UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

VOTE SHEET

DATE: MAY 21 2004

TO: The Commission
Todd A. Stevenson, Secretary

THRU: John Gibson Mullan, General Counsel JGM
Lowell F. Martin, Assistant General Counsel L.F.M.

FROM: Patricia M. Pollitzer, Attorney PMP

SUBJECT: Petition CP 02-3; HuntingTree Stand Petition

Attached is a briefing package from the staff concerning a petition submitted by Carol Pollack-Nelson, Ph.D. requesting that the Commission issue regulations establishing standards for hunting tree stands and banning waist belt restraints (also known as safety belts). The staff recommends that the Commission deny the petition.

Please indicate your vote on the following options.

I. Grant Petition CP 02-3.

_____ _____
Signature Date

II. Deny Petition CP 02-3 and direct the staff to prepare a letter of denial to the petitioner.

_____ _____
Signature Date

III. Defer decision on Petition CP 02-3.

_____ _____
Signature Date

CPSA 6(b)(1) CLEARED for PUBLIC
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IV. Take other action (please specify):

_____

_____

_____

_____ _____

Signature Date

U.S. CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

TREE STAND PETITION (CP 02-3)
BRIEFING PACKAGE

April 2004

For Further Information contact:

Mark Kumagai
Directorate for Engineering Sciences
U.S. Consumer Product Safety Commission
301-504-7532

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TAB D CPSC Memorandum from Carolyn Meiers, Directorate for Engineering Sciences, to DeWane Ray, Directorate for Engineering Sciences, entitled "Petition Requesting Standard for Hunting Tree Stands and a Ban of Waist Belt Restraints Used with Hunting Tree Stands (Petition CP 02-3)," October 30, 2003.

TAB E CPSC Memorandum from Jason Goldsmith, Ph.D., Directorate for Health Sciences, to DeWane Ray, Directorate for Engineering Sciences, entitled "Petition CP 02-3," October 29, 2003.

TAB F CPSC Memorandum from Thomas E. Caton, Directorate for Engineering Sciences, to DeWane Ray, Directorate for Engineering Sciences, entitled "Petition Requesting Standard for Hunting Tree Stands and a Ban of Safety Belts Used with Hunting Tree Stands (Petition CP 02-3)," October 29, 2003.

TAB G CPSC/ASTM Correspondence to F08.16 Subcommittee:
Letter from DeWane Ray, CPSC staff to James Olshefsky, ASTM F08 Staff Manager, Re: Letter Ballot F08.16 (03-01) Item 1, July 31, 2003.

Email from John Woller, Sr., TMA Technical Contact to ASTM to DeWane Ray, CPSC staff, Subject: Response to CPSC Comments to Letter Ballot F08.16 (03-01) Item 1, August 12, 2003.

CPSC/ASTM Correspondence to F08.16 Subcommittee:
Letter from Mark Kumagai, CPSC staff to James Olshefsky, ASTM F08 Staff Manager, Re: F08.16 Standards Development, March 19, 2004.

EXECUTIVE SUMMARY

This briefing package provides the Commission with the available information about the hazards associated with the use of hunting tree stands and safety belts. The central issue to be considered is whether the current design and construction of tree stands and safety belts present an unreasonable risk of death or injury, and whether a mandatory rule may be reasonably necessary to eliminate or reduce the risk of injury.

In a letter dated March 20, 2002, Carol Pollack-Nelson, Ph.D. petitioned the Commission to (1) establish a mandatory standard for hunting tree stands to address their design and construction, and (2) to ban safety belts in tree stands. The petition was docketed under the Consumer Product Safety Act on May 1, 2002. The petitioner asserts that hunting tree stands pose a serious risk of injury or death to their users from falling out of tree stands. The petitioner relies on incident data from the U.S. Consumer Product Safety Commission's (CPSC) databases, relevant medical literature, and personal experience to support her position that regulation is needed to address hunting tree stand design and construction factors that affect the tree stand's integrity and ability to remain in the tree. The petitioner states that many of the cited injuries and fatalities resulted from falls occurring when the tree stand suddenly and unexpectedly collapsed.

The petitioner asserts that the use of a safety belt "can prove to be a deadly precaution, as there is risk of fatality caused when it constricts around the chest and/or abdomen." The petitioner believes a hunter may be at a greater risk of death if he/she falls from a tree stand while wearing the safety belt, than if the hunter falls to the ground. The petitioner believes that the safety belt provided with some hunting stands presents a serious risk of death and a false sense of security to consumers.

The CPSC staff estimates that 6,000 injuries attributed to tree stand use were treated in U.S. hospital emergency rooms in 2001 based on a review of National Electronic Injury Surveillance System (NEISS) data. In addition to NEISS, CPSC staff reviewed available data on deaths, injuries, and incidents in the Injury or Potential Injury Incident Database (IPII), In-Depth Investigation Database (INDP), and Death Certificate Database. There were 137 incidents involving tree stands from 1980 through 2001. Included in these incidents were 62 deaths, 55 injuries, 17 incidents not involving a death or injury, and 3 incidents in which the outcome is unknown. Of the 137 incidents, 54 incidents mention tree stand failures resulting in 6 deaths, 40 injuries, and 8 incidents without injury. There were 7 incidents involving hanging or traumatic asphyxiation by a safety belt or harness that resulted in death. Staff has learned of an eighth asphyxiation death (not included in the above analysis) that involved a full body harness and occurred in October 2002.

Based on the incident data, staff determined that a majority of the tree stand-related incidents were due to falls from tree stands. However, for most of the injuries reported by NEISS, the cause of the fall is unknown. The incident data staff reviewed lacked sufficient detail to conclude that most injuries are due to unexpected collapse of the tree stand.

Staff reviewed industry and ASTM voluntary standards and reviewed engineering analysis and testing of tree stands conducted in support of activities conducted in CPSC's Office

of Compliance. Staff believes that the standards provide adequate requirements to address structural integrity, stability and adherence to the tree under a rated static load condition. To address dynamic loading conditions, the CPSC staff sent a letter to the ASTM Hunting Tree Stand Subcommittee that recommends the formation of Task Groups to consider the development of requirements to address simulated entering, exiting, ascending, and descending a hunting tree stand.

CPSC has reports of 8 incidents involving hanging or traumatic asphyxiation by a safety belt or harness that resulted in death. CPSC staff is concerned that a safety device, which is intended to prevent deaths and injuries due to falls from tree stands, may in fact result in death or serious injury due to its use. Staff believes that a recently adopted Treestand Manufacturers Association (TMA) industry standard, TMS 06-02, subsequently approved as ASTM standard F2337, that requires a full body harness is a significant safety improvement. However, staff is concerned with the absence of requirements to ensure that hunters can rescue themselves while suspended in a harness. These concerns were expressed in a letter to the ASTM subcommittee in July 2003. In August 2003, the TMA Technical Contact to ASTM responded in an email stating that the ASTM F08.16 Subcommittee will form a Task Group to investigate self-extraction from a full body harness; this Task Group has been formed.

Staff recommends that the Commission deny the petition. Based on an analysis of available data, evaluation of the standards and the potential for injury and death to users of tree stands, staff believes that improvements to the standards for tree stands could help to address the risk of injury or death due to product failures or insufficient performance requirements. However, staff cannot establish the extent to which improved standards would address tree stand incidents due to limitations in the current injury data.

Staff recommends that the Commission deny the petition for the following reasons:

- The available injury information does not provide sufficient detail to determine whether tree stand mechanical failure is a significant factor in fall related incidents.

- Staff considers recent TMA/ASTM requirements for a full body harness Fall Arrest System to be a significant safety improvement over a safety belt, and this requirement effectively addresses the petitioner's desire to not allow the use of safety belts.

The staff also recommends that the Commission direct the staff to continue work with the TMA and the ASTM Tree Stand Subcommittee to address tree stand performance requirements including self-rescue from a full body harness. TMA has agreed to work with the CPSC staff by forming an ASTM Task Group to investigate self-extraction from a full body harness.

UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

Memorandum

Date: MAY 21 2004

TO: The Commission
Todd Stevenson, Secretary

THROUGH: John Gibson Mullan , General Counsel
Patricia M. Semple, Executive Director

FROM: Jacqueline Elder, Assistant Executive Director
Office of Hazard Identification and Reduction
Dewane Ray, Project Manager
Mark Kumagai, Director, Mechanical Engineering
Directorate for Engineering Sciences

SUBJECT: Tree Stand Petition

I. INTRODUCTION

On May 1, 2002, a submission from Carol Pollack-Nelson, Ph.D. (Tab A) was docketed under the Consumer Product Safety Act as petition CP 02-3. The petitioner requested that the Commission issue regulations to establish a mandatory standard for hunting tree stands, and ban safety belts used with tree stands. This briefing memo discusses the background of the petition, incident data, market information, human factors issues, health sciences issues, and current standards. It also includes a discussion of comments received in response to a Federal Register notice, the options available to the Commission, and staff conclusions and recommendations.

The use of nomenclature and spelling for the description of the products involved in this briefing memorandum varies from source to source. Where terminology is quoted directly the original word will be used. To give the reader a consistent description, the following terms and spelling will be used:

Tree Stand: A device designed to be affixed to a tree or its branches, or self supporting, to permit an individual to sit or stand thereon for the purpose of attaining an elevated position from which to observe, photograph, or hunt. (Also spelled Treestand in many sources)

Safety Belt: A single belt, which can be worn either around the waist or chest, with a lanyard that secures the belt to an anchor on the tree. The safety belt is sometimes described as a waist belt, chest belt, body belt, safety strap, single strap, or fall arrest belt.

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Chest Harness: A safety belt with shoulder straps. The chest harness is sometimes described as a safety harness, or chest and shoulder harness.

Full Body Harness: A harness with straps that are fastened about the person in a manner designed to contain the torso and distribute the fall arrest forces over at least the upper thighs, pelvis, chest and shoulders, with means for attaching it to other components or subsystems.[1] The full body harness is also referred to as a safety harness, or four-point safety harness.

Fall Protection Device: A general term that describes safety devices used to prevent a fall or protect a user who falls from a tree stand. The term includes safety belts, chest harnesses, and full body harnesses and their associated components or subsystems.

Fall Arrest System (FAS): A system that is assembled for the purpose of arresting an accidental fall of its user. A FAS consists of a full body harness, lanyard, anchorage means and connecting hardware.[2]

II. THE PETITION (TAB A)

The petitioner asserts that hunting tree stands pose a serious risk of injury or death to their users from falling out of tree stands. The petitioner relies on incident data from U. S. Consumer Product Safety Commission (CPSC) databases, relevant medical literature, and personal experience. The petitioner states that from 1990 through 2000, 19 deaths and hundreds of injuries involving hunting tree stands were reported to the CPSC. The petitioner states that many of the injuries and fatalities resulted from falls occurring when the tree stand suddenly and unexpectedly collapsed, and that CPSC regulation is needed to address hunting tree stand design and construction factors that affect the tree stand's integrity and its ability to remain in the tree.

The petitioner asserts that the use of a safety belt, "can prove to be a deadly precaution, as there is risk of fatality caused when it constricts around the chest and/or abdomen." The petitioner believes a hunter may be at a greater risk of death if he/she falls from a tree stand while wearing a safety belt, than if the hunter falls to the ground. The petitioner states that CPSC's databases contain 4 fatalities that were a result of the hunter being asphyxiated by a safety belt. The petitioner believes that the safety belt provided with some hunting stands presents a serious risk of death and a false sense of security to consumers.

III. THE PRODUCTS/MARKET INFORMATION (TAB B)

A. Tree Stands

Hunting tree stands, or simply tree stands, are devices used while hunting to give a hunter an elevated position above his/her prey. Hunters perceive that there are several benefits of hunting from a tree stand, including (a) the elevated sight improves seeing game; (b) game on the

[1] Treestand Manufacturers Association Standard TMS 06-02 *Standard Test Method for Treestand Fall Arrest System*
[2] Ibid

ground are less likely to see hunters who are elevated; (c) the hunter's scent is dispersed higher, thus improving the chances of not being detected; and (d) shots are typically safer due to the angle towards the ground.

CPSC staff estimates there may be at least 11 million tree stands in use by hunters. Estimated annual unit shipments of all manufactured tree stand types could exceed 1.4 million units. Staff estimates that the total annual retail sales of all manufactured tree stand types range from $75 million to $150 million.

The Treestand Manufacturers Association (TMA) is the trade association representing the tree stand industry and comprises 24 manufacturers of tree stands and related products. It is open for membership to any tree stand manufacturing company or a manufacturer that produces a product that assists hunters in obtaining an elevated hunting position or which adds to the hunters' safety while hunting in an elevated hunting device.

