

BOBSY OSCA

*A modern lightweight sports/racing hybrid
for American club racing*



CLASS H MODIFIED sports car racing (850-cc displacement limit) has always attracted a small group of enthusiasts addicted to building their own cars and squeezing the maximum power from diminutive engines. Until recently, the Crosley engine dominated the class although it was becoming increasingly long in the tooth, and it has now been superseded by Saab, outboard motor power units, and an occasional Osca.

Among the Osca drivers is Chic Gast of San Francisco, who purchased a 1960 750-cc model which has served him well although by the end of the 1963 season it had reached a point where some radical updating was required if it was to continue winning races. For this reason, Gast decided to retain the power unit and install it in a Bobsy chassis (R&T March 1964) and the result is a well designed and very effective competition car.

There were really two reasons for needing a new chassis. First of all, chassis design has made tremendous strides in the last few years, due mainly to Colin Chapman and those who try to keep pace with him and, secondly, the Osca was built for a different type of competition than that to which we are accus-

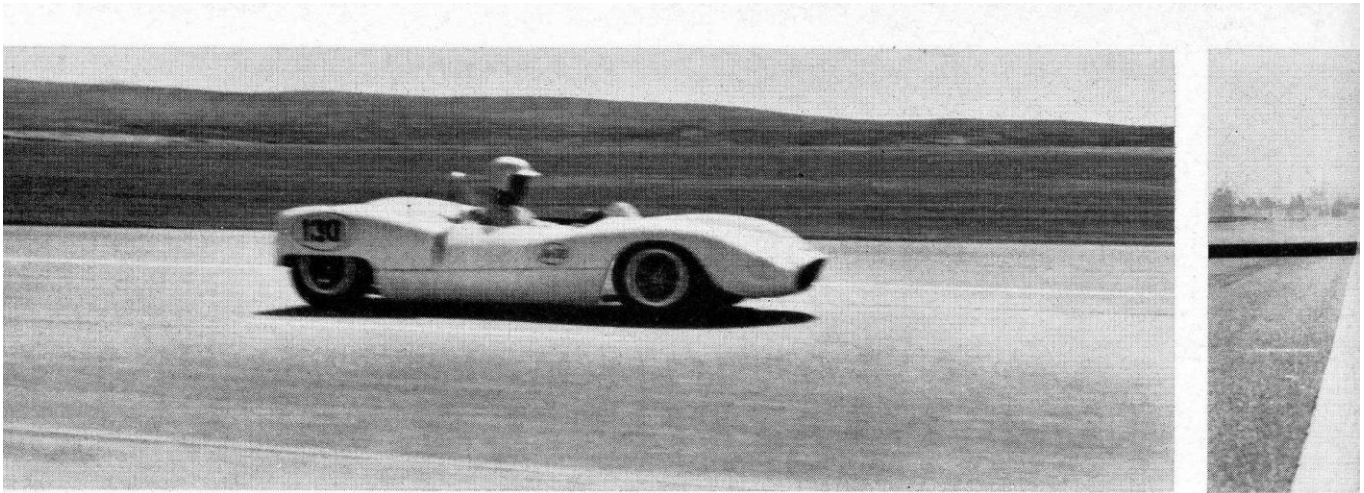
tomed. In Italy, the style of racing is set by such events as the Targa Florio, Giro di Sicilia and, formerly, the Mille Miglia, which put a premium on rugged construction because of their length and uneven Italian roads. On the other hand, English chassis have been developed for short races on circuits such as Goodwood and Silverstone, which are as smooth as pool tables and consist of a series of fast bends. The racing is fast and close and the accent is on lightweight construction combined with



BOBSY OSCA

AT A GLANCE...

| | |
|---------------------------------------|----------------------------|
| Engine | 4 cyl, dohc, 849 cc, 85 hp |
| Curb weight, lb | 788 |
| Top speed (as geared), mph | 101 |
| Acceleration, 0-60 mph, sec. | 9.3 |
| Passing test, 50-70 mph, sec. | 5.0 |



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superlative road holding. American conditions are similar, although the circuit configurations tend toward sharper turns with long straights in between, but road holding is still far more important than rugged construction.

