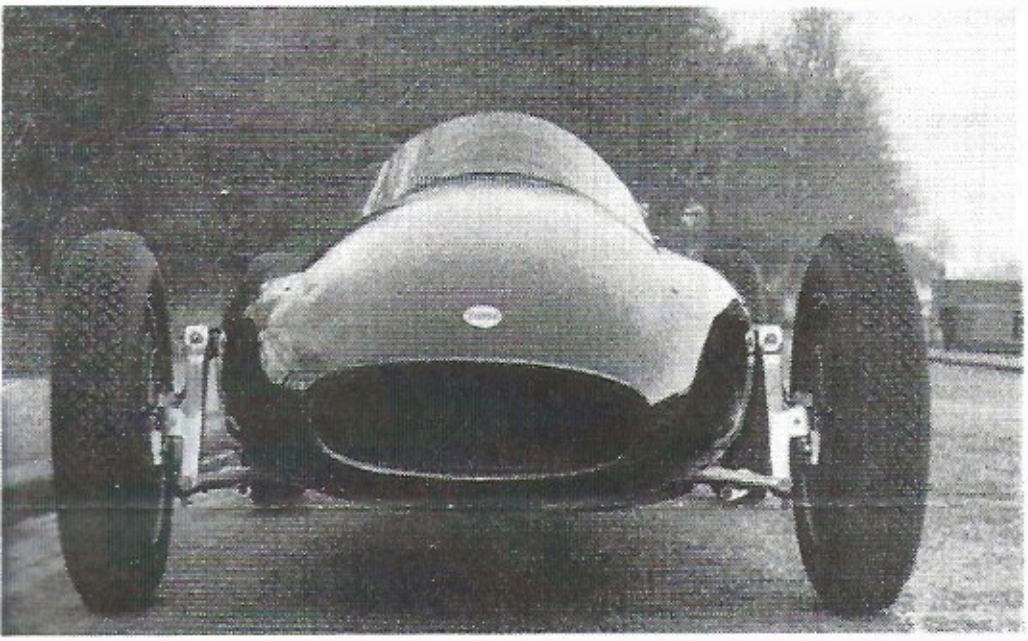
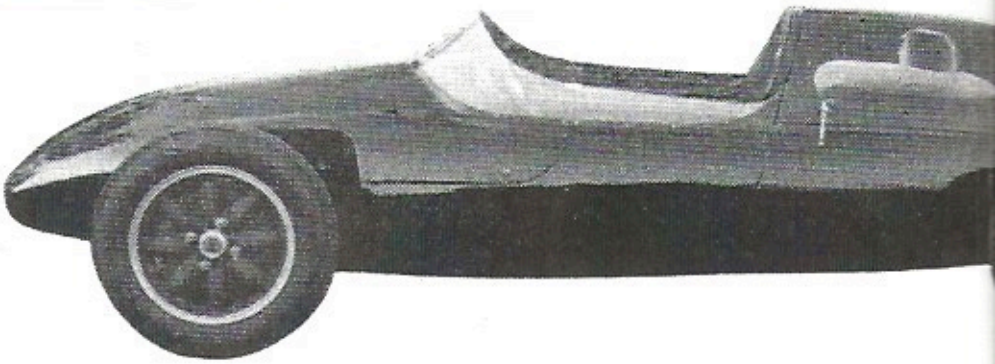
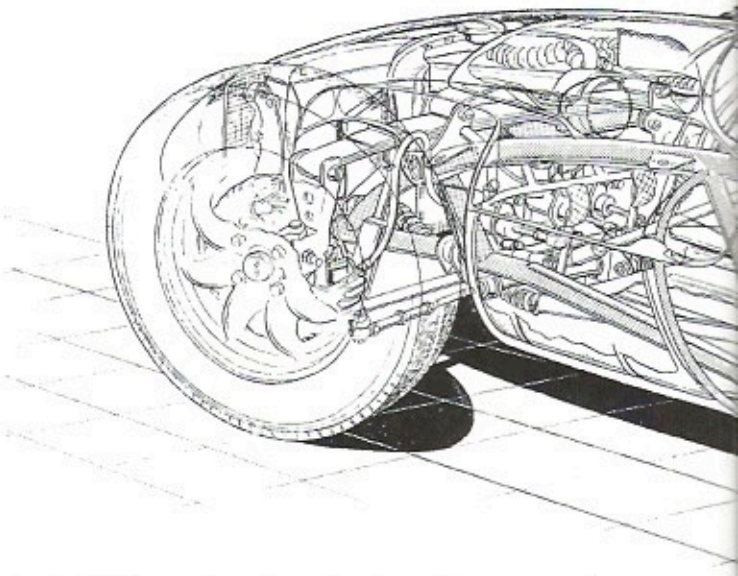


THE F2

An Exclusive Theo Page Cutaway
Front Line of Formula 2 Attack
Year, Powered by the New





★

THEO PAGE's cutaway drawing shows every detail of the new F2 Cooper, which is expected to be as fast on some circuits as F1 machinery.

