

Known Documented Cases of Avalanche Accidents with the ABS-Avalanche Air Bag System

Date	Place	No. of People (in Avalanche)	Avalanche Size	Location at beginning of Avalanche	Actions by People	Performance of Air Bag	Burial	Results
February, 1991	Gudauri (Caucasus)	1 Person (with ABS)	unknown	unknown	ABS activated	Air Bag on Surface (visible)	not or only partially buried	Accident survived
end of February, 1992	Disentis	1 Person (with ABS)	Crown: ca. 50 cm Width: ca. 50 m Length: ca. 200 m	caught in start zone	ABS activated	Air Bag on Surface (visible)	buried for a time during the avalanche but not buried when it stopped (lying on the avalanche debris)	Accident uninjured survived
March 26, 1993	Davos Totalphorn- Wolfgangpass	1 Person (with ABS)	Crown: ca. 90 cm Width: ca. 8 m Length: ca. 600 m	caught in start zone	ABS activated	Air Bag on Surface (visible)	buried for a time during the avalanche but only partially buried when it stopped (up to shoulder depth)	injured (thigh bruise)
December 23, 1993	San Bernardino Piz Rotond	1 Person (with ABS)	Crown: ca. 60 cm Width: ca. 80 m Length: ca. 120 m	unknown (edge of Avalanche)	ABS was first activated during the Avalanche	Air Bag on Surface (visible)	buried for a time during the avalanche and completely buried when it stopped (head in the snow); dug out within ca. 1 minute by the guide	Accident uninjured survived
January 8, 1994	Langwies Weissfluh-Haupteralp	4 People (with ABS)	Crown: ca. 30 cm Width: ca. 100 m Length: ca. 250 m	caught in start zone (upper third of slope)	3 Persons' ABS activated, 1 Person's ABS not activated	2 on the surface (visible); 1 Air Bag not inflated (defect); 1 ABS not activated	2 persons (with functioning ABS-System): 1 partially buried, 1 completely buried (head under the snow). 1 person Failure in ABS) partially buried (to the neck). 1 person (ABS not activated) completely buried. Found by the guide using beacon.	all persons slightly injured
February 17, 1994	Davos Rossboden-Rüedisch Tälli	3 People (2 persons with ABS; 1 person without ABS)	Crown: ca. 80 cm Width: ca. 100 m Length: ca. 750 m	caught in the upper third of slope (ca. 100 m vertically below the start)	Guide activated ABS; 1 Client's ABS first activated after guide shouted; 1 Client without ABS	Air Bags on Surface (visible)	1 person (guide) not buried 1 person (with ABS) completely buried (head under the snow) dug out within about 3 Min. dby the guide 1 person without ABS) not buried (only caught on edge of slide)	2 persons (with ABS): uninjured; 1 person (without ABS): back injury
February 28, 1995	Klosters Gotschnagrät, Drostobel	1 Person (with ABS)	unknown	caught in start zone	ABS was first activated during Avalanche	Air Bag only inflated to ca. 3/4 volume, on surface	1 person (guide) carried about 50 m, not buried	Accident uninjured survived. Lost 1 ski.
February, 1996	Chamonix Le Tour	3 People (with ABS)	Crown: ca. 30 cm Width: ca. 15 m Length: ca. 200 m	caught in start zone	Everyone's ABS were activated during Avalanche	all Air Bags on surface (visible)	No one buried; in the upper portion of the deposition zone	all persons: Accident survived uninjured
March 11, 1996	Dombai/Kaukasus	2 People (1 person with / 1 person without ABS)	Crown: ca. 3 m Width: ca. 150 m Length: ca. 350 m	both People were caught in start zone	ABS was activated during the Avalanche	Air Bag on Surface (visible)	both persons not buried (with / without ABS) in lower portion of the deposition zone	both persons: Accident survived uninjured
February 21, 1997	Flims/Laax Crappa Spessa	1 Person (with ABS)	Crown: ca. 50 cm Width: ca. 70 m Length: ca. 80 m	on the lower portion of slope at start of avalanche	ABS activated at start of avalanche	Air Bag only 1/3 visible on surface	1 person (guide) carried into a depression; completely buried (head approx. 30 cm); dug out in about 2 min after burial by clients; found by visible Air Bag; depth of the avalanche debris in gully was about 3-	Accident: uninjured survived
March, 1997	Wengen Berner Oberland	1 Person (with ABS)	Crown: ca. 80 cm Width: unknown Length: min. 400 m	Triggered by 2 Snowboarders; Skiers were in the lower portion of the start zone	ABS was activated during the Avalanche	Air Bag on Surface (visible)	1 person (ski instructor) carried about 400 m; not buried, face down, headed downhill, skis und poles still there, able to ski on	Accident: uninjured survived
Winter 1996/97	Gudauri (Caucasus)	1 Person (with ABS)	unknown	unknown	ABS activated	Air Bag on Surface (visible)	not at all or only partially buried	Accident survived

