

No. 98-05

Subject:

Helicopter External Loads

Distribution:

All DOI Helicopter Activities

Discussion:

A recent external load incident involving the use of multiple load lines had the potential for an accident when one of the lead lines crossed over the toe of the left skid. A review of safety files revealed an accident with similar characteristics:

The recent incident involved an external load operation using multiple load straps to move lightweight cargo a short distance. The sling configuration included of a short (6ft) lead line between the cargo hook and the five (15 ft) long load straps. The operation proceeded without incident until, during lift off, one of the load straps crossed over the toe of the left skid. This placed the entire load under the left skid. The reaction of the pilot to the CG problem was to release the load. Fortunately, the load went back on the ground before the out of lateral CG caused the roll to progress beyond the point of no return.

An earlier accident occurred during a water bucket mission. The bucket control head was attached directly to the cargo hook, and four down lines connected to the rim of the bucket. During water dipping, one of the down lines crossed over the heel of a skid. When the pilot experienced lateral CG control problems, the load was released from the cargo hook. The entire load was now under the skid causing the helicopter to roll and crash into the water. Some of the common characteristics of the two events are:

- Multiple load lines or down lines attached to a single load.
- Short or no lead line between cargo hook and load lines.
- One of the load lines crossed over a skid's toe or heal.
- Upon lift off, the pilot experienced lateral CG control problems.
- Corrected action was to release the load from the cargo hook.
- The corrective action multiplied the laterally displaced loading condition.

Recommendation:

1. When multiple load lines are used, they should be attached to the cargo hook by a single lead line and long enough to keep the load lines clear of the skids. This will result in the pilot having only to monitor one line during lift off.
2. Aviation managers must ensure that all personnel working with external loads are receiving the required training.
3. Pilot inspectors should discuss external load out of CG emergencies during pilot evaluations.

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