



The Multihog MH90 tool carrier equipped with a Universal Bingham AP400 patch planer ready for work on a foggy morning in Rotherham.

New carrier for patch planers

The desire to save money is forcing local authorities to look carefully at their work practices and examine if there are smarter ways to accomplish the most basic of tasks. Graeme Kirk joined Multihog and Universal Bingham as they united in Rotherham to demonstrate one of the latest road planing combinations.

Say what you like about the internet, but it does occasionally have its uses for business and leisure. This time last year, for example, Yorkshireman Mark Bingham, of Pontefract-based Universal Bingham, and Lancastrian Nick Leadley, of Multihog UK, based at Darwen, hadn't even met, but today they are co-operating on an exciting new road-planing combo.

Mr Leadley, who along with Nick Carter and Lee Whittaker, started marketing the Irish-built Multihog MH90 multi-purpose vehicle on this side of the Irish Sea through Multihog UK in June 2010, explained that the internet had everything to do with the two firms working together.

"When we launched the Multihog here, we started with the grass cutting attachments, but one potential client could see another use for it," he said. "Essentially, the feedback we got was to put a patch planer on it and I'll put one in every depot. We didn't know where to start, but a web search pointed us in the direction of Universal Bingham and we were able to launch a dedicated road planer attachment in January this year."

Mark Bingham was only too happy to help the newcomer and bring his 20 years of experience to the project.

"I built my first road planer 20 years ago, but it's only in the past few years that the machines have got near to fulfilling their potential," he said.

"There's always been a market for planers that could be attached to backhoe loaders. The JCB 3CX is a very effective carrier for a planer, although you're sometimes a bit limited in how much pressure the arm can apply to the operating attachment.

"The heavier, more powerful skid-steer loaders that have been introduced in recent years have helped grow the market, as they can finally handle patch planers effectively, but as someone designing, building and selling planers I'm happy to work with any new tool carrier coming into the market."

Mr Bingham's companies, Bingham Enterprises, which actually builds the equipment, and Universal Bingham, which sells them, are booming. There's a strong demand for planers from plant manufacturers, who buy the units to sell as



Main Picture: The AP400 can operate right up to the kerb thanks to the tilt function that allows the planer to be kept level even if the Multihog is working on an incline.

Left: The Universal Bingham AP400 planer uses 53 carbide steel-tipped picks to get 10mm lacing across its 400mm working width.

Right: The planer leaves the spoil in a neat heap inside the section that has been planed and the clean cut ensures sharp edges in the finished job.

own-brand attachments, and from contractors and local authorities buying direct. Export demand is also growing.

"In the past we have sold between 150 to 400 attachments each year, but despite the fact we're just coming out of a recession we're anticipating sales of 350 for 2011," Mr Bingham said. "We're well placed for expansion as we have a second 10,000sq.ft building that we can use to boost production and we don't anticipate any problems buying in the hydraulic motors, rams and pipes we use. Everything else is fabricated in-house so as long as we can get the steel stocks, we can build the planers."

Mr Bingham pointed to a new demand for efficient and cost-effective road repairs as a major driver for planer sales.

"Patch planers have proved a revelation to the sector," he said. "Not only can you carry out much more work in a day with a planer, the quality of the job is far superior too. Using a jack-hammer you not only dig up the section of road you want to repair, you also create new fractures all around the part of road you're working on."

"With the patch planer, you simply set the depth you want to cut to, then run the planer across the area to be repaired. You get a uniform section cut-out of the road and an ideal finish for resurfacing."

This accurate planing brings with it another benefit and that's cost savings.

"The beauty of the system is that you can save a huge amount on materials because you can plane out small sections of the road and you don't need to cut any deeper than the problem you are trying to repair requires," Mr Bingham said.

While Mark Bingham is naturally keen to emphasise that his patch planers do an excellent job on a range of tool carriers, Nick Leadley is just as eager to promote the benefits of the Multihog as the ideal host for the AP Series.

