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# Racing Balloon Is Shot Down by Air Force Attack Helicopter in Belarus

***The balloon crew may have been suffering from the combined effects of hypoxia and fatigue and, therefore, failed to react to the sounds of the helicopter and machine-gun fire, the official report said.***

*FSF Editorial Staff*

The crew of the hydrogen gas–powered balloon was participating in a 72-hour distance race that originated in Zürich, Switzerland. On the third day of the race, the balloon flew over Poland and drifted into the airspace of the Republic of Belarus in the Commonwealth of Independent States (CIS).

After the balloon entered Belarus airspace, a military observer spotted the balloon, and it was tracked on military radar. A Mil Mi-24B attack helicopter was dispatched to intercept it. The helicopter crew spotted the balloon and visually inspected it.

Ground controllers then ordered the helicopter crew to destroy the balloon. The crew fired armor-piercing incendiary shells, and the balloon burst into flames and fell to the ground. The incident occurred during daylight hours near a military airfield and a restricted airspace area. Both balloon crew members (the only occupants) were killed in the Sept. 12, 1995, accident.

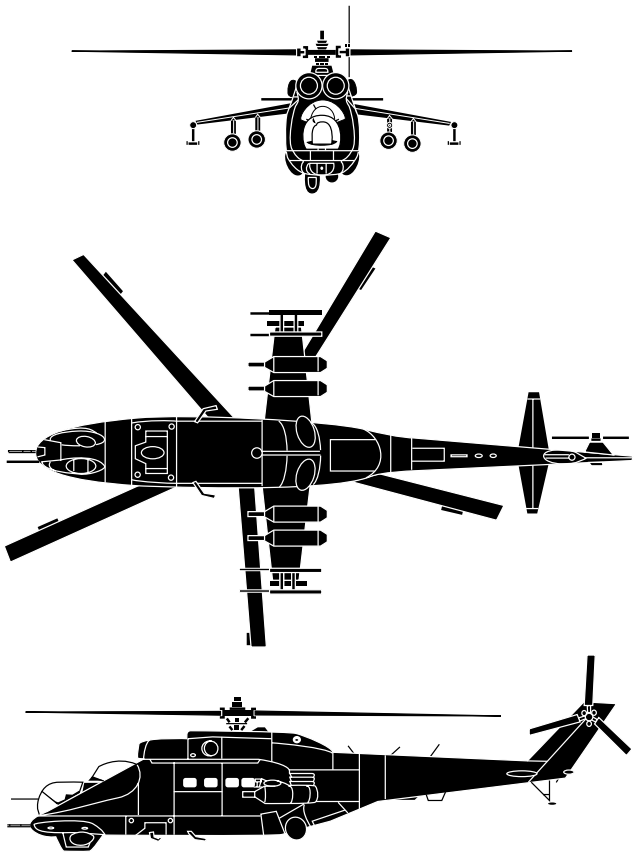
The final report of the CIS Interstate Aviation Committee concluded that the causes of this accident were: "Unauthorized flight into the airspace of [Belarus] by an unidentified balloon, with no radio communication [between the balloon crew and Belarus air traffic control (ATC)]," and "errors by [Belarus] anti-aircraft defense elements in the identification and classification of the airship that violated [Belarus] airspace."

Representatives from the U.S. National Transportation Safety Board (NTSB) and the Federal Republic of Germany also participated in the investigation, the report said.

The accident balloon (registered in Germany as *D-Caribbean*) was participating in a race for the Gordon Bennett Cup, "which was held to determine the winner in attaining the maximum flight distance in a fixed time (72 hours)," the report said. "The flights commenced at 1700 hours (UTC [Coordinated Universal Time]) on Sept. 9, 1995, in Zürich."

The accident crew made a logbook entry on Sept. 9, 1995, that the balloon had reached an altitude of 3,000 feet (915 meters) by 1900 hours. "Around 2100 hours, the *D-Caribbean* crossed the German border approximately 60 kilometers [37.2 miles] east of Stuttgart and continued flying in a north-northeast direction at an altitude of 2,400 [feet]–2,600 feet [732 meters–793 meters]," the report said.

