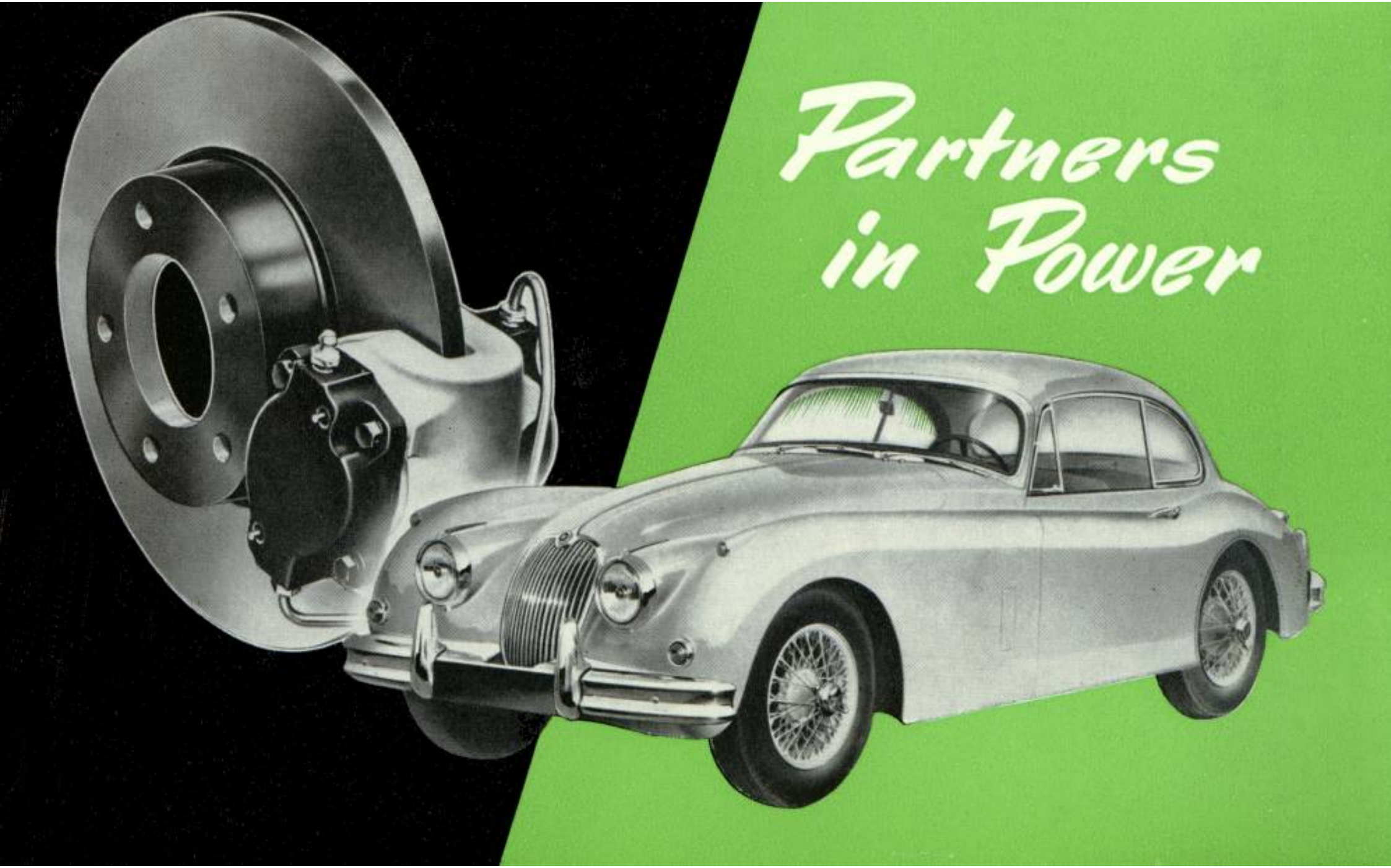

Partners
in Power

JAGUAR XK 150 DUNLOP DISC BRAKES

Partners in Power

An important contribution to the world-wide successes of Jaguar racing cars has been the use of Dunlop disc brakes, and in line with the Jaguar policy of technical development for production cars based on racing experience, Dunlop disc brakes are now standard equipment on the XK150 sports car.

