Trying too hard?

By Captain Ed Pooley

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London Heathrow is in many respects a typical parallel runway operation. As many readers will be aware, it's a very busy airport except during the middle of the night and for some years now, there's been an ongoing debate about whether capacity could be increased by using each of the two parallel east-west runways for both take offs and landings. To date, however, the traditional model of designating one of the runways as the landing runway and the other as the take off runway has prevailed. For local area noise abatement purposes, westerly operations are conducted using regular changes of runway designation at (usually) three hourly intervals. Easterly operations, where there are less widespread noise abatement concerns, involve the continuous designation of the northerly runway for landings with the southerly one for take offs.

As I know from personal experience, the TWR controllers at the airport have a long record of routinely combining safety and efficiency in the standard of their 'production' and they are well used to completing whole shifts with little or no break in the continuing maximum rate flow of traffic arriving and departing. Despite this, they have also long been known for their willingness to fit in a landing on the take off runway (and occasionally a take off on the landing runway) whenever this is judged possible and will eliminate the need for a particular aircraft to cross an active runway en route to or from a parking stand or otherwise significantly reduce its ground taxi or waiting time.

We can all appreciate that experience and professionalism are the key to judging when these runway switches can be achieved. Very, very occasionally it goes wrong to the extent of creating a real hazard to aircraft safety. I'm going to take us briefly through one such occasion in the hope that it will usefully illustrate the challenges of choosing to increase the production pressure in an already highly pressured environment and highlight the reduced scope for sub-optimal decision making which is implicit in a truly professional acceptance of the challenge…

It was early afternoon and the shift had just changed over. With easterly operations, the Air Departures Controller, fairly recently qualified as a TWR On-the-Job-Training-Instructor (OJTI), was already in position controlling 09R take offs when a student trainee arrived and advised that they had been scheduled for supervised controlling in that position. The changeover was carried out and the trainee began work uneventfully with the OJTI observing as mentor. At 1355hrs the radar controller positioning arriving aircraft onto the parallel runway 09L asked if it would be possible to fit in a British Airways 747-400 landing on the Departures runway. (Whilst this aircraft could save considerable taxi time and avoid crossing an active runway by such a switch, the initiative was that of the radar controller as the flight crew had complied with their company policy not to request switches at Heathrow). Despite the considerable queue of departing aircraft, a number of which had been given "line up and wait in turn" clearances, the trainee accepted the proposal without comment with an intention to briefly interrupt the departure flow.

At 1403:20, with no prior ATC speed control having been requested by TWR, the arriving British Airways 747 checked in with the TWR frequency on finals at a range of 6nm. The trainee TWR controller had an Aer Lingus aircraft waiting to go and this was cleared take off at 1403:50 having been held so as to achieve a 2 minute separation from the preceding wide-body because of potential SID conflict with the previous departure. A Lufthansa aircraft then moved onto the runway as previously cleared and was advised to be ready to roll immediately upon receipt of clearance and did so when the clearance was issued at 1404:40 - the specified minimum departure separation at Heathrow is 1 minute. At this stage, a further aircraft, a British Midland Airways A321, still held a conditional line-up clearance. Having observed traffic at 2 nm on their TCAS (but not visually) as the Lufthansa aircraft began to roll, this crew queried their line up from the holding point but it was immediately confirmed by the trainee at 1404:50 and the British Midland aircraft began to enter the runway.

The trainee, having good reason to believe that his mentor was content with the plan, then issued the next aircraft in the departure queue with their "line up and wait after the landing 747" clearance. The British Airways 747 crew then saw the British Midland A321 begin to line up as the mentor at last realised that matters were going to be, at the very least, difficult and took over control of the radio at 1405:10. He advised the 747 to continue and at 14:05:20 told the British Midland A321 to "power up against the brakes" and continued the transmission with "you're cleared to take off" - 15 seconds before the minimum one minute departure separation had been reached. Meanwhile the 747 crew realised that their only safe option was going to be to go around and as they were beginning the transition, the mentor followed the A321 take off clearance almost immediately (1405:30) with a cancellation of it and instructed a go around by the 747. The A321 was able to stop after only a short distance as the 747 transitioned to a climb over the top of it. The go around instruction/commencement occurred when the 747 was at about 165 feet agl and the lowest height reached as it commenced go around in the vicinity of the A321 fail fin (just under 39 feet high) was later found to have been 118 feet……

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The Investigation found that what started out as an attempt to be helpful turned into a near disaster because:

(1) an effective plan to achieve it was not made [poor mentoring];

(2) when it became clear that it was too late for the plan being followed to work, no action was taken to resolve matters safely [poor judgement and poor mentoring];

(3) the eventual intervention of the mentor was initially still focussed on achieving the flawed plan [poor judgement].

Why did this happen when the Investigation found that this 'helping hand' almost invariably occurs uneventfully? The Investigation found no reason to criticise the performance of either the trainee controller or the flight crews involved. It found that the hazardous situation could be attributed entirely to the action - and the inaction - of the mentor who had failed on this occasion to act with the professionalism that he had previously displayed and which would reasonably be expected of qualified and experienced controllers carrying out this task.

What does all this tell us about production pressure? It certainly says that there is a time and place for adding to the pressure by trying to boost efficiency. It also suggests that working as an OJTI when, as was found to have applied in this case, less than 100% enthusiastic and engaged in the process, is conducive to inappropriate judgements. The trainee in this case relied upon the mentor for timely proactive guidance but did not get it. The eventual take over by the OJTI was too late and initially made matters much worse by continuing to try and get the unworkable to work. This is perhaps the key point - if a plan isn't working and can't be revised to maintain the original objective then it should be abandoned before safety is compromised. As always, tactical management under production pressure must be a matter for individual controllers and nobody should under-estimate the importance of this personal responsibility.

If you wish, you can see the official UK AAIB Inspector's Report into this 'Serious Incident' on SKYbrary[8], where you will, as you might expect, find lots more about the selection, training and working practices which were associated with the OJTI system at Heathrow at that time which I have chosen not to dwell on here.

[8] http://www.skybrary.aero/index.php/B747%2C_LOS%2C_London_Heathrow_UK%2C_2000

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