CONQUERING GRILLE GAPOSIS

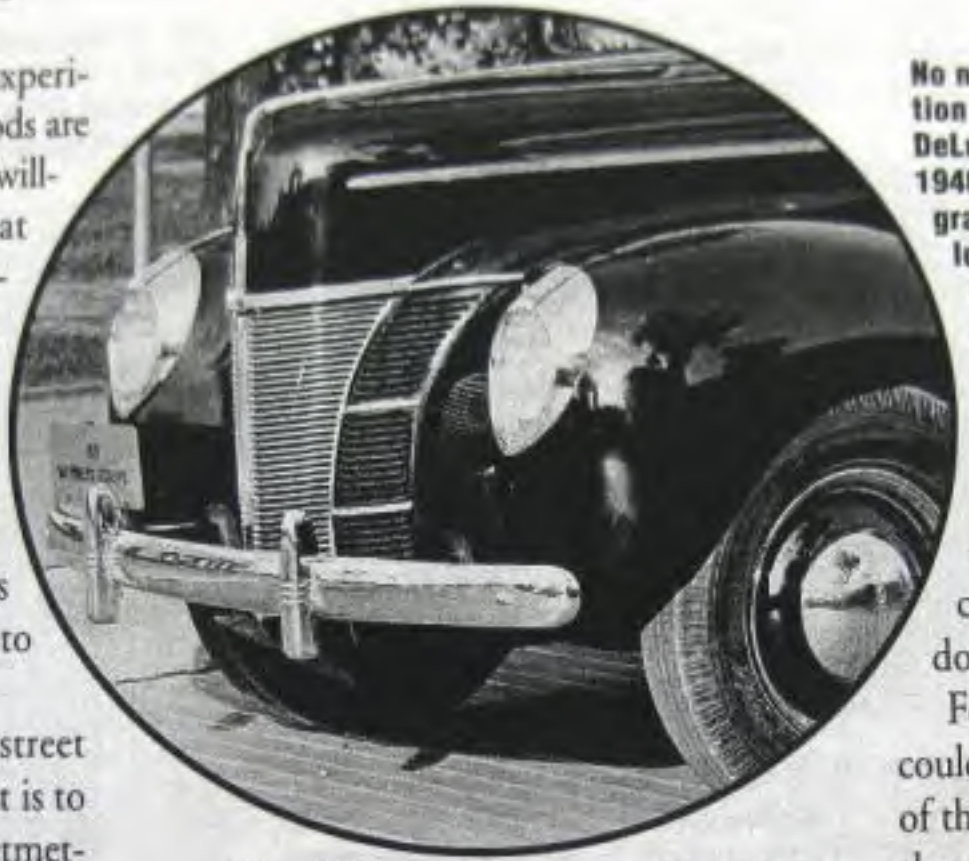
Getting all that sheetmetal in sync is easier said than done.



BY FRANK ODDO

It's one of those tasks that even experienced owners of '40-type street rods are reluctant to tackle. Fewer still are willing to pay a body shop for what appears to be a rather straightforward task: the installation of a reproduction grille, and the realignment of the hood and front fenders into a shining example of pre-World War II art deco. The reason, of course, is that it appears to be a straightforward task only to the uninitiated.

Those who have toiled in the street rod vineyards know how difficult it is to properly assemble the mass of sheetmetal suspended from the cowl of the chassis on 1939-41 passenger cars and pickups. The achievement of a precise, symmetrical fit of that gracefully curved metal sculpture is a challenge, to say the least.



No need to search for a perfect restoration to illustrate how a factory-fresh DeLuxe Ford front end looked back in 1940. I acquired this advertising photograph from the Ford Archives a very long time ago. It shows what an assembly-line inspector considered an acceptable hood/grille interface.

Nonetheless, even savvy rod builders have been known to blanch with fear when faced with the problem. And only then have they been forced to admit that maybe the body shop estimate of 8 or 10 hours of labor was not so far out of line. To paraphrase one of my favorite racing axioms, perfection costs money—how much perfection do you want?

For me, the problem began when I could no longer ignore the sad-sack look of the original grille in Desire. I'll admit that I have long taken pride in the fact that it (and all of the sheetmetal that hangs on the ol' coupe's bod) was there when Desire became mine back in 1968. Nevertheless, I finally reconciled myself



to the fact that the grille was showing the weariness of nearly 60 years in the sun. Two or three rechromes over the last couple of decades hadn't helped much and, indeed, were probably adding fuel to the fire.

The easy part was getting a new grille. Long gone are the days when rodders had to pay a premium for another original grille, or were forced by circumstances to buy one of those horrid Argentine



It is well understood by '40 guys that only after a near-perfect installation of the hood can you begin the replacement of any remaining front end components. The hood must be bolted on and as well-married to the cowl as possible. Make your inspections and necessary repairs before you begin the assembly.



I was satisfied with the fit of the hood and fenders, but the "grille gaposis" was starting to bug me. And yes, if you look closely, you'll see that I once again busted the lower grille chin in a moment of carelessness.

replacements that were "reproduction" in name only. It's only a short hop from the Cave to C.W. Moss for one of Vintique's outstanding repops, which can't be distinguished from the original that Henry himself squirreled away in the Greenfield Village barn back in 1940.

The hard part, as I said above, was putting it in place and making sure everything remained properly aligned. (The existing fit and function of the hood were fine. It opened with reasonable ease, and Dave Reggio's Hood Hold-



John Barrera bolted the die-cast Vintique grille, newly painted chin, and newly chromed center plate loosely together on a blanket-covered piece of foam rubber in the conventional manner, using a drift punch to align the holes. The proper nuts and bolts came from Vintique's grille hardware kit.



I long had eyes for one of Vintique's reproduction grilles and, finally, I decided to go for it. It's a work of reproductive art. I also picked up a new grille chin, a center plate, and an installation hardware kit while I was at C.W. Moss.

er provided a stable support when it was raised.) I figured installation would take two hours, maybe three, but that it would still be a cakewalk. I certainly didn't anticipate the consequences of the "dirty little secret" Desire had kept hidden from me all these years. When the task was completed more than a few hours later, I knew it was a story worth telling.

Those of us who own a particular car for a long time think we know her well—sometimes, we overlook the obvious. SRM

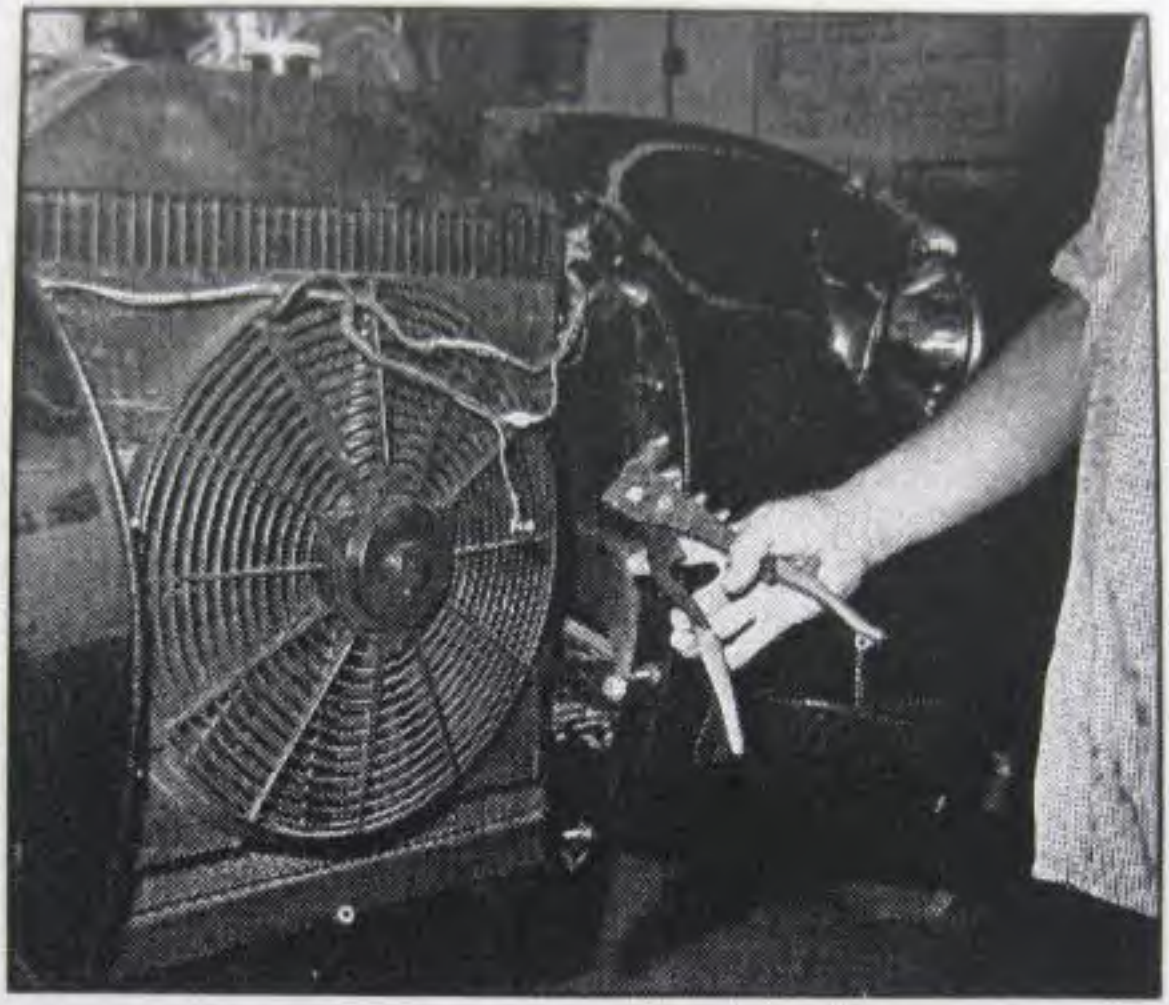


The louvered sheetmetal grille sides are original, as only the upper grille support is reproduced. The original sheetmetal had to be "hammer-fitted" to the die-cast sections. (Don't get heavy-handed!) At this point that John first noted two more-or-less-fresh cracks in the original metal. It brought home one of the two recurrent truisms of this piece: A street rod fashioned from a steel body that is decades old is going to require ongoing inspection and repair if it is to be kept in a solid, squeak-free state. Metal fatigue occurs in dozens of stress points.



Once welded and repainted, John reconstructed the grille assembly. To minimize endless bolting and unbolting more than a dozen fasteners and tweaking and twisting the several components, he followed an empirically determined torque sequence, going from snug to tight.





The fender welting and outer grille plates that deflect air through the radiator are not easy to tuck in when, at the same time, you are trying to squeeze the grille assembly between the fenders. One solution is to pop-rivet the plates and welting to the fender interface.

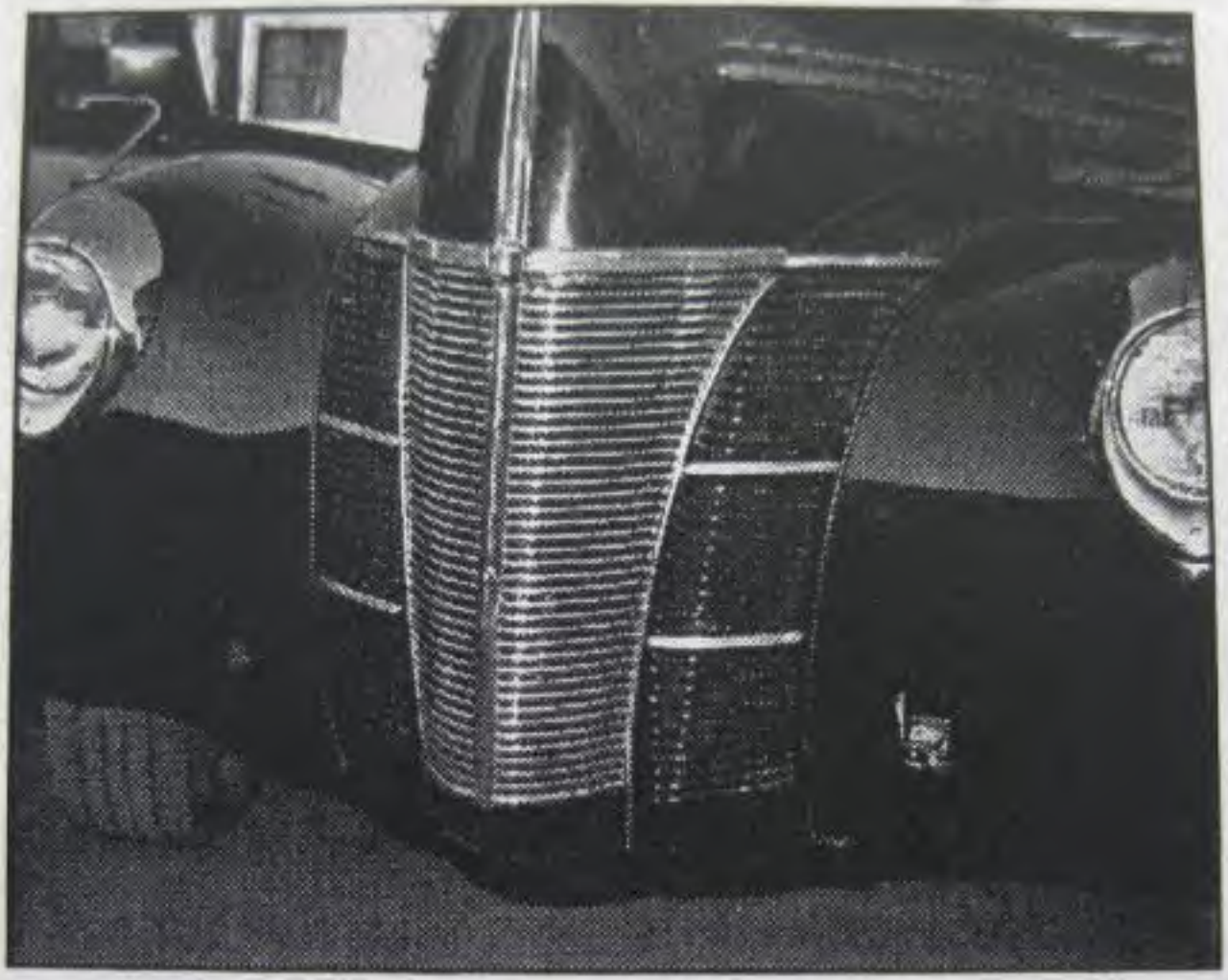


The grille was then shoehorned in and the entire front end bolted together—snug, but not tight. The front fenders were next loosened from the cowl. A well-padded floor jack was rolled under the grille, and used to gently force the entire assemblage up and into the hood.

