

Exam No. \_\_\_\_\_

**PRODUCTS LIABILITY, Fall 2001**

**FINAL EXAMINATION**

**INSTRUCTIONS**

1. Write your exam number at the top right corner of this page, and at the beginning of your answers. You must hand in these questions with your answers.
2. The exam has three parts. Grading will be weighted roughly as follows: Part I 35%; Part II 10%; Part III 55%.
3. Note the approximate space limit for each question in Parts I and II. The limits are stated in terms of a maximum number of sentences for each answer. Attempts to bypass these space limits with run-on sentences, one clause after another stitched together with devices such as semicolons or “and” or “thus,” will not escape my hawklike eyes.
4. Leave at least one-inch margins on the left, where I do my scoring.
5. The examination is open book, except as follows. (a) You may not access any computerized legal database (Westlaw, Lexis, Internet databases, etc.). (b) You may not communicate with anyone about the exam or its coverage or about any of the course topics, during the exam period.
6. The events described in this exam occur in Waterman, the newly admitted 51st state. The Waterman courts and legislature have not yet gotten around to passing any laws or deciding any cases. Therefore you may draw on any relevant course materials in formulating your answers.

**PART I. (35%)**

Maximum limit: 5 sentences per answer

Explain, in five sentences or less, the meaning and current significance of the following seven terms.

1. Burden of proof in enhanced injury cases
2. Comparative causation theory
3. Confidence interval
4. Dual capacity theory
5. Foreign/natural distinction
6. Implied preemption analysis
7. "Product line" approach

**PART II. (10%)**

Maximum limit: 2 sentences per answer

In which of the following situations is expert testimony necessary to meet the plaintiff's prima facie burden, under the Restatement (Third) of Products Liability? (You may give more than one answer, but you will suffer a penalty for wrong guesses.) Explain each answer you give in one or two sentences.

- A. The injury-causing aspect of the product's design fails to meet an applicable federal safety standard aimed at reducing the risk of the plaintiff's injury; but the plaintiff has not presented expert testimony about an alternative safer design.
- B. The plaintiff fell seriously ill because she ate a McDonald's burger known to be contaminated with *e. coli* bacteria.
- C. Plaintiff's small child suffocated when she removed and tried to swallow a hard plastic button from a soft teddy bear. Plaintiff's suggested alternative safer design is that the buttons should be unremovable by a child, but plaintiff has presented no expert testimony about this safer design.
- D. Plaintiff, who constantly uses an ATT cell phone while driving her car on business, was recently diagnosed with a rare form of brain cancer. Her claim, supported by a few studies in the medical literature, is that the cell phone's electromagnetic radiation output was the cause of her cancer.
- E. Expert testimony is unnecessary in A-D. (If you choose this answer, you may explain in eight sentences or less.)

**PART III. (55%)**

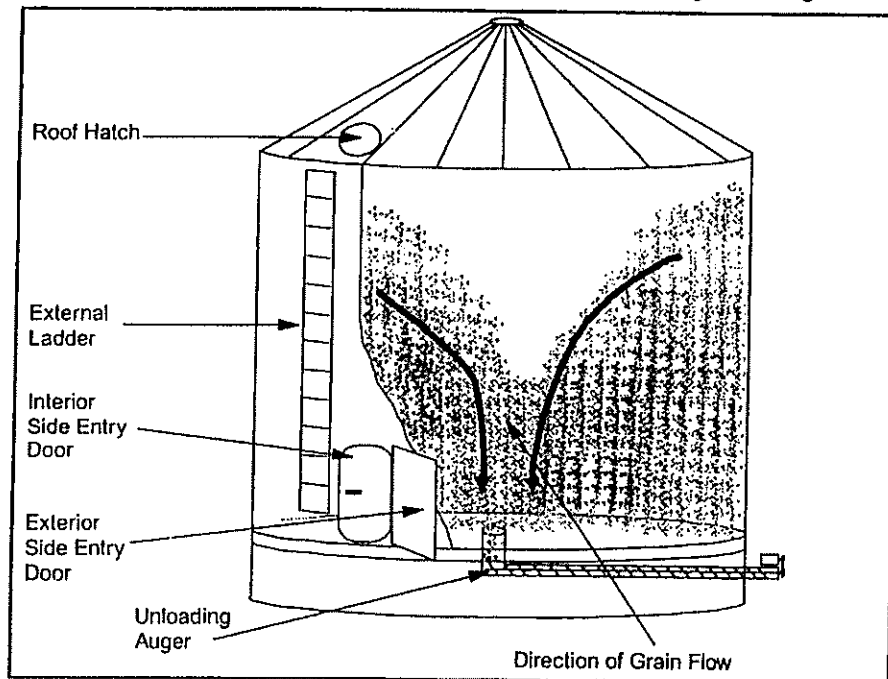
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Paul Prentice was a new employee of Waterman Grain Elevator Co. (WGE). Prentice suffocated inside a grain bin, while grain was being emptied into a railroad car bound for a ship taking the grain to feed starving Afghan refugees. Your senior partner is considering taking on the Prentice estate's products liability case (workers' comp death benefits have already been paid).

WGE for several years has contracted with the U.S. Agency for International Development (AID) to supply surplus grain to the U.S. foreign aid programs. WGE has sold corn, wheat and rice to AID for shipment all over the world, in increasing quantities these past few years. The volume of AID purchases reached such a level that WGE had to build a new grain elevator last year. The WGE/AID contract required that the new elevator meet various specifications for capacity (100,000 bu.), design, location, and outflow volume (3000 cu. ft/hr). Rather than build the elevator itself, WGE in turn contracted with Midwest Structures, Inc. (Midwest), providing that company with the government specifications. Midwest accordingly manufactured the grain bin, which is depicted below.

