## How are the cars tested?

NHTSA crashes cars head-on into a rigid barrier (a "frontal" crash). In this test, the cars are going 35 mph. A crash like this is equivalent to a head-on collision between two identical cars, each going at 35 mph—a very violent crash.

The measurements of potential head injuries that you will see on the graphs are taken during these crashes. In addition to the graphs, there is a chart enclosed with this fact sheet which shows information about potential injuries to the chest and femur (thigh bone), as well as the head, during frontal crashes.

To measure what could happen to people in the cars, NHTSA places dummies shaped like human beings in the driver's seat and the front passenger seat. These dummies are very sophisticated scientific devices, with instruments to measure the forces to the head, chest, and femur during the crash.

## What can we learn from these crash tests?

During the crashes, the instruments attached to the dummies measure how much force has been exerted on the dummies.

The graphs show the most important measurement, the "Head Injury Criteria," or "HIC," for each dummy and car. HIC units tell how far and how fast the head has moved in the crash. This motion itself may cause injury. The head can only tolerate so much of this motion without suffering damage, whether or not the head strikes anything.

## Do these crash tests have limitations?

Crash tests can give scientists and consumers a good idea of how individual car models might do in real road accidents. But the conditions in these tests cannot be exactly the same as the conditions in real accidents. You should consider these points:

(1) The test results on the graphs are actual measures of the forces exerted on the dummies during the crashes. Although these dummies were designed to react in the same way that people would during a crash, there is disagreement about how well they actually do.

(2) The test procedures, the conditions of the tests, or the facilities used for the tests vary to some extent. These variations account for some of the differences between test results on different cars.

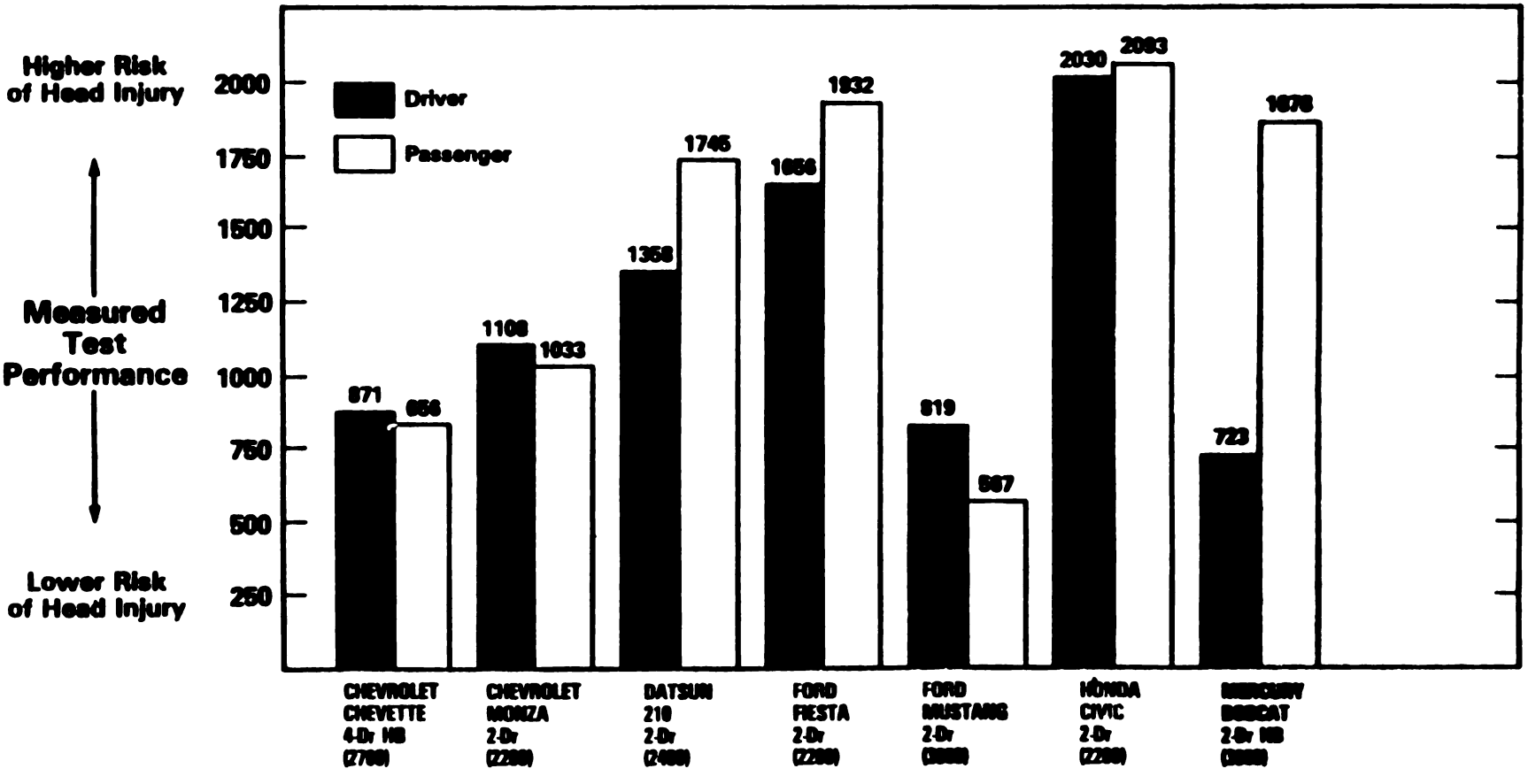
(3) Differences between test results and actual injuries in road accidents are likely to occur because the conditions in the crash tests are not exactly the same as the conditions in road accidents.

NHTSA is currently doing research to find out if the tests can be made more reliable. Up to now, only one sample of each car model has been tested. NHTSA's present research involves testing more than one sample of a given car model. This kind of research will help NHTSA scientists to determine whether some of the differences in the test results come from variations in the test procedures or variations in how the sample cars were manufactured.

# Head Injury Levels During Crash Tests
# New Car Assessment Program

## 1979 SUBCOMPACT CARS (1)

(Weight Range of Vehicles Tested: 2200 - 3900)

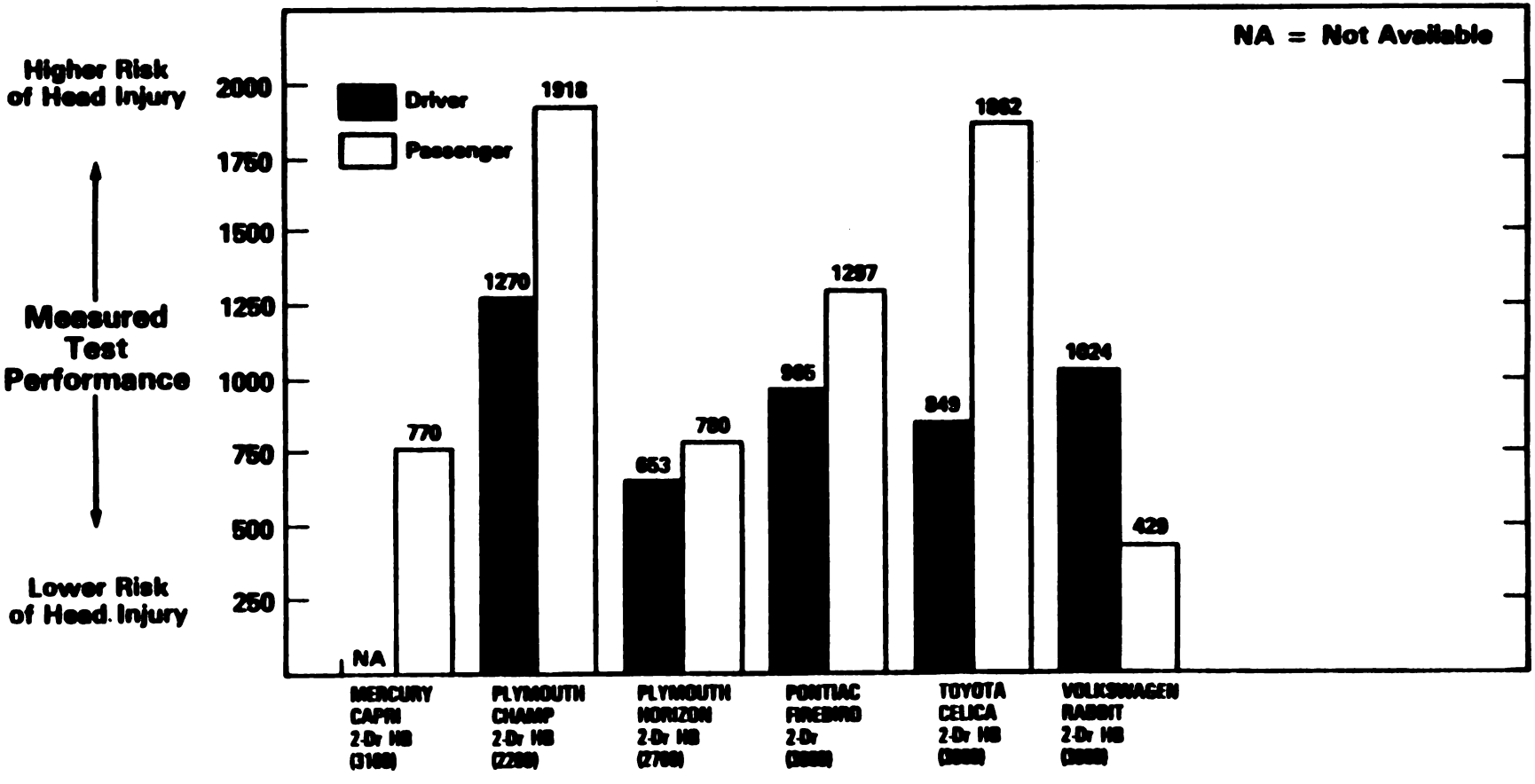



This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury. For a fuller explanation, please read the information pages. A chart enclosed with this fact sheet shows the actual values that NHTSA obtained from instruments that were attached to the test dummies during the crashes.

# Head Injury Levels During Crash Tests
# New Car Assessment Program

## 1979 SUBCOMPACT CARS (II)

(Weight Range of Vehicles Tested: 2200 - 3900)

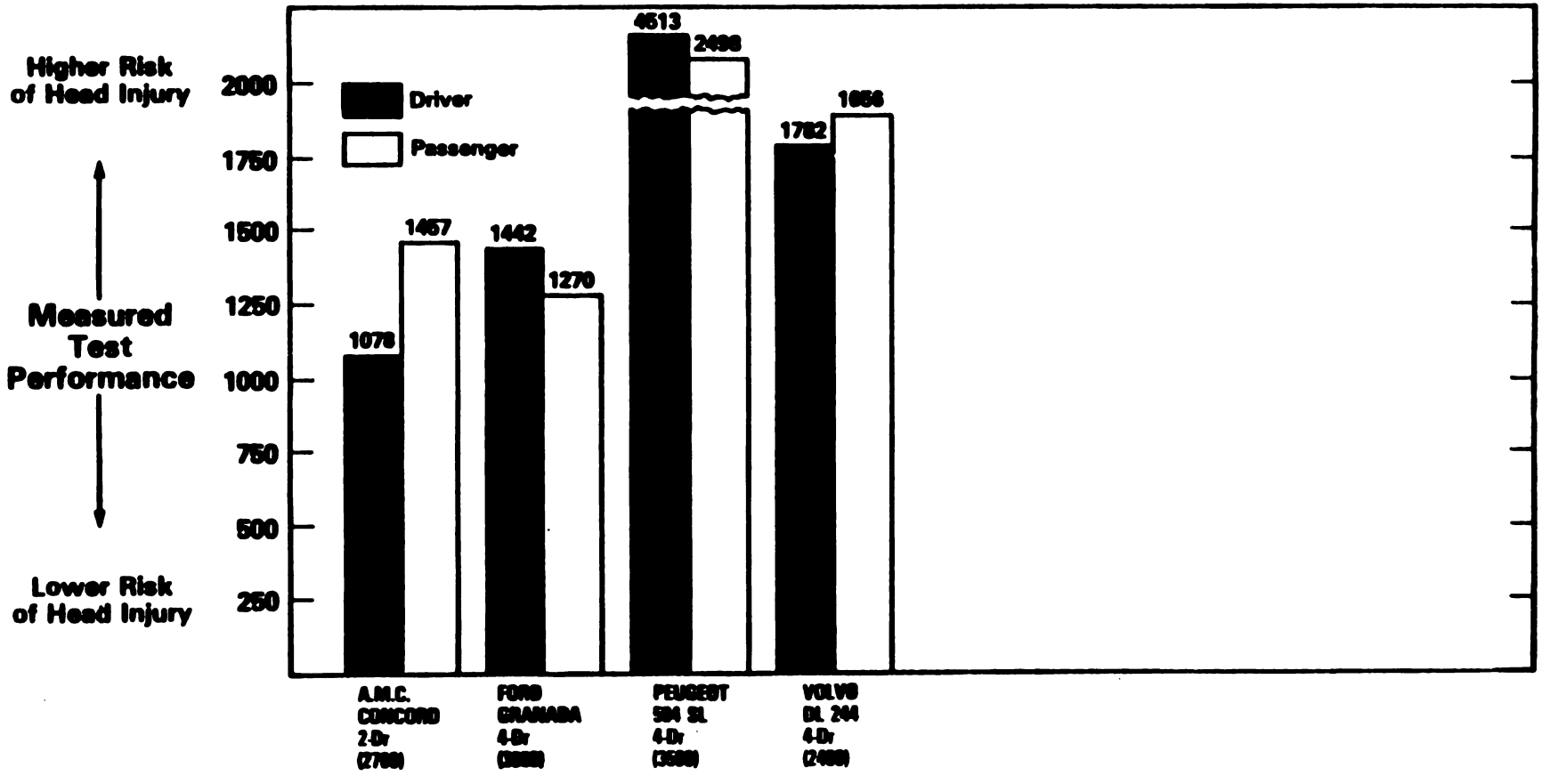



This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury. For a fuller explanation, please read the information pages. A chart enclosed with this fact sheet shows the actual values that NHTSA obtained from instruments that were attached to the test dummies during the crashes.

