

Road vehicles — Multimedia data exchange format for impact tests

Véhicules routiers — Format d'échange de données multimédia pour les essais de choc

Related electronic document D

NHTSA Compatibility

— Version 1.6 —

Revision 2

No essential changes to version 1.2

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RED D : NHTSA Compatibility

D.1 File Organization

The information is stored in several different types of files, written to the NHTSA subdirectory of the test root directory.

- one 'test information file' for the whole test (**see D.1.1**)
- one 'vehicle information file' describing the vehicle(s) and/or moving barriers used in the test (**see D.1.2**)
- one optional 'barrier information file' describing any fixed barrier used in the test (**see D.1.3**)
- one optional 'occupant information file' describing any occupants used in the test (**see D.1.4**)
- one optional 'restraints information file' describing the restraints used in the test (**see D.1.5**)
- examples of NHTSA compatibility files generated for a New Car Assessment Program test (**see D.1.6**)

Each line begins with a description field with maximum 28 characters. Position 29 may be a colon. The test information shall start at position 30. 'TAB's' are not allowed. For description fields it is not required to be case-sensitive.

Comment lines may be used at any line and shall be marked by the descriptor 'Comments'. Each following line of a comment shall also begin with the descriptor 'Comments'. Comment lines should not contain information readable for computer programs.

D.1.1 NHTSA Test Information Addendum Descriptor File

This file contains additional information concerning the test set up and/or conditions required to make the ISO-MME impact test dataset transportable into the NHTSA EV5 data exchange format. Refer to the NHTSA Test Reference Guide (NHTSA TRG), Volume 1, Vehicle Tests, General Test information section, Version 5 (NTRGV1.PDF -- referred to as TRG in the "Remarks" column) for extended field definitions and codes. This document is available on the NHTSA web site at

<http://www-nrd.nhtsa.dot.gov/software/test-reference-guides/test-reference-guides.html>

File Name: 'testnumber'.TST

Location: NHTSA subdirectory

Contents:

Field descriptor:	Optional:	Test Result		Remark:
		Attribute:	Data format:	
Laboratory test ref. Number			alphanumeric	see "Test Descriptor File"
Test Type	O		alphanumeric	coded field, see TRG
Test Configuration			alphanumeric	coded field, see TRG
Track Surface	O		alphanumeric	coded field, see TRG
Track Condition	O		alphanumeric	coded field, see TRG
Closing Speed		R	float	m/s, see TRG
Impact Angle (clockwise)			integer	0 to 359 degrees, see TRG
Offset	O		float	meters, see TRG
Side Impact Point	O		float	meters, see TRG
Comments	O		alphanumeric	multiple lines, 70 char maximum

D.1.2 NHTSA Vehicle Information Addendum Descriptor File

This file contains additional specification information on the test vehicle(s) and/or moving impactor(s) required to make the ISO-MME impact test dataset transportable into the NHTSA EV5 data exchange format. Refer to the NHTSA Test Reference Guide, (NHTSA TRG), Volume 1, Vehicle Tests, Vehicle Information section, Version 5 (NTRGV1.PDF -- referred to as TRG in the "Remarks" column) for extended field definitions and codes. This document is available on the NHTSA web site at

<http://www-nrd.nhtsa.dot.gov/software/test-reference-guides/test-reference-guides.html>

File Name: 'testnumber'.VEH

Location: NHTSA subdirectory

Contents:

