

SCI tests

the 1956

Ford Thunderbird

*“As a touring car
and a sports car...
...an improvement
on its predecessor.”*



THREE days before I started shaking down the '56 Thunderbird, Chuck Daigh blasted across the sand at Daytona in a similar but souped car and covered the standing mile in 39.07 seconds, an average of over 92 mph for the distance. A few days later I clocked a stock T-Bird on Ford's Arizona proving ground at a sizzling 119 mph.

On the surface these figures seem to indicate that the T-Bird has a solid potential as a competition sports car, and that Ford has started to tap it. But it only looks that way when you take the figures out of the overall T-Bird context.

The Bird has plenty of brute strength but it is no sports car. Even though it corners very well this year, its chassis, steering and brakes still make it best suited to turnpikes and drag strips. Nevertheless, Bird sales in '55 wrote one of the big success stories of the year; 16,155 of them were sold, a new record for sports-type cars in the U. S. and far more than anyone at Ford expected. For '56, plant facilities have

been expanded to fill an expected 20,000 orders. This estimate, too, may be conservative.

Don't assume, though, that the screaming success of a not-quite-sports car means that the U. S. public is too dull and insensitive to know what it's buying. This is not true. Because if the Bird is something less than a sports car, it is something more, too. While it has only some of the handling and performance characteristics of full-fledged high-performance cars, it also has the comfort, convenience and luxury of good Detroit touring iron — qualities that most American drivers find it hard to do without.

As both a touring car and a sports car the '56 Bird is an improvement on its predecessor. But for as long as the car's sports side is going to be molded to fit the requirements of its touring side, there's bound to be a pretty tight limit on how good it can get from the point of view of the *pur sang* enthusiast. Last year it seemed possible that the Bird was the first of a series of transition cars that would lead to a mature sports machine. But this year all the indications are that the Bird is going to stay split down the middle and as schizoid as Dr. Jekyll.

You can't drive the car for 10 minutes without becoming aware of the contradictions and compromises that the car's double personality makes necessary. When you punch the throttle, for example, there's a pronounced lag before the car moves forward. This is the result of the use of a simple Hotchkiss drive — part of the Bird's touring car heritage — in combination with rear springs which are not at all firm enough to give good resistance to rear axle torque. Last year's car had 48-inch five-leaf half-elliptic rear springs and a ride that was definitely firmer than the Detroit standard. The new model has four-leaf springs at the rear and they are now 56 inches long. Now the car has as smooth and gentle a ride as most Detroit touring cars, and its roadability has not been adversely affected, but there is the lag. Furthermore, if you rock the steering wheel while you're going down a straight stretch, the car wallows heavily back and forth on its springs — the opposite of an all-of-a-piece feel. The sprung part of the car leads a life of its own, with little regard for the unsprung part.

The Bird's steering is another case in point. Last year the car, when equipped with power steering was entirely —

At Kingman Arizona proving ground T-Bird laps test course with test driver J. B. Corbin behind wheel.

*“...a not-quite-sports car
that is doing a very
real missionary job...”*

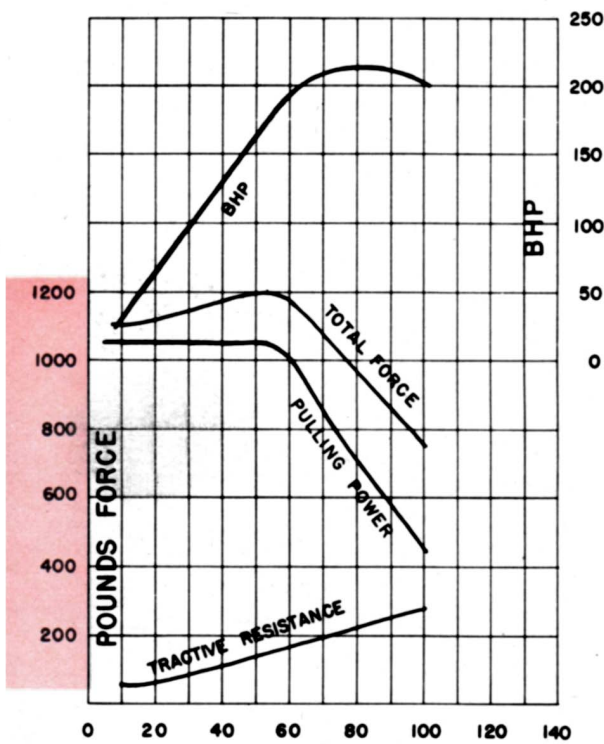
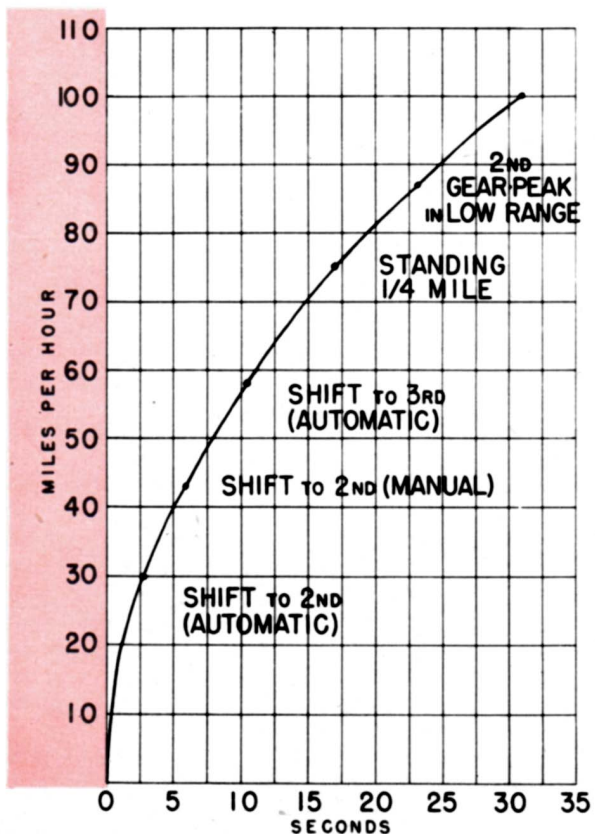