This marks the culmination of an association begun in 1951 when Dunlop designers, having already established the efficiency of the disc brake principle for use on aircraft, were seeking to develop road vehicle brakes of similar design.

Facilities were given by the Jaguar Company to fit disc brakes to racing cars entered in many of the leading competitions. The first successes were achieved in 1952 at Rheims and Silverstone. The following year disc braked Jaguars were victorious at Le Mans and in the Rheims 12-hour race. In the succeeding years up to 1956 Jaguars were again successful at Sebring, Rheims and Le Mans.

Throughout this period of development, data was being collected from road and laboratory tests in addition to the information gained from racing experience. Among the important factors emerging from these tests was the immunity of Dunlop disc brakes from fading and their ability to continue to function efficiently in wet conditions.

The advantages of Dunlop disc brakes have now been made available to drivers of the Jaguar XK150. They will be able to make the fullest use of the car's high performance secure in the confidence that engine power is matched by the most powerful brakes in production to-day.

what the disc brake means to the motorist...

Why are disc brakes necessary?

The performance of modern sports cars have so far improved that conventional drum brakes are reaching the limit of their capacity. Increased braking can only be achieved with extra size and weight. These solutions are largely precluded by modern styling which requires smaller wheels and reduces the cooling air flow to the brakes.

What are the advantages of disc brakes?

The compactness and increased efficiency enables rising performance to be met without cost or weight penalties. Although developed to give improved braking in the arduous conditions of racing, the production car disc brake sacrifices none of its smoothness, silence of operation and sensitive control under all temperature and weather conditions and at all speeds.

Do wet conditions affect braking?

No. The centrifugal action of the disc throws off excess water and the remainder is wiped clear by the action of the pads.

Do disc brakes fade?

Fade-free performance is a fundamental feature of Dunlop disc brakes. It enables drivers to achieve the maximum speed possible with the modern car, having complete confidence in the consistent stopping power of his brakes.

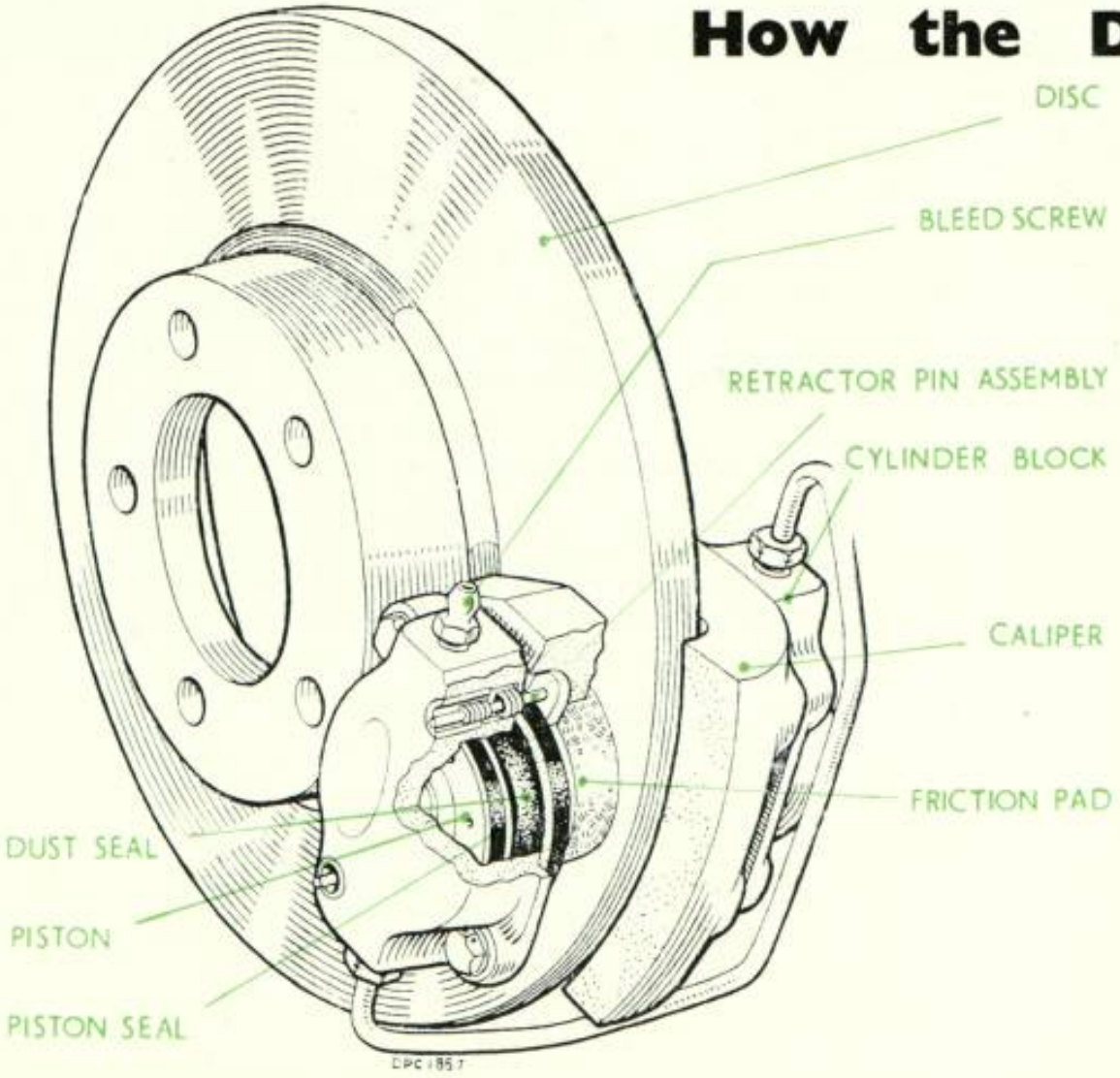
Does the more powerful braking affect tyre life?

