NATIONAL TRANSPORTATION SAFETY BOARD
Office of Aviation Safety
Washington, D.C. 20594

October 31, 2019

OPERATIONS GROUP CHAIRMAN'S FACTUAL REPORT ADDENDUM #1

NTSB No: CEN19FA072

A. ACCIDENT

Operator:	Viking Aviation, Inc.
Aircraft:	Bell 407, Registration N191SF
Location:	Zaleski, Ohio
Date:	January 29, 2019
Time:	0650 eastern standard time

B. GROUP

Operations Group Chairman:	John Brannen (AS-CEN) Senior Air Safety Investigator National Transportation Safety Board 4760 Oakland Street – Suite 500 Denver, CO 80239
Human Performance Group Chairman:	Sathya Silva, PhD (AS-60) Senior Human Performance Investigator National Transportation Safety Board 490 L'Enfant Plaza, SW Washington, DC 20594
Member:	Tim Taylor Viking Aviation Party Member 705 Heber Springs Rd. Batesville, AR 72501
Member:	David Gerlach Senior Air Safety Investigator Office of Accident Investigation & Prevention Federal Aviation Administration 800 Independence Ave., SW, Room 840 Washington, DC 20594

LIST OF ACRONYMS

CFR	*Code of Federal Regulations*
FAA	Federal Aviation Administration
NTSB	National Transportation Safety Board

C. SUMMARY

On January 29, 2019, at 0650 eastern standard time, a Bell 407 helicopter, N191SF, collided with forested, rising terrain about 4 miles northeast of Zaleski, Ohio. The helicopter was registered to and operated by Viking Aviation, LLC, doing business as Survival Flight, Inc., as a visual flight rules helicopter air ambulance flight under the provisions of 14 *Code of Federal Regulations* (CFR) Part 135 when the accident occurred. The certificated commercial pilot, flight nurse, and flight paramedic were fatally injured, and the helicopter was destroyed. Visual meteorological conditions existed at the departure location, and company flight following procedures were in effect. The flight departed Mt. Carmel Hospital, Grove City, Ohio at 0628, destined for Holzer Meigs Hospital, Pomeroy, Ohio, about 69 miles southeast.

D. DETAILS OF THE INVESTIGATION

1.0 BELL 206 VERSUS BELL 407 TRAINING

14 CFR Part 135.293 (b), "Initial and recurrent pilot testing requirements" stated:

> *"(b) No certificate holder may use a pilot, nor may any person serve as a pilot, in any aircraft unless, since the beginning of the 12th calendar month before that service, that pilot has passed a competency check given by the Administrator or an authorized check pilot in that class of aircraft, if single-engine airplane other than turbojet, or that type of aircraft, if helicopter, multiengine airplane, or turbojet airplane, to determine the pilot's competence in practical skills and techniques in that aircraft or class of aircraft. The extent of the competency check shall be determined by the Administrator or authorized check pilot conducting the competency check. The competency check may include any of the maneuvers and procedures currently required for the original issuance of the particular pilot certificate required for the operations authorized and appropriate to the category, class and type of aircraft involved. For the purposes of this paragraph, type, as to an airplane, means any one of a group of airplanes determined by the Administrator to have a similar means of propulsion, the same manufacturer, and no significantly different handling or flight characteristics. For the purposes of this paragraph, type, as to a helicopter, means a basic make and model."*

A legal interpretation of whether a competency check in any helicopter model listed on the same Type Certificate Data Sheet (TCDS) satisfies the "basic make and model" requirement under 14 CFR Part 135.293 (b) was requested from the Federal Aviation Administration (FAA). The FAA response stated that a competency check in any model helicopter on the same TCDS was permitted and would satisfy the requirements of 135.293 (b). The interpretation went on to clarify that although the Bell 407 and Bell 206 are on the same TCDS, the requirements of 135.293 (b) are not related to the differences training required in accordance with 135.321 (b)(4), 135.341, and 135.347, which state:

§ 135.321 (b)(4) Differences training.
The training required for crewmembers who have qualified and served on a particular type aircraft, when the Administrator finds differences training is necessary before a crewmember serves in the same capacity on a particular variation of that aircraft.

