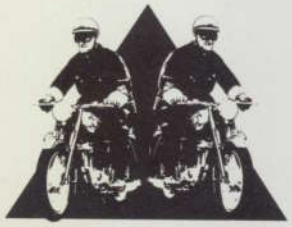
OLD SOLDIERS



Side by Side

Never die, says Patrick Click, after riding two motor cycles, armed forces for the use of. Howard Cook does photo duty.

Good stories must sometimes be missed because a much-reduced staff cannot spare time to travel as in days gone by. Other stories cannot be told for reasons of national security, and splendid pictures must regretfully be held over until no danger can result from their publication, wrote Graham Walker in his editorial of a 1943 issue of *Motor Cycling*.

Was Graham referring perhaps to hush-hush details of machines issued to long-suffering despatch riders in the British army, such as the 16H Norton, of which nearly 100,000 were made between 1937 and 1945? In fact, after BSA, Norton was the second largest supplier of machines to the Allies during the war, and manufactured approximately a quarter of the total British wartime production.

Details of the 16H which may have interested the enemy included its trials 5½-inch ground clearance rigid frame that tended to break its down-tube below the steering head, besides loosening DR's teeth; its valve-gear only partially protected by a curved cover, behind which was a grease nipple for each valve guide; its gearchange linkage that wore, resulting in no bottom (or top) gear; its vintage-style headlamp prongs that broke; its lack of a built-in air cleaner; its petrol tank that split; its Magdyno that came adrift; its rear hub that suffered from loose fixing studs; and its gearbox that worked loose, often resulting in the forked lug at the top wearing, which then broke when tightened . . .

The WD 16H Norton is a descendant of the first 490cc (79 x 100mm) side-valver of 1911, ridden in the TT that year by James "Pa" Norton himself, and the fast single-gear belt-drive BS and BRS machines that followed. Known first as the Model 16 with a high ground clearance frame for colonial use, in 1921 it acquired a low or "home" frame, similar to that first used in the 1920 TT – hence 16H. Updated, it continued in production until 1954, and remained in military service until 1960.

Although by 1938 the 16H Norton had totally-enclosed and positively-lubricated valve-gear, the War Department chose the 1937 version. In most respects identical to the near-vintage 1931 machine (the first to have dry-sump lubrication and the Magdyno positioned behind the cylinder), by 1937 it had been updated with a four-

Peter Harris gives Patrick Click a lift; Jack Dienst prefers the solitude of his 16H.

speed, positive-stop, foot-change Norton gearbox and clutch, check springs on the front fork, and a voltage-control regulator. Finally, to complement the "trials" frame, the WD 16H was given slightly lower gear ratios, almost identical to sidecar ratios of the civilian machine.

Meantime, whilst British DRs were slogging their rigid-framed tooth-looseners through the dust and sand of North Africa and the mud of Europe, their Italian counterparts were reluctantly fighting the war and riding what frequently seemed only slightly modified racers, mostly equipped with sophisticated, friction-damped, swinging arm rear suspension.

One, the purpose-built Moto Guzzi Alce (*Elk*), had an inlet-over-exhaust (ioe) outside flywheel "bacon slicer" engine laid horizontally in the frame in unit with a four-speed hand-change gearbox, and oversquare dimensions of 88 x 82mm giving a capacity of 498cc. The rear suspension was a reversed cantilever controlled by coil springs in compression below the engine and elbow-type friction-dampers on either side, and, like the 16H Norton, its girder fork had two check springs.

Produced from 1939 to 1945, the Alce outnumbered other motor cycles supplied to the Italian military, and was succeeded in 1946 by the similar looking Superalce (*Superelk*), which, believe it or not, remained in production, unchanged in specification, until 1957.

Like the Alce (but unlike the 16H) the Superalce, too, was built for the job, and had similar cycle parts, but the more sporty pushrod-operated 88 x 82mm overhead-valve engine of the Alce's military predecessor, the GTV of 1935. With exposed valve-gear and hairpin valve springs, it produced 18.5bhp at 4,300rpm.

