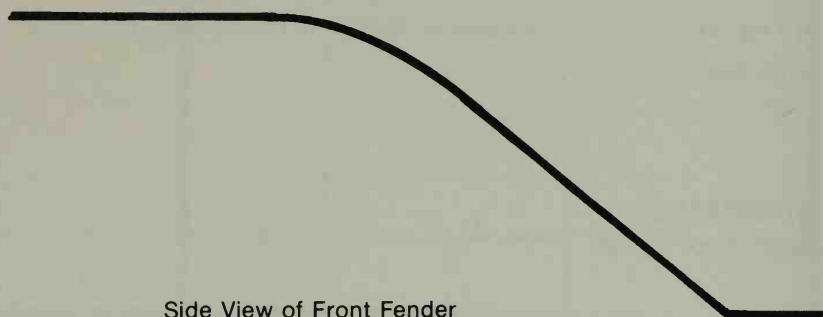
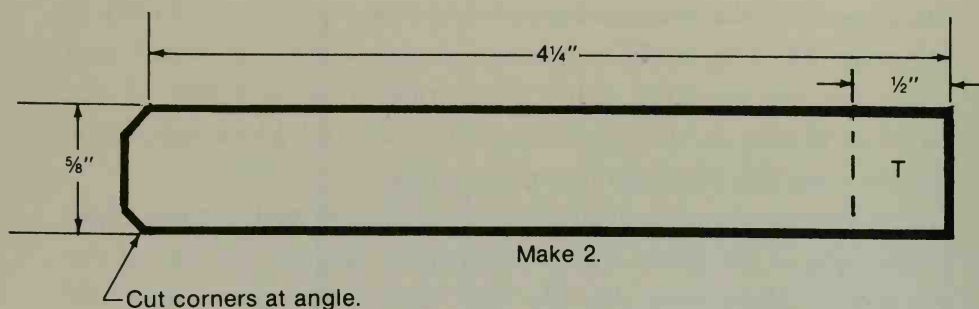
DIAGRAM 30
Rear Roof Panel



Window

Make 2. Glue as shown
on both sides of panel.

DIAGRAM 31 Front Fenders



Front Fenders (Diagram 31)

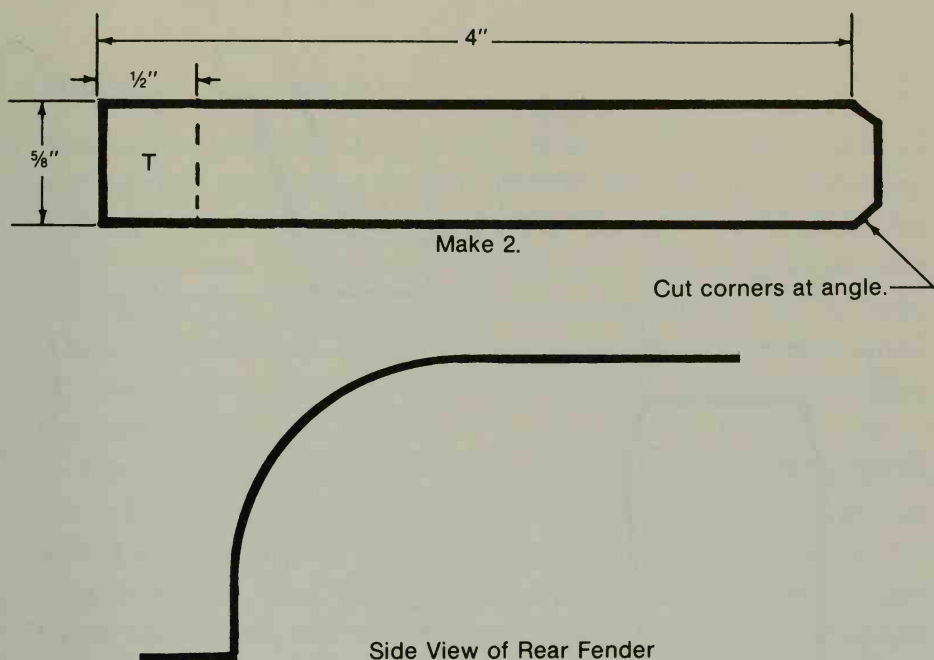
Draw and cut the two front fenders from black construction paper as shown in Diagram 31. Score along the dotted lines and bend each gluing tab at a sharp right angle. To curve, pull each fender several times over the edge of your work table or ruler until it holds the angle shown in the diagram. Put glue on the topside of each gluing tab and press the fenders in place at the forward end of the underside of the running boards. See the photographs of the finished model. Don't worry if the front of the fenders is loose and floppy. Brackets, to be attached later, will take care of this.

Rear Fenders (Diagram 32)

From black construction paper, draw and cut the two rear fender

DIAGRAM 32

Rear Fenders

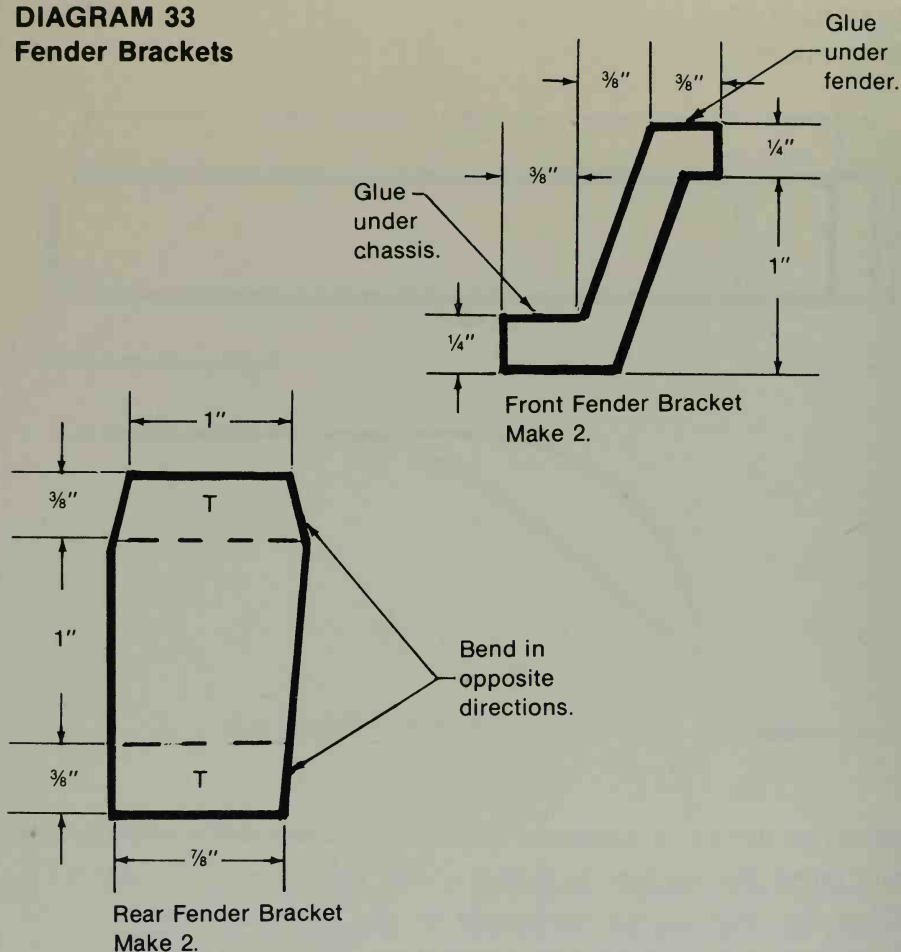


pieces as shown in Diagram 32. Score and bend the gluing tabs and curve the fenders as shown in the side view in Diagram 32. Glue the tabs to the undersides of the running boards at the back end. Again, the fenders will seem insecure until the brackets have been made and attached.

Front Fender Brackets (Diagram 33)

From rigid cardboard, draw and cut the two front fender brackets as shown in Diagram 33. Paint each with black poster paint. Glue one bracket to the undersides of the chassis and front fender along the edges indicated in the diagram, making the chassis attachment directly in back of the axle. Check to make sure that the bracket is in a vertical position, then hold it in place for a few minutes until the glue has hardened. Glue the second bracket to the remaining fender in the same way.

DIAGRAM 33
Fender Brackets



Rear Fender Brackets (Diagram 33)

Draw and cut the two rear fender brackets as indicated in Diagram 33, using black construction paper. Lightly score along the dotted lines and bend the gluing tabs in opposite directions. Glue one bracket in place so its square-cornered tab is attached to the underside of the chassis directly in front of the rear axle. Fasten the opposite tab to the underside of the rear fender. Looking from the back end of the car model, the bracket should form

a Z shape. Glue the second bracket to the other rear fender in the same way.

Headlights (Diagram 34)

The two headlights of the Model T Touring Car are made of a number of small parts, beginning with the main body cylinder.

Draw and cut the two body pieces from black construction paper as shown in Diagram 34. Pull each piece lengthwise over the edge of your work table or ruler several times until it curls. Then roll each into a cylinder $\frac{1}{2}$ inch in diameter. Insert a pencil or other round piece of wood through each cylinder and glue the ends closed.

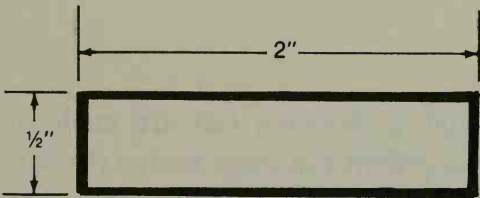
The ends of the cylindrical body pieces are covered with small discs. Draw these four pieces on black construction paper as shown in Diagram 34, using your compass pencil to make an indented circular track for easy cutting. Carefully cut the circular pieces and attach, one at a time, by pressing the glued cylinder ends against them.

The front part of each headlight consists of three parts, a cylindrical rim, a rim end, and a circular glass cover. Draw and cut the two rim body pieces from yellow construction paper as shown in Diagram 34. Roll each piece into a ring $\frac{5}{8}$ inch in diameter, using the same curling method you used for the headlight body. Glue to hold.

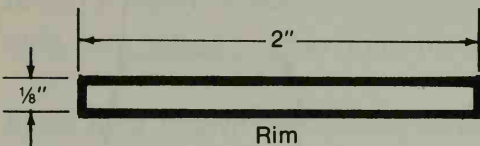
Draw and cut the two end discs from yellow construction paper as shown in Diagram 34. Glue one disc to either end of each rim in the same way that you attached the end piece to the headlight bodies. Then glue one rim at the disc end to each headlight body, centering the ends. The open end of the rim, facing front, will be covered with the headlight glass.

The headlight glass is made from white construction paper. Draw and cut these two pieces as shown in Diagram 34, drawing the glass design with pen and black ink. Glue each disc to the open end of the headlight rim as before.

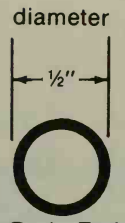
DIAGRAM 34
Headlights



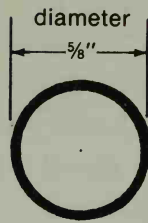
Body
Make 2.



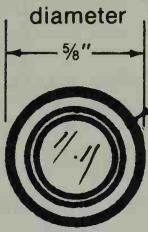
Rim
Make 2.



Body End
Make 4.

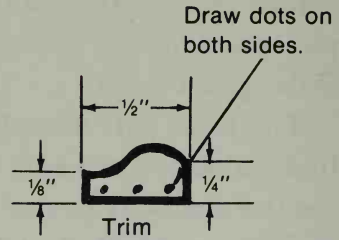


Rim End
Make 2.

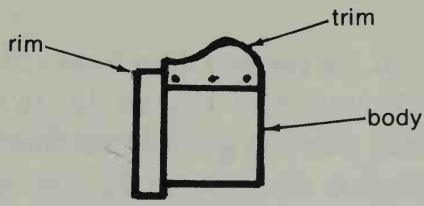


Glass
Make 2.

Draw design on
one side only.



Trim
Make 2.



Headlight Assembly

Glue each headlight unit to opposite sides of the radiator trim just below the slanted panels of the engine hood. See the photographs of the finished model.

Finally draw and cut the two trim pieces from rigid cardboard

as shown in Diagram 34. Paint each piece yellow. After they have dried, draw the three dots as shown with black pencil on both sides. Glue one trim piece to the top of each headlight. Align the ends of the trim and headlight body and hold the decorative piece in its vertical position until the glue has set.

Dashboard Lamps (Diagram 35)

Two dashboard lamps gave the Model T Touring Car an elegant appearance. Draw and cut the body pattern for the lamps first, as shown in Diagram 35. Use white construction paper. Draw the three glass designs on the panels with pen and black ink. For the circular design, make a track with your compass pencil first to make the inking easier. Lightly score along the dotted lines, folding the gluing tabs away from the design side. Fold each body piece into a boxlike shape and glue to hold at the tabs.

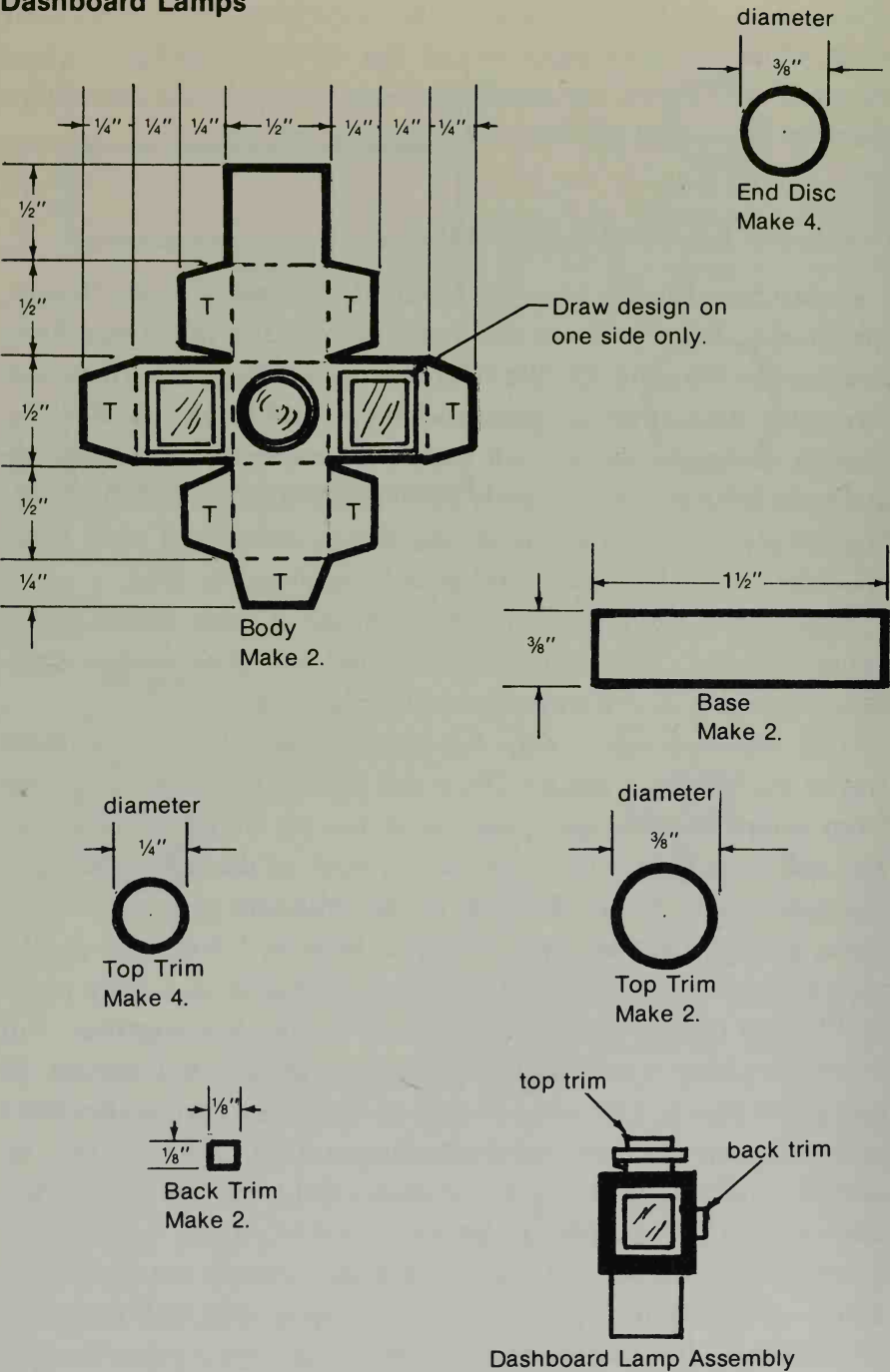
When each body is firmly glued, paint it with black poster paint, drawing the narrow strips around the glass designs carefully. Set aside to dry while you make the base pieces.

The two dashboard lamp bases are constructed in the same way as the headlight bodies. Draw and cut the base and end pieces from yellow construction paper as shown in Diagram 35. Curve and roll each base into a cylinder $\frac{3}{8}$ inch in diameter and glue the ends closed. Cover the ends of the cylinders with the cut-out discs, gluing them in place one at a time as before. When the glue has thoroughly dried, attach each base unit to a body piece.

The top trim is made of three discs sandwiched together. Cut these six pieces from rigid cardboard as shown in Diagram 35 and paint yellow. Place each larger disc between two smaller discs and glue together. See Assembly Diagram 35. When firmly attached, glue each trim unit to the dashboard lamp body, centering the units on the top side of the body.

Draw and cut the two tiny back trim pieces from rigid cardboard as shown in Diagram 35. Paint each with yellow poster paint. When dry, place each piece on the lamp body panel oppo-

DIAGRAM 35 **Dashboard Lamps**



site the circular "glass" and glue to hold. See the photographs of the finished model.

The dashboard lamps are glued to opposite outside upper corners of the dashboard. To do this, put a ribbon of glue on the back edge (opposite the circular glass panel) of the lamp and press into position. The top of the top trim should be even with the top edge of the dashboard. Hold the lamp until the glue has set.

Taillight (Diagram 36)

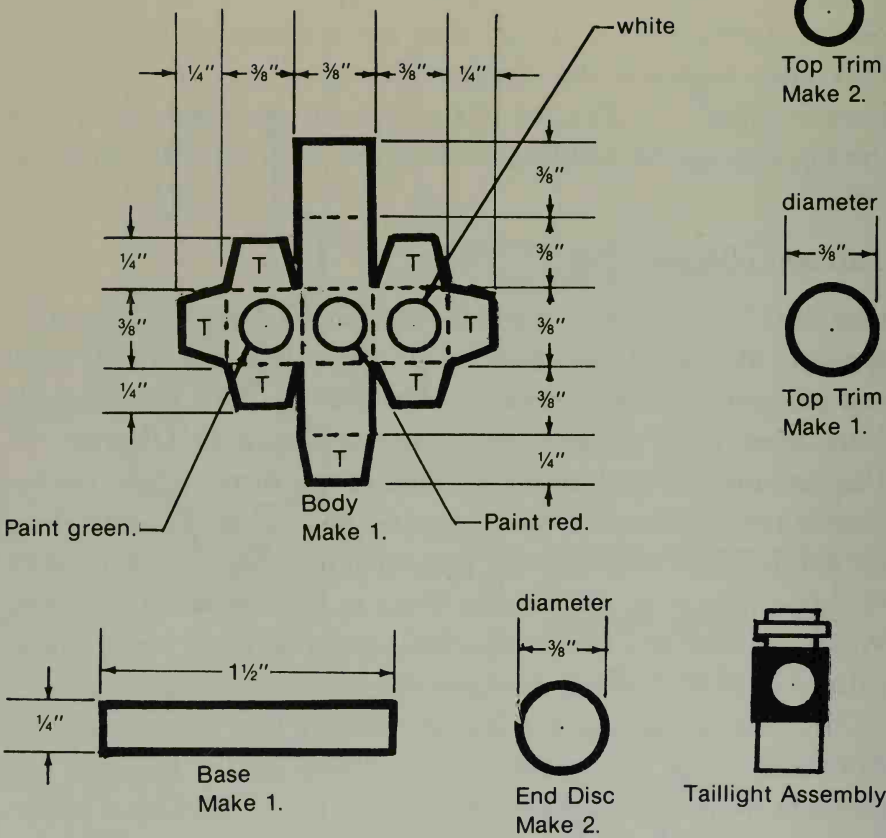
One final lamp must be made for the car model, the taillight. It is nearly identical to the dashboard lamps, except that it is small and painted differently. Draw and cut the pattern for the body piece from white construction paper as shown in Diagram 36. Use pen and ink to draw the outline of the three "glass" circles, painting two of them red and green as shown. Lightly score along the dotted lines and fold the pattern into a boxlike shape with the glass designs on the outside. Glue to hold at the gluing tabs. When the body is firmly attached, paint it with black poster paint, carefully avoiding the three drawn and painted circles.

The base of the taillight is made exactly like the ones on the dashboard lamps. Draw and cut the pattern for the base and end pieces as shown in Diagram 36, using yellow construction paper. Curve and roll the base into a cylinder $\frac{3}{8}$ inch in diameter. Glue to hold. Then glue the end pieces to the base as before. When the unit is firmly joined, attach it to the bottom of the taillight body as shown in the Assembly Diagram.

Cut the three top trim discs from rigid cardboard as shown in Diagram 36 and paint yellow. When dry, place the larger piece between the two smaller ones and glue together. Center the assembled unit on the top side of the taillight and glue in place.

Glue the taillight to the lower left corner of the back of the rear seat near the left wheel. Put glue on the undecorated side of the taillight body and press into position so the lower edge of the light body is even with the bottom edge of the back of the rear seat. See the photograph of the finished model on page 20.

DIAGRAM 36
Taillight



Light Fuel Tank (Diagram 37)

The early Model T's were equipped with a cylindrical tank, which was attached to the left running board. This contained fuel for lighting the car lamps since electricity-providing storage batteries had not yet come into use for that purpose.

From black construction paper, draw and cut the patterns for the bottom cylinder and end discs as shown in Diagram 37. Curve and roll the rectangular piece into a cylinder 1/2 inch in diameter. Glue closed. Then glue the discs to the open ends of the cylinder.

Draw and cut the patterns for the top tank and end pieces as shown in Diagram 37, using black construction paper. Curve and roll the tank piece into a cylinder $\frac{3}{8}$ inch in diameter. Glue to hold. Then glue the end pieces to the open ends of the cylinder. Finally, stack the two tanks, as shown in the photograph on page 20, and glue together.

On the top of the fuel tank is a small trim piece made from rigid cardboard. Draw and cut this pattern as shown in Diagram 37. Paint it yellow. When dry, lay the trim flat on the top side of the tank and glue to the exact center.

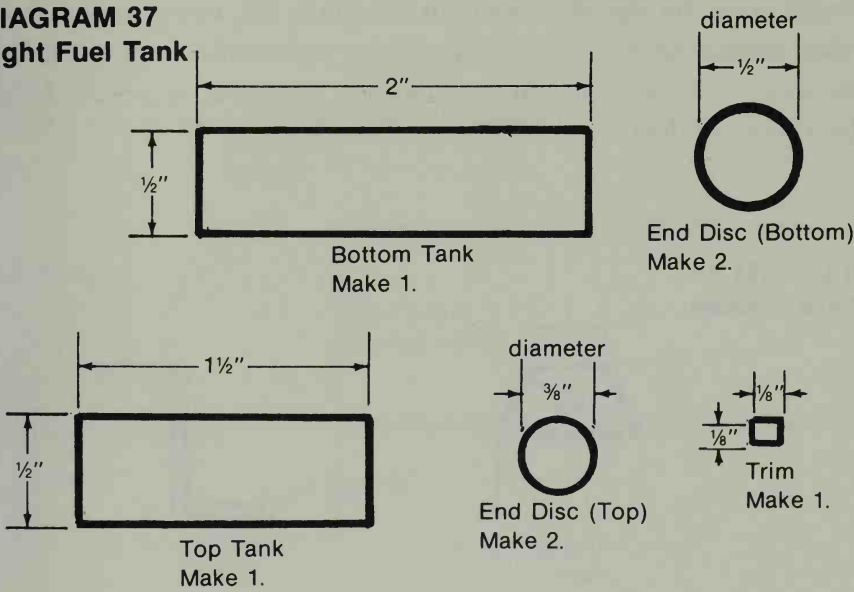
Place the fuel tank unit on the left running board about 1 inch from its forward end. Glue in place. See the photograph of the finished model on page 20.

Crank Handle and Bracket (Diagram 38)

Henry Ford's Model T's had to be started by turning a crank handle. The self-starter did not appear on automobiles until the mid-1920s.

The crank handle for this model is made from round tooth-

DIAGRAM 37
Light Fuel Tank



picks. Cut the three crank handle pieces to the lengths shown in Diagram 38. On shiny-surfaced cardboard, lay the shorter pieces at opposite right angles to the longer stem and glue at their connecting points. When the glue has set, slide your knife underneath the glued joints to loosen from the cardboard. Paint the finished crank handle black.

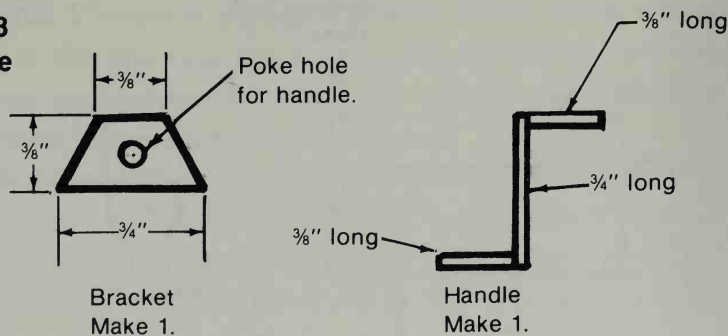
The crank handle is glued into a bracket before it is attached to the car model. Draw and cut the bracket from rigid cardboard as shown in Diagram 38. Use a sharp nail to make the center hole. Then paint the entire bracket black.

Put a generous amount of glue on either end of the crank handle and push it into the bracket hole. Let the unit dry. Then place the bracket in the center of the front spring directly below the radiator and glue in position. See the photograph of the finished model on page 20.

Windshield (Diagram 39)

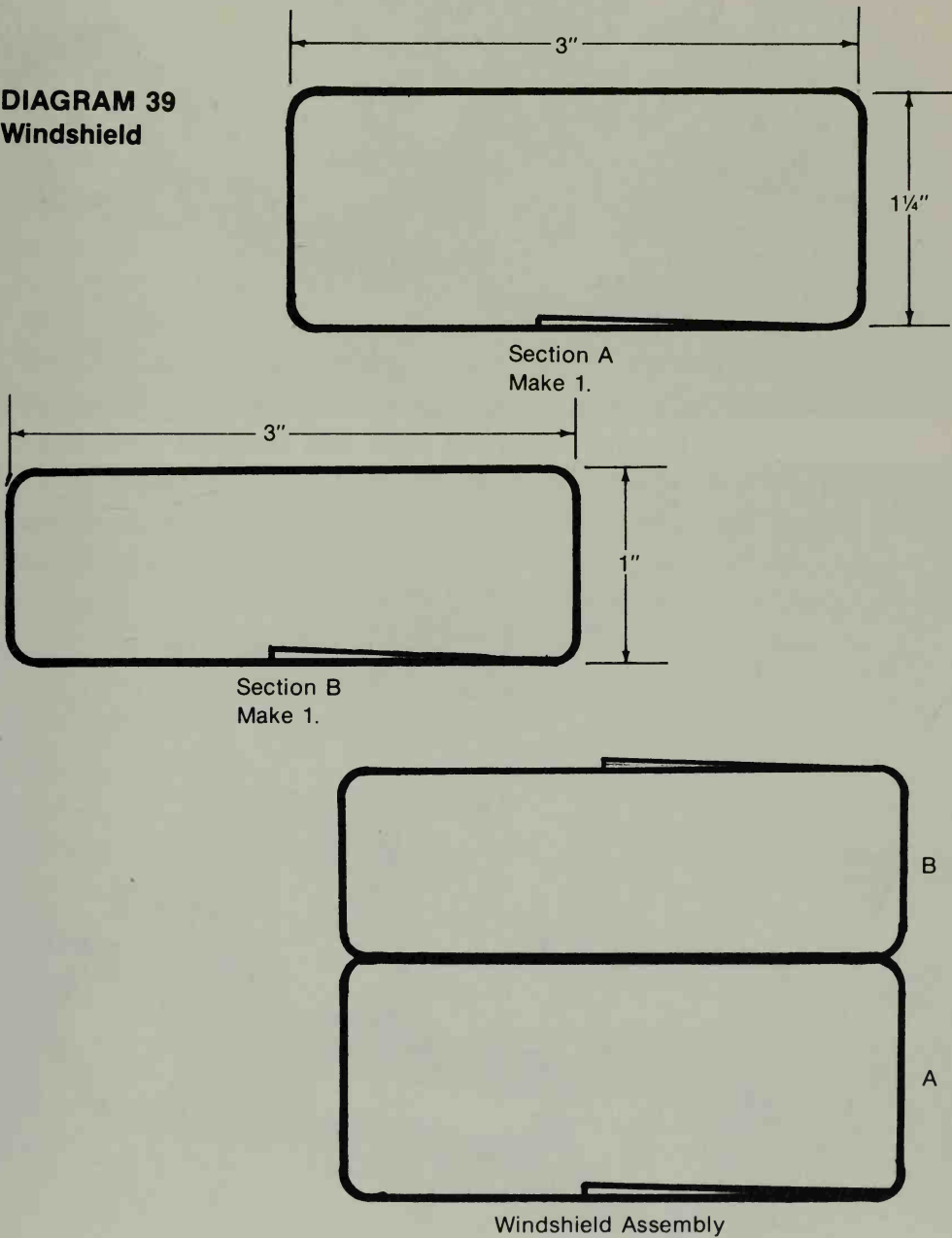
The windshield of the car model is made of two wire sections glued side by side. Cut a 10-inch length of paper-covered wire for section A and a 9½-inch length for section B. Bend each length into the shapes shown in Diagram 39, using a pencil or other round piece of wood to form the rounded corners. Overlap the wire ends as shown in the diagram and glue together. Paint the frames yellow.

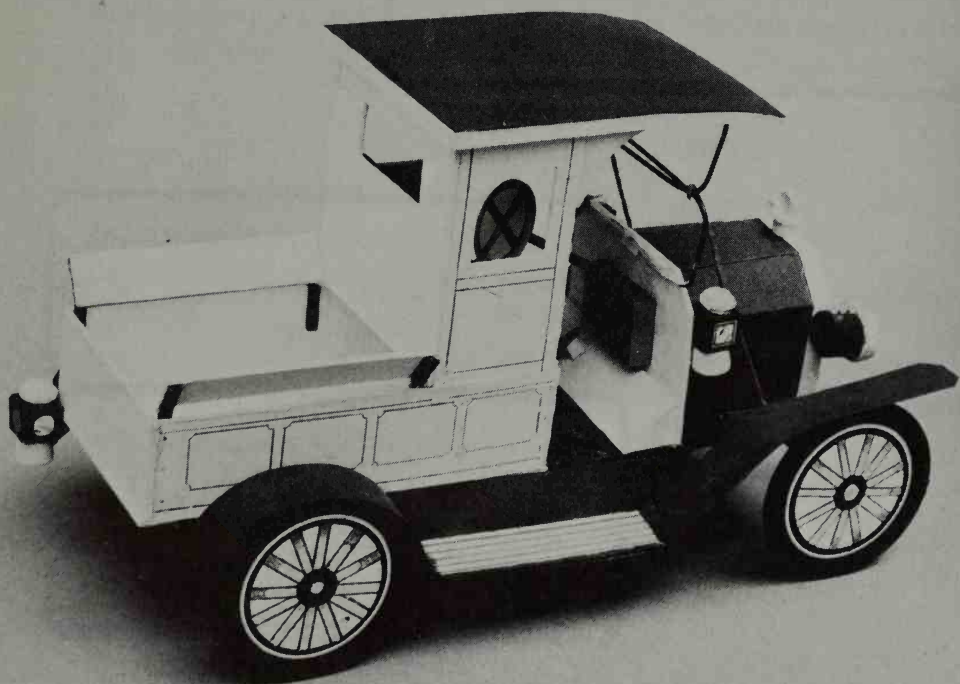
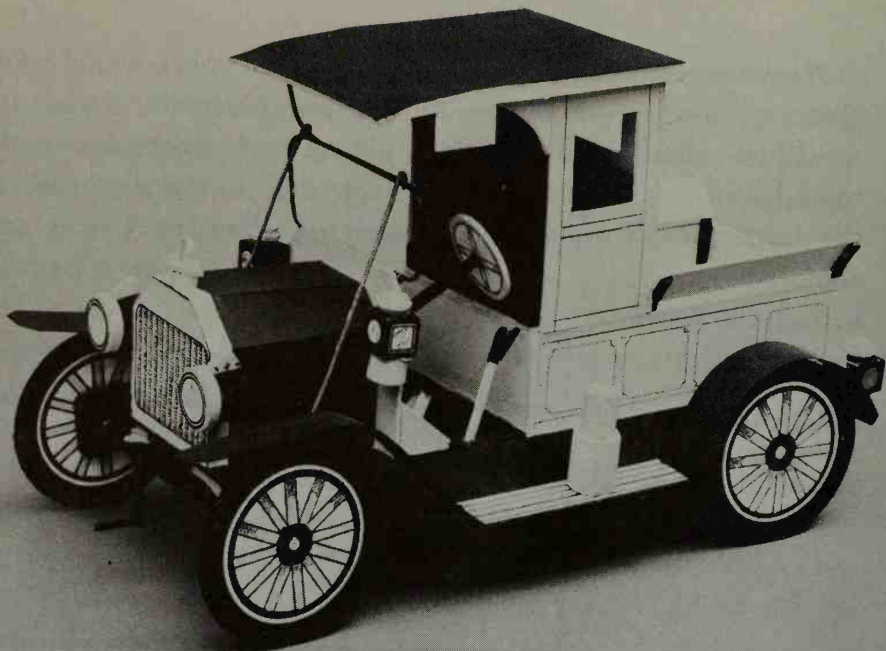
DIAGRAM 38
Crank Handle



Place the windshield sections flat on your work surface and glue together as indicated in the Assembly Diagram. Attach the windshield unit to the model by gluing its bottom edge to the top edge of the dashboard and its top edge to the underside of the front roof crosspiece. The Model T Touring Car is now complete.

DIAGRAM 39
Windshield





CLOSED CAB PICKUP TRUCK: 1913

Before the invention of the automobile, horse-drawn wagons were used for trucking purposes, everything from making light deliveries within cities to hauling farm products to market. Naturally enough, fuel-driven vehicles were welcomed as a great improvement over this slow and cumbersome transportation method. During the “trucking revolution” that took place in the first two decades of this century, a number of different kinds of trucks were designed and built for special purposes.

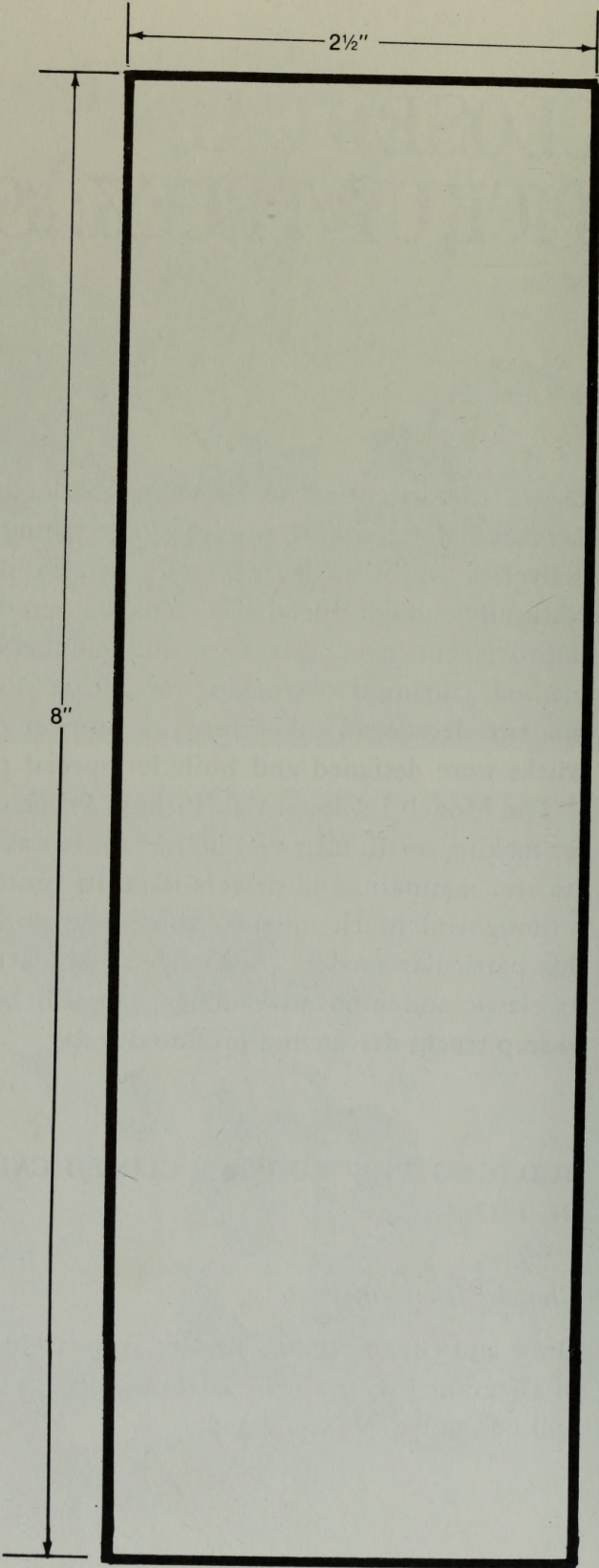
The Model T Closed Cab Pickup Truck of 1913 was popular for making small, intra-city deliveries. It was economical to operate and maintain, and drivers liked its protective, enclosed cab, a thoughtful touch missing from many early trucks. Although this particular model is no longer manufactured, variations on its classic and innovative design can still be seen in the small pickup trucks driven and produced today.

BUILDING THE MODEL T CLOSED CAB PICKUP TRUCK OF 1913

Chassis (Diagram 1)

Draw and cut the chassis pattern from rigid cardboard as shown in Diagram 1. Cut all the edges as straight as possible since this will be the base of your model.

