

TEMA 1

- 1.) Nel caso di trasporti di materiali al gancio, nella preparazione dei carichi, il candidato descriva quando si utilizzano le catene, quando le fettucce, quando le reti, quando i sacconi e perché si scelgono materiali diversi?
- 2.) Nel volo Hems la EU 965/2012 prevede lo sbarco del personale in hovering? Con quali modalità?
- 3.) In Hems, in base alla EU 965/2012, è possibile rifornire in moto e se sì, con quali precauzioni?
- 4.) Considerando la brezza di mare e quella di terra, alle 14.00 LT e a bassa quota, per volare da Sud dell'Italia verso Nord, è più conveniente (maggiore GS) prevedere di volare sulla costa adriatica o sulla costa tirrenica? Perché?
- 5.) Procedure di avvicinamento PBN. Si descriva la differenza tra LNAV, LNAV/VNAV, LP e LPV.
- 6.) Che cos'è il Regolamento SERA?

Trento, 22 febbraio 2021

F.to Stella Giampietro

F.to Piergiorgio Rosati

F.to Massimo Aita

F.to Arianne Boscolo

F.to Foppoli Tedy

TEXT 1 (AVIATION ACCIDENT REPORT)

Rapid Descent Into Terrain Island Express Helicopters Inc. Sikorsky S-76B, N72EX

Executive Summary

On January 26, 2020, about 0946 Pacific standard time, a Sikorsky S-76B helicopter, N72EX, entered a rapidly descending left turn and crashed into terrain in Calabasas, California. The pilot and eight passengers died, and the helicopter was destroyed. The on-demand flight was operated by Island Express Helicopters Inc. (Island Express), Long Beach, California, under visual flight rules and the provisions of Title 14 Code of Federal Regulations Part 135. The flight departed from John Wayne Airport-Orange County (SNA), Santa Ana, California, about 0907 and was destined for Camarillo Airport (CMA), Camarillo, California, about 24 miles west of the accident site.

After the helicopter departed from SNA, it flew at altitudes that remained below 1,700 ft mean sea level (msl) and generally between 400 to 600 ft above ground level (agl), and the flight's progress through controlled airspace en route to CMA was uneventful. Weather conditions reported to the pilot by air traffic controllers during the flight included an overcast ceiling at 1,100 ft agl, visibility of 2.5 miles with haze, and cloud tops at 2,400 ft msl.

At 0944:34 (about 2 minutes before the accident), while the helicopter was flying west at an altitude of about 1,370 ft msl (450 ft agl) over US Route 101 (US 101) and rising terrain, the pilot announced to an air traffic control facility that he was initiating a climb to get the helicopter "above the [cloud] layers," and the helicopter immediately began climbing at a rate of about 1,500 ft per minute. About the same time, the helicopter began a gradual left turn, and its flight path generally continued to follow US 101 below. About 36 seconds later and while still climbing, the helicopter began to turn more tightly to the left, and its flight path diverged from its overflight of US 101.

The helicopter reached an altitude of about 2,370 ft msl (about 1,600 ft agl) at 0945:15, then it began to descend rapidly in a left turn to the ground. At 0945:17 (while the helicopter was descending), the air traffic controller asked the pilot to "say intentions," and the pilot replied that the flight was climbing to 4,000 ft msl. A witness near the accident site first heard the helicopter then saw it emerge from the bottom of the cloud layer in a left-banked descent about 1 or 2 seconds before impact.

Probable Cause

The National Transportation Safety Board determines that the probable cause of this accident was the pilot's decision to continue flight under visual flight rules into instrument meteorological conditions, which resulted in the pilot's spatial disorientation and loss of control. Contributing to the accident was the pilot's likely self-induced pressure and the pilot's plan continuation bias, which adversely affected his decision-making, and Island Express Helicopters Inc.'s inadequate review and oversight of its safety management processes.

Trauco, AT Morao 2021

TEXT 2

NTSB News Release (aviation accident)

Alaska DPS Helicopter Crash Caused by Flight Into Bad Weather and Department's "Punitive Culture" 11/5/2014

WASHINGTON – The National Transportation Safety Board today determined that the March 30, 2013 crash of an Alaska Department of Public Safety helicopter was caused by the pilot's decision to continue flying into deteriorating weather conditions as well as the department's "punitive culture and inadequate safety management."

The crash occurred on a mission to rescue a stranded snowmobiler near Talkeetna, Alaska. The pilot, another state trooper and the snowmobiler were all fatally injured. Contributing to the accident was the pilot's "exceptionally high motivation to complete search and rescue missions," which increased his risk tolerance and adversely affected his decision-making, the Board found.