# *Head Injury Levels During Crash Tests*
# *New Car Assessment Program*

## *1979 COMPACT CARS*

**(Weight Range of Vehicles Tested: 3400 - 4000)**

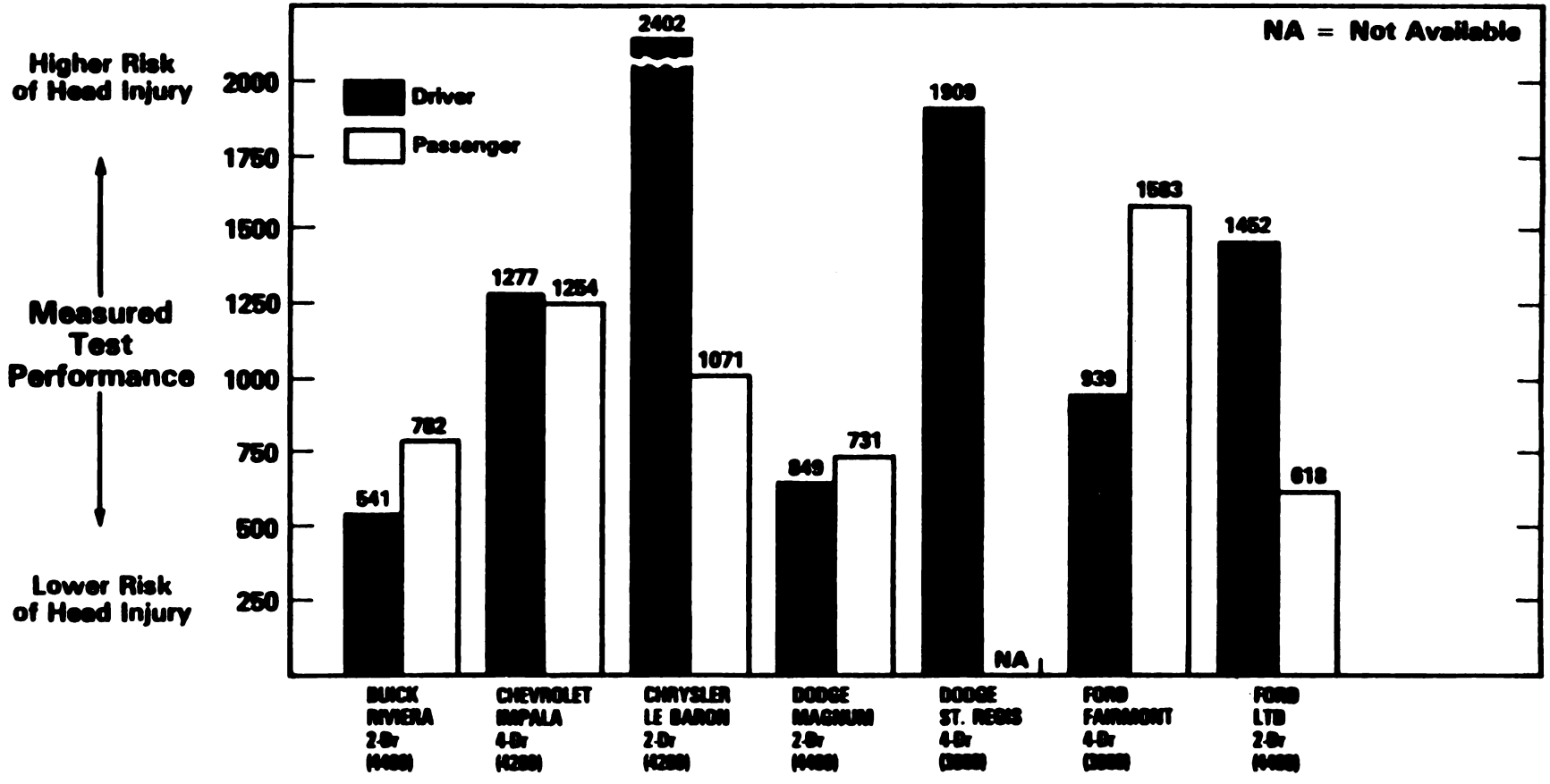



**This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury. For a fuller explanation, please read the information pages. A chart enclosed with this fact sheet shows the actual values that NHTSA obtained from instruments that were attached to the test dummies during the crashes.**

# Head Injury Levels During Crash Tests
# New Car Assessment Program

## 1979 LARGE AND MID-SIZE CARS (1)

**(Weight Range of Vehicles Tested: 3300 - 5400)**

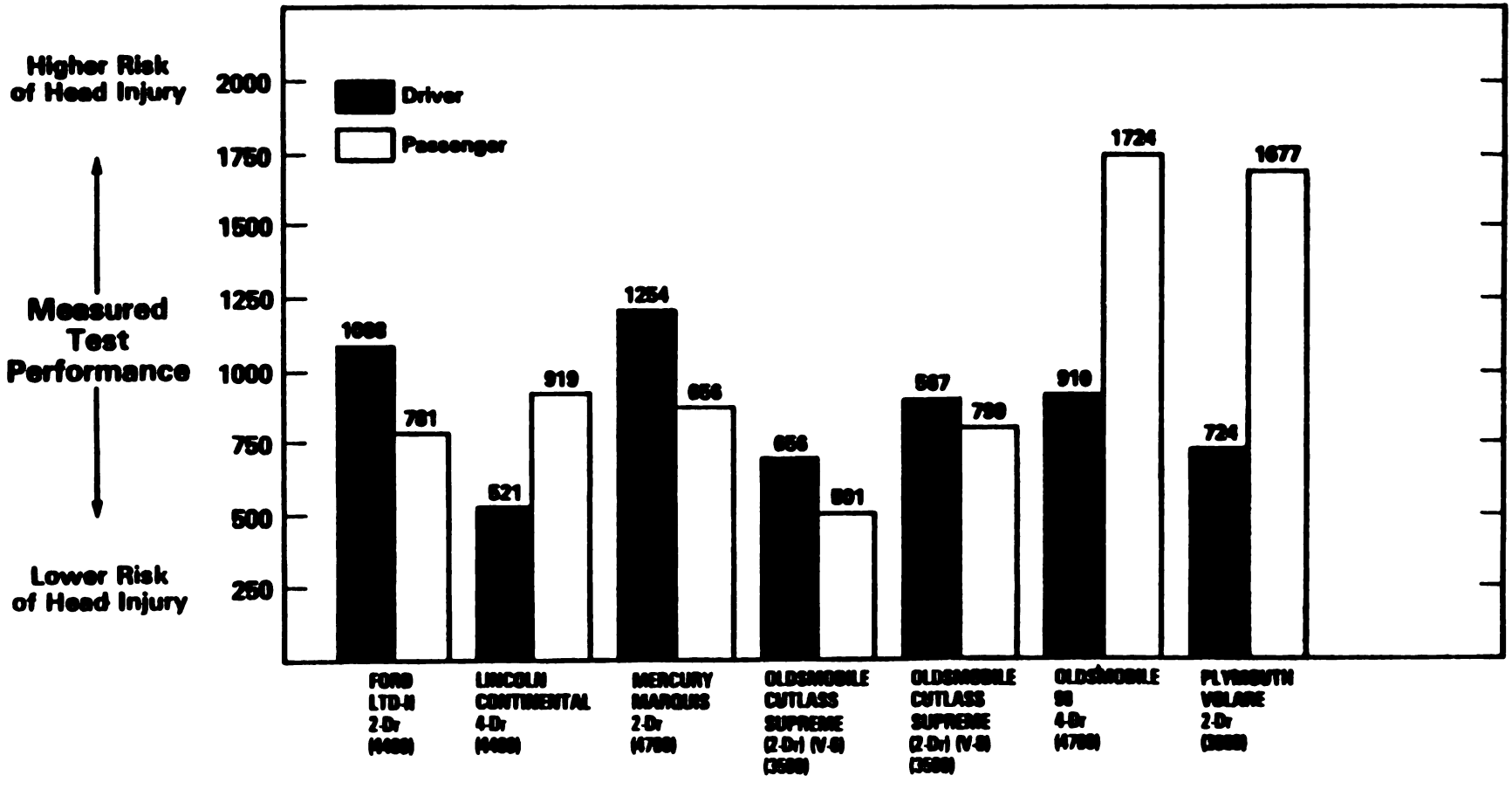



**This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury. For a fuller explanation, please read the information pages. A chart enclosed with this fact sheet shows the actual values that NHTSA obtained from instruments that were attached to the test dummies during the crashes.**

# *Head Injury Levels During Crash Tests*
# *New Car Assessment Program*

## *1979 LARGE AND MID-SIZE CARS (II)*

**(Weight Range of Vehicles Tested: 3900 - 5400)**

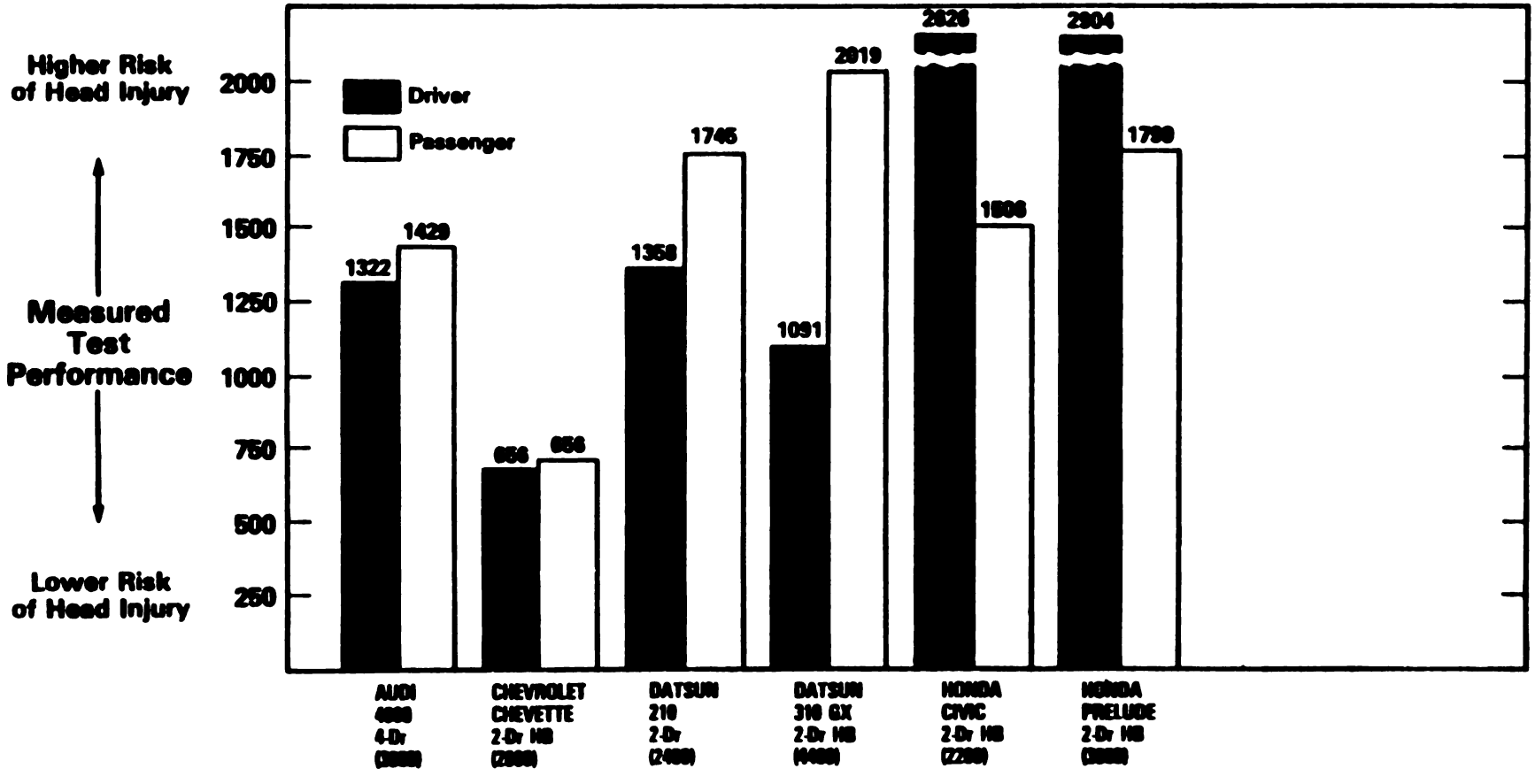



**This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury. For a fuller explanation, please read the information pages. A chart enclosed with this fact sheet shows the actual values that NHTSA obtained from instruments that were attached to the test dummies during the crashes.**

