

Crash During a Landing Approach

MAY 16, 2018.



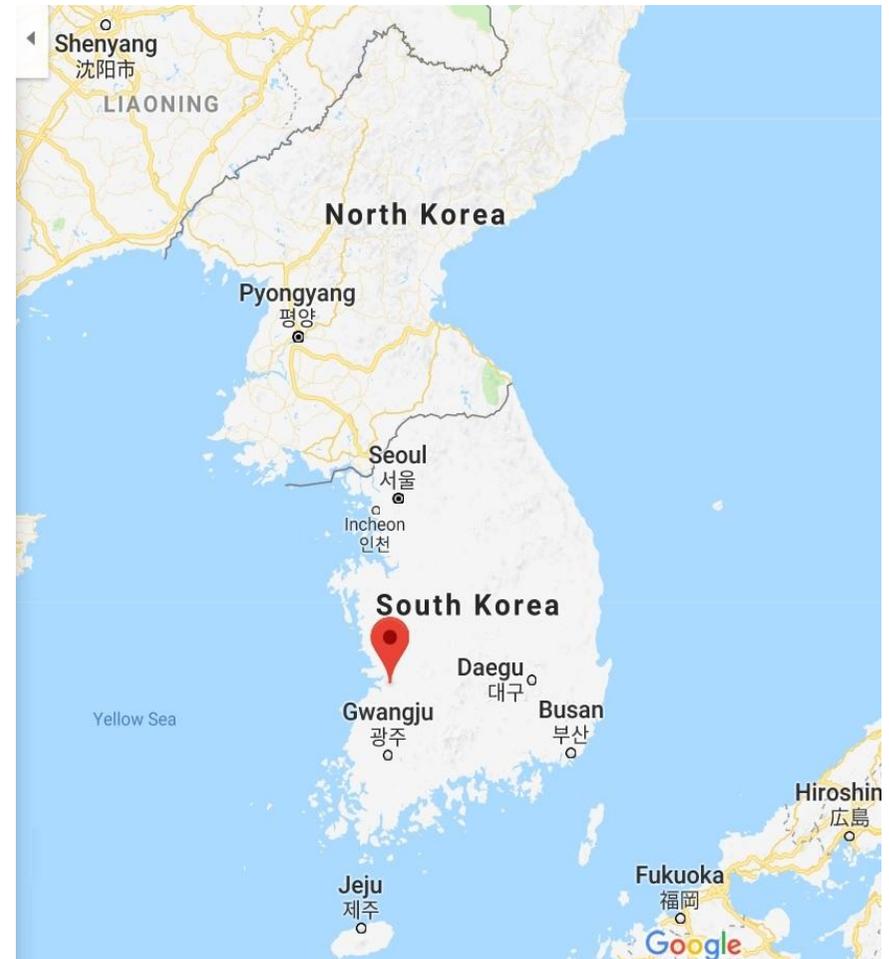
Aircraft and Railway Accident Investigation Board
Republic of Korea

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1. Synopsis

- Date : JAN 30, 2016. 5:00PM
- Operator : Sejin Aviation
(aerial work)
- A/C Manufacturer : MBB Co.
(Airbus Helicopter)
- A/C Type : BO105CBS-5
(Rotorcraft)
- Captain : fatally injured
- Aircraft : totally destroyed
- Occurrence: crashed into a hill
while approaching a landing site



2. Factual Information

- Purpose of Flight: Forest Fire Patrol
- While approaching a landing site, the Rotorcraft suddenly spun to the right about 10 times at an altitude of 30 to 40 meters and flew towards a nearby hill with a nose-down attitude



2. Factual Information

- History of Maintenance
 - 1991.10.15 manufactured by MBB in Germany
 - Operated by Sky Media in Switzerland
 - 2015.11.30. delivered to Sejin Aviation in Korea
 - 2015.12.22 oil leak from the tail rotor gear box (TGB)
 - 2016.1.6. replaced the TGB and ground operational check (20Min.)
 - 2016.1.26. 50Min. training flight (Ground 26Min., Air 24Min.)
 - 2016.1.30. forest fire patrol (40Min.)

