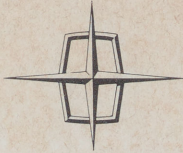


CAR LIFE

THE COMPLETE AUTO MAGAZINE



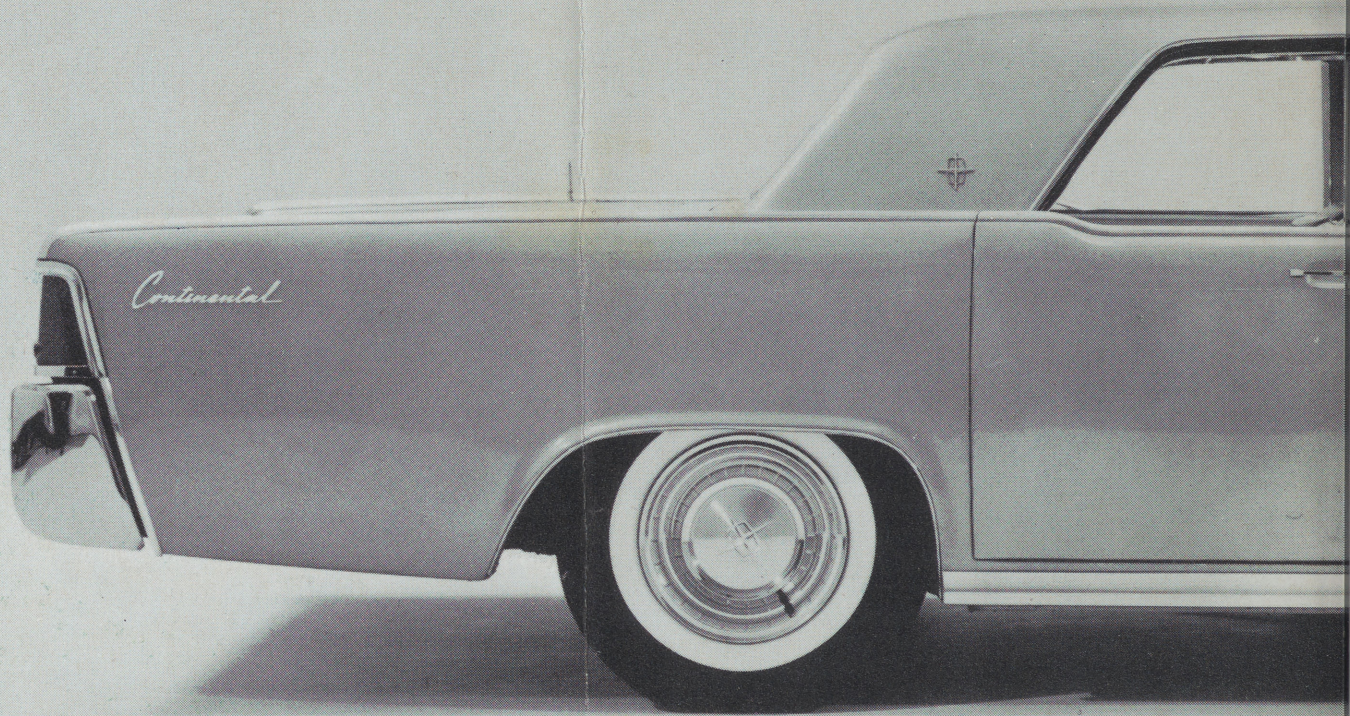
1961 LINCOLN CONTINENTAL

...Luxury car of the year

Lincoln Continental



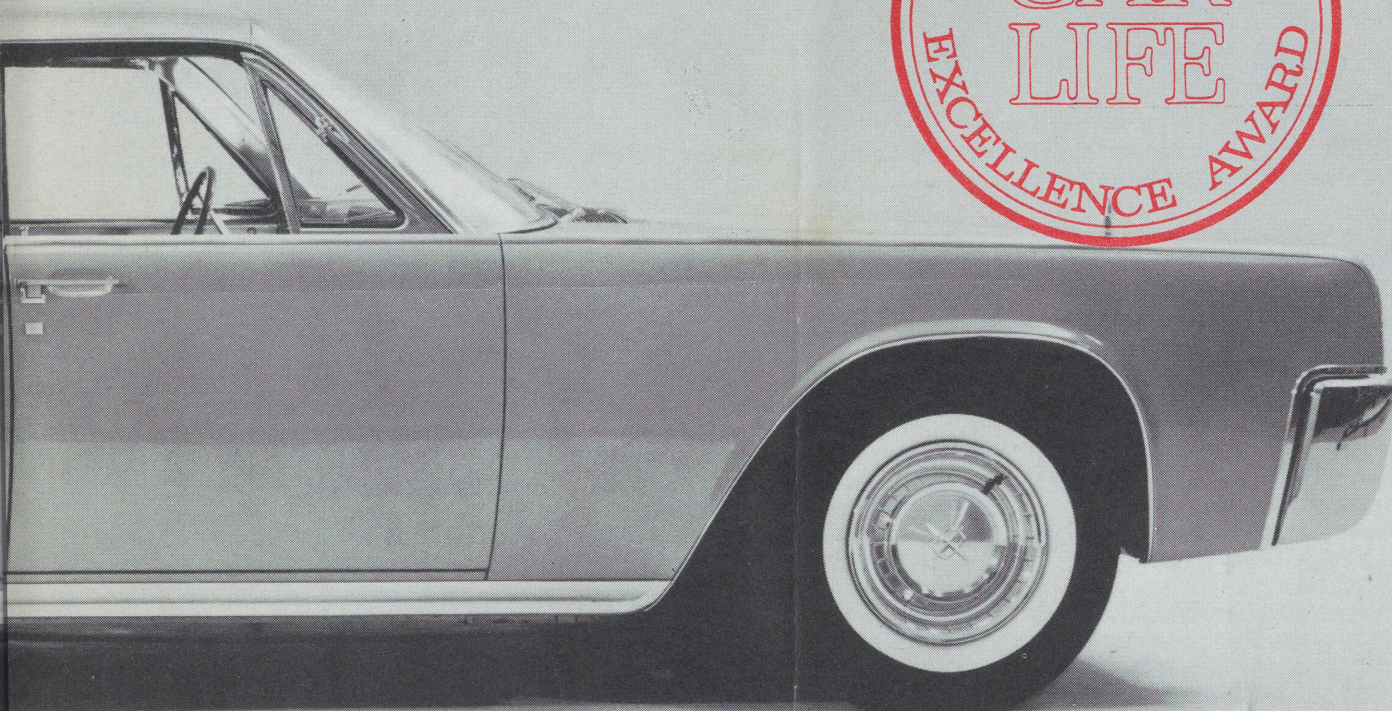
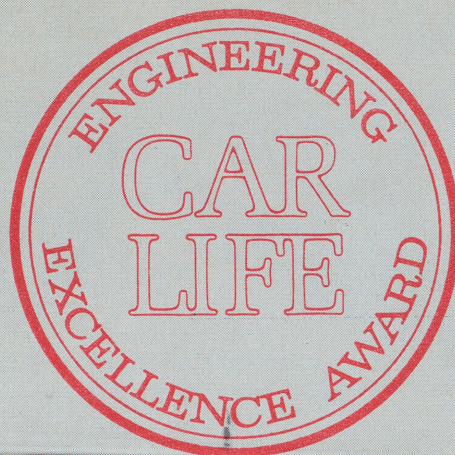
1961 LINCOLN