Chart shows results obtained with a gravity accelerometer (Perfometer). Bottom scale is calibrated in miles per hour.



almost lethally — devoid of feel. This year the feel is pretty acceptable, but the steering is far too slow. In '55 it was none too quick at 3.5 turns from lock to lock. Now it's really slow at 4.75 turns. Try to negotiate a complicated maneuver with both hands on the wheel and you get as tied up as if you were in a straightjacket. When the wheel has to spin through hundreds of degrees to aim the car where you want it to go, the only way you can operate is with one hand, and this is steering the hard way. It may not matter much when you're just parking the car or tooling conservatively along mountain roads, but when you become concerned with skids and with vital, sudden changes of direction — as in racing — you need more than the Bird gives you.

Even so, the T-Bird corners remarkably well. When I weighed it I found that with the fuel tank three-quarters full the weight on the front wheels was within five pounds of the weight at the rear. This good balance, plus a low center of gravity and a close tread-to-wheelbase ratio, helps the Bird achieve really excellent road adhesion. For test purposes I use a tight corner that has held some of the fine European sports-touring cars to a ragged 55 mph. But the '56 Bird, in the hands of competition driver Russ Kelly, who ran the test with me, snarled through the turn a good 10 mph faster.

Equally good is the Bird's acceleration. The car has a healthy enough power-to-weight ratio for it to hold its own with many of the world's really fast machines. But you should not attempt full-throttle starts with this car. What you get instead of a quick acceleration time is violent wheelspin.



T-Bird holds well on standard test curve, but left hairy skid marks. According to author, "It didn't have the glued feel but it stayed stuck and got through the turn faster than some pretty good foreign stuff."



The power plant with the engine dressup kit. Underhood bright work costs an extra \$21.50. This stock Fordomatic engine is rated at 225 hp.

BELOW: Indicating 120 mph on the Bird's clock. Car stayed on high edge of banked course without hands on wheel at this speed. Note light hand control here.



Spare must be tilted back in order to refuel. Tilt mechanism, however, is solid and simple to operate.



This view shows seating position of T-Bird. Adjustable seat and steering wheel allow for various positions of comfort.



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PERFORMANCE

Fordomatic model, 225 bhp

ACCELERATION:

From zero to	Drive range	Low range
30 mph	3.3 secs.	3.2 secs.
40	5.4	4.9
50	8.5	8.0
60	11.7	11.5
70	14.9	14.7
80	20.2	19.8
90	25.2	24.9
100	31.8	31.0
Standing 1/4 mile	17.3	17.1
Standing mile	45.4 (average 79.2 mph)	

SHIFT POINTS:

First (automatic)	28 mph (actual)
First (manual)	43 mph (actual)
Second (automatic)	58 mph (actual)

