
AIRduck

Air Duck

A Patented Invention by

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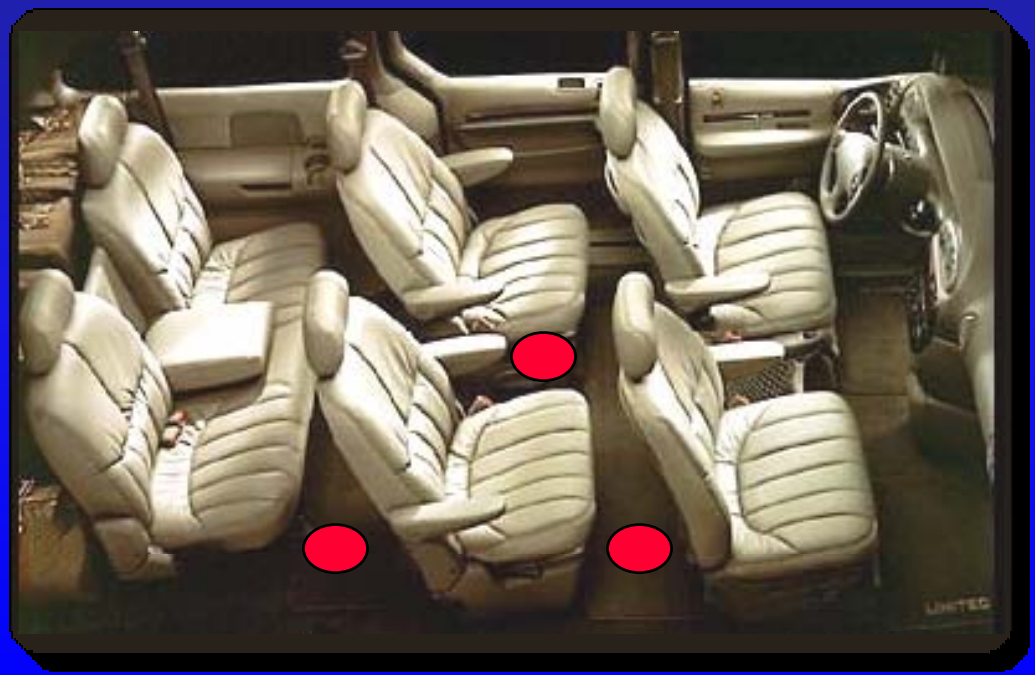
Problem

- Chrysler produced mini-vans lack an adequate means of circulating tempered air to the rear passenger compartment - especially to the floor area at the passenger's feet



Problem

- The problem is further compounded when objects are placed on the floor between the front seats thereby impeding the flow of tempered air from the floor vent at the base of the dash to the rear passenger compartment

Problem - Still

- Chrysler attempted to rectify this problem with an optional forced air system in the ceiling on the Grand models. This puts tempered air at your head and torso but not at your feet.

- This is not available in Plymouth or Dodge models nor in short WB Chryslers.

