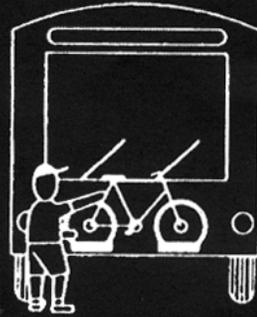
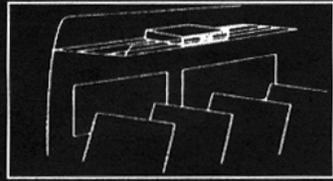


STORAGE SPACE



"I carry a lot of things; too many people with packages on the bus leads to aggravation."



Impact on Transit Ridership

"I would probably ride the bus more in the bike riding season if there were more [bike] racks."

"If there were room in the bus for packages, then we wouldn't have to climb over people's belongings on the bus. There are a lot of times when you're on the bus and you're carrying something and there is no room in the seats."

From the surveys conducted in the five case study cities, bicycle racks or package racks do not tend to induce additional rides by themselves. However, in bicycle-oriented communities like Aspen, bicycle and storage racks taken together (Storage 3) were rated number one in terms of their ability to induce additional transit rides among patrons; in Ann Arbor, a university town, it rated fifth. In the other three cities, these amenities ranked 8th in their ability to induce more rides.

Potential Customer Preferences

Our research results indicate that many types of passengers may consider storage to be a desirable feature:

"Choice" Riders

"The package racks, because a lot of people use up another seat with their belongings."

Choice riders may be interested in on-board storage especially if it makes a trip (such as on a bike) possible that might not otherwise be feasible.

Lower Income Riders

"Luggage racks would be a good idea. People come in at the shopping center with their groceries and take up two seats. They have to stack stuff on top of themselves, and it takes a long time just to unload."

On-board storage racks may also be preferred by low income riders, who must do most of their shopping by bus.

Riders with Longer Trips

"Sometimes I don't ride because I'm carrying a lot of things to work and it's really uncomfortable to sit with all of that weight on your lap for an hour..."

Passengers taking longer trips may wish to stow bags, etc. rather than hold onto everything for a long period of time.

Riders with Shorter Trips

"I think that's an ideal feature allowing somebody to get as far as the bus will actually take them and then continue another few miles to where they need to go in a timely fashion."

While it may seem logical that people with longer trips may want storage facilities, riders with shorter trips may show an even stronger interest -- in part for the convenience aspect as well as the idea of intermodal trip sharing with bicycles.

Potential Passenger Functional Concerns

Security

"I would never trust my packages to a rack and I would never select it. It's not a question of whether or not I want one, but I wouldn't leave my belongings in one."



Location of the package rack is an important concern, and many passengers may not consider using them unless they are within view of their seat.

STORAGE SPACE

Convenience

"The problem with the racks is that I hardly have enough time to get my things off the floor and get off the bus before the driver pulls away from my stop."



Storage areas need to be designed to be easily loaded and unloaded. A functional consideration with regard to bicycle racks is the time involved in loading and unloading them, whether or not the driver is involved. This can cause some delays and should be incorporated into bus scheduling, particularly in the summertime when more people are likely to bicycle.

Approximate Price
of Storage Facilities

- Level 1 - \$ 300
- Level 2 - \$1,000
- Level 3 - \$1,300

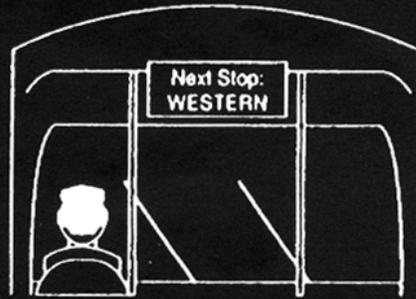
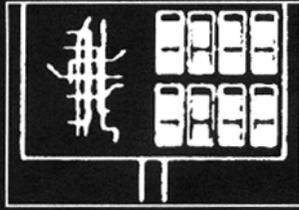
Ways to Offset
Costs

- Work with bus manufacturers
- User fees for bike racks
- Outside funding to promote alternative transportation (bicycling)

Types of Information to Test with Transit Design Game

Level	Transit Feature	Estimated Points
No Frills	No Storage Facilities	0
1	Package Rack	1
2	Bike Rack	13
3	Package and Bike Racks	14

ON-BOARD INFORMATION



"There is the intimidation factor: where is the bus going? I know I'm going to a specific street, but I don't even know if there's a bus stop there. I don't know when to push some little buzzer or gizmo in front of everyone to make the bus stop."

Impact on Transit Ridership

"This is really important, especially if you are on a route you're not used to."

"I picked the electronic display for 5 points. This is important because on some of our routes they go a lot of different ways and people aren't sure whether they're on the right bus."

As with information at the stop, information on-board the bus was one of the top choices of survey respondents in all of the cities. While the preference of those willing to forego a fare decrease was for a simple posted maps and schedules, the electronic "Next Stop" display rated much higher in its ability to induce additional transit. In fact, in Ann Arbor and San Francisco, the electronic on-board display ranked second in its ability to induce additional rides and in Rochester and Portland, it ranked fourth.

