

Pest control treatment of Chevrolet Ridemaster Deluxe DS, 1940

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Background

The Memorial acquired a 1940 Chevrolet Ridemaster Deluxe, DS car in July 2002. It was initially transported to the Treloar C Workshop in Mitchell, which is classified as an unclean area, for condition reporting and undertaking essential work prior to relocation into the storage areas.

During the investigation of the Chevrolet, an infestation of carpet beetles was discovered in the white, woollen felted underlay of the driver's seat. Since it was winter at the time, the car was relocated to Treloar B, a storage area which is devoid of climate control and therefore quite cold. This action was taken since lower temperatures are known to slow the growth rate of insects, providing time to investigate treatment options. As a precaution, the car was wrapped in polyethylene sheets to ensure no pests escaped into the storage area.

Carpet Beetles

The eggs of this pest hatch within one to three weeks of laying and the larvae develop between three and thirty six months. Carpet beetles eat proteinaceous materials such as wool and silk, but are known to also eat synthetic materials containing proteinaceous materials, or those contaminated with food or animal excrement.

Treatment Options

Several options were considered for the treatment of the carpet beetle infestation.

These were:

- Pestigas (pyrethrum in carbon dioxide carrier) - pyrethrum is a volatile substance which when used with a gaseous carbon dioxide carrier is non-residual. Pest control sprays are effective in killing the larvae and adults but not the eggs and pupae. Therefore spraying must be repeated approximately every four weeks, two to four times in order to eliminate the infestation. Regular vacuuming is also recommended to limit the availability of food and aid in the early detection of further outbreaks.
- Freezing - A local commercial refrigeration company was contacted to determine whether freezing the vehicle would be an option. The vehicle would require the temperature to remain at -18°C for one week to ensure all materials reached the

temperature required to kill all stages of life for at least forty eight hours. A refrigerated container capable of producing the required temperature change was available. However, freezing was not chosen as it would result in further deterioration of the rubber components, varying degrees of expansion and contraction of the materials used in the vehicle's construction and difficulty in bagging the object before freezing to prevent condensation. Another consideration was the possibility that, despite the fluids being drained from the car, the reaction of the old seals to freezing is unknown and might result in further damage.

- Anoxic Environment – the Memorial would consider this method as a treatment option for large technology object treatments in the future but it was not practical in this instance as we did not have a budget for the purchase of the specialized equipment. While successful accounts of anoxic treatments in other cultural institutions have been published, we had some questions as to its effectiveness for a vehicle of this type and more time would have been required to research this option than was available.

The Treatment

Pestigas was the chosen option for several reasons; it has proven to be effective, requires no specialized equipment, and it is both less expensive and less labour intensive to implement than the anoxic environment.

The car was first brought back into the workshop area where the treatment was to be conducted. The treatment was undertaken in the workshop as it was thought that exposing the beetles to warmer conditions would increase activity and growth rate and therefore increase the effectiveness of the treatment. All of the spare and loose parts were removed from the vehicle and placed on the floor around it, the bonnet, boot, and doors were propped open, and the mats were raised off of the floor with blocks of ethafoam in order to allow greater dispersion of the Pestigas throughout the vehicle.

Next, a tent was constructed around the car on the workshop floor. The tent was required to provide a sealed environment that could be filled with the Pestigas and resealed. The tent was built using a framework of plastic conduit lashed together with duct tape. The framework was then covered with sheets of polyethylene plastic sheets taped together with duct tape and taped to the floor.

Two Pestigas treatments were applied to the vehicle, eight weeks apart. The car was contained throughout the treatment within the sealed tent in the workshop, at a constant temperature of 18°C.

One week after the second application of Pestigas, the tent was disassembled. Several dead spiders were found on the floor under the vehicle. The external surfaces were all wiped down and the interior thoroughly vacuumed, including the infested underlay.

Monitoring

The vehicle has been inspected every six months for further outbreaks but none have been found.