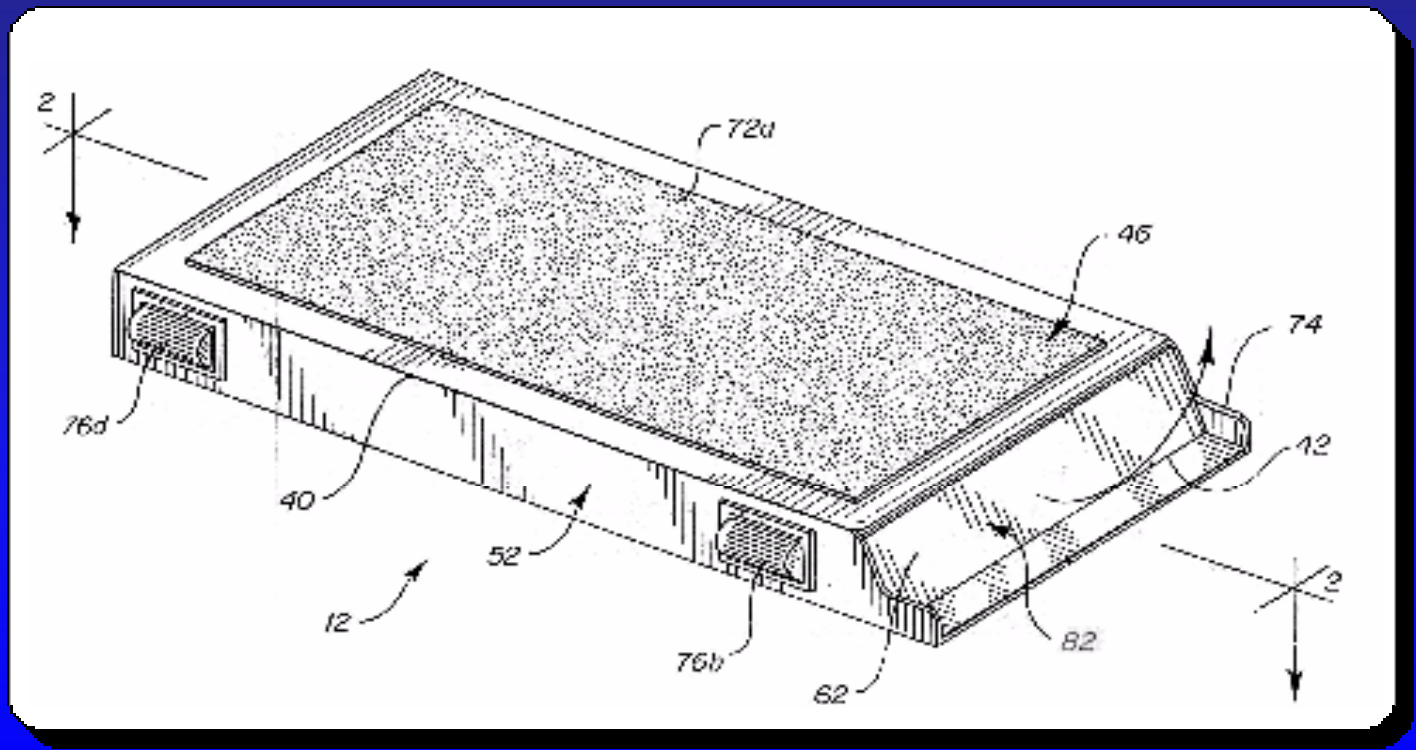
Problem - Still

- In base models tempered air vents have been placed in the rear of the front door handle/ armrests. Again, this puts tempered air at your torso but not at your feet.

- The lower vent is ineffective - it is blocked by the seatbelt rewind housing when the door is closed!

