



THE FORENSIC ENGINEERING REPORT

I-ENG-A® [IN-JUH]

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INSIDE THIS ISSUE:

Egg Farm Collapse	1-2
Member Firm of the Month	1,3
Engineers: Geeks or Normal Citizens?	2
Comedy Relief	2
Car and Auto Recalls	3
Tire Recalls	3
Product Recalls	3

HURRICANE UPDATE Predictions Increase

- Entire U.S. coastline - 74% (average for last century is 52%)
- U.S. East Coast Including Peninsula Florida - 50% (average for last century is 31%)
- Gulf Coast from the Florida Panhandle westward to Brownsville - 49% (average for last century is 30%)
- Above-average major hurricane landfall risk in the Caribbean

WHICH CAME FIRST, THE CHICKEN OR THE EGG?

Egg Farm Collapse

As investigative engineers, we come across quite a diverse range of experiences and often-times these stories have very interesting conclusions. The following is a summary of an actual investigation involving a building collapse on an egg farm. The owner reported the following to the investigator:

He was driving the front loader and cleaning some of the chicken manure on the ground level of the building. He was exiting and entering the building by the eastside door. About 100 feet south of the east door, when lifting the hoe of the loader, the hoe hit the side of one bar joist beam, at approximately the center of the beam span. A few hours later he noticed the upper level conveyors were not running in the first and second row, east of the building. He found that the

two conveyors' engine housings were tilting to the south. He turned the electrical power off and became very concerned. He notified a few people around and got them out of the building. Soon after, the east bay and two first rows of cages at the east side of the structure came down and most of the east wall caved in.

The I-ENG-A Member firm was retained to perform an evaluation to determine the failure mechanism of the building collapse. In addition, assistance was also requested to provide guidelines on securing the building to supervise shoring being done. This effort allowed the workers to safely evacuate the 50,000 chickens without further settlement of the structure

(a load of 150,000 pounds being moved out from the collapsed structure).

The investigation and the interviews revealed the following pertinent items: The building is an agricultural building on a chicken egg farm with a "non-conventional" steel frame. Being an agricultural building, it is exempt of the requirements of the Uniform Building Codes. This does not mean that the structure was unsafe.

The components of the building included a concrete slab which is soiled and accumulates the chicken manure that drops from the floor above.

The interior environment is aggressive and humid with strong uric-ammonia scent, creating a condition for long

MEMBER FIRM FEATURE : RIDDICK ENGINEERING CORP.

Little Rock, AR I-ENG-A® Member

Riddick Engineering Corporation was established in 1978. Since beginning as an I-ENG-A member in May, 2001, the firm has successfully completed hundreds of assignments for its insurance industry clients. The firm's president, Edgar Riddick, III, PE is a structural and mechanical engineer. Over the years, Mr. Ed Riddick, has engineered major projects such as MRI installations for Baptist Health, process design for Arkansas Steel Associates, explo-

sion-proof rooms for Remington Arms, HVAC and paving renovations for the Little Rock School District, infrastructure design for West and East Asian countries, time and motion studies for several prominent industries, energy conservation and co-generation studies, as well as comprehensive Mechanical, Electrical, Pipe and Plumbing and Structural design. The company is well known and received for its forensic engineering services and scientific

application studies. Such projects range from mold investigations and major fire cause and origin investigations to medical robotics design.

In recent years forensic and investigative engineering has rapidly become a significant part of Riddick Engineering Corporation.



WHICH CAME FIRST, THE CHICKEN OR THE EGG? CONT'D

term corrosion of some building members.

Inspection of steel members on the westside wall, revealed various column(s)/floor beam(s) connections that were significantly corroded.

The zinc-coated steel in the barn (galvanized steel) is in a corrosive environment. Zinc will be sacrificed first and the steel is protected until the zinc is dissolved. Steel does rust, and the steel members of this building have been in truly unfortunate circumstances, exposed to constant drops of manure, wetting and drying and in a very acidic atmosphere.

