

TP-202-08
Oct 12, 1989

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

LABORATORY TEST PROCEDURE

FOR

FMVSS 202

Head Restraints



SAFETY ASSURANCE
Office of Vehicle Safety Compliance
Room 6115, NSA-30
400 Seventh Street, SW
Washington, DC 20590

OVSC LABORATORY TEST PROCEDURE NO. 202
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1. PURPOSE AND APPLICATION

The Office of Vehicle Safety Compliance (OVSC) provides contracted laboratories with Laboratory Test Procedures (Tps) which serve as guidelines for obtaining compliance test data. The data are used to determine if a specific vehicle or item of motor vehicle equipment meets the minimum performance requirements of the subject Federal Motor Vehicle Safety Standard (FMVSS). The purpose of the OVSC Laboratory Test Procedures is to present a uniform testing and data recording format, and provide suggestions for the use of specific equipment and procedures. Any contractor interpreting any part of an OVSC Laboratory Test Procedure to be in conflict with a Federal Motor Vehicle Safety Standard or observing any deficiencies in a Laboratory Test Procedure is required to advise the Contracting Officer's Technical Representative (COTR) and resolve the discrepancy prior to the start of compliance testing.

Contractors are required to submit a detailed test procedure to the COTR before initiating the compliance test program. The procedure must include a step-by-step description of the methodology to be used.

The OVSC Laboratory Test Procedures are not intended to limit or restrain a contractor from developing or utilizing any testing techniques or equipment, which will assist in procuring the required compliance test data.

NOTE:

The OVSC Laboratory Test Procedures, prepared for use by independent laboratories under contract to conduct compliance tests for the OVSC, are not intended to limit the requirements of the applicable FMVSS(s). In some cases, the OVSC Laboratory Test Procedures do not include all of the various FMVSS minimum performance requirements. Sometimes, recognizing applicable test tolerances, the Test Procedures specify test conditions, which are less severe than the minimum requirements of the standards themselves. Therefore, compliance of a vehicle or item of motor vehicle equipment is not necessarily guaranteed if the manufacturer limits certification tests to those described in the OVSC Laboratory Test Procedures.

2. GENERAL REQUIREMENTS

FMVSS 202, Head Restraints, specifies requirements for head restraints to reduce the frequency and severity of neck injury in rear end and other collisions. The standard applies to each front outboard Designated Seating Position (DSP), and allows head restraints to be tested either dynamically or statically. The compliance test procedure preferred by the Office of Vehicle Safety Compliance (OVSC) is the STATIC TEST, which is the subject of this test procedure. The head restraint must meet specific dimensional and load carrying requirements.

A head restraint shall be provided at each front outboard DSP and when adjusted to its fully extended design position shall conform as follows —

- A. When measured parallel to torso line, the top of the head restraint shall not be less than 27.5" above the Seating Reference Point (SRP)
- B. When measured either 2.5" below the top of the head restraint, or 25" above the SRP, the lateral width of the head restraint shall be not less than—
 - (1) 10" for use with bench seats
 - (2) 6.75" for use with bucket seats
- C. The rearmost portion of the head form shall not be displaced more than 4" perpendicularly rearward of the displaced extended torso reference line during the application of load.
- D. The head restraint shall withstand an increasing load until one of the following occurs —
 - (1) Failure of the seat or seat back
 - (2) Application of a load of less than 200 pounds

Compliance shall be demonstrated as follows with the head restraint in its FULLY EXTENDED design position:

- A. Place the test device, having the back pan dimensions and torso line (centerline of the headroom probe in full back position) of the 3-dimensional SAE J826 manikin at the vehicle manufacturer's recommended design seated position.
- B. Establish the displaced torso reference line by applying a rearward moment of less than 3300 in-lbs about the SRP to the seat back through the test device back pan located as above.
- C. After removing the back pan, using a cylindrical head form having a 6.5" diameter in plan view and a 6" height in profile view, apply, perpendicular to the displaced torso reference line, a rearward initial load 2.5" below the top of the head restraint that will produce less than a 3,300 in-lb moment about the SRP.
- D. Gradually increase this initial load to less than 200 lbs. or until the seat or seat back fails, whichever occurs first.

3. SECURITY

The contractor shall provide appropriate security measures to protect the OVSC test vehicles from unauthorized personnel during the entire compliance-testing program. The contractor is financially responsible for any acts of theft and/or vandalism, which occur during the storage of test vehicles. Any security problems, which arise, shall be reported by telephone to the Industrial Property Manager (IPM), Office of Contracts and Procurement, within two working days after the incident. A letter containing specific details of the security problem will be sent to the IPM (with copy to the COTR) within 48 hours.

The contractor shall protect and segregate the data that evolves from compliance testing before and after each vehicle test. No information concerning the vehicle safety compliance-testing program shall be released to anyone except the COTR, unless specifically authorized by the COTR or the COTR's Branch or Division Chief.

NO INDIVIDUALS, OTHER THAN CONTRACTOR PERSONNEL DIRECTLY INVOLVED IN THE COMPLIANCE TESTING PROGRAM, SHALL BE ALLOWED TO WITNESS ANY VEHICLE COMPLIANCE TEST UNLESS SPECIFICALLY AUTHORIZED BY THE COTR.