Tree stands are grouped into four broad classes: (1) climbing stands, (2) ladder stands, (3) fixed stands, and (4) homemade stands. A climbing stand is constructed of two pieces, a base platform and a seat platform. The stand is "walked" or "inched" up a tree by alternately raising the seating platform and the standing platform in a stand up, sit down pattern. This pattern is reversed to descend the tree. The climbing function is integral to the design of the tree stand, making additional climbing equipment (ladders, tree steps, climbing sticks, etc.) unnecessary. Figure 1 is an example of a typical climbing stand. Climbing tree stands range in price from $160-$300, with an average price of about $225.

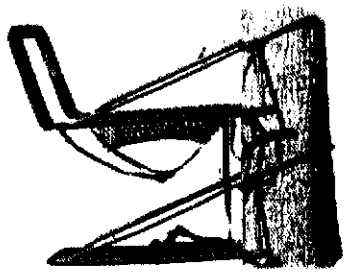

Figure 1 Typical Climbing Tree Stand

Ladder stands are comprised of a ladder that has a seat at the top. The ladder is propped up against the tree where it is secured by means of a chain or strap. The height of ladder stands ranges from 12-17 feet. Most models are for a single user. However, there are models that are marketed for two or more persons. Figure 2 is an example of a typical ladder stand. Ladder tree stands range in price from $120-$320 per unit, with an average price of about $225.

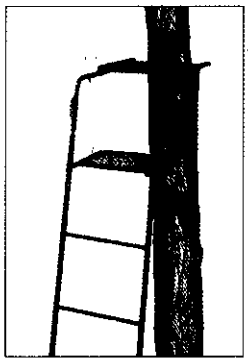

Figure 2 Typical Ladder Tree Stand

A fixed stand consists of a base and a seat. The stands are fastened to the tree by means of webbing or chains. These stands require a separate means to reach the desired elevation. This can be accomplished by a ladder, climbing sticks, or tree steps. Climbing sticks are portable devices that have steps that can be used to climb the tree. Tree steps are portable steps that are attached to the tree by straps or screwed into the tree. Multiple steps are used to climb the tree. Figure 3 is an example of a typical fixed stand. Prices of fixed tree stand models range from $50 to $150, with an average price of about $120.

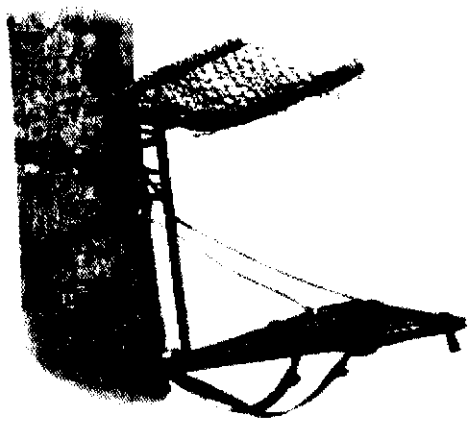

Figure 3 Typical Fixed Tree Stand

Homemade tree stands can vary in construction from copies of the three previously mentioned stand types to tree fort style houses constructed of wood. Many homemade stands are constructed on private property as most state and federal lands restrict the use of permanently constructed hunting stands on these properties.

B. Fall Protection Devices

Fall protection devices marketed for tree stand use can be classified as one of three different types: safety belts, chest harnesses, and full body harnesses. All of the various devices

use a lanyard to secure the device to an anchor point on the tree. The lanyard usually attaches to the harness at the user's back. A safety belt has a single loop that can be worn around the waist or chest area. These belts are generally the simplest and least expensive of the three types. This type of belt is what the petitioner has requested that the CPSC ban. Figure 4 is an example of a safety belt.

Figure 4 Safety Belt

A chest harness incorporates shoulder straps into the basic safety belt design. Figure 5 is an example of a typical chest harness.

Figure 5 Chest Harness

Full body harnesses include a waist belt, shoulder straps, and straps for the pelvic and thigh area, that help distribute the forces incurred from a fall evenly across the body. Full body harnesses are the most expensive of the three fall protection devices. Figure 6 is an example of a typical full body harness.

Figure 6 Full Body Harness

These fall protection devices may be included with the purchase of a tree stand or purchased separately. Safety belts are typically sold for under $10. Chest harnesses typically range in price from $10-$25. Full body harnesses typically range in price from $25-$60.

C. The User

In 2001 approximately 10.3 million people hunted deer. Hunters spent approximately $10.1 billion on trips and equipment during 2001. Hunters comprise approximately 6% of the national population in the United States. Ninety-one percent of hunters are male and 9% are female. [3] Surveys indicate that hunters who use tree stands spend approximately 75%-78% of their hunting time in portable tree stands.

IV. DISCUSSION

A. Incident Data (Hazard Analysis, Tab C)

The CPSC staff estimates that 6,000 injuries associated with to tree stand use were treated in U.S. hospital emergency rooms in 2001 based on a review of NEISS data. A majority of these injuries were due to falls from tree stands where the cause of the fall was not reported. In only a few cases was staff able to determine if a failure occurred to the stand. It is unknown how many of these injuries are from commercial stands versus homemade stands. A special study with additional in-depth investigations potentially could help determine the extent and specific causes of tree stand failures in addition to providing information about how many tree stands are commercial versus homemade.

In addition to NEISS, CPSC staff reviewed available data on deaths, injuries, and incidents in the Injury or Potential Injury Incident Database (IPII), In-Depth Investigation Database (INDP), and Death Certificate Database. There were 137 incidents involving tree stands from 1980 through 2001. Included in these incidents were 62 deaths, 55 injuries, 17 incidents not involving a death or injury, and 3 incidents in which the outcome (no injury, injury, or death) is unknown. Of the 137 incidents, 54 incidents mention tree stand failures resulting in 6 deaths, 40 injuries, and 8 incidents without injury. Of the 62 deaths, 53 were a result of the person falling out of the tree stand where the reason for the fall is unknown, 6 mention some type of tree stand failure, and 3 are listed as "other."

Of the 137 incidents, for those incidents where manufacturing information was known, 67 involved a commercially manufactured tree stand. Of these 67 incidents, a majority (49) were a result of some type of stand failure. Six of the 137 incidents were reported to involve homemade stands. In 64 of the 137 incidents there is not enough information to determine if the stand was homemade or manufactured.

During the same time period, there were 7 incidents involving hanging or traumatic asphyxiation by a safety belt or harness that resulted in death. Staff has learned of an eighth asphyxiation death (not included in the above analysis) that involved a full body harness and occurred in October 2002. Of these 8 deaths, 3 were associated with safety belts, 1 with a chest harness, 1 with a full body harness and 3 involved an unknown fall protection device.

[3] "2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation," U.S. Fish and Wildlife Service, U.S. Department of Interior, October 2002

B. Recent Studies Concerning Tree Stands (Tab D)

The International Hunter Education Association (IHEA) in conjunction with the North Carolina Wildlife Resources Commission and the Vermont Fish and Wildlife Department sponsored a survey in 2002 to gather data about tree stand accidents. The survey involved telephone interviews of 536 hunters from North Carolina and 520 hunters from Vermont for a total of 1,056 respondents. The results showed:

- 7% (76) of the hunters who used tree stands had a tree stand accident within the last 10 years.
- 1.5% (16) of the hunters interviewed had a tree stand incident that required medical attention.
- 74% of all tree stand incidents occurred while the hunter was transitioning into or out of the tree stand.
- 68% of tree stands used by hunters that had accidents in the past 10 years were manufactured.
- 79% of hunters involved in a tree stand accident indicated that their tree stand was not defective at the time of the accident.

Deer & Deer Hunting magazine, conducted a non-statistical survey of its readers on tree stand safety in 1993 and again in 1999. The surveys showed that many of the deer hunters who responded had fallen while climbing or hunting above ground and most were not wearing a fall protection device. The survey respondents were aware of the importance of always wearing a fall protection device, but believed that these devices were difficult and not practical when climbing or descending. *Deer & Deer Hunting* magazine concluded that the most common reason for falls from tree stands was some type of structural failure. These types of failures included rotted wood, loose nails, nails pulling through boards, broken bands, bolts, ropes, or attaching chains.

C. Health Sciences Evaluation (Health Sciences Analysis, Tab E)

The types of injuries associated with falls from tree stands can vary depending on a number of factors that include the height of the fall, whether or not a fall protection device was in use, impact with other objects during the fall, the impact surface, and the orientation of the body upon impact. The injury potential may range from inconsequential abrasions, contusions, and lacerations to more serious lacerations, fractures, and internal organ injuries, some of which can lead to permanent disability or death.

Fall Injuries without Use of Fall Protection

Injuries due to falls to the ground from tree stands can be severe, with permanent debilitation or death possible outcomes. Some of these fall injuries and deaths potentially could be prevented by addressing the failures of tree stands that lead to their occurrence. Other falls may be due to circumstances that do not include failure of the tree stands. Whereas, it appears that many falls occurred in the absence of a fall protection device, seeking to prevent such falls may involve strategies that are more complex than simply suggesting that hunters wear a fall arrest device.

Potential Injuries with Use of Fall Protection

Injuries experienced subsequent to falls from tree stands involving fall protection devices range from minor injury such as bruising in the case where the system gently arrests the fall, to more severe consequences, such as internal organ injuries, bone fractures and death by asphyxiation. The magnitude of the arrest forces and how these forces are transmitted to the body influence the type of injuries. The force transmission is dependent on the fall protection device used. In the case of a safety belt or chest harness the forces are distributed over localized areas such as the chest and/or waist. The arrest forces are more evenly distributed with a full body harness. The magnitude of the fall arrest force is a function of the user's mass and the free fall distance. The potential for asphyxiation associated with safety belts and chest harnesses is the greatest hazard associated with their use.

Safety belts or chest harnesses have the potential to hang or traumatically asphyxiate a suspended hunter by compressing the abdomen or chest in such a manner as to restrict breathing. Those devices and their alternatives (e.g., full body harnesses) may also produce fatal outcomes if suspension subsequent to a fall is for a prolonged period of time.

D. Human Factors Review of Fall Protection (Tab D)

A human factors review of the In-Depth Investigations (IDIs) identified two types of fall protection-related hazards. One hazard occurs during the fall sequence at the time of the arrest when the straps on the device exert pressure on the upper body that can result in asphyxiation. Asphyxiation can occur fairly rapidly under these circumstances.

The second hazard is a hidden hazard resulting from post-fall suspension in the restraints. With this hazard, the fall protection device successfully arrests the fall without incident and the hunter is left suspended from the tree. Because a hunter could be suspended from a fall protection device for a long period of time before help arrives (one source estimates between 14 and 16 hours[4]), it is expected that attempts will be made to get free of the device. The IDIs indicate that during some of the escape attempts the straps of the device shifted up to the neck, leading to the hanging death of the victim.

Post-Fall Suspension

Suspension time is a critical component of fall protection devices, and studies have been conducted to determine human tolerance to motionless suspension. These static suspension studies with human volunteers have shown that tolerance of a fall protection device varies considerably among individuals and among the various types of devices.[5]

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[4] June 19, 2002 letter from Nigel Ellis, specialist in fall protection, to the U.S. Consumer Product Safety Commission concerning Petition CP 02-3.

[5] Noel, G. et al. (1978). Some Aspects of Fall Protection Equipment Employed in Construction and Public Works Industries. In Fundamentals of Fall Protection. (1991), pp. 1-32. Ed. Sulowski, A.C. Toronto, Canada: International Society for Fall Protection.

A review of the literature on fall arrest and post-fall suspension found "that the risk of fall arrest injury with a waist belt is probably greater than the risk of fall arrest injury with a full body harness assuming a dorsal attachment in both cases. Despite the limited data available on human suspension, it appears that the waist belt and thoracic harness are not useful for prolonged motionless suspension." [6]

The U.S. Air Force conducted a study with 13 human subjects for the Occupational Safety and Health Administration (OSHA) of tolerable, motionless suspension times for a safety belt, chest harness, and full-body harness. [7] As in the findings of the literature review discussed previously, the study showed that the safety belt was the least tolerable of the fall protection devices tested. The following table shows the median tolerable times of suspension for each fall restraint. Volunteers exhibited a range of tolerance times for suspension and these times are also given in the table. Because the study was conducted on fit and healthy volunteers, tolerance for suspension may be less for the general population.

Type of Fall Restraint	Median Times	Range of Times
Safety Belt	1 ½ minutes	Approx. ½ minute – 4 ¾ minutes
Chest Harness	5 ½ minutes	Approx. 1 minute to 13 minutes
Full-Body Harness	14 ½ minutes	Approx. 5 min to 30 minutes

Volunteers were least able to tolerate the safety belt because of abdominal pressure and difficulty in breathing. The chest harness exerted pressure at the armpit and caused physiological distress in the upper extremities. The study found duration times could vary among full-body harnesses depending on the configuration of the harness. A general finding relating to full-body harnesses was that "the suspension loads should be distributed as much as possible and concentration of the loads in the groin area should be minimized."[8]

It was also discovered that survival times increase if the user can reposition within the fall restraint system; however, it is unknown what time limits can be applied to these situations. Survival times can depend on the physical condition of the hunter, strap configuration of the fall restraint system, load distribution in the fall restraint system, and a person's position in suspension. [9]

Post-Fall Self-Rescue

Tree stand manufacturers have provided some guidance on post-fall self-rescue maneuvers. The following step-by-step procedures for self-rescue from post-fall suspension are included in the instructions provided with one manufacturer's tree stand. These same procedures

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[6] Hearon, B.F. and Brinkley, J.W. (1984). Fall Arrest and Post-Fall Suspension: Literature Review and Directions for Further Research. In Fundamentals of Fall Protection. (1991), pp. 123-137. Ed. Sulowski, A.C. Toronto, Canada: International Society for Fall Protection.