Steel corrosion got to steel members and the loss of the section began to occur.

The investigation concluded that the impact contributed to the building collapse, even though pre-existing corrosion existed at some locations, thus weakening the structure.

There were similar accidents in the past and the building did not fall. Records show that columns had been knocked out, but someone noticed and shored the structure before the failures. There is the possibility that everything that happened before did not 'hit a critical spot' and the structure stood up to the task to distribute the extra load for the members around to catch it.

The recent incident caused gradual redistribution of loads and subsequent failure of parts of the structure. While the overall structure was somewhat weakened by pre-existing conditions, the impact was "the straw that broke the chickens back."

The investigation revealed that the building floor was about 54% collapsed and roof collapse was about 77% of the total roof area. It was recommended that the structure be demolished saving the concrete slab for re-use of a new structure.

ENGINEERS: GEEKS OR NORMAL CITIZENS?

Now isn't that the question of the century. I guess since I am an engineer this message might be a bit biased. But let me address this burning issue from an unbiased of a perspective as I can muster.

They always seemed to be the nerds that had the answer for the teacher in science and math class and they were perpetually right. #\$\$^&* In gym class they never seemed to be able to quite get it right. Of course they understood just what angle the ball would bounce but couldn't get it through the hoop or in the goal.

Well the reality is that for some reason, either parental upbringing or outside guidance, the engineer's mind is filled with the need to have things correct. He or she has spent a lifetime learning that must be right and within the laws of science and mathematics. You must agree that you want the bridge that you are driving over to be designed correctly and if you are working on the top floor of your office building you do not want it to fall down. How about when you are on your next flight. YIKES!

On the lighter side engineers know how to appreciate life too. What other profession would adopt Lady Godiva as their Patron Saint and embolden her into their drinking songs.

I believe that Engineers are normal citizens with a need to do the right thing. So next time you run into one don't make fun of his calendar with a hundred keys they designed just about everything that you use.

Tom Fraser is a Professional Engineer with over thirty years of engineering experience. He is licensed in NY, PA, MD, D.C., VA, NC & USVI.

Mr. Fraser is President of Fraser Wiley & Associates and Fraser Investigative Engineering Services (I-ENG-A Member, Rochester—Buffalo, NY)

by: Tom Fraser, PE

COMEDY RELIEF CORNER

The following are actual statements found on insurance forms where car drivers attempted to summarize the details of an accident in the fewest possible words. The instances of faulty writing serve to confirm that even incompetent writing can be highly entertaining.

1. Coming home I drove into the wrong house and collided with a tree I don't have.
2. The other car collided with mine without giving warning of its intention.
3. I thought my window was down, but I found it was up when I put my head through it.
4. I collided with a stationary truck coming the other way.
5. A truck backed through my windshield into my wife's face.
6. The guy was all over the road. I had to swerve a number of times before I hit him.
7. I pulled away from the side of the road, glanced at my mother-in-law and headed over the embankment.

Check next issue for more relief!

Jokes from:
www.einsuranceprofessional.com



MEMBER FIRM FEATURE RIDDICK ENGINEERING

"Through the use of our engineering and technical expertise, Riddick Engineering is capable of performing a wide variety of forensic investigative services including but not limited to fire cause and origin, lightning damage, traffic accident reconstruction, mechanical and structural failure analysis."

Based on the detailed investigative reports prepared by the firm, the insurance companies have been able to deny the claim or reduce their exposure, or subrogate to recover losses, and have given repeat assignments to the firm.

The I-ENG-A network of engineers & scientific consultants has solved thousands of investigations ranging from an exploding remote control hovercraft to a multimillion-dollar/hr datacenter fire loss. "We reassure our client with a disclosed upfront scope and having no geographical limitations, we insure quick response at minimum cost", Ed Riddick.

The office of Riddick Engineering is located at 4600 West Markham, Little Rock, AR 72205, (501) 666-7300.

