CLASSICS WORLD

GERMAN

AUDI QUATTRO

SOUVENIR GUIDE

We sell everything but . . .

CAAR PARTS

WWW.CAARPARTS.CO.UK

VEHICLE PARTS
Keeping you on the road
SHOP NOW

CYCLE ACCESSORIES
Keeping you on 2 Wheels
SHOP NOW

TOOLS
Trade & Home Workshop Tools
SHOP NOW

ENGINE OILS
Lubrication For Your Engine
SHOP NOW

BATTERIES
Ensuring a Great Start Every Time
SHOP NOW

MAINTENANCE
Bulbs, Screenwash & Body Repairs
SHOP NOW

WORKWEAR
Clothing, Boots & overalls
SHOP NOW

TOWING & TRAILER
Tow Balls, Electrics & Trailer Accessories
SHOP NOW

TECHNOLOGY
Electronics, SATnav, In Car Entertainment
SHOP NOW

ACCESSORIES
From Air fresheners to Wheel Trims
SHOP NOW

VALETING
Keeping Your Machine Sparkling Clean
SHOP NOW

TOURING & LEISURE
Parts, Accessories, Caravan Equipment & Pet Care
SHOP NOW

WITH OVER 350,000 PARTS & ACCESSORIES
FROM OVER 300 INDEPENDENT MEMBER STORES

CLICK & COLLECT

fahren AUTOMOTIVE PARTS · Gates · BLUE PRINT · LUCAS OIL PRODUCTS INC. · NGK · ebi bilstein · COMMA · Granville · FIRST LINE THE ALL MAKES SPECIALIST · BRAKEFIT · BOSCH · KYB · RING

Not all member stores currently offer buy online / collect in store but all stores offer a telephone ordering service.

CLASSICS WORLD GERMAN

AUDI QUATTRO SOUVENIR GUIDE

Kelsey Media
The Granary,
Downs Court, Yalding Hill,
Yalding, Maidstone
Kent ME18 6AL

EDITORIAL
Project Editor: Sam Skelton
Email: info@sam-skelton.co.uk
Contributors: Andrew Everett, Simon Goldsworthy, Paul Guinness, Paul Wager, Iain Wakefield
Art Editor: Paul Silk
Email: paulsilkdesign@gmail.com

ADVERTISEMENT SALES
Tandem Media Limited
Managing Director: Catherine Rowe
Production and Design
Manager: 01233 220245
Neil Hepden
bookazine@tandemmedia.co.uk
Sales Team: 01233 228751
Liam Stone:
liam@tandemmedia.co.uk

MANAGEMENT
Chief Executive: Steve Wright
Chief Operating Officer: Phil Weeden
Managing Director: Kevin McCormick
Subscription Marketing Director: Gill Lambert
Retail Director: Steve Brown
Print Production Manager: Georgina Harris
Print Production Controllers: Kelly Orriss and Hayley Brown
Subs Marketing Exec: Dave Sage
Affiliate Marketing: Kate Chamberlain

DISTRIBUTION
Distribution in Great Britain
Marketforce (UK) Ltd,
3rd Floor, 161 Marsh Wall,
London, E14 9AP
Tel: 0330 390 6555

Distribution in Northern Ireland and the Republic Of Ireland Newspread
Tel: +353 23 886 3850

PRINTING
Pensord

www.kelsey.co.uk

KELSEY media

Welcome to the fourth issue of ClassicsWorld German. For our new readers this, along with two sister series focusing on cars from Japan and Europe, will form a collection of publications focusing not on brands, but on individual aspects of our motoring heritage. In this series, we'll be looking at the very best classics Germany has to offer, discussing their stories and driving them to see if they're everything our hearts promised. This issue will focus on the legendary Audi Quattro.

When I was a small boy, my dad owned an Audi 90 - and when it came to its replacement there was a chap at the bottom of the road who had an Amazon Blue Quattro within budget. Naturally I wanted him to buy it - to a car crazy 12 year old it would be the perfect family chariot. Practical, economical, cheap. Of course he didn't, he bought a Ford Mondeo instead - but since that time I've harboured a love of the fast boxy Audi that I'm unlikely ever to be able to afford to indulge.

The closest I can get is to live vicariously; writing the history of this seminal all wheel drive machine and enjoying the sensation at second hand. There will never be another car like the

Audi Quattro - that matches its historical impact, its sheer desirability and its talent on and off track. Even without Gene Hunt, it would be an icon.

We've looked at some of the best models while putting this publication together, we've pitted them against the competition and we've delved into the family tree of the Quattro to find out just why it's so adept at capitvating our hearts. Whether a long term fan or new to the model's delights, this is a must-read for Quattro enthusiasts.

Thank you for buying this bookazine. We hope you'll have as much fun reading it as we did making it.

Sam Skelton,
Editor

CONTENTS

THERE'S MORE!

Get even more great classic car content online at **ClassicsWorld TV**

CLASSICS WORLD TV

IN ASSOCIATION WITH

LANCASTER INSURANCE

START WATCHING TODAY

Visit **classicsworld.co.uk**

Head to YouTube and search **Classics World**

CAR BUILDER SOLUTIONS

WWW.CARBUILDER.COM
INFO@CARBUILDER.COM

ISSUE 34

Heating & Aircon • Mechanical Parts • Interior • Braking & Clutch • Exhaust Systems

DON'T MISS OUR NEW CATALOGUE AVAILABLE NOW!

OVER 7,000 PRODUCTS AVAILABLE
DOWNLOAD OR ORDER YOUR COPY FROM OUR WEBSITE

One Stop Shop • Wiring Diagrams • Includes Hints & Tips
• Specification Charts • IVA Approved Products

01580 891309 - 01580 448007 - 01580 448017

DATABASE (1980-1991)

AUDI QUATTRO

We chronicle the life and times of the car once called Quattro, now known as Ur-Quattro, which 40 years ago changed the face of high-performance motoring forever. WORDS: PAUL WAGER

It's probably fair to say that visitors to the Audi stand at the 1980 Geneva show weren't really expecting to see anything earth-shattering, especially after they'd visited the Alfa Romeo stand and been knocked sideways by the SZ. After all, Audi at that time was yet to gain the technology-led brand appeal it enjoys today and even in its native Germany was known primarily as a maker of conventional, rather stolid front-driven saloon cars. The turbocharged Audi 100 5T in 1979 had provided a glimmer of excitement and the 100 Avant hatchback was unique in its sector (equalled only by our own Rover SD1), but by and large avant garde wasn't what you expected from the Ingolstadt maker back then. Indeed the many former NSU employees in the Audi ranks were still smarting from that company's tragic demise following the warranty disaster of the rotary-powered Ro80 which had sent it into the arms of Audi in the first place.

Even as the sheet was pulled from the new car taking centre stage, onlookers probably still didn't realise they were looking at something which would change motoring – and motorsport – significantly.

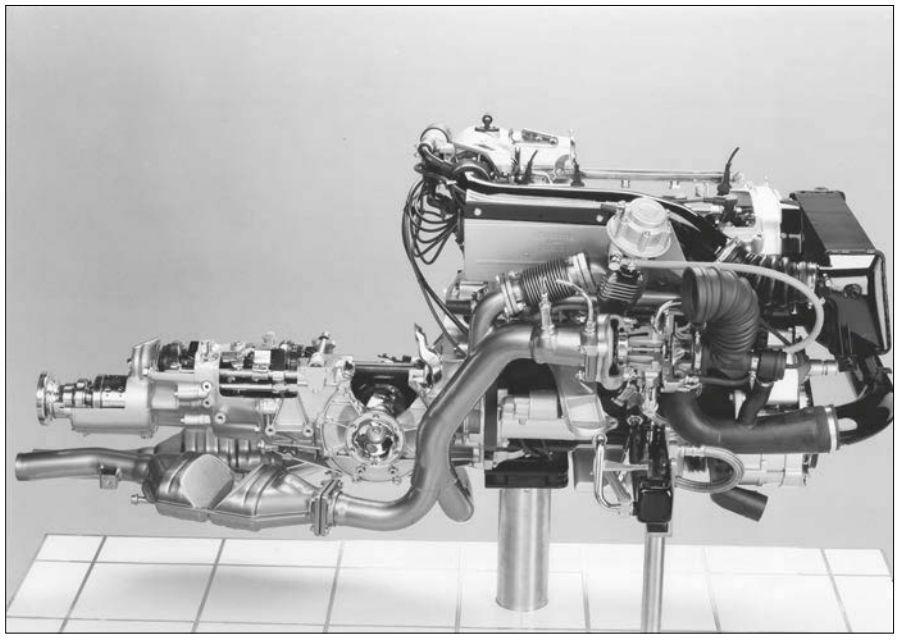
With a style which was a neat coupe conversion of the then-current Audi 80, the Quattro's chunky box arches hinted at a performance-inspired creation and sure enough, the press packs detailed an uprated version of the 5T's turbocharged five-cylinder engine and a permanent four-wheel drive system. Yes, that was unique at the time for a performance-

inspired road car, but Audi wasn't the first: Jensen had shown the way with its short-lived FF, while Ferguson Research which provided the Jensen's all-wheel drive transmission had debuted its own R4 as early as 1952.

The assembled press weren't to know the impact the new car would have and most contemporary reports seem to have considered it something of a curiosity – a 'halo' car intended to shine a glamorous light on to the Audi brand and one which would probably be seen on the streets in rather milder form.

When road testers got their hands on the Quattro though, mild curiosity turned to bold pronouncements that performance cars would never be the same again. That may not quite have been the case, but certainly top-level stage rallying would be changed beyond recognition from the tail-out Escort era. And so would Audi as a brand, even if it took some time for the famous Vorsprung Durch Technik slogan to be backed up by real substance.

By the end of the decade, an all-wheel drive quattro option (with a small 'q' when used on other models, insisted Audi's marketing folk) would be offered on every model in the range. It wouldn't take long for other makers to jump on the bandwagon and today there's not a premium maker which doesn't offer four-wheel drive.



Audi's longitudinal engine meant the 4wd conversion posed no real difficulties.

“ And so would Audi as a brand, even if it took some time for the famous Vorsprung Durch Technik slogan to be backed up by real substance.

DEVELOPMENT

The Quattro story begins not in the forest rally stages but in the snowy Finnish winter where Audi engineers were conducting mundane cold weather testing work on second-generation Audi 80 saloons during the winter of 1976.

Their support vehicles were the Volkswagen Iltis, a rugged 4x4 developed for the German military which boasted four-wheel drive. Engineer Jörg Bensinger noticed how the Iltis's off-road-biased 4x4 also worked well on the icy roads, where even the front-drive Audis were struggling to grip and that the military vehicle was faster than many much more powerful vehicles.

Even in the mid '70s, you didn't get a job in engineering at Audi without having an enquiring mind and so they fell to wondering how the Iltis drivetrain could benefit a more powerful road car.

The three men in question were Bensinger, manager of the experimental drivetrain department, Walter Treser who would later run Audi's motorsport operations and engineering chief Ferdinand Piëch who needs little introduction and who would go on to lead the entire VW Group to global domination.

Their enthusiasm encouraged the

board to issue approval for the project in the spring of 1977 and work commenced, using an Audi 80 with a slightly lengthened wheelbase. This was powered by the turbocharged five-cylinder already in development for the Audi 200 5T and paired with the Iltis transmission.

In order to provide the normally front-driven Audi 80 with a driven rear axle, a front axle and subframe complete with its MacPherson struts was turned 180 degrees and fitted to the rear.

The prototype was rough and ready but it worked and proved its worth when trialled the following year on the Turracher Höhe mountain pass in the Austrian Alps. VW board members had been invited to a 'tyre test' in January 1978 at which the prototype was demonstrated and had no problems climbing the snowbound pass, even on summer tyres without snow chains and only a modest 160bhp.

The modified 80 had an abundance of grip allowing its turbocharged power to be deployed even in winter conditions, but there was a problem: the Iltis used manually selected four-wheel drive, with the front axle usually disconnected and freewheeling on dry tarmac, so the Audi used the same solid propshaft, meaning front and rear axles were forced to rotate at the same speed. On ice and snow this worked well enough but on regular tarmac, the transmission would 'wind up', generating significant mechanical stress.

THE INSPIRATION

The Quattro as it appeared in 1980 may have been very different from the Jeep-like Iltis, but the humble military vehicle was definitely the inspiration for the project. Although it wore Volkswagen

badges, the Iltis had in fact been developed by the Group's Audi division and was a development of the older DKW Munga – DKW being one of the companies which made up the modern Audi company.

The need for a small off-road capable vehicle for the German military had initially been supplied by the VW 181 – a cross between the Beetle and wartime Kübelwagen – but it was only ever a stopgap and lacked four-wheel drive.

When the military appealed to car makers to submit proposals for a 'Europa Jeep', Audi turned to the DKW Munga which had previously been supplied in quantity to the army. The vehicle had been out of production for some time by then, but was modified using a 75bhp 1.7-litre VW engine to replace the Munga's two-stroke unit, plus a basic 4x4 drivetrain using Audi 100 componentry.

Although DKW was by then an Audi subsidiary, the firm had long since abandoned the name and so the vehicle was given Volkswagen badging. In the military's tests it proved equally as capable as the Mercedes G-Wagen but was unsurprisingly much cheaper and so was adopted by the military, with production beginning in 1978.

At the time, the accepted solution as used in all 4x4 vehicles was a separate centre differential or transfer box allowing front and rear axles to rotate at differential speeds, but the Audi engineers were determined to create a high-speed, lightweight system suitable for a performance car and wanted to avoid the weight and complexity of a separate differential and second propshaft. They also wanted a permanently engaged four-wheel drive system.

The solution was devised by Franz Trengler, at the time head of Audi's transmission design department and is beautifully elegant in its simplicity. In essence, a drilled-out hollow secondary shaft was added to the gearbox, allowing power to flow in both directions. Since Audi used longitudinal engines and gearboxes for its front-wheel drive cars, this meant power could flow forwards to the front axle, and backwards to the rear.

QUATTRO ON STAGE

The Quattro's first motorsport appearance was as a course car on the 1980 Algarve Rally, Hannu Mikkkola then taking victory at its first competitive event, the 1981 Austrian Rally. In the same year, the car would win the World Championship rounds in Sweden, San Remo and Britain. The following year Walter Röhrl would take the World Rally Championship title in a Quattro, with Michèle Mouton second and Mikkola third.

Mikkola would take the Drivers' Championship the following year, with Audi runner-up in the maufacturers' points and Stig Blomqvist winning the RAC Rally here in Britain.

The 1984 season would see Audi take both drivers' and maufacturers'

titles with Blomqvist after a 1-2-3 victory in the Monte Carlo Rally.

The following year Mouton would win the Pike's Peak hillclimb event in the USA with a Quattro, but in 1986 a serious accident in Portugal saw Audi retiring from the World Rally Championship and the FIA banning the unlimited Group B cars.

Audi would return to the World Rally Championship in 1987 but after the outrageous Group B cars had been banned, its weapon was the Audi 200 quattro, leaving the original Quattro to compete events like Pike's Peak which it won again in 1986 and 1987.

The rear end of the shaft drove what was effectively a centre differential, which could be incorporated into the main gearbox housing rather than as a separate casing. This could be locked manually via a dashboard control and the set-up transmitted the power 50:50 between each end, with the rear axle incorporating its own limited-slip differential.

Power to the front axle meanwhile was transmitted by an output shaft running inside this hollow shaft and the result was a compact, relatively lightweight system which offered the grip of permanent four-wheel drive without the bulk of separate casings.

The transmission was clearly key to achieving the goal of an all-weather performance car, but to make a definitive statement Audi needed to offer rather more performance than its cars were then known for. The answer was to take the 2144cc turbocharged five-cylinder unit developed for the 5T and add an intercooler. This allowed higher boost and a headline figure of 200bhp, backed up with 210lbf.ft torque.

With a coupe bodyshell already under development for the 'B2' generation of the 80 saloon, the Quattro was ready for launch.

YOU DIDN'T KNOW...

- Each Quattro built was subjected to an extensive test drive including a 100mph run.
- Like the Ford Capri, it was demand from the UK market which kept the Quattro in production after its planned end date.
- The all-wheel drive Audi 80 prototype was christened 'A1' for Allrad 1. Hans Nedvidek who built the driveline had previously built gearboxes for Fangio and Moss.

"When the Quattro debuted as a course car on the 1980 Algarve Rally, it wasn't officially a competitor. If it had been, Hannu Mikkola would have won by no less than half an hour.

- The need for a centre differential was highlighted when VW's development chief Ernst Fiala lent the prototype to his wife to drive into Vienna and she complained that it 'jumped' around tight corners.
- The centre differential fitted by Nedvidek to the prototype Quattro drivetrain used a differential from an Audi 50 (VW Polo) gearbox.
- The digital dash also gave spoken warnings, using the synthesized voice of German newsreader Patrizia Lipp.
- Audi's switch to soft orange night time illumination was allegedly derived from submarine practice.
- In 1980 an Audi-prepared Iltis won the Paris-Dakar Rally.
- Early versions of VW's Syncro 4x4 option in the Passat and Santana were in fact quattro by another name. The later Golf Syncro used a part-time viscous-coupled system.
- When the Quattro debuted as a course car on the 1980 Algarve Rally, it wasn't officially a competitor. If it had been, Hannu Mikkola would have won by no less than half an hour.
- Evolution versions of the Sport Quattro produced a hefty 507bhp thanks to an anti-lag system and were famously tricky to control.
- The Quattro project was given Audi AG internal code 262.
- The press launch of the Audi Quattro was actually held in an ice-skating rink near the Geneva show.
- The Quattro name was suggested by Walter Treser.

• The Sport Quattro used the more upright windscreen from the Audi 80 saloon after drivers complained about internal reflections.
• After running Audi's rallying programme from 1980, Walter Treser established his own company developing special VW and Audi vehicles including a convertible hardtop Quattro.
• The Audi A2 was the only Audi model since the Ur-Quattro not to be offered with the quattro 4x4 option.

HISTORY

The cars on the Audi stand at Geneva in March 1980 used the 2144cc 10-valve version engine known internally by the code 'WR'. Partly hand-built, they were assembled in a dedicated production facility at Audi's Ingolstadt plant.

Initially the cars were left-hand drive only, but demand quickly saw Audi reconsidering and from late 1982 cars were made available in right-hand drive.

The following year, the conventional analogue instruments were replaced by a digital dashboard using Tron-era green LED displays. The following year this was changed to orange in line with the interior lighting on Audi's other cars of the era.