Potential Customer Preferences

"Everybody should have access to information if they're going to ride the buses."

On-board information tends to have almost universal appeal.

"Choice" Riders

"I spent four points for the display for selfish reasons. I'm always peering out the windows trying to see if things look familiar - I don't know where I'm going!"

On-board information may be preferred by Choice riders, who are less familiar with the service and routes.

Lower Income, "Captive" Riders

"I don't like to go all the way to the main information booth to figure out how to get somewhere new by bus, so I picked the maps and schedules."

Regular riders who must use transit, including lower income riders, may also seek conveniently located information, especially to new destinations.

Riders with Shorter Trips

"I just wanted the routing map and schedule. My ride is very short, if the bus comes."

Passengers with shorter trips may be interested in on-board information to keep their trips short.

Potential Passenger Functional Concerns

Efficiency

"People are always asking the drivers for directions to . . . some tourist spot, and the drivers have to take time from their busy schedules to explain how to get there."



Providing information must be done in a way that does not delay the trip for other riders. Also, driver distraction, whether caused by rowdy patrons or by riders requesting information about routes or schedules, is of concern to transit passengers. One solution: use advertising panles to provide information about destinations and events for visitors and infrequent transit riders.

Reliability

"I chose the electronic display - sometimes the drivers don't call out the stops and it's hard for me to see at night, so I think this would be really helpful."



Providing information must be done consistently. An electronic display on a bus in Germany announces the next stop.

Keeping Information Up-to-Date and Maintained

"The schedules change 2 or 3 times a year, so you have to make sure someone is going to go around and change the information that's posted."



Passengers feel that if transit agencies are going to provide information, they should also take the responsibility for making sure the information is accurate.

Types of Information to Test with Transit Design Game

Approximate Price of On-Board Info

Level 1 - \$ 100
 Level 2 - \$1,200

Note: As new information technologies are developed, the costs for automated or electronic stop displays may come down

Ways to Offset Costs
 - Advertising/Sponsorship of posted maps and schedules

Level	Transit Feature	Estimated Points
No Frills	No On-Board Information	0
1	Route Maps and Schedules	1
2	Electronic On-Board Display	5

RIDE QUALITY



"Some of the older buses are really noisy, and you really bounce around a lot."

Impact on Transit Ridership

"I think it's important for public transit to compete to some extent, from a comfort point of view, with automobiles. I think it would encourage more people to use buses."

This feature refers to the smoothness of the ride and the quietness of the transit vehicle. As a relatively expensive feature, ride quality ranked at the bottom of the list in terms of both its appeal to passengers willing to forego a fare reduction, as well as in its impact on transit ridership. Still, it was clearly important to certain types of passengers, especially for higher income riders and men.

Potential Customer Preferences

"Choice" Riders

"Some of the [older buses] shake, and rattle so badly that you can't read anything. I feel sorry for some of the older folks. I like to consider myself somewhat young, but it really jars me. I can't imagine being my mother's age and trying to ride that bus. I don't think she'd want to ride it again."

Among Choice riders, who do have cars available to them, ride quality may make a difference.

Higher Income, Male Riders

"I think this is absolutely essential."

Higher income riders, and especially men, may have a stronger preference for the quieter and smoother ride quality.

Potential Passenger Functional Concerns

Reasonable Cost

"I wanted a quieter and smoother ride but it was far too expensive."

While passengers may want to improve ride quality, they want it done at a reasonable cost.

Maintenance

"Some of the older buses are really noisy, and you really bounce around a lot ...I don't know how much it would cost to have a maintenance guy just take a screwdriver and fix a few things..."

Better maintenance of buses is also a key ingredient of improved ride quality.

Approximate Price of Ride Quality

Note: This is not a feature that can be purchased, but is achieved through a mechanical upgrade to a bus.

Ways to Offset Costs

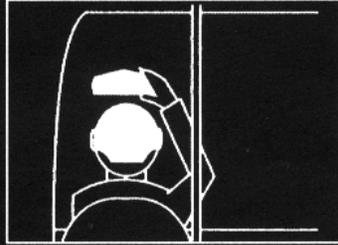
- Work with manufacturers on making simple changes, such as better insulation of engines.
- In Seattle, the design and comfort of the basic bus was improved without costing more to build or operate

Types of Information to Test with Transit Design Game

Note: The price deferential between Level 1 and Level 2 under this amenity category is quite large and begs for the development (or inclusion) of intermediate solutions, such as were introduced in Aspen (Case Study 4-2).

Level	Transit Feature	Estimated Points
No Frills	Standard Bus	0
1	Quieter and Smoother Ride	6

COURTESY-TRAINED DRIVERS



"One thing I like particularly about our bus system is that we have excellent bus drivers — personality-wise, they're very helpful, will give us information at the drop of a hat, very accommodating. They will give us directions and tell us where business places and other things are, new places we need to go and don't know where the stops are. They basically are just superb in my book and have been for many years."

Impact on Transit Ridership

"If you're going to be riding the bus on a continual basis, it's important that your drivers have some courtesy and respect you."

