Honda presentation

to

NHTSA Office of Defect Investigation

PE09-024 06-08M Odyssey Soft Brake

(EA09-014 07-08M Odyssey Soft Brake)

October 22, 2009

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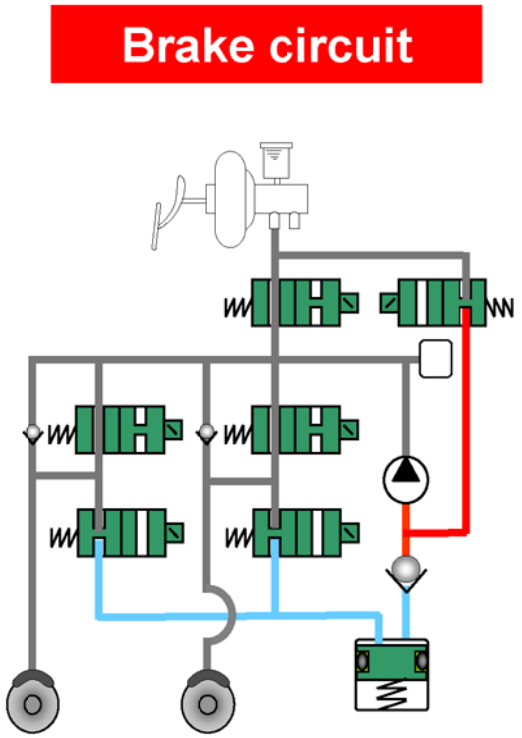
Background Information

- When the ABS/VSA modulator is in diagnostic mode immediately after initial engine startup, it is possible for some modulators to allow air into the modulator.
- Air entering the modulator or primary brake circuit by this method eventually can result in a noticeable increase in brake pedal stroke.
- Our market investigation confirmed that the amount of air in the system for vehicles exhibiting this symptom increased according to the number of days since final assembly was completed.



Result of Vehicle Study

Study of brake pedal stroke of company-owned 07/08MY Odyssey (Total 57 units)
(associate lease vehicles, manager vehicles and company pool cars at HMA & HAM)

[redacted]

〈Air suction-part〉

- 7 units with stroke of [redacted] or greater were returned and were studied – Air suction was confirmed
  - The vehicles with a stroke of [redacted] or greater showed a tendency for the pedal stroke to increase over time

〈Normal judgment-part〉

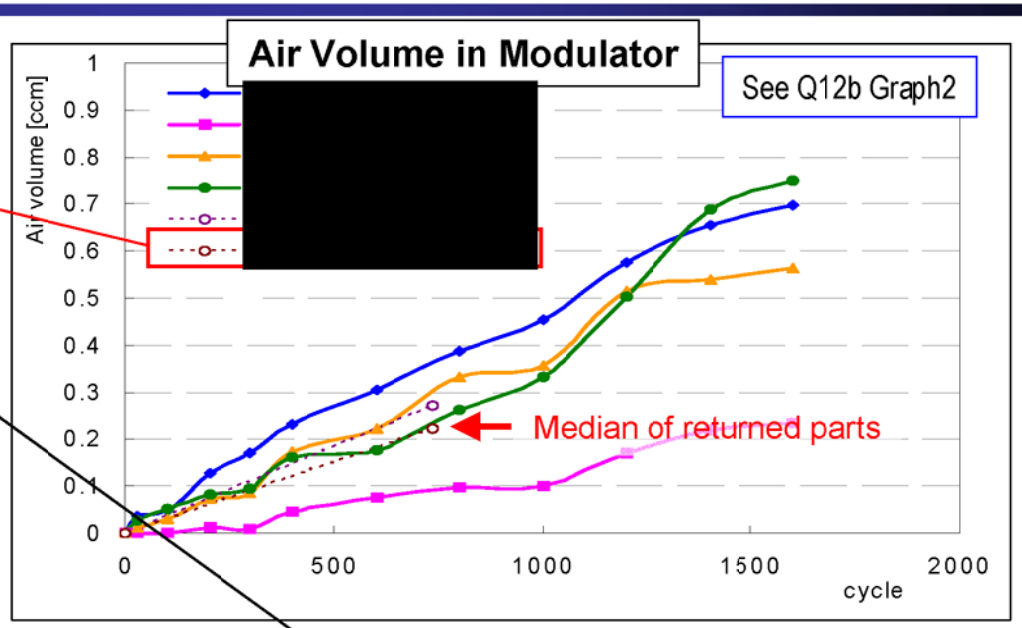
- As to vehicles with stroke of less than [redacted] the pedal stroke remained within the expected range over time. Vehicles that have not allowed air ingress initially have not shown any tendency to allow air into the system over time