In 1984 the Quattro gained the restyled interior from the regular front-drive Audi Coupe, with new steering wheel, console and instrument panel including the rotary switches. At this point the wheels were enlarged from the 6x15 of the early cars to a chunky 8x15.

The suspension geometry was adjusted in 1983 with the rear anti-roll bar removed to reduce lift-off oversteer and was then lowered by 20mm and gained stiffer springs during the facelift.

In 1987 the manually-operated centre differential lock was replaced by an automatic Torsen (torque-sensing) unit.

The same year saw the engine enlarged to the 2226cc 'MB' engine, while in 1989 it gained a twin-cam 20-valve head and the 'RR' code, with power up to 220bhp and the floorpan modified to accommodate the optional catalytic converter.

Box arches apart, the bodyshell followed the front-drive Coupe with the flat front and four lamps changed to single lamp units in 1983 and then a smoother, angled grille in 1984, the bodyshells galvanised from 1985 and a plastic bootlid fitted from 1987. Simple stick-on 'quattro' badging was used for the WR-engined cars, with plastic chrome Audi lettering appearing on the MB-engined examples and the RR-powered Quattros using just the plastic chromed four rings.

QUATTRO EVOLUTION

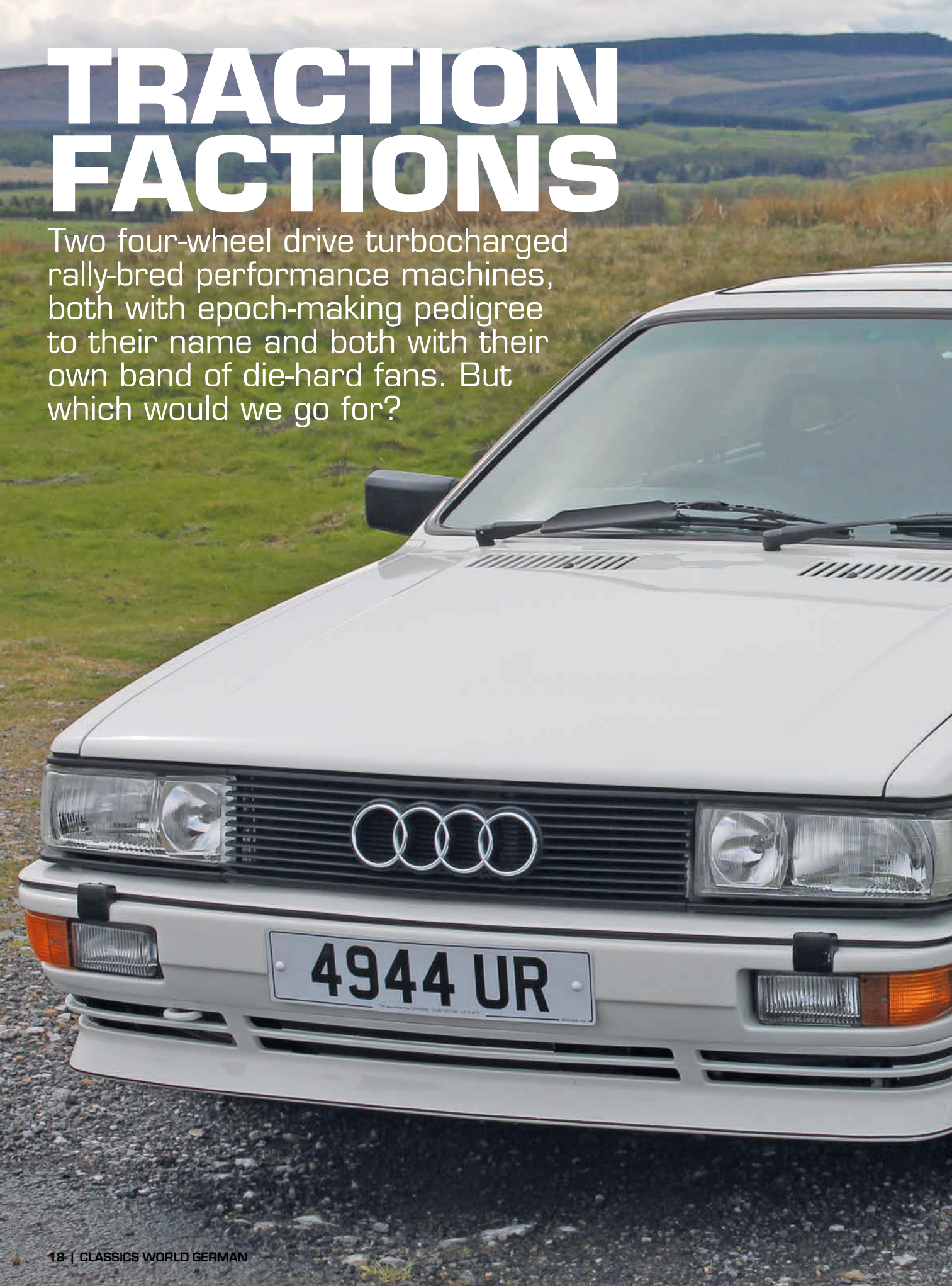
Debuted in 1983, the Sport Quattro was effectively a roadgoing version of Audi's Group B rally car, complete with lightweight Kevlar panels and a 320mm shorter wheelbase in the interests of

improved agility on narrow special stages. The engine was downsized to 2133cc in order to allow it to enter the under 3-litre class after the 1.4 multiplication for turbocharged engines was factored in. Despite that, it produced 306bhp in road form and scorched to 60mph in just 4.8 seconds, while the rally car boasted 450bhp in its S1 form and 507bhp in the evolution S2 version. Just 224 were built, although many more standard cars were converted to gain the Sport Quattro look.

The Quattro left production on May 17 1991, by which time its successor, the Audi S2 had already been launched, based on the third-generation Audi 80 launched some seven years earlier. A total of 11,452 Quattros had been built. ■

TRACTION FACTIONS

Two four-wheel drive turbocharged rally-bred performance machines, both with epoch-making pedigree to their name and both with their own band of die-hard fans. But which would we go for?



Taken as a pair, the two cars you see here constitute the most important machines in the history of the World Rally Championship. The Audi Quattro introduced all-wheel drive to the muddy business of rallying and in the process helped usher in the Group B era; the one that earmarked the mid-'80s as perhaps the most intense and exciting period in professional motorsport. The Lancia Delta picked up where the Quattro left off and proved that the production-based stipulations of Group A were no barrier to either performance or desirability.

Icon would be a fitting word for both cars then, homologation specials of the best, purest and most beloved sort, but which should you invest in if you're fortunate enough to have the means as well as the motivation? Well, here's the lowdown on both.

AUDI UR QUATTRO

More pixels and ink have been devoted to the Audi Ur Quattro (the prefix denoting 'original' in German) than almost any other rally-related car. Which is a fitting situation given the impact Ingolstadt's remarkable machine had on the sport in the early '80s – a situation made all the more remarkable by Audi's diminutive stature at the time. Indeed, the team bosses charged with stewarding the competition programmes of Audi's rivals were famously dismissive of the car and its traction-based party trick upon its 1980 debut, decrying it as either too complex or too heavy to be of any real value.

It didn't take long for the laughing to stop, of course. The 1981 season turned out to be a brutal demonstration of the worth of all-wheel drive, and Hannu Mikkola and Michelle Mouton – very much Audi's 'early adopters' – reaped the rewards. In truth, only maddeningly poor reliability prevented Audi from clinching the biggest prize in rallying at its first attempt, though it didn't take long for amends to be made. Audi took the manufacturers' crown the following year and both titles in 1984, very much 'peak Quattro' as far as its rallying exploits went.

Audi's Group B fortunes began to wane as the category matured and new, more potent rivals appeared. The launch of the fearsome Quattro Sport, effectively a sawn-off shotgun in automotive form and a true unicorn of a homologation special, came in 1984. Bargain on spending at least £250,000 to secure one of the 200 made.

The Sport in turn birthed the mighty E2 complete with a 'cow catcher' front-end, rear-mounted radiators, water injection and the small matter of over 550bhp on tap. These unruly, flame-belching monsters were spectator favourites but never managed to fully restore Audi honour, and just two further wins were recorded by the marque prior to its retreat from rallying in the wake of Group B's demise in 1986.

This being a homologation special the changes made by Audi in order to further its special stage exploits were reflected in the road cars, so much so that their respective engine codes have come to signify the fundamental changes made to the Quattro over its long, eleven-year life. Those early cars featured a 2144cc 10v engine and

"The 'winningest' single model in WRC history, the Lancia Delta HF Integrale came to define rallying at the dawn of the Group A era and had managed to deliver to its maker a stunning ten titles before its fortunes finally began to fade in the early '90s.

are known as 'WR' cars, while those equipped with the 10v version of the new 2226cc engine available from 1988 are often referred to as 'MBs'. Those built between 1989 and 1991 had a 20-valve variant of the 2226cc five-pot, good for 220bhp and given the 'RR' engine code and prefix.

Engine aside the biggest changes in the Quattro's specification concerned its drive configuration. UK buyers had to wait until 1982 to own a car with right-hand drive, and another two years on top of that before they could spec it with ABS – a full 12 months after Audi made the technology available to European customers.

Other changes included revisions to

the suspension geometry in 1984, soon followed by a 20mm reduction in ride height the following year, introduced at the same time as mild visual tweaks to the front-end. An uprated Torsen differential was fitted in 1988, its worth having been proved beyond all doubt by Audi's own experience rallying and developing the car.

More modest upgrades mostly centred on the interior and exterior aesthetics, with things like a revised LCD display, dashboard, seats and trims all evolving as the eighties progressed. The main visual overhaul in 1985, when the formally glacier face-vertical grille was modestly inclined, and headlights made flush-fitting.

You don't have to drive a Quattro for long for its old school origins to make

Turbocharged Fiat Twin Cam powered the Delta Integrale.

themselves apparent, but then that's an indisputably key part of its charm. Watch-checking levels of turbo lag and an innate predisposition towards understeer (a legacy of that five-pot's location, ahead of the front axle) are thus part and parcel of the experience, but so too are levels of traction which while impressive enough in 2021, must have felt simply otherworldly at the time of the Quattro's launch back in 1980.

The Quattro's assured position as a truly epoch-defining car means that parts supply, while costly, isn't too much of an issue. Specialists such as Highland Quattro and Quattro Corner can supply those essentials no longer stocked by Audi Tradition (the official parts supplier for Audi 'oldtimers', including vital items like braking systems and suspension and drivetrain components. Panels are another matter entirely now that any and all Coupes of the Ur shape are rare beasts, but they do come up for sale from time to time.

“ The dawn of the '90s saw Lancia update the Integrale once more in order to retain its position atop the rallying world, with the first Integrale Evoluzione breaking cover early in 1991.

LANCIA DELTA HF INTEGRALE

The 'winningest' single model in WRC history, the Lancia Delta HF Integrale came to define rallying at the dawn of the Group A era and had managed to deliver to its maker a stunning ten titles before its fortunes finally began to fade

in the early '90s. That this owed as much to good fortune as anything else (Lancia was alone in being able to offer an all-wheel drive hatchback with a 2.0 turbocharged engine come the time of Group A's promotion to the top of the rallying world in 1987) was by-the-by: the Delta was a sensation, comfortably the best car of the early Group A era and thus the weapon of choice for a who's who of World Champions.

The more prescriptive nature of the Group A regulations served to tie the competition versions of the Integrale more closely to those destined for the forecourts, and a slew of ever more potent and capable Deltas was the result. What started off as the HF 4WD in 1986 soon evolved, gaining its famous Integrale moniker the following year and a wider track and arches at the same time. This was followed in 1989 by the first of the new, 197bhp 16-valve cars, a direct result of Lancia's need to keep the old stager competitive against newer and more formidable rivals like the Celica GT-4.

The dawn of the '90s saw Lancia update the Integrale once more in order to retain its position atop the rallying world, with the first Integrale Evoluzione breaking cover early in 1991. Its successor came along just two years later, though both were an attempt to squeeze every last shred of performance from a design with its origins in the late '70s, and both spawned special edition offshoots. Key Evoluzione alterations involved revisions to the suspension and steering, larger wheels (15-inch on the Evo 1, 16-inch on the Evo 2), a jump in power to 212bhp, improved cooling, and of course, ever wider and more imposing wheel arches.

While other aspects of its makeup evolved in-step with the world in which it had made its own, the Delta's all-wheel drive system remained largely unchanged over the course of time on sale. Key to its ground-covering ability

was the use of a centrally mounted epicyclical differential featuring a viscous coupling and, at the rear, a Torsen differential which was able to moderate wheel spin, adjusting the amount of torque sent to a given wheel depending on the amount of traction available, and thus was something of a revelation.

The only real deviation made in respect to the Integrale's all-wheel drive system occurred in 1989 when the 16-valve car was introduced. Cars made prior to this will have a 56:44 front:rear split, hammering home its front-wheel drive origins, while 16-valve and Evo models will feature a reconfigured, 47:53 drive split intended to reduce understeer.

All Integrales offer the sort of sure-footed, relentlessly grippy yet slightly agricultural driving experience present in cars with permanent four-wheel drive from this era, and, as with the Quattro above, an innate preference for understeer. This marries well with the sort of binary turbocharged 'shove' on offer from all Integrale models, and a well-sorted example should feel taught, front-footed and secure in all grip conditions.

Parts supply for the Delta HF Integrale and its myriad variants has long been an issue, a legacy of the modest number sold in the UK and the declining fortunes of the Lancia brand itself. That said it is a homologation special, and thus a small crop of dedicated specialists has sprung up to cater for it including DeltaWorks and Tanc Barratt, the latter even able to supply short and complete engines.

TECH SPEC

AUDI QUATTRO (MB)	
ENGINE:	2226cc, 5-cyl
POWER:	200bhp
0-62mph:	6.7sec
TOP SPEED:	138mph
GEARBOX:	5-spd man
BUY ONE FOR:	£20,000-30,000

LANCIA DELTA HF INTEGRALE	
ENGINE:	1995cc, 4-cyl
POWER:	210bhp
0-62mph:	5.7sec
TOP SPEED:	136mph
GEARBOX:	5-spd man
BUY ONE FOR:	£20,000-30,000

VERDICT

We suspect which of these two cars you'd rather own will depend on the level of emotional attachment they generate within you. A generation of sometime forest-dwelling rally fans was birthed by the Group B revolution set in motion by the Audi Quattro, and it remains one of the most recognisable (and recognised) cars of the eighties. The Delta's charms are perhaps a little less obvious, certainly in terms of its wider recognition by the general public (unless Gene Hunt drives one in an as-yet unconfirmed Ashes to Ashes spin-off), but it remains a beguiling reminder of an era when WRC and road cars were linked by a genuine, tangible thread.

"The dawn of the '90s saw Lancia update the Integrale once more in order to retain its position atop the rallying world, with the first Integrale Evoluzione breaking cover early in 1991.

Both cars offer a driving experience that's special enough to be rewarding yet not so archaic as to be a chore, while their all-wheel drive systems, mechanical and largely bomb-proof the pair, mean that this same driving experience can be had all round and in all weathers. Just don't forget your matching Martini cap and jacket on the way out. ■

ACCEPTABLE

We pick our favourite examples of cars that defined a decade.

WORDS: SAM SKELTON

Some cars automatically speak for their eras. The Harris Mann school of design could exist in no decade outside the 1970s, just as the Anglo-Italian flair of the Farina range could only have been a late 1950s construct. The 1980s was a power decade on the surface, one in which greed was good and money was there for the taking, but also one where there was a vast divide between the haves and the have nots.

Some cars transcended this owing to differences in spec. Both sides of the divide the Peugeot 205, the Ford Escort, the Volkswagen Golf held an undeniable appeal. But the halo models, the GTIs and the RS Turbos, spoke of the decade in a far more potent manner than any more humble model could ever achieve.

And as time passes, the people for whom these were automotive poster children have assumed the sort of disposable income that makes them a potential classic investment. These are the cars we always dreamed of, the cars we saved for – the cars that, today, command the same rose-tinted appreciation that the MGB enjoyed back when these were new.

VOLKSWAGEN GOLF GTI MK1

The Volkswagen Golf GTI wasn't the first sporting family car. It wasn't even the first hot hatch. But what it was was the first to popularise the concept, the trendsetter. The Golf sparked a raft of copycats from the Ford Escort XR3 to the MG Maestro and the Astra GTE. It's easy to see why, too; the GTI wasn't originally an officially sanctioned project but a skunkworks proposal by Volkswagen engineers. Top brass liked the car, planned a limited edition, but sales took off and every model of Golf since has been available in GTI form.

Launched in 1976 with a 108bhp 1.6-litre engine, the Mk1 GTI lasted for seven years of production across 1.6 and 1.8 litre variants, and the Campaign special edition. Lowered and stiffened suspension, a golf ball gearknob and a little red stripe around

IN THE ’80S

the grille were the only telltales on the outside of just what this car was capable of. 0-60 in under ten seconds made a mockery of sports cars like the MGB, while offering the sort of practicality that made cars of similar performance look unreasonably selfish. Today, the Golf GTI makes a compelling classic buy – panels and trim are largely shared with standard Golfs, the mechanicals are simple and easy to maintain, and the popularity of classic Volkswagens means that maintenance is relatively easy. Get a solid example, and you won’t go far wrong. Better still, the values are

PORSCHE 944

While the Porsche 911 is seen as the yuppie chariot of choice today, it was – Turbo excepted – a shade passé by the standards of the 1980s. The new and shiny car of choice was the slick, transaxle-equipped 944, with near perfect poise and balance and without the handling histrionics for which its air-cooled sibling was well known.

Launched in 1983 as a performance derivative of the 924, the 944 sported big flared arches, a Porsche-developed 2.5-litre engine and – optionally –a socking great turbocharger for those red brace bragging rights. Galvanised shells and a proliferation of Porsche people mean that keeping your 944 on the road isn’t as difficult as you might think. And if it’s a car you find tempting, we certainly wouldn’t want to change your mind. Because there are few cars of any era with corner with such poise, which have steering so well weighted, which have such a precisely perfect gearbox. The Porsche 944 should be prescribed to people who want to know how a sports car ought to feel. And while they’re nowhere near as good value as they once were, they can still be found for between £7000-10,000 if you’re canny and you know where to look. The later the car the better it will be, though early 2.5 litre examples do offer outstanding value for money.

“ The Porsche 944 should be prescribed to people who want to know how a sports car ought to feel.