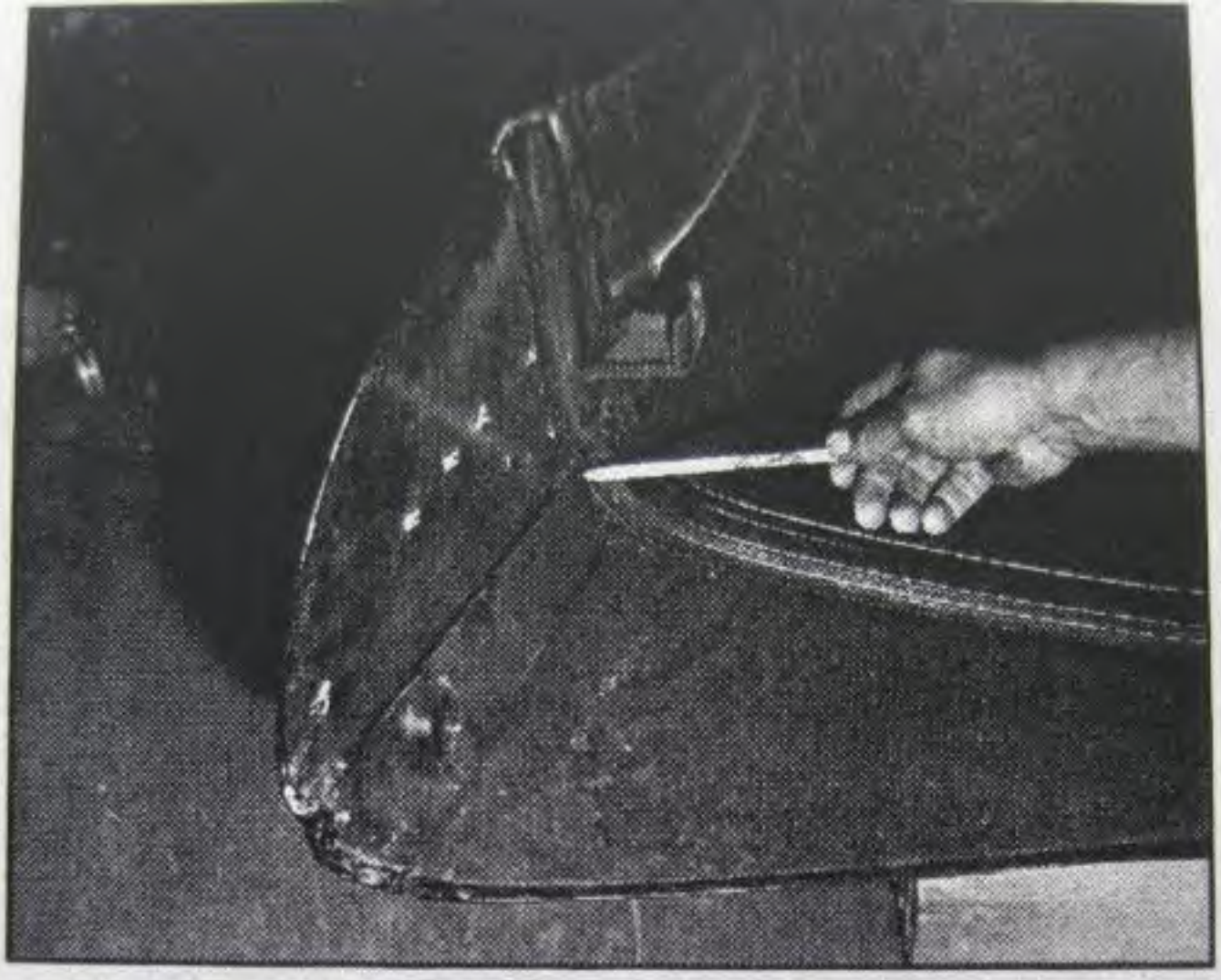


Various types of fender braces have been used through the years by '40 owners to replace the oft-removed, original fender brace mounted at the front crossmember. John convinced me that brackets made of gusseted, 1/4-inch steel would immobilize the entire front end. They are bowed slightly to bring the fenders in for a better fit to my coupe's modified chassis. Those you construct for your car would not necessarily have the same contour. The brackets are 7 1/2-inches tall and 2 inches wide, with a 2 1/4-inch base. The hole for the fastener was located while the front assemblage was jacked into place. Again, and this is critical, the hood and hood ornament and the alignment references for both fenders and grille.

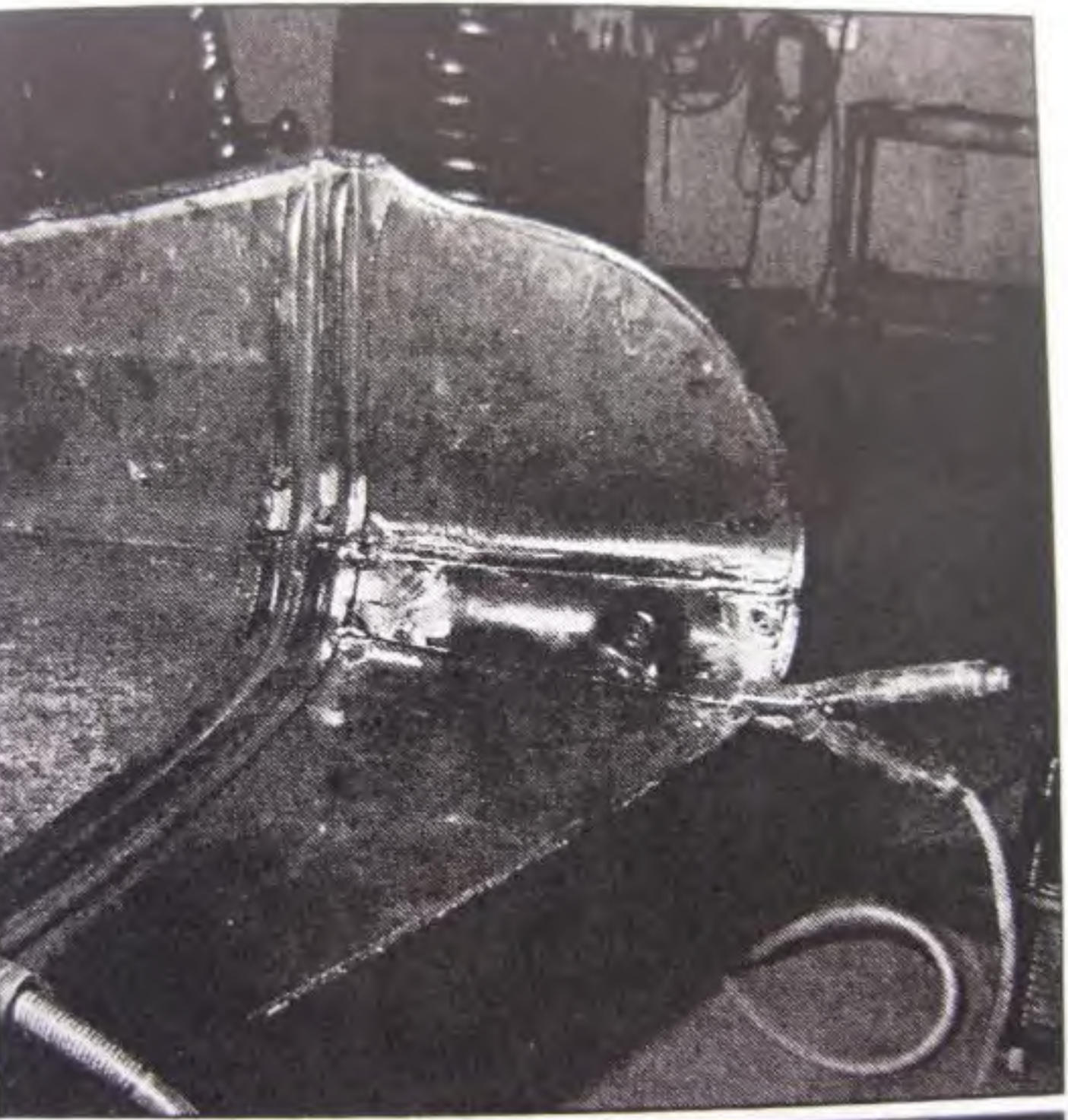
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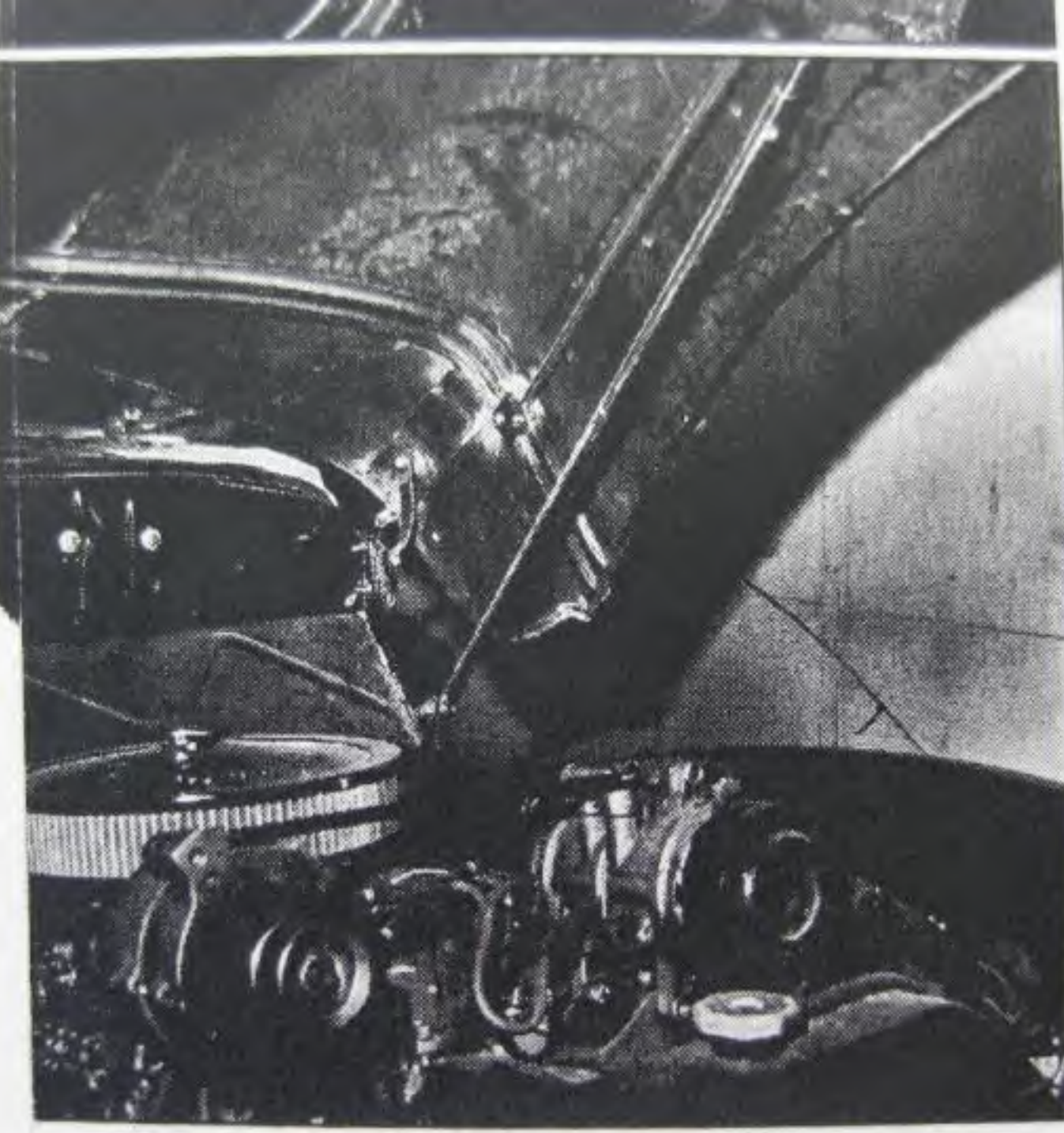
With the grille and sheetmetal cinched down and the gaposis of the old grille a thing of the past. Unfortunately, I just wasn't satisfied with the fit of the back of the hood at the cowl!



