

## **Additional Data Tables**

*Appendix to "Ride-On Lawnmowers: The Hazards of Overturning," by Melvin L. Myers. Published in Professional Safety, May 2009, pp. 52-63.*

**Table 7. Consumer Mowing Instability Incidents Based on Newspaper Reports**

Year	Sex	Age	Outcome	Preevent	Incident	Location	State	Source	
1	1989	F	80	dead	struck bank	overturn	home	MN	<i>St. Paul Pioneer Press</i> 6-16-89
2	1990	M	55	dead		overturn		NY	<i>Buffalo News</i> 5-3-90
3	1990	F	53	dead	up bank	overturn		PA	<i>Pittsburgh Post-Gazette</i> 7-26-90
4	1990	F	22	asphyxia		overturn	home	FL	<i>Sarasota Herald-Tribune</i> 5-9-98
5	1991	F	69	rescued	spinout	overturn	home	PA	<i>Philadelphia Inquirer</i> 5-9-91
6	1991	M	14	fire dead		overturn	home	TN	<i>Knoxville News-Sentinel</i> 6-29-91
7	1992	F		asphyxia		overturn	home	MN	<i>Monahan v. Toro Co.</i> 856 F.Supp. 955
8	1992	M	40	dead	turn→cliff	fall	home	KY	<i>Lexington Herald-Leader</i> 6-4-92
9	1993	M	67	dead		overturn	neighbor	PA	<i>Pittsburgh Post-Gazette</i> 5-16-93
10	1994	M	39	drown	spinout, bank	overturn		ME	<i>Portland Press Herald</i> 7-27-04
11	1994	M		guarded	wall	overturn	home	PA	<i>Morning Call</i> 9-18-94
12	1994	M	68	dead	spinout	overturn	road	TN	<i>Knoxville News-Sentinel</i> 10-27-94
13	1994	F	75	dead	spinout	overturn	home	IN	<i>Evansville Courier</i> 11-1-94
14	1994	F	63	drown	creek	overturn	home	NC	<i>Charlotte Observer</i> 7-2-94
15	1995	M	65	dead		overturn	home	AL	<i>Huntsville Times</i> 4-10-95
16	1995	M	75	dead	spinout	overturn	home	OH	<i>Columbus Dispatch</i> 4-26-95
17	1995	M	88	dead	ditch	overturn	home	IA	<i>Gazette</i> 7-4-95
18	1995	F	66	drown	creek	overturn	home	IN	<i>News-Sentinel</i> 9-6-95
19	1995	M	72	dead		overturn	home	AR	<i>Buffalo News</i> 7-8-95
20	1995	M		critical	spinout, bank	overturn	home	NH	<i>Union Leader</i> 9-30-95
21	1996	M	81	dead	spinout	overturn	home	NY	<i>Watertown Daily Times</i> 9-3-96
22	1996	F	62	dead		overturn	home	WI	<i>Wisconsin State Journal</i> 9-24-96
23	1997	M	55	dead	turn→cliff	fall	home	WA	<i>San Diego Union-Tribune</i> 6-1-97
24	1997	M	52	dead	barn	overturn	home	IL	<i>Daily Herald</i> 6-3-97
25	1997	M	77	drown	lake	overturn	home	GA	<i>Atlanta Journal and Constitution</i> 6-26-97
26	1997	M	82	dead		overturn	home	OH	<i>Akron Beacon Journal</i> 4-25-97
27	1997		10	dead		overturn		NC	<i>Charlotte Observer</i> 5-31-97
28	1997	M	65	dead		overturn	lot	NC	<i>Charlotte Observer</i> 5-31-97
29	1997	M	69	dead	ditch	overturn	home	NC	<i>Greensboro News &amp; Record</i> 7-30-97
30	1998	F	74	fire dead	pull load	overturn	home	NC	<i>Winston-Salem Journal</i> 3-31-98
31	1998	M	54	dead		overturn	home	IL	<i>St. Louis Post-Dispatch</i> 5-4-98
32	1998	M	75	asphyxia	slope	overturn		VA	<i>Consumer Product Safety News</i> , Winter 98
33	1998	M		dead	dry creek	overturn	home	OK	<i>Black v. M&amp;W Gear Co.</i> , 269 F.3d 1220
34	1998	M	81	dead	5' wall	overturn	home	NJ	<i>Star-Ledger</i> 9-23-98
35	1999	M	13	dead	ditch	overturn	home	NC	<i>Charlotte Observer</i> 7-2, <i>Herald Sun</i> 7-3-99
36	1999	M	85	dead	bank	overturn	home	OH	<i>Columbus Dispatch</i> 8-14-99
37	2000	M	12	asphyxia	up hill	overturn	home	PA	<i>Morning Call</i> 5-22-00
38	2000	M	54	dead	drain	control	home	NC	<i>Winston-Salem Journal</i> 5-16-00
39	2000	F	47	dead	bank	overturn	home	WI	<i>Wisconsin State Journal</i> 6-17-00
40	2000	M	66	dead	into shed	overturn	home	NC	<i>Greensboro News &amp; Record</i> 6-24-00
41	2000	M	48	dead	10' ditch	overturn	home	IN	<i>Evansville Courier</i> 8-3-00
42	2000	M	67	dead	ditch	overturn	home	IN	<i>Evansville Courier</i> 8-5-00
43	2000	M	17	dead	8' bank	overturn	residence	FL	<i>Bradenton Herald</i> 7-22-00
44	2000	M	39	dead		mishap	home	KY	<i>Lexington Herald-Leader</i> 8-26-00
45	2001	M	60	dead	60' bank	overturn	home	ID	<i>Spokesman-Review</i> 5-7-01
46	2001	M	63	dead	bank	overturn	home	MI	<i>Grand Rapids Press</i> 6-17-01
47	2001	M	66	fire dead		overturn	home	FL	<i>Daytona Beach News-Journal</i> 6-18-01
48	2001	M	50	dead		overturn	home	IN	<i>Palladium-Item</i> 7-13-01
49	2001	M	42	dead	hill	overturn	home	VA	<i>Roanoke Times</i> 8-7-01
50	2001	M	75	dead	ditch	overturn	home	IA	<i>Gazette</i> 9-20-01
51	2002	M	67	dead	6' wall	overturn	home	WI	<i>Capital Times</i> 10-10-02
52	2002	M	74	asphyxia	creek	overturn	home	SC	<i>The State</i> 11-28-02
53	2002	M	30	cuts	hill	overturn	home	MI	<i>Flint Journal</i> 6-20-02
54	2002	M	62	drown	pond	overturn	home	NC	<i>Charlotte Observer</i> 4-19-02
55	2003	M	69	dead	bank	overturn	home	IA	<i>Gazette</i> 10-2-03
56	2003	M	65	critical		overturn	home	NY	<i>Buffalo News</i> 6-9-03
57	2003	M		drown	hill	overturn	home	NC	<i>Charlotte Observer</i> 4-6 & 7-03
58	2003	M				overturn	home	TN	<i>Tennessean</i> 10-20-03
59	2003	M		dead	incline	overturn	home	OH	<i>Cincinnati Enquirer</i> 4-22-03
60	2004	F	54	dead		overturn	home	OH	<i>Columbus Dispatch</i> 7-14-04

