

From: [REDACTED]
To: [REDACTED]; [REDACTED]
Cc: [REDACTED]
Subject: RE: EXT: CEN22LA328 (N228MT) - Additional Questions
Date: Friday, July 22, 2022 12:50:02 PM

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Mike,

The fire extinguisher covers do not have a lanyard attached to the bags. It was able to come free because it was not secured under the metal band. It is common practice to have the bag secured under the using the buckle.

Under Policy AV 0002 Aviation Safety. Section III. Procedure

A. Ground Operations

1. A small, covered waste container labeled Foreign Object Debris (FOD) should be secured and easily visible near each base helipad. A search for FOD should be conducted at a minimum daily at the time of the aircraft equipment checklist and any foreign objects should be placed in the FOD container. It is every employee's duty to pick up FOD located within 50 ft. of the helipad and removed to prevent hazards. Any ground support equipment around the helipad should be properly secured so as not to present a hazard to the aircraft operations.

Pilot implied FOD checks are conducted as crews walk to and from the aircraft and anytime they are on the ramp. The fuel bowser is checked with the daily fuel checks.

Keith Luberda

Operations Safety Officer

[REDACTED] | [REDACTED] | www.lifeteam.net < <http://www.lifeteam.net> >

AIR EVAC LIFETEAM

A Global Medical Response Solution

From: Bonham, Tony [REDACTED]
Sent: Friday, July 22, 2022 11:14 AM
To: Hodges Michael [REDACTED]
Cc: Mulholland, Sean [REDACTED]; Luberda, Keith [REDACTED];
Jenkins - Chief Pilot AEL, Timothy [REDACTED]
Subject: Re: EXT: CEN22LA328 (N228MT) - Additional Questions

Keith,

Can you provide any or all of this info?

Tim.....you have any info if Keith doesn't?

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TONY BONHAM

Vice President of Aviation

■ ■ ■ ■ ■ | www.lifeteam.net

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On Jul 22, 2022, at 11:04 AM, Hodges Michael ■ ■ ■ ■ ■ wrote:

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Good morning gentlemen,

I hope everyone is doing well.

I want to please about the cloth fire extinguisher cover, from the portable fueling unit, that was ingested into the fenestron of N228MT. I have some additional questions about this please.

1. Do you know why that cover was able to become free like it did? Was the cover not properly secured to the fire extinguisher on the portable fueling unit? Does the cover come with a lanyard to help secure it from departing?
2. Is the helipad and the surrounding area, including the portable fueling unit, supposed to be inspected (such as looking for FOD, inspecting the fire extinguishers, etc.) by Air Evac on a regular basis? If so, when was the last time an inspection was conducted on that area by Air Evac and were there any issues noted during the inspection?

Thank you again for the help. Have a good weekend.

Mike

Mike J. Hodges, MS, CHP
Air Safety Investigator
National Transportation Safety Board

4760 Oakland Street, Suite 500
Denver, Colorado 80239-2793
United States of America

Cellular/SMS: [REDACTED]

Facsimile: [REDACTED]

Response Operations Center (24/7): 1-844-373-9922

Work Hours: Monday-Friday, 0900-1730 Mountain Time

“Don’t let yesterday use up too much of today.” – Will Rogers

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From: [REDACTED]
To: [REDACTED]
Cc: [REDACTED]
Subject: Re: CEN22LA328 (N228MT) - Accident Update
Date: Thursday, July 21, 2022 11:31:24 AM
Attachments: [image.png](#)
[Outlook-cid_image0.png](#)

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FYI,

I created a Baldwin Safety Alert and sent to the field and I included the link that you provided.
Thx.

