Subject: Cargo Rigging Procedures

Area of Concern: Improper Cargo Rigging and Cargo Security

Distribution: All Aviation Users

Discussion: Several SAFECOMs have been submitted concerning cargo rigging and security that have resulted in a total or partial loss of the load. In an effort to prevent further incidents, this Safety Alert provides lessons learned and other information that may be useful for helicopter pilots, crews, and other personnel involved in transporting or rigging of external cargo.

The following SAFECOMs address the issues:

**SAFECOM 20-0508, Rigging:** Two nets, each containing a swivel, were placed side by side directly into the cargo remote hook. Only one swivel should be placed in the remote hook or it will impede the ability of the load to swivel.

**SAFECOM 20-0509, Cargo Security:** When the cargo net was lifted from the ground to approximately 15 feet, a small AED fell out of the bottom of the net.

**SAFECOM 20-0484, Cargo Security:** On the second external load delivery, the crew noticed a box containing lunches was open and missing 6 bagged lunches. The box was not fiber taped and had opened during flight.

**SAFECOM 20-0424, Cargo Hook Manual Release:** The manual release knob was somewhat sticky and did not fully return to the locked position, allowing the weight of the external load to pull down the cargo hook and drop the bucket into the dip site.

**SAFECOM 20-0320, Rigging:** While performing a left turn during longline bucket operations, the bucket with longline departed the belly of the aircraft and impacted the ground. There were no indicators of mechanical failure that would result in the lost load. The most likely cause was a small rope line that was tied off from the belly hook upper frame bracket to anchor points under the belly of the helicopter. The tie rope was secured with knots, one on the forward upper anchor bracket of the belly hook, and one on the aft. The forward knot was tied into an anchor on the left underside of the aircraft. The aft knot was tied into an anchor on the right underside of the aircraft. The tie rope was used to restrict the spinning capability of the belly hook. It is assumed that during the left turn, the
belly hook (with longline and bucket attached) swung as far to the right within the hellhole as possible. In doing so, it appears that the knot on the forward-facing bracket had slid up the frame bracket coming into contact with the manual release mechanism, releasing the belly cargo hook and dropping the load.

**Recommendations:** Fortunately, none of these incidents resulted in any injuries. However, they did result in the loss of some expensive equipment and delayed the mission. Crewmembers and pilots should take the time to review Chapter 11 in the *NWCG Standards for Helicopter Operations (NSHO), PMS 510*. When time permits, conduct mockup drills or hip pocket classes for external cargo operations.

Additionally, the Wildland Fire Lessons Learned Center has a [Rapid Lesson Sharing](http://www.fs.fed.us) document regarding backhauling equipment from the fireline that can be used in your local training and reviews.

See also Interagency [Safety Alert 12-01](http://www.fs.fed.us), [19-03](http://www.fs.fed.us) and [Lessons Learned 18-05](http://www.fs.fed.us) for additional safety information and recommendations for external cargo operations.

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