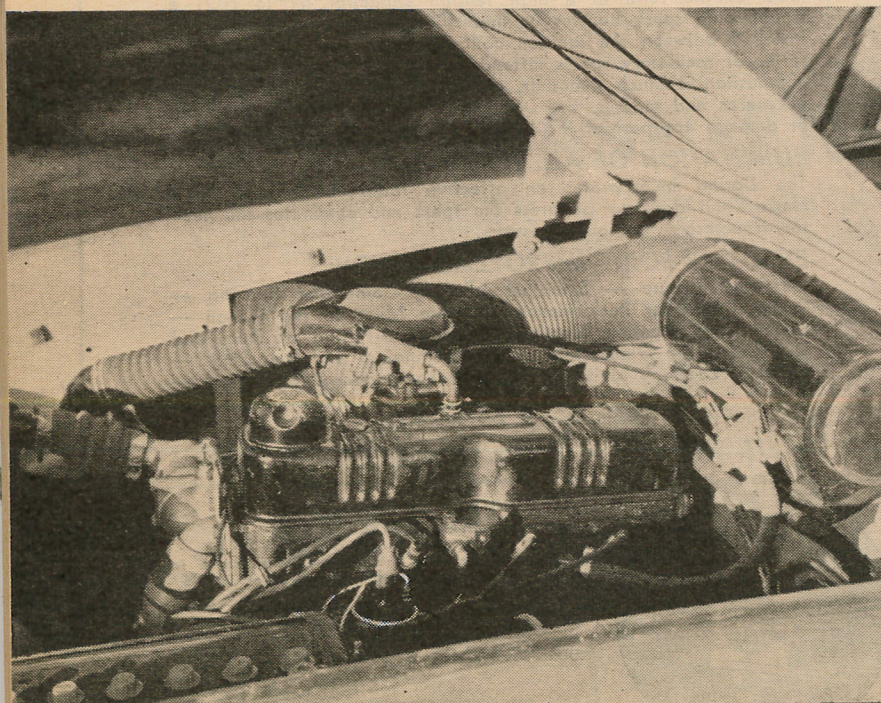




Since its introduction some years ago, the Humber Hawk has changed little externally, but gradual improvements have made a world of difference.

By PETER HALL

HAWK WITH NEW



Unusual for 1961, the Hawk engine has a very long stroke, fairly small bore. There are only four cylinders, but they work very smoothly.

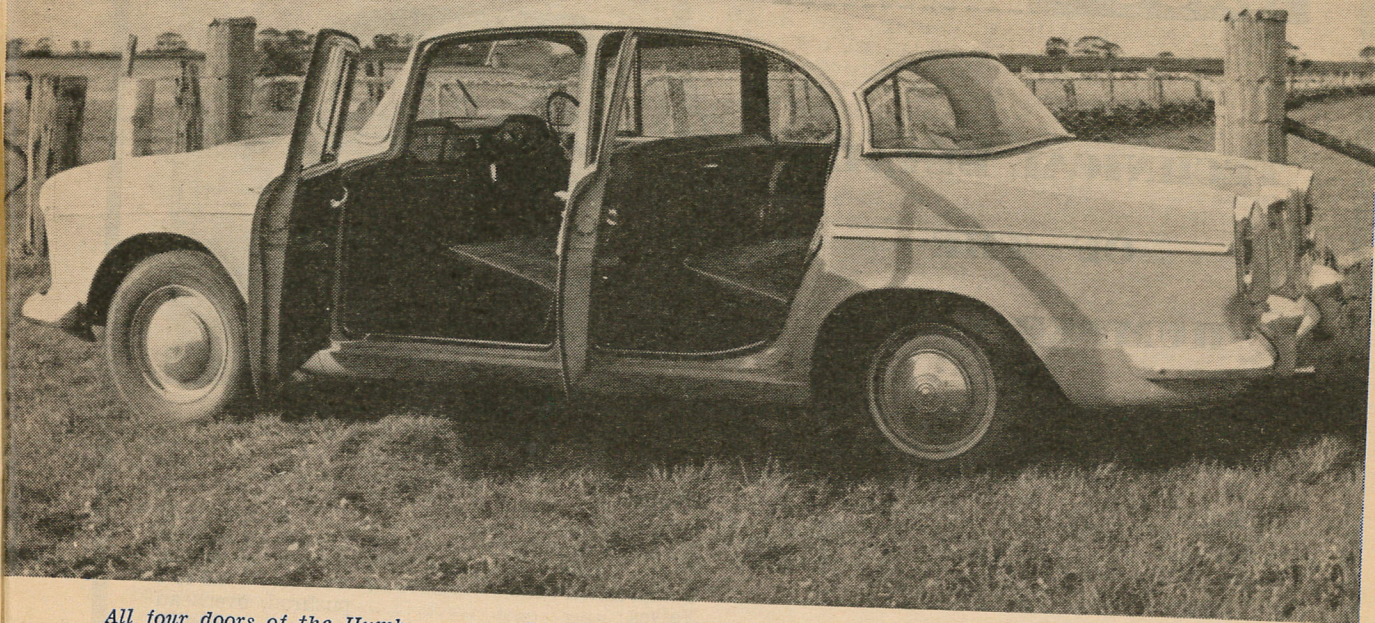
Gradual improvements have refined the Humber Hawk in many ways. The newest version looks the same, but has lighter steering and, most important, disc brakes.

