A REPORT ON SPECIFIC OPERATIONAL AND DIMENSIONAL DESIGN CHARACTERISTICS OF THE PRESENT UNITED STATES PASSENGER VESSEL FLEET

U.S. DEPARTMENT
OF TRANSPORTATION

FEDERAL TRANSIT
ADMINISTRATION

FEBRUARY 1995 FTA-MA-06-0197

OFFICE OF TECHNICAL ASSISTANCE AND SAFETY

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Technical Report Documentation Page

1. Report No.	2.Government Accession No.	3. Recipient's Catalog No.
FTA-MA-06-0197-02-02		UMTRIS

4. Title and Subtitle	5. Report Date
A Report On Specific Operational and Dimensional Design Characteristics Of The Present United States Passenger Vessel Fleet	February 1995
	6. Performing Organisation Code
7. Author's-	8. Performing Organization Report No.
Martin C. Pilsch, Jr.	MA-06-0197-02-02
9. Performing Organization Name and Address	10. Grant or Project No.
Urban Harbors Institute University of Massachusetts Boston 100 Morrissey Boulevard Boston, MA 02125-3393	FTA-MA-06-0197-06
	11. Contract No.
12. Sponsoring Agency Name and Address	13. Type of Report and Period Covered
U.S. Department of Transportation Federal Transit Administration (FTA) 400 7th Street, SW Washington, DC 20590	UNIVERSITY RESEARCH IN TRANSPORTATION AND THE AMERICANS WITH DISABILTIES ACT
	14. Sponsoring Agency Code

15. Supplementary Notes

16. Abstract

This report on specific dimensional design characteristics of the present waterborne passenger vessel fleet in the United States, reflects a sampling of existing vessels reported by the vessel operating community as well as the vessel design and construction industires. The report summarizes information on areas such as vessel operations, general characteristics, exterior and interior vessel dimensions and services. The report offers findings, conclusions and recommendations to the Department of Transportation on both the process and the specific areas of concern that should receive attention during their efforts to promulgate ADA regulations for ferries and excursion vessels.

The report offers a review of statistics reported by the Urban Harbors Institute in an earlier report on the impact of ADA on the vessel industry, documentation on the data base itself, a comparison of the present rules, regulations and guidelines now in existence on ADA to highlight the treatment of the critical areas to date, a detailed review of the survey in report form of information provided by 57 companies on 108 vessels. A total of 67 reports, 34 from the operator responses and 33 from the design and build industry are presented and analyzed. Finally, UHI has included extracts of each of the company responses.

Finally, the report creates two matrix, one from the operating side of the industry and the other from the design and build side of the industry. These matrix compare the minimum and maximum dimensions on areas on vessels critical to accessibility, the existence or not of certain amenities important to the issues of accessibility and specifications which may have an impact of compliance with the Act.

	18. Document Availability - Available to the public through the National Technical Information Service (NTIS), 5285 Port Royal Road Springfield, Virginia 22161 - telephone 703/487/4650

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
unclassified	unclassified		

Form DOT F 1700.7 (8-72) Reproduction of completed page authorized

METRIC/ENGLISH CONVERSION FACTORS

ENGLISH TO METRIC

LENGTH (APPROXIMATE)
1 inch (in) = 2.5 centimeters (cm)
1 foot (ft) = 30 centimeters (cm)
1 yard (yd) = 0.9 meter (m)
1 mile (mi) = 1.6 kilometers (km)

AREA (APPROXIMATE)
1 square inch (sq in, in^2) = 6.5 square centimenter (cm^2)
1 square foot (sq ft, ft^2) = 0.09 square meter (m^2)
1 square yard (sq yd, yd^2) = 0.8 square meter (m^2)
1 square mile (sq mi, mi^2) = 2.6 square Kilometers (km^2)
1 acre = 0.4 hectares (he) = 4,000 square meters (m^2)

MASS - WEIGHT (APPROXIMATE)
1 ounce (oz) = 28 grams (gr)
1 pound (lb) = .45 kilogram (kg)
1 short ton = 2,000 pounds (lbs) = 0.9 tonne (t)

VOLUME (APPROXIMATE)
1 teaspoon (tsp) = 5 milliliters (ml)
1 tablespoon (tbsp) = 15 milliliters (ml)
1 fluid ounce (fl oz) = 30 milliliters (ml)
1 cup (c) = 0.24 liter (l)
1 pint (pt) = 0.47 liter (l)
1 quart (qt) = 0.56 liter (l)
1 gallon (gal) = 3.8 liters (l)
1 cubic foot (cu ft, ft^3) = 0.03 cubic meter (m^3)
1 cubic yard (cu yd, yd^3) = 0.76 cubic meter (m^3)

TEMPERATURE (EXACT)
[(X - 32) (5/9)] °F = Y °C

METRIC TO ENGLISH

LENGTH (APPROXIMATE)
1 millimeter (mm) = 0.04 inch (in)
1 centimeter (cm) = 0.4 inch (in)
1 meter (m) = 3.3 feet (ft)
1 meter (m) = 1.1 yards (yd)
1 Kilometer (km) = 0.6 mile (mi)

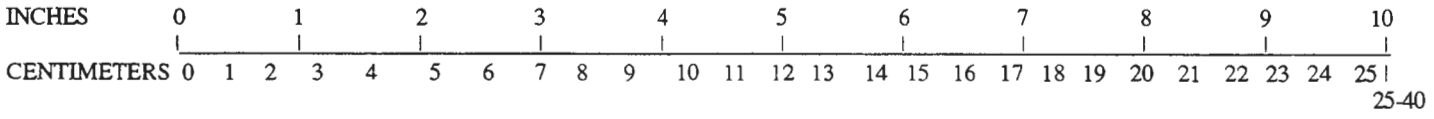
AREA (APPROXIMATE)
1 square centimeter (cm^2) = 0.16 square inch (sq in, in^2)
1 square meter (m^2) = 1.2 square yards (sq yd, yd^2)
1 square kilometer (km^2) = 0.4 square mile (sq mi, mi^2)
1 hectare (he) = 10,000 square meters (m^2) = 2.5 acres

MASS - WEIGHT (APPROXIMATE)
1 gram (gr) = 0.036 ounce (fl oz)
1 kilogram (kg) = 2.2 pounds (lb)
1 tonne (t) = 1,000 kilograms (kg) = 1.1 short tons

VOLUME (APPROXIMATE)
1 milliliter (ml) = 0.03 fluid ounce (fl oz)
1 liter (l) = 2.1 pints (pt)
1 liter (l) = 1.06 quarts (qt)
1 liter (l) = 0.26 gallon (gal)
1 cubic meter (m^3) = 36 cubic feet (cu ft, ft^3)
1 cubic meter (m^3) = 1.3 cubic yards (cu yd, yd^3)

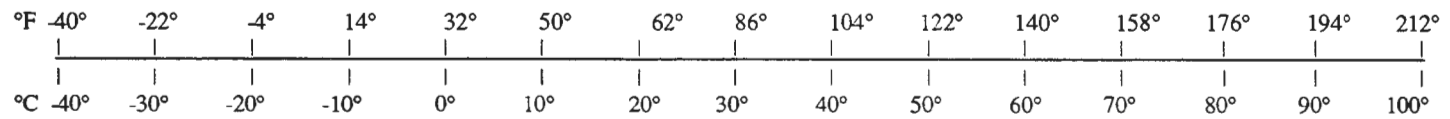
TEMPERATURE (EXACT)
[(9/5)Y + 32]°C = °F

QUICK INCH-CENTIMETER LENGTH CONVERSION



25-40

QUICK FAHRENHEIT -CELCIUS TEMPERATURE CONVERSION



For more exact and/or other conversion factors, see NBS Miscellaneous Publication 286, Units of Weights and Measures. Price $2.50. SD Catalog No. C13 10 286.

A REPORT ON SPECIFIC OPERATIONAL AND DIMENSIONAL DESIGN CHARACTERISTICS OF THE PRESENT UNITED STATES PASSENGER VESSEL FLEET

Data Base and Report
February 1995

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Report Number:

FTA-MA-06-0197-02-02

A REPORT ON SPECIFIC OPERATIONAL AND DIMENSIONAL DESIGN CHARACTERISTICS OF THE PRESENT UNITED STATES PASSENGER VESSEL FLEET

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&
CONCLUSIONS AND RECOMMENDATIONS

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

1.0 FINDINGS

UHI's survey indicates that eventual compliance with ADA by the vessel industry could easily become a clash between the interests of governmental, industrial and disability advocates. It need not be, however but to be successful, the effort to attain accessibility must be a series of compromises that will allow the establishment of an accessible path that will suit the requirements of each advocacy - on the water. The parties must provide readily achievable goals, eliminate all of the mental and physical barriers possible and lastly, base the final outcome (regulations) upon an understanding of the needs of each.

If the ADA regulations eventually promulgated by the Department of Transportation for ferries and excursion vessels are going to deal with accessibility issues on passenger vessels presently in the existing fleet, regulators must be prepared to deal with all of the major accessibility issues, applying them to a restrictive, difficult atmosphere. Because passenger vessels offer a combination of transportation and entertainment (ferry, dining, dancing, touring, excursions) and do it on a platform that is often not the most stable for these types of activities, the degree of difficulty in attaining accessibility is multiplied versus land structures and other modes of transportation. What will be most frustrating, will be that because of the incredible diversity among the vessel fleet, the ability to treat the subject of passenger vessel accessibility with some degree of consideration, should one even want to do that, will be difficult.

The UHI survey found that the elements included in an accessible path in buildings and facilities are all found in the present fleet of passenger vessels and in many cases exist in multiples within an extremely limited enclosure. A number of these areas, including such things as restrooms, stairways, doors, thresholds, aisle ways and railings are a critical part of the vessel structure and will require adjustment to meet present ATBCB guidelines.

This survey also found, however, that in many cases these areas on some vessels comply or exceed existing ADA dimensions, guidelines and regulations.

The following four page chart depicts the responses tabulated by the data base on information requested by the DOT staff. Referring to a number of the vessel areas, responses to the questions asked on the survey required a yes or no answer. In other areas, a minimum and maximum number or dimension was extracted from the data base:

DIMENSIONAL MATRIX - VESSEL OPERATORS

TYPE OF VESSEL/ REGULATION	TOTAL PER CATEGORY	TYPE OPERATION		TYPE ACTIVITY			PASSENGER CAPACITY		LENGTH OF VESSELS		TONNAGE		CLOSE CIRCUIT VISUAL AID PROVIDED		PUBLIC ADDRESS SYSTEM PROVIDED	
		FER	EXC	PASS	VEH	COMBO	MIN	MAX	MIN	MAX	MIN	MAX	YES	NO	YES	NO
Passenger Vessel Inspected - **T-Boat-S** *46CFR Subchapter T*	21	13	8	15	0	6	49	300	36'	65'	14	89	8	13	14	7
Passenger Vessel Inspected - **T-Boat-L** *46CFR Subchapter T*	46	23	23	35	0	11	98	725	65'	192'	66	99	13	30	28	18
Passenger Vessel Inspected - **H-Boats** *46CFR Subchapter H*	16	13	3	5	0	11	150	2,500	120'	408'	98	2,928	7	9	15	1

TYPE OF VESSEL/ REGULATION	RESTROOM PROVIDED		RESTROOM PER VESSEL		RESTROOM LENGTH VESSELS / > & < THAN		RESTROOM WIDTH VESSELS/ >&< THAN		DECKS - TOTAL PER VESSEL		DECKS FOR BOARDING		MOBILITY AID LIFT CAPACITY		TE;EPHONES PROVIDED	
	YES	NO	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	UP	LOW	YES	NO	YES	NO
Passenger Vessel Inspected - **T-Boat-S** *46CFR Subchapter T*	11	10	1	2	<56/ 17	>66/ 1	<48/ 19	>60/ 0	1	6	1	13	0	21	2	16
Passenger Vessel Inspected - **T-Boat-L** *46CFR Subchapter T*	41	5	1	6	<56/ 20	>66/ 18	<48/ 17	>60/ 17	1	6	3	36	2	44	18	27
Passenger Vessel Inspected - **H Boat** *46CFR Subchapter H*	16	0	1	7	<56/ 5	>66/ 8	<48/ 7	>60/ 8	1	3	1	11	7	9	4	12