[7] Brinkley, J.W. (1988). Experimental Studies of Fall Protection Equipment. In Fundamentals of Fall Protection. (1991), pp. 139-153. Ed. Sulowski, A. Toronto, Canada: International Society for Fall Protection.

[8] Ibid.

[9] Ibid.

are described in a safety video produced by the National Bowhunter Education Foundation and the Treestand Manufacturers Association (TMA) included with some manufacturer's tree stands. The video also suggests that hunters carry a knife to cut themselves out of the restraint straps when suspended in a fall protection device.

In case of fall:

1. Most important: Do not panic.
2. Second most important: Determine the quickest way possible to remove your weight from the safety belt. This may be done by climbing back onto either section of the tree stand or by installing and standing on a screw-in or strap-on-step (If available).
3. Once your weight is off the safety belt, if you can not use the tree stand to climb back down the tree, hold onto the tree with one arm, remove the safety belt with the other, then "bear hug" the tree and carefully climb down.
4. Replace harness.

Note: It is highly recommended that you hunt with a companion and that you carry a cell phone or a two-way radio at all times when using treestands.

The maneuvers described above require physical coordination and strength that may not be possessed by the hunters. In addition, hunters may not be able to act quickly enough to affect a rescue, as in the instance of a tree stand collapse where handholds may not be available. Photographs accompanying some of the IDIs show that some victims were found hanging close to trees yet could not rescue themselves.

Staff believes that advising hunters to cut themselves out of a fall protection device is an unrealistic means of post-fall rescue. Cutting or loosening the straps or trying to slip out of fall protection devices introduces a hidden hazard; the straps can slip up the torso and either incapacitate the hunter by pinning the arms against the body or cause asphyxiation by exerting pressure on the chest or neck region. This is evidenced by the investigations of fatalities, discussed above, involving asphyxiation by fall protection devices.

E. Industry, Voluntary and Government Standards (Tab F)

The staff is aware of two organizations, the TMA and ASTM International that have developed standards, practices, and test methods for tree stands. The TMA develops tree stand manufacturing standards. In addition, it has a certification program that provides independent laboratory testing of a manufacturer's tree stand for compliance with TMA standards. Manufacturers that have obtained a certified status are authorized to use the TMA certification label on certified products. Certification is not a requirement for TMA membership. The majority of the commercially available tree stands are manufactured by one of the 24 TMA members. There are currently nine TMA members that manufacture products that are certified to TMA standards. According to TMA, these nine member firms accounted for approximately 90% of the manufactured tree stand market in 2003.

TMA has developed eleven standards for tree stands. Ten of the TMA standards have been adopted as ASTM standards. The ten ASTM standards specify requirements for static load capacity, static stability, tree adherence, ability to withstand repetitive loading, labeling, fall arrest systems, and quality assurance programs. The ASTM standards provide the manufacturer with a method to test a tree stand for a rated load.

Based on CPSC staff review of existing standards, staff believes that the TMA and corresponding ASTM International standards for structural integrity, stability, and adherence to the mounting tree provide for adequate testing for the use of tree stands under the maximum rated load. However, these load-based tests do not consider dynamic load conditions such as when the user is entering, exiting, ascending or descending a tree stand. CPSC staff sent a letter to the ASTM Hunting Tree Stand Subcommittee on March 19, 2004 (Tab G) that recommended the formation of Task Groups to consider new provisions that would address these dynamic loading conditions, as well as new tests that consider the effect of loads along the length and not only at the top platform, since in use the actual load varies along the length as the user ascends or descends the ladder. The staff letter also recommended that a Task Group evaluate possible requirements that address the strength of fabric seats that are used with some tree stands.

The TMA voted and approved standard TMS 06-02 entitled "Standard Test Method for Treestand Fall Arrest System" during its annual meeting held January 16, 2003. This new standard requires manufacturers that desire TMA certification to supply a fall arrest system (FAS) with each stand effective January 1, 2004. The FAS is required to consist of a full body harness, lanyard, anchorage means, and connecting hardware. The standard covers the determination of the load capacities for tree stand FASs and components or sub systems. This standard was published in December 2003 as ASTM F2337.

It is the staff's opinion that the recently adopted TMS 06-02 and ASTM F2337 standard to require a full body harness should address asphyxia from chest compression that can occur if the user wears a safety belt. While CPSC staff believes that requiring a full body harness is a significant safety improvement to the standard, staff is concerned with the absence of requirements to ensure that hunters can rescue themselves while suspended in a harness. In a recent incident involving a death by asphyxiation, the hunter fell and was suspended by his full body harness. The hunter attempted to get out of the harness by removing the harness, which resulted in a strap in the harness wrapping around the hunter's neck and asphyxiating him. Staff has expressed these concerns to ASTM subcommittee F08.16 (Tab G). In August 2003, the TMA Technical Contact to ASTM responded in an email (Tab G) stating that the ASTM F08.16 Subcommittee will form a Task Group to investigate self-extraction from a full body harness; this Task Group has been formed.

OSHA Standard

The staff is aware of Federal standards for personal fall arrest systems developed by the Occupational Safety and Health Administration (OSHA) that are applicable to the construction industry. These personal fall arrest systems are used to arrest an employee in a fall from a working level. Effective January 1, 1998, OSHA adopted requirements [29 CFR 1926.500(b)] that prohibit the use of a safety belt for a personal fall arrest system. The requirements include a

full body harness that distributes the fall arrest forces over the thighs, pelvis, waist, chest and shoulders, and the means for attaching it to other components of a personal fall arrest system. The decision to prohibit safety belts for personal fall arrest systems was based on studies showing the hazardous effects of the initial fall impact forces and the pressure exerted on the body by these restraints.

F. Compliance Activities

From 1995 to 2002 there were six joint press releases announcing the recall of hunting tree stands and related products. The recalls were the result of manufacturing problems such as weld failures, crimping inadequacies, quality control inspections, seat fabric tearing and harness buckles slipping.

G. Response to Comments on the Petition

The CPSC published a notice in the *Federal Register* on May 1, 2002, requesting written comment on the petition from interested parties. Four comments were received.

Mr. Andrew C. Sulowski (Fall Protection Inc.) supports the petition and recommends providing suitable fall protection for tree stand users.

Mr. J. Nigel Ellis (Dynamic Scientific Controls) supports the petition as written. He notes that he has been involved as an expert witness in approximately twenty cases involving serious injury and death as a result of falls from tree stands and suspension in safety belts. He believes the climbing tree stand is "lethal" and that the TMA is ineffective in producing a stable climbing tree stand through its current standards and tests, or the ASTM equivalent. Mr. Ellis believes that tree stand improvements should start with an adequate fall protection system. Mr. Ellis mentions that there are full body harnesses that are available for such use.

Mr. Todd A. Sharp (Consumer) supports a ban of safety belts. He believes that many aspects of the fall protection system should be studied to provide better protection.

Mr. Mark Nelan (President, TMA), representing the TMA, submitted comments recommending that the petition be denied. The TMA states that there are inherent risks associated with the use of tree stands. The TMA disputes the petitioner's review of incident data. The TMA assessment of the data "demonstrates that the vast majority of the reported incidents occur from falls alone rather than failure of the product." The TMA highlights its action to address safety by developing industry safety standards. The TMA states that it has formed a Fall Arrest System Committee that is "drafting standards for the design and testing of fall arrest systems which take human factors considerations more fully into account." The TMA also highlights its work in developing a tree stand safety video.

V. OPTIONS

Grant the Petition

If the Commission decides that available information indicates that hunting tree stands and safety belts may present an unreasonable risk of injury or death and a rule may be necessary to address that risk, the Commission may grant the petition and direct the staff to develop an advance notice of proposed rulemaking.

Deny the Petition

Should the Commission find that the information contained in this briefing package does not provide sufficient justification to grant the petition, the Commission may deny the petition.

Defer the Petition

Should the Commission require information in addition to that contained in this briefing package to determine whether the petition should be granted or denied, the Commission may defer its decision and direct the staff to collect the additional information.

VI. CONCLUSIONS AND STAFF RECOMMENDATIONS

Based on the incident data staff reviewed, a majority of the tree stand-related incidents are due to falls from tree stands. However, for most of the injuries reported by NEISS the cause of the fall was not reported. The petitioner states that many of the tree stand-related injuries and deaths are due to the sudden and unexpected collapse of the tree stand. In addition the petitioner states, "A tree stand regulation is needed to ensure that stands are designed with optimal materials and instructions in order to reduce the likelihood of a fall." The incident data staff reviewed lacked sufficient detail to conclude that most injuries are due to some mechanical failure of the tree stand that could be addressed by a safety standard.

Staff has reviewed industry voluntary standards and conducted an engineering review and testing of some tree stands. Staff believes that the standards provide adequate requirements to address structural integrity, stability and adherence to the tree under a rated load condition. Staff has identified areas needing improvement in the existing standards concerning no load/reduced load conditions (such as those encountered when entering or exiting a tree stand), additional bending tests on ladder stands, and additional testing for fabric seat components. These conclusions were based on engineering review of in-depth investigations and could potentially be addressed through the voluntary standards process.

CPSC has reports of 8 incidents involving hanging or traumatic asphyxiation by a safety belt or harness that resulted in death. CPSC staff is concerned that a safety device, which is intended to prevent deaths and injuries due to falls from tree stands, may in fact result in death or serious injury due to its use. In January 2003, the TMA approved TMS 06-02 to require certified manufacturers to provide a Fall Arrest System that includes a full body harness with each tree stand sold effective January 1, 2004. The same standard was published as ASTM F2337 in December 2003.

CPSC staff believes that requiring a full body harness is a significant safety improvement to the standard, however additional requirements to ensure that hunters can rescue themselves while suspended in a harness are needed. In a recent incident the hunter attempted to get out of his full body harness, which resulted in the harness wrapping around the hunter's neck and asphyxiating him. Many hunters hunt alone in secluded areas, and would most likely be required to rescue themselves if suspended by any of the fall arrest devices previously discussed.

CPSC staff believes that the current TMA and corresponding ASTM standard for a FAS should address the issue of post-fall rescue. These concerns were expressed in a letter to the ASTM subcommittee on July 31, 2003. In August 2003, the TMA Technical Contact to ASTM responded in an email stating that the ASTM F08.16 Subcommittee will form a Task Group to investigate self-extraction from a full body harness; this Task Group has been formed. Staff believes this issue can be addressed by working with ASTM and the industry to improve their standard. The TMA has expressed interest in working with the CPSC staff to improve voluntary tree stand safety standards.

Staff recommends that the Commission deny the petition for the following reasons:

- The available injury information does not provide sufficient detail to determine whether tree stand mechanical failure is a significant factor in fall related incidents.

- Staff considers recent TMA/ASTM requirements for a full body harness Fall Arrest System to be a significant safety improvement over a safety belt, and this requirement effectively addresses the petitioner's desire to not allow the use of safety belts.

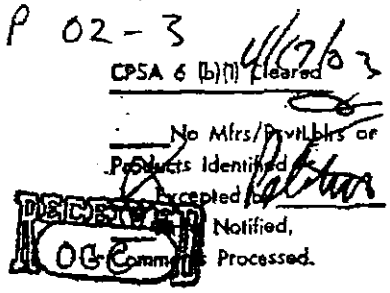
The staff also recommends that the Commission direct the staff to continue work with the TMA and the ASTM Tree Stand Subcommittee to address tree stand performance requirements including self-rescue from a full body harness. TMA has agreed to work with the CPSC staff by forming an ASTM Task Group to investigate self-extraction from a full body harness.

TAB A

Petition CP 02-3: Letter from Carol Pollack-Nelson, Ph.D., Independent Safety Consulting, to Stephen Lemberg, Acting General Counsel March 20, 2002.

Carol Pollack-Nelson, Ph.D.
Independent Safety Consulting
13713 Valley Drive
Rockville, Maryland 20850-5402
(301) 340-2912 (phone & fax)

CP 02-3



March 20, 2002

MAR 25 2002

Stephen Lemberg, Esq.
Acting General Counsel
U.S. Consumer Product Safety Commission
4330 East-West Highway
Bethesday, MD 20814

Re: Hunting Tree Stands

Dear Mr. Lemberg:

Based on the information contained below, I hereby petition the Consumer Product Safety Commission to promulgate regulations that (1) establish a mandatory standard for hunting tree stands to address the risk of falling; and (2) ban waist belt restraints in tree stands, as they pose a serious threat to the safety of users.