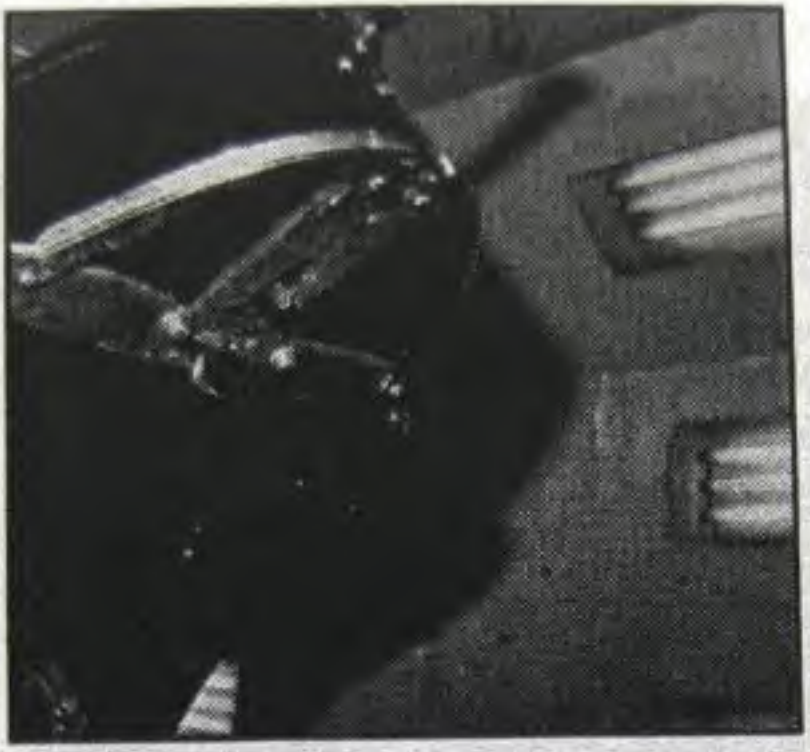
Off came the hood for a more intense inspection. It was only then that we discovered Desire's dirty little secret: The hood's inner bracketry had been modified sometime in her past! I have owned her for 30 years but, in all that time, I had not noticed the modification!







Suffice it to say that the old hood fix was causing the new misalignment. Vintage Auto Body's metalmen, John Barrera and Manny Serna, cut the previously repaired bracketry out, repositioned and welded the pieces back in, and then added a little metal to the back of the driver's side of the hood to achieve the hood-to-cowl fit that I wanted. Far more than I want to imply an amateur street rodder should tackle.



As the metal repair of the hood progressed, the ease of opening and closing the latch mechanism stiffened. The problem was traced to warpage in the hood crossmember that contains the hook. Inasmuch as the crossmember (Ford PN 01A-16774-B) is not a reproduction item, as far as I know, Manny experimented with a couple of flat washer spacers between it and the inner lip of the hood. Hidden discreetly within the assembly, they reposition the crossmember a tad higher. The release operates smoothly, with just the right amount of effort required to securely clamp the hood down. The same problem—give this quick fix a try.

For years I've heard guys complain about the '40s bosom. Sometimes, the problem can be adjusted out, sometimes not. The foregoing amply illustrates the second truism that street rodders cannot afford to forget: Decades-old cars acquired with the body and frame in a stock or near-stock state almost always bring along some hidden baggage. It's easy to identify what former customizers or hot rod builders did to the body or chassis. It's usually more difficult to ascertain what a mid-century collision shop did. Repairs that were adequate or even above average 40 or 50 years ago can easily add to the sum total of time, effort and cost, to say nothing of the frustration.





ILLUSTRATION BY GEORGE SHEELEY

HANGIN' THE '40 FRONT END

BY ART BRANUM

With the current trend toward independent front suspension systems in '39 and '40 Fords, the status of how you build back to the support for the fenders, hood, and grille components becomes very much a factor as to how your hot Ford will line up and survive.

STOCK FRONT SUPPORT YOKE

When Henry's people first put the '39-40 Ford together (Standard, Deluxe, pickup, and delivery), the front fenders bolted to the cowl, and the rear of the front sheet metal clip was supported by a yoke that attached to each of the front inner fender panels and then mounted down on the crown of the front crossmember. If your car hasn't had one of these yokes in place for some time, chances are the fenders are cracked below the headlight or at the top of the wheel opening head, the gobs doesn't line up with the front of the hood, and the hood gaps look at the cowl. Nothing else was built into the front end to support the sheet metal except that yoke. If it is worn, pitted, missing, your stock front clip is probably riding on top of the bumper brackets, which causes the headlights to bounce like a hardtail Harley!

If you're still into wrenching a heavy side front suspension, make certain that the yoke is in acceptable shape and the crossbrace hasn't been cut too far lower crank pulley clearance, which was a common practice in the early days of small-block Chevy conversions. If you start with a butchered yoke, the fenders will tend to spread out and wrinkle with the hood, and everything will eventually settle down on the bumper irons. If it's absolutely necessary to trim out the crossbrace, weld discrete support braces back in so that the yoke spreading will be kept to a minimum.

INDEPENDENT FRONT SUSPENSIONS

For those of you who are current to the independent front suspensions, most of them too have abolished the location on the front crossmember where the stock support yoke would bolt in. Along with this feat, you must now trim the inner fender panels to clear the upper A-arms, which again reduces their ability to provide the necessary support for the entire front end. Early on in the Mustang II adaptations, I saw some rather lengthy rules added to those of the crossmembers to accept the stock yoke, but several other problems then resulted with regards to clearance for crank pulleys, fan belts, and radiator hoses. Mr. 40's Faircuff has developed two products to help solve this problem for the independent front suspension user.

16-GAUGE LOUVERED INNER FENDER PANELS

Once we had trimmed out the stock 18- or 20-gauge fender panels to clear space for the Mustang II upper A-arms, it became very apparent that we had lost all (or much) of the support that was designed in here even with the completely stock set up. We then went to work and created new panels from 16-gauge steel that were already contoured out to clear the Mustang II parts. By using the thicker material we were able



1

If the stock front yoke still exists on your '40, chances are it has been modified by trimming out the cross support to clear small-block Chevy crank pulleys, which in turn, allowed the front fenders to spread out and crack. If yours is still in tact, measure across the span to check the spread. The dimension should be 28½ inches outside to outside.

HANGIN' THE '40 FRONT END

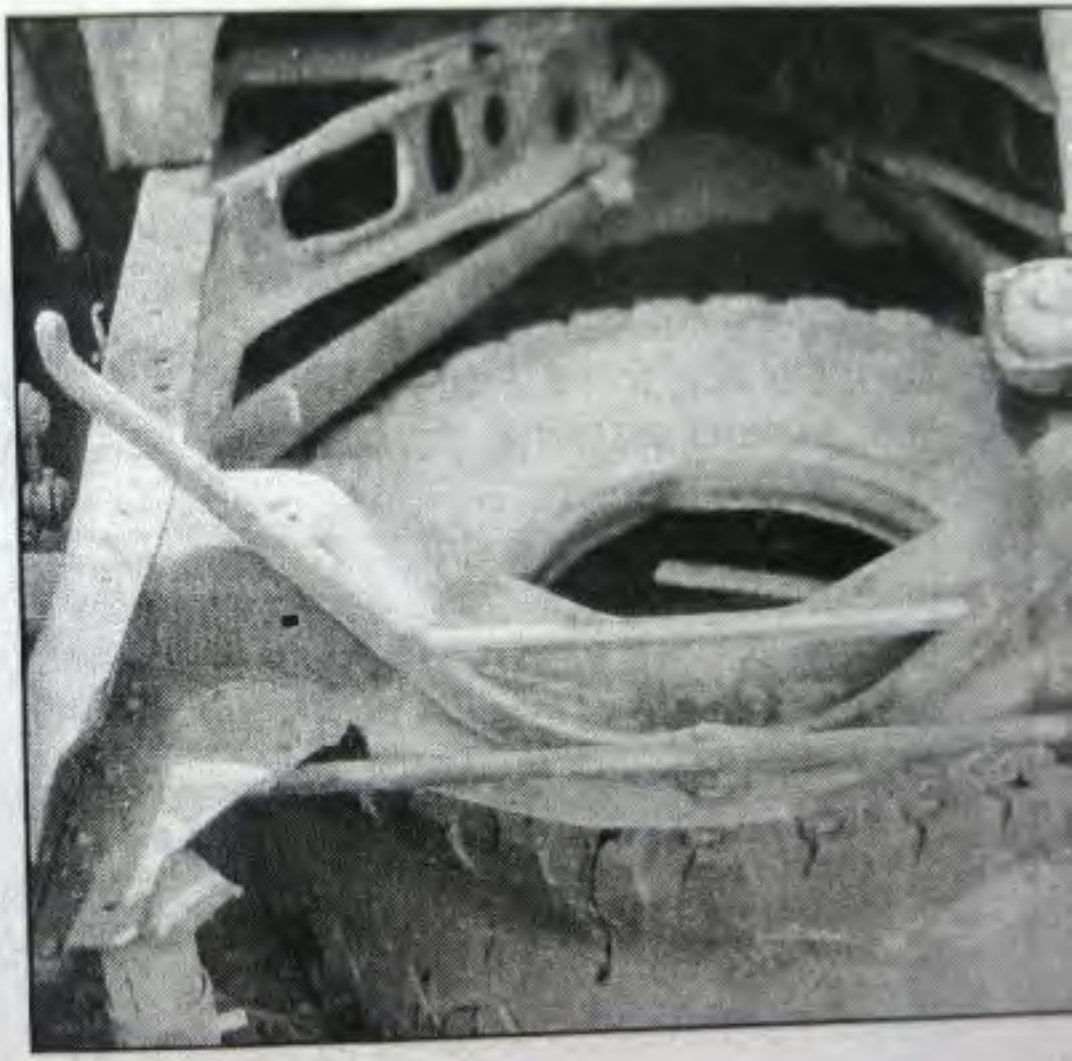
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STOCK FRONT SUPPORT YOKE

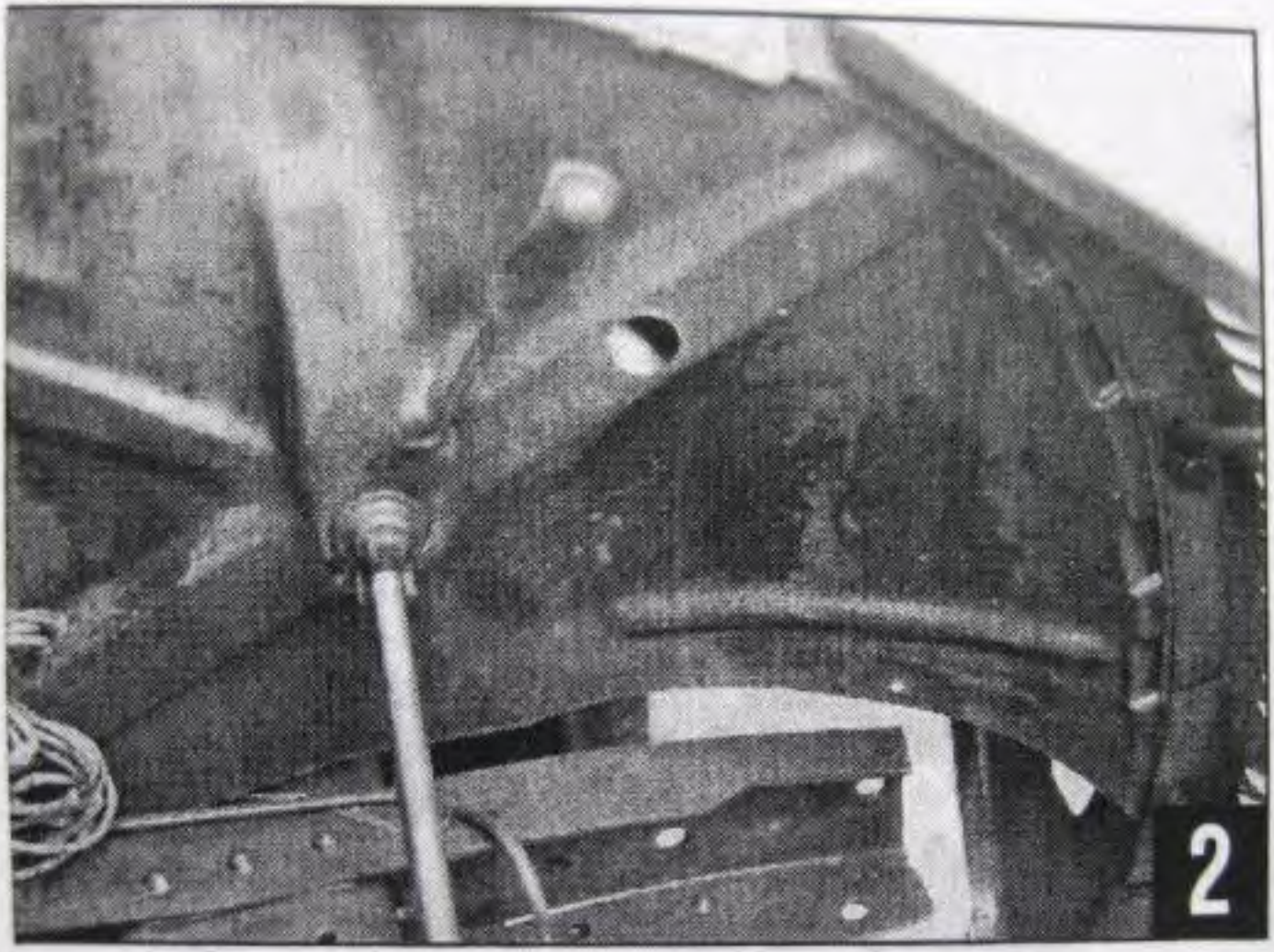
When Henry's people first put the '39-40 Ford together (Standard, Deluxe, pickup, and delivery), the front fenders bolted to the cowl, and the rest of the front sheet metal clip was supported by a yoke that attached to each of the front inner fender panels and then mounted down on the center of the front crossmember. If your car hasn't had one of these yokes in place for some time, chances are the fenders are cracked below the headlights or on top of the wheel opening bead, the grille doesn't line up with the front of the hood, and the hood gaps back at the cowl. Nothing else was built into the front end to support the sheet metal except that yoke. If it is com-



suspension, make certain that the yoke is in acceptable shape and the crossbrace hasn't been cut out for lower crank pulley clearance, which was a common practice in the early days of small-block Chevy transplants. If you run with a butchered yoke, the fenders will tend to spread out and misalign with the hood, and everything will eventually settle down on the bumper irons. If it's absolutely necessary to trim out the crossbrace, weld shorter support braces back in so that the yoke spreading will be kept to a minimum.