The frame comprises a box-section top member, widely splayed twin down-tubes, and seat component consisting of plates that support the rear fork and which extend forward below the engine. After disconnecting the petrol and oil pipes, two bolts below the cylinder, and a bolt under the front saddle, the whole forward section is removable, leaving the engine/gearbox unit in place conveniently mounted on the massive roll-on centre stand and rear wheel. A further feature is the huge, but practical, side stand, nearly two feet long, and with a 3½-inch foot – surely strong enough to support a tank.

Just as Norton had done, Moto Guzzi, too, raced from the beginning, and notched up victory in the 500cc class of the Targa Florio in Sicily – the first year of manufacture – followed by a win in the 1924 European championship with a 498cc overhead-camshaft four-valve version that produced 25bhp with a maximum speed of 93mph.

And, in 1935, the all-conquering Rudges and Nortons were vanquished by Stanley Woods's Lightweight and Senior TT wins: the latter at record speed on a 498cc 102-degree vee-twin arrangement of the classic layout, reputed to produce in excess of 50bhp. Not only were Stanley's IoM victories the first by a foreign machine since 1911, but they were also the first ever by a sprung frame motor cycle of any kind.

Innovative Moto Guzzi went on to produce racers with three, four and, finally, eight cylinders, whilst conservative Bracebridge Street stuck obstinately to their outmoded single until the end, but that's history.

Jack Dienst's very original but well-used WD 16H Norton proudly wears the insignia of his old unit – the 10 DR Section of the 5th (London) Corps of Signals – and has army workshop markings stamped on the crankcase, whilst a brass plate inside the toolbox denotes that its last WD overhaul was in 1953.

Difficult to believe, but Peter Harris's early 1930s-looking Moto Guzzi Superalce with its exposed valve gear was manufactured exactly 14 years later than the 16H, in 1953, and is only a slightly modified version of the first military Moto Guzzi, the GT-17 of 1932.

Scarce in the UK, but common in Italy, it was imported in 1983 and purchased in 1986 for £600, after changing hands several times. Incorrectly, the import document states that the Superalce was manufactured in 1937; not surprising in view of its near-vintage appearance.

A motor cyclist since 1932, Jack Dienst (full name Hermann John Frederick Dienst) joined the Royal Corps of Signals as a volunteer DR, and later became a section fitter, through Arthur Bourne's scheme in *The Motor Cycle*. "He seemed like God at the time – I hero-worshipped him – but after a short time in the army I felt differently," Jack laughed.

His 16H having been "waterproofed", Jack was trained to make beach landings, but when he went ashore on the Norton at Algiers it was down a ship's gangway, not through the briny. "When we arrived in North Africa we didn't need a road bike any more; we needed a trials machine with plenty of ground clearance – the more the better – so long as it had the plonk of a side-valve engine. The 16H was never designed for cross-country work . . . it was chosen by some idiot in the War Office."

Explaining that he preferred the "simplicity and comparatively easy accessibility of the old 16H Norton," a correspondent wrote in a letter published in *Motor Cycling* in 1942: "The bikes in my unit cover anything up to 16,000 miles a year and we have a 16H Norton still on the road which has three campaigns, seven countries and 30,000 miles to its credit, and still goes."

Could Jack's be the very one? To judge by its worn tappets and guides that pump oil like a North Sea oil rig onto the timing side of the engine (and onto the rider's boot), its sloppy gearchange (no bottom gear), and its leaking petrol tank, it might well be. Perhaps not, though, for it seems more likely to have at least four campaigns to its credit, not three! "Nevertheless," quipped Jack, "both the machine and its rider are genuine World War Two historical objects."

"Incidentally, I have come across a lot of motor cycles I have never heard of, all of which are notable for noise, hairpin valve springs, unit construction and spring frames ... What wouldn't we give for rear suspension on our models," wrote Signm. F. W. Harrison in the 1943 issue of *Motor Cycling*. Graham Walker, too, was pressing for sprung frames: "The North African campaign has taught many lessons, but none more important than the need for insulation of rider and mount," he wrote.