"The immediate benefits that the Multihog brings are the excellent view of the working area that the operator gets from the cab and the fact that you can drive the Multihog to the site on the road," he said. "You don't need to be mucking about with the trailers or low-loaders that you'd need to get a skid-steer machine to your site."

"But one of the most important factors is that the weight and stability of the Multihog, combined with the 50hp that its main oil flow circuit provides, make it the ideal carrier for a power-hungry piece of kit like a planer. When you lower the planer into work, you know it will stay there and produce a neat, uniform result."

"And you can't ignore the flexibility of the Multihog as a tool carrier for other applications such as snow ploughing and grass cutting, or using the rear platform to mount a spreader body for grit or salt."

FIRST IMPRESSIONS

Demonstrations of the Multihog with the AP400 patch planer started in January with a major open demonstration North of the Border and a series of planned working demos for local authorities and road maintenance contractors. Feedback from one large council suggested that the output of its 20-strong pothole crew could be increased from between 60 and 70 square metres/hour to 100 square metres/hour by using the combination planing to a depth of 100mm.

The latest demonstration was held at the request of Rotherham Metropolitan Borough Council and involved planing out a series of white lines and arrows at the entrance to a bus lane on a cold, foggy



A major benefit with the Multihog is that the operator sits in an elevated position with a good view of the planer and the road surface.

Universal Bingham AP400 planer

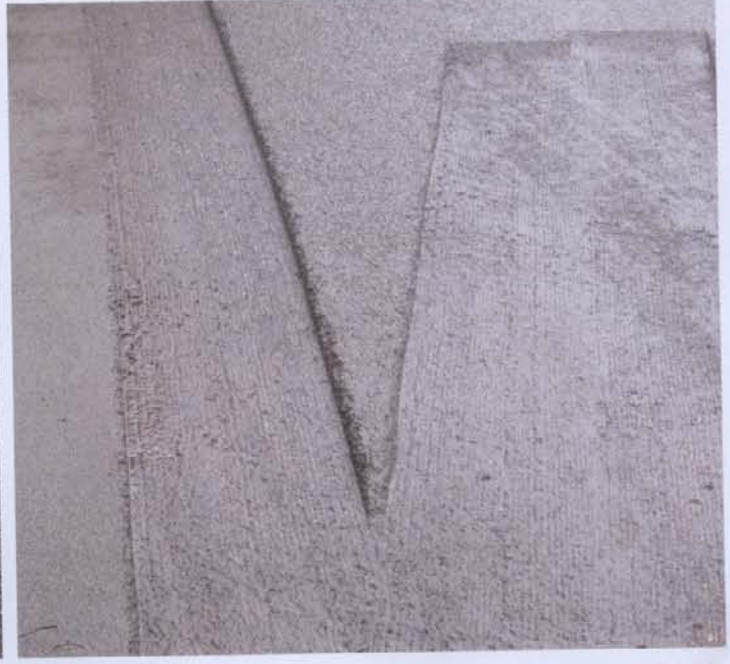
The AP400 planer built for Multihog by Universal Bingham sits near the bottom of a range that encompasses seven models with working widths from 300mm to 1000mm. All come with a standard maximum cutting depth of 120mm, although optional deeper cutting models that will operate down to 150mm are also available.

The AP Series features a centre pivot design that puts the force of the vehicle it is attached to directly over the cutting drum. This is said to eliminate stress on the planer frame as well as the instability and bouncing that can be experienced with rear-pivot or top-pivot models.

The planers are supplied with a mounting frame that features a hydraulic side-shift function so the unit can be moved right up to the kerb. Hydraulic rams are also used to set the cutting depth and to operate the tilt function that allows the planer to rotate through 15 degrees to the left or right.

The AP Series planers are fitted with carbide steel cutting picks that rotate in their fittings to allow even wear and promote a sharpening effect as they work. In the case of the AP 400, there are 53 picks used in an up-cutting motion for a finish with 10mm lacing. Larger models from the AP Series achieve 15mm lacing.