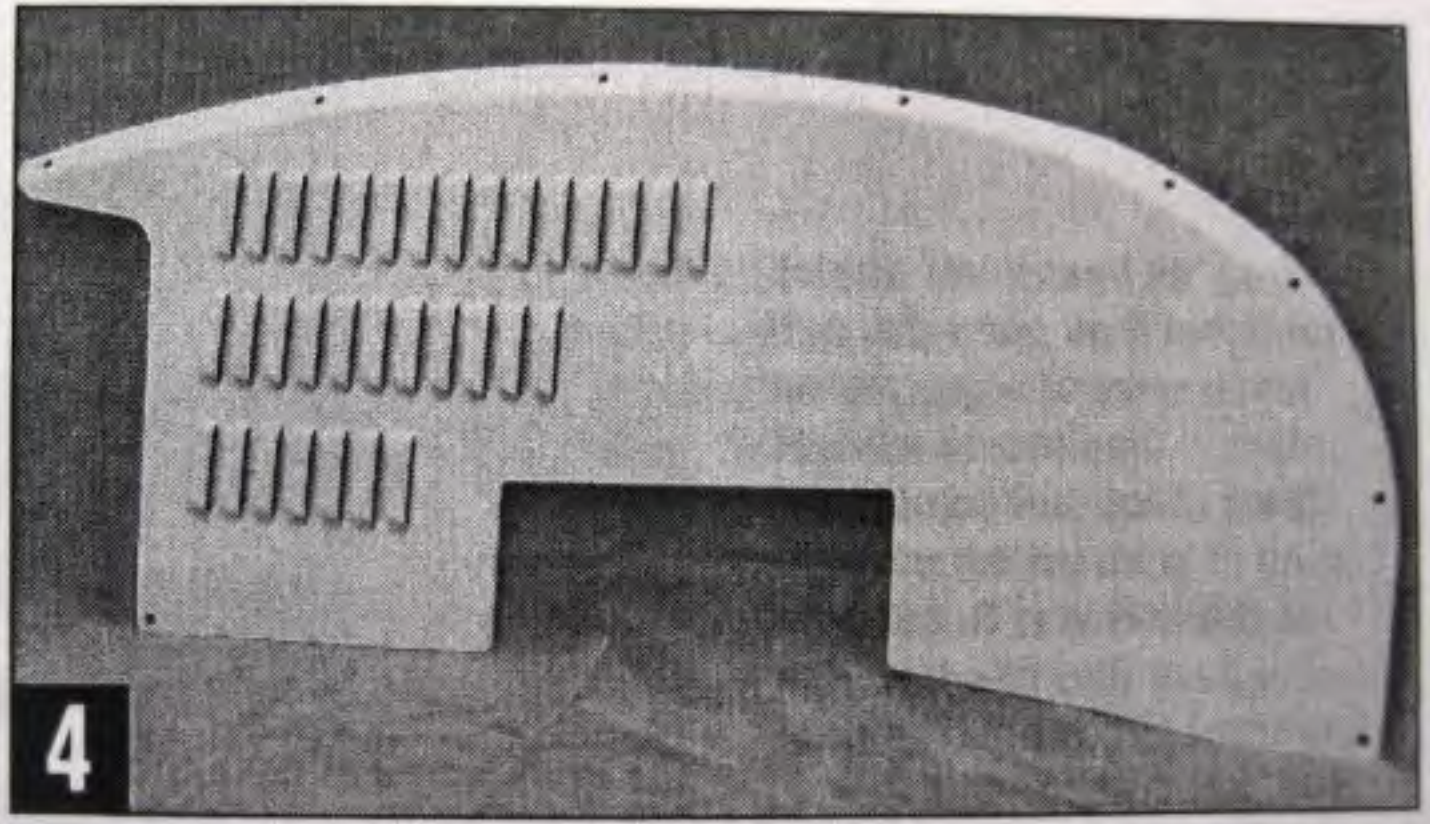


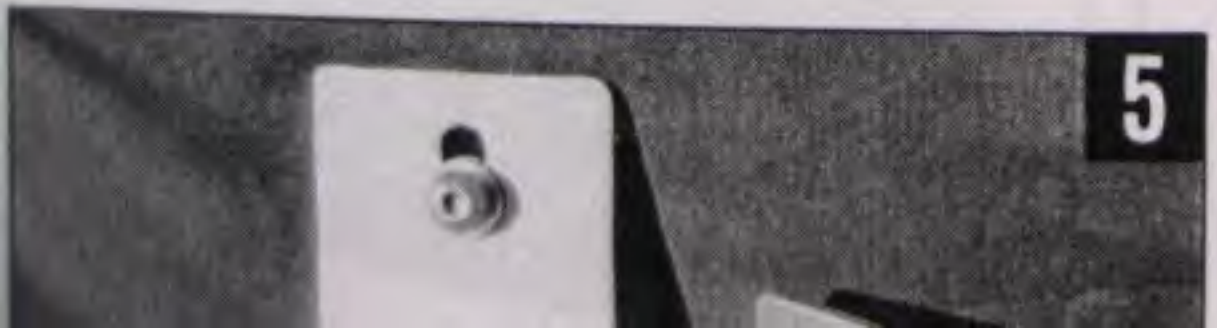
If the stock front yoke still exists on your '40, chances are it has been modified by trimming out the cross support to clear small-block Chevy crank pulleys, which in turn, allowed the front fenders to spread out and crack. If yours is still in tact, measure across the span to check the spread. The dimension should be 26¾ inches outside to outside.



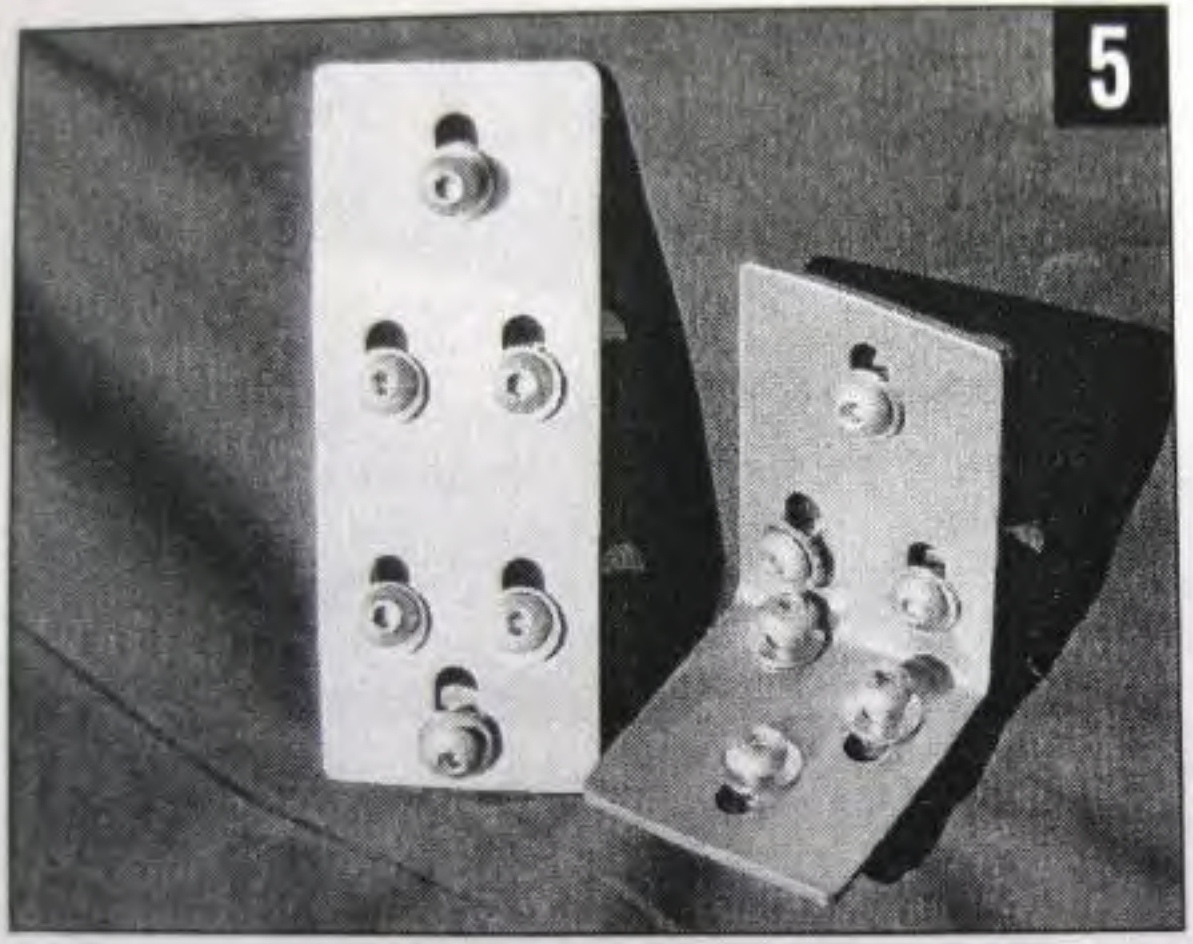
Ford's 18- to 20-gauge front fender panels are usually full of added holes, rust pockets, header cut-outs, etc. by this time in their life, and don't offer much in the way of support for the front sheet metal. Even less support is there if they've been trimmed out to clear Mustang II components.

The inner fender panels from Mr. 40's are laser-cut from 16-gauge steel to give the front sheet metal even more support. They're available for axle-type or independent front suspensions, and come in both smooth and louvered versions. The louvered ones definitely make a difference in a Forty's ability to eliminate hot air from the almost totally enclosed engine compartment.





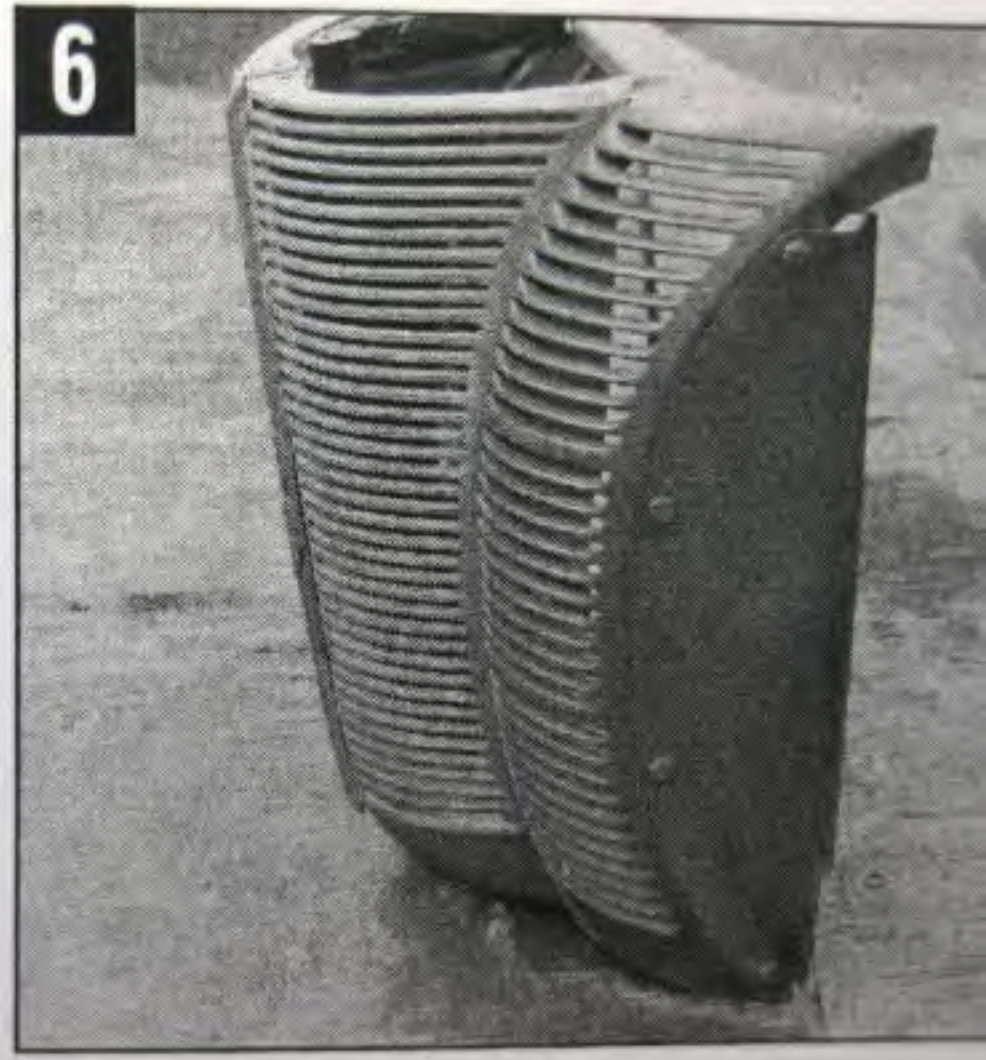
Since the stock yoke will only work on Mustang II-derived installations with a great deal of modification and bracketing, Mr. 40's has created these