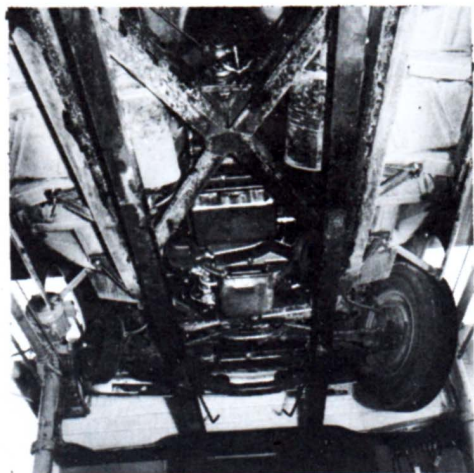
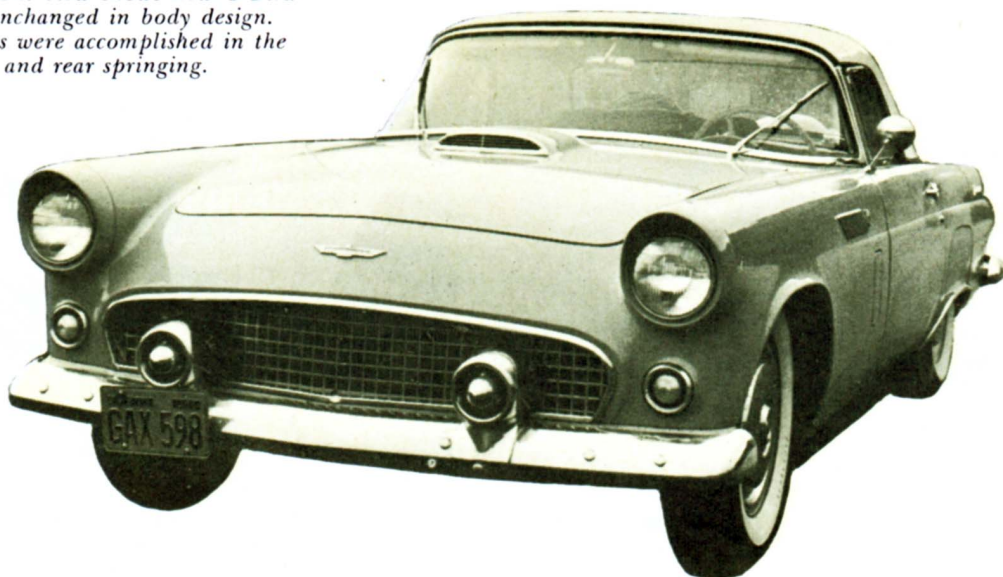
TOP SPEED: (1.5-mile approach to 1/4-mile timing trap)

Two-way average	106.4 mph
Fastest one-way run	108.7 mph
With five-mile run	119.4 mph

SPEEDOMETER CORRECTION:

Indicated	Actual
30 mph	27 mph
40	36
50	44
60	53
70	62.5
80	72
90	82
100	91

Three-quarter front view shows new T-Bird to be basically unchanged in body design. Major alterations were accomplished in the steering, engine, and rear springing.



Underchassis shows X braced frame and simple Hotchkiss drive. Front suspension is standard ball joint used on all Fords.

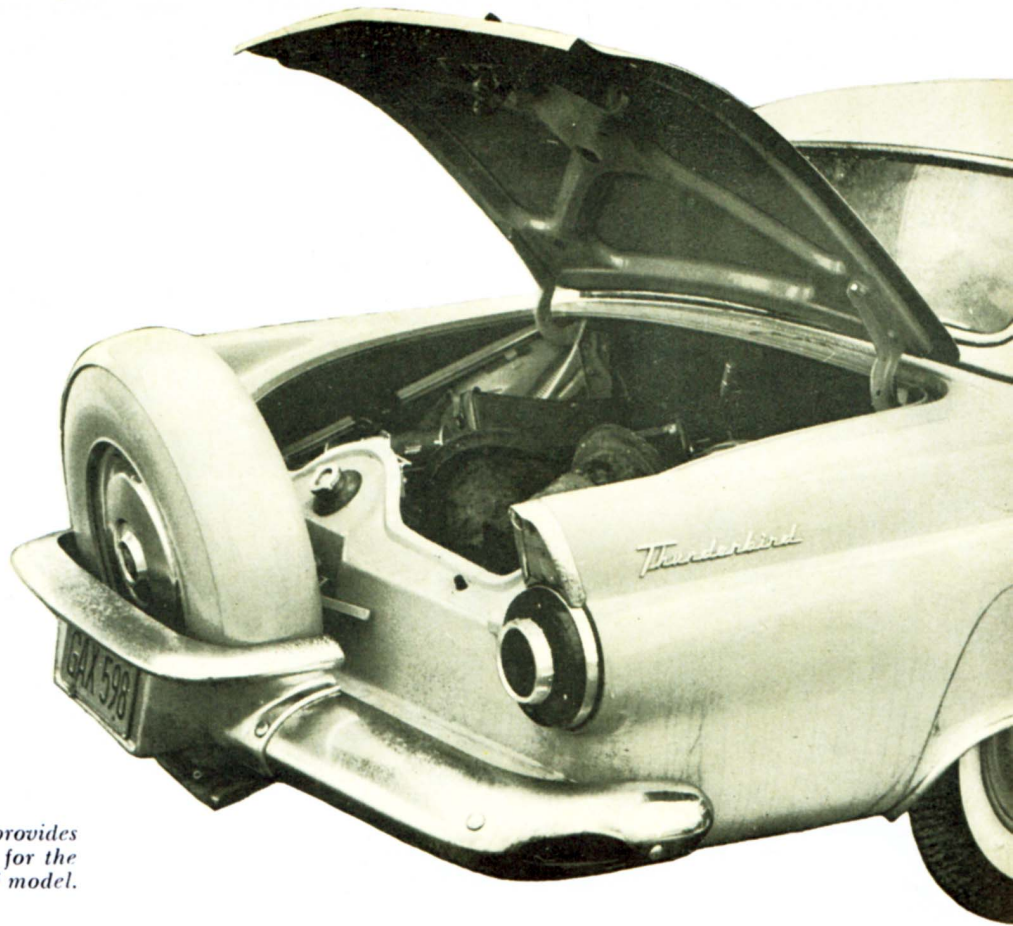
RATING FACTORS:

