

TEST RESULT SHEET



TITLE: Impact Test on Road-Blocker

MIRA Ltd

MIRA-2005-1008214

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Watling Street,
Nuneaton, Warwickshire
CV10 0TU
Tel : +44 (0) 24 7635 5000
Fax : +44 (0) 24 7635 8000

Test No:	D0006	Customer:	Frontier Pitts Ltd
Test Date(s):	21 January 2005	Client Liaison Engineer:	Mr George Liddle
Authority:			

Test Objective/Method/Specification No:

The test was conducted to prove the arresting capability of a Frontier Pitts Road-blocker when impacted with a 6,804kg (15,000lb) test vehicle at a speed of 80km/h. The test was conducted in accordance with the Department of State test standard SD-STD-2.01 Revision A, Certification Class K12.

Specimen Description/Part No(s):

The system under test was described as Roadblocker. The Road-blocker was installed, on the MIRA Ltd test site, by Airtay Construction, to drawings supplied by Frontier Pitts Ltd. The installation was carried out on 10 January 2005 using concrete of 20mm aggregate, 50 slump and 35 newton as specified by Frontier Pitts Ltd.

An International 4700 DT466E Medium duty truck was purchased to act as the test vehicle. The vehicle was ballasted to a test weight of 6765kg by the addition of 1 concrete block and two steel blocks, rigidly attached to the load bed. Principal dimensions of the vehicle are shown in Table 1:Details of test vehicle.



Test Equipment:

The test was carried out on the Highway And Vehicle Open-Air Crash (HAVOC) facility. Vehicle propulsion to the impact was by use of a 2 MW, computer controlled feedback, 11kV DC electric drum winch. Guidance of the test vehicle to the required impact point is by means of a tensioned wire guidance device. A 14mm steel cable was run along the prescribed vehicle trajectory and anchored at the impact end. The tensioned cable ran through an attachment, which controlled lateral location of the vehicle by applying a steering force through the front wheels. Both towing and guidance cables were released approximately 3m prior to impact. Vehicle speed was measured by two sets of contact event timer devices positioned a short distance from the impact point. Photographic coverage of the test was carried out using a still camera and high-speed cameras running at 250 frames per second. MIRA Ltd HAVOC facility has been accredited by UKAS to ISO17025 for conducting tests on roadside furniture to EN1317, EN12767 and NCHRP350.

Results:

The test vehicle impacted the roadblocker at 79.5km/h and an angle of 0deg with impact occurring XXXmm Left of target point.

The vehicle was brought to a complete halt by the blocker. The bonnet assembly broke loose and flew forward past the blocker by 15m. No other part of the truck passed the impacted face of the blocker during the test. The front axle of the truck was pushed rearwards impacting the fuel tanks on both sides of the vehicle. The fuel tank on the left hand side of the vehicle was punctured and leaked diesel post-test.

The penetration of the front of the vehicle load-bed was measured as being -0.98m in relation to the inside edge of the blocker, complying with the SD-STD-2.01 Revision A requirement of penetration to be less than +1m.

The blocker mechanism had "over-centred" during impact and could not immediately be lowered. Once the lifting cams had been forced back past centre point, the hydraulic mechanism was used to raise and lower the blocker as normal. It was thought that adjustment of the limit switch would prevent the blocker extending over-centre.

Attachments/Notes:

Table 1: Details of Test Vehicle
Appendix A: Still photographs

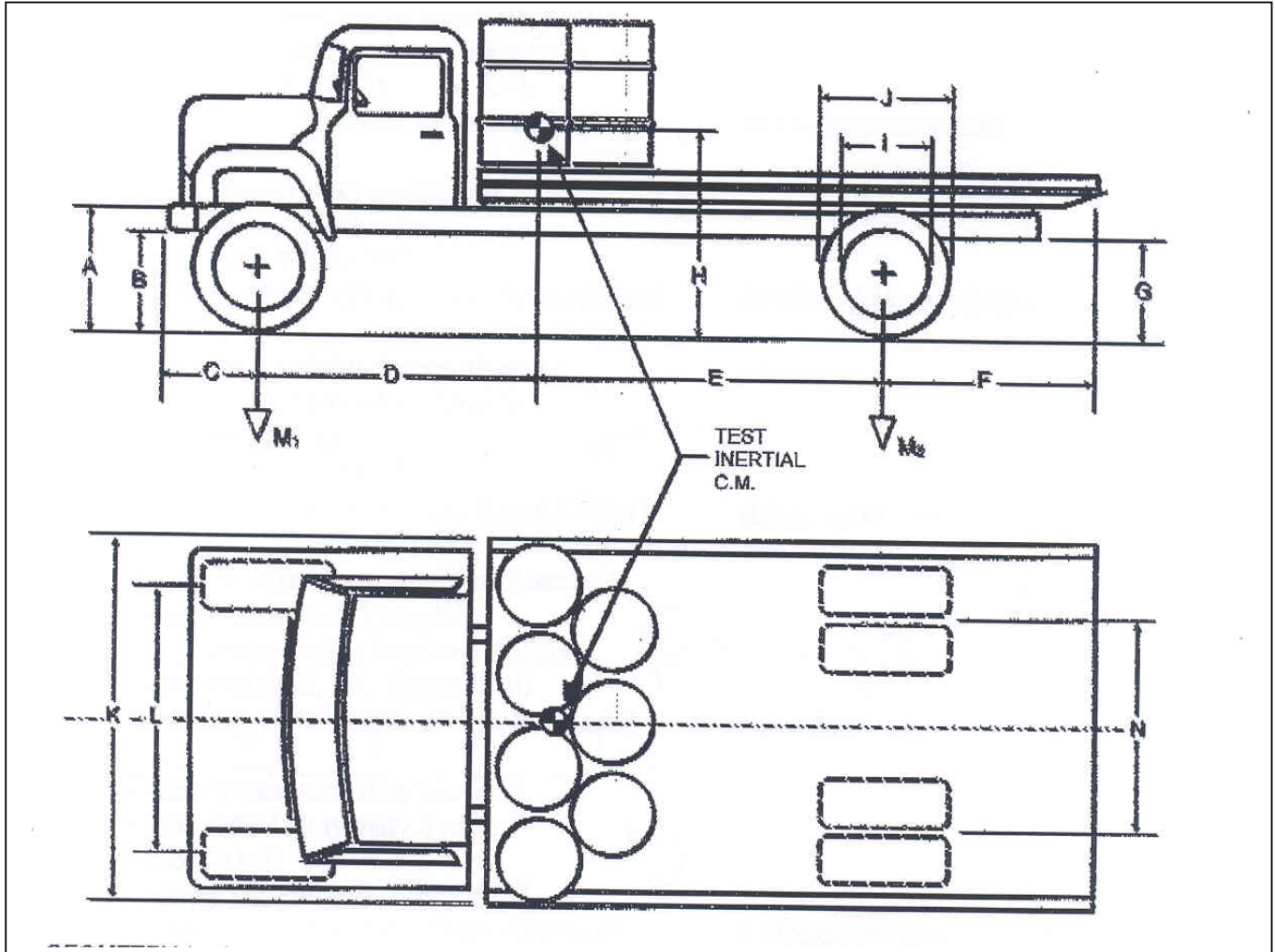
	Name	Position	Signature	Date
Prepared By	D. Johnstone	Project Engineer		
Verified By	J. Gleave	Manager, Crash & Structures		

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Table 1: Details of Test Vehicle



Date 21 Jan 05 Test No D0006 VIN _____ Make International
 Model 4700 DT466E Year _____ Odometer _____ Tyre Size _____



GEOMETRY (mm)

A 690 B 430 C 790 D 3448 E 2112 F 2750 G 1160
 H N/a I 590 J 940 K 2430 L 2075 N 1800

MASS DISTRIBUTION (kg)

	KERB	TEST INERTIAL
M_1	N/a	2570
M_2	N/a	4195
M_{total}	5970	6765

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Appendix A: Still Photographs



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