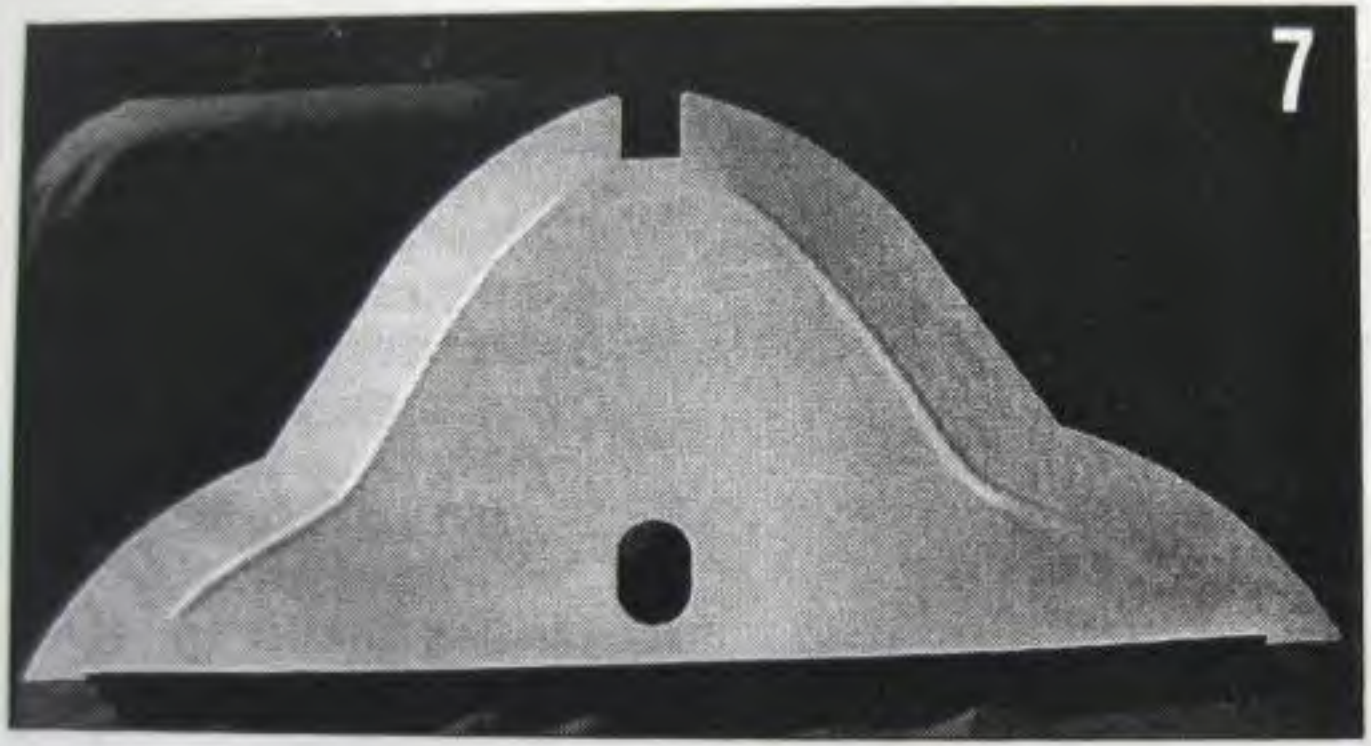
Since the stock yoke will only work on Mustang II-derived installations with a great deal of modification and bracketing, Mr. 40's has created these brackets to mount each side to the frame rail. The holes are slotted for adjustment of fenders to hood and grille. The flat brackets mount on the wheel side of the frame and panel, and the angle-style mount atop the frame rail, making them visible from the engine compartment.

HANGIN' THE '40

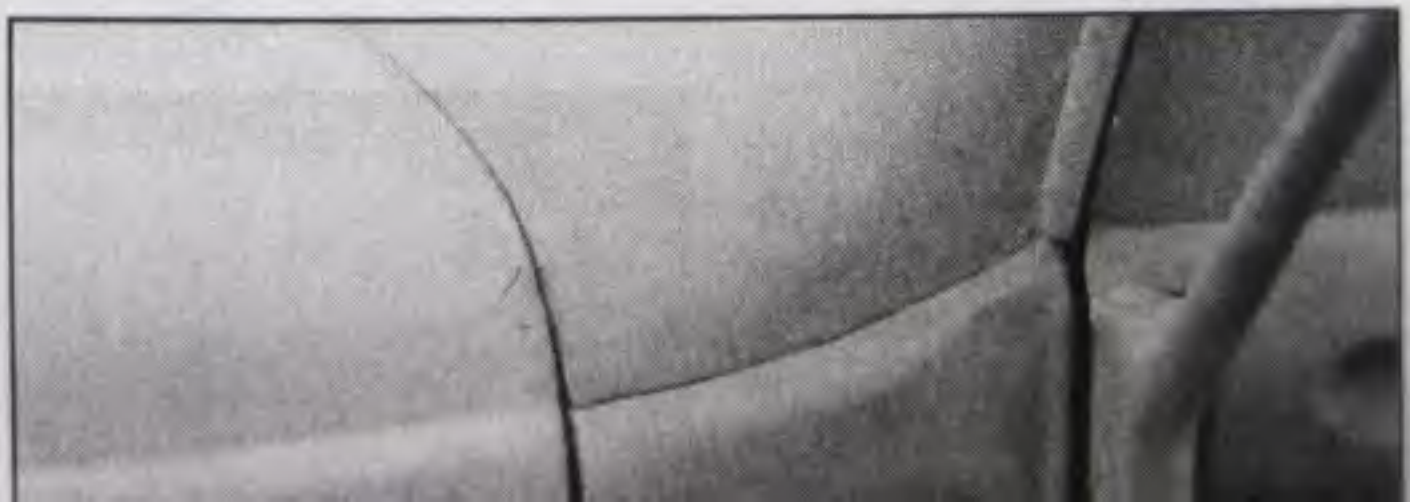
The replacement panels bolt between the grille sides and the fenders to block air from bypassing the radiator. If you're running without them, it could be one of the contributors to an overheating situation. These, along with the pan that goes under the radiator, are usually missing on most of today's '40s, but are very critical to forcing air through the radiator. Most antique parts dealers carry these from a couple of different sources.







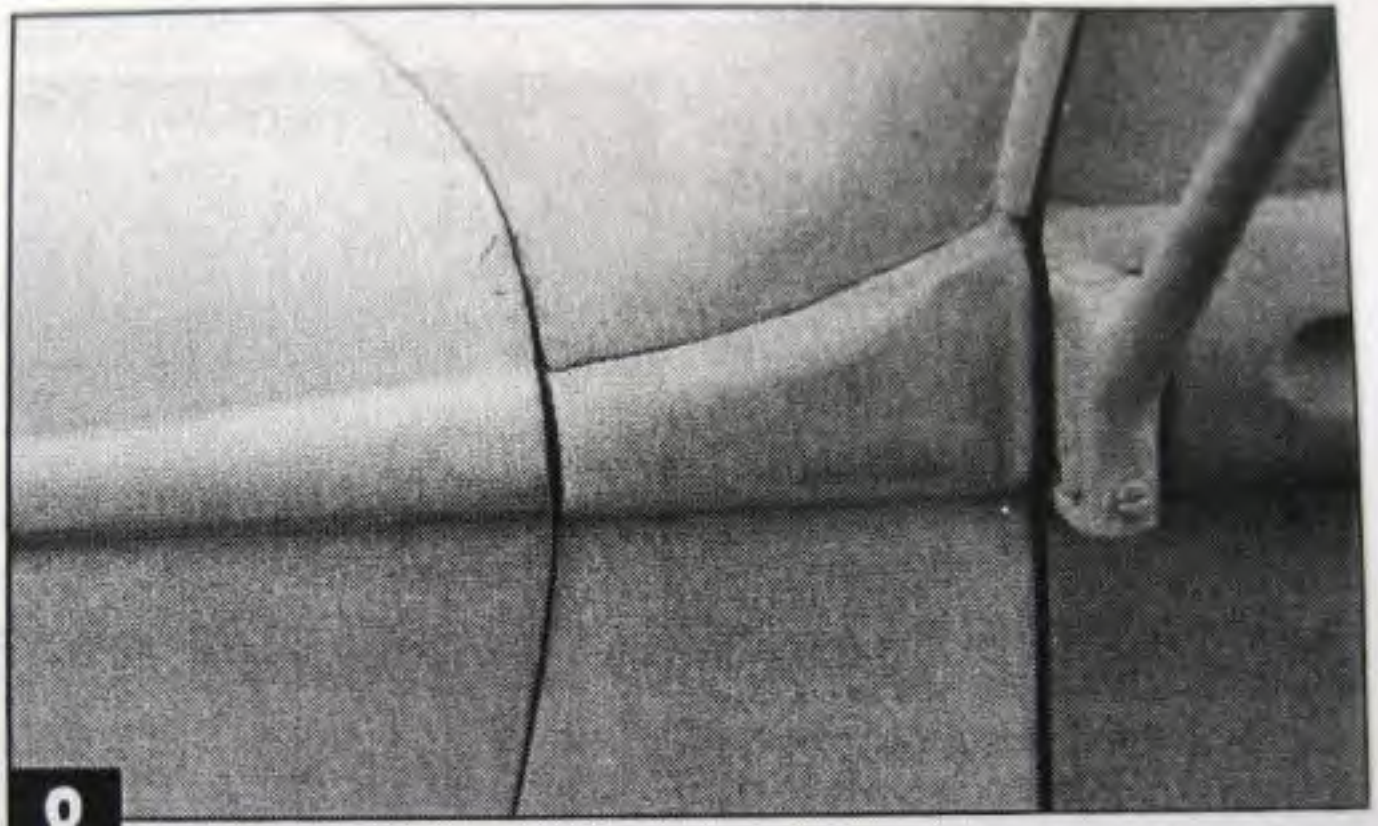
A natural addition to the stock radiator shrouding pieces are these over-the-grille shrouds from Mr. 40's. They're available in either brushed aluminum or steel (for painting), and are made for either Standard or Deluxe grilles. These keep the incoming air from zooming over the top of the radiator, plus cover the top of the grille cavity.



Most '40 hoods will line up pretty well on one side, and leave more of a gap on the

