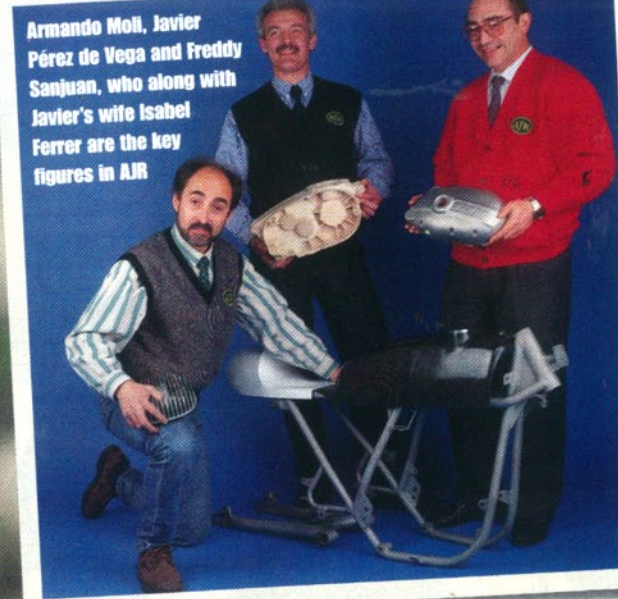


Bul fighters

Spanish firm AJR is battling to make its replica of the Sixties Bultaco TSS350 single a classic class leader in the Nineties
ALEX MEDINA *pics: Jose Coronilla*

Tester Alex Medina relives his youth aboard an AJR replica of the clubman's favourite Bultaco TSS350. New bike has the original's character in an efficient modern package



Armando Moli, Javier Pérez de Vega and Freddy Sanjuan, who along with Javier's wife Isabel Ferrer are the key figures in AJR

■ BULTACO REPLICA

ONE OF THE GREAT PRIVATEER RACE BIKES OF THE Sixties has been reborn for the Nineties — the Bultaco TSS350. In 1969 Ginger Molloy took a TSS350 overbored to 356cc to third place in the Spanish 500cc GP, making the Bultaco the first two-stroke to grab a rostrum place in a 500cc GP world championship round.

AJR's replica is a beauty that's built to be raced. And modern materials and technology have let the AJR evolve into a faster, more reliable and more powerful bike than the original ever was.

Assembled by hand to the highest standards, the AJR's quality is obvious on the track, where its handling and high revving performance make it ideal for classic racing — and loads of fun.

AJR stands for Armando and Javier Replica, named after owners Armando Moli and Javier Pérez de Vega, both aged 47.

Moli is an industrial engineer whose day job involves working in the electronics industry but whose passion is for restoring classic bikes.

Pérez was one of the founders of disc brake firm AJP and also has a reputation for his work on restoring old bikes.

Also involved in AJR are Freddy Sanjuan, a former Ossa race department mechanic, and Pérez's wife Isabel Ferrer.

They are now seeing the fruits of a shared passion that, at first, few others believed would lead anywhere.

Armando says: "We decided to manufacture instead of doing restoration work in 1993. We didn't want to copy a Bultaco, but instead make a machine which is a loving reminder of the old bike, which was the only Spanish machine that really sold to race privateers."

He adds: "The TSS was easy to pilot, reliable and very attractive." The team hope to sell their new replica to riders interested in taking part in classic races in any countries where local rules permit it to compete.

"It will probably be mature riders, maybe people who raced in the Seventies, who buy our bike. We've had surprising amounts of feedback from places like France, the USA, Japan and the UK," says Armando.

The persistence shown by Armando and his colleagues in the face of early scepticism from parts suppliers has been rewarded, as they have just started making the bikes at a rate of one or two every month at their workshop in Barcelona. They are priced at a competitive £10,300 in the UK.

Moli and Pérez are both hugely enthusiastic about Spanish bikes, especially the TSS. The name TSS — Tralla Super ►

“The AJR recreates the old Bultaco with incredible accuracy, but careful improvements make it a better bike”



◁ Sport — was given to a series of Bultaco's purpose built Sixties racing bikes — machines that were light, simple, nimble and powerful enough for most riders. They were never in the top league of race bikes, but they served many riders well. It's that spirit of enthusiast competitiveness that the AJR team is now recreating.

