“Harness Up Before You Climb Up!”

With deer hunting season soon to be upon us, Virginia Department of Game and Inland Fisheries (DGIF) would like for every hunter to review safety instructions for using their treestands and especially full-body safety harnesses. Then practice, practice and practice some more in using them safely. Since 1993, in Virginia there have been over 183 reported treestand incidents with 13 resulting in fatalities. This article highlights data related to these incidents and gives examples on how they could have been prevented.

Treestands have become very prevalent among deer hunters. Each year more hunters take to the fields using treestands to improve their chances of harvesting a trophy deer. With increasing numbers of hunters of all ages using treestands, there is also an increase in the number of related incidents involving falls from treestands. To prevent serious injuries and fatalities, it is critical that hunters follow some basic safety guidelines and always use a full-body safety harness every time they leave the ground. Let’s look at our treestand incident experiences for the past twelve years.

TREESTAND INCIDENTS IN VIRGINIA 1993-2005

Year	Total number of incidents	Percent	Fatal	NonFatal
1993-1994	16	8.7	1	15
1994-1995	13	7.1	0	13
1995-1996	20	10.9	0	20
1996-1997	19	10.4	0	19
1997-1998	22	12.2	4	18
1998-1999	12	6.6	1	11
1999-2000	18	9.8	3	15
2000-2001	12	6.6	0	12
2001-2002	14	7.7	2	12
2002-2003	9	4.9	1	8
2003-2004	11	6	1	10
2004-2005	17	9.3		17
Total	183		13	170

* Data provided by DGIF Hunting Incident Reports 1993-2005

By far, the 1997-1998 hunting season was the worst for treestand related incidents during the twelve year period with 22 (12.0%) reported. Although the number of incidents has reduced somewhat since then, there is still a lot of room for improvement. With the

increasing number of hunters using treestands each year, concerted efforts must be made to remind hunters to constantly practice safe procedures and use safety harnesses at all times when they are hunting from any type of treestand.

Age of Hunters

Of the total number of treestand related incidents during the twelve year reporting period, 13 (7.1%) resulted in fatalities. The youngest injured hunter was 12 years old (nonfatal) and the oldest was 78 years old (fatal). The largest number if incidents occurred to hunters ranging from 28 to 45 years old totaling 89 incidents (48.6%). In interviews with hunters in this age group, it was determined that many of them had been hunting for about twenty years without incident. Quite a few were married, had good jobs and were settled in their lives. This overconfidence and attitude of being "ten foot tall and bullet proof" however, can lead to an unexpected fall from a treestand. The causes for the fatal incident involving a 78 year old hunter were due to him not wearing a safety harness, and the homemade seat support of the stand failed causing him to fall 17 feet to the ground. (See Tab A)

As a comparison, Deer and Deer Hunting magazine (D&DH) conducted a treestand incident survey in 1993. Their statistics revealed similar patterns regarding the ages of hunters involved in treestand accidents. The average age of injured hunters in their survey was 34.39 years old with the preponderance occurring in the 25 to 34 years of age group.

Gender of Hunters

Of the 183 incidents reported, 132 were identified as male; 50 of the reports did not indicate gender. In reviewing all of the incident reports, there was one female injured while using treestands. It could be assumed that few females use treestands, or they are safer than males.

Falls While Ascending, Descending or In The Stand

Clearly, the largest number of falls from treestands, 73 (39.9%) and fatalities, 10 (76.90%) occurred while the hunter was in the stand. The reasons for the falls are discussed later in this report. In the D&DH survey, 29.1% indicated they were in the stand at the time of the incident. It appears more Virginia hunters are injured while in their stands than the D&DH survey. In reviewing the hunting incident reports, this could be attributed to the number of homemade stands used versus commercially manufactured ones. Ascending and descending percentages somewhat parallel the D&DH survey. (See Tab B)

Feet Above Ground

Reportedly, 109 (59.6%) of the falls occurred when hunters were in elevated stands from 10 to 21 feet above the ground. Sixty-six falls (36.0%), occurred at 10 to 15 feet and 43 (23.5%) occurred at heights from 16 to 21 feet above the ground. Eight of the thirteen fatalities (61.5%) occurred at these heights. This compares similarly to the D&DH survey where the average height of the fall was