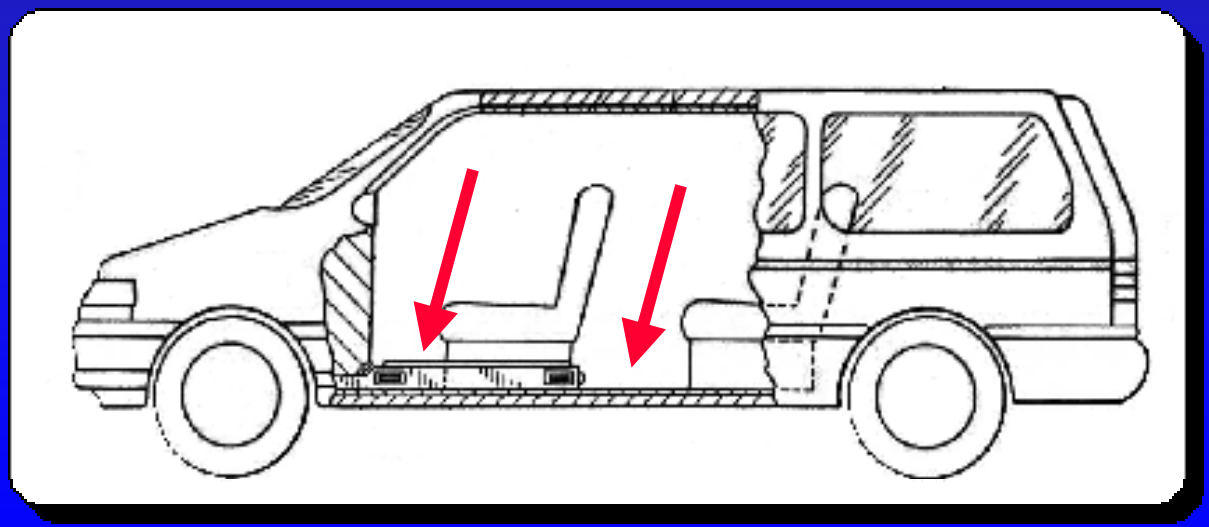
Solution

- The Patented AIR DISTRIBUTION UNIT & SYSTEM (**Air Duck**) solves the problem.



Air Duck

- The **Air Duck** is a portable, self-contained air distribution unit that easily retrofits to a vehicle's existing air distribution system to assist in the uniform flow of tempered air to the front & rear passenger compartments.



Air Duck

- The **Air Duck** is an elongate conduit having an inlet and multiple outlets.
- A manually operated front flap is joined at the inlet of the conduit that serves two functions:
  - As a bypass to allow re-direction of tempered air to the driver compartment only.
  - To enable access to an optional drop down storage compartment at the base of the front instrument panel.

Features & Benefits

- Portable
  - Can be moved from one vehicle to another
  - Unit is held in place by non-skid surface
  - Simple installation - no fasteners required
- Summer and Winter Value
