

Learning From Experience #3

MAIN WHEEL INCORRECTLY FITTED

It's all too easy to take for granted the support that exists in a main-base environment and the following incident serves as a reminder of the some of the issues experienced at some line stations.

On arrival at main-base, the flight crew of a long-haul twin engined aircraft reported that one of the main wheel tyre pressures was intermittently reading low. On hubcap removal, the wheel nut was seen to be too far down the axle threads with the locking bolt barely engaged with the axle nut. Further investigation identified that the tyre pressure sensor connector had been cross-threaded and the wheel spacer was missing, causing the wheel to rock slightly on the axle. The wheel had been changed at the line station prior to the last sector.

The resident line engineer discovered a cut in a main wheel tyre on his initial walk round and, after assessment, felt that the tyre was within maintenance manual limits. However, subsequent discussions with customer services and the flight crew led to the decision to change the wheel; nightfall was approaching and the clock was ticking ...

The line station in question supported one resident engineer with back up from other airlines. The regular back up engineer was contacted at home (1 ½ hours away from the airport) whilst the resident engineer conscripted a couple of baggage handlers to help with the manual tasks of a wheel change. Once all the equipment was positioned at the aircraft, the engineer started to jack the wheel, at which time the baggage handlers 'disappeared'. The engineer then discovered that the jack did not work on air-drive and manual jacking was accomplished with support from the refueller. By this time the flight crew had arrived and the third flight crewmember was assigned to hold a flashlight through all operations, as the ramp lighting was insufficient.

Having sought support from the baggage handlers again, the U/S wheel was removed. After inspecting and re-greasing the axle, the new wheel was positioned, minus the spacer, which was still attached to the U/S wheel. The wheel nut was torqued and a spin check carried out. As the cover plate was being fitted, after the tyre pressure sensor had been connected, the back up engineer arrived to finish the job whilst the resident engineer attended to a further fault on the flight deck.

The main contributory factors identified during the investigation were:

- Pressure caused by lone working practices on station.
- Inadequate area lighting.
- Pressure of a delay that could have caused crew to go out of hours.
- No specific cautions or warnings in the maintenance manual to ensure that the spacer was fitted.

With regards to lone working, the line station reviewed it's policy and identified that, in the main, having one resident engineer was sufficient for normal operations as there are plenty of other staff around the aircraft (baggage handlers, refuellers etc.) to ensure that safety cover is maintained. What was lacking was a robust process to ensure that when the resident engineer required support, it was readily available.

The other lesson reiterated was one of communication. Operational Pressure is always going exist but as long as the engineer kept everyone abreast of the situation, there should have been no undue pressure to dispatch a less than serviceable aircraft. Commercial pressures must not play a part when it comes to aircraft maintenance practices.