The *D-Caribbean* "remained in German airspace from 0000 hours on Sept. 10, 1995, at an altitude of 2,400 feet [732 meters], ascending to 10,000 feet [3,050 meters], after which it entered the airspace of Poland at 0730 hours on Sept. 11," the report said. "In Polish airspace, the *D-Caribbean* flew at an altitude of 10,000 [feet]–16,000 feet [3,050 meters–4,880 meters]."



## Mil Mi-24 'Hind'

The Mil Mi-24 is a heavily armed assault and gunship helicopter produced in large numbers in the former Soviet Union. Known as the "Hind" in North Atlantic Treaty Organization (NATO) code, the helicopter was produced in a variety of versions. The Hind A carries eight troops and has wing-mounted missiles and a nose gun. The Hind B is similar to the A model, with two inboard weapon stations on each side.The Mi-24, powered by two Isotov TV3-117 turboshaft engines, has a normal takeoff weight of 11,000 kilograms (24,250 pounds). It has a maximum cruising speed of 159 knots (295 kilometers/183 miles per hour), a service ceiling of 14,750 feet (4,500 meters) and a maximum range of 405 nautical miles (750 kilometers; 466 miles).

Source: *Jane's All the World's Aircraft*

On Sept. 12, at approximately 0200, the *D-Caribbean* "approached the 150-kilometer [93-mile] line before crossing the national border of Belarus," the report said. "According to a report by the Civil Aviation Department of Poland, the *D-Caribbean* did not make contact with the Polish ATC authorities. Its ... transponder was turned off."

The crews of three other balloons that were participating in the race "established and maintained radio contact with ATC authorities," the report said. "They transmitted reports on their location[s] at approximately one-hour intervals because of the limited capacity of their batteries. All three balloons were equipped with ... transponders ... ."

When the accident balloon was within 150 kilometers (93 miles) of entering the airspace of Belarus, "the crew should have requested permission from the ATC center of the [appropriate] ATC authority [in this situation, Polish ATC] to fly over the national border," the report said. "Such a request was not made [by the accident crew]. Nor did the crew comply with ... Russia's AIP [Aeronautical Information Publication], which stipulates that if there are direct ground-based communications channels between the ATC authorities of Belarus and the neighboring country [i.e., Poland], the crew could obtain permission to fly over the national border from the ATC center in Warsaw [Poland]," the report said.

The report added: "In flying over the national border, the crew did not fulfill the requirement of ... Russia's AIP, under which [the crew] should have notified the dispatcher at the ATC center of the [appropriate] ATC authority of the actual time and level (altitude) of the flight."

Investigators believed that the crew was resting from 2300 on September 11 to 0310 on Sept. 12, "since no entries were made in the logbook during this time, whereas they had been made at one-hour intervals previously, most likely when the pilots took a break in turns," the report said.

The balloon entered the airspace of Belarus between 0510 and 0521 at an altitude of approximately 8,400 feet (2,562 meters), the report said. "It should be noted that at 0510 hours, the crew recorded the balloon's coordinates in the logbook," the report said. "In violation of the AIP, the crew did not make two-way radio contact with an ATC center of an authorized ATC agency either indirectly or through other airships, and did not obtain permission to enter the airspace."

The crew entered the balloon's coordinates in the logbook at 0600, which indicated that they knew their location in the territory of Belarus. "At 0634 hours, the balloon was sighted by an officer at a border station," the report said. "During the next seven minutes, information on the balloon was transmitted through the operational command units of the Border Guards to the AAD CCP [Anti-aircraft Defense Central Command Post] and was received by the duty officer at 0641 hours. One minute later, AAD forces were commanded to go on No. 1 alert," the report said.