4. GOOD HOUSEKEEPING

Contractors shall maintain the entire vehicle compliance testing area, test fixtures and instrumentation in a neat, clean and painted condition with test instruments arranged in an orderly manner consistent with good test laboratory housekeeping practices.

5. TEST SCHEDULING AND MONITORING

The contractor shall submit a test schedule to the COTR prior to testing. Tests shall be completed as required in the contract. Scheduling shall be adjusted to permit sample motor vehicles to be tested to other FMVSS as may be required by the OVSC. All testing shall be coordinated to allow monitoring by the COTR.

6. TEST DATA DISPOSITION

The contractor shall make all vehicle preliminary compliance test data available to the COTR on location within four hours after the test. Final test data, including digital printouts and computer generated plots (if applicable), shall be furnished to the COTR within five working days. Additionally, the contractor shall analyze the preliminary test results as directed by the COTR.

All backup data sheets, strip charts, recordings, plots, technicians notes, etc., shall be either sent to the COTR or destroyed at the conclusion of each delivery order, purchase order, etc.

7. GOVERNMENT FURNISHED PROPERTY (GFP)

ACCEPTANCE OF TEST VEHICLES

The Contractor has the responsibility of accepting test vehicles from either new car dealers or vehicle transporters. In both instances, the contractor acts in the OVSC's behalf when signing an acceptance of test vehicles. If a dealer delivers a vehicle, the contractor must check to verify the following:

- A. All options listed on the "window sticker" are present on the test vehicle.
- B. Tires and wheel rims are the same as listed.
- C. There are no dents or other interior or exterior flaws.
- D. The vehicle has been properly prepared and is in running condition.
- E. The glove box contains an owner's manual, warranty document, consumer information, and extra set of keys.
- F. Proper fuel filler cap is supplied on the test vehicle.

If the test vehicle is delivered by a government-contracted transporter, the contractor should check for damage, which may have occurred during transit.

A "Vehicle Condition" form will be supplied to the contractor by the COTR when the test vehicle is transferred from the new car dealer or between test contracts. The upper half of the form describes the vehicle in detail, and the lower half provides space for a detailed description of the posttest condition. Vehicle Condition forms must be returned to the COTR with the copies of the Final Test Report or the reports will NOT be accepted. Also refer to the Data Sheet Section of this test procedure.

NOTIFICATION OF COTR

The COTR must be notified within 24 hours after a vehicle has been delivered.

8. CALIBRATION OF TEST INSTRUMENTS

Before the contractor initiates the safety compliance test program, a test instrumentation calibration system will be implemented and maintained in accordance with established calibration practices. Guidelines for setting up and maintaining such calibration systems are described in MIL-C-45662A, "Calibration System Requirements". The calibration system shall be set up and maintained as follows:

- A. Standards for calibrating the measuring and test equipment will be stored and used under appropriate environmental conditions to assure their accuracy and stability.
- B. All measuring instruments and standards shall be calibrated by the contractor, or a commercial facility, against a higher order standard at periodic intervals NOT TO EXCEED TWELVE (12) MONTHS! Records, showing the calibration trace ability to the National Institute of Standards and Technology (NIST), shall be maintained for all measuring and test equipment.
- C. All measuring and test equipment and measuring standards will be labeled with the following information:
 - (1) Date of calibration
 - (2) Date of next scheduled calibration
 - (3) Name of the technician who calibrated the equipment
- D. A written calibration procedure shall be provided by the contractor, which includes as a minimum the following information for all measurement and test equipment:
 - (1) Type of equipment, manufacturer, model number, etc.
 - (2) Measurement range
 - (3) Accuracy
 - (4) Calibration interval
 - (5) Type of standard used to calibrate the equipment (calibration trace ability of the standard must be evident)
- E. Records of calibration for all test instrumentation shall be kept by the contractor in a manner, which assures the maintenance of established calibration schedules. All such records shall be readily available for inspection when requested by the COTR. The calibration system will need the acceptance of the COTR before the test program commences.

9. PHOTOGRAPHIC DOCUMENTATION

Photographs shall be black and white, 8 x 10 inches, and legible. A tag, label or placard identifying the test vehicle model and NHTSA number shall appear in each photograph and be legible. Each photograph shall be labeled as to subject matter. The test setup and equipment used in all tests shall be photographed for the record before and at prescribed time periods during testing listed in this test procedure. Any failure must be photographed at various angles to assure complete coverage. As a minimum the following photographs shall be included:

- A. Left side view of vehicle
- B. Right side view of vehicle
- C. 3/4 frontal view from left side of vehicle
- D. 3/4 rear view from right side of vehicle
- E. Vehicle's certification label
- F. Vehicle's tire information label
- G. 3/4 frontal view of head restraint system
- H. Unloaded H-Point test device in normal position
- I. H-Point test device under load to show displaced torso reference line angle
- J. Load carrying fixture showing head form (unloaded)
- K. Head form position under 3,275 in-lb moment
- L. Head form position under 199.5 pound load at completion of test, if applicable

10. DEFINITIONS

DESIGNATED SEATING POSITION (DSP)

Any plan view location capable of accommodating a person at least as large as a 5th percentile adult female, if the overall seat configuration and design and vehicle design is such that the position is likely to be used as a seating position while the vehicle is in motion, except for auxiliary seating accommodations such as temporary or folding jump seats.