DELOREAN DMC-12

We guess that in the '80s people weren't quite ready for the DeLorean DMC-12. But their kids loved it – and still do. The Back to the Future exposure might have opened up the DMC-12 to a far bigger market than it would otherwise have seen, but the story of the DeLorean would have earned it its own cult following even had the silver screen not taken to it. John DeLorean's 'ethical' sportscar with its rumours around finance from cocaine deals and being used as a money-laundering front by respected motor industry figures was always going to be the sort of car that attracted fans, even with its relatively feeble PRV V6 and its unpainted bodywork that attracted finger marks.

Built in Northern Ireland for just two years, the DeLorean is one of those cars that has long had more admirers than there are cars to buy, so if you're serious about wanting one you'll have to be quick. We recommend joining the club too, as you'll hear about cars before they reach the open market.

Values are still climbing – not least because of the people who've converted some of the few cars into Back to the Future replicas, thus destroying their appeal to anyone who isn't a fan of the films. Looking after one needn't be as hard as you'd expect, given the relatively common mechanicals. And it's one of the surest investments in the classic car scene – even if the market drops, film enthusiasts will keep DMC values high.

PEUGEOT 205 GTI

When the hot hatch wars of the 1980s were in full swing, it barely seemed like a month could go by without one of the motoring magazines claiming that the latest thing had "stolen the Golf GTI's crown". And every month, after this supposed victory, the crown would somehow revert to the Golf just in time to be stolen by the next pretender. But those in the know always knew that the crown had been surrendered to just one car; the Peugeot 205 GTi. The little Pug married perky style to a sprightly engine –a 110bhp 1.6 in the early cars and a 130bhp 1.9 in later models – all of which were lighter than the Golf and therefore faster. Known for cocking a wheel at the limit, the Peugeot's handling outshone the Golf with ease – and so what if the quality of the plastics was a little sub-par? The 205 was the in car. For ultimate 1980s points, try to find a CTi convertible – the ultimate oxymoron, a hot hatch which eschewed the hatchback preacticaltiy to reinstate the open roof of the sportscars that the hot hatch had killed off in the first place.

"205 GTis are worth mad money now...

205 GTis are worth mad money now, when you consider that barely a decade ago you could still buy a usable example for under £1000. But they are still rising – if you can afford to buy one today, it makes a highly amusing alternative to an ISA.

FORD SIERRA COSWORTH

Some cars transcend their eras to become all time greats. That's the case with the Sierra RS Cosworth. Planned to put Ford right back into the middle of motorsport by new Head of Motorsport Stuart Turner in 1983, the plan was to produce a high output Sierra. When Cosworth presented its YAA project to Ford, the two concepts were married together. The YAA had been based around the Ford Pinto – and led to an official order from Ford for a high output engine with a minimum of 180bhp and potential for up to 300bhp in race spec.

Cosworth responded with conditions; the engine had to produce at least 204bhp in road tune and Ford must accept 15,000 engines. This suited Ford, and development ensued. Ford had only made plans involving 5000 engines, but the remaining units would come in handy when Ford decided to replace the three door Cosworth with a Sapphire-based variant.

The 2WD Sapphire is the best value of the bunch, though the four-wheel drive of the later Cosworths is useful for grip – unless you're a serious collector it's probably best to steer clear of the three-door variants as they're vastly more expensive for what amounts to the same car to drive. The Sapphire is actually a shade stiffer, making it a more entertaining car as well as a more practical one. With as little as £20,000 you could get yourself into a Sapphire – you'll need at least twice that for a three door.

FORD ESCORT RS TURBO

Beloved of Diana, Princess of Wales, the Escort RS Turbo was huge fun for what amounded toa Mk3 Escort. Hers was black and relatively understated with the standard Escort grille, in an attempt to show some discretion. But the RS Turbo we all remember wore white as it walked down the streets of your soul – and not only was it white, it was fitted with big RS alloy wheels, stripes, spotlamps and a three bar grille.

The first front-wheel drive car to be fitted with a limited-slip differential, the RS Turbo's 1.6 litre CVH was tuned to shove 132bhp through the front axle. Inside there were Recaro seats with blue piping, and that rasping exhaust note was accentuated under hard acceleration with the whoosh of a turbocharger. Not that you could guarantee you were going to go in a straight line; the combination of heavy steering and violent torque steer under full acceleration made the RS Turbo one of the most amusing or terrifying hot hatches of its era depending upon your perspective.

MK3 RS Turbos can now command well in excess of £35,000, but the facelifted MK4 with its subtler aesthetic and higher production numbers makes for a better bargain. Less than half

"MK3 RS Turbos can now command well in excess of £35,000, but the facelifted MK4 with its subtler aesthetic and higher production numbers makes for a better

that figure will get you a good Mk4, and if you're willing to entertain other peoples' homebrews it's possible to get a Turbo-converted Escort or Orion for under £10,000. It's crucial though to remember that the cheaper the car, the poorer its return will be as an investment when you come to sell it on again.

BMW E30 M3

Of all the cars on this list, the BMW M3 is perhaps the least in accordance with the concept of 1980s excess. In fact, the M3 was a somewhat minimalist design. Just four cylinders when standard sporting BMWs had six, light weight, no frills, and even modifications to the shell to ensure it cheated the wind just a little more efficiently mean that this is one of the more restrained cars on our list. Even with the rear spoiler and the fat arches, even with the aggressive nose and the cross spoke alloys.

It was all done in the name of motorsport. And because DTM and Group A Touring Car rules stipulated a homologation series, a minimum of 5000 road cars had to be built too. Solely available in left-hand drive, few panels on these cars remained unaltered – down to the bonding of the windscreen in place of the rubber seal fitted to all other E30 models, whatever needed to be tweaked was tweaked. Unsurprisingly an original E30 M3 is a desirable car today, whether an early model or a later Evolution.

Prices in the UK start at around £40,000 today – but the very best examples can fetch into six figures on the right day. Less than a decade ago, £20,000 would have bought you a tidy example – you might have missed the boat for bargains, but this is a car that won't lose money.

AUDI QUATTRO

There's a very good reason why when the creators of Life on Mars wanted to bring Gene Hunt crashing into the 1980s, they had him stepping out of a Mars Red Audi Quattro. That reason is this: That the Austin Metro just wasn't cool enough, despite being the other automotive shining light of 1980. And while neither of the cars used in filming was sufficiently early to have been historically accurate, the fact remained that the Quattro spoke of a decade of excess like few other cars. Here was a performance coupe for which two driven wheels simply weren't enough, for which four cylinders weren't enough, for which natural aspiration wasn't enough. The Quattro screamed excess from every pore when new, despite being relatively restrained by today's standards. And what could be more 1980s than Audi's own pearlescent white Quattro on white alloy wheels?

If you want one – as we think you should, even if you're not quite sure yet – buy the car with the best trim you can – mechanical parts are all mendable, but trim can be difficult to get in good condition and it's worth getting the most original and tidy example you can find. We remember when just three grand would have got you into a Quattro – bank on north of £30,000 today and expect period iconic colours such as Alpine White and Mars Red to carry a considerable price premium. Like the DeLorean though, the car's pop culture fame ensures that whatever happens to the classic car market the Quattro should remain a safe investment.

SAAB 900 TURBO

While the Saab Turbo has its roots in the 1970s, it is without question that the 900 Turbo is seen as a car of the following decade. Its use as James Bond's cars in the first official novels following the death of Ian Fleming certainly helped; the cleverly modified 'Silver Beast' ensured that a generation of car enthusiasts would find the turbocharged Swede an appealing prospect.

Saab also had a solid image and perceptions of reliability on its side, two things which ensured it was bought by the sort of person who looked after and kept their cars for several years. This is why there are so many 900

Turbos left today – they managed to avoid banger status. And the best bit is, that the qualities that ensured these cars were kept and enjoyed for longer than average terms when new make them excellent modern classics for regular use today. A 900 Turbo offers upwards of 30mpg alongside grin-inducingly addictive acceleration. Specialists such as SAABits can offer almost anything you need to keep your 900 on the road, and given that a reasonable example can still be had for under £5000 with a choice of hatch, saloon or cabriolet bodystyles, the 900 is arguably the best value car on our list today. It can't stay that way for much longer.

CONCLUSION

If you want to get your red braces and white socks out, there are few better cars in which to do so than the list we've assembled here. And while there are options available at several price points, you shouldn't let values alone drive your decision – these are emotive purchases, and we'd be stunned to find that any of our readers had failed to lust after a single one of our choices. Stick a Wham! cassette into the tape deck, and let these cars take you to the place where membership, we're led to believe, is a smiling face.

FORTY YEARS OF THE AUDI QUATTRO

Harald Demuth with a Group B A2 rally quattro today. Aged 69, he keeps his fitness levels up by running marathons.

The game-changing Audi quattro made its UK debut in London in 1980. Here, five former members of the Audi UK Rally Team recall how it changed the world, and we take a look back at the numerous iterations of the quattro rally car.

WITH GRATEFUL THANKS TO THE AUDI UK PRESS OFFICE

HARALD DEMUTH
– Rally driver

Two-time German Rally Champion Harald Demuth helped develop the quattro, campaigned Group B and 80 versions in the UK and drove an Audi 100 quattro up a snow-covered Finnish ski jump in the famous 1986 Audi television advert.

I was driving for Toyota in the German Rally Championship in 1978 when I had the choice to sign for either Audi or Volkswagen for the 1979 season. Volkswagen had an excellent record with the Golf, but Audi had no presence in rallying. However, there was a lot of whispering behind hands that Audi had something special waiting in the bush, as we say.

To gain experience of the sport, Audi began rallying a front-wheel-drive 80. We were telling everyone how good that car was, but what we couldn't say was that we were developing the quattro, which was just light years ahead of the 80. We tested an early quattro all-wheel-drive system in an 80 bodyshell.

On the 1982 RAC Rally, I was lying behind Hannu Mikkola in a quattro. OK, the gap was quite big, but I was on course to finish second. Then I had an off on the last day and ended up fifth. David Sutton, who was running the Audi UK rally team, came over and asked me if I would drive for him. Over the years I drove the Group B quattro and the 80 quattro in the UK. There was a massive difference in the performance of course, but the handling and the feeling in the corners was very similar thanks to the all-wheel-drive system.

I also won the German Rally Championship twice in a Group B quattro. I called my car Christine – after the Stephen King book and film of the same name about the 1958 Plymouth Fury that just kept rebuilding itself and could never be stopped. I'd spin off the track and go through a ditch, there'd be a big bang, and I'd think, "This is it – I've done it this time!" But my quattro would just keep going, and later when I had a look in the service halt, there would only be a little scratch.

DAVID INGRAM
Marketing and Public Relations Executive

When the Audi quattro arrived in 1980, it made a huge impression on David Ingram, who had joined the company two years earlier.

I remember first reading about the quattro in the motoring press – this 200-horsepower, turbocharged, five-

Harald Demuth and his unbreakable rally quattro 'Christine' pictured on the 1984 Hunsrück Rally in West Germany.

Audi's David Ingram, centre, oversees the arrival of the first quattro in the UK in 1980. This was the car that was...

...hoisted 100 feet above the streets of Kensington and gingerly manoeuvred onto a stage on London's Kensington Roof Gardens.

cylinder, four-wheel-drive coupé – and I thought wow, this sounds like something else. Then I saw the pictures from Geneva – I was too junior at that time to go out to the motor show, but I was put in charge of supervising the UK launch, which involved hoisting a car 100 feet up in the air to the top of Kensington Roof Gardens in London.

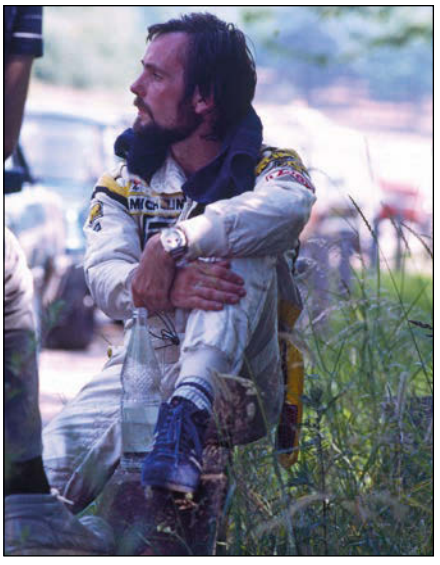
The first time I got to drive the quattro was amazing. The characteristics of that five-cylinder engine as the turbocharger came in, and the burble as you came off the accelerator – it was just so exciting. And then the rally car arrived. I remember watching it on the 1981 RAC Rally – Hannu Mikkola rolling on the first night and then tearing through the forests to win by 11 minutes. Such powerful images come back to me.

Demuth en route to victory on the 1982 Saarland Rally.

The following year, when we started our own Audi UK rally team with David Sutton, it was like a dream. Suddenly I was working with all my heroes, like Stig Blomqvist who won the British Rally Championship in a quattro in 1982. It makes me misty-eyed now just thinking about those days.

It was a spectacular era for Audi, and it enabled the company to emerge from relative obscurity in the UK. Plus, it coincided with us starting to work with BBH, the Bartle Bogle Hegarty advertising agency, and adopting the Vorsprung durch Technik slogan. The quattro was an awesome road car and an all-conquering competition car. It

Stirling Moss – at the time an Audi UK British Touring Car Championship (BTCC) driver – alongside the quattro.



A few minutes rest for Demuth on the 1985 Hunsrück Rally.

A road side pit-stop for Michèle Mouton's Sport S1 on the 1985 Scottish Rally. *Photo: Graham Rood*

was a powerful statement, and there's no doubt it contributed significantly to making Audi what it is today.

PHIL SHORT – Co-driver

Yorkshire-born co-driver Phil Short was the first Briton to compete and win in a rally quattro.

Björn Waldegård and I won the Welsh Rally for the Audi UK team in the first-generation Group 4 quattro in 1982. It was unbelievable to sit in that car. In those days we were used to Ford Escorts, Vauxhall Chevettes and Talbot Sunbeams with 240PS and rear-wheel drive. Suddenly we had 330PS with four-wheel drive – and the most staggering performance. By the time I co-drove Hannu Mikkola on the 1984 Scottish Rally in a Group B A2 quattro, we were up to 400PS. The car was so good. It was an incredible feeling to sit on the start line and know that, unless something went wrong, you were probably going to win. Which we did, by six minutes.

I don't know how much power the short-wheelbase Sport S1 E2 had when I co-drove Walter Röhrl on the 1985 RAC – I did ask, but the engine guy wouldn't tell me. It was well over 500PS anyway, Formula 1 technology in the forest. When that thing left the start line, it was like a rocket ship. It made your head spin until you got used to the way the forces were working on your body. It was frightening at times, though. We crashed out once, 80 metres down a Welsh mountain, and I remember thinking that the cars cannot go on like this.

With the switch to more production-like Group A cars in 1987, David Llewellin and I joined the Audi UK team to campaign the normally aspirated Coupé quattro. Suddenly we were back down to 190PS. On the first test, we looked at each other and laughed because it felt so slow after the Group B cars. But it got better. We had some great times in it, winning the Scottish and Cyprus rallies.

GRAHAM ROOD
Route Co-ordinator

Every rally team needs a co-ordinator to make sure cars, mechanics and service vehicles are in the right place at the right time. In the Audi UK team during the successful 1980s, that person was Graham Rood.

Barely a straight panel, but US driver John Buffum still made it to the end of the 1982 Lombard RAC Rally and finished in 12th place in his Group 4 quattro. Photo: Graham Rood

All hands on deck as David Lewellin and Phil Short's A2 quattro receives attention on the way to a 4th place finish on the 1985 Ulster Rally. *Photo: Graham Rood*

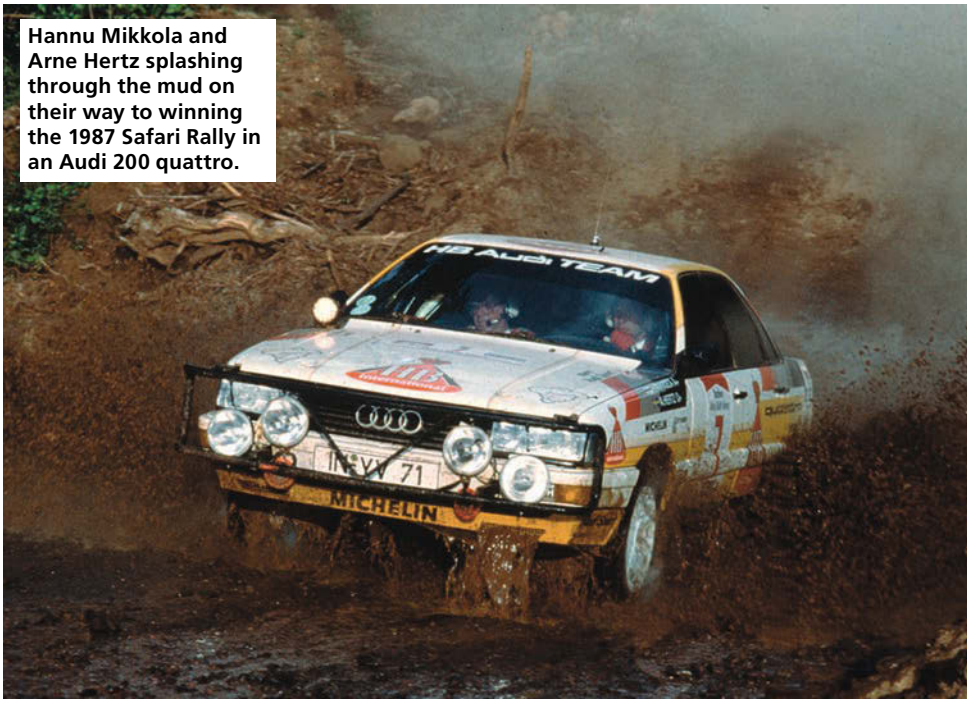
Freddy Kottulinsky and Arwed Fischer were part of the Audi 80 rally team in 1978 and 1979. Kottulinsky also won the 1980 Paris-Dakar Rally in a Volkswagen Iltis, a military 4x4 which Audi used to benchmark the quattro during development.

Five-cylinder turbo firepower – the final Sport S1 E2 produced well over 500PS. *Photo: Graham Rood*

My job was to make sure that from the moment the car left the workshop until it won the rally, everything went right – that was the theory anyway. It involved creating a detailed route plan and schedule for the rally car, the chase car that would follow it, the management car and the service vans, a plan and schedule which I would then go through with co-drivers.

On a five-day event like the RAC Rally with 65 special stages, there would be 300 tyres to look after and maybe 50 service halts to arrange. There'd be fierce competition from all the teams to find farmers who'd let us use their yards to patch up the cars in the middle of the night. But at the same time, there'd be great camaraderie too; we all knew each other, and we'd help each other out.