At 0644, the balloon was detected on radar at the AAD CCP, at an altitude of approximately 6,600 feet (2,000 meters) and moving at 20 kilometers (12.4 miles) per hour. "Since the duty officer at the AAD CCP had no information on piloted balloons, this was probably why the balloon was judged to be an automatic drifting aerostat or sounding balloon (a meteorological probe), especially as the *D-Caribbean*'s white envelope made it resemble unmanned sounding balloons," the report said.

The AAD CCP attempted to obtain information about the balloon by contacting ATC authorities between 0652 and 0810, the report said. The information received by the AAD CCP indicated that "no applications for balloon flights and no takeoffs were made," the report said. Based on this information, the AAD concluded that the balloon was an unmanned meteorological balloon that had been launched from Poland at 0440, the report said.

At 0818, the balloon was observed over the area of a military airfield. Two minutes later, "the AAD CCP ordered the Mi-24B military interceptor helicopter to take off, which took place at 0826," the report said.

A decision to destroy the balloon was justified if it was unmanned and "its flight could not be intercepted by any means but destruction," the report said. An unmanned balloon posed a threat to flights from a nearby military airfield, scheduled flights from a second airfield and flights along international air routes and 10 local airline routes; and it risked penetrating a nearby restricted airspace, the report said.

The helicopter was guided to the balloon by military controllers. "At 0849:30 hours, the [helicopter] crew visually detected the balloon at a relative bearing of about 90 [degrees] to 100 degrees ('at 3 [o'clock] to 4 o'clock'), and received the command to approach to a distance of no less than 50 meters [164 feet] in order to determine the presence of a suspended load," the report said.

Fifteen seconds later, "the operations officer in charge of the guidance repeated the inquiry whether a suspended load was present, to which he received the crew's affirmative reply (helicopter commander: 'There's a suspended load; I have not yet identified what it is'; pilot-operator: 'Some kind of gondola')," the report said.

The commander of the AAD troops "made the decision to destroy the balloon, which was transmitted at 0851:35 hours to the crew of the interceptor helicopter," the report said. "The helicopter commander accepted the order ... and clarified the nature of the target ('White balloon with suspended load at altitude of 2,200 meters [7,218 feet]. Attack.')"

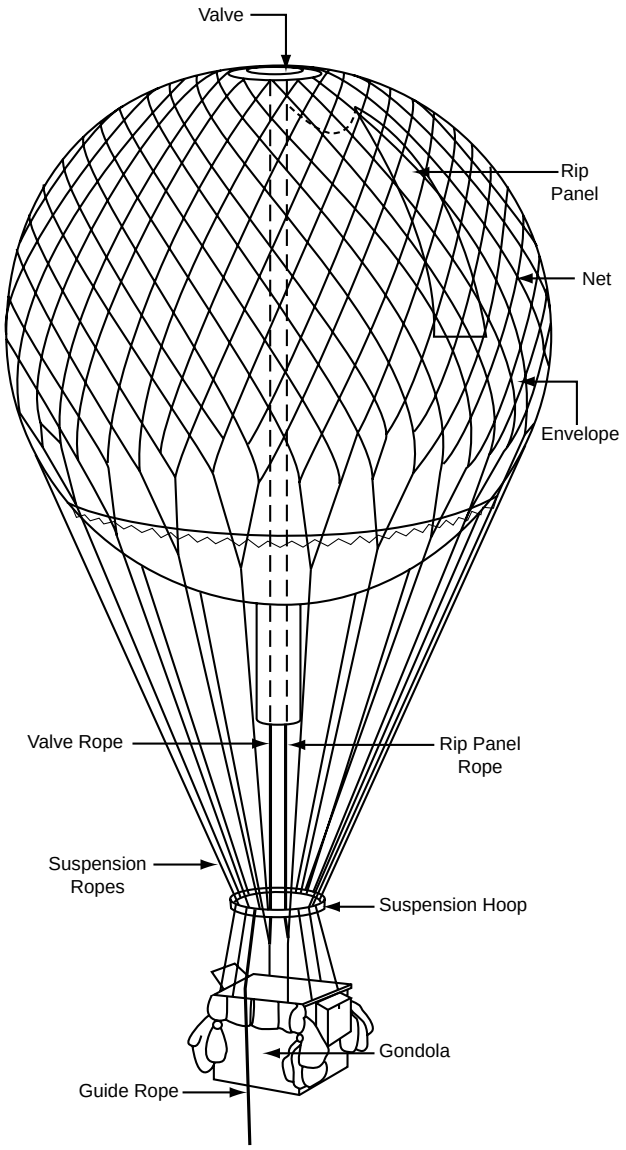
The report noted: "In all stages of the initiation and implementation of the order to destroy the balloon, no other command (or recommendation) for additional inspection of the target was given.