**Table 7. Consumer Mowing Instability Incidents Based on Newspaper Reports**

Year	Sex	Age	Outcome	Preevent	Incident	Location	State	Source
61	2004	F	rescued		overturn	home	GA	<i>Georgia Magazine</i> 4-04
62	2004	M	rescued	incline, pond	overturn	home	FL	<i>St. Petersburg Times</i> 4-2-04
63	2005	M	dead	gravel	overturn	home	IA	<i>The Gazette</i> 3-17-05
64	2005	M	critical	stump	overturn	home	WA	<i>Tacoma News Tribune</i> 4-15-05
65	2005	M	minor		overturn	home	IA	<i>Dubuque Telegraph Herald</i> 7-20-05
66	2006	F	dead		overturn	home	OH	<i>Cincinnati Post</i> 5-15-06
67	2006	M	dead		overturn	home	OR	<i>The Oregonian</i> 5-15-06
68	2006	M	drown	slide	overturn	home	OH	<i>Cincinnati Enquirer</i> 6-5-06
69	2006	M	dead	creek	overturn	roadside	OK	<i>The Oklahoman</i> 6-25-06
70	2006	F	dead		overturn	home	IN	<i>Knight-Ridder/Tribune News</i> 7-6-06
71	2006	M	dead	extra-rider	overturn	home	PA	<i>Centre Daily Times</i> 9-18-06
72	2006	M	drown	steep incline	overturn	home	KY	<i>Lexington Herald-Leader</i> 7-19-06
73	2006	M	dead	incline	overturn	home	MA	<i>Patriot Leader</i> 7-27-06
74	2006	M	dead		overturn	home	OK	<i>The Oklahoman</i> 7-8-06
75	2007	M	burned	towing car	overturn	home	FL	<i>UPI NewsTrack</i> 7-20-07
76	2007	M	dead	steep incline	overturn	home	IL	<i>Register Mail</i> 8-3-07
77	2007	M	cut		overturn		TX	<i>NewspaperARCHIVE.com</i> 8-27-07
78	2007	M	dead	bank	overturn	home	IA	<i>Dubuque Telegraph Herald</i> 8-1-07
79	2007	M	dead			home	MI	<i>Grand Rapids Press</i> 10-9-07
80	2007	M	dead			home	NY	<i>Batavia Daily News</i> 10-22-07

**Table 8. Commercial Mowing Instability Incidents Based on Newspaper Reports**

Year	Sex	Age	Outcome	Preevent	Incident	Location	State	Use*	Source	
1	1990	M	27	dead		overturn	airport	TN	G	<i>Commercial Appeal</i> 7-4-90
2	1992	M	40	dead		overturn	roadside	TX	G	<i>Fort Worth Star-Telegram</i> 7-11-92
3	1994	M	45	dead		overturn	road	LA	G	<i>The Advocate</i> 3-9-94
4	1998	M	78	critical		overturn	lawn	CT	P	<i>New Haven Register</i> 7-4-98
5	1998	M	61	fire dead		overturn		FL	P	<i>St. Petersburg Times</i> 9-29-98
6	1998	M	41	dead	shoulder	overturn	roadside	IN	G	<i>Connersville News-Examiner</i> 6-1,2-98
7	1999	M	19	asphyxia	hillside	overturn	hospital	WI	P†	<i>Milwaukee Journal Sentinel</i> 7-31-99
8	2000	M	17	dead	8' bank	overturn	lawn	FL	P	<i>Florida Times-Union</i> 7-21-00
9	2001	M	65	drown	bank	overturn	lake	FL	P	<i>Naples Daily News</i> 8-19-01
10	2001	M	41	drown	slope	overturn	pond	FL	P	<i>Stuart News/Port St. Lucie News</i> 12-22-01
