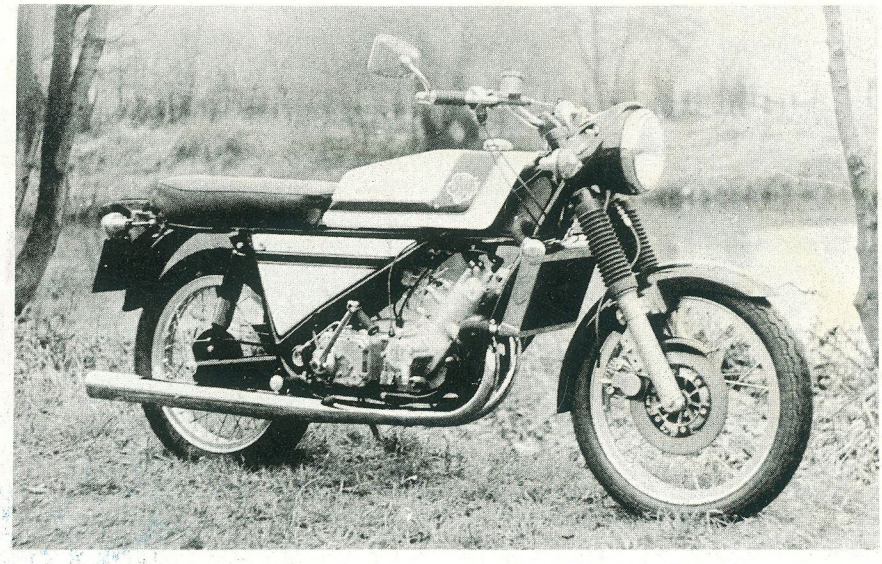
The Exclusive

SILK 700S



660cc. 305lb.

FLEXIBLE POWER

HIGH POWER/WEIGHT RATIO

SUPERB HANDLING

"AS SMOOTH AS A SILK"

The story of the Silk 700S

The Background

George Silk and Maurice Patey started by overhauling and tuning vintage motor-cycles, but were convinced of the need for a new, high-quality British motor-cycle. The "Silk Special", with reconditioned Scott engines, was produced in small numbers to develop and prove the basic concept of the motor-cycle, while a new engine was being designed and developed. The Silk 700S is new, is British, and has unique qualities of light weight and superb handling, road holding, performance and fuel economy.

The directors and senior staff of Silk Engineering are all keen motor-cyclists, and between them own a large number of vintage and modern motor-cycles. They include specialists from the fields of aeronautical, production and value engineering, and senior management consultants, to give the broad basis necessary for launching a new highly-technical product under today's difficult conditions.

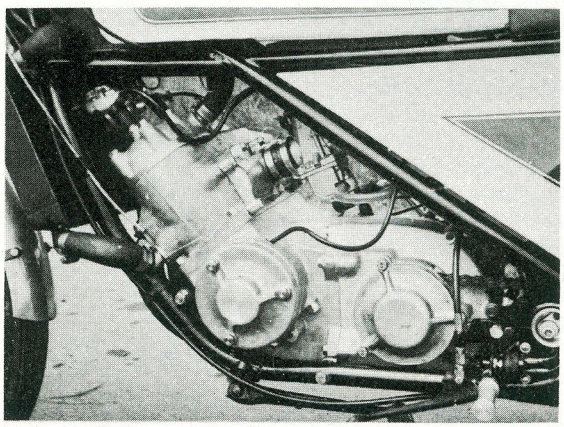
Our aim has been to produce a machine which is designed by enthusiasts for enthusiasts, with character in the tradition of the great classical British motor-cycles and the added advantages of light weight and low maintenance. The aeronautical saying: "Simplicate and Add More Lightness," summarises our technical philosophy.

The Silk 700S has today a unique place in the British motor-cycling scene. Because production quantities are limited—we are not a mass-production company—we can offer specialist features to suit the needs of individuals or of specific types of use. Our policy is to develop the bike progressively so that it retains both its character and its unique appeal to selective markets

The Engine

Traditionally, the 2-stroke had the advantages of lightness, compactness, simplicity and mechanical quietness; but it suffered from a reputation for difficult starting, sparkplug troubles, blue exhaust smoke, rapid bore wear and seizure. Later versions of the 2-stroke, using the "loop scavenge" principle, produce very high powers but suffer, at the same time, from lack of torque at low speeds so that six gears are necessary, and the fuel consumption is high.

The new Silk engine was initially designed by David Midgelow, C. Eng., M.I. Mech.E. and George Silk, to emphasize the advantages and minimise the disadvantages of the 2-stroke, and was then referred to Dr. G. Blair, B.Sc., Ph.D., C.Eng., M.I.Mech.E., M.S.A.E. at Queen's University, Belfast, for the porting to be optimised, and the performance to be calculated by computer. Our new, patented, "Velocity Contoured" charge/scavenge system is a major factor in achieving abundant low speed torque and good fuel consumption. Maximum horse power is produced at 6,000 r p m , but maximum torque occurs around 3,000 r p m , giving real "kick-in-the-back" acceleration throughout the speed range and requiring only a simple four-speed box. The fuel consumption is outstanding for a 700 c.c. bike, by any standards. The compact design of the all-aluminium engine makes the best of the power/weight and power/volume advantages of the 2-stroke.