The report said that in violation of regulations, "neither the guidance station nor the helicopter crew made any attempt to establish radio contact with the violator on the international emergency frequency 121.5 megahertz. The balloon crew also did not use the aforesaid frequency."

The helicopter crew fired twice at the balloon, at 0852:55 and 0854:20, using 12.7-millimeter (0.5-inch) armor-piercing incendiary shells. "The envelope was ignited and the balloon began falling," the report said.

A military rescue team began a ground search for the balloon at 0900, and the search was completed by 1130, the report said. The balloon's gondola, with the bodies of the crew members inside, was found 492 feet–656 feet [150 meters–200 meters] from railroad tracks. "The gondola was not destroyed; deformation consisted of compression of the gondola frame along the vertical axis," the report said. "The remnants of the burned envelope of the balloon were found 250 [meters]–300 meters [820 feet–984 feet] from the gondola."

**Structural Diagram of the *D-Caribbean* Racing Balloon**




Source: Commonwealth of Independent States Interstate Aviation Committee

**Figure1**

Both crew members died of impact injuries, the report said. Autopsies performed on both crew members could not "rule out the possibility that the crew experienced chronic fatigue in the concluding stage of the three-day flight, resulting from the combined effects of the following factors: Altitude hypoxia [oxygen deficiency] (making a flight at an altitude of 2,500 [meters]–3,000 meters [8,203 feet–9,843 feet] over three days), disturbance of the sleep and waking schedules, psychoemotional stress related to a competitive flight over the territories of several countries and the presence of age-related pathological changes ... ," the report said.

The report noted: "The fatigue that occurred in the crew (who most probably were sleeping after the last entry in the flight log) may serve to explain the lack of an appropriate reaction to the noise of the helicopter and the first short burst from the machine gun [on the helicopter that fired the 12.7-millimeter (0.5-inch) shells]."

The autopsies revealed chemical substances were used by both crew members that "might be medications (biostimulants) that may have been used by the crew in therapeutic doses in the process of making the flight, to prevent fatigue," the report said.

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The background and qualifications of the flight crew were reviewed. The crew commander, 55, held an airline transport pilot (ATP) certificate. "[He was] authorized to fly multi-engine and single-engine aircraft ... ; balloons as a commercial pilot; and helicopters as an amateur pilot," the report said. He had logged a total of 10,000 hours flying time.

The pilot, 68, held an ATP certificate. "[He was] authorized to fly multi-engine land- and sea-based aircraft, single-engine aircraft, and helicopters as a transport and commercial pilot ... , and balloons as an amateur pilot," the report said. He had logged a total of 14,000 flying hours.

The history of the balloon was reviewed. The balloon was manufactured in 1990 by Ballonbau Woerner GmbH of Germany, the report said. It was equipped with a global positioning system (GPS) satellite navigation system, ultra-short-wave and short-wave radio sets, a secondary transponder, two oxygen tanks and a barograph. The Aeronautical Federation of Russia estimated that, at the time it was intercepted, the balloon "had a flying weight of approximately 400 kilograms [882 pounds]," the report said.