HEAD RESTRAINT

A device that limits rearward angular displacement of the occupant's head relative to its torso line.

H-POINT

The mechanically hinged hip point of a manikin, which simulates the actual pivot center of the human torso and thigh described in SAE. Standard J826, April 1980, Devices For Use In Defining And Measuring Vehicle Seating Accommodations.

TORSO LINE

A line connecting the H-Point and the shoulder reference point as defined in SAE Standard J826, APR1980, Devices For Use In Defining And Measuring Vehicle Seating Accommodations.

SEATING REFERENCE POINT (SRP)

The manufacturer's design reference point which:

- A. Establishes the rearmost normal design driving or riding position of each DSP in a vehicle
- B. Has coordinates established relative to the designed vehicle structure
- C. Simulates the position of the pivot center of the human torso and thigh
- D. Is the reference point employed to position the two-dimensional templates described in SAE Standard J826, APR1980, Devices for Use in Defining and Measuring Vehicle Seating Accommodations

11. PRETEST REQUIREMENTS

Prior to conducting any compliance test, contractors are required to submit a detailed in-house compliance test procedure to the COTR, which includes a step-by-step description of the methodology to be used. Written approval must be obtained from the COTR before initiating the compliance test program so that all parties are in agreement.

TEST DATA LOSS

A compliance test is not to be conducted unless all of the various test conditions specified in the applicable OVSC Laboratory Test Procedure have been met. Failure of a contractor to obtain the required test data and to maintain acceptable limits on test parameters in the manner outlined in the applicable OVSC Laboratory Test Procedure may require a retest at the expense of the contractor. The retest costs will include the cost of the replacement vehicle (with the same equipment as the original vehicle) and all costs associated with conducting the retest. The original test specimen (vehicle) used for the invalid test shall remain the property of OVSC, and the retest specimen shall remain the property of the contractor. If there is a test failure, the contractor shall retain the retest specimen for a period not exceeding 180 days. If there is no test failure, the Contractor may dispose of the test specimen upon notification from the COTR that the final test report has been accepted.

The Contracting Officer of NHTSA is the only NHTSA official authorized to notify the contractor that a retest is required. The retest shall be completed within two (2) weeks after receipt of notification by the Contracting Officer that a retest is required. If a retest is conducted, no test report is required for the original test.

12. COMPLIANCE TEST EXECUTION

TEST METHOD

All testing shall be performed with the head restraints in their installed design configuration in the test vehicle furnished to the contractor. The laboratory test procedure and associated equipment for testing are based in the requirements of the following documents to the extent referenced herein.

- A. FMVSS 202, Head Restraints
- B. SAE J826, APR1980, Devices For Use In Defining And Measuring Seating Accommodations
- C. SAE J879b, JUL1968, Motor Vehicle Seating Systems
- D. Military Standard Specification No. MIL-C-45662A, Calibration System Requirements

TEST EQUIPMENT

Test equipment items are listed below. The required range and accuracy of the equipment are included, where applicable.

- A. Appropriate linear measuring device accuracy of ± 0.030 "
- B. Cylindrical head form with a 6.5-inch diameter mounted on fixture to rotate about a fixed SRP
- C. Means of applying load (at least 200 pound capacity).
- D. Load cells and instrumentation for measuring load during test with accuracy of ± 0.5 percent
- E. Test device, a 3-dimensional H-Point machine (manikin) for use in defining and measuring vehicle seating accommodations, SAE J826, APR1980.
- F. Test stand and fixture setup to retain test vehicle and other test equipment needed to conduct head restraint test
- G. Camera and adequate lighting to provide pertinent photographs
- H. Continuous recorder to make permanent supplemental record of load and displacement during head form displacement tests with accuracy of ± 2 percent

12. COMPLIANCE TEST EXECUTION....Continued

TEST PERSONNEL PERFORMANCE

Personnel supervising and/or performing the compliance test program shall be thoroughly familiar with the requirements, test conditions, and equipment for the test to be conducted.

TEST SEQUENCE

The test vehicle and head restraints shall be subject to the test in the order shown below

- A. Receiving-Inspection of Test Vehicle
- B. Dimensional Measurements
- C. Pretest Preparation
- D. Performing the Static Test

RECEIVING-INSPECTION OF TEST VEHICLE

Complete the "Vehicle Condition" form supplied by the COTR and the Receiving-Inspection data sheet.

Upon receipt of the test vehicle, it shall be identified with a visible sign or placard showing the following information:

- A. Vehicle Make/Model
- B. Vehicle Identification Number (VIN)
- C. Vehicle NHTSA number (provided by COTR)
- D. Compliance Test for Head Restraints (S202).