I believe that hunting tree stands pose a serious risk of injury or fatality to users. Over the past year, I have researched injuries and fatalities associated with hunting tree stands by conducting a literature search at the National Institutes of Health Medical Library and also by conducting a FOIA request for incident data contained in the CPSC's data bases. I have also had the opportunity to use a manufactured hunting tree stand. Below is a summary of the findings from these research efforts.

A literature search at the National Institutes of Health produced two articles addressing injuries associated with falls from hunting tree stands. Both papers report that falls from tree stands are often associated with severe and permanent damage (Price and Mallonee, 1994; Crites, Moorman and Hardaker, 1998). Crites, et. al. (1998) reported that, "[s]pinal injuries resulting from falls out of tree stands are often associated with concomitant neurologic deficit, prolonged hospitalization, and long-term disability." In their retrospective of 27 patients who came to the Duke University Medical Center, 44% sustained significant neurological injury. Price and Mallonnee (1994) studied injuries reported to the Oklahoma State Department of Health spinal cord injury surveillance data. They reported that, "[h]alf of the injuries resulted in neurological damage severe enough to result in permanent paralysis or death."

A FOIA request to the CPSC for incident data occurring from 1990 to November 30, 2000 revealed 19 deaths and hundreds of injuries reported through NEISS and contained in the Reported Incident file. Many of the injuries and fatalities resulted from falls when the tree stand suddenly and unexpectedly collapsed. Incident data report various causes for tree stand failure, including: stitching in a strap fraying and breaking; a weld breaking; the buckle on the strap that holds the tree stand to the tree breaking; the stand becoming unhooked; the stand losing its grip on the tree or sliding down the tree; and the metal arm bending, causing the stand to detach from the tree. Currently, there are variances in tree stand designs. For example, some stands have a straight, stamped blade, while others have "teeth" that grip the tree. A tree stand regulation is needed to ensure that stands are designed with optimal materials and instructions in order to reduce the likelihood of a fall.

Other reasons for tree stand failure may be related to the consumer, as proper set-up and use of a tree stand relies heavily on the consumer's (1) cognitive understanding of what needs to be done (e.g., ability to understand the directions); (2) behavior and capability in executing the tasks properly (e.g., having the physical strength to set the stand up in the tree); and (3) perception of whether or not they have succeeded. One's safety at the top of the tree stand essentially depends upon the correctness of the human-product interaction over the course of the many steps required to set it up and move it up the tree. In fact, there are numerous opportunities for human error due to the number of steps required to set up a tree stand. For example, the hunter might err in which tree he selects (i.e., type of bark, diameter, taper), the height and angle he initially sets the platform, or in which hole he inserts a retaining pin for a support arm. Additionally, some hunters fall from an intact tree stand as a result of fatigue or intoxication. Both of these human conditions are foreseeable and known to exist while hunting in tree stands.

To prevent fall-related injuries, tree stand manufacturers often provide and urge consumers to use a fall arrest device, such as a waist strap. The waist strap is affixed around the hunter's waist with a buckle. Hunters sometimes wear the waist belt so that the buckle is around their back. This prevents the buckle from interfering with their bow or when shooting. However, with the buckle around one's back, it is inaccessible to a hunter in the event that the platform suddenly falls, since it would be located between the hunter's shoulder blades.

Wearing a waist strap can prove to be a deadly "precaution", as there is a risk of fatality caused when it constricts around the chest and/or abdomen. In fact, in the event that the tree stand platform falls, the hunter may be at greater risk of fatality when wearing the waist belt than if he or she fell to the ground. CPSC's data bases reveal four fatalities, occurring in 1996, 1998, 1999, and 2000, which occurred when the hunter was wearing, and became asphyxiated by, a waist belt. Thus, the waist belt that is provided with some hunting tree stands presents a serious risk of death, and a false sense of security to consumers.

While the number of tree stand incidents may be low compared to other consumer products, please keep in mind that tree stands are used for a limited period of time each year, during hunting season, and by a limited segment of the population. Furthermore, the number of injuries associated with tree stands have increased over the years. It is likely that this increase mirrors increased sales of manufactured tree stands. According to CPSC data, the number of reported incidents has increased over time. In 1990, there were 6 reported incidents, 1 fatality and no NEISS reports. In 1999, the last year for which I have complete data, there were 4 reported injuries, 2 fatalities, and 53 NEISS reports.

Based on my evaluation of published research, incident data, and my own use of a climbing hunting tree stand, I believe that design criteria are needed for hunting tree stands. Without such a regulation, manufacturers can produce and sell tree stands which are unable to support intended users, or which exceed cognitive, physical, or perceptual abilities of users. Due to the heavy reliance on consumer ability, regulation is needed. In sum, a mandatory standard is needed to ensure that a climbing tree stand (1) possesses necessary structural integrity to support a user under foreseeable conditions of use and misuse; (2) provides adequate "safety gear," rather than "safety gear" that can cause fatality (i.e., waist strap); (3) provides meaningful instructions and warnings; and (4) is designed in a way that anticipates and minimizes human error potential. For example, tree stands should be designed to provide feedback to hunters, regarding the "correctness" of their assembly at each critical step, in order to facilitate proper set-up and use.

Thus, I hereby petition the Consumer Product Safety Commission to promulgate regulations that (1) establish a mandatory standard for hunting tree stands to address their design and construction as such factors directly affect the tree stand's integrity and its ability to remain in the tree; and (2) to ban waist belts in tree stands, as they pose a serious threat to the safety of users. Furthermore, the inclusion of waist belts with the tree stand implies that they are a safety mechanism to prevent injuries in the event that the stand collapses. To the contrary, the tree stand waist belt may pose a greater risk of injury or fatality than the fall itself.

I appreciate your consideration of my comments. Please feel free to contact me to discuss this matter.

Most sincerely,

Carol Pollack-Nelson, Ph.D.

TAB B

CPSC Memorandum from Charles L. Smith, Directorate for Economic Analysis, to DeWane Ray, Directorate for Engineering Sciences, entitled "Petition on Hunting Tree Stands and Tree Stand Safety Harnesses (Petition CP 02-3)," July 15, 2003.

United States
CONSUMER PRODUCT SAFETY COMMISSION
Washington, D.C. 20207

Memorandum

DATE: July 15, 2003

TO : DeWane Ray, ESME, Project Manager, Petition CP 02-3

Through : Gregory B. Rodgers, Ph.D., Acting AED, EC GBR

FROM : Charles L. Smith, EC CLS

SUBJECT : Petition on Hunting Tree Stands and Tree Stand Safety Belts (Petition CP 02-3)

By a submission dated March 20, 2002, Dr. Carol Pollack-Nelson requested that the Consumer Product Safety Commission (CPSC) establish a mandatory standard for hunting tree stands to address the risk of falling. Also, the petition seeks a ban of safety belts used with the tree stands by hunters. This memorandum discusses economic issues related to the petition.

Product Description

Tree stands are platforms or seats that are attached to trees, generally about 15 to 20 feet above the ground. Manufactured tree stands of three basic types account for most of the market: fixed tree stands, climbing tree stands, and ladder tree stands. Fixed tree stands are attached to trees by hunters who use ladders, "climbing sticks," or other equipment to get to the desired height. Climbing tree stands enable hunters to climb up trees to the desired height on them by alternatively raising the separate foot and seating platforms. Ladder stands incorporate a ladder in their design.

Retail Prices and Annual Sales of Tree Stands

Manufactured stands have largely replaced homemade permanent wooden stands, although the homemade stands are still used by many hunters. Prices for fixed position tree stand models generally range from about $50 to $150, with an average of about $120; climbing tree stand models generally range between $160 to $300, with an average of about $225, and ladder tree stands typically are $120 to $320 per unit, with an average of about $225. Dr. Ray McIntyre, chairman of the board of directors of the Treestand Manufacturers of America (TMA), advised Economic Analysis that fixed tree stands are the most popular types, followed by climbing tree stands and ladder tree stands with about equal shares of the market. Although precise market shares of each type are not

available, Dr. McIntyre believes that more fixed tree stands are sold than climbing or ladder tree stands.

Dr. McIntyre stated that reliable information on tree stand sales is not available. His best guess is that annual sales total $40 to $50 million at the wholesale level and perhaps $75 million at retail. John Woller, founder of a tree stand manufacturer (Summit Specialties) was also contacted by Economic Analysis. ASTM lists him as the contact for technical information on standards related to tree stands (ASTM F8.16 subcommittee). Mr. Woller said that the wholesale value of shipments could total $70 to $100 million annually, but he characterized that as a guess. He thinks that annual sales have been steady or declining in recent years. Mr. Woller's estimate of wholesale shipments could be as much as $150 million at the retail level, according to the markup cited by Dr. McIntyre. Based on the estimated $75 to $150 million in total annual retail sales, the annual unit sales could range from 420,000 to 880,000 units.[1]

Other information on the size of the tree stand market is provided by a survey of bowhunters that was done by Southwick Associates for the Archery Manufacturers and Merchants Organization (AMO). That survey found that the average bowhunter spent $90 in 1998 on tree stands. Mr. Rob Southwick advised Economic Analysis that this total might have included purchases other than new manufactured tree stands, such as used tree stands from friends and wood used by hunters to make their own stands. If we assume that the average annual manufactured tree stand purchases are about $75 per bowhunter, the approximately 3.2 million bowhunters might account for about $240 million in retail sales annually. This is much greater than estimates derived from judgements of the value of sales offered by Dr. McIntyre and Mr. Woller, and it does not account for sales to hunters who purchase tree stands strictly for use with firearms. Based on the survey data, unit shipments of manufactured tree stands could exceed 1.4 million units.

Tree Stand Usage and Ownership

Tree stands are commonly used to hunt white-tailed deer, primarily in the eastern half of the country, where most white-tailed deer live. By elevating their hunting position, hunters' scents are less likely to be detected by deer. The TMA estimated that 75 percent of hunter hours during 1998-99 were spent in portable tree stands, according to a November 2001 article in the *Topeka Capital-Journal.* This is in consistent with surveys of readers of *Deer & Deer Hunting* in 1993 and 1999, which found that respondents spent an average of 78.5 percent of their deer hunting time in tree stands. According to the U.S. Fish and Wildlife Service,

[1] This estimate is based on the assumption that the average retail price of tree stands ranges from about $170 to $180 per unit.

10.3 million individuals hunted deer in 2001. These hunters accounted for 133 million deer hunting days, or an average of 13 days per hunter.[2]

The majority of tree stands may be used by bow hunters, for whom tree stands have long been popular, even though the 3.2 million bowhunting licenses account for only about 20 percent of all hunting licenses issued. However, tree stands are said to be increasingly popular with deer hunters using rifles. Many of these hunters may also be bowhunters, since over 80 percent of bowhunters also hunted with firearms in the last two years, according to AMO. The type of weapon used most often with tree stands may vary by region. The results of a survey of hunters in North Carolina and Vermont published in August 2002 by the International Hunter Education Association found that North Carolina hunters used rifles most often from tree stands (65 percent of respondents) and Vermont hunters used bows most often (67 percent of respondents).

Some hunters own and use more than one tree stand, setting them up in different areas and choosing the best hunting spot. A survey of bowhunters published by AMO found that each bowhunter owns an average of 3.5 tree stands/climbing gear. Given a population of a little over 3 million bowhunters, over 11 million tree stands may be owned by bowhunters alone. Some of these are tree stands constructed by hunters, rather than purchased from manufacturers.

Tree Stand Manufacturers

Major manufacturers of tree stands reportedly belong to the TMA. According to the president of the TMA, there are now 24 manufacturers of tree stands and related products that are members of the association. The TMA has been involved in the development of tree stand manufacturing standards (discussed in a separate memo from the Directorate for Engineering Sciences). Currently nine firms certify that their products comply with TMA standards. These firms are likely to account for more than 90 percent of the market for tree stands in 2003.[3] Based on information provided by individuals who are knowledgeable about the industry, the larger manufacturers of tree stands are thought to include Hunter's View, API Outdoors, Summit Specialties, and Bear River.

Fall Arrest Systems

The importance of using fall protection devices such as safety harnesses with tree stands has been stressed in articles in deer hunting magazines. Also,

[2] "2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation," U.S. Fish and Wildlife Service, U.S. Department of the Interior, October 2002.
[3] Mark Nelan, President, Treestand Manufacturers Association, Telephone conversation with Charles Smith, Directorate for Economic Analysis, July 15, 2003.

according to the Directorate for Engineering Sciences, ASTM F2122-01, one of the nine voluntary standards addressing tree stands, states that "[a] fall protection device, such as a safety belt or harness, shall be provided with each treestand as standard equipment. The type of fall protection device is an option of the manufacturer." Economic Analysis has not determined the extent to which this provision is followed in the market. Although one article reviewed stated that the most common type of fall arrest system is the safety belt, most of the devices Economic Analysis has seen advertised for sale are either chest harnesses or full-body harnesses.