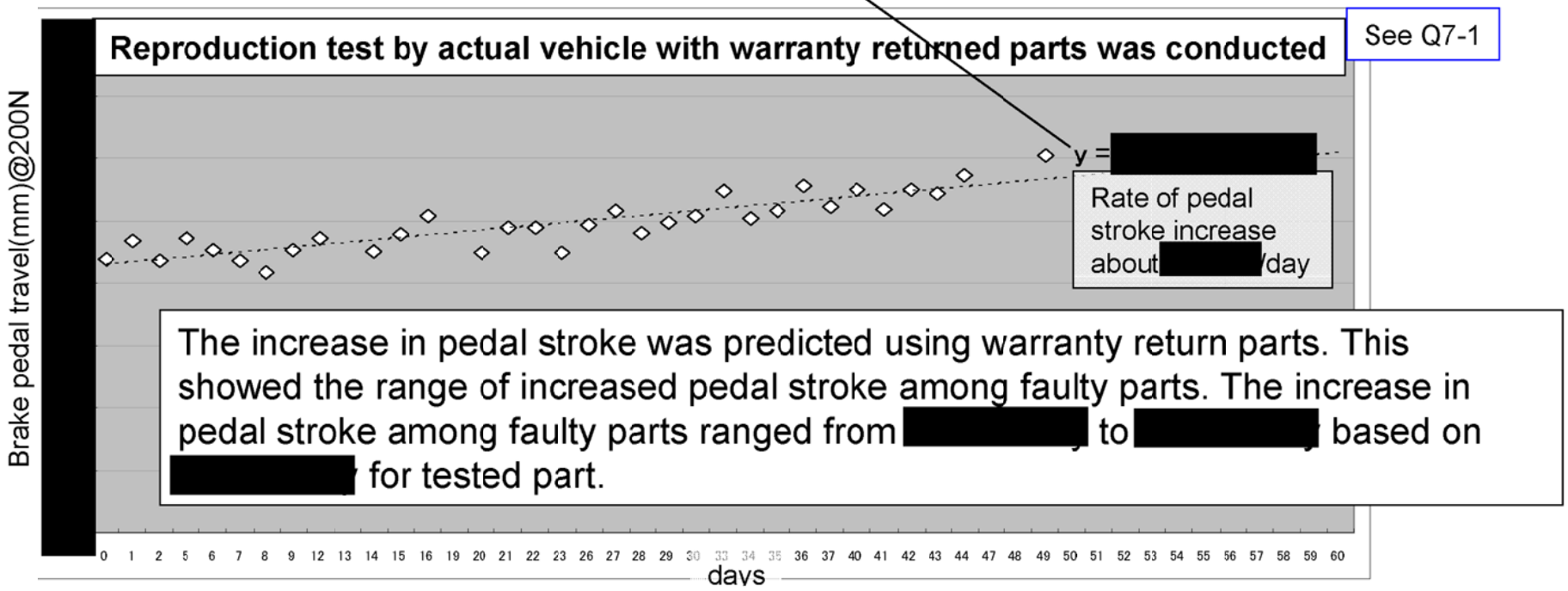
Tendency for air suction of defective part (warranty returned part)

Among the 6 returned parts, the part showing air ingress that was the median of all 6 parts was selected for a reproduction bench test [redacted]

The median part was tested in a vehicle showed increased pedal stroke at about [redacted] mm per day