★

IF the Cooper Car Co. ever want a motto to go beneath a coat of arms on their notepaper, they could do worse than borrow from the Boy Scouts—"Be Prepared".

It is unusual for a manufacturer to have his new car ready for the first race of a new formula; it is even more unusual for him to have it ready on the 1st of the first month of the year from which the formula is effective. So it was a matter for considerable eyebrow-raising last year when John Cooper announced that his new Formula 2 car would be ready to race in July, nearly six months before it became "legal". Here was someone who was definitely not going to be caught napping.

Then, to make matters considerably better (and as readers will no doubt remember), the Cooper ran away with the race on its first appearance (Silverstone), its second (Brands Hatch), its third (Goodwood) and wound up the season by netting a neat thousand pounds and the *Daily Herald's* Gold Cup at Oulton Park. All this, incidentally, being gained without the engine for which the car was designed, and months before it was officially "in season". A début which, no doubt, has caused certain famous names on the Continent seriously to think.

No departure from the Cooper dictum that the engine should go behind the driver, the F2 car's power unit tucks away so tidily that there are no ugly protrusions to detract from its long, sleek and sweeping lines—a profile much improved since last season by lowering the nose. In fact, the new vehicle incorporates so much gained from Cooper's long experience of Formula 3, that in almost every way, both visually and constructionally, it is a half-litre car "grown up".

The heart of the matter, the power unit, is the as yet unraced, twin-overhead-camshaft, 1½-litre Coventry-Climax. Last year, the "single-knocker", 1,500 c.c. unit, derived from the FWA 1,100 c.c., was used. The new engine, type FPF, has four cylinders with a bore and stroke of 81.2 x 71.1 mm., giving a total swept volume of 1,475 c.c. Running on 100 octane fuel, to conform with the requirements of the formula, and with a compression ratio of 10 to 1, approximately 140 b.h.p. is available at 7,000 r.p.m. This considerable amount of power must propel a dry weight of some 6¼ cwt. only, a great deal of which is carried on the driving wheels, by virtue of the rear mounting of the engine.

To minimize the effect of the higher centre of gravity of the twin-o.h.c. unit, caused by its greater weight and greater mass towards the top, it is mounted in the frame at a downward angle of five degrees at the front and one of 18 degrees towards the right. This also helps to reduce the overall height, and prevents the carburetters from protruding outside the rear cowling.

The carburetters themselves are interesting in that they are newly developed twin-choke SU units, each being, in effect, two single carburetters sharing a common float chamber. In tests they have proved to be as efficient as the more familiar twin-choke Weber carburetters, though they have yet to be tried under racing conditions.

Power is transmitted to the rear wheels via a two-plate Borg and Beck racing clutch and a gearbox, the casing of which is Citroën and the moving parts Cooper. This has four forward speeds, but no reverse. Various choices of ratios are

COOPER

ay Drawing of a Member of Britain's
ack, Making its Official Bow this
Coventry-Climax 2-o.h.c. Engine

available for both the gearbox and final drive. Lockheed hydraulic two-leading-shoe drum brakes are fitted, although Girling disc brakes are available optionally.

The framework of the Formula 2 Cooper owes much to the maker's well-tried Formula 3 pattern, being based upon four longitudinal steel tubes, braced at points of stress and with hoops at the scuttle and behind the driver. The body-work is mounted closely around the frame and both the front and rear sections are hinged to allow greater accessibility to the front suspension and steering and the engine. It will be noted that the header tank is placed above the engine, bracketed to one of the camshaft covers, and connected to the forward-mounted radiator by means of flexible hosing.

Already the Formula 2 Cooper has equalled Formula 1 speeds on certain circuits. During the coming season the Grand Prix cars may well be outpaced by this most promising contender, and it will be more than interesting to see how it compares with the various British and Continental opponents, which have not had the Cooper's advantage of so much pre-formula development and trial.

MAXWELL BOYD.

