



[Location] Pest Division

[address]



"SO, WHAT'S BUGGING YOU?"

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# Truly on ... the Rat



Commercial guide to rodent prevention and elimination and helpful pest prevention tips



Courtesy of

[LOCATION] PEST DIVISION

1-000-000-0000

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# Facts

Believed to originate in Malaysia as early as 4000 B.C., the rat plagued humans as early as the seventh century. Travelers transported the rodent, and it quickly populated its new territory.

Rat populations are found in virtually any type of environment.

- ▶ Nursing facilities
- ▶ Restaurants
- ▶ Supermarkets
- ▶ Warehouses
- ▶ Schools
- ▶ Prisons
- ▶ Cruise ships
- ▶ Naval vessels
- ▶ Food processing plants



Rats are the most destructive vertebrates in the world! In fact, the rat does \$2 Billion in damage in the U.S. each year. A rat will gnaw through anything softer than its teeth, including aluminum and adobe brick. It can literally destroy electrical wires, wood posts and even soft metal pipes. This very destructive behavior can result in fires from exposed wiring and gas/sewer line leaks. The Norway rat is considered the most destructive.

What conditions encourage a rat infestation? If food and harborage are available, the structure is a target for rodents.

## Signs of Infestation

- Fecal pellets along runways, feed areas and near nests. The Norway rat's droppings are capsule-shaped, while the Roof rat has spindle-shaped droppings.
- Wet or dried urine along traveled pathways (visible under ultraviolet light).
- Tracks visible on dusty surfaces.
- Smudge or rub marks on surfaces adjacent to traveled paths.
- Gnaw marks.
- Noises in walls, especially at night. Animals kept on site may become agitated because they hear rodent gnawing, digging, running and fighting.
- Burrow holes under sidewalks and similar surfaces.



Norway rat fecal pellets.

# 5 Critical Questions to ask before selecting a Pest Control Company



## 1. HOW LONG HAS THE COMPANY BEEN IN BUSINESS?

You need a company with a proven track record . . . one that you can depend on for the long-term. Truly Nolen has been in business for more than sixty years. Now, that's staying power!

## 2. IS THE PEST CONTROL COMPANY PROACTIVE?

Your pest control company should have a proactive plan to keep pests out of your home or business - before they get in and adversely affect your environment. Truly's Three Zone Pest Management Program gives creatures a one, two, three punch by building barriers to keep them out of your environment.

## 3. WILL A TRAINED, CERTIFIED TECHNICIAN INSPECT AND TREAT MY HOME OR BUSINESS?

The technician inspecting and treating your home or business should be professionally trained and continually educated. Truly Nolen employs trainers who make sure that our state-certified technicians are up to speed on the latest technology and most advanced techniques available. Our commitment is to provide you with the best possible pest management program with the least impact on your environment.

## 4. THERE HAVE BEEN MANY TECHNOLOGICAL ADVANCES IN THE INDUSTRY. DOES YOUR COMPANY TAKE ADVANTAGE OF THESE IMPROVEMENTS?

Your pest control company should use state-of-the-art methods that are environmentally sensitive. Truly Nolen technicians combine exclusion, mechanical traps and the strategic application of baits to address rodent activity.

## 5. WHAT IS THE COST OF THE PEST CONTROL SERVICE?

There are many variables in the price that pest management companies charge. What you are purchasing is protection - for your home or business, your family and your customers. While Truly Nolen is not the least expensive, we take great pride in delivering the most value for your money. Keep in mind that the difference between the most and least expensive companies is often just a dollar a day.

Ask your Truly Nolen inspector for a . . .

## Complimentary Pest Inspection

You'll receive a written report describing the pest management tasks that need to be addressed in your home or business. You'll find that this report is a valuable tool, regardless of your final decision.



# Solution



Bait is securely threaded on a rod and placed on a spindle inside the bait station.



Above & below - Technician affixes the bait box to a concrete stepping stone to provide a secure base.



A label is placed on inside of the station lid, tracking inspection & material replacement dates.