§ 135.341 Pilot and flight attendant crewmember training programs.
(a) Each certificate holder, other than one who uses only one pilot in the certificate holder's operations, shall establish and maintain an approved pilot training program, and each certificate holder who uses a flight attendant crewmember shall establish and maintain an approved flight attendant training program, that is appropriate to the operations to which each pilot and flight attendant is to be assigned, and will ensure that they are adequately trained to meet the applicable knowledge and practical testing requirements of §§ 135.293 through 135.301. However, the Administrator may authorize a deviation from this section if the Administrator finds that, because of the limited size and scope of the operation, safety will allow a deviation from these requirements. This deviation authority does not extend to the training provided under § 135.336.

(b) Each certificate holder required to have a training program by paragraph (a) of this section shall include in that program ground and flight training curriculums for -

(1) Initial training;
(2) Transition training;
(3) Upgrade training;
(4) Differences training; and
(5) Recurrent training.

(c) Each certificate holder required to have a training program by paragraph (a) of this section shall provide current and appropriate study materials for use by each required pilot and flight attendant.

(d) The certificate holder shall furnish copies of the pilot and flight attendant crewmember training program, and all changes and additions, to the assigned representative of the Administrator. If the certificate holder uses training facilities of other persons, a copy of those training programs or appropriate portions used for those facilities shall also be furnished. Curricula that follow FAA published curricula may be cited by reference in the copy of the training program furnished to the representative of the Administrator and need not be furnished with the program.

§ 135.347 Pilots: Initial, transition, upgrade, and differences flight training.
(a) Initial, transition, upgrade, and differences training for pilots must include flight and practice in each of the maneuvers and procedures in the approved training program curriculum.

(b) The maneuvers and procedures required by paragraph (a) of this section must be performed in flight, except to the extent that certain maneuvers and procedures may be performed in an aircraft simulator, or an appropriate training device, as allowed by this subpart.

(c) If the certificate holder's approved training program includes a course of training using an aircraft simulator or other training device, each pilot must successfully complete -

(1) Training and practice in the simulator or training device in at least the maneuvers and procedures in this subpart that are capable of being performed in the aircraft simulator or training device; and

(2) A flight check in the aircraft or a check in the simulator or training device to the level of proficiency of a pilot in command or second in command, as applicable, in at least the maneuvers and procedures that are capable of being performed in an aircraft simulator or training device.

Differences Training was addressed in the training program with the following paragraph. No additional curriculum segments or modules were located within the training program.

Differences

Differences between variations of the BHT 206 Series are minimal; however, due to slight differences in limitations, instrumentation, and installed equipment, differences training will be required during all categories of training/checking. Additional specific differences training will be annotated in each individual's training records. If such training was not recorded, Ground Training 5-1 will be reviewed for any additional model that is different than the base aircraft model. In all cases, the flight maneuvers in 6-17 will be trained to proficiency for any additional model. The flight training will also be recorded in the individual's training record. Once VA differences training has been complete, the individual will be considered a PIC in that model for as long as the PIC is remains current and qualified in any BHT 206.

John Brannen
Senior Air Safety Investigator

NATIONAL TRANSPORTATION SAFETY BOARD
490 L'Enfant Plaza East, SW
Washington, DC 20594

March 6, 2019

Arjun Garg
Chief Counsel, AGC-1
Federal Aviation Administration
Washington, DC

Dear Mr. Garg:

On January 29, 2019, a Bell BHT-407 helicopter, N191SF, being operated by Viking Aviation LLC as Survival Flight 14, collided with forested, rising terrain about 4 miles northeast of Zaleski, Ohio, resulting in three fatalities. The flight was being operated under the provision of 14 *Code of Federal Regulations* Part 135 as a helicopter air ambulance flight.

During the course of this ongoing NTSB investigation, it was discovered that the accident pilot had completed a competency check as required by 14 CFR 135.293(b) in a BHT-206 model helicopter. There was no record of a competency check in the BHT-407 model helicopter. The Principal Operations Inspector (POI) from the Little Rock Flight Standards District Office (FSDO), responsible for oversite of this operator, has said that because the BHT-206 and BHT-407 were on the same Type Certificate Data Sheet (TCDS), it was legal for the accident operator to conduct competency checks in this manner.