# Head Injury Levels During Crash Tests
# New Car Assessment Program

## 1980 SUBCOMPACT CARS (I)

**(Weight Range of Vehicles Tested: 2200 - 3100)**

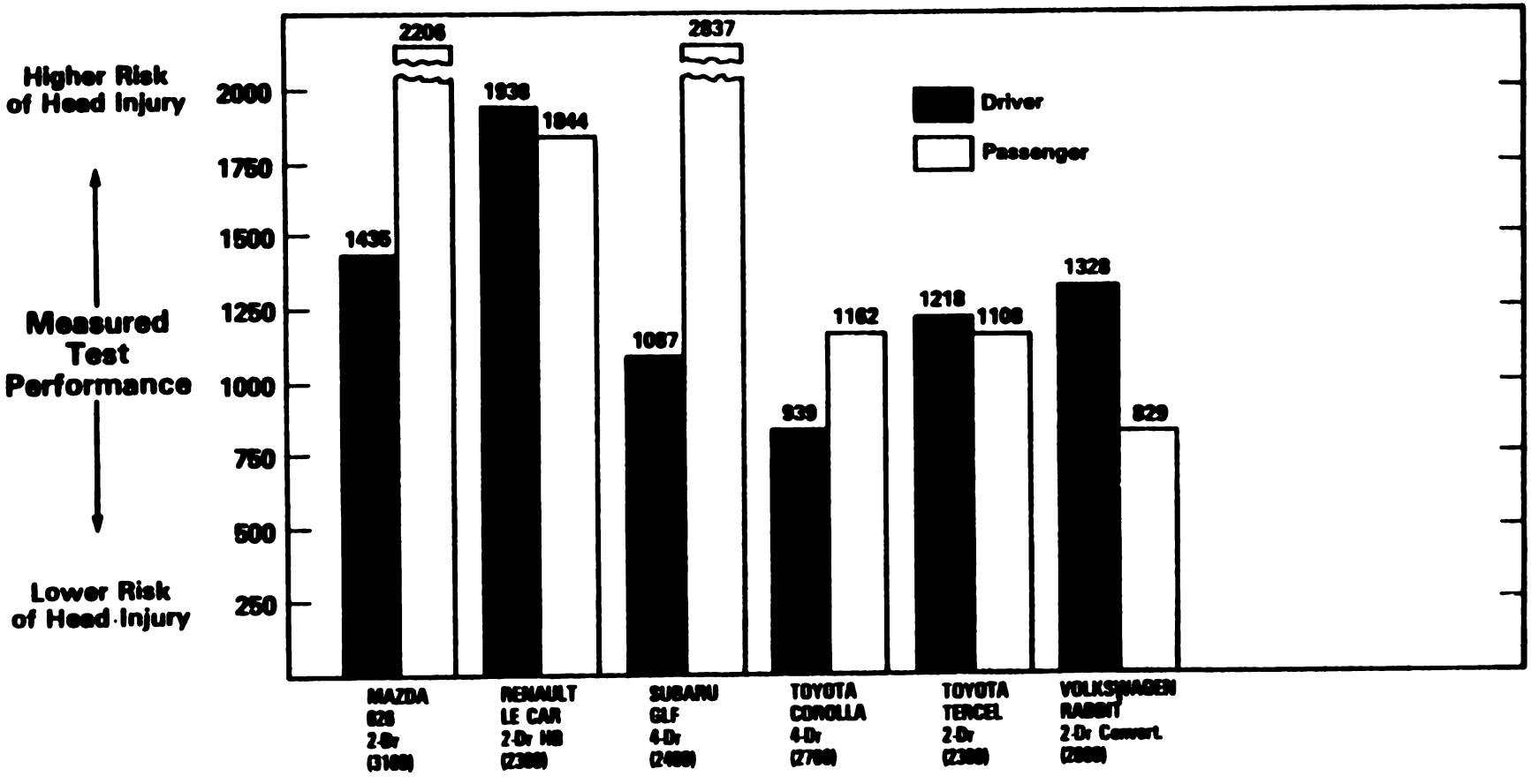



This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury. For a fuller explanation, please read the information pages. A chart enclosed with this fact sheet shows the actual values that NHTSA obtained from instruments that were attached to the test dummies during the crashes.

# Head Injury Levels During Crash Tests
# New Car Assessment Program

## 1980 SUBCOMPACT CARS (II)

(Weight Range of Vehicles Tested: 2200 - 3100)

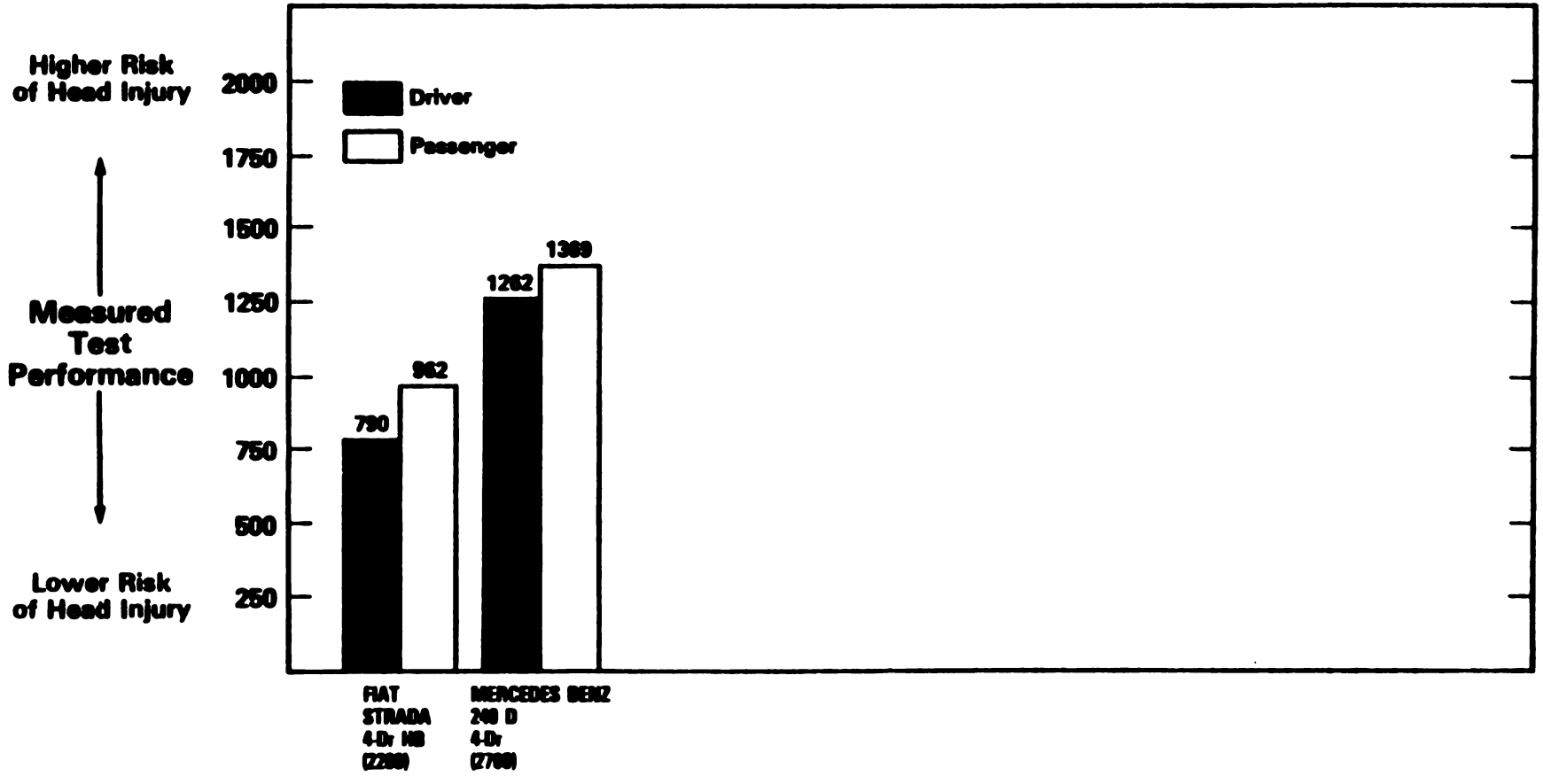



This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury. For a fuller explanation, please read the information pages. A chart enclosed with this fact sheet shows the actual values that NHTSA obtained from instruments that were attached to the test dummies during the crashes.

# *Head Injury Levels During Crash Tests*
# *New Car Assessment Program*

## *1980 COMPACT CARS*

**(Weight Range of Vehicles Tested: 2700 - 3700)**

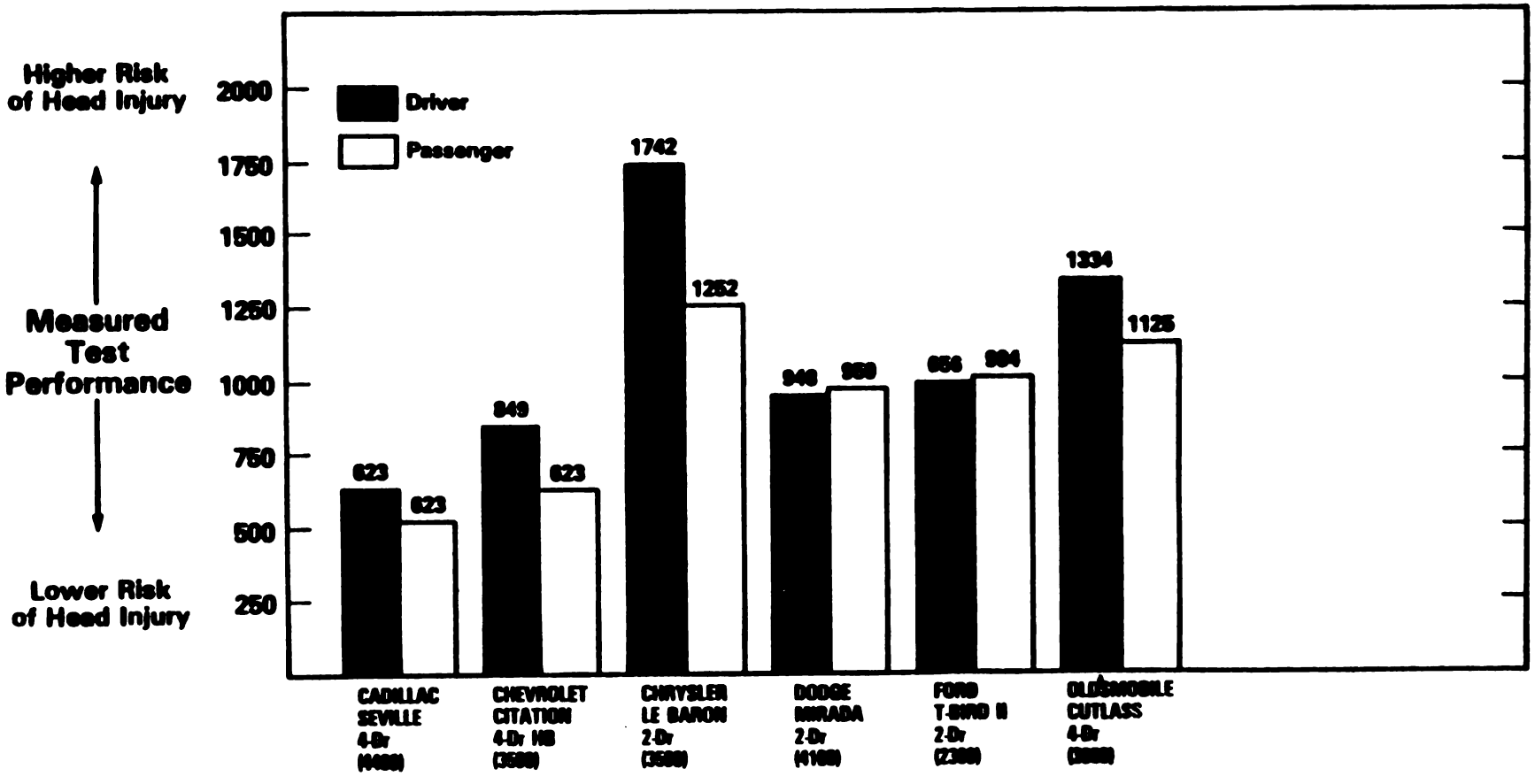



**This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury. For a fuller explanation, please read the information pages. A chart enclosed with this fact sheet shows the actual values that NHTSA obtained from instruments that were attached to the test dummies during the crashes.**

# Head Injury Levels During Crash Tests
# New Car Assessment Program

## 1980 LARGE AND MID-SIZE CARS

(Weight Range of Vehicles Tested: 3900 - 4600)

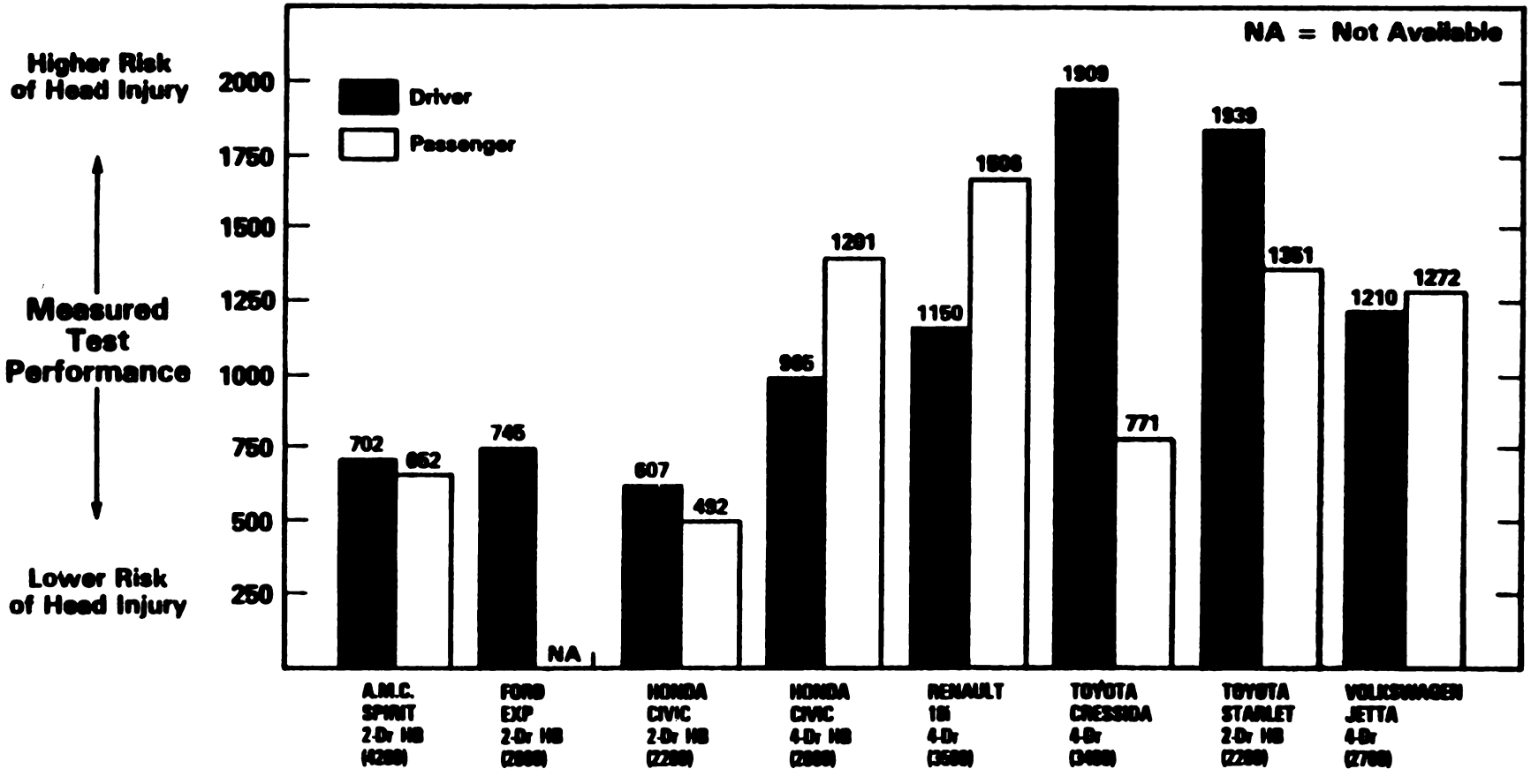



This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury. For a fuller explanation, please read the information pages. A chart enclosed with this fact sheet shows the actual values that NHTSA obtained from instruments that were attached to the test dummies during the crashes.