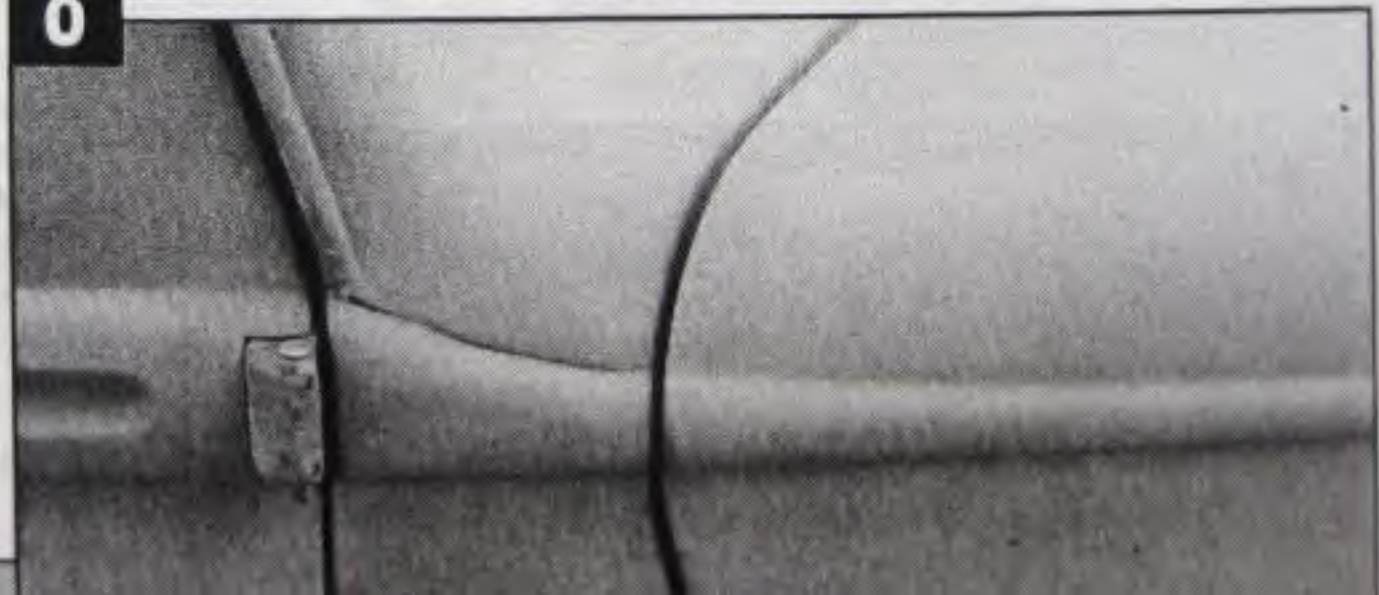


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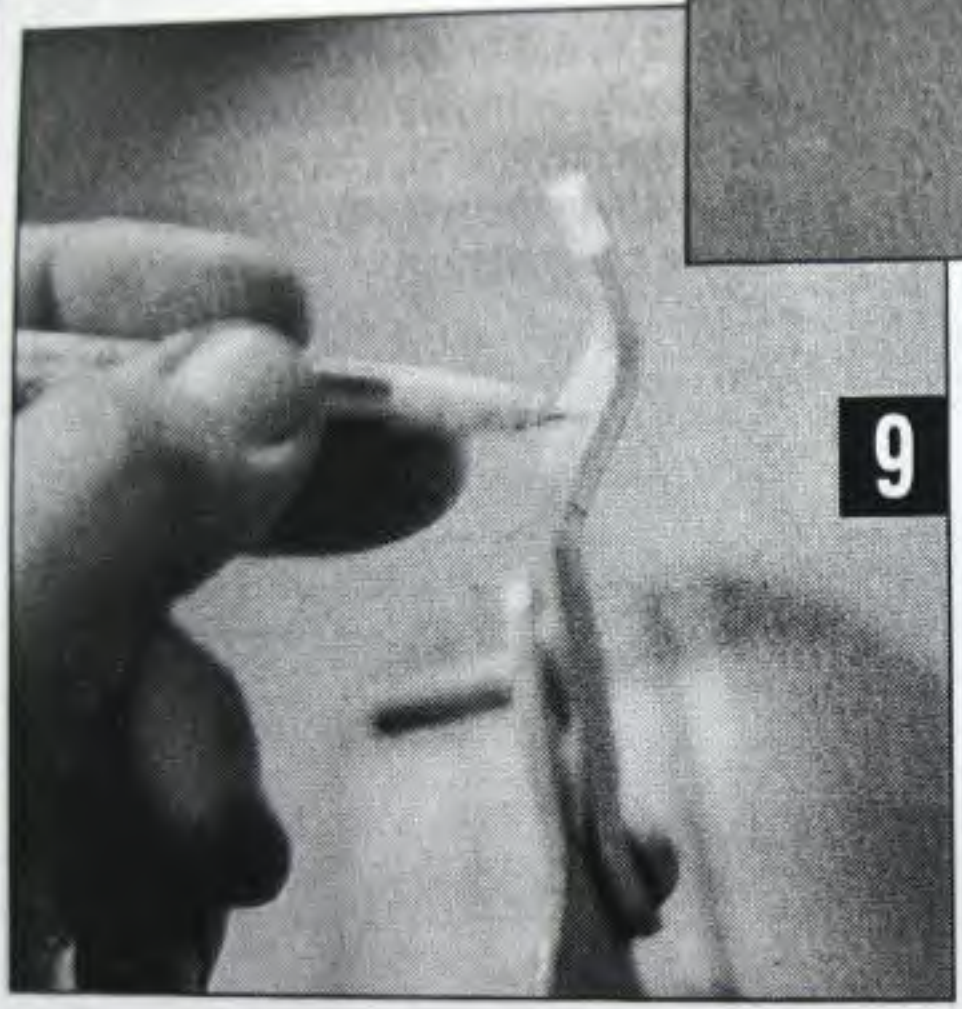


Most '40 hoods will line up pretty well on one side, and leave more of a gap on the other. Adjustments will get them close, but sometimes adding or subtracting material is the only way to get both sides to have that fine line. Our shop truck is okay on the right side, but a little too close on the left.

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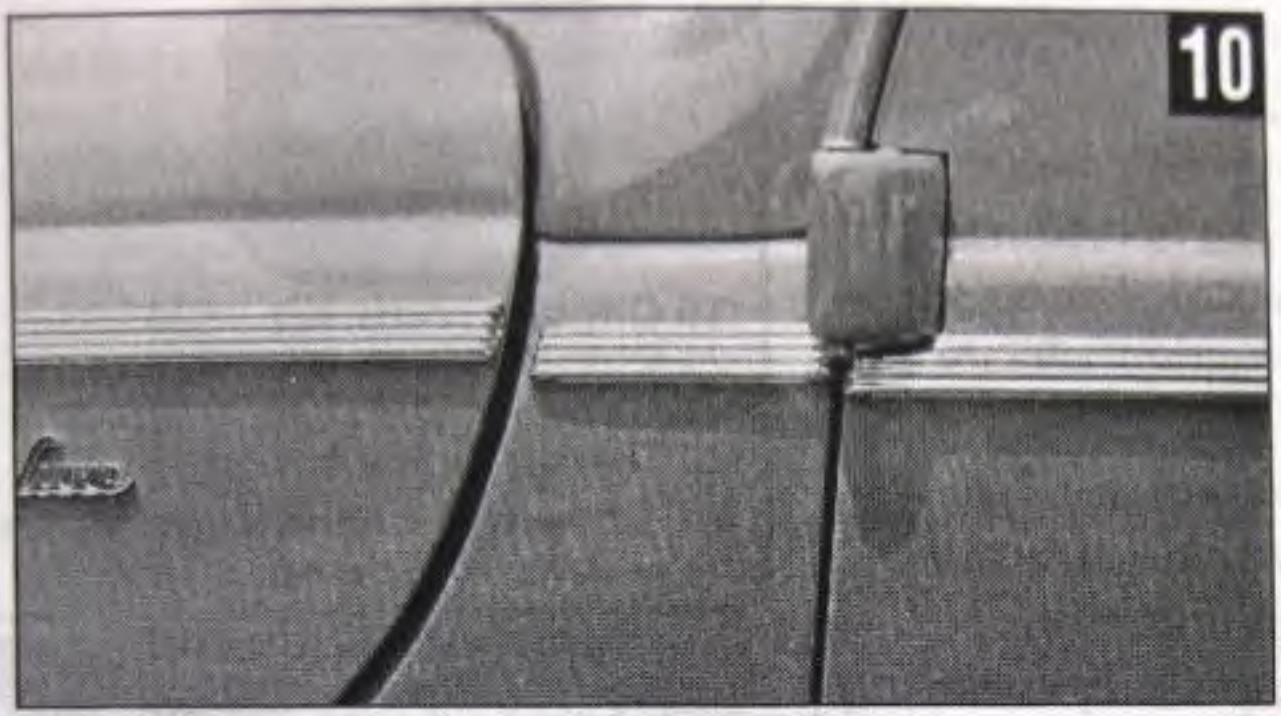


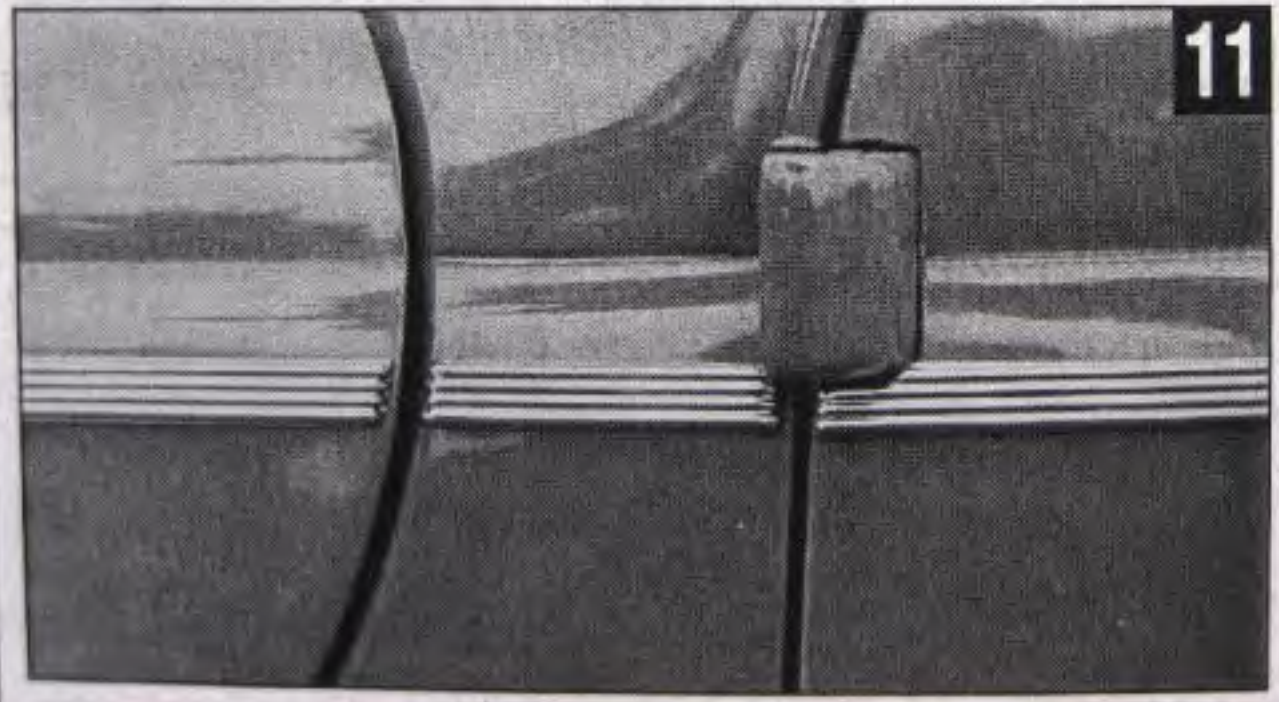




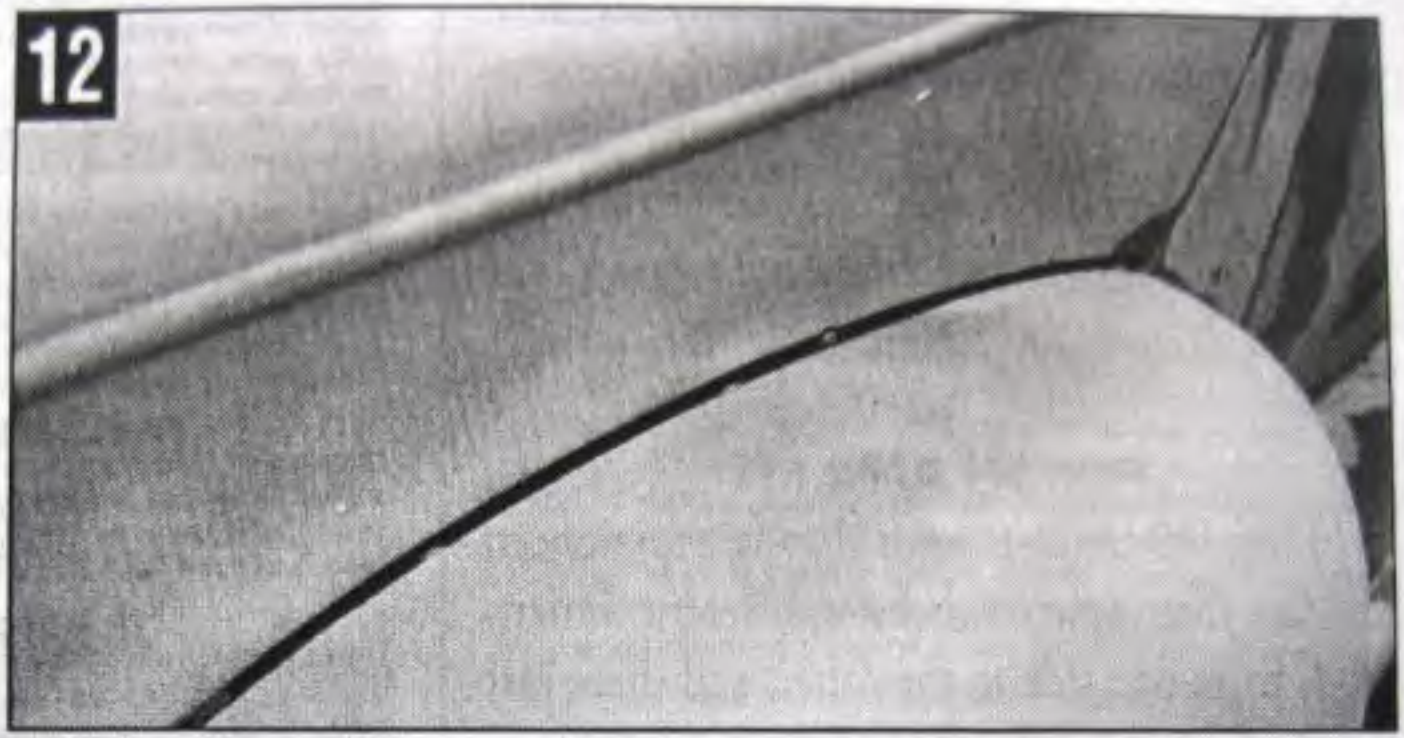
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About the only way to adjust the hood hinges is to move them around in the mounting holes, or increase/decrease the amount of bend in the hinge arms. It's strictly trial and error, and probably the most time-consuming part of assembling a '40 Ford front end. Well-lubricated and limber hinge arms are necessary to get all the adjustments to stay in place. We have found hinge arm length variations as much as a half-inch when comparing old stock originals with some of the current repops.