DIMENSIONAL MATRIX - VESSEL OPERATORS (Continued)

TYPE OF VESSEL/ REGULATION	DINING AREA PROVIDED		DINING AREA TABLES		PETS ON BOARD		PET RELIEF AREA PROVIDED		NUMBER OF DOORWAYS		DOORWAY WIDTH/ VESSELS/ >&< THAN		THRESHOLD HEIGHT VESSELS/ >&< THAN		GENERAL AISLEWAY WIDTH VESSELS/ >&< THAN	
	YES	NO	MIN	MAX	YES	NO	YES	NO	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
Passenger Vessel Inspected - **T-Boat-S** *46CFR Subchapter T*	5	16	1	26	14	7	1	20	1	9	<32"/ 9	>36"/ 2	1"/ 0	3"&> 11	<32"/ 11	>36"/ 4
Passenger Vessel Inspected - **T-Boat-L** *46CFR Subchapter T*	23	19	4	250	31	14	2	44	2	20	<32"/ 14	>36"/ 9	1"/ 1	3" &> 15	<32"/ 13	>36"/ 17
Passenger Vessel Inspected - **H-Boats** *46CFR Subchapter H*	10	6	8	36	13	3	1	15	1	14 *125	<32"/ 3	>36" 0	1"/ 0	3"&> 92	<32"/ 1	>36"/ 11

TYPE OF VESSEL/ REGULATION	NUMBER OF STAIRWAY		STAIRWAY WIDTH VESSELS/ >&< THAN		STAIRWAY STEP&RISER VESSELS/ >&< THAN		STAIRWAY RAIL HEIGHT VESSELS/ >&< THAN		SNACKBAR PROVIDED		SNACKBAR PER VESSEL		SNACKBAR COUNTER HEIGHT VESSELS/ >&< THAN		SNACKBAR AISLEWAY WIDTH VESSELS/ >&< THAN	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	YES	NO	MIN	MAX	MIN	MAX	MIN	MAX
Passenger Vessel Inspected - **T-Boat-S** *46CFR Subchapter T*	1	6	<36"/ 16	>37"/ 1	<12.5" 0	>18.6" 1	<30"/ 3	>34"/ 12	9	12	1	1	<34"/ 1	>43"/ 1	<36"/ 4	>37"/ 1
Passenger Vessel Inspected - **T-Boat-L** *46CFR Subchapter T*	1	6	<36"/ 23	>37"/ 15	<12.5" 20.	>18.6" 6	<30"/ 2	>34"/ 34	33	13	1	4	<34"/ 1	>43"/ 14	<36"/ 10	>37"/ 9
Passenger Vessel Inspected - **H Boat** *46CFR Subchapter H*	1	3	<36"/ 7	>37"/ 9	<12.5" 0	>18.6" 4	<30"/ 2	>34"/ 12	14	2	1	2	<34"/ 4	>43"/ 7	<36"/ 4	>37"/ 5

DIMENSIONAL MATRIX - VESSEL DESIGN & BUILD FIRMS

TYPE OF VESSEL/ REGULATION	TOTAL PER CATEGORY	TYPE OPERATION		TYPE ACTIVITY			PASSENGER CAPACITY		LENGTH OF VESSELS		TONNAGE		CLOSE CIRCUIT VISUAL AID PROVIDED		PUBLIC ADDRESS SYSTEM PROVIDED	
		FER	EXC	PASS	VEH	COMBO	MIN	MAX	MIN	MAX	MIN	MAX	YES	NO	YES	NO
Passenger Vessel Inspected - **T-Boat-S** *46CFR Subchapter T*	5	3	2	5	0	0	25	325	22'	65'	60	81	3	2	4	1
Passenger Vessel Inspected - **T-Boat-L** *46CFR Subchapter T*	15	8	7	13	0	2	150	800	79'	213'	54	99	1	14	14	1
Passenger Vessel Inspected - **H-Boats** *46CFR Subchapter H*	5	1	4	5	0	0	600	3,000	189'	284'	>100	-	0	5	5	0

TYPE OF VESSEL/ REGULATION	RESTROOM PROVIDED		RESTROOM PER VESSEL		RESTROOM LENGTH VESSELS / > & < THAN		*RESTROOM WIDTH VESSELS/ >& < THAN		DECKS - TOTAL PER VESSEL		DECKS FOR DISCHARGE /BOARDING		MOBILITY AID LIFT CAPACITY		TELEPHONE PROVIDED	
	YES	NO	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	UP	LOW	YES	NO	YES	NO
Passenger Vessel Inspected - **T-Boat-S** *46CFR Subchapter T*	3	2	2	2	<56"/ 4	>66"/ 0	<48"/ 4	>60"/ 0	1	3	0	5	0	5	1	4
Passenger Vessel Inspected - **T-Boat-L** *46CFR Subchapter T*	15	0	2	6	<56"/ 4	>66"/ 6	<48"/ 5	>60"/ 5	1	4	1	14	1	14	2	12
Passenger Vessel Inspected - **H Boat** *46CFR Subchapter H*	5	0	2	6	<56"/ 0	>66"/ 5	<48"/ 0	>60"/ 5	2	4	2	2	1	4	1	4

DIMENSIONAL MATRIX - VESSEL DESIGN & BUIILD FIRMS(Continued)

TYPE OF VESSEL/ REGULATION	DINING AREA PROVIDED		DINING AREA TABLES		NUMBER OF DOORWAYS		*DOORWAY WIDTH/ VESSELS/ >&< THAN		THRESHOLD HEIGHT VESSELS/ >&< THAN		*GENERAL AISLEWAY WIDTH VESSELS/ >&< THAN	
	YES	NO	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
Passenger Vessel Inspected - **T-Boat-S** *46CFR Subchapter T*	2	3	0	0	2	4	<32"/ 1	>36"/ 1	.75"/ 1	3"&> 3	<32"/ 1	>36"/ 1
Passenger Vessel Inspected - **T-Boat-L** *46CFR Subchapter T*	7	8	6	149	2	15	<32"/ 1	>36"/ 4	.75"/ 0	3" &> 11	<32"/ 2	>36"/ 7
Passenger Vessel Inspected - **H-Boats** *46CFR Subchapter H*	5	0	0	0	3	37	<32"/ 1	>36" 2	.75"/ 0	3"&> 4	<32"/ 2	>36"/ 2

TYPE OF VESSEL/ REGULATION	NUMBER OF STAIRWAY		*STAIRWAY WIDTH VESSELS/ >&< THAN		STAIRWAY STEP&RISER VESSELS/ >&< THAN		*STAIRWAY RAIL HEIGHT VESSELS/ >&< THAN		SNACKBAR PROVIDED		SNACKBAR PER VESSEL		SNACKBAR COUNTER HEIGHT VESSELS/ >&< THAN		SNACKBAR AISLEWAY WIDTH VESSELS/ >&< THAN	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	YES	NO	MIN	MAX	MIN	MAX	MIN	MAX
Passenger Vessel Inspected - **T-Boat-S** *46CFR Subchapter T*	1	2	<36"/ 5	>37"/ 0	<12.5" 4	>18.6" 1	<30"/ 1	>34"/ 4	4	1	1	1	<34"/ 1	>43"/ 2	<36"/ 3	>37"/ 0
Passenger Vessel Inspected - **T-Boat-L** *46CFR Subchapter T*	2	6	<36"/ 10	>37"/ 2	<12.5" 9	>18.6" 4	<30"/ 1	>34"/ 12	11	4	1	3	<34"/ 0	>43"/ 7	<36"/ 5	>37"/ 2
Passenger Vessel Inspected - **H Boat** *46CFR Subchapter H*	2	6	<36"/ 2	>37"/ 2	<12.5" 4	>18.6" 1	<30"/ 0	>34"/ 5	4	1	1	2	<34"/ 0	>43"/ 3	<36"/ 1	>37"/ 1

Based upon the UHI surveys, we can offer two elements to our findings: one, a profile of vessels in the existing fleet and two, a follow-on comment relating to each of the parts of the profile. The results of the surveys indicate that the Department of Transportation should be cognizant of the following:

Profile:

1. The vessels represented in the survey are oriented toward transportation with over 59% of the total vessels we surveyed being ferries. In the overall population of the small passenger vessel in the United States, however, the overwhelming number of vessels are actually engaged in excursion, dinner and tourist type activities.

2. The vessels are T-Boats, the majority being under 100 Tons and fall into the L category, the largest majority being over 65 feet in length.

Comment:

1& 2a. The majority of the vessels we surveyed were T-Boats, classified in the L category. These vessels, although under 100 gross tons, can be varying lengths and beams. Many of the passenger vessels in the T-Boat, S category, do not provide restroom facilities nor snack bars and offer limited comforts. They are in the business of moving people back and forth over short distances for relatively short periods of time and the vessels were not designed for individuals with disabilities nor are they easily retrofitted for this activity.

Profile:

3. The vessels handle passengers. One third of the vessels, however, also handle a combination of vehicles and passengers.

Comment:

3a. For the vessels handling a combination of passengers and vehicles, regulators must consider the space available on most of these vessels when requiring access for the ramps mounted on vehicles. They must also consider the capability to lift the wheel chair from the vehicle deck to the main cabin if it is on a different deck level.

Profile:

4. The vessels generally handle over 150 passengers each with the greatest number handling a range between 350 and 600 passengers. The majority of the vessels offer a seating capacity much along the same levels of volume.

Comment:

4a. The fact that these vessels handled a wide range of passenger capacities, provides the regulator the ability to allocate seating spaces for wheel chairs along the present ATBCB guidelines.

Profile

5. The majority of the vessels have two decks and prefer to utilize the lower deck for loading and discharge.

Comment:

5a. The regulations must consider the multi-deck access issue. The majority of the vessels load and discharge from the lower deck but do very little to provide access to upper decks, stranding individuals in wheel chairs on the lower deck unless they wish to be carried. Services and amenities for disabled passengers may not be provided on all levels.

Profile:

6. An overwhelming number of vessels did not offer lifts for passengers utilizing mobility aids.

Comment:

6a. The issue of retrofitting a vessel with a lift can affect the structural integrity of many of the present vessels, the stability of the vessel and in many cases, the vessel's overall cost/benefit. Stair lifts running along stairway railings are possible, however, impede access during emergencies.

Profile:

7. Most of the vessel owners allowed pets (dogs, especially seeing eye dogs) on board, however, most did not provide a pet releavement area.

Comment:

7a. The issue of aid dogs being aboard a vessel should not be allowed to be a problem. The availability of a small releavement area should also not pose a problem for most vessels.

Profile:

8. The majority of the vessels offered a public address system but did not provide visual aids.

Comment:

8a. Vessels should be able to provide both audible and visual aids for individuals with hearing and sight disabilities.

Profile:

9. The majority of vessels did not provide telephone capability.

Comment:

9a. Telephones will only become an issue if they are made available. Most vessels operate with radio communications for their own benefit and have not been use to providing telephones. New technology has changed this and the style of telephone on vessels will require some research by the regulators.

Profile:

10. The majority of the vessels did have thresholds at doorways, most between one and three inches in height.

Comment:

10a. Ramping of thresholds will be a concern because the thresholds on most of the present fleet are deemed necessary by the USCG. Most of the operators would support removal of thresholds. Ramps over most of the threshold on present vessels would not comply with present guidelines on slopes and would also provide somewhat of a hazard to those passengers not in wheel chairs.