**Bait Station** This mechanical device is generally used to reduce rodent populations on a structure's exterior, thereby reducing the population pressure on the building and the chance that a rodent will access the interior of the structure. Rodent stations should be placed around the outside of a structure at intervals of 50-100 feet, depending on the activity and rodent pressure.

All bait stations must be tamper resistant. Each is secured to the ground with a stake or glued to a block-type surface so that it cannot be relocated, shaken, or moved by humans or animals. This keeps the control pattern intact, reduces the chance of an animal coming in contact with bait material, or the bait being deposited in an inappropriate place.

Stations are secured with an Allen wrench-type device per HACCP regulations.

A tag or inspection sticker is placed inside the station to document the unit's initial placement date and all subsequent inspections.



Bait station glued to a cement block and placed. It's ready for action!

With heavy rodent pressure, stations are monitored weekly or even daily. Trapped rodents are removed, and the trap is reset. If monitoring for rodent activity without any indication of a current infestation, stations are checked at least monthly.



# Facts

Rats live in colonies and share the same food source. As a nocturnal creature, they venture forth when it's dark and quiet. If one sees a rat during the day, it is a safe assumption that the structure has a significant rodent infestation.



The anatomy of the rodent gives it ready access to structures through holes and gaps that are no larger than one-half inch.

As a creature of habit, the rat usually travels no more than 150 feet from its nest, using its sense of smell as radar to guide it along established pathways, to identify food sources and to mate. It navigates along walls to avoid natural predators. The rat's whiskers and guard hairs are also used as a guidance mechanism. In exploring its territory, the rat will venture down a portion of a pathway, carefully exploring each segment until the entire path is well known. Each path has multiple safe stopping points or havens. Other paths in the environment are sequentially explored.

It is a rat's nature to feed indiscriminately on debris. As a result, the rodent comes in contact with many diseases. By its very presence, the rat contaminates the human environment with its urine, droppings and hair.



## Rat traits

- ✓ Dislike open spaces
- ✓ Always exploring
- ✓ Can jump as high 2-3 feet

- Rats swim through sewers. **WRONG!** A rat may drop down through sewer vent and come up a toilet, but they are not inclined to go underwater.
- Rats don't bite. **WRONG!** Thousands of rat bites are reported in the U.S. each year. Small children and infants are the most frequent bite victims and become susceptible to Rat Bite Fever. Symptoms of this disease may occur well after the bite wound has healed and include a reoccurring fever over period of weeks to months.
- Rats don't climb. **WRONG!** This rodent can climb rough walls, pipes, wires and anything else it can grasp. It can even walk across a thin wire stretched horizontally.



# Hazards

While there are at least thirty-four diseases associated with rodents, this list represents just a few.

**Plague** A disease that devastated Europe in the 14th century, it was spread by rats carrying infected fleas, which in turn infected man through flea bites. There are still periodic breakouts of this disease today. Plague is a bacterial disease affecting the circulatory and respiratory systems. It can manifest itself in man in the form of Bubonic Plague, Septicemic Plague, Pneumonic Plague, or Sylvatic Plague.



**Salmonella** Salmonellas bacteria occur in the intestinal tract of rodents and are transmitted to other mammals when they consume foods contaminated with excreta from infected rodents. This disease is probably much more common than realized. The severity of symptoms varies in humans. Typically, symptoms include diarrhea for about ten days, possibly leading to dehydration, with abdominal pain and a low-grade fever. Deaths from dehydration or septicemia are rare and usually occur in infants, debilitated persons, or the elderly.

**Leptospirosis** This disease is caused by a spirochete that exists in the blood and urine of the rat. Humans are infected when they handle or consume foods infected with rat urine. They can also be infected by wading in contaminated water. The infection results in yellow jaundice, a serious but generally non-life threatening disease. Laboratory confirmation of this disease is difficult.