	Std. trans.	Overdrive	Fordomatic
Bhp per cu. in.	.69	.69	.72
Bhp per sq. in. piston area	2.29	2.37	2.48
Pounds per bhp — test car	—	—	15.8
Piston speed @ 60 mph	1545 fpm	1140 fpm	1430 fpm
Piston speed @ max. bhp	2530 fpm	2640 fpm	2640 fpm
Brake lining area per ton (test car)	—	—	101 sq. ins.

FUEL CONSUMPTION:

Very hard driving	11.3 mpg
Average driving under 60 mph	12.7 mpg

T-Bird . . .
an esoteric
gospel for
the unsaved . . .



Continental spare arrangement provides more luggage space in trunk area for the touring minded motorist, than did '55 model.

SPECIFICATIONS

POWER UNIT:

Type	V8		
Valve arrangement	In-line, pushrod operated		
Idle speed	475 - 500 rpm		
	Std. Trans.	Overdrive	Fordomatic
Maximum bhp	202 @ 4600	215 @ 4600	225 @ 4600
Maximum torque, lb-ft.	289 @ 2600	317 @ 2600	324 @ 2600
Piston displacement	292 cu. in.	312 cu. in.	312 cu. in.
Bore x stroke	3.75 x 3.30 in.	3.80 x 3.44 in.	3.80 x 3.44 in.
Stroke Bore ratio	.88 to 1	.91 to 1	.91 to 1
Compression ratio	8.4 to 1	8.4 to 1	9.0 to 1

DRIVE TRAIN:

Transmission ratios	1st - 2.33	1st - 2.33
	2nd - 1.48	2nd - 1.48
	3rd - 1.00	3rd - 1.00
		OD - 0.70
Final drive ratio	3.73	3.92

CHASSIS:

Suspension, front	Unequal length wishbones, coil springs, ball-joints.
Suspension, rear	Solid axle, torque taken through semi-elliptic springs.
Shock absorbers	Houdaille direct tubular, F & R; 1 in. piston diameter.
Steering type	Worm & two-tooth roller.
Steering wheel turns	4.75 from lock to lock.
Steering turning diameter	36 ft.
Brake type	Hydraulic duo-servo, cast iron drums, 11-in. diam.
Brake lining area	175.5 sq. ins.
Wheel studs	5½-in. studs, 4½" circle diam.
Tire size	6.70 x 15
Rim width (outside)	6.5 ins.
Wheelbase	102 ins.
Tread	56 ins., F & R.

GENERAL:

Length	175 ins.
Width	70 ins.
Height	52.5 ins.
Weight, test car	3550 lbs.
Weight distribution, F/R	50/50

T-Bird

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reading 143, the most optimistic error I've come across in a long time and one that the pink-slip jousters would do well to remember. Another good point to remember is that on a car as heavy as the Bird ordinary passenger-car tires are likely to start shedding their threads after 8 or 10 miles of 110 to 115 mph driving. Ford had the cars at the proving ground equipped with Firestone Super Sport tires — tubeless, of course. Under the Bird's hard acceleration the tires slip on the driving wheels and would easily shear the valve stems from conventional tubes. Anyone contemplating serious dragging, using standard tubes would do well to put screws in the wheel rims.