Before taking each required test photo, place the sign or placard noted above in the field of view. The sign size and location should not obstruct the test detail being highlighted in the photograph.

The head restraint system and all associated components and trim shall be inspected for functioning and damage. Record the results of this examination on the appropriate data sheet. If structural damage or other defects are noted that could influence the test results obtain approval from the COTR before initiating the test program.

12. COMPLIANCE TEST EXECUTION....Continued

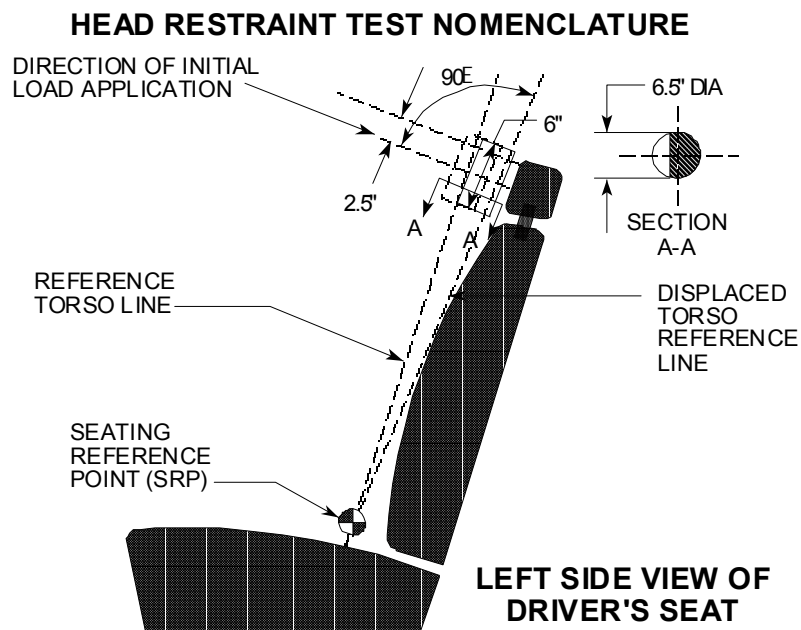
DIMENSIONAL MEASUREMENTS

Confirm that a head restraint system is provided in test vehicle at each front outboard DSP. Provide a photograph.

Where applicable, adjust each head restraint to its fully extended design position.

Establish the torso line for each outboard front DSP using dimensional information provided by the COTR or the 2-dimensional template device described in SAE J826.

Measure the distance, parallel to the torso line, between the top of the head restraint and the SRP. This distance shall not be less than 27.5". See the figure below. Record this measurement on the appropriate data sheet.



Measure the lateral width of each head restraint as described below:

The width is measured either 2.5" below the top of the head restraint, or 25" above the SRP ($\pm 0.125"$). Record the greater of these readings on the appropriate data sheet. Indicate whether the measurement is related to the 2.5" below the top or the 25" above the SRP. The lateral width of the head restraint shall be not less than:

12. COMPLIANCE TEST EXECUTION....Continued

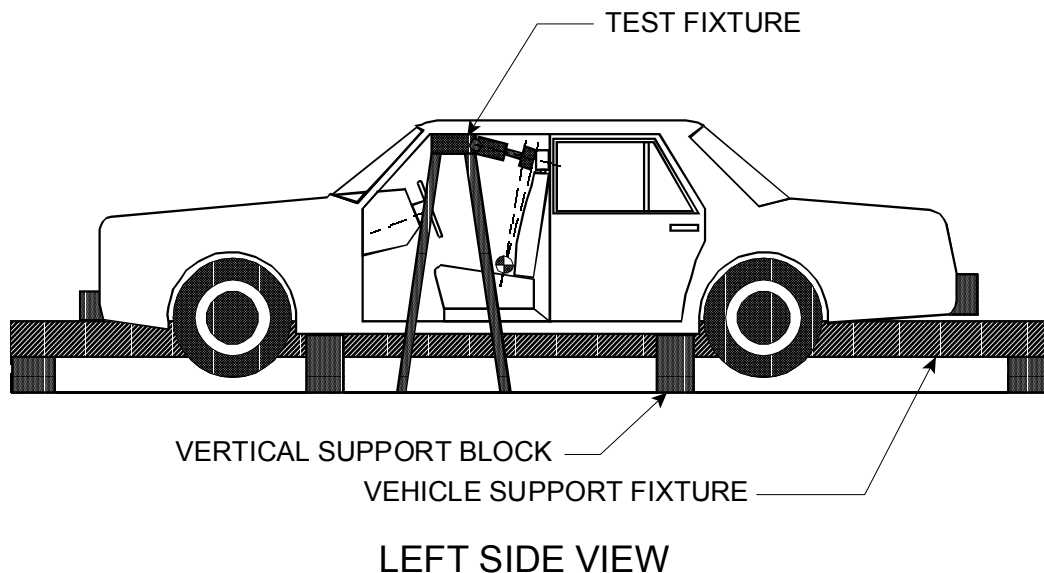
- A. 10" for use with bench seats
- B. 6.75" for use with bucket seats

PRETEST PREPARATION

The head restraint static test shall be performed inside the vehicle with restraints in the manufacturer's installed design position.

