

# BODY OF INFLUENCE?

Gary Martin brings you details of Swift's innovative new caravan construction method, which could shape the industry for years to come

In the March issue, we marked Swift's 50th anniversary. This month, we start a new chapter in the Hull-based manufacturer's story by bringing you details of, arguably, its most significant development ever. Please give a warm welcome to 'SMART HT'.

Before I go into the detail, a synopsis. SMART HT, Swift tells me, was five years

in the making. A completely timberless (and mastic-free) body construction process, it uses methods and materials not seen before in the caravan industry (the 'HT', incidentally, standing for 'Hi-Tech'). The result is a caravan that combines stunning looks inside and out with the promise of durability. Sounds good. At this juncture, I should point out that

this manufacturing process is only to be employed on the group's new flagship ranges – Swift Elegance and its Sterling Continental counterpart, each comprising three single-axle models and one twin-axle (prices from £22,495 to £27,495 and MTPLMs from 1,438kg to 1,900kg), which were given their public debuts at the February NEC show.



## ABRIEF LOOK AT THE SMART HT PRODUCTION CYCLE



Swift has invested heavily in computer numerically controlled technology



The state-of-the-art CNC machine is operated by the touch of a button



Cutting via CNC is very accurate – here a window aperture is being created



Powerful water cutters are also used in the SMART HT process



The timberless floor is thick, insulated and able to withstand up to eight tons



SMART HT sidewalls feature durable GRP inner and outer skins



Structural Reaction Injection Moulding technology allows corners to be shaped



Front and rear panels are attractively curved to reduce drag

## THE PRODUCTION CYCLE: INSIGHT

Cutaway of the innovative SMART HT system and (below) near the end of the production line, awaiting the fitting of the flush doors and windows



## STRONG MINDED

Let's get down to the nitty-gritty. Basically, SMART HT is an aluminium frame clamping system with SRIM (Structural Reaction Injection Moulding) corner structure technology (used by prestigious car makers Lotus and Aston Martin), into which all exterior panels, including the floor, are locked into place.

The body panels are further secured by the latest MS Polymer adhesives and sealants, supplied by the Switzerland-based Sika Group – a leading exponent of bonding and adhesive technologies. Swift says the result is a structure that has an “enormous amount of strength and rigidity”, while the bonding process allows for a dramatic reduction in the number of screws and fixings used, contributing to a valuable saving in terms of weight.

The aluminium frame sections feature a ‘cold bridge’ or ‘thermal break’. Made from a Polyamide material, this technology is designed to stop condensation forming inside the aluminium by preventing the internal surface from cooling. Clever stuff to put you, the caravan owner, in the driving seat in the important fight against water/moisture ingress (indeed, this whole construction process should prove an effective barrier to attack by the wet stuff).

One of the highlights of this new construction method is the (timberless) floor – I never thought I'd see the day when

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“I never thought I'd see the day when I'd get excited about a caravan floor!”

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I'd get excited about a caravan floor! Some 45mm or so thick and strong enough, Swift claims, to withstand the weight of 100 people (equivalent to eight tons; exhaustive tests were undertaken at Millbrook Proving Ground in Bedfordshire), the floor features five layers of sandwich construction. Clad to a Styrofoam core (which boasts excellent insulation properties) is a strong and lightweight rigid honeycomb matrix. This is then covered in GRP inner and outer skins with a special woven glass strand structure that is designed to give the floor Rambo-like levels of toughness.

Like the floor, the sandwich construction roof and sidewalls all boast impact-resistant and durable GRP inner and outer skins. Swift says that skinning

both sides results in a balanced panel that will not bow in heat – indeed, extensive cold chamber testing was undertaken to prove this point.

‘PURE’ (hard polyurethane) blocks that are impervious to water are strategically embedded within both the floor and sidewalls where extra fixing strength is required.

Completing the exterior picture, the front and rear GRP moulded panels have been designed using ‘Computational Fluid Dynamics’, the result of which is a stylish and aerodynamic bodyshape that “promises lower fuel consumption and safer towing”. Look closely at these panels, and you may notice that they are attractively curved from side to side as well as from top to bottom – this not only looks great but also helps add a little extra interior space (106mm). This wouldn't have been possible without SRIM, which allowed Swift to produce nicely-contoured interior corner panels.

What is also noticeable is that windows, main caravan door, service hatches and awning rail are all flush fitting, to further reduce turbulence that causes drag.

The sidewalls, floor and roof (including the cutting out of all apertures and the positioning of the PURE blocks) are created using CNC (computer

## INSIDE VIEW: FIRST LOOK



Clockwise from top left: Sterling's clean and Continental look (this is the 480); modern Sterling kitchen; lovely detail touches; Swift Elegance 570



numerically controlled) technology, which is so accurate (to a mind-boggling 0.02mm) that it eliminates any tolerance or efficiency-related build issues. I saw this amazing and large CNC machine, which is driven directly by Swift's 3D CAD software, in action when I visited the company in January – it is as impressive as it sounds. As you might expect, it doesn't come cheap, though – a cool £2.5 million or so to you, sir!

### FURTHER IMPROVEMENTS

Innovation doesn't end with the construction process of Elegance and Continental, though. There are many more new and thoughtful improvements and touches inside and out...

For a start, restyled furniture is made from thicker-than-normal composite panels with a foam core which Swift says is light yet incredibly strong. New furniture fixings, the strongest the company has ever made, have been

developed, and cast foam soft furnishings, which promise greater durability and superior sitting/sleeping comfort, feature.

Swift becomes the first caravan manufacturer to bond a decorative paper to GRP as part of the interior panel production – the result is a finish that is sure to find wide appeal. Pods in the lounge feature a USB and Jack plug audio link, while a handy spirit level in the front shelf will help users when pitching their caravans. Add soft-close locker hinges and drawers, acrylic stone solid work surfaces, low-energy LED lighting, Alde wet heating and awning light with LED alarm indication into the equation, and you begin to see the high standard Swift has set itself with these new caravans.

Although both the Swift and Sterling line-ups feature identical layouts – two-berth 480 and four-berths, 570, 580 and 645 – they couldn't look more different inside. Swift models sport a predominantly rich gloss 'Mali Acacia'

finish to cabinetwork with contrasting matt white kitchen doors and dark detail on soft furnishings, which gives a warm and traditional welcome the moment you step inside, while Sterlings have a more contemporary feel – white the dominant colour here for furniture, with contrasting matt black kitchen doors and lighter details on seating. These two ranges are clearly aimed at very different customers.

### FINAL THOUGHTS

Swift should be applauded for developing and introducing SMART HT. Here, no doubt, is a significant step forward in caravan construction, a step that should see Swift enjoy a very healthy start to its second half century – indeed, a step that should be of great benefit to the caravan-buying public, too.