The more effective heat dissipation of disc brakes prevents the transfer of brake heat to the tyre beads and the smooth torque characteristics tend to give a more even tread wear.

Are disc brakes easy to maintain?

The self-adjusting features of Dunlop disc brakes reduce maintenance to a minimum. Pads have a very long service life and replacement is carried out without bonding or riveting. Other maintenance merely consists of routine checks of the fluid reservoir level and adjustment of the hand brake. The latter is a simple screw-driver operation which can be performed without removing the wheels.

How the Disc Brake works . . .



The illustrations on these pages clearly show the construction and operation of a Dunlop disc brake.

On the left is shown a front brake with one of the cylinders cut away exposing the piston and friction pad. Rear brakes are similar in construction but are fitted with a mechanically operated hand brake to meet parking and emergency requirements.

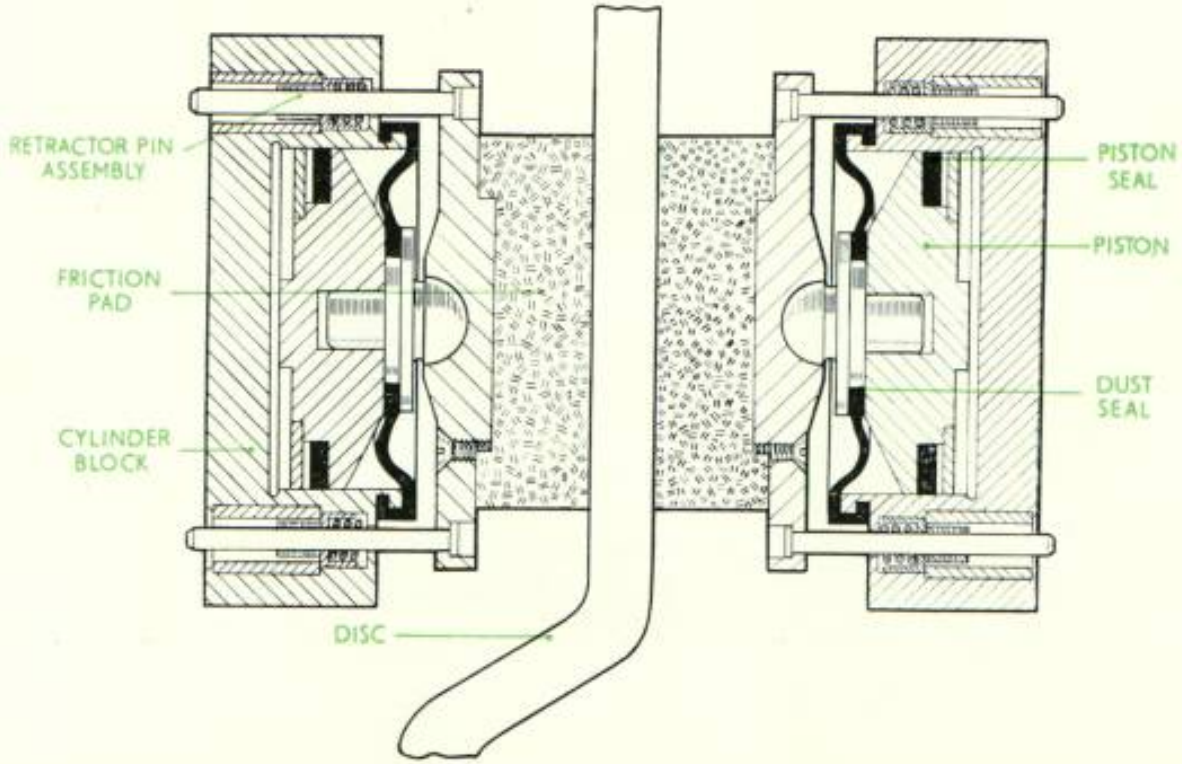
The disc is attached to the hub and rotates with the wheel. It is embraced by a caliper which is rigidly fixed to the axle. This caliper carries two hydraulic cylinders each containing a piston and circular pad of friction material. The cylinders are situated one on each side of the disc (see illustration on right hand page) and when the brake pedal is operated they move forward under pressure and apply the pads to the faces of the rotating disc.

