

A GUIDING LIGHT

Go with the glow: STG Aerospace's SafTGLo floor mounted twin-track aisle configuration

Leading photoluminescent floorpath marking system specialist, STG Aerospace sheds some light on the latest trends guiding aerospace OEMs towards the next generation of aircraft cabin interior lighting solutions.

LED demand is being driven by through-life cost and flexibility of the technology. Airlines will only survive by reducing costs wherever they can to allow customers to afford to use their product in the face of the multitude of added cost challenges being heaped on them. Well-designed LED applications are far more reliable than other sources of electrical light generation. Also they are far more flexible for producing the likes of 'mood' lighting being introduced to reduce the effects of air travel, and provide an in-cabin experience.

This is a very similar ethos to that which STG Aerospace endorses and which has made photoluminescence such a popular and successful technology on aircraft. Fit for purpose – that being to provide way guidance to exits in an emergency when dense smoke has obliterated all other means of such guidance – combined with virtually 100% reliability, reduces the enormous costs associated with maintaining electrical

systems and eliminating flight delays caused by electrical faults in traditional systems.

In glowing terms

Photoluminescence (PL), the phenomena of glowing in the dark after 'charging' with light, is well understood, but the application of that to aircraft is radical and creative, and not simply achieved from the original idea.

PL was essentially a toy technology, using poor materials and poor process control in achieving its effect. Those two expressions are anathema to the aviation industry and STG had to invest in a substantial development programme to ensure best materials, with consistent and quality assured processing to achieve consistent and guaranteed repeatability of performance, combined with the creation and compliance with full auditable internal QA systems to underpin those processes. Then it had to prove the efficacy or the technology

to naturally sceptical regulatory authorities – a hugely expensive process the company (at that time) did well to survive. But survive the company did, and thrive, to the point today where around 40% of the global commercial passenger fleet has STG technology fitted, and all aircraft OEMs offer the technology either as original fit (e.g. Embraer's ERJ170/190) or as an option (90% of all Boeing's B737NGs use STG products from the factory).

In the intervening years since first certification in 1996, and the creation of STG Aerospace in 1998, design has changed, materials have changed, and technology protocols have changed, not only to improve performance and reliability, but also to meet the needs of the market, to reduce costs, improve cabin ambience and of course safety.

The floor mounted, twin-track aisle configuration of SafTGLo systems is STG's patented configuration and is effectively mandated by the regulatory



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On the right track: STG Aerospace's ColorMatch overcarpet system

authorities. In 1998 you could have any colour of product as long as it was yellow and the system guide tracks were 38mm wide. Today its systems are offered in full and half width and in many colours to suit the cabin décor. They also perform better and STG has extended the original design configuration to provide reliable solutions for all areas of the aircraft cabin and with any type of floor covering. Whilst it has awarded one royalty patent licence to enable Lufthansa Technik to sell its own design to its particular market, STG says it has an overwhelming market dominance and continues to pioneer new improvements to its technology, as it has for every other advance since inventing it in 1995.

STG has also used PL to provide an alternative to radioluminescent signs, which are very common on older aircraft. Radioluminescence has been banned in the US for buildings after significant

radiation was detected in the ruins of the World Trade Centre buildings after 9/11. It is now not a preferred technology for aircraft uses either. As a result, STG's TR (Tritium Replacement) PL signs are a popular maintenance-free and cost-effective alternative, reaching out to military as well as civilian aviation markets.

The current global financial crisis has not adversely affected STG; rather, the company has prospered. Sales have always trended upwards with 2010 seeing sales and profit records consistently broken. This performance has not been met with complacency; STG has a very vigorous R&D programme, investing up to 15% of its revenues into improvement and new product development. Whilst its market remains constant – the aircraft cabin – it has facilitated a huge growth path by creating new technological competencies in-house and developing new radical solutions to known aviation problems using those competencies.

STG's latest product – WEPPS (Wireless Emergency Primary Power System) – was recently launched after winning a prestigious Crystal Cabin Award for Innovation ahead of the likes of Airbus and Lufthansa Technik. This radical 'part for part' replacement for troublesome NiCad emergency lighting batteries is virtually maintenance-free and 'fit for life'. It incorporates many novel diagnostic features which also reduce costs significantly. The system is gaining significant market traction as the company rolls out its certification

base and as more customers realise that like all STG products, WEPPS does actually 'do what it says on the tin' – and STG's tin says it will save money (with a ROI of usually less than one year) while increasing safety.

Looking on the bright side

For the future STG will continue its successful strategy of identifying problems to be solved in its target market, and using its creative ethos to develop radical and patentable solutions. In 2011 there will be new developments launched to further expand the application of SaFTGlo and WEPPS technologies, in addition to a new and radically different general lighting product and which further expands STG's market base.

In the meantime the company's biggest business challenge over the next twelve months is to manage the growth of the business on several fronts, both technically and geographically. As a result, recruitment, integration and deployment of the skills STG needs is a primary focus of the senior management team. |

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Press to impress: STG Aerospace's WEPPS diagnostic panel