DIAGRAM 1
Chassis



Make 1.

Radiator and Rear Motor Wall (Diagrams 2 and 3)

These identically shaped parts are drawn and cut from white rigid cardboard. Label the edges of each piece A, B, or C as shown in Diagrams 2 and 3. Paint the radiator yellow. Then, using a soft lead pencil, carefully draw the design on one side of the pattern as indicated in Diagram 2. With a sharp-pointed nail, poke the hole for the steering post in the rear motor wall as shown in Diagram 3. This piece needs no painting since it will ultimately be covered by the dashboard.

DIAGRAM 2
Radiator

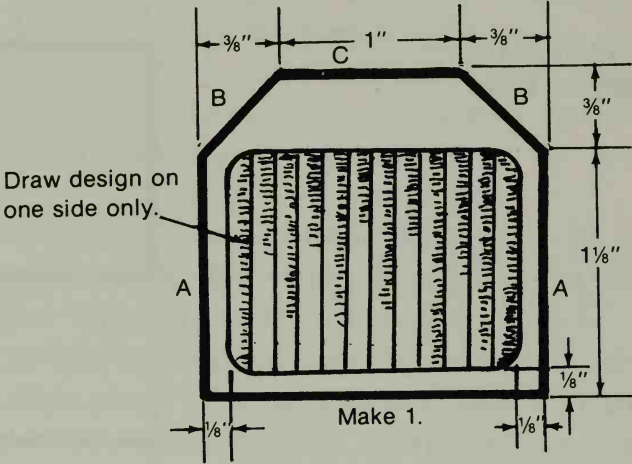
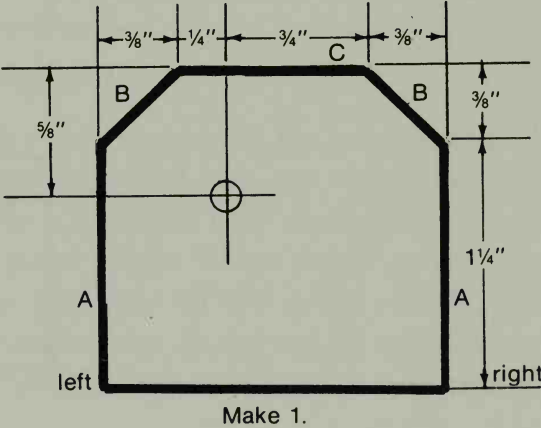


DIAGRAM 3
Rear Motor Wall

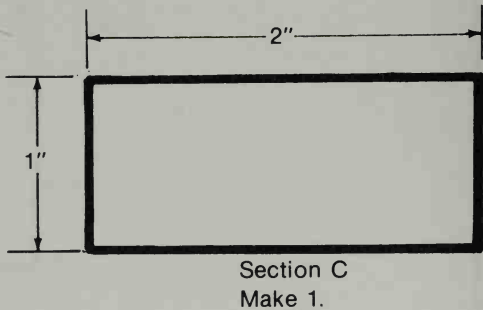
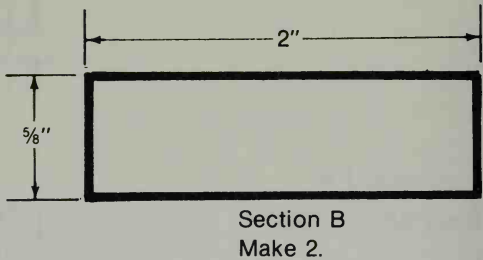
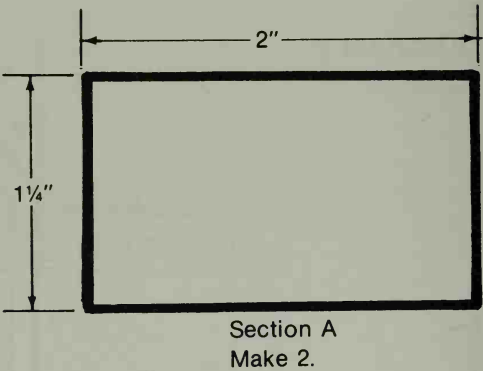


Engine Hood (Diagram 4)

The radiator and rear motor wall are connected by five engine hood panels. Draw, cut, and label these pieces as shown in Diagram 4 using black construction paper. For outlining, you may find that a light-colored pencil is easier to see than lead pencil.

Match the engine hood panels with the lettered edges of the radiator and rear motor wall patterns. Glue together, making sure all the edges fit together snugly so there are no gaps in the finished unit.

DIAGRAM 4
Engine Hood



Radiator Trim (Diagram 5)

Draw and cut the radiator trim pattern from yellow construction paper as shown in Diagram 5. Wrap this piece around the forward end of the engine hood so that one long side is edge to edge with the radiator pattern. See the photographs of the finished model. Glue in place. Trim any overhang with your scissors.

Radiator Cap (Diagram 5)

The radiator cap consists of a cylindrical body and disc top. First draw and cut the pattern for the body from yellow construction paper as shown in Diagram 5. Pull the piece lengthwise over the edge of your work table or ruler to curl. Then roll it into a cylinder $\frac{1}{4}$ inch in diameter. Glue the ends together, sliding a pencil or other round piece of wood through the cylinder to use as a support.

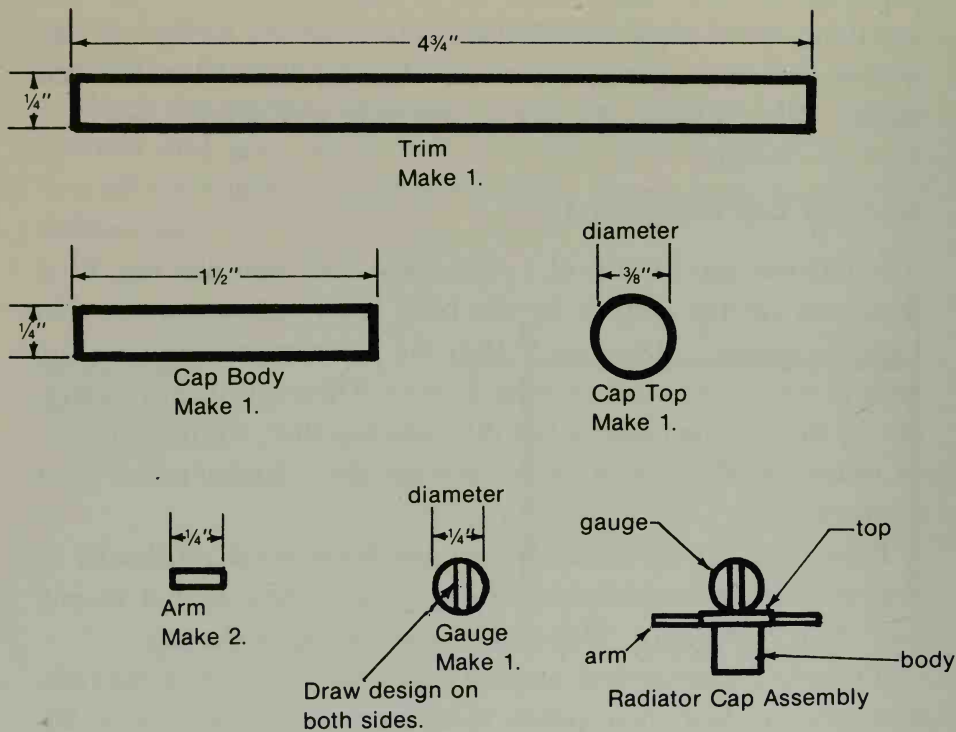
Draw and cut the radiator cap top from rigid cardboard as shown in Diagram 5. Paint the disc yellow, then glue it to one end of the body piece. This end is now the top of the cap.

Two small quarter-inch arms extend from the edge of the radiator cap top. Cut these pieces from toothpicks as shown in Diagram 5 and paint yellow. When the paint is dry, glue one arm to each side of the radiator cap edge, as shown in Assembly Diagram 5. Hold in place for a few minutes until the glue has set.

Radiator Cap Gauge (Diagram 5)

On the real pickup truck, a gauge, showing the temperature of the water inside the radiator, extended from the top of the radiator cap. Cut the gauge for the model from rigid cardboard as shown in Diagram 5 and paint yellow. When dry, draw the two parallel lines as shown on both sides of the gauge with pencil. Place and glue the gauge on its edge on the top of the radiator cap so it is in line with the arms and its design runs vertically. See Assembly Diagram 5.

DIAGRAM 5
Radiator



When the radiator cap unit is firmly attached, place it on the top center of the radiator trim with the arms parallel to the radiator front. Put a generous amount of glue around the edge of the open end of the cap and press the unit in position. See the photographs of the finished model.

Engine Compartment Attachment

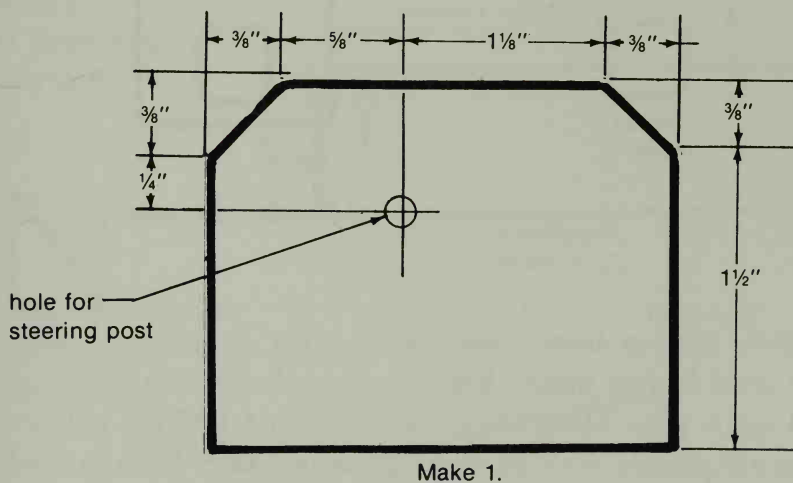
Put a generous amount of glue along the edges of the underside of the engine compartment. Center the unit on either short end of the chassis so that the bottom edge of the radiator is even with

the chassis edge. Make sure the sides of the unit are parallel to and the same distance from the sides of the chassis. Press the unit in position.

Dashboard (Diagram 6)

The dashboard of the pickup truck is made from rigid cardboard. Draw and cut the pattern for this piece as shown in Diagram 6. Paint it yellow. With a sharp-pointed nail, poke the hole for the steering post as shown in the diagram. Enlarge the hole by twisting a pencil point through it until a piece of large match-stick wood fits the hole snugly. Set aside while you make the coil box.

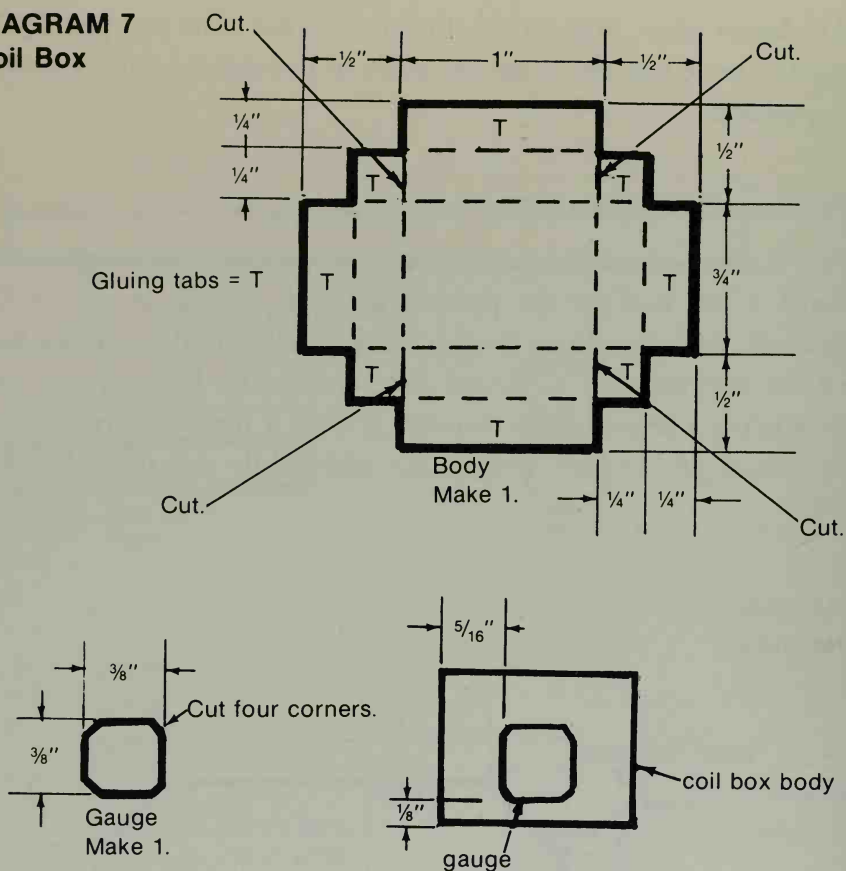
DIAGRAM 6
Dashboard



Coil Box (Diagram 7)

For the real Model T, the coil box contained part of the vehicle's equipment needed for engine ignition. Draw and cut the coil box

DIAGRAM 7
Coil Box



Coil Box-Gauge Assembly

body pattern from construction paper as shown in Diagram 7. I used brown paper, but you may choose any color you wish. Lightly score along the dotted lines and fold the pattern into a boxlike shape with an opening on one side. Glue to hold at the gluing tabs T.

Now draw and cut the gauge pattern from black construction paper as shown in Diagram 7. Glue the gauge to the coil box body in the position indicated in Assembly Diagram 7. Then attach the coil box unit to the dashboard so its top edge is 1/2 inch from the top of the dashboard and its right side is 1/2 inch from

the dashboard's right side. See the photograph of the finished model on page 68.

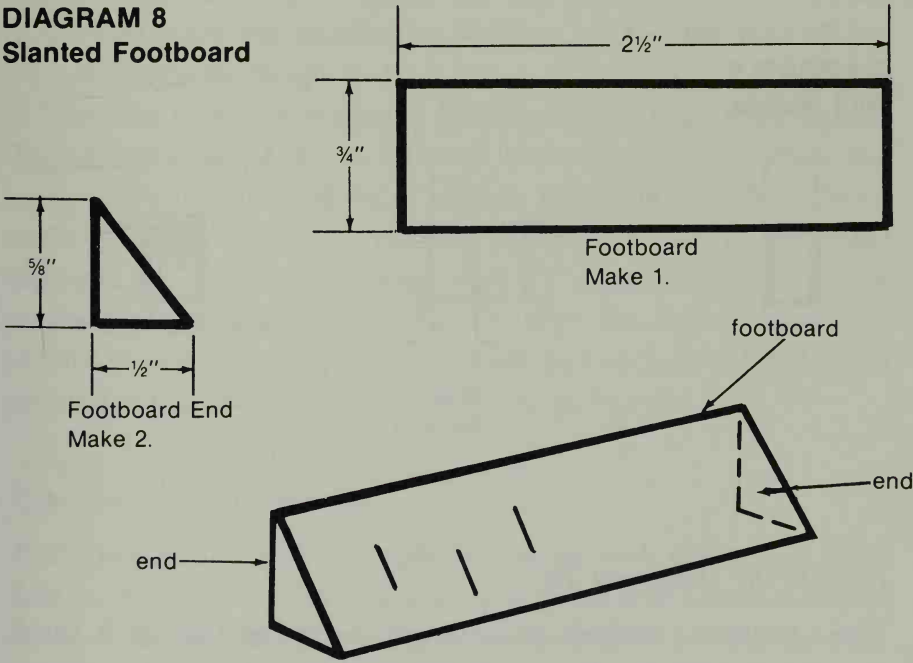
Dashboard Attachment

Place the dashboard upright against the rear motor wall so it is in a perfectly perpendicular position. Make sure the corners of the dashboard are even with the chassis sides and the steering-post holes are aligned, then glue the dashboard in place.

Slanted Footboard (Diagram 8)

Draw and cut the slanted footboard pattern from rigid cardboard as shown in Diagram 8. Paint it yellow. While it is drying, cut the two footboard ends from rigid cardboard and paint them yellow too.

DIAGRAM 8
Slanted Footboard



Footboard Assembly and Pedal Positions

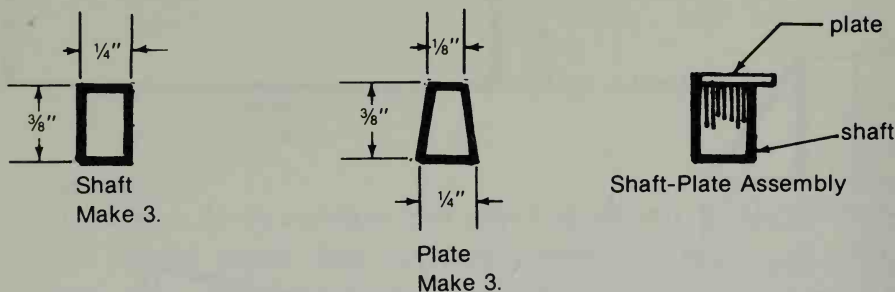
With a soft lead pencil, mark the foot pedal positions on one side of the footboard pattern as indicated in Assembly Diagram 8. The outer pedals are $\frac{1}{4}$ inch from the bottom edge and the center pedal is $\frac{1}{8}$ inch from the edge. Each is $\frac{1}{4}$ inch long and they are spaced $\frac{3}{8}$ inch apart. Then glue the footboard ends in position as shown. Set aside while you make the three foot pedals.

Foot Pedals (Diagram 9)

Cut the three foot pedal shafts from rigid cardboard as shown in Diagram 9. Paint them yellow and set aside to dry.

Draw and cut the three pedal plates from black construction paper as shown in Diagram 9. Glue one plate to a narrow end of each shaft. See Assembly Diagram 9. When the units are firmly attached, glue them to the positions marked on the footboard, making sure the narrow ends of the pedal plates point upward. See Assembly Diagram 8.

DIAGRAM 9 **Foot Pedals**

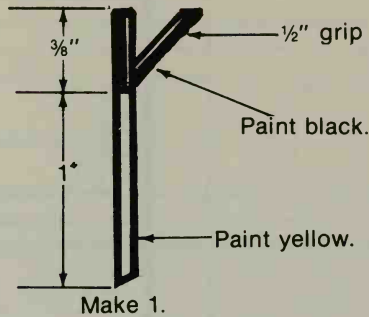


Handbrake (Diagram 10)

The handbrake is made from lengths of round toothpick wood. Cut the handbrake shaft and grip, and glue together as shown in Diagram 10. Paint the shaft below the base of the grip yellow,

and the remainder as well as the grip itself black. Set aside to dry while you make its base attachment, the floor mat.

DIAGRAM 10
Handbrake



Floor Mat (Diagram 11)

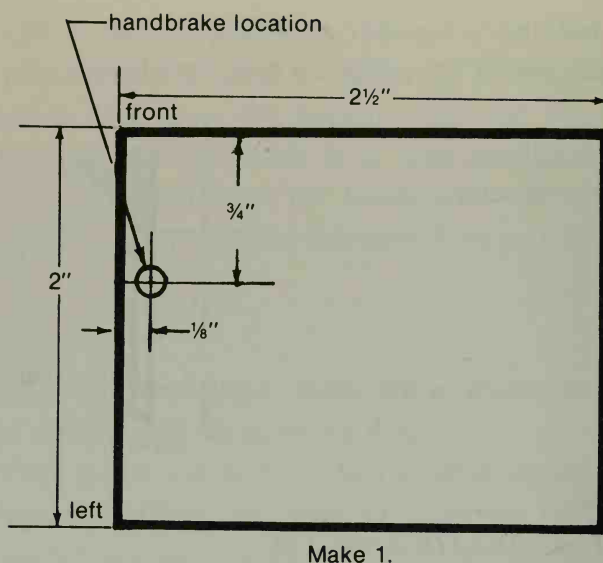
The floor mat for the driver's compartment is a simple rectangular pattern made from black construction paper. Draw and cut this piece as shown in Diagram 11. Using a light-colored pencil or crayon, mark the handbrake position on the left side of the mat as shown in Diagram 11.

Place the mat on the chassis, pushing its top edge snug against the bottom edge of the dashboard. Glue in position. Place the footboard unit on top of the floor mat. Glue the back of the unit to the dashboard and its underside to the floor mat, making sure the sides are even with the sides of the chassis. See the photographs of the finished model. Finally, glue the angled end of the handbrake shaft to the position marked on the floor mat. Hold in position for a few minutes until the glue has set.

Truck Body (Diagram 12)

The truck body is just a simple box made with two sets of identical panels. Start by drawing and cutting the side panels as shown in Diagram 12. Use rigid cardboard, painting the panels any color you wish. I selected yellow to match the color of the driver's compartment. When the paint is dry, draw the panel design on one

DIAGRAM 11
Floor Mat



side of each piece as shown in Diagram 12. Use a soft lead pencil to do this.

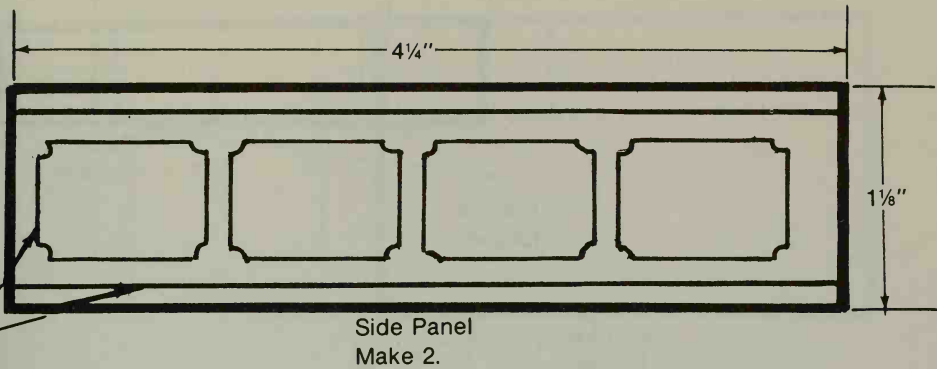
Now cut out the front and rear panels as shown in Diagram 12. Make these from rigid cardboard, too, and paint them to match the side panels. When dry, glue all four panels together along their short edges to form a box. After the glue has firmly set, attach the body unit to the chassis, making sure its back edge is even with the back edge of the chassis (it will overlap the floor mat by about $\frac{1}{4}$ inch). See the photograph of the finished model on page 68.

Top Body Panels (Diagram 13)

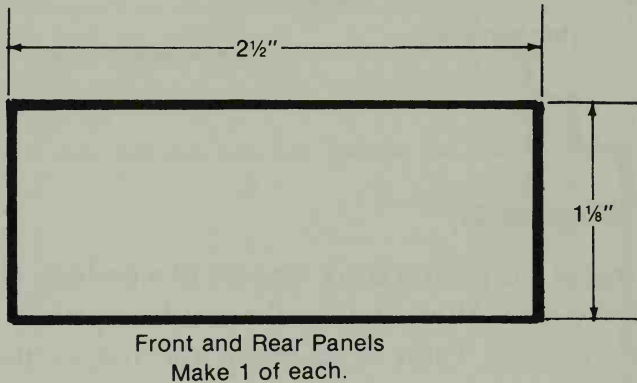
The truck body has two top panels that angle outward from the sides. Cut these pieces from rigid cardboard as shown in Diagram 13 and paint them the same color as the truck body unit. Set aside to dry while you make the attachment brackets.

Each top panel is attached to the truck body by two rigid

DIAGRAM 12
Truck Body



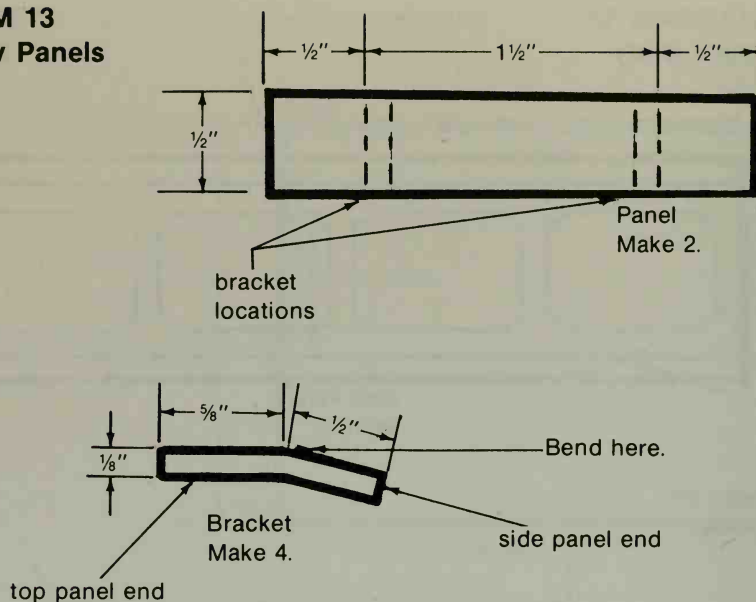
Draw design on
one side only.



cardboard brackets. Cut these four pieces $1\frac{1}{8}$ inches long and bend as shown in Diagram 13. Paint each black.

When dry, glue the short ends of the brackets to the panels at the positions shown in Diagram 13. As soon as the panels and brackets are firmly attached, glue one unit to each inner side of the truck body. Make sure that the panels extend outward from the body sides and that the rear brackets are square with the rear corners of the body.

DIAGRAM 13
Top Body Panels

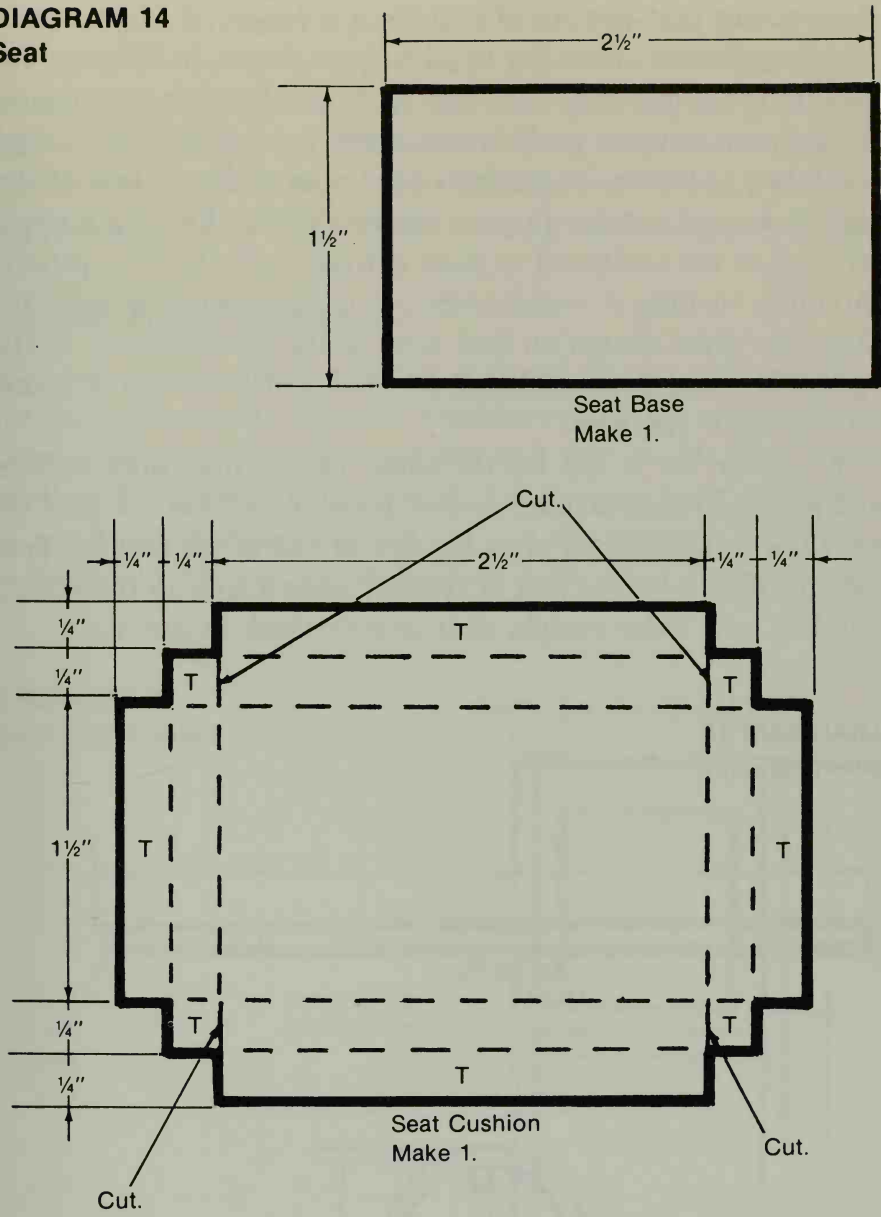


Seat (Diagram 14)

The seat of the pickup truck consists of a cushion glued to a rigid cardboard base. Draw and cut the seat base pattern first as shown in Diagram 14. Paint it to match the rest of the truck body. Place it on the forward end of the truck body so that its long front is even with the edge of the front truck body panel. There should be a small gap between the top body panels and the rear edge of the seat base, where the back cab panel will be attached. Make sure the sides of the seat base and sides of the truck body are even, then glue the pattern in place.

Now draw and cut the seat cushion pattern from black construction paper as shown in Diagram 14. Score along the dotted lines lightly, then fold the pattern into a boxlike shape that is open on one side. Glue together at the gluing tabs T. Then glue the completed cushion to the top of the seat base, making sure the edges are even all around.

DIAGRAM 14
Seat



Steering Unit (Diagram 15)

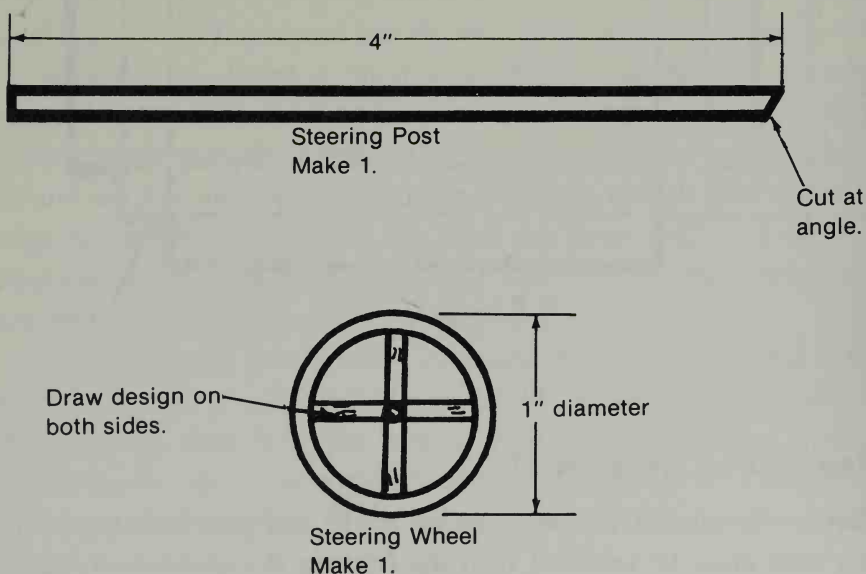
Before the cab for the seat can be made and attached, the steering unit must be inserted into the hole in the dashboard. Make

the steering post first, cutting it from a length of large matchstick wood or other similar wood strip as shown in Diagram 15. Be sure to cut one end at an angle as shown. Paint the post black.

Use your compass to draw the steering wheel on white rigid cardboard as shown in Diagram 15. Go over the outline of the pattern several times with your compass pencil, forming a circular track in the cardboard to make cutting easier. Cut the pattern carefully, turning it continuously into the scissors as you cut. Draw the wheel design on both sides of the disc as shown in Diagram 15 using pen and black ink. Use yellow crayon or paint for the rim if you wish.

When the ink is dry, lay the wheel flat on your work surface and put a generous amount of glue in its center. Let the glue set for a few minutes, then press the square end of the steering post into it. Make sure the post is at exact right angles to the wheel, standing your ruler upright next to it to check its position.

DIAGRAM 15
Steering Unit

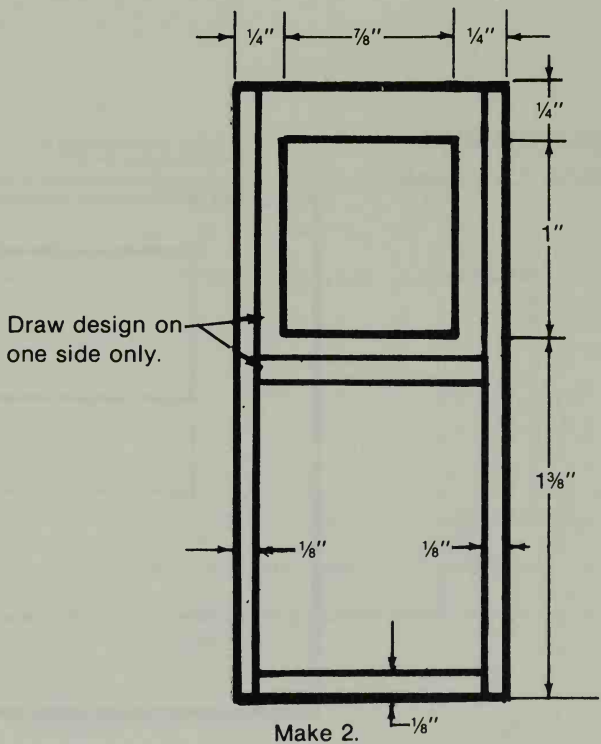


As soon as the wheel and post are firmly attached, put glue on the slanted end of the post and around the hole in the dashboard. Push the steering post through the hole, pressing the glued end against the chassis floor. Position the wheel so its bottom edge is about even with the edge of the seat cushion. Hold in place or support with a small object like an eraser until the glue hardens.

Side Cab Panels (Diagram 16)

The seat of the pickup truck is enclosed by two side panels, a rear panel, and a roof. The cab panels are made and attached first. Draw and cut the pattern for the two side panels from rigid cardboard as shown in Diagram 16. Lay the panels on a flat piece of wood or other backing and cut out the windows with your knife. To do this, run the blade of the knife along the metal edge

DIAGRAM 16
Side Cab Panels



of your ruler until you have made a deep cut for the window outline. Then set the ruler aside and finish cutting. Paint the panels the same color as the truck body and, when dry, draw the cab design on one side using a soft lead pencil. See Diagram 16.

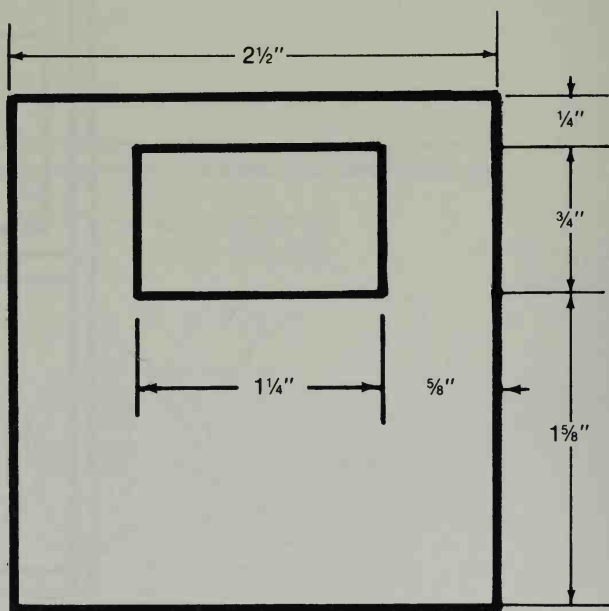
Rear Cab Panel (Diagram 17)

Cut the rear panel from rigid cardboard as shown in Diagram 17. Cut out the window as you did for the side panels. Then paint both sides of the pattern to match those panels.

When the paint is dry, lay the rear panel flat on your work surface and run a generous line of glue along its two side edges. Then press one of the long edges of a side panel, design side facing outward, into the glue. Make certain the edges of the two pieces are square. Hold for a few minutes until the glue hardens, then attach the second side panel in the same way.

After the three panels are firmly attached, place the unit on

DIAGRAM 17
Rear Cab Panel



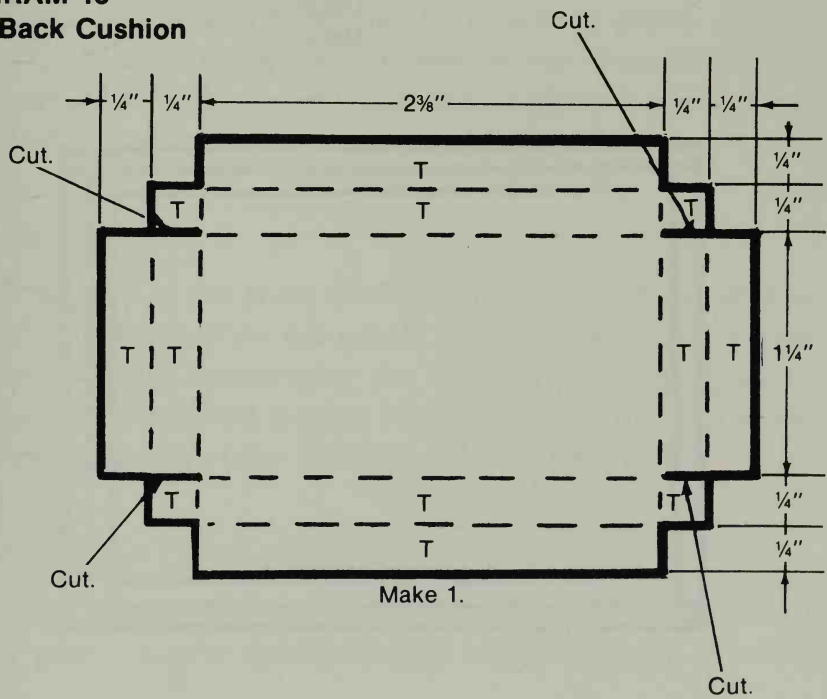
Make 1.

the truck model as shown in the photographs of the finished model. Glue the side panels to the sides of the seat base and cushion and the top edge of the sides of the truck body.