A typical test setup is shown below.

S202 VEHICLE TEST SETUP



Raise the test vehicle until all four wheels are approximately 1" off the floor. Retain the vehicle in this position by installing a vertical support or jack stand between the vehicle's frame and test area floor close to each wheel. Secure the frame to a suitable mass restricts longitudinal and lateral movement of the vehicle during the application of the test loads. Adjust front seats to their rearmost position and where applicable, adjust head restraints to fully extended design position.

Install a load-carrying fixture that will distribute the test loads. The load-carrying fixture shall be secured to restrict longitudinal and lateral movement during test sequences.

Obtain the dimensions of the SRP and the torso line angle, established by the vehicle manufacturer, from the COTR.

12. COMPLIANCE TEST EXECUTION....Continued

For photographic coverage of the test, position a camera and necessary associated equipment in the test area.

PERFORMING THE STATIC TEST

Place a test device having the back pan dimensions and torso line of the 3-dimensional SAE J826 manikin at the manufacturer's recommended design seating position. Rotate the test device against the seat back so that the torso line of the device is in the normal position. Measure the torso line angle and record on the appropriate data sheet. Photograph the installed test device, seat and head restraint depicting an overall view.

Establish the displaced torso reference line for each head restraint position by applying a rearward moment of 3,275 in-lbs about the fixed SRP to the seat back, through the center of the test device back pan. The load is to be applied perpendicular to the displaced torso line. Measure the distance between the SRP and the point of load application. Measure the displaced torso line angle. Record these measurements and the force applied at this point to produce the above moment on the appropriate data sheet. Photograph the loaded test device at the displaced torso reference line angle. Release the load and remove the test device from the seat.

Adjust the load carrying fixture using a cylindrical head form having a 6.5" diameter in plan view and a 6" height in profile view so that its lateral centerline (profile view) is located 2.5 ± 0.125 " below the tip of the restraint and which allows the load to be applied perpendicular to the displaced torso line. Install a linear displacement transducer between the load actuator and head form. Orient the transducer to measure head form displacement in the rearward direction perpendicular to the displaced torso reference line. Photograph this unloaded position from the side. The static test load is applied individually to bucket type seats head restraints on seat backs with bench seats all head restraints shall be loaded simultaneously. Measure and record all displacement distances specified in the test procedure and provide automatic recording equipment to —

- A. Show the initial test load to the maximum load (pounds) versus head form displacement (inches)
- B. Show the initial test load to maximum test load (pounds) versus the time history of the test (seconds)

Apply a 3,275 in-lb moment 2.5" below top of head restraint perpendicular to the displaced torso line about the fixed SRP to the centerline of the restraint. Apply the required load in 5 ± 0.5 seconds and hold for 5 ± 0.5 seconds prior to increasing the load to 199.5 ± 5 pounds. Measure and record the distance from

12. COMPLIANCE TEST EXECUTION....Continued

the SRP to the point of load application, and load necessary to produce the above moment. Measure and record the distance between the displaced torso line and the loaded 3,275 in-lb moment of the head form. Photograph this loaded position from the side. To complete the test, gradually increase the applied load 199.5 ± 5 pounds at a rate of 50 ± 10 lbs/minute or until the seat, seat backs or head restraint fails, whichever occurs first. Photograph any failure at various angles to assure a complete record and record the maximum at the time of failure. If the 199.5 ± 5 -pound load is reached with no failures photograph the test setup with full load applied from both the side and front depicting an overall view of the entire seat head restraint and loaded head form. Release the load. Test is complete. Observe for any permanent deformation head restraint or seat backs deformation that may have occurred. If applicable, measure, record and photograph the deformation damage and describe in the appropriate data sheet.

13. POST TEST REQUIREMENTS

The contractor shall re-verify all instrumentation and checks data sheets and photographs. Make sure data is recorded in all data block on every compliance test data sheet.

14. REPORTS

14.1 MONTHLY STATUS REPORTS

The contractor shall submit a monthly Test Status Report and a Vehicle or Equipment Status Report to the COTR. The Vehicle or Equipment Status Report shall be submitted until all vehicles or items of equipment are disposed of. Samples of the required Monthly Status Reports are contained in the report forms section.

14.2 APPARENT NONCOMPLIANCE

Any indication of a test failure shall be communicated by telephone to the COTR within 24 hours with written notification mailed within 48 hours (Saturdays and Sundays excluded). A Notice of Test Failure (see report forms section) with a copy of the particular compliance test data sheet(s) and preliminary data plot(s) shall be included. In the event of a test failure, a post test calibration check of some critically sensitive test equipment and instrumentation may be required for verification of accuracy. The necessity for the calibration shall be at the COTR's discretion and shall be performed without additional costs to the OVSC.

14.3 FINAL TEST REPORTS

14.3.1 COPIES

In the case of a test failure, **SEVEN** copies of the Final Test Report shall be submitted to the COTR for acceptance within three weeks of test completion. The Final Test Report format to be used by all contractors can be found in the "Report Section".