RECENT USPC PRODUCT RECALLS

Innovative Scuba Concepts Recalls Diving Regulator Components Due to Drowning Hazard:

Swivel for a Scuba Regulator, For more information contact—Scuba Concepts Inc. at (800) 472-2740 or visit the firm's Web site at www.innovativescuba.com

Kayak Paddle Floats Recalled by NRS Due to Drowning Hazard:

For more information, call NRS toll-free at (877) 677-4327 or visit the firm's Web site at www.nrsweb.com

CPSC Warns Meerkat 50 Youth ATVs Defective and Dangerous:

Kazuma Pacific has sold at least 2,700 Meerkat 50 ATVs and has stated that they are continuing to sell the units that CPSC staff found to be defective. Kazuma dealers and Web retailers nationwide have sold this ATV since 2003 for between \$525 and \$825. The risk with these ATVs is severe because these vehicles are intended for children age 6 to 11. CPSC staff is requesting that consumers immediately report any incidents involving the Kazuma Meerkat 50 to the CPSC Hotline at (800) 638-2772.

Royal Products Recalls Pine Cone Candles Due to Fire Hazard:

For additional information, call Royal Products at (800) 693-1199 or visit the firm's Web site at www.royalproducts.com

Thermador® Ceramic Cooktops Recalled by BSH Home Appliances Corp. Due to Fire Hazard:

Model Numbers CIT362DS/01 and CIT302DS/01

For more information, contact BSH Home Appliances at (800) 758-1001, or visit the firm's Web site at www.thermador.com

West Marine Inflator Pumps Units:

About 1,400 Importer: Stearns Inc., of St. Cloud, Minn. (Note: The original importer Sevylor Inc., was recently acquired by Stearns Inc.) Hazard: The inflator pumps can explode during use, ejecting sharp plastic parts and posing a serious laceration hazard to consumers.

CAR & AUTO RECALLS & ALERTS

A Texas county sued Ford Motor Co. to force the company to tell all law enforcement agencies that Crown Victoria cars are at risk of gas-tank explosion and fires. The Wall Street Journal reports that Ford has recently settled four cases involving people killed or injured by fires in Crown Victoria cars.

Daimler Chrysler Corporation recalled the 2002 Jeep Grand Cherokee impacting 38,700 vehicles manufactured from July to September 2001 due to a defect in the onboard vapor recovery system. Fuel leakage in the presence of an ignition source could result in fire.

Car makers have long received complaints about placement of gas tanks in an exposed position, causing fire or explosion, leading to damage, injury or death. While most car makers now place gas tanks in a protected position, many cars, pickups and trucks (1973-1987 Chevrolet C and K series) are still regularly operating with an unsafe saddlebag fuel system.

TIRE RECALLS WARNINGS & ALERTS

According to the National Highway Traffic & Safety Administration (NHTSA) tens of millions of tires have been recalled in recent years. Defective tires include models made by Bridgestone-Firestone, Goodyear, and Cooper. Defectively designed or manufactured tires may suddenly lose their tread or explode (blow-out) causing the driver to lose control of the vehicle, resulting in a collision or accident. The NHTSA has reported at least 200 deaths and more than 700 injuries linked to accidents involving Firestone tires and Ford Explorers. The NHTSA requires tire makers to recall and or replace defective tires.

Information from:

<http://www.automobile-recalls.com>



Mailing Address Line 1
Mailing Address Line 2
Mailing Address Line 3
Mailing Address Line 4
Mailing Address Line 5

Primary Business Address
Your Address Line 2
Your Address Line 3
Your Address Line 4



FOR ENSURING SERVICE TO THE PROPERTY AND CASUALTY INDUSTRY SINCE 1991

COMPLIMENTS OF YOUR
LOCAL MEMBER FIRM

FIRM NAME

Primary Business Address

Your Address Line 2

Your Address Line 3

Your Address Line 4

Website

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CURRENT MAP OF MEMBER FIRM LOCATIONS