Each AJR is assembled by hand by people who love what they are doing, then thoroughly tested, the whole construction process taking hundreds of hours per bike.

AJR makes most of the parts for its bikes in house, using new castings made specially. The brakes, suspension, frame and much of the engine are made by AJR, while it has turned to outside suppliers to make the gears, crankshaft, carburettor and fairing.

The original TSS frame is a simple duplex tubular design made from mild steel. But the AJR uses TIG welded chrome moly tube to give a stronger frame that weighs only 15½lb. The swingarm has four needle roller bearings

▲ Fairing and tank follow design of original but are made in light, tough carbon fibre not available to Bultaco. Note also right-side gearshift and huge gap between carb and rear wheel

in place of the Bultaco's bronze bushes.

Suspension front and rear looks the same as on the TSS, but the front fork has the addition of adjustable pre-load and the rear shocks contain gas.

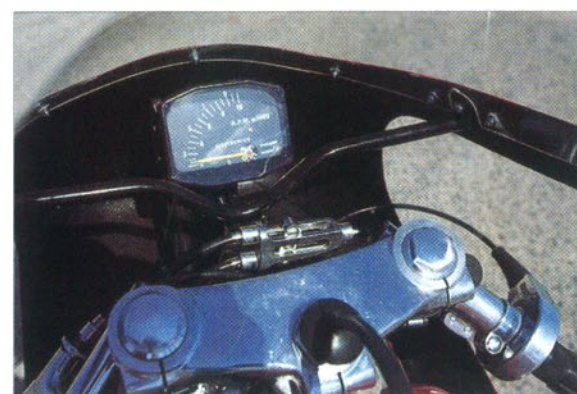
The main changes in the engine include a revised crankshaft, cylinder and head. The conrod is stronger and bears on an enlarged crankpin with the small end bush up from 20 to 24mm. Main bearings are ball, curing the early problem of crank flex on the TSS.

Original Bultaco cylinders feature twin transfer and single exhaust ports, but the AJR has four transfer and twin exhaust ports. The replica's pistons made by specialist Mahle. At first AJR used leftover original Bultaco pistons, but they soon proved unreliable in the face of extra power produced by other changes. That problem was cured by the switch to the specially made Mahle items, which are made of tougher material, with the shape modified and just one ring where the original bike had two.

Power output is 52bhp, a significant increase on the original TSS which claimed 46½bhp.

Like the TSS the AJR uses a twin plug head, but the oval combustion chamber of the Bultaco has been replaced with a hemispherical squish band design. A

◀ Electronic ignition, fibre plate clutch and tough straight cut gears for primary drive are among detailed changes making the TSS350 based AJR a reliable tool for use in classic racing



▲ Revcounter goes up to 10,000rpm but all the useful power happens at 5-8000rpm

combustion chamber modified to take a single spark plug was favoured by Frank "Franco" Sheene on the racers he tuned for his son Barry.

Motoplat electronic ignition is used. A fibre plate clutch with an aircraft quality alloy basket is more efficient and 3lb lighter than the original. Primary drive is by straight cut gear, made stronger than on the TSS design.

The fairing is made of carbon fibre as is the fuel tank, which is fitted with inner baffles. All this weight saving makes the AJR 20 per cent lighter than the TSS.

The AJR is an incredibly accurate recreation of the Bultaco, but it is a better bike. All the minor changes, which combine to give some major improvements, have been carefully chosen.

And as my test ride at the Calafut circuit proved, these changes add up to an excellent track bike. It has a similar feel to the TSS and other Bultaco two-stroke singles I rode in the late Seventies, like the sporting Metralla road bikes. I have ridden many bikes made in the Eighties and Nineties but in a corner of my mind I always remembered those old Bultacos I loved so much.

The AJR has a lot of the feel of the old Metralla and TSS, and the same charm. But despite the age of its basic design it feels like a thoroughbred all-out race machine.