Harold C. MacDonald

In his position as assistant chief engineer, Car and Truck group, Ford Motor Company, Mr. MacDonald is responsible for the design and development of the Lincoln Continental. He received his mechanical engineering degree from Michigan State University in 1940, began his automotive career as an automobile and aircraft engine designer for Packard. During World War II he served as an engineering officer supervising PT boat maintenance in the Pacific. In 1946 he joined Chevrolet, came to Ford's Lincoln-Mercury Division in '48, was named manager of the advanced vehicles department there in '52, and from '55 on served as the Division's chief designer until appointed to his present position in 1960.

C O N T I N E N T A L



THE LAYMAN MIGHT EXPECT an award for "engineering excellence" to be based on new mechanical features, or what might be termed "advanced or novel design." However, engineering, in its broadest sense, encompasses far more than just the original paper design or blueprints. The engineering of an automobile, in particular, must include a program of test and development work to insure that the ideas of the designer will be practical and serviceable in the hands of the owner. Furthermore, a good portion of a test program is devoted to an evaluation of modifications or changes suggested by the production engineers—the people who have to build the product.

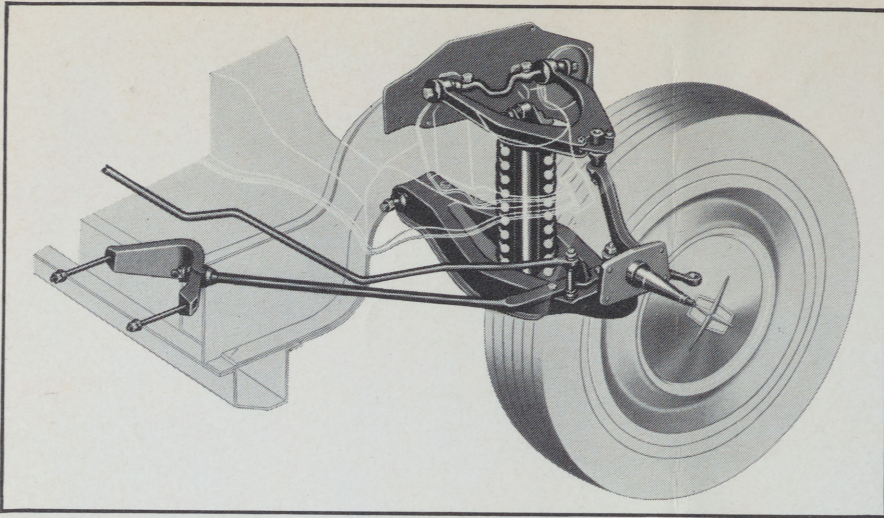
A little over a year ago, *Car Life* gave the Chevrolet Corvair an Engineering Award for its outstanding pioneering in over-all layout and functional approach to the design of a compact car. This year the award goes to the 1961 Lincoln Continental.

The engineering excellence of the new Lincoln is, as we have outlined above, the result of a cooperative effort between three more or less separate groups of engineers; the original design team, the test crew, and the produc-

tion experts. Up to this point, the Lincoln development is no different from that of any other car. But where the Lincoln achieves excellence is, for want of a better term, in quality control. Stated another way, the Lincoln is an outstanding example of a concerted, cooperative effort to build a top-quality automobile.

Now, engineers as a group are invariably the most dissatisfied people in a company—seldom given to brash claims, and usually prone to make understatements. But Lincoln's top engineers, those responsible for such specific areas as the body, the suspension, the engine and the transmission, are unanimous in saying that their new car acknowledges superiority to no other car, regardless of price or country of origin. And this statement is not made without an extremely thorough analysis and test of competitive products.

After visiting the plant at Wixom, Michigan, talking to the various engineers responsible, and driving 3 different Lincolns over a period of 3 weeks, the *Car Life* staff selected this car for the 1961 Engineering Excellence Award. Our reasons are given on the following pages.



Front suspension was keyed to silence considerations.

WHILE THE 1961 LINCOLN Continental features no startling new design innovations, it does incorporate a host of new refinements, both in the product itself and in its manufacturing techniques. A partial list of these follows:

1. The most rigid unit frame and body ever produced, to the best of our knowledge,
2. The most thorough sound-insulation and shock-damping methods ever applied to a production automobile,
3. Super-precision fits and tolerances in all mechanical components,
4. The most thorough product testing ever applied to a production car—to each and every car off the line,
5. An approach to minimum servicing and maintenance which is second to none,
6. Completely sealed electrical components designed to give extremely long, trouble-free service,
7. A new approach to the rust and corrosion problem.