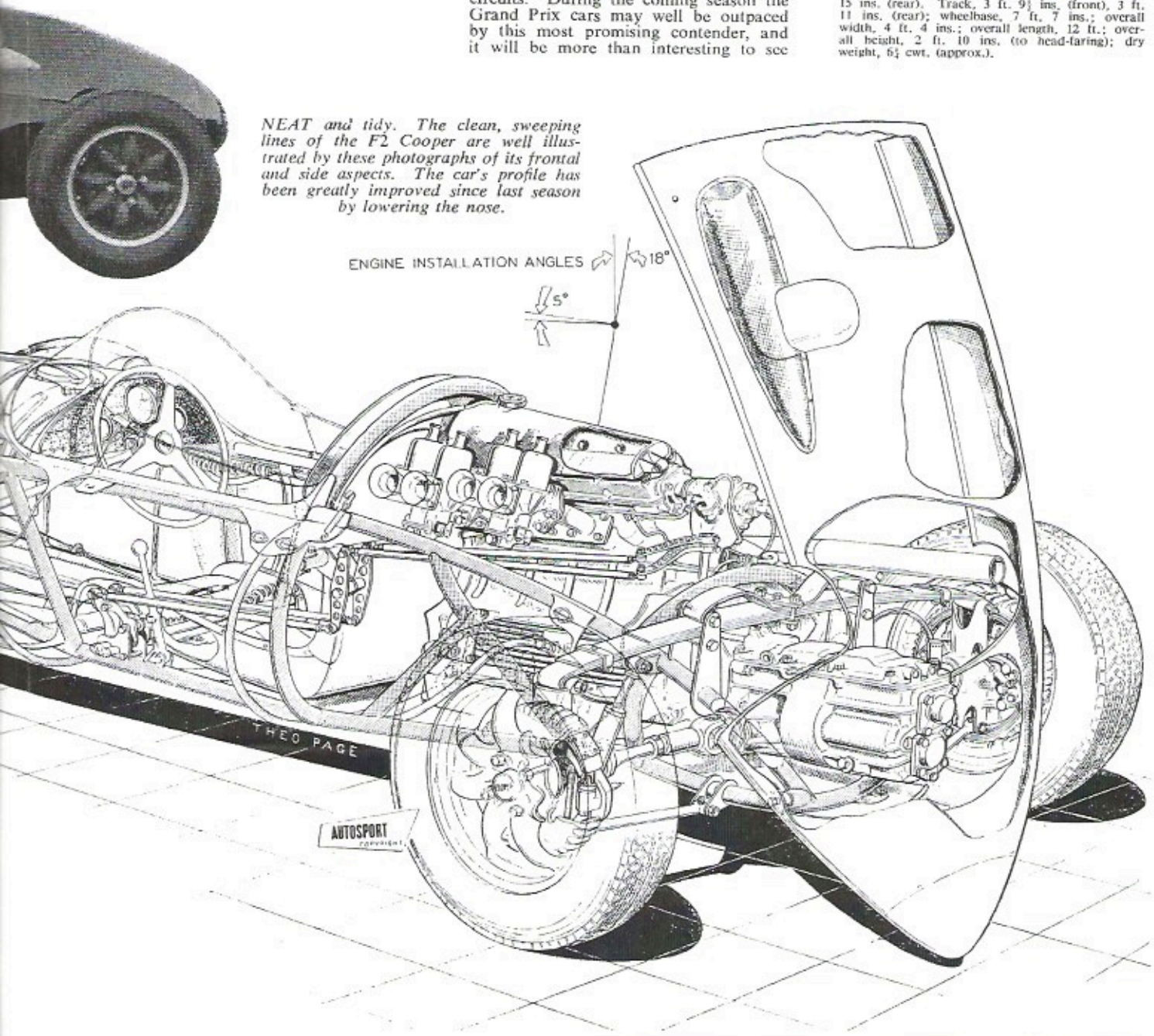
SPECIFICATION

Engine: Rear-mounted Coventry-Climax FPF; 4 cylinders (81.2 x 71.1 mm.), 1,475 c.c.; compression ratio, 10 to 1; 140 b.h.p. at 7,000 r.p.m.; twin-o.h.c.; 2 twin-choke SU carburetters, type DU6; dry sump lubrication system (oil capacity, approx. 3 gals.).

Transmission: Four-speed Citroën-Cooper gearbox, ratios, 8.72, 5.98, 4.04 and 3.47 to 1 (with 3.10 spiral bevel final drive), no reverse; alternate final drive ratios available (4.5, 4.1 and 3.7). Borg and Beck 7¼ in. clutch.

Chassis: Lockheed hydraulic 2-l.s. brakes (Girling disc brakes available); i.f. and i.r. suspension by transverse leaf spring and lower wishbone; rack and pinion steering; Armstrong telescopic shock absorbers.

General: Tyres, 4.50 x 15 ins. (front), 5.25 x 15 ins. (rear). Track, 3 ft. 9½ ins. (front), 3 ft. 11 ins. (rear); wheelbase, 7 ft. 7 ins.; overall width, 4 ft. 4 ins.; overall length, 12 ft.; overall height, 2 ft. 10 ins. (to head-faring); dry weight, 6¼ cwt. (approx.).



NEAT and tidy. The clean, sweeping lines of the F2 Cooper are well illustrated by these photographs of its frontal and side aspects. The car's profile has been greatly improved since last season by lowering the nose.

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