



NEW ZEALAND AGRICULTURAL AVIATION

SAFETY UPDATE

DECEMBER 2019

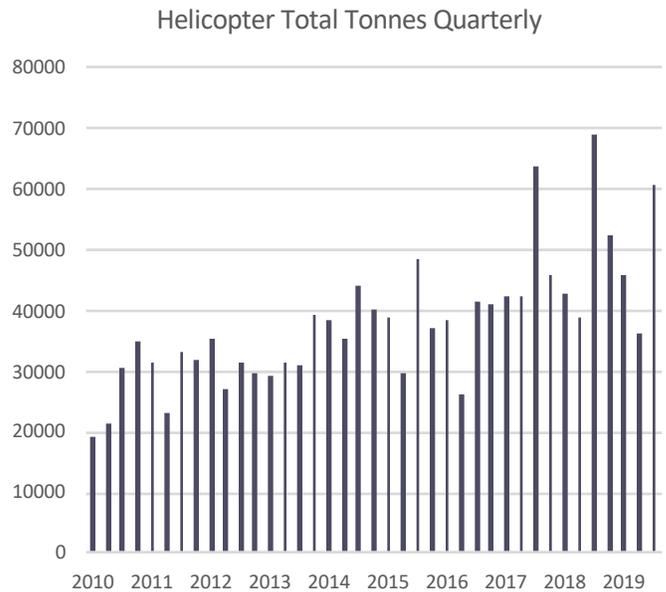
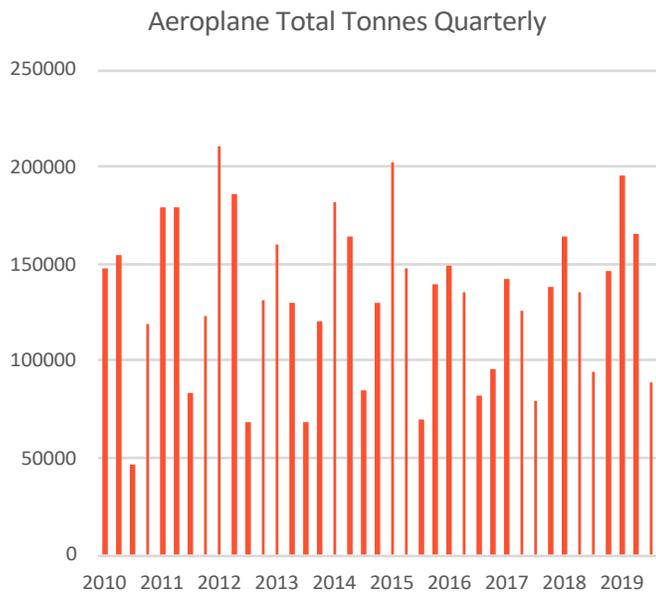


INTRODUCTION

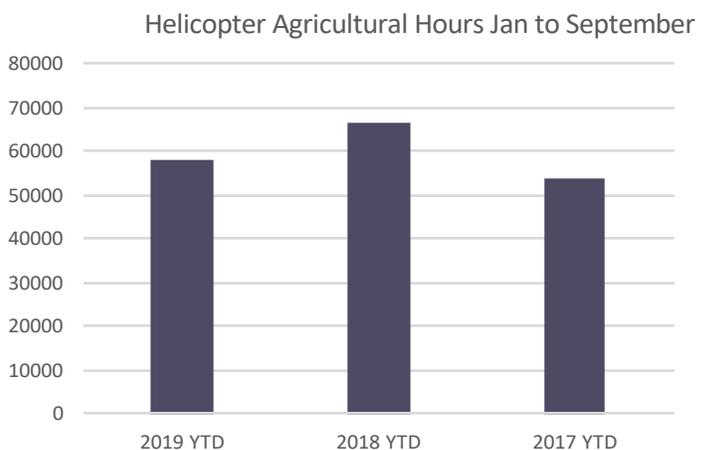
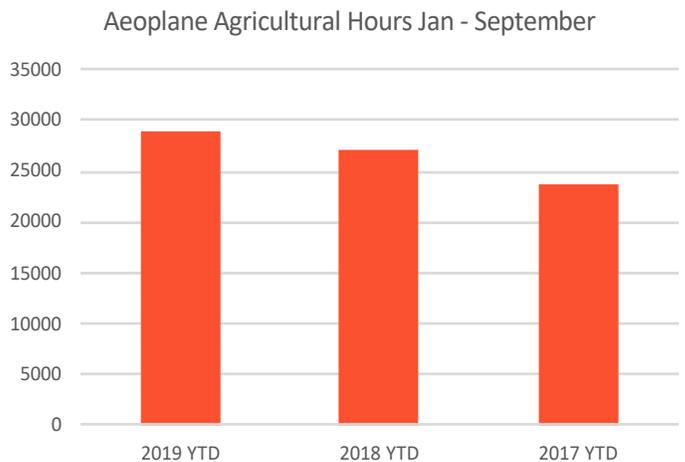
This is a another update on activity and safety in the agricultural sector, with activity and accident rate information current to September 2019. Like the previous updates it includes further details about accidents, incidents and defects reported this year to date. If you have questions or comments about the information then please contact me at Joe.Dewar@caa.govt.nz.