Seat Back Cushion (Diagram 18)

A seat back cushion rests against the rear cab panel. Draw and cut the pattern for this piece as shown in Diagram 18 using black construction paper. Lightly score along the dotted lines and fold the pattern into a boxlike shape that is open on one side. Glue together at the corner gluing tabs T. Then glue the completed cushion to the inside of the cab, attaching it along its gluing tabs to the side and rear cab panels and to the back edge of the seat cushion.

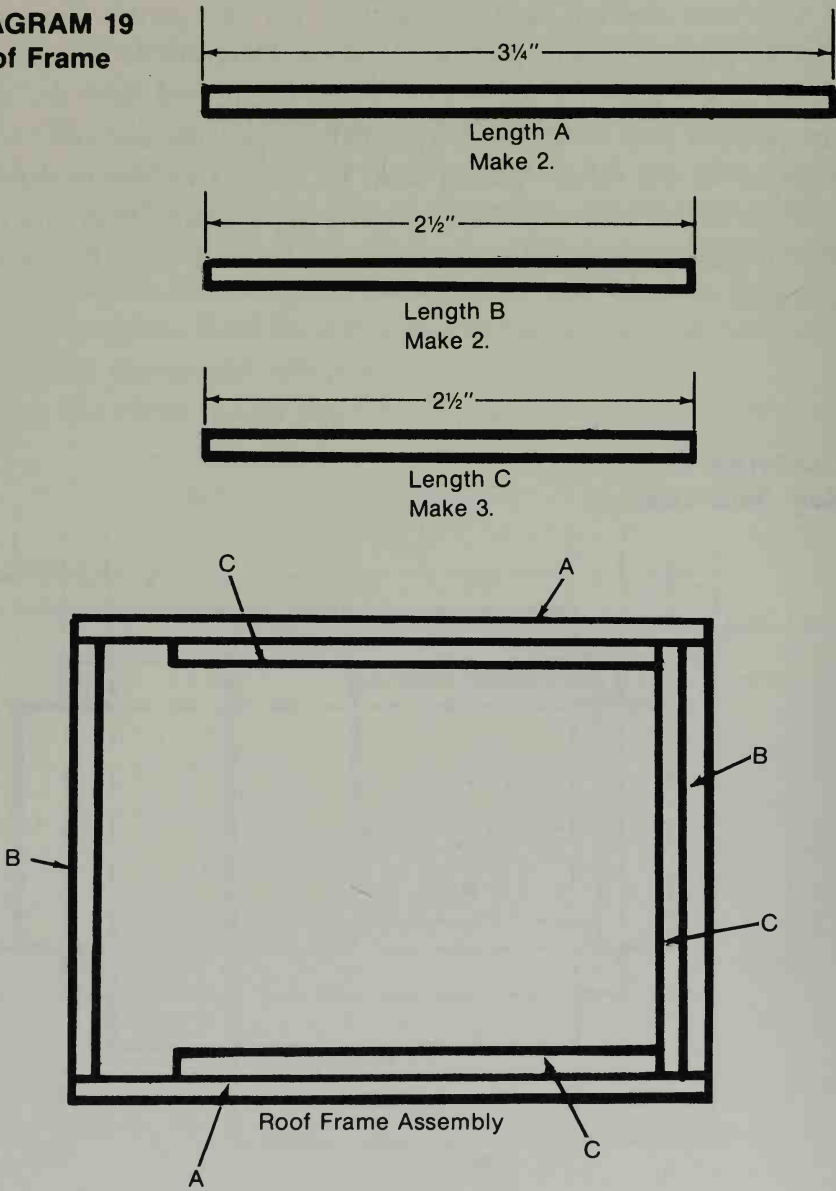
DIAGRAM 18
Seat Back Cushion



Roof Frame (Diagram 19)

The roof frame is made from lengths of large matchstick wood or similar wood strips. Measure, cut, and label these seven pieces as shown in Diagram 19.

DIAGRAM 19
Roof Frame



Place the lengths on shiny-surface cardboard as shown in Assembly Diagram 19 and glue at their connecting points. When dry, slide your knife under the glued joints to loosen from the cardboard backing. Set aside while you make the molding.

Roof Molding (Diagram 20)

The roof frame is surrounded by rigid cardboard molding. Draw and cut the four molding strips as shown in Diagram 20.

Glue the molding strips to the roof frame as shown in Assembly Diagram 20. Make sure the angled ends of the side pieces are at the front and that they slope in the same direction on both sides. When the molding strips are firmly attached, paint the entire unit to match the cab panels.

Roof Top (Diagram 21)

The roof top is a single rectangular piece made from black construction paper. Measure and cut the pattern as shown in Diagram 21, cutting as straight as you possibly can. Position the top on the angled side of the roof frame unit and glue in place. Trim any overhang with your scissors.

Roof Attachment

Attach the roof to the truck model by putting a ribbon of glue along the top edges of the cab panels. Press the roof onto the glue with its back end overhanging the rear cab panel by about $\frac{1}{8}$ inch and its forward end sloping downward above the dashboard. See the photograph of the finished model on page 68.

Side Cab Panel Curves (Diagram 22)

The truck roof is completed with the addition of two small curved pieces that fit in the corners where the roof and side

DIAGRAM 20
Roof Molding

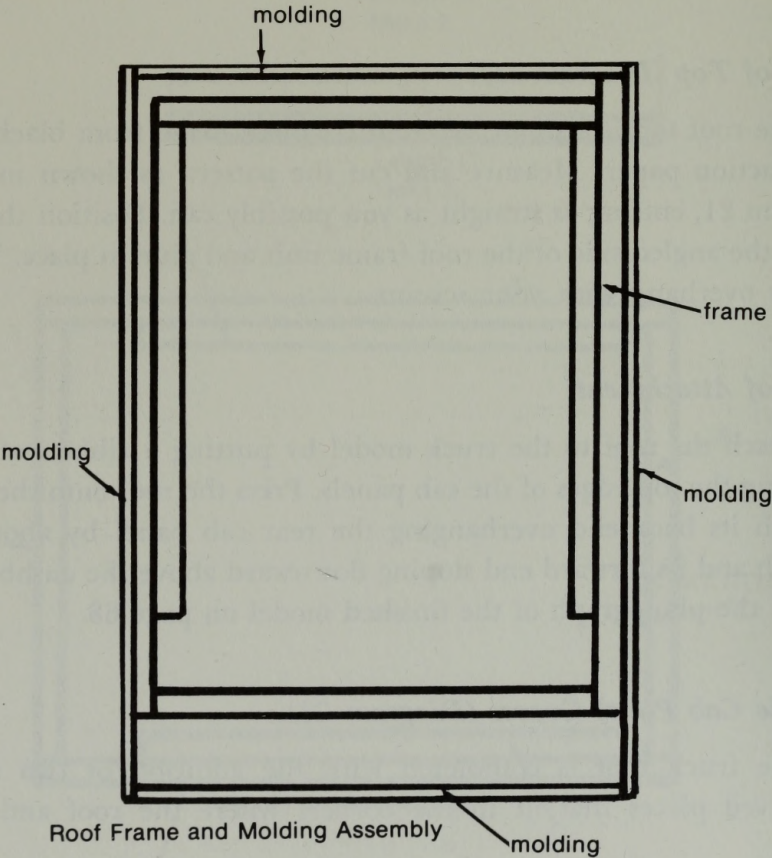
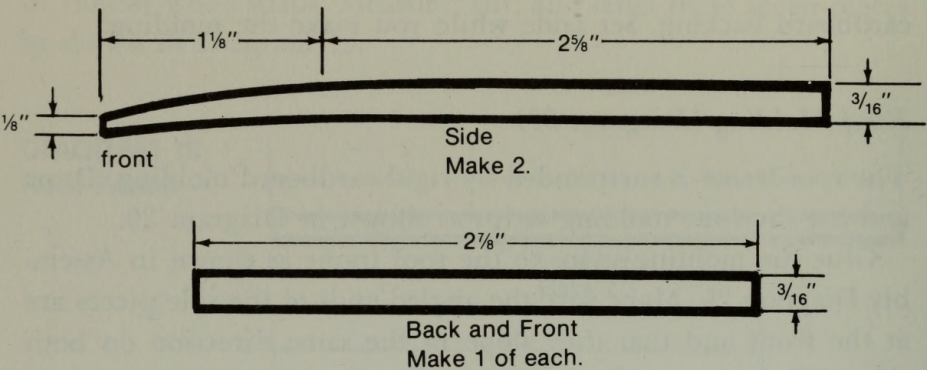
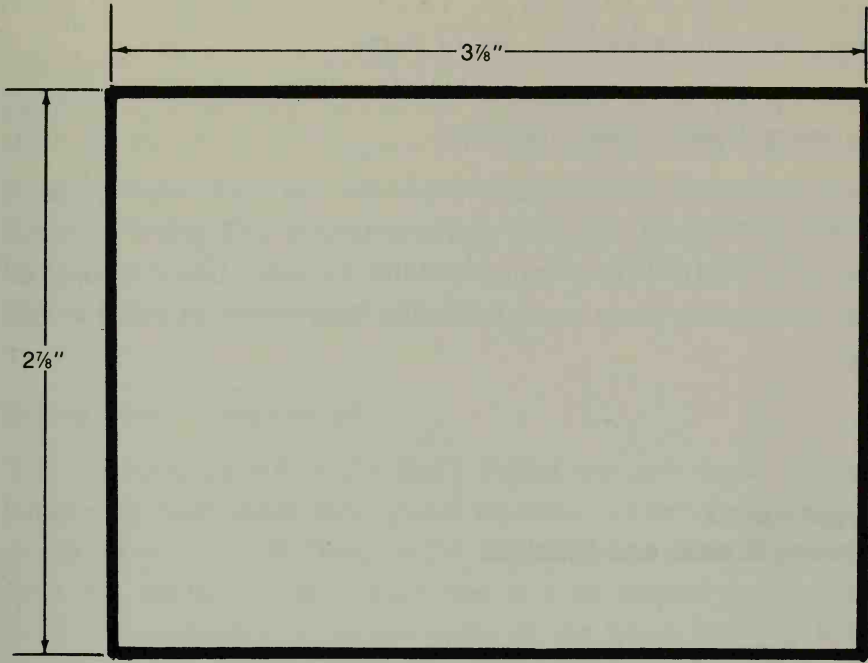


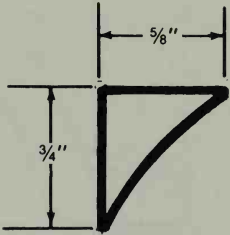
DIAGRAM 21
Roof Top



Make 1.

panels meet. Draw and cut these pieces as shown in Diagram 22. Use rigid cardboard and paint to match the truck cab and body. Glue the pieces along their straight edges so they are flush with the side cab panels. See the photograph of the finished model on page 68.

DIAGRAM 22
Side Cab Panel Curves



Make 2.

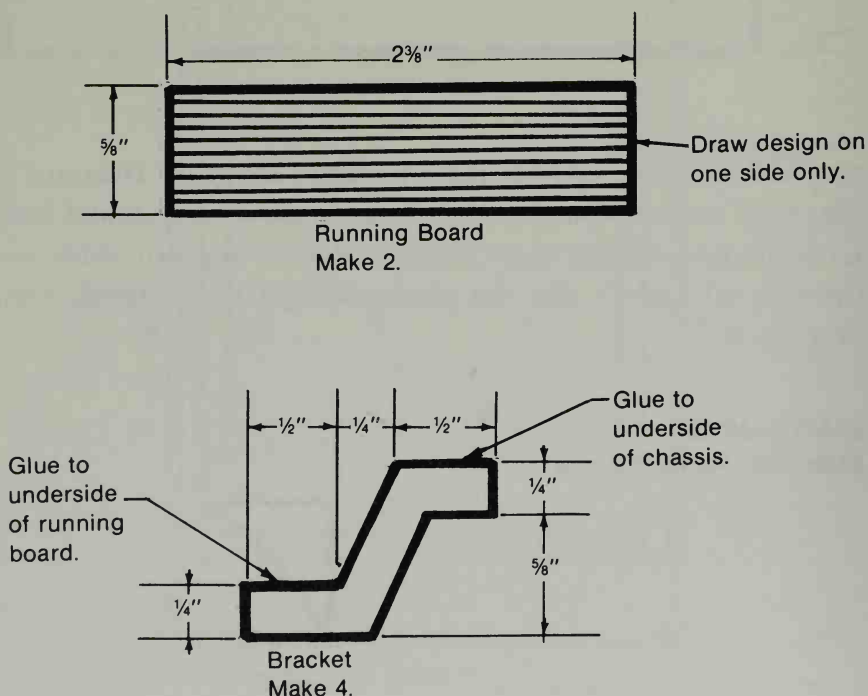
Running Board Brackets (Diagram 23)

Draw and cut the four running board brackets from rigid cardboard as shown in Diagram 23. A knife works best for these pieces since a scissors twists them out of shape.

Running Boards (Diagram 23)

Now draw and cut the pattern for the two running boards as shown in Diagram 23. Use rigid cardboard and paint to match the truck body. When dry, draw the running board design on one side of each piece as shown, using lead pencil to avoid smearing.

DIAGRAM 23
Running Boards and Brackets



Glue two brackets to the underside of each running board along the edge indicated in the bracket diagram. Place the brackets $\frac{1}{2}$ inch from the back and front ends of the running boards.

After the units are firmly attached, turn the truck model upside down. It may be somewhat wobbly at this point but it should balance. Glue the brackets to the underside of the chassis along the edge indicated in Diagram 23. The forward ends of the running boards should be about even with the rear edge of the slanted footboard and the angled edge of the running board brackets should extend outward from the chassis sides. See the photographs of the finished model.

Spring Units (Diagram 24)

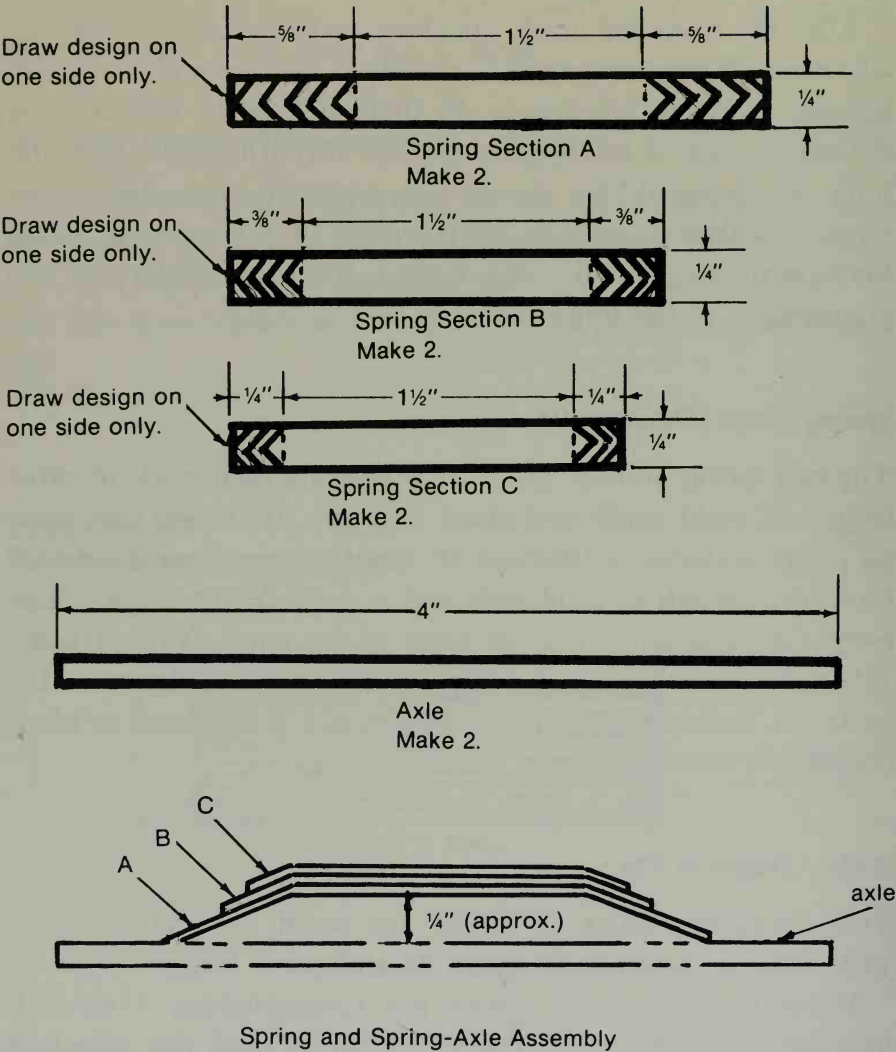
The two spring units of the truck model are each made of three lengths of rigid cardboard glued together. Draw and cut these six pieces as shown in Diagram 24. Lightly score along the dotted lines just enough to bend each end at a 45 degree angle. Then paint the cardboard strips the color of the truck cab and body. When dry, draw the arrow design on each piece as shown in Diagram 24, drawing on the unscored side and using pencil or black crayon. Set aside while you make the axles.

Axles (Diagram 24)

From large matchstick or similar size wood, cut the two four-inch axles as shown in Diagram 24 and paint black.

When the paint is dry, place one spring section A on each axle, bending the ends of the spring pieces until the axles and spring units are about $\frac{1}{4}$ inch apart. See Assembly Diagram 24. Center the two spring pieces, then glue to the axles. When the attachments are firm, stack spring sections B on top of spring sections A as shown in the Assembly Diagram and glue to hold. Finally glue spring sections C in place as shown. Set aside to let the glue harden while you make the wheels and wheel boxes.

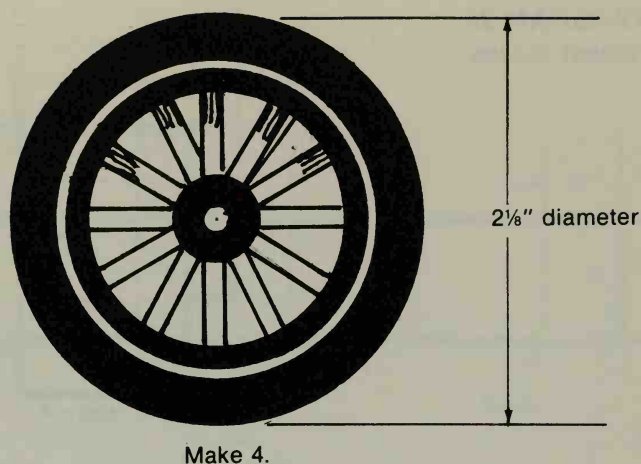
DIAGRAM 24
Springs and Axles



Wheels (Diagram 25)

Draw and cut the four pickup truck wheels from rigid cardboard as shown in Diagram 25. Keep turning the wheel pattern into

DIAGRAM 25
Wheels



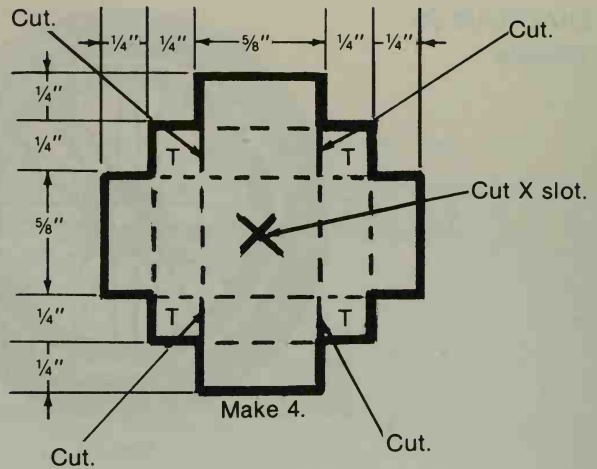
Paint center and spokes color of truck body.
Draw design on both sides.

your scissors as you cut to form a nice round shape. Draw the spokes and tire designs on both side of the wheel pattern as indicated in the diagram, using pen and black ink. Color in the spokes and center of each wheel to match the truck body. Use paint or crayon.

Wheel Boxes (Diagram 26)

From black construction paper, draw and cut the four wheel boxes as shown in Diagram 26. While the pattern is still flat on your surface, cut the X slot in the center of each piece, using the tip of your knife. Be sure to protect your work surface with a piece of smooth wood or other backing when doing this cutting. Lightly score along the dotted lines and fold each pattern into a boxlike shape. Glue each box together at the corner gluing tabs T. Then glue one wheel box to the center of each wheel, X-slot facing outward.

DIAGRAM 26
Wheel Boxes



Wheel-Axle Assembly and Attachment

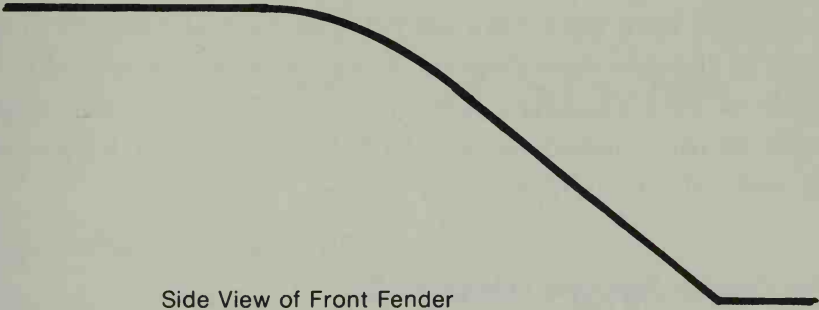
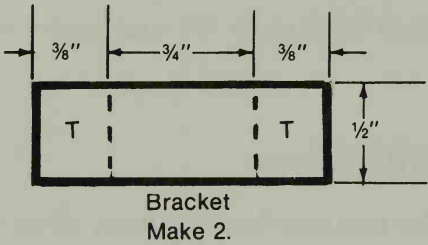
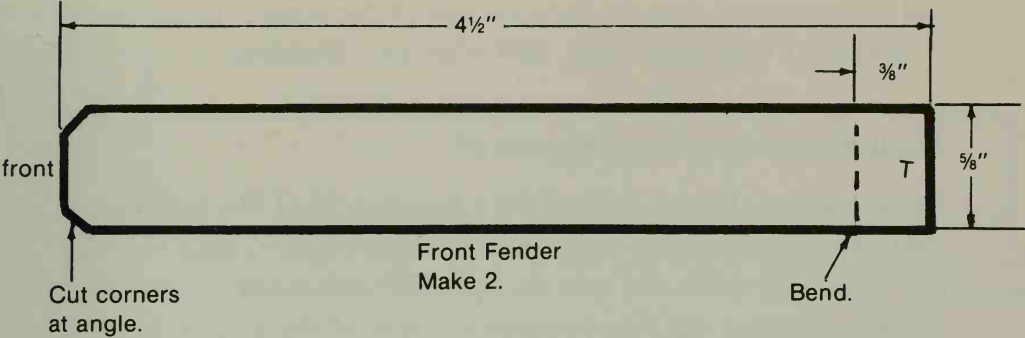
When the wheels and wheel boxes are firmly attached, lay one wheel unit flat on your work surface and put a generous amount of glue into the X cut. Let it set for a few minutes, then press one end of either spring-axle unit into the slot. Make sure the axle is in a vertical position by standing your ruler upright next to it. As soon as the glue has hardened, repeat this procedure for the second spring-axle unit and then for the wheel-axle connections on the opposite side.

After the spring-axle and wheel units are securely joined, they can be attached to the underside of the chassis. The model should still be in its upside-down position from the running board attachment. For the front unit, put a generous amount of glue on either spring section C and press to the chassis at its front edge. Attach the second unit 1 3/8 inches from the rear edge of the chassis. Make sure that both axles are parallel to the front and rear edges of the chassis and that the wheels are the same distance from the chassis sides.

Front Fenders (Diagram 27)

The fenders of the Model T truck are made from black construc-

DIAGRAM 27
Front Fenders and Brackets



tion paper. Draw and cut the pattern for the front fenders first as shown in Diagram 27. Lightly score along the dotted lines and bend the gluing tabs sharply. Pull the midpoints of the fenders lengthwise over the edge of your work table or ruler to form the curved shape shown in Diagram 27.

Glue one fender tab to each forward end of the running boards at the underside. See the photographs of the finished model. Do not be concerned that the forward half of the fenders seems loose. A bracket, to be made next, will solve this problem.

Front Fender Brackets (Diagram 27)

Draw and cut the two front fender brackets from black construction paper as shown in Diagram 27. Lightly score along the dotted lines and bend the tabs in opposite directions, forming an S-shape. Position the brackets on each side of the engine hood so the lower tab rests on the chassis top about $\frac{1}{2}$ inch from the front edge and the upper tabs touch the undersides of the fenders. Glue in place.

Rear Fenders (Diagram 28)

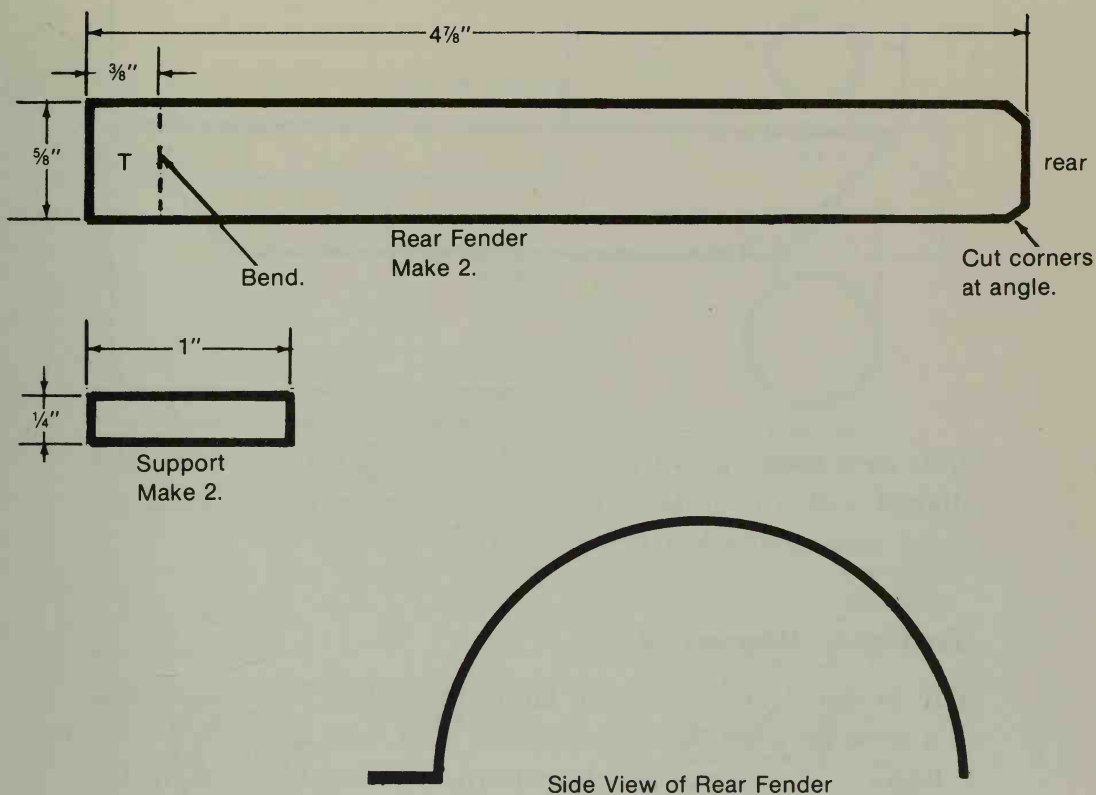
Draw and cut the two rear fenders from black construction paper as shown in Diagram 28. Lightly score along the dotted lines and bend the gluing tabs sharply. Pull the fenders lengthwise over the edge of your work table or ruler to form the curved shape shown in the side view diagram. Glue one fender tab to the underside of each running board at the back end. See the photographs of the finished model. As before, a bracket attachment will make the fenders' position secure.

Rear Fender Supports (Diagram 28)

Cut the rear fender supports from rigid cardboard as shown in Diagram 28 and paint the two pieces black. The brackets are attached flat and parallel to the rear edge of the chassis. Glue one-half of each bracket to the underside of the chassis about $\frac{3}{8}$ inch from the end and the other half to the underside of the rear fender near its end. Hold in place until the attachment is firm.

DIAGRAM 28

Rear Fenders and Supports



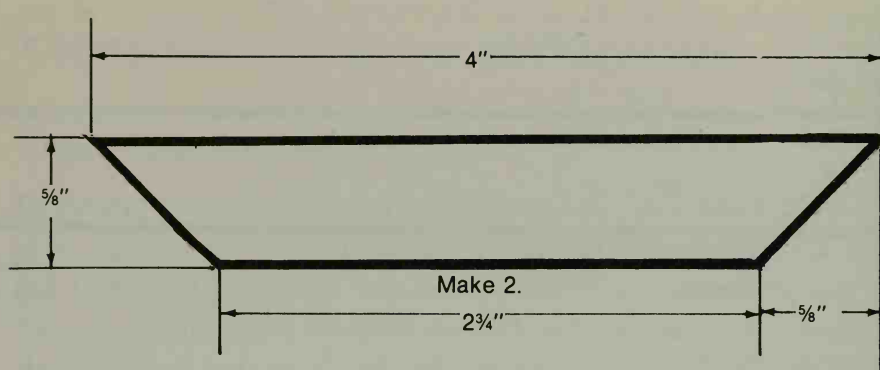
Splash Guards (Diagram 29)

The Model T Pickup Truck had two splash guards to prevent dirt and stones from flying up against the truck body. The guards were on the right and left sides of the truck between the fenders and even with the inner edge of the running boards.

Draw and cut the splash guard pattern as shown in Diagram 29 using black construction paper. To attach, put glue along the long side of each guard piece almost to the edge. Also put glue on the exposed, slanted edges of the running board brackets.

DIAGRAM 29

Splash Guards



Slide each splash guard carefully in position with its short edge aligned with the inside edge of the running board. Press the glued areas gently but firmly together.

Headlights (Diagram 30)

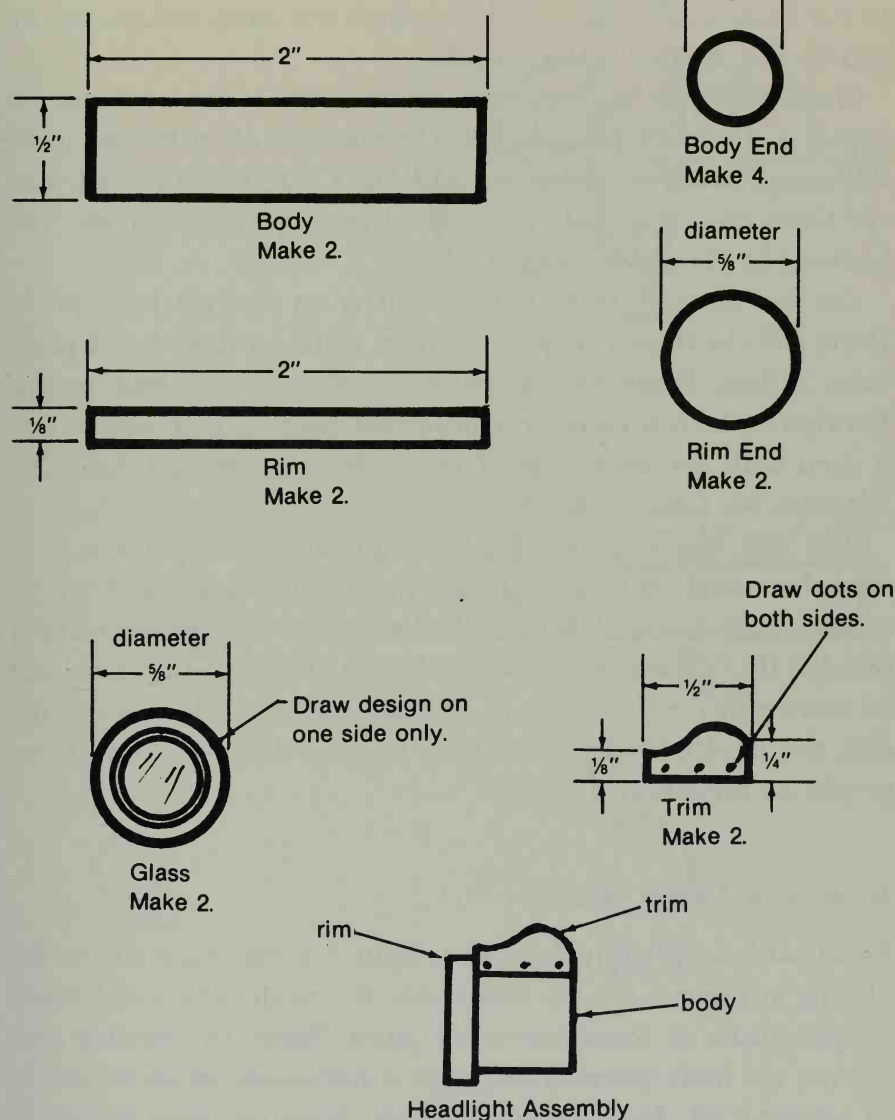
The Model T truck has two large headlights. These are made of a series of parts—body, ends, rim, glass, and trim.

Begin with the main body pattern, drawing and cutting the two pieces from black construction paper as shown in Diagram 30. Pull each piece lengthwise over the edge of your work table or ruler to curve, then roll into a cylinder $\frac{1}{2}$ inch in diameter. Put a pencil or other piece of round wood through each cylinder to serve as a support as you glue the ends together.

Draw and cut the four body ends from black construction paper as shown in Diagram 30. Lay these pieces flat on your work surface. Put glue around the rim of one end of either body cylinder and press against an end piece. Attach the remaining discs in the same way.

The glass of the headlights is attached to a rim unit. Draw and cut the two rim bodies from yellow construction paper as shown in Diagram 30. Curve each piece as you did for the head-

DIAGRAM 30
Headlights



light bodies and roll into a ring $\frac{5}{8}$ inch in diameter. Glue the ends together.

The rim end opposite the glass is closed with a yellow construction paper disc. Draw and cut these two pieces as shown in

Diagram 30. Glue one end to each body rim in exactly the same way you did for the headlight body ends. Then attach the rims to the headlight bodies, centering their end discs and gluing together. See Assembly Diagram 30.

Draw and cut the two glass pieces from white construction paper as shown in Diagram 30. On one side of each disc, draw the design as shown using pen and black ink or a soft lead pencil. Glue each glass pattern to the front, open end of the rim bodies. See Assembly Diagram 30.

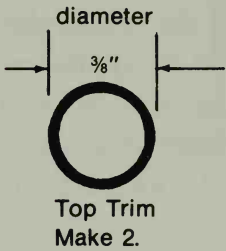
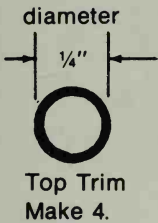
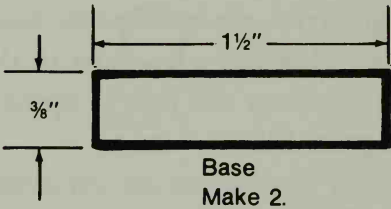
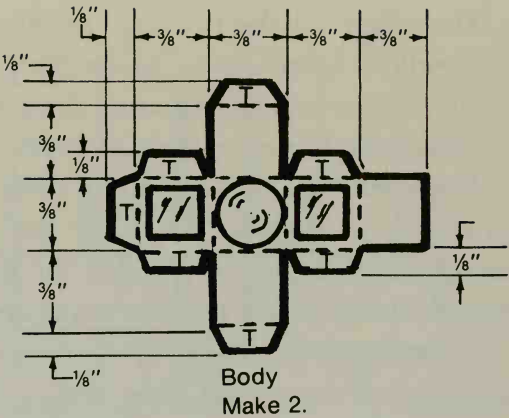
On the top side of each headlight is an upright trim piece. Draw and cut these two patterns from rigid cardboard and paint them yellow. Draw the decoration as shown with lead pencil. Position each trim piece on a headlight body so its rounded end is even with the back edge of the body cylinder. See Assembly Diagram 30. Glue in place.

The best way to attach the headlight units to the truck is to turn the model on its side, gluing the headlights in place one at a time. Position the headlight bodies at the uppermost vertical point of the radiator trim. The back ends of the headlights should be even with the back edge of the radiator trim. Make sure, too, that the headlights are even with one another. See the photographs of the finished model.

Dashboard Lamps (Diagram 31)

Dashboard lamps provided extra lights for the truck driver for driving at night. Like the headlights, the model's two dashboard lamps consist of numerous small parts. Begin by drawing and cutting the body pieces from white construction paper as shown in Diagram 31. On one side of each, draw the glass design as shown using pen and black ink. Then carefully paint the remainder of the pieces black. When dry, turn over and lightly score along the dotted lines. Fold each into a boxlike shape and glue together at the gluing tabs T. Set aside while the glue hardens.

DIAGRAM 31
Dashboard Lamps



Dashboard Lamp Assembly

Draw and cut the two base patterns as shown in Diagram 31. Use yellow construction paper. Pull each lengthwise over your work surface or ruler to curl, then roll into a cylinder $\frac{3}{8}$ inch in diameter. Glue the ends to hold.

Draw and cut the end discs from yellow construction paper as shown in Diagram 31. Place flat on your work surface and attach one at a time by pressing the glued ends of the base pieces against them. When the base units are firmly attached, glue each to a body piece, centering them on either undecorated panel adjacent to the round glass design. See Assembly Diagram 31 and the photographs of the finished model.