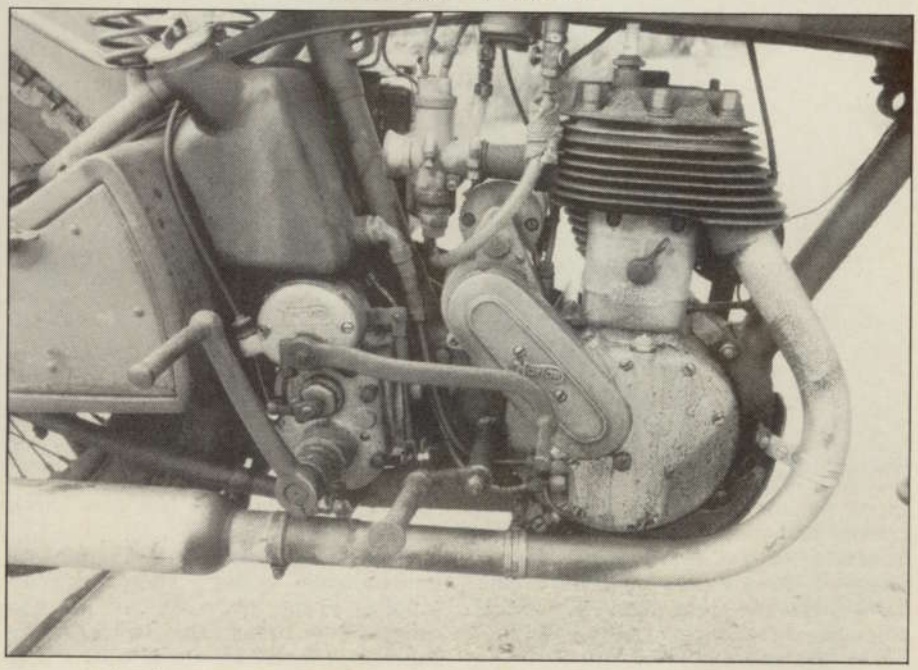
Finished in glossy olive green, Peter Harris's Superalce is obviously less used than Jack's 16H, and undoubtedly still in its original unrestored condition. Once off its massive roll-on centre stand, the Moto Guzzi felt heavier, longer and lower than the Norton – as indeed it is – and its rear handlebars made manhandling difficult.

One depression of the kickstarter with its exposed quadrant set the 18lb outside flywheel spinning and produced the steady and vibrationless *bonk bonk bonk* of a stationary engine, despite the engine's oversquare dimensions and the automatic advance and retard Marelli magneto. Although fitted, the valve lifter was only required for stopping the engine.

In contrast, starting the Norton required several kicks, even when warm (has Signm. Dienst been omitting his Daily Tasks?), but once started, and the ignition retarded, it plonked as well as the Superalce. What the Norton lacks in flywheel effect is compensated by its long stroke.

Engaging bottom gear from neutral on the Superalce by pressing downwards with the heel on the rocking-pedal gear lever produced the crunch – literally. Undoubtedly, the extremely wide-ratio, non-constant-mesh, four-speed "crash" gearbox is its least attractive feature, and is best summarised by impressions of a 1950 Superalce published some years ago: "Changing gear is a noisy and violent operation. You pull in the clutch, close the throttle and wait. When the flywheel has let the engine slow to idling speed you stamp down hard on the rocking-pedal gear lever. It usually sounds as if all the gears are breaking up, but you soon get used to it."

A thin cover hides the Norton valve gear, complete with grease nipples and oily mess; the Superalce has a vintage appearance, with plenty of exposed mechanisms, but note the under-engine spring box.