Water-cooling has a number of advantages and other manufacturers are now introducing it for their higher-powered machines. Firstly, it controls the hotspots, giving more uniform and better controlled combustion, thus reducing unwanted exhaust emission.

Secondly, it provides better cooling round the spark plugs, thus helping to overcome one of the 2-stroke's problems. Thirdly, it emphasises the 2-stroke's inherent mechanical quietness. Fourthly, although there is the added bulk of the radiator, the actual engine itself can be much smaller, lighter and more get-at-able. Finally, the whole system is so well matched that, with such a small engine, the header tank can be mounted above it, using thermo-syphon cooling and avoiding the complication of water pumps and thermostats.

Simplicity, leading to reliability and ease of maintenance, has been our aim throughout.

HIGH POWER/WEIGHT RATIO

SUPERB HANDLING

"AS SMOOTH AS A SILK"

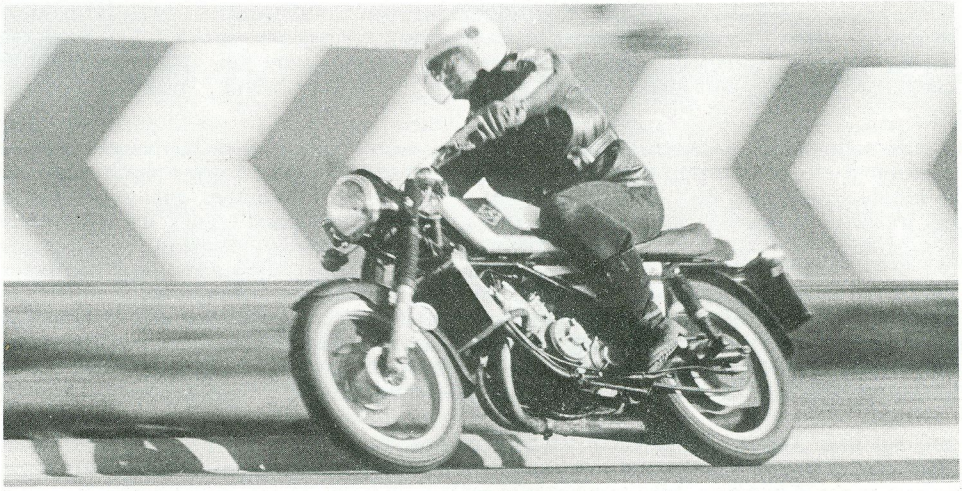
The Bicycle

The lightweight frame, based on a well-proven, race-bred design, emphasises the advantages of the small lightweight engine, and we have really concentrated on keeping it light. Not only does this contribute to the fantastic performance, but it means that the bike is readily handleable—you don't need a weightlifter to move it round the garage!

Also contributing to this, and to the fabulous road holding and steering, is the low centre of gravity—again made possible by the compactness of the engine.

The ride is, if anything, slightly on the firm side, but we have done this deliberately to give the optimum road holding—we really do claim it is the optimum.

As one experienced rider said: "You have to ride some of the modern high performance bikes as though they were on ice all the time—with the Silk, you forget about the steering and go where you want, almost by instinct."



Low Maintenance Costs

The whole motor-cycle has been designed by practical motor-cyclists for simplicity, reliability and long life leading to minimal maintenance costs.

Simplicity

Two cylinders, one carburettor, one silencer, no valves, no contact-breaker. Only engine adjustment required is to the single carburettor.

Approximately 1000 miles between topping-up with oil.

Eccentric adjuster for final drive chain—simple adjustment and perfect wheel alignment.

Engine and gearbox removal without dismantling. Quick detachable rear wheel.

Only one service tool necessary—for clutch nut.

Spanners to fit all other nuts are included in comprehensive tool kit.

Long Life

Mechanical design for 80 hp and 9400 rpm with large dimensions and bearings—big reserve factors and low wear.

Water-cooled engine, with cast-iron liners and moderate rpm—target of 60,000 miles before major overhaul.

Well-proven clutch with improved operation, using standard clutch plates.

Well-proven gearbox with improved materials and manufacture.

Large bearings to take chain load directly—no distortion.

Enclosed chains—five times longer life than exposed chains.

Light weight—all parts more lightly loaded.

Smooth—no failures due to vibration.

SILK

SUPERB HANDLING

SPECIFICATION

General description
A lightweight, high-performance, sports-tourer, designed and manufactured in limited quantities by enthusiasts for enthusiasts.

THE ENGINE

Type and dimensions
Inclined twin-cylinder piston-port two-stroke, water-cooled, pressure-pump lubricated. Patented "Velocity Contoured" charge/scavenge system for low-speed torque and good fuel consumption. Bore and stroke 76 mm × 72 mm, 653 c.c.