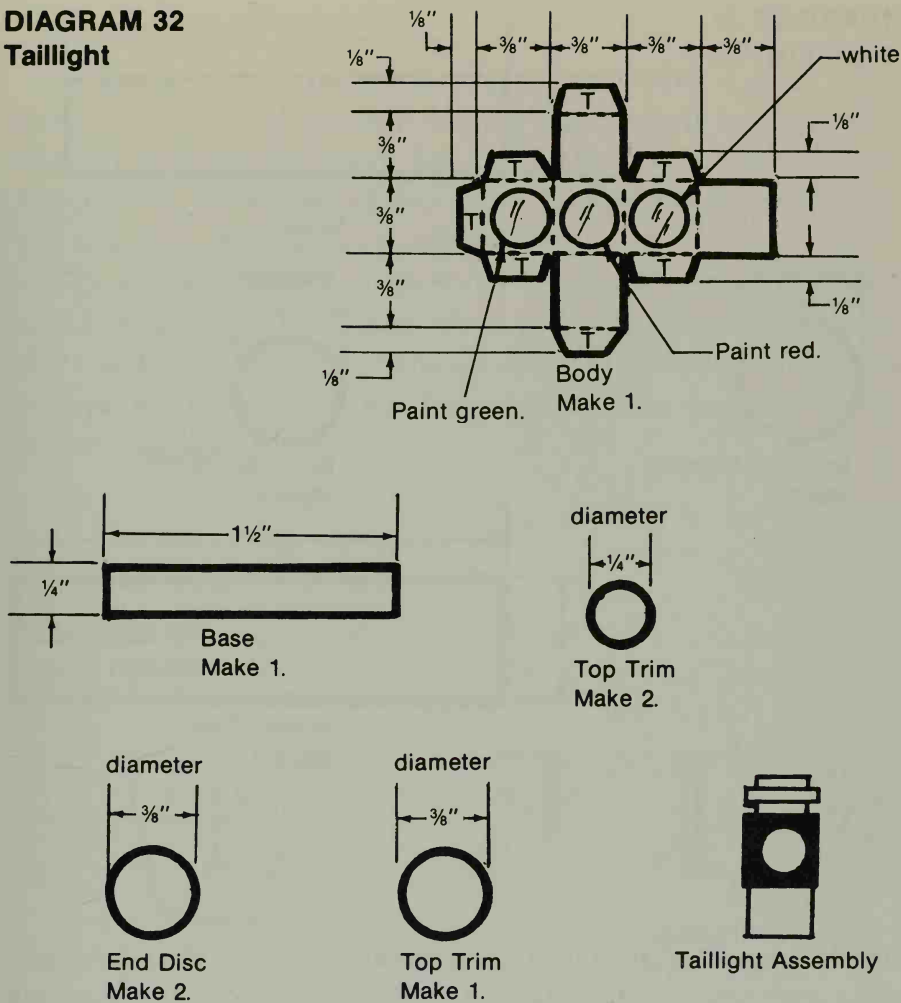
On top of the dashboard lamps is a three-part trim unit. Draw and cut the six discs for these two pieces from rigid cardboard as shown in Diagram 31. Paint yellow. When dry, place each larger trim piece between two smaller ones and glue together. Then glue the trim units to the dashboard lamp bodies, centering them on the panels opposite the base pieces. See Assembly Diagram 31.

The lamp units are attached to the forward-facing surface of the dashboard that extends from the engine cover. Position the lamps with the round glass designs facing forward. Put a vertical strip of glue on approximately one-half of the lamps' rear panels and press each to the dashboard so the top of the body is even with the base of the dashboard's slanted edge. See the photographs of the finished model.

Taillight (Diagram 32)

The single taillight is made in exactly the same way as the dashboard lamps, except that it has three circular glass panels which are painted three different colors. Draw and cut the parts for this piece as shown in Diagram 32. Use the same materials and assembly procedures you used for the dashboard lamps, except for the drawing and coloring of the glass designs. When the taillight parts are firmly attached as shown in Assembly Diagram 32,

DIAGRAM 32
Taillight

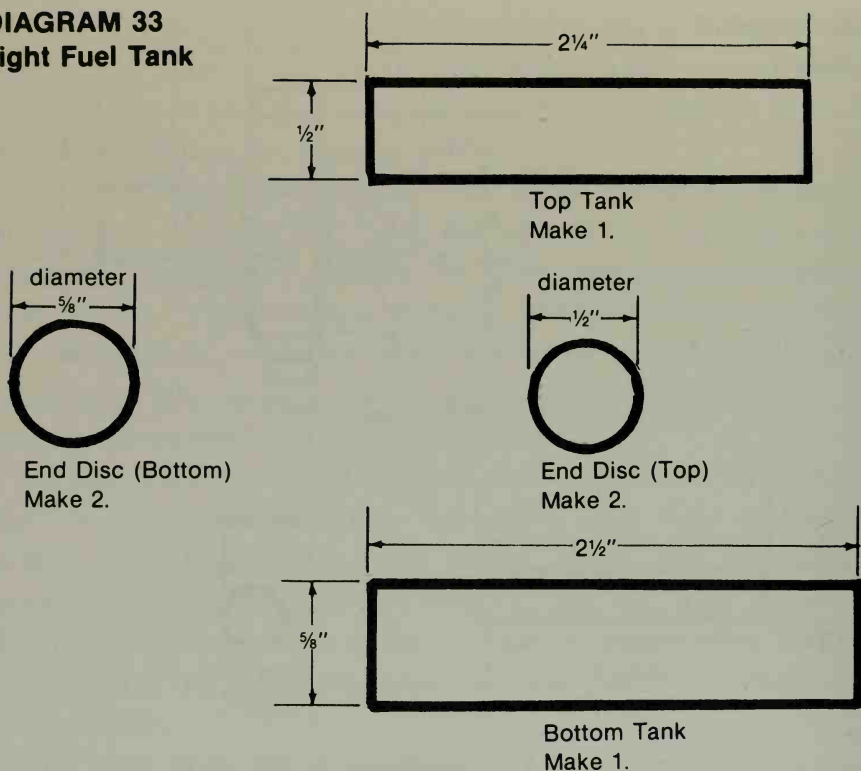


glue the upper right section of the taillight's plain panel to the lower left corner of the rear truck body panel. See the photograph of the finished model on page 68.

Light Fuel Tank (Diagram 33)

The light fuel tank consists of two different-sized cylinders glued together. Draw and cut the patterns for the two tanks as shown

DIAGRAM 33
Light Fuel Tank



in Diagram 33. Use yellow construction paper. Pull each lengthwise over your work surface or ruler to curl. Roll the top tank into a cylinder $\frac{1}{2}$ inch in diameter and the bottom tank into a cylinder $\frac{5}{8}$ inch in diameter. Glue to hold.

Cut the end discs for the tank pieces as shown in Diagram 33 using yellow construction paper. Place flat and attach to the cylinders by pressing the glued ends of the tanks onto the matching disc pieces.

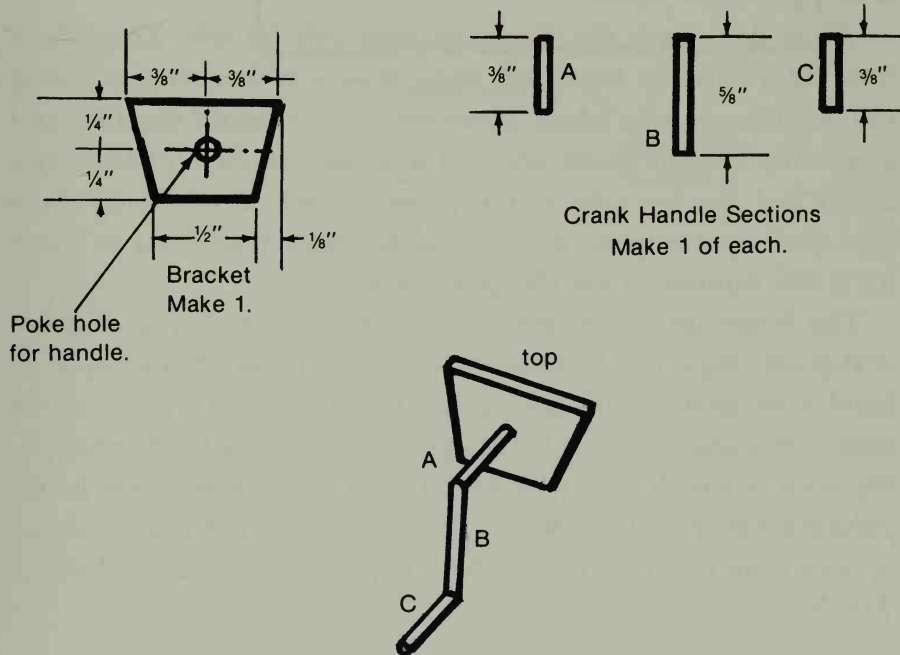
When the tank units are firmly attached, place the smaller one on top the larger one, keeping the ends centered. Glue to hold. Then glue to the left running board about 1 inch from its back end. See the photograph of the finished model on page 68.

Crank Handle (Diagram 34)

The Model T truck had to be started by turning a crank at its front end. This unit consists of a rigid cardboard bracket and a wooden crank handle. Draw and cut the bracket first as shown in Diagram 34. Paint it black and poke the hole for the crank handle as shown using a sharp-pointed nail.

The crank handle is made from lengths of round toothpick wood. Measure and cut these three pieces as shown in Diagram 34. Lay flat on a piece of shiny-surface cardboard forming the S-shape shown in Assembly Diagram 34. Glue together at the connecting points.

DIAGRAM 34
Crank Handle



Crank Handle and Bracket Assembly

After the sections are firmly attached, glue the handle to the bracket by placing the glued end of section A into the bracket hole. Let dry, then glue the back of the bracket to the front center of the spring-axle unit. When the attachment is secure, paint the crank handle black.

Windshield (Diagram 35)

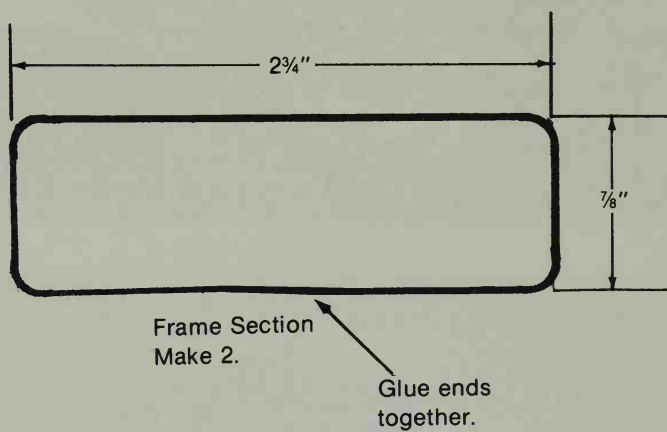
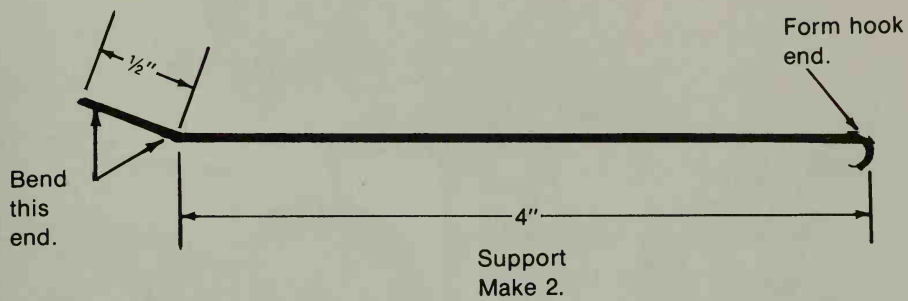
The windshield is the final part for the pickup truck model. It consists of a wire frame held in place by two hooked supports. The windshield frame is also made in two parts, both identical. Make these pieces first.

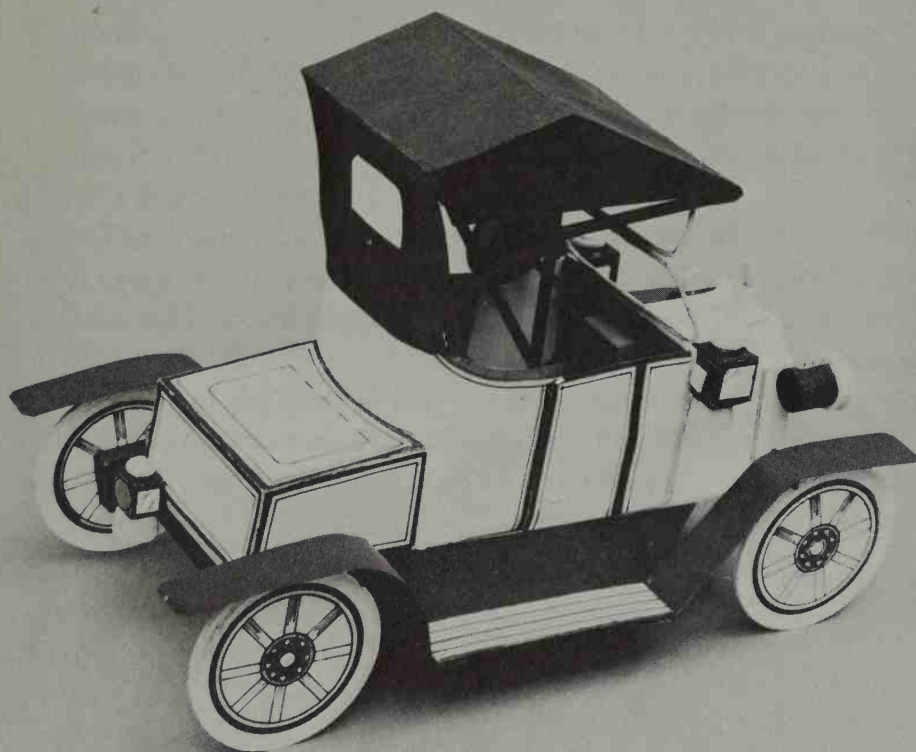
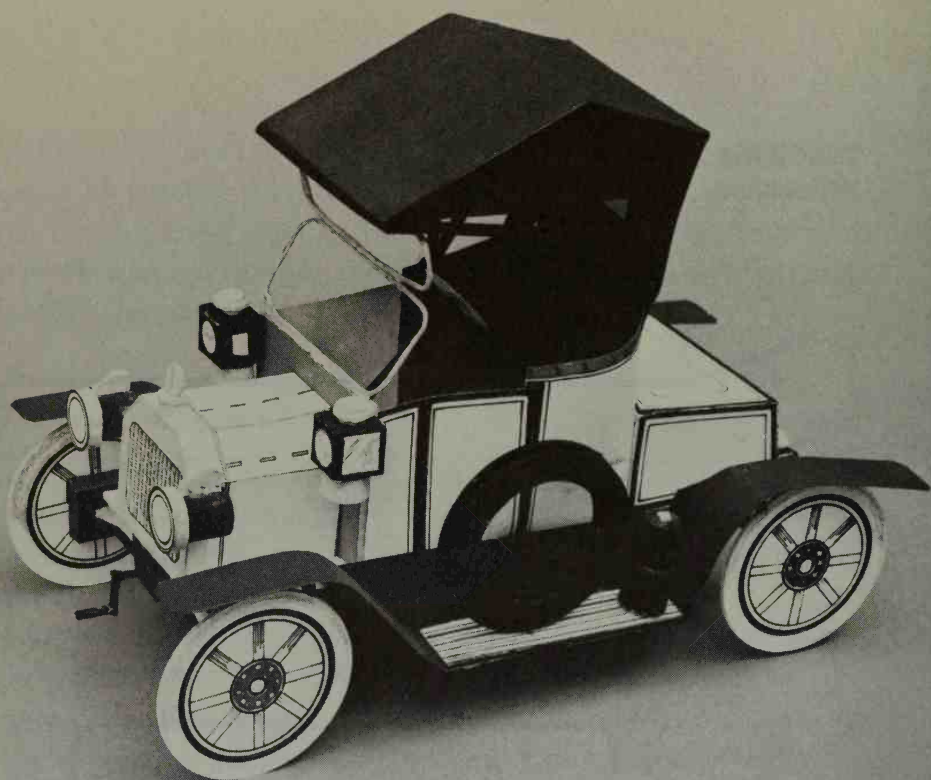
Cut two pieces of paper-coated wire, each $8\frac{1}{2}$ inches long. Bend each to form the frame pattern shown in Diagram 35. Use a pencil or other round piece of wood to help you shape the corners. Overlap the ends as shown and glue together. Hold with a spring-type hair clip or tie with string until the glue hardens, then paint each black.

When dry, place the frame sections side by side along their long sides opposite the glued ends. Run a ribbon of glue along the two long outside edges. Hold the frame sections together and attach the bottom glued side to the inner top edge of the dashboard and the top side to the inner surface of the roof. Make sure the frame unit is in a vertical position, then hold in place for a few minutes until the glue has set.

The frame unit attachment is strengthened with the addition of two wire supports. Cut these pieces each about $4\frac{3}{4}$ inches long. Bend each to the shape shown in Diagram 35. Put glue on the hook and slanted ends of the supports. Attach the hooks at opposite ends of the double wire center of the frame with the hooks pointing downward. Press the slanted ends to the chassis about $\frac{1}{2}$ inch from the front edge. This completes the Model T Pickup Truck.

DIAGRAM 35
Windshield





RUNABOUT: 1913

The Runabout was an extremely popular two-passenger car despite its small size. Everyone from young men anxious to impress their female friends to doctors making house calls in rural areas found the Runabout a marked improvement over the horse and buggy days. Like all Ford Model T's, the low price of the Runabout made it particularly attractive to buyers. The Runabout of 1913 sold for \$525. In 1925, two years before it was discontinued, its price tag read an astonishingly low \$260.

BUILDING THE MODEL T RUNABOUT OF 1913

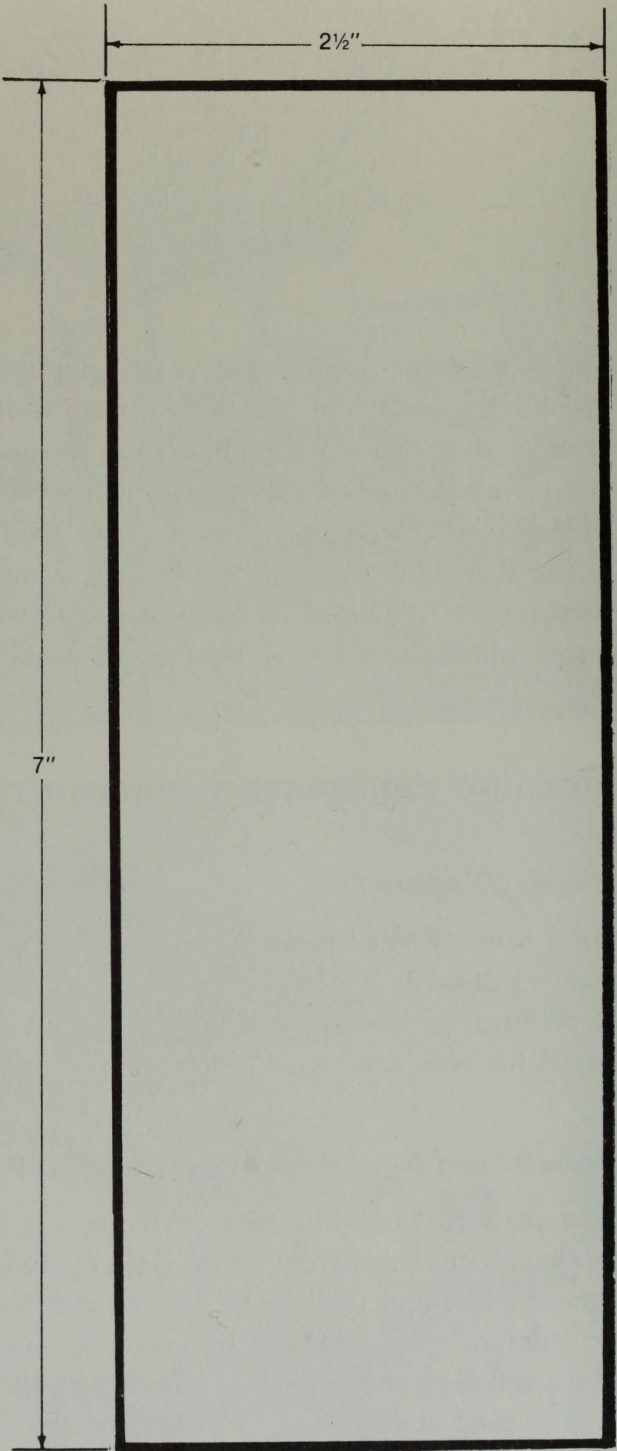
Chassis (Diagram 1)

Draw and cut the chassis pattern as shown in Diagram 1. Use rigid cardboard. (If the cardboard is scrap material and has lots of printing on it, cover this with paint in the color you have selected for your model.)

Radiator and Rear Motor Wall (Diagrams 2 and 3)

The patterns for both these parts are exactly the same shape. Draw and cut them from white rigid cardboard as shown in Diagrams 2 and 3. Select one for the radiator and draw the radiator grill design on one side of this piece as shown in the diagram. Use a soft lead pencil to draw the design, then paint the outside undecorated edge yellow. Set aside to dry while you poke the

DIAGRAM 1
Chassis



Make 1.

DIAGRAM 2
Radiator

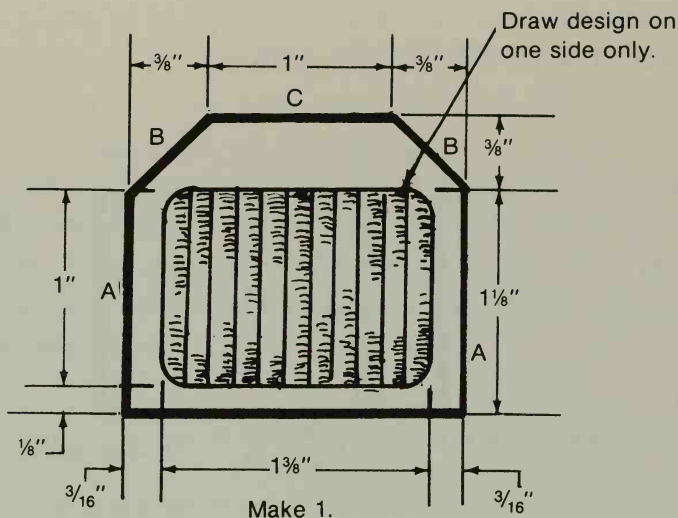
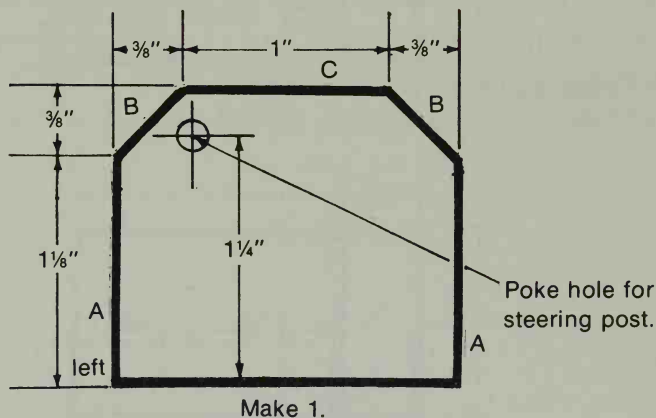


DIAGRAM 3
Rear Motor Wall

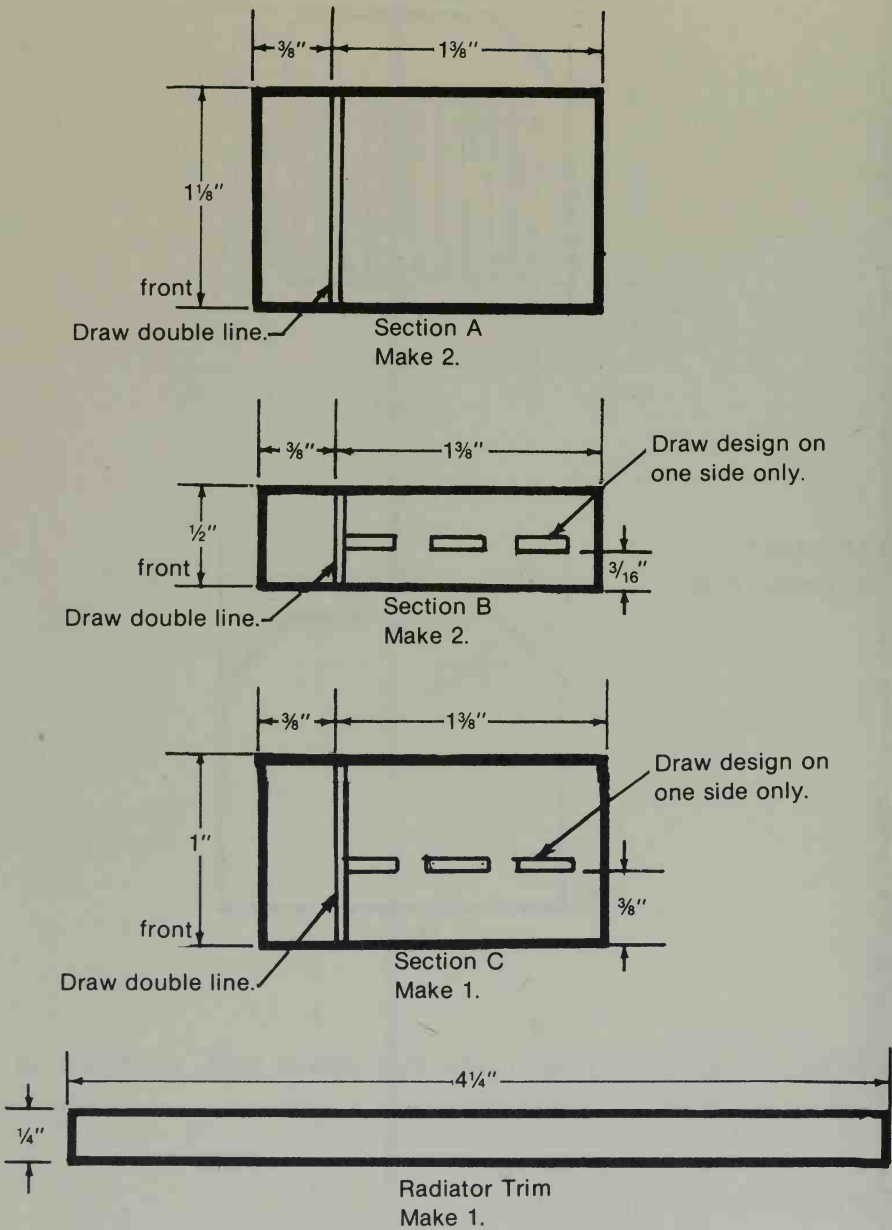


hole for the steering post in the rear motor wall, as shown in Diagram 3, using a sharp-pointed nail.

Engine Hood (Diagram 4)

The radiator and rear motor wall are connected by five engine hood panels labeled A, B, and C. Draw, cut, and letter the pat-

DIAGRAM 4
Engine Hood and Radiator Trim



terns for these pieces as shown in Diagram 4, using whatever color construction paper you have chosen for your model. Draw the designs shown on one side with pen and black ink or soft lead pencil.

Match the edges of the engine hood panels with the lettered edges of the radiator and rear motor wall, keeping the double lines of the engine hood design on the radiator end. Glue the panels in place one at a time, making sure the long edges of each are tight against one another.

Radiator Trim (Diagram 4)

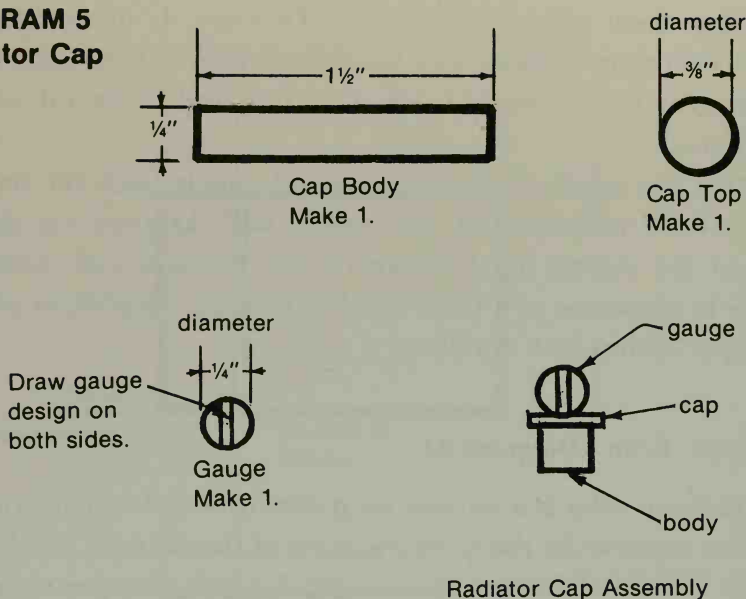
The radiator trim is a narrow strip cut from yellow construction paper to suggest the shiny yellow brass of the radiator on the real Model T. Draw and cut the pattern for this piece as shown in Diagram 4. Wrap it around the forward, or radiator, end of the engine compartment, keeping its long front edge even with the radiator pattern. Glue in place. Cut any overhang at either end with your scissors. See the photograph of the finished model on page 110.

Radiator Cap (Diagram 5)

If you have made any of the preceding models you know that the radiator cap consists of three small parts glued together. Draw and cut the radiator cap body first from yellow construction paper as shown in Diagram 5. Pull it lengthwise over your work table or ruler to curve, then roll into a cylinder $\frac{1}{4}$ inch in diameter. Slide a pencil or other piece of wood into the tube for support while you glue the ends together.

Cut the radiator cap from rigid cardboard and paint one side yellow. See Diagram 5. Center and glue, yellow side outward, to one end of the radiator cap body.

DIAGRAM 5
Radiator Cap



Radiator Cap Gauge (Diagram 5)

The radiator cap gauge told the driver of the real Model T the temperature of the water within the radiator. The gauge is also made from rigid cardboard. Draw and cut this piece as shown in Diagram 5 and paint both sides yellow. When the paint is dry, glue the gauge edgewise onto the center of the cap with the design in a vertical position. See Assembly Diagram 5.

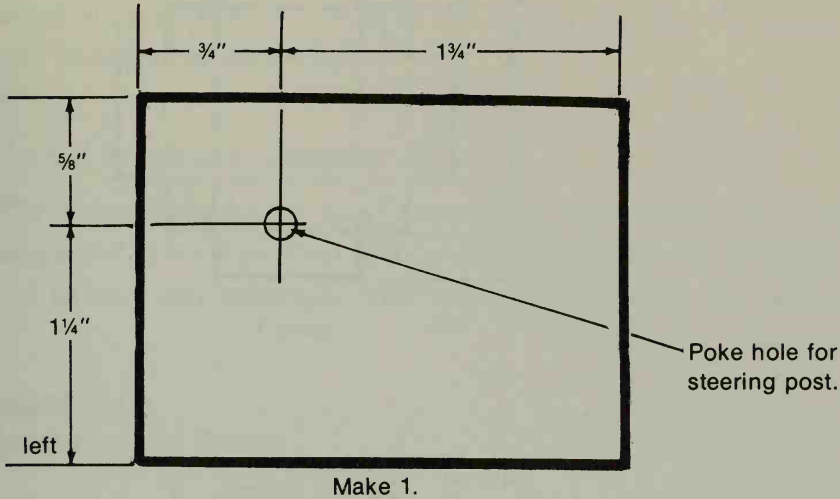
When the entire unit is firmly attached, glue it to the top center of the radiator trim. Then place the engine compartment unit on either end of the chassis, aligning the bottom edge of the radiator with the edge of the chassis. Glue in position, making sure the sides of the engine compartment are the same distance from the sides of the chassis.

Dashboard (Diagram 6)

Draw and cut the pattern for the dashboard from rigid cardboard as shown in Diagram 6. Paint this the same or a different

DIAGRAM 6

Dashboard

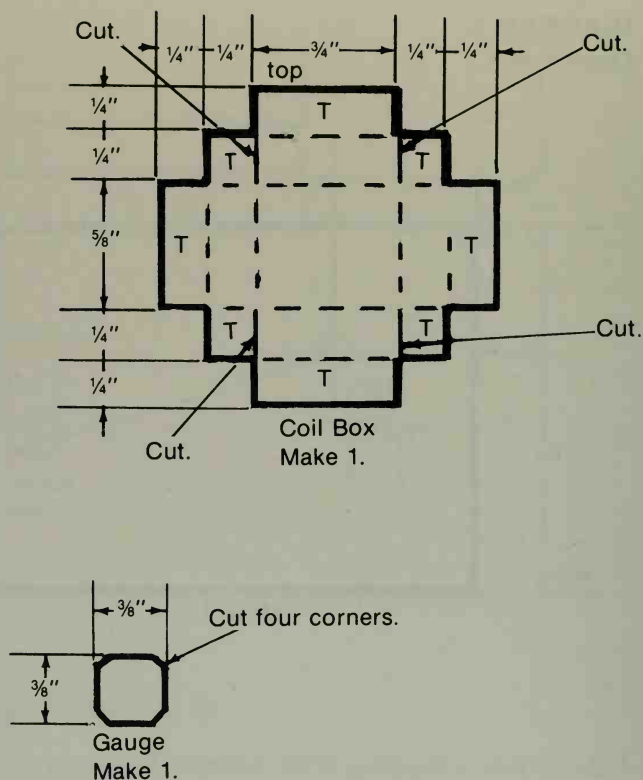


color from what you have chosen for your model, coloring both sides. Poke the hole for the steering post with a nail as shown and enlarge it by turning a pencil point through it until the hole is big enough to hold a length of large matchstick wood snugly. Set aside while you make the coil box and gauge.

Coil Box and Gauge (Diagram 7)

A coil box is attached to the inner side of the dashboard immediately to the right of the steering post hole. Draw and cut the pattern for the coil box as shown in Diagram 7. Use any color construction paper you wish except black. Lightly score along the dotted line and fold the pattern into a boxlike shape that is open on one side. Glue together at the corner gluing tabs T. Put a small weight on the box or fasten the corners with paper clips to hold the piece together until the glue dries. Meanwhile make the gauge.

DIAGRAM 7
Coil Box



The coil box gauge is made from black construction paper. Draw and cut the gauge pattern as shown in Diagram 7. For drawing the piece, a light-colored pencil might be more visible on black paper than lead pencil. Glue the gauge to the center of the coil box. Then attach the coil box unit so its top edge is $\frac{3}{8}$ inch from the top edge of the dashboard and each side is $\frac{7}{8}$ inch from the sides of the dashboard.

Dashboard Attachment

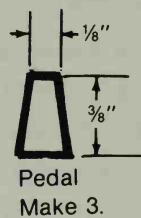
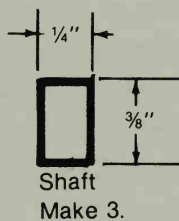
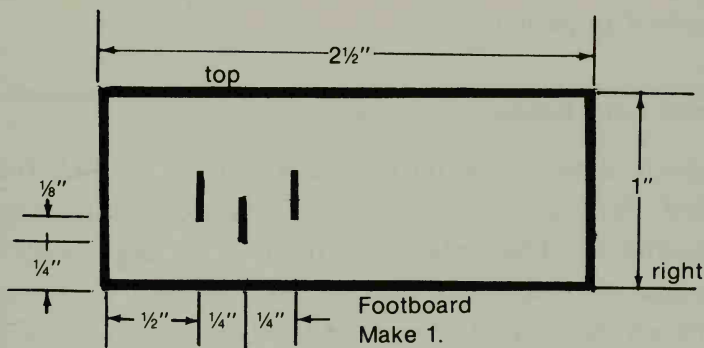
When the glue has hardened, place the dashboard unit upright against the rear motor wall. Put a generous amount of glue along the bottom edge of the dashboard and the surface of the rear

motor wall. Press the dashboard firmly onto the chassis and against the rear of the engine compartment. Hold for a few minutes until the glue has set, making sure the sides of the dashboard are even with the sides of the chassis and that the steering-post holes are exactly aligned.

Slanted Footboard (Diagram 8)

The slanted footboard is a rectangular part made from rigid cardboard. Draw and cut this pattern as shown in Diagram 8 and paint it any color you wish. On one side, mark the positions

DIAGRAM 8
Footboard and Pedals



for the three foot pedals as shown in Diagram 8, using lead pencil. Set the footboard aside while you make the foot pedal units.

Foot Pedals (Diagram 8)

Each foot pedal consists of a shaft and a pedal plate. Draw and cut these pieces as shown in Diagram 8, using rigid cardboard for the shafts and black construction paper for the pedal plates. Paint the shaft pieces any color you wish.

When the paint is dry, put glue on either short end of one shaft and press this end onto a pedal plate that is flat on your work surface. See Assembly Diagram 8. Hold the shaft in its vertical position for a few minutes until it is secure. Assemble the remaining pieces in the same way. Then attach the completed foot pedals to the slanted footboard at the positions you have marked in pencil.

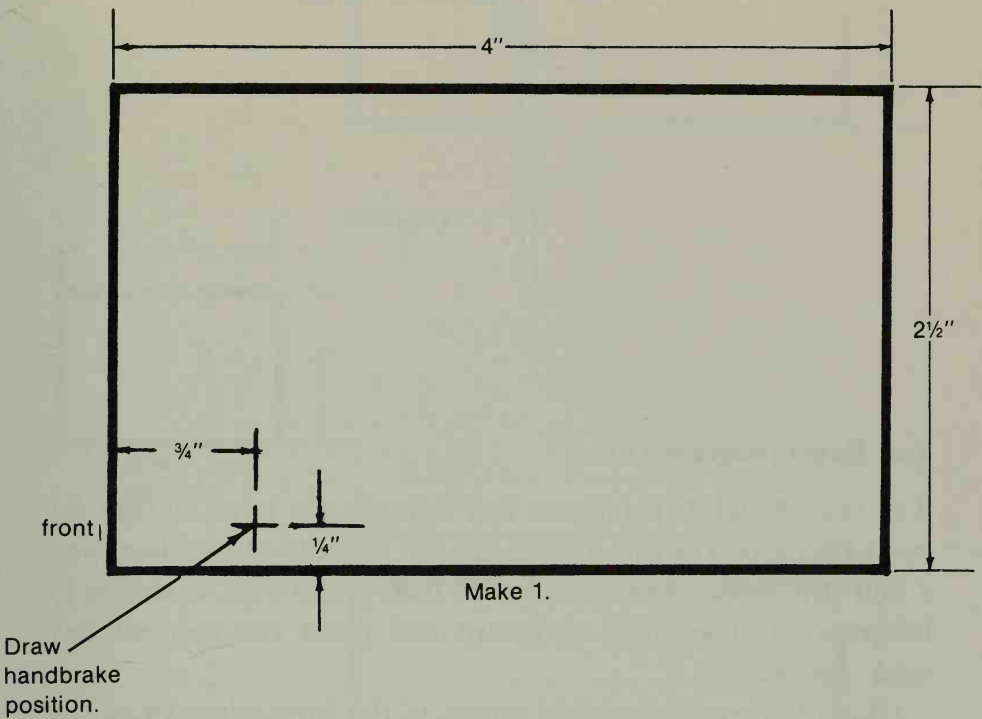
Footboard Attachment

With pencil, draw a line on the chassis about $\frac{1}{2}$ inch from the dashboard. Put a generous amount of glue along both long edges of the footboard. Then place this piece at an angle with its top edge against the dashboard and its bottom edge along the penciled line on the chassis. Press the footboard in position gently.