# Head Injury Levels During Crash Tests
# New Car Assessment Program

## 1981 SUBCOMPACT CARS

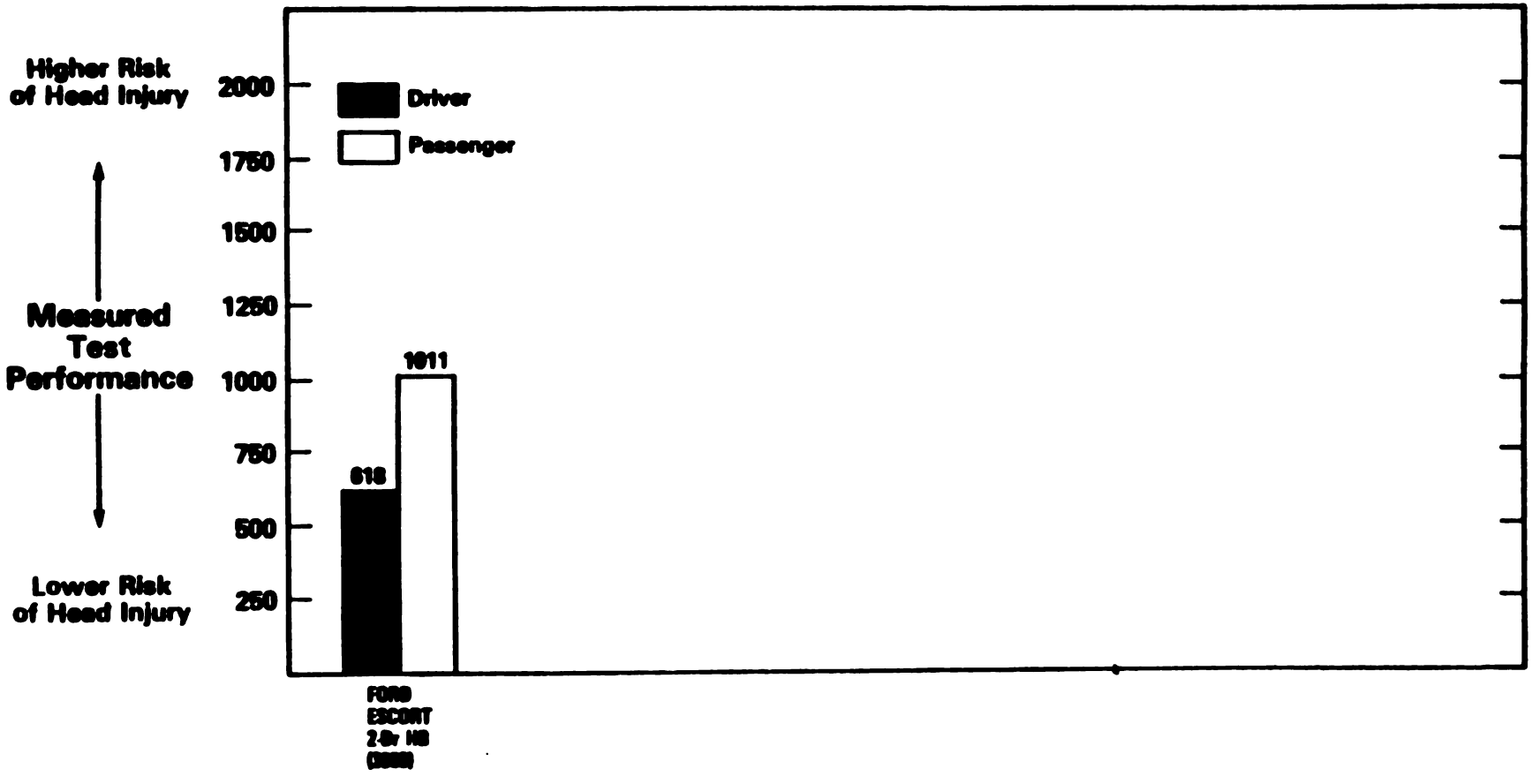
**(Weight Range of Vehicles Tested: 2200 - 3400)**




This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury. For a fuller explanation, please read the information pages. A chart enclosed with this fact sheet shows the actual values that NHTSA obtained from instruments that were attached to the test dummies during the crashes.

# *Head Injury Levels During Crash Tests*
# *New Car Assessment Program*

## *1981 COMPACT CAR*

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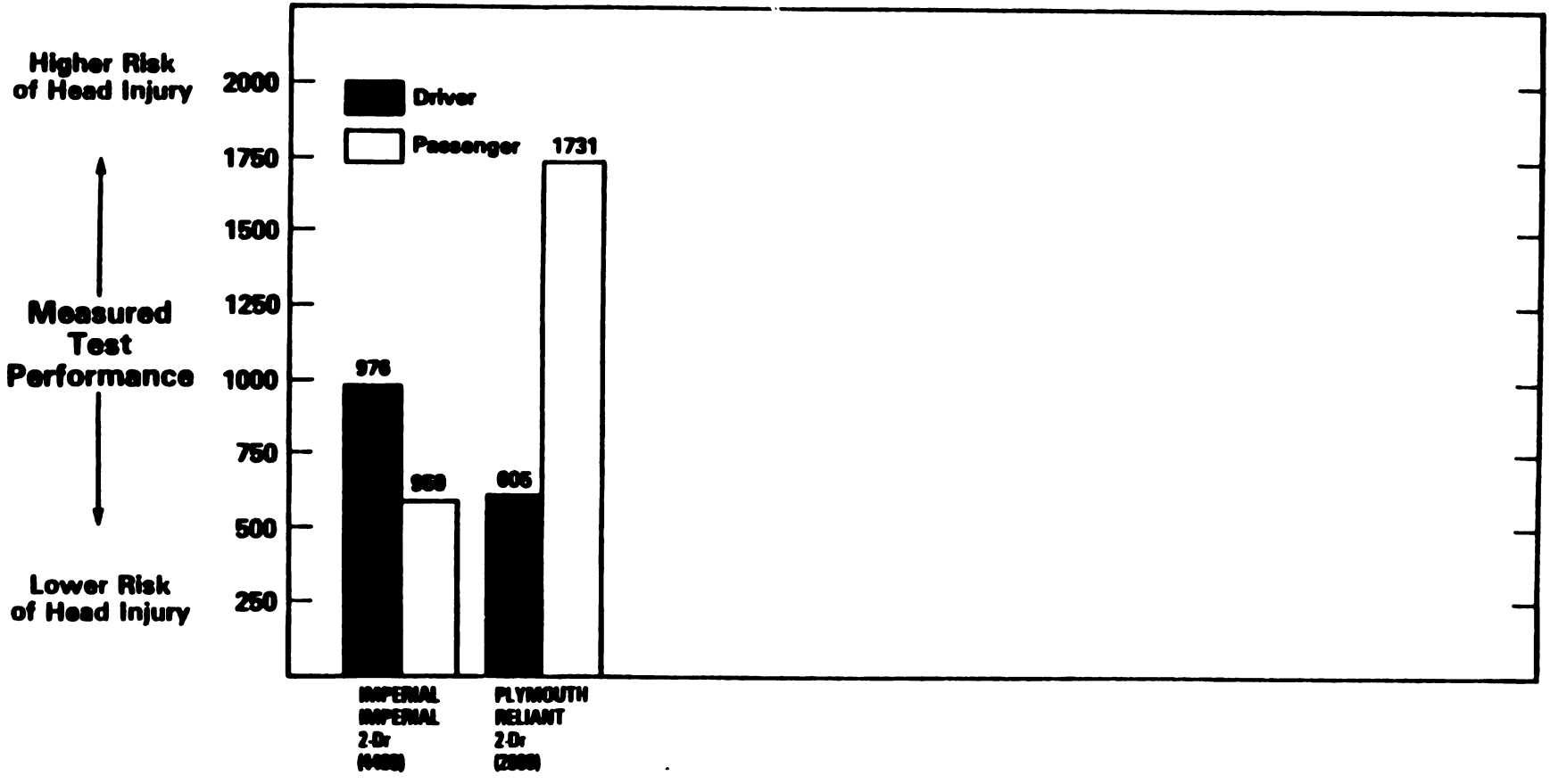
# *Head Injury Levels During Crash Tests*
# *New Car Assessment Program*

## *1981 LARGE AND MID-SIZE CARS*

**(Weight Range of Vehicles Tested: 3000 - 4000)**

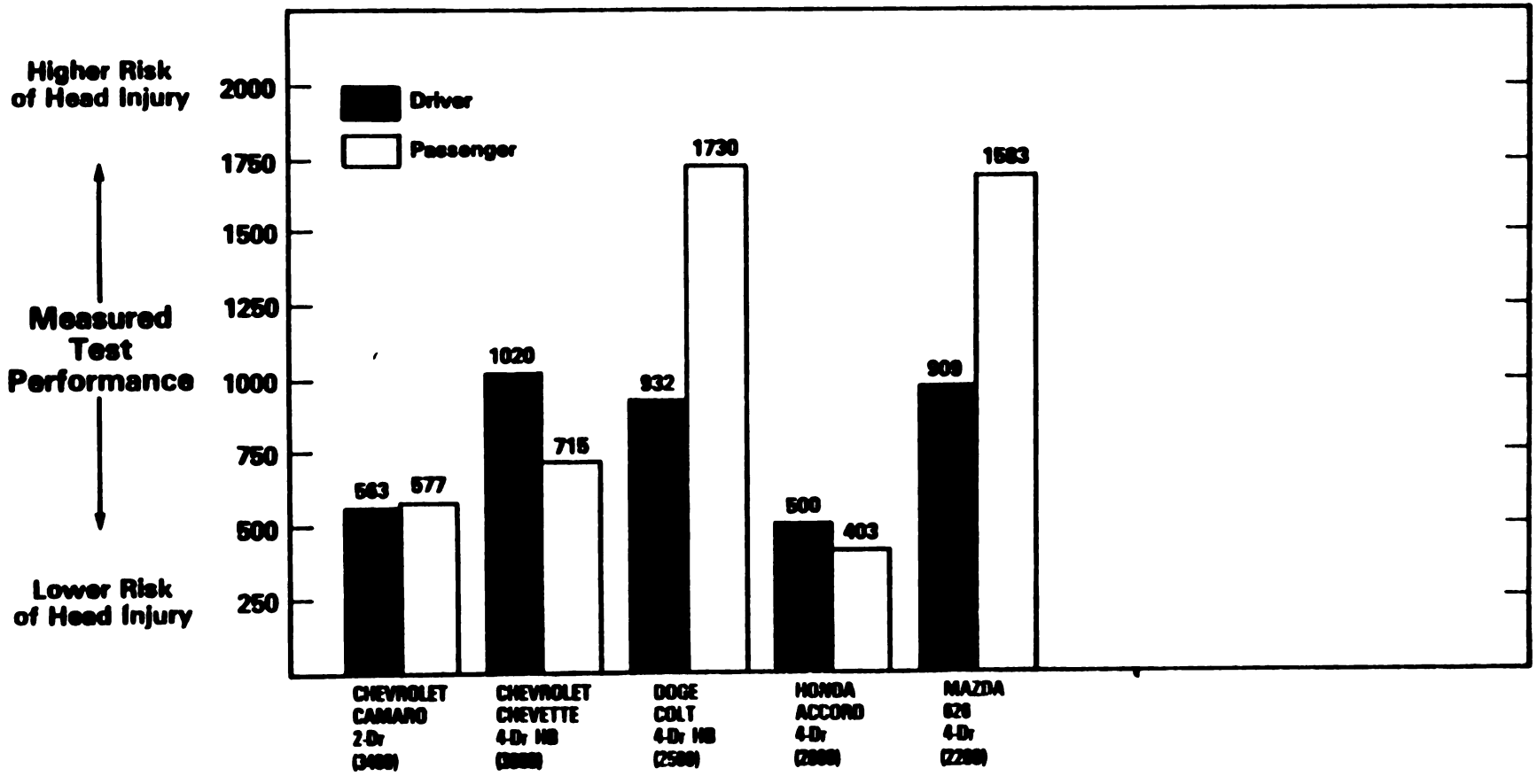



This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury. For a fuller explanation, please read the information pages. A chart enclosed with this fact sheet shows the actual values that NHTSA obtained from instruments that were attached to the test dummies during the crashes.