AGRICULTURAL ACTIVITY

The agricultural product statistics to date indicate that overall sector activity has been higher than in 2018. A total 592,736 tonnes have been reported, 48,000 more than for the first three quarters of 2018. The increase has been driven exclusively by fixed wing agricultural operations; helicopter operators have reported lower tonnages than last year, particularly in the third quarter.

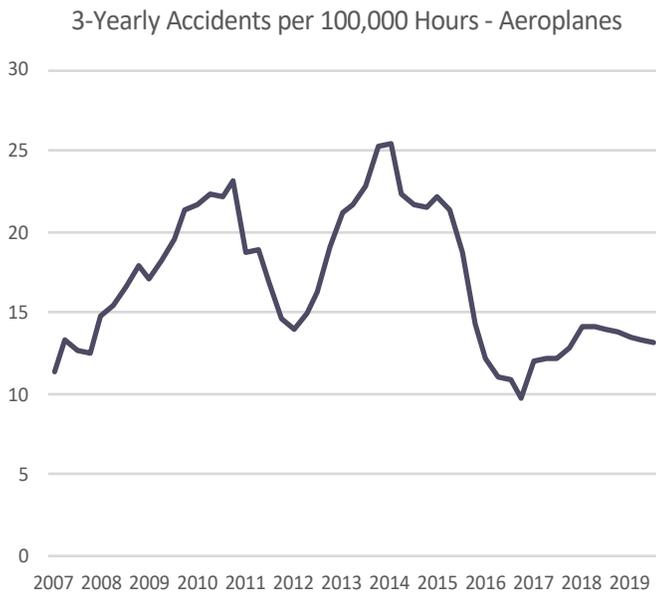


The increased fixed wing activity is also reflected in the reported hours - 1,950 more hours were flown for the 2019 year to September than the same period in 2018.



SAFETY PERFORMANCE

There have been 5 accidents on agricultural operations in the year to date; for the same period in 2018 there were also 4 accidents. The accident rate trend for both fixed wing and helicopter agricultural operations has recently been increasing. The charts below show the rolling average 3-yearly accidents per 100,000 hours. The current rate for fixed wing operations is **13.22** while for helicopter operations it is **4.49**.



ACCIDENTS IN 2019

-  January
-  North of Taupo
-  Bell 206
-  Collision/strike - wire

The helicopter hit power lines and crashed while spraying. During the last load of the job and while searching for broom to spray, the aircraft contacted high voltage power lines. The aircraft rotors cut through the power lines, rendering the helicopter uncontrollable, and it subsequently impacted the ground. The pilot indicated that although he was aware of the power lines, he lost situational awareness while focused on the search for pockets of broom.

-  April
-  Manawatu
-  Robinson R44
-  Collision/strike - wire

The pilot was conducting aerial spraying work when the helicopter struck an electric fence wire while completing the third load of the job. The pilot was aware of the location of the wire and had avoided it during the other spray runs and on previous work on the block. He managed to execute an emergency landing, however the helicopter suffered extensive damage to the front canopy, a rotor blade and during the ensuing heavy landing.



May



East of Te Urewera National Park



750XL



Takeoff accident

The aircraft was conducting agricultural operations (application of lime) from a local airstrip near Gisborne. The team included the Pilot and two ground crew. After 1 ½ hours of normal top-dressing operations, the hopper ram clevis that attaches to the hopper lid broke at the thread.

The crew decided one ground crewman would continue to load (Loading Crewman) and one could manually open the hopper lid (Crewman) by climbing on the passenger side then dismounting aft of the wing. The Pilot pulled the circuit breaker to disable the hopper ram which, unbeknownst to him, also disabled the flap warning system.

On the next load the Crewman noticed the flaps had not been set for take-off as he stepped off the wing but did not have time to get to his radio to alert the Pilot. The Pilot did not detect that the flaps weren't set as usual, and the disabled flap warning system did not alert him.

With the flaps retracted there was insufficient lift for the aircraft to get airborne and clear the obstacle (fence) at the end of the airstrip. The aircraft wheel assembly struck the fence, the left wing struck the ground and the aircraft rolled over. It stopped, inverted, 255m from the end of the airstrip.



June



Waikato



Fletcher



System/component failure - engine power loss

A sudden loss of engine power required a forced landing from low level. The only available area was swampy and flat with numerous trees surrounding it. In order to avoid contacting a larger tree, a small dead tree could not be avoided on landing, and the aircraft sustained damage to the right hand outer wing panel on contact. A faulty fuel gauge was determined to be the cause of the engine power loss.