Even a glance over this list of seven items will show that this car is designed and built with almost complete disregard for cost. While it can be argued that the result is expensive, it is our considered opinion that holding the Lincoln's selling price to only 2.9 times as much as that of the lowest priced Falcon is a truly remarkable achievement. This is particularly impressive in view of the fact that the car is much larger than the Falcon and its volume of production is only about 10% as great. While the comparison

is not completely fair, note also that this 2.9 price ratio compares with a 1:10 ratio just 25 years ago, when a Ford cost about \$600 and a Lincoln was priced at over \$6000.

Each of the above seven items deserves detailed comment. The rigidity of a frame (or, in this case, a unit structure) is considered to be its most important rating factor. The 1961 Lincoln structure has a torsional rating of over 10,000 ft-lb per degree of twist; at least 20% higher (or better) than any competitive design. This insures complete freedom from shake and allows somewhat softer springing for a more luxurious ride.

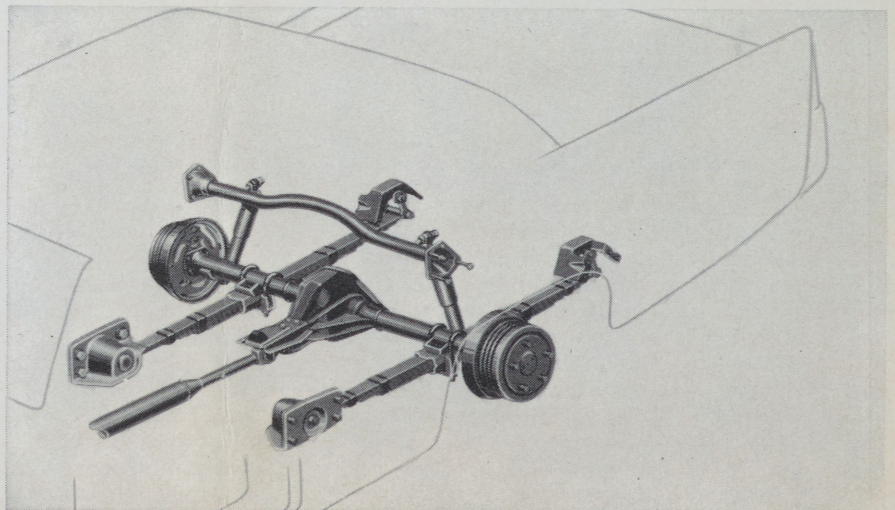
The approach to sound insulation and shock damping has been to use

every known means of eliminating transmission of road shocks to the passenger compartment—and then spare no expense to insulate or isolate whatever noise or shock might possibly get through. Rubber is used liberally throughout the suspension system, both front and rear. The variety of sound deadeners and insulation materials used throughout the body would take pages to describe. Even the tires have been specially engineered to reduce the transmission of road noise.

As for machining tolerances in mechanical components, a comprehensive manufacturing program has been set up to insure “ideal” clearances between working parts. Selective fits (long a standard practice for pistons) have been instituted for main bearings, main crankshaft journals, tappet bores, intake and exhaust valve stems and connecting rod bore and bearings. In addition, a host of engine changes have been made to insure quieter operation and greater reliability. A few of these are: constant-pitch valve springs, an improved distributor, a new method of supplying air to the carburetor at idle, molded nylon teeth on a die-cast aluminum camshaft drive sprocket, improved gasket design to prevent oil and water leaks, a redesigned piston for better control of expansion as well as reduced oil consumption, positive control of crankcase ventilation, exhaust valve rotators, and new hydraulic tappets with a stainless steel outer body and chrome-plated plungers.

Every engine, as it comes off the

Huge rubber bushings attach rear springs.

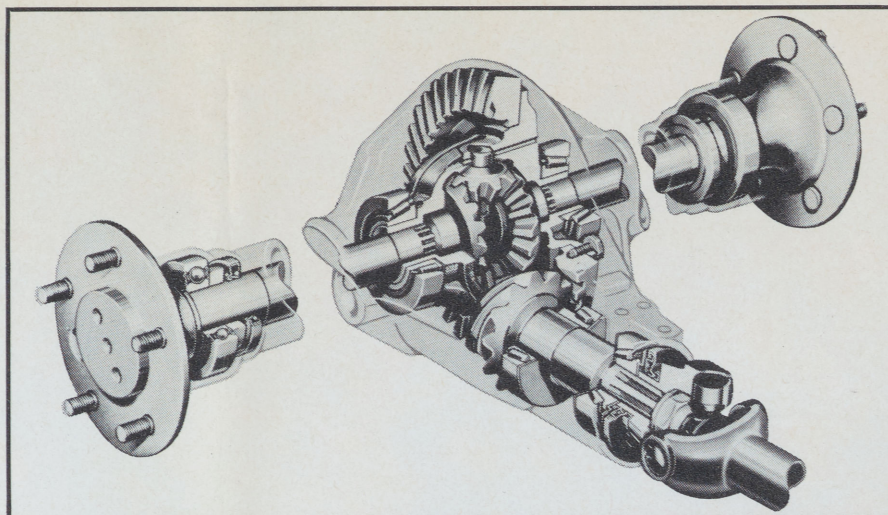


1 9 6 1 L I N C O L N

assembly line, is test run on a dynamometer for 3 hours. The latter part of the run is at 3500 rpm (equivalent to 98 mph), then the engine is torn down for inspection and re-assembled. The automatic transmission is also given a 30-minute test run for function and performance, before installation in the car. Then each completed car is given a 12-mile road test, during which the driver must check off some 190 separate items as being satisfactory. After that, the car is run over an inspection pit where black light is employed to detect oil leaks (by means of a fluorescent dye included in all lubricants).

Even the generators are given individual test runs before assembly with the engines, to insure that they run smoothly and quietly, in addition to performing properly. The idea behind this whole almost unheard-of procedure is to insure that the car is right when it leaves the factory.