The screenshot shows a web browser window with the URL baldwinsafety.com/ae01/bulletins/17322. The page title is "NTSB Safety Alert - Helicopter Landing Sites: Free from Debris". The alert was published on July 21, 2022, and acknowledged on the same date. The recipients listed are Pilots, Flight Nurse, Flight Paramedic, Maintenance, Program Director, Maintenance Control, Clinical Staff, Leadership, and Regional Managers. The alert text describes an incident where a rotor wash blew the red cover off of a fire extinguisher located at the fuel farm, and it was ingested into the Fenestron tail rotor and caused severe damage. The aircraft will be out-of-service for many weeks. The alert also requests that users immediately check their departure/landing areas to ensure there is no FOD (Foreign Object Debris) that can potentially be blown into the tail rotor blades, main rotor blades, or engine intake. The FAA also asked that the user share the below NTSB Safety Alert related to FOD with their personnel. The alert is signed by Tony Bonham, VP of Aviation, and includes a link to the NTSB Safety Alert: [Helicopter Landing Sites: Free from Debris \(ntsb.gov\)](https://www.ntsb.gov). The sidebar on the left contains navigation links such as Home, MY FAVORITES, Safety Report: AEL, UAS Report: MT02, My Submissions, Form Dashboard, Audit Manager, Flight Risk Assessment, AEL, Clinical Report, Clinical Suggestion Box, GENERAL, Discussion Board, Documents, External Links, Help, My Bulletins, My Submissions, Safety News, and Status Board. The footer of the page displays the user's name, TONY BONHAM, and their title, Vice President of Aviation, along with the website www.lifeteam.net.

TONY BONHAM
Vice President of Aviation
[REDACTED] | www.lifeteam.net



A Global Medical Response Solution.

From: Hodges Michael [REDACTED]
Sent: Thursday, July 21, 2022 12:14 PM
To: [REDACTED]
Subject: EXT: CEN22LA328 (N228MT) - Accident Update

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Hello gentlemen,

I hope everyone is doing well.

I have been assigned the recent accident with N228MT. The NTSB case number is CEN22LA328.

Scott – Are you working this one or is it going to be someone else from the FSDO? If it is someone else, please provide me their contact information when able.

Tony and Tim – Can I please request (the photos I currently have are a smaller size):

1. Larger size photos of the damage sustained the fenestron.
2. Larger size photos of the FOD that was ingested.
3. Larger size photos of the fenestron hub cover pieces that were damaged.

Also, Tony and Tim, I would respectfully ask if you can please share this NTSB Safety Alert with your entire company to help promote safety awareness on this topic:

[Helicopter Landing Sites: Free from Debris \(ntsb.gov\)](https://www.ntsb.gov/safety/alerts/2022/04/helicopter-landing-sites-free-from-debris)

The first accident case highlighted is an Airbus EC-135, that I worked a few years ago.

Thank you for the help and have a good week.

Mike

Mike J. Hodges, MS, CHP
Air Safety Investigator
National Transportation Safety Board

4760 Oakland Street, Suite 500
Denver, Colorado 80239-2793
United States of America

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NTSB

SAFETY ALERT

National Transportation Safety Board



Helicopter Landing Sites: Free from Debris



Foreign object debris can foul rotor systems and cause damage

The problem

- Unsecured or improperly secured foreign object debris (FOD) at helicopter landing sites can migrate due to the effects of main rotor system downwash and upwash and foul the main or tail rotor systems.
- Examples of FOD that are light enough to migrate and affect the helicopter include towels, ropes, tarps, bags, tents, equipment covers, loose tree branches, tumbleweeds, and hats worn by ground personnel.
- Contact with FOD at a landing site can lead to a loss of helicopter control and accidents.

Related accidents

The National Transportation Safety Board (NTSB) has investigated several accidents in recent years involving FOD at helicopter landing sites:

- The pilot of an Airbus (formerly Eurocopter) EC135 P2+ helicopter reported that, while landing at a public safety training center, he felt the helicopter shudder unexpectedly. The pilot immediately landed the helicopter without further incident. A postflight examination revealed that a towel had been ingested into the fenestron (see figures 1 and 2). The towel ingestion resulted in separation of the fenestron hub cover, which was subsequently ingested, substantially damaging the helicopter. The pilot reported that the towel came from an unsecured storage container near the landing site. ([GAA16LA056](#))