15.5 feet above the ground. The question however, is "Why would a hunter need to climb into a stand that is more then 20 feet off the ground?" Most hunting situations do not require hunters to be any higher than 20 feet. To hunt from higher elevations increases the angle of the shot at the deer and requires the hunter to make more acute adjustments. This could easily end up as a missed shot or worse, wounding the deer without harvesting it. Also, the higher the hunter is off the ground the more severe the injuries will be if they fall. (See Tab C)

Safety Harness

Out of 183 reported treestand incidents, only 9 (5.5%) of the hunters indicated they were using their safety harness (this category includes any device used to restrain the hunter; rope, strap, belt, etc.) at the time of the incident. Hunting incident reports routinely do not indicate whether or not the hunter was using a safety harness. In the future however, the DGIF will be making greater strides in providing more detailed incident information that will be useful in developing programs to reverse these negative trends. The data will also strengthen the need for all hunters to use a safety harness whenever using any type of treestand. There is one common fact from this analysis; each fatal incident (except for the heart attack cases) could have been prevented if the hunter had been wearing a safety harness. (See Tab D)

Body Part Injured

Based on related data on the height in which hunters place their stands, it is not surprising that 41 (22.4%) incidents resulted in severe and multiple injuries. Five (38.5%) of the 13 fatalities included multiple injuries to the hunter and 4 (30.8%) resulted in broken necks. Many injuries also involved the hips and legs 32 (17.5%). The number of permanently disabling injuries to hunters closely paralleled the D&DH survey with 2.7 % of the total. Unfortunately, the lives of five hunters are now permanently changed, even to the point where they may not be able to enjoy a viable job, or the mobility that they once enjoyed. All of these injuries could have been prevented. (See Tab E)

Type of Stands

It was difficult to determine the type of treestands involved with each incident since that information was not routinely gathered in earlier hunting incident reports. When it was noted in the narrative it was then indicated in this report. Even so, it is fairly conclusive that permanent homemade stands contributed to the majority of the treestand incidents. As the reporting data improves in future hunting incident reports, this information will be valuable in determining the type of stands and whether they are commercially manufactured or of homemade construction. If Virginia hunters continue to build homemade stands that are poorly constructed, then other measure may have to be considered to reduce the number of serious and fatal injuries.

As a point of comparison, in the D&DH survey, they indicated that 56.5% of the hunters used a permanent stand; 46.7% used homemade portable stands; and 80% said they used commercially manufactured portable stands. Yet, those same hunters said that the type of stand the were using when the fell included 37% portable commercially manufactured stands; 25.8% homemade permanent stands; and 19.2% homemade portable stands. Apparently, their data is skewed.

Keep in mind that commercially manufactured treestands have improved immensely since 1993 and that some of them currently meet the Treestand Manufacturers Association (TMA) standards for design and construction. TMA is a self-governing body and have developed their own safety standards for design and construction, and have certified a few manufacturers. This alone is a significant improvement. Until recently they did not have a third party watch-dog group to ensure that TMA manufactured treestands were as safe to use as possible. Since treestands are for recreational use, they are not covered under the Occupational Safety and Health Administration standards.

In 2005, the American Society for Testing of Materials (ASTM) issued a set of standards for all facets of treestands, including design and construction, labeling, load capacities, and safety harnesses. The standards were developed to ensure that manufacturers would produce a better quality product. ASTM International is one of the largest voluntary standards development organizations in the world. They are a trusted source for technical standards for materials, products, systems, and services. Known for their high technical quality and market relevancy, ASTM standards have an important role in the information infrastructure that guides design, manufacturing and trade in the global economy. For more detailed information on ASTM treestand safety standards, go to www.astm.org. In the search field, type in the word treestand.

Treestands are however, a consumer product and may be regulated by the Consumer Product Safety Commission. If commercially manufactured treestands show a trend toward failures or the cause of serious or fatal injuries, the Consumer Product Safety Commission will then publish announcements of the problems to notify consumers of any recalled treestands. To find out if your treestand has been recalled, go to www.cpsc.gov . At the homepage, click on Recalls and Product Safety News; then click on Product Description. In the Simplify Search field, type in treestand or tree stand. Items may be listed under both spellings of the word. When the list of recalled items appears, click on the item for more detailed information on each stand. You may also wish to type in the words safety harness to see if your safety harness has been recalled, too. (See Tab F)

Firearm or Archery Equipment

The reader should not assume that all of the fatal incidents resulted from gunshot or arrow wounds. The table in Tab G merely indicates only the type of equipment the hunter was using at the time of the incident.

