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RE: RV-6A RV-7A RV-8A RV-9A: NOSE GEAR LEG AND NOSE WHEEL FORK

Ever since the first tricycle gear RV-6A (1988) rolled out of Van's hangar, there has been a documented history of nose gear development. A list of changes Van's Aircraft has made to improve just the nose gear product over the years would include changes in heat treating processes, post heat treating magna-fluxing, nose fork grain orientation, nose wheel selection, nose wheel axle selection, and most recently nose fork weight. The most notable improvement generated **SB 98-10-1** (1998) which suggested either leg replacement or periodic inspection of legs in service.

Van's Aircraft's own operational experience, over time, with 6 different tricycle gear RVs and a cumulative 7000+ hours, has been positive. However, as the number of flying kit built tricycle gear RVs has increased, so has the number of accidents involving damage to the nose gear. Because of the broad range of use and abuse to which the fleet is subjected, we find it difficult to categorize accidents and establish a precise cause and effect relationship. But with over 17 years and literally **hundreds of thousands** of hours of customer use, the nose gear has proven safe and practical for the vast majority of users.

That said, we recognized from the beginning that it would be impossible to make the tricycle gear configuration completely foolproof. In studying the NTSB accident reports it was obvious that **pilot proficiency** was the most significant factor that could be addressed. This awareness precipitated our push for transition training many years ago and is still a primary focus for Van's in keeping all RV pilots safe. This training has clearly been successful in reducing accidents associated with all RV models and its importance cannot be overstressed.

Recently improved manufacturing capability (late 2004) enabled Van's to produce a new, lighter weight leg/fork combination which incidentally provides more clearance between the nose strut axle and the ground. Greater axle/ground clearance may be beneficial in certain extreme operating conditions. However, there is no definitive data indicating that greater clearance at the axle will reduce the likelihood of a nose gear failure.

While we are shipping this new leg/fork combination in our current finish kits, we are doing additional operational testing on our own demonstrator fleet to determine if the design exhibits any improvements (other than weight savings) over its predecessor. At this time, we have insufficient data to warrant a recommendation to replace any nose gear components on currently flying aircraft. If over time Van's Aircraft's operational testing determines that significant improvements exist, we will immediately provide instructions for altering existing legs and nose forks being used by the existing fleet in the field.

History has shown that ensuring correct tire pressure, providing adequate wheel fairing to tire clearance, correct axle nut torque, and exercising proper pilot technique through pilot proficiency training are the best way to prevent any problem with the nose gear.