The balloon's barograph was recovered from the wreckage. Although its case was damaged, the "condition of the barograph after the incident made it possible to decipher the barometric altitude of the balloon's flight," the report said. "Recording of altitude was possible throughout the entire flight."

The communication radios from the balloon were also recovered and examined. "Before the moment of impact, the radio set was tuned to the emergency frequency 121.5 megahertz, but (according to satellite monitoring data) there was no emission at this frequency in the area of the incident at the time corresponding to the event," the report said.

The second radio was examined by the U.S. NTSB and was found to have been set on the frequency 154.515 megahertz, the report said. "It does not seem possible to explain the significance of this tuning, since neither the list of communications centers issued along with other aeronavigational data to the participants in the race before the takeoff, nor other sources of aeronavigational information … give the frequency of 154.515 megahertz," the report said.

Investigators interviewed another participant who piloted a balloon in the race. "It has been determined that the organizers of the race did not provide the participants information on communications channels with air traffic control centers in the airspace of Belarus," the report said. "Thus, [the pilot interviewed, who] tried to establish radio contact with the Minsk [Belarus] ATC center at a frequency of 133.8 megahertz, received this channel [information] from a control center in the territory of Poland. The *D-Caribbean* crew ... did not establish radio contact with the Polish ATC centers and did not receive information on the communication frequency of the Minsk ATC center."

The report noted: "The possibility cannot be fully ruled out that the *D-Caribbean* crew did try to contact ground dispatchers but was not heard, since the distance of steady radio reception on ultra-short-wave radio sets at a flying altitude of 2,000 [meters]–2,500 meters (6,562 feet–8,203 feet) is approximately 200 kilometers [124 miles], whereas the distance to Minsk exceeded this. However, attempts to make radio contact on the frequency of 133.8 megahertz by [the other participant] ... show that if the *D-Caribbean* crew was receiving on this frequency, it could have also tried to make radio contact."

The report concluded that "the *D-Caribbean* crew did not make radio contact with the ATC dispatchers," the report said.

The balloon transponder was recovered from the wreckage and examined by the NTSB, the report said. The transponder was found set to code "2774" or code "2777," and was not powered at the moment of impact. "Neither the code assigned

to this balloon (4262) nor the code required for setting on a civilian airship being intercepted (7700 in mode A) was set ... ," the report said.

The report noted: "The *D-Caribbean* balloon could not be reliably observed using the primary radar of the ground equipment employed in the Republic of Belarus because of its low (less than 50 kilometers [31 miles] per hour) ground speed."

Investigators reviewed the preparations and plans of the organizers of the race. In March 1995, "the Belarus Center for Organization of Air Traffic (BCOAT) ... received a request ... from the President of the Aeronautics Club of Switzerland ... for a possible flight of no more than 20 balloons in the airspace of Belarus during a balloon race for the Gordon Bennett Cup to be held from Sept. 9–12, 1995," the report said. In June 1995, the organizers of the race sent a follow-up request to BCOAT. "All the addressees, including the Belarus Ministry of Defense, agreed to make the airspace of Belarus available to the organizers of the race," the report said.

A telegram was sent on June 12 to the Aeronautics Club of Switzerland, "stating that Belarus had no objections to the flight of balloons through its airspace and that specific permit numbers would be issued promptly after receipt of the flight plans," the report said.

The report noted: "The reply to the organizers of the race was not recorded in the 'Permits' logbook as required [by BCOAT procedures] ... [and] the [appropriate] organizations of Belarus also failed to record their agreed permission to conduct the flights." As a result of the failure to record information about the balloon flights, steps were not taken to prepare for their arrival, nor were the appropriate ATC or military facilities notified, the report said.

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On the first day of the race, flight plans for all participating balloons were transmitted to BCOAT, the report said. Because the flight plans included neither specific information about the points of entry into and exit from Belarus nor the time of crossing into Belarus airspace, "the specialists in the BCOAT work shift did not include the flight plans in the 24-hour flight schedule in preparation [for the flights]," the report said.