Profile:

11. Some vessels were reported to have from seven to nine doorways, one, from the Alaska Marine Highway System's fleet had cabins and listed 125 doorways.

Comment:

11a. Dealing with doorway dimensions to allow passage of wheel chairs may pose a problems since most of the doorways are specifically designed to USCG specification and provide the water tight integrity of the vessel which includes the threshold.

Profile:

12. The doorways on vessels ranged from 20 to over 37 inches wide.

Comment:

12a. Changes to doorway widths can have an adverse affect on the structural integrity of most vessels.

Profile:

13. The vessels had from one to 4 or more stairways each. The width of the stairways ranged from slightly less than 25 inches to over 37 inches.

Comment:

13a. Many of the step and riser combinations on vessel stairways are smaller than ATBCB guidelines and have open risers.

Profile:

14. Most of the stairway railings were between 21 inches to 40 inches above the nose of the stairs.

Comment:

14a. Stairway railings should not pose a problem for retrofitting, however, design of outside railings as specified by USCG must be coordinated.

Profiles:

15. The majority of the vessels that had rest rooms, had two rest rooms, however, a number of the vessels had no rest rooms.

16. The range of length and width of rest rooms was typically between 76 inches and 125 inches.

Comment:

15 & 16 a. Many vessels surveyed did not have restrooms. USCG regulations establish guidelines for restrooms on vessels under circumstances where trip lengths only exceed 30 minutes. Rest rooms available on present vessels vary in length and width combinations. The installation of accessible restroom accessories such as grab bars, mirrors, urinals, commodes, sinks, counters, faucets and pipes will depend upon the size of the enclosure used. Alteration of those rest rooms that do not meet specification for ADA accessibility will be difficult and expensive.

Profile:

17. There is no requirement by the USCG for vessels to provide a snack bar and a number of vessels do not. The majority of vessels that did provided snack bar facilities had one to three per vessel.

Comment:

17a. The dimensions of serving areas specifically, counter heights, aisle ways and condiment areas can be adjusted to ATBCB standards on most vessels.

Profile:

18. The decision to provide a dining area on board vessels was split. The greater number did so, however, the difference was very close. Operators provided a wide range of tables, one dinner cruise vessel had 250 tables.

Comment:

18a. Where dining areas are provided, the number and dimensions of most tables are adjustable and the allocation of accessible positions for wheel chairs can be based upon present ATBCB guidelines possible.

2.0 CONCLUSIONS

Based upon the information and data developed by the UHI survey and the resulting computer analysis of this data, combined with the previous work accomplished by the Institute, we have concluded that:

The actual creation of a regulation which will apply to all passenger vessels, whether present fleet or future design and builds, should be accomplished in two sections, one for the present fleet and the second for new design and builds.

Converting the existing passenger vessel fleet to full compliance with the ADA will run the gamut from easily accomplished, to already done, to a great degree of difficulty. However, the creation of fully accessible vessels during new design and construction is definitely possible even utilizing the present ATBCB guidelines. The issues of some portions of the present U.S. Coast Guard safety and stability regulations may rightfully create some obstacles, however, these can be overcome.

There are issues of accessibility on vessel that will be easily dealt with by everyone.

There are areas on a wide segment of the present passenger vessel fleet that are already, or very nearly, in compliance with the guidelines established by the ATBCB for ADA.

Combined with the areas on vessels already in compliance and some effort on the part of the vessel owners, many of the other areas can become readily accessible.

The establishment of a totally accessible vessel, however, regardless of the level of compliance already accomplished in specific areas on that vessel, will only be feasible with major changes in either the vessel's structure or the dimensions established in the present ATBCB guidelines.

New vessel design, complying with a number of the specifications presently established by ATBCB and the Department of Transportation for buildings, structures, facilities and land based transportation equipment, is not only possible but is, in fact with few problems, being accomplished now.

3.0 RECOMMENDATIONS

The actual creation of a regulation which will apply to all passenger vessels, whether present fleet or future design and builds, should be accomplished in the following manner:

It is first recommended that regulations be created in two segments, one for new design and builds and the second, for the present or existing ferry and excursion vessel fleets.

It is recommended that regulations be immediately created for vessels under the classification of new design and build. These regulations would apply to vessels contracted for after a selected date and would only apply to those vessels subsequently placed into operation.

Within the realm of negotiated reality, the effort to convert the present fleet to any degree of compliance, should be generally guided on a vessel by vessel basis and divided into degrees of difficulty. These degrees might be segmented into the following categories:

Category 1 - The most difficult segment of a conversion effort will be those elements that entail changes in vessel structure affecting the overall integrity of the vessel and could, in many cases, create an undue burden. In most cases, the installation of an elevator creating the ability for multi-deck access for disabled individuals in wheel chairs, the adjustment of doorway widths for wheel chair clearance, the reduction and/or ramping of thresholds and the creation of accessible rest rooms will not only be difficult, but next to impossible without major and expensive, structural changes.

Category 2 - The next degree of difficulty involving a conversion effort will be the adjustment of those elements that require structural change but do not impact the structural integrity of the vessel. These changes may still, however, involve significant effort and expense but not an undue burden. Examples of these efforts would be the adjustment of snack bar counters, the establishment of accessible seating, the creation of accessible aisle ways, the adjustment of railing heights and the creation of an accessible rest room in a rest room that has measurements comparable to those established as the minimums by the current ATBCB guidelines.

Category 3 - The final degree of difficulty involving a conversion effort will be the adjustment of those elements that require little if any structural change and can be readily accomplished with reasonable effort and expense. This includes, but is not limited to: the establishment of an accessible path in open cabins, creation of wheel chair positions in seating and dining areas, establishment of accessible dining areas and tables with proper height and clearance dimensions of counters and tables and the installation of visual and audible aids and tactile warnings for individuals with hearing and sight disabilities.

It is further recommended that the Department of Transportation assemble a team of advocacy experts and organize a number of national workshops which would be attended by representatives of the disability advocacy groups, the passenger vessel industry, the U.S. Department of Justice, the U.S. Department of Transportation and the U.S. Coast Guard. The team would act as facilitators and the purpose of the workshops would be to discuss the general format of a regulation and potential areas of agreement or conflict so that documents can be quickly presented to the general public.

The first workshop should be of a general nature, discussing regulatory format, issues and process.

The follow-on workshops should be of a more specific nature, dealing with future vessel design and the present fleet respectively.

CHAPTER 1

INTRODUCTION AND BACKGROUND

CHAPTER ONE

INTRODUCTION AND BACKGROUND

1.0 Introduction
1.1 General

The Americans With Disabilities Act has been in effect since 1990. Based upon specific stipulations in the law, the Department of Transportation implemented the Act shortly thereafter. By promulgating its regulations in 1991, DOT ensured that both public and private transportation, including: buses, rapid rail, light rail, commuter rail, intercity rail and over-the-road buses would be covered under the ADA and that these transport modes would have specific guidelines under which to operate. The requirement to provide accessibility for mobility aids on over-the-road buses was exempt under these particular DOT regulations and a section designated for both passenger vessels and excursion boats, Part 38.177 in the regulation, was reserved. Pending investigation of the feasibility of incorporating accessibility for mobility aids, the effective date for the inclusion of that portion to over-the-road buses was delayed. Air lines were exempt from both the ADA and DOT's implementing regulations based upon the promulgation of their own, specific law and applicable regulations, completed in the late 1980's.

The Department of Transportation reserved the section of their ADA regulations on passenger ferries and excursion vessels based upon the absence of sufficient information necessary to draft and promulgate an effective regulation. Entwined in this dilemma was the question as to overall jurisdiction between a number of agencies including the U.S. Coast Guard. In August of 1993, the University of Massachusetts Boston's Urban Harbors Institute (UHI), under a grant from DOT, issued its final report for the Federal Transit Administration (FTA) concerning the impact of the Americans With Disabilities Act upon the waterborne passenger vessel industry. This report titled ***The Impact of the Americans With Disabilities Act Upon the Waterborne Passenger Vessel Industry***, provided basic information on the status of passenger vessels in the United States. In assessing the impact of the ADA upon the water transportation industry the report also recommended steps necessary to begin the incorporation of the industry's equipment and operations under the Act as DOT regulations are promulgated.

As a result of this study, UHI concluded that regulatory conflicts were inevitable based upon two factors: one, the multi-jurisdictional nature of the ADA (a civil rights act) and two, the specific jurisdiction, long assumed and specifically established, over the waterborne passenger industry, of the U.S. Coast Guard. The UHI report concluded that the application of present Architectural and Transportation Barriers Compliance Board (ATBCB) guidelines and specifications (heavily emphasizing application to landside structures and transportation) to the passenger vessel industry would be extremely difficult due to the generally unstable nature of the transportation platform (vessels) created by the water environment. In addition, U.S. Coast Guard regulations that control vessel design, have established strict dimensional guidelines and operating procedures geared to safety of life at sea.

1.2.0 Study Effort

1.2.1 General

In reviewing the Institute's final report, Department of Transportation realized that additional information regarding vessels would be required to position their regulatory team in a position to create applicable regulations. Part of their requirement was the collection of data on the present vessel fleet to support their decisions on the ability, or lack of it, of the established vessel population to attain a satisfactory level of accessibility. They requested additional assistance from the Urban Harbors Institute in the form of dimensional data on the existing ferry and excursion vessel industry.

1.2.2 Objectives

UHI's objectives in conducting this study, are:

1.2.2.1. To identify specific areas on vessels that will be affected by ADA regulation;

1.2.2.2. To identify the U.S. Coast Guard, DOT and ATBCB regulations and guidelines that apply to these and similar areas;

1.2.2.3. To identify differences as well as commonalty in any or all of these areas;

1.2.2.4. To produce a format that illustrates the specific application of the present regulations and guidelines to these areas;

1.2.2.5. To identify present vessel dimensional data on each of these areas and construct a data base;

1.2.2.6. To produce reports and final analysis on each vessel segment to identify the extent that each area within the specific vessels conforms or does not conform to ADA regulations and guidelines.

1.2.3 Tasks

In reviewing UHI's impact analysis on ADA and preparing the process of drafting regulations to replace the reserved sections of the original regulation on ADA, DOT realized that they did not possess adequate technical information on U.S. passenger and excursion vessels. As part of the second phase of the National Waterborne Passenger Transportation Study being conducted by UHI, DOT requested that UHI undertake a follow-on study concerning ADA, concentrating upon critical exterior and interior dimensions of vessels in the current fleet.

The specific tasks of the study were:

1.2.3.1. To identify, within ATBCB, DOT and USCG regulations and guidelines, the status of the present fleet with respect to each.
1.2.3.2. UHI agreed to conduct a survey to collect the dimensional data of typical passenger and excursion vessels in operation at the present time.
1.2.3.3. UHI would then create a data base consisting of critical vessel dimensions.
1.2.3.4. UHI would also compare the data collected with specifications established by U.S. Coast Guard regulations, ATBCB specifications and guidelines and DOT regulations on other modes of transportation.
1.2.3.5. UHI would design specific reports reflecting the information in the data base and conduct statistical analysis of the dimensional and interior information on a select portion of the U.S. ferry and excursion vessels in operation today.
1.2.3.6. UHI would also complete a matrix provided in suggested by the DOT, with the information gathered from vessel owners and operators as well as vessel design and shipbuilding firms in the United States. This matrix would eventually be utilized to establish areas where application of present ADA, ATBCB and DOT regulations and guidelines conflict with USCG regulations.
1.2.3.7. UHI would produce a report indicating the results of the investigation, outlining the information, the analysis of the data and the completion of the matrix and regulatory comparison.