**Trichinosis** Rats are infected with this minute roundworm by consuming excrement or meat infected with the worms. Through their excrement, rodents perpetuate the disease by infecting man's food supplies. The worms can be found encased in the muscles of mammals and birds. When imbedded, they exist in an animated state. When a suitable host (e.g., man, farm animal, rat) consumes the infected flesh, the worms re-activate, invade the digestive tract and reproduce themselves again and again.



**Rabies** Generally, rats in the U.S. are not a rabies hazard. However, health departments remain vigilant in their monitoring of this disease as it is related to rodent populations.



**Hantavirus** A distant cousin of the Ebola virus, this pulmonary illness can be a fatal. The virus is carried in the urine and feces of infected rodents. Initial symptoms are like those of the flu, namely fever, chills, muscle aches, headache, nausea and vomiting. A dry cough may occur. While it appears that the infected person is improving for a day or two, he/she transitions to respiratory failure. More than 50% of the diagnosed cases have been fatal. While there are no other direct links between this disease and the rat population, health departments remain vigilant in their monitoring of this disease as it is related to rodent populations.

# Solution

**Glue boards** As an alternative to the snap trap, a glue board will ensnare the rodent as it explores.

Advantages:

- Effective where there is an abundant food supply so rodents are less likely to take the bait.
- Can trap several animals with a single unit.
- Convenient and economical.
- Disposable - clean and easy to use.
- No approval needed to use glue boards in food plants.



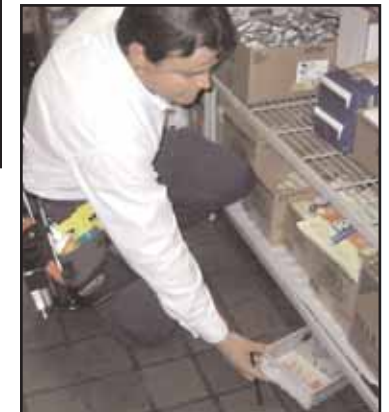
*Glue board in bait box.*

To prevent customer or employee contact with a glue board or prevent visual contact with the trapped rodent, the glue board can be placed inside a bait box.



*Above - Tent-shaped glue board placed in void under grocery store shelving units. Right - Glue board in bait box placed under food storage shelving in restaurant.*

With a strategically placed glue board, baiting is generally not necessary. However, the glue board can be baited with non-oil based foods to further enhance rodent interest.



More rats are trapped the first night than on subsequent nights.



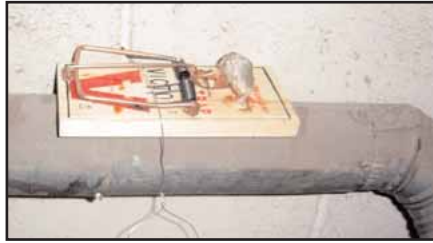
**Live trapping alternative** If the customer requests that the rodent be trapped alive and relocated for disposal, the technician can place multiple baited Hav-A-Hart traps throughout the structure.

# Solution

## Step #3 Control

Now that the external population has been excluded from the building interior, the technician must work to control those rodents already living inside the structure.

**Snap Trap** Placed along a wall or structural member in runways, the snap trap is positioned with the trigger toward the runway. Snap traps can also be used in corners, behind and under objects, or near areas showing abundant tracks or droppings. The technician may use multiple traps placed only a few inches apart. If the suspicious yet clever creature jumps the first trap, the next trap is sure to catch the rodent.



*Snap trap secured to pipe used as runway.*



*Cornered snap traps.*

When selecting bait, use a food type that is more attractive than those already present in the environment. Examples include peanut butter, bacon, tuna, dog/cat food, or raisins. Using a different bait selection in sequential traps may reduce bait shyness. For instance, bait the first trap with a meat substance, the next with a nut, and the third with cereal.



*Sample baits.*

While bait has significant value, a rat can often be trapped without using any bait because the trap is situated in a runway. Basically, the rat just wanders into the trap in his explorations.

Cleaning rat traps may be counterproductive. Rats seem to be attracted to traps that are already scented with rat odors.



*Snap trap secured inside bait station.*



*Snap trap/bait station placed in storage area along runway.*

# Solution

## The RED Zone

Servicing high profile public access areas without any noticeable sign of treatment.