Floor Mat (Diagram 9)

Draw and cut the floor mat from construction paper as shown in Diagram 9. Choose a color for this piece that is different from the color of the slanted footboard. Glue the mat to the chassis, pressing its front end against the bottom edge of the slanted footboard. Make sure the sides of the mat are even with the sides of the chassis. Next poke a hole for the handbrake location as shown in Diagram 9 using a sharp-pointed nail. The hole does not have to go all the way through the chassis, but make it wide enough to hold the toothpick handbrake shaft upright.

DIAGRAM 9
Floor Mat



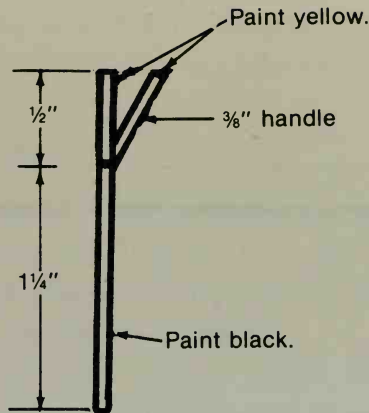
Handbrake (Diagram 10)

The handbrake is made from two lengths of round toothpick, one for the post and one for the handle. Measure and cut these pieces as indicated in Diagram 10. Glue the hand grip to the post as shown. Paint the post below the base of the hand grip black. Then paint the handle and the remainder of the post yellow.

When the paint is dry, put a generous amount of glue on the bottom end of the post and force it into the hole in the floor mat. Make sure that the handle faces rearward and that the post is in a vertical position before the glue hardens.

DIAGRAM 10

Handbrake



Make 1.

Seat Base (Diagram 11)

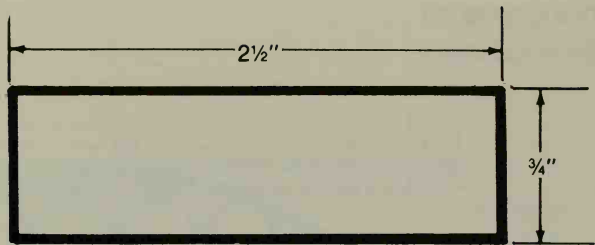
The real Model T Runabout had a single seat large enough for two passengers. On this model, the seat consists of a cushion and a four-part base. Draw and cut the base pieces first, as shown in Diagram 11. Use rigid cardboard and paint the patterns any color you wish.

Glue the two sides at right angles to the front piece along the $\frac{3}{4}$ -inch edges. When secure, glue the top of the seat base to the sides and front along their matching edges. The result is a box with two open sides. A bottom piece is not necessary since the seat base will be attached to the chassis, and a back is not needed since the rear of the seat base will be concealed by a large body piece to be made later. Attach the seat base unit to the chassis so the bottom edge of the front panel is 2 inches from the dashboard and its sides are even with the sides of the chassis.

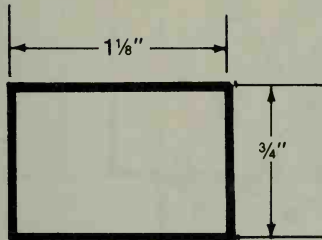
Seat Cushion (Diagram 12)

Draw and cut the seat cushion pattern as shown in Diagram 12. Use whatever color construction paper you wish, though a light color is better since it contrasts well with the drawn design. Use

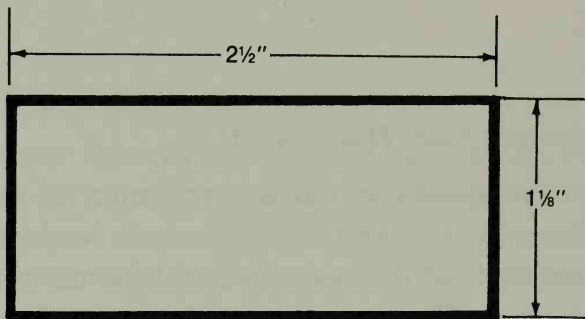
DIAGRAM 11
Seat Base



Front
Make 1.



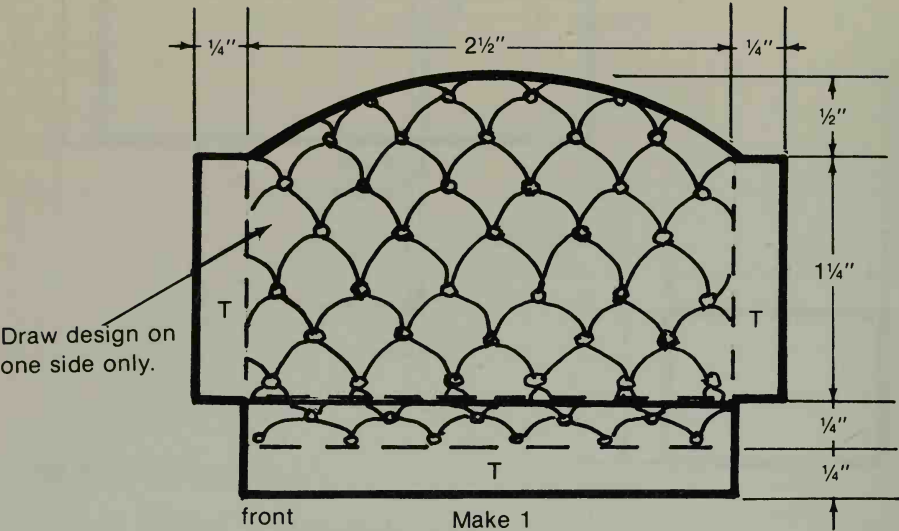
Side
Make 2.



Top
Make 1.

pen and ink to draw the cushion pattern on one side as shown in Diagram 12. Then turn the piece over and lightly score along the dotted lines. Bend the cushion at the scored lines, folding under the front gluing tab. Glue the cushion to the forward edge of the top of the seat base along the front gluing tab. The two side tabs T remain loose until the main body piece is attached. Make sure that the forward-facing narrow panel of the seat cushion is flush with the front panel of the seat base and that their corners are even.

DIAGRAM 12
Seat Cushion



Steering Post (Diagram 13)

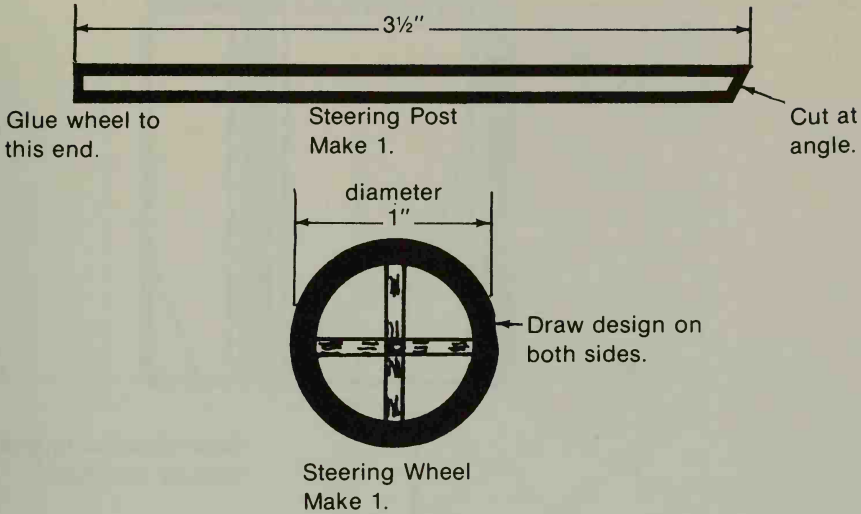
At this point, the steering unit must be made and attached before the driver's compartment is further enclosed. Make the steering post first, using a length of matchstick or a similar strip of wood. Cut this piece as shown in Diagram 13 and paint it black. Set aside to dry.

Steering Wheel (Diagram 13)

Now draw and cut the wheel from rigid cardboard as shown in Diagram 13. Use a compass to make the circular shape, drawing your compass pencil over the outline several times to form an indented track. This will make cutting easier. Draw the rim and spokes design on both sides as shown in Diagram 13. Use pen and ink to outline the design. Then carefully fill in the spokes with yellow paint or crayon, going over the black outline afterward if necessary.

DIAGRAM 13

Steering Unit



Steering Unit Assembly and Attachment

Lay the wheel flat on your work surface. Put a large amount of glue in its center. Press the square end of the steering post into the glue, then hold the post vertically for a few minutes until the glue has set. Check the post's upright position by standing your ruler on end next to it. The two should be parallel.

After the steering wheel and post are firmly attached, put a generous amount of glue on the slanted end of the post and around the hole in the dashboard. Slide the post through the dashboard hole until the glued end touches the chassis inside the engine compartment. Position the wheel about 1 inch above the front edge of the seat cushion, then hold the steering unit in place until the glue has hardened.

Forward Body Sides (Diagram 14)

The forward body sides are the first of the body sections to be added to the model. Draw and cut these two pieces as shown in

DIAGRAM 14
Forward Body Sides

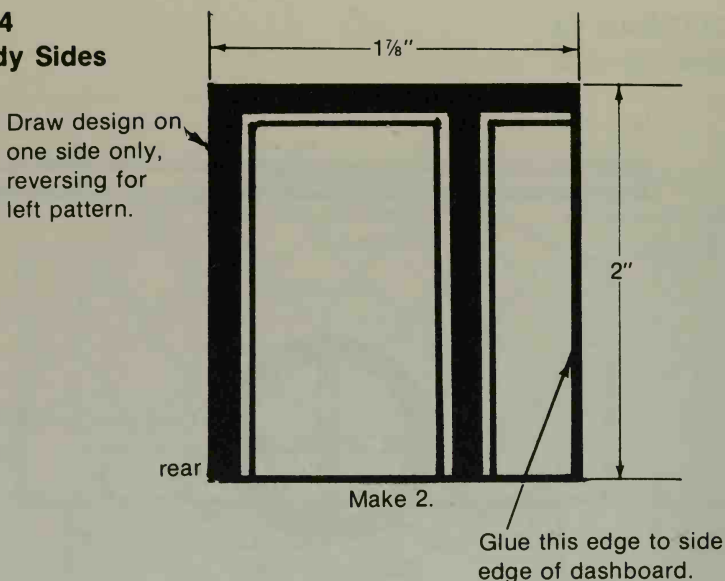


Diagram 14. Use the same color construction paper you used for the engine hood panels. Draw the design as shown on one side of each piece using pen and ink. Note that the design in Diagram 14 is for the right body side and must be reversed for the left pattern. When dry, glue the bottom edge of each pattern to the appropriate chassis side and the forward edge to the edge of the dashboard. Rub your finger along the glued edges several times to make sure there are no air bubbles and that the pattern edges are firmly attached.

Main Body Section (Diagrams 15 and 16)

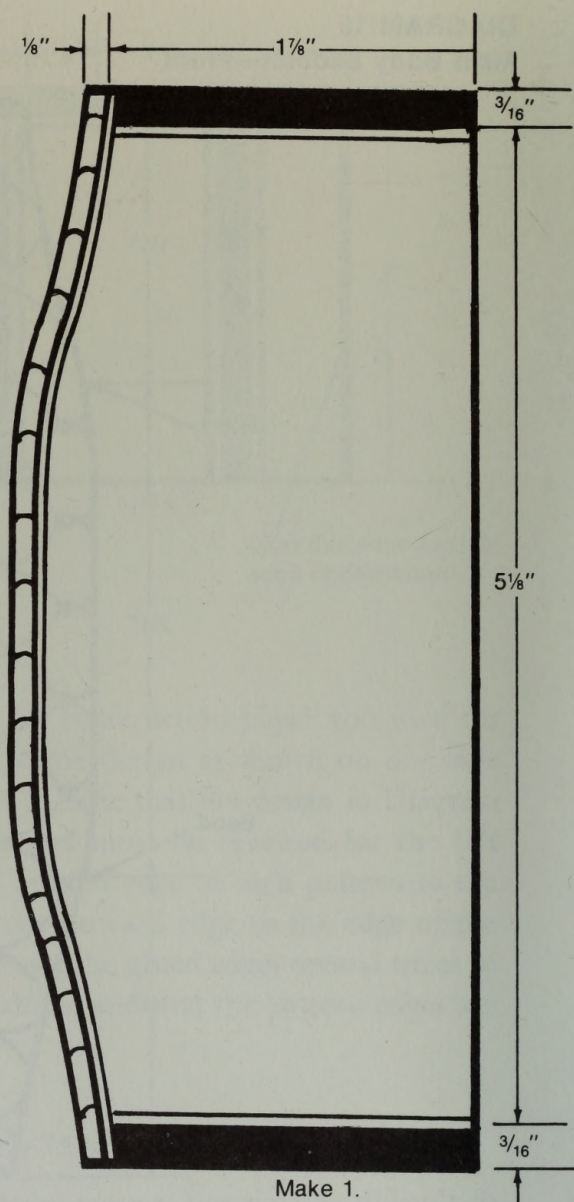
The main body section is a large pattern but not too difficult to make. Draw and cut this piece as shown in Diagram 15. Use the same color construction paper you used for the forward body sides. Lay the pattern flat on your work surface and paint the area for the cushion design on one side. Use any color paint you wish but select one that is not too dark. After the paint has dried,

Main Body Section—Front



turn the pattern over and use the same color to paint the background for the top border design. See Diagram 16. Turn the pattern over again and draw the cushion design with a soft lead

DIAGRAM 16
Main Body Section—Rear



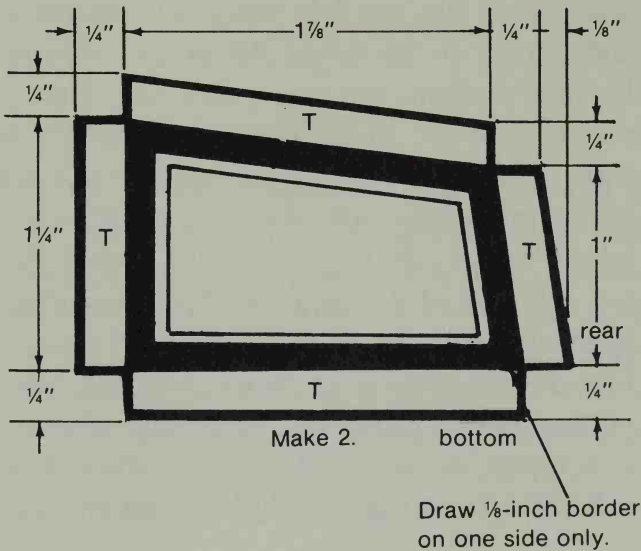
pencil as shown in Diagram 15. This side will be the inner surface of the main body section. Turn the pattern over once more and draw the top border design as shown in Diagram 16, using a soft lead pencil, and the side borders, using pen and ink.

After the design work is finished, bend the sides of the pattern over the edge of your work table or ruler several times as indicated in Diagram 15. Slide the pattern in position around the seat base to make sure it fits properly. Then put a generous amount of glue on both sides of the seat base and side tabs of the cushion and press the main body pattern to these glued parts. Hold for a few minutes until you are sure the pattern will stay in position. Next overlap the ends of the main body section and the forward body sides, with the ends of the body sides on the outside. Run a ribbon of glue along their connecting points and press the ends together. Try to keep the double-line design on the ends of the two connecting patterns parallel.

Trunk Sides (Diagram 17)

The real Model T Runabout had a small, sloping trunk at the back. On the model, this is a three-panel part. Begin by drawing and cutting the two trunk sides as shown in Diagram 17. Use the same color construction paper you used for the body pieces. On

DIAGRAM 17
Trunk Sides



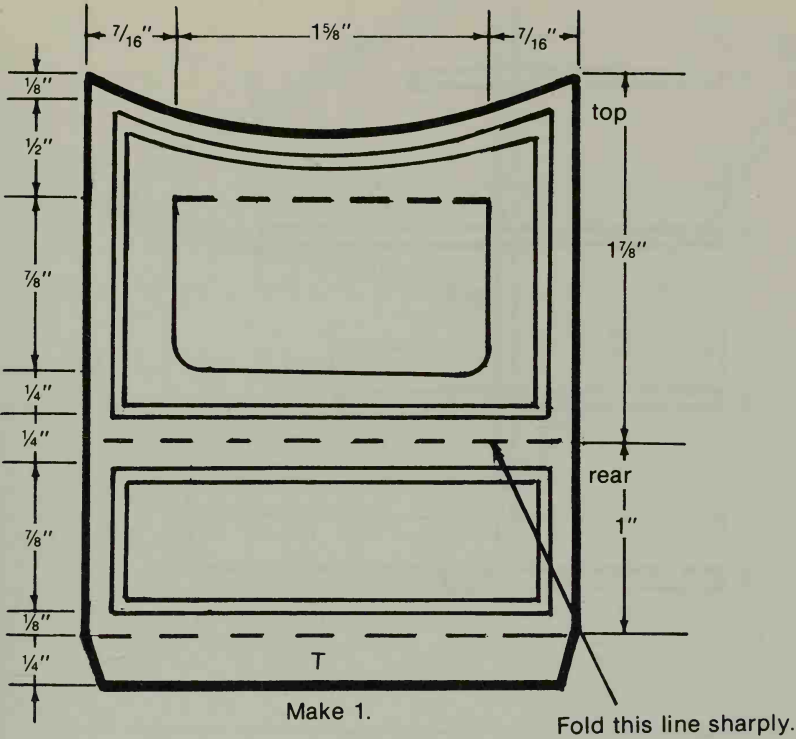
one pattern, draw the design as shown using pen and black ink. This will be the left trunk side. For the right trunk side, reverse the design and draw it on the opposite side of the pattern. When the design work is finished, turn over the two patterns and lightly score along the dotted lines. Bend the gluing tabs inward.

Put a generous amount of glue on the bottom gluing tab of each trunk side and on the forward end tabs. Glue the long bottom tabs to the chassis and the forward end tabs to the back of the main body section. Make sure the bottom fold edges of the trunk sides are even with the edges of the chassis.

Top and Rear of Trunk (Diagram 18)

The top and rear of the trunk are made as a single piece. Draw and cut the pattern as shown in Diagram 18 using the same color construction paper you used for the trunk sides. Place the forward end of the pattern against the rear of the back seat. Trim, if necessary, so the curves match perfectly. Draw the border and line designs as shown using pen and black ink. Make the border and $\frac{1}{4}$ -inch center section solid black as shown in the photographs of the finished models. Turn the pattern over and lightly score along the two fold lines. The dotted line near the front end is part of the drawn design and represents a long hinge—be sure to draw, not score, this line. Bend the pattern at the scored lines and place in position at the rear of the model to make sure it fits properly. Then put glue on the top and rear gluing tabs of the two side pieces as well as on the single gluing tab on the pattern for the top and rear of the trunk. Attach the top and rear of the trunk to the tabs of the trunk sides, at the same time pushing the curved forward end snug against the main body section. Also press the single gluing tab of the top and rear of the trunk against the back edge of the chassis. Slide your finger over the glued edges of the trunk to make sure the unit is firmly attached. There shouldn't be any gaps.

DIAGRAM 18
Top and Rear of Trunk

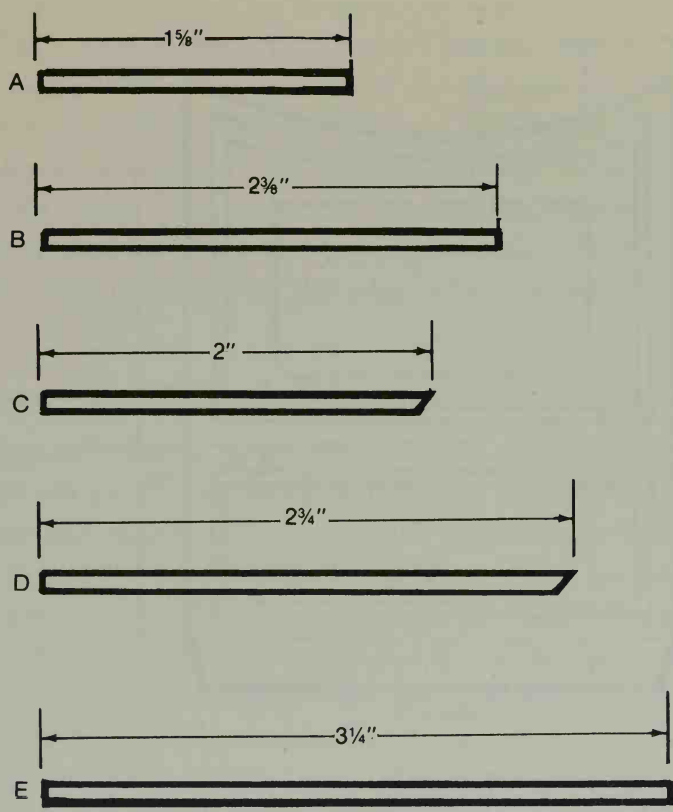


Side Roof Frames (Diagrams 19 and 20)

The roof of the Model T Runabout is made like the roof of the Touring Car—a wood frame covered by black construction paper panels. The two side roof frames are made first. Cut and label the sections for these two parts from large matchstick or similar strips of wood as shown in Diagram 19. Paint the lengths black.

When the sections are dry, lay them on a flat piece of wood or shiny-surface cardboard, following the layout in Diagram 20. Start with section E, the center post, and attach the other sections to it and to one another. Use a generous amount of glue on

DIAGRAM 19
Roof Side Frame Pieces



Made 2 of each.

the ends as you assemble the two frames. Do not try to move the completed units until the glue has hardened. Then loosen each from your work surface by sliding and twisting your knife under each glued joint. The frames should come free in one piece. Look at them edgewise to make sure the parts are straight. Make any adjustments with care.

Roof Frame Crosspieces (Diagram 21)

The side roof frames are joined by three crosspieces to form a

DIAGRAM 20
Side Frame Assembly

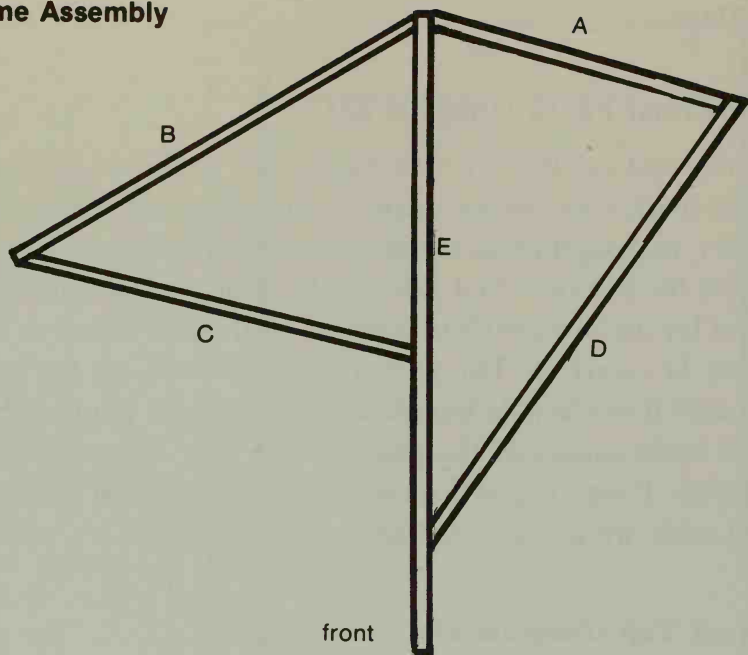
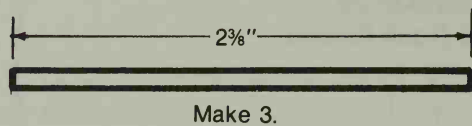


DIAGRAM 21
Roof Crosspieces



single frame unit. Measure and cut the crosspieces from large matchstick or similar wood as shown in Diagram 21. Paint these pieces black.

When dry, turn one side frame upside down on a flat piece of wood or shiny cardboard so it is perpendicular to the work surface. Put glue on one end of each crosspiece and press the three parts to the ends of sections A and B of the upended side frame. Make sure the three crosspieces are at exact right angles to the frame, then attach the second side frame in the same way. Hold

the unit until the glue has set. Set aside while you make the roof panels.

Side Roof Panels (Diagram 22)

Draw and cut the two side roof panels as shown in Diagram 22. Use black construction paper. Score along the dotted lines carefully, making them as straight as possible and scoring on opposite sides for the right and left panels. Bend the tabs at right angles and lay the two panels in position on the roof frame to make sure they fit correctly. The gluing tabs T should lay flat on sections A and B of the side frames. Put glue on the gluing tabs and on the inner surface of the panels where they connect with the side frames. Press the glued areas of the panels against the frame, then set aside while the glue hardens.

Roof Top (Diagram 23)

Draw and cut the rectangular roof top from black construction

DIAGRAM 22
Side Roof Panels

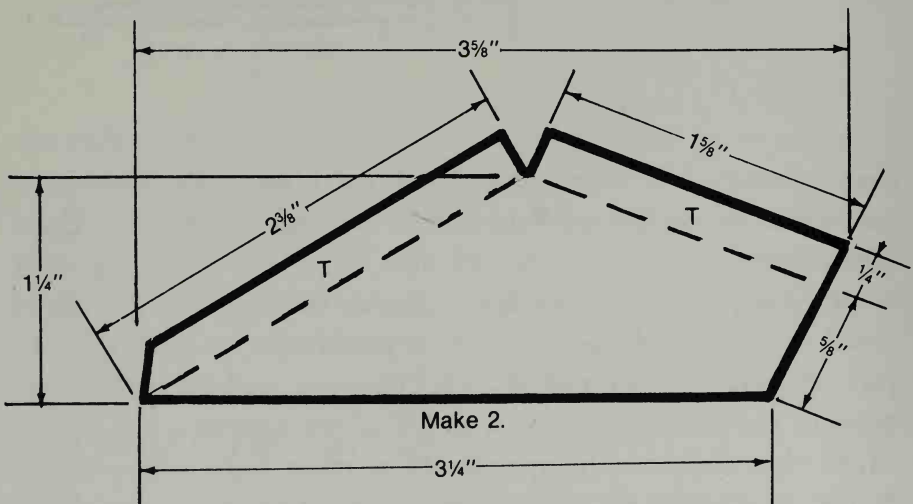
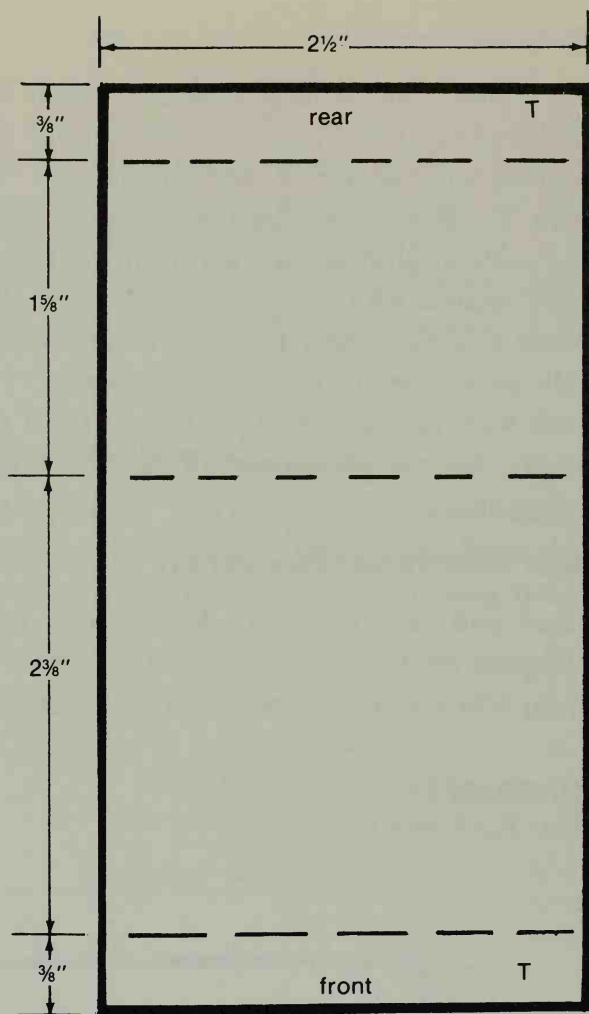


DIAGRAM 23
Roof Top



Make 1.

paper as shown in Diagram 23. Score along the dotted lines lightly. Bend the end gluing tabs sharply but only crease the center fold to match the angle of the top of the roof frame. Place the pattern in position to make sure it fits properly. Then put a generous amount of glue along the sides, the gluing tabs, and the center fold of the roof top and press in place. Keep sliding your finger over the glued edges until the piece is securely attached. See the photograph of the finished model on page 110.

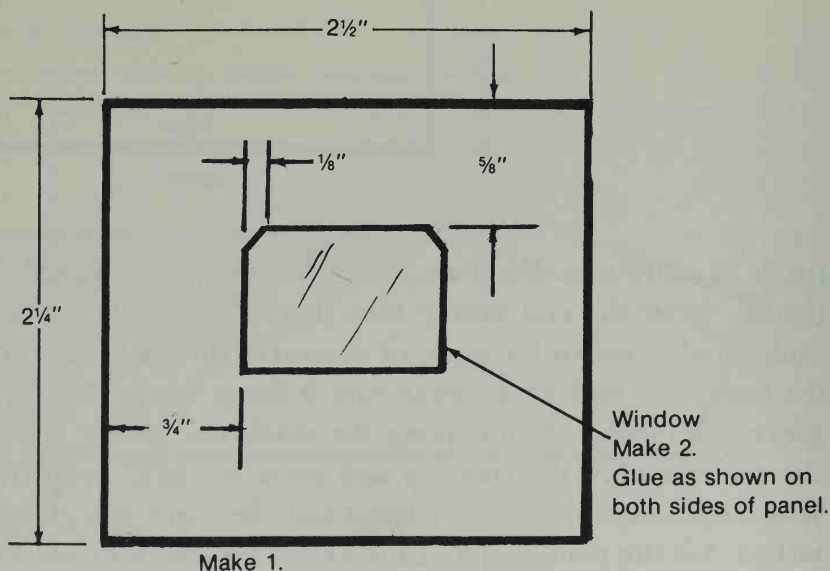
Roof Attachment

Put a large amount of glue on the outside edge of the roof frame center posts (section E) from the base of the posts to their connection with section F. See Diagram 20. Hold the roof frame, with the glued posts on the inside of the car body, and press the posts in position $\frac{1}{4}$ inch from the forward edge of the main body section with the post ends $\frac{1}{2}$ inch above the seat cushion. Make sure the center posts are exactly vertical and that the roof side panel bottom edges are horizontal. Then clamp the glued ends with spring-type clips to hold until the roof attachment is secure. See the photograph of the finished model on page 110.

Rear Roof Panel (Diagram 24)

Draw and cut the pattern for the rear roof panel as shown in Diagram 24. Use black construction paper. Cut the two windows from white construction paper, making them 1 inch wide and

DIAGRAM 24
Rear Roof Panel

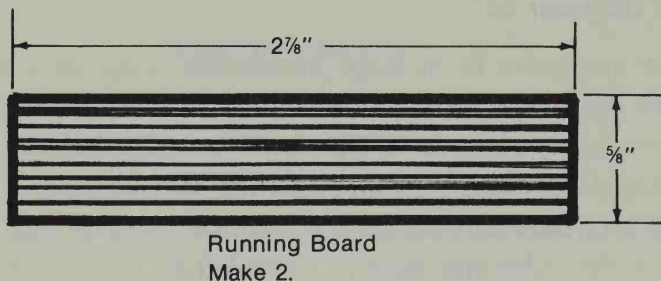
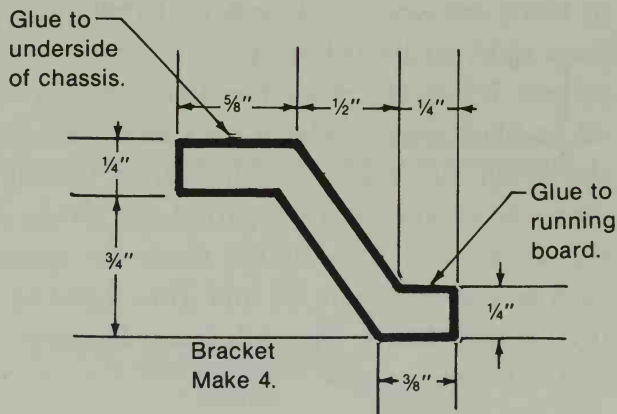


$\frac{3}{4}$ inch high and angling the top corners as shown in the diagram. Draw the glass marks as shown with pen and black ink. Glue the windows to opposite sides of the panel in the position indicated in Diagram 24. Then run a ribbon of glue along the top and bottom edges of one side of the roof back. Press the glued top edge to the rear roof crosspiece and the bottom edge to the topmost section of the main body pattern. See the photograph of the finished model on page 110. The roof of the model is now complete.

Running Board Brackets (Diagram 25)

Draw the four running board brackets on rigid cardboard as shown in Diagram 25. Use a knife to cut these pieces. Paint them black and set aside to dry while you make the running boards.

DIAGRAM 25
Running Boards
and Brackets



Running Boards (Diagram 25)

The running boards are also made from rigid cardboard. Draw and cut these two pieces as shown in Diagram 25. Draw the line design on one side of each using pen and black ink.

Glue two brackets to the underside of each running board along the edge indicated in Diagram 25. Position the brackets at opposite ends, $\frac{1}{2}$ inch from the edge. Then attach the running board units to the underside of the chassis along the edge marked in the diagram. Place the rear bracket of each unit $2\frac{5}{8}$ inches from the rear of the chassis. Make sure the slanted bracket edges are flush with the chassis sides. Hold the brackets in place until the glue has set.

Springs (Diagram 26)

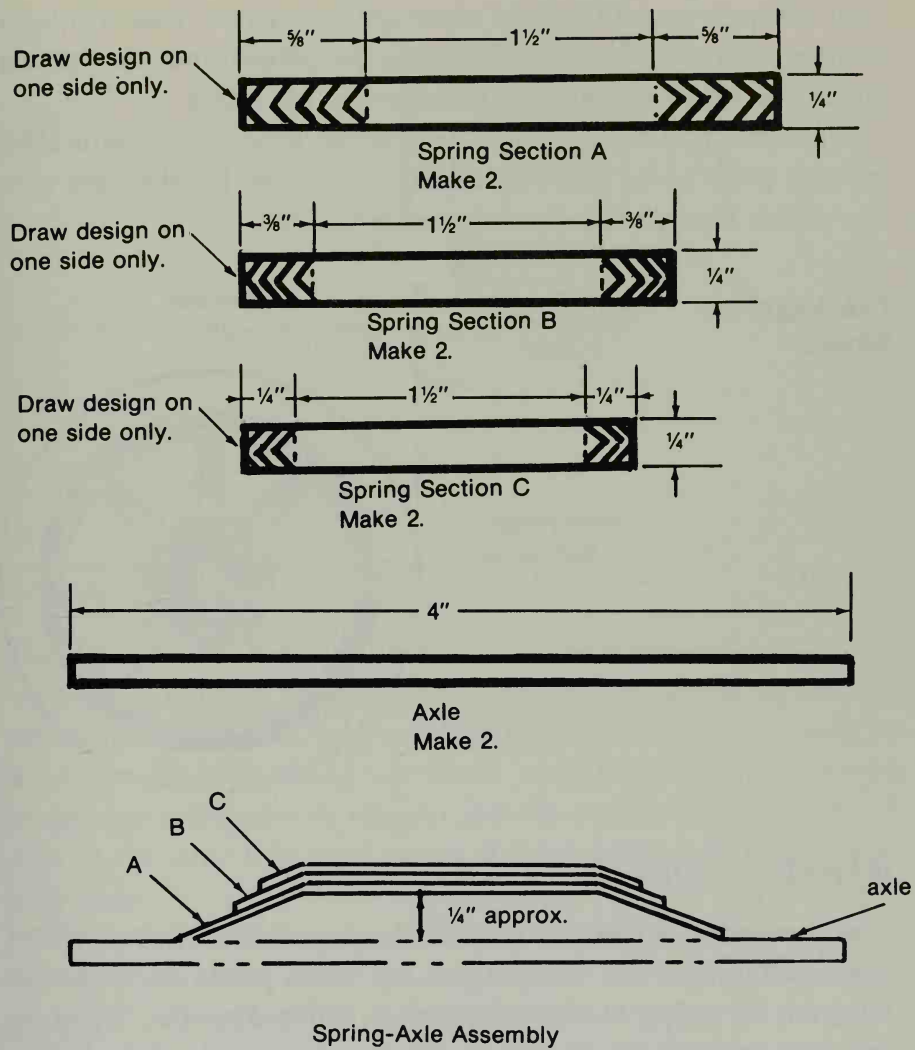
The Model T Runabout has two spring units. Each is made up of three sections, A, B, and C. Draw and cut these six sections from rigid cardboard as shown in Diagram 26. Paint each section yellow. When dry, draw the design shown on one side with pencil or black crayon. Turn over and mark off the inside edge of the design on each end. These lines should be $1\frac{1}{2}$ inches apart on each section. Make a partial cut along these lines and bend the design ends downward. Stack the spring sections as shown in Assembly Diagram 26 and glue together along their connecting centers. Leave the ends loose for now. Set aside while you make the axles.

Axles (Diagram 26)

Cut the two axles from large matchstick wood or similar wood strips to the length shown in Diagram 26. Paint them black.