One reason for this extensive testing and checking program is to avoid having any faults slip through which the dealer will have to correct. Toward that end, the engine crankcase is filled with a special, heavy duty break-in oil, and there is no 1000-mile check-up required. New owners are instructed that no service of any kind should be necessary until a 6000-mile total has been reached. Oil changes are necessary only at 6000-mile intervals and chassis lubrication is specified every 30,000 miles. The front wheel bearings need no re-packing and the transmission



Rear axle assembly has heavier-duty components.

oil need never be changed—except, possibly, after several years of use.

Final proof of the company's confidence in this array of engineering and servicing features is found in the warranty: two years or 24,000 miles, whichever comes first.

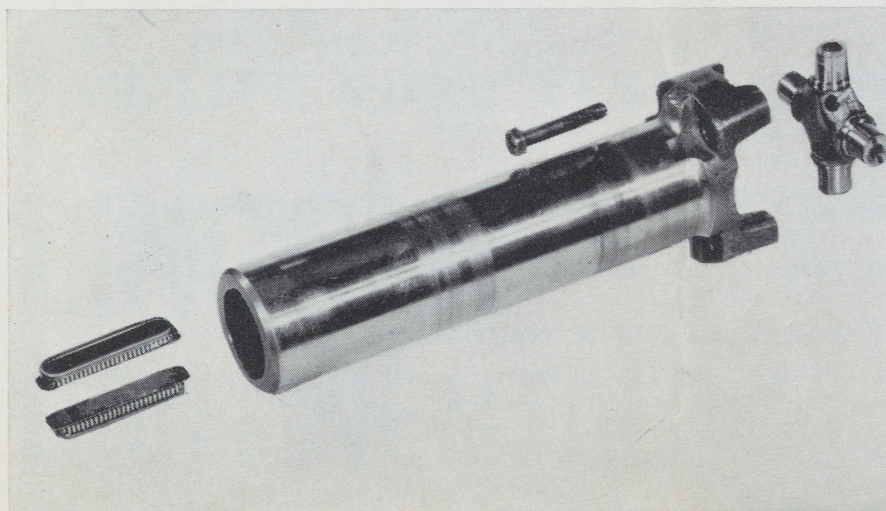
The final two items on our list concern the electrical components and anti-corrosion measures. A normal car's electrical system comprises a large number of separate parts, each made as cheaply as possible, and connected by wires running in all directions, often with little or no protection against chafing, contact with hot surfaces, etc. Every electrical item in the Lincoln's specification is of premium grade, carefully tested and tightly sealed. All wires

have special insulation and wrapping, and most connectors are the plug-in type. All wiring harness is tested for shorts before installation, but in addition each completed car receives a thorough check on an electronic test rig, which shows up not only any short circuit, but even any incipient shorts. Each of the four electric window motors is larger than the industry norm, to provide extra safety against overloading, and each has stainless steel shafts, special shaft seals, integral circuit breakers and is dipped in latex rubber for resistance to moisture. And these don't even show, nor do they help "sell" cars!

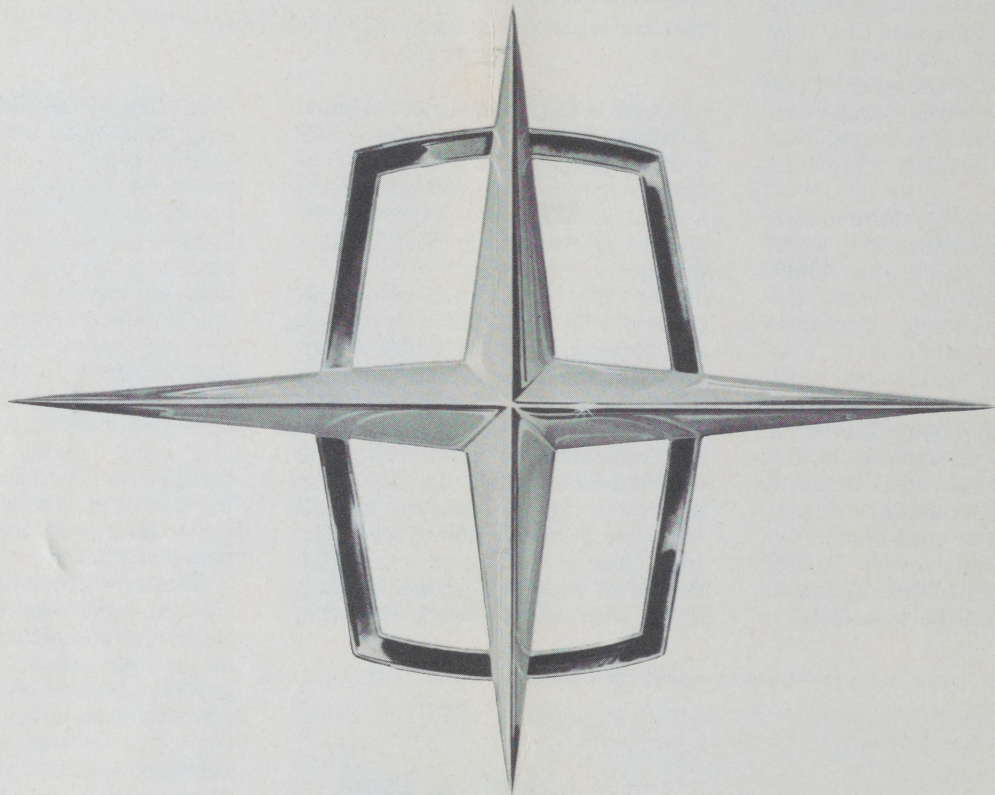
Finally we come to the anti-corrosion methods employed by Lincoln. Here, the body/frame structure has all its principal components made of galvanized steel, plus a dip in a special anti-rust paint. But even more important is the extensive use of stainless steel in out of the way places (such as shock absorber shafts) and costly gaskets, covers, seals and even splash guards applied to areas particularly vulnerable to salt splashing. Again, here is concern over things that aren't readily apparent to the sales prospect.