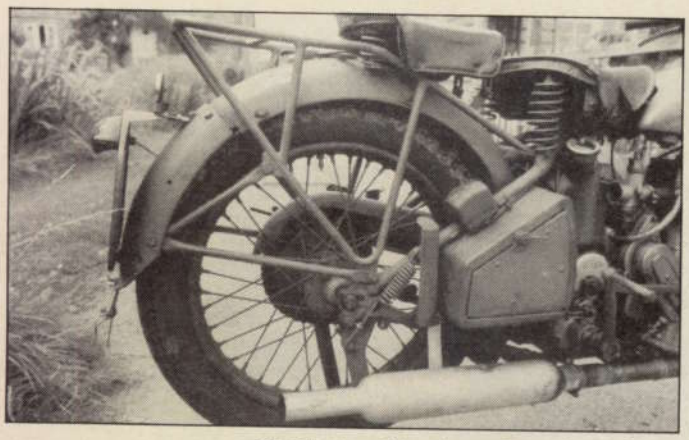
However, with care and patience and waiting until the engine really was idling before changing gear, up or down, cog-swopping could be effected with only only a clonk. It's a slow and cumbersome business, though, changing down especially, and it was some miles before top could be engaged; finally achieved by really firm pressure on the lever.

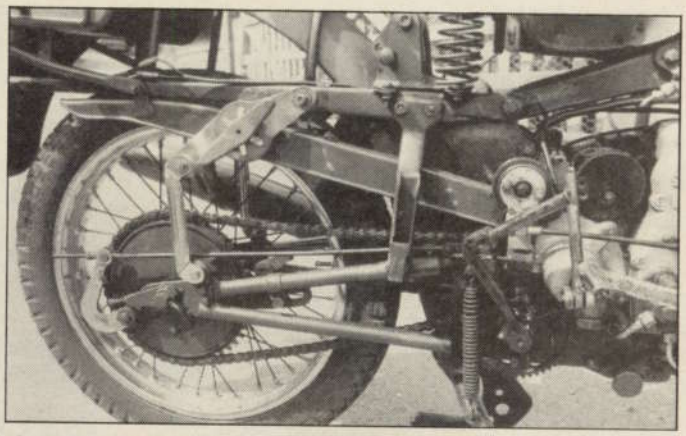
Remotely mounted, the gear lever is connected by a rod to the positive-stop mechanism, which, unlike the Norton's, is unenclosed. Why ever did the Italian military not specify the constant-mesh box of the Falcone; but then why did the British War Office opt for the 1937 version of the 16H Norton with its exposed valve-gear? Ours is not to reason why.

Apart from its inability to engage bottom gear, due to the sloppy linkage, neither the Norton's excellent constant-mesh gearbox nor its clutch could be faulted; starting in the 9.35 to 1 second gear and slipping the clutch was no problem. "We rarely used bottom gear for pulling away and even in mud you could plonk along okay in second – the Norton clutch is so robust it will stand any amount of slipping," recalled Jack.

However, the 10-inch gearlever with its long travel meant moving the foot from the rest each time a gear was changed, up or down, and Jack recalls that, like most DRs who rode Nortons, he hooked the heel of his riding boot under the lever when changing down.

The Superalce's best feature is undoubtedly its ingenious reversed canti-





The Norton did not even have the undamped plunger suspension available in 1939; Moto Guzzi's cantilevered suspension was introduced in 1928, controlled by elbow dampers and four springs under the engine.

lever swinging arm rear suspension, controlled by four springs in compression in a box below the engine, and hand-adjustable, friction-dampers on either side. Adjustable for solo or pillion riding, and in conjunction with the front fork, also provided with hand-adjustable friction-dampers on both sides, the Superalce gave a smooth but pleasantly firm ride.

Not so the Norton. Its rigid frame jarred the spine and its front fork (not even provided with the single hand-adjuster of the civilian machine for its friction-dampers) juddered. To be fair, however, with its shorter wheelbase and traditional Norton handling, it did steer better, both in a straight line and on corners. Whilst both machines could be ridden "hands off" (albeit with a tendency to wander to the left) the Norton passed the Featherbed test – a quick check that the law is not around, hands off, waggle the backside, and no trace of a tank-slapper!