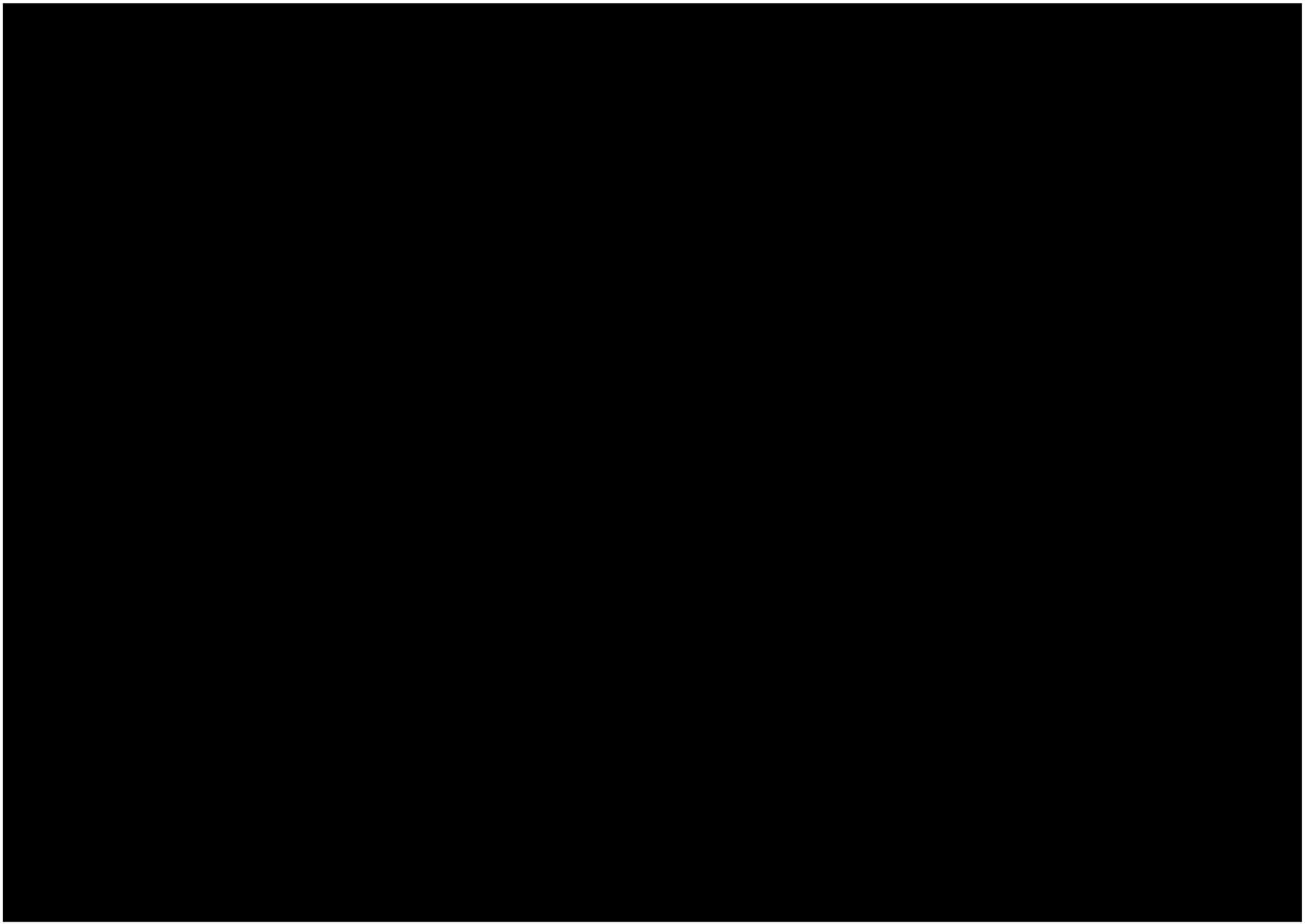
Stroke for **defective** part (**warranty returned part**) increased at maximum rate of about [redacted] **mm/day** and minimum rate of about [redacted] **mm/day**.





The increase in pedal stroke was predicted using warranty return parts. This showed the range of increased pedal stroke among faulty parts. The increase in pedal stroke among faulty parts ranged from [redacted] to [redacted] based on [redacted] for tested part.

Air suction—Mechanism for air accumulation



Superbleed procedure

Brake performance

The brake system for Odyssey meets and exceeds FMVSS 135 and is designed to meet customer expectations. As a result the brake system can decelerate the vehicle at about 10 m/s^2 [1G] deceleration by applying a pedal force of [redacted]

While the Odyssey continues to comply with FMVSS 135 when the pedal stroke has been increased due to air intrusion, the difference in brake feel will be noticeable to drivers (based on survey of company vehicles) and the driver should seek repair.

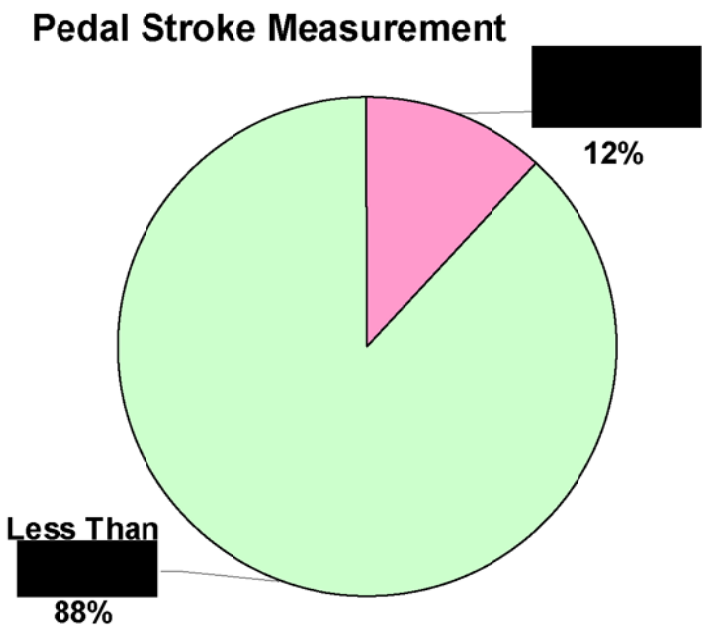
◇ **Odyssey Touring〔adjustable pedal height〕result**