The recommended power requirements for the AP Series are roughly 8hp for every 100mm of cutting width. The 400mm model needs at least 32hp, while at least 70hp is required for the AP 1000.





The Multihog tool carrier can be equipped with a number of bodies and attachments; the demonstration model was carrying a Fiedler salt spreader with a capacity of 1600kg.

March morning. With the traffic lights and cones in place to keep cars out of the working area, Multihog's demonstration team unchained the machine, reversed it off the back of their demo truck and got ready to start work.

The 400mm-wide planer was wide enough to span the white lines, so the first job was a straight run down 20m or so of painted white lines. The Multihog and planer were set to break up the surface paint and the road surface to a depth of 30mm and the combination started making steady progress forward.

Anyone expecting a lot of noise from the planer would have been disappointed; the only sound that was obvious to observers was the noise from the Multihog's engine as it drove the hydraulic pumps that were not only driving the vehicle forward, but providing the oil to turn the AP400's motor at 150rpm.

The only proof that the planer was doing its job was the trail of spoil, neatly sitting within the planer's 400mm working width, emerging from under the rear of the Multihog. Once that was removed by roadsweeper, all that was left was a neat trench 400mm wide and 30mm deep.

To add just an extra bit of challenge to the demo unit, the white line finished up right against the kerb.

A side shift function on the AP 400 carrier plate means the planer can be moved to the extreme right so that it can operate against the kerb while the Multihog has all four wheels on the road, but in this case, where it made sense to plane out the whole line in one pass, the Multihog mounted the kerb and used the tilt function on the planer to keep it working flat on the ground.

Mark Bingham explained that the AP Series uses carbide-tipped picks operating in an up-cutting motion to dig out the road surface.

"The AP400 has 53 picks spread across the cutting drum, with more at the outside so that we get as smooth an edge as possible," he said. "The pick pattern leaves the base with a 10mm lacing pattern. Think of it like preparing a surface for painting; the lacing provides the perfect key for the tarmac that will be used when the road is resurfaced."

With a curved white painted arrow also to be removed, two further short passes with the Multihog and planer were required, the first of these runs intersecting with the initial long run to provide a sharp point where the two met.

With all the spoil removed – Mark Bingham said that by varying the forward speed of the Multihog an experienced operator can influence the size of the spoil produced – Rotherham's road team moved in, treated the trench and applied a new layer of tarmac to return the road to a level surface. In not much more than an hour the job was complete.

Time will tell if Rotherham Metropolitan Borough Council goes ahead and places an order for the Multihog and planer, but what's certain is that the motorists that passed the demonstration site that morning witnessed a combination that represents the future of road repair.

Multihog MH90 specifications

The MH90 is the first vehicle to be produced by Irish manufacturer Multihog, of Dundalk, County Louth. Fitted with a 3.3-litre, 87.5hp Yanmar diesel engine, the unit features a two-speed hydrostatic transmission driving two or four wheels at speeds up to 40kphr. Measuring 3400m long, 2400mm high and between 1730-1960mm wide depending on tyre choice, the Multihog's pivot steering and 1760mm wheelbase gives it a turning radius of just 3000mm.

The MH90 has an unladen weight of 3080kg and can carry up to 2000kg on its rear platform and up to 2000kg on its front tool carrier. It can also tow close to 3000kg as long as the gross train weight doesn't exceed 6000kg.

Standard hydraulic equipment includes a main front hydraulic flow and return of 120 lit/min at 220bar, as well as a double-acting valve and a single-acting valve both with flows of up to 30 lit/min at 220bar. A further single-acting hydraulic point at the same flow and pressure is fitted at the back. Additional hydraulic valves and load-sensing hydraulics are available as an extra-cost option.

Low-ground pressure tyres are supplied as standard and can be used at pressures from 15-50psi depending on application. Ground pressures as low as 9-10psi mean the Multihog can be used where damage to grass or soil needs to be minimised.