

## **Aircraft Damaged During De-jacking Operation**

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#### **Investigation Summary**

At the time of the jacking incident the aircraft was in the early stages of the maintenance input. A task being undertaken prior to the de-jacking incident was the replacement of the main landing gear pivot pins carried out to the requirement of a Service Bulletin.

During the jacking of the aircraft for the replacement of the pivot pins it became apparent that the air pump on the L/H main jack was defective. In the opinion of the Supervisor overseeing the pivot pin replacement, the aircraft only required to be lifted enough to get the weight off the wheels, therefore use of the defective jack was continued for the task of pivot pin replacement by using the serviceable alternative hand pump on the L/H main jack.

During the maintenance input, it was highlighted that a leak on a main oleo required rectification; this necessitated jacking the aircraft significantly higher than for the pivot pin change. As previously identified, the jack did not have a serviceable air pump; this resulted in the jack requiring replacement or repair prior to the oleo seal change.

On the day of the incident the hangar superintendent notified the Supervisor in charge of the pivot pin task that the jack was to be removed to be repaired, it was stated by the Supervisor in charge of the de-jack, that no time had been specified for jack rectification.

it was established that the Supervisor took the decision to de jack the aircraft and the end of the shift to enable the L/H main jack with the defective air pump to be removed for repair. The Supervisor stated that he believed it to be a good time for the de-jack as it would not disturb too many other maintenance tasks at the end of the shift. The Supervisor also stated that he took the decision to have the aircraft de-jacked at this time as he was dealing with a domestic situation that would result in him being late in on shift the following day.

Interviews conducted with a leading hand and two fitters identified them as questioning the timing of the de-jack on being requested to assist, stating they had documentation to sign up and tooling to return and it was close to the end of their shift. A fitter also stated that there was a conversation between the supervisor and another technician resulting in a short period when it was not clear if the de-jack was going to take place.

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The de-jack took place when two personnel were positioned at the main and tail jacks.

Interviews with two of personnel involved in the de-jacking identified that no one was present on the inclinometer prior to the lowering of the aircraft.

During the interview with the Supervisor he was stated that he had requested a fitter to be an observer of the inclinometers.

During the interview with the fitter who the supervisor identified as being requested to observe the inclinometer, the fitter denied being requested to do so. He did state that he was requested to assist with the de-jacking task but was not allocated a task and was not present at the initial de-jack.

This was due to an element of confusion during a short period when it was not clear if the de jack was actually going to take place when staff were returning tooling and completing documentation for the end of shift.

The de-jack commenced on the supervisor's verbal command, for all jack positions to start the lowering.

From the interview conducted with the supervisor it was noted that the distance he believed the aircraft was going to be lowered, approximately 3 inches, was not thought enough to be classified as a de jack and assumed there would be no problems.

As a result of his assumption he failed to ensure all AMM requirements were met including ensuring there was an observer for the inclinometer.

It was noted from interviews with the personnel on the tail jack that there was no communication between the supervisor and the tail jack team during de-jacking and there was only a request made to the L/H main jack team to increase the rate of descent to remain level with the other main jack.

During interview with the lock ring operator of the tail jack it was stated that the aircraft only lowered by about one inch on the tail during the de-jacking of the aircraft.

The locking ring operative insisted during interview that he had the locking ring unlocked during the whole period of de-jack.

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The second person on the tail jack operating the lowering valve stated that the valve was open during the period of de-jack.

It was stated in interviews of 3 members of the jacking team and an interview with a witness that during the lowering of the aircraft the supervisor was seen on a mobile phone.

During interview with the Supervisor the statement made by the jacking team personnel was denied, he stated that he was not on his phone during the actual de-jack as he had received the call prior to the de-jacking.

Interview with the Supervisor identified that the phone call he received related to an ongoing domestic situation he was having to dealing with.

On completion of the de-jacking the supervisor stated that he ensured the main jacks were clear of the aircraft and went to the rear jacking point. The purpose of visiting the rear jacking point was to ensure that the jack was contacting the aircraft as he believed the jack was needed as a steady. On his arrival there was no pressure evident on the gauge, so to ensure it was in contact he applied pressure to the jack to achieve a positive pressure reading.

On completion of the de-jack the supervisor carried out his end of shift tasks and travel and to assist in the domestic situation.

It was while he was in the process of clocking out that the condition to the aircraft was noticed by another Supervisor and brought to the attention of the supervisor who had overseen the de-jacking, the incident was immediately reported to the hangar management.

From interviewing the Supervisor who was not involved in the de-jacking, but who later carried out recovery of the aircraft, it was identified that the aircraft was found to be in a 3 degree nose down attitude with the nose oleo fully compressed and the nose tyres

about half compressed. In addition the main landing gear was not taking any significant load, all other load being applied through the aircraft structure by contact with the tail jack.