IMPROVING SITUATIONAL AWARENESS THROUGH BETTER SOPS

by Captain Ed Pooley

I hope you will not disagree that effective SA is closely linked to the effectiveness of the SOPs that link us – directly or via an intervening system – to the reality upon which our operational decisions must be founded. They represent a significant part of the prevailing context for good SA.

On that basis, it is useful to reflect on how these SOPs are adopted. Some are mandated - or strongly encouraged – by the Safety Regulation Agency under which your activities are conducted. Many others are those advocated by the manufacturers of the systems you will be using which are almost always followed. Finally there are those adopted at an organisation level because the management believes they represent a beneficial addition to the previous two. Such practices have in the past often been added, removed or ignored at the personal whim of a senior manager in an organisation without much effort being made to assess the extent to which this action might affect safety improvement. For airlines, the extent of this third element has been dramatically reduced by the advent of aircraft manufacturer FCOMs and FCTMs. Few would dispute that these have been an extremely beneficial consequence of the advent of a wider definition of product liability than simply the airworthiness of the aircraft. But despite the reduction in the role of organisation management in respect of SOP decision making, the need for those airlines at the 'cutting edge' to demonstrate best practices which go beyond the main body of SOPs is still really important – especially in terms of maximising the SA of a two crew flight deck team. In all parts of the aviation sector, history shows us that the best practices of today often inspire the regulatory mandates of tomorrow - to put it more bluntly, safety regulation rarely leads and often follows!

With the foregoing in mind, I am going to look at a best practice SOP which, in my opinion and that of airlines which use it, greatly improves SA during an approach to land but which has not been widely adopted. In fact it is an idea which has been consistently ignored and in some cases even expressly dismissed without evaluation both at the organisational level and by many bodies with a responsibility for or a professed interest in safety. Of course the spread of good ideas is always subject to the "not invented here" or (for regulatory inspectors) the "we didn't do that in my airline" excuse, but in the example I will now describe, I'm sure there must be more to non-adoption than that.

My example is an alternative SOP for flying an approach – any approach whether flown in IMC or not. Most will appreciate that the usual procedure is that throughout an approach, one pilot controls the aircraft and is designated as 'Pilot Flying (PF) whilst the other – the Pilot Monitoring (PM) or Pilot not Flying (PNF) supports this task by carrying out ancillary duties and, crucially, monitoring the actions of the PF and their consequences for the aircraft flight path. Only in exceptional circumstances would a role reversal occur and then only in the interests of maintaining (or recovering to) a safe flight path when the PF has failed to do this. It is such an unfamiliar situation – particularly so if the one making an ad hoc take over is not the aircraft commander – that accidents often follow because take over does not occur. However, of wider significance is the fact that the success of this almost universal model is based on an assumption that monitoring of the PF by the PM is effective. In fact there is a lot of evidence out there to suggest that either the act of monitoring itself or the act of communicating its findings to the PF frequently fails.

So now let's consider an alternative way to fly an approach which is based on a **planned** role reversal. Now that very low visibility landings are routine, there are variations in the detail but in simple terms, the approach is flown by one pilot who hands over to their colleague for landing but keeps control if the approach is rejected

in favour of a go around before a decision to continue to a landing has been made. A changeover to the landing pilot does not necessarily occur at or even approaching the prescribed minimum altitude for the approach but it may do. Under this system, either pilot is able (subject to the aircraft commander's decision and applicable approach minima or company limits) to land the aircraft. This method has generally been referred to as a 'Monitored Approach' but sometimes goes by other names too.

At a stroke, this method completely changes the dynamics of monitoring during the approach. The pilot who is expecting to take over for the landing tends to be very attentive to the flight path management of the other pilot because he is going to 'inherit' the result. The pilot who is flying the approach is aware that unless the expected role reversal is called by the other pilot, they will need to fly a go around without messing it up. Both influences contribute additively to an increased likelihood that any approach will be well flown. One airline which gave me direct experience of this method has been using it for over 40 years and, as a leader in the use of 'Operational Flight Data Monitoring' (OFDM) they have been able to validate the beneficial effect on operating standards - and on mitigating the risk of approach and landing accidents. They are not entirely alone - another major European carrier of more recent origin also makes use of the approach role reversal method and it has been successfully adopted by some much smaller airlines too.

Of course, there is much more to it than this simple summary communicates, but there are places where you can find out more about it[1]. The point of using it as an example here was to illustrate my contention that 'choice' SOPs can critically enhance SA. Any procedure which has demonstrably stood the test of time should not be ignored in the quest for SA which is as near to reality as we can get. How else can you expect that the decisions – big and small – which all front line operators repeatedly take will be the best ones? I conclude that when thinking about how to enhance SA, don't forget the potential effect of changes to SOPs.

1- For example, start with http://www.skybrary.aero/index.php/Monitored_Approach which has links to sources with much more information on the subject.

Finally, those of you who are not pilots of multi crew aircraft and therefore don't work in a team where an anticipated role reversal takes place with a fully shared SA which has been built up over a significant time, is there a wider message? I think there probably is since the shared SA necessary for pilot role change depends on both pilots having acquired the same (accurately recognised) SA before the change. This achievement is then 'validated' in the minutes following the changeover. There is perhaps a parallel with the shared SA needed between controllers handing over a position. Whilst this is a one-for-one change in which the departing controller can, unlike the pilot relinquishing the PF role, 'switch off' once the changeover is complete, their departure cannot safely occur until SA has been briefed, SA has been understood and that understanding of SA has been validated. I suspect that some handovers do not include the third 'validation' of (assumed) SA stage. Of course, the off-going controller will be understandably keen to 'get it over with' and the on-coming controller may well not feel they need to be watched for a few minutes. But unless the position is very quiet, it might be an idea to 'extend' the SOP for a changeover slightly in this way. An equality between real and perceived SA is, after all a vital pre-requisite for safety and this may enhance the chances of it after a change of controller. The same might be said for the handover of any safety critical position.

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