The Bobsy-Osca was assembled at the Bobsy plant in Medina, Ohio. Gast removed the engine from his car and shipped it to Bobsy, where it was mated to a 5-speed Hewland transmission and installed in a new chassis. This combination has proved entirely satisfactory, and the Hewland transmission is more reliable and easier to shift than the original Osca unit, in addition to the advantage of the various gear ratio combinations which it offers. In practice, five speeds are not really necessary because there is torque between 4000 rpm and the limit of 8000. However, like most competition cars, the Bobsy-Osca is not too easy to get off the line and first makes a good starting gear. As soon as one shifts up to second, first locks itself out, together with reverse.

To join the engine and transmission involved some adaptation, and resulted in a bastardized clutch consisting of a DKW driven plate, a Sprite 9-spring competition cover assembly and a Porsche release bearing.

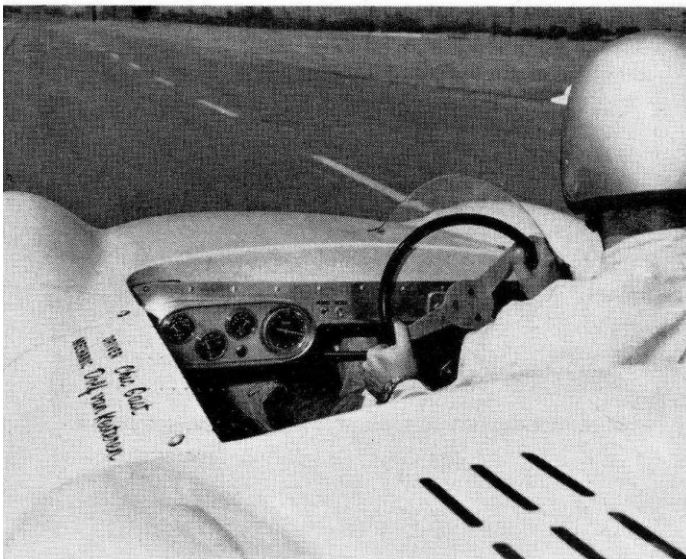
The Osca engine started life as a 750-cc unit with a bore and stroke of 64 x 58 mm. When the capacity limit for class

was increased to 850 cc, the factory offered a kit consisting of a crankshaft and a set of pistons which increases the stroke to 66 mm, leaves the bore the same, and brings the capacity up to the maximum permissible. The engine is strongly constructed and its reliability does not appear to have suffered from the capacity increase.

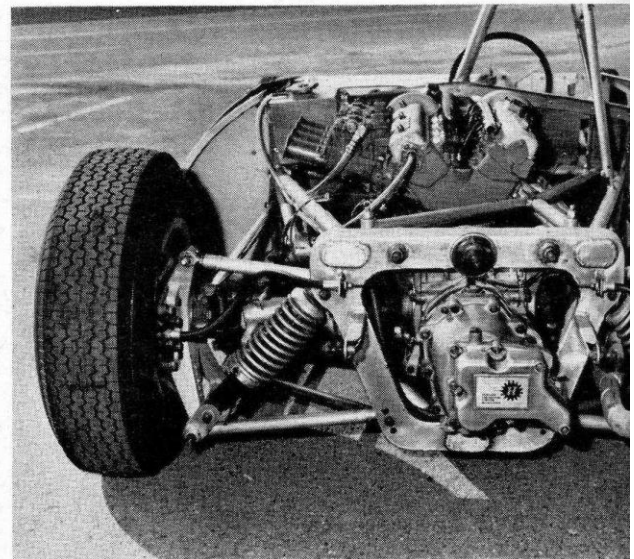
In both appearance and design, the engine is all that one has come to expect from the Italian manufacturers. It is all aluminum, from the wet sump to the cam covers; it weighs 230 lb, with the clutch, and seems to be willing to run at 8000 rpm for almost indefinite periods. The only serious disadvantage is the price. At present, Osca will make one of these engines for \$3800, with a certain amount of arm twisting and a delay of about six months. However, you do get a true racing engine designed specifically for the job and, although the outlay is considerable, many people have discovered that it is often cheaper in the long run to start off with a racing power unit rather than try to obtain the same results through developing a stock engine. In fact, it is conceivable that Formula Junior racing was more expensive, rather than cheaper, because the regulations insisted on the use of production engines.

