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**PUBLIC COMMENTS TO FAA**

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BY:

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**SUBJECT:**

**Aircraft Cockpit Security Regulatory Requirements  
Special Federal Aviation Regulation, SFAR 92  
Foreign Registered Air Carriers  
14 CFR, Part 129**

Presented at the Federal Aviation Administration's  
Public Meeting

NTSB Conference Room  
L'Enfant Plaza  
Washington, D.C.

July 30, 2002

## **Purpose of Comments**

These NASI comments have been developed from engineering analysis, combined with decades of experience with passenger and freighter aircraft designs, operations, maintenance, and continued airworthiness. Since September 11, 2001, NASI has conducted confidential testing that has validated the existence of the issues stated in this Public Comment. The NASI testing and analyses have also exposed new questions about aircraft security. NASI has aggressively progressed to solve those problems in order to produce solutions that will render existing aircraft designs more immune, or unaffected, to the tricks of terrorists that may attempt to illegally take command of aircraft on the ground or in the air.

### **NASI Comment #1**

#### **ACCUMULATIVE DAMAGE TO COCKPIT DOORS DURING TESTING FOR FAA CERTIFICATION**

NASI's position is that the existing FAA requirement that allows for a fresh cockpit door to be tested for each impact of the pendulum impact load test is not adequate for showing that the cockpit door will prevent unauthorized people from gaining access into the cockpit.

The new cockpit door structural and mechanical designs must be tested with ONE TEST ARTICLE door and jamb system as the series of pendulum dynamic impact loads are applied to the door system. The accumulation of impact loads will produce accumulative damage that will more accurately represent how the door structures and mechanisms will respond to the efforts of a terrorist enthusiastically trying to damage the door enough to force the door open.

## **NASI Comment #2**

### **FAA TO REVISE THE REQUIREMENTS OF DOOR IMPACT TESTING REQUIREMENTS**

The existing FAA requirements for testing to certify the new secure cockpit door designs are not adequate. NASI proposes that the FAA revise those cockpit door testing requirements to include door components (such as vent panels) to ensure that the entire door structure and mechanical components will survive the impact loads.

## **NASI Comment #3a, 3b**

### **FAA TO CHANGE COCKPIT DOOR PULL TESTING REQUIREMENTS**

**3a.)** The FAA's Pull Test requirements for cockpit doors should be revised to require a 1,000 pound-force load instead of the existing 250 pound-force load test.

**3b.)** After each impact and ballistic test the FAA's Pull Test loads should be applied in the direction that the door OPENS, not with a constant 100 pound force in the door-closed direction as currently required by the FAA regulation. The constant 100 pound force in the closed direction should be in addition to a pulling force.

## **NASI Comment #4**

### **COCKPIT DOORKNOB DESIGN REQUIREMENTS**

The FAA's design requirements for the cockpit door knob should be revised to require a structural or mechanical "break-away" function and/or tapered geometry to prevent the knob from being lassoed and being used as a pulling anchor from the passenger cabin.

One example of how a terrorist could gain access to the cockpit by utilizing only the items that are legal to bring aboard an aircraft is now described. This example will be called the "Wall Repelling Method" because the terrorist will employ the repelling techniques that are commonly taught to people who are attempting to gain greater mechanical advantage over a vertical wall or door surface.

A man or a woman can apply loads of 1,000 pounds-force and can be maintained for a number of seconds simply by using a fabric strap from a common carry-on bag. The strap can easily be modified prior to the flight so that the strap can be looped around the waist of the terrorist in seconds and go undetected by the passengers or Flight Attendants. The terrorist can make a typical walk to the galley or lavatories near the cockpit and lasso the cockpit door's knob, lean back to pull tension on the strap, prop both feet against the cockpit bulkhead structure, and straighten the knees of both legs in a repelling position for a vertical wall condition.

The mechanical advantage of the human machine will instantly produce up to 1,000 pounds-force that can easily fail the doorknob and defeat the door latch feature. After this 5-second scenario of forcing the cockpit door open, the terrorist can spring into the cockpit and deliver a shocking surprise to the Pilots, Flight Attendants, and passengers.

Respectfully,



Wesley M. Plattner  
President, National Aircraft Service, Inc.

Dated: 30 July 2002