11	2002	M		rescued	lake edge	overturn	lake	IL	P	<i>Daily Herald</i> 5-31-02
12	2002	M	22	dead	near pond	overturn	lawn	FL	P†	<i>Tampa Tribune</i> 5-31-02
13	2002	M	71	drown	ditch	overturn	lawn	PA	P†	<i>Morning Call</i> 6-20 & 21-02
14	2002	M	77	drown	bank	overturn	golf	OH	P	<i>Columbus Dispatch</i> 7-25-02
15	2002	M	55	dead	spinout, muddy	overturn	duplex	IL	P	<i>State Journal-Register</i> 8-18-02
16	2002	M	31	drown	wet grass	overturn	golf	FL	P†	<i>St. Petersburg Times</i> 9-26-02
17	2003	M	25	drown	spinout, edge	overturn	condos	FL	P	<i>News-Press</i> 3-11-03
18	2003	M	42	dead	hill	overturn	complex	NC	P†	<i>Greensboro News &amp; Record</i> 5-3-03
19	2003	M	54	dead	runaway		park	MA	G	<i>Worcester Telegram &amp; Gazette</i> 8-21-03
20	2003	M	57	drown		overturn	lawn	VA	P	<i>Virginian-Pilot</i> 9-7-03
21	2003	M	29	drown	lake edge	overturn	complex	IN	P	<i>Indianapolis Star</i> 9-19-03
22	2004	M	37	dead	hit wall	overturn	lawn	MI	P	<i>Midland Daily News</i> 5-10-04
23	2004	M	57	dead	fall off	runover	lawn	IL	P†	<i>Rockford Register Star</i> 6-9-04
24	2004	M	46	dead	bank	overturn	park	VA	G†	<i>Richmond Times-Dispatch</i> 8-26-04
25	2004	M	66	dead	bank	overturn	golf	PA	P†	<i>Patriot-News</i> 9-8-04
26	2005	M		rescued	lagoon	overturn	park	WI	G	<i>Milwaukee Journal Sentinel</i> 5-10-05
27	2005	M	36	dead	20' bank	overturn	golf	CA	P	<i>CBS5.com Headline News</i> 6-3-05
28	2005	M	40	dead	bank	overturn	subdivision	FL	P†	<i>Ocala Star-Banner</i> 9-28-05
29	2005	M	47	dead		overturn	roadside	OK	P	<i>Tulsa World</i> 6-24-05
30	2006	M	25	drown	slope	overturn	park	NY	P	<i>The Associated Press</i> 6-6-06
31	2006	M	46	drown	near pond	overturn	stable	FL	P†	<i>Knight-Ridder/Tribune News</i> 10-26-06
32	2006	M	29	drown	bank, lake	overturn		FL	P	<i>Palm Beach Post</i> 10-26-06
33	2006	M	48	drown	pond, bog	overturn	farm	MA	P	<i>Kingston Observer</i> 7-26-06
34	2006	M	61	dead	cold, exposure	overturn	lodge	AK	P	<i>Associated Press</i> 9-8-06
35	2007	M	21	drown	slide	overturn	park	FL	G	<i>Crestview News Bulletin</i> 5-10,11-07
36	2007	M	58	drown	ledge	overturn	park	FL	G	<i>St. Petersburg Times</i> 7-10 & 12-07
37	2007	M		arm loss	fall, bank	runover	golf	CO	P†	<i>Denver Post</i> 7-24-07
38	2007	M	78	serious	bank	overturn	golf	MD	P	<i>The Capital</i> 10-19-07
39	2007	M	43	drown	pond	overturn	golf	FL	P†	<i>Miami Herald</i> 1-11-07
40	2007	M	56	critical	3' drop	overturn	canal	FL	P	<i>South Florida Sun-Sentinel</i> 2-14-07
41	2007	M	25	drown	turn	overturn	golf	OH	P†	<i>Columbus Dispatch</i> 10-11-07
42	2007	M	41	dead		overturn	park	TX	G	<i>Tribune-Herald</i> 4-5-07

