

On the basis of the studies and analysis performed, the Committee established that the immediate cause of the accident was the descent below the minimum descent altitude at an excessive rate of descent in weather conditions which prevented visual contact with the ground, as well as a delayed execution of the go-around procedure. Those circumstances led to an impact on a terrain obstacle resulting in separation of a part of the left wing with aileron and consequently to the loss of aircraft control and eventual ground impact.

Circumstances Contributing to the Accident

- 1) Failure to monitor altitude by means of a **pressure** altimeter during a **non-precision** approach;
- 2) failure by the crew to respond to the **PULL UP warning** generated by the TAWS;
- 3) attempt to execute the go-around maneuver under the control of ABSU (**automatic go-around**);
- 4) Approach Control confirming to the crew the **correct position of the airplane** in relation to the RWY threshold, glide slope, and course **which might have affirmed the crew's belief that the approach was proceeding correctly** although the airplane was actually **outside the permissible deviation margin**;
- 5) **failure by landing zone controller (LZC) to inform** the crew about descending **below the glide slope and delayed** issuance of the level-out command;
- 6) **incorrect training** of the Tu-154M flight crews in the 36 Regiment.

3.2.3. Conducive circumstances

- 1) **incorrect coordination of the crew's work**, which placed an excessive burden on the aircraft commander in the final phase of the flight;
- 2) **insufficient flight preparation** of the crew;
- 3) **the crew's insufficient knowledge** of the airplane's systems and their limitations;
- 4) **inadequate cross-monitoring** among the crew members and failure to respond to the mistakes committed;
- 5) **crew composition inadequate** for the task;
- 6) **ineffective immediate supervision** of the 36 Regiment's flight training process by the Air Force Command;
- 7) **failure** by the 36 Regiment to **develop procedures governing the crew's actions** in the event of:
 - a) failure to meet the established approach criteria;
 - b) using radio altimeter for establishing alarm altitude values for various types of approach;
 - c) distribution of duties in a multi-crew flight.
- 8) **sporadic** performance of flight support duties by LZC over the last 12 months, **in particular under difficult Weather Conditions**, and lack of practical experience as LZC at the SMOLENSK NORTH airfield.

On the basis of the inquest, the Committee developed the following safety recommendations addressed to:

Prime Minister
Office of the President of the RP
Sejm Office
Senate Office
Prime Minister Office
Minister of National Defense
Minister of Foreign Affairs
Chief of Staff of the Armed Forces
Chief of Inspectorate of Armed Forces Support
Chief of Military Medical Service
Chief of Hydrometeorological Service Headquarters of the Armed Forces
Commander-in-Chief of the Polish Air Force
Air Force Chief of Training
Commanding Officer of the 36 Regiment
Russian Federation

Today the Committee will put forward the most important recommendations on ways of improving flight safety regarding:

Legal regulations:

1. Draw up an **annex** to the “Polish Air Force flight manual” to set out the guidelines for conducting multi-crew flights. Include multi-crew specificity also in the regulations and guidelines referred to by the “Polish Air Force flight manual”. Consult EU-OPS regulations for that purpose.
2. Draw up and implement such **theoretical and practical training curriculum for the Tu-154M crews** which takes into account the current aircraft systems and involves training on simulators.
3. Draw up **multi-crew coordination manuals** (for both flight and cabin crews) containing a set of standard crew procedures in each flight phases including emergency situations.
4. Draw up a new document setting out **the standards for the FES in the aviation of Polish Armed Forces** in line with the changes to the Armed Forces structure and amendments to the relevant documents.
5. Draw up coordination guidelines for the process of **commissioning VIP air transport** by the Institutions which are entitled to commissioning such services from the Air Force Command.
6. Verify regulations pertaining to the manner and scope of **supervision by Air Force Command of training activities** in the 36 Regiment.
7. Develop the **guidelines for air mission preparation and for process documentation**. Consult the EU-OPS.
8. Consider supplementing the **Aeronautical Information Publication of the Russian Federation and Countries of The Commonwealth of Independent States** with the provisions on planning and conducting flights outside the classified airspace including the information exchange procedure.

Aviation training

1. Verify regulations pertaining to **the manner and scope of supervision by Air Force Command of training activities** in the 36 Regiment.
2. Introduce periodic lectures and training workshops on **CRM (Crew Resource Management), MCC (Multi Crew Cooperation), and ORM (Operational Risk Management)** in specialized training facilities.
3. Draw up new guidelines for **instructor pilot training and certification**. Inflight instructor pilot training should be preceded by a centralized theoretical training ending with an exam. The Air Force Commander should be the authorized body for awarding instructor pilot certificates.

Organization

1. Develop the guidelines for **classification of airports and airfields** which may be used as air mission destinations.
2. Draw up coordination guidelines between the commissioning institution and the flight dispatcher for the VIP flights so as to give the flight dispatcher a possibility to perform a **safety evaluation of such task**.
3. Establish procedures for **acquisition of weather information** from the airfields which do not transmit international weather data, with respect to conducting flight missions to such airfields.
4. Develop operational supervision guidelines for international flights (including **maintaining radio contact**).