The BCOAT specialists "either should have redone the permit and included the flights in the current schedule, or should have alerted the applicant that he was prohibited from entering the airspace of the Republic, and then filled in the 'Prohibition' logbook," the report said. "This was not done, however, because the flight plans did not indicate the possible entry of a balloon into the airspace of Belarus. The flight plans that were received were classified as [incorrect]. As a result, the specialists in the BCOAT work shift did not transmit to the sender the permit number for entry into the airspace of Belarus; nor was notice given of a prohibition," the report said.

For reasons that the report did not explain, four flight plans were transmitted by BCOAT "to the air defense agencies of Belarus for the flight of the balloons from Sept. 9–12, 1995, including the *D-Caribbean*'s flight plan," the report said. "The information received by the work shifts was not passed on to AAD, since it was missing the current flight schedule."

On the first day of the race, the BCOAT received 17 telegrams announcing the departures of the balloons, the report said. The telegrams were not processed, and "consequently the ATC and AAD work shifts were not notified either," the report said. "At the same time, a notification of prohibition was not issued to the applicants."

On the day of the accident, the appropriate ATC and military facilities were not prepared to accept the balloon flights because:

- "No preparations were made to provide for the Gordon Bennett Cup race, including communications with the organizers of the flyover and with auxiliary groups in the neighboring country;
- "The flight plans and notifications of departures were ignored because of their formal discrepancies with the accepted (for guided airships) structure of these documents; [and,]
- "Specific ATC centers both in the [appropriate] bodies of the ATC system and at the AAD CCP had no information on the possible entry of the balloons into the airspace of Belarus."

The procedures used by the military and the actions of the helicopter crew in intercepting the accident balloon were reviewed. "The regulations defining the conditions for an interception of the flight do not contain clear-cut methodological instructions on how to establish whether a balloon is manned or unmanned," the report said. "The fact of the existence of a suspended load on the balloon cannot be a criterion for considering that it is unmanned, since the gondola (a suspended load) is the only place where a crew can be located."

As the helicopter intercepted the balloon, "taking into account that the helicopter was about 50 meters [164 feet] above the

balloon, the crew observed the gondola, but could not see its inside since that (according to the crew) was covered," the report said.

The report added: "An interception should be made as an extreme measure and should be limited to identifying the airship and to directing it away from the restricted area. The airship being intercepted must have the capability of avoiding the restricted area, which refers to piloted airships [according to International Civil Aviation Organization (ICAO) rules] and is not applicable to balloons that do not have the capability of maneuvering in the horizontal plane. Moreover, the crew of a manned balloon cannot meet the requirements of giving signals to the crew of an interceptor by swinging the airship, blinking the navigation lights, lowering the landing gear, and/or turning on the landing lights."

The report concluded that "the helicopter's sortie to intercept the *D-Caribbean* balloon was carried out in accordance with [the appropriate sections] of the [ICAO] Interception Guide. [But] the intercepting helicopter did not carry out the necessary identification of the *D-Caribbean* balloon being intercepted, in violation of [the ICAO Interception Guide], and made no attempt to force it to land." The report also noted that "at the same time, a number of requirements of the [ICAO Interception] Guide cannot be applied to balloons, since they relate to unguided airships."

Investigators reviewed the markings on the accident balloon for compliance with ICAO standards. The race participant's number and the national flag of the country of registration should have been displayed on the outside of the gondola. "The marking of the *D-Caribbean* balloon did not meet the [ICAO] requirements fully, since the gondola did not carry the race participant's numeric symbol or identifying plaque," the report said. "The national flag was inside the gondola and could not have been seen from outside."

The balloon was also required to have its national and registration symbols ("D-Caribbean") displayed on opposing sides of the maximum horizontal circumference in letters 50 centimeters (19.7 inches) high. "From the materials at the disposal of the Investigating Commission, it is not possible to determine unambiguously the presence of symbols on two sides," the report said. "It is also not possible to establish the height of the symbols, but measurements based on photographs permit us to estimate that the height approximately meets the requirements."