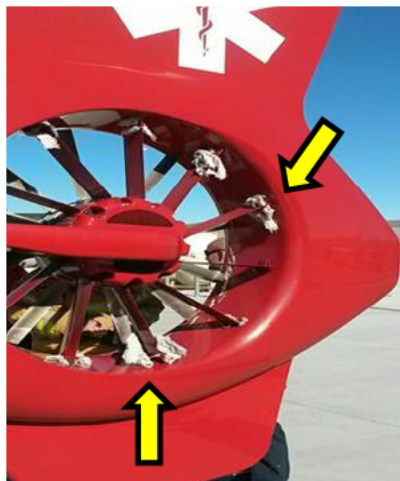


Figure 1. Fenestron with towel pieces.



Figure 2. Lower fenestron housing.

- The pilot of an Airbus (formerly Eurocopter) AS350 B3 helicopter was conducting a remote, high-altitude landing on a mountain during a rescue mission when the main rotor system was fouled by a rope that was not properly secured by ground personnel during the loading process. The helicopter abruptly rotated to the left, began to shake violently, and impacted terrain before the pilot regained control of it and made an emergency landing. A postflight examination revealed substantial damage to the main rotor system, tail boom, and empennage (see figures 3 and 4). ([GAA15CA258](#))

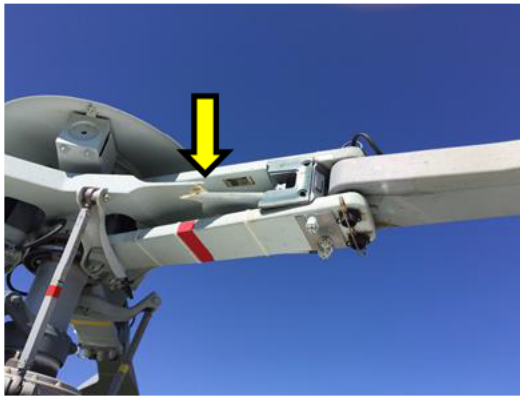


Figure 3. Main rotor system (Starflex assembly).



Figure 4. Empennage (horizontal stabilizer and vertical fin).

- After the pilot landed an MD Helicopters MD 500D (formerly Hughes 369D) helicopter at a remote landing site near secured bundles of trash, the helicopter started to shake abruptly. The pilot maintained control of the helicopter until the shaking subsided and shut down the engine. A witness reported that a tarp from a nearby trash bundle had migrated up into the main rotor blades. As a result of the entanglement, one of the main rotor blades separated from the helicopter. ([WPR13CA406](#))
- The pilot of a Robinson R22 Beta helicopter landed the helicopter on a private landing pad in a position that placed the tail rotor system near tarps that were held on the ground by boards and stones. As the pilot was preparing to shut down the helicopter, the tarps were lifted into the tail rotor system. The helicopter rotated several revolutions on the ground, struck a parked trailer, and caught fire. ([CEN13LA115](#))

What can you do?

- When choosing a landing site, avoid areas close to construction activities and trash storage. Consider the effects of main rotor system downwash and upwash on FOD migration when selecting a landing site, based on the site conditions and the size of the helicopter.
- Keep in mind that wind speed and direction can aid in the migration of FOD to landing sites. Rain water and drainage can also stream FOD along the path of least resistance.
- Ask available personnel to conduct a sweep of the landing site for FOD that could affect the helicopter. If personnel are not available, visually scan for FOD on the landing site while conducting your high and low reconnaissance before you land. If the conditions permit, check for FOD while conducting your ground reconnaissance before you take off.
- Have personnel at the landing site remove or secure any headgear (such as helmets, hats, and knit caps). Ensure any additional clothing, gear, and equipment items are secured and kept clear of the main and tail rotor systems.

- Incorporate the Perceive, Process, Perform (3P) risk management model for selecting an appropriate landing site. This model (resources for which are provided below) can help you develop the aeronautical decision-making and risk management skills to help identify the potential for FOD, evaluate its potential impact on flight safety, and implement the best course of action to mitigate the risk.
- Educate and train flight crews who routinely work with ground personnel at landing sites (such as helicopter air ambulance companies, law enforcement organizations, and military units that coordinate with first responders on the ground) about how to identify, secure, or remove FOD that could affect the helicopter.

