

With the Alu-Tech bodyshell, Pegasus is 50kg lighter than a traditionally built tourer



**CONFIDENTIAL**

# THE Pegasus Files

Bailey has been working on a secret project at its Bristol HQ. We sent our best agent, **Doug King**, to see what he could find out

IT WAS A simple brief: to design a caravan that would be more weatherproof, more robust and durable, more aerodynamic and inherently more stable than a conventional tourer. Simple enough but the design also had to achieve this without a weight penalty and without pushing costs through the roof. The brief was given to Team Pegasus and the project was born.

**Pegasus Project: Body beautiful**

The bodyshell is fundamentally different from that of a conventional van, having more in common with a commercial vehicle. It comprises five fully-bonded panels. The two side panels, back panel and the floor make up most of the body. A single sandwich-construction panel seamlessly forms the roof

and front of the caravan. The panels are locked together into a purpose-designed aluminium extrusion framework with no external fixing points. Even the awning rail forms part of the aluminium extrusion, rather than being attached by screws.

The side, rear and roof panels comprise an outer skin of impact-resistant aluminium bonded to high-density polystyrene and a GRP inner wall lining. Inside, the wooden battens to which the furniture is normally fixed have been replaced by a composite plastic alternative.

The fully bonded panels are an improvement on what has gone before. The walls, roof and floor are 30% thicker than those of a conventional van, which means you'll be warmer in winter and cooler in the summer. There's extra insulation, too, around the

pipe runs and wheel boxes to keep the warmth in. Bailey has called the construction Alu-Tech.



Risk of water ingress is minimised by the single panel forming the roof and front of the van, eliminating the need for a joining seam

**Pegasus Project: The war on water ingress**

For years caravan owners have asked why, if they can make boats waterproof, why not caravans? Well, one caravan manufacturer believes it has come up with a solution to the problem.

It may seem obvious but one of the key ways to beat water ingress is by making fewer holes in the bodyshell. Bailey has designed the window and exterior service door frames as flush-fit units that are bonded to the shell - no screw holes required. In fact, Bailey has reduced the number of external joints and fixing points in the van by 90%: fewer holes means there is less opportunity for water to get in. There is no seam between the roof and the front panel either, as the whole panel is one piece.

In addition, low absorbency buffer zones have been included around the openings of the windows and doors to stop water that does beat the seals spreading into the caravan body.

In the mid 1990s, Bailey was the first manufacturer to give a five-year warranty against water ingress in its caravans. Now it has gone even further.

Team Pegasus is so confident in the durability of the new construction, that Bailey is offering a 10-year warranty against water ingress.

Window frames are flush-fit units bonded to the shell INSET Roof, back and sidewalls are sealed against water

**Pegasus Project: The science of winter caravanning**

Pegasus is the first British caravan to be insulated to Grade III classification of BS EN 1645-1. To test that this has been achieved, the van was popped into a big fridge. It was left in there for 10 hours while the temperature of the fridge was

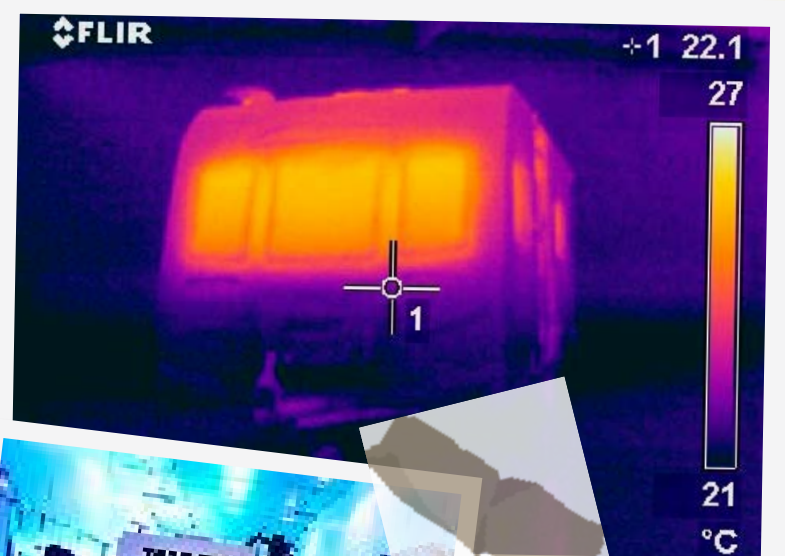
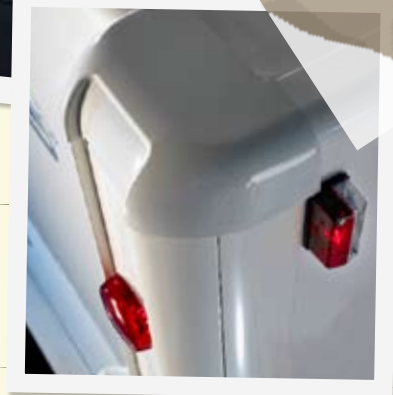
reduced to -15°C (5°F). The temperature inside the caravan was then raised to +20°C (68°F) and had to be maintained there for two hours while the outside temperature remained at -15°C.

