

HELICOPTER SAFETY REVIEW

TYPE OF OPERATION

?	Not known
AWC	Crop dusting or other spreading work
AWE	External load
AWF	Fire suppression
AWH	Animal herding/hunting
AWJ	Parachute dropping
AWM	Medical evacuation
AWP	Personnel positioning to site
AWR	Rescue
AWS	Survey, patrol, photographic
AWT	Target towing
CT	Crew training
Demo	Demonstration
DNC	Domestic non-scheduled cargo
DNP	Domestic non-scheduled passenger
DSC	Domestic scheduled cargo
DSP	Domestic scheduled pax
Ferry	Ferry or positioning
INC	International non-scheduled cargo
INP	International non-scheduled pax
ISC	International scheduled cargo
ISP	International scheduled pax
Pvt	Private/business/corporate
Test	Test or development

PHASE OF FLIGHT

ED	En route emergency descent
ER	En route
GP	Ground parked
GR	Ground/engines running
GT	Ground taxi
LA	Landing/approach

LD	Landing initial descent
LG	Landing go-around
LR	Landing roll
MH	Manoeuvre hover
MT	Manoeuvre
NA	Non-operational attended
NE	Non-operational engines running
NOG	Non-operational ground
NT	Non-operational taxi/towing
NU	Non-operational unattended
Pvt	Private
TA	Take-off/aborted
TC	Take-off/climb to cruise
TI	Take-off/initial climb
TR	Take-off run

GENERAL

AF	Air force
AGL	Above ground level
AMSL	Above mean sea level
Apt	Airport
CAVOK	Cloud and visibility OK (visibility more than 10km, cloudbase higher than 5,000ft AGL)
CFIT	Controlled flight into terrain
CofA	Certificate of airworthiness
CNK	Cause not known
DME	Distance measuring equipment
FAA	US Federal Aviation Administration
GPS	Global positioning system
IAS	Indicated air speed
ILS	Instrument landing system
I/VMC	Instrument/visual meteorological conditions
I/VFR	Instrument/visual flight rules

I/OGE	In/out of ground-effect
LE	Leading edge
MTOW	Maximum take-off weight
OAT	Outside air temperature
Off	Offshore
Nr	Near
PF	Pilot flying
PNF	Pilot not flying
POB	People on board
RPM	Revolutions per minute
VOR	VHF navigation beacon

MANUFACTURERS

Aerospatiale/Eurocopter:	SA315/SA316/SA318/SA319/SA332/SA341/SE313/AS350/AS355/SA365/HH-65
Agusta:	A109
Bell:	204/205/206/212/214/230/412/UH-1/TH-1C/TH-57A/OH-58
Boeing (including Hughes and McDonnell Douglas):	Vertol 107, MD500/MD520N
IPTN/Bell (Indonesian):	NB412
EH Industries:	EH101
Eurocopter:	B0105/BOH58, BK117B1/BK117A1
Eurocopter/IPTN:	NO105CB
Fairchild-Hiller:	FH1100
Hughes:	369
IAR:	IAR Alouette
Kaman:	HH-43F
Kamov:	Ka-26/Ka-32
Kawasaki:	KV-107
Mil:	Mi-2/Mi-6/Mi-8
PZL-Swidnik:	W3 Sokol
Sikorsky:	S-58/S-61/S-64/S-76/CH-54A

