

The Sunbeam is often completely forgotten when British vertical twins are discussed. It was 'different', radically so, it had no sporting pretensions, and production ceased in 1956. Never a very big seller, its demise allowed BSA post war owners of Sunbeam to expand production of their own A7 and A10 twins.

The original Sunbeam S7 was designed by Erling Poppe once manufacturer of the P & P motorcycle, later a designer in the

The ignition distributor was driven from the rear of the camshaft. The disposition of the valves meant that the two adjacent inlet valves could be served by a single port and in Amal carburettor. In turn the exhaust ports were widely separated and two chromed exhaust pipes swept down to join one another in a short length of flexible pipe before entering the silencer. This flexible pipe was to allow for the fact that the engine was mounted on rubber which effectively concealed any vibration, but

allowed the engine to 'rock' at tickover speeds. Lubrication was by a single gear pump, no scavenge taking place, as the system ran wet-sump car fashion. Power output was 25hp at 5000rpm. Sunbeam had in fact experimented with a very advanced cylinder head of crossflow type with valves at 90°, the camshaft acting on the inlet valves via rockers and on the exhaust by short tappets running in guides in the head and operating rockers.

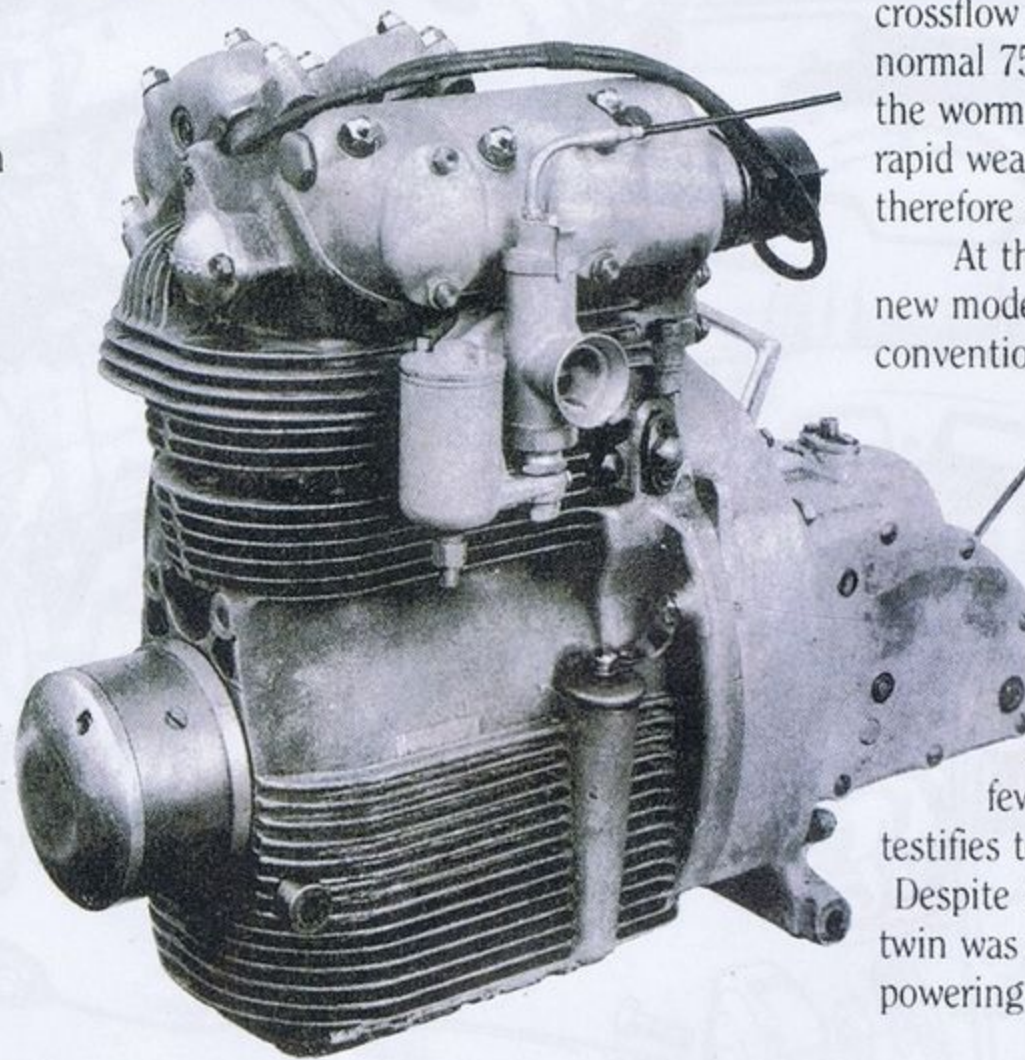
What advantage this had over a

SUNBEAM

motor industry. That he was heavily influenced by the pre-war BMW is self evident from the Sunbeam's controversial styling and the use of an engine with its crankshaft in line with the frame and shaft transmission. Whatever one thought of the bike's looks and its huge tyres, the engine design appeared to be very advanced for 1947 at the end of which year the Sunbeam was first road tested. Well over-square at 70mm x 63.5mm - 487cc, the cylinders were well spaced apart for cooling and carried iron liners in an aluminium casting that extended to form the crankcases. The crankshaft was cast in nodular iron with a large central bobweight and ran in a ball bearing at the front, a split white metal mainbearing at the rear.

Additional flywheel weight was provided by the substantial car-type clutch outboard of the rear main bearing. At the other end of the crankshaft was a large 'pancake' 6-volt dynamo. The light alloy connecting rods ran on split plain lead-bronze big ends. The light alloy cylinder head had its valves in line in a wedge shaped combustion chamber operated by a single chain overhead camshaft and rockers.

A rare photograph of the interesting 'crossflow' engine developed by Sunbeam. It proved easily capable of 90mph but wore out the final drive gears in less than 3000 miles!



conventional single ohc and rockers is not clear. Possibly it made for shorter, stiffer rockers, and the fact that the camshaft was offset resulted in less shrouding of the head, and better cooling. Fitted with this crossflow engine, speed was raised from a normal 75mph to 90mph, but reliability of the worm and wheel final drive suffered and rapid wear took place. The crossflow engine therefore was aborted.

At the time of the introduction of a new model the lighter S8 which used a conventional BSA front fork and brake and carried normal sized motorcycle tyres, the opportunity was taken to uprate some aspects of the engine design. Thicker cylinder liners were fitted, the oil capacity of the wet sump increased, and the flexible engine mounts improved. Thereafter few alterations were called for, which testifies to the basic soundness of the design. Despite the usual folk lore, the Sunbeam twin was a reliable and long lived engine powering a motorcycle of considerable charm.

Controversial? Different anyway. Sunbeam's in line shaft driven twin.