When the brake pedal is released, the retractor pins return the pads to the "off" position which is completely clear of the disc.

Design Features

The use of separate cylinders attached to the caliper body are a special Dunlop feature. They ensure improved heat insulation of the pistons and seals, and make it possible to provide an effective seal for the protection of the pistons from dust, corrosion and hub grease.

Disposing the pads on either side of the disc ensures thermal balance and protects the disc from stresses imposed by axle movement, making possible the consistently straight line braking which is another feature of Dunlop disc brakes.



The brake pads are unaffected by water, and have been developed to give long service life.

The retraction device which holds the pads clear of the disc when the brakes are not in use also provides automatic adjustment for wear throughout the life of the pads. It prevents unnecessary heating of the brake, reduces drag and is an effective measure against "squeak."

Dunlop disc brakes employ a conventional hydraulic system operating through a master cylinder which ensures a light pedal load and provides a powerful but sensitive brake control.

Jaguar Successes with Dunlop Disc Brakes —

1952 **First :** Rheims Sports Car Race.

First : Silverstone Production Sports Car Race

1953 **First, Second, Fourth :** Le Mans 24-hour Race

First : Rheims 12-hour Race

1954 **Second, Fourth :** Le Mans 24-hour Race

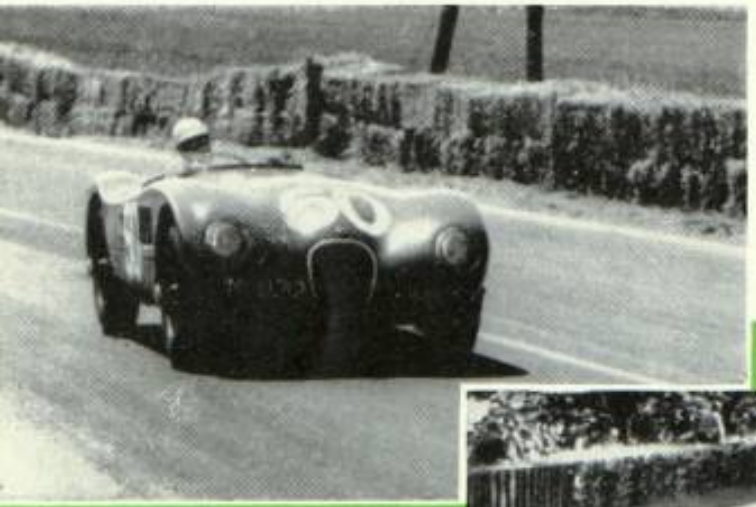
First, Second, Third : Rheims 12-hour Race