The Bird's brakes are better than they were before. The car I tested last year and this year's test car both had power brakes. In the case of the '55 you could depress the brake pedal a couple of inches and nothing would happen. One sixteenth of an inch more and the wheels would suddenly lock, with assorted embarrassing consequences.

The '56 model's brakes take hold smoothly and evenly. At below 50-mph speeds they lack authority and at 100 mph they seem to serve a sort of token function. These are not the brakes you look for on a sports car or on what the

Europeans call a *gran turismo* machine. You learn quickly to downshift to Low Range to add to the car's braking power.

On the whole, the Bird feels quite good at high speed — as good as any loose-steering car can feel. But this and the tendency to dance on its springs makes driving the Bird a more nerve-tightening experience than the average sports car driver is happy to accept.

Another objection that the man who wants a pure sports car is likely to make is that the car has far more iron than it needs. The Bird may be small by Detroit standards but it's unnecessarily bulky and ponderous for a high-performance car. Here again the car's dual personality is the reason. The Bird is based on a shortened version of the Ford convertible frame which, with its rugged cruciform construction, is itself a heavy device. On the Bird this frame is beefed up even more with an immense amount of strap iron that is hand-welded to the bottom of the frame. This iron, two inches wide and half an inch thick, is applied to the side members of the frame and to the four segments of the central X-member. The resulting structure ought to be very rigid and reliable. As a sports car frame it is laughably heavy. As a touring car frame it is ruggedly substantial.

On many other touring-car counts the T-Bird scores very well indeed. It has plenty of room for luggage and passengers. It doesn't have the shoulder-cradling bucket seats that the sports car *aficionado* might prefer, but its yielding upholstery does an above-average job of body bracing. Furthermore, the bench seat is wide enough to accommodate three adults in total comfort or two adults and two kids. The detail work is excellent by any standard, but most important to the American mass market, it meets good U. S. standards of quality, style and comfort. I detected only one jarring note in the luxurious overall effect; cranking the windows up or down is so difficult that you would welcome power assist.

Physically, the '56 Bird, like the '55, is a handsome beast. The biggest styling change this year is, of course, the switch to the continental spare, which makes the car look more like a logical successor to the old Lincoln Continental than the new Continental itself. Naturally the new, external mounting for the spare makes a big difference in the T-Bird's luggage capacity — something all short wheelbase cars can use. In a car that is not essentially a competition machine, the style and utility benefits of this change more than compensate for the small sacrifice in additional wind drag. #

Monza

(Continued from page 37)

by Weber is no surprise, and the Monza uses two of the 58/DCOA/3 type twin-choke carburetors. These are really prodigious, and carry 44 mm venturis. Webers are noted for their careful interior streamlining and "straight-through" design, which is fine at high revs but impairs proper correction for low-speed running. Paul Frere quotes a volumetric efficiency of over 100 percent at 5000 rpm for the similarly equipped Ferrari Grand Prix engine, which should be approached by the thorough intake and exhaust tuning on the Monza. Very short angled alloy pipes connect the gasworks to the ports, and stubby velocity stacks are fitted. A heavy throttle linkage cross shaft is carried in two ball bearings.

A notorious torque producer, the

Monza top end imposes a high level of stress on the rest of the engine and drive train. In actual fact the less glamorous bearing end of the engine is a trifle overstressed, and as a result the standard Monza's full-bore racing life is limited on the average to a period of seven hours. Beyond this point tune falls off and clearances become excessive, calling for a complete rebuild and renewal of bearings, pistons, etc. Endurance races have thus seldom been the Monza's meat.

The short head and cylinder unit bolts directly to the very deep Siliconium crankcase, and rubber rings form water seals at the bottoms of the individual cylinders. Very simple solid webbing supports each of the five main bearings, which are 2.36 inches in diameter and available in four under-

sizes. The webbing continues down an inch and a half or so beyond the crank centerline, to give the deep, I-sectioned bearing caps some lateral support. There are two retaining studs per cap.

That it may carry the oil supply to the crank and big ends, the center main is $\frac{5}{8}$ of an inch wider than its $1\frac{1}{8}$ inch breatheren. Quite devoid of elaborate balance weighting, the forged steel crankshaft receives the impact through 1.97 inch diameter big-end journals. Aluminum-bronze Vandervell thin wall bearings are fitted here, as at the mains, and four under-sizes are again available.

Connecting rods are short and simple, the sides of the I-section center being perfect tangents to the outer diameter of the wrist-pin end. Two bolts retain the big-end cap, while the