

## CASE STUDY:

Cockroaches and rodents  
in a manufacturing plant.



## An automobile manufacturing facility was experiencing problems with both Norway rats and American cockroaches.

### INTRODUCTION

Manufacturing plants, even when they do not produce food-related products, can attract pests since they can provide warmth, harborage, and sometimes water.

Common pests of non-food manufacturing facilities include vertebrate pests like birds and rodents, which can be fairly mobile and attracted to manufacturing facilities for warmth.

Other pests, like cockroaches, ants, flies, and spiders, can also invade these facilities. Because of exterior lights, assorted night-flying insects can be attracted to buildings, especially when located

near a body of water or rural location without much other competition.

Certain manufacturing plants are going to be more sensitive to pest contamination than others. So, a manufacturer of aluminum used in aircraft construction is not going to be able to tolerate insect impurities which may compromise the integrity of the metal. A manufacturer of medical devices will have a much lower tolerance for pests compared to an auto manufacturer. The sensitivity of the site must be considered in building the pest management program.

### COMMON PESTS OF NON-FOOD MANUFACTURING FACILITIES



Birds



Rodents



Cockroaches



Ants



Flies



Spiders



## CHALLENGE

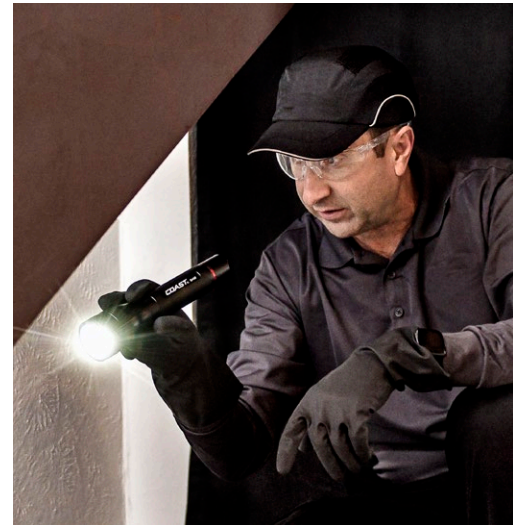
The primary target pests of non-food manufacturing plants will be invading from the exterior. For this reason, it is critical to make sure that the exterior lines of defense are well-designed and sufficient to prevent pest entry. This includes design considerations when the structure is built or renovated and pest proofing measures on an ongoing basis throughout the life of the structure.

One manufacturing plant had been experiencing problems with both Norway rats and American cockroaches. The facility manufactured cars; while areas where pests were active did not place the product at risk, there was overall concern for employee safety and wellbeing.

The American cockroach is the second most common cockroach species in the United States. It is considered a peridomestic species in that it can be found outdoors and indoors depending on temperature and geographic location. The facility in question was located in the Midwest and outdoor populations were ruled out since the cockroaches would appear year-round inside the building. American cockroaches are often associated with sewers and steam tunnels in urban areas, regardless of exterior temperatures. This pest is 1.5 to 2 inches in length as an adult. It is reddish brown in color and the adult is fully winged but is considered a weak flier. The area behind the head, called the pronotal shield, is marked with a pale-yellow border with a brown center. American cockroaches are considered a pest of medical importance. They can harbor pathogens responsible for foodborne illness on the hairs, legs and bodies. They have also been shown to trigger allergic reactions in some people and can contaminate foods and infested living spaces with odors from secretions they produce.

The Norway rat is the most common pest rat species in the United States. It is considered the third most successful mammal on earth behind the house mouse and humans. They prefer soil contact when available and will often burrow near structures. Like the American cockroach, they can harbor a variety of diseases including diseases indirectly spread by the parasites they carry such as fleas and ticks.

## INVESTIGATION



Upon investigation, it was found that both the American cockroaches and the Norway rats were entering the structure from exterior sources.

The American cockroaches were harboring in the sewer system and making their way into the facility through drains and sump pumps located in employee areas like offices, restrooms, and basements.

The Norway rats were based on the exterior but would occasionally enter the plant through poorly sealed doors or doors that were left open by employees for ventilation purposes. Numerous burrows were found in one exterior location near a dumpster where employees often took exterior breaks. The majority of this exterior area was paved, except for a small grassy patch. The rats took advantage of the limited space for harborage. Food was available in the area due to trash left behind by employees, even when properly discarded.



## SOLUTION

Our Technicians directly treated the exterior areas where rats were burrowing by placing pelletized bait into the burrows. The team maintained the bait for a period of several days, closed the burrow openings, and monitored for the reappearance of activity. We recommended sealing the small grassy patch with concrete to prevent future rodent burrowing.

The service also included placing additional rodent bait stations along the building perimeter to allow for continual monitoring and control as needed.

Technicians pest-proofed the doors and educated staff on the importance of keeping doors closed while not in use. Acting on another recommendation from our team, plant staff added trash receptacles with self-closing lids to help decrease accessibility to discarded trash.

To reduce future American cockroach activity, our experts requested that any drain not needed for water management be sealed. If a drain could not be sealed, the service team used insecticidal baits or installed drain screens or one-way valves. Based on the size and design of the drain, the American cockroach management plan called for use of granular or gel baits in drain treatment. The team placed granular baits on plastic-backed glue boards which were suspended inside larger drains and sump pumps and secured via wire onto grate covers.

## SUMMARY

Working in partnership with the customer, our team designed an integrated pest management program which included the use of non-chemical tactics and chemical tools, ultimately achieving full resolution of the American cockroach and Norway rat problems for the auto manufacturer.

Since both of these pests were coming into the plant from the exterior, the use of pest proofing methods was essential for the long-term control of the problem.

Chemical controls would only provide short-term results and a reinvasion of the pests was likely to occur.

Sealing drains and exterior entry points provided long term control.

Concrete sealing of the area where the rats were burrowing provided relief in an area frequently used by employees, reducing health risks and employee concern.

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