

## Weights & Loading of M1009 CUCV 3/4 Ton Blazer

*Roscommon Equipment Center*  
**Northeast Forest Fire Supervisors**  
*in Cooperation with*  
**Michigan's Forest Fire Experiment Station**

The M1009 Commercial Utility Cargo Vehicle (CUCV) is a General Motors Model K10516 Blazer nominal rated at 3/4 ton capacity. It could be utilized for wildfire use by installing a small tank and pump unit. This paper provides information on the load capacity and estimated tank size for this type of conversion.

The M1009 curb weight and weight ratings in pounds are:

	<u>Curb Weight</u>	<u>Weight Ratings</u> <sup>1</sup>
Front	2,835	2,945 (FAWR)
Rear	2,365	3,455 (RAWR)
Total	5,200	6,400 (GVWR)

The available payload is approximately 1,200 lbs. and the wheelbase is 106.5 inches.

The user should not operate the vehicle above the stated Gross Vehicle Weight Rating (GVWR).

### Loading Characteristics with Slip-On Tanks

REC analyzed the M1009 for installing a small water tank. Generally there is very little load capacity available with these units. We estimate that the maximum water tank capacity will be no more than 60 gallons.

For a 50 gallon water tank unit, we estimate the finish weight as follows:

Occupants: two at 200 lbs. each	400 lbs.
Water weight - 50 gallons	420 lbs.
Tank, small pump, storage and other	250 lbs.
<u>Curb weight from above</u>	<u>5,200 lbs.</u>
 Total of above weights	 6,270 lbs.

This leaves slightly more than 100 lbs. for error, so be careful. Selection of tank material and pump will be critical to keep the weight down. A plastic tank would be appropriate. The Aqua-Duk 12 volt electric driven roller pump<sup>2</sup> or under the hood belt driven pump could save weight.

The above calculations assume that the Blazer's rear top and rear seat are kept in place. The vehicle can be converted to an open cargo area unit by removing these items and adding a rear cab panel. The top is attached by a few bolts and can be removed easily. It weighs 160 lbs. The rear seat weighs about 60 lbs. Assuming that you add a 50 lb. (with window glass) rear cab panel, remodeling could gain 170 lbs. additional payload. This translates to about 20 more gallons or additional storage weight. About 60 lbs. more can be realized by removing the spare tire.

Remember to weigh the completed vehicle with occupants and all items that will be dispatched to assure the final product does not exceed either the axle or gross vehicle weight ratings. REC provides a calculator on its web site (see Footnote 2) to input the weights of the specific items you plan to add to a vehicle. Your inputs will provide an estimate of the final vehicle weight.

<sup>1</sup> The FAWR (Front Axle Weight Rating) and RAWR (Rear Axle Weight Rating) vary for different CUCV models. The listed ratings are the more conservative, a wise choice to use with an older vehicle.

<sup>2</sup> REC evaluated the Aqua-Duk pump for member agencies as Project #50. This pump is singled out here only because its 12 volt DC electric drive is unique and may provide benefits for this situation. This should not be taken as an endorsement for this product to the exclusion of others. An online version of REC Project #50 is available at <http://www.dnr.state.mi.us/www/fmd/ffes/rechome.html>.