The weather at the time of the accident was reviewed. The clouds were "scattered cumuli at an altitude of 600 meters [1,969 feet], [with an] upper limit of 1,500 meters [4,922 feet]," the report said. The winds at altitude "according to data supplied by the balloon crew (from the logbook): direction 105 degrees, six [meters] to seven meters [19.7 feet–22.9 feet] per second. According to the forecast by the weather bureau at Brest [Belarus] Airport [the winds were]: unstable, up to six meters [19.7 feet] per second."

## Transcript of Intercept and Shootdown of *D-Caribbean* Balloon by Belarus Air Force Attack Helicopter

**CCO:** (Talking to attack helicopter 90335) The balloon is above you, about 1,000 meters higher. On the right, with cloud cover as background, that's where it should be, or [seen] through the breaks in the cloud cover; that big cloud, the one that's higher.

**HC:** I see it. Am at 1,000 meters.

**CCO:** 335, you observe the balloon; look to the right, anything higher?

**HC:** I see it above me.

**CCO:** 335, do you observe the balloon?

**HC:** This is 335, I don't see it because of the cloud cover.

**CCO:** Roger. The balloon is in the breaks in the cloud cover. Permission given to climb to 2,000 toward the location. From the location we will perform the approach from scratch.

**HC:** Roger, climbing to 2,000 meters.

**CCO:** 335, make a right turn to get on 30-degree course, and [make a] right.

**HC:** Roger, right turn, 30-degree course.

**CCO:** 335, altitude control. 335, look to the right behind the cloud, distance 10-8.

**HC:** Roger.

**CCO:** The balloon is white.

**HC:** This is 335, I observe the balloon, at 90 degrees, approaching.

**CCO:** 335 confirmed, at 90 degrees, approach no closer than 50.

**HC:** Roger.

**CCO:** With vertical separation.

**[At 0852:]**

**HC:** 335 climbed to 2,000, it is approximately 200–300 meters above [me].

**CCO:** Roger. Any suspended load?

**HC:** There is one hanging there, but so far I have not determined what it contains.

**[AAD CCP speaking with the Air Force:]**

**Air Force:** Is there a suspended load?

**AAD CCP:** Yes, there is.

**[AAD CCP speaking with AAD Commander:]**

**AAD CCP** Comrade Commander, [I] have visually detected a helicopter. There is a hanging load, there is one. Your decision?

| | |
|---|---|
| **Commander:** | Destroy! |
| **CCO:** | Roger. |
| **[At 0853:]** | |
| **CCO:** | 90335, this is Radial, destroy balloon. |
| **HC:** | Roger, destroy balloon. |
| **CCO:** | 90335, please give account of your actions as you go. |
| **HC:** | Affirmative, [I am] attack[ing]. |
| **CCO:** | 90335, destroy balloon. |
| **HC:** | Roger, destroy. |
| **CCO:** | 90335, cannot see you because of clouds. [Need] information regarding your actions. |
| **CCO:** | 90335, do you see the balloon? |
| **HC:** | 335, I see the balloon. |
| **CCO:** | Have you received the order to destroy the balloon? |
| **HC:** | Yes, we have. |
| **CCO:** | Who issued the order? |
| **HC:** | Radial. |
| **CCO:** | Roger, I confirm. |
| **HC:** | This is 335, the balloon has been destroyed. |
| **CCO:** | Roger, 335, I see it being destroyed. Please watch the gondola as it falls. |
| **HC:** | Roger. |
| **[At 0857:]** | |
| **CCO:** | 90335, your actions? |
| **HC:** | 335, I am following the fall. |
| **CCO:** | Roger. Observe safety measures. |
| **[At 0859:]** | |
| **HC:** | Descent to 200, fixing the location, then proceed according to orders from the superiors. Roger. |
| **CCO:** | 335, need more precise map location for the fall. |
| **HC:** | Roger. |
| **CCO:** | 335, on the basis of visual observation, does the gondola have any equipment, components? |
| **HC:** | 335 to Radial, can't tell what was in the gondola, maybe equipment, but no people. |
| **CCO:** | Roger. |

