

# Illusions of safety

**Robert Hunter** highlights potential implications of a growing reliance on a systems approach towards risk

One of the most significant changes in the management of risk in the aviation industry is the increasing reliance on safety management systems (SMS). These 'systems' consist of a tailored risk assessment undertaken by the airline that generates the risk. The level of safety to be achieved can be determined in three ways – it may be at the airlines' discretion; it may be defined by the regulator; or, as is increasingly the case, it may be ostensibly 'defined' by the regulator but so loosely that in practice the level of safety is determined by the airline. It seems that regulators may be fearful of producing rules that leave airlines hamstrung for years, yet otherwise regulators have to regulate; writing rules that place a firm requirement to actively do something nebulous can seem like a good compromise. Moreover, regulators stand to gain from the SMS approach because it transfers responsibility from the regulator to the airlines. Regulators that mandate an explicit quantifiable level of safety are potentially liable if that level proves insufficient to prevent an accident; SMS puts regulators at arm's length from accidents.

In principle, the SMS method is sound, in so far that the system has the ambition of identifying and managing all hazards appropriately. However, in practice, SMS does not generally consider that the SMS itself could be a hazard. The factors that may turn an SMS into a house of cards generally arise from conflicting interests in the human designer/s and enablers of the SMS.

An individual, such as an accountable manager, can contrive the design of the system to serve their own interest. At the organisational level, the fundamental conflict is between productivity and safety. Statements such as 'safety is our number one priority' and 'if you think safety is expensive try having an accident' encourage us to think that this conflict is unlikely to be anything more than a theoretical possibility. However, 'trying to have an accident' when it can mean running a greater risk of having an accident, has a different meaning to

'having an accident'. Currently, a small UK airline may not see a fatal accident for 80 years or so. Hence, if the airline CEO does think that safety is expensive and that, by reducing the airline's spend on safety to 'try having an accident', the CEO could well find that, by halving the safety budget, the airline would still not see the attributable accident for decades. If a business is on the rocks safety is expensive.

In the aviation industry, today, so-called prescriptive regulation, based on clear rules, is frequently portrayed as being an antiquated form of safety assurance and that the 'new' systems of safety management are a superior evolution. However, the shift in regulatory strategy towards SMS is much more experimental than is commonly portrayed. Indeed, there are many cases in which originally existing forms of self-managed risk, an SMS by another name, catastrophically failed to be then replaced by prescriptive regulation. Prior to the 1876 Merchant Shipping Act, ship owners were judged to be best placed to determine how heavily loaded their ships would be. Seamen and ship's captains that attempted to refuse to go to sea in overloaded ships were coerced into doing so. It was argued that safety was the paramount interest of ship owners and, on this basis, regulation was unwarranted interference. It was the combination of the sustained efforts of Plimsoll, the continuing loss of merchant seamen's lives at sea, and the political pressure of public sentiment that led to the load line position being determined by an independent body. The expression 'You've got to draw the line somewhere' was coined during the Plimsoll parliamentary debates that were extensively covered in the media of the day.

SMS have a component of Board level accountability and this can be a good thing. The Board are seen as the owners of the risk because they generate the risk and have some jeopardy for the risk. However, the problem with having the risk owner (the airline Board) as being someone different from the person that

has the substantive jeopardy for the risk (the crew and passengers) is that it facilitates the creation of a system which is, in effect, not an SMS but a 'BMS' – a blame management system. This is because the principal risk for a Board is not that they are killed in one of their aircraft, but that they are blamed for someone else being killed in their aircraft.

The SMS method is also vulnerable to the problem of 'owned science'. In situations where organizations are commissioning science to support an industrial practice of high commercial value, because they own this data, they can conceal or choose not to study what is not in their interest to expose and promote what is in their interest. This interest may act in other coercive ways. Airlines may dissuade pilots from submitting fatigue reports by subjecting the reporting pilots to quasi-disciplinary procedures. In the UK it is likely that a pilot involuntarily falls asleep on the flight deck at least every day, yet there have been just two formal reports of this in 30 years.

SMS may reasonably allow operators to take into account their 'operational experience' to support new safety practices or amend old safety practices of no proven value. However, 'operational experience', where it is allowed to be relied upon in regulation, is generally not defined. Rather than having some firm statistical basis, it may be a feeling that something has been gotten away with so far, so it must be safe, or worse still, a feeling that something has been got away with so far, so it must be too safe.

The uncertainty of interpretation of regulation and the complexity of the 'system' part of SMS can belie the common sense of what an SMS really is and turn it into something of such impenetrable techno-bureaucratic complexity that it becomes an area of specialization that requires an expert. Airlines can outsource this expertise to an SMS commercial consultancy. In this regard marketable features of such a product, such as the protection of the Board (the



customer) from blame and claims of greater productivity for a given level of safety compliance, become potentially biasing factors that undermine the intent of the SMS.

Because the effectiveness of an SMS depends so much on the will of the operator, SMS may make safe operators safer and other operators less safe. Conflicting interest is a fly in the ointment of SMS. The control of such conflicts is

too often assumed to be sufficiently safeguarded by vague, easily coerced, aspirational factors such as 'trust' and 'safety culture'.

In general, not only might trust-based SMS not work if there are conflicting interests, they might make things much worse. If instead of policing traffic speeds, we relied on drivers' self-reports

of their speeding violations, not only might we expect drivers to not report their speeding but also that they might speed more often. SMS, if not sufficiently safeguarded against conflicting interests, particularly regulatory interest, can be a naïve approach that may undermine flight safety.

**Rob Hunter** is Head of Flight Safety at the British Airline Pilots Association.