The brakes, while well up to the job,

▼ Tucked in knees and elbows echoes the track technique popular when TSS was new and suits handling characteristics of AJR



The real thing

Bultaco racers won 29 GPs in the Sixties — but the factory's greatest race success was at club and national level with the TSS range of production racers. These affordable strokers won countless admirers, including the fans behind the AJR.

Race glory came quickly to Bultaco, which was formed in 1958. Johnny Grace was a close runner up in the roadster class at the Spanish GP as early as 1959.

Prototypes of the first production racer, the TSS125, were tried throughout 1960 and the production version went on sale in 1961.

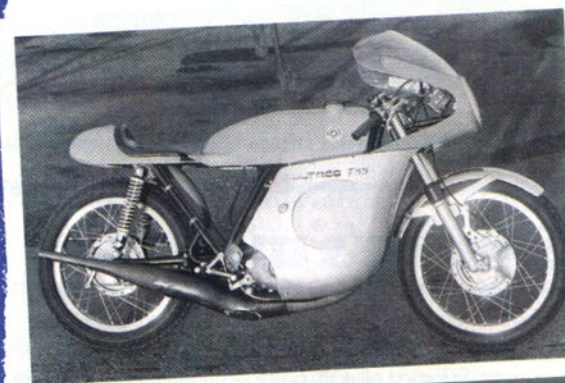
Riders including Dan Shorey and Tommy Robb enjoyed British success — their victories mirrored around Europe by national level riders in the 125 and 250 classes.

The first big international victory came in 1963 at Modena, Italy, where Ramon Torras beat Honda's Jim Redman in a superb giant killing display. In 1965 Tommy Robb won the North-West 200 and in 1966 Ginger Molloy won the 250 class at the Ulster GP. They were both on water-cooled bikes, which went on sale in 1965. Meanwhile the sporty roadgoing Metralla models, with air-cooled engines, were doing well in Spanish production racing and various long distance events.

The prototype TSS350 was unveiled in 1968 and went into production at the end of the year. Air-cooled and fitted with a five-speed gearbox, its all alloy engine was based on the 360cc unit from the El Bandido motocrosser rather than the water-cooled, six-speed TSS250.

The 350 had a compression ratio of 10:1 and produced a claimed 47.5bhp at 8500rpm. A 38mm Amal Concentric Mk1 replaced the 32mm Amal B-32 GP carb on the earlier TSSs. It also had gear primary drive. Its oval twin plug combustion chamber was not judged a success and most riders followed tuner Frank Sheene's lead and went for a single plug conversion and more conventional shape.

Mass production of the whole TSS range stopped at the end of 1969, by which time Japanese twins had the advantage over the European singles on all but the twistiest tracks.



▲ Bultaco's final version of the TSS350, discontinued because it was struggling against the technically innovative Japanese twins

are perhaps the least impressive part of the package. Squeeze the lever and the beautiful looking front brake at first appears to do nothing, although it rewards a firmer squeeze with reassuring amounts of progressive stopping power.

As you would expect from a race bike, the engine also needs some input from your right hand to really get going. Nothing much happens at low revs, but from 5000 to 8000rpm the AJR unleashes its power packed punch

◁ It takes a while to get used to revving the AJR so much harder than the original Bultaco.

At first I was reluctant to spin it above 4000rpm and was surprised by the way the engine was always ready and willing to increase its rpm. But once I got into the rhythm, the AJR 350's abilities soon became obvious.

The gearshift on the right-hand side took a while to get used to after many years on bikes with left-side changes, but once I got the hang of it I found it gave mostly good, positive gear selection.

The handling and suspension are a match for the excellent engine. They show their pedigree — not their age.

It's a racing set-up and gives superb rigidity and stability, with geometry that best rewards a Sixties riding technique, not the knee-down antics that suit machines designed more recently.