Among the recommendations the NTSB made today as a result of the investigation was for Alaska and other states to develop and implement a flight risk evaluation program.

"These brave few take great risks to save those in harm's way," said NTSB Acting Chairman Christopher A. Hart. "There needs to be a safety net for them as well."

Among the Board's findings was that the Alaska Department of Public Safety (DPS) lacked policies and procedures to ensure that risk was managed, such as formal weather minimums, formal training in night vision goggle operations and having a second person familiar with helicopter rescue operations involved in the go/no-go decision.

During the investigation of this accident, the Board found that the pilot had been involved in a previous accident. The Board found that the DPS's internal investigation of the earlier accident was too narrowly focused on the pilot and not enough on underlying risks that could have been better managed by the organization.

The Board concluded that DPS had a "punitive culture that impeded the free flow of safety-related information and impaired the organization's ability to address underlying safety deficiencies relevant to this accident."

Since 2004, the NTSB has investigated the crashes of 71 public helicopters responsible for 27 deaths and 22 serious injuries.

"Public agencies are not learning the lessons from each other's accidents," Hart said. "And the tragic result is that we have seen far too many accidents in public helicopter operations."

As a result of the investigation, the Board made recommendations to Alaska, 44 additional states, Puerto Rico, the District of Columbia and the Federal Aviation Administration.

Trecho, 17 marzo 2014

TEXT 3

**NTSB News Release (aviation accident) ~~XXXXXXXXXX~~
Improper Contractor Actions and Insufficient Federal Oversight Led to 2008 Fatal Firefighting
Helicopter Crash Near Weaverville, California, NTSB Says**

12/7/2010

The National Transportation Safety Board today determined that a series of improper actions by the contractor and insufficient oversight by the U.S. Forest Service (USFS) and the Federal Aviation Administration (FAA) led to the August 5, 2008, fatal crash of a Sikorsky S-61N helicopter near Weaverville, California. The contractor's actions included the intentional alteration of weight documents and performance charts and the use of unapproved performance calculations.

Contributing to the accident was the failure of flight crewmembers to address issues related to operating the helicopter at its maximum performance capability. Contributing to the fatalities and survivors' injuries were the immediate and intense fire that resulted from fuel spillage from the fuel tanks that were not crash resistant, the separation from the floor of the cabin seats that were not crash resistant, and the use of an inappropriate mechanism on the cabin seat restraints. The pilot-in-command, the safety crewmember, and seven firefighters were fatally injured; the copilot and three firefighters were seriously injured.

On August 5, 2008, a Sikorsky S-61N helicopter (N612AZ), which was being operated by the USFS as a public flight to transport firefighters battling forest fires, impacted trees and terrain during the initial climb after takeoff at a location about 6,000 feet above sea level in mountainous terrain near Weaverville. The USFS had contracted with Carson Helicopters, Inc. (CHI) of Grants Pass, Oregon, for the services of the helicopter, which was registered to CHI and leased to Carson Helicopter Services, Inc. (CHSI), also of Grants Pass.

"The probable cause of this accident had to do with Carson's actions and the oversight entities' inactions," said NTSB Chairman Deborah A.P. Hersman. "Carson engaged in a bargain that violated the trust of their crewmembers, the firefighters that they carried onboard, and the aviation industry. But the FAA and the Forest Service did not hold up their end of the deal to oversee Carson's actions. Public aircraft have been made the orphans of the aviation industry. It's now time for the FAA and other government agencies to step up and take responsibility." In order to prevent similar accidents and to improve the survivability of such accidents when they do occur, the NTSB issued 11 new recommendations to the FAA and reiterated one from 2006. Ten recommendations were issued to the USFS.

Toronto, 17 marzo 2011

TEXT 4 (aviation accident report)

Crash Following Encounter with Instrument Meteorological Conditions After Departure from Remote Landing Site Alaska Department of Public Safety Eurocopter AS350 B3, N911AA

Executive Summary

On March 30, 2013, at 2320 Alaska daylight time, a Eurocopter AS350 B3 helicopter, N911AA, impacted terrain while maneuvering during a search and rescue (SAR) flight near Talkeetna, Alaska. The airline transport pilot, an Alaska state trooper serving as a flight observer for the pilot, and a stranded snowmobiler who had requested rescue were killed, and the helicopter was destroyed by impact and postcrash fire. The helicopter was registered to and operated by the Alaska Department of Public Safety (DPS) as a public aircraft operations flight under 14 *Code of Federal Regulations* Part 91. Instrument meteorological conditions (IMC) prevailed in the area at the time of the accident. The flight originated at 2313 from a frozen pond near the snowmobiler's rescue location and was destined for an off-airport location about 16 mi south.