Field descriptor:	Optional:	Test Result Attribute:	Data format:	Remark:
Vehicle Number 1				1 or M see RED B 'Test Object'
Vehicle Make 1			alphanumeric	free text
Vehicle Model 1			alphanumeric	free text
Vehicle Year 1			integer	4 digit year
Body Type 1			alphanumeric	coded
VIN 1			alphanumeric	free text
Engine Type 1	O		alphanumeric	coded field, see TRG
Engine Size 1	O		float	liters
Transmission Type 1	O		alphanumeric	coded field, see TRG
Vehicle Test Weight 1			integer	kgs, see TRG
Wheel Base 1			float	meters, see TRG
Vehicle Length 1			float	meters, see TRG
Vehicle Width 1			float	meters, see TRG
Vehicle Center of Gravity 1			float	meters, see TRG
Steering Column Separation 1	O		alphanumeric	coded field, see TRG
Column Collapse Mechanism 1	O		alphanumeric	coded field, see TRG
Vehicle Modifications 1	O		alphanumeric	50 characters maximum
Vehicle Speed 1		R	float	m/s, see TRG
Crab Angle 1			integer	degrees, see TRG
Principal Dir of Force 1	O		integer	degrees, see TRG
Bumper Engagement 1	O	R	alphanumeric	coded field, see TRG
Sill Engagement 1	O	R	alphanumeric	coded field, see TRG
A-Pillar Engagement 1	O	R	alphanumeric	coded field, see TRG
Damage Profile Distance 1-1	O	R	float	meters, see TRG
Damage Profile Distance 2-1	O	R	float	meters, see TRG
Damage Profile Distance 3-1	O	R	float	meters, see TRG
Damage Profile Distance 4-1	O	R	float	meters, see TRG
Damage Profile Distance 5-1	O	R	float	meters, see TRG
Damage Profile Distance 6-1	O	R	float	meters, see TRG
Vehicle Damage Index 1	O	R	alphanumeric	coded field, see TRG

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Total Length Indentation 1	O	R	float	meters, see TRG
Center Damaged Area to CG 1	O	R	float	meters, see TRG
Maximum Crush Distance 1	O	R	float	meters, see TRG
Angle of Moving Cart 1	O		integer	degrees, see TRG
Veh Orientation on Cart 1	O		integer	degrees, see TRG
Comments	O		alphanumeric	multiple lines, 70 char maximum

The following block describes test object 2, i.e., vehicle or moving impactor 2

Vehicle Number 2			integer	2, see RED B, 'Test Object'
Vehicle Make 2			alphanumeric	free text
Vehicle Model 2			alphanumeric	free text
Vehicle Year 2			integer	4 digit year
Body Type 2	O		alphanumeric	coded
VIN 2			alphanumeric	free text
Engine Type 2	O		alphanumeric	coded field, see TRG
Engine Size 2	O		float	liters
Transmission Type 2	O		alphanumeric	coded field, see TRG
Vehicle Test Weight 2			integer	kgs, see TRG
Wheel Base 2			float	meters, see TRG
Vehicle Length 2			float	meters, see TRG
Vehicle Width 2			float	meters, see TRG
Vehicle Center of Gravity 2			float	meters, see TRG
Steering Column Separation 2	O		alphanumeric	coded field, see TRG
Column Collapse Mechanism 2	O		alphanumeric	coded field, see TRG
Vehicle Modifications 2	O		alphanumeric	50 characters maximum
Vehicle Speed 2		R	float	m/s, see TRG
Crab Angle 2			integer	degrees, see TRG
Principal Dir of Force 2	O		integer	degrees, see TRG
Bumper Engagement 2	O	R	alphanumeric	coded field, see TRG
Sill Engagement 2	O	R	alphanumeric	coded field, see TRG
A-Pillar Engagement 2	O	R	alphanumeric	coded field, see TRG
Damage Profile Distance 1-2	O	R	float	meters, see TRG
Damage Profile Distance 2-2	O	R	float	meters, see TRG
Damage Profile Distance 3-2	O	R	float	meters, see TRG
Damage Profile Distance 4-2	O	R	float	meters, see TRG
Damage Profile Distance 5-2	O	R	float	meters, see TRG
Damage Profile Distance 6-2	O	R	float	meters, see TRG
Vehicle Damage Index 2	O	R	alphanumeric	coded field, see TRG
Total Length Indentation 2	O	R	float	meters, see TRG
Center Damaged Area to CG 2	O	R	float	meters, see TRG

Maximum Crush Distance 2	O	R	float	meters, see TRG
Angle of Moving Cart 2	O		integer	degrees, see TRG
Veh Orientation on Cart 2	O		integer	degrees, see TRG
Comments	O		alphanumeric	multiple lines, 70 char maximum