Chief mechanic Ron Lumley and I would follow the rally car in an Audi 100 Avant. It only had front-wheel drive



Hannu Mikkola and Arne Hertz splashing through the mud on their way to winning the 1987 Safari Rally in an Audi 200 quattro.

Harald Demuth puts a restored, front-wheel-drive Audi 80 rally car through its paces.

at that time, but it was a great car, it soaked up a lot of punishment, and there was plenty of space for spare parts. We were all navigating on OS maps – no sat nav in those days.

One of the most staggering performances was when Walter Röhrl and Christian Geistdörfer came to do the 1984 Ulster Rally in the short-wheel-base 500PS Sport S1 quattro. All the other drivers had been there for days recceing and making pace notes, but Röhrl just wanted to go out for a couple of hours in the dark. He said: "OK, I know what these roads are like now," and he was good to go.

That car was incredible. All the other top drivers would come down and watch it leave the start line. It just squatted down at the back, and with the turbo power and quattro grip, it flew. Röhrl was up through the gears into fifth before it was out of sight. He was 2.3 seconds per mile quicker than the others and won by four minutes. But as always at Audi, it was a team effort, and everyone played their part.

NORMAN GAULT – Mechanic

Having worked as a mechanic with the Audi UK rally team during the 1980s, Scotsman Norman Gault helps keep the Audi historic quattro road and competition cars in fine fettle today.

The Audi UK quattro rally cars were built by Audi Sport in Ingolstadt, Germany. But when we got them, we didn't just put them on a trailer and head off to a rally – we modified them to make them easier to work on when we were stuck out in a wet forest. For example, the cars had six bolts holding each driveshaft on. We took three of the bolts off and replaced them with dowels. We modified things like the exhaust mountings too, so we could get the propshaft off quicker and change the gearbox faster. We could do that in 20 minutes. On a modern rally car, of course, it's a lot quicker, but that time was quite phenomenal back then. And the German team adopted our modifications on their later cars.

Our most potent car was the Sport S1 that we ran at Shelsley Walsh hill climb for Hannu Mikkola in 1986. Audi Germany told us to break the course record – whatever it took. We boosted the engine to just under 700PS. It was astonishing. I have never seen a car leave the line so fast in my life. Hannu could barely change gear quickly enough. We broke the record in practice, broke it again during the first run, and again during the second run.

These days I help look after Audi's heritage cars. We've got a Group B S1 E2 quattro, and when Michèle Mouton came to drive it up the hill at Goodwood, her eyes got so big behind the wheel – she wanted to do everything at maximum attack again, like the old days. All the drivers we worked with – Hannu Mikkola, Michèle Mouton and Stig Blomqvist – were fantastic, and we still have good times when we get together.

THE CARS

Audi dominated rallying in the early to mid-1980s with a wide variety of quattro models. The brand's rally success can be traced all the way back to 1912, when an Audi Type C claimed victory on the Austrian Alpine Rally. It was the first of three back-to-back triumphs at the event for the Type C, and company founder August Horch played a crucial role behind the wheel during this famous hat-trick of wins.

Fast-forward to the modern era, and when Audi began rallying in 1978, it was not with the all-wheel-drive quattro, but with the front-wheel-drive 80 model. This was the perfect way to get the team match-fit for the arrival of the quattro and a full assault on the World Rally Championship (WRC) in 1981. The original quattro – or 'Ur' quattro, as it is known in Germany – was initially rallied under Group 4 regulations in 1981. The first Group B quattro appeared in 1983 and was known as an A1 quattro, with the more powerful A2 version following soon after.

Fabrizia Pons (left) and Michèle Mouton take a breather. An Audi 100 Avant chase car is on the far side of the road. *Photo: Graham Rood*

All three versions of the quattro were rallied successfully by the Audi UK team. In 1983, Stig Blomqvist used both the A1 and A2 to win the British Rally Championship, before becoming world champion with Audi the following year. The 1983 British championship also saw Harald Demuth campaigning a four-door saloon 80 quattro.

The short-wheelbase Audi Sport quattro S1 made its UK debut on the 1984 Ulster Rally, where Walter Röhrl blitzed the opposition. By 1985, the winged Sport quattro S1 E2, the ultimate rally quattro, had replaced the S1 on the world stage. Audi UK ran an S1 E2 for Michèle Mouton on two events in 1985. However, the team continued to find further success by campaigning the S1, winning the National Breakdown and Welsh rallies with Hannu Mikkola in 1986.

After the ultra-powerful Group B cars were banned at the end of 1986, Audi UK signed David Llewellin to drive a Group A Coupé quattro in 1987. The car still had the advantage of all-wheel drive, but its five-cylinder engine lacked a turbocharger. A win on the Scottish Rally and second on the Circuit of Ireland were its best results in that year's British Rally Championship.

Audi Sport debuted its 200 quattro on the 1987 Monte Carlo Rally, where Röhrl finished third. Three months later, Mikkola won the Safari Rally, chased home by Röhrl in second. The big executive saloon was also campaigned by Audi UK in 1988, while an Audi 90 quattro also appeared on events in Europe.

The Audi UK team withdrew at the end of the 1988 season, returning to the rally stages in 1993 with a Group N Coupé S2 quattro for Shell Scholarship winner Jonny Milner, who scored an impressive fifth place overall in the road-going-specification car on the Pirelli International Rally. ■

Audi developed this mid-engined quattro prototype for rallying's proposed 1988 Group S category, but the category (and subsequently the car) were shelved.

10 THINGS YOU NEED TO KNOW ABOUT...

THE AUDI UR QUATTRO

REPORT: ANDREW EVERETT

History is littered with automotive legends that had no truly convincing follow up – cars such as the Mini Cooper S, Lancia's Delta Integrale, the Ford Escort Cosworth, BMW E30 M3 and Audi UR Quattro all spring to mind (the 'UR' is a German prefix for 'original'). All were stunning cars in their own way upon launch, startling journalists and buyers alike, and none were ever really replaced properly, let alone improved upon.

Certainly not the Quattro – even though it was over ten years old when it was dropped and had ageing styling, a laughable interior and a clonky gearshift, the Audi S2 that replaced it in 1991 wasn't cut from the same cloth. To be fair the successor wasn't a bad car being fast, superbly put together and generally pretty competent, but it lacked the charisma of the original. Like the M3, Audi replaced a box-arched icon with something quite ordinary that just went very fast.

Intended as an image booster for Audi (which at that time was a long way behind BMW and Mercedes in the prestige stakes), the Quattro came and went, held back by the sheer dullness of the regular production cars. It wouldn't be until the launches of the A4 and A8 in 1994 that Audi got their act together and really started to challenge the other two. Today, the Quattro is still undervalued. Everything is relative of course, but when three-door Sierra Cosworths sell for £40,000 or more and E30 M3s fetch between 50 and 100 grand, a really good 20v Quattro for £35,000 and usable ones for well under £30,000 is looking cheap.

The Quattro project began in the late 1970s when the late Ferdinand Piech – describing current four-wheel-drive cars as 'truck like' – wanted to build a serious performance car for Audi. Already responsible for the four-wheel-drive VW Iltis military jeep, Audi had a head start. Unlike four-wheel-drive cars of the time, the Quattro had a system where power was taken from the back of the transaxle inline gearbox with an inbuilt centre differential to a rear differential via a regular propshaft – no transfer box here. The centre diff is inside the gearbox, and power to the front wheels goes from this via a short shaft to the front diff that's also

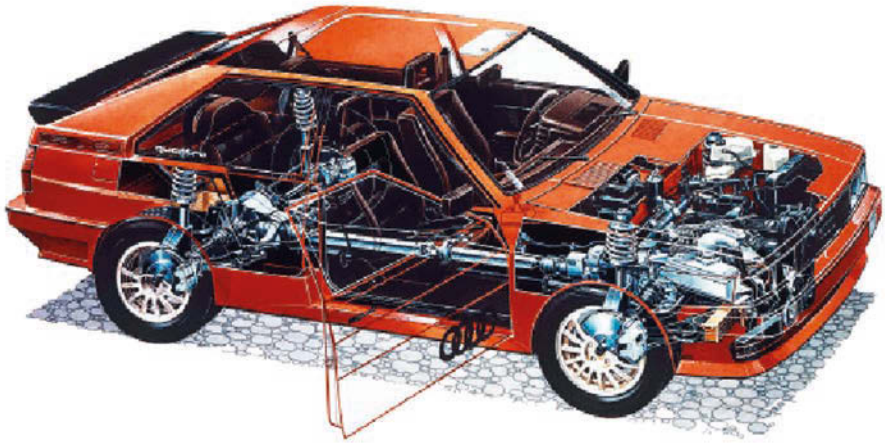
“ The Quattro project began in the late 1970s when the late Ferdinand Piech – describing current four-wheel-drive cars as 'truck like' – wanted to build a serious performance car for Audi.

inside the 'box.

Piech's other aim was to build a fast coupé that was also practical, good on fuel and reliable. 911s were two seaters and very tricky in the wet and so really were 924s and 928s. Lotus cars were interesting but too fragile, the XJ-S too thirsty and cramped and the only practical exotic coupé was the 635CSi BMW which was also very expensive and not the easiest of cars to drive fast in bad conditions. The 1980 Ferrari Mondial was a four-seater, but at £25,000 plus debatable durability (and slower that the Audi too) the coast was clear for Audi to build a winner.

Today, the early Quattro with 200bhp and 205 section tyres looks quaint on paper, but in the flesh it's every bit as remarkable as it was 40 years ago. Yes, it really was that long ago.

1 We're used to special Audis being eye wateringly expensive now, but in 1980 the Quattro – whilst not being given away – was seriously underpriced. At £14,500, it undercut so many slower or inferior cars – the BMW 635CSi was £19,650, the Porsche 911SC £16,732, and the Lotus Elite 2.2 £16,877 for example. Even an Opel Monza 3.0 Coupé was £13,109 and the 924 Turbo was a tenner short of £14,500. The UR Quattro would run rings around all of them; it literally had no real competition.



Key to the Audi Quattro's rally dominance was a 4WD system that was effective and reliable.

2 The Quattro was a real parts bin special. The floorpan was from the Audi 80 and most panels from the forthcoming Audi 1.9 Coupé. The brakes were Audi 200, but thankfully Audi replaced the spongy vacuum assistance with an Ate Teves hydraulic servo powered by the PAS pump. The rear diff internals were from the VW Iltis army jeep and the gearbox used a Polo differential as a coupling to give drive to the front and rear driveshafts.

3 As well as Ferdinand Piech who got the Quattro project going, other Audi stars were Walter Treser (project manager) and Fritz Indra (engine development) who came to Audi from BMW tuner, Alpina. The 2144cc engine was basically a 200 Turbo unit as launched in in 1979. The 200 engine gave 170bhp, but this wasn't enough to give Porsche and BMW beating performance to the Quattro so Audi added an intercooler to drop intake charge temperature by 50-60 degrees C with 12.3psi boost as well as fitting a Japanese computerised ignition system.

4 To give an idea how understressed the production engine was, the first Works rally Quattro gave 350bhp at a low 6300rpm – the standard unit's 200bhp was delivered at a very lazy 5500rpm. It replaced the standard (very low) compression ratio of 7:1 with an even lower 6.3:1 and the bigger KKK turbocharger had variable boost setting to give between 1.5 and 1.8 bar (26.1-27.7psi) with the boost starting at the

As most people will always think of the Audi Quattro – in full rally trim and ready for action.

higher figure and dropping as the revs increase. The rally unit replaced Bosch K Jetronic injection with a Pierburg DL system as used on the Alpina B7 Turbo.

5 Today, the 1980s Quattro isn't especially fast. A top speed of 138mph along with a 0-100mph time of 18 seconds is beaten by a lot of fairly ordinary cars these days, but at the time it was decently quick and not much could beat the headline 6.5 second 0-60mph sprint. The later 20-valve version was slightly faster on paper at 141mph all out, 17.1 seconds to 100mph and 6.3 seconds to 62mph, but what any Quattro may have lacked in ultimate go, it more than made up for in grip and sheer traction.

6 The short wheelbase Audi Sport Quattro might look a bit strange thanks to the 12.5in missing from the centre section, (at 86.7cm the Sport Quattro's wheelbase is fractionally shorter than that of a Metro!) but even today there aren't that many showroom-ready cars that can easily beat its 12.6 seconds 0-100mph time. Geared up at 21.7mph per 1000rpm in fifth, this 1273kg rocket had 306bhp at 6700rpm thanks to the all-new 2133cc 20-valve engine.

"...What any Quattro may have lacked in ultimate go, it more than made up for in grip and sheer traction.

7 The Sport Quattro's 2133cc engine was not really related to the regular 10-valve unit. For a start, the block was changed from cast iron to ribbed aluminium and the number of valves doubled – the head design is quite similar to that used on the 1986 Golf GTI 16v. A massive intercooler and bigger KKK turbo were used to boost power and raise torque to 258lb. ft at 3700rpm – still very driveable. 17.4psi of boost was well within its safety margin, and competition versions developed 592bhp by 1986. The slightly smaller 2133cc capacity was to bring the car in at under 3-litres with the 1.4 turbo multiplication factor used by the FIA. 2144cc multiplied by 1.4 is, annoyingly, 3001cc!

8 The Quattro didn't really lend itself to facelifts, but Audi made a few changes. For 1983, the Audi 80 style analogue instruments were replaced by a new digital set up, whilst at the same time the original four small square headlights were replaced by a single oblong unit per side. The rear suspension geometry was also revised. The main facelift, however, came in 1985 with a new sloping front grille, lights, bumpers and trim, but the biggest problem was the dismal looking facia – a problem Audi never got around to fixing.

9 Mechanically, Audi constantly revised the Quattro. A Torsen (TORque SENsing) centre diff replaced the Polo based item in 1987, and of course the new alloy block 20-valve engine arrived in 1989. In between these was the new 2226cc 10-valve engine in 1987, launched as the Audi five-cylinder engine was revised for the 90 and 100 saloons and a standardised 2226cc capacity. The 20-valve engine was an alloy block unit giving 220bhp at 5900rpm, still with 2226cc.

10 Early cars were all LHD and VW Audi imported only 163 cars between 1980 and 1982. Companies such as GTI Engineering and David Sutton Motorsport did RHD conversions until RHD were starting to be built and imported in late 1982. The ultimate rarity in Britain is not the short wheelbase Sport Quattro, but the three RHD factory Treser Roadsters – at £40,000, these cars were built from 1984 Coupés by ex-Audi engineer Walter Treser. Good luck even seeing one, never mind buying one. ■

FIVE-CYLINDER CLASSICS

Who says a car needs to have an even number of cylinders? Whether you favour petrol or diesel power, performance or practicality, there's no shortage of five-cylinder classics on the market right now. We check out some of the most tempting five-pot options. WORDS: PAUL GUINNESS

LAND ROVER DEFENDER TD5

A firm favourite of the British Army for years, it was fitting that Land Rover rebadged its toughest model as the Defender line in 1990, available as before in both 90- and 110-inch wheelbase guises and with a variety of body styles to suit all commercial and passenger-carrying needs. This legendary off-roader would go on to enjoy a 26-year career, with numerous updates carried out during that time in order to keep it competitive.

The Defender became a five-cylinder model in 1999 with the launch of the Td5, which brought extra smoothness and refinement to the diesel line-up. Despite initial concerns from die-hards over its relatively complex electronics, the Td5 proved to be a hit during its eight-year life. It was Euro 3 emissions compliant, fitted with a hi-tech ECU and had all sorts of emissions gadgetry to clean up the exhaust gases. Power was a useful 122bhp, with 221lb.ft. of torque on tap; and, crucially, the Td5-engioned Defender was quieter than before (aided by extra soundproofing), and ABS brakes were fitted.

Come 2007, the Defender was back to four cylinders, with its Td5 engine being replaced by Ford's greener DuraTorq (ex-Transit) diesel powerplant. But the Td5 continues to be a popular modern-classic choice now, appealing to Defender fans who appreciate its relative refinement.

WHAT'S GREAT: The five-cylinder Td5 combines the famous ruggedness and off-road qualities of any Defender with some useful extra power and a touch more refinement

WHAT TO WATCH: Check for signs of off-road damage, plus rust in the bulkhead and rear half of the chassis; oil pumps can be prone to failure; check the state of the electronics; interior damage is common, despite being a robust design

WHAT TO PAY: £3000-4000 (project); £8000-12,000 (very good); £15,000 (superb)

FIAT COUPE 20V

With its wedge-like shape, dramatic wheelarch 'slashes', bubble-top headlamps and race-type filler cap, Fiat's logically named new Coupe of 1994 looked like nothing else in its class – all thanks to the imagination of Chris Bangle, better known for his later BMW designs. Inside too, the Fiat looked dramatically different from the competition, not least because of its colour-coded painted metal dashboard – a major departure from the norm of the '90s.

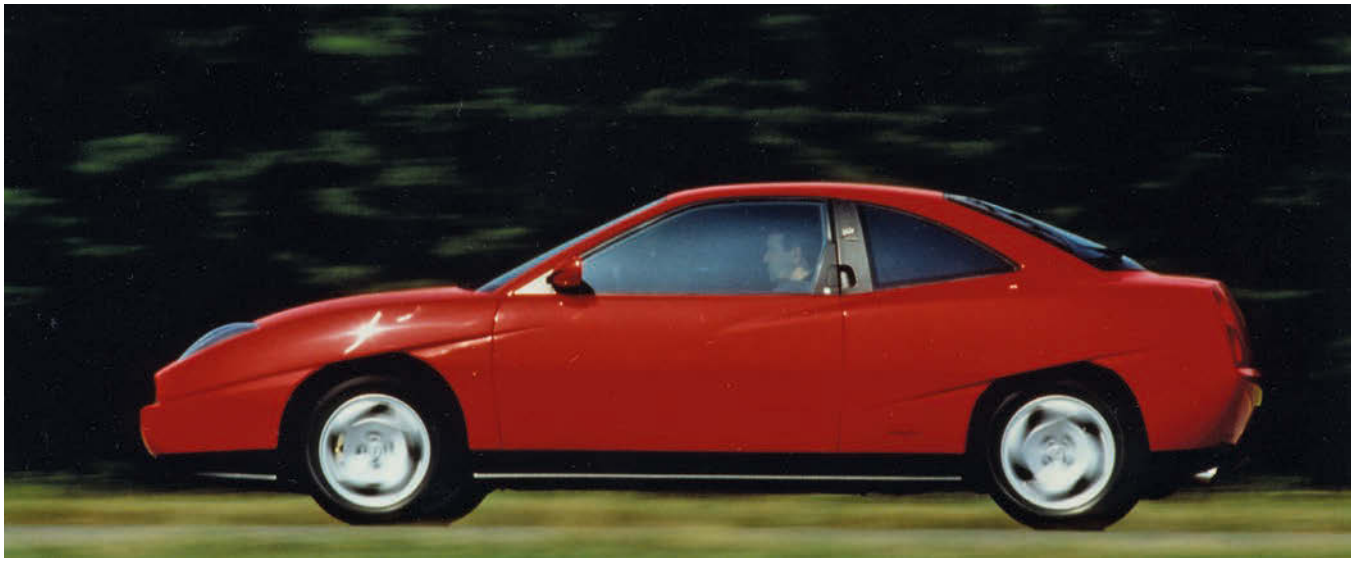
Available in 16-valve normally-aspirated and turbocharged guises, the Fiat Coupe had the performance to go with its looks. But it was with the debut of the 20-valve five-cylinder models in 1996 that this sporting Fiat achieved true greatness; the new 20v Turbo pushed out a whopping 217bhp and hit 60mph from rest in just over six seconds, with its front-drive torque steer kept in check via a limited slip diff and beefed-up suspension.