After picking up the stranded, hypothermic snowmobiler at a remote rescue location in dark night conditions, the pilot, who was wearing night vision goggles (NVG) during the flight, encountered IMC in snow showers within a few minutes of departure. Although the pilot was highly experienced with SAR missions, he was flying a helicopter that was not equipped or certified for flight under instrument flight rules (IFR). The pilot was not IFR current, had very little helicopter IFR experience, and had no recent inadvertent IMC training. Therefore, conducting the flight under IFR was not an option, and conducting the night flight under visual flight rules in the vicinity of forecast IFR conditions presented high risks. After the helicopter encountered IMC, the pilot became spatially disoriented and lost control of the helicopter.

At the time the pilot was notified of the mission and decided to accept it, sufficient weather information was available for him to have determined that the weather and low lighting conditions presented a high risk. The pilot was known to be highly motivated to accomplish SAR missions and had successfully completed SAR missions in high-risk weather situations in the past.

Probable Cause

The National Transportation Safety Board determines that the probable cause of this accident was the pilot's decision to continue flight under visual flight rules into deteriorating weather conditions, which resulted in the pilot's spatial disorientation and loss of control. Also causal was the Alaska Department of Public Safety's punitive culture and inadequate safety management, which prevented the organization from identifying and correcting latent deficiencies in risk management and pilot training. Contributing to the accident was the pilot's exceptionally high motivation to complete search and rescue missions, which increased his risk tolerance and adversely affected his decision-making.

Truck, 17 miles LOS 1

TEXT 5 (aviation accident report)

Loss of Control Sundance Helicopters, Inc. Eurocopter AS350-B2, N37SH

Executive Summary

On December 7, 2011, about 1630 Pacific Standard time, a Sundance Helicopters, Inc., Eurocopter AS350-B2 helicopter, N37SH, operating as a "Twilight tour" sightseeing trip, crashed in mountainous terrain about 14 miles east of Las Vegas, Nevada. The pilot and four passengers were killed, and the helicopter was destroyed by impact forces and postimpact fire. The helicopter was registered to and operated by Sundance as a scheduled air tour flight under the provisions of 14 Code of Federal Regulations (CFR) Part 135. Visual meteorological conditions with good visibility and dusk light prevailed at the time of the accident, and the flight operated under visual flight rules. The helicopter originated from Las Vegas McCarran International Airport, Las Vegas, Nevada, about 1621 with an intended route of flight to the Hoover Dam area and return to the airport. The helicopter was not equipped, and was not required to be equipped, with any on-board recording devices.

The accident occurred when the helicopter unexpectedly climbed about 600 feet, turned about 90° to the left, and then descended about 800 feet, entered a left turn, and descended at a rate of at least 2,500 feet per minute to impact. During examination of the wreckage, the main rotor fore/aft servo, one of the three hydraulic servos that provide inputs to the main rotor, was found with its flight control input rod not connected. The bolt, washer, self-locking nut, and split pin (sometimes referred to as a "cotter pin" or "cotter key") that normally secure the input rod to the main rotor fore/aft servo were not found. The investigation revealed that the hardware was improperly secured during maintenance that had been conducted the day before the accident. The nut became loose (likely because it was degraded)[1] and, without the split pin, the nut separated from the bolt, the bolt disconnected, and the input rod separated from the linkage while the helicopter was in flight, at which point the helicopter became uncontrollable and crashed.

Probable Cause

The NTSB determines that the probable cause of this accident was Sundance Helicopters' inadequate maintenance of the helicopter, including (1) the improper reuse of a degraded self-locking nut, (2) the improper or lack of installation of a split pin, and (3) inadequate postmaintenance inspections, which resulted in the in-flight separation of the servo control input rod from the fore/aft servo and rendered the helicopter uncontrollable. Contributing to the improper or lack of installation of the split pin was the mechanic's fatigue and the lack of clearly delineated maintenance task steps to follow.