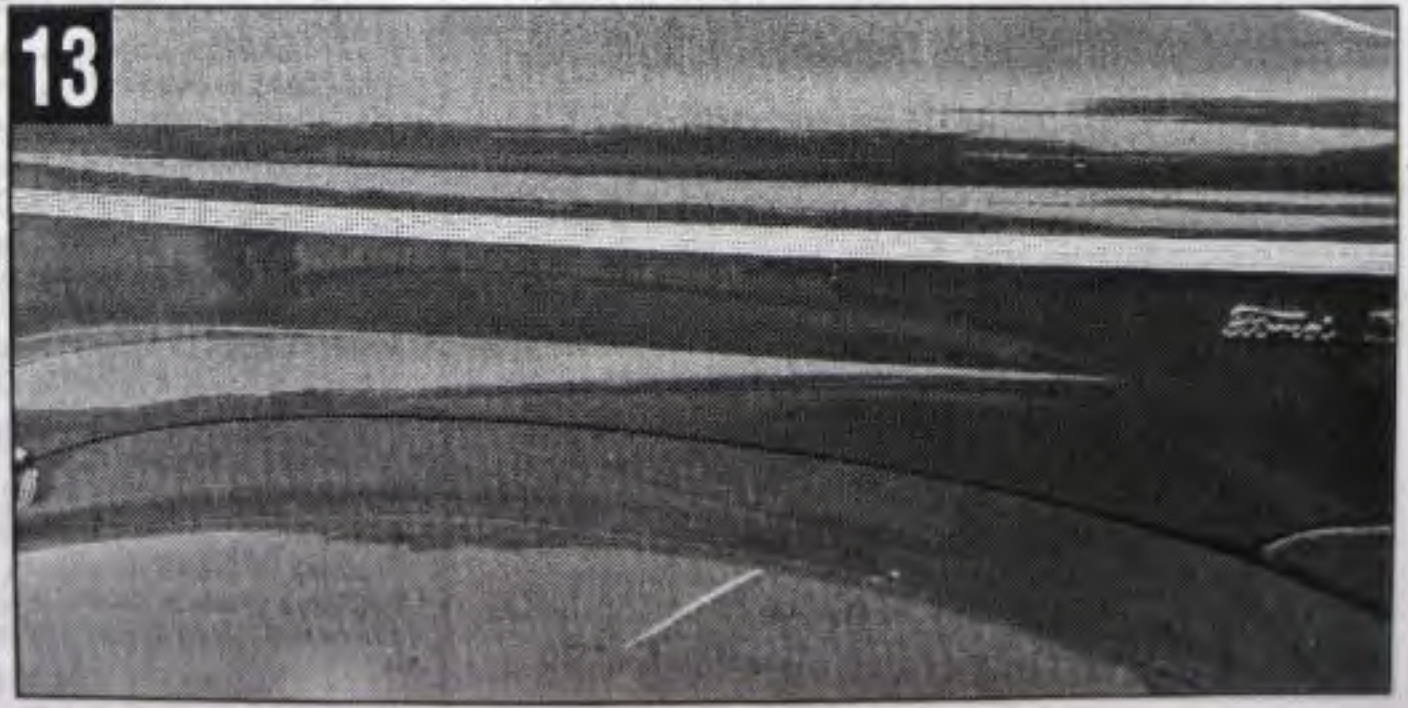


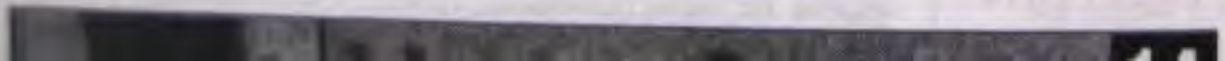


Once you get the body character lines in sync, you can adjust the hood and cowl trim by slotting the holes a bit. Nothing makes this area look out of whack more than having the door, cowl, and hood trim on three different planes. Note the body lines in photo 10 — the door is slightly below the cowl line, the hood is way above that, and the stainless molding looks like a stairstep. Photo 11 shows everything in the same line for a nice finish.



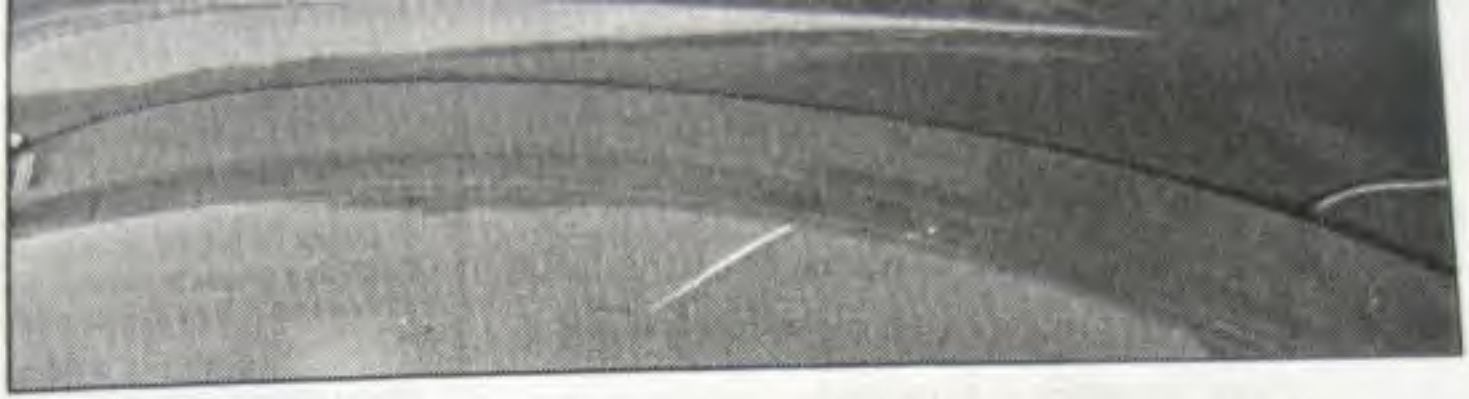
Since the surface of the front fenders where the hood rests is at a slight angle, the more the fenders are spread apart, the more the hood sinks into the engine area. If you're using new hood bumpers, they will need to be trimmed in height, otherwise the gap between the hood and fenders could be as much as 3/4-inch wide! Photo 12 shows pretty much the way Ford sent them out, while 13 illustrates the fine line achieved by trimming the rubber bumpers almost flat where they rest on the fender surface.

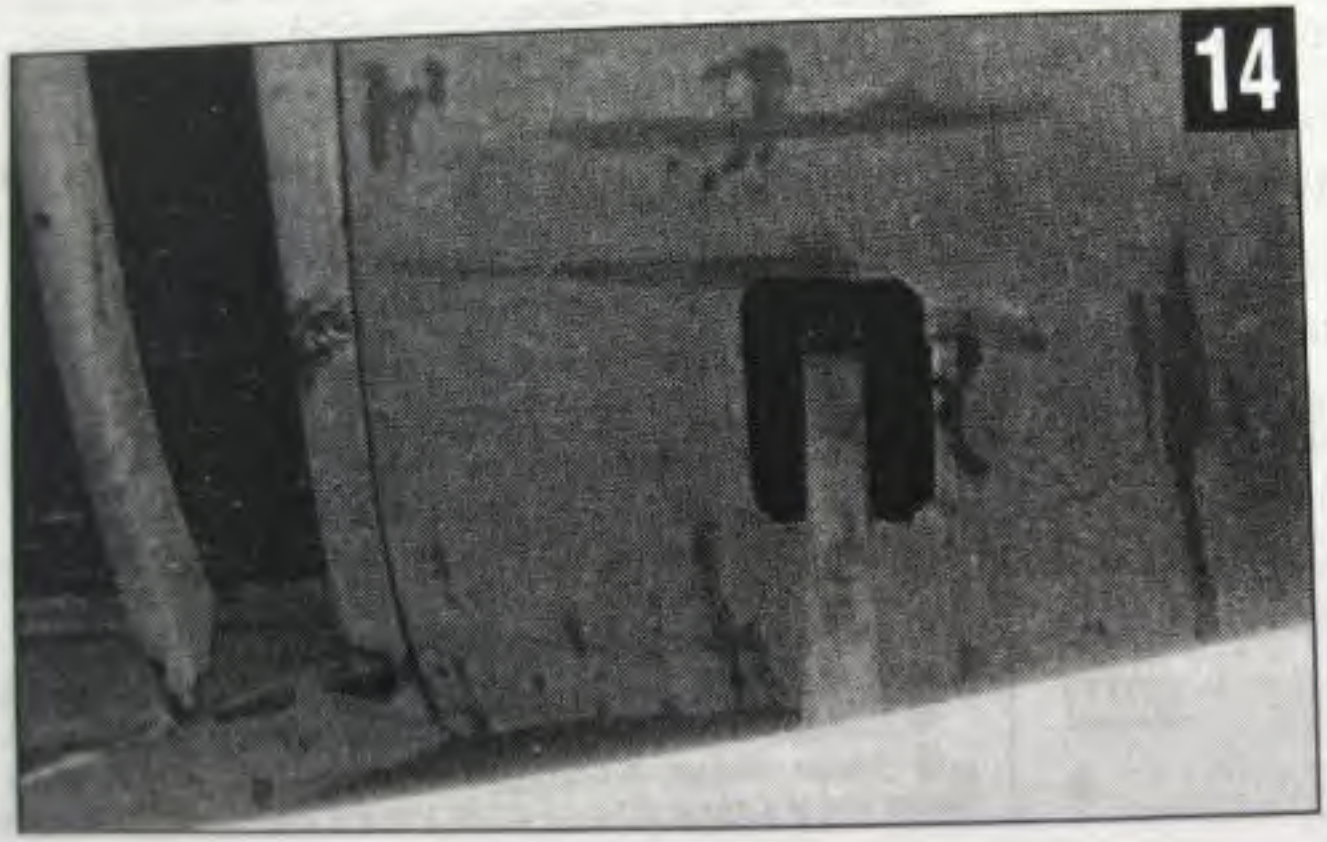




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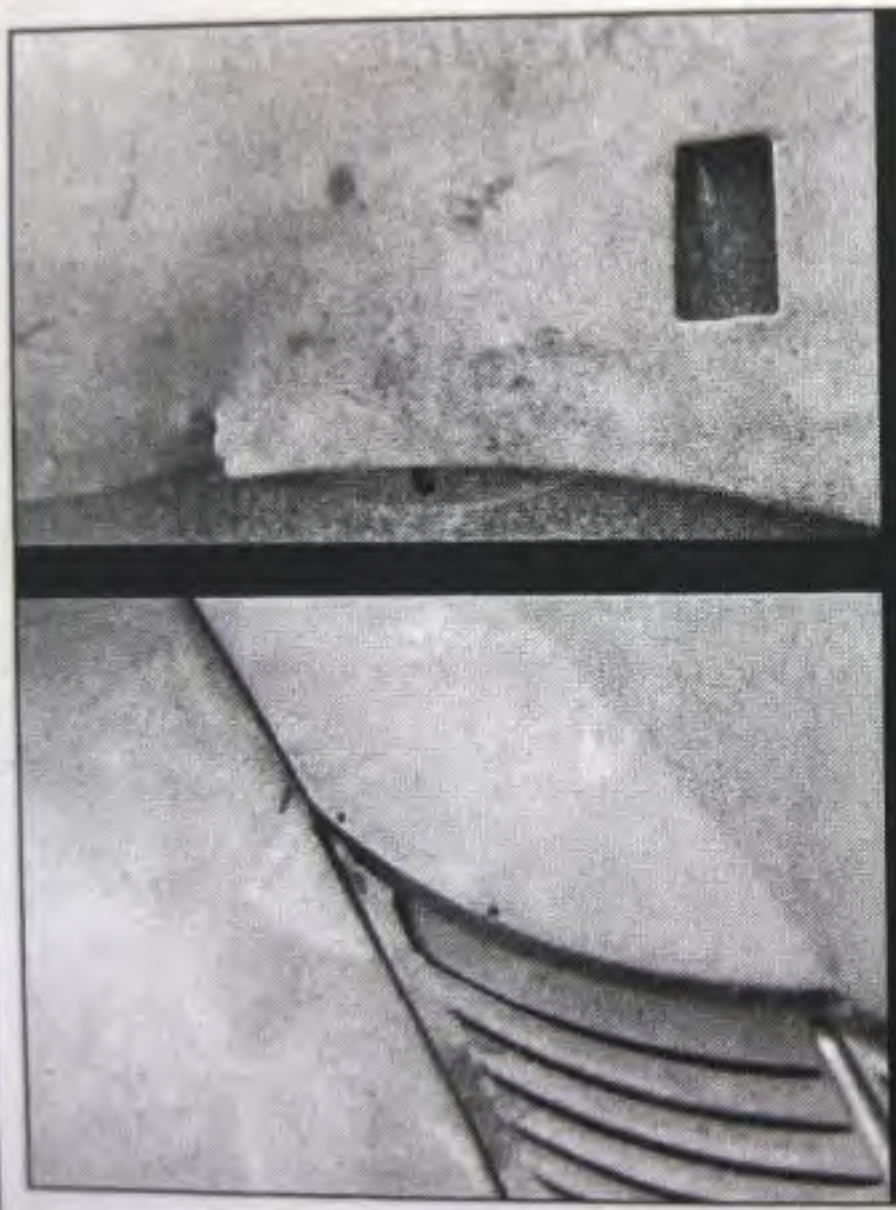


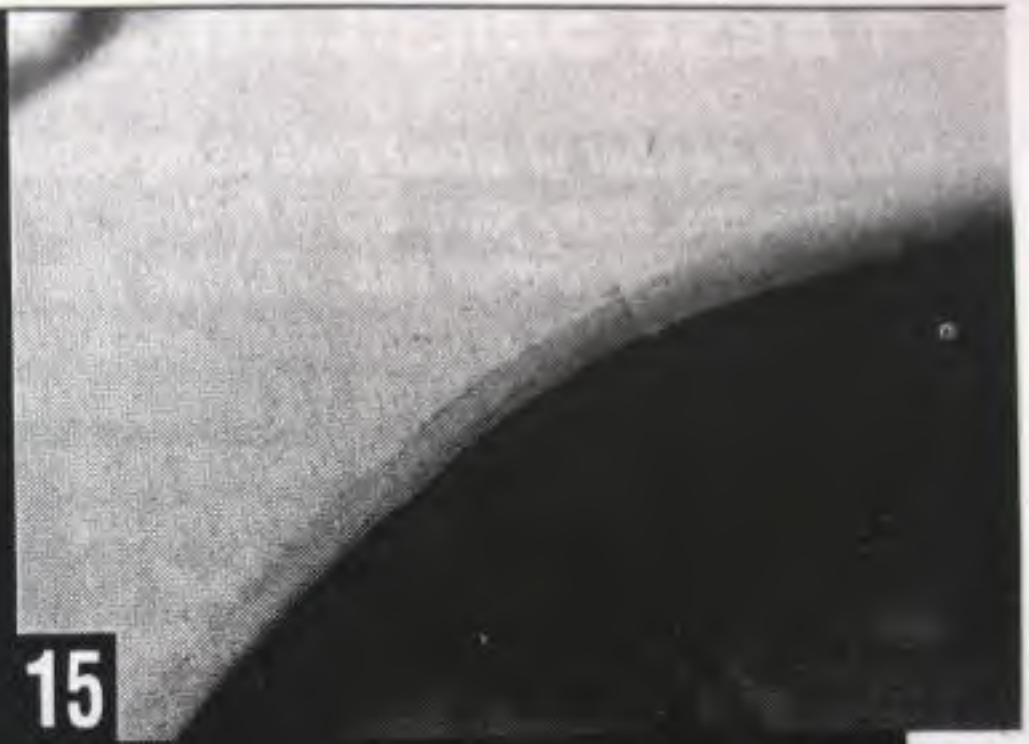
Ideally, if your front fenders are in the proper position, the bumper brackets will exit the fender and not touch the sheet metal. If the gap is too small on the top, you need to raise the fenders and make it equal all around the opening. Touching on any surface is likely to promote vibration and invite bead cracks along the fender.