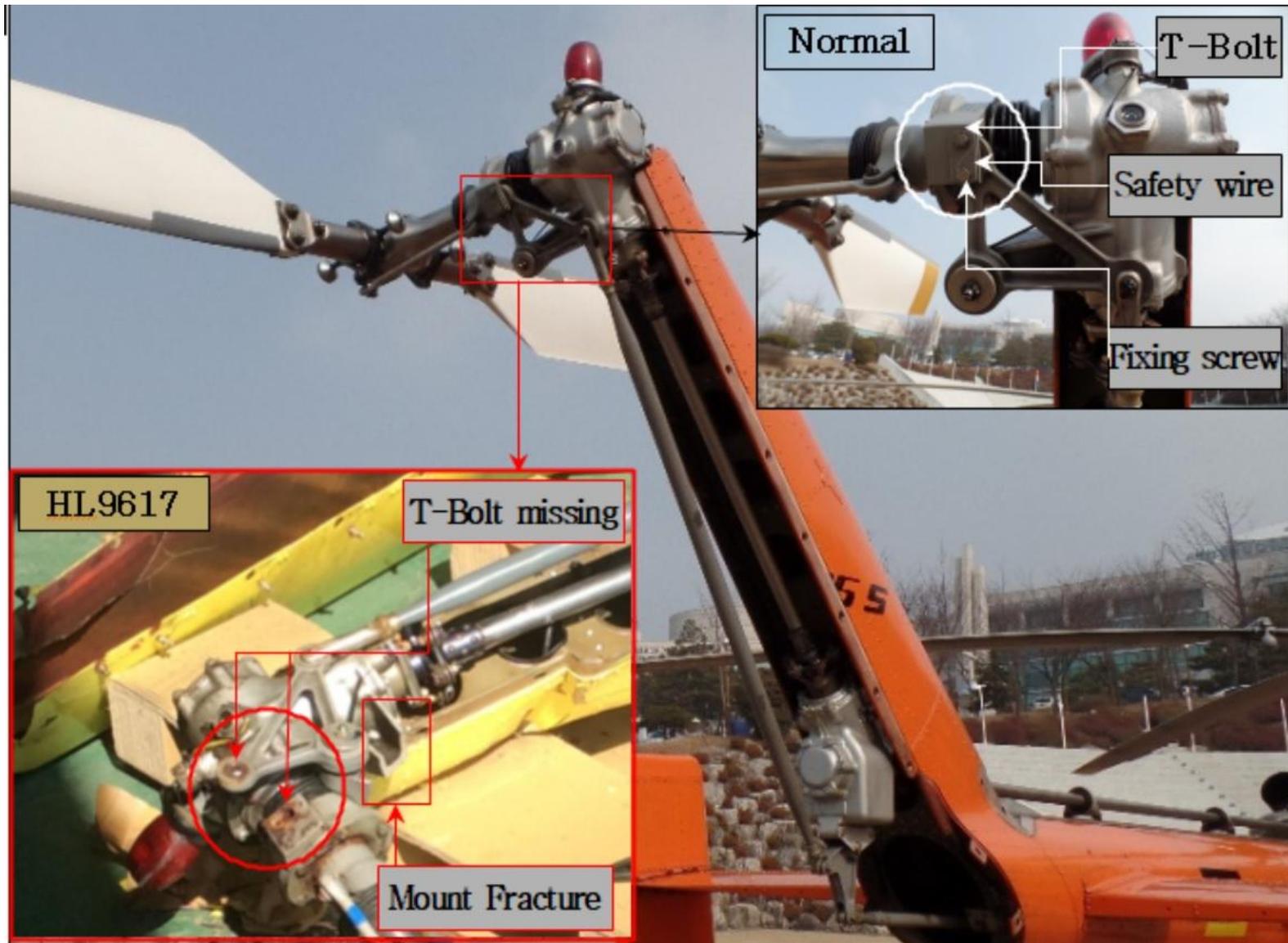
2. Factual Information

- History of the TGB
 - 2010.3. removed from the rotorcraft as an unserviceable condition at the Sky Media the former operator
 - 2015.11.30. delivered with the rotorcraft to Sejin Aviation
 - Unpreserved
 - Non-airworthiness condition
 - 2016.1.6. installed on the rotorcraft with non-airworthiness certificate