14 CFR 135.293(b) currently states:

No certificate holder may use a pilot, nor may any person serve as a pilot, in any aircraft unless, since the beginning of the 12th calendar month before that service, that pilot has passed a competency check given by the Administrator or an authorized check pilot in that class of aircraft, if single-engine airplane other than turbojet, or that type of aircraft, if helicopter, multiengine airplane, or turbojet airplane, to determine the pilot's competence in practical skills and techniques in that aircraft or class of aircraft. The extent of the competency check shall be determined by the Administrator or authorized check pilot conducting the competency check. The competency check may include any of the maneuvers and procedures currently required for the original issuance of the particular pilot certificate required for the operations authorized and appropriate to the category, class and type of aircraft involved. For the purposes of this paragraph, type, as to an airplane, means any one of a group of airplanes determined by the Administrator to have a similar means of propulsion, the same manufacturer, and no significantly different

handling or flight characteristics. For the purposes of this paragraph, type, as to a helicopter, means a basic make and model.

14 CFR 1.1 contains the following definition of *Type*:

Type:

(1) As used with respect to the certification, ratings, privileges, and limitations of airmen, means a specific make and basic model of aircraft, including modifications thereto that do not change its handling or flight characteristics. Examples include: DC-7, 1049, and F-27; and
(2) As used with respect to the certification of aircraft, means those aircraft which are similar in design. Examples include: DC-7 and DC-7C; 1049G and 1049H; and F-27 and F-27F.
(3) As used with respect to the certification of aircraft engines means those engines which are similar in design. For example, JT8D and JT8D-7 are engines of the same type, and JT9D-3A and JT9D-7 are engines of the same type.

The only Flight Standardization Board (FSB) report[1] applicable to the BHT-407 pertains to an IFR configuration STC, SR09244RC. The report states, in part: *"Although the model BHT-407 is a derivative of the BHT-206, the main rotor, engine, engine control system (FADEC), hydraulic system, drive train, and tail rotor are significantly different from the BHT-206. The systems, handling qualities, and characteristics of the BHT model 407 itself requires specific training."*

The make and model specific competency check requirement for Part 135 helicopter operations was reiterated in a legal interpretation dated August 13, 2009, and addressed to Aircoastal Helicopters, Inc.[2] The FAA restated in that interpretation that helicopter "type" for these purposes is defined as "basic make and model."

Subsequent to the accident, the FAA's Office of Accident Investigation and Prevention (AVP-100), has supported the position of the accident operator's POI and stated that the accident operator's competency checks in the BHT-206 would be allowed to count for the BHT-407. AVP-100's response, however, does not address the regulation and interpretation as a whole and appears to contradict 14 CFR 135.293(b) and the associated 2009 legal interpretation.

[1] Attachment 1: Bell Model 407 FSB report
[2] Attachment 2: Aircoastal legal interpretation

Therefore, the NTSB is requesting a legal interpretation of 135.293(b) to clarify if a competency check in any helicopters listed on the same TCDS satisfies the helicopter "make and model" requirement outlined in 14 CFR 135.293(b).

Sincerely,

[redacted]

Shaun Williams
Senior Aviation Accident Investigator
National Transportation Safety Board
4760 Oakland Street, Suite 500
Denver, CO 80239
Office: 907-244-9079

Federal Aviation Administration

Memorandum

Date: October 23, 2019

To: Patrick Hempen, Director, Accident Investigation Division, AVP-100

From: [redacted] Lorelei D. Peter, Assistant Chief Counsel for Regulations, AGC-200

Prepared by: Autumn Killingham, Attorney, AGC-220

Subject: NTSB Information Request; Re: N191SF Viking Aviation, Ohio, 1/29/2019

In preparing a response to an NTSB request dated March 6, 2019, you requested clarification from my office concerning 14 CFR § 135.293(b). Specifically, you asked whether a competency check in any helicopter model listed on the same type certificate data sheet (TCDS) satisfies the helicopter "basic make and model" requirement under § 135.293(b). The pertinent facts and your question are as follows:

Facts:

1. On January 29, 2019, civil aircraft N191SF, a Bell BHT-407 helicopter, operated by Viking Aviation LLC ("Viking Aviation"), collided with rising terrain approximately four (4) miles northeast of Zaleski, Ohio, resulting in three (3) fatalities.

2. The flight was operated as an air ambulance flight under part 135, subpart L.

3. Prior to the above-described flight, the accident pilot had completed a competency check as required by 14 C.F.R. § 135.293(b) in a BHT-206 helicopter.

4. Prior to the above-described flight, the accident pilot had not completed a competency check in a BHT-407 helicopter.

5. At the time of the collision identified in paragraph 1 above, the BHT-206 and BHT-407 were on the same Type Certificate Data Sheet (TCDS).