# *Head Injury Levels During Crash Tests*
# *New Car Assessment Program*

## *1982 SUBCOMPACT CARS (1)*

**(Weight Range of Vehicles Tested: 2400 - 3400)**

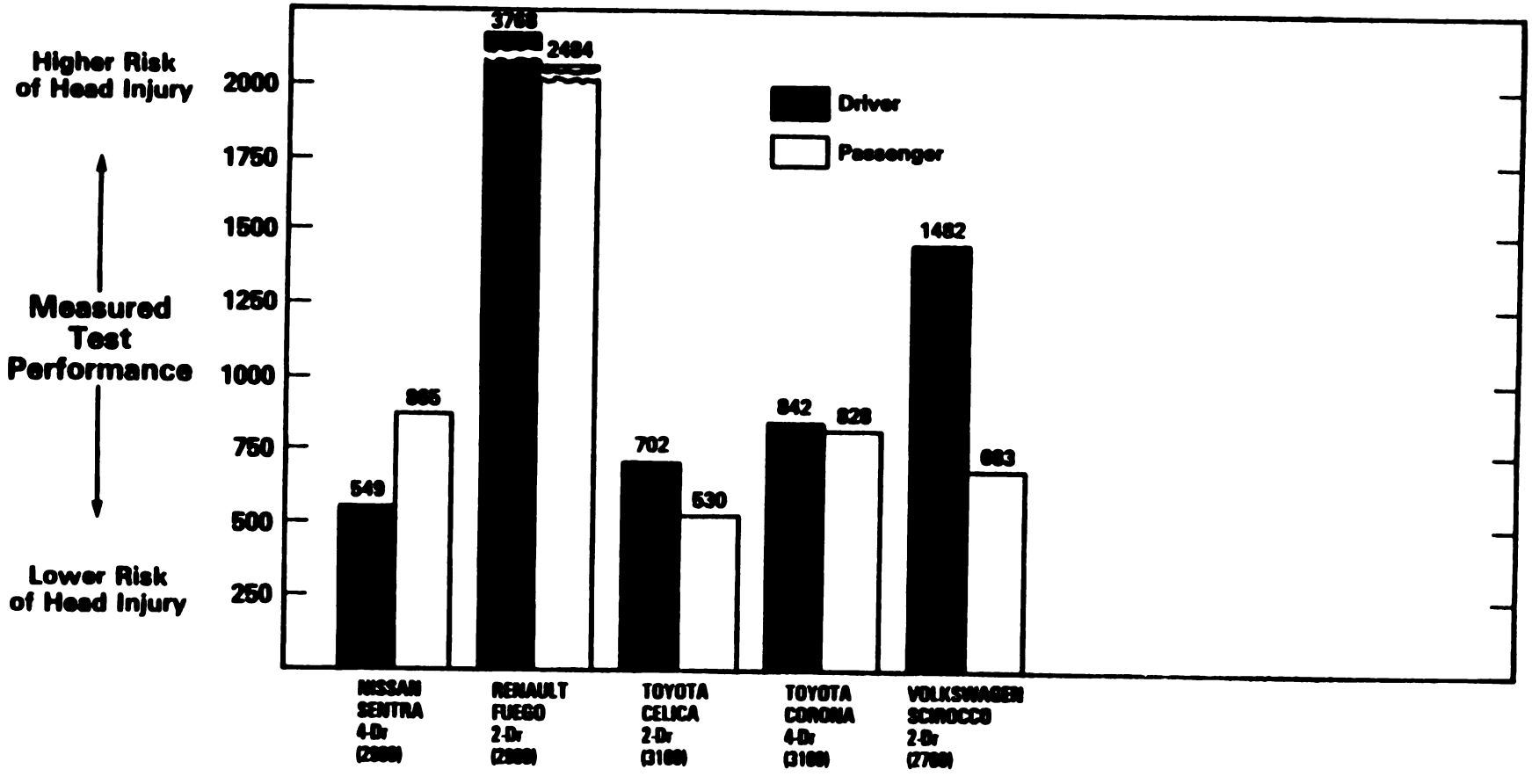



This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury. For a fuller explanation, please read the information pages. A chart enclosed with this fact sheet shows the actual values that NHTSA obtained from instruments that were attached to the test dummies during the crashes.

# Head Injury Levels During Crash Tests
# New Car Assessment Program

## 1982 SUBCOMPACT CARS (II)

(Weight Range of Vehicles Tested: 2400 - 3400)

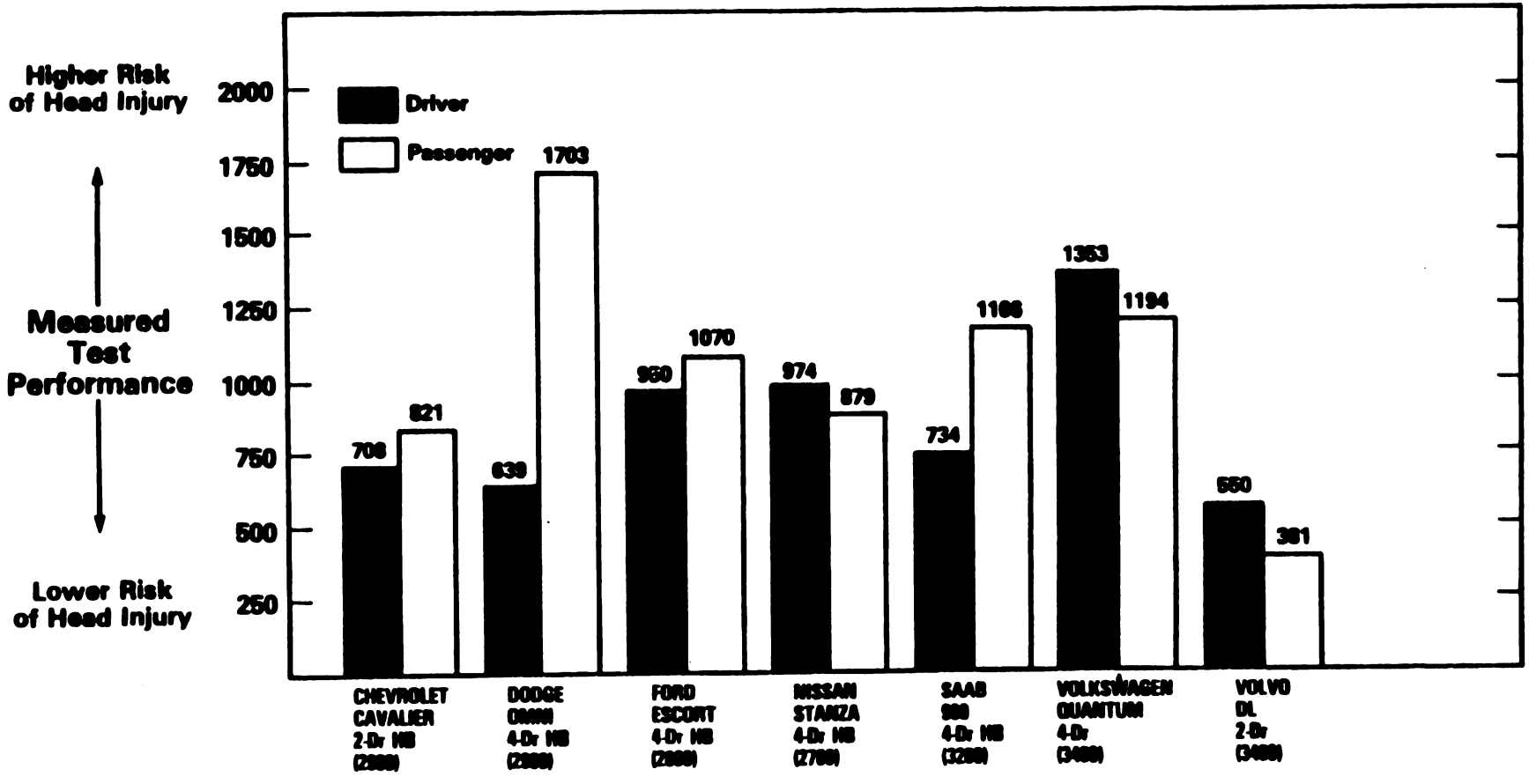



This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury. For a fuller explanation, please read the information pages. A chart enclosed with this fact sheet shows the actual values that NHTSA obtained from instruments that were attached to the test dummies during the crashes.

# *Head Injury Levels During Crash Tests*
# *New Car Assessment Program*

## *1982 COMPACT CARS*

**(Weight Range of Vehicles Tested: 2600 - 3400)**

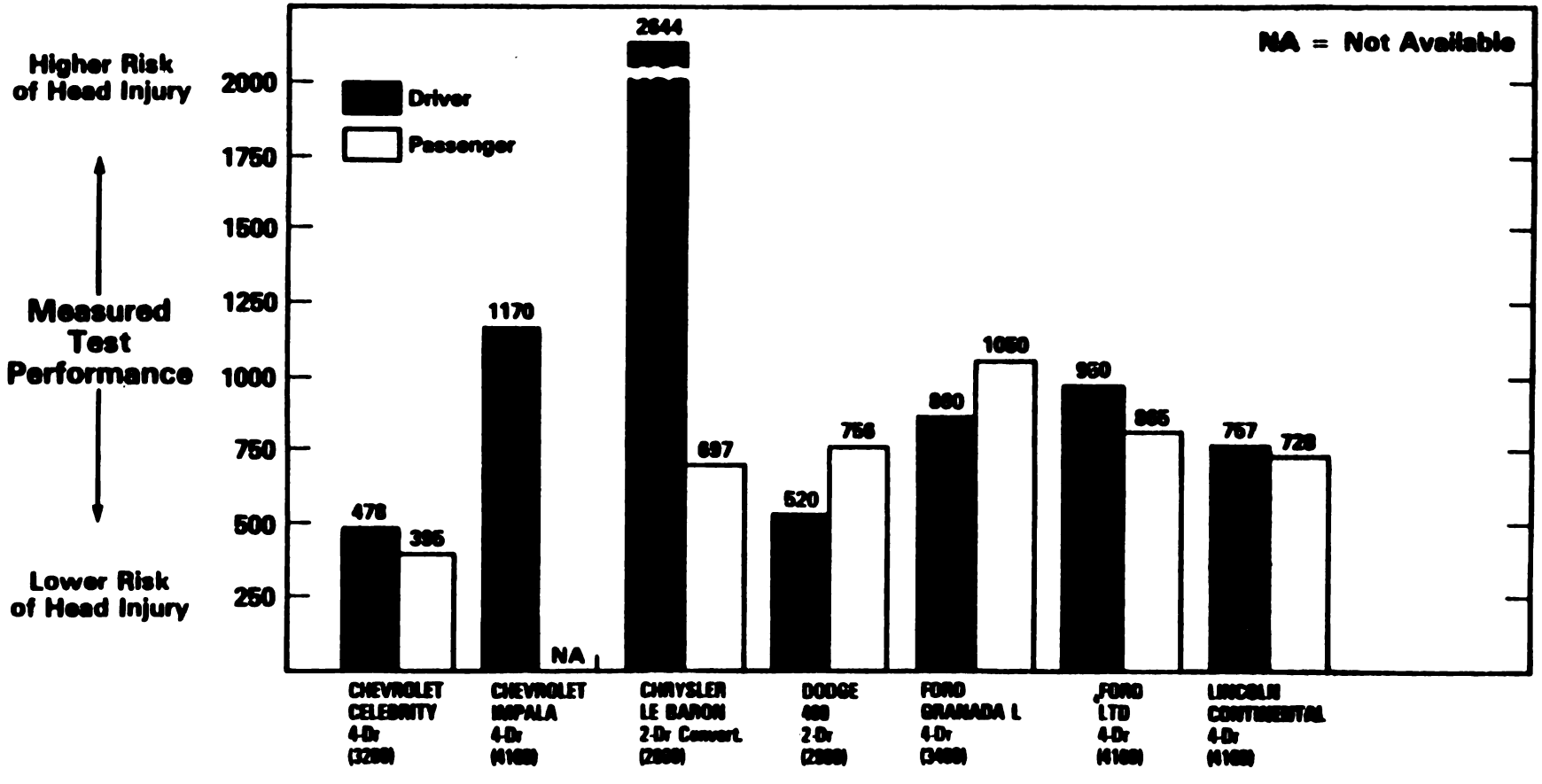



This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury. For a fuller explanation, please read the information pages. A chart enclosed with this fact sheet shows the actual values that NHTSA obtained from instruments that were attached to the test dummies during the crashes.

# *Head Injury Levels During Crash Tests*
# *New Car Assessment Program*

## *1982 LARGE AND MID-SIZE CARS*

**(Weight Range of Vehicles Tested: 3000 - 4100)**

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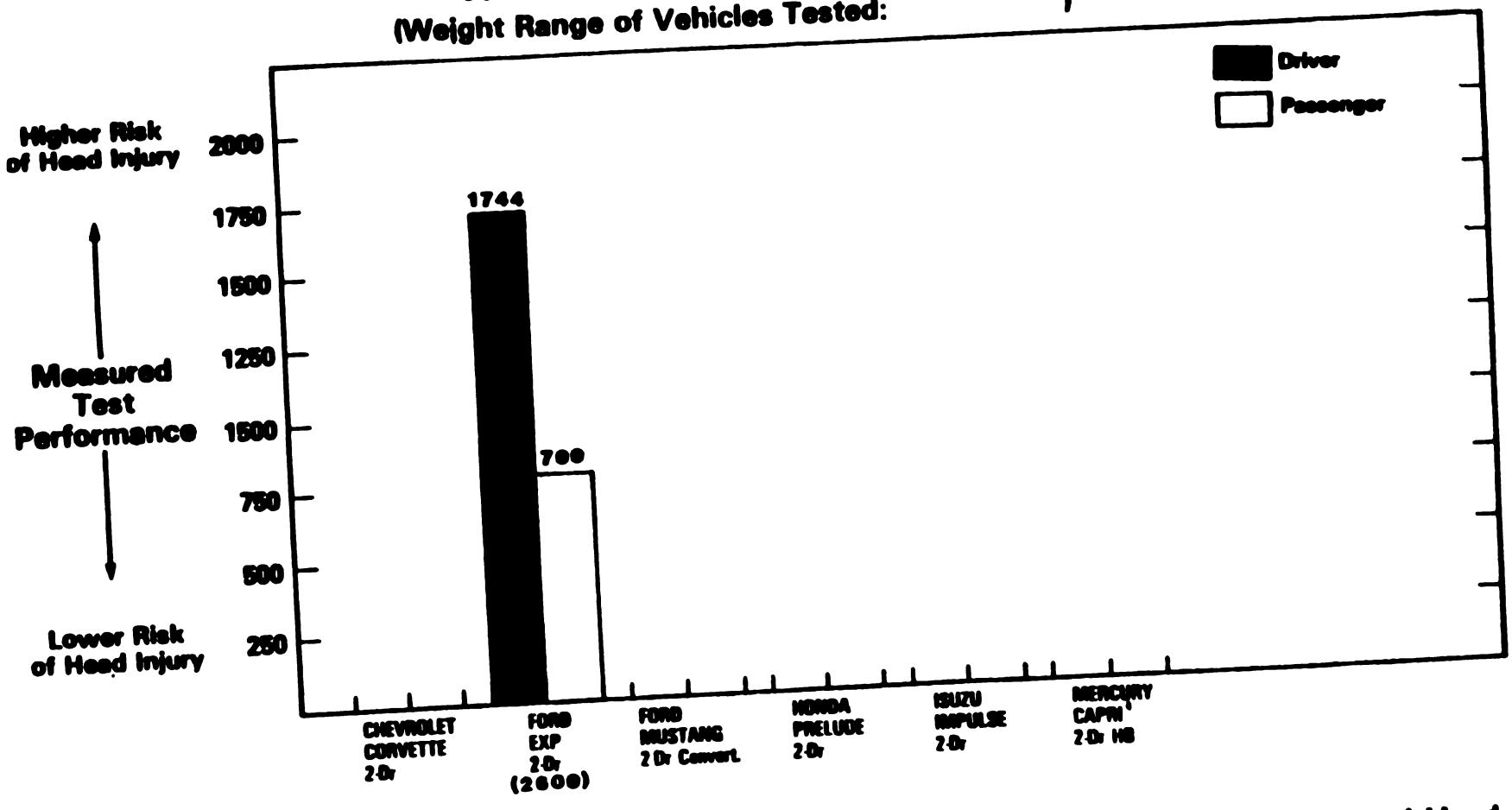
# Head Injury Levels During Crash Tests
# New Car Assessment Program