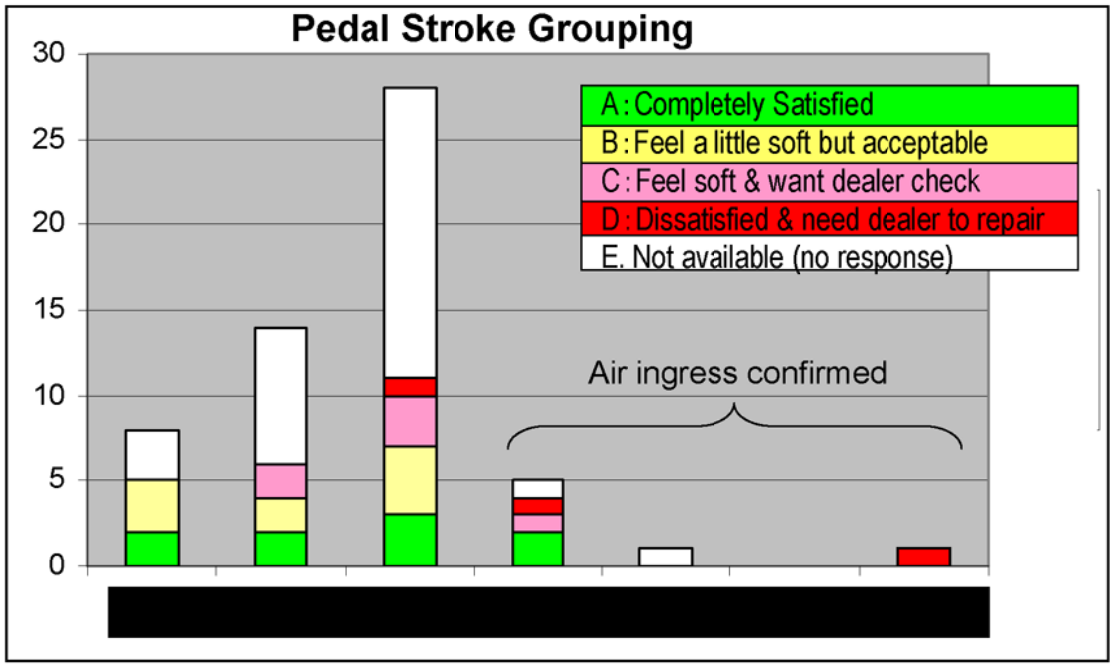
[redacted]

Results Summary

The following data was gathered by an in-house survey at HMA in Alabama and HAM in Ohio using manager, company lease vehicles and pool vehicles:

Resulting from the market investigation mentioned previously, air suction for 7 vehicles out of 57 vehicles (12%) was confirmed.