IN America the motor industry is the centre of the most outspoken and critical soul-searching about capitalist principles for many decades.

Americans have always been noted for their unconcerned willingness to hang their dirty washing in the full view of all who care to look, including their worst enemies, and this is no exception.

The subject of the latest bout of soul-searching is something which classic car lovers and conservative-minded car buyers have long complained about when the subject of American cars came up.

It is called "planned obsolescence". Those critics who use this impressive phrase claim among other things



All four doors of the Humber open wide and give good access to the well appointed interior. Seats are very wide.

(ROAD) HOOKS

WHEELS
FULL ROAD TEST

that many American manufacturers deliberately re-style their products at ever-shortening periods to entice the public to buy the new model even though the previous one is still thoroughly functional.

They say of the motor industry that the major changes to American cars in recent years have been superficial bodywork alterations that have not improved the cars, but merely added unnecessarily to their cost.

This particular dirty washing display has its darker patches which do not concern us so much as the general proposition of whether annual model changes, superficial or not, are as important as some car makers seem to think.

Don't misunderstand me — no one in his right mind will ever criticise the car maker who does his best to improve the design, engineering, finish and performance of his products — genuinely and frequently.

The question is whether we really want to have cars that look different every year or so just for the sake of having them look different.

I certainly don't and I suspect that a vast number of Australian motorists don't either. I believe I can point to the astounding sales success of rarely-changing cars like the

Holden and Volkswagen to support my view.

It is a view which the very independent British firm, Rootes Ltd, seems to take.

There are few companies in the world which have changed the appearance of their range of cars so little in the past five years as Rootes and its Australian associate company have done.

To me, the final proof of Rootes policy came with the release of the Series Two, 1961 Humber Hawk saloon.

During my test of the car I examined every square inch of its exterior and found not a single detail which differed from the Series 1A 1960 model. Those impressed only by superficialities would have denied it was a new model at all.

Is this a wise policy for Rootes or is it just colossal cheek on their part to foist a "new" model on the public that is completely and utterly not new?

The wisdom of the policy, from Rootes point of view, will be proved or disproved only by the year's sales figures. But after testing the car concerned I, for one, thoroughly applaud the policy.

For a start, the price of the Series Two model is exactly the same as

the Series 1A, with which, as I've said, it is identical in exterior appearance.

But, much more important, the car has several quite important modifications which, had not Rootes saved cash by not altering the superficial styling of the car, would undoubtedly cause its price to rise.

The most important of these, by far, is the fitting of disc brakes to the front wheels.

On the grand prix circuits and in sports car races throughout the world, disc brakes have been proved, beyond question, to be the best system the motor industry has yet devised to slow and stop motor cars.

They are free from fade, are little troubled by water and mud, adjust themselves automatically and the friction material fitted to them (in pads) is quickly and cheaply replaced when it wears out.

British braking firms developed disc brakes and it is pleasing to see British car firms fitting them to standard production models despite the fact that they cost more than conventional shoe-and-drum type brakes.

Rootes fitted them to the Hawk's big brother, the Humber Super Snipe, last year with outstanding success.