1.2.4.0 Methodology

1.2.4.1 UHI accomplished this study in three phases which included the investigative, the analytical and the formal preparation processes.
1.2.4.2. UHI conducted document review and regulatory analysis.
1.2.4.3. UHI selected a number of ferry and excursion operations and vessel design and construction firms and forwarded a short questionnaire to them requesting information on vessel utilization, classification, the existence of specific amenities and the minimum and maximum dimensions on specific areas on the vessels. UHI followed this mailing with telephonic inquiries to complete or fill-in the questionnaire.
1.2.4.4. UHI designed a computerized data base and accompanying reports, input the data and tabulated and analyzed it.
1.2.4.5 UHI produced a final written document concerning the dimensional status of today's vessel fleet.

1.3.0 BACKGROUND

1.3.1 General - A Review Of Previous UHI, ADA Work Relating To USCG Vessel Statistics

The analysis that UHI has undertaken in this report is related to passenger ferry and excursion/dinner/tour vessels presently operating within the waters of the United States. The information encompasses passenger vessels providing commuter or ferry services and excursion/dinner/tourist vessels providing general entertainment in all types of water throughout the U.S.. All of the vessels in both categories fall under the jurisdiction of the United States Coast Guard.

In its report on the impact of ADA on the passenger vessel industry, UHI utilized data provided by the U.S. Coast Guard on inspected vessels. U.S.C.G. inspects vessels carrying passengers for hire in the United States, on an annual basis. They are referred to as small passenger vessels and fall under two basis categories:

1.3.1.1 subchapter T (small passenger vessels) refers only to those vessels of less than 100 gross tons.
1.3.1.2 Subchapter H (also passenger vessels) refers to those vessels of 100 gross tons or more.
REF: Table 70.05-1(a), 46 CFR Ch.1

Classes of Vessels Examined or Inspected Under Coast Guard Regulations

Method of propulsion	Size or other limitations	Vessels inspected and certified under Subchapter H and Subchapter T
Steam	Not over 65'	All vessels carrying over 6 passengers
	Vessels over 65'	1. All vessels carrying more than 12 passengers on international voyage 2. All vessels not over 15 gross tons which carry more than 6 passengers 3. All other vessels carrying passengers except yachts
Motor	Vessels not over 15 gross tons	All vessels carrying over 6 passengers
	Vessels over 15 gross tons, except seagoing vessels of 300 gross tons and over	1. All vessels carrying over 12 passengers on international voyage 2. All vessels not over 65', carrying more than 6 passengers 3. All other vessels of over 65' carrying passengers for hire.
	Sea-going motor vessels of 300 gross tons or more	1. All vessels carrying more than 12 passengers on international voyage 2. All other vessels carrying passengers except yachts
Sail	Vessels not over 700 gross tons	All vessels carrying more than 6 passengers
	Vessels over 700 gross tons	All vessels carrying passenger for hire
Non-Self propelled	Vessels less than 100 gross tons	All vessels carrying more than 6 passengers
	Vessels 100 gross tons and over	All vessels carrying passengers for hire

Table 1.3.1 -

1.3.1.3 (1) Sub-chapter T Boats - Those vessels carrying more than 12 passengers and registering less than 100 tons are classified as T Vessels, falling under U.S. Coast Guard regulations, Title 46, Sub-chapter T. T boats as they are called, are divided into two sub-catergories, S & L vessels. Generally, S vessels are those T vessels that are not over 65 feet in length. L vessels are those T vessels over 65 feet in length.

(2) Sub-chapter H Boats - Those vessels carrying more than 12 passengers and registering more than 100 gross tons are classified as H Vessels, falling under U.S. Coast Guard regulations, Title 46, Subchapter H.

Vessels inspected and certified under the Subchapter H guidelines are capable of operating on ocean and unlimited coastwise routes as well as any inland route including the Great Lakes. The areas of operation for vessels inspected and certified under the Subchapter T guidelines are designated by the Officer In Charge, U.S.C.G. on the vessel's certificate of inspection. The certificate will indicate the area of operation (body of water) designated in order of severity. The order is considered to be: ocean, coastwise, Great Lakes; lakes, bays, and sounds and rivers. Operation of vessels on routes less severe than those specifically described or designated on the certificate of inspection issued by the U.S.C.G. will be permitted.

The Urban Harbors Institute solicited assistance and collected data from a select number of sources including the United States Coast Guard and vessel operating companies utilizing vessels under Sub Chapters T&H of the Coast Guard regulations as well as data on vessels both previously or presently under design or construction from a number of marine architects, marine engineers and ship builders. Urban Harbors was interested in analyzing the information based upon the representative numbers in each category within the industry as well as the minimums and maximums in each category where dimensions apply. The information from vessel operators and design and construction firms was collected by mail and telephone and was entered into the data base.

In addition, the USCG information collected during UHI's previous ADA project has relevance to this report.

1.3.2 Delineation Of Criteria for Exemption Or Compliance

Based upon the data supplied by the U.S. Coast Guard included in the Urban Harbors Institute's previous study on ADA, the U.S.C.G. has classified a number of the vessels it inspects, approximately 5,000 vessels per year, in what is considered the small vessel category. This includes T category vessels only. This report separated data into categories such as length, age, body of water, number of passengers, vessel tonnage, vessel service and trip time. This prompted UHI to offer these categories as possible candidates for consideration for exemption or delineation of vessels under the ADA.

Potential Categories To Be Considered For Exemption or Delineation

CATEGORY	ISSUE OF DELINEATION
Length (LOA)	Utilizing a selected length to determine exemption or compliance
Tonnage	Utilizing a selected tonnage to determine exemption or compliance
Number of Passengers	Utilizing passenger capacity to determine exemption, compliance or compliance to certain ADA statutes or guidelines.
Type of Water (Area of Operation)	Area of operation determining compliance or exemption of certain statutes in ADA.
Type of service	Determine the category of service, whether ferry, excursion, dinner, tourist or gambling that might be exempted or required to comply.
Trip time	Utilizing trip time minimums to determine requirements under ADA statutes or guidelines.
Vessel Age	Utilizing vessel age as a determinate to exemption or compliance or applicability of certain statutes and guidelines.

Table 1.3.2.1 -

1.3.3 Grand fathering

As it has often been emphasized, vessels tend to remain in service as much as 5 to 6 times as long as other modes of public transportation (buses and trains). Determining how to approach the problem of ***grand fathering*** may be in the answer to a number of questions:

- Must the responsible federal agencies require that passenger vessels in the existing fleet eventually be in total compliance with the law?
- Which passenger vessels now in service are able to be converted to full accessibility if required?
- Should federal regulators deal with the issue of establishing a ***grandfather clause*** for all or for only a part of the existing fleet?
- Finally, should the regulators, advocates and the industry agree to rely upon the phrases "undue burden" and "readily achievable" rather than "fully accessible" for the vessels now in service?

1.3.2.1 Vessel Age

The predominant category of the total number of vessels inspected by the U.S. Coast Guard annually is the small passenger vessel. These vessels are under 100 tons and are generally referred to as T-Boats, after the Sub -chapter (T) that regulates them. The population of this size vessel is approaching 5,400 in the United States. Inspection statistics published for 1990 indicate that the majority of these vessels were built within the last 50 years. There are an additional 140 inspected vessels that have been in service even longer, at least one dating back to 1871. There are also a number of non-inspected craft fitting into these categories that are uncounted.

Inspected Vessels - 1990 - Number of Vessels By Year of Build

Year	**Number**	**Year**	**Number**
1990	120	1964	73
1989	230	1963	77
1988	223	1962	66
1987	198	1961	65
1986	215	1960	59
1985	193	1959	56
1984	147	1958	40
1983	141	1957	54
1982	174	1956	37
1981	231	1955	52
1980	213	1954	38
1979	250	1953	40
1978	222	1952	27
1977	196	1951	16
1976	165	1950	253
1975	123	1949	17
1974	141	1948	25
1973	133	1947	30
1972	124	1946	22
1971	92	1945	35
1970	113	1944	36
1969	114	1943	19
1968	108	1942	16
1967	102	1941	24
1966	84	1940	14
1965	86		
Subtotal	4138	Subtotal	1,191
Total		**5,329**	

Table 1.3.2.2-

As indicated, the small passenger vessel fleet is not replaced with the same frequency as land or rail transportation equipment. The following chart depicts the year of construction and number of the small passenger vessels inspected by the U.S. Coast Guard in 1990 according to the present definition of an inspected small passenger vessel.

NOTE: The regulation now governing the inspection of small passenger vessels became effective June 1, 1958. Prior to that date, there were vessels under 15 tons that were not inspected. The data presented, therefore, does not reflect an accurate trend in vessel construction between 1940 and 1958.

Since 1940, there has been an average of 104 small passenger vessels, 15 tons or more, built every year. Prior to 1940, the average was 3.09 per year, however, these are not figures that can accurately depict a trend. In the last 20 years, however, the average has increased to over 176 new builds per year. More than half of the small passenger vessel fleet inspected by the U.S. Coast Guard in 1990 is less than 20 years old.

Age of Present Inspected Fleet in five Year Increments

Age	Number of Vessels
5 YEARS OR YOUNGER	986
6 TO 10 YEARS	886
11 TO 15 YEARS	1,046
16 TO 20 YEARS	613
21 TO 25 YEARS	521
26 TO 30 YEARS	367
31 TO 35 YEARS	246
36 TO 40 YEARS	173
41 TO 45 YEARS	347
46 TO 50 YEARS	130

Table 1.3.2.3 -

Other than the basic design of a great number of these vessels that date back to the early 1900's, there are a number of categories that should be utilized in the decision to include or exempt passenger vessels presently in operation. The least these categories should do is serve as a delineation for vessels falling in the exempt or compliance columns on an individual vessel basis.

The U.S. Coast Guard indicates that 986 or 19% of the total 5,329 small passenger vessels being inspected annually were built between 1986 and 1990. They have provided statistical breakdowns of these vessels by vessel length, tonnage, passenger capacity and operating routes.

1.3.2.2 Vessel Dimensions

Vessel dimensions are controlled by length, breadth (beam) and depth (draft). The draft of a vessel, (relating to the shallowest depth of water in which the vessel can operate), can be controlled by either the length or breadth or both. The length and beam of a vessel can be instrumental in determining the gross tonnage and the carrying capacity.

The newer, fast ferries have been designed to carry increasingly greater numbers of passengers, while remaining in the T-Boat category, under 100 gross tons. These vessels, informally called "Super-T's" offer advantages to the operators in reduced crews and U.S. Coast Guard inspection criteria. New regulations are in the process of promulgation to reclassify these vessels.

1.3.2.2.1 Length

Based upon Coast Guard statistics, a large percentage of the small passenger vessels inspected were under 40 feet in length. The largest percentage, however, are between 50 and 99 feet.

Number of Vessels By Length

Length - Range	Number of Vessels	Percentage
Under 40 '	399	41%
40' To 99'	507	51%
100' To 149'	66	7%
Over 150'	13	1%

Table 1.3.2.4-

1.3.2.2.2 - Tonnage

Gross tonnage statistics for vessels built during the period 1986 to 1990 indicate that a large number of small passenger vessels inspected were indeed small, being under 20 gross tons. Over 51% of the vessels, however, ranged between 20 and 99 gross tons.

Number of Vessels by Gross Tonnage

Tonnage Range	Number of Vessels	Percentage
0 TO 19 Gross Tons	481	49%
20 TO 49 Gross Tons	194	19%
50 TO 99 Gross Tons	311	32%

Table 1.3.2.5 -

1.3.2.2.3 - Passenger Capacity

The majority of the small passenger vessels built between 1986 and 1990 and now operating in the United States, carry between one and forty-nine passengers. There are a total of 203 vessels carrying between 50 and 149 passengers, 44 vessels carrying between 150 to 199 passengers, 61 carrying between 200 and 549 passengers and 27 carrying between 550 to over 600.