Examination of even this partial list of 1961 Lincoln specifications indicates that here is a car extraordinary—one that is designed to be beautiful and comfortable, and built to be long-lived and reliable. In short, this is a car which well deserves the 1961 *Car Life* Award for Engineering Excellence. ■

Driveshaft slip-joint "keys" have recirculating needle bearings.



C O N T I N E N T A L



THE 1961 LINCOLN CONTINENTAL IS SO PRECISELY BUILT, SO THOROUGHLY INSPECTED, IT IS AMERICA'S ONLY LUXURY CAR HONORED BY A TWO-YEAR/24,000-MILE WARRANTY* OF QUALITY

*Ford Motor Company warrants to its dealers, and its dealers, in turn, warrant to their Lincoln Continental customers as follows: That for 24 months or for 24,000 miles, whichever comes first, free replacement, including related labor, will be made by dealers, of any part with a defect in workmanship or materials. Tires are not covered by the warranty; appropriate adjustments will continue to be made by the tire companies. Owners will remain responsible for normal maintenance service and routine replacement of maintenance items such as filters, spark plugs, ignition points and wiper blades.



CAR LIFE ROAD TEST

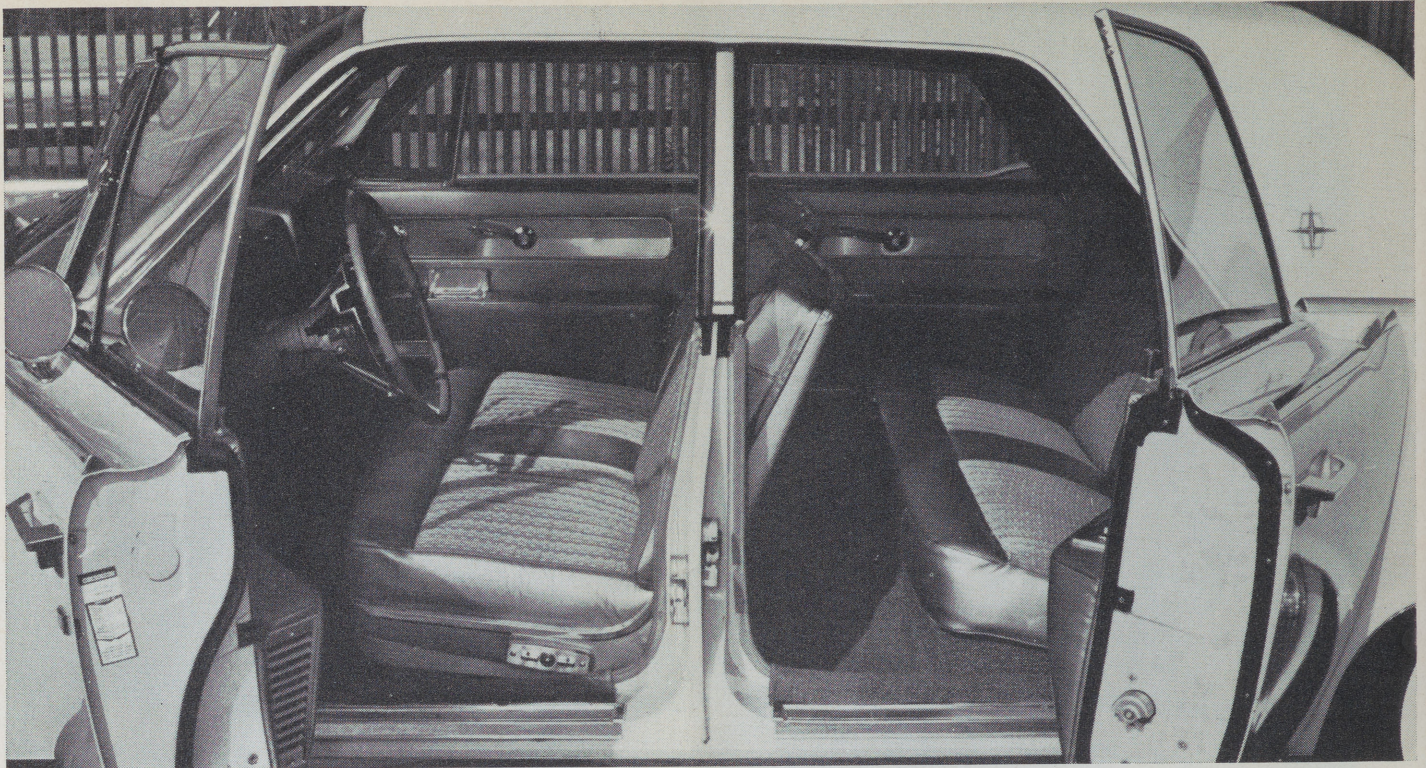
LINCOLN CONTINENTAL

Members of the *Car Life* staff who first drove the yet-to-be-announced Lincoln-Continental definitely felt that here was a car that would appeal to people with good taste—if they could afford it.

For, remembering the Continental Mark II, we estimated the price at \$10,000. Since that time, the list price has been set at \$5565 (without taxes) and we have had a chance to drive two production cars. Somewhat to our surprise we found no reason to alter or revise our earlier favorable impression. Now, the *Car Life* staff leans rather heavily toward the compacts when it comes to personal ownership, but all 5 staff members who drove the test car were impressed—some of their comments were: "A truly fine car, well built, extremely luxurious, easy to drive."