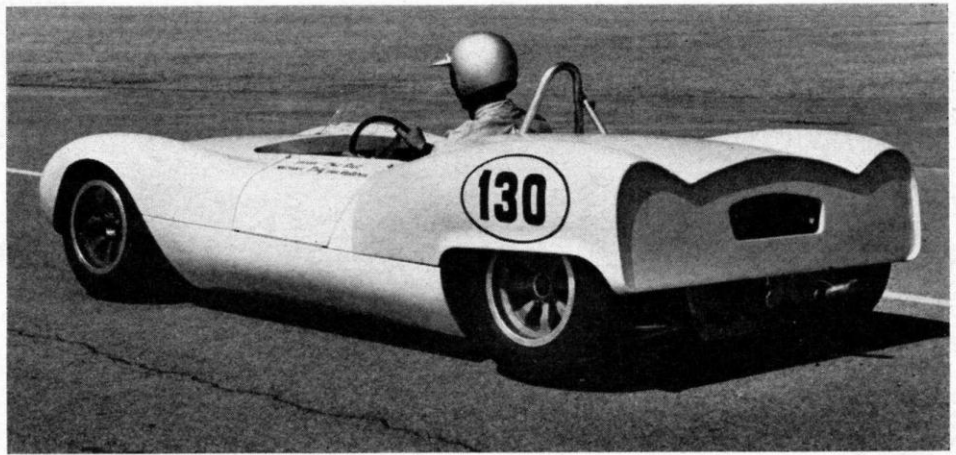
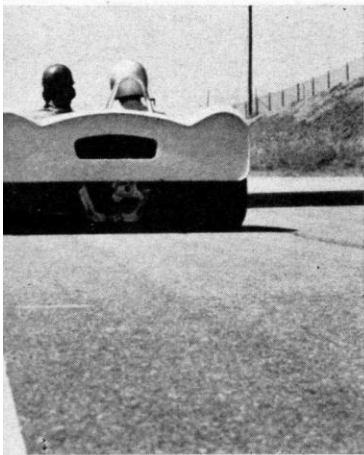
The Bobsy chassis was fully described in March R&T, and it follows quite closely the established lines for rear-engined competition sports cars. However, it is distinguished by the extensive use of aluminum in the frame and suspension components. In fact, when the car made its first appearance on the West Coast, the aluminum roll bar was queried by the technical inspectors, but notarized specifications for the tubing used dispelled any doubts.

Seating position is comfortable for 6-foot driver.



Hewland transmission has a large variety of ratios.





On renewing our acquaintance with the Bobsy chassis, we were again reminded that the standard of workmanship is really exceptional and in keeping with the little hand-built Osca engine. Innovations for this season are cast aluminum lower A-arms in front, of Bobsy manufacture, and also Bobsy's own wheels.

On the track, the car is entirely different from the original Osca. Whereas the Osca had the heavy feel so characteristic of Italian competition cars, the Bobsy is exactly opposite and follows the Lotus/Cooper tradition. The steering is finger-light at speed, and the car will hold its line through a turn without any wheel sawing or other effort on the driver's part. Similarly, the brakes, which have 9.5-in. discs in front and 9-in. at the rear with Airheart single spot calipers, are light and progressive.


Assessing the performance of a competition car presents problems because they can usually be geared for any particular circuit, and the performance figures depend entirely on the gearing used at the time. We tested the Bobsy-Osca at the Riverside circuit and it was undergeared for the course because it had been set up to run at the short Del Mar circuit the following weekend. With this gearing, the car would reach 101 mph in 5th at 8000 rpm and had to be feathered on the main straight to avoid over-revving. It gave the impression of being almost too closely geared, because shifting drops the engine revs less than 1500 rpm and, due to a sluggishness in the tachometer, it is necessary to shift by ear.