December 10, 1997	Obertauern Salzburg	2 People (with ABS)	Crown: ca. 70 cm Width: ca. 15 m Length: ca. 300 m	both People were caught in start zone	ABS activated at start of avalanche	Air Bags on Surface (visible)	both people were in the upper third of the slope when avalanche stopped; 1 person not buried; 1 person partially buried; accident occurred during avalanche	both persons: Accident: uninjured survived
January 21, 1998	Disentis	1 Person (with ABS)	Crown: ca. 40 cm Width: ca. 40 m Length: ca. 50 m	caught in start zone	ABS activated at start of avalanche	Air Bag on Surface (visible)	partially buried; able to free self	Accident: uninjured survived
March, 1998	France	1 Person (with ABS)	unknown	unknown	had major problems triggering ABS	Air Bag on Surface (visible)	unknown; probably partially buried	survived, probably uninjured
November 21, 1998	Münchner Haus Zugspitze Garmisch	1 Person (with ABS)	Crown: ca. 30 cm Width: ca. 50 m Length: ca. 300 m	caught in start zone	ABS was activated during the Avalanche	Air Bag on Surface (visible)	after it stopped, in the upper portion of the deposition zone; not buried	Accident: uninjured survived
December 8, 1998	Kapall St. Anton a. Arlberg	1 Person (with ABS)	Crown: ca.80 cm Width: 20 - 60 m Length: ca. 300 m	caught in start zone	ABS activated at start of avalanche	Air Bag on Surface (visible)	after it stopped, in the lower portion of the deposition zone; partially buried; rescue by rest of party	Accident: uninjured survived
January 16, 1999	Gemsstock Andermatt	7 Personen (with ABS)	Crown: ca 150 cm Width: 60 - 80 m Length: ca. 150 m	unknown	5 People activated ABS, 2 People did not trigger ABS	Air Bags on surface (visible)	all 7 persons not or only partially buried	2 persons slightly injured (rocks); other 5 persons uninjured
January 28, 1999	Decker Glacier Alberta Canada	1 Person (with ABS)	Crown: 30 - 60 cm Width: ca. 50 m Length: ca. 300 m	caught in start zone	ABS activated at start of avalanche	Air Bag on Surface (visible)	on skitour; descent on foot (skis carried). was able to turn onto back during the avalanche; not buried	Accident uninjured survived
end of January '99	Val d'Isère France	2 People (with ABS)	unknown	unknown	2 persons' ABS not activated	ABS not activated	unknown; offpiste	survived
January 31, 1999	Val d'Isère France	1 Person (with ABS)	unknown	unknown	ABS not activated	ABS not activated	unknown; offpiste	Accident with injuries survived
March 24, 1999	Erlispitze, Valluga St. Anton a. Arlberg	1 Person (with ABS)	Crown: 20 - 50 cm Width: 60 m Length: 150 m	caught in start zone	ABS activated during the Avalanche	Double Air Bags Failure: only 1 Air Bag inflated	partially buried, 1 Air Bag visible	Accident uninjured survived
January 29, 2000	Hoher Riffler Gampernunalpe, Firlsch Tirol	2 People (1 person with / 1 person without)	Crown: 60 cm Width: 50 m Length: ca. 200 m	in middle of slope at start of avalanche	ABS activated at start of avalanche	Air Bag on Surface (visible)	Person with ABS not buried, mid-slope Person without ABS partially buried in lower portion of the deposition zone (carried from the start zone)	both persons: Accident uninjured survived
February 16, 2000	Davos Rinerhorn, Sertig	1 Person (with ABS)	Crown: 15 - 70 cm Width: 30 m Length: 50 - 70 m	caught in start zone	ABS activated at start of avalanche	Air Bag on Surface (visible)	stopped in the upper portion of the deposition zone; partially buried	Accident uninjured survived
February 16, 2000	Portlesspitze Matsch, Südtirol Italien	5 People (1 person with / 4 persons without ABS)	Crown: 30 - 160 cm Width: 250 m Length: 550 m	in middle of slope at start of avalanche	ABS activated at start of or during avalanche	according to witnesses, the Air Bag remained visible on the surface during the avalanche - after coming to rest, buried 170 cm deep	when it stopped all 5 persons were buried (170 cm to 300 cm) in a small depression at the base of the slope; individual with inflated Air Bags was buried 170 cm deep ; all were found using beacons	3 persons without ABS: dead 1 person with ABS: dead 1 person without ABS: survived

2. April 2000	Davos Monstein Büelenhorn	1 Person (with ABS)	Crown: 50 cm Width: 30 m Length: 500 m	caught in start zone	ABS activated during the Avalanche	Air Bag on Surface (visible) although the 150 litre Bag was ripped from the pack (seams gave way) shortly before the avalanche stopped	not burried	Accident: uninjured survived
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26 known accidents (withABS) involving 40 Persons (with ABS) 32 Persons with filled Air Bag (2 persons techn. failure/ 6 persons Did not pull rip cord)

8 Persons without or with only partially filled Air Bags: 8 Persons uninjured or only silghtly injured

32 People with inflated Air Bag: 16 Persons not burried 11 Persons partially burried 4 Persons completely burried (head) --> Air Bags visible on the surface

1 Person completely burried --> Air Bags not visible !

31 People with inflated Air Bags survived

1 Person with inflated Air Bags died !