  - Distributes cool air in the summer to a hot floor
  - Distributes warm air in the winter to a cold floor
- Low Profile
  - Less than 2” high
  - Can be used with center storage consoles

Features & Benefits

- Load Bearing
  - Designed to support up to 350 lbs. static load
  - Allows ingress and egress between passenger areas
- Efficient
  - Does not interfere with existing air dist. system
  - Low pressure drop - minimal air restriction
  - Light weight - negligible impact on fuel consumption
  - Reduces the need to run the AC or heater fan on higher settings - ergo less cabin noise!

Features & Benefits

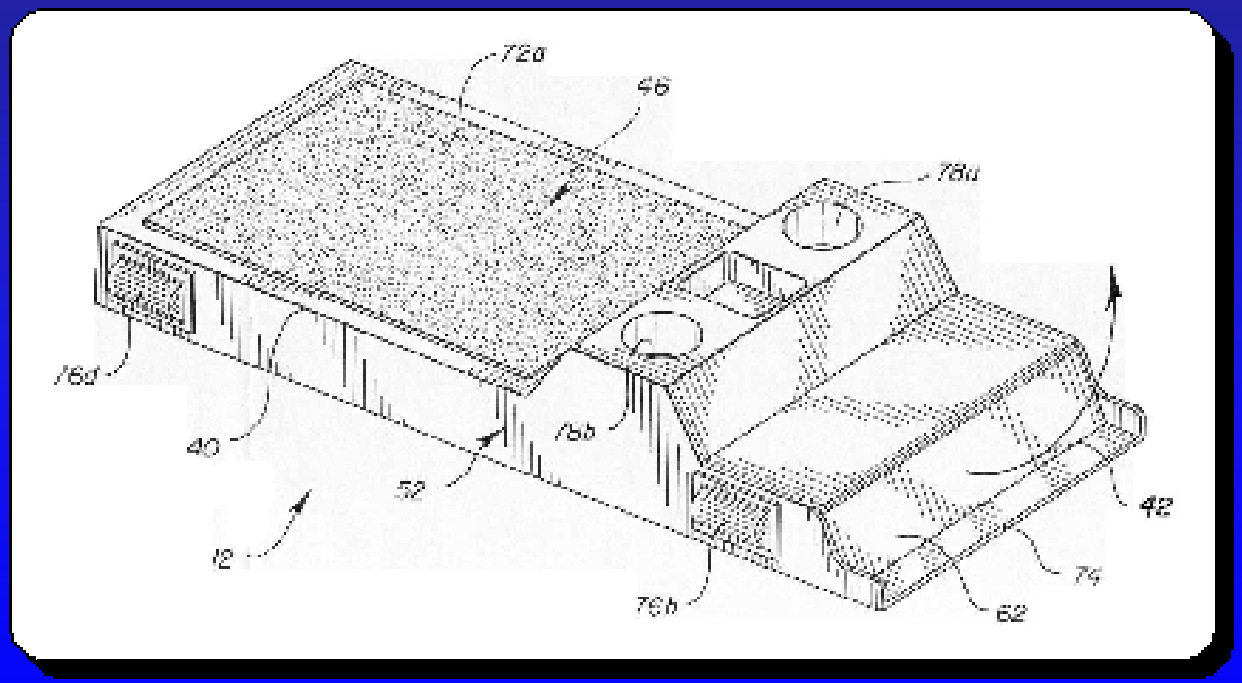
- Individually Adjustable Vents
  - Located adjacent to the seating areas and at the rear
  - Foot adjustable - no need to bend over!
- Manual Bypass
  - Adjustable front flap allows bypass of tempered air to the front compartment when traveling alone
  - Adjustable flap also allows use of drop down storage bin without interference