Trento, Armando 2011

DOMANDE GRUPPO 1

1 A)	In un avvicinamento strumentale, se non diversamente specificato, qual è il gradiente minimo richiesto per il segmento di mancato avvicinamento? Come si calcola il rateo variometrico minimo necessario?
1 B)	Quali sono le caratteristiche della pioggia congelante "freezing rain" e quali sono i pericoli per il volo ad essa collegati?
1 C)	Qual è la differenza tra DA(DH) e MDA(MDH) e quali criteri vanno adottati nelle procedure CDFA?
1 D)	Si descriva la relazione tra GS, TAS e IAS in funzione della quota
1 E)	Si descriva il fenomeno dell'ipossia

Trento, 17 marzo 2021

DOMANDE GRUPPO 2

2 A)	Ai sensi del DM 01 febbraio 2006 (liberalizzazione piste di atterraggio), quanto è il tempo di risposta per il servizio antincendio e di soccorso in eliporti ed elisuperfici in elevazione ? Quale deve essere, negli eliporti ed elisuperfici oltre ai quantitativi minimi degli agenti estinguenti previsti dallo stesso decreto, la scorta degli stessi agenti ? Quali sono le classi antincendio degli eliporti e delle elisuperfici ai sensi del DM 01 febbraio 2006 (liberalizzazione piste di atterraggio)?
2 B)	Ai sensi della LP 12 agosto 1996, n.5 (Disciplina per la tutela dell'ambiente in relazione all'esercizio degli aeromobili), quando è possibile svolgere attività di volo con decolli ed atterraggi nel territorio della Provincia autonoma di Trento al di fuori dei parchi naturali, riserve naturali e delle aree protette senza comunicazioni e/o autorizzazioni ad enti provinciali e/o comunali sopra ai 1600 metri di altitudine?
2 C)	Ai sensi della LP 12 agosto 1996, n.5 (Disciplina per la tutela dell'ambiente in relazione all'esercizio degli aeromobili), senza comunicazioni e/o autorizzazioni ad enti provinciali e non considerando i voli effettuati per servizi di interesse pubblico ovvero dalle forze armate o di pubblica sicurezza o dalla protezione civile o dai servizi forestali o a scopo di soccorso o per servizi di manutenzione degli impianti di telecomunicazione (ripetitori radio TV), è possibile svolgere attività di volo territorio della Provincia autonoma di Trento al di fuori dei parchi naturali, riserve naturali e delle aree protette di fino a quale quota?
2 E)	Ai sensi del DM 01 febbraio 2006 (liberalizzazione piste di atterraggio), esistono tre classi antincendio degli eliporti e delle elisuperfici Essi sono H1, H2 e H3. Spiega le differenze.
2 F)	Ai sensi del DM 01 febbraio 2006 (liberalizzazione piste di atterraggio), per operare su elisuperfici occasionali quale è l'esperienza minima richiesta?

DOMANDE GRUPPO 3

3 B)	
	Se ricevi una chiamata dalla centrale dei VVF per trasportare personale dei vigili del fuoco su un rifugio, di notte, a seguito di un incendio senza pericolo per le persone, sei abilitato al volo con i visori NVG e hai l'elicottero idoneo, l'azienda ha l'approvazione alle operazioni specifiche NVIS , quali precauzioni devi prendere e quali sono i limiti che ti devi porre? (in base alla EU965/2012 e con tutte le possibili abilitazioni/ approvazioni previste dalla stessa)
3 D)	Quale è la recency che il pilota, l'operatore del verricello e il personale sanitario deve avere in base alla EU 965/2012? Il personale sanitario può essere verricellato con la recency scaduta?
3 E)	In un volo di trasferimento ai limiti dell'autonomia, quali accorgimenti si possono attuare per ridurre i consumi? Quali sono le velocità migliori per questo scopo?
3 F)	In quale parte dell'Operations Manual si trovano informazioni circa l'uso delle MEL? Si descrivano brevemente caratteristiche e modalità di utilizzo. Chi apre la MEL? Esiste una differenza tra una MEL aperta prima del volo o durante un volo?
3 G)	Dovendo effettuare un avvicinamento per l'atterraggio su un'area innevata, quali precauzioni e tecniche vanno adottate?

Trento, 17 marzo 2021

DOMANDE GRUPPO 4

4 A)	Il candidato illustri come si colloca il Nucleo elicotteri all'interno dell'organizzazione della Provincia autonoma di Trento e quali sono i compiti previsti dalla legge di disciplina dell'attività di protezione civile della Provincia per la figura del "responsabile tecnico" e per il "responsabile di impresa".
4 B)	Il candidato illustri come si colloca il Nucleo elicotteri all'interno dell'organizzazione della Provincia autonoma di Trento, per quali attività è consentito l'impiego di elicotteri in dotazione al Nucleo e quali di queste rivestono carattere prioritario.
4 D)	Il candidato illustri modalità e limiti all'utilizzo di beni e locali dell'amministrazione.
4 E)	Quali sono i doveri del dipendente in caso di malattia?
4 G)	Quali sono gli obblighi del dipendente rispetto alle informazioni di cui viene a conoscenza per ragioni d'ufficio e nel caso in cui sia destinatario di regali o altre utilità?

Trento, 17 marzo 2021