The results are used to calculate the bodyshell's thermal insulation efficiency - the U-value. To achieve Grade III classification of EN 1645-1 the U-value needed to be no greater than 1.2W/sq.mK (W = watts and K is the temperature in Kelvin units). The U-value for the Alu-Tech was 0.96W/sq.mK.

What does this mean in English? Quite simply, this is the best caravan on the market to use all year round.

**Pegasus Project: Is it tough enough?**

Bailey claims that the Alu-Tech body is 50kg lighter than a traditionally built tourer's but is this new method of construction strong as well as lightweight? >>>



Pegasus's test in a refrigerated unit proved the van's insulation would make it a good year-round tourer



The caravan is inspected to see how it endured the paved road surface test at Millbrook test circuit in Bedfordshire



## The Pegasus Eilas

To find out I went along to the caravan road tests at the Millbrook automotive testing facility in Bedfordshire.

The tests simulated three years of towing and were carried out independently by Millbrook personnel. The testing took place over seven days, during which the caravan was towed 657 miles. This included driving the caravan over the equivalent of 208 miles of Belgian pave road - replicating the worst road surface in Europe - 63 kerb strikes, 99 cycles over twist humps, 24 cycles through a potholed section of road, 63 miles of hill climb and descent, and 214 miles of towing at speed. At regular intervals the test results were recorded and evaluated. And after completing all the tests, the whole thing was repeated.

I travelled in the towcar during the testing and was amazed at the punishment the Pegasus was subjected to. Not least the chassis, which took a real hammering, far more than it will get from even the most uncaring owner. Incidentally, the seven-year-old Mondeo used for the Millbrook tests had to be

scrapped at the end of the testing, which shows how rigorous it was!

### Pegasus Project: The Boffins

**Team Pegasus** Crack team from Bailey HQ

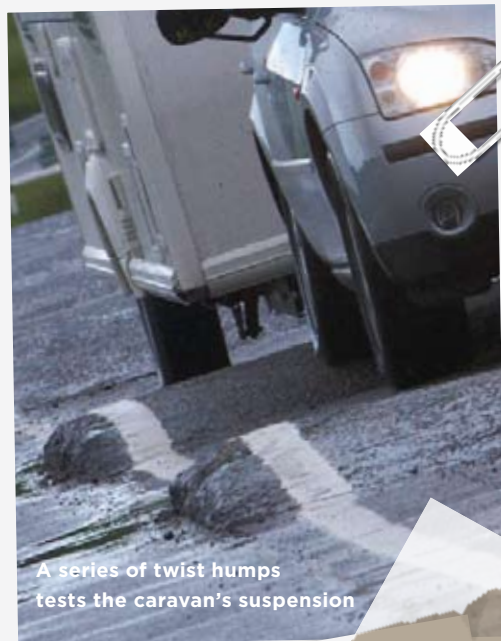
**Al-Ko** Chassis development  
**RAPRA** Rubber and Plastics Research Association checked the performance of all the plastic components

**Bath University** Undertook the integrity and torsional rigidity testing of the new panel construction and all aspects of in-built stability

**Millbrook** On-road and thermal efficiency testing

### Pegasus Project: Where can it be seen?

The seven models in the range will be officially unveiled at the NEC show in October and will sit alongside Bailey's Senator, Pageant and Ranger ranges. In time these, too, will be updated with the Alu-Tech bodyshell. Find out more at the top secret website, [www.baileypegusus.co.uk](http://www.baileypegusus.co.uk).



A series of twist humps tests the caravan's suspension



Shock absorbers as standard improve the ride quality

## Pegasus Project: Final Report

What I saw left me in no doubt that Pegasus is the biggest step forward in caravan design and construction since Sam Alper brought caravanning to the masses with the launch of the Sprites back in 1948. The Pegasus team set out to make a caravan that is more weatherproof, more robust and durable, more aerodynamic and inherently more stable. To say I was impressed with the way the bodyshell came through the rigorous tests is an understatement and having seen the results, I'd say Team Pegasus has achieved its objectives.

Agent Doug 'Fix-it' King



Bailey managing director Nick Howard turns stuntman to prove the strength of the Alu-Tech Bodyshell construction of Bailey's latest secret weapon



It may look like an ordinary tourer but underneath that tough, smooth exterior is 21st-century thinking and, maybe, the future of caravan construction

Turn to page 52 to discover what's under the covers of Pegasus in our First Look review