For those buyers who are used to owning this category of automobile, the most important change in the 1961 Lincoln is in its size. Whereas the previous model was one of the largest cars on the road, the new model is more conservative in this respect and achieves its more compact dimensions with no discernible sacrifice in interior roominess. Here are the comparison figures:

	1961	1960
Wheelbase	123.0	131.0
O/a length	212.4	229.0
Width	78.6	80.1
Height	53.5	56.9
Volume, cu ft.....	517	604
Curb weight	4954	5280



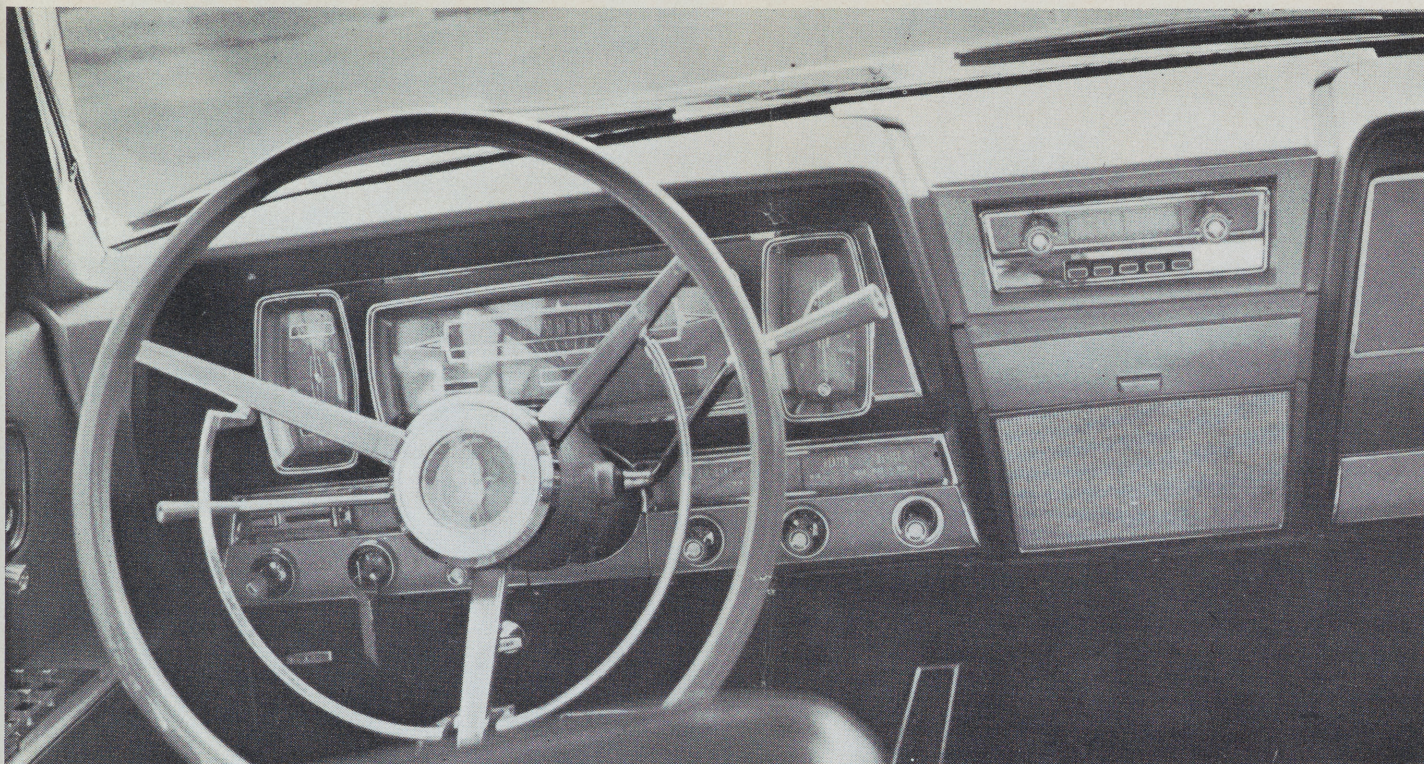
From this it is easy to see that the "box" volume has been reduced by 14.4% and, with the optional air conditioning as supplied on the test car (curb weight 5220 lb), the weight is almost the same as before.

With the biggest engine on the market today (430 cu in.), the performance is all that anyone could ask, and numerous engine refinements have brought the engine noise level down to a mere whisper. Engine smoothness is further enhanced by a very low rate of crankshaft revolutions per mile (see data panel), and when the car is driven in the "economy-D-2" transmission range the fuel consumption goes as high as a respectable 14 mpg. However, the "D-1" transmission setting gives more dynamic acceleration, and in varied driving from day to day we averaged just over 12 mpg for 1100 miles.

The acceleration checks were all made using the "D-1" shift position. This, along with full throttle, holds first gear to 44 or 45 mph, while second gear remains engaged up to 75 to 77 mph. These shift points are well chosen for the best possible performance, since they correspond to an engine speed of close to 4100 rpm, which is exactly at the peak of the power curve. Considering the sheer weight of this machine, the acceleration times are startling; a zero to 60 mph time of close to 11 seconds and zero to an honest 100 mph in just over 40 seconds was hot-rod performance only a few years ago. Incidentally, the speedometer error was commendably small and it actually read dead accurate at 90 and 100 mph, indicated.