\* G: Public employment; P: Private employment

† OSHA investigation conducted and identified

**Table 9. Indeterminate (Consumer or Commercial) Mowing Instability Incidents Based on Newspaper Reports**

Year	Sex	Age	Outcome	Preevent	Incident	Location	State	Source
1	1998	M	66	dead	spinout, bank	roll	IL	<i>State Journal-Register</i> 7-2-98
2	1999	M	46	asphyxia	incline	overturn	PA	<i>York Daily Record</i> 5-22-99
3	1999	M	62	arm loss			PA	<i>York Daily Record</i> 5-22-99
4	2000	F	51	fire dead	bank	overturn	IN	<i>Evansville Courier</i> 4-15-00
5	2004	M	53	dead	ditch	overturn	OH	<i>The Blade</i> 5-6-04
6	2004	M	63	dead	hill	overturn	roadside WI	<i>Milwaukee Journal Sentinel</i> 6-24-04
7	2005	M	45	dead		overturn	lawn IL	<i>State Journal-Register</i> 5-22-05
8	2005	M		dead	bank	overturn	KY	Kentucky State Police, 7-19-05
9	2006	M	66	minor			SC	<i>Bluffton Today</i> 5-14-06
10	2007	M		dead		overturn	NH	<i>Hayes v. Mtd Products, Inc.</i> 9-6-07
11	2007	M		dead	spinout	overturn	IA	<i>Radio Iowa News</i> 7-9-07
12	2007	M		dead		overturn	IA	<i>Dubuque Telegraph Herald</i> 8-9-07

**Table 10. Narratives From the Consumer Product Safety Commission’s National Electronic Injury Surveillance System for a Sample of Hospital Visits Related to Riding Power Lawnmower Overturns, 2006**