Features & Benefits

- Environmentally Friendly
  - Can be manufactured from recycled materials
- Ergonomically Friendly
  - The **Air Duck** is designed to be manufactured with soft rounded corners and edges - easily accomplished with HDPE and a variety of other materials
- One Size Fits All
  - Fits all standard and grand size Chrysler mini-vans
  - Can be used with center bench or captains seating arrangements

Features & Benefits

- User Conveniences
  - Optional cup holders keep hot drinks hot in the winter and cold drinks cold in the summer



Features & Benefits

- User Conveniences (contd.)
  - Optional cup holder “horns” for warming / drying your gloves in the winter
  - Keep ski boots warm by placing on the unit top
  - Pet warmer/cooler - keeps your small pet safely on the floor in comfort and not on your seats
  - Pile up coats, handbags and other items on top of the unit without affecting passenger comfort

Prototype Testing

Air Duck Prototype Test - 2/14/99
1998 Plymouth Voyager
24 Deg. F Outside Temperature

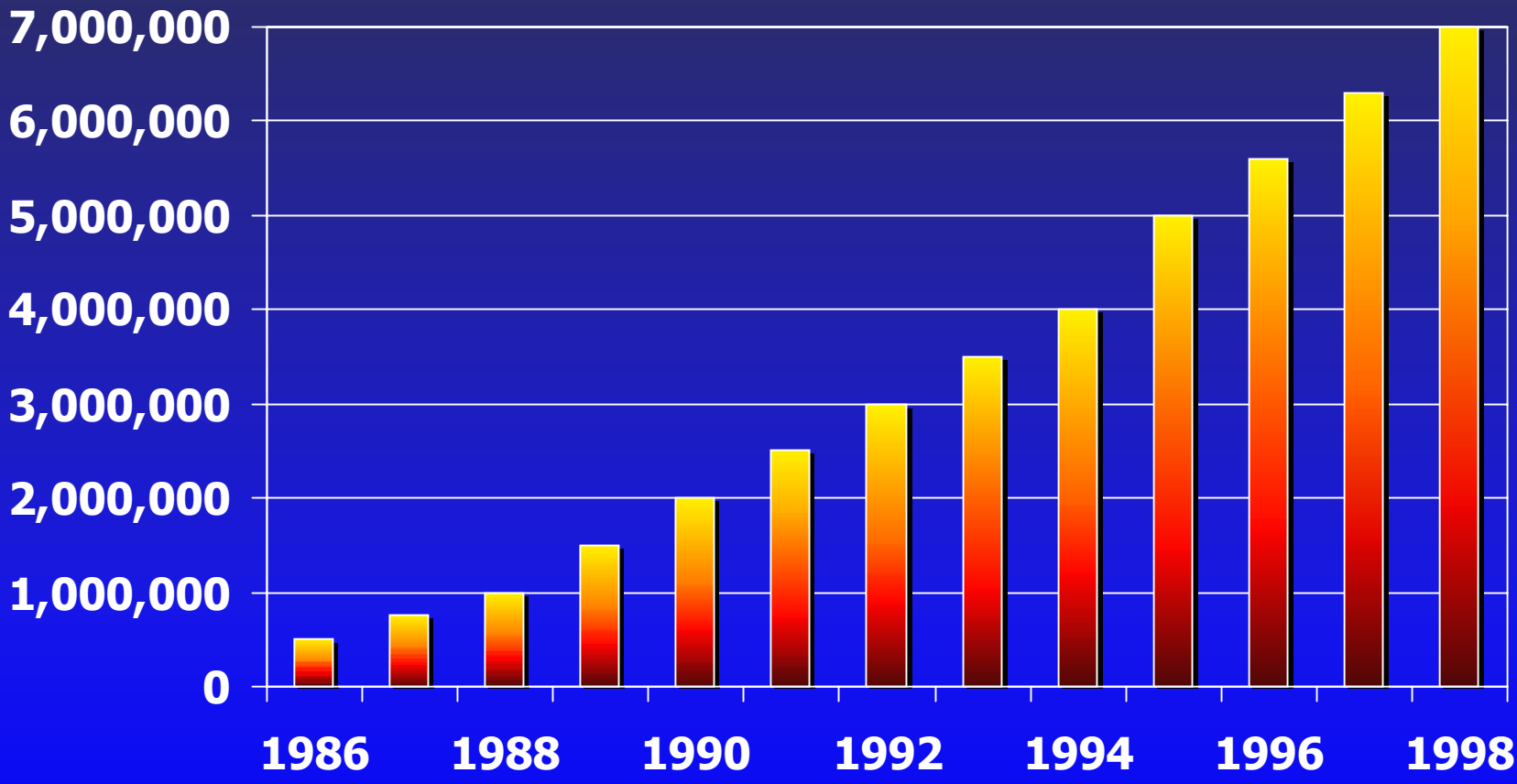
Temperatures Deg. F w/o **Air Duck**

Front Seat	32 in. above floor	84.4	
Driver Area	Floor level	73.8	Delta = 10.6
Second Seat	32 in. above floor	72.3	
Passenger Area	Floor Level	53.8	Delta = 18.5