TURBINE HELICOPTER ACCIDENTS LIST - 1999

Date	Type	Registration	Operator	Location	Operation	Phase	Fatalities	Injuries	P08	Circumstances
JANUARY										
2	Bell 205A1	N58126	Los Angeles City Fire Dept.	Rustic Canyon, 12km SW of Van Nuys, USA	CT	TI	-	1	3	Climbing through 75ft AGL, the engine started making unusual noises. Warning lights came on. A 180° autorotation ended in a very hard landing.
4	Hughes 369D	N5013P	Hawkins & Powers Aviation	12km S of Woodruff, Utah, USA	AWS	MT	-	-	3	Aircraft suffered loss of power, attributed to a compressor stall, and the pilot autorotated to a hard landing. The aircraft rolled over.
8	Bell 407	CC-CWS	Helicopters Agroforestales	19km NE of Otmue, Chile	AWP	MT	-	-	2	While flying at 1,000ft with a 6.5m-long steel cable attached to the cargo hook, the cable flew up and hit main and tail rotors. The tail rotor and gearbox broke away. An autorotation resulted in rollover on touchdown.
12	Hughes 369D	C-GSSN	Ruperts Land Operations	68km SW of Fox Creek, Alberta, Canada	AWS	ER	1	-	1	CNK.
19	Mil Mi-8	RA-25363	2nd Perm Aviation Enterprise	38km from Chalkovsky, Russia	AWS	LA	-	-	7	Lost visual contact with the ground on approach to landing site, but the approach was continued, resulting in ground impact 1,500m short of site.
22	Bell 206B3	ZS-HIA	R Booysen	Germiston, South Africa	Pvt	?	-	-	5	Loss of power. On touchdown the main rotor struck the tail boom.
26	Mil Mi-8	LZ-CAK	Hummingbird Island Airways	Off Rangali Island, Maldives	DSP?	ER	5	-	20	Pilot turned back upon hearing a loud noise shortly after take-off from a hotel, but suffered a loss of power and ditched, rolled over and sank.
29	MD520N	HB-XGO	Fuchs Helikopter	Nr Schwytz, Switzerland	AWS	ER	4	-	4	Crashed while positioning to drop explosives on a potential avalanche site.
29	Mil Mi-8T	RA-24696	Strezhevskoe Air Enterprise	92km from Strezhevo, Russia	?	ER	1	-	4	En route flying at 150m AGL the helicopter developed severe vibration and crashed on snow-covered ground.
30	Hughes 369E	N992SD	Riverside County Sheriff	Nr Lake Elshore, California, USA	AWS	ER	-	-	2	Chip warning light came on, but while the pilot looked for a place to land engine failure warning lit. Autorotation followed by hard touchdown.
31	Hughes 369D	N58431	Las Vegas Police	McCarran Apt, Las Vegas, USA	CT	LR	-	-	2	During practice autorotation the aircraft touched down hard and the main rotor hit the tail boom.
FEBRUARY										
2	Bell OH-58	N151ES	City of Lakeland Police	Lindor Regional Apt, Lakeland, USA	Pvt	TI	-	1	2	Pilot, responding to a night emergency call, took off from the helicopter's trailer without disconnecting it from the tractor. A skid caught on the tractor. The aircraft pitched nose down, hit the ground and rolled over.
5	Bell 212	EC-GUY	Aviser	Pyrenees Mountains, Spain	AWS	MH	-	-	6	Hovering in strong crosswind, the aircraft drifted. Main rotor hit ground.
5	Bell 206B3	N907CA	Horizon Helicopters	Nr Sabine Pass, Texas, USA	Ferry	LA	-	-	-	Aircraft entered a fog bank while turning right on to final approach for a private heliport. The pilot became disorientated and the helicopter crashed in shallow water.
9	AS350B1	C-GPTK	N'them Mountain Helicopters	Nr Blue River, Columbia, Canada	AWP	TI	-	-	1	After taking skiers to the top of a slope at 7,200ft, the pilot increased power for take-off but lost visual contact with the ground in the snow. The helicopter hit the ground, rolled over and burned out.
9	Hughes 369D	N5070J	Agrotors	Nr Herminie, Pennsylvania, USA	AWS	MH	-	-	3	The engine is reported to have partially lost power in the hover at about 70ft AGL. The pilot turned through 270° for a forced landing, but touching down on sloping ground resulted in main rotor severing the tail.
10	Mil Mi-8TV-1	ZS-RIP	Heys Helicopters	Cape Town, South Africa	AWE	MT	4	-	4	While delivering a load to the top of a building the tail rotor struck an advertising hoarding on a neighbouring building. The aircraft crashed.
12	AS355F1	N355MF	Southwest Helicopters	Toledo, Ohio, USA	Ferry	ER	-	3	3	The pilot set off, aware the weather was marginal for a VMC flight and turned back when it deteriorated. On receiving a report of better conditions from another pilot in the area, the pilot resumed the flight but