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HANGIN' THE '40

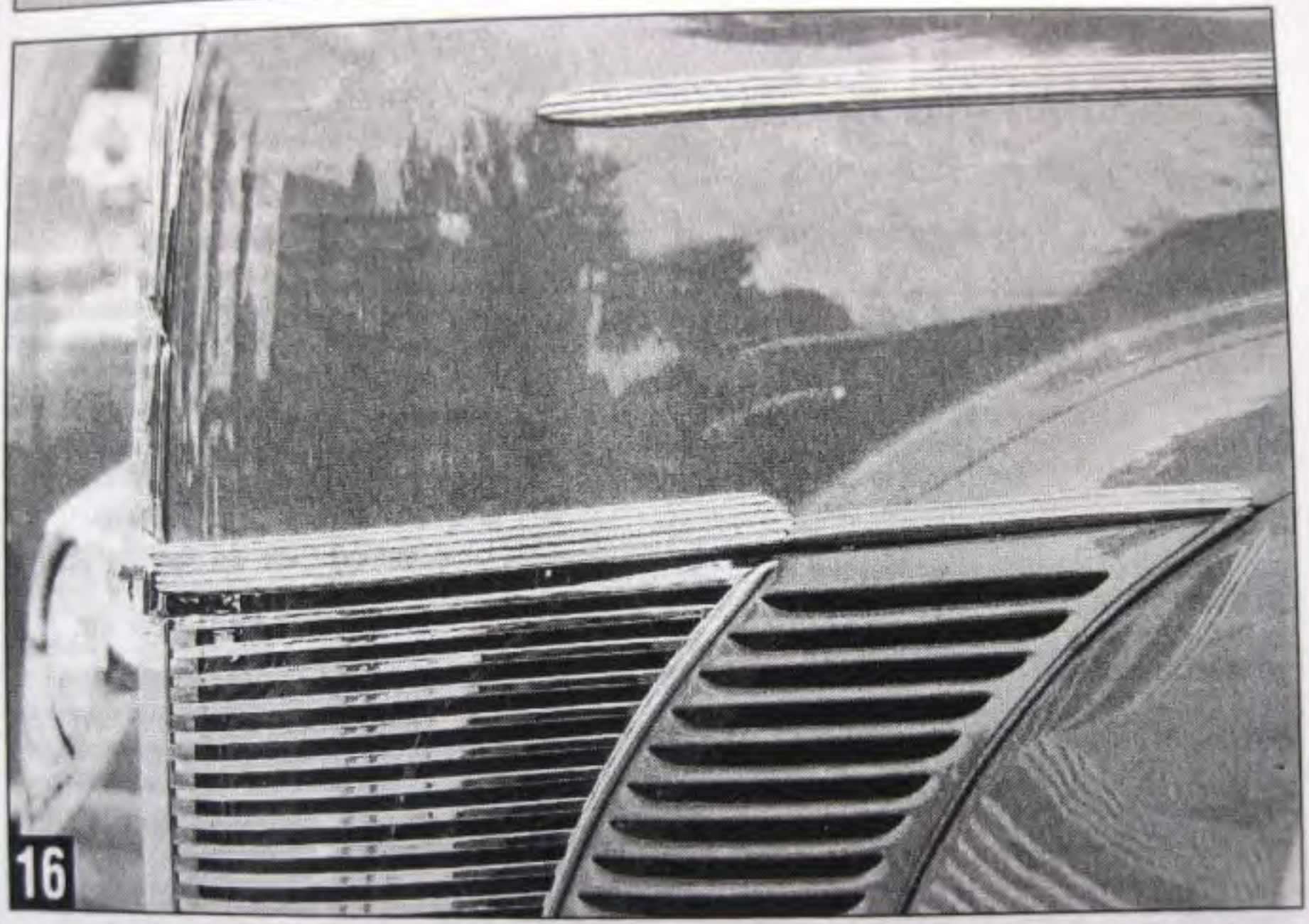
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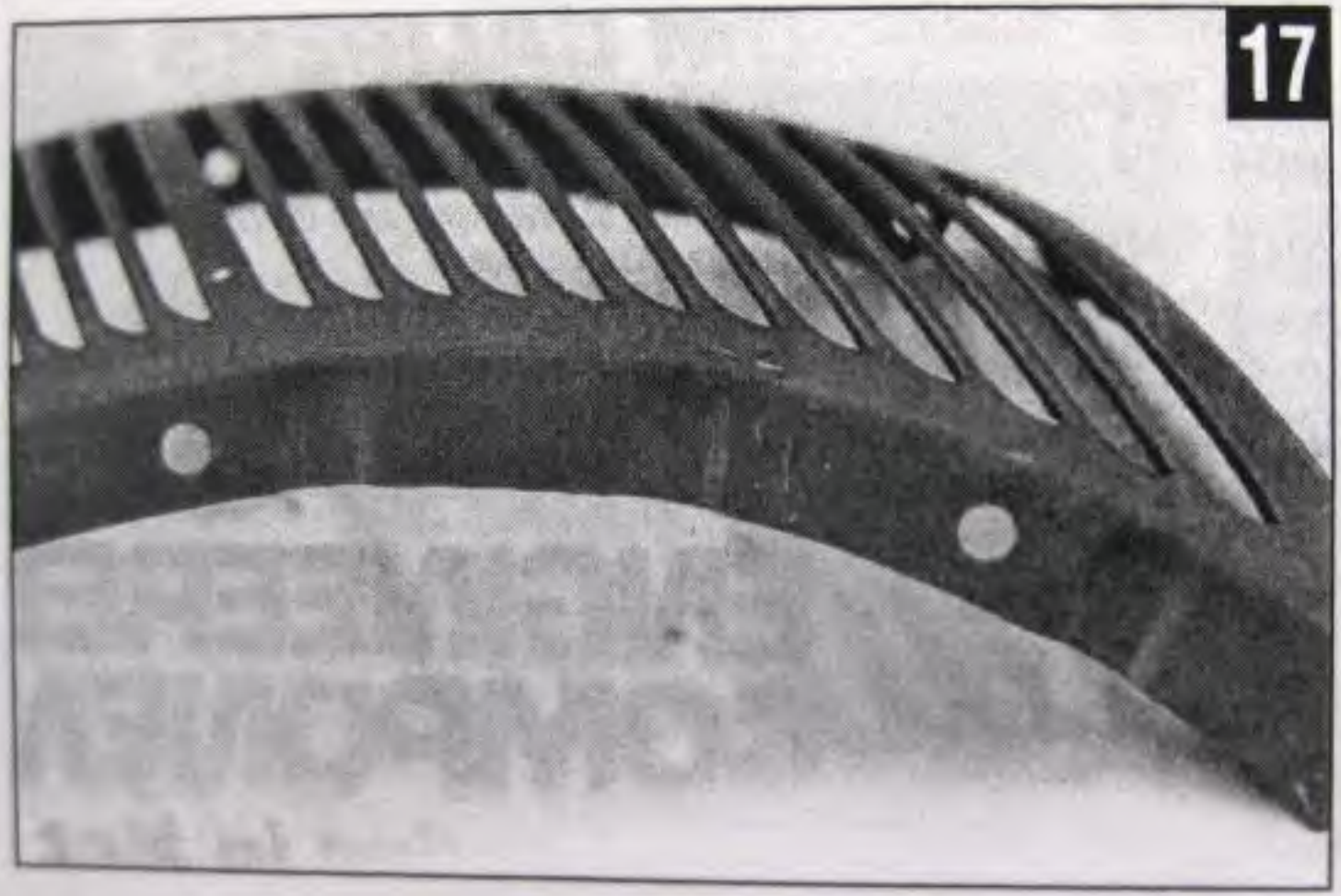


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The most common areas for cracks are under the headlight on the bottom fender lip, and above the wheel opening. Cracks and splitting can be deterred by giving proper support to the inner fender panels, and ultimately the front sheet metal.



The most noticeable misalignment problem on '40s, especially those with a Deluxe grille, is that the top grille bars tend to slope down and away from the bottom line of the hood, which leaves an ugly gap between the two. Most of the time, this can be corrected by loosening up the bolts surrounding the grille sides and jacking it up into position. The hood latch will work better as well.



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Ford provided mounting holes in the front end components that at first glance appear like they would use 3/8-inch bolts — but in actuality, they use 1/4-inch hardware to allow room to adjust the grille, side grilles, and fenders in relationship with each other. Put the bolts in finger-tight, then start tightening them down after you have all the panels and gaps where SRM e them.

ADJUSTING THE HOOD, FENDERS, AND GRILLE

Here's a time-saving tip for those of you who are reassembling '39 Deluxe and '40 front sheet metal components — the factory put the hood in place first and adjusted the hinges by rotating them in the mounting holes, or by adjusting the bend in the arms to make the hood fit the cowl, and then slid the front clip (that had been loosely assembled) into place. Most of us will bolt the

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fenders and grille assembly up tight, and then try to make a one-piece hood fit the opening that is left. It just doesn't work. The best method is to bolt the fenders loosely to the cowl, and the same with the grille, jack the nose up so that the bumper brackets are somewhat centered in the fender openings, and then fit the hood with the grille and fenders. You'll have a lot more adjustability if you use 1/4 x 20 bolts around all the outer grille assembly, since the pre-punched holes are almost 3/8-inch in size.

Once you get all the gaps tighter than Ford ever did, gradually tighten everything down as you go. Even though the arms that are part of the hood hinges are of fixed length, it is possible to do a slight adjustment for a tighter fit along the cowl by putting more of a bend in the angle ends of each arm. A word of caution, however, make certain the ends remain in the same plane with each other and don't strike the other hinge arms in their travel. Well-oiled and smooth-operating hinge arms will make adjusting the hood much easier. New replacement hinges tend to have the rivets installed too tightly, and that, along with too much paint, will cause binding and bend the arms, as well as pull the rivets out of their holes. In all, this is probably the most

time-consuming and frustrating part of reassembling any portion of a '40 Ford, but the finished results are very noticeable, especially to another '40 owner who has taken the time to get all the lines in sync.

FINISH AND FIT

Most '40 builders have already experienced the fact that some cowls have different dimensions from one side to the other, and there just isn't any way to make the gap at the back vertical edge of the hood look the same on both sides. This doesn't seem to occur on all Forties, but was probably the result of one Ford stamping plant suffering a shift in the die or assembly jig prior to welding the firewall/cowl section together. If you make one side nice and tight, the other side

has a gap. You're faced with either trimming down one edge of the hood, or adding material to one side of the cowl or to the edge of the hood itself. Of course, nobody can view both sides at once anyway, so rather than doing some extensive bodywork, you might just want to leave it the way Henry put it together. Right!

To save yourself some frustration, just remember, back in the Forties, a quarter-inch or even wider gap was very acceptable to most auto manufacturers. Getting 'em narrowed down to pencil-lead widths so that ball bearing roll tests like they do on television commercials are perfect just takes buckets of time and patience.

SRM


Ford Deluxe


MOTOR CITY
Ford
FLATHEAD
Ford Deluxe

push_rod
Member



Re: 1940 Ford Hood Alignment

I might have just gotten lucky when I put the hood back onto my coupe. I used a technique my cousin (WWII dry lake bed racer) told me. I installed the grille and fenders first. I then placed a padded furniture blanket over the fenders. I installed the hood, but left the hinge and hinge plate bolts slightly loose at the attachment points on the firewall. I opened the hood, and gently pushed it up as high as it would go (only enough to take up all the slack at the firewall attachment points.). While I held the hood up, my dad tightened up those slightly loose bolts. The hood shut and aligned perfectly, fitting tightly against the top and sides of the cowl.

Last edited by push_rod; 07-21-2013 at 04:29 PM.