When dry, place one spring unit on each axle as shown in Assembly Diagram 26. Bend the ends of each spring section C, leaving a $\frac{1}{4}$ -inch gap between it and the axle. Center the spring units on the axles and glue to hold. When the attachment is se-

DIAGRAM 26
Springs and Axles



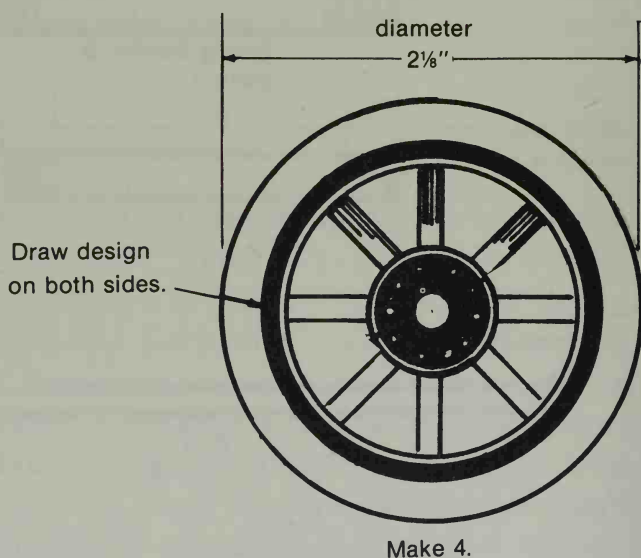
cure, glue the ends of sections A and B as shown in Assembly Diagram 26.

Wheels (Diagram 27)

Draw the outline for the wheels on rigid cardboard as shown in Diagram 27, going over the circular pattern several times with your compass pencil until an indentation is made. This will help you cut a nice round shape. Turning the pattern into the scissors while you cut will also help prevent any flat edges.

Draw the wheel design as shown in the diagram on both sides of each piece using pen and black ink, except for the very center, which is painted yellow. Set aside to dry.

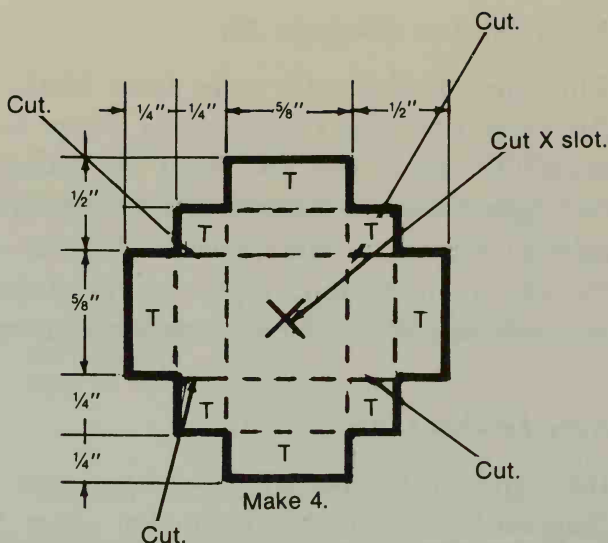
DIAGRAM 27
Wheels



Wheel Boxes (Diagram 28)

The spring-axle units are attached to the wheels by four wheel boxes. Draw and cut the pattern for these pieces as shown in Diagram 28 using black construction paper. Cut the X-slot in the center as shown with your knife. Score along the dotted lines carefully, then fold each pattern into a boxlike shape that has a small opening on one side. Glue together at the corner gluing tabs. As you finish each box, put a small weight on top of it to hold it together until the glue dries. Then glue one box to the center of each wheel, X-side facing outward.

DIAGRAM 28
Wheel Boxes



Wheel-Axle Assembly and Attachment

Place the wheel units flat on your work surface. Put a generous amount of glue on one end of an axle and on the X-slot of one wheel unit. Push the axle end into the slot, keeping the axle in a vertical position. Stand your ruler upright next to the axle to make sure it is perfectly straight. Attach one wheel to the second axle in the same way, then repeat the procedure for the opposite axle ends.

When the wheel-axle attachment is secure, turn the car model upside down. Rest it on the long side of the roof, using small supports if necessary. Put a generous amount of glue on the plain yellow portion of spring sections A. Press one glued spring unit against the underside of the chassis along the front edge. Place the other glued section against the rear edge of the chassis. Make sure the wheels are equally spaced on both sides of the chassis. Leave the model in the upside down position until the spring-chassis attachment is secure.

Front Fenders (Diagram 29)

The front fenders are made from black construction paper. Draw and cut these two pieces as shown in Diagram 29. Score along the dotted line and bend the gluing tabs sharply. Pull each fender several times over the edge of your work table or ruler to form the shape shown in the side view in Diagram 29. Put a generous amount of glue on the gluing tabs and attach to the underside of the forward ends of the running boards.

Rear Fenders (Diagram 29)

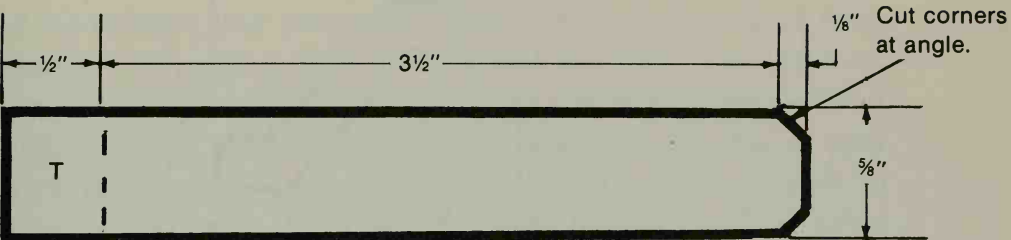
Draw and cut the pattern for the two rear fenders as shown in Diagram 29. Use black construction paper. Score along the dotted lines on opposite sides for the right and left fenders. Pull the tab end of the fenders over the edge of your work table or ruler, forming a slightly sharper curve than for the front fenders. See the photographs of the finished models. Glue the fenders to the back ends of the running boards at the underside, positioning them with the narrow extension near the gluing tab next to the car body. A bracket to be made and attached later will make the fenders' attachment more secure.

Fender Brackets (Diagram 30)

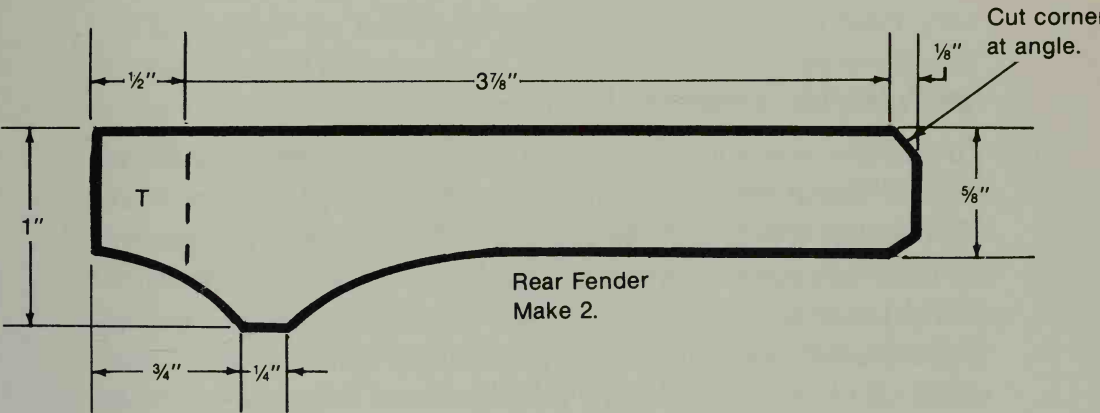
Draw and cut the pattern for the four fender brackets as shown in Diagram 30. Use rigid cardboard and cut these pieces with your knife. Scissors will twist the brackets out of shape. Paint the brackets black.

When dry, place one bracket under each front fender about $\frac{1}{2}$ inch from the front end of the chassis. Glue the connecting edges of the brackets to the undersides of the fenders and the chassis. Hold in place for a few minutes until the glue has set. Attach the rear brackets in the same way, placing them about 1 inch from the back edge of the chassis. When these brackets are secure, put a small amount of glue on the ends of the narrow

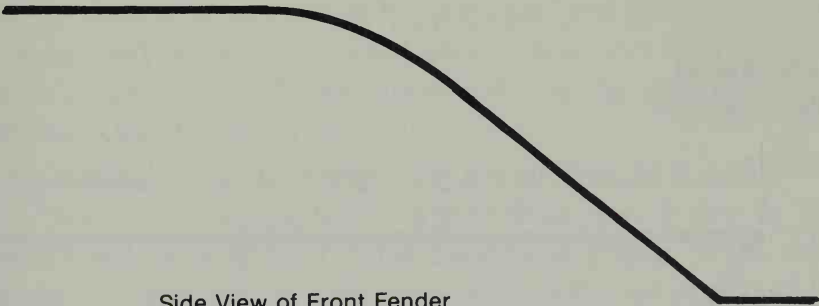
DIAGRAM 29
Fenders



Front Fender
Make 2.



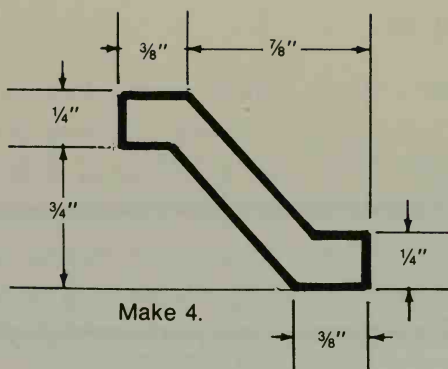
Rear Fender
Make 2.



Side View of Front Fender

fender extensions and press against the trunk sides for additional fender support.

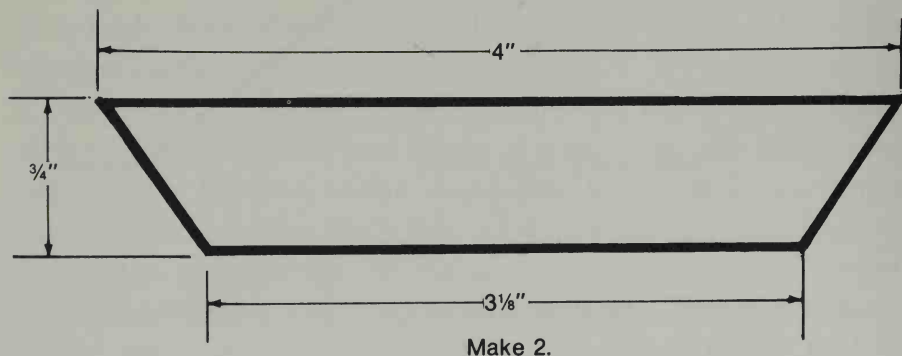
DIAGRAM 30
Fender Brackets



Splash Guards (Diagram 31)

To prevent stones and mud from flying up against the sides of the real Runabout, splash guards covered the openings between the running boards and the car body. Draw and cut the pattern for these two parts as shown in Diagram 31. Use black construction paper. Put glue on the outside slanted edges of the running board brackets and the longest side of each splash guard almost at the edge. Press each guard in position between the car body and the running board.

DIAGRAM 31
Splash Guards



Headlights (Diagram 32)

The Model T Runabout had two large headlights on both sides of the radiator. For the model, these units are constructed from a number of small parts, beginning with the body. Draw and cut the two headlight bodies from black construction paper as shown in Diagram 32. Pull each piece lengthwise over the edge of your work table or ruler several times to curl. Overlap the ends to form two cylinders $\frac{1}{2}$ inch in diameter. Slide a pencil or other round piece of wood inside each cylinder to serve as a support as you glue the ends closed.

The ends of the headlight bodies are covered with black construction paper. Draw and cut these four pieces as shown in Diagram 32. Put glue on the edge of the cylinder ends and press each against a disc piece.

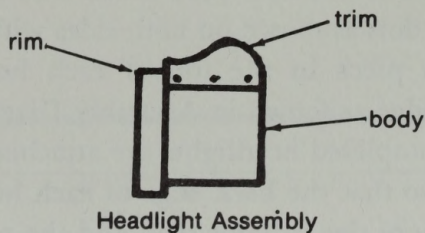
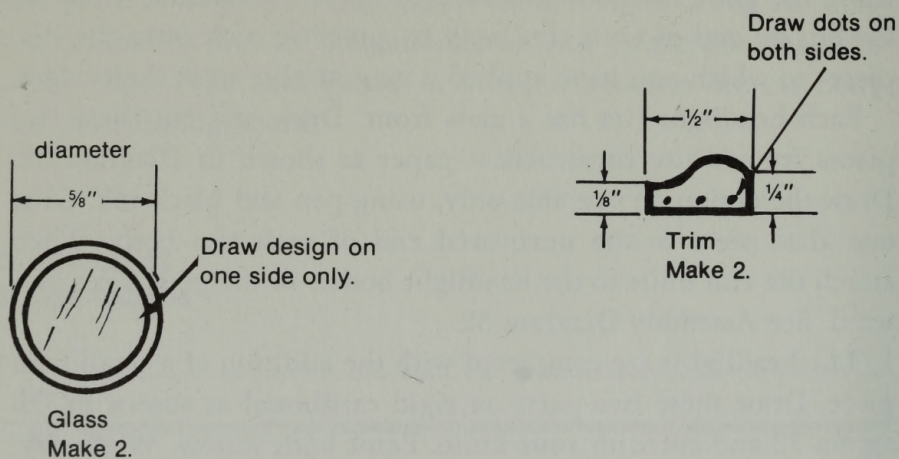
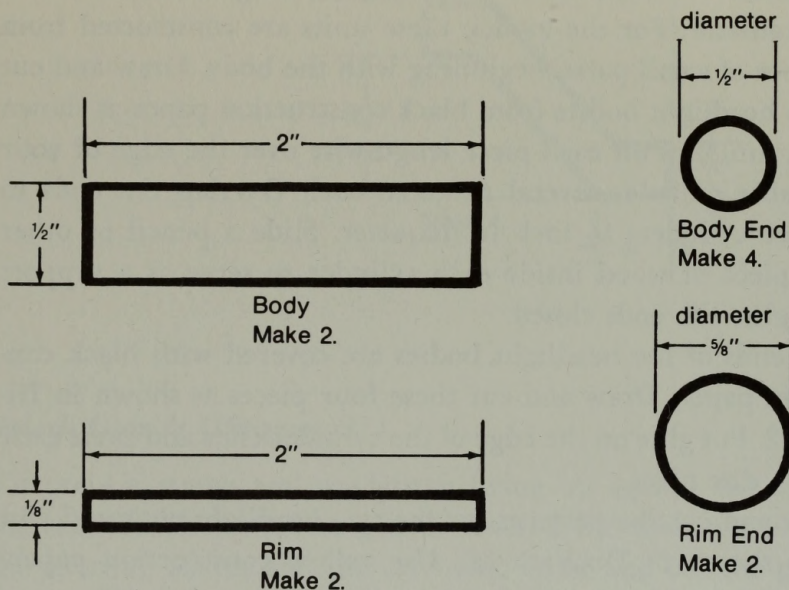
Draw and cut the patterns for the two headlight rims and rim ends as shown in Diagram 32. Use yellow construction paper. Curve and glue the rim pieces into cylinders $\frac{5}{8}$ inch in diameter, using the same methods you used to make the headlight bodies. Cover one end of each rim body by pressing each onto the disc pieces to which you have applied a ring of glue near their edges.

Each headlight rim has a glass front. Draw and cut these two pieces from white construction paper as shown in Diagram 32. Draw the design on one side only, using pen and black ink. Glue one glass piece to the uncovered end of each rim body. Then attach the rim units to the headlight bodies so the glass faces outward. See Assembly Diagram 32.

The headlights are completed with the addition of a small trim piece. Draw these two parts on rigid cardboard as shown in Diagram 32 and cut with your knife. Paint both yellow. When dry, draw the dots as shown on both sides with a soft lead pencil. Glue one trim piece to the top of each headlight body along the straight edge as shown in Assembly Diagram 32.

The completed headlights are attached to opposite sides of the radiator so that the back edge of each headlight is even with the back edge of the radiator trim and the top of the headlight body

DIAGRAM 32 **Headlights**



(not the trim) is slightly above the base of the angled engine hood panel. To do this, put a generous amount of glue on one side of each headlight body, opposite sides for the right and left lights, and press against the radiator trim. Hold for a few minutes, making sure that the trim pieces are perfectly vertical and that the lights are aligned with one another.

Dashboard Lamps (Diagram 33)

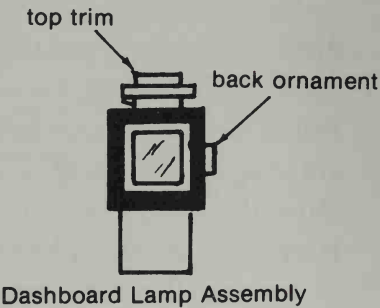
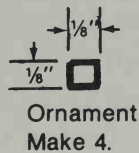
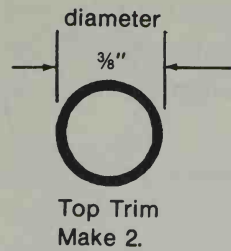
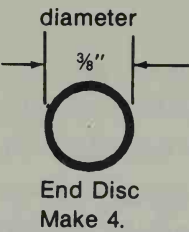
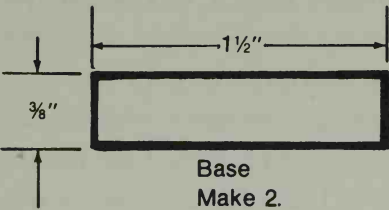
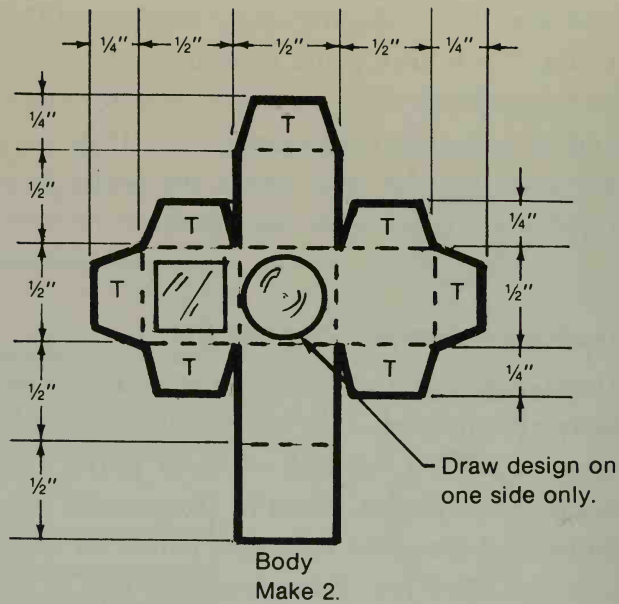
Dashboard lamps were a popular and decorative feature on many early automobiles. Like the headlights, these two pieces are constructed from a number of small parts. Draw and cut the two lamp bodies first as shown in Diagram 33. Use white construction paper and draw the two glass panels as shown on one side with pen and black ink. Paint this same side of the body black, coloring carefully around the glass panels. Turn over and score gently along the dotted lines. Fold each pattern into a boxlike shape and glue closed at the gluing tabs. Place a small weight on these parts until the glue has set. Meanwhile make the base units.

The dashboard lamp bases are made in the same way as the headlight cylinders. Draw and cut the patterns for the base bodies and end pieces as shown in Diagram 33. Use yellow construction paper. Roll the bodies into cylinders $\frac{3}{8}$ inch in diameter and glue closed. Attach the end pieces by pressing one glued cylinder end against each disc. Attach one base unit to each lamp body on either black panel adjacent to the round glass design. See Assembly Diagram 33.

The dashboard lamps have a top trim unit made from three discs sandwiched together. Draw and cut these six pieces from rigid cardboard as shown in Diagram 33. Paint them yellow. When dry, place one larger disc between two smaller ones and glue together to form a single piece. See Assembly Diagram 33. Glue the completed units to the top center of each dashboard lamp body as shown in Assembly Diagram 33.

Two small square ornaments are also attached to the back and

DIAGRAM 33
Dashboard Lamps



side panels of each lamp. Cut these squares from rigid cardboard as shown in Diagram 33 and paint them yellow. When dry, glue one square flat to the center of each plain black panel. The dashboard lamps are now complete.

Glue each lamp to the top corners of the dashboard along the inside edge of its back panel. The top of the lamp bodies should be even with the top edge of the dashboard. The round glass panel should face forward. Hold each lamp in position until the glue has dried. See the photograph of the finished model on page 110.

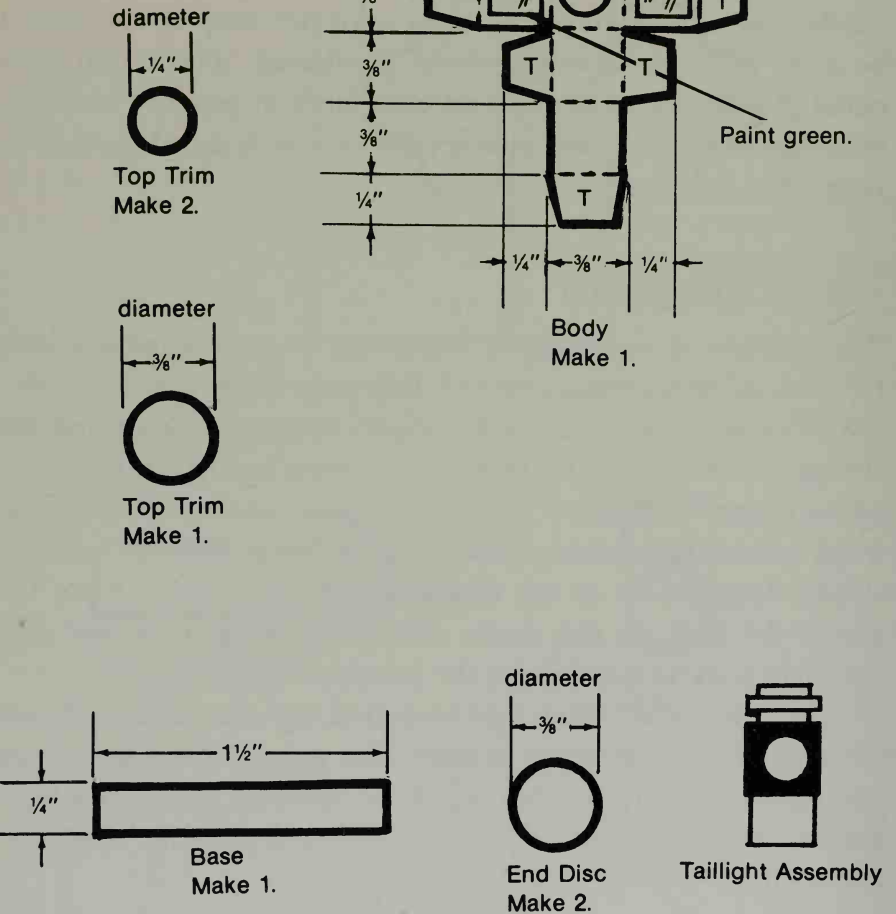
Taillight (Diagram 34)

The taillight of the Model T Runabout is constructed similarly to the dashboard lamps, although this piece is smaller, has multi-colored glass panels, and has no square ornament. Draw and cut the pattern for the taillight body as shown in Diagram 34. Use white construction paper. Draw the glass panels with pen and black ink and paint the red and green panels as shown. Draw the slanted lines shown in the diagram with lead pencil. Paint the rest of the body on this drawn side black. Score, fold, and glue the body piece as you did for the previous light bodies.

Draw and cut the base, base ends, and top trim discs as shown in Diagram 34. Use yellow construction paper for the base units and rigid cardboard painted yellow for the trim pieces. Assemble and attach these pieces as you did for the dashboard lamps and as shown in Assembly Diagram 34.

Attach the completed taillight to the back end of the trunk and chassis about $\frac{1}{4}$ inch in from the lower left corner of the trunk. Put a generous amount of glue on the upper half of the taillight panel opposite the circular glass design. Let the glue set for a few minutes, then press into position. Hold the light in place until the attachment is firm. See the photograph of the finished model on page 110.

DIAGRAM 34
Taillight



Light Fuel Tank (Diagram 35)

Almost all early automobiles were equipped with a small fuel tank that stored gas for lighting the car's lamps. On the Run-about, this was a two-part upright unit on the left running board.

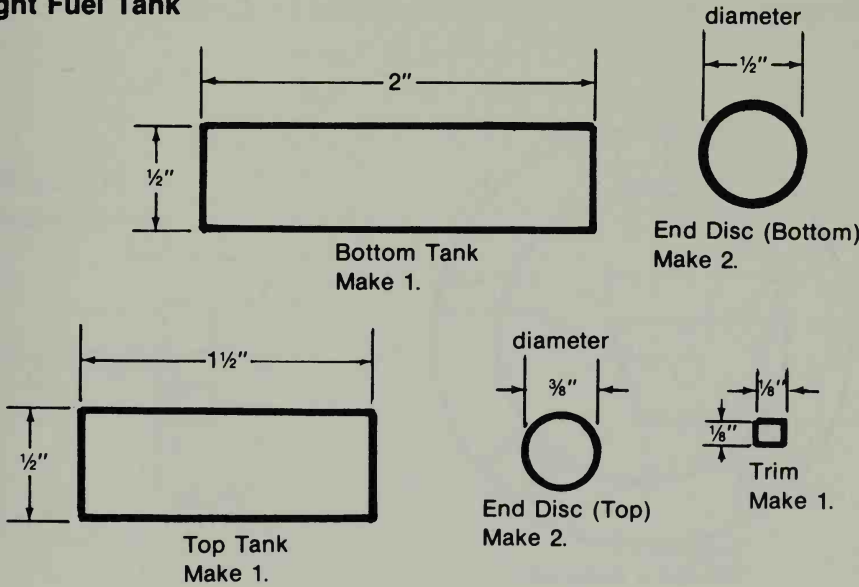
Draw and cut the bottom and top tanks as shown in Diagram 35. Use either black or yellow construction paper, whichever you prefer. Curve as for the other tubular parts and roll the bottom tank into a cylinder $\frac{1}{2}$ inch in diameter and the top tank into a cylinder $\frac{3}{8}$ inch in diameter. Glue closed.

Draw and cut the tank ends from the same color construction paper you used for the base pieces. See Diagram 35. Attach to the proper base piece by pressing the glued tank ends onto the discs.

Place the smaller tank on top of the larger one and glue to the exact center of the base disc. See the photograph of the finished model on page 110.

Cut the small ornament from rigid cardboard as shown in Diagram 35 and paint it a contrasting color from the rest of the tank. When dry, glue it flat to the top center of the top fuel tank. Finally, glue the completed unit to the left running board about $\frac{1}{8}$ inch from the back edge. See the photograph of the finished model on page 110.

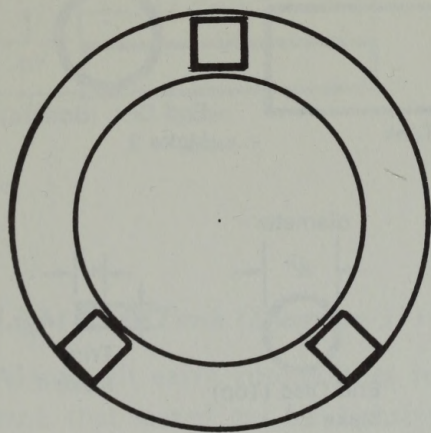
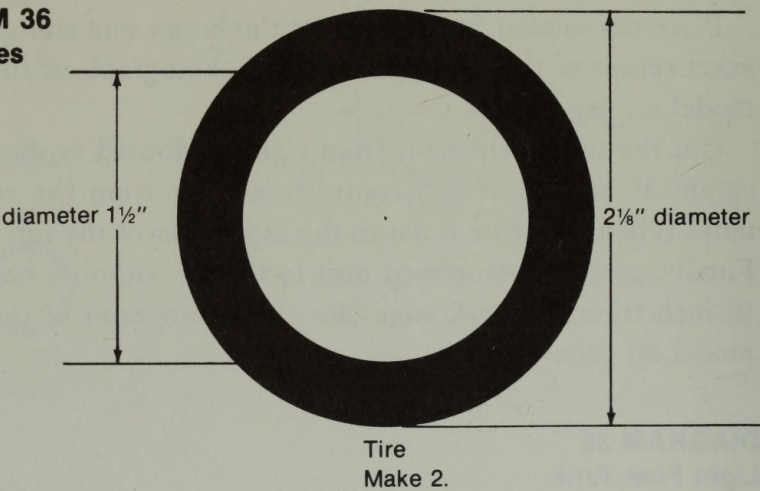
DIAGRAM 35
Light Fuel Tank



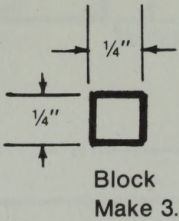
Spare Tires (Diagram 36)

Flat tires on the early cars were frequent so two or more spare tires were carried in case of emergencies. This car model has two spare tires attached to the left running board. Draw and cut the two tires from rigid cardboard as shown in Diagram 36. Paint the tire design black on both sides as shown. Cut out the center

DIAGRAM 36
Spare Tires



Tire-Block Assembly



portion of each tire, making a circular track first with your compass pencil, then cutting with your knife (and scissors, if desired).

The two spare tires are connected by three blocks. Draw and cut these pieces from rigid cardboard as shown in Diagram 36. Paint black. Glue the three blocks to one spare tire as shown in Assembly Diagram 36. Glue the second spare tire on top of these, keeping the tire edges even.

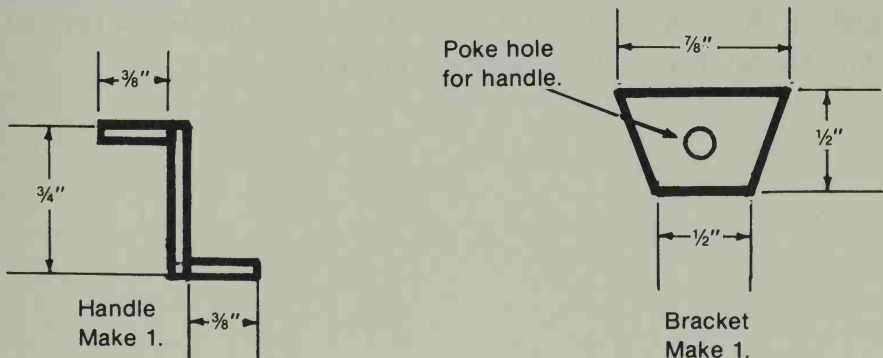
Place the tire unit on the left running board in front of the light fuel tank. Put glue on each tire where the unit touches the running board and press in place in a vertical position. See the photograph of the finished model on page 110.

Crank Handle (Diagram 37)

The Model T Runabout had to be started by cranking the engine. The handle for this model is made from lengths of round toothpick wood. Measure and cut these three pieces as shown in Diagram 37. Glue the pieces together as shown and paint the unit black. Set aside to dry while you make the bracket attachment.

Draw and cut the crank handle bracket as shown in Diagram

DIAGRAM 37
Crank Handle



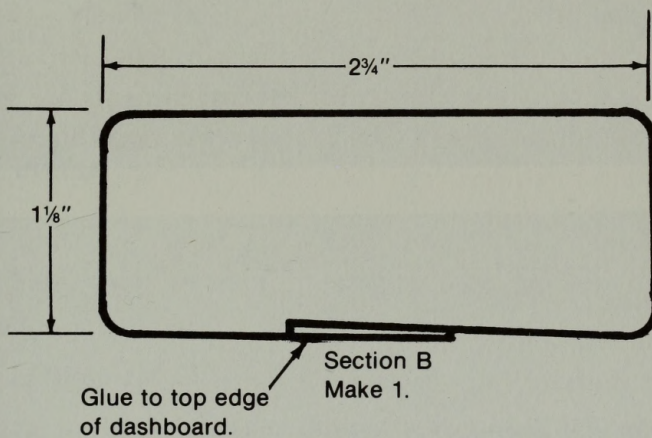
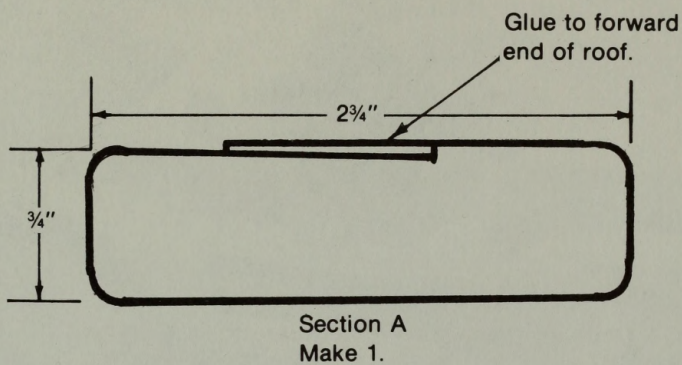
37. Use rigid cardboard and paint it black. Poke the hole in the center of the bracket with a nail and enlarge it by twisting the pointed end of a pencil through it. Glue one end of the crank handle into the hole. As soon as the attachment is secure, place the unit on the front springs with the long edge against the underside of the chassis. Center the bracket and glue in place. See the photograph of the finished model on page 110.

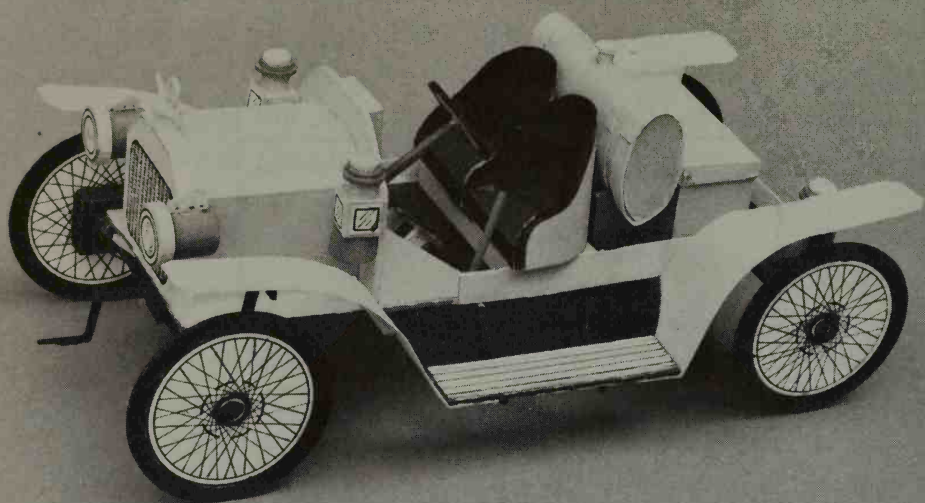
Windshield (Diagram 38)

The windshield of the Runabout is a two-part unit made of paper-covered wire. Cut section A $8\frac{1}{8}$ inches long and section B $8\frac{5}{8}$ inches long. Bend each to form the shapes shown in Diagram 38. Use a pencil or other round piece of wood to help curve the corners. Glue the overlapping ends of the wire together and hold with string or spring-type clips until the attachments are secure. (In the photographs of the finished model, the ends for frame B extend all the way to the corners but this amount of overlap is not necessary.) Paint the frames yellow.

The frames are attached to the model one at a time. Start with frame B, gluing the side indicated in Diagram 38 to the top edge of the dashboard. When almost firmly glued, bend the frame inward toward the steering wheel until the top edge of the frame is about $\frac{1}{2}$ inch from the wheel. Hold in place until the glue has hardened. Then glue frame A to the top edge of frame B, attaching it along the side shown in Diagram 38, and to the forward ends of the roof frame. Make sure frame A is perfectly vertical. The Model T Runabout is now complete.

DIAGRAM 38
Windshield





SPEEDSTER: 1914

A highly successful racer, the Speedster was a modified Model T. Its chassis and engine were from a 1914 Touring Car, while everything else was designed and built by the owner. It might be described as one of the earliest of the so-called Hot Rods. But to me, it is far more attractive than any of today's models, every line of the Speedster suggesting its grace and swiftness. Now a collector's item, the Speedster can only be seen in car exhibits and shows and, occasionally, in community parades and other special events.

BUILDING THE MODEL T SPEEDSTER OF 1914

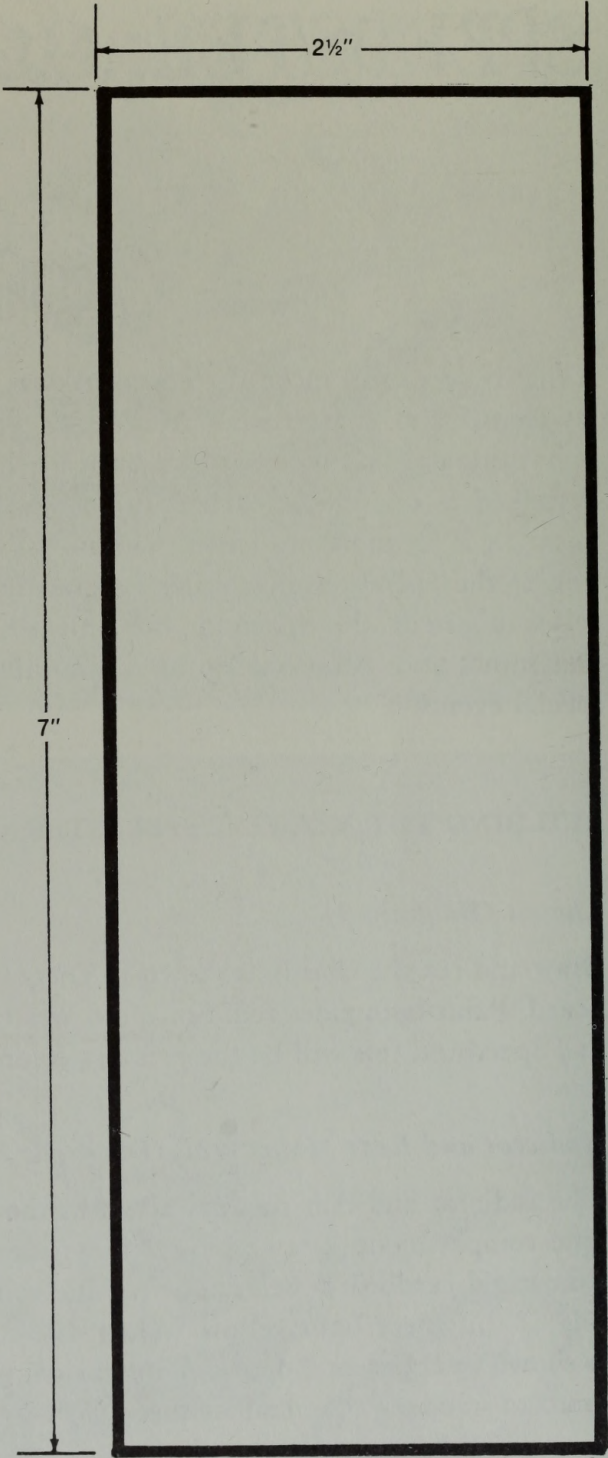
Chassis (Diagram 1)

Draw and cut the chassis as shown in Diagram 1 from rigid cardboard. Paint both sides red. Since red was the color of the original Speedster, this will be the primary color used for this model.