It is of particular interest that three reported incidents involved the hunter using a crossbow. Prior to the 2004-2005 hunting season, crossbows were only allowed to be used with a permit by persons with physical disabilities. No additional information was available to make a determination if the hunter was using a crossbow legally or not.

Prior to the establishment of new reporting procedures, there was limited information available regarding whether or not the hunter was using a firearm or bow when they fell from the treestand. From what we were able to gather, 73 (39.9%) of the 183 incidents involved the use of a firearm. This would include a rifle, shotgun or muzzleloader. It is noteworthy to mention that in 7 (53.8%) of the 13 fatalities hunters were using a firearm. In the reports where there was no mention of the type of equipment used i.e., Unknown/Unreported, it may be assumed that many more incidents involved the use of a firearm. In the D&DH magazine survey, 10.3% of the hunters surveyed indicated they fell from their treestand when they were using a firearm only; 22.1% indicated they used a bow only; and 66.8% said they hunted from a treestand with a firearm and a bow. Until the hunting incident reports provide more specific information on the equipment used, we will have to assume that the type of equipment used by the hunter is a mute point.

Other Contributing Factors

It seems that the number one cause of many treestand incidents was related to failure of the stand 44(24%); followed by fell asleep/lost balance 36 (19.7%); step pulled out of the tree 22 (11%); limb broke 12 (6.6%); missed step 11 (6.0%); and safety harness failed 7 (3.8%) In the D&DH survey, their data for stand failure tracked almost the same (23%); however Virginia hunters were exceptionally higher in the other categories. The type of safety harness used by hunters could have included a rope or strap around the waist, or earlier devices that were poorly constructed. Many full-body safety harnesses on the market today, although not meeting the Occupational Safety and Health Administration (OSHA) standards for design and construction, at least closely meet the standards. It is less likely that some of the currently manufactured safety harnesses will fail; nevertheless, it is advisable that hunters wear devices that meet OSHA standards. Regarding fatalities, 4 (30.8%) were due to heart attacks while the hunter was in their treestand; followed equally by 2 (15.4%) stand failures and 2 (15.4%) falling asleep/losing consciousness. Counties not listed below experienced 2 or less incidents during the 12 year reporting period. (See Tab H)

Treestand Incidents By County

Statistically, Bedford County experienced the most treestand related incidents during the sampling period with 11 injuries. Botetourt had 8; with Amelia and Northampton following with 6 each. Although these numbers may seem small out of a total of 183 incidents, it represents some significant indications. First, many more hunters are prone to serious or fatal injuries in these counties. It may be due in part to the geography of the land in terms of available hunting areas and the total number of hunters in the county. There is a

strong indication that more hunter education programs may be needed in these counties to focus on the problem and reduce the number of treestand related incidents.

A review of the fatalities by county discloses that Botetourt and Accomack had 2 each with the remainder having 1 each. Both Botetourt and Accomack are high on the total number of incidents list. Again, concentrated efforts to increase hunter education and awareness of treestand safety is urgently needed in these counties. (See Tab I)

Conclusions

No matter what type of treestand you use for hunting, remember this: You are responsible for your own safety. Every one of the 183 treestand incidents could have been prevented. Use sound judgment in selecting commercially manufactured treestands. Purchase only a stand that meets recognized safety standards. Homemade stands lead to greater risks of injuries. Always use a full-body safety harness and remain connected to the tree from the time you leave the ground until you return at the end of your hunt. After all, a safety harness is the most important item you can have while hunting from a treestand. Harness Up Before You Climb Up!