Accustoming oneself to a lightweight rear-engined competition car is not too easy, because its characteristics are totally

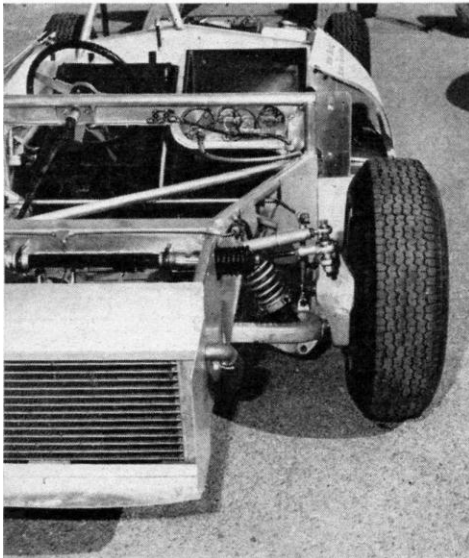
different from those of a production sports car. Chic Gast found that the switch to the Bobsy-Osca was not an easy one, but once accustomed to the car he was quick to realize and take advantage of its tremendously superior road holding and handling, as compared with the original Osca.

When considering competition cars such as the Bobsy-Osca, it is necessary to take into account other factors besides mere performance. Many race car owners have found out that as soon as they have paid their money, they are strictly on their own, and receive little help in solving the inevitable problems that arise. However, Jerry Mong, who builds the Bobsy, has proved extremely helpful as far as "after-sales service" is concerned.

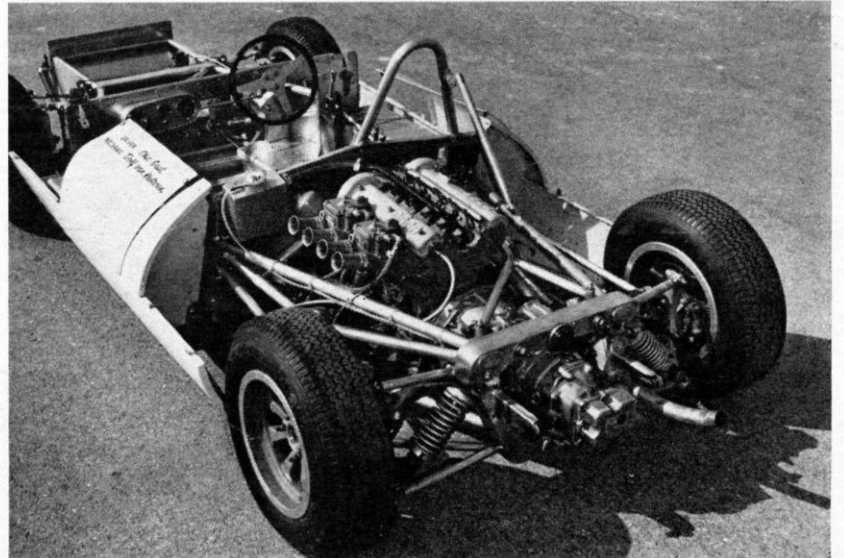
The car was delivered with lengthy instructions regarding such matters as the correct suspension settings, the recommended tire pressures for various conditions, and the care of the Metalastic universal joints. Gast has found that a letter or a quick phone call to Medina, O. will produce any additional information he requires and, in the event of an accident, parts can be obtained off the shelf from the small stock maintained by the constructor.

Although the Bobsy-Osca is one of a kind, it could be reproduced for about \$9000. This might seem to be excessive for a class H car, but it is unique and equal to, if not superior to, anything else in its class, and ready to win races from the moment one takes delivery. Furthermore, the standard of workmanship of both the engine and chassis is beyond criticism. Therefore, when compared with other machines, the Bobsy-Osca is unquestionably a full \$9000 worth of race car. 

Lower A-arm is cast aluminum.