In 2002 The International Hunter Education Association surveyed in North Carolina and Vermont hunters who had been involved in "accidents" (most of which did not result in injuries) in the previous ten years. That survey found that 58 percent were not wearing a fall-restraint device at the time of the accident. Information on prevalence of each type of fall-restraint device currently being used by hunters is not available. Furthermore, CPSC staff has learned that the TMA is working on revisions to its voluntary standard that would require complying firms to provide full body harnesses with the purchase of their tree stands. This development could reduce the likelihood that new fall-restraint devices would be safety belts, for which the petitioner seeks a ban.

In addition to being included with many tree stand purchases, hunters may buy fall-restraints separately. Safety belts are available for under $10. Chest harnesses may range from about $10 to $25. Consumers may purchase full-body harnesses at prices typically ranging from about $25 to $65.

TAB C

CPSC Memorandum from Natalie Marcy, Directorate for Epidemiology, to Mark Kumagai, Directorate for Engineering Sciences, entitled "Death, Injury, and Incident Data, Petition CP 02-3, Petition on Hunting Tree Stands," April 6, 2004

UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

Memorandum

Date: April 6, 2004

TO : Mark Kumagai, Division Director, ESME

THROUGH: Susan Ahmed, PhD, Associate Executive Director, RR for SA
Directorate for Epidemiology
Russell Roegner, PhD, Director, Division of Hazard Analysis RR

FROM : Natalie Marcy NM
George Rutherford GWR
Division of Hazard Analysis

SUBJECT : Death, Injury, and Incident Data, Petition CP 02-3,-Petition on Hunting Tree Stands

The subject petition calls for a mandatory standard for hunting tree stands to address the risk of falling, and a ban on waist belt restraints used with the tree stands. Epidemiology staff reviewed the available death, injury, and incident data in CPSC files. This memo contains an overview of hunting tree stand related deaths, injuries, and incidents, and a compilation of data relevant to hunting tree stands.

Emergency Room Treated Injuries

An estimated 6,410[1] injuries were treated in U.S. hospital emergency rooms in 2001 associated with hunting tree stands (Table 1).

Falls from tree stands account for most of the injuries. In only a few cases (estimate 120) were we able to determine whether a failure occurred. In the four reports of the stand falling out of the tree, the reason why the stand fell or collapsed is not reported. In two of those incidents, the person fell. In the other two incidents, it is unclear if the person was struck by a falling stand or if he fell with the stand. "Other injury" includes strained muscles, injuries sustained while installing or dismantling a tree stand, and injuries from jumping out of the tree stand.

Table 1: Estimated Injuries by Hazard Type

Hazard	Est. Number of Injuries	Sample Size	Lower Bound	Upper Bound
Fall From Tree Stand, Cause of Fall Unknown	5,080	103	4,040	6,130
Stand Fell Out of Tree	120	4	50	190
Other Injury	800	18	530	1070
Injury Not Attributed to Tree Stand Use	410[2]	9	280	550
Total	6,410[3]	134	5,190	7,630

Source: National Electronic Injury Surveillance System, 2001
Lower bound and upper bound are 95% confidence limits

Emergency Room Treated Injuries: Relevant Hazard Patterns

The relevant hazard patterns to this petition are fall from tree stand, cause of fall unknown and stand fell out of tree. Although the specific details of each incident are not known to CPSC to determine if the case involved a stand failure and/or a fall protection device, these two categories contain cases which might involve these two variables of interest. The injury statistics that follow address only the 5,200 estimated injuries (sample size 107) which make up these two categories.

[1] Tree stands are currently reported using the product code for scaffolding (1816). To identify cases involving tree stands, this code is searched using the following keywords: deer, tree, stand, and hunt. The cases retrieved are then read to eliminate duplicates and cases not involving a tree stand.
[2] The injury did not result from the intended use of the tree stand. For example, in one incident a man was installing a tree stand and was bitten by a spider. In another incident, a man strained his back while placing the tree stand in a shopping cart.
[3] Values may not add to total due to rounding.

Table 2: Disposition

	Estimated Number of Injuries
Treated and Released	3,850
Hosp/Transf	1,350
Total	5,200

Source: National Electronic Injury Surveillance System, 2001

Tree stand related injuries tend to be severe, with 26.0% of the injured hospitalized or transferred (Table 2).

The most common injuries occur to the shoulder or trunk, 41%, and to the leg or foot, 33% (Table 3). The most common types of injuries are fractures, 44%, strain or sprain, 21%, and contusions or abrasions, 19% (Table 4). Other injuries include concussion, dislocation, laceration, nerve damage, internal injury, and pain or soreness; each of these injury types individually accounts for less than 5% of the total injuries.

Table 3: Body Part Injured

	Estimated Number of Injuries
Shoulder/Trunk	2,140
Arm/Hand	420
Leg/Foot	1,720
Head/Neck	920
Total	5,200

Source: National Electronic Injury Surveillance System, 2001

Table 4: Type of Injury

	Estimated Number of Injuries
Fracture	2,280
Strain, sprain	1,110
Contusions, abrasions	970
Other injury	840
Total	5,200

Source: National Electronic Injury Surveillance System, 2001

There were no cases resulting in death associated with tree stands reported through NEISS in 2001.

Other Incident and Death Data

In the Injury or Potential Injury Incident Database (IPII), In-Depth Investigation Database, and Death Certificate Database, there were 137 incidents involving tree stands from 1980 through 2001. There were 62 deaths, 55 injuries, 17 incidents not involving a death or injury, and 3 incidents in which the outcome (no injury, injury, or death) is unknown. There were 55 stand failures resulting in 7 deaths, 40 injuries, and 8 without injury. Table 5 shows the disposition associated with the reports by the hazard pattern of the incidents.

Table 5: Incident and Death Certificate Data, Disposition by Hazard Pattern

	Unspecified Fall	Stand Failure	Other	Complaint	Total
Death	53	6	3	0	62
Injury	12	40	3	0	55
No Injury	1	8	1	7	17
Unknown	3	0	0	0	3
Total	69	54	7	7	137

Source: Injury or Potential Injury Incident (IPII), 1980-2001
In-Depth Investigations (INDP), 1980-2001
Death Certificates (DCRT), 1980-2001

There were 62 deaths involving tree stands from 1980 to 2001. Fifty-three of the deaths resulted from the person falling out of the stand; reason for fall unknown. There were 6 fatal stand failures, 4 that also involved the deceased being hanged by their fall protection device. Fifty-one of the deaths do not specify a manufacturer of the hunting tree stand.

Staff learned of an additional death in which a mechanical failure of the stand was identified and death resulted from the victim being suspended by a fall protection device. This death occurred in October 2002, which is after the time period of this analysis and is not included in the above table or figures. This incident is summarized in case e, along with the four incidents in this category (cases a through d) that occurred from 1980 through 2001. The manufacturer is known in four of these incidents (including case e), and the fifth does not specify a manufacturer.

a. A 14-year-old male died when the bottom of the tree stand fell out due to a defect and he was suspended by his safety belt, which did not have a release mechanism.
b. A 59-year-old male was found dead suspended in the safety belt of a hunting stand, which was found collapsed.
c. A 12-year-old-male died when the armrest of the tree stand broke, causing him to plunge forward. He was found hanging by a fall protection device.
d. A 30-year-old male was killed when the deer stand he was using collapsed causing him to hang by a chest harness on the deer stand.
e. A 34-year-old male died when the tree stand platform gave way, causing him to fall. He was found suspended by his full body harness. He had cut the leg straps in an attempt to self-rescue. The full body harness then slipped up around his neck, strangling him.

There were four incidents involving a problem with the safety restraint system that do not mention a problem with the stand. A manufacturer is not identified in these four incidents.

f. A male was injured after falling from a tree stand when the safety belt latch slipped while deer hunting.
g. A 58-year-old male died after he became suspended by his waist safety belt while deer hunting from a tree stand.

h. A 42-year-old male died when he fell off a tree stand and was entangled in his fall protection device.
i. A 58-year-old male was found hanging by his fall protection device from a deer stand and died the next day due to his injuries.

Sixty-nine of the incident reports stated only that the victim fell. These cases might include more stand problems and fall protection device related injuries or deaths, but the reports did not contain enough detail to identify the cause of the falls.

Two spreadsheets listing the deaths and the non-fatal incidents are attached. Cases detailed above are identified in the narratives on the spreadsheets. Cases of failures or problems with the fall protection devices are highlighted.

Manufacturer Information

Among the 68 incidents for which a manufacturer is identified, there were 32 different manufacturers mentioned. Eight manufacturers account for the majority (38) of those incidents. There were 64 cases for which no manufacturer information was reported. Another 6 cases were reported to involve homemade stands. While it is not appropriate to attribute proportions to data from these sources, it is noteworthy that CPSC has received 50 reports of failure of manufactured stands, including 5 that resulted in death.

Table 6: Type of Hazard by Brand Name (Number of Deaths in Parentheses)

	Unspecified Fall	Stand Failure	Other	Complaint	Total
Brand Identified	8 (2)	49 (4) [a, b, d]	3	7	67 (6)
Unknown*	56 [f] (46) [g, h, i]	4 (2) [c]	4 (3)	0	64 (51)
Homemade	5 (5)	1	0	0	6 (5)
Total	69 (53)	54 (6)	7 (3)	7	137 (62)

* This category most likely includes cases involving both manufactured and homemade stands. There is not enough information in the reports in our files for many of these cases to make the distinction.

Note: The incidents listed in the text are indicated in the table with the corresponding letter.

Source: Injury or Potential Injury Incident (IPII), 1980-2001
In-Depth Investigations (INDP), 1980-2001
Death Certificates (DCRT), 1980-2001

Staff Response to Hunting Tree Stand Petition Comments

There are some errors and misunderstandings in the Tree-stand Manufacturer's Association analysis.

The TMA comments misquote the petition in both of the direct quotes they mention in paragraph four. TMA quotes the petition as saying that "most injuries and fatalities occurred as a result of a fall from the tree stand." While it is true that most injuries and fatalities do occur as a result of falls from the tree stands, the petition materials use the term "many" not "most." The second misquote is the statement attributed by TMA to the petition, that "most injuries and fatalities stemmed from falls from tree stands when the stand collapsed." This statement is not included in the petition material, nor does it accurately portray the data.

TMA asserts that "the vast majority of the reported incidents occur from falls alone rather than failure of the product." They correctly acknowledge that this level of detail is not in the NEISS data; however, their quantitative statement about the incident data is not appropriate. About half of the incidents identified in the staff review of the data did refer to some kind of failure of the stand; however, this data source is anecdotal and not appropriate for quantitative analysis, other than to identify possible problem areas for further investigation. One cannot make statements about the failure frequency of tree stands based on the incident data files.