D.1.3 NHTSA Barrier Information Addendum Descriptor File

This file contains additional information concerning any fixed barrier struck in a vehicle impact test required to make the ISO-MME impact test dataset transportable into the NHTSA EV5 data exchange format. Refer to the NHTSA Test Reference Guide (NHTSA TRG), Volume 1, Vehicle Tests, Barrier Information, Version 5 for extended field definitions and codes. This document is available on the NHTSA web site at

<http://www-nrd.nhtsa.dot.gov/software/test-reference-guides/test-reference-guides.html>

File Name: 'testnumber'.BAR

Location: NHTSA subdirectory

Contents:

Field descriptor:	Optional:	Test Result Attribute:	Data format:	Remark:
Barrier			B, K, or P	see RED B 'Test Object'
Barrier Shape	O		alphanumeric	coded field, see TRG
Rigid or Deformable Barrier	O		alphanumeric	coded field, see TRG
Angle of Fixed Barrier	O		integer	degrees, see TRG
Diameter of Pole Barrier	O		float	meters, see TRG
Comments	O		alphanumeric	multiple lines, 70 char maximum

D.1.4 NHTSA Occupant Information Addendum Descriptor File

This file contains additional test specification data required to make the ISO-MME impact test dataset transportable into the NHTSA EV5 data exchange format. Refer to the NHTSA Test Reference Guide (NHTSA TRG), Volume 1, Vehicle Tests, Occupant Information section, Version 5 for extended field definitions and codes. This document is available on the NHTSA web site at

<http://www-nrd.nhtsa.dot.gov/software/test-reference-guides/test-reference-guides.html>

File Name: 'testnumber'.OCC

Location: NHTSA subdirectory

Contents:

Field descriptor:	Optional:	Test Result Attribute:	Data format:	Remark:
Vehicle Reference Number 1			integer	1 or 2 see RED B 'Test Object'
Occupant Seat Position 1			alphanumeric	see RED B 'Seat Position'
Fine Location 3/Dummy Type 1			alphanumeric	see RED B 'Fine Location 3'
Dummy Manufacturer/Ser No 1	O		alphanumeric	50 characters maximum
Dummy Modifications 1	O		alphanumeric	50 characters maximum

Head to Windshield Header 1	O		float	meters, see TRG
Head to Windshield 1	O		float	meters, see TRG
Head to Side Header 1	O		float	meters, see TRG
Head to Side Window 1	O		float	meters, see TRG
Chest to Dash 1	O		float	meters, see TRG
Chest to Steering Wheel 1	O		float	meters, see TRG
Arm to Door 1	O		float	meters, see TRG
Hip to Door 1	O		float	meters, see TRG
Knees to Dash 1	O		float	meters, see TRG
Head to Seatback 1	O		float	meters, see TRG
Neck to Seatback 1	O		float	meters, see TRG
Chest to Seatback 1	O		float	meters, see TRG
Knee to Seatback 1	O		float	meters, see TRG
Seat Track Position 1			alphanumeric	coded field, see TRG
1st Contact for Head 1	O	R	alphanumeric	coded field, see TRG
2nd Contact for Head 1	O	R	alphanumeric	coded field, see TRG
1st Contact for Chest/Abdo 1	O	R	alphanumeric	coded field, see TRG
2nd Contact for Chest/Abdo 1	O	R	alphanumeric	coded field, see TRG
1st Contact for Legs 1	O	R	alphanumeric	coded field, see TRG
2nd Contact for Legs 1	O	R	alphanumeric	coded field, see TRG
Head Injury Criterion HIC 1	O	R	integer	nondimensional
Lo HIC Time Interval 1	O	R	float	seconds
Up HIC Time Interval 1	O	R	float	seconds
Thorax Peak Accel (CLIP3M) 1	O	R	float	m/sec ²
L Femur Peak Load 1	O	R	float	Newtons
R Femur Peak Load 1	O	R	float	Newtons
Chest Severity Index 1	O	R	integer	nondimensional
Lap Belt Peak Load 1	O	R	integer	Newtons
Shoulder Belt Peak Load 1	O	R	integer	Newtons
Thoracic Trauma Index 1	O	R	float	nondimensional
Pelvic Acceleration 1	O	R	float	m/sec ²
Comments	O		alphanumeric	multiple lines, 70 char maximum
.....				