The 20v Turbo's top speed was 149mph, pushed to 155mph in 1998 when a six-speed manual gearbox became standard equipment. But even the normally-aspirated 20v offered an impressive 145bhp – enough for a top speed of 132mph and the 0-60 dash in around 8.5 seconds. Production of the Coupe finally ceased in December 2000 after a total run of 72,762 cars – and it remains a popular choice in the UK, with prices of the best examples now on the rise.

WHAT'S GREAT: No other modern-classic coupe available for similar money looks as dramatic as the amazing Fiat – and few offer quite the same levels of excitement and performance

WHAT TO WATCH: Five-cylinder engine is reliable but needs regular servicing; front wishbones and track rod ends can wear after 40,000 miles; front jacking points and boot floor can be rust-prone; check for accident damage, paying particular attention to panel gaps and paintwork

WHAT TO PAY: £1500-2000 (project); £4500-7500 (very good); £10,000-12,000 (superb)



VOLVO 850

The front-wheel drive 850 usefully updated Volvo's image in the early '90s thanks to its modern driving style and excellent packaging. This was the company's first car with front-driven wheels, and it proved to be a popular buy – particularly in commodious estate car guise. Launched in 1991, the 850 ran for six years before being rebadged as the Volvo S70 (saloon) and V70 (estate) for the rest of the decade.

It was when the high-performance 850 models arrived, however, that things got really interesting, with Volvo even entering the Touring Car Championship. Whether buyers chose the saloon or the estate, speed fans loved the idea of the 149mph 850 T5 (as did Britain's police forces), with ferocious acceleration from its 225bhp five-cylinder turbocharged engine. But the subsequent 850 R trumped that with its 243bhp output and 155mph top speed, hitting 60mph along the way in a mere 6.8 seconds.

The Swedish company best known for producing practical estates was suddenly thrust into the high-performance limelight, and yet the 850 R remained as usable (and as safe) as any other Volvo. Nowadays, there's an 850 to suit all budgets, with standard five-cylinder petrol models available from just a few hundred pounds upwards, while the various go-faster versions inevitably achieve far higher prices thanks to their enduring appeal.

WHAT'S GREAT: It still looked like a Volvo, but the 850's front-wheel drive layout and modern driving style brought the Swedish firm bang up to date for the 1990s

WHAT TO WATCH: Even a Volvo can rust, so check the sills, door bottoms, rear arches and floorpans for signs of rot or poor repairs; reliable by nature, which means many examples suffer from neglect; check the dashboard warning lights, as electronic issues aren't rare

WHAT TO PAY (850 T5): £1000-2000 (project); £4000-6000 (very good); £8000-10,000 (superb)

MERCEDES-BENZ 190D 2.5

Prior to the launch of the 190 range in 1982, Mercedes-Benz's entry-level saloon had been the long-running W123-generation E-Class. The company knew it was missing out on sales, however, with rivals BMW and Audi doing well with their smaller 3-Series and 80 models respectively. And so along came the Mercedes 190, a handsome 'compact executive' that remained in production for more than a decade.

Most of the 190s sold in the UK were of the four-cylinder petrol-engined variety, ranging from the cheapest 1.8-litre 'basic' model through to the high-performance 2.5-16 Cosworth of later years. For fans of five-cylinder engines, however, the diesel-powered 190D 2.5 offered a tempting package of attributes, featuring a brand new powerplant that would go on to establish an enviable reputation for high-mileage reliability.

Under the bonnet of the 190D was a 2497cc version of Mercedes' latest OM602 diesel engine, pushing out a reasonable (but admittedly not exciting) 94bhp. The 190D's top speed was 108mph, although it would take more than 15 seconds to hit 60mph from a standing start. But that didn't matter to buyers of diesel-engined Mercedes cars, whose main priorities were reliability and low long-term running costs.

The same engine (which was also developed into a 2.8-litre unit) went on to power numerous other Mercedes models, including the W124-generation E-Class, the G-Wagen and the Sprinter van. And with mileages of half-a-million-plus not uncommon from this amazingly durable powerplant, a 190D 2.5 might just be the cleverest of all the five-cylinder engine choices here.

WHAT'S GREAT: It might not be the quickest diesel-engined car of its generation, but the five-cylinder 190D is certainly one of the most robust and reliable over vast mileages

WHAT TO WATCH: Rust can be an issue, so check the front wings, sills, back arches and floorpans for signs of rot; ultra-reliable engine will still benefit from regular servicing, so check the history; interior can show signs of wear on very high-mileage 190Ds

WHAT TO PAY: £500 (project); £2000-3500 (very good); £5000-plus (superb)

VOLKSWAGEN GOLF V5

The launch of the fourth-generation Golf in 1997 saw Volkswagen's best-selling hatch moving slightly more upmarket, with Volkswagen aiming to widen its appeal via a wider array of different versions. And that extensive line-up included the Golf V5, employing the same five-cylinder engine that had already been introduced in the Passat range.

It was an intriguing powerplant, being the first vee-configured five-cylinder engine to go into production. The V5 was derived from the narrow-angle six-cylinder VR6, albeit with three cylinders on one bank and two on the other in a 'staggered' layout. It was offered solely in 2324cc guise (a hefty engine by Golf-class standards), with a power output of 148-168bhp depending on spec level. The same engine was also offered in the VW Bora, as well as the SEAT Toledo from 1998.

With hindsight, it's perhaps difficult to see where the V5 fitted in to the Golf line-up. After all, those seeking practicality and low running costs would opt for the more economical (1.4- and 1.6-litre) four-cylinder models, while most folk seeking a sporty Golf would go for a turbocharged

1.8 GTi (with the same power output as the V5) or the 200bhp VR6. Nowadays though, the V5 offers terrific value for money considering its performance potential – as well as a brilliant soundtrack when it's worked hard.

WHAT'S GREAT: It might not be the most ubiquitous version of the MkIV Golf, but the V5 offers strong performance via a superb-sounding engine – and it's terrific value, too

WHAT TO WATCH: Rust isn't unusual, so check all structural areas and outer panels, including sills, front wings, rear arches and doorskins; V5 engine is durable but prone to neglect thanks to the MkIV's low values

WHAT TO PAY: £250-500 (project); £1200-1500 (very good); £2000-2500 (superb)

FORD FOCUS ST

Following on from the success of the original Focus ST170 came the all-new ST of 2005, based around the second-generation version of Ford's family-size hatch. And to make up for the fact that the Mk2 Focus was less of a looker than the first (and to keep it ahead of any equivalent Golf GTi), this latest ST came with an impressive 222bhp via a 20-valve turbocharged version of Ford's (ex-Volvo) 2.5-litre five-pot.

Combine that with seriously tweaked suspension (featuring 15mm lower springs, firmed-up dampers and a thicker anti-roll bar) and you had a Focus that could easily handle such power. In fact, thanks to the car's superb chassis and the ST's quicker-than-standard steering rack, you had a hot hatch that went, cornered and steered phenomenally well. Yet it remained highly usable, almost laid-back when you needed it to be; and with three- or five-door body styles, it was even a practical choice.

The ST's 2522cc five-cylinder engine is a gem, giving this go-faster Focus a genuine top speed of 150mph and a 0-60 sprint time of just 6.5 seconds. It also develops 236lb.ft. of torque from as little as 1600rpm, making it a seriously responsive car even in standard spec – although it's possible to extract even more power via various aftermarket options.

WHAT'S GREAT: With 222bhp to play with, the five-cylinder second-gen Focus ST is one of the best hot hatch buys of the Noughties – and even manages to offer decent value

WHAT TO WATCH: Pre-2008 STs can suffer from cracked cylinder liners; worn anti-roll bar drop links are common; check for clutch slip; the tailgate can leak so feel for damp in the boot

WHAT TO PAY: £2500-3500 (project); £5000-7000 (very good); £9000-10,000 (superb)

AUDI QUATTRO

Few car manufacturers can claim to have introduced a model that brought about an entirely new concept in motoring, yet that's exactly what Audi achieved with the original Quattro. Following its launch in 1980, a multitude of performance cars utilising 4x4 technology was launched, with companies like Ford, Subaru, Porsche and Lancia all selling 'hot' all-wheel drive models over the years. The Quattro might not have been the first production four-wheel drive high-performance car (as Jensen fans will be quick to point out), but its success helped to create a whole new market sector.

Another vital Quattro component was its five-cylinder engine, of course, which first appeared under the bonnet of the Audi 100 in 1976. The same unit would eventually make its way into the Quattro, albeit with the addition of fuel injection and turbocharging.

Success in motorsport was at the forefront of Audi's intentions for the Quattro, and in order to compete it had to be homologated to the tune of 400 road-going cars. In the end, however, well over 11,000 examples of the original-shape Quattro were produced, during a run that lasted more than a decade. Development of the Quattro was an evolutionary affair, culminating in the eventual launch of the 20v model – the final incarnation and the one that many enthusiasts now hanker after thanks to its 220bhp output. The end result is a top speed of 142mph, with 0-60 achieved in just 6.3 seconds.

The original Quattro is, of course, one of Audi's most famous classic models, and values have risen dramatically in recent years. If it's beyond your budget, however, you can still enjoy five-cylinder Audi motoring via the similarly-styled B2-generation Audi Coupe – albeit with front-wheel drive only.

WHAT'S GREAT: It's the high-performance offering of the '80s that revolutionised Audi's reputation, combining impressive performance with rally-winning all-wheel drive grip

WHAT TO WATCH: 150,000 miles can be easily achieved, although the Quattro needs an oil change every 5000 miles; pneumatically-operated diff locks can seize; 1985-on cars are galvanised but still need checking for corrosion and signs of accident damage

WHAT TO PAY: £5000-8000 (project); £17,000-28,000 (very good); £30,000-plus (superb)

LARGE STOCK!

MANUAL & DUAL CLUTCHES

www.sussexautos.com

01323 848886

BRANDS INCLUDING:
LUK, RYMEC & BORG WARNER

Over 20,000 Automatic & Manual Transmission parts available from stock.

Complete Transmissions & Transfer Units also available!

sussex autos

QUALITY PARTS YOU CAN RELY ON!

Email us at: parts@sussexautos.com

Since **1983**

AUDI QUATTRO

The car which really put Audi on the map, the Quattro is an appreciating asset these days. Here's what you need to know before taking the plunge.

WORDS: PAUL WAGER

Read too many marque histories and you could come away with the idea that Audi's Quattro was as significant to automotive technology as the wheel itself. It wasn't of course, as witnessed by the fact that all-wheel drive cars remain in the minority, but it was a real game-changer back in its day. Especially of course on the rally stages which is where the car proved the worth of four-wheel drive in a performance application and took the Audi brand from a maker of rebadged Passats to a front-runner in the performance car game.

It was only the original turbocharged Quattro coupe (Ur-Quattro from the German 'Ur' meaning original) which receivd the capital Q in its name, the 4x4 option later extended across the range as a specification option as simply 'quattro'.

By that point the Audi brand had become as synonymous with 4x4 as Subaru and so the original had done its job very well. It was replaced by the technically superior but somehow less charismatic S2 and today the Ur-Quattro is joining the ranks of the blue chip supercars with pristine examples going for £50,000 or more at auction.

Prices do still vary widely though, so if you fancy getting in on the action

while you still can, then you'll need to be aware of some (expensive) pitfalls.

HISTORY

The Quattro owes a debt not to the Jensen FF as you might think, but to VW Group's military vehicle, the Iltis. During cold-weather testing of the second-generation Audi 80 in the late '70s, Audi development engineers noticed how the four-wheel drive Iltis was able to keep up with the more powerful front-drive Audis on icy roads and the idea of using all-wheel drive for on-road performance rather than off-road mud-plugging was born.

Championed by Audi's legendary Ferdinand Piëch, a prototype was worked up using an Audi 80. At the time conventional four-wheel drive systems were bulky and heavy, using a separate transfer box to send power to the additional axle, often driven by chain. Only Subaru offered a neat road-biased solution with its boxer engine and front transaxle arrangement allowing drive to be taken rearward without a separate transfer box but Audi's system was more elegant still.

Audi traditionally used a longitudinal front engine and front-wheel drive and to send drive back to the rear axle, a hollow transmission output shaft was

employed. The outer shaft drove the rear wheels, with an inner shaft rotating inside it providing drive to the front axle. A centre differential integrated into the gearbox allowed the front and rear axles to turn at different speeds and the result was a system which was simpler and lighter than existing designs.

The firm had already been working on a coupe – essentially a two-door Audi 80 – and it was this body style which was chosen as the basis for the new car, with boxy flared arches the work of British stylist Martin Smith. The Quattro drivetrain was paired with an uprated version of the 200 5T turbo engine, now intercooled to produce 200 bhp.

The Quattro was unveiled in 1980 in 2144cc, 10-valve form and upgraded in 1987 to 2226cc, gaining a twin-cam 20-valve head and the option of catalytic converter in 1989 and it's the engine codes which are often used in adverts to signify the different models: the original 2144cc 10-valve is the 'WR', the 2226cc 10-valve is the 'MB' and the 20-valve unit the 'RR'.

Alongside the engine changes, the Quattro swapped its analogue dials for

"By that point the Audi brand had become as synonymous with 4x4 as Subaru and so the original had done its job very well.

a digital dash in 1983 using Tron-style green LCD, changed the following year to orange.

In 1984 the Quattro gained the restyled interior from the regular front-drive Audi Coupe, with new steering wheel, console and instrument panel including the rotary switches. At this point the wheels were enlarged from the 6x15 of the early cars to a chunky 8x15.

The suspension geometry was adjusted in 1983 with the rear anti-roll bar removed to reduce lift-off oversteer and was then lowered by 20mm and gained stiffer springs during the facelift.

In 1987 the manually-operated centre differential lock was replaced by an automatic Torsen (torque-sensing) unit.

Box-arches apart, the bodyshell followed the front-drive Coupe with the flat front and four lamps changed to single lamp units in 1983 and then a smoother, angled grille in 1984. The 'RR' cars also feature a modified floorpan to clear the optional catalytic converter.

One way to tell the three models apart is the badging: early 'WR' cars use stick-on decals for the 'quattro'

emblem, whereas the 'MB' uses plastic chrome Audi lettering and logo and the 'RR' uses just the chrome plastic four rings logo.

The Quattro left production in May 1991, with the last cars overlapping the new Audi Coupe based on the B3 model which had been launched in 1986. its replacement would be effectively the 20-valve 'RR' engine and drivetrain installed in this car to create the Audi S2.

WHAT TO LOOK FOR

BODY

Audi proudly trumpeted the galvanised bodyshells offered across the range from 1985 but earlier cars often became pretty rotten before their values started to climb again so you'll need to examine the usual areas – sills, doors and arches – to get a handle in its solidity. This applies to the later cars too, since galvanising doesn't by itself prevent rust… nor can it prevent crash damage. Original build stickers inside the front end and bootlid area are good indications that it hasn't been heavily shunted and Audis of this era always suffer badly if the rear end has been repaired – especially the seam around the rear panel and sealing of the light units.

"Don't be tempted by a restoration project unless your fabrication skills are up to scratch either…

Post-1987 cars use a plastic bootlid which won't rot but requires specialist skills to repair if it's damaged.

Don't be tempted by a restoration project unless your fabrication skills are up to scratch either: body panels haven't been available from Audi for some time and the wings you can buy today will be fibreglass reproductions.

TRANSMISSION

It's been said that you need to look more closely at the underside of a Quattro than the rest of it and that's not a bad suggestion. The rear diff seal can leak and if it runs low on oil it will be wrecked, while the pneumatically operated centre diff can also seize up through lack of use but is a DIY job to free off. If the light doesn't come on when the button is used, then add it to the to-do list.

During a test drive, drive the car in a low-speed figure-of-eight to listen for any bearing grumbles.

The gearbox action is slow and heavy by modern standards but if you've tried a few Quattros you'll have a feel for how it should feel. If the synchro feels a little weak then most owners learn to live with it and employ judicious double-declutching rather than face the cost of a gearbox rebuild.

SUSPENSION

These are heavy cars and age will take its toll on the suspension bushes, with

the wishbones being common as well as front and rear subframes. Later cars have also been known to show cracks in the subframes at the rear.

ENGINE

Despite its exotic nature at the time, the Audi five-clyinder is a reliable old lump even in turbo form, tending to get smokey and noisy in age rather than fail dramatically. It's reckoned that the earlier 'WR' will need an overhaiul after 150,000 miles with the 'WR' and 'RR' good for closer to 200,000 miles. Failed turbos will be obvous from the smoke due to oil getting past the seals, with the 'MB' being worse in this respect as its turbo lackes the water cooling of the later models.

The big issue under the bonnet is a cracked exhaust manifold, often caused by failure of the right-hand engine mount which takes more of the weight of the canted-over engine. This can in turn lead to a cracked exhaust manifold which is a common Quattro problem. With the part no longer available new, the solutions are either to have the existing one welded up or have a bespoke one made from scratch – both expensive options. There's also a day's worth of labour to dismantle the engine bay to access the manifold so it pays to listen out for the tell-tale clacking of a cracked manifold, usually near the turbocharger.

Not strictly an engine issue but worth checking anyway is a leaky fuel tank – it's only obvious with a full tank but they can leak from the seam between the two halves of the moulding.

BRAKES

The Quattro uses a hydraulic accumulator rather than a conventional servo and this needs to be checked for safety. The check usually recommended is to unplug the low pressure warning switch, attach a voltmeter set to continuity across the connector and then depress the pedal several times – if the switch closes within fewer than six presses then it'll need replacing.

