

National Transportation Safety Board
Office of Aviation Safety
Aviation Engineering Division
Washington, D.C. 20594

August 13, 2003

UNIT LOAD DEVICE GROUP CHAIRMAN'S FACTUAL REPORT

DCA02MA001

A. **ACCIDENT**

Location: Belle Harbor, New York

Date: November 12, 2001

Time: 0916 Eastern Standard Time (EST)

Aircraft: Airbus Industries A300B4-605R, N14053, American Airlines,
Flight 587

B. **INVESTIGATION GROUP**

Chairman: Stephen Carbone
National Transportation Safety Board
Washington, D.C.

C. **SUMMARY**

On November 12, 2001, at about 0916 Eastern Standard Time (EST), American Airlines (AAL) flight 587, an Airbus A300B4-605R airplane, N14053, was destroyed when it crashed into a residential area of Belle Harbor, New York, shortly after takeoff from the John F. Kennedy International Airport (JFK) Jamaica, New York. Two pilots, 7 flight attendants, 251 passengers, and 5 persons on the ground were fatally injured. Visual meteorological conditions (VMC) prevailed and an instrument flight rules (IFR) flight plan had been filed for the flight destined for Santo Domingo, Dominican Republic. The scheduled passenger flight was operating under 14 Code of Federal Regulations Part 121.

On December 19, 2002, the Unit Load Device Group Chairman reviewed the documentation related to American Airlines' cargo container usage.

D. DETAIL OF INVESTIGATION

1.0 Unit Load Device Container

The Unit Load Device (ULD) is a container unit designed to encompass cargo loaded into it. Each container is equipped with a door or cover, which is secured to retain the cargo inside the container. The secured container can be loaded onto an aircraft that incorporates a container loading system. ULD containers are manufactured from materials, e.g., aluminum, heavy plastic, etc.

Containers vary in size and shape, depending on the aircraft model type and the location in the aircraft where they are to be used.

A single ULD (attachment 1) with a floor panel measuring 60.4 inches wide by 125 inches long can occupy each zonal container position. A demi-container¹ (attachment 2) is 60.4 inches wide by 61.5 inches long. Two can be placed in each zonal container position.

2.0 Regulations and Rules Required of American Airlines

As is outlined in the American Airlines' Ramp Manual, containers on the American Airlines Offload Control Sheet have designation codes that are also spelled out in the International Air Transportation Association ULD Technical Manual, page 88 – *Code List* (attachment 3).

According to the Federal Aviation Administration (FAA), there are no regulations requiring air carriers to use certified containers. The FAA does recognize NAS3610 and AS1677 as valid standards for ULD containers.

A letter "D" designation represents a "noncertified" container, as shown in AS1677² (attachment 4), while a letter "A" designates a "certified"³ container.

Per the A300-600 Weight and Balance Manual, 1.10.05, page 5, published by Airbus (attachment 5), ULD containers are required to meet the Equipment Strength demands of NAS 3610. The requirements for the containers are referenced on page 3 of the same manual (attachment 6).

¹ Demi-containers are half-size containers that can be mated with another demi-container to occupy one full-sized container position together.

² AS1677 is the Aerospace Standard for *General Requirements for Noncertified Cargo/Baggage Containers*. AS1677 clarifies limits for the noncertified containers and is used in association with NAS 3610.

³ Certified is a classification given to ULD containers that meet the standards set forth in the NAS3610 and AS1677 requirements. Noncertified containers do not meet these requirements.

3.0 American Airlines Unit Load Device Containers

Per American Airlines ULD Engineering, American Airlines has contracted container repairs with a container repair facility. The facility employs Airframe licensed personnel to repair damaged containers. AAL uses noncertified containers by relying upon the aircraft manufacturer's designed compliance with NAS 3610 and the requirements imposed to safely contain the cargo.

The A300B4-605R has eleven container positions below the main passenger deck. There are six positions located in the Forward Lower Cargo compartment (attachment 7) forward of the wing section and five positions are located in an Aft Lower Cargo compartment (attachment 8) aft of the wing section.

A review of the load manifest of the accident flight demonstrates that twenty-two demi-sized containers occupied eleven container positions in the forward and aft cargo bays (attachment 9). Sixteen of the twenty-two demi-containers in the group were noncertified.

AAL uses "noncertified"⁴ containers in conjunction with certified containers in their ULD program. Sixteen noncertified containers were used on the accident flight. The "D" designated, noncertified containers on the manifest did not meet the requirements of NAS 3610.

Stephen Carbone
Unit Load Device Group Chairman

⁴ In the early 1990's, American Airlines attempted to initiate a program using reinforced disposable cardboard ULD containers. These containers were designated "noncertified". The project was abandoned, but the term 'noncertified' remained and the practice of using noncertified containers continued. Any ULD containers not meeting the standards dictated by NAS 3610 are designated as noncertified.