Acceleration above 100 mph is rather slow, but the



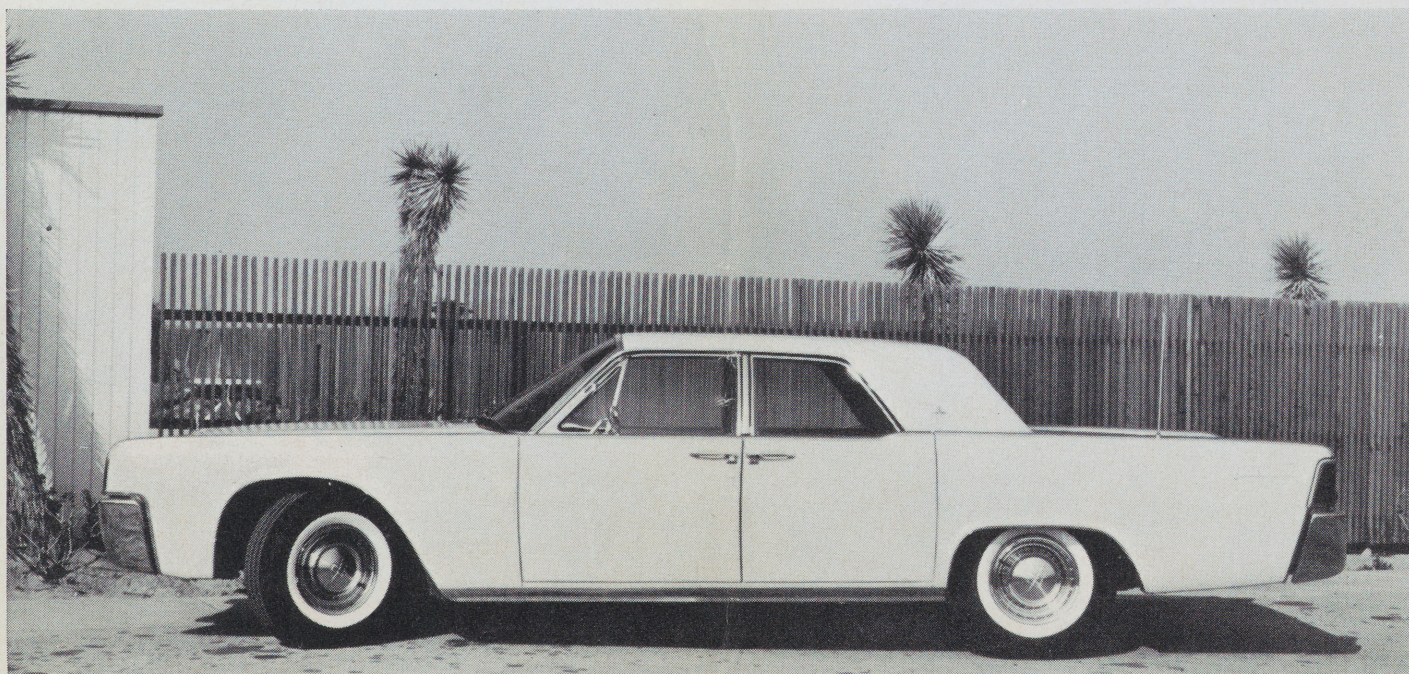


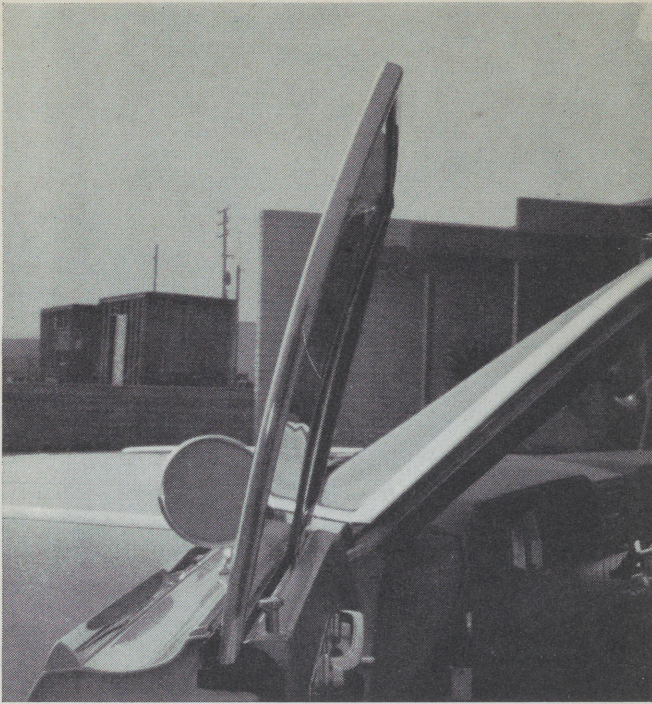
2.89 axle ratio is near-perfect for best possible top speed, since 4100 rpm is equivalent to 115 mph. Our test strip wasn't long enough to get the car completely unraveled, but the true top speed is undoubtedly very close to 117 mph, given a sufficiently long stretch of open road.

The ride over all types of streets and roads is absolutely superb, and the only criticism we can make is that the front end seems to have a very slow oscillation rate under certain types of road waves taken at moderate speed. High speed stability is excellent up to a genuine 100 mph. Above that speed, particularly on curves that wouldn't even be noticed at 60 mph, the power steering feels a little sensitive and almost too quick for comfort. However, even 100 mph is a ridiculous speed these days—as well as an illegal one.

For all normal driving at legal speeds the steering is easy and with a ratio requiring 3.8 turns (lock to lock), the ability to maneuver quickly is a definite safety factor. The small 16-inch steering wheel is also an important safety feature, which contributes to quick and easy control. Cornering roll is moderate for such a softly sprung vehicle and the car has positive understeer. When cornered like a sports car on wet roads the front end slides first, but there is enough power to produce rear end slide if you are going slowly enough to get a downshift into first gear.

Like all of the controls, the brakes are very smooth and require no more than a very light pedal pressure. The booster is innocuous and does not show any tendency to over-control or grab. Two stops from 100 mph



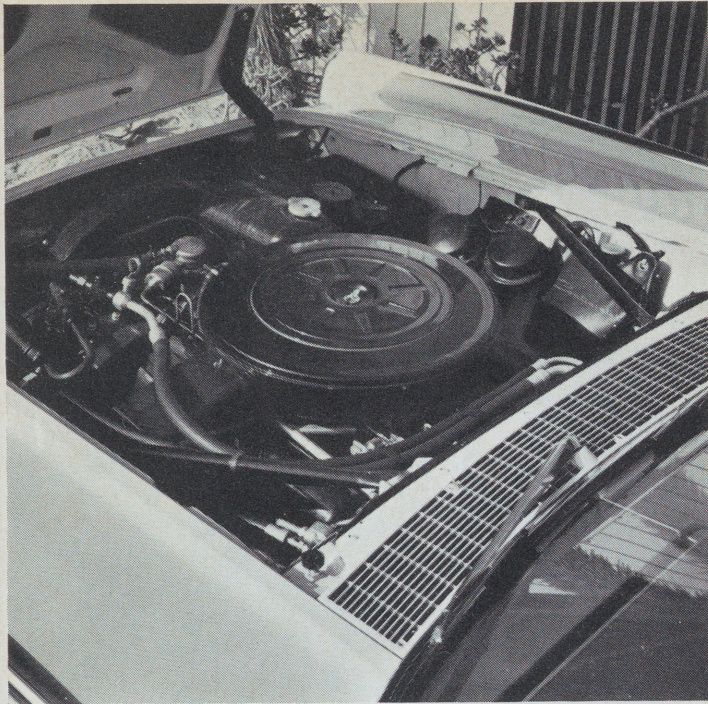


within a time interval of about 3 minutes showed no sign of fade—thanks to huge, finned brake drums with no less than 416 sq. in. of drum swept area.