TECHNICAL DETAILS OF THE HUMBER HAWK



PERFORMANCE

TOP SPEED:

Fastest run	79.6 mph
Average of all runs	78.6 mph

MAXIMUM SPEED:

First	42.0 mph
Second	53.0 mph
Top	79.6 mph

ACCELERATION:

Standing Quarter Mile:	
Fastest run	22.7 sec
Average of all runs	23.3 sec
0 to 30 mph	6.3 sec
0 to 40 mph	10.8 sec
0 to 50 mph	15.4 sec
0 to 60 mph	21.2 sec
0 to 70 mph	33.9 sec
0 to 80 mph	NA
20 to 40 mph	5.9 sec
40 to 60 mph	11.8 sec

GO-TO-WHOA:

0-60-0 mph	25.9 sec
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SPEEDO...ERROR:

Indicated	Actual
30 mph	28 mph
40 mph	38 mph
50 mph	47 mph
60 mph	57 mph
70 mph	67 mph
80 mph	NA
90 mph	NA

FUEL CONSUMPTION:

Cruising speeds	21.0
Overall for test	18.2

SPECIFICATIONS

ENGINE:

Cylinders	four, in line
Bore and stroke	81 by 110 mm
Cubic capacity	2267 cc
Compression ratio	7.5 to 1
Valves	pushrod, overhead
Carburettor	Zenith
Power at rpm	78 at 4400
Maximum torque	120.3 lb/ft at 2300

TRANSMISSION:

Type	Borgwarner automatic
Ratios:	
First	9.769-20.474
Second	6.034-12.670
Top	4.22
Rear axle	hypoid

SUSPENSION:

Front	independent coil
Rear	semi-elliptic
Shockers	telescopic

STEERING:

Type	Burman re-circulating ball
Turns, 1 to 1	4½
Circle	38 ft

BRAKES:

Type	disc front, drum rear
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DIMENSIONS:

Wheelbase	9 ft 2 in
Track, front	4 ft 8 in
Track, rear	4 ft 7 in
Length	15 ft 4 in
Width	5 ft 9 in
Height	5 ft 1 in

TYRES:

Size	6.40 by 15
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WEIGHT:

dry	27 cwt
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After testing it, I'm inclined to think the discs are a greater success on the Hawk than they were on the Super Snipe. On reflection, that seems logical enough. The Hawk is a lighter car and the brake system used on the two models is identical. The one drawback disc brakes have as far as ordinary, personal cars are concerned is that they require heavier pedal pressures.

So the second modification made to the Humber Hawk to justify it being called a new model was the fitting of a vacuum power-brake unit. The result was all the advantages of disc braking combined with pedal pressure so light that a baby could stop the car swiftly and effortlessly from any speed of which it was capable.

The third modification would go unnoticed by anyone who had not driven the earlier model Hawks. The steering, unchanged in principle or design, was very much lighter to operate than formerly.

The secret of the lighter steering, apparently, was in small but important changes to the position and free movement of steering joints and king pins.

The Hawk is as light as a mini-car to manoeuvre, whether the driver is edging it into an undersized city parking spot or racing down the highway at 70 mph.

Suspension is another part of the Hawk that has been modified slightly to give a quite noticeable improvement over earlier models.

New silico manganese coil springs

are fitted to the front suspension, which is, of course, independent. An anti-roll bar is fitted between the bottom links of the front suspension. The semi-elliptic leaf springs at the back are slightly wider.

New shock absorbers are fitted all round the Hawk and the overall effect is to give the car a clearly softer ride over not-so-perfect surfaces. It is a tribute to the ingenuity of the Hawk's suspension designers that the generally softer ride does not impair its handling qualities.

Indeed, I felt the handling of the 1961 Hawk was better than any of its predecessor. Its cornering characteristic was one of slight understeer but even under the most extreme centrifugal pressure the Hawk never got out of hand.

It rolled a bit more than its predecessors, but the wheels seemed to dig into the ground more vigorously. I'm sure this was due to the softer suspension — exactly the same thing happened to the Volkswagen when the Australian factory gave it softer shock absorber settings late in 1960.

On firm roads the Humber Hawk sailed along with the serenity of the Canberra moving into Circular Quay on a calm day.

The other changes to the Hawk were of a more minor nature and were concerned mainly with the comfort of driver and passengers.

As on the Series Three Super Snipe, the intermediate gear hold for the Borg-Warner automatic transmission is now operated by pushing

the selector lever towards the dash panel. In operation, this arrangement proved immeasurably easier than pulling out the knob that was formerly placed on the Hawk's dashboard to the right of the instrument cluster.

On the test car, which had done only 2000 miles, the lever was a bit stiff to pull back, but this would undoubtedly correct itself with use.

Interestingly, automatic transmission is now standard equipment on Australian - assembled Humber Hawks. If you want the four-speed gearbox model, with or without overdrive, you have to order a fully-imported Hawk at considerably extra cost.