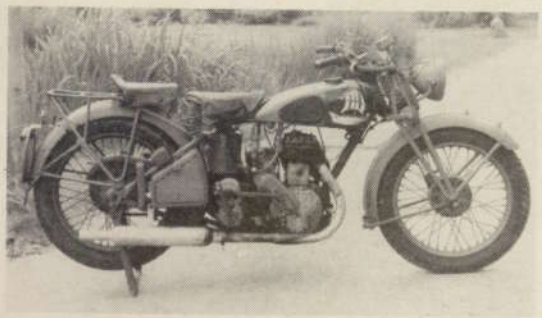
Both machines have superb flexibility and huge amounts of plonk from their low compression engines, and both pulled away happily in top gear from little more than walking pace – the Norton's ignition retarded a little. With its exceptionally low bottom gear the Superalce would almost certainly have climbed out of a shell hole had one been found.

Jack Dienst believes that the 16H was one of Hitler's secret weapons – that the Nazi Führer actually bribed somebody in the War Office to supply them to the British army. Secret weapon or not, "attractively cellulosed in a pleasing shade of green" and "reconditioned to exacting Government standards", ex-WD 16H Nortons were sold off in thousands to a motor cycle-starved public following the war.

Sidecars attached, and as faithfully as they had served DRs during the war, the old warhorses plonked to the seaside hauling Mum, Dad and the kids until well beyond the introduction of the ubiquitous Mini in the late fifties. By then the Norton's military career had finished, but the Superalce, exactly as tested, continued to serve the Italian army for another decade.

RUSSELL MOTORS

125/127 FALCON ROAD,
CLAPHAM JUNCTION, BATTERSEA,
LONDON SW11 2PE
TEL: 01-228 1714 (Closed Wednesdays)



NORTON 16H – JUST SOME OF OUR PARTS

ENGINE

Head gasket	each £2.50
Base gasket	each £0.30
Head nuts	each £0.85
Head studs	each £0.40
Base nuts	each £0.30
Base studs	each £0.40
Cylinder liners	each £15.00
Big ends	£25.00
Small ends	£4.00
Cam bushes	set £12.00
Tappet guides	pair £9.00
Main bearings	each £6.50
Crankcase (bare)	£35.00
Oil pump tell tale	£4.00
Timing chest	£20.00
Valve springs	pair £3.00
Valve guides	each £3.00
Valve collets	pair £0.60

GEARBOX

Gear lever	£6.00
Mainshaft	£12.00

GEARBOX (cont.)

Layshaft	£10.00
Sleeve gear bushes	each £1.60
Mainshaft gear bushes	each £2.00
Layshaft bushes	each £2.00
Mainshaft bronze thrust washer	£4.50
K/s spring	£1.50
K/s spring cover	£1.40
F/c springs	pair £1.50
Gear pointer	£1.00
Clutch nut	£0.65
Clutch springs	set £1.20
Clutch spring stud	each £1.20
Clutch spring bolt	each £0.25
Clutch rod	£1.00
Clutch sprocket inserts	set £5.00

CYCLE/ACCESSORIES

Girder main spring	£12.00
Rebound springs w/clevis	pair £8.00
Rebound springs clevis pins	each £1.00
Rear wheel spindle	£4.50
Rear brake drum/sprocket	£25.00

CYCLE/ACCESSORIES (cont)

Brake drum sleeve bolts	each £1.50
Brake shoe springs	each £0.60
Chain adjuster bolts & nuts	pair £0.80
Front saddle bracket	£2.00
½ round footrest rubbers	pair £5.50
Mag dyno points	£2.50
Rear stand bolts/nuts	pair £1.00
Dynamo brushes	pair £1.50
Pattern voltage regulator	£15.00
6in Lucas rim & dome glass	£8.00
Black face ammeters	£5.50
Chaincase rubber wide or narrow	£4.50
Lycett saddle badge	£1.25
Handlebar clamps	set £10.00
Oil pipes	pair £7.00
Petrol tank bolts	each £0.80
Handlebar end plugs	each £2.00
Photocopy of WD16H W/shop Manual	£6.50
Steering damper knob	£4.00
Rear chainguard	£25.00
Petrol pipes	pair £3.50