## 1983 SUBCOMPACT CARS (1)

(Weight Range of Vehicles Tested: )

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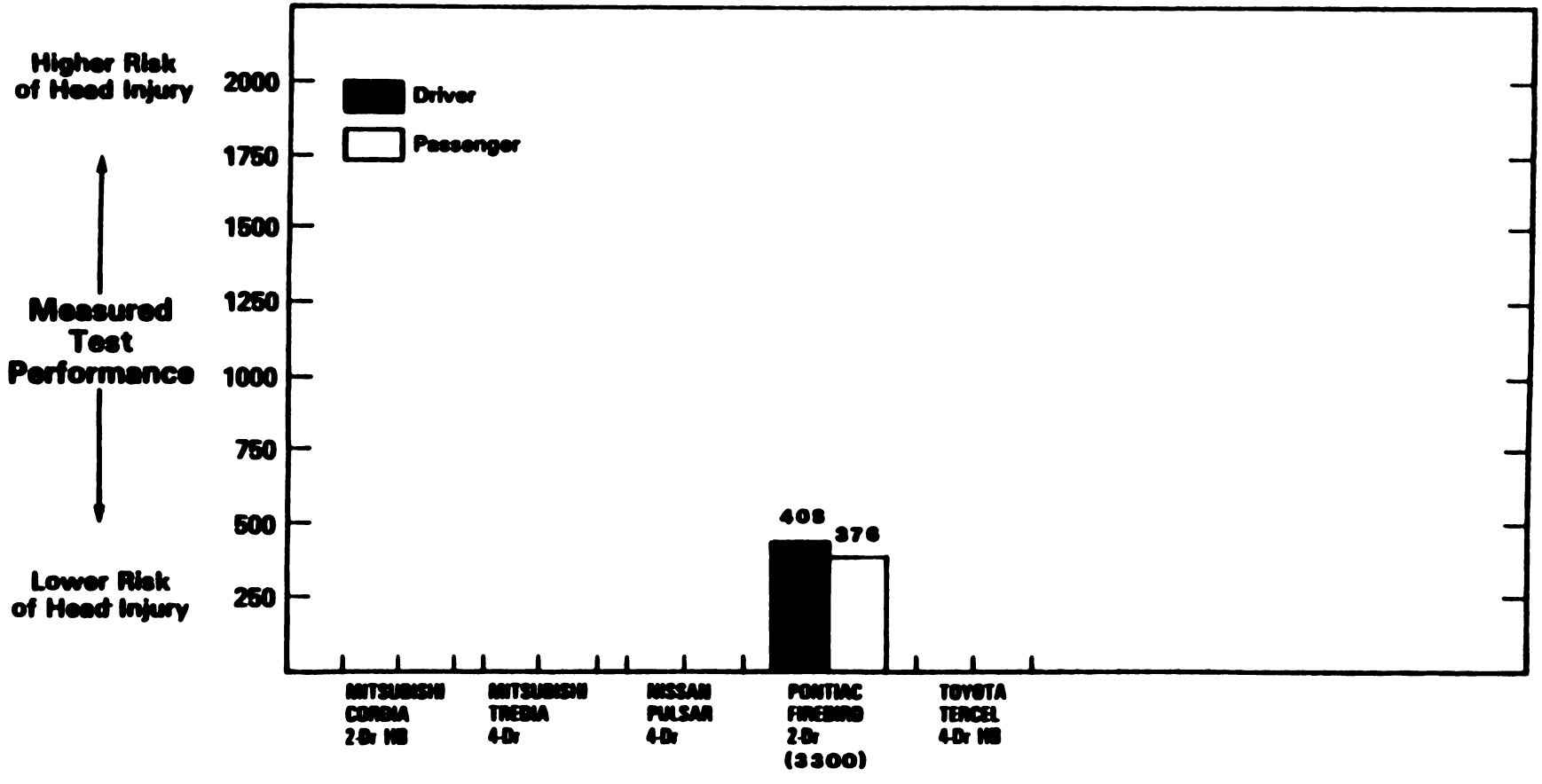
# *Head Injury Levels During Crash Tests*
# *New Car Assessment Program*

## *1983 SUBCOMPACT CARS (II)*

**(Weight Range of Vehicles Tested: )**

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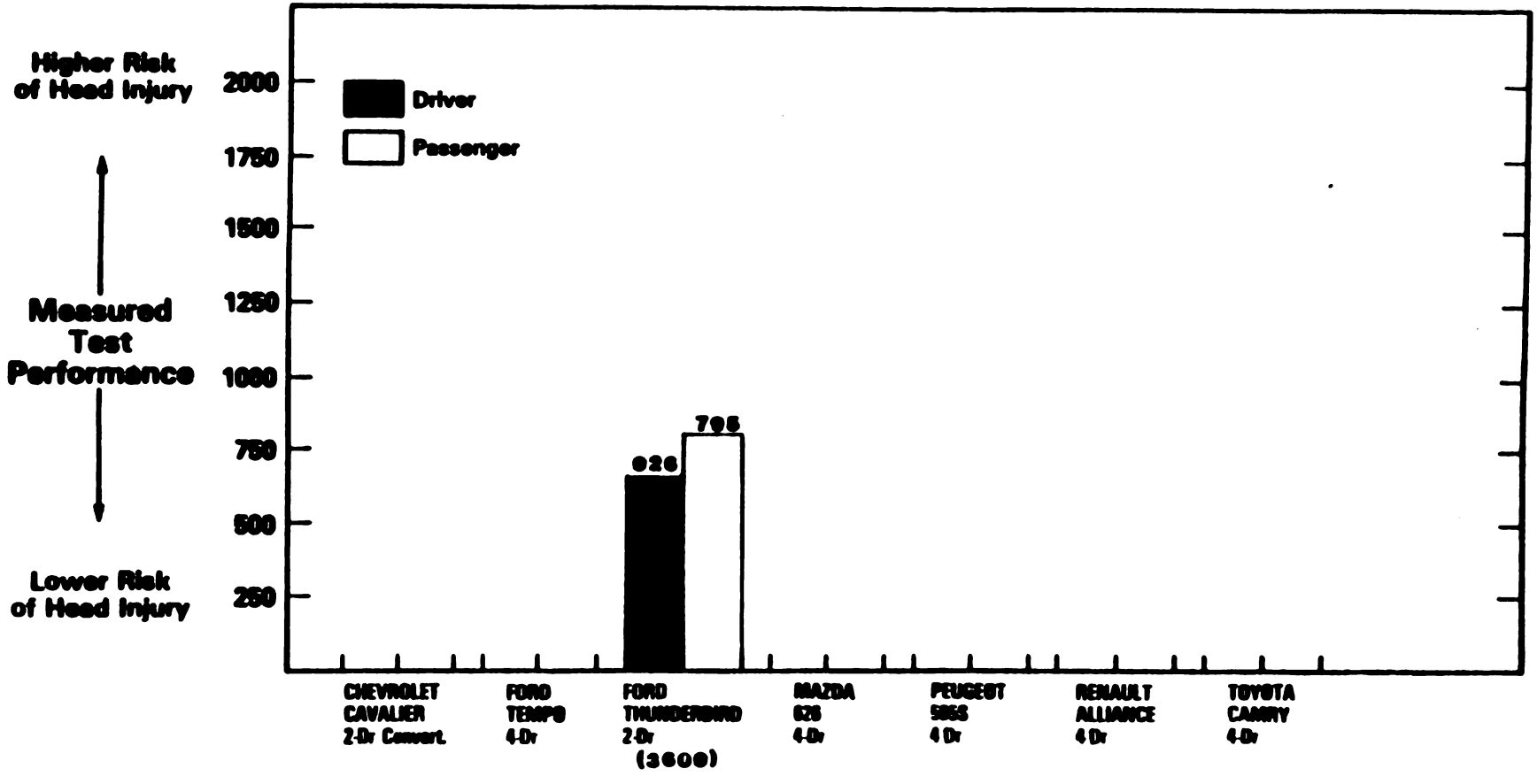
# *Head Injury Levels During Crash Tests*
# *New Car Assessment Program*

## *1983 COMPACT CARS*

(Weight Range of Vehicles Tested: )

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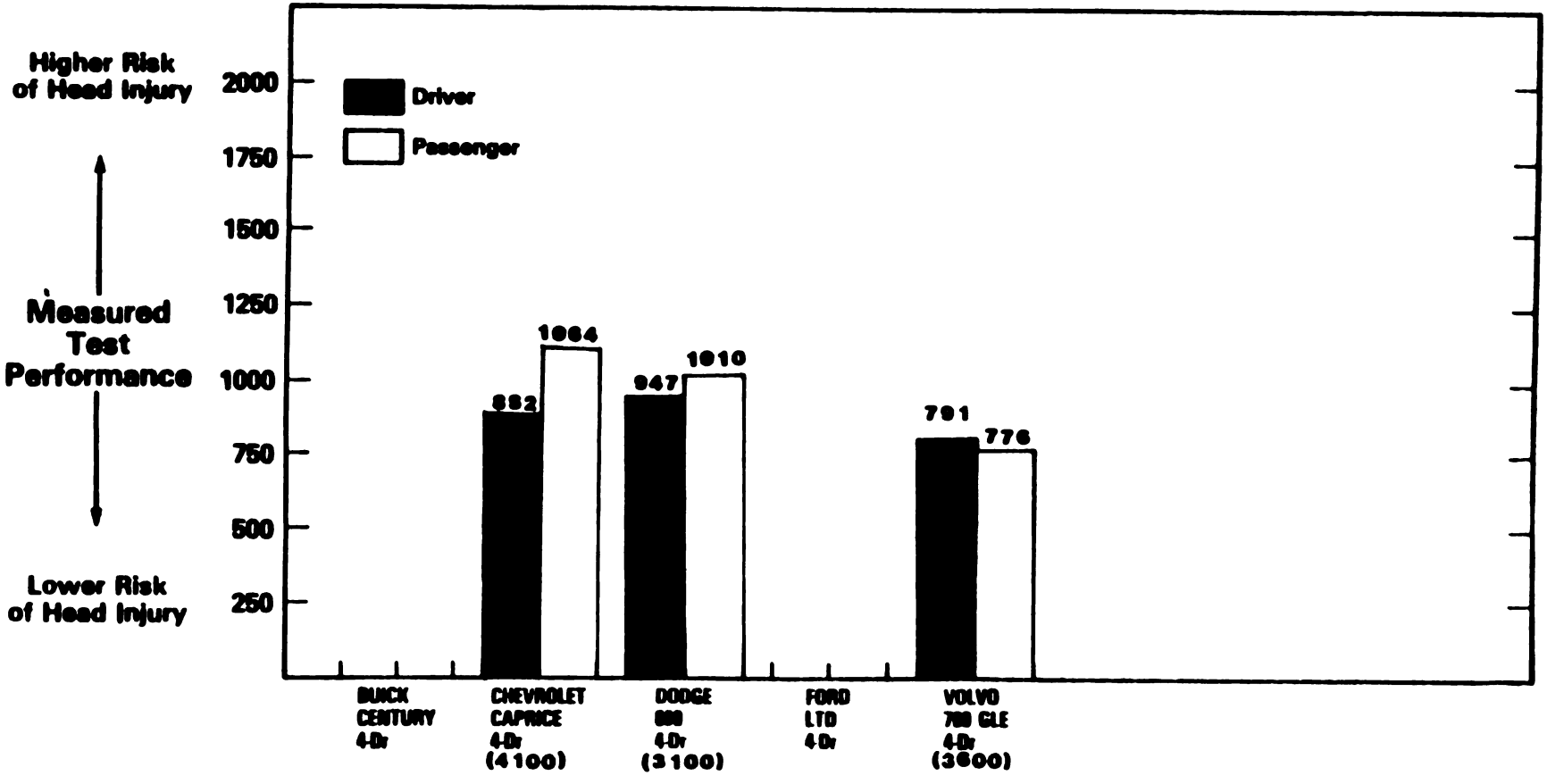
# Head Injury Levels During Crash Tests
# New Car Assessment Program

## 1983 LARGE AND MID-SIZE CARS

(Weight Range of Vehicles Tested: )