Comment – The following block describes test occupant m (last vehicle occupant)

Vehicle Reference Number m		alphanumeric	1 or 2, see RED B ‘Test Object’
Occupant Seat Position m		alphanumeric	see RED B ‘Seat Position’
Fine Location 3/Dummy Type m		alphanumeric	see RED B ‘Fine Location 3’
Dummy Manufacturer/Ser No m	O	alphanumeric	50 characters maximum
Dummy Modifications m	O	alphanumeric	50 characters maximum

Head to Windshield Header m	O		float	meters, see TRG
Head to Windshield m	O		float	meters, see TRG
Head to Side Header m	O		float	meters, see TRG
Head to Side Window m	O		float	meters, see TRG
Chest to Dash m	O		float	meters, see TRG
Chest to Steering Wheel m	O		float	meters, see TRG
Arm to Door m	O		float	meters, see TRG
Hip to Door m	O		float	meters, see TRG
Knees to Dash m	O		float	meters, see TRG
Head to Seatback m	O		float	meters, see TRG
Neck to Seatback m	O		float	meters, see TRG
Chest to Seatback m	O		float	meters, see TRG
Knee to Seatback m	O		float	meters, see TRG
Seat Track Position m			alphanumeric	coded field, see TRG
1st Contact for Head m	O	R	alphanumeric	coded field, see TRG
2nd Contact for Head m	O	R	alphanumeric	coded field, see TRG
1st Contact for Chest/Abdo m	O	R	alphanumeric	coded field, see TRG
2nd Contact for Chest/Abdo m	O	R	alphanumeric	coded field, see TRG
1st Contact for Legs m	O	R	alphanumeric	coded field, see TRG
2nd Contact for Legs m	O	R	alphanumeric	coded field, see TRG
Head Injury Criterion HIC m	O	R	integer	nondimensional
Lo HIC Time Interval m	O	R	float	seconds
Up HIC Time Interval m	O	R	float	seconds
Thorax Peak Accel (CLIP3M) m	O	R	float	m/sec ²
L Femur Peak Load m	O	R	float	Newtons
R Femur Peak Load m	O	R	float	Newtons
Chest Severity Index m	O	R	integer	nondimensional
Lap Belt Peak Load m	O	R	integer	Newtons
Shoulder Belt Peak Load m	O	R	integer	Newtons
Thoracic Trauma Index m	O	R	float	nondimensional
Pelvic Acceleration m	O	R	float	m/sec ²
Comments	O		alphanumeric	multiple lines, 70 char maximum

D.1.5 NHTSA Occupant Restraint Information Addendum Descriptor File

This file contains additional information concerning the restraints used for each occupant in a given impact test required to make the ISO-MME impact test dataset transportable into the NHTSA EV5 data exchange format. Refer to the NHTSA Test Reference Guide (NHTSA TRG), Volume 1, Vehicle Tests, Restraint Information section, Version 5 for extended field definitions and codes. This document is available on the NHTSA web site at

<http://www-nrd.nhtsa.dot.gov/software/test-reference-guides/test-reference-guides.html>

File Name: 'testnumber'.RST

Location: NHTSA subdirectory

Contents:

Field descriptor:	Optional:	Test Result Attribute:	Data format:	Remark:
Vehicle Reference Number 1			integer	1 or 2, see TRG
Occupant Seat Position 1			alphanumeric	see RED B 'Seat Position'
Restraint Mount 1	O		alphanumeric	coded field, see TRG
Restraint Type 1			alphanumeric	coded field, see TRG
Restraint Deployed 1	O	R	alphanumeric	coded field, see TRG
Comments	O		alphanumeric	multiple lines, 70 char maximum

.....