Because courtesy training is not an expensive proposition, it was a middle level choice of riders willing to forego a fare decrease. While courtesy training was not ranked the highest in its ability to attract more riders, courteous drivers are recognized as important to a pleasant passenger experience.

"There have been some bus drivers I've ridden with, and they didn't know all the routes, so I think the training should be a little bit more complete."

Potential Customer Preferences

Women

"Some of the drivers are pretty rude. They should get more training."

Courtesy is welcomed by all riders, but may especially be appreciated by women.

Potential Passenger Functional Concerns

Route Training

"The bus drivers don't seem to know the connections. That's another kind of training I'd like to see them get. I don't think there's any excuse for drivers not to be able to give good directions."

It is not just courtesy training that is required, but riders are concerned that many drivers know the system well enough to provide accurate information about transfers and routing or to give directions.

Comfort and Safety

"Is waiting for me to sit down a question of courtesy, safety, or comfort? I think it's partly safety, especially given the slick floors from all the rain."

Again, concerns extend to respect for passenger needs and safety.

Training Effectiveness

"I didn't spend in this category because I don't believe people can be trained to be courteous. I think they can be given reductions in pay and they will be behavior modified to be courteous, but you can't teach someone how to be nice. You can only encourage or discourage them."



You can teach anyone to drive a car, some say, but not to be personable and friendly. In San Francisco, people who expressed dismay with drivers on other routes in the City raved about the quality and courtesy of the conductors on the F Line Streetcars. This group of drivers is a self-selected one, chosen not only for their enthusiasm for the streetcars they drive, maintain and care for themselves but also for their "people skills."

Types of Information to Test with Transit Design Game

Approximate Price of
Courtesy Training

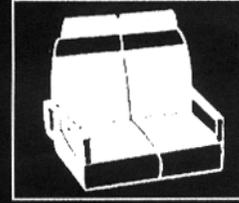
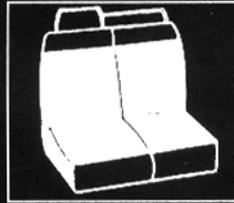
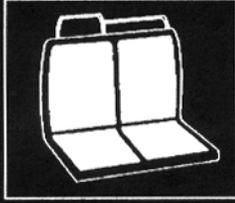
Level 1 - \$ 300

Ways to Offset
Costs

- Training incorporated into
regular driver training pro-
gram

Level	Transit Feature	Estimated Points
No Frills	Standard Driver Training	0
1	Added Courtesy Training	1

ON-BOARD SEATING



"It's good to feel nice and cushioned."

Impact on Transit Ridership

"Whenever I see those hard seats, I just want to go home and get back in my car."

The modestly padded seat was one of the top choices of those willing to forego a fare reduction in order to get this improved seating -- although the fully padded seating ranked near the bottom of the list. On the other hand, these fully padded seats ranked very high in their ability to generate more transit trips, in second place in Rochester and Portland, ranking third or fourth place in Ann Arbor, Aspen, and San Francisco.

Potential Customer Preferences

Riders with Longer Trips

"I thought there should be some padding on the seats. I've been on some buses where there's absolutely no padding on the seats, and usually it's a half an hour ride, and it gets uncomfortable. I figured it was worth a couple of points to have some padding; it doesn't have to be deluxe with arms and a headrest."

Length of trip may have a significant effect on rider preference for padded or more deluxe seating.

"I didn't choose the head and arm rests, but I've seen it on buses where the ride is really long, because you want to be as comfortable as you can for as long as possible. The seating should be as deluxe as possible for people with long commutes."

Higher Income Riders

"I think the comfort of the seats should be comparable to that of a car."

Because fully cushioned seating most closely resembles the kind of seats one finds in automobiles, fully cushioned seating may be preferred by higher income riders.

Potential Passenger Functional Concerns

Comfort for a Variety of Situations

"We need more space between the seats or aisles. It's not fair for people that are heavier set. It makes them feel uncomfortable. Some seats should be wider."

"For people that are a little bigger and are sitting on the ridge between two seats, it can be really uncomfortable. Unscooped seats would solve the problem...or wider ones."

"I like the arm rests to separate me from the person next to me who is sometimes not the most desirable person."



Seat designs should be tested to make sure they work for passengers from the point of view of shape, material, width, and other design factors. This seat is wider than other seats on the same bus.

ON-BOARD SEATING

Keeping Them Maintained

"The kids would have a great time ripping up the cushioned seats. They would be destroyed within a week."

"I would avoid the cushy seats because I think it holds smell, and is tempting for vandals."



In the minds of some passengers, padded seating brings with it added responsibility on the part of the transit agency.

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**Approximate Price
 of On-Board Seating**
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Level 1 - \$2,000
 Level 2 - \$5,000
 Level 3 - \$6,000

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**Ways to Offset
 Costs**
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- Work with Manufacturers
- Select durable fabrics
- Tailor seat design to customer types

Types of Information to Test with Transit Design Game

Level	Transit Feature	Estimated Points
No Frills	Unpadded Seating	0
1	Some padding	2
2	Fully cushioned	5
3	Head and Arm Rests	6