Number of Vessels By Passenger Capacity

Number of Passengers	Number of Vessels
1 - 49	651
50 - 149	203
150 - 199	44
200 - 549	61
550 - OVER 600	27

Table 1..3.2.6-

1.3.2.2.4 - Operating Route

The operating routes for these vessels were oceans, coastwise, limited coastwise, the Great Lakes, other lakes, sounds and bays and rivers. The maximum route allowable for each vessel are determined by a combination of vessel construction, stability, hatch combing heights, freeboard, lifesaving equipment and any other special hazards such as cold water, lack of rescue facilities and safe harbors. The area of operation permitted for each vessel is designated by the Officer in Charge, Marine Inspection of the area Operation of vessels on routes of less severity than that specifically described or designated on the Certificate of Inspection is permitted.

Number of Vessels By Operating Route

Operating Route	Number of Vessels
Oceans	125
Coastwise	181
Coastwise Limited	134
Great Lakes	25
Other Lakes, Bays and Sounds	310
Rivers	203
All Others	8

Table 1.3.2.7 -

Perhaps regulators should utilize an age or time guideline whereby vessel owners either convert their present vessels or replace them based upon those guidelines? Perhaps the industry should revert to the timeliness of general lay-up or special overhauls or refurbishments to determine the level of accessibility to eventually be incorporated in a vessel. Perhaps the U.S. Coast Guard, utilizing agreed upon general specifications established in cooperation with the Architectural and Transportation Barriers Compliance Board and the Society of Naval Architects and Engineers should determine the level of accessibility each individual vessel should or could attain based upon the inspection certificate issued which determines the maximum number of passengers and the operating route the vessels will be allowed to travel?

In reality, determining accessibility for ferry vessels and excursion boats is not an issue of simply selecting one delineation over the other; or even a combination of categories. The above information has been provided to demonstrate the difficulty in establishing hard fast rules and regulations concerning the vessel industry and its level of accessibility.

The term "**level**" may be the key to unraveling this Gordian Knot. Federally sponsored workshop style symposia to determine three to four levels of accessibility for vessels may be the most feasible approach. Some of the general areas most commonly referred to when discussing the level of accessibility for vessels include the three S's: **stability, structure and safety**. **Stability** is an issue dealt with by a separate Subchapter of the U.S.C.G. rules and regulations Subchapter S. Stability refers to the ability of the vessel too withstand tipping moment under certain stresses. **Structure** in our context, refers to the form of the exterior and interior design of the vessel. Difficulties in adjusting either the exterior or the interior of vessels to meet ADA standards for multi-level access, stairs and stairways, thresholds, doors and doorways, aisles, restroom and dining facilities may be difficult and only determined on a vessels by vessel basis. **Safety** refers to all considerations on a vessel, but particularly in the areas of access and egress and the ability of the vessel to remain afloat during fire or flooding. These include: seating considerations - location, numbers, restraints, protruding objects, movement to safe havens and emergency egress from the vessel, interference with the safety of other passengers, door and bulkhead thicknesses and thresholds. They also include: audible and visual notification and signs for those passengers with hearing or sight disabilities.

Within each of the three S's fall one, five, all of the areas that will be required to create fully accessible vessels.

CHAPTER 2

DATA BASE DOCUMENTATION

CHAPTER TWO

DATA BASE - DOCUMENTATION

2.0 Introduction

To assess the impact of the Americans With Disabilities Act (ADA) of 1990 on the waterborne passenger vessel industry, the Urban Harbors Institute together with the Federal Transit Administration recommended the development of a data base on dimensional information on specific areas of vessels that will be impacted by ADA rules, specifications and guidelines. This assessment is paramount to the beginning of the development and publication of a Federal Department of Transportation (DOT) regulation for the application of ADA to ferries and excursion vessels. If DOT regulations for vessels adopt dimensions that are currently utilized for land based transportation and buildings, and they will clash with present U. S. Coast Guard standards.

The information for developing the database was gathered by utilizing a two page questionnaire sent to vessels operators and designers. (APPENDIX 1)

2.1 Questionnaire Content

2.1.1 General Information
- Name of company
- Total fleet company own
- Type of operation
  - Ferry
  - Excursion or dinner
- Activity
  - Passenger
  - Vehicle
  - Passenger/Vehicle
- Area of operation

2.1.2 Vessel Data
- Vessel type
  - T boat-S
  - T boat-L
  - H boat
- Tonnage
- Capacity
  - Passenger
  - Seating
  - Vehicle

2.1.3 Number of decks available for passengers
2.1.3.1 Passenger or vehicle lift available
2.1.3.2 Boarding - upper or lower deck
2.1.3.3 Discharge - upper or lower deck
2.1.4 Do you allow dogs on board?
2.1.4.1 Do you provide a pet releavement area?
2.1.5 Do you provide snack bar facilities?
2.1.6 Do you provide visual aids?
2.1.7 Do you provide audio information?
2.1.8 Do you provide a dining area?
2.1.9 Do you provide telephones on board?
2.1.10 Vessel Dimensions:
2.1.10.1 Length of vessel
2.1.10.2 Number doorways
2.1.10.2.1 Minimum and maximum width
2.1.10.2.2 Minimum and maximum width of thresholds
2.1.10.3 Minimum and maximum width of aisle ways
2.1.10.4 Number of stairways
2.1.10.4.1 Minimum and maximum width between railings
2.1.10.4.2 Minimum and maximum step and riser combination width
2.1.10.4.3 Minimum and maximum Railing height
2.1.10.5 Number of restrooms
2.1.10.5.1 Minimum and maximum doorway width
2.1.10.5.2 Minimum and maximum room width
2.1.10.5.3 Minimum and maximum room length
2.1.10.6 Number of Snack bars
2.1.10.6.1 Height of counter
2.1.10.6.2 Width of aisle way
2.1.10.7 Dining Area
2.1.10.7.1 Number of tables
2.1.10.7.2 Square footage available

2.2 Structure of the database

Field name	Type	Width	Decimal	Index
ID_NUMBER	Numeric	3		Y
COMPANY	Character	65		Y
TOT_FLEET	Numeric	10		N
OP_FERR	Character	10		N
OP_EXC_DIN	Character	10		N
ACT_PASS	Character	10		N
ACT_VEH	Character	10		N
ACT_PAS_VE	Character	10		N
AREA_OP	Character	50		N
T_BOAT_S	Character	10		N
T_BOAT_L	Character	10		N

H_BOAT	Character	10		N
TONNAGE	Numeric	10	2	N
CAP_PAS	Numeric	10		N
CAP_SEAT	Numeric	10		N
CAP_VEH	Numeric	10		N
NUM_DECK	Numeric	10		N
PAS_V_LIFT	Character	10		N
BOARD_U_L	Character	10		N
DISC_U_L	Character	10		N
DOGS	Character	10		N
PET_REL_AR	Character	10		N
SNAC_FAC	Character	10		N
VIS_AIDS	Character	10		N
AUD_INFO	Character	10		N
DIN_AREA	Character	10		N
PHONE	Character	10		N
VSL_LNGT	Numeric	10	2	N
NUM_DWAYS	Numeric	10		N
DWY_W_MIN	Numeric	10	2	N
DWY_W_MAX	Numeric	10	2	N
THRSHLD_MI	Numeric	10	2	N
THRSHLD_MA	Numeric	10	2	N
AISLWY_MI	Numeric	10	2	N
AISLWY_MA	Numeric	10	2	N
STWY_NUM	Numeric	10		N
STWY_W_MA	Numeric	10	2	N
STWY_W_MI	Numeric	10	2	N
S_RS_W_MI	Numeric	10	2	N
S_RS_W_MA	Numeric	10	2	N
STWY_RH_MI	Numeric	10	2	N
STWY_RH_MA	Numeric	10	2	N
REST_NUM	Numeric	10		N
RES_DW_MI	Numeric	10	2	N
RES_DW_MA	Numeric	10	2	N
RES_RW_MIN	Numeric	10	2	N
RES_RW_MAX	Numeric	10	2	N
RES_RL_MI	Numeric	10	2	N
RES_RL_MA	Numeric	10	2	N
SNAC_NUM	Numeric	10		N
SNAC_H_CO	Numeric	10	2	N
SNAC_W_AIS	Numeric	10	2	N
DIN_N_TAB	Numeric	10		N
COMMENT	Memo	10		N
VESL_NUN	Numeric	2		N
SQUARE_FT	Numeric	10		N
OPTION	Character	2		N

2.3 Data Dictionary

ID_NUMBER	IDENTIFICATION NUMBER
COMPANY	COMPANY NAME
TOT_FLEET	TOTAL FLEET
OP_FERR	OPERATION FERRY
OP_EXC_DIN	OPERATION EXCURSION OR DINNER
ACT_PASS	ACTIVITY PASSENGER
ACT_VEH	ACTIVITY VEHICLE
ACT_PAS_VE	ACTIVITY PASSENGER OR VEHICLE
AREA_OP	AREA OF OPERATION
T_BOAT_S	T BOAT S
T_BOAT_L	T BOAT L
H_BOAT	H BOAT
TONNAGE	TONNAGE
CAP_PAS	CAPACITY PASSENGER
CAP_SEAT	CAPACITY SEATING
CAP_VEH	CAPACITY VEHICLE
NUM_DECK	NUMBER OF DECKS
PAS_V_LIFT	PASSENGER OR VEHICLE LIFT
BOARD_U_L	BOARDING UPPER OR LOWER
DISC_U_L	DISCHARGE UPPER OR LOWER
DOGS	DOGS
PET_REL_AR	PET RELEAVEMENT AREA
SNAC_FAC	SNACK FACILITY
VIS_AIDS	VISUAL AIDS
AUD_INFO	AUDIO INFORMATION
DIN_AREA	DINING AREA
PHONE	PHONE
VSL_LNGT	VESSEL LENGTH
NUM_DWAYS	NUMBER OF DOORWAYS
DWY_W_MIN	DOORWAY WIDTH MINIMUM
DWY_W_MAX	DOORWAY WIDTH MAXIMUM
THRSHLD_MI	THRESHOLD MINIMUM
THRSHLD_MA	THRESHOLD MAXIMUM
AISLWY_MI	AISLE WAY MINIMUM
AISLWY_MA	AISLE WAY MAXIMUM
STWY_NUM	STAIRWAYS NUMBER
STWY_W_MI	STAIRWAY WIDTH MINIMUM
STWY_W_MA	STAIRWAY WIDTH MAXIMUM
S_RS_W_MI	STEPS & RISER MINIMUM
S_RS_W_MA	STEPS & RISER MAXIMUM
STWY_RH_MI	STAIRWAY RAILING HEIGHT MINIMUM
STWY_RH_MA	STAIRWAY RAILING HEIGHT MAXIMUM
REST_NUM	RESTROOM NUMBER

RES_DW_MI	RESTROOM DOORWAY WIDTH MINIMUM
RES_DW_MA	RESTROOM DOORWAY WIDTH MAXIMUM
RES_RW_MIN	RESTROOM ROOM WIDTH MINIMUM
RES_RW_MAX	RESTROOM ROOM WIDTH MAXIMUM
RES_RL_MI	RESTROOM ROOM LENGTH MINIMUM
RES_RL_MA	RESTROOM ROOM LENGTH MAXIMUM
SNAC_NUM	SNACK BARS NUMBER
SNAC_H_CO	SNACK BAR HEIGHT OF COUNTER
SNAC_W_AIS	SNACK BAR WIDTH OF ALLEYWAY
DIN_N_TAB	DINNING AREA NUMBER OF TABLES
COMMENT	
VESL_NUN	VESSEL NUMBER
SQUARE_FT	SQUARE FOOT
OPTION	OPTION

2.4 Use of the database

- Turning on the computer, the C: prompt will appear

example: C:>*cd dbase (enter)*
C:\dbase>*cd jobs(enter)*
C:\dbase\jobs>*dbase(enter)*

- The control panel will appear on screen.
- Choose ADA-MENU under Applications (a window will appear asking if you want to Run application or Modify application, please choose Run application, pick Yes of the next pop up window).
- The ADA menu should appear on screen then you select type of transaction that you want.
- If you want to view a report, select type of report from the list under Applications (you will notice under the control center box there are two highlighted yellow lines, the one in the bottom give you the description (name) of the report that is highlighted under Applications in the control center).
- To print reports, you can either print screen when the report is displayed or you can run PROGADA for the companies or DIS_PRO for the designers under Applications in the Control Center, these programs will print all the reports.