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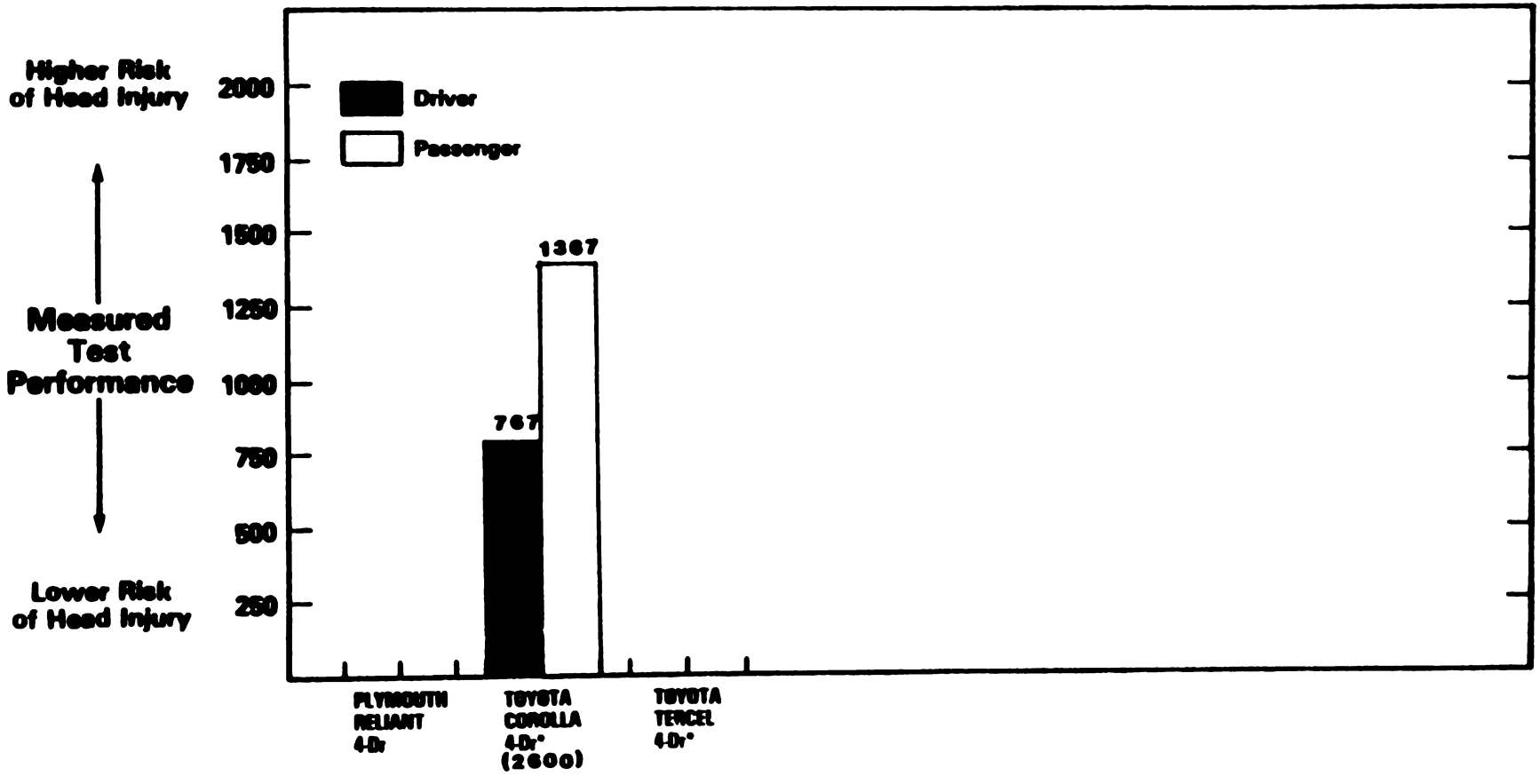
# *Head Injury Levels During Crash Tests*
# *New Car Assessment Program*

## *1983 STATION WAGONS*

**(Weight Range of Vehicles Tested: )**



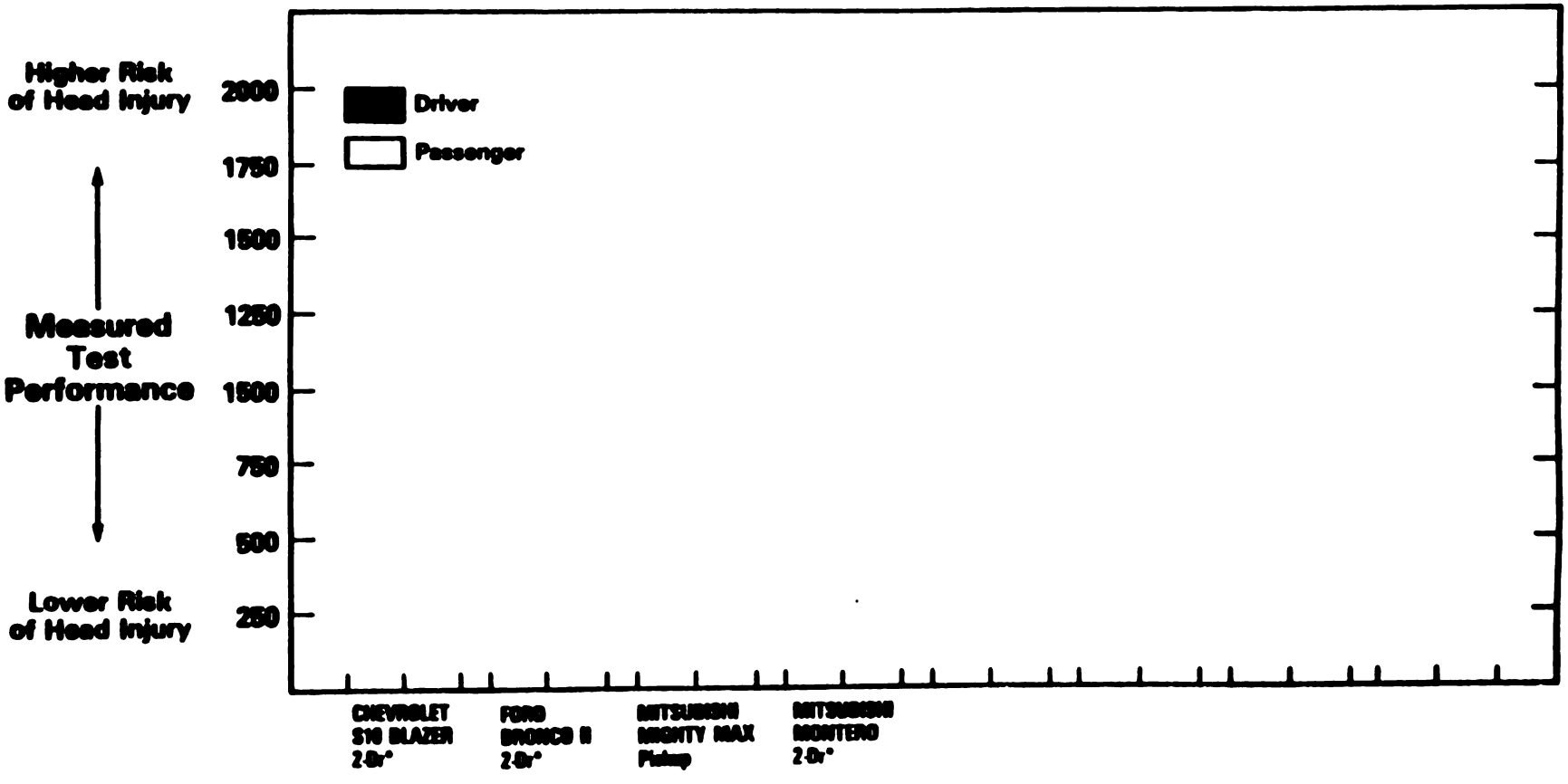

(*) 4-Wheel Drive

This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury. For a fuller explanation, please read the information pages. A chart enclosed with this fact sheet shows the actual values that NHTSA obtained from instruments that were attached to the test dummies during the crashes.

# *Head Injury Levels During Crash Tests*
# *New Car Assessment Program*

## *1983 TRUCKS*

**(Weight Range of Vehicles Tested: )**




(*) 4-Wheel Drive

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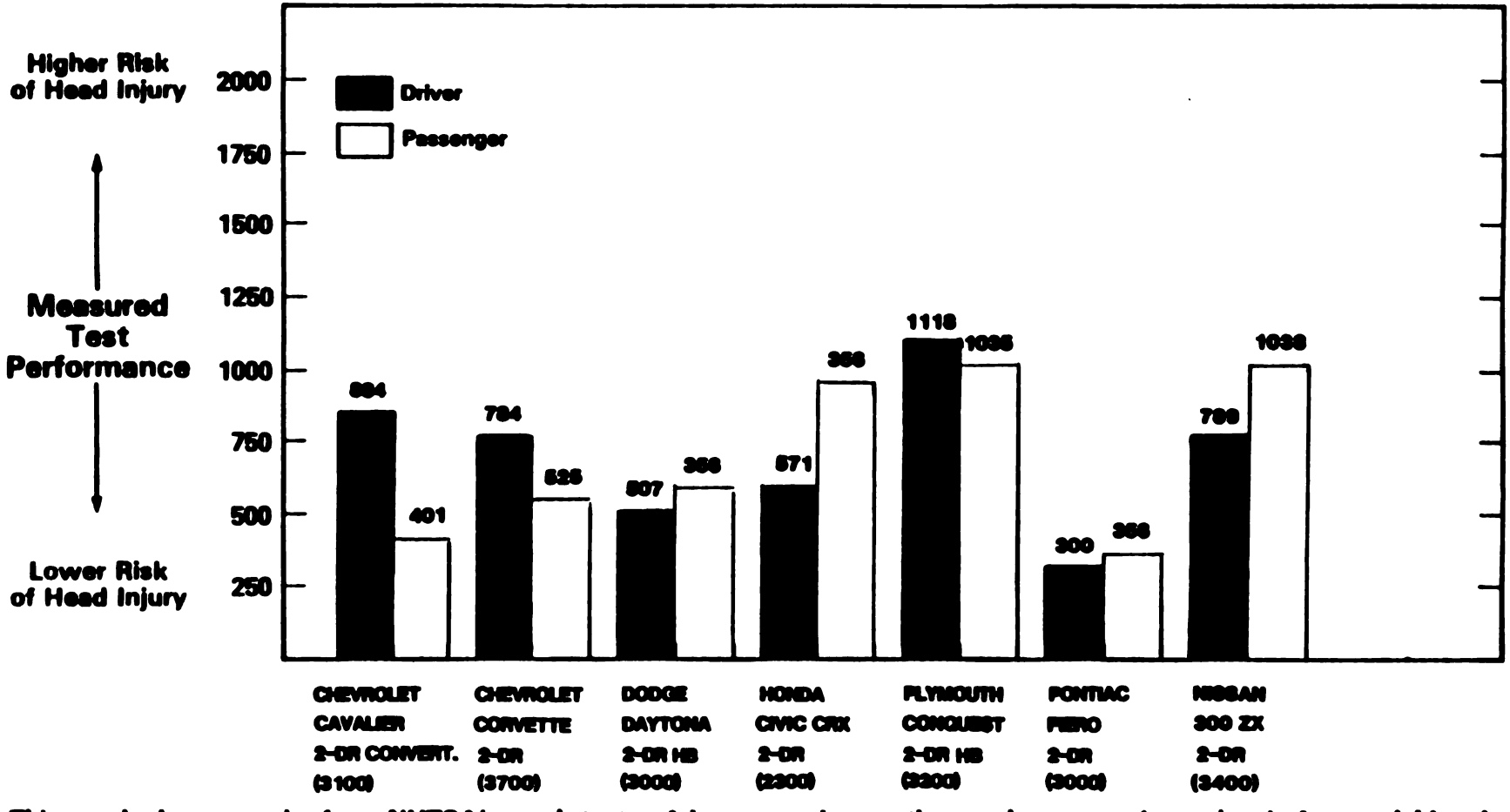
# *Head Injury Levels During Crash Tests*
# *New Car Assessment Program*

## 1984 SUBCOMPACT CARS

**(Weight Range of Vehicles Tested: 2300-3700 )**

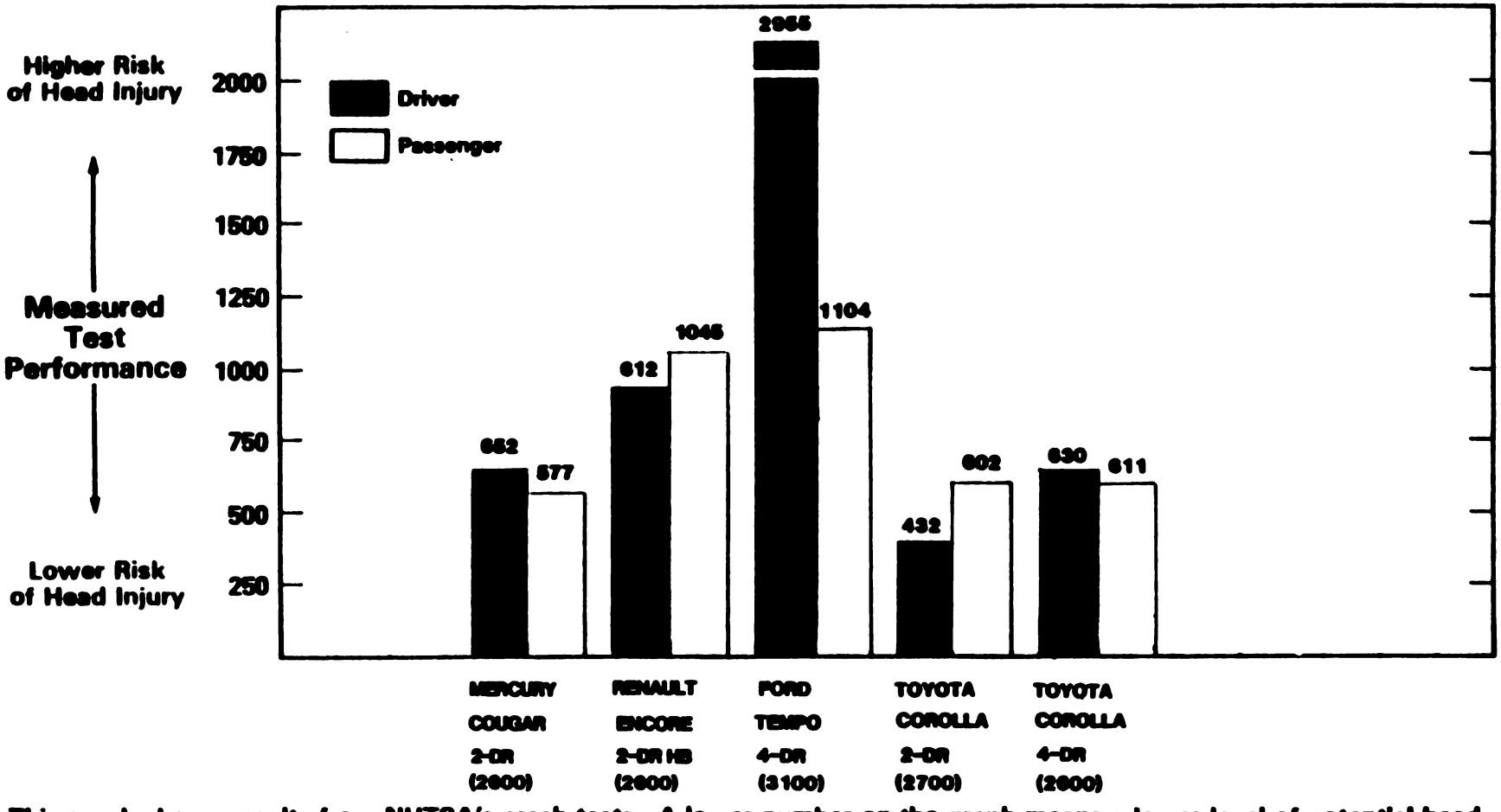



This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury.

