

Modern Activity of Bezymianny Volcano and Danger to Aviation

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Bezymianny volcano is one of the most active volcanoes of Kamchatka, Russia. Volcanic activity of Bezymianny started in October 1955 from moderate explosive eruptions, which lasted for about half a year. On March 30 the climactic eruption occurred: catastrophic directed blast and strong Plinian activity. The total volume of eruptive products was over 3 km³. A growth of the lava dome Novy into the explosive crater continues from 1956 till present.

During the 1965-2010 occurred 41 Vulcanian type strong explosive eruptions of the volcano, while 20 of them producing ash up to 10-15 km a.s.l. First strong explosive eruption occurred in 1965. Since 1977, strong explosive eruptions were noting one or two times per year. The most powerful eruption was in 1985, the volume of eruptive products (tephra and pyroclastic flow deposits) reached 0.05 km³.

After powerful eruptions, a lava flow could effuse during a few years. A direction of lava effusing changed, so that by 2005 all the slopes of the dome were covered by thick lava flows. After the 1985 eruption, a lava flow effused about 4 years. In 2006-2010, a lava flow moved down the volcanic south-eastern flank about 1.2 km. After the eruption in 1980, lava flow moved up to 1.5 km.

All explosive eruptions of the volcano were accompanied by the formation of pyroclastic flows and surges. The largest flow with length of 12.5 km was formed in 1985. Most widespread of pyroclastic surges were by eruptions in 1985, 1997, 2000, 2005, 2010. The volume of pyroclastic flow deposits for 45 years was about 0.4 km³.

All explosive eruptions of the volcano were dangerous for international and local aviation but volcanological experience and daily complex analysis the remote sensing data (seismic, video, satellite) of the volcanic activity since 2002 allowed scientists of Kamchatkan Volcanic Eruption Response Team (IVS FED RAS) predict many eruptions of Bezymianny and increasing aviation safety at Kamchatka.

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