CHAPTER 3

REGULATORY COMPARISON

CHAPTER THREE

COMPARISON OF REGULATIONS AND GUIDELINES

3.0 Comparison & Spreadsheet - Regulations and Guidelines

3.1 General - When considering the impact of the dimensional data Urban Harbors Institute would eventually collect on the present fleet of passenger vessels in the United States, it was concluded that a spreadsheet comparing existing rules, regulations and guidelines that are presently published on ADA, covering landside buildings, structures and transportation vehicles was necessary. During its initial impact assessment of the Americans With Disabilities Act, Urban Harbors Institute determined that there were five official documents that would eventually impact the actual promulgation of ADA regulations on the vessel industry. These documents were published by four federal entities, including: the Congress, the Architectural and Transportation Barriers Compliance Board [(ATBCB)(2 documents], the Federal Department of Transportation (1 document) and the U.S.Coast Guard (three subparts of one document). It was felt that these regulations and guidelines would not only impact the ultimate decisions on the various levels of accessibility for vessels, but, in fact, may be utilized as the basis for guidelines for vessel specific ADA rules and regulations. These documents included:

- *The Americans With Disabilities Act (ADA) 1990*

- *The Americans With Disabilities Act (ADA) - Accessibility Guidelines for Buildings and Facilities*

- *The Americans With Disabilities Act (ADA) Accessibility Guidelines for Transportation Vehicles; Title 49, Part 38 - The Americans With Disabilities Act (ADA) Accessibility Specifications For Transportation Vehicles; and,*

- *Code of Federal Regulations, Title 46 Shipping, Part 70 to 89, (Subchapter H), Parts 170 to 174 (Subchapter S) and Parts 175 to 185 (Subchapter T).*

3.2 Objective - The objective of a comparison of the regulations and guidelines that potentially would affect the promulgation of ADA regulations for ferries and excursion boats is to establish the areas of common interest in the four basic documents and to emphasize both the similarities and differences in each.

3.3 Discussion -

One of the problems with this comparison is the fact that it is difficult to determine which of the documents will become the corner stone. The Institute assumed that the Department of Transportation's treatment of specific subjects on buses, vans and the four types of rail; rapid, light, commuter and intercity would be relevant and used as a model for format. DOT's treatment of certain items for each of the transit modes would also provide insight into the potential direction that might be taken by DOT regulators. The institute also assumed that the ATBCB guidelines, one for buildings and facilities and the other for transportation vehicles will be extremely important because it provides many of the guidelines on dimensions that must be adhered to. The USCG's Subchapters H, S & T will each provide the guidance and comparison on these critical dimensional conflicts and will consider the important aspects of vessel design and safety.

Since the Americans With Disabilities Act of 1990 (ADA) is civil rights legislation and the U.S.C.G. subchapters are officially promulgated regulations, a second, and very safe assumption was that the Act could easily take precedent over the regulation. We therefore could assume that the guidelines for accessibility in buildings and facilities and transportation vehicles promulgated by the Architectural and Transportation Barriers Compliance Board would be relied upon heavily and utilized as the corner stone for most of the dimensional guidelines for ferries and excursion vessels.

Even in the hierarchical structure of laws, rules, regulations and guidelines, practicality must be considered. With respect to the application of ADA requirements, vessels may well be required to comply with ATBCB guidelines. Attaining accessibility by utilizing many of the ATBCB dimensional guidelines will be difficult for the existing fleet. However, even though the most difficult of the ATBCB guidelines with respect to dimensions are limits established for landside structures based upon the parameters of a single piece of equipment, (the wheel chair), most are in fact attainable by the vessel industry during new vessel design and construction. Many of the ATBCB guidelines can be adopted as long as the conflicts between ADA and the U.S.C.G. can be overcome.

UHI's spreadsheet is presented with the ATBCB guidelines as the basis from which to work on the development of ADA for vessels. USCG regulations have been long standing tools for vessel design and are the cornerstone of vessel safety. USCG regulations deal with most but not all areas that are dealt with in the ATBCB guidelines. The difficulty becomes the fact that USCG regulations have never considered wheel chair accessibility when determining their standards nor have they provided design criteria for

accessible paths for individuals with hearing and sight disabilities. Because they are regulations and they don't deal with accessibility, U.S.C.G. regulations become the object for change, however, in a few crucial areas - especially those affecting stability and emergency egress - ATBCB guidelines may require adjustment.

U.S. DOT regulations for landside mass transit are valuable as an example of how DOT has taken ATBCB regulations and applied them to the equipment and operation of their various modes. (It has been assumed that present DOT regulations for landside transportation take into account all ATBCB guidelines whether they actually specify them or not.)

ATBCB regulations recognize waterborne transportation and transportation facilities in general, but do not deal with them. DOT recognizes ferries and excursion vessels but does not deal with them, preferring to "reserve" this section of their regulations. USCG regulations deal directly with passenger vessels, their design, construction, maintenance and operation and based upon the fact that they were written prior to ADA, do not provide for accessibility for disabled passengers.

3.4 Summary

The following is a summary of the spreadsheet by area of consideration by guideline or regulation:

3.4.1 General - Accessible Routes - ATBCB and the DOT regulations call for at least one accessible route within the boundary of a site [or mode of transport]. USCG regulations do not refer to an accessible route as such, for individuals with disabilities, but indicate the requirement for clear avenues of escape (two).

3.4.2 Multi-level Access - ATBCB deals with all aspects of multi level access, specifying elevator requirements and exemptions to the requirement to install elevators. DOT calls for level change devices on most equipment and second level seating and dining capabilities. USCG does not discuss multi-level access other than stairs and does deal with construction of elevators (not a requirement) on subchapter H vessels.

3.4.3 Bridge Plates & Ramps - ATBCB deals with ramps indicating slope variables and threshold heights as does DOT. USCG regulations do not.

3.4.4 Doors & Doorways - ATBCB deals with accessible doors and doorways including dimensions, hardware and operation. DOT establishes door widths based upon mode of transport and size. The portion of the USCG regulation on doors and doorways is extensive, specifically directed to safe access and egress. U.S.C.G. regulations include a section on the size, thickness, type of hardware, method of opening and watertight conditions and the regulation specifically classifies doors and doorways.

3.4.5 Aisles & Aisle ways - ATBCB establishes requirements for dimensions of aisles and aisle ways. DOT establishes parameters based upon use of aisle ways by standard wheel chairs. USCG establishes minimum dimensions for aisles but they are limited and not applicable to present wheel chair standards.
3.4.6 Stairs and Stairwells - Specifications are established in ATBCB but they are not considered part of an accessible route. ATBCB develops uniform tread and riser dimensions. DOT specifies little for stairs on buses & vans. USCG deals with stairs based upon use, inclination and the number of people to be served.
3.4.7 Hand Rails & Grab Bars - ATBCB establishes heights, specification dimension and design for hand rails on stairs and ramps and in restrooms. DOT deals with handrails on lifts, interior circulation on some modes and restrooms. USCG deals with handrails on stairs, along the outside of decks, and storm rails in passageways.
3.4.8 Toilet Areas and Rest rooms - Dimensions and layout are specifically outlined in ATBCB guidelines. DOT's regulations concentrate on commuter rail and intercity rail only. USCG deals with restrooms, however, they only concern themselves with numbers of facilities based upon the level and sex of passengers.
3.4.9 Seating - ATBCB establishes assembly area capacities and space for wheel chairs, space for wheel chairs in dining areas and the ability of an individual to transfer from the chair, sit at a table and store the wheel chair. DOT deals with securement areas, signage for priority seating, dining area and chair storage. USCG establishes the number of seats (capacity) based upon one of three criteria but does not deal with positions for wheel chairs nor their dimensions.
3.4.10 Telephone & Assertive Listening Devices - ATBCB deals with the number of accessible telephones per telephone bank, TDD capability and the dimensions controlling installation. DOT does not mention telephones. USCG does not mention telephones.
3.4.11 Signage - ATBCB deals with location, specifications, illumination of signs. DOT deals with location, specifications and illumination as well. USCG deals with signage at emergency exits , embarkation points, special position identifications.
3.4.12 Drinking Fountains - ATBCB deals wth numbers, installation dimensions, location of controls. DOT and USCG do not mention drinking fountains.
3.4.13 Snack bar, Cafeterias, Restaurants- ATBCB deals with the number and distribution of tables, accessible routes, food service lines, dimensions, reach ranges, seating and space allowances. DOT deals with dining areas on intercity rail and includes access dimensions, space for transfer and chair storage. USCG does not mention dining areas or snack or cafeteria areas.

3.5 Spread Sheet comparisons

WATER TRANSPORTATION AREA	U.S. ATBCB (ADAAG) (Buildings, Facilities, Transportation Vehicles)	U.S. DOT REGULATIONS (Transportation Vehicles)	U.S.C.G. REGULATIONS (Passenger Vessels)
1.0 GENERAL 1.1 Rules, Regulations and Guidelines	Americans With Disabilities Act of 1990; Accessibility Guidelines., Architectural and Transportation Barriers Compliance Board - Buildings and Facilities; Accessibility Guidelines for Transportation Vehicles.	Title 49 - Code of Federal Regulations, Part 38 - Americans With Disabilities Act (ADA), Accessibility Specifications for Transportation Vehicles	Title 46 - Shipping - Subchapters H - Passenger Vessels & T - Small Passenger Vessels (under 100 gross tons) and portions of Subchapter S - Subdivisions and Stability.
1.2 Primary Concentration or Purpose	Accessibility Guidelines for places of public accommodation and commercial facilities and bus and rail systems.	Minimum guidelines and requirements for accessibility, Standards in Part 37 of Tile 49, Part 38 is applicable to transportation vehicles: buses, vans and systems; rapid rail and systems; light rail and systems; commuter rail and systems; intercity rail and systems, over the road buses and systems.	Prescribed by the Commandant of Coast Guard to carry out the intent and purpose of Title 46 which requires inspection and certification of vessels carrying freight for hire or more than six people. Does not establish guidelines for accessibility under ADA.
1.3 Application to Water Transportation	None- Water transportation and facilities section is [Reserved].	Subpart H, Other vehicles and Systems - 38.177 - Ferries, excursion boats and other vessels [Reserved].	Subchapter H - Applicable to all U.S. flag vessels with few exceptions that are 100 gross tons or more. Subchapter T - Applicable to all U.S, flag vessels with few exceptions that are less than 100 gross tons, carrying more than 6 passengers. No references, standards or guidelines have been written applicable to ADA.
2.0 DISCUSSION 2.1 General - Accessible Route	At least one accessible route within the boundary of a site. At least one accessible route connecting buildings facilities, elements and spaces on the same site. At least one accessible route shall connect accessible building or facility entrances with all accessible spaces, elements and dwelling units. Accessible routes include: minimum clear widths, passing space, access from transportation stops, accessible parking, passenger loading, building entrance, accessible ramps, protruding objects, doors and doorways, changes in levels, stairways, aisles, elevators, public telephones, assembly areas, rest rooms, emergency exits, floor surfaces textures, signs and areas of refuge.	Interior circulation for rapid, light, commuter, and inter-city rail as well as buses, vans and over-the-road buses. Buses & vans - mobility aid accessibility, doors, steps and thresholds; priority seating, interior circulation, lighting. Rapid rail - doorways, priority seating, interior circulation, floor surfaces. Light rail - doorways, priority seating, interior circulation, floors, steps and thresholds, lighting, mobility aid accessibility, between car barriers. Commuter rail - doorways, mobility aid accessibility, interior circulation, floors, steps and thresholds, lighting, public information, priority seating, restrooms, between car barriers. Inter-City Rail - doorways, interior circulation, floors, steps and thresholds, lighting public information, rest rooms, mobility aid accessibility, sleeping compartments. Over-the-Road Buses - Doors, steps and thresholds, interior circulation, hand rails and stanchions, lighting. ADA reserved mobility aid accessibility pending further study.	Under Subchapters H & T, no mention of accessible routes applicable to individuals with a disability. Most discussion deals with egress under emergency conditions. Subchapter H - Part 72 - Construction and Arrangement - Structural Fire Protection deals with decks, stairways and elevators; under 72.10 - deals with means of escape - two means required; also deals with doors and door securement (locking), stairway sizes, corridors, public space, 72.25- Passenger accommodation - specifies separate toilets for men and women, the number of facilities, determination of the actual requirement for toilets. 72.40 - deals with rails and guards - establishes heights and the number of courses. Subchapter T - Part 177 - establishes two avenues of escape, establishing windows and windshields of sufficient size and proper accessibility (not ADA accessibility) as one of the avenues. Establishes fixed seating criteria, aisle way widths, toilet facilities, rails and guards, seating and how passenger levels area determined. Seating, part 176.01-25 - maximum number may be determined by the Officer In Charge, Marine Inspection. Three categories are established and generally utilized, (1) Rail Criteria; (2) Deck area criteria; and (3) Fixed Seating. Maximum number of passengers may also be limited by the issues of stability or subdivision (Subchapter S part 171 - special rules pertaining to passenger vessels.