Where there has been no indication of a test failure, **THREE** copies of each Final Test Report shall be submitted to the COTR within three weeks of test completion. Payment of contractor's invoices for completed compliance tests may be withheld until the Final Test Report is accepted by the COTR. Contractors are requested to NOT submit invoices before the COTR is provided copies of the Final Test Report.

Contractors are required to submit the first Final Test Report in draft form within two weeks after the compliance test is conducted. The contractor and the COTR will then be able to discuss the details of both test conduct and report content early in the compliance test program. Contractors are required to PROOF READ all Final Test Reports before submittal to the COTR. The OVSC will not act as a report quality control office for contractors. Reports containing a significant number of errors will be returned to the contractor for correction, and a "hold" will be placed on invoice payment for the particular test.

14. REPORTS....Continued

14.3.2 REQUIREMENTS

The Final Test Report, associated documentation (including photographs) are relied upon as the chronicle of the compliance test. The Final Test Report will be released to the public domain after review and acceptance by the COTR. For these reasons, each final report must be a complete document capable of standing by itself.

The contractor should use **detailed** descriptions of all compliance test events. Any events that are not directly associated with the standard but are of technical interest should also be included. The contractor should include as much **detail** as possible in the report.

Instructions for the preparation of the first three pages of the final test report are provided below for the purpose of standardization.

14.3.3 FIRST THREE PAGES

A. FRONT COVER —

A heavy paperback cover (or transparency) shall be provided for the protection of the final report. The information required on the cover is as follows:

- (1) Final Report Number such as 202-ABC-9X-001 where
202 is the FMVSS tested
ABC are the initials for the laboratory
9X is the Fiscal Year of the test program
001 is the Group Number (001 for the 1st test,
002 for the 2nd test, etc.)

- (2) Final Report Title And Subtitle such as

SAFETY COMPLIANCE TESTING FOR FMVSS 202
Head Restraints

World Motors Corporation
199X Ace Super Coupe
NHTSA No. CX0401

- (3) Contractor's Name and Address such as

COMPLIANCE TESTING LABORATORIES, INC.
4335 West Dearborn Street
Detroit, Michigan 48090

14. REPORTS....Continued

NOTE: DOT SYMBOL WILL BE PLACED BETWEEN ITEMS (3) AND (4)

- (4) Date of Final Report completion
- (5) The words "FINAL REPORT"
- (6) The sponsoring agency's name and address as follows

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Safety Assurance
Office of Vehicle Safety Compliance
400 Seventh Street, SW
Room 6115 (NSA-30)
Washington, DC 20590

14. REPORTS....Continued

B. FIRST PAGE AFTER FRONT COVER —

A disclaimer statement and an acceptance signature block for the COTR shall be provided as follows

This publication is distributed by the U. S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared By: _____

Approved By: _____

Approval Date: _____

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By: _____

Acceptance Date: _____

14. REPORTS....Continued

C. SECOND PAGE AFTER FRONT COVER —

A completed Technical Report Documentation Page (Form DOT F1700.7) shall be completed for those items that are applicable with the other spaces left blank. Sample data for the applicable block numbers of the title page follows.

Block 1 — REPORT NUMBER

202-ABC-9X-001

Block 2 — GOVERNMENT ACCESSION NUMBER

Leave blank

Block 3 — RECIPIENT'S CATALOG NUMBER

Leave blank

Block 4 — TITLE AND SUBTITLE

Final Report of FMVSS 202 Compliance Testing of 199X Ace Super Coupe, NHTSA No. CX0401

Block 5 — REPORT DATE

March 1, 199X

Block 6 — PERFORMING ORGANIZATION CODE

ABC

Block 7 — AUTHOR(S)

John Smith, Project Manager / Bill Doe, Project Engineer

Block 8 — PERFORMING ORGANIZATION REPORT NUMBER

ABC-DOT-XXX-001

Block 9 — PERFORMING ORGANIZATION NAME AND ADDRESS

ABC Laboratories
405 Main Street
Detroit, MI 48070

14. REPORTS...Continued

Block 10 — WORK UNIT NUMBER

Leave blank

Block 11 — CONTRACT OR GRANT NUMBER

DTNH22-9X-D-12345

Block 12 — SPONSORING AGENCY NAME AND ADDRESS

US Department of Transportation
National Highway Traffic Safety Administration
Safety Assurance
Office of Vehicle Safety Compliance (NSA-30)
400 Seventh Street, SW, Room 6115
Washington, DC 20590

Block 13 — TYPE OF REPORT AND PERIOD COVERED

Final Test Report
Feb. 15 to Mar. 15, 199X

Block 14 — SPONSORING AGENCY CODE

NSA-30

Block 15 — SUPPLEMENTARY NOTES

Leave blank

Block 16 — ABSTRACT

Compliance tests were conducted on the subject 199X Ace Super 2-door coupe in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-202-XX for the determination of FMVSS 202 compliance. Test failures identified were as follows:

None

NOTE: Above wording must be shown with appropriate changes made for a particular compliance test. Any questions should be resolved with the COTR.