# *Head Injury Levels During Crash Tests*
# *New Car Assessment Program*

## 1984 COMPACT CARS

(Weight Range of Vehicles Tested: 2600-3600 )

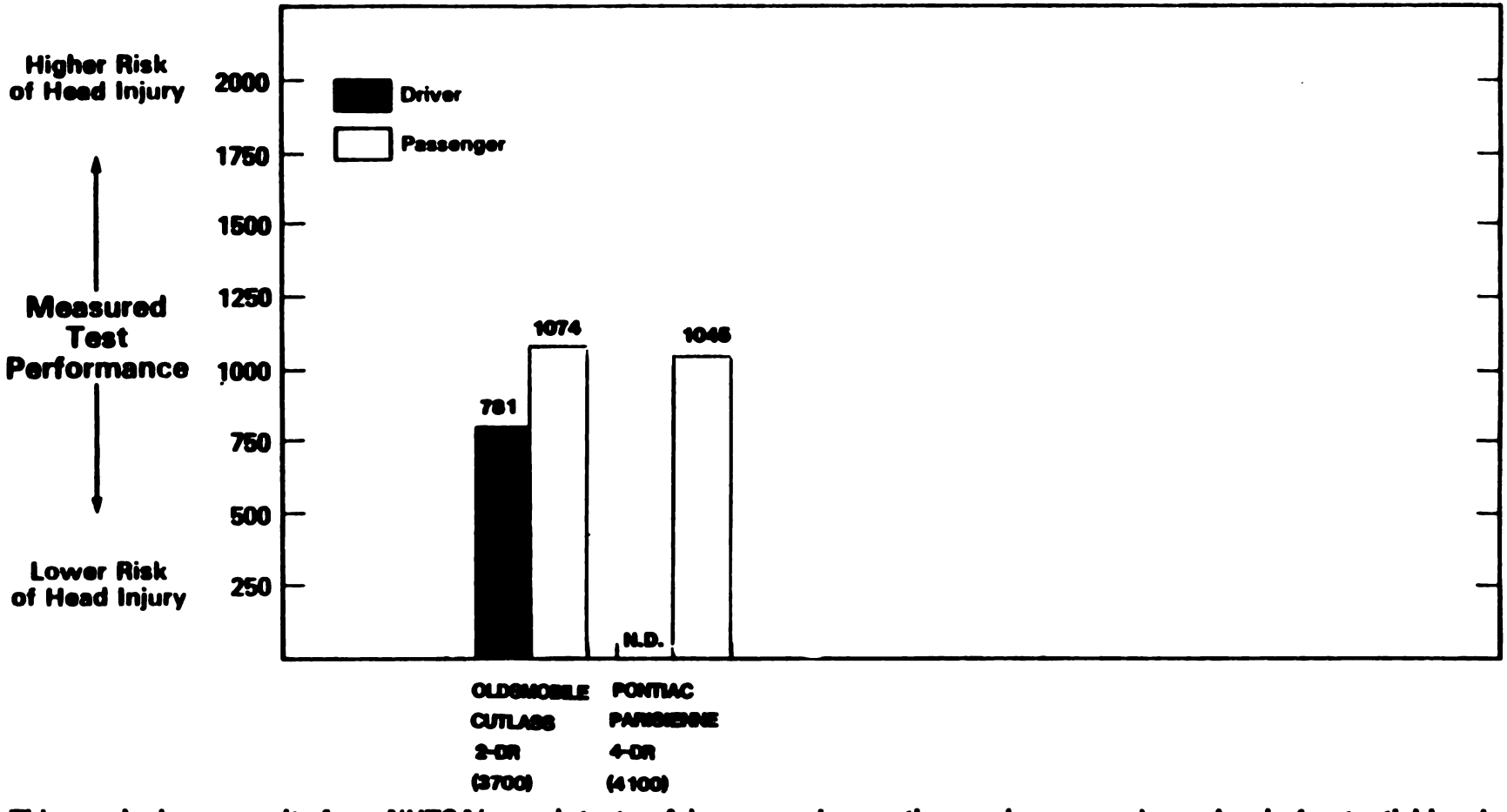



This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury.

# *Head Injury Levels During Crash Tests*
# *New Car Assessment Program*

## 1984 LARGE AND MID-SIZE CARS

(Weight Range of Vehicles Tested: 3700-4100 )



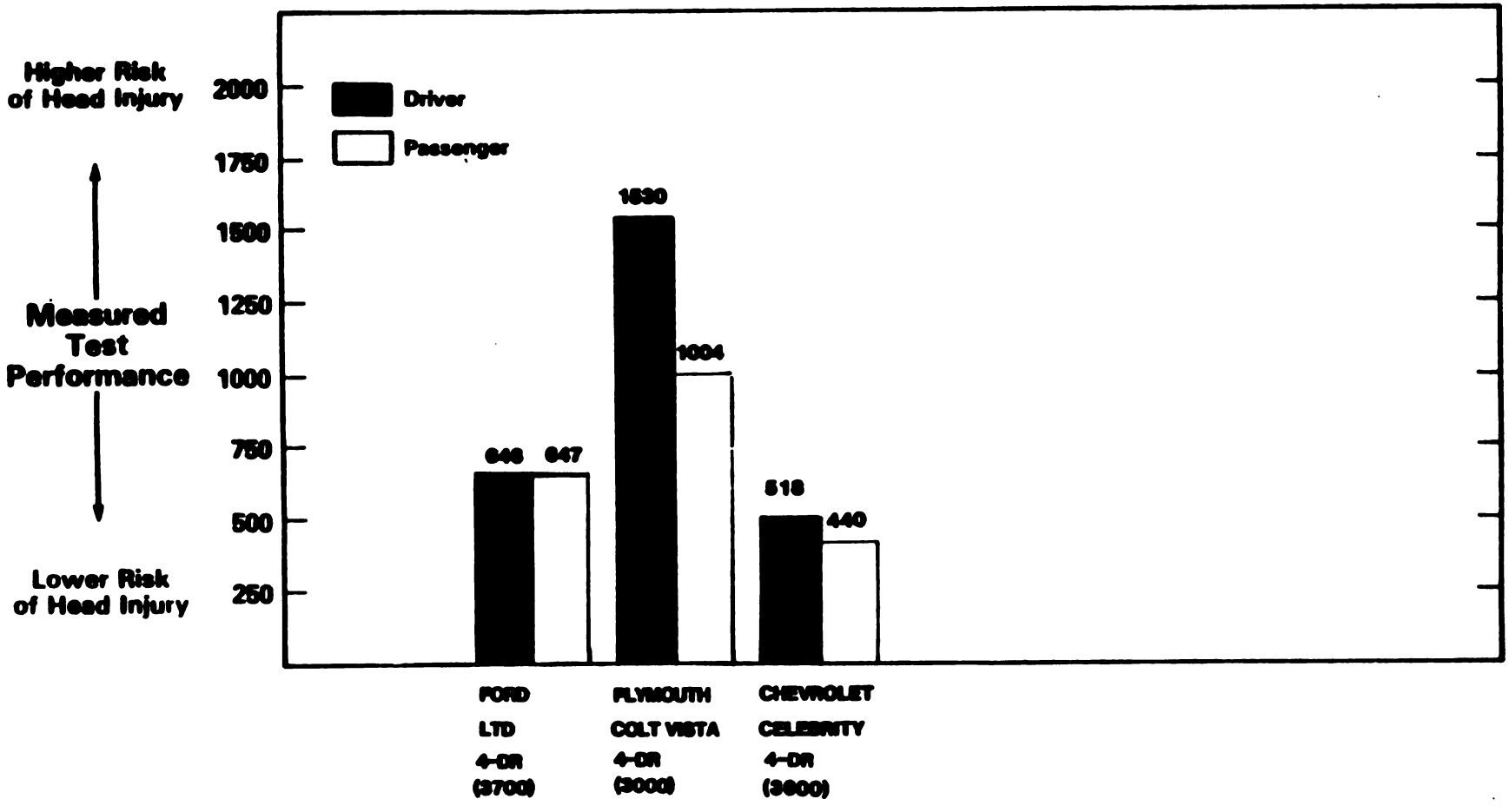

This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury.

*U.S. GOVERNMENT PRINTING OFFICE : 1984 0-421-429/7217

# *Head Injury Levels During Crash Tests*
# *New Car Assessment Program*

## 1984 STATION WAGONS

(Weight Range of Vehicles Tested: 3000-3700 )

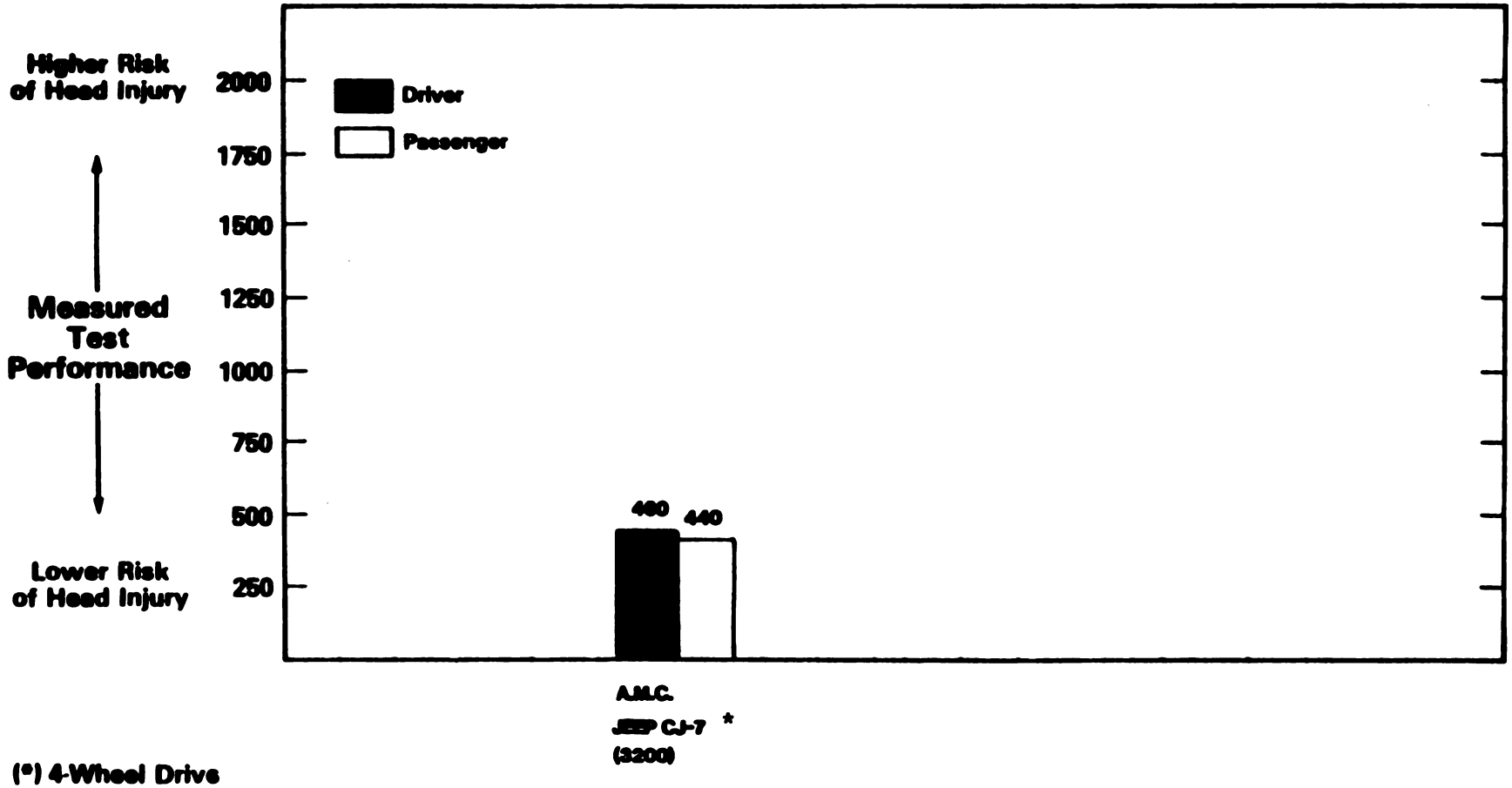



This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury.

# *Head Injury Levels During Crash Tests*
# *New Car Assessment Program*

## 1984 TRUCKS

**(Weight Range of Vehicles Tested: 3200 )**




(*) 4-Wheel Drive

This graph shows results from NHTSA's crash tests. A lower number on the graph means a lower level of potential head injury.