Injury, Sample Size	Case No.	From Narrative
Concussion N = 4 (75% overturns) N/A	60918967	Slid 10 feet down embankment on riding mower
	61218306	Patient's riding lawnmower went down embankment
	60654061	Riding lawnmower down 4 ft embankment
Contusion or Abrasion N = 58 (26% overturns) National Estimate = 2,760 Overturn Estimate = 718	60445242	Patient was on a riding lawnmower going up hill when it rolled back over
	60507209	Cutting grass on hillside on riding lawnmower, rolled lawnmower over
	60740604	Riding lawnmower, rolled over on top of him
	60303975	Patient riding lawnmower up steep incline, he fell off, and it fell back
	60551378	Backing a riding mower down a ramp - went off edge
	61146784	Was riding mower cutting grass tipped over on incline
	60341855	Patient flipped lawnmower onto side while riding it
	60700568	Was on riding mower when it rolled over
	60727577	Was driving a riding power mower up into a truck; mower turned over
	60926216	Tipping over the riding lawnmower at home
	60507585	Patient was at home on a riding lawnmower when he rolled it down a hill
	60505003	Rolled his ride-on lawnmower
	61020988	Rolling his riding lawnmower at home
60409145	Lost control of riding lawnmower down an embankment landed in a creek	
60649128	Patient was loading/ unloading riding lawnmower and it turned over	
Dislocation, N = 3 (33%)	60401401	Riding lawnmower rolled over patient
Fracture N = 41 (24% overturns) National Estimate = 2,014 Overturn Estimate = 483	60536185	Riding tractor lawnmower flipped over
	60749374	Fall from riding lawnmower roll over, jumped when tractor “took off”
	60917868	Patient turned a riding lawnmower over
	60741273	Rolling a riding lawnmower at home
	60736447	Was on riding power lawnmower; mower turned over on him
	60905227	Flipped riding mower
	60409069	Riding lawnmower tipped over and patient fell off
	60500656	Patient was on a powered riding lawnmower when it rolled over on him
	60622186	Riding lawnmower rolled over
	60845215	Riding lawnmower rollover
Hematoma N = 3 (100% overturns) N/A	60527966	Riding lawnmower rollover
	61052433	Riding lawnmower accident
	60906794	Patient states riding lawnmower turned over
Internal Organ Injury N = 8 (38% overturns) N/A	60512212	Loading riding lawnmower into truck, lawnmower flipped
	60734820	Patient was at home using a riding lawnmower, rolled it down a hill
	60845248	Riding mower went over embankment
Laceration N = 41 (15% overturns) National Estimate = 1,934 Overturn Estimate = 290	60441403	Patient jumped off riding lawnmower that was turning over at home
	60729223	Patient rolled over in lawnmower
	60535470	Mower patient was riding flipped over and pinned leg
	60920658	Fall off lawnmower over 5 ft embankment, mower fell on top of patient
	60732960	Patient rolled riding mower over and then mower ran over his hand
Other N = 28 (21% overturns) National Estimate = 1,938 Overturn Estimate = 407	60948733	Drove large riding lawnmower off 3 ft. ledge, head hit step
	60612673	Riding lawnmower turned over and fell on patient's ankle
	60601683	Flipped a riding lawnmower low back pain
	60752943	Riding lawnmower fell back while loading it on ramp
	60857025	Low back pain—tipped over on riding lawnmower at home
	60716328	Riding lawnmower flipped over backwards landing on top of her
Sprain & Strain N = 66 (12% overturns) National Estimate = 3,219 Overturn Estimate = 386	60642586	His riding lawnmower flipped mower
	60415381	Flipped over on riding lawnmower
	60651099	Flipped riding lawnmower
	60931122	On a riding lawnmower and jumped off as it was about to roll
	60533574	Back pain, riding lawnmower turned over
	60636681	Patient was driving riding lawnmower up ramp, flipped over on patient
	61245988	Riding lawnmower flipped while going uphill
	60809278	Patient was on a riding power lawnmower and it flipped over
60325396	Riding mower tipped over	