Tab A

AGE of HUNTERS

Year	Total	10 to 15	16 to 21	22 to 27	28 to 33	34 to 39	40 to 45	46 to 51	52 to 57	58 to 63	64 to 69	70 plus
1993-1994	16		2	1	3	3	4		1	1	1	
1994-1995	13	1		3	2	2		1	2	1	1	
1995-1996	20		1	3	2	4	2	2	3	3		
1996-1997	19			1	5	3	4	4	1	1		
1997-1998	22		1	2	3	3	1	2	4	4	2	
1998-1999	12		2	1	4		2	1	1	1		
1999-2000	18	1		1	1	4	4	1	4	1	1	
2000-2001	12		1		3	4	1		2		1	
2001-2002	14				2	4	3	1	1	1	1	1
2002-2003	9		1		1	1	2	1		2	1	
2003-2004	11					2	2		2	3	1	1
2004-2005	17				3	2	3	4	2	2		1
Total	183	2(1.0%)	8 (4.4%)	12 (6.6%)	29 (15.8%)	32 (17.5%)	28 (15.3%)	17 (9.3%)	23 (12.6%)	20 (10.9%)	9 (4.9%)	3 (1.6%)
Fatal	13			1	3	1			2	1	3	2

Tab B

FALLS WHILE ASCENDING, DESCENDING Or IN THE STAND

Year	Total	Ascending		Descending		In Stand		Unknown/Not Reported	
1993-1994	16	5		5		6			
1994-1995	13	3		4		6			
1995-1996	20	6		8		6			
1996-1997	19	7		2		10			
1997-1998	22	7		5		10		1	
1998-1999	12	3		5		4			
1999-2000	18	4		6		8			
2000-2001	12	6		3		3			
2001-2002	14	4		2		8			
2002-2003	9	3		4		1		1	
2003-2004	11	4		2		5			
2004-2005	17	0		9		7		1	
Total	183	52	28.40%	55	30.00%	73	39.90%	2	1.20%
Fatal	13	2	15.40%	1	7.60%	10	76.90%	0	0.00%

Tab C

FEET ABOVE GROUND

Year	Total	0 to 9	10 to 15	16 to 21	22 to 27	28 to 33	34 to 39	40 +	Unknown/Not Reported
1993-1994	16		10	3	2		1		
1994-1995	13		7	1	1	2			2
1995-1996	20	4	7	4	1	1			3
1996-1997	19	1	7	4	3		1		3
1997-1998	22	3	7	5					7
1998-1999	12	3	1	2	2	2	1		1
1999-2000	18		7	6	1	1		1	2
2000-2001	12		4	3		1		1	3
2001-2002	14	1	5	5	1	1			1
2002-2003	9		2		1	1			5
2003-2004	11		5	3	1				2
2004-2005	17	2	4	7	1	1			2
Total	183	14 (7.6%)	66 (36.0%	43 (23.5%)	14 (7.7%)	10 (5.5%)	3 (1.6%)	2 (1.1%)	31 (16.9%
Fatal	13	1	4	4	1	0	0		3

Tab D

SAFETY HARNESS

Year	Total	Yes	No	Had But Not Used	Unknown/Not Reported
1993-1994	16		14		2
1994-1995	13	1	6	2	4
1995-1996	20		2	1	17
1996-1997	19		1	1	17
1997-1998	22	1			21
1998-1999	12		1		11
1999-2000	18	2	2		14
2000-2001	12	2	1		9
2001-2002	14	2	3	2	7
2002-2003	9	1	1		7
2003-2004	11		2		9
Total	166	9 (5.4%)	33 (19.9%)	6 (3.6%)	118 (71.1%)
Fatal	13	0	4 (30.8%)	0	9 (69.2%)

Tab E

BODY PART INJURED

Year	Total #	Fatal	Unknown/ Not reported	Multiple Injuries	Hips/ Legs	Head/ Neck	Shoulder/ Arms	Back	Feet	Face	Chest/ Ribs	Permanent	None
1993-1994	16	1	3	2	4			2	1	1	1	1	1
1994-1995	13	0	8	2	1		1	1					
1995-1996	20	0	9	3	5			1		1	1		
1996-1997	19	0	10	2	2		1	2				2	
1997-1998	22	4	3	8	5		4				2		
1998-1999	12	1	6	2	2			2					
1999-2000	18	3	5	3	2	1	1	5					1
2000-2001	12	0	1	3	3	1	1	1		1			1
2001-2002	14	2	1	6	1	3		1	1		1		
2002-2003	9	1		5		2	1		1				
2003-2004	11	1	1	4	2			1			1	2	
Total	166	0	47 (28.3%)	40 (24.0%)	27 (16.2%)	7 (4.2%)	9 (5.4%)	16 (9.6%)	3 (1.8%)	3 (1.8%)	6 (3.6%)	5 (3.0%)	3 (1.8%)
Fatal		13	3 (23.0%)	5(38.5%)		4(30.8%)		1 (7.6%)					