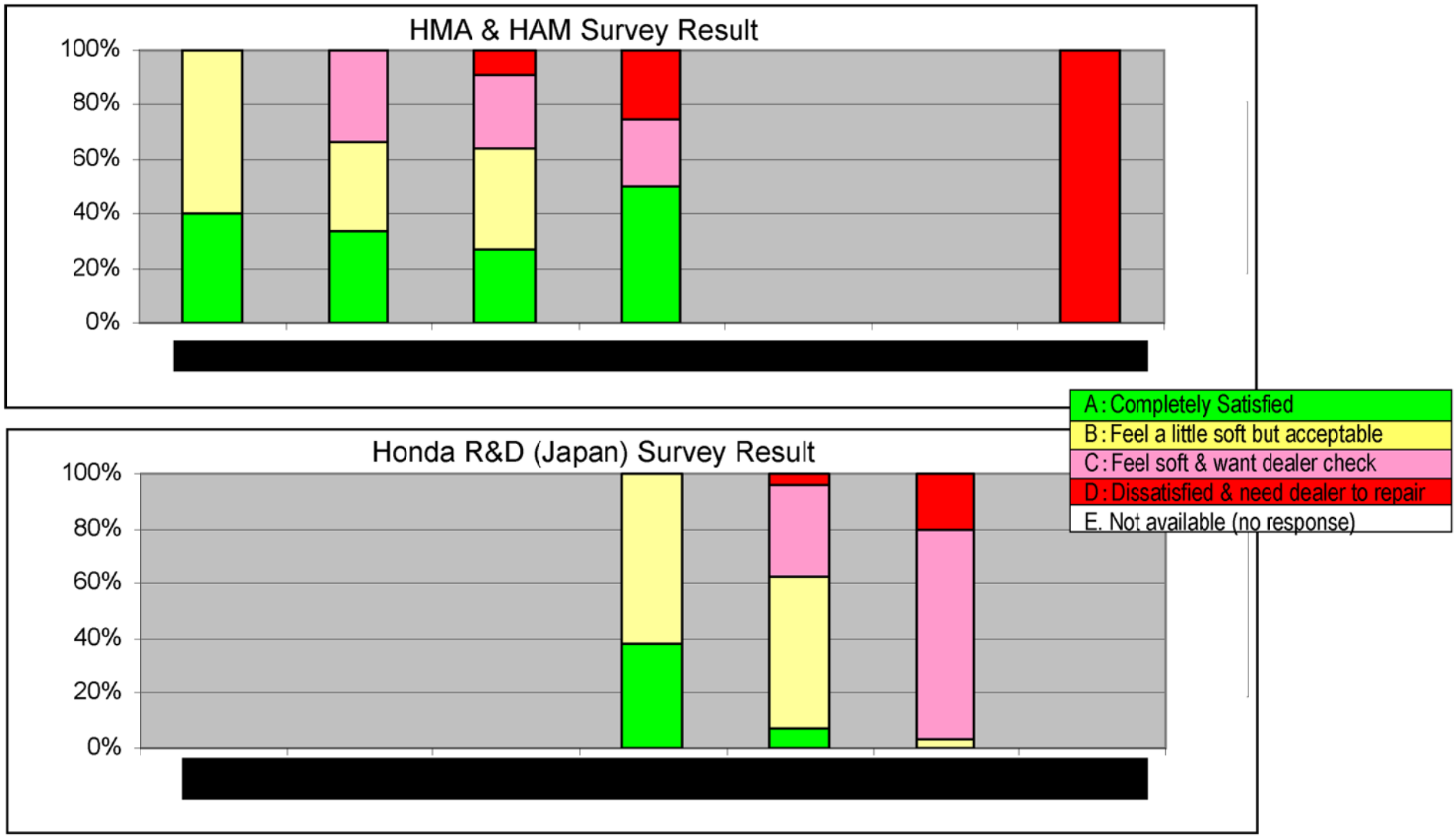


A total of 7 Odysseys (12%), had a pedal stroke that was [redacted] or greater.

- **The average pedal stroke was [redacted]**
- **The highest recorded pedal stroke was [redacted]**
- **The lowest recorded pedal stroke was [redacted]**

Results Summary – Brake Stroke Surveys

All drivers felt unusual pedal stroke which is [redacted] and go to dealer check or repair.



Conclusion

The brake pedal stroke increases gradually. However, braking performance is maintained while the stroke is increasing. Parts returned through our normal warranty process indicate that drivers notice the increased stroke and become dissatisfied with the pedal feel, prompting them to have the vehicle serviced. Our in-house surveys (in Japan and US) indicate that drivers will have the vehicle serviced by the time the pedal stroke has increased by [redacted]

We have confirmed that with an increase in brake pedal stroke of [redacted] he Odyssey complies with FMVSS 135, including braking performance during all failsafe tests specified by FMVSS 135.

Although there have been some complaints in the market about Odyssey brakes, we believe that many of these complaints are not due to this cause. The 2006 Odyssey is not subject to this failure mode, yet many of the complaints are for 2006 Odyssey (06MY: 4 cases, 07MY : 6 cases, 08MY : 2 cases). We request the opportunity to study vehicles prior to any attempt to repair them, if possible.

We would like conduct more analysis on these vehicles and this subject (panelist test, simulation, etc.).

Driving Evaluation

Three vehicles prepared

Please consider:

~pedal feel

~driver perception

~braking performance

~ability to engage ABS

Vehicle Color	Brake Pedal Stroke (approx.)
Silver	~[redacted] (normal)
Blue	~[redacted]
Gold	~[redacted]