**Table 11. Factors Reported by OSHA, NIOSH & Police Investigations, 1986-2007**

Inspection no.	Year	State	Preevent	Event	Machine	Environment	Slope	Water	Age	Sex	Injury	ROPS	
1	102093838	1986	UT	edge	overturn	trim	golf		no	41	male	fracture‡	
2	018388769	1989	AL	run-away	overturn	triplex	incline, tree			22	male	crushed	
3	109245019†	1993	AL	run-away	overturn	4 WD	golf, 20' drop-off	30°	no	34	male	crushed	no
4	109208371	1998	FL		overturn	ZTR	seawall	3'		32	female	drowned	no
5	126591494	1998	MN		overturn	rotary	golf		shallow	55	male	asphyxia	no
6	300178738†	1998	GA	spinout	overturn		golf, culvert	45°	no	21	male	crushed	
7	300630480†	1998	NY	spinout	overturn	CTR	slope	21°	creek	29	male	asphyxia	no
8	302024633	1998	MD	freewheel	overturn	triplex	golf, washout	5-10°		20	male	head trauma	no
9	302075809	1998	AR		overturn	4x4	golf, steep	60°		70	male	crushed	
10	300118932	1999	WI	edge	overturn	ZTR	slope	60°		19	male	internal	no
11	302367453	1999	VT	edge	overturn	ZTR		16' drop		46	male	crushed	no
12	119828358	2000	CA	run-away	jumped			hill	lake	28	male	laceration‡	
13	303186746†	2000	FL		overturn	triplex	golf, drop-off	28°	lake	28	male	drowned	
14	FACE 00-25†	2000	NC		overturn		15' bank	35°		43	male	massive trauma	
15	303642235†	2001	OK	sprayer	overturn	ZTR	berm	slope		57	male	heart attack	no
16	304245822†	2001	FL	slide	overturn	ZTR	wet grass	22-29°	lake	26	male	drowned	no
17	304249956†	2001	FL	skid	overturn	ZTR	wet ground	12-22°	canal	42	male	drowned	no
18	304250780†	2002	FL	deflated tire	overturn	ZTR	drop-off	20°	lake	37	male	drowned	no
19	304810336†	2002	FL	spinout	overturn	ZTR	golf, 2.5' drop-off	20-25°	1.5'	22	male	drowned	no
20	305013070	2002	PA		overturn	rear	road side	8' ditch	8"	71	male	drowned	no
21	305871295†	2002	FL	slide	overturn	triplex	golf, tee to ditch	15°	3'	31	male	drowned	collapse
22	306408410†	2003	FL	slide	overturn	ZTR	slope	15-21°	pond	26	male	drowned	no
23	306499336†	2003	NC	spinout	overturn	ZTR		20°		42	male	crushed	no
24	112898408†	2004	PA	run-away	collision	reel	golf, slope, trees	20°	no	66	male	concussion	no
25	306727181†	2004	IL	object	overturn	ZTR	night, ditch	45°		57	male	crushed	no
26	107320202	2004	MA	dump sand	overturn	truckster	golf, sandtrap					crushed	
27	304250780	2004	FL		overturn	ZTR		>15°				crushed	
28	308101526†	2004	VA	run-away	runover	ZTR	35' bank	15-29°	no	46	male	asphyxia	no
29	** †	2005	TX	spinout	overturn	ZTR	slope	13-19°	3'	23	female	drowned	no
30	308434273†	2005	FL	slide	overturn	ZTR	bank, 180° roll	25°	no	40	male	crushed	no
31	309207017	2006	NY		overturn	ZTR	1 ft drop-off	19°	2-3'	25	male	drowned	no
32	309752749†	2006	TX	edge	overturn	triplex	golf, sandtrap	20°		23	male	concussion	
33	310211222†	2006	FL	slide	overturn	ZTR	polo	20°	pond	46	male	drowned	no
34	310210638†	2006	FL	seatbelt off	overturn	ZTR	270° roll	18°	pond	28	male	drowned	yes
35	310214408†	2007	FL	seatbelt off	overturn	tractor	270° roll	19.5°	pond	43	male	drowned	yes
36	310481825	2007	OH	u-turn	overturn	ZTR	golf green		pond	25	male	drowned	no
37	310468228	2007	CO	tree base	runover	Walker	hill	22°			male	amputation‡	

\*\* Marble Falls, TX Police Report, public park employee

‡ nonfatal

† full investigation report received