



U.S. Department  
of Transportation

**Federal Aviation  
Administration**

# SAFO

Safety Alert for Operators

SAFO 13008  
DATE 8/20/13

Flight Standards Service  
Washington, DC

[http://www.faa.gov/other\\_visit/aviation\\_industry/airline\\_operators/airline\\_safety/safo](http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/safo)

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*A SAFO contains important safety information and may include recommended action. SAFO content should be especially valuable to air carriers in meeting their statutory duty to provide service with the highest possible degree of safety in the public interest. Besides the specific action recommended in a SAFO, an alternative action may be as effective in addressing the safety issue named in the SAFO.*

**Subject:** Part 121 Air Carriers Performing Special Cargo Loads Operations

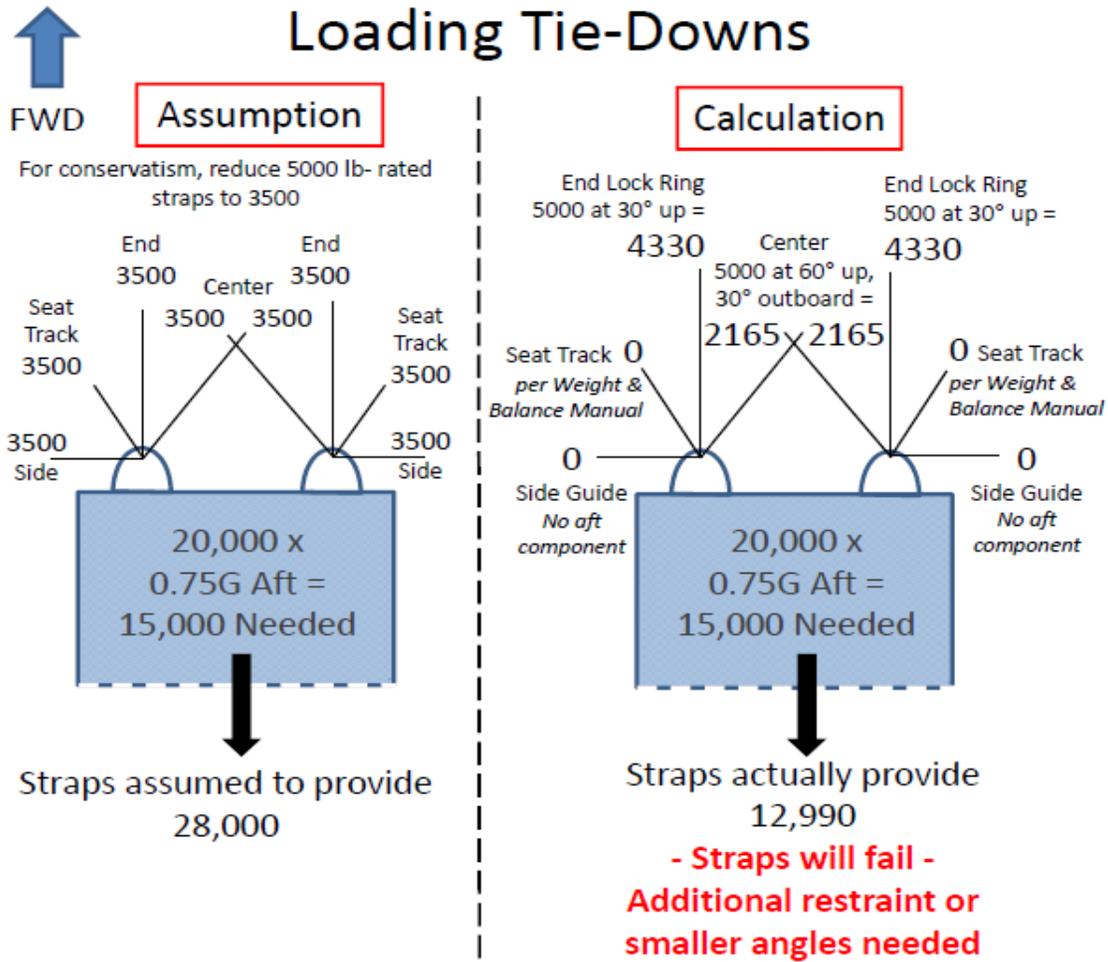
**Purpose:** This SAFO serves to recommend tie-down procedures for restraint of special cargo loads.

**Discussion:** In SAFO 13005, dated 5/17/2013, the FAA recommended each part 121 air carrier review its approved weight and balance control program with emphasis on heavy vehicle special cargo loads. Upon further discussion/review of operators procedures, the Federal Aviation Administration (FAA) recommends an in-depth review of weight and balance, cargo loading documents or both with emphasis on special cargo loads other than Unit Load Device (ULD) cargo.

**Recommended Action:** Air carriers should review their Weight and Balance manual and cargo loading documents to ensure adherence to the manufacturers' FAA-approved Weight and Balance manual or supplemental type certificate (STC) supplement. The review is to verify that over-simplified procedure substitutions are not used by the air carrier for securing special cargo load. The manual must state the policy and provide procedures to determine the intended reaction load for each tie down to ensure sufficient special load restraint for flight loads. This review is to ensure:

- Only the manufactures' FAA-approved Weight and Balance manual or STC supplement authorized airplane tie-down locations are used.
- Only the manufactures' FAA-approved Weight and Balance manual or STC supplement authorized seat track locations are used.
- The method of determining the number of straps required to secure a load by dividing the payload weight by a reduced strap allowable is not recommended. This method does not reflect the strength, or lack of, the actual vehicle or airplane attach point.
- The straps are only effective for the direction(s) of force for which that strap is restraining the cargo.
- Each strap is secured to the special cargo load. The method of looping a strap through a vehicle tie-down results in the capability of each leg of the strap being reduced to the weaker of the two strap tie-down attachment points on the airplane.
- Must ensure the tie-down points and capability are defined for the special load and airplane.

The following Loading Tie-Downs illustration is provided as an example only:



Direction	Tiedown Location	Directional Allowable (at 0, 0 degrees)	Floor Angles (degrees)	Centerline Angle (degrees)	Number of Tiedown Fittings	Actual Tiedown Allowable (lbs)
Aft	Side Guide	5000	60	90	2	0
Aft	Seat Track	<i>Not permitted per W+B</i>	30	30	2	0
Aft	End Lock Ring	5000	30	0	2	8660
Aft	Center	5000	60	30	2	4330
<i>Note: Reducing this angle to 30° provides 16,160 lbs aft. No other change needed.</i>					<b>Total</b>	<b>12,990</b>

**Contact:** Questions or comments concerning this SAFO can be directed to Steven Fox, P.E. Senior Aerospace Engineer, Airframe Branch, Seattle Aircraft Certification Office, Federal Aviation Administration, (425) 917-6425.