6. The Principal Operations Inspector (POI) responsible for the oversight of Viking Aviation informed the NTSB that Viking legally conducted competency checks in this manner because the BHT-206 and the BHT-407 were on the same TCDS.

7. The FAA's Office of Accident Investigation and Prevention (AVP-100) subsequently advised the NTSB that the accident operator's competency checks in the BHT-206 counted for the BHT-407.

Question:

The NTSB requested a legal interpretation to determine whether a competency check in any helicopter model listed on the same TCDS satisfies the helicopter "basic make and model" requirement under 14 C.F.R. § 135.293(b).

Analysis:

The answer to your question is yes.

Section 135.293(b) provides in pertinent part:

> (b) No certificate holder may use a pilot, nor may any person serve as a pilot, in any aircraft unless, since the beginning of the 12th calendar month before that service, that pilot has passed a competency check given by the Administrator or an authorized check pilot in that class of aircraft, if single-engine airplane other than turbojet, or that type of aircraft, if helicopter, multiengine airplane, or turbojet airplane, to determine the pilot's competence in practical skills and techniques in that aircraft or class of aircraft. ...For the purposes of this paragraph, type as to a helicopter, means a basic make and model.

Section 1.1 provides in pertinent part:

Type:

(1) As used with respect to the certification, ratings, privileges, and limitations of airmen, means a specific make and basic model of aircraft, including modifications thereto that do not change its handling or flight characteristics. Examples include: DC-7, 1049, and F-27; and

(2) As used with respect to the certification of aircraft, means those aircraft which are similar in design. Examples include: DC-7 and DC-7C; 1049G and 1049H; and F-27 and F-27F.

(3) As used with respect to the certification of aircraft engines means those engines which are similar in design. For example, JT8D and JT8D-7 are engines of the same type, and JT9D-3A and JT9D-7 are engines of the same type.

The language in § 135.293(b) is materially similar to the definition of "type" set forth in § 1.1. Considering the usage of "type" contained in § 135.293(b), and the definition of "type" in § 1.1, the regulations envision aircraft that are similar in design and flight characteristics.

The information contained in the TCDS provides the formal description of the aircraft and its accompanying "conditions and limitations."[1] Each TCDS is specific to a single type certificate but lists the various models under that type certificate and differences between models. Because each TCDS is specific to a single type certificate, aircraft listed on the same TCDS would be the same type under the regulatory definition.

When defining "type" for helicopters as meaning "basic make and model" in part 135, the FAA concluded the "handling and flight characteristics of light helicopters are significantly different [and t]he equipment available for them is also considerably different." *Regulatory Review Air Taxi Operators And Commercial Operators*, Final Rule, 43 Fed. Reg. 46742, 46774 (Oct. 10, 1978). This language distinguishes helicopters from single-engine airplanes, for which a competency check in any aircraft of that class is required, rather than creates a more restrictive requirement for helicopters than for turbojet or multi-engine airplanes. *See id.* Furthermore, the § 135.293(b) definition may be a vestige of history because the FAA indicated an interest in similar treatment between airplanes and rotorcraft by stating "[a]s additional helicopters become available and standardization of various models is accomplished, competency check requirements will be established similar to those for airplanes." 43 Fed. Reg. at 46742. Considered together, the FAA intended in 1978 for helicopters and airplanes to be treated similarly, and § 135.293(b) permits a helicopter competency check to be in any model on the same TCDS in the same way as would be required for a turbojet or multi-engine airplane competency check.

This conclusion is consistent with the previous legal interpretation issued by this office. *See* Legal Interpretation to Aircoastal Helicopters, Inc., from Rebecca B. MacPherson, Assistant Chief Counsel for Regulations (August 13, 2009). That interpretation concluded, among other things, a competency check is required in each helicopter make and model, but it did not provide clarification as to what constitutes a "basic make and model."

Similarly, this conclusion does not contradict the assessment rendered in the BHT-407 Flight Standardization Board (FSB) report. Although that report evaluated only the supplemental type certificate (STC) for single pilot instrument flight rules (IFR) in the BHT-407, it noted that "the main rotor engine, engine control system (FADEC), hydraulic system, drive train, and tail rotor are significantly different from the BHT-206." It further provided that the BHT-407 requires "specific training." Differences training is required in accordance with §§ 135.321(b)(4), 135.341, and 135.347 and is unrelated to competency check requirements.

[1] FAA Order 8110.4C, Change 6, Para. 3-3.