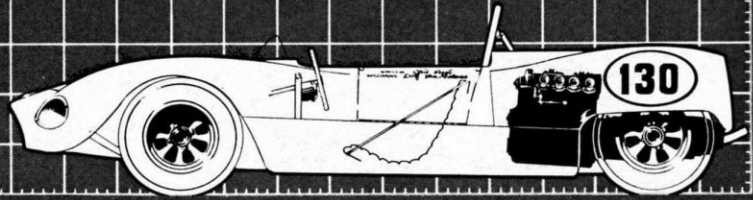


Osca engine is neatly installed in Bobsy chassis.





ROAD TEST BOBSY OSCA



SCALE: 10" DIVISIONS

ENGINE

Engine, no. cyl. type... 4 cyl. dohc
 Bore x stroke, in... 2.52 x 2.60
 Displacement, cc... 849
 Equivalent cu in... 51.8
 Compression ratio... 9.5:1
 Bhp @ rpm... (est) 85 @ 7700
 Equivalent mph... 98
 Torque @ rpm,
 lb-ft... (est) 65 @ 6000
 Equivalent mph... 77
 Carburetor, no., make... 2 Weber
 No. barrels—diameter... 2-33 mm
 Type fuel required... premium

DRIVE TRAIN

Clutch diameter & type: 6-in. single plate, dry
 Gear ratios,
 5th (1.22)... 5.33
 4th (1.43)... 6.25
 3rd (1.74)... 7.60
 2nd (2.00)... 8.75
 1st (2.57)... 11.2
 Synchronesh... none
 Distributor type... spiral bevel
 Ratio... 4.375:1

CHASSIS & SUSPENSION

Frame type: aluminum alloy tube space-type
 Brake type... disc
 Tire size... f/r 5.00 x 13/5.50 x 13
 Wheel revs/mi... 880
 Steering type... rack & pinion
 Turns, lock to lock... 2.3
 Turning circle, ft... 49
 Front suspension: independent with unequal-length A-arms, coil springs, tube shocks.
 Rear suspension: independent with reversed lower A-arms, upper control arm, trailing links, tube shocks, coil springs.

ACCOMMODATION

Normal capacity, persons... 1
 Occasional capacity... 2
 Hip room, front, in... 2 x 15
 Seat back adjustment, deg... 15
 Step-over height... 15
 Floor height... 3.5
 Door width... 20.5

GENERAL

Curb weight, lb... 788
 Test weight... 1128
 Weight distribution with driver, %... 49/51
 Wheelbase, in... 88.5
 Track, front/rear... 48.5
 Overall length... 139.5
 Width... 57.0
 Height... 29.0
 Frontal area, sq ft... 9.3
 Ground clearance, in... 3.3
 Overhang, front... 34
 Rear... 15
 Departure angle, no load, deg... 28
 Fuel tank capacity, gal... 14

INSTRUMENTATION

Instruments: 10,000 rpm tachometer, oil temperature, water temperature, oil pressure
 Warning lamps: ignition

MISCELLANEOUS

Body styles available: roadster as tested

CALCULATED DATA

Lb/hp (test wt)... 13.3
 Cu ft/ton mi... 122.5
 Mph/1000 rpm (5th)... 12.8
 Engine revs/mi... 4690
 Piston travel, ft/mi... 2030
 Rpm @ 2500 ft/min... 5780
 Equivalent mph... 73.9
 R&T wear index... 95.3

MAINTENANCE

Crankcase capacity, qt... 4
 Oil filter type... full flow
 Lubrication grease points... 15
 Tire pressures, front/rear, psi 21/25

ROAD TEST RESULTS

ACCELERATION

0-30 mph, sec... 4.0
 0-40 mph... 5.5
 0-50 mph... 7.0
 0-60 mph... 9.3
 0-70 mph... 12.0
 0-80 mph... 15.6
 0-100 mph... 25.9
 Standing 1/4 mi, sec... 17.3
 Speed at end, mph... 84

TOP SPEEDS

5th (8000), mph... 101
 4th (8000)... 86
 3rd (8000)... 71
 2nd (8000)... 61
 1st (8000)... 48

SPEEDOMETER ERROR

Speedometer not fitted.

GRADE CLIMBING

(Tapley Data)

Data not taken.

FUEL CONSUMPTION

Data not taken.

ACCELERATION & COASTING