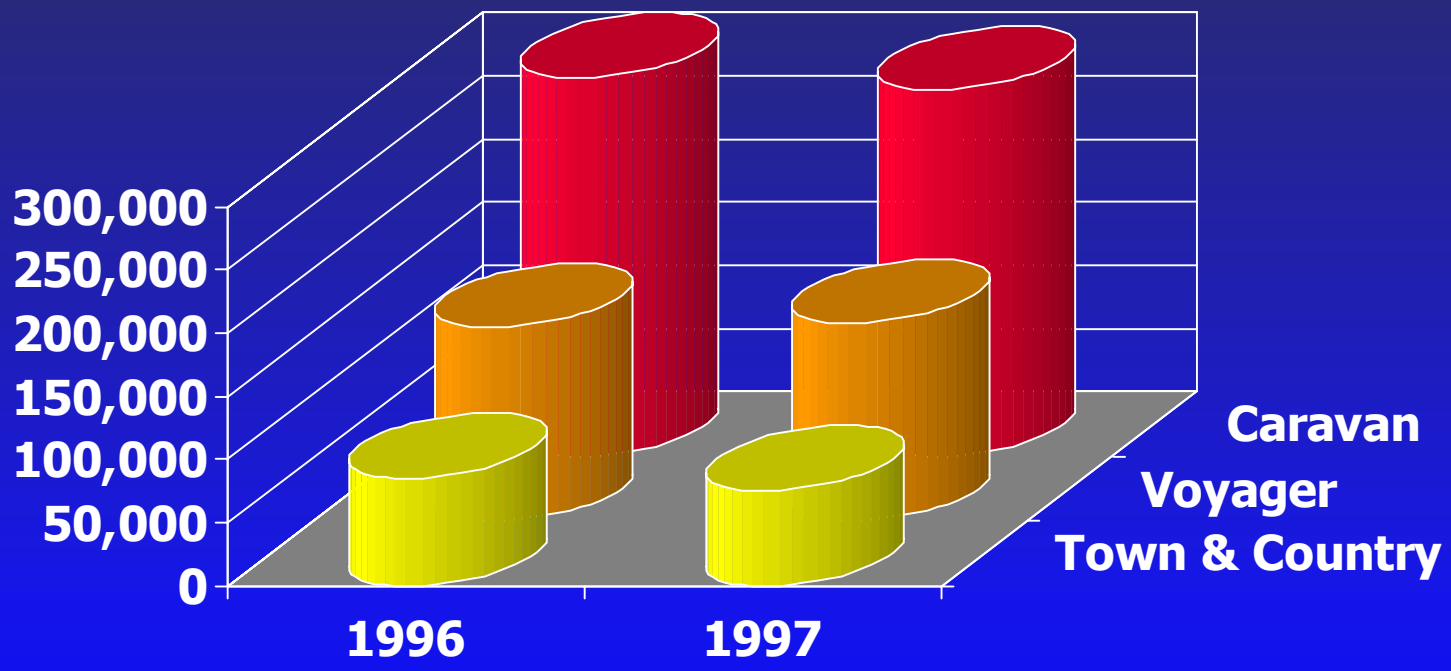
Temperatures Deg. F w/ **Air Duck**

Front Seat	32 in. above floor	84.1	
Driver Area	Floor level	76.3	Delta = 7.8
Second Seat	32 in. above floor	74.3	
Passenger Area	Floor Level	67.3	Delta = 7.0

Cumulative Number Chrysler Minivans Produced 1983 - 98



Production Split Between Models 1996 - 1997



The Patented Air Duck will fit all years and all models!

Related Automotive Products
Full Retail Selling Prices

JC Whitney - Wolf Automotive
Center Console - P/N 07PD5990 $ 89.99

JC Whitney - Steel Horse Automotive
Center Console - P/N 81PD0165 $ 79.99

JC Whitney - TSI Automotive
Center Console - P/N 07PD5807 $ 74.99

Sears - Mini Van Console
Center Console - P/N STE.396XX $ 89.99

Retail Cost Model

Retail selling price	75.00
Dealer cost (40% discount)	45.00
Less distributor discount (25%)	11.25
Distributor cost	33.75
Less terms (2% 10 days, net 30)	0.68
Less freight (5% median cost)	1.69
Less royalties (3%)	1.01
Less commission (5%)	1.69
Net sales Price	28.68
Manufacturers cost (10% profit)	25.81

Manufacturing Cost Model

Hand-made, Wood Based Materials,
One-of Construction

Top & Bottom – Luan Plywood	$ 2.2000
Frame Rails - Fir	$ 5.6000
Top & Bottom Non-skid Rubber	$ 2.0663
Adhesive & Fasteners	$ 0.9975
Labor – Burdened - $/hr	$ 15.0000
Total per ADU	$ 25.8638

It is anticipated that the mfg. cost for mass production in HDPE will be under $ 10.00/ **Air Duck**

Possible Mfg. & Marketing Partner Relationships

Manufacturing	Marketing
Rubbermaid	Wal-Mart
Tucker	K-Mart
Steel Horse	Rubbermaid
Wolf Automotive	Tucker
TSI	Steel Horse
Sterilite	Wolf Automotive
Coleman	TSI
	Chrysler

Summary

- The **Air Duck** is a simple, safe and effective aftermarket device that will improve the distribution of tempered air in Chrysler mini-vans
- The **Air Duck** can be manufactured from a variety of materials
- The **Air Duck** can be used in other vehicles with a centrally located air outlet under the dash and a level floor