Comment – The following block describes occupant restraint m (last occupant's last restraint)

Vehicle Reference Number m			integer	1 or 2, see TRG
Occupant Seat Position m			alphanumeric	see RED B 'Seat Position'
Restraint Mount m	O		alphanumeric	coded field, see TRG
Restraint Type m			alphanumeric	coded field, see TRG
Restraint Deployed m	O	R	alphanumeric	coded field, see TRG
Comments	O		alphanumeric	multiple lines, 70 char maximum

D.1.6 Examples of NHTSA Addendum Descriptor Files

D.1.6.1 Example of NHTSA Test Information Addendum Descriptor File

```

Comments                : V3239.TST
Comments                : GENERAL TEST INFORMATION -----
Laboratory test ref. Number : MY5803
Test Type               : NCA
Test Configuration      : VTB
Track Surface           : CON
Track Condition         : DRY
Closing Speed           : 15.52
Impact Angle            : 0
Offset                  : 0
Side Impact Point       : NOVALUE
Comments                : NEW CAR ASSESSMENT PROGRAM TEST

```

D.1.6.2 Example of NHTSA Vehicle Information Addendum Descriptor File

```

Comments                : V3239.VEH
Comments                : VEHICLE INFORMATION -----
Vehicle Number 1        : 1
Vehicle Make 1          : VOLKSWAGEN
Vehicle Model 1         : PASSAT
Vehicle Year 1          : 2000
Body Type 1             : 4S
VIN 1                   : WVWMA23B1YP118035
Engine Type 1           : 4CIF
Engine Size 1           : 1.8
Transmission Type 1     : AF
Vehicle Test Weight 1   : NOVALUE
Wheel Base 1            : 2.715
Vehicle Length 1        : 4.650
Vehicle Width 1         : NOVALUE
Vehicle Center of Gravity 1 : 1.222
Steering Column Separation 1 : NOVALUE
Column Collapse Mechanism 1 : NOVALUE
Vehicle Modifications 1  : NONE
Vehicle Speed 1         : 15.52
Crab Angle 1            : 0
Principal Dir of Force 1 : 0
Bumper Engagement 1     : NOVALUE

```

Sill Engagement 1	: NOVALUE
A-Pillar Engagement 1	: NOVALUE
Damage Profile Distance 1-1	: NOVALUE
Damage Profile Distance 2-1	: NOVALUE
Damage Profile Distance 3-1	: NOVALUE
Damage Profile Distance 4-1	: NOVALUE
Damage Profile Distance 5-1	: NOVALUE
Damage Profile Distance 6-1	: NOVALUE
Vehicle Damage Index 1	: NOVALUE
Total Length Indentation 1	: NOVALUE
Center Damaged Area to CG 1	: NOVALUE
Maximum Crush Distance 1	: NOVALUE
Angle of Moving Cart 1	: NOVALUE
Veh Orientation on Cart 1	: NOVALUE
Comments	: NO COMMENTS

D.1.6.3 Example of NHTSA Barrier Information Addendum Descriptor File

Comments	: V3239.BAR
Comments	: BARRIER INFORMATION -----
Barrier	: B
Barrier Shape	: LCB
Rigid or Deformable Barrier	: R
Angle of Fixed Barrier	: 0
Diameter of Pole Barrier	: NOVALUE
Comments	: NO DATA COLLECTED ON A1, B1, C1, D1, D2, D3,
Comments	: D4,D5,D6,D7,D8,D9

D.1.6.4 Example of NHTSA Occupant Information Addendum Descriptor File

Comments	: V3239.OCC
Comments	: DRIVER OCCUPANT INFORMATION -----
Vehicle Reference Number 1	: 1
Occupant Seat Position 1	: 1
Fine Location 3/Dummy Type 1	: H3
Dummy Manufacturer/Ser No 1	: VECTOR, S/N:034
Dummy Modifications 1	: UNMODIFIED
Head to Windshield Header 1	: .350
Head to Windshield 1	: .635
Head to Side Header 1	: .245