Tree Stand Related Deaths 1980 - 2001

docno	tkno	state	city	age	sex	dt_inj	disp	narrative
C8795028A		GA	MARIETTA	0	1	9/19/1986	8	MAN WAS KILLED WHEN DEER STAND FELL OUT OF TREE.
G9620013A	960207CCN0546	AL	TROY	30	1	12/21/1995	8	A 30 YOM WAS KILLED WHEN THE DEER STAND HE WAS USING COLLASPED CAUSING HIM TO HANG BY HIS NECK FROM THE SAFETY HARNESS. Case d. in memo
I0040221A	000609HCC0742	MS	CLINTON	14	1	12/29/1999	8	A 14 YEAR OLD MALE DIED FROM ASPHYXIATION WHEN HE WAS IN A TREESTAND, AND THE BOTTOM FELL OUT DUE TO A DEFECT. HE HAD HIS SAFETY BELT ON, BUT IT HAD NO RELEASE MECHANISM TO PROVIDE AN ESCAPE. Case a. in memo
N0110011A	010111CNE6050	PA	SHREWSBURY TWP	59	1	9/30/2000	8	(1) - A MAN, AGE 59, DIED OF CHEST COMPRESSION INJURY AND WAS FOUND SUSPENDED IN THE SAFETY HARNESS OF A HUNTING STAND, SUSPENDED FROM THE TREE. THE TREE STAND WAS FOUND COLLAPSED. Case b. in memo
X96C0727A		PA	BETHEL TWP	58	1	12/4/1996	8	A MAN, AGE 58, DIED OF ASPHYXIA AND SHOCK AFTER HE BECAME SUSPENDED BY THE WAIST SAFETY BELT WHILE DEER HUNTING FROM A TREE STAND. Case g. in memo
X9582623A		NC	STATESVILLE	24	1	6/25/1995	8	A 24 YEAR OLD MALE DIED OF HEAD INJURY FROM A FALL FROM A DEER STAND WHEN THE RAILING GAVE WAY. A MALE RELATIVE WITH HIM WAS ALSO INJURED IN THE FALL.
N99B0176A	991214CCC0190	TN	WEAKLEY COUNTY	12	1	10/16/1999	8	A 12 YEAR OLD BOY WAS ACCIDENTALLY KILLED WHILE DEER HUNTING. HE WAS FOUND HANGING BY A SAFETY STRAP ON A DEER STAND. The tubular arm rest on the stand broke, causing the victim to plunge forward. Case c. in memo
9842123822		PA	ADDISON TWP.	42	1	12/14/1998	8	PERSON WAS HUNTING IN A TREE STAND, FELL OFF AND WAS ENTANGLED IN SAFETY HARNESS - POSITIONAL ASAPHYXIATION - AUTOPSY NO Case h. in memo
0021032750		KY	LOUISVILLE	58	1	10/29/2000	8	FOUND HANGING FROM SAFETY STRAP AT DEER STAND - INTRACEREBRAL HEMORRHAGE - HEART VALVE REPLACEMENT - AUTOPSY NO Case i. in memo
N02C0038A	021212CNE7628	PA	CORRY	34	1	10/5/2002	8	A MAN, AGE 34, DIED OF ASPHYXIATION WHEN THE TREE STAND PLATFORM GAVEWAY UNDER THE HIS FEET,CAUSING HIM TO FALL, & THE SAFETY HARNESSSLIPPED ACROSS THE NECK WHILE HE DANGLED FROM THE HARNESS. Case e. in memo
8242094338		PA	SCRUBGRASS TWP	72	1	10/26/1982	8	CARDIAC ARREST; TRAUMATIC SHOCK; BEING SUSPENDED BY HIS FINGERS THAT WERE CAUGHT IN A DEER TREE STAND - LOWER PLATFORM OF DEER HUNTING TREE STAND - AUTOPSY NO
X9930943A		VA	NEW KENT	46	1	9/24/1988	8	A MAN, AGE 46, DIED OF SEPTIC SHOCK DUE TO LEG FRACTURE RECEIVED SEVERAL YEARS AGO WHEN HE FELL 16 FEET FROM A DEER STAND WHILETRACKING DEER. C-128934
9042093607		PA	WAYNE TWP.	37	1	10/25/1990	8	FELL FROM TREE STAND - CLOSED HEAD INJURY - AUTOPSY YES
9113040306		GA	MONROE	51	1	9/27/1991	8	FELL FROM TREE STAND DEER HUNTING - CRUSHED CHEST INJURY, MASSIVE; HEMOTHORAX-BILATERAL SEVERE; PNEUMOTHORAX-BILATERAL PULMONARY EMPHYSEMA- BY HISTORY - AUTOPSY NO
9113042403		GA	SAVANNAH	38	1	10/10/1991	8	FELL FROM DEER STAND - CIRCULATORY COLLAPSE; CRUSH SYNDROME WITH ANURIC RENAL FAILURE; T4 VERTEBRAL COLUMN & SPINALCORD INJURY - BILATERAL PNEUMONIA/SEPSIS - AUTOPSY YES
9151038011		VA	NEWPORT NEWS	65	1	10/31/1991	8	FELL FROM A TREE STAND WHILE HUNTING - TRANSECTED AORTA WITH FRACTURED SPINE; DUE TO FALL FROM A TREE - AUTOPSY YES
9155029815		WI	BLACK RIVER FALLS	39	1	11/5/1991	8	DECEASED FELL FROM A TREE WHILE BOW HUNTING FROM A TREESTAND FATALLY INJURED - LACERATION OF THE LIVER; RUPTURE OF THE RIGHT ATRIUM - FRACTURE OF 2 RIGHT RIBS - AUTOPSY YES
9112123830		FL	NEW PORT RICHEY	53	1	11/10/1991	8	FELL FROM TREE STAND WHILE HUNTING - MULTIPLE INJURIES AUTOPSY YES
9113042349		GA	QUITMAN	43	1	11/10/1991	8	FELL FROM DEER STAND - CRANEO-CEREBRAL TRAUMA; MULTIPLE BLUNT INJURIES; FALL OF 30 FT FROM DEER STAND - AUTOPSY YES
9113043370		GA	MARIETTA	48	1	11/10/1991	8	FELL OUT OF DEER STAND - ACUTE PULMONARY THROMBOEMBOLISM; DEEP VEIN THROMBOSIS OF LOWER EXTREMITIES; EMBOLISM FOLLOWING PELVIC FRACTURE - AUTOPSY YES
9118041788		IN	MICHIGAN CITY	11	1	11/17/1991	8	VICTIM FELL WHILE CLIMBING OUT OF TREE STAND & GUN DISCHARGED - MASSIVE HEAD TRAUMA; GUN SHOT WOUND TO HEAD - AUTOPSY NO
9155031703		WI	STEPHENSON	45	1	11/23/1991	8	FELL FROM TREE STAND WHILE HUNTING APPROX 25' HIGH BROKEN NECK C-4; FALL FROM TREE STAND - AUTOPSY YES
X91C0641A	911219CAA1152	WV		54	1	11/30/1991	8	A 54 YEAR OLD MALE DIED AS A RESULT OF A FALL FROM A HUNTING TREESTAND WHICH WAS LOCATED 14' ABOVE THE GROUND. IT IS BELIEVED, HE HAD JUST FINISHED CLIMBING AND WAS DISMANTLING CLIMBING AID WHEN HE LOST BALANCE AND FELL TO HIS RIGHT, BRINGING THE CLIMBING AID DOWN WITH HIM. TREE STAND REMAINED IN TREE.
9217071339		IL	DETROIT TWP.	56	1	12/3/1992	8	FALL FROM DEER STAND - RESPIRATORY ARREST; INTERNAL CHEST INJURIES; FALL FROM A DEER STAND - AUTOPSY NO
G94B0092B		GA	UNKNOWN	0	1	10/1/1994	8	- (1) A HUNTER DIED FOLLOWING A FALL FROM A TREE STAND.
X94C0826A		NC	WILSON	28	1	11/14/1994	8	A 28 YEAR OLD MALE DIED FOLLOWING A FALL FROM A TREE STAND.
9512127648		FL	MAYO	15	1	11/3/1995	8	FELL FROM TREE STAND - ATLANTOOCCIPITAL SEPERATION AND SUBDURAL HEMORRHAGE - AUTOPSY YES
9542106568		PA	W. PROVIDENCE	39	1	11/3/1995	8	FALL FROM TREE STAND - TRAUMATIC RUPTURE OF RIGHT VENTRICLE AND INFERIOR VENA CAUSE AS; RESULT OF FALL FROM TREE STAND - AUTOPSY YES
9612145330		FL	OLD TOWN	65	1	10/4/1996	8	FELL FROM TREE STAND - MULTIPLE INJURIES - AUTOPSY EYS

Tree Stand Related Deaths 1980 - 2001

docno	tkno	state	city	age	sex	dt_inj	disp	narrative
9742102832		PA	MOORE TWP.	55	1	10/11/1997	8	FELL FROM TREE STAND ON PROPERTY IN WOODED AREA - FRACTURE OF CERVICAL VERTEBRA WITH COMPRESSION OF SPINAL CORD; A.S.C.U.D - AUTOPSY YES
9721028066		KY	CANEYVILLE	65	1	10/19/1997	8	FELL FROM TREE STAND & FOOT CAUGHT IN LADDER OF TREE STAND - POSITIONAL ASPHYXIA; ACCIDENTAL REVERSE SUSPENSION - AUTOPSY YES
X9821806A	980320CCC1217	VA	ACCOMACK	68	1	11/5/1997	8	A MAN, AGE 68, DIED OF INTERNAL HEMMORRHAGE AND SPINAL FRACTURE DUE TO A FALL FROM A 20 FOOT HIGH DEER STAND ON A FARM.
X9821830A	980320CCC1216	VA	RICHMOND	57	1	11/12/1997	8	A MAN, AGE 57, DIED AS A RESULT OF INJURIES RECEIVED IN A 13 FOOT FALL FROM A TREE STAND IN THE WOODS.
9712135858	980528CCC1448	FL	CHIPLEY	47	1	11/18/1997	8	FELL FROM TREE STAND WHILE HUNTING - PULMONARY EMBOLUS; DEEP VEIN THROMBOSIS; SEQUELAE OF L3 SPINAL FRACTURE - AUTOPSY YES
X9920609A		WV	RUPERT	62	1	9/7/1998	8	A MAN, AGE 62, DIED OF BLUNT HEAD TRAUMA RECEIVED IN A FALL FROM A TREE STAND IN THE WOODS. 98-7588
9854016014		WV	QUIET DELL/LOST CREEK	57	1	10/17/1998	8	PROBABLY FELL FROM HUNTING TREE STAND - INTERNAL HEMORRHAGE; LACERATIONS OF LIVER AND RIGHT KIDNEY - ARTERIOSCLEROTIC CORONARY ARTERY DISEASE - AUTOPSY YES
X9930944A		VA	AMELIA	27	1	11/2/1998	8	A MAN, AGE 27, DIED OF BLUNT TRAUMA TO ABDOMEN RECEIVED IN FALL FROM A TREE STAND TO THE GROUND WHILE WAITING FOR DEER TO SHOT. ALCOHOL MAY HAVE BEEN INVOLVED. C-129058
9842108146		PA	SUGARLOAF	41	1	11/14/1998	8	FALL OUT OF TREE STAND IN WOODED AREA-APPROX. 12 FEET - BLUNT FORCE INJURIES TO TORSO; FALL FROM HEIGHT - AUTOPSY YES
9822040708		LA	SHREVEPORT	79	1	11/19/1998	8	SUBJECT FELL FROM A DEER STAND - HEMOPERITONEUM; LACERATED SPLEEN; FALL FROM HEIGHT - AUTOPSY YES
X98C0938A	990111HCC0209	WV	GREN SPRING	63	1	11/23/1998	8	A MAN, AGE 63, DIED FROM MASSIVE HEAD INJURIES AFTER FALLING FROM A TREE STAND WHILE DEER HUNTING.
9842116748		PA	GETTYSBURG	71	1	12/24/1998	8	FELL FROM TREE STAND - PULMONARY EMBOLI; CHEST INJURIES; FALL - AUTOPSY YES
9945026494		SC	MCBEE	37	1	10/4/1999	8	DECEDENT WAS HUNTING OUT OF TREE STAND CAME INTO CONTACT WITH ELECTRICAL WIRE ON UTILITY POLE - ELECTROCUTION - CONTACT WITH UTILITY WIRES WHILE SITTING IN DEER STAND THAT WAS ATTACHED TO UTILITY POLL - AUTOPSY YES
X0041253T		OH	JACKSON COUNTY	43	1	10/8/1999	8	A 43 YEAR OLD MALE DIED WHEN HE FELL FROM A TREE STAND. 993395.
9954016666		WV	WESTOVER	54	1	10/16/1999	8	FELL FROM TREE STAND WHILE BOW HUNTING - MULTIPLE INJURIES - AUTOPSY NO
G99B0216A		LA	TULLULAH	43	1	11/1/1999	8	A MAN, AGE 43, DIED IN A 10 TO 15 FOOT PLUNGE FROM A DEER STAND.
9942115481		PA	MOHONING	72	1	11/14/1999	8	FELL FROM HUNTING TREE STAND - BLUNT FORCE SPINAL INJURIES; FALLING FROM TREE STAND - AUTOPSY NO.
N0010107A		GA	AUBURN	47	1	11/22/1999	8	A MAN, AGE 47, DIED OF HEAD AND NECK TRAUMA RECEIVED IN A FALL FROM A 22 FOOT HIGH DEER HUNTING TREE STAND.
9942115787		PA	PLEASANT VALLEY	49	1	11/29/1999	8	SUBJECT WAS HUNTING FROM TREE STAND. SUBJECT GUN APPARENTLY FELL AND DISCHARGED WITH BULLET STRIKING SUBJECT - ACCIDENTIAL GUNSHOT WOUND TO THE HEAD - AUTOPSY NO
X0020529A		VA	WINCHESTER	54	1	12/3/1999	8	A MALE, AGE 54, DIED FROM THORACO/ABDOMINAL TRAUMA DUE TO A FALL FROM A TREE STAND.
X0083800A		VA	SOUTHAMPTON	68	1	12/4/1999	8	A 68 YEAR OLD MALE DIED WHEN HE FELL FROM A DEER STAND WHILE HUNTING.CAUSE OF DEATH: ACUTE BLUNT FORCE TRAUMA DUE TO FALL. #T57848
9942130563		PA	PHILADELPHIA	65	1	12/9/1999	8	FELL FROM A DEER PERCH - MULTIPLE INJURIES - AUTOPSY NO
X0041600A		FL	PANAMA CITY	44	1	1/25/2000	8	A 44 YEAR OLD MALE DIED FROM A BLUNT IMPACT OF HIS TORSO WHICH WAS CAUSED BY A FALL FROM A TREE STAND. 00-0029
X0110356A		NC	FAYETTEVILLE	53	1	1/25/2000	8	A MAN, AGE 53, DIED OF MULTIPLE BLUNT FORCE TRAUMA INJURIES RECEIVED IN A FALL FROM A TREE STAND. 00-9977
0040020986		OK	TULSA	71	1	8/14/2000	8	FALL FROM DEERSTAND - PROBABLE SEPSIS; DECUBITUS ULCERS; TRAUMATIC PARAPLEGIA - AUTOPSY NO
H0090336A	001003CCC2007	MN	EAGAN	47	1	9/1/2000	8	A MALE, AGE 47, SUFFERED A FATAL CONCUSSION AND DIED WHEN HE FELL TO THE GROUND WHILE STEPPING DOWN A METAL HUNTING STAND ATTACHED TO A TREE WITH A SAFETY STRAP.
G00B0103A	001114CCN0081	MI	SOLON TWP.	42	1	11/10/2000	8	A MAN, AGE 42, DIED AFTER FALLING OUT OF A TREE STAND WHILE HUNTING FOR DEER. HE WAS NOT WEARING A SFETY HARNESS. ALCOHOL INTOXICATION WAS A FACTOR
X0141692A		MI	MUSKEGON	42	1	11/12/2000	8	A 42 YEAR OLD MALE FELL APPROXIMATELY 20 FEET FROM A TREE STAND. CAUSE OF DEATH COMPLICATIONS OF NECK FRACTURE DUE TO THE FALL. DAS01-065
N00C0205B		DE	SANDYSTON	58	1	12/5/2000	8	A MALE HUNTER, AGE 58, DIED OF CHEST INJURY WHEN HE FELL 20 TO 30 FEET FROM A TREE STAND AS HE WAS CLIMBING DOWN FROM THE STAND AFTER SHOOTING A DEER.
X0162870A		SC	ORANGEBURG COUNTY	50	1	12/10/2000	8	A MAN, AGE 50, DIED FROM A BROKEN NECK WHEN HE FELL 12 TO 15 FEET FROM A DEERSTAND.
G01A0178A		CO	BARBER COUNTY	31	1	10/1/2001	8	A MALE, AGE 31, WAS ELECTROCUTED WHEN HE PUT A TREE STAND IN AN UTILITY POLE, HE THOUGHT WAS ABANDONED FOR DEER HUNTING.
N01A0024A	011029CNE7024	SC	SOUTH CHARLESTON	51	1	10/27/2001	8	A MALE, AGE 51, WAS HUNTING WHEN HE APPARENTLY FELL FROM A TREESTAND.
N01C0200A	011219CNE2065	SC	COLUMBIA	48	1	11/24/2001	8	A MALE, AGE 48, WHO WENT FOR DEER HUNTING ON HIS PROPERTY WAS FOUND DEAD AFTER HE FELL FROM THE HUNTING STAND.
N01C0221A		WV	MASON COUNTY	0	1	11/26/2001	8	ONE MAN WAS KILLED AFTER FALLING FROM A TREE STAND. TWO OTHER MALE'S WERE INJURED WHEN THEY TOPPLED FROM THE TREE STAND. ONE OF THEM WAS LEFT HANGING BY HIS FEET FOR TWO HOURS.