Engine construction
Separate cast-aluminium head, block and crankcase, with integral water cooling. Centricast iron dry liners, jig-machined for accurate porting. Two-piece crankcase, horizontally split for rigidity and avoiding oil leaks. Pressed-up counter-balanced crankshaft, running in 4 caged needle-roller bearings. Forged con-rods with floating gudgeon pins and caged needle-roller big-ends. Specially designed ported-skirt pistons.

Lubrication
Crankshaft-driven Silk "DUPU" micrometering duplex pressure pump meters oil according to rpm and throttle opening, through pressure-retaining non-return valves.
Approximate rate of oil usage better than 300 miles per pint.
Separate $3\frac{1}{4}$ pint oil tank.

Ignition
"Lumenition" transistorised ignition, with centrifugal advance/retard and dual coils.

Carburation
Latest-type Amal Concentric Mk. II carburettor, with air intake silencer/filter.

Exhaust system
Siamesed expansion type with specialist-designed silencer.

THE TRANSMISSION

Primary chain
$\frac{7}{16}$" Reynolds Duplex chain in enclosed oil bath. Speed reduction 24:49.

Clutch
Specially designed robust multi-plate clutch, using standard clutch-plates, running in enclosed oil bath.

Gearbox
Rigid casting assemblies flange-mounted on to the crankcase, with rigid cast covers, multiple-bolted to eliminate oil leaks.
Robust heavy-duty close-ratio gears:
1st 2:29; 2nd 1:59; 3rd 1:21; Top Direct.

Final drive
Totally enclosed $\frac{5}{8}$" × $\frac{1}{4}$" roller chain, grease packed.
Adjustment by eccentric in swinging-arm fulcrum.
Standard gearing: 19-tooth gearbox sprocket, 36-tooth wheel sprocket with "Cush-Drive".

The bicycle frame
Lightweight duplex frame, triangulated for strength and rigidity at steering head and swinging-arm pivot points. Manufactured in aircraft-grade tubing by Spondon Engineering and race proved. Complete engine and gearbox removal by taking out ten bolts, without dismantling.

Steering head and front forks
Twin Timken tapered-roller steering head bearings, pre-packed with grease and sealed. Race proved hydraulic-damped front forks. Dirt-excluding full gaiters.

Rear suspension
Rigid swinging-arm pivoting on substantial Tufnol bushes. Grease-nipple lubricated to provide adequate supplies of grease to expel road dirt and water, to ensure long-life and accurate road holding and steering. Girling suspension units, readily adjustable to suit load.

Brakes
Single 10" disc Lockheed hydraulic front brake. Finned light-alloy calliper. Disc in cast-iron for optimum braking in dry or wet conditions. Robust light alloy handlebar-mounted master cylinder. 7" light alloy drum rear brake.

Wheels
Aluminium alloy rims. Rustless spokes. Avon Roadrunner tyres. Sizes: Front, 3.60 x 18; Rear, 4.10 x 18.
Quick detacnable rear wheel.

Fuel tank
Light aluminium tank, quick removable, approx. 4 gals.
Snap action filler cap.

Electrical equipment
12V negative earth system.
Crankshaft-driven 150W alternator with rectifier and battery.
Special Lucas 7" quartz-halogen headlamp, with built-in parking light.
Headlamp fairing includes speedometer, ignition switch, ammeter, light switch, headlamp highbeam indicator, flashing indicator warning light. Amber flashing indicators front and rear. Large area combined stop-and-tail light reflector.
Horn.

General
Nuts and bolts are stainless steel; standard threads are UNF or UNC.

Customer-choice items

Wheels:	Stainless steel or polished alloy rims.
Front brake:	Single disc standard. Alternatives are hydraulically operated twin disc or 8" 2-leading-shoe cable-operated drum brake.
Handlebars:	To suit customer preference.
Fuel tank:	Long range 4 gallon (18 litre) or sprint 3 gallon (14 litre) capacity.
Seat:	Single seat, occasional dual seat or full dual seat and pillion footrests. Seat height from 28" (71 cm) to suit customer.
Sidecar attachments:	If required.
Colour scheme:	White background on tank, black frame. "Silk purple and gold" linings as standard. Alternative colours to customer choice if required.

DIMENSIONS AND PERFORMANCE

Dimensions

Wheelbase: 56" (142 cm). Length: approximate 81" (206 cm).
Ground clearance: approximate 8" (20 cm). Weight: approximate 305 lb.
Fuel capacity: 4 gallon (18 litre) or 3 gallon (13 litre).
Oil capacity: $3\frac{1}{4}$ pint (1.85 litre).

Approximate performance:

Speeds at 6000 rpm	Top	111 mph (178 kph).
	3rd	92 mph (147 kph).
	2nd	70 mph (112 kph).
	1st	48 mph (77 kph).

Fuel consumption—Average touring: 55 mpg (7.0 l/100km).
Oil consumption—Average touring: Better than 300 miles/pint (850 km/litre) (0.12 l/100 km).

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