Elsewhere it's all conventional, with single-piston calipers replaced by twin pot units in 1987. Seized calipers are sorted by fitting exhange replacements while a seized handbrake mechanism is generally also a DIY prospect to free off.

INTERIOR AND TRIM

The later the car, the more plush the interior, with part leather stndard for the UK from 1989 but most earlier cars featuring cloth. Audi is surprisingly poor at supporting its older cars with detail parts which is why you'll often find cars either retrimmed in non-standard leather or fitted with seats from the regular Coupe which are a bolt-in replacement.

If the air conditioning doesn't work then it doens't have to be a deal-breaker as parts haven't been available for some time and rather than have the system reconstructed most owners simply put up with it. The original electric aerial in the wing is also no longer available and when the nylon plastic gear strips the simple cure is to fit a fixed antenna.

VALUES

The days when you could pick up a Quattro for under ten grand are long gone, thanks to *Life On Mars* and a general appreciation of everything '80s. Expect to pay over £20,000 for a running, usable example of the early 'MB' car, with the mid-market cars going for £28,000-£25,000 and the very best examples of the late-model 20pvalve 'RR' going for over £50,000.

Projects? Well you'll do well to find them but as we said, make sure you know what you're getting into as fabrication skills will be required for sure. ■

“The days when you could pick up a Quattro for under ten grand are long gone, thanks to *Life On Mars* and a general appreciation of everything ’80s.

TECH SPEC

AUDI QUATTRO WR

ENGINE:	2144cc 10V
POWER:	197 bhp at 5500 rpm
TORQUE:	210 lbf.ft at 3500 rpm
MAX SPEED:	137 mph
0-50 mph:	7.3 secs
GEARBOX:	five-speed manual
WEIGHT:	1290 kg
LENGTH:	4.4 m
WIDTH:	1.7 m

AUDI QUATTRO MB

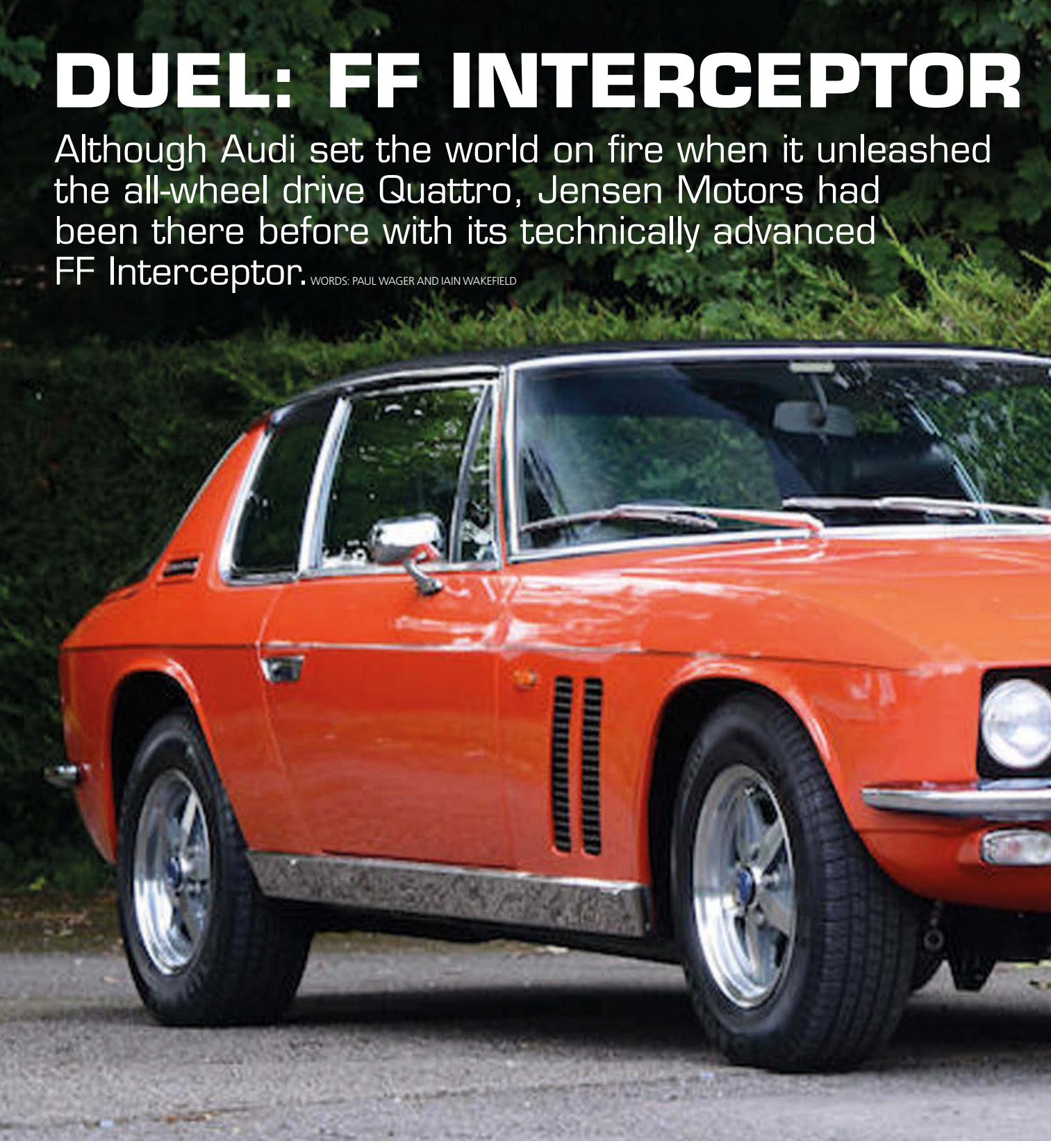
ENGINE:	2226cc 10V
POWER:	197 bhp at 5800 rpm
TORQUE:	199 lbf.ft at 3000 rpm
MAX SPEED:	138 mph
0-50 mph:	6.7 secs
GEARBOX:	five-speed manual
WEIGHT:	1300 kg
LENGTH:	4.4m
WIDTH:	1.7m

AUDI QUATTRO RR

ENGINE:	2226cc 20V
POWER:	220 bhp at 5900 rpm
TORQUE:	228 lbf.ft at 1950 rpm
MAX SPEED:	141 mph
0-50 mph:	6.3 secs
GEARBOX:	five-speed manual
WEIGHT:	xxxx kg
LENGTH:	xxxm
WIDTH:	xxm

DUEL: FF INTERCEPTOR

Although Audi set the world on fire when it unleashed the all-wheel drive Quattro, Jensen Motors had been there before with its technically advanced FF Interceptor. WORDS: PAUL WAGER AND IAIN WAKEFIELD



INTERCEPTOR FF

The first all-wheel drive car propelled by an internal combustion engine was the 60 horse power Spyker hillclimb racer in 1903 and for many years this 'go anywhere' technology was mainly associated with agricultural and military vehicles. Although all-wheel drive went on to prove its worth down on the farm and on the battlefield, especially during the Second World War, Irish businessman Harry Ferguson was convinced this form of drive could be used to make passenger cars safer.

After selling his tractor business in the early 1950s, Ferguson formed a new company with Freddie Dixon and Tony Rolt to develop the latter pair's existing all-wheel drive system and went on to demonstrate their new drivetrain in an F1 car during the 1961 season. This intriguing set up came to the attention of fellow race enthusiast Owen Jensen and he persuaded his brother, Alan Jensen, to purchase an exclusive research licence from Harry Ferguson and his partners to develop the system for a roadgoing car.

After testing the Ferguson Formula four-wheel drive system in a prototype

V AUDI QUATTRO

C-V8 in 1965, Jensen Motors installed the complex hardware into a stretched version of the company's brand new all-steel bodied V8-powered Interceptor. Introduced in 1967, the full-time all-wheel drive Jensen Interceptor FF was based on the standard Vignale-styled model and was easily identified by an extra vertical louvre behind the front wheels

to disguise the more complex model's slightly longer wheelbase.

The extra length was required to accommodate the FF's bulky centre differential and anti-skid braking set up based on a Dunlop's Maxaret system used on heavy aircraft. Although it was very advanced for its time, the FF's mechanical anti-lock set up wasn't without its problems, as the system could be automatically triggered if the car hit a sharp bump in the road. Another issue that affected the FF Interceptor was a weakness with the front hubs and these items had to be redesigned several times to eliminate the problem. In offering a luxurious grand tourer equipped with all-wheel drive and anti-lock brakes, Jensen were able to compete with exotic continental built sporting machinery, although at £6017 the V8-powered FF Interceptor was 60 per cent more expensive than its rear-wheel drive sibling. Despite reliability shortcomings due to issues with the all-wheel drive front hubs and the handbuilt transfer box, the Jensen FF was a landmark vehicle and deserves to take the honours as the first all-wheel drive production sports coupe to go on sale in the UK.

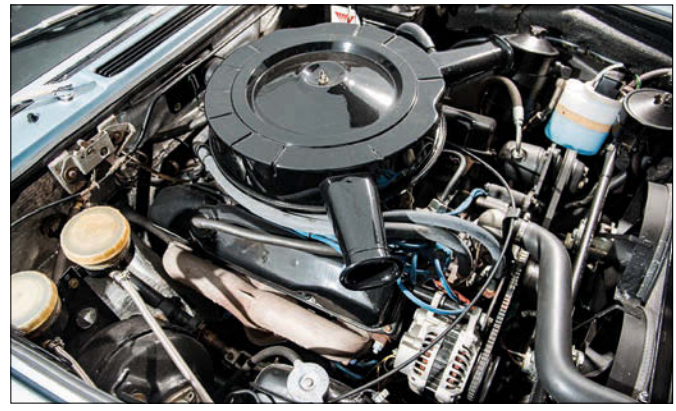
“ Despite its mechanical shortcomings, the Interceptor's Formula Ferguson full-time all-wheel drive was well ahead of its time.

The FF version of the Interceptor was powered by a Chrysler-sourced 6276cc V8 connected to a three-speed Torque-Flite automatic gearbox. Front suspension was a double wishbone and coil spring set up and even when pushed to the limits on its skinny cross-ply tyres, a FF Interceptor would stick to the road like a limpet in a storm when cornering hard, even in the wet.

Despite its mechanical shortcomings, the Interceptor's Formula Ferguson full-time all-wheel drive was well ahead of its time. It would be nearly 15 years before Audi's Vorsprung durch Technic marketing mantra announced the arrival of the all-wheel drive Quattro in 1980. Audi's noted chassis engineer Jörg Bensinger had put forward the idea for a high performance all-wheel drive car back in 1977. The idea was positively received and the company went on to base its four-wheel drive research on the system used in the military VW Iltis. Audi proved its all-

THE FACTS

1968 INTERCEPTOR FF	
ENGINE:	6276cc V8
POWER:	325bhp at 4600rpm
TOP SPEED:	130mph
0.60mph:	8.4sec
ECOMONY:	13.6mpg
WEIGHT:	1807kg



wheel drive Quattro system on the international rally circuit and similar to the Formula Ferguson system used in the Interceptor, Audi's four-by-four drive employed a mechanical locking centre differential. In 1987 Audi changed this to a Torsen torque sensing unit that allowed power from the engine to be automatically directed between the front and rear axles in gradual stages, depending on the conditions…

This vastly improved the capability of Audi's Quattro system, as the front-rear split could now be directed from a normal 50-50 per cent distribution to a maximum split of 67-80 per cent. Electronic controls, such as road wheel speed sensors make the split appear seamless to the driver and this obviously makes a Torsen-based Quattro system technically superior to Harry Ferguson's 1960's developed FF drive train.

By the early 1970's Jensen was struggling financially and all-wheel drive Interceptor production came to an end in 1971. Despite its shortcomings, the Interceptor FF managed to beat the sophisticated Audi Quattro to the showroom by nearly 15 years and even though only 320 all-wheel drive Interceptors were built at Jensen's West Bromwich-based factory, the FF has to be regarded a worthy forerunner to the all-conquering Audi Quattro.

AUDI QUATTRO

The FF may have been the first production car to offer all-wheel drive in the interests of on-road performance rather than off-road ability but it was hardly a mainstream choice and with just 320 produced it was destined to remain a rarity. Like the

Jensen, Audi's original Quattro was an expensive performance car rather than an everyday family saloon but the revolution it would kick-start would see all-wheel drive available on some really very unassuming cars within a decade of its debut. Audi itself would extend the permanent 4x4 concept to its own 80 and 100 saloons as well as a less extreme nonturbocharged coupe and it wasn't long before other makers got in on the act. By the mid '90s, the Mk3 Cavalier/Vectra was offered in 4x4 guise as a regular 2-litre model, while Ford could supply the Sierra as the sporty XR4x4 and later the Mondeo in 2-litre form too. Sister company VW got in on the act of course, with a four-wheel drive option dubbed Syncro available on Golf, Passat and Transporter. Meanwhile, performance cars from the Ford Sierra/ Escort Cosworth and Renault 21 Turbo Quadra to the Bugatti EB110 were embracing all-wheel drive as the concept gained marketing value.

Although it will forever be linked to the glamour of Group B rallying, the Quattro concept had its roots in the rather mundane VW Iltis, a utilitarian VW product developed for the West German military. When using them as support vehicles during cold weather testing of new models, Audi engineers noticed that the Iltis could keep up with the much more powerful Audis on the road thanks to their full-time four-wheel drive.

"Today the original Quattro isn't quite as tricky to restore or to own as the Jensen but it's getting there.

THE FACTS

1980 AUDI QUATTRO	
ENGINE:	2144cc I5
POWER:	200bhp at 5500rpm
TOP SPEED:	137mph
0.60MPH:	7.3sec
ECOMONY:	30mpg
WEIGHT:	1290kg

The idea of using permanent four-wheel drive for a performance road car was born and championed by Audis legendary Ferdinand Piëch, a prototype was worked up using an Audi 80. At the time conventional four-wheel drive systems were bulky and heavy, using a separate transfer box to send power to the additional axle, often driven by chain. Only Subaru offered a neat road-biased solution with its boxer engine and front transaxle arrangement allowing drive to be taken rearward without a separate transfer box but Audi's system was more elegant still.

Audi traditionally used a longitudinal front engine and front-wheel drive and to send drive back to the rear axle, a hollow transmission output shaft was employed. The outer shaft drove the rear wheels, with an inner shaft rotating inside it providing drive to the front axle. A centre differential integrated into the gearbox allowed the front and rear axles to turn at different speeds and the result was a system which was simpler and lighter than existing designs.

The firm had already been working on a coupe – essentially a two-door Audi 80 – and it was this body style which was chosen as the basis for the new car, with boxy flared arches the

work of British stylist Martin Smith. The Quattro drivetrain was paired with an uprated version of the 200 5T turbo engine, now intercooled to produce 200 bhp.

The world sat up and took notice: here was a firm until recently better known for producing reworked VWs which had turned out a latterday Jensen FF and when the Quattro started to clean up on the world rally stages, everyone and his dog scrambled to offer a four-wheel drive rallying weapon: without the Quattro we would never have seen the Delta Integrale for example.

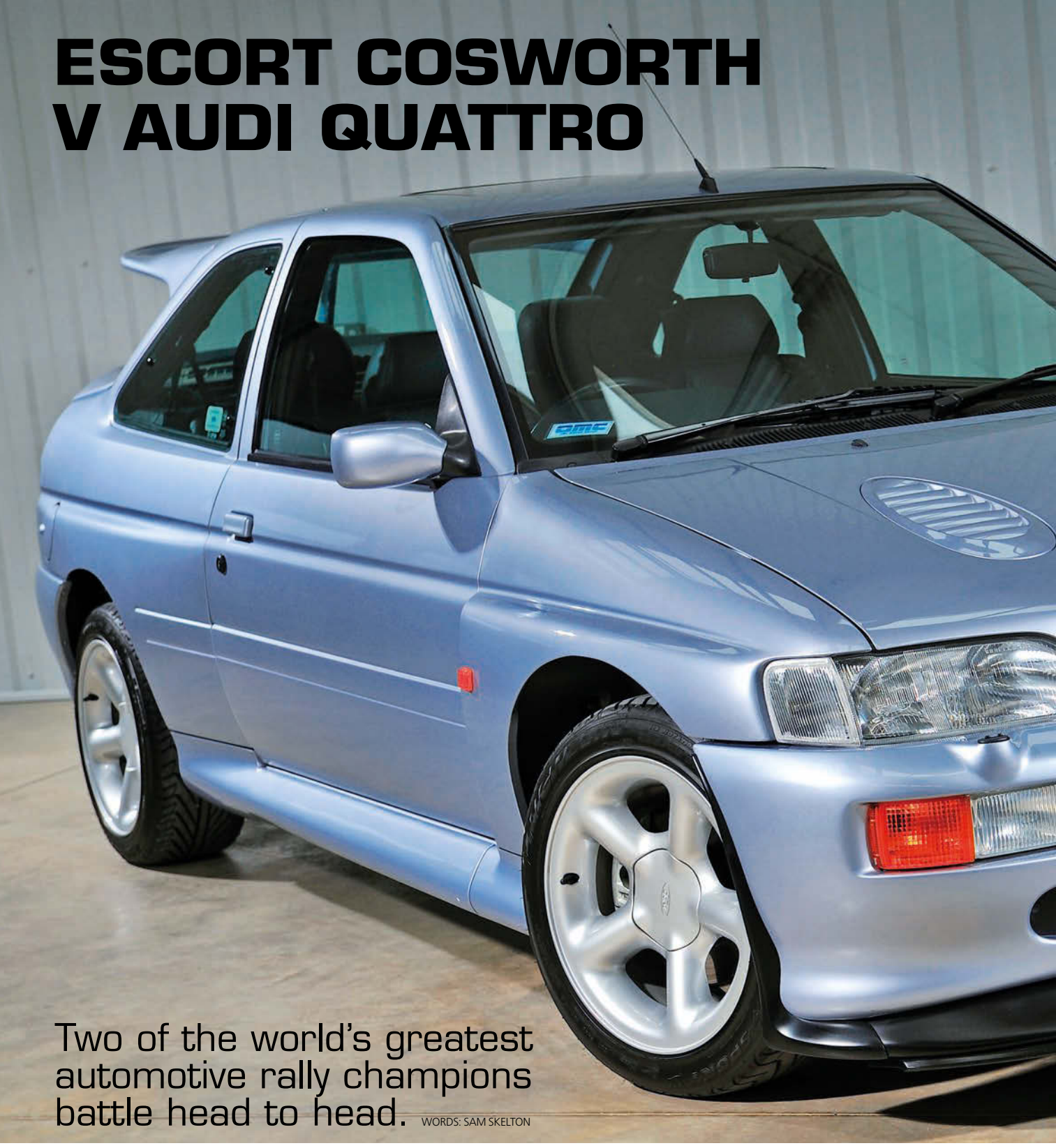
The Quattro (always with a capital 'Q' for the turbo original, insisted Audi) would later gain a revised 20-valve engine good for 220 bhp which would be carried over into the mechanically similar but more refined and mainstream Coupe S2 and then the subtle Audi 100 S4 saloon.