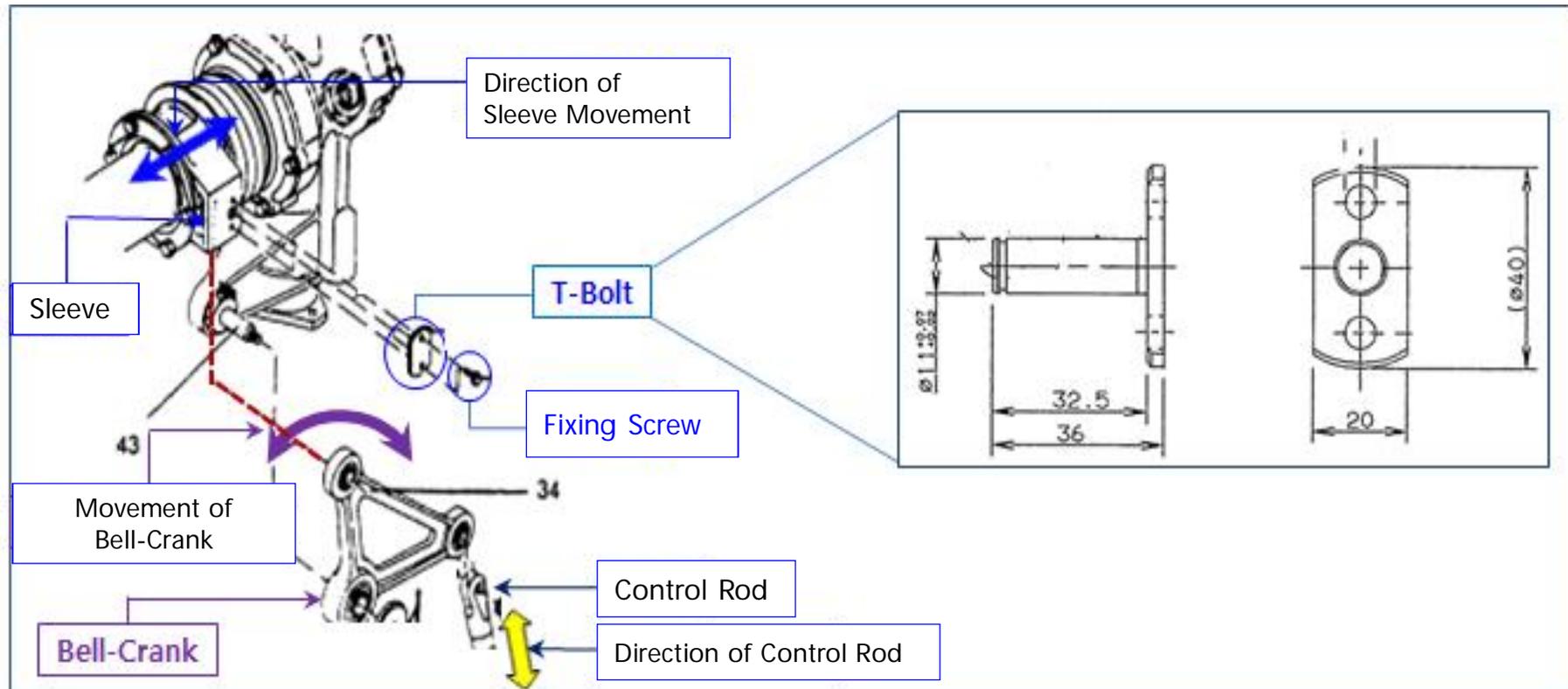
2. Factual Information

- Field Investigation
 - The tail rotor pitch control bell-crank attached to the vertical stabilizer had been separated from the pitch control sleeve because the T-bolt had been lost
 - It is concluded that the T-bolt was tightened without fixing screws.
 - T-bolt had to be installed in the TGB, and the T-bolt is tightened by two fixing screws and one safety wire to prevent it from falling out during flight.

2. Factual Information



2. Factual Information



3. Analysis

- Installed unserviceable TGB
 - Mechanic reported to the supervisor that the subject part did not have its airworthiness certificate.
 - Mechanic was instructed to perform the replacement.
- The captain probably failed to perform the emergency procedures
 - He probably concentrated only on gaining yaw control until the moment of the crash.

4. Conclusions

- Probable Cause
 - As T-bolt was lost during flight due to inadequate aircraft maintenance, the bell-crank became separated from the tail rotor pitch control sleeve, which caused the aircraft to experience a loss of yaw control, thereby resulting in crash.
 - When the rotorcraft experienced a loss of yaw control, the captain could not perform appropriate emergency procedures.

4. Conclusions

- Contributing Factor
 - Sejin Aviation inadequately performed aircraft maintenance in that the aerial work operator installed the unserviceable TGB which had lost airworthiness and failed to check the fastening of T-bolt fixing screws.
 - As Sejin Aviation inadequately provided its flight crew with emergency procedures training, the captain could not perform appropriate emergency procedures in an emergency situation.

5. Safety Recommendations

- To Sejin Aviation
 - Take measures to improve maintenance practices including a compulsory check on a valid airworthiness certificate of a replacement part.
 - Take measures to enhance emergency procedures training to ensure that pilots can improve their ability to respond to emergency situations.

5. Safety Recommendations

- To the Regional Office of Aviation
 - Prevent aerial work operators from performing inadequate maintenance activities and enhance safety oversight of their emergency procedures training for pilots.

Thank You !!

**Aircraft and Railway Accident
Investigation Board**

BO105CBS-5

