

Record of phone conversation – November 20, 2018

Logan Simmons, chief inspector at Covington Aircraft

The representative was asked under what circumstances supercharger gear teeth would break off and if that would cause a decrease in engine power. Gear teeth most often break off due to either a sudden engine stoppage or due to fatigue/stress cracking. The fatigue/stress cracking can often be the result of a prop-strike (propeller sustains a strike but does not stop) and if left unchecked can result in the eventual separation of the affected gear teeth. It is possible for an engine to continue relatively normal operation with only 1 gear tooth missing, however multiple broken teeth would result in a decrease in power of the supercharger section. Based upon the information provided, it appears unlikely that the gear teeth broke upon impact of the aircraft to the ground due to the fact that gear teeth were found in the engine sump. If the teeth broke as a result of the sudden engine stoppage when the aircraft impacted the ground, they most likely would have remained in the blower section and not have been carried down into the engine sump (this is what typically happens when a gear tooth separates during a flight as the oil flow will carry the broken fragment down in to the sump).