September



Waikato



Cresco



Hard Landing

The aircraft encountered sink just before landing, resulting in a heavy landing. The RH undercarriage broke off and also the spreader. This resulted in the aircraft sustaining substantial damage.

INCIDENTS AND DEFECTS IN 2019



September



Southland



Fletcher



Prop damage

Number 1 prop blade damaged by another aircraft being pushed back in to the hangar. Prop removed for inspection.



September



Canterbury



Bell 206



External load - inadvertent release

Pilot inadvertently depressed the cyclic cargo release button causing the bucket to be jettisoned into a paddock. New to type (30 Hours), the cyclic setup is different to what pilot was used to.



September



Auckland



AS 350



System/component failure - spray tank mounts

During scheduled aircraft inspection, two of the four mounts of the agricultural spray tank were found to have cracked attachment brackets. On the R/H forward mount one of the attachment brackets was found cracked completely through and had detached, the remaining attachment bracket was cracked approximately half way through. The L/H forward mount was found to have cracks on both of the brackets about half way through. Operator advised and modification originator subsequently informed of defects by operator. Spray tank forwarded to modification originator for investigation & repair.



September



Otago



Cresco



System/component failure - wing panel bolt

During check 1 inspection found the lower LH outer wing panel attachment bolt and nut loose. The nyloc nut finger tight only, with no bolt thread protruding through the nyloc portion. First inspection after a import Cof A Suspect nut not done up in the first place. Attachment outer panel and centre section holes inspected, new nut fitted and correctly torqued. All other attachment bolts checked, satis.



September



Southland



750XL



System/component failure - MLG mudguard

During pre-flight pilot noted broken arm on MLG mudguard, engineer found opposite side also cracked. Both removed. Issue forwarded to the manufacturer.



September



Otago



AS 350



External load

While carrying out fertiliser spreading operations, the cargo hook separated from the cargo swing following the failure of the cargo hook link, resulting in the loss of the fertiliser spreading bucket. It seems on initial investigation that there have been previous cases of Onboard Systems links failing with underslung fert buckets. One hook repair facility has come up with a load beam protector which it seems helps to mitigate the impact of loads twisting with the application of torque from the spreader bucket.



September



Taupo



Bell 206



External load

Cargo hook load beam failed to lock closed while being used to spread fertiliser in the field. Found the shaft on which the load beam pivots had migrated through the load beam toward the manual release side of the hook by 0.354" causing the spring and mechanism misalignment, which prevented the hook to operate correctly. Hook to be repaired and returned to service.



September



Canterbury



Hughes 500



Ground handling

The pilot went to lift off after refuelling and the fuel hose was still in aircraft, as he came into the hover the fuel hose pulled tight and broke the nozzle on the end of the fuel hose. Ground crew alerted him on the radio to what was happening and he landed and shut machine down. The aluminium spout of the fuel hose nozzle was broken off and was still in the tank, We extracted the spout from the tank and inspected the aircraft and there was no damage. Cause: Pilot and Ground Crew were distracted from the refuelling process by a malfunctioning auxiliary bucket motor.

The refuelling process was not completed by the ground Handling Staff and checked by the Pilot in Command. Lessons Learned: If a procedure gets interrupted then the procedure must be started again from the start.

Pilot in Command must control the process and direct other personnel to complete tasks and report or signal tasks are completed to the trained standard.



September



Taihape



Hughes 500



Near collision/strike - wire

Near miss with TV aerial wire. On second run back along top of ridge, noticed wire across gateway. TV Aerial Wire to neighbouring house. The block was surveyed with farmer the day before. The pilot was informed of a TV aerial but when they surveyed they found another TV aerial to another neighbouring house which they presumed was the one in contention.



October



Hawke's Bay



Hughes 500



External load

After transit to another job location the operator found that zips on the underslung travel bag had opened enough to allow one work bag, one jacket and three

jerry cans to slip out. A locking system will now be used to prevent uncontrolled opening.



October



Taupo



Hughes 500



Ground handling

Inadvertently left the pin that secures the dual collective control in its hole when reconfiguring the aircraft. Upon lift off pilot noticed collective travel was restricted so shut down the aircraft and found the pin was contacting the dual collective cover and restricting movement.



October



Manawatu



AT 402



Take off incident - prop strike

Prop strike on take-off. Working off a steep, rough airstrip, "carrying" the tail across the roughest section when the pilot got an uncommanded pitch down at the same time as getting airborne prematurely, the aircraft sunk back onto the steepest section of the airstrip. With the combined nose down attitude and undercarriage compression was enough to cause a prop strike. Take-off continued, load jettisoned, flew back to the close by base airstrip.