WATER TRANSPORTATION AREA	U.S. ATBCB (ADAAG)	U.S. DOT REGULATIONS	U.S.C.G. REGULATIONS
2.2 Multi-level (Deck) Access	4.9 - Stairs are never considered part of an accessible route. They must be usable by people with mobility impairments. 4.1.3. para 4 - Stairs between levels not connected by an elevator must comply with technical specifications for accessible stairs. 4.1.3. para 4 - One elevator to serve each level of a multi-story structure. Each elevator must comply with section 4.10. **Section 303 of ADA exempts facilities less than three stories or having less than 3,000 sq.ft. per story.** Exceptions may be designated based upon uses. Determination will be made by the Attorney General. Levels not required to be served by elevator must otherwise be accessible for mobility impaired as well as sight and hearing impaired.	Title 49, Part 38 - Level change devices or boarding devices, bi-level dining and lounge cars must comply. Services offered on upper levels must be provided on lower levels where there is no accessibility to the upper level.	Subchapter H - 72.05.20 - Stairways, ladders and elevators are discussed. Elevators will be of steel construction. Where there is deck penetration differentiation is made based upon the number of levels. Subchapter S - No discussion of multi-level access. Plans for installation of elevators must consider overall stability of the vessels. Subchapter T - No discussion of elevators or multi-deck access.
2.3 Bridge Plates and ramps	ADAAG does not specifically deal with bridge plates. Defines ramps as an accessible route with a running slope greater than 1:20. Indicates that changes in levels greater than 1/2 inch must be ramped. 4.8 Ramps - Slopes greater than 1:20 must be ramped. Ramp slopes must not be greater than 1:12. Provides guidelines on slopes, length of ramps and dimensions of rest areas. Also deals with ramping of thresholds.	Title 49, Part 38 deals with bridge plates on commuter rail and intercity rail. All vehicles must provide either a level change mechanism or boarding device (lift or ramp). DOT does deal with ramps for specific transport modes establishing slope minimums for transition between platforms and vehicle entrances called platform entrance ramps.	USCG Regulations apply to vessels but do not deal directly with bridge plates or ramps leading from dockside to vessels edge. It is a jurisdictional division. Establishment of maximum slope of 1:12 for specific boarding ramp lengths is possible, however, studies have proven that ramps in areas with significant tidal ranges are expensive and take-up space not always available dockside in every location. Based upon vessel design, mobility aid accessibility from water's edge to the vessels deck could be a significant problem due to the combination of the height of the vessel's bulwark and the deck along with the width of the vessel or the distance between the bulwark and the entrance way.
2.4 Doors and doorways	4.1.3 - Accessible Buildings & 4.13 - Doors - Specifies a clear width of 32" with a 90 degree opening. Also deals with maneuvering clearances, two doors in series, thresholds and ramping, door hardware, door closures, door opening forces and power assisted and automatic doors.	Tittle 49, Part 38 - Subparts B, C, D, E, F and G. No mention of door widths for buses & vans. Minimum clearance for rapid, light, commuter and intercity rail is 32". Over the road buses shall have a minimum door width of 30 inches but no less than 27 inches. Door height on vehicles in excess of 22 feet long must be 68 inches between top of door and the mobility aid lift. For vehicles less than 22 feet long, the height shall be 58".	Subchapter H - 72.05.-25 and Table 72.05.20(s) - Doors are classed. Dimensions of doorways at stairways is a function of the number of persons served by the door. In no case shall a clear door be less than 28 inches wide. On the embarkation deck, each Type 1 stairway shall provide exit doorways of 44 inches on each side of the vessel. Doors other than water tight doors must open in the direction of escape and be capable of being operated by one person. They may be locked unless they are access doors on the two routes of escape. Section also deals with materials, latches, closing mechanisms and location and purpose of the door. Subchapter T - Refers to Subchapter H, 72.05 for vessels contracted for on or after July 1, 1961 carrying 150 passengers or more. 177.15 - Atleast one doorway that is a means of escape shall be water tight. Subchapter S - Water tight bulkhead doors are classed with permissible locations assigned to each.

WATER TRANSPORTATION AREA	U.S. ATBCB (ADAAG)	U.S. DOT REGULATIONS	U.S.C.G. REGULATIONS
2.5 Aisles and Aisle ways	4.3 - Accessible routes applies to all walks, halls, corridors, aisles. At least one accessible route must be established. Minimum clear width is 36". Passing spaces must also be established on routes less than 60 in in width and must be located at reasonable intervals. Establishes dimensions for turning areas and protruding objects.	Title 49, Part 38 - No standard established for buses. For rapid, light and intercity rail, aisle ways should be a minimum of 32". Commuter rail not specified.	Subchapter H - No specific designation of aisle ways or dimensions. Subchapter T - 177.30 - Aisle ways - Widths are based upon the length of aisles. Aisles more than 15' in length, must be 30" wide. Aisles below 15', must be 24" wide. Distance between seats in a row will be 30" front to front.
2.6 Stairs and Stairwells	4.9 - Stairs are never considered part of an accessible route. They must be usable by people with mobility impairments. 4.1.3 para 4 - Stairs between levels that are not connected by an elevator must comply with technical specifications for accessible stairs. Stairs must have uniform treads no less than 11 inches wide. Open risers are not permitted. Stairways shall have railings that are continuous, especially on the inside, space between handrails and walls shall be 1 1/2".	Title 49, Part 38 - Buses & Vans, rapid, light, commuter and intercity rail and over-the-road buses - Steps must have slip resistant surface; contrasting band of color along the edge.	Subchapter H - 72.05.20 - Stairways under this section are dealt with in detail. Four types of stairs are established, based upon primary use, angle of inclination and number of persons served. Minimum width is determined on a deck by deck basis. Minimum stair tread width is calculated based upon the type of stair, the primary use and the number of passengers served. Stair loading is 100lbs per sq ft with a factor of safety of four. Stringers, treads and all platforms and landings shall be of solid steel. Hand rails shall be fitted on both sides between 33 and 36 inches above the tread nose. For stairs in excess of 66 inches wide, a center rail shall be provided. Type 1,2,3 & 4 stairs shall be dimensioned on a deck by deck basis. Open risers are permitted. Subchapter T - Stairs on vessels contracted for on or after July 1, 1961 carrying 150 passengers or more shall be under subchapter H - 72.05.20.
2.7 Hand Rails & Grab Bars	4.8.5 - Hand Rails on Ramps - With a rise greater than six inches or a horizontal projection greater than 72 inches. handrails shall be placed on both sides of the ramp. If hand rails are not continuous, they shall extend at least 12 inches beyond the top and bottom of the ramp segments and shall be parallel to the floor or ground. Clear space between hand rail and wall shall be 1 1/2 inches. Inside hand rails shall be continuous on switch back or dog legs. Top of hand rail gripping surface shall be mounted between 30" to 34" above the ramp. Top of the hand rail gripping surface shall be rounded or return smoothly to the floor, wall or post. 4.9.4 - Stairs - Shall have handrails on both sides of stairs. Shall be continuous. If not they shall extend 12 inches beyond the top riser and at least 12 inches plus the width of one tread beyond the bottom riser. Clear space between hand rails and the wall 1 1/2 inches. Hand rails shall be mounted so that the top is 30" to 34" above the surface.	Title 49, Part 38 - Buses & Vans - 38.23 - Mobility Aid Accessibility - Handrails on two sides which move in tandem with the lift and are graspable and support standees. Shall have a usable component at least 8 inches long with the lowest portion 30" above the platform. The highest portion will be a maximum 38 inches above the platform. Handrails shall be capable of withstanding a force of 100 lbs. Diameter of handrails will be 1 1/4 inches to 1 1/2 inches. Hand rails will be a minimum of 1 1/2 inches from the wall.38.29 - Handrails - Dimensions are the same. Handrails shall not interfere with turning and maneuvering of wheel chairs. Where on-board fare collection devices are used, a horizontal passenger assist shall be located across the front of the vehicle in vehicles in excess of 22 feet in length. Overhead rails shall be continuous except for a gap at the rear door. Handrails shall be sufficient to permit safe boarding, on board circulation seating and standing assistance and alighting by persons with disabilities. Rapid Rail	Subchapter H, Subpart 72.40 - Rails and Guards - all vessels contracted for on or after July 1, 1969, vessels contracted before that must meet 72.40.90 - (a) All passenger vessels shall have efficient guard rails or bulwarks on decks and bridges as follows: Height shall be atlesast 39 1/2" from the deck. At the peripheries of freeboard and superstructure, decks at peripheries of all decks accessible to passengers, rails shall be in at least three courses including the top. The opening below the lowest course shall not be more than 9". The courses shall not be more than 15 inches apart. On other decks and bridges, the rails shall be in at least two courses, evenly spaced. (b) where height interferes with the business of the vessel, other arrangements may be made. In general, however, the rail height shall be at least 30". On passenger decks of ferries and excursion vessels, the space below the top will be fitted with wire. Where vessels are engaged exclusively in voyages of a shortened nature the provisions of this section's part may be (a) relaxed. Suitable storm rails shall be installed in all passage ways and on both sides where passage ways are 6' or more in width.