Today the original Quattro isn't quite as tricky to restore or to own as the Jensen but it's getting there. It's still a specialist proposition, with many parts (including Quattro-specific panels) no longer available. However, so popular did the Quattro concept prove that there's a huge number of other Audis sharing the idea and with the first-generation TT (boasting 2225 bhp in range-topping trim) now becoming a modern classic, it's possible to buy into the Quattro idea for much less than the Jensen's entry ticket.

Indeed, the later Porsche-developed RS2 Avant estate was in many ways even more crushingly competent with 315 bhp from the five-cylinder engine and room for a brace of Retrievers.

If Audi popularised the idea of the 4x4 performance car though, respect is still due to Jensen for getting there first. Although perhaps it's best not to mention Subaru anywhere near Ingolstadt... ■

ESCORT COSWORTH V AUDI QUATTRO



Two of the world's greatest automotive rally champions battle head to head.

WORDS: SAM SKELTON

Few cars changed the world of rallying in quite the same way as Audi's Quattro. The first in a stream of all wheel drive demons of the dirt stage, before long all its rivals were copying the four by four formula. Courtesy of rallying legends such as Michele Mouton, the Quattro has rightfully become an icon, and what worked on the track was good for the road too. Executive pricing may have deterred some, but the Quattro was a four seat supercar with a place on every child's bedroom wall.

The mighty Sierra Cosworth was one of the few everyman heroes that could compete on image, and even then its rear wheeld rive layout meant it lost traction in poorer weather. The Sapphire Cosworth 4x4 levelled the playing field, but it was the subsequent Escort that took the fight back out into the forests. Where once the Quattro was king, it felt like every weekend we'd see a Repsol branded Escort taking the laurels.

Both have a long list of fanatics today, people who simply wouldn't entertain the thought of any other car. But which one was best?

AHEAD THROUGH TECHNOLOGY

The Audi Quattro turned rallying into a technologically led motorsport arena. Gona were the days of the MK2 Escort tearing through a forest, here was an advanced piece of engineering that would show a clean pair of tyres to anything that tried to follow in its wake. Turbocharging and all wheel drive combined to create an unstoppable force, and one the rest of the world was forced to imitate to keep up. The engine of the Audi 200 Turbo and the drivetrain of the military VW Iltis were combined in the shell of the 80 Coupe, following a pitch by Audi chassis designer Jorg Bensinger, when he learned that nothing in the VAG stable could touch the Iltis in the snow. What worked for the military would work for rallying, after all.

The longitudinal engine meant that driving a centre differential wouldn't be difficult for Audi – and this split power under a modified Audi 80 floor. Externally the arches grew to accommodate a wider track and wider wheels, with the pleasant added bonus that the Quattro would now look much more muscular than the 80 Coupe on which it was based. Hand built on a production line dedicated solely to the car, just 11452 were built over an eleven year production period.

Cosmetically Audi didn't mess too much with the formula. New headlamps were fitted for 1983 with single lenses rather than twins, and for 1985 the car gained a softer front end to go with the wider wheels fitted in the previous year. Audi fitted a new digital dash for 1983, and a new dashboard moulding for 1984. While underneath the suspension was modified – and the rear anti roll bar removed – to make the car more predictable and reduce the tendency to oversteer. The engine grew slightly, but the main mechanical change was the 20v cylinder head for 1990, which would boost power by 15%.

The Audi S2 replaced the Quattro for 1991, and took the turbocharged Audi fight into the market the Cosworth would later enjoy. Using the second generation 80 Coupe as a base, it was less visually aggressive and more refined, appealing to a different market. The S2 never quite redeemed the flagging sales of the second generation 80 Coupe – a model also available with 2.0, 2.3 and 2.2 quattro configurations. Its three door body was more practical but less appealing. The subsequent S2 Avant – and its RS2 evolution – carried the performance Audi torch through the 1990s into a very different market to that the Quattro had once enjoyed.

UNIVERSAL ESCORT

The Ford Sierra Cosworth had enjoyed an equally fearsome reputation as the Quattro, though on the Touring Car circuit. But Ford wanted to regain some of the rallying credibility that it had enjoyed with the Mk1 and Mk2 Escort, and the impending launch of the Mk5 meant that they would have a car that would benefit from the rally halo in terms of sales. Problem, the MK5 Escort was front wheel drive, and its chassis insipid. The obvious answer was to cut down the floorpan of the Sierra Cosworth and clothe it in a body as close to the Escort as possible – though one in which just the doors and roof were shared panels.

Styling for the new homologation special was finalised in 1989, the year before the Mk5 was launched to the public. The styled was by Stephen Harper, under the guidance of Ford's Special Vehicle Operations department.

A new engine management system was used, and power was split with two thirds to the back and the remainder to the front wheels. Two versions were built – the first 2500 were used to homologate the car for Group A rallying, and used a Garrett T34 turbocharger and an air-water intercooler. This combination increased lag but also increased power, and once the homologation requirements were satisfied the turbocharger was replaced with a smaller T25 – this reduced turbo lag at the expense of maximum boost, and made the car more driveable. The

homologation cars also incorporated a non functioning water injection system, to show the FIA inspectors that the cars were capable of water injection even if not used as such. Later examples could also be ordered without the spoiler.

Road cars were available in three variants – Motorsport spec cars were all white, with minimal interior electrics, no radio, no central locking and cloth seats. Standard cars came with sports seats, a radio, central locking and other toys. Lux models gained Recaro seats, electric windows and mirrors, and opening rear windows. Most sold were Standard or Lux, but the options specced when new can make it hard to distinguish between the two today.

7145 Cosworths would be built in total from 1992 to 1996 – the homologation cars completed by 1994

and the later specification introduced that year. Ford would not directly replace the Escort Cosworth, though the 2002 Ford Focus RS would be seen by many as an indirect replacement despite its front wheel drive layout.

VERDICT

This is a difficult one to call – both cars have strong images and equally strong price tags today, and when you're spending this sort of money it's going to be difficult to sway you one way or the other. The Audi unquestionably did it first, and did it in a louder, more overtly 1980s manner. But then the Escort had a further decade and more to refine the concept of an all wheel drive turbocharged rally hero, and it used its twelve years well.

If we could find a really nice late 20v Quattro in the right colour, it would be the logical choice for us – in part because the Ford's blue collar image makes it harder to imagine spending the money they command today, but also because the Quattro's place in history makes it a more tempting proposition. But to the children of the 1980s now looking to invest, the Quattro was old hat and the Escort was their playground champion. The Escort Cosworth is already worth more than the Quattro owing to the strength of Ford pricing and this changing market, and this trend is likely to continue. If the money on resale matters to you, the Escort – though pricier – is the better investment proposition today.

"This is a difficult one to call – both cars have strong images and equally strong price tags today..."

No direct winner then – this is purely down to individual taste. On which basis, we'd have the Audi. ■

TECH SPECS	AUDI QUATTRO	FORD ESCORT RS COSWORTH
ENGINE:	2144cc I5	1993cc I4
TRANSMISSION:	Five-speed manual	Five-speed manual
MAX POWER:	200bhp	227bhp
MAX SPEED:	138mph	144mph
0-60:	6.5 seconds	6.0 seconds
LENGTH:	4404mm	4211mm
WEIGHT:	1290kg	1360kg


G669 YMF

SUBSCRIBE TODAY

SAVING 20%

6 ISSUES JUST £21.99

* Only available to new UK Direct Debit subscribers. 6 issues just £21.99. Your subscription will continue at the rate of £21.99 every 6 months. Savings based on full UK cover price.

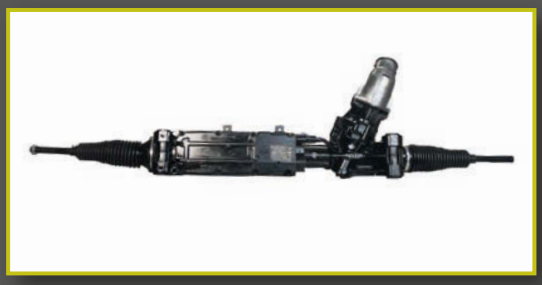
VISIT SHOP.KELSEY.CO.UK/CMT2022H

OR CALL OUR SUBSCRIPTIONS TEAM ON **01959 543 747**
& QUOTE OFFER CODE **CMT2022H**
HOTLINE OPEN: **MON - FRI 8.30AM - 5.30PM**

WPS

WESTERN POWER STEERING LTD

THE POWER STEERING SPECIALISTS



Western power steering can offer a complete range of remanufacturing options for power steering from steering rack, steering columns, steering pumps and steering boxes.

We have been rebuilding and remanufacturing power steering for nearly 40 years, so our experience with it is vast. We are leaders in our field at providing reconditioning services to classic vehicles and more modern vehicles with electric power steering.

Some of our newest products that we are now able to offer are very specific to us with our specialist in house technology that not many companies are able to utilise. We have a broad range of vehicles that we are able to supply units for at a low cost with a long warranty on all of our units.

WWW.SHOP.WESTERNPOWERSTEERING.CO.UK

01179 602906

ENQUIRIES@WESTERNPOWERSTEERING.CO.UK

Western Power Steering, Unit 6, Hanham Business Park,
Memorial Rd, Hanham, Bristol, BS15 3JE

IMPREZA V AUDI QUATTRO

The Quattro dominated global rallying in the 1980s. But is the Impreza a better classic buy?

WORDS: SAM SKELTON

The Audi Quattro revolutionised rallying. While all its initial rivals used two wheel drive, by the end of the decade it was a brave team that would seek to take on the might of the Quattro without all wheel drive at its disposal. In the hands of people such as Michele Mouton, Audi's executive coupe became one of the most fearsome machines to take on the dirt track – and there were few all-round road cars that could touch it to boot.

Unsurprisingly, the closest a car came to knocking the halo from the Quattro's achievements was over a decade later, with a decade of further development. Colin McRae and his colleagues took the humble Subaru Impreza from victory to victory – with a stream of turbocharged road examples and special editions flying out of its native Japan.

But of the two, which makes a better classic for the rally enthusiast today? We've pitted the standard Quattro against the UK's standard Impreza, the Turbo 2000, to find out.

OLD STAGER

The Audi Quattro was a game changer. Like the Jensen FF which turned the grand tourer market into a technological showground, Audi's Quattro did the same thing for a smaller budget a decade later. It utilised a centre differential which split power between the front and rear wheels – a system which posed little difficulty for Audi given the existing longitudinal layout of its front wheel drive cars and the existence of the Volkswagen Iltis, a light vehicle for the armed forces.

The concept of a high performance four wheel drive was pitched in 1977 by Jorg Bensinger, chassis engineer for Audi, when it was determined that the Iltis was VAG's best performing car in the snow. The system was developed by Walter Treser and installed in an 80. From here, the Quattro programme began. It made sense to fit the most powerful engine that Audi had available, which was a 2.1 litre turbocharged five-cylinder drawn from the Audi 200 Turbo. The 80 Coupe shell was used, adapted underneath to take the extra differential and propshaft. On the outside it gained fat arches and wheels to maximise its visual clout, much as Lancia would subsequently do for its similar Delta Integrale. Partially hand built on a dedicated production line, just 11452 were built over an eleven year production period.

From 1983 the Quattro gained a digital LCD dashboard, while from the following year there was a new dashboard moulding. The Quattro was facelifted twice – first with new headlamps for 1983 and again with a whole new nose for 1985. Wheels had grown 2 inches wider the previous year, while suspension changes had reduced the tendency to oversteer.

“ The Audi Quattro was a game changer. Like the Jensen FF which turned the grand tourer market into a technological showground, Audi’s Quattro did the same thing for a smaller budget

Over time the engine grew from 2.1 to 2.2 litres, gaining a new head in 1989 with four valves per cylinder to create the final Quattro 20v model.

Audi replaced the Quattro in 1991, with the launch of the Audi S2. The S2 retained the 20v engine and Quattro system, but fitted into the bodyshell of the next generation 80 Coupe. The 80 Coupe had been launched in 1988 – but flagging sales led to the development of a Quattro successor as a range-booster. Its three door format added practicality, but the car lacked the image Audi had enjoyed – to say nothing of the rallying history. The subsequent S2 Avant and RS2 Avant transformed Audi’s performance image – by expanding the formula into the new arena of performance estate cars. By the RS2 Avant, the Quattro finally had a worthy successor.

IMPRESSIVE PERFORMANCE

The Subaru Impreza had humble beginnings. Effectively a small family car made more useful to country dwellers by the fitment of all-wheel-drive, it wasn’t the sort of car one expected to turn the world of motorsport on its head. But when fitted with a turbocharged engine from the Legacy, the smaller Impreza body turned Subaru into one of the rallying names to be

reckoned with. The performance of the larger Legacy on the rally stages had impressed, owing to a 290bhp variant of the engine and chassis tweaks by British specialist Prodrive, and it was this expertise that made the Impreza into a rallying phenomenon. What was good on the stages was also good on the road, and the WRX was launched to an eager audience in Japan with 240bhp in 1994. British cars were detuned to 214bhp, and renamed the Turbo 2000.

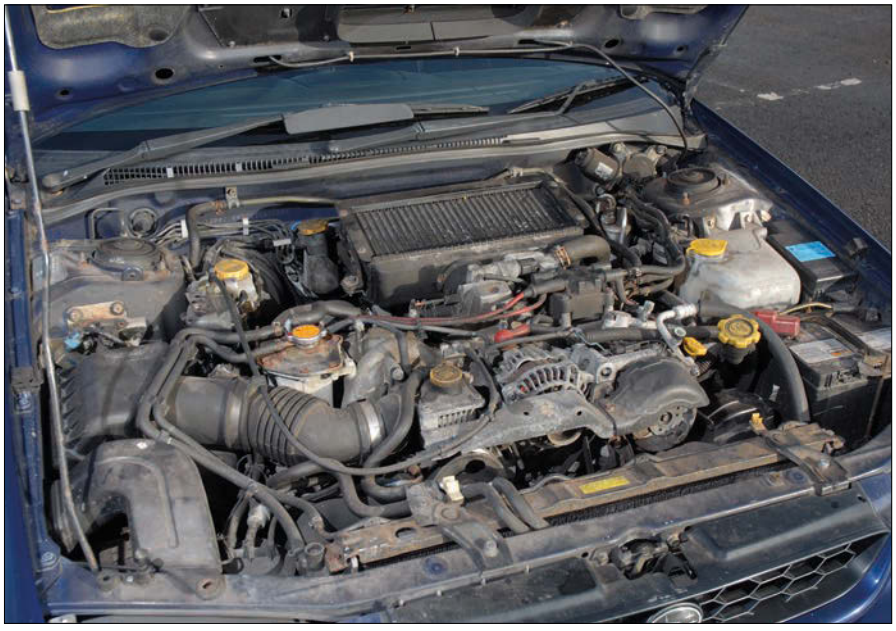
A litany of specials followed, and deciphering what was what became an art form for fans of the sport. RB5, 22B, P1, these were the terms whispered in reverent tones by those in the know.

“ The Impreza’s bargain price helped – it was possible to buy this rally weapon new for around the cost of a low spec Rover 800

Of course, the one that most enthusiasts in Britain were able to buy was the Turbo 2000 – this being imported and available through showrooms, rather than a grey import of a model not to British specifications. The Turbo 2000 may have had less overall power, but its longer gearing and more compliant suspension were better suited to UK roads than any of the imported WRX models from Japan. The cars which were once more desirable owing to their legitimate

status, though, are today in the minority – overlooked in favour of imports offering more power. The 214bhp they offer, however, is a fairer match to the Quattro's output – to say nothing of the fact that like the Turbo 2000, the Quattro was for several years available in the UK through franchised dealers.

Subaru's timing was impeccable – the Impreza came onto the market around the time Ford ceased sales of the Escort Cosworth, and proved a natural successor for those seeking a high performance road or competition car on a budget. The Impreza's bargain price helped – it was possible to buy this rally weapon new for around the cost of a low spec Rover 800, which put



the Impreza just about within reach of someone on an average income during the mid 1990s. Unsurprisingly, there were scores of people who felt that a little harder saving over something like a Vauxhall Astra GSi would be worth the end result, and dealers could barely meet demand. Not that this was an issue – grey importers were bringing in 240bhp WRXs just as quickly as Subaru could bring in Turbo 2000s, and selling their more powerful wares at a discount price. The warranties weren't as good, but the package made up for it.

TECH SPECS	AUDI QUATTRO	SUBARU IMPREZA TURBO 2000
ENGINE:	2144cc I5	1994cc F4
TRANSMISSION:	Five-speed manual	Five-speed manual
MAX POWER:	200bhp	214bhp
MAX SPEED:	138mph	144mph
0-60:	6.5 seconds	6.1 seconds
LENGTH:	4404mm	4350mm
WEIGHT:	1290kg	1235kg

The Turbo 2000 lasted until the end of first-gen Impreza production for the UK market. It was replaced by a turbocharged variant of the second generation car. Enthusiasts bemoaned the lower performance, though this came with the bonuses of a stiffer shell and a higher level of equipment.

VERDICT

The Subaru Impreza is the only choice here for the budget conscious. The fact is, the Quattro has become such an icon that prices have skyrocketed, helped in no small part by its appearance in Ashes to Ashes. Unless you have an enviable bank balance or were lucky enough to buy one when they were cheap, Quattro ownership will remain a pipe dream for many. The Impreza can still be had for under £5000, making it a more practical proposition.

And while the Quattro is undoubtedly the car with the stronger image, the Subaru offers an equally enjoyable driving experience. It would be folly of us not to acknowledge that when considered on paper, the Subaru is the better proposition. But we're fans of the Quattro, and we'd rather look out of the window to see a Quattro on the driveway. As classic cars are ultimately about the way they make you feel, if we had a limitless budget we'd pick the Audi every time.

"While the Quattro is undoubtedly the car with the stronger image, the Subaru offers an equally enjoyable driving experience.