It was a real pleasure to rediscover the experience of riding a Sixties race bike on a machine built in the Nineties, with all the quality and reliability you can expect from a machine fresh from the factory. It's a great feeling, and it's all thanks to the obsessive enthusiasm of a handful of Spanish bike lovers ■

1997 AJR

Engine	air-cooled two-stroke single
Capacity	348cc
Bore x stroke	83.2 x 64mm
Compression	11.7:1
Output	52bhp @ 8000rpm
Carburation	38mm Amal MkII
Transmission	five speed
Frame	tubular steel duplex cradle
Brakes	front double sided t/s 210mm drum rear t/s 210mm drum
Tyres	front 90-90 x 18in, rear 110-20 x 18in
Fuel capacity	2.6 gallons (12 litres)
Price	£10,300



▲ AJR is one fifth lighter than original TSS350 Bultaco. Nearly all parts are made in-house

Sheene's machine

Respected tuner Frank Sheene was among the spectators at one of Bultaco's earliest race outings, a long distance event at Barcelona's Montjuich Park.

Frank was so impressed, he introduced himself to Francisco Xavier Bulto. That meeting forged a link that lasted a decade — and landed the Londoner with the nickname Franco.

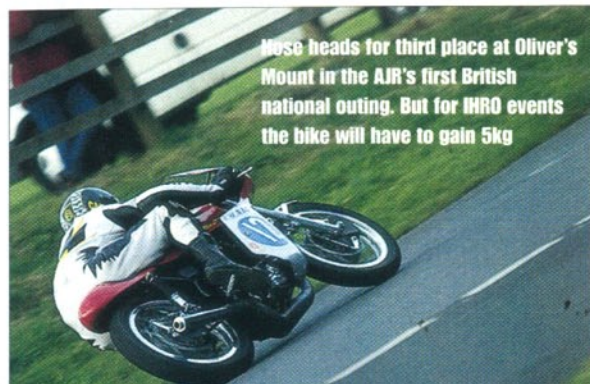
Factory support for Sheene followed in 1965, and his bikes developed a formidable reputation for being well prepared and fast.

But his achievements were soon overtaken by those of his son Barry, who began racing Bultacos in 1968. His first race was at Brands Hatch on a 125, but the bike seized and he fell off. But Barry won both his races at his second meeting, also at Brands.

In 1969 he got full works backing on a 125, a 250 and a 250 overbored to 280cc. He very quickly became a frequent victor at British events, and soon strode on to the world stage.

In 1970 at the Spanish GP he rode a 360 Bultaco, prepared by Franco, in the 500 race. He qualified a sensational second behind Italy's MV star Angelo Bergamonti. Although his engine seized, Barry had shown the sort of promise that would lead him to international stardom — but not on Bultacos.

► Barry Sheene in 1969, when he got full works backing for his Bultacos, with dad and tuner Frank Sheene and dapper Snr Bulto, taunting Bazza with unfit gasper



Hose heads for third place at Oliver's Mount in the AJR's first British national outing. But for MRO events the bike will have to gain 5kg

TSS gets on track

Classic race ace Bob Heath was down to ride an AJR at the 1997 Pre-TT Classic at Billown, but decided the bike's handling might not be good enough over the bumpy real road circuit.

Meanwhile Mike Hose was experiencing gearbox problems with the Seeley Westlake he was running in at Jurby.

So Hose lacked a ride and AJR had a bike going spare. Hose sealed the union with a third place in the junior singles and a fourth in open 350 classic.

"AJR didn't think the TSS needed development — the bike cleans up in Spain," says Hose. But the Merseyside mechanic thought otherwise if the replica was to compete in the cut and thrust of UK classic competition.

UK importer Paul Wilkinson (01624 897374) gave Mike a pretty free hand in the bike's development.

Suspension specialist Maxton changed the shock absorbers for modified Koni adjustables and revalved the forks and changed their internals to make them less stiff.

"In handling terms we're now getting the AJR on a par with Bob Heath's Seeley 7R, and at least as good as my old K4 Hondas. With the engine development done we'll be on a definite winner," reckons Hose.

That engine development includes a smaller exhaust port to give the piston ring an easier life and fitment of a Mikuni carb. Wilkinson reckons the carb change unleashed an extra 3bhp.

Wilkinson says that AJR is building one bike a month, and that delivery time is six to eight weeks. It costs £10,300 including VAT, delivery and a spares kit.