The Lincoln-Continental is primarily a car for luxurious cross-country travel. It floats along to 80 mph smoothly, quietly and effortlessly. The driver has good visibility and can see both front fenders for accurate placement when required. The seats are especially nice and wide center armrests fold down to convert a full 6-passenger sedan into a 4-passenger car, if desired. The controls on the instrument panel are well marked and easy to find at night, and they look as though they were designed to rotate. Some do turn, but, unfortunately, one has a toggle "flip" action. This can be very disconcerting, and we were particularly disappointed with the automatic vacuum door locks—they aren't automatic. When you start to drive off, a red light flashes and the door lock knob must be pushed *down* to lock the doors and turn off the light. When you want to get out, the knob must be flipped back up. We found this something of a nuisance.

Our test car was equipped with air conditioning (\$504.60 extra). The main control console drops down like a centrally located glove box, but the air ducts are distributed about the interior to avoid uncomfortable drafts. We didn't try the unit, but Lincoln's air conditioning engineers state that under competitive test this unit





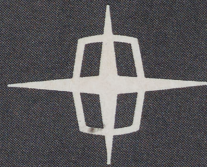
will out-perform anything else on the market; for example, under bright sunlight, 100° F outside temperature, and 40% relative humidity, the 1961 conditioner had a 13° F cooler inside temperature than competitors, after only two minutes. We'll take their word for all this, though it should be mentioned that the "competitors" would necessarily have to be 1960 models.

As one would expect in a car of this type, all those little touches that mean so much to the perfectionist are in evidence. The ashtrays, to cite only one example, are illuminated with integral, individual bulbs—bright enough to ensure easy location of the receptacle on the darkest night, yet dim enough to avoid casting an unwanted reflection on the windshield. Rear seat ashtrays include individual lighters.

One surprising factor about the external appearance of the Continental is the curvature of the side windows. At first sight you notice this, then dismiss it as an illusion brought about by the considerable "tumble home" possessed by the greenhouse. Upon closer examination, one discovers that the windows are indeed curved to better conform to said tumble home. Fortunately, the degree of curvature is slight, and does not make its presence felt in the form of unwanted distortion when looking out from within.

From all that we can ascertain, surveys to the contrary notwithstanding, appearance is far and above the most important factor in a car purchasing decision (excluding price, of course). Here, the new Lincoln-Continental scores mightily. A few of our people had some reservations as to the Lincoln's grille treatment, but the general feeling was that this is the best-looking American car built today. A typical statement was "I like the car's appearance, on the whole. The front and rear end could be improved, but I don't find them objectionable." While surveys show that people buy cars for economy, we believe they are merely giving what they *think* is the right answer. The Lincoln has the "looks," the quality is second to none—and if you can scrape up the down payment—well, put us down for one when our rich aunt dies. ■

CAR LIFE ROAD TEST



LINCOLN CONTINENTAL

SPECIFICATIONS

List price	.....\$5977
Price, as tested	.....6714
Curb weight, lb.	.....5220
Test weight	.....5500
distribution, %	.....56/44
Tire size	.....9.00-14
Tire capacity, lb.	.....5420
Brake drum area	.....416
Engine type	.....V-8, ohv
Bore & stroke	.....4.30 x 3.70
Displacement, cc.	.....7049
cu in.	.....430.0
Compression ratio	.....10.0
Bhp @ rpm	.....300 @ 4100
equivalent mph	.....115
Torque, lb-ft.	.....465 @ 2000
equivalent mph	.....56.0

GEAR RATIOS

3rd (1.00), overall	.....2.89
2nd (1.48)	.....4.28
1st (2.37)	.....7.45
1st (2.37 x 2.1)	.....14.4

DIMENSIONS

Wheelbase, in.	.....123.0
Tread, f and r	.....62.1/61.0
Over-all length, in.	.....212.4
width	.....78.6
height	.....53.5
equivalent vol, cu ft.	.....517
Frontal area, sq ft.	.....23.4
Ground clearance, in.	.....5.5
Steering ratio, o/a.	.....20.5
turns, lock to lock	.....3.8
turning circle, ft.	.....46.7
Hip room, front	.....59.7
Hip room, rear	.....60.7
Pedal to seat back	.....38.0
Floor to ground	.....10.0
Luggage vol, cu ft.	.....22.9

PERFORMANCE

Top speed (est), mph	.....117
best timed run110
3rd ()
2nd (4000)76
1st (4150)45

FUEL CONSUMPTION

Normal range, mpg12/14
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ACCELERATION

0-30 mph, sec.4.1
0-405.6
0-508.0
0-6011.2
0-7016.1
0-8022.5
0-10043.0
Standing ¼ mile18.2
speed at end	.....74

PULLING POWER

3rd, lb/ton @ mph	.....275 @ 45
2nd	.....440 @ 35
1st	.....600 @ 25
Total drag at 60 mph, lb.	.....165

SPEEDOMETER ERROR

30 mph, actual	.....29.4
60 mph	.....58.9
90 mph	.....90.0

CALCULATED DATA

Lb/hp (test wt)	.....18.4
Cu ft/ton mile	.....96.8
Mph/1000 rpm	.....28.0
Engine revs/mile	.....2140
Piston travel, ft/mile	.....1320
C. L. wear index	.....28.2

ACCELERATION & COASTING

