

NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Southwest Regional Office
Gardena, CA 90248

November 05, 2008

FIELD NOTES

I concur that the content of the following “Field Notes” document generated during the field phase of the investigation involving the weighing of the Carson Sikorsky S-61N long-body helicopters accurately reflects the information gathered during the field phase of the investigation.

Signature: _____ Date: _____

Zoë Keliher
NTSB – Air Safety Investigator (Field)
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Signature: _____ Date: _____

Oliver Bucklin- Maintenance Personnel
Carson Helicopters Services, Inc.

Signature: _____ Date: _____

Sean Moretz
Carson Helicopters Services, Inc.

Signature: _____ Date: _____

Jim Morrison
United States Forest Service

A. ACCIDENT

NTSB Accident Number: LAX08PA259
Location: Weaverville, California
Date: August 05, 2008
Time: 1950 Pacific Daylight Time
Aircraft: Sikorsky S-61N

B. SUMMARY:

On August 5, 2008, at 1941 Pacific daylight time, a Sikorsky, S-61N helicopter, N612AZ, contacted trees during the initial climb near Weaverville, California. Postimpact fire destroyed the helicopter. The airline transport pilot and 8 passengers were fatally injured, and the commercial copilot and 3 passengers were seriously injured. The helicopter was being operated under contract to the United States Forest Service by Carson Helicopter Services, Inc. (CHSI), as a public-use flight. Visual meteorological conditions prevailed for the cross-country flight that was originating at the time of the accident. A company visual flight rules (VFR) flight plan had been filed. The helicopter was departing from Helispot 44 (H-44, elevation 5,935 feet) en route to Helispot 36 (H-36, elevation 2,516 feet) when the accident occurred.

The helicopter had been assigned to transport approximately 50 wildland firefighter helitack crewmembers out of the Trinity Alps Wilderness of the Shasta Trinity National Forest due to forecasted worsening weather conditions. The helicopter had completed two trips, and had gone to Trinity Helibase to refuel. After it had refueled, it returned to H-44 for its third load of passengers. During departure, the helicopter impacted trees and subsequently terrain, coming to rest on its left side. A postcrash fire consumed the aircraft.

D. DETAILS OF THE INVESTIGATION:

1. Description:

The helicopter was weighed in accordance with the CHSI normal maintenance procedures approved under 14 CFR 135. The scales utilized in the weighing were of the jack-point type (electronic load set kit) and labeled as follows:

Manufacturer: Revere Corporation of America
 Part Number: C-55800-3-25
 Serial Number: 5356A

Cell #1: s/n: 701729 Left (Red)
 Cell #2: s/n 701732 Right (Yellow)
 Cell #2: s/n 701737 Tail (blue)

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A calibration date was noted as September 23, 2008, with a due date of September 23, 2009.

2. Examination:

Investigators initially observed the helicopter to be weighed in a dry hangar at the CHSI facilities in Grants Pass, Oregon on November 05, 2008. The helicopter was registration N61NH (serial 61474) and was a S-61N long-body model, similar to the accident helicopter. CHSI personnel reported that it had been in the hangar for the last two days in an attempt to keep it out of the omnipresent Oregon weather (i.e. rain).

The CHSI pre-weighing checklist was complied with prior to the weighing procedure. The helicopter was cleaned a dry. In accordance with the Sikorsky Maintenance Manual (MM) Chapter 8, section b., the hydraulic fluid and oil was serviced (full); the fuel tanks were drained (with the exception of the unusable fuel noted in the Chart A). The main rotor blades were positioned in accordance with the MM. All extraneous equipment was removed. Investigators followed the Chart A checklist and verified listed equipment was installed in the helicopter; the differences noted from the last weighing on October 01, 2008 were the addition of a VSI and both an inverter and gas generator (ng) gauges were noted as installed that were not (marked twice). The last Chart C for the helicopter noted a weight of 11,682 lbs.

The helicopter was configured in a “normal flight configuration” as per the Sikorsky MM (e.g. doors closed, etc.). The jack points used were referenced were in the CHSI General Maintenance Manual (GMM) Chart B. Following the notation of scales used, the instructions were followed from the scale manufacture as written on the casing of kit unit. The three hydraulic jacks were positioned at their respective jack points and actuated to lift the helicopter approximately four inches above the hangar floor. With the helicopter jacked, the previously rigged plum-bob was aligned to the scale reference affixed on the floor of the aft fuselage [as designed originally by Sikorsky a scale is located for weighing purposes adjacent to the right aft fuselage air-stair doorway].

The plum-bob settled to the reference zero point both on a lateral and horizontal plane. The scales were positioned as: blue – tail (cell 3), red - left main (cell 2), yellow - right main (cell 1). The following weights were obtained:

First Weigh:

Tail: 2363 lbs

Right: 4615 lbs

Left: 4744 lbs

The addition of the three equates to 11,722 pounds; following the set down of the helicopter, the scales all indicated a zero weight (i.e. remained in calibration). The tare on the equipment utilized for weighing (wheel straps) was 1.2 lbs for each main point and 1.8 for the tail (totaling 4.2). This equates to a total empty weight of 11,717.8 lbs.

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After the first weighing the same procedures were followed in attempt to verify the initial weights, where the following information was obtained:

Second Weigh:

Tail: 2,365.5 lbs

Right: 4758 lbs

Left: 4595 lbs

The addition of the three equates to 11,718.5 pounds; following the set down of the helicopter, the scales all indicated a zero weight (i.e. remained in calibration). The tare on the equipment utilized for weighing (wheel straps) was 1.2 lbs for each main point and 1.8 for the tail (totaling 4.2). This equates to a total empty weight of 11,714.3 lbs.

A person with a known weight of 200 lbs, boarded the helicopter and positioned himself at the approximate center of gravity location. The following weights were obtained while he stood still inside:

Tail: 2,414.5 lbs

Right: 4822 lbs

Left: 4682 lbs

The addition of the three weights equates to 11,918.5 pounds, 200 pounds more than the second weigh.