The Impreza, though, makes for an astounding consolation prize. ■

KILLER Bs

The Group B rally era led to some interesting homologation creations. We've chosen our favourites. WORDS: SAM SKELTON

Group B rallying enjoys a mixed reputation. Many of its fans support the technical advances the sport brought, the development that c ould be undertaken with such low homologation requirements and the brilliance of the extreme machines which resulted. Others believe that it offered the sport too much too soon, and point to the crashes and the fatalities as proof that the world was not yet ready for the sort of vehicles the class unleashed upon the world.

But like or loathe the sport, the cars it gave the world are undoubted motorsport classics today. We've chosen some of the most memorable examples.

AUDI SPORT QUATTRO

The Audi Quattro had already proved itself an impressive rally weapon in the Group 4 class. But it had problems – it was too large, too heavy to be as good as it could be off road. The Group B rules changed that – by requiring just 200 homologation cars to be built, it gave life to several new and interesting models and a tweaked Quattro was Audi's ticket to the big time. Very little was shared with the standard car. The wheelbase was cut by 320mm, the shell shortened correspondingly in the rear. It used the windscreen and frame of the 80 saloon – a better angle to prevent unwanted reflections affecting the driver's view. The engine capscity waschanged – by reducing capacity by just 11cc, the Sport Quattro would just fit into the 3.0 class by the time the multiplication factor for turbocharged engines had been applied. There was also a 20 valve cylinder head developed, several years ahead of the fitment of a similar unit to the road car.

Competition cars even had carbon-Kevlar bodies, though the homologation cars were steel shelled. The nose of that shell was very different – rounder, like the facelift Quattro would be, but with single headlamps in the manner of the outer units fitted to the original Quattro of 1980. Inside there was a new dash moulding, and unlike the standard Quattro's LCD the analog instrument binnacle was taken from the 200 saloon. With over 300bhp on tap, the Sport Quattro was a ferocious machine even in road trim, while the rally variant was almost unstoppable with half as much power again. The later Sport Quattro S1 E2 of 1985 built upon the formula with extreme aerodynamic aids and an engine capable of 600bhp, and enjoy success at Pikes Peak following the closure of the Group B programme.

"The Audi Quattro had already proved itself an impressive rally weapon in the Group 4 class. But it had problems – it was too large..

FORD RS200

The RS200 wasn't Ford's first go at Group B. Plans to create a turbocharged

rear wheel drive MK3 Escort, the RS1700T, went awry, and when development was pulled in 1983 Ford decided to use the new rules to develop a rally focused machine. This would need to have all wheel drive to rival the new cars from Audi and Peugeot, and Ford was pushing for a mid engined layout. The RS200 was the result. It may have used a Sierra windscreen and borne a resemblance, but the Ghia-styled bodies were otherwise unique. They were built from fibreglass on Ford's behalf by Reliant, before the road versions were trimmed at Tickford. Ford switchgear was used, to maximise the corporate look.

The weight balance called for a front mounted transmission – so drive would head first to the front before being split and sent rearwards again. Double wishbone suspension with twin dampers helped the balance of the chassis, while power came from a 1.8 litre Cosworth engine producing 250bhp for road cars and up to 400 in any of the 29 rally examples built. The 90 road cars could

be had with upgrade kits to boost power north of 300bhp. As a rally car, the RS200 was flawed – a great chassis, but too little power for its weight. Its best position in a Group B rally was third, in the 1986 Rally of Sweden, but it was the events of that year's Rally de Portugal that cast the darkest shadow on the RS200. Leaving the course, an RS200 injured scores of spectators and killed three, while at another rally that year an RS200 crash claimed the lives of its driver and codriver. Today, the RS200 is widely remembered as the impetus for the banning of Group B rallying.

PEUGEOT 205 T16

Group B regulations said that rally machines had to be based on existing cars. Peugoet took this literally to a degree – stating that the T16 was based on the humble 205 hatch. This despite the fact that one was a shopping car, the other a mid engined, rear wheel drive monster. However, as it intended building 200 T16 road cars too, the comparison held water. Built by Heuliez, the T16s were actually based on standard 205 shells – though drastically modified. There was a firewall welded in between the B posts, while the rear was

“ This despite the fact that one was a shopping car, the other a mid engined, rear wheel drive monster.

then constructed in Superlegegra fashion with sheet and tube sections. The front was adapted in the same way, leaving only the front of the cabin effectively as “original” 205 in design. Peugeot Talbot Sport built the competition cars, while Simca built the road cars.

The engine used was effectively an XUD converted back to petrol, the stronger diesel block offering advantages in high tune applications. It carried a specially designed 16v cylinder head, and the gearbox from the Citroen SM. The first iteration of the rally car had the same construction as the road car, the Evolution 2 eschewed sheet

sheel at the rear for a wholly tubular design. 200bhp in road trim translated to twice that for the race cars – whose underpinnings would go on to form the basis of the 405 Turbo 16 Paris-Dakar car of 1988.

LANCIA DELTA S4

Technically the Delta S4 was Lancia's second bite at the Group B pie. But the 037 – despite a swish, MonteCarlo-esque body, had rear wheel drive, and against a largely all wheel drive field it was frankly outclassed. The Delta S4 remedied this. Like the 205 T16, it was less an adapted road car and morea silhouette racer, with a tubular spaceframe under a body that might have looked like a Delta if you were simultaneously drunk and asleep. Like the 037 there was long travel double wishbone suspension all round, with coilovers at the front at a separate spring with twin dampers at the back. The body was a carbon fibre shell, with front and rear shells fully detachable and replaceable if necessary leaving just the passenger cell as part of the actual car. This also, of course, improved ease of maintenance between trials. Like the 037, the doors were Kevlar, with no inner skin, handle or window winder. Just a small sliding slot would serve for passing time cards through.

The Delta S4 utilised the world's first application of twin charging. This is where a supercharger and a turbocharger are used in tandem to increase the boost provided to the engine by a dramatic level; more than either system alone could achieve. Turbochargers are more efficient but incur lag, the supercharger would have a more instant pickup and effectively eliminate this issue. Lancia intended tobuild 200 roadgoing S4 Stradales as part of the FIA agreement, but it seems that fewer than half this number were in fact built and at a cost five times that of the standard Delta HF Turbo, few in fact were sold.

“Like the Lancia and the Peugeot, the MG Metro 6R4 bore little resemblance to the production hatch upon which it was based...

MG METRO 6R4

Like the Lancia and the Peugeot, the MG Metro 6R4 bore little resemblance to the production hatch upon which it was based – especially by the time the aero kit was fitted to production models. The name gave it away – 6 cylinder, rear engined, 4 wheel drive – development had been undertaken by Williams, and the car used a semi monocoque design with a tubular chassis. The bespoke 3 litre V6 was derived from the Rover V8, and utilised some of the architecture of the Cosworth DFV to boot. Twin overhead camshafts and four valves per cylinder made it an advanced engine for the era, even if the result would remain naturally aspirated. With permanent four wheel drove, the gearbox drove separate props to both differentials acting as its own internal transfer box. Most of the bodywork was GRP – though the roof was aluminium and the doors, base wings and certain other panels were derived from the standard steel units on the basic Austin Metro.

There were two variants – the Clubman was the roadgoing variant offering 250bhp, of which about 200

were made. The International – of which there were 20 – was the real deal, with over 410bhp. Tony Pond took the 6R4 to third in its first rally, the Lombard RAC of 1985. Unfortunately the cancellation of Group B rather ended the 6R4's career before it began. The unused V6 engines and remaining parts would subsequently be sold to Tom Walkinshaw Racing – where they would be turbocharged and fitted to the Jaguar XJ220.

CITROEN BX 4TC

PSA didn't only enter Group B with the Peugeot 205. In house sibling Citroen wanted a slice of the Group B cake, and entered the sport with a specially adapted BX. Many would have noticed the vastly longer than standard nose – this was as a result of the fitment of the Chrysler 180's engine, in a longitudinal manner, and with a turbocharger. The engine was downsleeved to 2141cc – a drop of 14 cc to enable it, like the Sport Quattro, to qualify for the three litre class after the fitment of its turbocharger. Transmission, like the 205 T16, was via the gearbox from the Citroen SM. 200 road cars were built to satisfy FIA regulations, each developing around 200bhp.

“ The lack of exposure and positioning meant that Citroen was unable to sell all 200 roadgoing examples either; just 62 found homes worldwide.

The 4TC was not as successful as its sibling, competing in just three rallies before the Group B formula was banned and reaching a highest position of sixth. The lack of exposure and positioning meant that Citroen was unable to sell all 200 roadgoing examples either; just 62 found homes worldwide. Build quality and reliability issues meant that Citroen bought back and destroyed many of the cars it had sold – and just a handful remain today.

CONCLUSION

The Group B era was an interesting one for rally design – by limiting the hoologation needs we saw far more extreme rally machines than had existed before. This came at a cost, with fatalities leading to the closure of the class by 1986. And yet the Group B formula was in many ways the precursor to modern rallying. Its place in history is assured, and we should celebrate the cars which emanated from it as historic exemplars of a now timeless formula. ■

OLYMPIC STANDARD

Interlocking rings mean one of two things; sporting prowess or German quality. We've chosen the cars which represent both. WORDS: SAM SKELTON

Few brands have such a rich seam of performance history as Audi. From 1980 to the present day the German brand has earned itself a reputation for premium performance cars which could seat four – whether coupe, saloon, or estate. The one aspect linking them all has been Audi's Quattro all wheel drive system in various iterations. And whether you crave the practicality of the RS4 or the classic style of the original Quattro, the halo models for the prestigious German brand have always eclipsed their competition.

Values of cars like this can only stay strong, and grow stronger as the classic market improves. While there will always be advocates of Subari, of Mitsubishi, or BMW – Audi was the first to the party, and has consistently proven since that its products are the best. Might any of them prove a temptation? Read on…

Audi Quattro

The original and arguably the best, the Audi Quattro popularised the concept of the all wheel drive performance car. Unveiled in 1980, the Quattro married the engine of the Audi 200 Turbo to the all wheel drive system of the Volkswagen Iltis, and put

it all into the lighter, stiffer shell of the Audi 80 Coupe. As a performance halo model, the recipe was perfect, and the success of the Quattro on the world rally stage only boosted the car's appeal. Its subsequent appearance in 2008 his series Ashes to Ashes opened up the Quatro to a whole new generation of enthusiasts, sparking price rises which continue to this day.

From 1982 Audi would sell the Quattro in Britain with right hand drive – following the company's claims that such a conversion was not feasible, external converted had proved it could be done and Audi was forced to take development in house to avoid missing out on orders. A raft of changes kept the Quattro fresh until its demise in 1990, including two facelifts, a new interior and – at the end – a 20v cylinder head which would boost ower by up to 15%.

These late cars are the most capable and early models the most desirable – but an early right hand drive Quattro still offers relatively good value today. Just do yourself a favour – you'll save money by avoiding Mars Red examples, however much you dream of taking down 1980s crims...

AUDI SPORT QUATTRO

The Group B homologation special that was the Audi Sport Quattro might have looked like the standard car, but was vastly different. Not just a shortened coupe shell, the Sport Quattro actually used elements of the 80 saloon in preference – chiefly the windscreen and frame, which were more upright than on the Coupe upon which the Quattro was based. This was to reduce the likelihood of reflections dazzling the driver at speed. Under the skin, the wheelbase was shortened by 320mm, the cylinder head was given four valves per cylinder, and the engine capacity changed slightly to permit the car entry into the 3.0 class (There was a multiplication factor of 1.4 applied to turbocharged engines – the Sport Quattro's 2110cc equated to 2954cc under the rules where the standard Quattro engine would have been just 2cc too big).

“ Competition cars had carbon-Kevlar shells, but the examples sold for road homologation retained steel bodies.

Competition cars had carbon-Kevlar shells, but the examples sold for road homologation retained steel bodies. The headlamps were narrower and the front more bulbous, making these cars instantly recognisable from all angles. Even inside, there was a new dash moulding with an instrument pack taken from the 200 saloon. Just 200 of these cars were built, and at no point can

they be mistaken for the standard car. Over 300bhp meant that there was more than enough power to dominate not only in the forests but on the roads. Owners today can virtually name their price, should anyone wish to buy.

AUDI 200 TURBO QUATTRO

The Audi Quattro was a desirable car, but ultimately a flawed one for the sort of executive who could afford it. Costing V12 Jaguar Sovereign money, the Quattro might have had four seats but it also only had two doors. The 200 Turbo Quattro, available for within a couple of hundred quid of the Coupe, took what amounted to the same mechanical package and wrapped it up in a larger four door bodyshell – or, for a little more – an estate. With leather trim as standard, all the toys and the bigger body, here was a Quattro that could appeal to the Jaguar and Mercedes market.

Replaced by the first Audi S4 model based on the subsequent 100, the Audi 200 Turbo received the same mechanical upgrades as the Quattro coupe as time passed, but represents far better value today. Not only is it a more practival package, but with fewer survivors it's a rare and more interesting car and because of its lack of rally heritage it commands a far lower price today. Just a handful remain, making it one of the hardest cars on this list to source – but arguably the cleverest investment if the car you always wanted was the original Quattro coupe. We'd look to find a 20v model if possible, while the estate is undoubtedly the more collectible car as the very first of a long line of performance Audi estates.

AUDI S2

Launched in 1991 as a replacement for the original Audi Quattro, the S2 effectively utilised the same drivetrain as the older car, complete with the 20v engine, in the later 80 Coupe shell. The second generation 80 Coupe had

been unveiled in 1988, and the range spanned 2.0, 2.3 and 2.2 quattro variants. But unexpectedly slow sales meant that Audi wanted to create a halo model, and nobody could deny that at eleven years old the original Quattro had effectively done its bit.

The S2 range expanded to include saloon and estate derivatives in its native Germany, though in Britain we never officially got the saloon. Should you be keen enough, they were produced for the Antipodean market in right hand drive, but for many the choice of Coupe or Avant is adequate. The latter went on to form the basis of the Porsche-developed RS2 Avant.

Today the S2 is one of the best value routes into performance Audi ownership, as well as being the model which popularised the concept of the performance Audi estate. With relatively few sold in right hand drive, you're likelier to find a Coupe than an Avant and values reflect this on the whole. Buy carefully though, and you;ll have one of the best early 1990s performance cars the world has never heard of.

AUDI RS2

If ever a car earned its cult status, it was the first of Audi's RS models. Unlike the other sporting Audis of the time it was solely offered as an estate – based on the S2 Avant, it was

developed in conjunction with Porsche.

Standard 80 Avant shells were shipped to the Porsche factory at Zuffenhausen, to the same lines which had been used to build the Mercedes-Benz 500E. They were fitted with brakes and wheels from the 968 Clubsport – but this was only the start of the story. Porsche uprated the suspension as well as the brakes, and fitted a mean and moody bodykit which relocated the number plate to the rear number and added a tailblazer between the rear lights. Inside, carbon fibre or wood trim was fitted along with the finest full leather sports seats – part suede seats being a popular option. A bigger turbo was fitted, alongside a heavy duty intercooler, better injectors, a new camshaft, better induction and a better exhaust system. An adapted S4 ECU powered the car – which could crack 60mph in under 5 seconds with the family on board and a Labrador in the boot.

Unsurprisingly, the planned production run of 2200 cars sold out almost instantly, with Audi forced to make almost 700 more before demand was sated. Of these, just 180 were produced in right hand drive. Find one of these cars today, and your phone will be ringing off the hook courtesy of other enthusiasts begging you to name your price. An exclusive club...

AUDI RS4

It's hard to sum up just how big a deal the RS4 was upon its launch in 1999. Intended as a replacement for the Porsche-developed RS2 Avant, it was also meant to be a ore widely sold model with greater popularity. Based on the S4 Avant, it utilised the same shell despite the differences in most of the ourer panels – wider arches to cover a wider track, unique bumpers and side skirts. Unlike the S4, the RS4 came solely as an estate, continuing gAudi's tradition of saving the RS tag for high performance carryalls. The engine was developed for the car by Cosworth, again based on the S4's 2.7 litre V6 with twin turbochargers, Cosworth modified the heads with enlarged ports, bigger inlet and exhaust systems were fitted, along with bigger intercoolers and a revised ECU. Power leaped from 261 to 375bhp, with a correspondingly alarming effect on performance to boot.

Bigger brakes and wheels completed the package, alongside a six speed manual box and Audi's Torsen based Quattro system. 6030 were made over a three year production run, with RS4 production ceasing when the A4 was replaced in 2001. With fewer than 3000 RS2s made, this represented a production increase of over 100% when compared to the old model. Audi would not produce an RS4 based upon the following A4 model, waiting a generation before reviving the name for the B7 A4 with the extended front grille. By then, the RS4 would use a variant of the same V8 used in the larger RS6.

AUDI RS6

Fans of British crime film Layer Cake will have been waiting for this one; Audi's big bruiser was the lead car in one of the definitive films of a generation. Away from that, its big V8 had twin turbochargers, enough to offer 444bhp and 0-60 in 4.6 seconds. In a first for the RS range, two body styles were available – where previous RS Audis had been available solely as estates the RS6 was launched in both estate and saloon formats. Of the two, the saloon was always the weaker seller – Audi buyers having become inured to the fact that big power usually came with space in the back for the Labrador to boot.

All RS6 models were automatic – a five speed ZF unit with ratios spaced to make the most of the RS6's wide power band. Variable inlet manifolds helped to ensure that the RS6 could pull from under 2000rpm and continue to well over 5000. Lower than the S6 by 20mm and stiffer by 30%, the RS6 was the ultimate evolution of the performance Audi – or so we thought. The final series were known as the RS6 Plus, with a mammoth 473bhp courtesy of a little tweaking and a sports exhaust. Sitting on even lower and stiffer suspension, this car would appeal to a select few. But with just 999 made and Avant the only body option, only a select few could buy it. Blacked out window frames and grille surround are the key indicators for woud-be spotters. Today, the RS6 saloon marks the best value RS6, but also one of the rarest – the RS6 Avant and RS6 Plus both appealing to wider audiences and thus holding greater value.

CONCLUSION

Whether you want a performance estate or an iconic GT, an MoT exempt rally warrior or something capable of taking on the school run, there's a performance Audi for almost all tastes and almost all budgets. Cars like the S2 offer fantastic value when compared to the original Quattro, while the image of more modern estates like the RS4 and RS6 helped propel Audi into the same market sector as BMW and Mercedes. With values continually rising, it's wise to invest now. ■

CERAMIC MADE EASY

Meguiar's Since 1901

ADVANCED SIO2 HYBRID TECHNOLOGY FOR PROTECTION AND DURABILITY BEYOND CONVENTIONAL WAX

MEGUIARS.CO.UK

CLASSICS WORLD

GERMAN

AUDI QUATTRO

9 772634 778006 04
KELSEY media
ISSUE 4 £8.99