Tree Stands and Harnesses (INDP and IPII) Non-Fatal Reports

docno	tkno	state	city	age	sex	dt_inj	disp	narrative
A86A0025A		AA	ATLANTA	0	0		0	MANUFACTURE RECALLED DEER HUNTER'S TREE STANDS BUILT DURING THE PERIOD BETWEEN AUG.1-OCT.18 BECAUSE THEY WERE BUILT WITH DEFECTIVE MATERIALS.
C9610010A		PA	HONEY BROOK	0	0	10/11/95	0	A TREE STAND BROKE AFTER ONLY A FEW TIME USES. NO INJURY.
F9050070A		FL	GRAND ISLAND	0	0	1/1/90	0	MANUFACTURER FEELS CLIMBING TREE STANDS SHOULD HAVE SPIKES FOR HOLDING STAND ON TREE.
F9050071A		LA	TALLULAH	0	0	1/1/90	0	MANUFACTURER FEELS CLIMBING TREE STAND SHOULD HAVE SPIKES FOR HOLDING STAND ON TREE. PLYWOOD BOTTOM OF STANDS COULD ROT, AND TOP PLATFORMIS UNSTABLE IF USER LEANS TO THE SIDE.
F9050072A		WI	FOUND DU LAC	0	0	1/1/90	0	MANUFACTURER FEELS THE CLIMBING TREE STAND IS DANGEROUS DUE TO ADJUSTABLE METAL BAND WHICH GOES AROUND TREE INSTEAD OF A GRIPPER BAR DUE TO RUBBER BACK SLIDING, LOCKING SYSTEM PINCHING FINGERS AND STAND IS NOT RIGID.
F9050073A		MI	HASTINGS	0	0	1/1/90	0	MANUFACTURER FEELS CLIMBING TREE STAND IS HAZARDOUS DUE TO NO RIGIDITY AND STAND WILL SWING ON THE BAND WHICH GOES AROUND TREE INSTEAD OFA GRIPPER BAR.
F9050074A		LA	SHREVEPORT	0	0	1/1/90	0	COMPLAINANT FEELS CLIMBING TREE STAND IS DANGEROUS DUE TO NO SPIKES ON STAND TO HOLD ONTO TREE, STAND WILL WALK IT PERSON STANDS ON BACK OF PLATFORM CAUSING PERSON TO FALL, & IF SEAT IS NOT POSITIONED PROPERLY AGAISNT TREE, TENSION WILL LOOSEN ON BAND CAUSING PERSON TO FALL.
H00B0304A		MD	MIDDLETOWN	0	1	11/1/00	0	A MAN WAS CLIMBING THE TREE WHEN THE TREE STAND'S FOOT REST COLLAPSED. HE WAS ABLE TO GRAB ONTO A LIMB TO AVOID FALLING TO THE GROUND. NO INJURY.
H01C0024A		PA	MESHOPPEN	0	0	10/11/01	0	EVEN THE REPLACED TREE LADDER COULD NOT BE ASSEMBLED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS. OWNER RECEIVED A NEW INSTRUCTION MANUAL WHICH WAS THE SAME THAT CAME WITH THE ORIGINAL & REPLACED LADDER. NO INJURY.
H95A0022A		NY	KINGS PARK	0	0	1/1/93	0	CONSUMER FEELS TREE STANDS WHICH GRIP INTO TREE DOES NOT ALWAYS GRIP SECURELY, AND SOMEONE COULD FALL.
H95A0206A		PA	SMOCK	0	1	10/11/95	0	A DEER STAND SLID DOWN A TREE AS A MAN WAS CLIMBING OUT OF IT. NO INJURY.
H95A0266A	951024CCN0147	OH	CROWN CITY	0	0	10/21/95	0	TWO HARD RUBBER PRONGS DETACHED FROM A TREE STAND CAUSING IT TO DISENGAGE. NO INJURY.
H95A0352A		PA	SMOCK	15	1	10/24/95	0	A 15 YOM WAS ON A DEER HUNTING TREE STAND THAT SLID DOWN A TREE DURING USE. NO INJURY.
I00A0375A		GA	MARIETTA	37	1	10/28/00	0	A 37 YEAR OLD MAN ALMOST FELL ABOUT 20 FT FROM A TREESTAND IN TREE.NO INJURY.
I00B0285A		WV	DANVILLE	29	1	11/24/00	0	A MAN, AGE 29, WAS NEARLY INJURED BY A LOOSE BRACE ON THE BACK OF A TREE STAND HE WAS CLIMBING. A WELD ON THE SEAT PLATFORM WAS ALSO FOUND CRACKED.
I01C0253A		OH	CANTON	20	1	11/11/01	0	A MAN, AGE 20, NEARLY INJURED IN A FALL FROM THE TREE STAND DURING USE. APPARENTLY THE STRANDED STEEL CABLES THAT SUPPORT ON THE PLATFORM LET LOOSE FROM THE CRIMP FITTINGS. NO INJURY.
I99A0124A	991027CCC2028	IN	ANDERSON	37	1	10/17/99	0	A MAN, AGE 37, WAS NEARLY INJURED WHEN A DEER HUNTING STAND FAILED DURING USE.
C9355045A		NJ	WOODS ALLOWAY	27	1	10/10/92	1	A 27 YEAR OLD MALE WAS INJURED IN A FALL FROM A TREE STAND.
C97A5006A		NY	OLEAN	0	1	1/1/94	1	A MAN WAS SEVERELY INJURED BY A TREESTAND USED FOR DEER HUNTING.
G01C0251A		IN	EDINBURGH	45	1	12/28/01	1	A MAN, AGE 45, INJURED HIS HIP WHEN HE FELL 20 FEET FROM A TREE STAND WHILE HUNTING DEER.
G97C0265A		MO	SPRINGDALE	39	1	11/15/97	1	A 39 YR OLD, MAN WAS HUNTING WHEN HE FELL FROM A TREE STAND. THE VICTIM IS NOW PARALYZED FROM THE SPINAL INJURY HE SUFFERED FROM THE FALL.
H00A0104A		MI	STERLING HEIGHTS	46	1	10/1/00	1	A MALE, AGE 46, WAS STANDING IN THE TREE STAND WHEN IT CAME UNHOOKED,CAUSING HIM TO FALL TO THE GROUND. HE SUSTAINED A SPRAINED RIGHTWRIST, SHOULDER, AND BRUISES TO RIGHT LEG.
H01B0127A		MO	SPRINGFIELD	38	1		1	A MALE, AGE 38, RECEIVED A BROKEN LEG WHEN THE TREE STANDS NYLON STRAP BROKE IN HALF & THE BASE OF THE TREE STAND BUCKLED,CAUSING HIM TO FALL.
H0210120A		TN	MILLINGTON	37	1	12/27/01	1	A MAN, AGE 37, WAS INJURED WHEN THE METAL RING THAT HOLDS THE TOP OF THE TREE STAND TO THE BACK OF THE TREE SUDDENLY BROKE DURING USE.HIS FEET REMAINED HOOKED IN THE TREE STRAPS, SEVERELY TEARING NERVES, CARTILAGE, AND LIGAMENTS IN HIS ANKLES.
H8910199A	890207CEN0828	AL	ATTALLA	33	1	11/19/88	1	A 33-YEAR-OLD MAN WAS SLIGHTLY INJURED WHEN THE TREE STAND USED FOR HUNTING BROKE AT THE WELD BETWEEN THE TWO METAL BARS CAUSING HIM TO FALL FROM TREE.
H98A0195A		PA	SARVER	47	1	10/8/98	1	A MAN SUFFERED A KNEE INJURY CLIMBING DOWN A TREE STAND THAT FELL UNEXPECTEDLY WHEN THE FRAME BENT.
H98B0145A	981124CCN0060	MI	HOWELL	38	1	11/7/98	1	A MAN, AGE 38, BRUISED HIS ELBOW WHEN A METAL HOOK ON A TREESTAND STRAP DETACHED AND HE FELL 13 FEET.
I0090314A		CT	LEDYARD	50	1	9/1/99	1	A MAN, AGE 50, RECEIVED BRUISES AND ABRASIONS WHEN HE FELL FROM HIS HUNTING TREE STAND. FABRIC IN SEAT TORE RESULTING IN FALL. MANUFACTURER HAS REPLACED SEAT WITH NEW THICKER FABRIC SEAT, HOWEVER, SAME RESULT OCCURRED.
I00C0211A		MI	MARNE	32	1	12/3/00	1	A MAN, AGE 32, SUFFERED MULTIPLE BUMPS, CUTS, AND SCRAPES IN A FALL FROM A TREE STAND DURING USE. APPARENTLY THE LOOPED END OF A CABLE CAME OUT OF THE CRIMP.
I01B0169A	011116CCN0126	MI	FOWLERVILLE	40	1	11/15/01	1	A MAN, AGE 40, SUFFERED A BACK INJURY WHEN HIS TREESTAND COLLASPED DURING USE. THE WELDS HOLDING THE SEAT TO THE FRAME WERE FOUND BROKEN.
I97C0074A	980102CCC1760	SC	MONCKS CORNER	44	1	12/4/97	1	A MALE HUNTER, AGE 44, WAS BRUISED, PULLED MUSCLES, AND SCRAPED DURING FIRST USE OF A TREE STAND FOR HUNTING THAT FAILED CAUSING HIM TO FALL.
X0041568A		AR	BENTON	50	1	11/11/94	1	A 50 YEAR OLD MALE FELL OUT OF A TREE STAND WHILE HUNTING. HE SUSTAINED A FRACTURE TO HIS LEFT LEG.

