National Transportation Safety Board
Washington, DC 20594

Brief of Accident

Adopted 05/08/2001

IAD00LA037
File No. 691 | 04/16/2000 | MANASSAS, VA | Aircraft Reg No. N162GG | Time (Local): 13:05 EDT

Make/Model:	Greenleaf / EXEC 162F
Engine Make/Model:	Rotorway / 6306
Aircraft Damage:	Substantial
Number of Engines:	1
Operating Certificate(s):	None
Type of Flight Operation:	Personal
Reg. Flight Conducted Under:	Part 91: General Aviation

	Fatal	Serious	Minor/None
Crew	0	0	1
Pass	0	0	0

Last Depart. Point:	Same as Accident/Incident Location
Destination:	Local Flight
Airport Proximity:	On Airport
Airport Name:	MANASSAS
Runway Identification:	34L
Runway Length/Width (Ft):	3703 / 100
Runway Surface:	Asphalt
Runway Surface Condition:	Dry

Condition of Light:	Day
Weather Info Src:	Weather Observation Facility
Basic Weather:	Visual Conditions
Lowest Ceiling:	None
Visibility:	10.00 SM
Wind Dir/Speed:	190 / 005 Kts
Temperature (°C):	23
Obstr to Vision:	None
Precipitation:	None

Pilot-in-Command Age: 70

Certificate(s)/Rating(s)
Commercial; Multi-engine Land; Single-engine Land; Helicopter
Instrument Ratings
Airplane

Flight Time (Hours)

Total All Aircraft:	7383
Last 90 Days:	14
Total Make/Model:	12
Total Instrument Time:	2474

The pilot/owner/builder of the homebuilt helicopter departed on a local flight. He completed a traffic pattern, and initiated an approach to the ground. During the final segment of the approach, the pilot found the collective control stick difficult to lower, and the movement restricted. The pilot forced the collective to the full-down position, and the helicopter contacted the ground and rolled over. A 25-pound metal barbell plate was found in the foot well on the copilot's side after the accident. The surface of the plate was lightly coated with rust. Examination of the copilot's seat cushion revealed rust colored transfers on the fabric. The seat pan exhibited circular scratches that measured the same radius as the barbell plate. The collective stick was raised, and the barbell plate was placed so that it was superimposed over the scratches. The collective stick was lowered, it contacted the plate, and approximately the bottom 1/3 of the collective stick travel could not be attained. The pilot explained that on the advice of the kit factory, a 25-pound weight could be added to the co-pilot's side to assist the pilot in achieving a more wings-level vertical ascent to a hover. He said: 'A 25-pound weight in the right seat worked fine. I flew with it all the time. It was secured by the seat belt. On the last flight it was not secured. I just put it on the seat because it was so heavy.'

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Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: APPROACH - VFR PATTERN - FINAL APPROACH

Findings
1. (C) ROTORCRAFT FLIGHT CONTROL,COLLECTIVE CONTROL - BLOCKED(PARTIAL)
2. (C) CONTROL INTERFERENCE - INADVERTENT - PILOT IN COMMAND

Occurrence #2: HARD LANDING
Phase of Operation: DESCENT - EMERGENCY

Findings Legend: (C) = Cause, (F) = Factor

The National Transportation Safety Board determines the probable cause(s) of this accident as follows.
Was the pilot' use of an unsecured ballast weight in the cockpit that shifted in flight and blocked the collective control movement.