Radiator and Rear Motor Wall (Diagrams 2 and 3)

The radiator and rear motor wall form the two ends of the engine compartment. Draw and cut these identically shaped parts from rigid cardboard. Select one for the radiator and paint one side of this piece light yellow. When dry, draw the grill design as shown in Diagram 2 on the painted side, using soft lead pencil to avoid smudges. The rear motor wall does not require painting

DIAGRAM 1
Chassis



Make 1.

DIAGRAM 2
Radiator

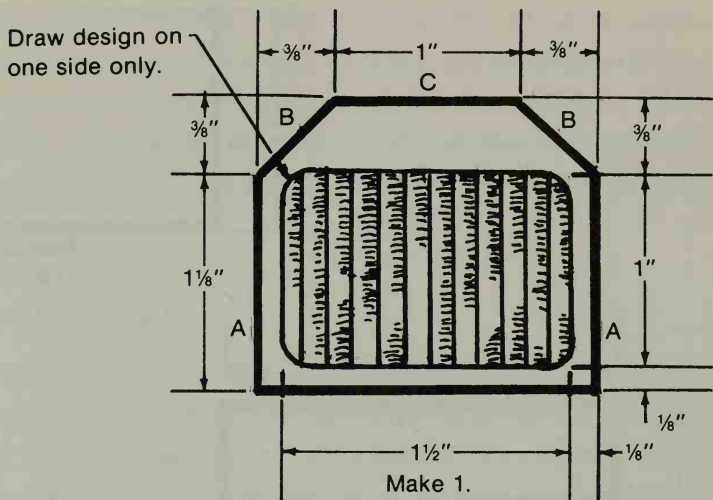
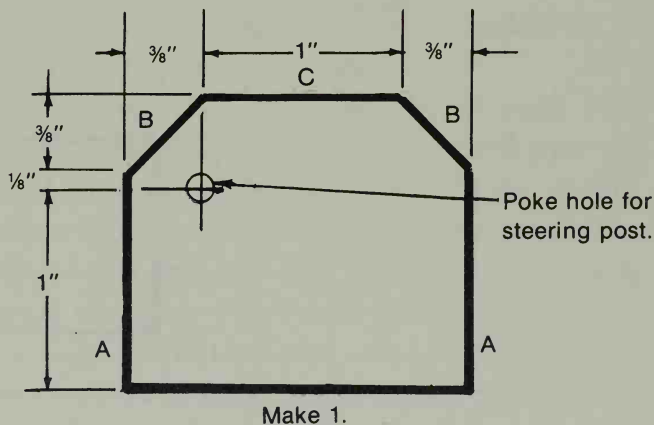


DIAGRAM 3
Rear Motor Wall

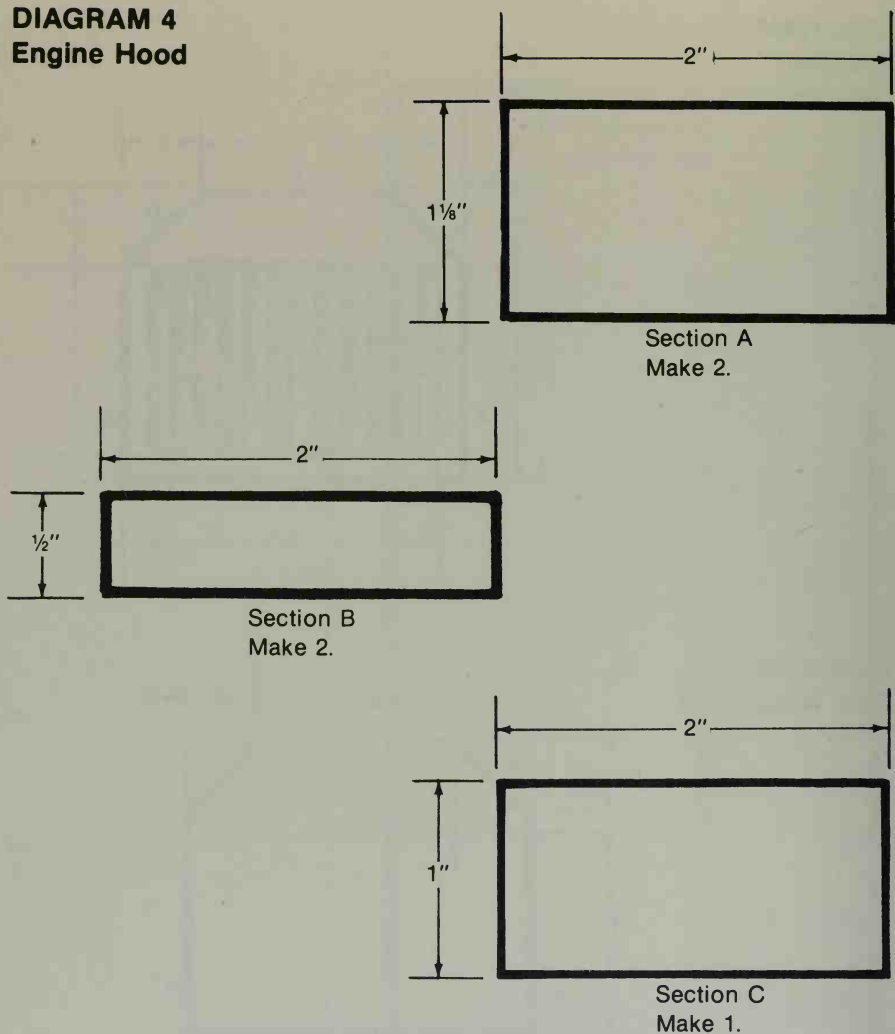


since it will be covered by the engine hood and dashboard. Poke the hole for the steering post as shown in Diagram 3, using a sharp nail.

Engine Hood (Diagram 4)

The radiator and rear motor wall are connected by five engine hood panels lettered A, B, and C. Draw, cut, and label these

DIAGRAM 4
Engine Hood



pieces as shown in Diagram 4. You can use red construction paper if it is slightly stiff. If you feel the construction paper is too thin and flexible, cut the panels from rigid cardboard and paint them the same color as the chassis.

Match the panels with the lettered edges of the radiator and rear motor wall. Glue together with the panels' long edges tight against one another, and the front and rear edges square with the radiator and rear motor wall.

Radiator Trim (Diagram 5)

Draw and cut the radiator trim as shown in Diagram 5. Use yellow construction paper to match the color of the radiator front. Wrap the trim around the front end of the engine compartment, keeping its front edge even with the edge of the radiator. Glue the trim in place, beginning at either end and working around the engine compartment to the opposite side. Trim any overhang with your scissors.

Radiator Cap (Diagram 5)

The radiator cap consists of a cylindrical body, a top, and two arms. Draw and cut the body pattern first as shown in Diagram 5, using the same color construction paper you used for the radiator trim. Pull the pattern lengthwise over the edge of your work table or ruler to curl. Then roll it into a cylinder $\frac{1}{4}$ inch in diameter. Glue the ends closed, sliding a pencil or other round piece of wood into the tube to use as a gluing support.

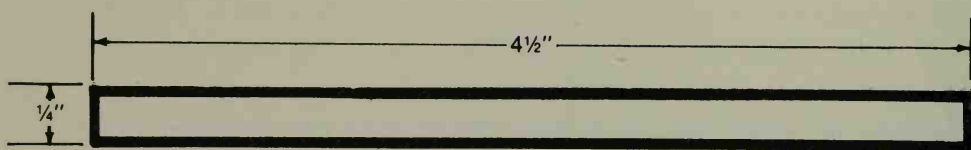
Draw the radiator cap top with your compass on rigid cardboard as shown in Diagram 5. Pull the compass pencil over the outline several times, forming a circular track to make cutting easier. Cut the pattern and paint to match the body piece. When dry, put glue on the edge of either end of the radiator cap body and press onto the cap disc, centering the two pieces.

Cut the two arms from round toothpick wood as shown in Diagram 5. Attach the arms to opposite edges of the radiator cap, gluing them at right angles to the edge of the top. When the arms are firmly attached, paint them to match the cap top.

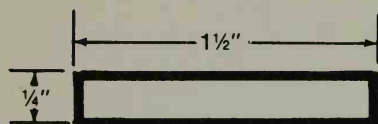
Radiator Gauge (Diagram 5)

On top of the radiator cap is a gauge made from rigid cardboard. Draw and cut this piece as shown in Diagram 5. Paint it yellow to match the top and arms. When dry, draw the gauge design on both sides as shown in Diagram 5, using a soft lead pencil. Glue

DIAGRAM 5 Radiator



Trim
Make 1.



Cap Body
Make 1.

diameter

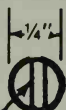


Cap Top
Make 1.



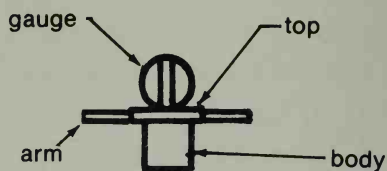
Arm
Make 2.

diameter



Gauge
Make 1.

Draw design on
both sides.



Radiator Cap Assembly

the gauge on edge so it is perpendicular to the surface of the cap top with its design running vertically. When secure, place the radiator cap unit on the center of the radiator trim and glue in position along the bottom edge of the cap body.

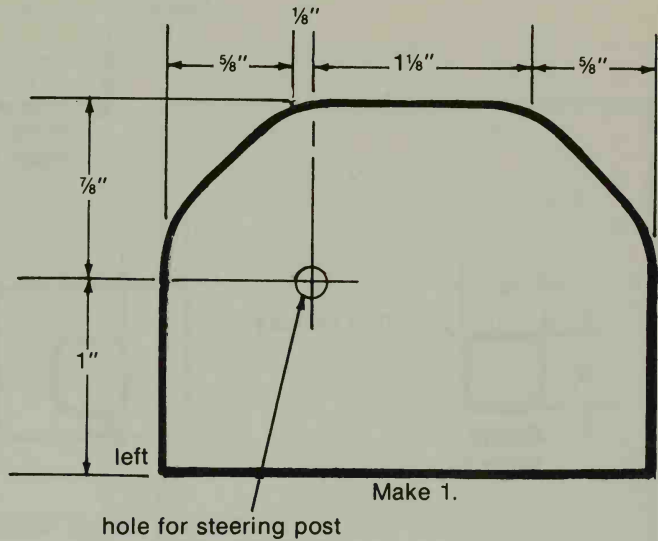
Engine Compartment Attachment

Place the completed engine compartment on either end of the chassis. Put glue along the bottom edges of the compartment and press in position, making sure the radiator is even with the short edge of the chassis and the sides of the compartment are the same distance from the sides of the chassis. See the photographs of the finished model.

Dashboard (Diagram 6)

Draw and cut the pattern for the dashboard from rigid cardboard as shown in Diagram 6. Paint the dashboard to match the radiator cap. When dry, poke the hole for the steering post as indicated in Diagram 6, using a sharp nail. Enlarge the hole with a pencil point until it is wide enough to hold a piece of large matchstick wood snugly. Set aside while you make the coil box and gauge.

DIAGRAM 6
Dashboard

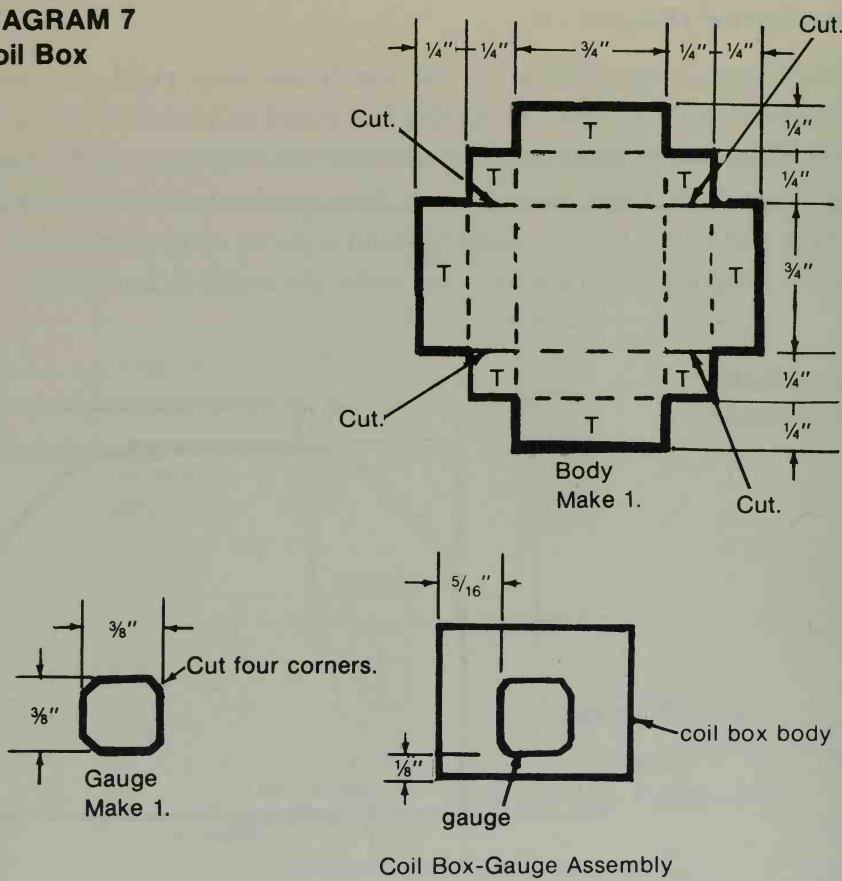


Coil Box (Diagram 7)

The coil box pattern is made from red construction paper. Draw and cut this piece as shown in Diagram 7. Lightly score along the dotted lines and fold the pattern into a boxlike shape that is slightly open on one side. Glue together at the corner gluing tabs T.

Draw and cut the coil box gauge from black construction paper as shown in Diagram 7. For drawing the pattern, a light-colored pencil may be easier to see than lead pencil. Center the gauge on one edge of the coil box pattern and glue in position. Then attach the coil box unit to the center of the dashboard so its bottom

DIAGRAM 7
Coil Box



edge is 1 inch from the bottom edge of the dashboard, gluing the unit in place along its long gluing tabs. See the photograph of the finished model on page 156.

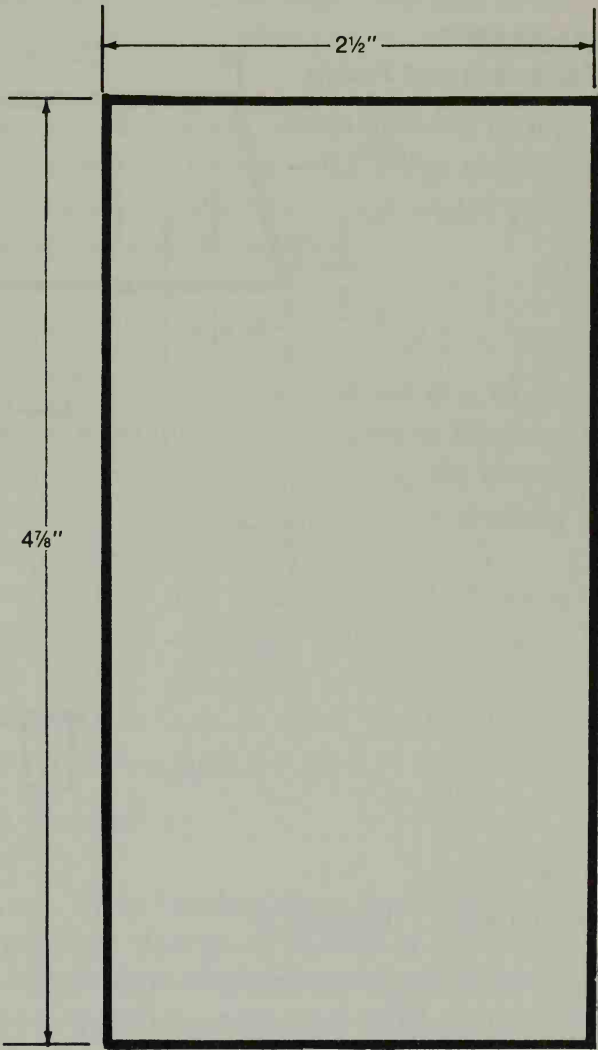
Dashboard Attachment

When the coil box unit is firmly glued, place the dashboard up-right on the chassis directly against the rear motor wall. The bottom corners of the dashboard should be even with the sides of the chassis and the holes for the steering post should be aligned. Put a generous amount of glue along the bottom edge and forward-facing surface of the dashboard and press it firmly in position.

Floor Mat (Diagram 8)

The floor mat is a large rectangular pattern made from black construction paper. It extends from the bottom of the dashboard to the back edge of the chassis. Draw and cut the pattern as shown in Diagram 9. Place in position on the chassis, aligning the edges of the two parts. Glue to hold, running your finger along the mat to remove any air bubbles.

DIAGRAM 8
Floor Mat



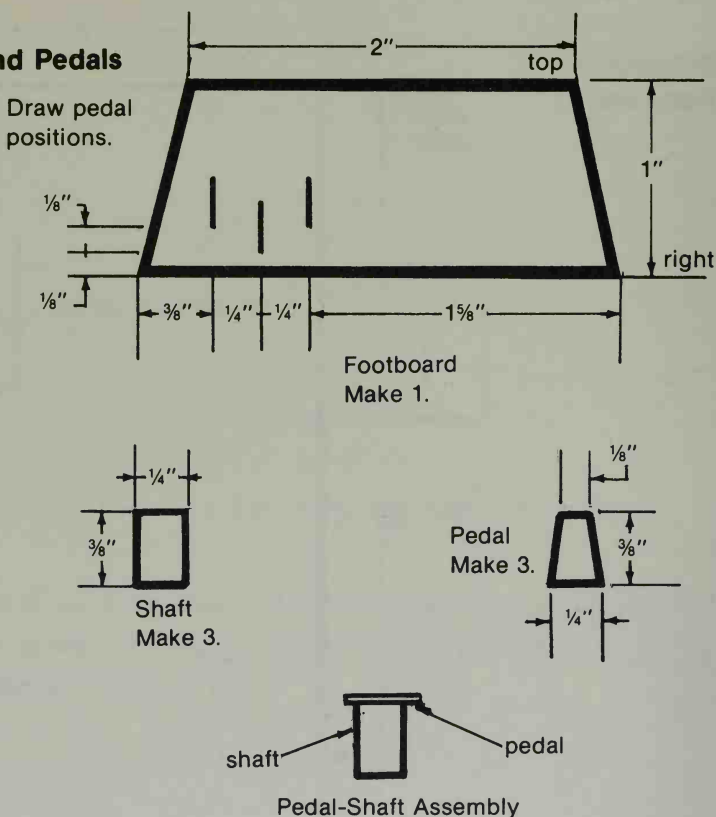
Make 1.

Slanted Footboard (Diagram 9)

The slanted footboard is made from rigid cardboard. Draw and cut the pattern for this piece as shown in Diagram 9. Paint one side black or cover with a piece of black construction paper. Mark the position for the three foot pedals on the black side as shown in Diagram 9, using a light-colored pencil for easy visibility. Set aside while you make the pedal units.

DIAGRAM 9

Footboard and Pedals



Foot Pedals (Diagram 9)

Cut the three foot-pedal shafts from rigid cardboard as shown in Diagram 9. Paint both sides of each piece to match the color of the dashboard. Set aside to dry.

Draw and cut the pedal pieces from any color construction paper you wish. Choose a color that contrasts well with the black surface of the slanted footboard. Glue one pedal to each shaft as shown in Assembly Diagram 9.

Footboard Assembly and Attachment

Glue the three foot-pedal units perpendicular to the slanted footboard at the positions you have marked. While the glue dries, measure and mark a straight line on the chassis $\frac{3}{4}$ inch from the dashboard.

Place the assembled footboard unit on the chassis with its top edge against the dashboard and its bottom edge along the line you've marked on the chassis. Attach the unit in this angled position, gluing along the long edges of the footboard.

Seat Base (Diagram 10)

The two seats of the Model T Speedster are attached to a single base. Draw and cut the pattern for this piece as shown in Diagram 10, using red construction paper. Lightly score along the dotted lines and fold the pattern into a boxlike shape that is partially open on one side. Glue together at the corner gluing tabs T.

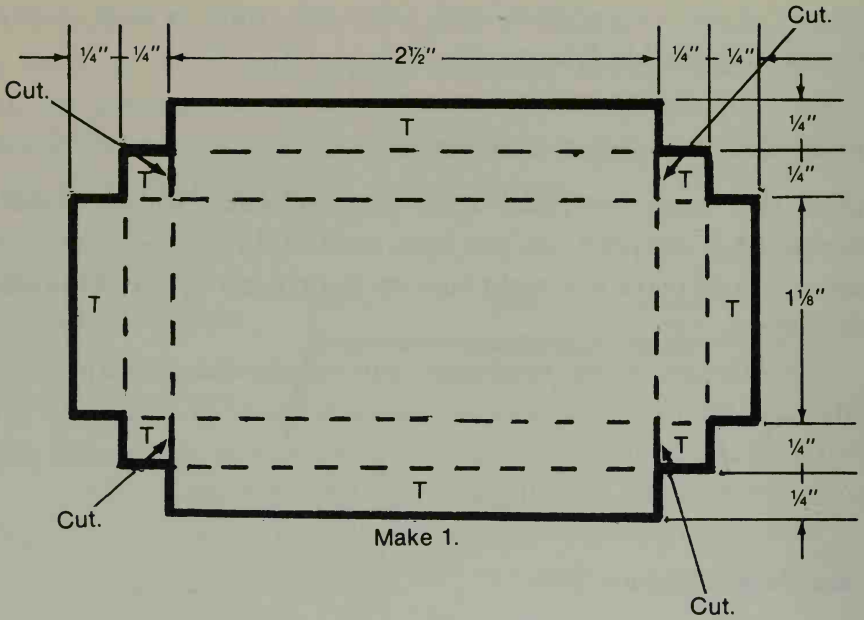
Mark a straight line on the floor mat $\frac{3}{4}$ inch from the bottom edge of the footboard. Place the seat base on the mat, open side facing downward, with its forward-facing panel even with the line marked on the mat. Glue the seat in place along its long gluing tabs, making sure its sides are even with the sides of the chassis.

Handbrake (Diagram 11)

Before additional parts are made for the driver's compartment, the handbrake must be installed. This piece consists of a post and a hand grip, both made from lengths of round toothpick wood. Cut the wood, following the measurements given in Diagram 11. Glue the hand grip to the post as shown in the diagram. Paint the

DIAGRAM 10

Seat Base

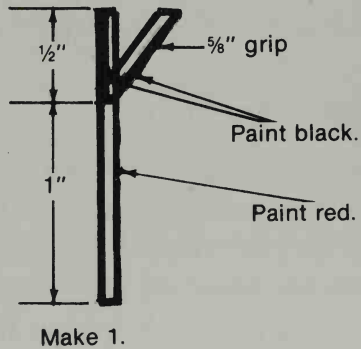


post below the base of the hand grip red; then paint the hand grip and the remainder of the post black.

While the paint dries, use a sharp nail to make a hole in the floor mat $\frac{3}{8}$ inch from the seat base and $\frac{1}{4}$ inch from the left edge of the chassis. The hole needn't go all the way through the

DIAGRAM 11

Handbrake

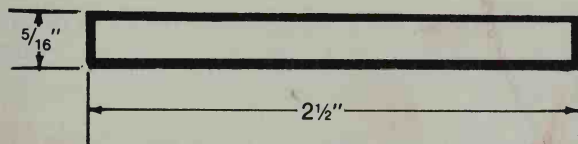
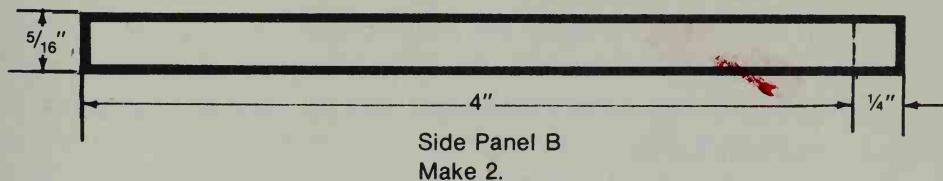
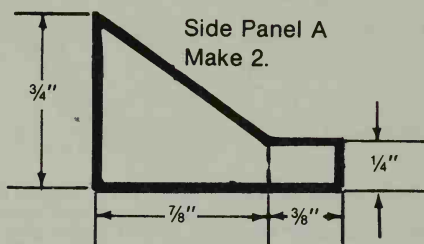


chassis. Put a generous amount of glue in the hole and push the bottom end of the handbrake post into it. Angle the brake slightly toward the seat base and hold for a few minutes until the glue has hardened. See the photographs of the finished model.

Side and Rear Chassis Panels (Diagram 12)

On the Speedster model, narrow side and rear panels extend from the dashboard all around the edge of the chassis. Draw and cut patterns A and B for the two side panels first, as shown in Diagram 12. Use the same color construction paper you used for the engine panels. Bend the rear $\frac{1}{4}$ -inch tabs of the B panels sharply, bending in opposite directions for the right and left panels.

DIAGRAM 12
Chassis Panels



Lightly crease the rear tabs of panels A, again bending in opposite directions.

Place the A panels on opposite sides of the footboard so the square ends fit in the right angle formed by the chassis and dashboard, slanting them inward to follow the edge of the footboard. Glue the wide end of each panel to the sides of the slanted footboard. Glue the bottom edge of each to the floor of the chassis. Place the B panels along the sides of the chassis, aligning them with and overlapping the rear tabs of the A panels. Bend the B panels' $\frac{1}{4}$ -inch rear tabs so they are square with the back edge of the chassis. Glue these panels in position. Slide your finger along the glued portions of each panel several times to make sure they are firmly attached.

Now draw and cut the rear panel from red construction paper as shown in Diagram 12. Glue this part to the back edge of the chassis, covering the short ends of the B panels. See the photograph of the finished model on page 156.

Seats (Diagram 13)

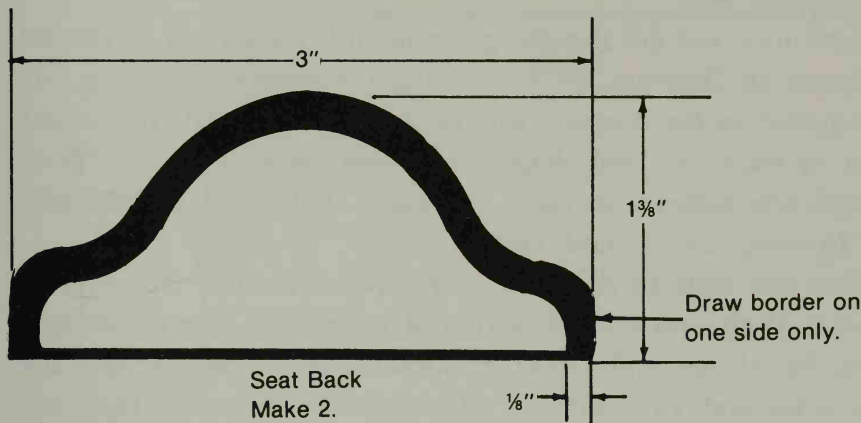
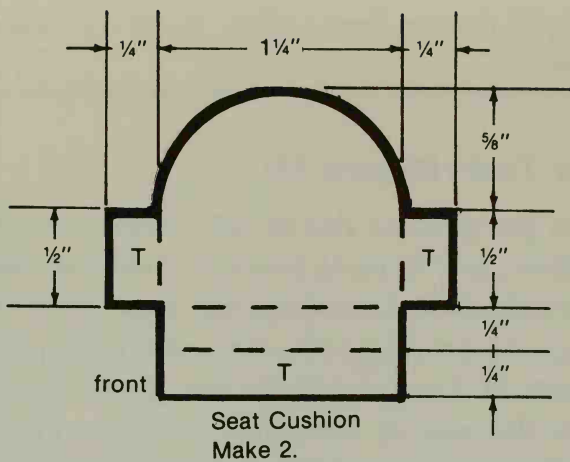
The Model T Speedster had two individual seats. These were the forerunners of the bucket seats that are so popular in many of today's sports cars. On the model, each seat is made in two parts, a boxlike seat cushion and a curved seat back.

Draw and cut the pattern for the two cushions as shown in Diagram 13. Use black construction paper. Lightly score along the dotted lines and bend the fold edges sharply. Set aside while you make the seat backs.

Draw and cut the two seat backs as shown in Diagram 13. Use red construction paper. Paint one side of each pattern black. This will be the inside surface of the seat back. When the paint is dry, turn over each piece and draw the black border as shown in Diagram 13.

Border side facing outward, gently pull each pattern lengthwise over the edge of your work table or ruler to curve. Attach

DIAGRAM 13
Seats



the seat back and cushion one at a time. To do this, put a generous amount of glue on the side gluing tabs and curved rear edge of the cushion. Beginning at either end, wrap the seat back around the glued cushion, making sure its bottom edge is even with the bottom edge of the side gluing tabs. Hold the two parts together until the attachment is secure. Repeat for the second seat.

Place the finished seat units side by side on the seat base. Glue each to the seat base along the front gluing tab of the cushion and the bottom edge of the seat back. The seats should extend

beyond the seat base slightly. See the photographs of the finished model.

Gas Tank (Diagram 14)

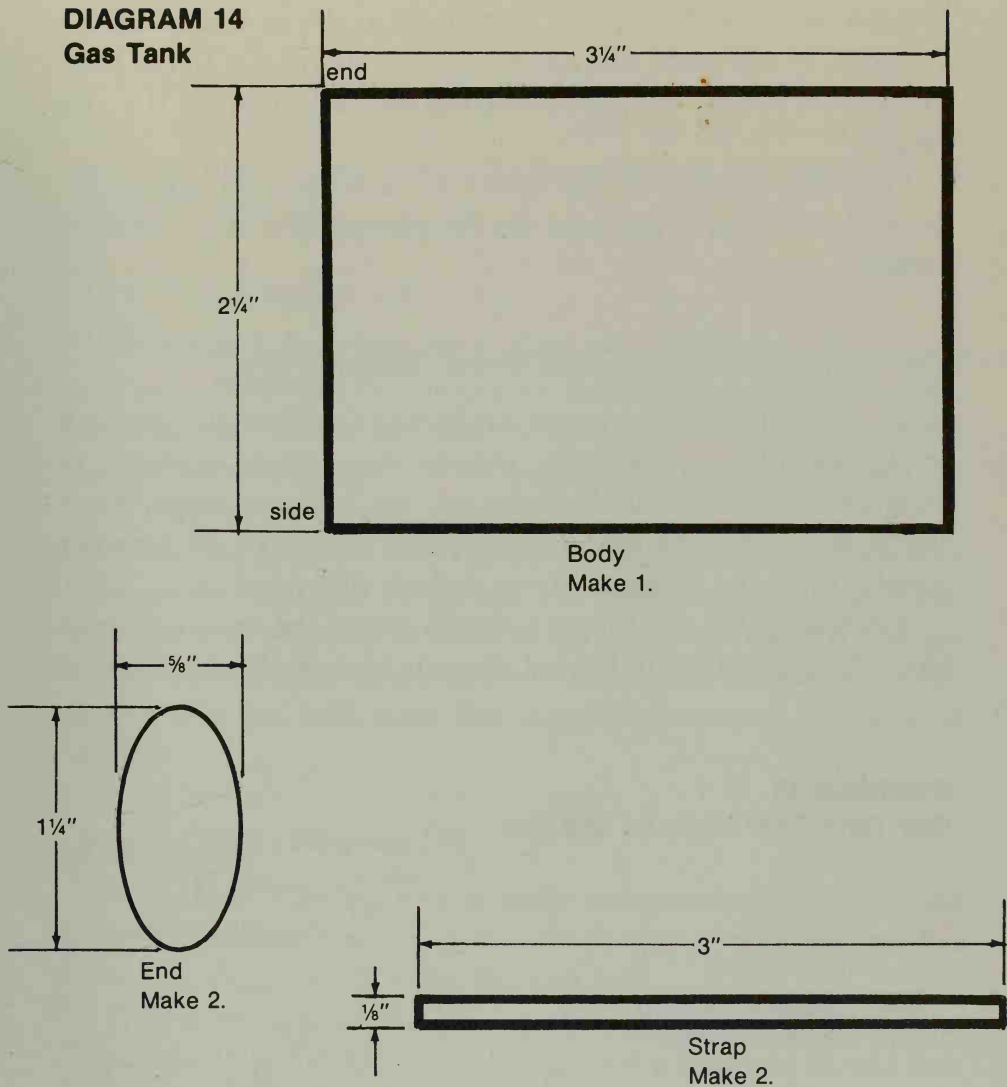
The gas tank for the Model T Speedster is, perhaps, the most difficult part to make because of its oval shape. However, if you work slowly and carefully, the construction will be much easier. Begin by drawing and cutting the body pattern as shown in Diagram 14. Use red construction paper. Pull this piece lengthwise over the edge of your work table or ruler a number of times, applying pressure on the pattern with your finger until the paper is in a tight curl.

Now draw and cut the two gas tank ends from rigid cardboard as shown in Diagram 14. If drawing the pattern following the dimensions in the diagram proves to be too difficult, you might want to trace the oval shape on carbon paper and then draw around this pattern on rigid cardboard. Paint one side of each end to match the gas tank body.

Glue the ends to the tank body one at a time. Put a large amount of glue on a small section of unpainted edge of one end piece. Attach one end corner of the tank body here, keeping the edge of the body even with the edge of the end. Once the two parts are securely glued, continue attaching small sections of the end and body patterns in the same way until you reach the starting point. Since the body is now in its oval shape, the second end piece is easier to attach. Glue it to the body, following the same attachment method. Once this end is firmly in place, glue the overlapped side edges of the body pattern to hold. Run your finger along these glued edges to make sure the bond is secure.

The gas tank has two red construction paper straps. Draw and cut the pattern for these pieces as shown in Diagram 14. Pull each strap lengthwise over the edge of your work table or ruler to curl. Then wrap the straps around opposite ends of the tank body, $\frac{1}{2}$ inch from the edge, and glue to hold.

DIAGRAM 14
Gas Tank



Gas Tank Filler Cap (Diagram 15)

The gas tank has a single filler cap, which consists of a body and a top. Draw and cut the pattern for the body first, as shown in Diagram 15. Use yellow construction paper. Pull the piece lengthwise over the edge of your work table or ruler to curl. Then roll into a cylinder $\frac{3}{16}$ inch in diameter and glue to hold.

Draw and cut the cap top from rigid cardboard as shown in Diagram 15 and paint this piece yellow. Glue the top to the body cylinder as shown in Assembly Diagram 15, centering the two parts.

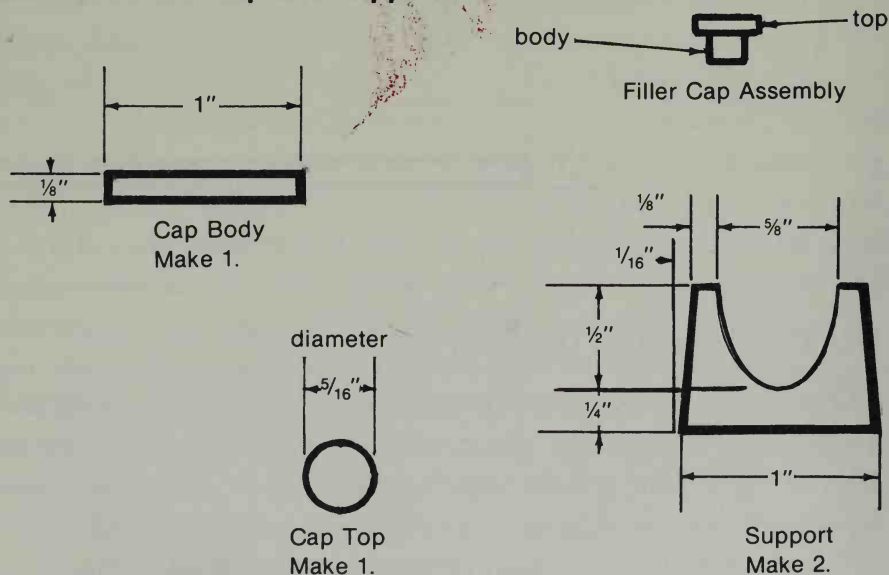
Place the cap unit on the center of either narrow side of the gas tank and glue in position. See the photographs of the finished model.

Gas Tank Support and Attachment (Diagram 15)

Two rigid cardboard supports are needed to attach the gas tank to the rear of the seats. Draw and cut these pieces as shown in Diagram 15, using your knife to cut the half-oval shape. Place the tank on the supports to make sure the parts fit together snugly. Paint the supports brown to look like wood.

When dry, glue one support to each side of the chassis, $\frac{3}{8}$ inch from the edge, directly behind the seat base. Hold the supports

DIAGRAM 15
Gas Tank Filler Cap and Support



in a vertical position until the glue has set. See the photographs of the finished model.

To attach the gas tank unit, put a generous amount of glue on each support's curved edge. Then press the gas tank firmly but carefully onto the supports, centering the tank and holding it in a vertical position.

Tool Box (Diagram 16)

The Model T Speedster has a large tool box directly behind its gas tank. Draw and cut the pattern for the box and lid as shown in Diagram 16. Use red construction paper. Lightly score the dotted lines carefully. Fold each piece into its proper shape and glue together at the gluing tabs T.

When the parts are firmly attached, put a generous amount of glue on the top panel of the box and press the lid onto it. Then glue the tool box unit to the floor mat and rear edges of the gas tank supports, making sure the box is the same distance from the chassis edge on both sides. See the photographs of the finished model.