Tab F

TYPE OF STAND

			COMMERCIAL			HOMEMADE				UNKNOWN/
Year	Total #	Fatal	Portable	Ladder	Climbing	Permanent	Portable	Ladder	Climbing	UNREPORTED
1993-1994	16	1	4		1	6	1	1		3
1994-1995	13	0				4				9
1995-1996	20	0				3		2		15
1996-1997	19	0	1							18
1997-1998	22	4				2	1	2		17
1998-1999	12	1				1		1		10
1999-2000	18	3								18
2000-2001	12	0	4							8
2001-2002	14	2				2	1	1		10
2002-2003	9	1				1		1		7
2003-2004	11	1	1			1				9
2004-2005	17	0			3	3		2		9
Total	183		10(5.5%)	0	4 (.6%)	23 (12.6%)	3(1.6%)	10(4.8%)	0	133 (72.7%)
Fatal		13	0	0	0	2 (15.4%)				11 (84.6%)

Tab G

FIREARM OR ARCHERY EQUIPMENT

Year	Total #	Fatal	Firearm *	Bow	Crossbow	Unknown/Unreported
1993-1994	16	1	2			14
1994-1995	13	0	4			9
1995-1996	20	0	6	1		13
1996-1997	19	0	5			14
1997-1998	22	4	8	2		12
1998-1999	12	1	7	4		1
1999-2000	18	3	7	4		7
2000-2001	12	0	6	4		2
2001-2002	14	2	8	5	1	
2002-2003	9	1	5	1		3
2003-2004	11	1	6	2	1	2
2004-2005	17	0	9	2	1	5
Total	183		73 (39.9%)	25(13.7%)	3 (1.6%)	82 (44.8%)
Fatal		13	7 (53.8%)	1 (7.6%)		5 (38.5%)

* Includes rifle, shotgun and muzzleloader

Tab H

OTHER CONTRIBUTING FACTORS

Year	Total #	Fatal	Tree Selection	Limb Broke	Stand Failed	Harness Failed
1993-1994	16	1	1	2	4	
1994-1995	13	0		1	1	
1995-1996	20	0		3	6	
1996-1997	19	0	1	2	2	
1997-1998	22	4		1	4	
1998-1999	12	1		2	4	
1999-2000	18	3			2	
2000-2001	12	0		1	5	
2001-2002	14	2			4	
2002-2003	9	1			2	
2003-2004	11	1			3	
Total	166		2 (1.2%)	12 (7.2%)	37 (22.3%)	7 (4.2%)
Fatal		13			2 (15.4%)	

Removed Harness	Alcohol Drugs	Lost Grip	No Stand Involved	Heart Attack	Unknown	Stand Not Raising/Lower Equipment	Properly Attached
1							2
	1	2					
	1	1	1				1
1				4			
					1		
		2			1		3
					2		
1					1	1	
1					2		
	2	5		4			
4 (2.4%)	(1.2%)	(3.0%)	1 (.6%)	(2.4%)	7 (4.2%)	1 (.6%)	6 (3.6%)

1 (7.7%)	4 (30.8%)	2 (15.4%)	1 (7.7%)	

Tab I

TREESTAND INCIDENTS BY COUNTY

Bedford	11
Botetourt	8
Amelia	6
Northhampton	6
Accomack	5
Culpepeper	4
Cumberland	4
Fauquier	4
Rappahannock	4
Brunswick	3
Buckingham	3
Campbell	3
Caroline	3
Franklin	3
Giles	3
Grayson	3
Halifax	4
Lancaster	3
Madison	3
Patrick	3
Pulaski	3
Rockingham	3
Shenandoah	3
Southhampton	4
Warren	3
Wythe	3

FATALITIES BY COUNTY

Accomack	2
Botetourt	2
Amelia	1
Buckingham	1
Essex	1
Frederick	1
Giles	1
Greensville	1
Lancaster	1
Loudon	1
Southampton	1
Total	13