14. REPORTS....Continued

Block 17 — KEY WORDS

Compliance Testing
Safety Engineering
FMVSS 202

Block 18 — DISTRIBUTION STATEMENT

Copies of this report are available from —

National Highway Traffic Safety Administration
Technical Reference Division
Room 5108 (NAD-52)
400 Seventh St., SW
Washington, DC 20590
Telephone No.: 202-366-4946

Block 19 — SECURITY CLASSIFICATION OF REPORT

Unclassified

Block 20 — SECURITY CLASSIFICATION OF PAGE

Unclassified

Block 21 — NUMBER OF PAGES

Add appropriate number

Block 22 — PRICE

Leave blank

14. REPORTS....Continued

14.3.4 TABLE OF CONTENTS

Final test report Table of Contents shall include the following:

- A. Section 1 — Purpose of Compliance Test
- B. Section 2 — Compliance Data Summary
- C. Section 3 — Test Data
- D. Section 4 — Test Equipment List and Calibration Information
- E. Section 5 — Photographs
- F. Section 6 — Notice of Test Failure (if applicable)

15. DATA SHEETS

**DATA SHEET 1
SUMMARY OF RESULTS**

VEH. MOD YR/MAKE/MODEL/BODY: _____

VEH. NHTSA NO.: _____ ; VIN: _____

VEH. BUILD DATE: _____ ; TEST DATE: _____

TEST LABORATORY: _____

OBSERVERS: _____

A. VISUAL INSPECTION OF TEST VEHICLE

Upon receipt for completeness, function, and discrepancies or damage which might influence the testing.

RESULTS:

B. DIMENSIONAL REQUIREMENTS	PASS	FAIL
Driver's Side --	_____	_____
Passenger's Side --	_____	_____
C. HEAD FORM DISPLACEMENT	PASS	FAIL
Driver's Side --	_____	_____
Passenger's Side --	_____	_____
D. HEAD RESTRAINT STRENGTH	PASS	FAIL
Driver's Side --	_____	_____
Passenger's Side --	_____	_____

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

15. DATA SHEETS....Continued

DATA SHEET 2

RECEIVING INSPECTION

VEH. MOD YR/MAKE/MODEL/BODY: _____

VEH. NHTSA NO.: _____ ; VIN: _____

VEH. BUILD DATE: _____ ; TEST DATE: _____

TEST LABORATORY: _____

OBSERVERS: _____

Upon receipt, the vehicle will be examined visually for completeness, function, and damage, which may influence the head restraint system test results.

RESULTS:

RECORDED BY: _____ DATE: _____

APPROVED BY: _____

15. DATA SHEETS....Continued

DATA SHEET 3

PRETEST PREPARATION

VEH. MOD YR/MAKE/MODEL/BODY: _____

VEH. NHTSA NO.: _____ ; VIN: _____

VEH. BUILD DATE: _____ ; TEST DATE: _____

TEST LABORATORY: _____

MANUFACTURER'S DATA FOR LOCATING SEATING REFERENCE POINT (SRP):

NOTE: Dimensions are obtained from the vehicle manufacturer and provided to the test laboratory by the OVSC COTR.

	DRVR SIDE	PASS SIDE
Manufacturer's Torso Line Angle (degrees)	_____	_____
SRP Location (inches) -- (Measured From Driver's Front Outboard Seat Track Anchorage Location)		
X (Longitudinal):	_____	_____
Y (Lateral or Transverse):	_____	_____
Z (Vertical):	_____	_____

For rearward simulated occupant loading of a front seat head restraint system, seat adjusters (tracks) shall be located in the FULL REARWARD position.

REMARKS:

RECORDED BY: _____ DATE: _____

APPROVED BY: _____

15. DATA SHEETS....Continued

DATA SHEET 4

DIMENSIONAL REQUIREMENTS

VEH. MOD YR/MAKE/MODEL/BODY: _____

VEH. NHTSA NO.: _____ ; VIN: _____

VEH. BUILD DATE: _____ ; TEST DATE: _____

TEST LABORATORY: _____

OBSERVERS: _____

TEST REQUIREMENT	DEMONSTRATION REQUIREMENT	TEST RESULT	Pass	Fail
			_____	_____
Provide Head Restraints	Driver's Side	_____	_____	_____
	Passenger's Side	_____	_____	_____
Height Above SRP	≥27.5"	Drvr Side-_____	_____	_____
		Pass Side-_____	_____	_____
Lateral Width Of Head Restraint Measured Either 2.5" Below Top OR 25" Above SRP (whichever is greater)	Not Less Than --	Driver's Side--		
		A. 10" (Bench Seat)	A. _____	_____
	B. 6.25" (Bucket Seat)	B. _____	_____	_____
	Passenger's Side--	A. _____	_____	_____
		B. _____	_____	_____
		_____	_____	_____
_____		_____	_____	