Steering Unit (Diagram 17)

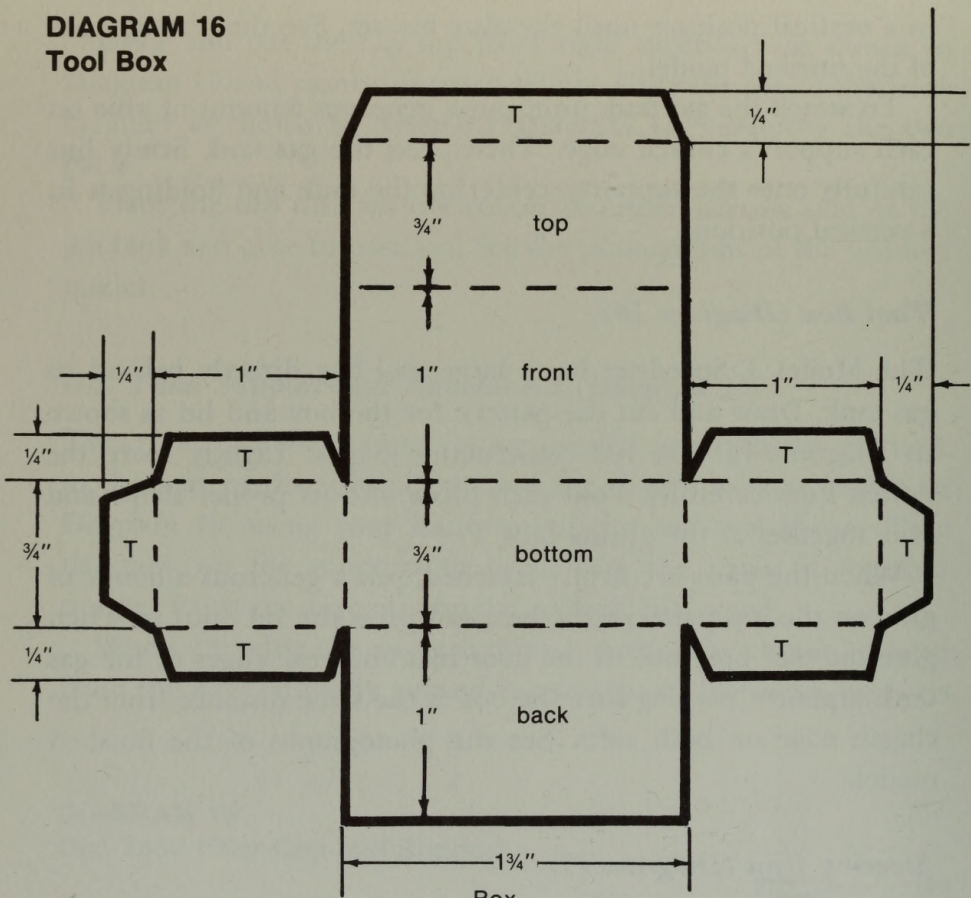
The two-part steering unit is made and attached next. Cut the steering post first from large matchstick wood or similar wood as shown in Diagram 17. Paint the post red.

Next draw and cut the steering wheel from rigid cardboard as shown in Diagram 17, making it as perfectly round as you can. On both sides, paint the black border around the rim as shown in the diagram. Draw the spokes design on both sides, using pen and ink.

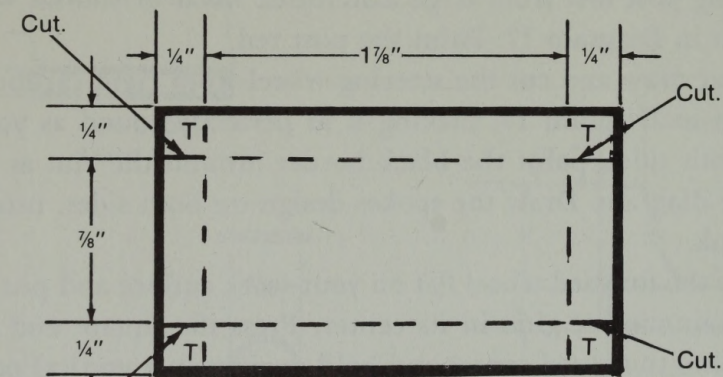
Lay the finished wheel flat on your work surface and put a generous amount of glue in its center. Press the square end of the post onto the glued center and hold upright in a vertical position until the glue has set.

As soon as the steering unit is firmly attached, put glue on the

DIAGRAM 16
Tool Box

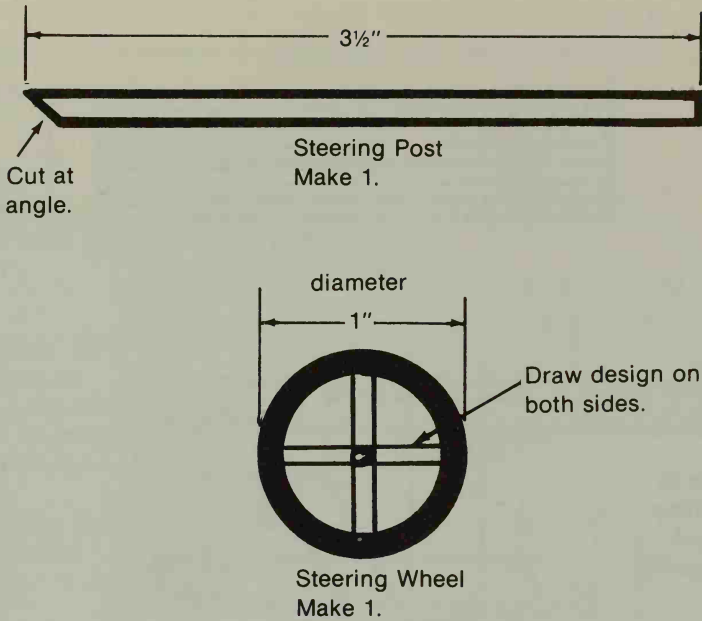


Box
Make 1.



Lid
Make 1

DIAGRAM 17
Steering Unit



angled end of the post and around the hole in the dashboard. Let the glue dry for a few minutes until it becomes tacky, then slide the post through the hole in the dashboard, pressing the glued end onto the chassis inside the engine compartment. Hold the unit in place until it is secure, positioning the bottom edge of the wheel about $\frac{1}{2}$ inch directly above the edge of the seat cushion. See the photographs of the finished model.

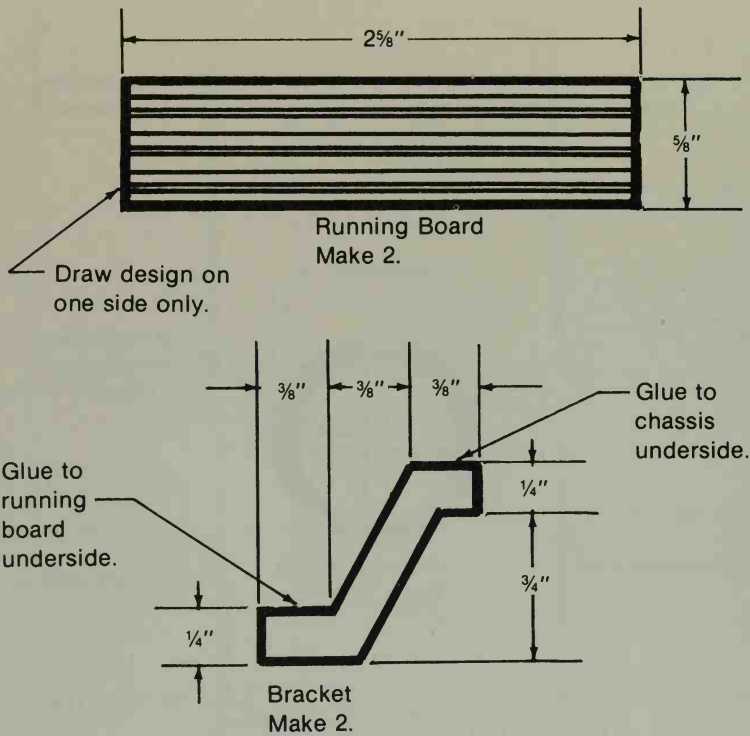
Running Boards (Diagram 18)

Draw and cut the pattern for the two running boards from rigid cardboard as shown in Diagram 18. Draw the design as shown on one side of each piece, using pen and ink.

Each running board is attached to the chassis by two rigid cardboard brackets. Draw and cut these four pieces as shown in Diagram 18. Paint black. When dry, glue two brackets to the under-

DIAGRAM 18

Running Boards and Brackets



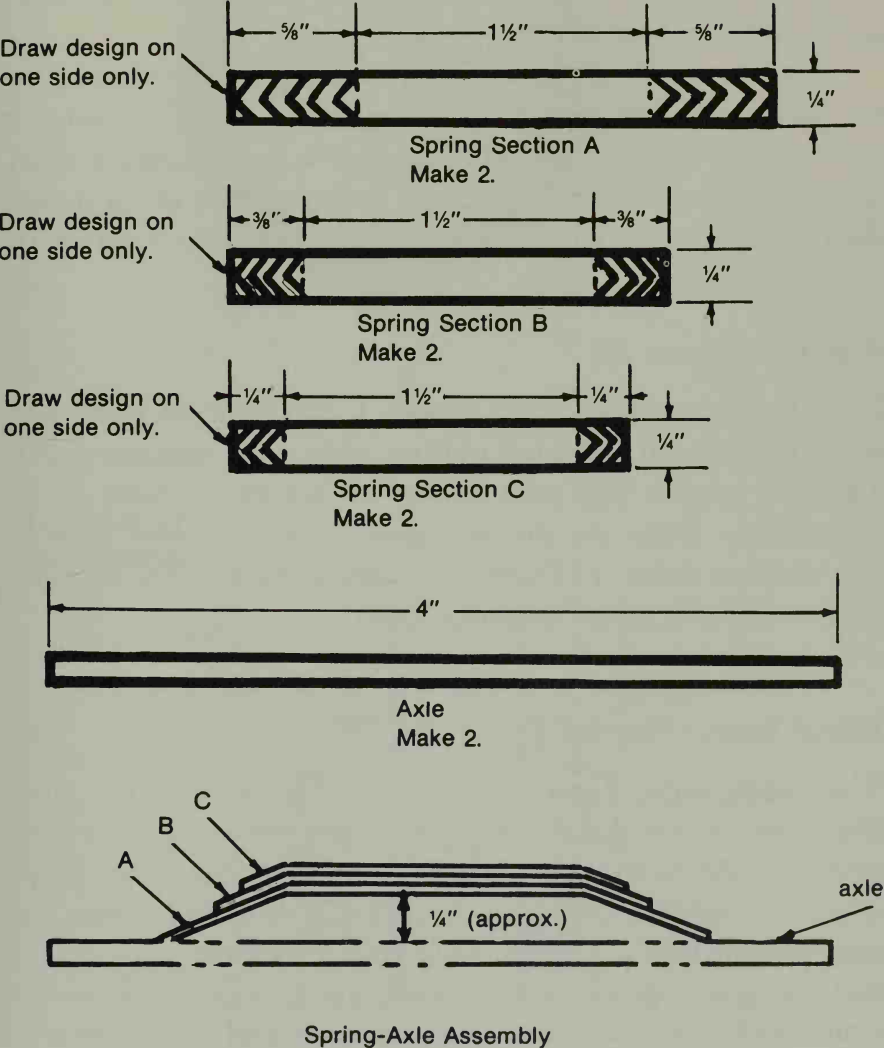
side of each running board, positioning them $\frac{3}{4}$ inch from opposite ends. Make the bracket attachment along the edge indicated in Diagram 18, holding each piece upright until the glue has set.

Attach the running board units to the underside of the chassis along the edge indicated in Diagram 18. To do this, first turn the car model upside down, resting it on supports to protect the steering wheel, radiator cap, and gas tank filler cap. Glue the brackets to the chassis parallel to the front and rear edges and with the rear bracket $2\frac{1}{2}$ inches from the rear edge of the chassis. The upper corners of the slanted bracket edges should be even with the side edges of the chassis. See the photographs of the finished model.

Axles (Diagram 19)

Cut the two axles from large matchstick wood or similar wood to the length shown in Diagram 19. Paint the axles black. Set aside to dry while you make the spring units.

DIAGRAM 19
Axles and Springs



Springs (Diagram 19)

The front and rear spring units of the Model T Speedster each consist of three stacked sections. Draw and cut these six parts from rigid cardboard as shown in Diagram 19. Paint the sections yellow. When dry, draw the spring design as shown in Diagram 19, using a soft lead pencil. Turn over each piece and mark the inside edge of the design on the underside. With your knife, score along these lines and bend the design ends as shown in Assembly Diagram 19. Stack the sections as shown in the same diagram and glue together along their centers.

Place one completed spring unit on each axle, centering the two parts. Bend the ends of spring section A until its center is $\frac{1}{4}$ inch above the axle, then glue the ends to the matchstick wood. When the attachment is secure, glue the loose ends of spring sections B and C to the ends of A and B. See Assembly Diagram 19.

Wheels (Diagram 20)

Draw the four wheels of the Model T Speedster on rigid cardboard, making an indented outline with your compass pencil. Turn the pattern into your scissors as you cut to form a nice round shape. Draw the tire and spokes design on both sides of each wheel as shown in Diagram 20, using pen and ink. Set aside to dry while you make the wheel boxes.

Wheel Boxes (Diagram 21)

The wheels and spring-axle units are connected by wheel boxes. Draw and cut the pattern for these four parts as shown in Diagram 21. Use black construction paper. Cut the X-slot in the center and lightly score along the dotted lines of each piece. Fold each pattern into a boxlike shape that is partially open on one side and glue together at the corner gluing tabs T. As you assemble each box, put a small weight on it to hold it together until

DIAGRAM 20
Wheels

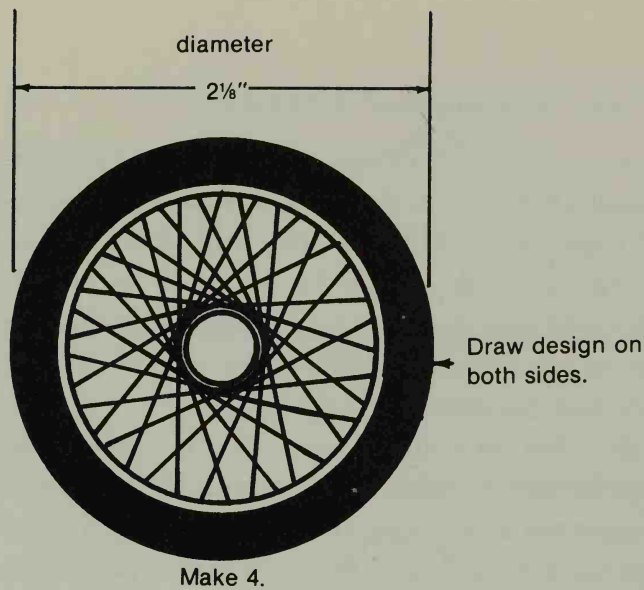
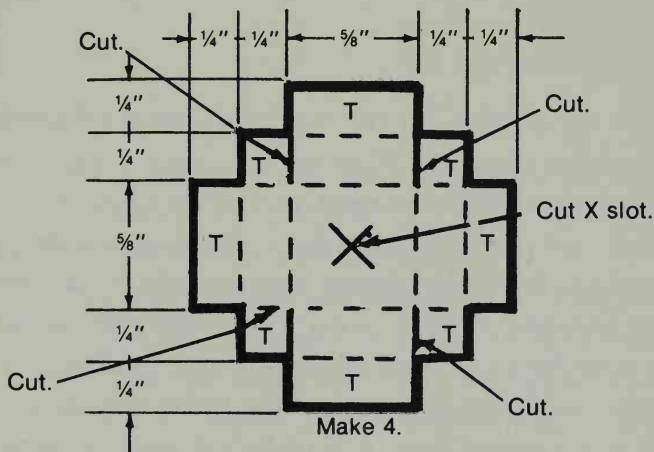


DIAGRAM 21
Wheel Boxes



the glue dries. Then attach one wheel box to the center of each wheel with the X-slot facing outward.

Wheel-Axle Assembly and Attachment

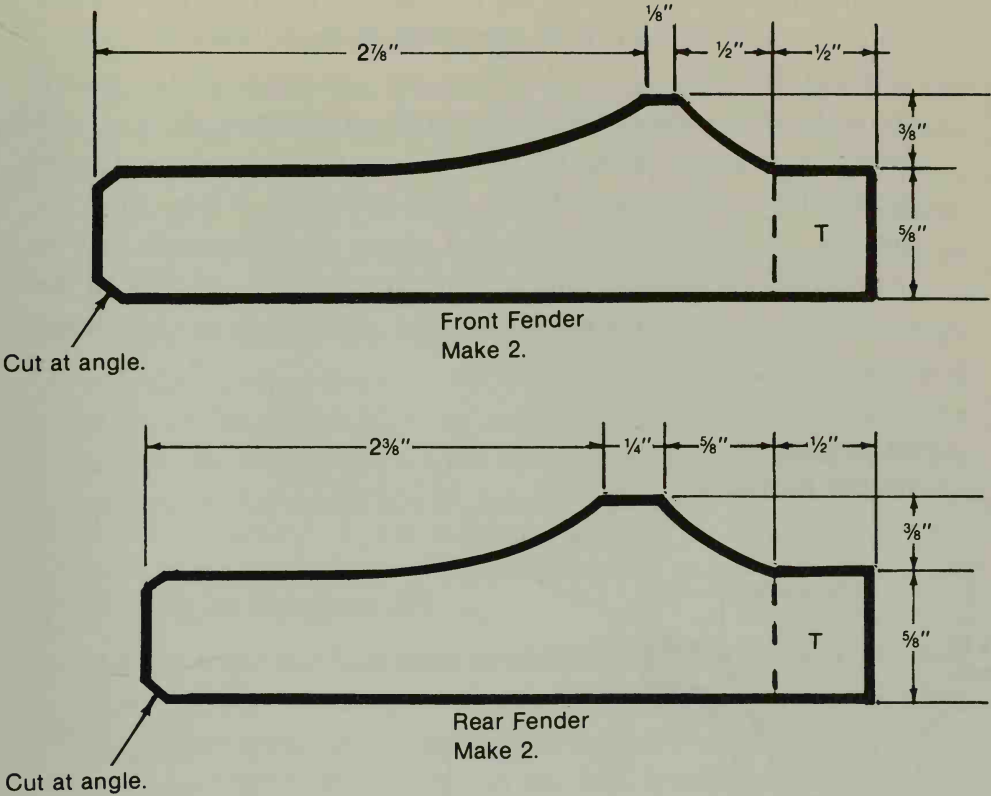
Place each wheel unit flat on your work surface. Put a generous amount of glue around the X-slot of one wheel box and on one end of either axle. Slide the axle end through the hole in the wheel box and press against the center of the wheel. Stand your ruler upright next to the axle to check its vertical position. Hold the axle in place until the glue has hardened. Repeat for the second axle and the second set of wheels.

For the wheel-axle attachment, the car model should be in the same upside-down position as for the running board attachment. Put a generous amount of glue on the straight center section of each spring section A and press these two parts against opposite ends of the chassis. Make sure that the spring units are even with the front and back edges of the chassis and that the wheels are the same distance from the sides of the chassis and are aligned with one another. Leave the model in its upside-down position until the fenders and fender brackets have been made and attached.

Front Fenders (Diagram 22)

Draw and cut the pattern for the two front fenders from red construction paper as shown in Diagram 22. Lightly score along the dotted lines. Pull each fender gently over the edge of your work table to curve, curving opposite sides of the pattern for the right and left fenders. Bend the gluing tabs sharply. Glue these tabs to opposite running boards along the underside of the front end. Then glue the extending sections of the fenders to the edge of the chassis. See the photographs of the finished model. Brackets to be made and attached later will make the fenders more secure.

DIAGRAM 22
Fenders



Rear Fenders (Diagram 22)

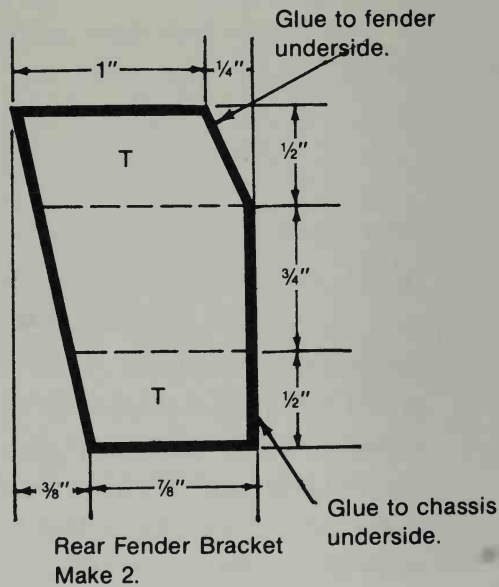
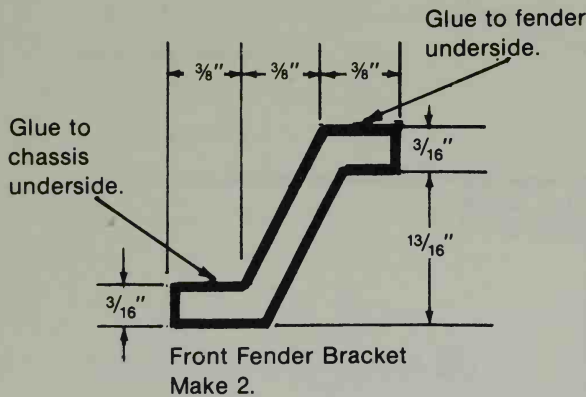
Draw and cut the pattern for the two rear fenders from red construction paper as shown in Diagram 22. Lightly score along the dotted lines. Pull these pieces over the edge of your work surface as you did for the front fenders, but apply more pressure to form a sharper curve. Bend the gluing tabs and glue to opposite running boards along the rear underside. Glue the fender extensions to the sides of the chassis panels. Again, a bracket attachment will make these parts more secure.

Front Fender Brackets (Diagram 23)

Draw the pattern for the two front fender brackets from rigid cardboard as shown in Diagram 23. Cut the parts with your knife since scissors will twist them out of shape. Paint black.

When dry, glue the brackets to the underside of the chassis along the edge indicated in Diagram 23, positioning them $\frac{1}{2}$ inch from the front end of the chassis. Make sure the brackets are perpendicular to the chassis. When the attachment is firm, glue the brackets to the fender undersides along the edge indicated in Diagram 23. If needed, glue a 1-inch length of matchstick to the underside of each fender, gluing the matchstick to the chassis

DIAGRAM 23
Fender Brackets



and the bottom edge of the dashboard. See the photograph of the finished model on page 156.

Rear Fender Brackets (Diagram 23)

The rear fenders have a different kind of bracket. Draw and cut the pattern for the two rear fender-support pieces from red construction paper as shown in Diagram 23. Carefully score along the dotted lines for the chassis tabs; then turn over each pattern and lightly score the lines for the fender tabs. Bend the tabs so the brackets form a Z-shape when viewed from the side.

Glue the tabs to the chassis and fenders one at a time. First attach the chassis tab so its rear edge is $\frac{1}{4}$ inch from the rear end of the chassis. Then glue the opposite tab to the underside of the fender. Repeat for the second bracket. As soon as these parts are secure, the car model can be turned right side up.

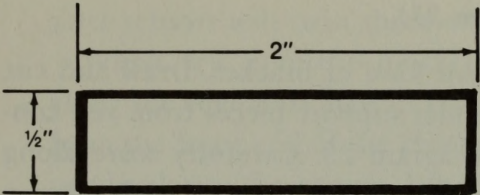
Headlights (Diagram 24)

All the early cars had large headlights on both sides of the radiator, and the Speedster was no exception. On the model, these two parts consist of two enclosed cylinders end to end and a rigid cardboard trim. Draw and cut the two headlight bodies first as shown in Diagram 24. Use red construction paper. Pull each pattern lengthwise over the edge of your work table or ruler to curl. Roll each into a cylinder $\frac{1}{2}$ inch in diameter. Glue closed. Slide a pencil or other round piece of wood through the cylinder for support as you glue the parts together.

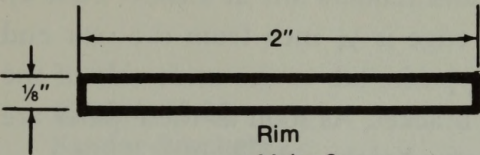
The ends of the headlight bodies are covered with red construction paper discs. Draw and cut these four pieces as shown in Diagram 24. Lay the end discs flat on your work surface. Put glue on the edge of the headlight body ends and press onto the end discs one at a time.

At the forward end of each headlight body is a narrow brass rim. This piece is constructed in the same way as the headlight

DIAGRAM 24 **Headlights**

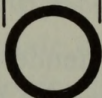
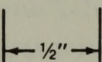


Body
Make 2.



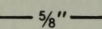
Rim
Make 2.

diameter

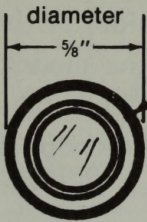


Body End
Make 4.

diameter



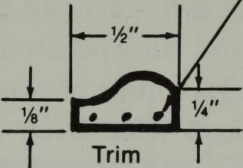
Rim End
Make 2.



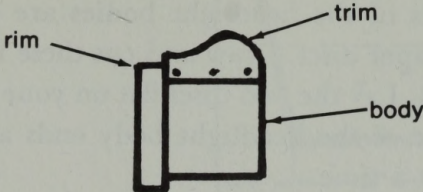
Glass
Make 2.

Draw design on
one side only.

Draw dots on
both sides.



Trim
Make 2.



Headlight Assembly

body. Draw and cut the rim body first as shown in Diagram 24, using yellow construction paper. Curve and roll into a cylinder $\frac{5}{8}$ inch in diameter. Glue closed.

Draw and cut the rim ends from yellow construction paper as shown in Diagram 24. Attach one piece to each rim body, leaving one end to be covered by the headlight glass. Then glue one rim unit to each headlight body, centering the end pieces of the two parts.

Draw and cut the pattern for the two headlight glass pieces as shown in Diagram 24. Use white construction paper and draw the glass design on one side of each as shown, using pen and ink. Glue one pattern to the open end of each rim body, design side outward.

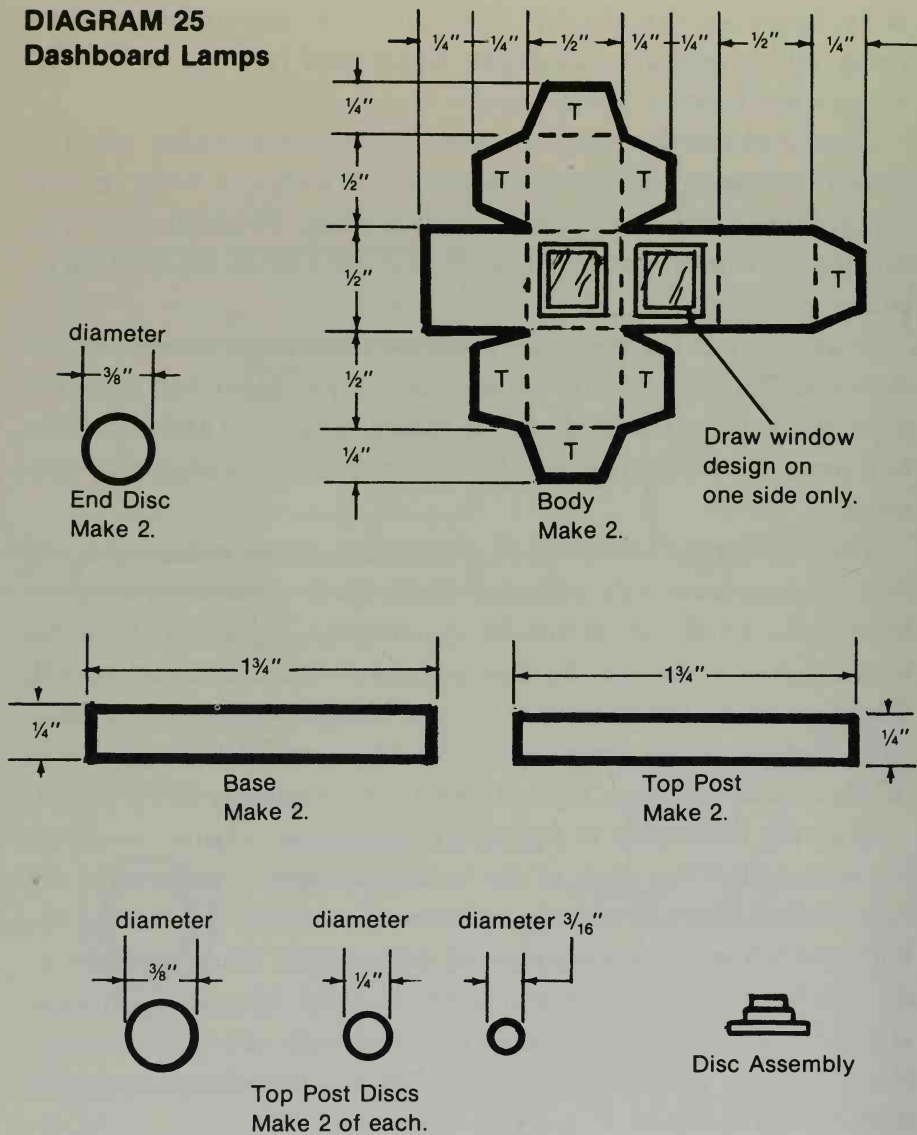
The headlights had a small, decorative ornament on the top side of the main body cylinder. Draw and cut these two parts from rigid cardboard as shown in Diagram 24. Paint the ornaments yellow and draw the dots as shown with a soft lead pencil. Glue one ornament upright along the straight edge on each headlight body with the upward curving edge toward the rear. Hold in place until the glue has hardened. See Assembly Diagram 24.

Glue the headlights to opposite sides of the radiator, positioning each so the top edge of the headlight body is even with the base of the angled side of the radiator trim and so the rear of the body is even with the rear edge of the radiator trim. It is best to do this from the front of the model to make sure the lights are aligned with one another and the ornaments are perfectly vertical. Hold in place until the glue has set. See the photographs of the finished model.

Dashboard Lamps (Diagram 25)

The Model T Speedster had two dashboard lamps as additional lighting. Like the two headlights, these parts are constructed from several smaller pieces. Draw the two dashboard bodies first as shown in Diagram 25. Use white construction paper. Draw the

DIAGRAM 25
Dashboard Lamps



window design as shown on one side of each pattern, using pen and ink. When dry, turn over and lightly score along the dotted lines. Turn over again and paint the window side of each pattern red, carefully painting around the ink design. When dry, fold

each to form a box and glue closed at the gluing tabs T. Set aside while you make the remaining lamp pieces.

Draw and cut the two dashboard lamp bases from red construction paper as shown in Diagram 25. Curve and roll into cylinders $\frac{3}{8}$ inch in diameter, then glue closed.

Draw and cut the two base ends from red construction paper as shown in Diagram 25. Glue one end to each base cylinder. Then place the open end of each lamp base on the bottom panel of a body piece. Center and glue in position.

On the panel opposite each base are a cylindrical post and three discs. Draw and cut the two posts first from red construction paper. Curve and roll each into a cylinder $\frac{1}{4}$ inch in diameter. Glue closed.

Draw and cut the six decorative discs from rigid cardboard as shown in Diagram 25. Paint the smallest discs yellow and the remaining four red. When dry, stack the discs as shown in Assembly Diagram 25, centering them on one another. Glue together.

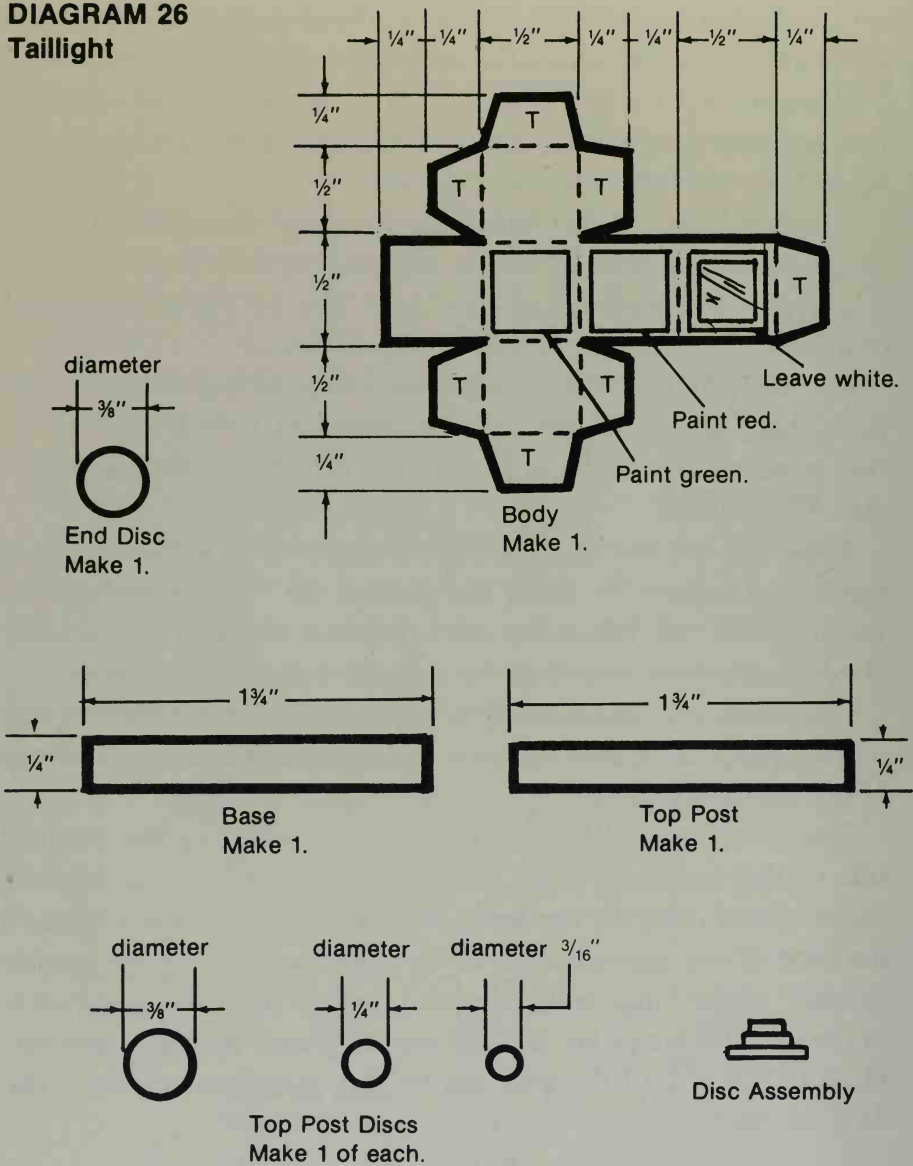
When the ornaments are firmly attached, glue one to one end of each post. Then glue the post and disc units to the top panels of the dashboard lamps, again centering the two parts.

The completed dashboard lamps are attached to the forward side of the dashboard with their window panels facing forward and outward from the car body. Glue the lamps one at a time to the base of the slanted edge of the dashboard so approximately one-half of the lamp body extends outward from the dashboard. Make sure the lamps are aligned vertically and with one another. Hold in place until the glue has set. See the photographs of the finished model.

Taillight (Diagram 26)

The taillight is the last light to be added to the car model. It is identical to the dashboard lamps except for its three drawn glass panels. Draw and cut the taillight body, base, base end, top post, and discs as shown in Diagram 26. Use the same materials and

DIAGRAM 26
Taillight



assembly methods as for the dashboard lamps. However, note that the body piece has three drawn panels, instead of two, and that only two are painted.

Glue the completed taillight to the rear chassis panel on the left side. Make this attachment along the light's plain panel so

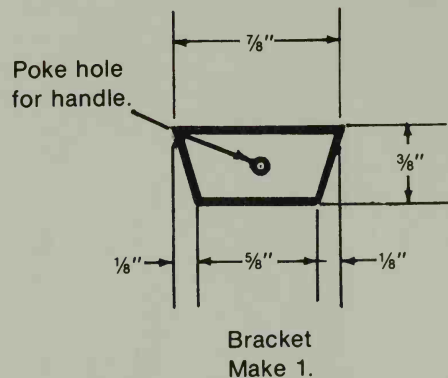
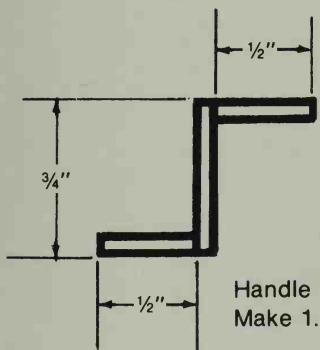
the red panel faces rearward. See the photograph of the finished model on page 156.

Crank Handle (Diagram 27)

The crank handle is made from three lengths of round toothpick wood. Cut these to the lengths given in Diagram 27 and glue together as shown. Paint the unit black and set aside to dry while you make its attachment bracket.

Draw and cut the crank handle bracket from rigid cardboard as shown in Diagram 27. Poke the center hole with a sharp nail, then paint the bracket black. When dry, glue one end of the crank handle in the bracket hole, making sure the handle length is perpendicular to the bracket. Then attach the completed unit to the front center of the front spring. See the photograph of the finished model on page 156.

DIAGRAM 27
Crank Handle



FURTHER READING

- Clymer, Floyd. *Henry's Wonderful Model T—1909–1927*. New York: Bonanza Books (Div. of Crown Publishers, Inc.), 1955.
- Kimes, Beverly Rae. *Henry's Model T*. *Automobile Quarterly*, vol. 10, no. 4, 1972.
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Frank Ross, Jr., is the author of numerous highly praised books on scientific and technical subjects for young people. An extraordinarily talented model maker as well, Mr. Ross is also responsible for such popular Lothrop craft books as *ANTIQUE CAR MODELS: Their Stories and How to Make Them*, *FLYING PAPER AIRPLANE MODELS, HISTORIC PLANE MODELS: Their Stories and How to Make Them*, *HISTORIC RACING CAR MODELS: Their Stories and How to Make Them*, and *MODEL SATELLITES AND SPACECRAFT: Their Stories and How to Make Them*. Mr. Ross and his wife Laura, also an author, live in Southampton, New York.

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