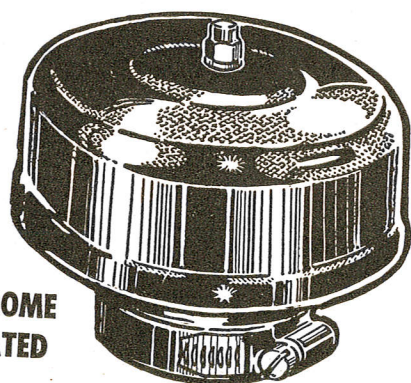
This is very much in contrast with the position in the Hawk's home country, Britain, where the four-speed gearbox (synchro on the upper three gears) is the only transmission listed by Rootes. The only option as far as the Hawk transmission is concerned in Britain is the overdrive unit.

It seems that if an Englishman wants an automatic Hawk he has to import one from Australia!

This is indeed illustrative of the growing trend to automatic cars in Australia, a trend which Rootes were one of the first companies operating here to recognise and act on to their advantage.

The Borg-Warner transmission itself was predictably simple to operate and had only one annoying feature.

SPORTS AIR FILTERS



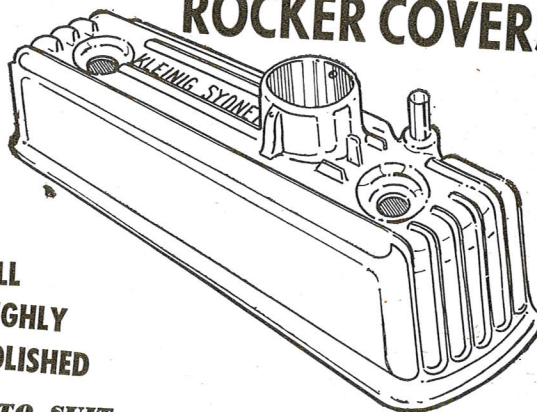
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Unless the driver was very careful with his revs the jump from intermediate to drive gears was of the slap-in-the-back variety.

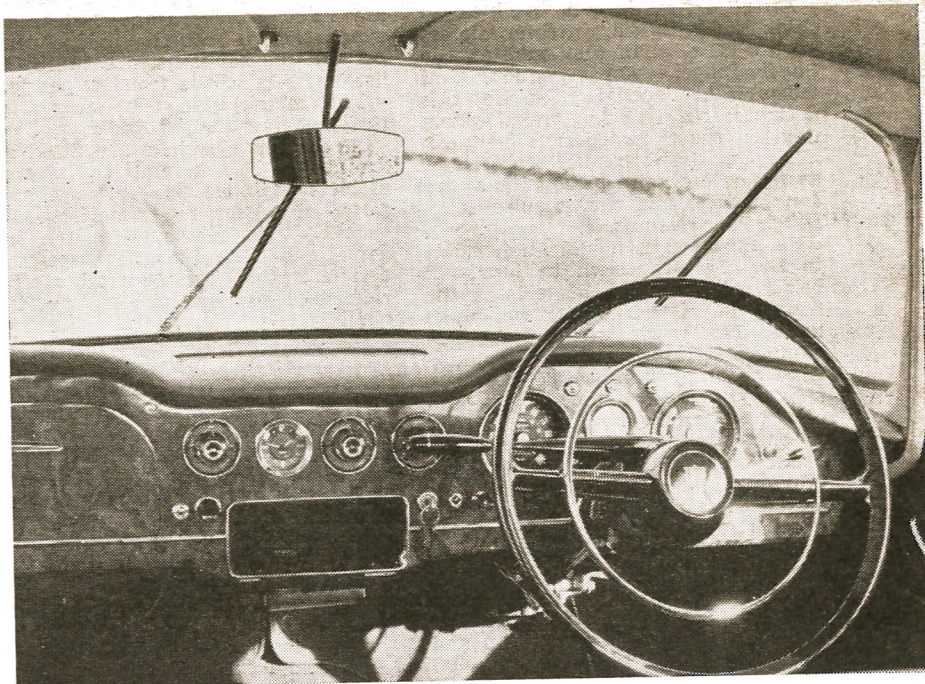
Rootes and several owners of cars with Borg-Warner automatic transmission assure me this is a common characteristic of the transmission that disappears when the car has done 5000 to 7000 miles.