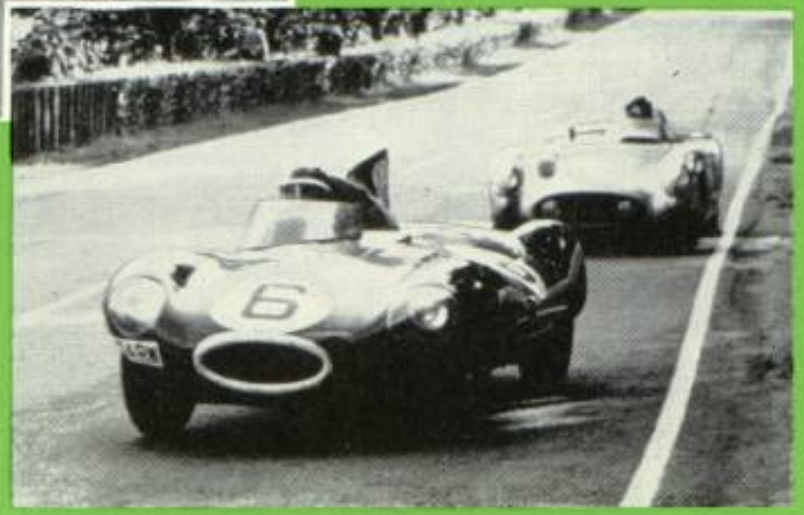
1955 **First :** Sebring 12-hour Race

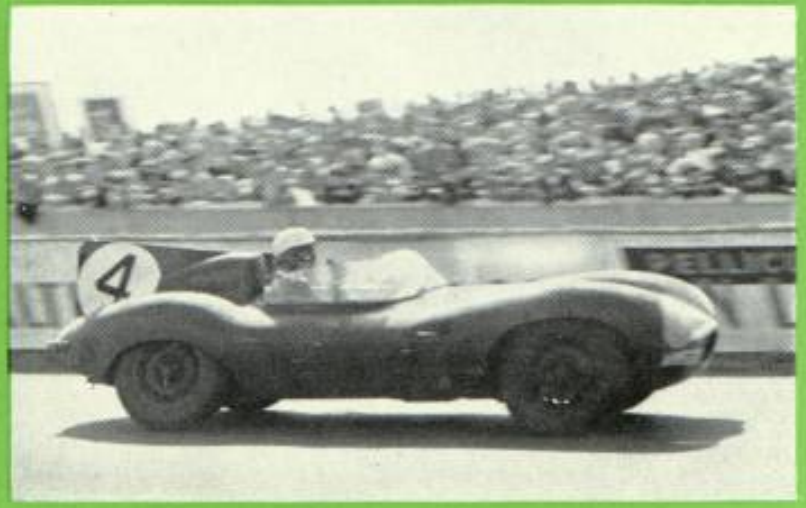
First, Third : Le Mans 24-hour Race

1956 **First, Fourth, Sixth :** Le Mans 24-hour Race

First, Second, Third, Fourth : Rheims Sports Car Race







1. 1952, Rheims, Stirling Moss

2. 1955, Le Mans, Mike Hawthorn

3. 1956, Le Mans, Ron Flockhart and Ninian Sanderson

expert opinion . . .

From my own experience in racing I think that Dunlop disc brakes are the most significant advance in brake design since the introduction of four wheel brakes, and that their use on production cars will be a big step forward in road safety.

There is no doubt that disc brakes are becoming a necessity for fast cars on the crowded roads of today because of their marvellous reliability and stopping power.

Yours faithfully,

Four years ago I won my first race in a Jaguar fitted with Dunlop disc brakes. This was in the 1952 Sports Car Race at Rheims. I have since raced many times with Dunlop disc brakes and I know that they have contributed in no small way to my successes.

With the increased performance of the modern sports car they are just as necessary on the roads and I am glad to see that they are now being made for production cars - surely one of the greatest contributions to safety with speed in motoring history.

This is another case where hard experience in racing has been responsible for a big development in motoring generally.

The Future of Dunlop Disc Brakes

The Brakes of the Future

Dunlop has equipped Britain's leading aircraft with brakes for many years. Bristol Britannias, de Havilland Comets and Vickers Viscounts are all fitted with Dunlop disc brakes.

Now disc brakes have been proved in the fierce competition of sports car racing and are available for production cars and heavy road vehicles.

Their use is now being extended to tractors, earthmovers, railway wagons and marine engines, while outside the realm of transport, Dunlop disc brakes will make valuable contributions to the efficiency and safety of rock drilling and mining, rubber, textile and other machine tool applications.

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