

Health and Safety Law obligations in the aviation industry

In this edition of *The Legal Lounge* I outline some of the health and safety law obligations that apply to aviation industry employers, and discuss the outcome of a recent prosecution against Safe Air Limited following the death of an employee in a work related accident.

HSE Act - statutory framework

The object of the Health and Safety in Employment Act 1992 (HSE Act) is to “*promote the prevention of harm to all persons at work and other persons in, or in the vicinity of, a place of work*”. The HSE Act imposes various responsibilities on employers, those responsible for work, and those carrying out the work, to take “*all practicable steps*” to ensure the health and safety of the workplace and persons performing work. This includes a requirement to identify and safely manage hazards and potential causes of harm in the workplace or in the course of a person’s duties.

Of particular relevance to the aviation industry, section 6 of the HSE Act requires employers to take all practicable steps to ensure a safe work environment and work facilities, to ensure that “*plant used by an employee is so arranged, designed, made, and maintained that it is safe for the employee to use*”, and to ensure that employees are not exposed to hazards arising from the processing, working, or use, of things in or near their place of work. If a workplace hazard cannot be completely eliminated, section 9 requires all practicable steps to be taken to isolate the hazard from employees.

“All practicable steps” is defined in the HSE Act. In summary, it means to take all steps reasonably practicable in the circumstances to achieve a safe result, having regard to

- The nature and severity of the harm that may otherwise be suffered
- The current state of knowledge about the likelihood that harm of that nature and severity will be suffered if steps are not taken to achieve a safe result
- The current state of knowledge about the means available to achieve a safe result, and the likely efficacy, cost and availability of those means.

Breach of the obligations of employers under s6 of the Act carries a maximum fine of \$250,000 (this compares with average fines under the Civil Aviation Act 1990 for corporate entities of \$20,000 up to \$100,000 for the most serious charges). Reparation orders for victims of workplace accidents under the HSE Act are also often much higher than for other types of prosecutions.

Department of Labour v Safe Air Limited [2012] NZHC 2677

On 8 August 2011 an aircraft engineer employed by Safe Air Limited (SAL) was tragically killed after being ingested into the air intake of a Hercules C130 aircraft engine. Following an investigation by the Department of Labour, SAL was prosecuted under s6 of the HSE Act for failing to take all practicable steps to ensure the safety of an employee at work. SAL pleaded guilty and was ordered to pay reparation of \$22,250 to relatives of the deceased, and fined \$56,250 by the District Court. The High Court later increased the fine to \$70,000.

SAL aircraft engine test bed facility

SAL is an aircraft maintenance facility. One of its specialties is maintaining and overhauling the Rolls Royce T56 engine, used on the Hercules C130 aircraft. That is a turboprop engine. The air intake cowling for that engine lies beneath the propeller shaft. To ensure air reliability, engines are run through a set of rigorous tests. These can be done on the aircraft. However, to maximise flying time, engines are removed from the aircraft and run separately on test beds on the ground.

In 2002 SAL purchased a second-hand test bed unit in the United States. Several modifications were made to the test bed. The original design was accepted by SAL as being similar to photographs of another test bed model from the United States that was exhibited in Court. This clearly showed that there were specific restricted gantries with ladder access to the rear and sides of the engine only. The air intake at the front of the engine, below the propeller, could not be accessed while on the test bed.

SAL modified this design by installing an elevated work platform, which rises and falls depending on whether the engine is being tested with the propeller on or off. If the propeller has been removed, then a person may walk right around the engine on the elevated platform, including directly in front of the air intake cowling of the engine. It was routine practice for SAL aircraft engineers to do so. Although the platform contained an external railing, this was not continuous. At the front of the platform there was a gap in the railing immediately in front of the engine, which had only a chain across it. The main purpose of the railing was to protect engineers from falling off the platform. Although there was an informal practice that engineers would hold on to (or at least touch) the rail while the engine was running, this was not a formal documented requirement. This was despite the fact that air intake from a running engine was identified as a hazard in SAL's hazard register, and two previous incidents of foreign objects being sucked into the engine had occurred. Although SAL had as a result implemented a requirement that engineers not wear loose clothing or carry any loose objects when working around a running engine on the platform, no other steps were considered necessary or taken in respect of this hazard.

The accident

On 8 August 2011 a Hercules C130 aircraft engine was mounted, with its propeller removed, on the test bed. The victim Mr Hunter was servicing the engine with a colleague. After completing low ground speed idle checks, on both sides of the engine, he returned to the control room. The engine was then increased to high ground speed idle. Mr Hunter checked the right hand side of the engine before walking around the front of the engine towards the left hand side. He was described as being unusually tall and thin, being well over 6 feet tall but weighing only 53 kilograms. It appears that he successfully negotiated his passage past the air intake the first time, and inspected the left hand side of the engine. However, on walking back in front of the air intake, he had both hands cupping his earmuffs and was not holding the handrail. It is not known how close to the hand rail he was. Tragically, the effect of the airflow was to draw Mr Hunter's upper body into the air intake. The injuries were not survivable and he died at the scene.

Assessment of the culpability of SAL for the safety failure

In pleading guilty under s6 of the HSE Act, SAL accepted that it had not taken all practicable steps to prevent physical human access proximate to the air intake while the engine was running.

It was also accepted by SAL that installation of an internal rail guard (or similar) to prevent a person from getting close enough to the engine would have isolated the hazard from its employees, and should have been installed.

The main argument centred on the level of culpability of SAL for this safety failure. The District Court Judge found the risk of harm was obvious and significant, and that the steps taken to restrict access to the front of the engine while operating “fell well below what a responsible employer should have done in these circumstances”. The risk of ingestion into the air intake was a known hazard and in the absence of any proper barriers, the District Court Judge considered the risk of a person being ingested into the air intake was strong. He therefore assessed the culpability to be in the “medium to high range” and, after giving credit for the guilty plea and cooperation of SAL with the prosecution, he imposed a fine of \$56,250 in addition to the reparation order of \$22,250.

On appeal by the Department of Labour, the High Court Judge supported the District Court Judge’s analysis, but assessed SAL’s culpability as in the “high range”. In addition to the fact that the hazard was known to SAL, and acknowledged to have very serious potential consequences, the High Court Judge was disturbed by the lack of formal written procedures to address the hazard. He considered that, to at least minimise (but not isolate) the risk, strict work methods should have been imposed to prevent employees from walking in front of the air intake while the engine was running at high speed, or to ensure that if they did so, they were secure and not able to be drawn into the intake. He was also concerned that the additional step to isolate the hazard (installation of an internal hand rail) was an easy and relatively affordable option to SAL. Omitting to take either of these safety steps in what was viewed as an obvious safety risk with a high risk of severe harm, was therefore viewed as a serious failure. The High Court Judge also considered that, in opting to modify the test bed from its original design without adequate regard to the safety implications of doing so, SAL had departed from prevailing international standards within the aviation industry. For these reasons the fine was increased to \$70,000.

Comment

This case highlights the serious consequences of failing to fully address potential safety hazards when working around aircraft and aircraft engines, and the need to ensure that the full extent of possible hazards has been identified and all practical steps taken to isolate or minimise the risk. It also illustrates the need to ensure that documented procedures and work practices are robust and sufficient to fully respond to identified hazards.

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