Performance of the Hawk was not hair-raising, but the car was no slow coach either. The car tested was the first of several Hawks I've driven over the years that would not deliver at least a genuine 83 mph. My best run registered a speed of a fraction under 80 for the flying quarter mile. I feel I should point out in this respect that the engine of the test car seemed unusually tight and the top speed runs were made with a very strong, gusty wind blowing from the side. It is conceivable that these factors could have reduced top speed by two or three miles.

However, I doubt if top speed would be of anything but academic interest to the average Hawk buyer. Much more important was its ability to cruise in silence and without strain to driver, passengers or car at a genuine 70 mph, all day.

The engine was something of an anomaly in short-stroke 1961. A big 2½-litre four cylinder engine with a stroke of no less than 110 mm is like something out of the history books.

But the Hawk power unit develops its handy 78 bhp at relatively low revs and does it so smoothly that it is almost impossible to pick the



Although the screen wipers park at the other end of their arc, this shot shows how they leave a blind spot on the right of the windscreen.

engine as a four at all. It is an engine with many years of careful development and modification behind it and its ability to lead a long and useful life is undoubted.

The fittings of the Hawk were well up to Humber standard and included a first-class heater and demister,

windscreen washers, two-speed electric wipers, centre arm-rests back and front, and a complete range of instruments, including an ammeter and oil gauge added for the first time on this model. I think the Hawk fully justifies Rootes' contempt for annual "styling" changes. #

CHRYSLER'S GAS TURBINE

(Continued from page 23)

After the war Heubner went to work on his project. He gathered about him a tiny group of engineers who believed in the gas turbine. They labored in a sea of sceptics. It was not until 1954 that they came up with their first gas-turbine automobile.

Nobody gave Heubner and his plans a second glance, however, until 1916, when he produced a turbine-powered car that averaged 14 mpg on a trip from New York to Los Angeles.

Persisting, he had so cleaned up his design by 1958 that he got 19.4 mpg on a Detroit-New York trip. That was better than a standard Plymouth V8.

When Heubner engine Number Three was announced early this year, it produced about the same fuel mileage as in 1958, but Heubner had added spine-tingling acceleration and fine engine braking under no-throttle conditions.

Between 1958 and 1961, Heubner wrestled with three hefty problems. A gas turbine is, essentially, a constant-speed engine. Adapted to automobiles, it obviously could not run at one speed. Heubner was suffering from a lack of acceleration, an absence of engine braking, and a lag between depression of the accelera-

tor and engine response.

With innumerable engine refinements and the addition of an automatic transmission, he got more acceleration. Then he put swivelling blades in his power turbine. That gave him even more acceleration plus engine braking plus instant response to the go pedal.

Heubner calls the blades "variable nozzles" — the unique addition to his engine. They swivel automatically through a control (a "brain") that reacts to gas temperature and pressure. These two depend on accelerator pressure and car speed.

The blades are tiny airfoils. They twist, root to tip, not only to gain efficiency but to minimise gas-compressibility effects from the turbine's high speed. At no-throttle the blades actually can reverse their "thrust." Then the kinetic energy of the car, through the drive wheels and drive train, makes a fan of the power turbine.

The fan, a sort of spigot turning off the flow of gases, stores their heat in the engine for use when the accelerator comes down again. Momentarily the engine interior becomes a heat reservoir. It's this reverse-blade position, using up the car's kinetic energy, that supplies the equivalent of the piston engine's compression braking.

One of the odd characteristics of the engine is that above 18,200 rpm

on the power turbine at a no-throttle condition, it "flames out." It's dead. No fuel flows. At exactly that speed the "brain" signals, "Hey, fuel, please!" Fuel flow resumes, the spark plug sparks, and instantly the engine is in business again.

Better fuel economy certainly is possible. To use an engineer's phrase, the Chrysler engine has finished its research phase and entered development. It has proved itself.

Fuel? On its latest publicised long-distance trip, from Detroit to Washington, the engine burned kerosene on the road and, in Washington, straight gasoline. On part of the return trip, it burned a mixture of diesel fuel dumped on top of gasoline. It will burn leaded, premium fuel, but only at the eventual expense of fouling the turbine blades.

Heubner is letting out just so much design information and no more. His regenerator, for instance, is off limits to reporters. Knowledgeable engineers with competitive companies say, however, that he uses a whirling plate in it to boost the heat transfer.

One of Heubner's problems in researching turbines has been the unwillingness of his staff engineers to wring out an engine to the point of failure. They flinch when one of their precious engines is abused. Their attitude is, let George Heubner do it. So George has to do it. #