Interested in more information?

The following Federal Aviation Administration (FAA) resources are accessible via www.faa.gov:

- Advisory Circular (AC) 00-59, “[Integrating Helicopter and Tiltrotor Assets into Disaster Relief Planning](#),” provides guidance about helicopter landing site planning and usage during disaster relief operations.
- FAA-H-8083-21A, “[Helicopter Flying Handbook](#),” provides guidance about how to conduct a high, low, and ground reconnaissance.
- FAA-H-8083-25B, “[Pilot’s Handbook of Aeronautical Knowledge](#),” provides guidance in chapter 2-15 about how to incorporate the 3P risk management model during all phases of flight.
- AC 135-14B, “[Helicopter Air Ambulance Operations](#),” provides guidance in section 3-8 for establishing procedures for conducting airborne and ground reconnaissance of landing sites and heliports, with particular emphasis on off-airport landing sites or heliports not used on a routine basis.

The FAA Safety Team (FAASTeam) provides access to online training courses, seminars, and webinars to provide education that focuses on accident and incident causal factors, special emphasis items, and regulatory issues. Course ALC-28, “[The Art of Aeronautical Decision-Making](#),” provides information about the 3P risk management model. This course (and many others), as well as seminar and webinar information, can be accessed from the FAASTeam website at www.faasafety.gov. (Course access requires login through an existing or new free FAASTeam account.)-

The NTSB’s Aviation Information Resources web page, www.nts.gov/air, provides convenient access to NTSB aviation safety products. The reports for the accidents referenced in this safety alert are accessible by NTSB accident number from the [Aviation Accident Database](#) link, and each accident’s public docket is accessible from the [Accident Dockets](#) link for the Docket Management System. This safety alert and others, such as SA-026, “[All Secure, All Clear](#),” (which emphasizes securing items inside an aircraft) and SA-054, “[Control Foreign Object Debris](#),” (which emphasizes keeping track of tools and objects during aircraft maintenance) can be accessed from the [Aviation Safety Alerts](#) link.



European Aviation Safety Agency

John Vincent • Head of Safety Analysis and Research

Cologne, 26 August 2008
JVI/hka/E.2 2008(D)73618

Accident Investigation Board Norway
(AAIB Norway)
Attn. Ms. Grete MYHRE
Director
[REDACTED]
NO 2001 Lillestroem
NORWAY

SL
06/197-23 08/18M
311
LN-00D EI

Subject: Safety recommendation related to the event Eurocopter EC-135 P2 registered LN-00D, on 13.04.2006 at Lagardene, Norway

Dear Ms. Myhre,

Following the Safety Recommendation mentioned above addressed to the European Aviation Safety Agency, please find thereafter the Agency's response.

Yours sincerely,

[REDACTED]
J. Vincent

Copy: C-Rotorcraft

[REDACTED]
E.F014-02

Safety Recommendation Reply

Recommendation NORW-2007-073 issued on 12.20.2007

Subject:	Accident to Eurocopter EC-135 P2 registered LN-OOD, on 13.04.2006 at Lagardene, Norway
Safety recommendation:	Safety recommendation SL no. 2007/37T The accident has revealed that the hub cover of the Fenestron on EC 135 can loosen when the rotor tips are bent out. A loosened cover will be sucked through the Fenestron and cause extensive damage. AIBN recommends that Eurocopter consider whether the fixing mechanism between the cover and hub could be changed to prevent loosening
Response category:	Agreement
Response:	EASA agrees with this recommendation. Eurocopter Deutschland (ECD) has launched a technical review of possible design improvements to the fenestron hub cap installation; this might lead to a future design change if deemed suitable. However, no unsafe design features have been identified so far. In-flight loss (as well as all other three events reported to ECD) was accompanied by contact of the fenestron/tail boom with obstacles.
Status:	Closed