Tree Stands and Harnesses (INDP and IPII) Non-Fatal Reports

docno	lkno	state	city	age	sex	dt_inj	disp	narrative
X98C0879A		MD	GLEN BURNIE	0	1	11/28/98	1	A MAN WAS INJURED AFTER HE LOST PART OF HIS TREE-STAND SAFETY HARNESS, FELL ASLEEP, AND FELL 20-25 FEET WHILE HUNTING.
X98C0939A		WV	CHARLESTON	0	1	11/5/98	1	A MAN WAS INJURED AFTER FALLING FROM A TREE STAND TO THE GROUND RECEIVED WHEN SAFETY BELT LATCH SLIPPED AND FAILED WHILE DEER HUNTING Case e. in memo
	000107HEP9002	LA		61	1	12/27/99	1	THE VICTIM IS A 61 YEAR OLD MALE WHO WAS INJURED WHEN HIS DEER STAND COLLAPSED AND HE FELL ABOUT 30 FEET FROM A TREE TO THE GROUND. THE VICTIM'S HUNTING PARTNER TOOK HIM TO THE HOSPITAL WHERE X-RAYS REVEALED A FRACTURE IN THE VICTIM'S KNEECAP, AND HE WSA PLACED IN A CAST FOR 5 WEEKS. THE VICTIM WAS THEN RELEASED.
A86A0044A	861105ATL5009	GA	CLARKSTON	23	1	10/25/86	4	A 23-YEAR OLD MALE RECEIVED A FRACTURE TO HIS BACK IN TWO PLACES AND A COMPRESSION OF HIS SPINAL COLUMN WHEN HE FELL FROM A DEER HUNTING TREE STAND THAT WAS APPROXIMATELY 30 FEET IN THE AIR. HE FELL WHEN THE TREE STAND'S METAL FRAME BROKE.
C89B5036A	891213CCC2101	WI		43	1	12/10/89	4	THIS INVESTIGATION WAS INITIATED THROUGH CORRESPONDENCE FROM A LOCAL ATTORNEY. THE INCIDENT INVOLVED A DEER STAND, WHICH WAS APPROXIMATELY 10 YEARS OLD. THE VICTIM CLIMBED THE TREE TO THE DEER STAND, AND UPON SITTING DOWN, THE CABLES WHICH CONNECT THE SITTING AREA TO THE FOOTBOARD AREA BROKE, CAUSING THE DEER STAND TO COLLAPSE. THE VICTIM FELL, BREAKING BOTH ANKLES, LEGS AND HIS PELVIS.
C9085037A	900907CCC1651	WV	CHARLESTON	0	1	10/26/88	4	A MALE WAS HOSPITALIZED WHEN A SCAFFOLD HE WAS USING IN A TREE FOR HUNTING FAILED, DROPPING HIM OUT OF A TREE.
C9245007A	920424CCC2362	AL	AUTAUGA CO.	45	1	11/28/91	4	A 45 YEAR OLD MALE WAS SERIOUSLY INJURED AFTER A TREE STAND FAILED AND HE FELL.
C9665032A		NY	DUTCHES CO	32	1	11/20/94	4	A MAN, AGE 32, SUFFERED A FRACTURED PELVIS IN A FALL FROM A TREESTAND THAT FELL DURING USE.
F93B0107A		AR	JONESBORO	0	1	10/30/90	4	A MAN WAS HURT IN A FALL FROM A TREE STAND THAT BROKE WITHOUT WARNING.
G01A0126A		IL	MCVILLE	35	1	10/21/01	4	A MALE, AGE 35, FELL 18 FEET FROM A TREE STAND, BREAKING HIS LEFT LEG. HE WAS HOSPITALIZED. THE TIE-DOWN STRAP THAT HOLDS THE STAND TO THE TREE HAD SLIPPED AND GAVE AWAY.
G94B0138A		MS	CARROLL CO	0	1	10/28/94	4	A MAN WAS INJURED WHEN HIS 4-WHEEL ATV FLIPPED OVER AS HE PULLED A DEER STAND.
H00A0142A		IL	CARPERNTERSVILLE	0	1	12/20/98	4	THE BELT WHICH WRAPS AROUND THE TREE AND HOLDS THE TREE STAND FIRMLY AGAINST THE TREE SLID OUT CAUSING THE TOP OF THE SEAT TO DIP FORWARD AND DUMPED THE MALE TO THE GROUND. THE MALE WAS INJURED AND HOSPITALIZED.
H9620073A		GA	MACON	42	1	9/30/95	4	A 42 YOM DISLOCATED HIS RIGHT ELBOW, SHATTERED RADIAL BONE IN RIGHT ARM, AND FRACTURED RIGHT SIDE OF PELVIS WHEN METAL DEER STAND SHIFTED SIDEWAYS, CAUSING HIM TO FALL.
H9640202A	960429CCN1015	TN	BUCHANAN	44	1	10/20/95	4	A MAN, AGE 45, WAS SERIOUSLY INJURED IN A FALL FROM A DEER STAND THAT COLLAPSED DURING USE.
H9920195A		AA	UNKNOWN	30	1	11/24/98	4	A MAN, AGE 30, WAS HOSPITALIZED FOR ANKLE AND KNEE INJURIES RECEIVED WHEN A METAL DEER STAND COLLAPSED DURING USE. NO SAFETY HARNESSES WERE PRESENT OR USED.
I0050061A		MI	SAGINAW	55	1	10/1/96	4	A 55 YEAR OLD MALE FELL FROM A TREE STAND WHILE HUNTING. HE IS NOW HOSPITALIZED WITH DIAPHRAM INJURIES AND IS KEPT ALIVE BY A RESPIRATOR.
I98A0022A		NY	CAIRO	40	1	10/30/97	4	A MAN, AGE 40, WAS HOSPITALIZED FOR MULTIPLE FRACTURE INJURIES TO HIS SPINE, CALCANEUS, WRIST, AND TIBIA/ FIBIA RECEIVED IN A FALL FROM A TREE STAND THAT COLLAPSED DURING USE.
N00C0205A		NJ	SOUTHAMPTON	73	1	11/30/00	4	A MALE HUNTER, AGE 73, WAS HOSPITALIZED AFTER FALLING 25 FEET FROM A TREE STAND. HE SUSTAINED HIP, CHEST, BACK, LEG AND ARM INJURIES.
N95B0156A		NC	SALISBURY	20	1	10/28/95	4	A 20YOM FRACTURED HIS SPINE IN A 15 FOOT FALL FROM A TREE STAND.
P9715993A		SC	BARNWELL	3	1	9/1/95	4	517602 FROM DEER STAND AFTER FALLING ASLEEP E884.9 INJURY MECH: FALL LEVEL OF CONSC: AWAKE850.10 CONCUSSION 910.00 SUPERFICIAL INJ-FACE/ NECK/ SCALP EXC EYE
	901102CEP9002	IL		33	1	10/27/90	4	VICTIM HAD CLIMBED UP INTO A TREE FOR HUNTING AND HAD PACKED HOMEMADE PORTABLE DEER STAND (MADE FROM PLYWOOD AND A 5 FOOT LONG METAL CHAIN). THE VICTIM HAD WRAPPED THE 6 FOOT LONG CHAIN AROUND THE TREE TRUNK 30 FEET ABOVE THE GROUND. A FEW MINUTES AFTER HE COMPLETED ATTACHMENT OF THE HOMEMADE DEER STAND, THE HOOK AT THE END OF THE CHAIN SLIPPED ALLOWING THE STAND ASSEMBLY TO LOOSEN FROM THE TREE TRUNK WITH THE VICTIM THEN FALLING 30 FEET TO THE GROUND. THE VICTIM RECEIVED MULTIPLE BRUISES TO HIS LEFT BODY AND WAS KEPT OVERNITE FOR OBSERVATION.
C8915016A		PA	HARRISBURG	0	0	12/1/88	9	A PERSON WAS INJURED WHEN A CLIMBING TREE STAND COLLAPSED WHILE HE/ SHE WAS USING IT; POSSIBLY DUE TO ONE PIN HAVING BEEN TOO SHORT TO PROPERLY LOCK TREE STAND IN PLACE.
C9625007A		MD	EASTON	0	1	11/25/95	9	A MAN INJURED HIS ARM AND EYE IN A 25' FALL FROM A PORTABLE TREE STAND USED FOR DEER HUNTING.
C9670014A		AL	MONTGOMERY	0	1	5/6/96	9	MAN SEVERELY INJURED HIMSELF WHEN HE FELL FROM AN IMPROPERLY MANUFACTURED TREE STAND.
C9765044A		VT	UNKNOWN	0	1	10/1/95	9	THE MALE VICTIM WAS BADLY INJURED IN A FALL FROM A NEW TREE STAND AFTER STITCHING IN A STRAP FRAYED AND/ OR BROKE CAUSING HIM TO FALL.
C9795026A		IL	UNKNOWN	0	0		9	THE VICTIM WAS INJURED WHEN A TREE STAND FAILED.
C97A0003A	971202CCC2141	MO	VERNON CO	37	1	9/1/97	9	A MAN, AGE 37, BROKE HIS BACK DURING FIRST USE OF A TREE STAND WHEN A WELD BROKE AND HE FELL.
C9815021A		SC	UNKNOWN	0	1		9	A HUNTER FELL FROM A TREE STAND AND MAY HAVE BEEN INJURED.
C9865002A		AA	UNKNOWN	0	0		9	A PERSONAL INJURY OCCURRED INVOLVING A FOLDING TREE STEP.
C9925035A		LA	LAFAYETTE	0	0		9	A CLIENT WAS INJURED FROM HUNTING DEER STANDS, ALSO KNOWN AS HUNTING TREE STANDS.

Tree Stands and Harnesses (INDP and IPII) Non-Fatal Reports

docno	lkno	state	city	age	sex	dt_inj	disp	narrative
G94B0092A		GA	UNKNOWN	0	1	10/1/94	9	- (2) A HUNTER WAS INJURED WHEN A STEP CAME LOOSE ON HIS TREE STAND.
G98C0199A	981228CCN0086	WI	EAU CALIRE	53	1	10/1/98	9	A MAN, AGE 53, SUFFERED SPINAL INJURIES. HE FELL FROM TREE STAND TO THE GROUND WHEN A BUCKLE APPARENTLY FAILED ON THE STRAP HOLDING THE HUNTING TREE STAND TO THE TREE TRUNK.
H9730119A		NC	LAWNDALE	46	2	10/17/94	9	A 46 YEAR OLD FEMALE SUFFERED BROKEN BREAST BONE AND TORN LIGAMENTS IN LEFT FOOT WHEN SHE USED A TREE STAND AS INSTRUCTED AND STAND'S RIGHT ARM BENT AND BECAME DETACHED FROM TREE CAUSING HER AND STAND TO FALL 20' TO GROUND.
I0030184A		WI	RACINE	45	1	9/24/99	9	AS A 45 YEAR OLD MALE WAS CLIMBING A LADDER FOR A TREESTAND, THE TUBULAR STEEL THAT IT IS MADE FROM BUCKLED AND COLLAPSED. HE FELL TO THE GROUND AND FELL ON A RUSTY PIECE OF METAL THAT WAS BEING USED AS A SURVEY MARKER. 70 STITCHES WERE NEEDED FOR HIS INJURIES.
I0160097A	010608CCN0628	MI	BLOOMFIELD HILLS	43	1	12/31/99	9	A MAN, AGE 43, SUFFERED WRIST FRACTURE AND SHOULDER INJURY WHEN HIS TREE STAND CRACKED IN TWO CAUSING HIM TO FALL TO THE GROUND.
I9980118A		KS	UNKNOWN	0	1	10/27/97	9	A MAN HAD A FINGER RIPPED OFF WHEN HIS WEDDING RING CAUGHT ON THE STEP OF A TREE STAND.
N01C0221A		WV	Kanawha county	0	1	11/26/01	9	Newspaper report involving four men. This man fell 20 feet from a tree stand, breaking his leg. He was found appx. 4 hrs later.
N9060092A		NC	DUBLIN	0	1		9	A MALE WAS INJURED WHEN THE DEER STAND HE WAS STANDING ON CAME UNHOOKED AND CAUSE HIM TO FALL 20-FEET.
X9611159A		VA	HAMPTON	48	1	11/20/91	9	A 48 YOM BECAME PARALYZED WHEN HE FELL FROM A BROKEN DEER STAND.
X9741192A		MI	SAINT CLAIR	46	1	9/21/96	9	A MAN, AGE 46, SEVERELY FRACTURED HIS WRIST IN A FALL FROM A TREESTAND THAT TURNED OVER AS HE WAS SETTING IT UP.
X97B0763A		VA	GILES CO	0	1	10/22/97	9	A MAN WAS INJURED IN A FALL DURING FIRST USE TREE STEPS USED TO ACCESS HIS TREE STAND FOR HUNTING. THE LAST STEP COLLAPSED AS HE STEPPED ON IT.
N01C0221A		WV	Mason county	0	1	11/26/01	99	Newspaper report involving four men. This man fell from a tree stand
N01C0221A		WV	Mason county	0	1	11/26/01	99	Newspaper report involving four men. This man fell from a tree stand and was suspended by his feet for two hours.