**CCO** = Combat Control Officer
**HC** = Helicopter Crew
**AAD CCP** = Anti-aircraft Defense Central Command Post

Source: Commonwealth of Independent States Interstate Aviation Committee

The report concluded that the unauthorized flight by the accident balloon into the airspace of Belarus was the result of "deviations from standard operating procedure in the actions of the personnel of the authorized agencies of the Republic of Belarus Air Traffic Organization in the area of failure to comply fully with regulatory documents in force when receiving and processing applications, flight plans and departure telegrams concerning the flight of a group of balloons participating in the race for the G. Bennett Cup, which led to uncertainty concerning issuance of a permit for the flight of balloons into Belarus airspace without including them in the current schedule of flights or making an alternate decision to prohibit their flight."

The report also blamed the crew of the accident balloon for "noncompliance with the requirements of the flight regulations for [Belarus] airspace, published in the Compilation of Air Navigation Information (AIC of [Belarus]), with respect to maintaining radio contact, using onboard identification systems for the secondary radar system, requesting and obtaining the appropriate permit for flying into [Belarus] airspace and crossing the state border," the report said.

The report also concluded that errors by [Belarus] AAD elements in identifying and classifying of the accident balloon were the result of :

- "Noncompliance with the requirements of regulatory documents by AAD personnel upon the discovery of the airspace-violating balloon, with respect to giving the special 'all-alert' signal, and with respect to using the international emergency frequency 121.5 megahertz when preparing to intercept, which (in combination with the *D-Caribbean* balloon's deviations in its markings from the requirements of [ICAO] Annex 7 to the Convention on International Civil Aviation and of the Race Rules) made it more difficult to identify the object; [and,]

- "Deficiencies of the regulations in force in [Belarus] for the interception of balloons and other small-sized, low-speed targets, due to the lack of clear and unambiguous methodological instructions for identification and classification of objects, which does not preclude possible errors in the use of weapons against the aforesaid targets."

The Flight Safety Commission of the CIS Interstate Aviation Committee made the following recommendations to the Belarus aviation authorities:

- "[Amend] the regulations for interception of airships that violate [Belarus] airspace ... , providing methodological instructions for the ground services and the crews of interceptors in the unambiguous identification and classification of objects, which will preclude errors in their identification; [and,]

- "Update the regulatory documents governing the interaction of the Air Traffic Organization and AAD services, in order to preclude the possibility of the loss (omission) of information about planned and actual flights of airships of various kinds in [Belarus] airspace."

The accident investigation board made the following recommendations to the organizers of sports competitions involving aeronautics, exhibition and demonstration flights, and overflights of balloons:

- "Revise the documents containing the regulations for such flights, [to provide] crews with full air-navigation information, taking into account the special features of the flights and air traffic control as published in the relevant [publications], and [to ensure] effective monitoring of their readiness for the specific flights; [and,]
- "Draw up additional requirements to ensure the markings of airships."

The accident investigation board also requested that ICAO "review the issue of supplementing and amending the standards and recommendations for the practice of ICAO with respect to balloons and other motorless flying machines that drift on the wind, including the interception regulations ... in accordance with the analysis carried out during this investigation," the report said.♦

Editorial note: This report was adapted from *On The Aviation Incident Involving the Balloon* D-CARIBBEAN *on September 12, 1995, in the Vicinity of the Town of Bereza (Republic of Belarus)*. The report was prepared by the Commonwealth of Independent States Interstate Aviation Committee and the Belarus State Commission, and it was translated from Russian to English by the U.S. State Department. The 81-page report is contained in NTSB File no. DCA95RA061.

**ACCIDENT PREVENTION**


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