REMARKS:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

15. DATA SHEETS....Continued

DATA SHEET 5

HEAD FORM DISPLACEMENT

VEH. MOD YR/MAKE/MODEL/BODY: _____

VEH. NHTSA NO.: _____; VIN: _____

VEH. BUILD DATE: _____; TEST DATE: _____

TEST LABORATORY: _____

OBSERVERS: _____

TEST REQUIREMENT	DEMONSTRATION REQUIREMENT	TEST DATA	Pass	Fail	
Torso Line Angle (Unloaded)	Measure Using Test Device OR Data Provided By COTR	Drvr Side-_____	<u>NA</u>	<u>NA</u>	
		Pass Side-_____	<u>NA</u>	<u>NA</u>	
Displaced Torso Line Angle	S202, §5.2(b)	Drvr Side-_____	<u>NA</u>	<u>NA</u>	
		Pass Side-_____	<u>NA</u>	<u>NA</u>	
		Force (lbs) Reqd To Provide 3275 in-lb Moment To Back pan	Drvr Side-_____	<u>NA</u>	<u>NA</u>
		Pass Side-_____	<u>NA</u>	<u>NA</u>	
		Distance From SRP To Load Application On Back pan (inches)	Drvr Side-_____	<u>NA</u>	<u>NA</u>
		Pass Side-_____	<u>NA</u>	<u>NA</u>	
Displacement Of Head Form Rearward Of Displaced Torso Line When Loaded To 3275 in-lb Moment 2.5" Below Top Of Head Restraint	Shall Not Be Displaced More Than 4" Rearward Of Displaced Extended Torso Line	Drvr Side-_____	___	___	
		Pass Side-_____	___	___	
	Distance From SRP To Point On Head Form Where Load Is Applied (inches)	Drvr Side-_____	<u>NA</u>	<u>NA</u>	
		Pass Side-_____	<u>NA</u>	<u>NA</u>	

15. DATA SHEETS....Continued

TEST REQUIREMENT	DEMONSTRATION REQUIREMENT	TEST DATA	Pass	Fail
Displacement Of Head Form Rearward Of Displaced Torso Line When Loaded To 3275 in-lb Moment 2.5" Below Top Of Head Restraint	Force Applied To Head Form To Produce 3275 in-lb Moment (lbs)	Drvr Side-_____	<u>NA</u>	<u>NA</u>
		Pass Side-_____	<u>NA</u>	<u>NA</u>

REMARKS:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

15. DATA SHEETS....Continued

DATA SHEET 6

HEAD RESTRAINT STRENGTH

VEH. MOD YR/MAKE/MODEL/BODY: _____

VEH. NHTSA NO.: _____ ; VIN: _____

VEH. BUILD DATE: _____ ; TEST DATE: _____

TEST LABORATORY: _____

OBSERVERS: _____

Results of increased load application to 199.5 lbs. OR until failure occurs (check one):

_____ Head Restraint Failure At _____ lbs.

_____ Seat or Seat Back Failure At _____ lbs.

_____ Application of 199.5 lbs WITHOUT Failure

Describe failure, if encountered, below. If permanent head restraint or seat back deformation is observed, describe below.

REMARKS:

RECORDED BY: _____ DATE: _____

APPROVED BY: _____

15. DATA SHEETS....Continued

DATA SHEET 7

TEST EQUIPMENT LIST

VEH. MOD YR/MAKE/MODEL/BODY: _____

VEH. NHTSA NO.: _____ ; VIN: _____

VEH. BUILD DATE: _____ ; TEST DATE: _____

TEST LABORATORY: _____

OBSERVERS: _____

ITEM	MFR	MODEL	S/N	CALIBR. PERIOD	DATE OF LAST CALIBRATION	ACCURACY	REMARKS

REMARKS:

RECORDED BY: _____

DATE: _____

APPROVED BY: _____

16. FORMS

LABORATORY NOTICE OF TEST FAILURE TO OVSC

FMVSS NO.: 202 TEST DATE: _____

LABORATORY: _____

CONTRACT NO.: _____; DELV. ORDER NO: _____

LABORATORY PROJECT ENGINEER'S NAME: _____

TEST SPECIMEN DESCRIPTION: _____

VEHICLE NHTSA NO.: _____; VIN: _____

PART NO.: _____ MFR: _____

TEST FAILURE DESCRIPTION: _____

FMVSS REQUIREMENT, PARAGRAPH § ____ : _____

NOTIFICATION TO NHTSA (COTR): _____

DATE: _____ BY: _____

REMARKS: _____

16. FORMS....Continued

MONTHLY TEST STATUS REPORT

FMVSS 202

DATE OF REPORT: _____

NO.	VEHICLE NHTSA NO., MAKE & MODEL	COMPLIANCE TEST DATE	PASS/ FAIL	DATE REPORT SUBMITTED	DATE INVOICE SUBMITTED	INVOICE PAYMENT DATE
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						

16. FORMS....Continued

MONTHLY VEHICLE STATUS REPORT

FMVSS NO. 202

DATE OF REPORT: _____

NO.	VEHICLE NHTSA NO., MAKE & MODEL	DATE OF DELIVERY	ODOMETER READING	TEST COMPLETE DATE	VEHICLE SHIPMENT DATE	ODOMETER READING
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						