*Suffocations — Continued*

**FIGURE 1. Grain bin structure and direction of grain flow during unloading**



Suffocation is a recognized hazard for grain elevator employees. The nature of the problem, and the recommended preventive measures, are taken from U.S. Centers for Disease Control (CDC), as published in Morbidity & Mortality Weekly Reports (next page):

**Editorial Note:** The findings in this report indicate that suffocations in grain bins are a continuing source of preventable occupationally related deaths among workers in the agriculture industry. CDC's National Traumatic Occupational Fatalities (NTOF) surveillance data from 1980 through 1992 contain death-certificate reports of 88 farm workers killed by engulfment in grain or other agriculture produce stored in bins or silos, and the Census of Fatal Occupational Injuries (CFOI) (maintained by the Bureau of Labor Statistics) contain an additional 33 reports of deaths associated with engulfment in grain bins for 1993 through 1994 (NIOSH, unpublished data, 1996)<sup>3</sup>. No reliable estimates are available for nonfatal incidents.

Most grain storage bins are round, flat-bottomed structures with capacities of 20,000–100,000 bushels of grain (1,2); many older bins on farms are smaller and may hold ≤5000 bushels (Figure 1). Most bins on farms are filled through a hatch in the roof and emptied through a hole in the center of the floor (4). The mechanical augers used to unload bins can move grain at rates of up to 3000 cubic feet per hour (1,2), and a person can become completely submerged in the flowing grain in 8 seconds (1,2).

Because grain bin interior doors are designed to open inward, side doors cannot be opened during rescue efforts when grain levels are above the entry doors.

Suffocations in grain bins usually occur when bins are being emptied. During emptying, the flowing grain forms an inverted cone with strong enveloping forces, which can quickly draw a person under the surface (Figure 1) (1,2,4–6). A worker walking on stationary grain may sink only 12 inches<sup>4</sup>; in comparison, flowing grain has characteristics of quicksand and can rapidly induce immersion (1,2,4,5). Suffocation also can occur if a worker enters a bin containing caked, frozen, or spoiled grain. When such grain is unloaded from below, an overlying crust forms, which can collapse under the weight of a person standing or walking on the crust (1,2,4–6).

After considering these CDC recommendations, the AID contract officer, Al Ames, specified that the grain bin must have a permanent inside ladder and epoxy coatings. He rejected the pressure-sensitive indicators as unnecessary, since the epoxy would prevent the grain from adhering to side walls, and properly instructed workers would not be entering the grain bins during unloading anyway. "Put clear warnings on all entrances," Ames directed. "We can use the pressure indicator money to feed the starving Afghans."

Paul Prentice started work at the WGE elevator one Monday. His job orientation, which lasted one hour, included Points 2–5 of the NIOSH precautions reproduced above. The next day, as grain for Afghanistan was being emptied into a rail car, the flow slowed almost to a stop. "Damn -- caked again!" said Mo Moore, the WGE foreman. "Paul, climb up on top with this rake and break up the crust." Paul climbed up the external ladder, at the bottom of which was a large notice in red capital letters "Do Not Enter Bin During Loading Or Unloading Operations!" He climbed through the unmarked roof hatch with the rake and started down the internal ladder. The grain gushed out of the auger. No one ever saw him alive again.

"When we realized he'd fallen in there, we had to cut our way in with a torch," said Mo in a later interview. "I'd thought the bin had emptied enough that we could get in the doors if we needed to, but I was wrong." "The delay in reaching him might have killed him," suggested Dr. Don Dunn, the coroner. "But on the other hand, maybe it was a blessing. If they saved him, he might have had permanent brain damage."

Your senior partner would like a memo from you outlining the potential theories of recovery, the defenses the estate is likely to encounter, and the best arguments for overcoming those defenses. She would also like your tentative evaluation of whether the case is worth taking, and your thoughts on what other key facts, if any, will need to be ascertained. Write the memo.

Measures to prevent suffocations associated with grain bins include 1) updating existing grain bins by installing safety features that are now standard for most newly manufactured bins (e.g., installation of permanent inside ladders and warning stickers to alert workers to the hazards of entrapment and suffocation); 2) installing pressure-sensitive indicators on bin walls to allow workers to determine the level of the grain without entering the bin; 3) using epoxy coatings to prevent caked grain from adhering to the inside walls of bins; and 4) encouraging grain bin manufacturers and distributors to review instruction manuals with customers. In addition, NIOSH recommends the following precautions to reduce the risk for suffocation related to immersion in flowing grain (4,7):

1. Workers should be educated about the risks for suffocation and trained in safe work practices and rescue measures applicable to flowing grain hazards.
2. Workers should never enter grain storage structures while grain is being loaded or unloaded.
3. Workers should never enter storage areas below grain that is adhering to side walls.
4. If entry into a bin is necessary, workers should use safety equipment designed to keep the worker above the grain surface; workers should never stand on top of grain. In addition, all conveying equipment, whether automatic or manual, should be shut off, locked, and tagged to prevent inadvertent operation.
5. When breaking up surface crusts, workers should remain positioned outside the bin and use a wooden pole or a weighted line to dislodge the crusted grain.