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U.S. ARMY ABERDEEN TEST CENTER  
ABERDEEN PROVING GROUND, MARYLAND 21005-5059  
TEST RECORD

ATEC Project No.: 2007-DT-ATC-AFSPT-D2979  
Test Type and Title: Armored Vehicle Roll-Over  
Test

12 1 MAY 2007  
Dates of Test: 13 November 2006  
through 1 March 2007

Authority: ATEC Decision Support  
System 14 September 2006

Test Record No.: AD-V-25-07

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## TEST ITEM

One Ballistic Engineered Armored Response Counter Attack Truck (BearCat), vehicle identification number (VIN) 1FDA57P76EC11173, was provided by Lenco Industries of Pittsfield, Massachusetts, for testing at the U.S. Army Aberdeen Test Center (ATC), Aberdeen Proving Ground (APG), Maryland.

The Lenco BearCat is an armored personnel carrier constructed on a commercially available Ford Motor Company F-550 Chassis with modifications by Lenco Industries providing seating capacity for ten passengers. Modifications include a shortened wheelbase, a one-piece armor hull constructed of 1.27 centimeter (cm) (0.5 inches (in.)) thick high-hard certified ballistic steel, ballistic glass, nine gunports and a myriad of other available options. The U.S. Air Force Space Command, Directorate of Security Forces, intends to utilize the BearCat as a standardized security vehicle at Peterson Air Force Base, Colorado, in replacement of their current High Mobility Multi-purpose Wheeled Vehicle (HMMWV) fleet.

## SUPPORTING FACILITIES AND INSTRUMENTATION

### a. Facilities

- (1) ATC Engineering Test Facility (Building 436)
- (2) ATC Tilt Table
- (3) ATC Munson Test Area (MTA)
- (4) ATC Perryman Test Area (PTA)
- (5) ATC Churchville Test Area (CTA)
- (6) Philips Army Airfield (PAAF)

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TR No. AD-V-25-07  
10

g. Tilt Table. The static rollover threshold of the BearCat at GCW was measured using the ATC Tilt Table. Maximum side slope angle (accuracy  $\pm 0.2$  degree of reading) and simulated lateral acceleration (accuracy  $\pm 0.01$  degree of reading) were determined with both the left and right side of the vehicle positioned upslope. Static rollover results are presented in Table 7. A photograph of the BearCat on the Tilt Table is shown in Figure 6.

TABLE 7. STATIC ROLLOVER THRESHOLD RESULTS OF THE BEARCAT

Vehicle Side Upslope	Wheel Location	Rollover Measurement			
		VCW		GCW	
		Side Slope, degree	Simulated Lateral Acceleration, <i>g</i>	Side Slope, degree	Simulated Lateral Acceleration, <i>g</i>
Driver side	Axle 2 outside	37.0	0.75	36.4	0.74
	Axle 2 inside	37.7	0.77	36.8	0.75
	Axle 1	37.9	0.78	36.8	0.75
Curb side	Axle 2 outside	36.8	0.75	36.4	0.74
	Axle 2 inside	37.7	0.77	37.6	0.77
	Axle 1	38.2	0.79	37.6	0.77



Figure 6. BearCat on the Tilt Table at rollover threshold.

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