Head to Side Window 1	: .325
Chest to Dash 1	: .515
Chest to Steering Wheel 1	: .320
Arm to Door 1	: .126
Hip to Door 1	: .154
Knees to Dash 1	: .220
Head to Seatback 1	: NOVALUE
Neck to Seatback 1	: NOVALUE
Chest to Seatback 1	: NOVALUE
Knee to Seatback 1	: NOVALUE
Seat Track Position 1	: RW
1st Contact for Head 1	: AB
2nd Contact for Head 1	: NO
1st Contact for Chest/Abdo 1	: AB
2nd Contact for Chest/Abdo 1	: NO
1st Contact for Legs 1	: DP
2nd Contact for Legs 1	: SC
Head Injury Criterion HIC 1	: 377
Lo HIC Time Interval 1	: .0528
Up HIC Time Interval 1	: .0887
Thorax Peak Accel (CLIP3M) 1	: 426.59
L Femur Peak Load 1	: 3534
R Femur Peak Load 1	: 4642
Chest Severity Index 1	: NOVALUE
Lap Belt Peak Load 1	: 6474
Shoulder Belt Peak Load 1	: 5109
Thoracic Trauma Index 1	: NOVALUE
Pelvic Acceleration 1	: NOVALUE
Comments	: NO COMMENTS
Comments	:
Comments	: RIGHT FRONT PASSENGER INFORMATION -----
Vehicle Reference Number 2	: 1
Occupant Seat Position 2	: 3
Fine Location 3/Dummy Type 2	: H3
Dummy Manufacturer/Ser No 2	: VECTOR, S/N:035
Dummy Modifications 2	: NONE
Head to Windshield Header 2	: .365
Head to Windshield 2	: .655
Head to Side Header 2	: .230
Head to Side Window 2	: .315
Chest to Dash 2	: .540

Chest to Steering Wheel 2	: NOVALUE
Arm to Door 2	: .060
Hip to Door 2	: .148
Knees to Dash 2	: .225
Head to Seatback 2	: NOVALUE
Neck to Seatback 2	: NOVALUE
Chest to Seatback 2	: NOVALUE
Knee to Seatback 2	: NOVALUE
Seat Track Position 2	: NOVALUE
1st Contact for Head 2	: AB
2nd Contact for Head 2	: NO
1st Contact for Chest/Abdo 2	: AB
2nd Contact for Chest/Abdo 2	: NO
1st Contact for Legs 2	: DP
2nd Contact for Legs 2	: NO
Head Injury Criterion HIC 2	: 318
Lo HIC Time Interval 2	: .0577
Up HIC Time Interval 2	: .0936
Thorax Peak Accel (CLIP3M) 2	: 399.1
L Femur Peak Load 2	: 4278
R Femur Peak Load 2	: 1408
Chest Severity Index 2	: NOVALUE
Lap Belt Peak Load 2	: 6563
Shoulder Belt Peak Load 2	: 4042
Thoracic Trauma Index 2	: NOVALUE
Pelvic Acceleration 2	: NOVALUE
Comments	: NO COMMENTS

D.1.6.5 Example of NHTSA Restraint Information Addendum Descriptor File

Comments	: V3239.RST
Comments	
Comments	: DRIVER RESTRAINT #1 INFORMATION -----
Vehicle Reference Number 1	: 1
Occupant Seat Position 1	: 1
Restraint Mount 1	: BC
Restraint Type 1	: 3PT
Restraint Deployed 1	: NA
Comments	: DRIVER 3 POINT BELT
Comments	

```

Comments                               : DRIVER RESTRAINT #2 INFORMATION -----
Vehicle Reference Number 2             : 1
Occupant Seat Position 2               : 1
Restraint Mount 2                      : SW
Restraint Type 2                      : ABG
Restraint Deployed 2                   : DP
Comments                               : DRIVER AIR BAG
Comments
Comments                               : PASSENGER RESTRAINT #1 INFORMATION -----
Vehicle Reference Number 3             : 1
Occupant Seat Position 3               : 3
Restraint Mount 3                     : BC
Restraint Type 3                      : 3PT
Restraint Deployed 3                   : NA
Comments                               : PASSENGER 3 POINT BELT
Comments
Comments                               : PASSENGER RESTRAINT #2 INFORMATION -----
Vehicle Reference Number 4             : 1
Occupant Seat Position 4               : 3
Restraint Mount 4                     : DP
Restraint Type 4                      : ABG
Restraint Deployed 4                   : DP
Comments                               : PASSENGER AIR BAG

```