Inspection and treatment includes:

- waiting areas (interior and exterior)
- dining room/bar areas
- patios
- restrooms
- cash register area
- all hallways with public access
- public telephone areas
- elevators & stairways



## The YELLOW Zone

Treating support areas, where pests generally enter the structure and breed.

Inspection and treatment includes:

- kitchens & food storage facilities
- employee lounges, break rooms
- utility service areas & janitorial closets
- employee restrooms & locker rooms
- loading docks/receiving & shipping areas
- business offices
- laundry/linens storage areas



Good treatment protocols in the Yellow Zone are the best defense for the Red Zone.

## The GREEN Zone

Protecting the business' image, beginning with first impressions at the front door.

Inspection and treatment includes:

- walkways
- parking lot
- landscaped islands
- publication dispensers
- benches
- trashcans
- driveway/customer drop points
- landscaped areas adjacent to walkways
- building perimeter and vertical surfaces
- roof, including eaves



# Solution

## Step #1 Exclusionary Measures

Exclusion is the first step in a rodent management program. Exclusion (a.k.a. rat-proofing or "building them out") implies that the technician prevents the rodent from entering the area targeted for control by sealing up cracks and crevices that provide harborage and easy access into the structure.



*Around incoming gas and water lines.*



*Around utility conduit.*



*Exterior crack sealed.*

Through the use of clear silicone caulk and stainless steel wool, exclusion is very effective at reducing or eliminating key insect harborage areas. Pictured above, a technician seals an opening around a spigot on the building's exterior.



*Screening off vents.*

### Rodent Control Checklist

- Screen roof vent pipes.
- Screen AC runway.
- Screen turbine bonnets.
- Screen eave vents.
- Place bait boxes.
- Place snap traps.
- Routinely inspect premises.
- Stuff stainless steel wool in exterior holes/openings into building, including openings around utility egresses.

Undertaking a rodent program without addressing needed repairs and remodeling will automatically set the stage for failure. Further, elimination of existing and potential harborage is essential to any exclusion program.

Rat proofing should also be done internally to prevent migration from area to area in the structure.



# Solution

## Step #2 Sanitation

Sanitation plays an important role in minimizing those conditions that attract rodents. A janitorial routine for the structure, both interior and exterior, should be established. All obscure locations, such as shelf corners, under cabinets and worktables, behind lockers and other equipment, should be swept out and checked for rodent reinfestation on a regular basis. Further, old nests and excrement must be removed from the structure.

**Garbage Disposal** Improperly handled garbage is a perfect food source for the rodent. In fact, it is possible to implement all necessary rat control measures and still experience increased rodent infestation due to careless garbage disposal. It's a matter of "population dynamics."

The customer is encouraged to use rustproof metal containers with tight fitting lids for all garbage and refuse disposal. The units should be of sufficient size to handle all refuse and allow the lid to securely fit atop the can. Garbage disposal areas should be as clean as possible and power washed routinely.



Although daily garbage pickup is not always feasible, refuse should be collected as frequently as possible. The technician should constantly check the garbage disposal area for evidence of rodent infestation.

**Commercial Storage Methods** Improperly stored items, especially edibles, provide food and harborage for the rodent. The technician's control activities are hindered when inventory or supplies are not securely stored. The wise customer realizes that he/she will reduce rodent damage to inventory if he/she uses proper storage techniques.

- Place all items on racks or pallets at least 8" to 12" off the floor.
- Leave at least 18" between stored goods and building walls. This allows for inspection, trapping/baiting and cleanup.
- Stacks should not be more than 6' wide, with a minimum 12" aisle between each for easy cleaning and inspection.
- Helpful hint: Paint an 18" border, or a white stripe 16" from the wall, around the storeroom perimeter. This will make detection of an infestation easier. While the customer may reduce storage space, it is a far greater inconvenience to have inventory loss due to contamination.



- Check incoming supplies for rodents. Containers often serve as a means of access for this unwanted visitor.