WATER TRANSPORTATION AREA	U.S. ATBCB	U.S. DOT REGULATIONS	U.S.C.G. REGULATIONS
2.7 Handrails & grab bars (cont'd)	4.16.4 - Grab bars as noted in the section on restrooms. 4.26 - Dealing with handrails and grab bars - size spacing, and structural strength. Diameter/width - 1 1/4" to 1 1/2" space between wall and bar 1 1/2" May be located in a recess 3" deep extending at least 18" above the rail. Bending and sheer stress less than 250 lbs/ft.	Handrails shall be provided and shall allow a route at least 32" wide. Light Rail - At entrances equipped with steps, handrails shall be provided so that passengers can grasp from the outside of the vehicle. Commuter Rail - Where platforms on lifts are present, interior circulation and handrails. Intercity Rail - Interior circulation and handrails, restrooms mobility aids accessibility. Over-The-Road Buses - Interior circulation and handrails.	72.05.20 - Stairways, Ladders & Elevators - (k) hand rails shall be fitted on both sides of stairways. For stairways in excess of 66 inches, additional center handrails shall be provided. All handrails shall be at a vertical height of 33 to 36 inches and of incombustible material. Subchapter T - 177.35 - Rails and Guards - Except as otherwise provided, rails or equivalent protection shall be installed near the periphery of all weather decks accessible to passengers and crew. Hand grabs may be substituted where space limitations make deck rails impractical. Space between courses shall be even and not more than 12" apart. The lower rail may not be required where all or part of the space below the upper course is filled with a bulwark, chain links or wire mesh on passenger decks of ferries or excursion boats, rails shall be 42" high. On fishing vessels, rails may be lower but must be at least 30 inches high. In certain cases, the peripheral rails may be reduced to 30" For vessels subject to the 1966 Int'l Convention On Load Lines, rail and bulwark heights at the peripherals of the freeboard and super structure decks shall be at least 39 1/2". If this height interferes with the normal operation of the vessels a lesser height may be approved. The opening below the lowest course shall not be more than 9" or 15" apart. Storm rails or hand grabs shall be installed where necessary in passage ways, deck houses sides or hatches.
2.8 Toilet Areas	All public and common use facilities must comply 4.22 - Establishes guidelines for floor space, height, grab bars, flush controls, dispensers, stalls, toe clearance, doors, urinals, lavatories, mirrors and faucets. Water closets - Clear floor space - 66"x48" for front entrance; 56"x48" for side entrance; 56"x 60" minimum for front entrance; height 17" to 19"; height of commode 17" to 19" off the floor; grab bars - back wall 12" minimum,. side wall 42" min. Flush controls hand operated or automatic, mounted on wide side of toilet 44" above the floor. Dispensers, installed within reach. Toilet stalls - On an accessible route within the rest room. Minimum depth 56", wall mounted water closet, 3+" increase in the size of the stall will allow floor mounting.	Title 49, Part 38 - Commuter Rail and Intercity Rail - If a rest room is provided for the public, it shall be accessible Minimum clear floor area 35"x 60". Permanent fixtures may overhang by 6" if the lowest part of the fixture is 9" above the floor and may overlap a maximum of 19": if a minimum of 29" above the floor, provided they do not interfere with access to the water closet. Height of the water closet - 17" to 19" inches to the top of the toilet seat. Grab bar at least 24" inches long mounted behind the water closet a horizontal grab bar 40" inches or more long on one side of the wall with one end not more than 12" inches from the back wall at a height between 33 inches and 36 inches.	Subchapter H - Subpart 72.25 - Separate toilets provided for male and females. Minimum equipment is based upon the number of passengers - urinal may be substituted for toilets in men's toilets. Ferry boats having a short run are not required to provide toilets. No dimensional requirements specified. Subchapter T - 177.30.5 - Vessels with short runs of 30 minutes or less need not provide toilets or basins. Facilities for men and women separate. Number of toilets and basins depend upon passenger capacities. Levels are 49 and less, over 49 with men and women over 40, men only. No dimensional requirements specified.

WATER TRANSPORTATION AREA	U.S. ATBCB	U.S. DOT REGULATIONS	U.S.C.G. REGULATIONS
2.8 Toilet Areas (Cont'd)	Toe clearance - front and at least one side partition provide toe clearance of at least 9 inches. Depth greater than 60", no toe clearance required. Door shall comply with 4.13. Grab bars as per above; urinals - stall type or wall hung at a maximum of 17 inches above the floor. Clear floor space of 30"x48". Flush controls as above. Lavatories and mirrors - rim or counter surface no higher than 34';, Provide a clearance of 29"under the sink or shelf apron, Minimum knee and toe clearance 27" and 9". Mirrors - bottom edge of reflecting surface no higher than 40" above the floor. Exposed pipes insulated or otherwise covered.	Faucets and flush mechanisms must be operable with one hand and no more than 44 inches above the floor. Doorways at the end of the enclosure shall be 32" wide. Doorways at the side 39". Latches and hardware must be operable with one hand. Rest rooms must be within close proximity to at least one seating location for a person using a mobility aid with a clear unobstructed path.	
2.9 Seating	4.1.3 - Accessible Buildings - New Construction - Assembly Areas - Capacity of seating and the number of required wheel chair locations. Where technically not feasible, accessible position may be clustered. Clear floor space for wheel chairs 48"x30" for one position.	Title 49, Part 38 - Vehicles that are required to have securement positions shall have signs that clearly indicate that seats in front of vehicle are priority for persons with disabilities. Buses & Vans - At least one securement position for vehicles less than 22 feet in length. At least two securement positions per vehicles in excess of 22 feet; vehicles shall have at least one set of forward facing seats. Rapid Rail - Signs should mark priority seating for persons with disabilities. Minimum of two clear spaces, 48"x30" in size. Designation of specific spaces is not required. Light Rail, Commuter Rail - same as rapid rail. Intercity rail - At least one space to provide table service to a person who wishes to remain in his wheelchair or a space to fold and store a wheel chair. At least one but nor more than two spaces per car.	Subchapter H - Subchapter T - Seating, Part 176.01-25 - Maximum number may be determined by the Officer In Charge, Marine Inspection. Three categories are established and generally utilized, (1) Rail Criteria; (2) Deck area criteria; and (3) Fixed Seating. (1)one passenger per 30 inches of railing; (2) one passenger per 10 square feet of deck area; (3) one passenger per 18 inches of width. Maximum number of passengers may also be limited by the issues of stability or subdivision (Subchapter S part 171 - special rules pertaining to passenger vessels. There is no mention of securement positions, minimum spaces for individuals with disabilities.
2.10 Telephones & Assertive listening Devices	The number of accessible telephones, (number with volume control, 25% of each type of phone, public pay, public closed circuit and other public telephones.) Identified by a sign. A building or facility that has a total of six or more public pay telephones must provide at least one public pay phone equipped with a TDD. Clear ground space of 30"x48" allowing a forward or parallel approach. Reach dimensions for forward reach - 48"; side reach is 54"; Push button controls cord length at least 29".	Title 49, Subpart 38, Not mentioned	Subchapters H & T - Not mentioned. Vessels have generally lacked public telephones.

WATER TRANSPORTATION AREA	U.S. ATBCB	U.S. DOT REGULATIONS	U.S.C.G. REGULATIONS
2.11 Signage	Signs should be provided. Directional signage should be placed at inaccessible entrances indicating the location of the accessible entrance. 4.30.3 - Character height and letter spacing - sized according to the viewing distance. Wall mounted sign 66" above the floor must have 1" letters minimum, suspended sign 80 inches minimum clearance 3 inch minimum character height. Building directories require to have 5/8" minimum character height. Space between letter should be wide 1/16th the height of upper case letters. Upper case characters and Grade 2 Braille raised 1/32nd inch upper case sans serif or simple serif characters and symbols must be contrasting. Finish and contrast illumination levels shall be 100-300 lux(10-30 foot candles) uniform over the entire sign surface. Symbols of accessibility should be utilized.	Title 49, Part 38 - Buses & vans, Rapid Rail, Light rail, commuter rail, Priority seating signs for securement locations. Characters shall have a width to height ratio between 3:5 and 1:1 and a stroke width to height ratio between 1:5 and 1:10. A minimum character height of 5/8". Wide spacing 1/16th of height of upper case letters; contrasting light on dark or dark on light.	Subchapter H - Subpart 78.47-40 - Emergency exit signs in areas where there is a secondary means of escape. Sufficient embarkation direction signs. One inch letters with arrows of appropriate dimensions. Exits and life boat stations marked Emergency signals, lifeboat assignments, life preserver positions marked. Subchapter T - Escape hatches and emergency exits. Water tight doors and hatches. One letters - Emergency Exit Keep clear, water tight door, hose in emergency.
2.12 Drinking Fountains	4.15 Minimum number required. If drinking fountains are provided, 50% per floor must comply with accessibility standards. Spout height not higher than 36 inches. Spout location at the front of the unit. Controls at the front within the reach ranges. Clearances Units without clear space under shall have a clear space parallel to them. Knee space at least 27", 30 " wide and 17" deep. Floor space 30"x48"	No specific mention	No specific mention
2.13 Snack bar/Cafeterias /Restaurants	Restaurants and Cafeterias - Fixed tables, at least 5%, no less than one, shall be accessible. The number of accessible tables distributed throughout the facility shall be proportionally divided between smoking and non-smoking parts. All dining areas of new construction will be accessible. In non-elevator buildings with mezzanine sections measuring no more than 33% of the total dining area of the accessible area, an accessible means of vertical access is not required provided the same services and character are available in an accessible space usable by the general public. Access aisles - 36" clear between parallel edges. Food service lines must have a minimum clear width of 36" with a preferred clear width of 42". Tray slides shall be mounted 34" above the floor. At least 50% of the self-service shelves must be within reach ranges. At counters higher than 34" a portion of the counter shall be provided in compliance with new clearances. Seating clearances and height of table tops within accessible guidelines. Tableware and condiment areas shall comply with space allowances and reach ranges. Head tables and raised platforms shall be accessible. Vending machines located on an accessible route must comply with reach ranges and space allowances.	Title 49, Part 38 - Subpart F - Intercity Rail cars - single level dining cars shall have one door 32 inches wide to permit a wheelchair and mobility aid user to enter and at least one space for a wheel chair (48"x30"). Space for transfer to a regular coach seat w/space to store a folded wheel chair.	No mention of snack or cafeteria areas.

CHAPTER 4

SURVEY RESULTS

CHAPTER 4

UHI'S ADA DIMENSIONAL SURVEY

4.0 UHI ADA Dimensional Survey

4.1 Introduction

Urban Harbors Institute contacted over 150 companies requesting that they take part in the ADA Dimensional Survey. A mailing was completed with a short, two page survey attached. UHI contacted passenger ferry, excursion and tourist vessel operators and as a second source, design and ship building firms for similar type vessel designs. Vessel operators were asked to select one or more of their vessels, hopefully in different categories (ferries vs excursion vessels) if they had them and respond with a survey for each. Design and shipbuilding firms were asked to select examples of the design and/or construction work they either recently completed, had on the ways or under design in the categories of ferries or dinner/excursion.

4.2 Survey and Questionnaire

The questions on each of the two surveys were somewhat similar. The first portion of the questionnaire confirmed the type of operation of the vessel (either ferry or excursion/dinner vessel), the type of activity (passenger, vehicle or combination); data on the vessel: type of vessel (T-Boat,[S or L] & H-Boat), tonnage, passenger capacity, number of decks, snack bar facilities, the handling of pets (dogs) on board, boarding and discharge levels, existence of passenger lifts or elevators, the existence of closed circuit visual aids and public address systems, the existence of dining areas, the existence of telephones.

The second portion of the questionnaire dealt with the vessel's interior specifications. Information requested included: the number of each interior category (doors, aisle ways, stairs etc.,) if applicable and the minimum/maximum dimensions of each: vessel lengths, number of doorways and width; dimension of thresholds and aisle ways; the number of stairways, the widths between railings, step and riser widths and railing heights; rest rooms - are they available, number, doorway width, room width, room length; snack bar - number, height of counter width of aisle ways; dining area - number of tables, total square footage available.

4.3 Data Base Questionnaires (See Appendix 1)

4.4 Data Base Reports

UHI has produced 34 reports from the ADA Dimensional Data Base, created from the information provided by the vessel operator questionnaires and 33 reports created from the questionnaires received from the vessel design and construction firms. The reports include:

4.4.1. Type of Operation
4.4.2. Type of Activity
4.4.3. Type of Vessel
4.4.4. Vessel Specifications - Tonnage
4.4.5. Vessel Specifications - Passenger Capacity
4.4.6. Vessel Specifications - Seating Capacity
4.4.7. Vessel Specifications - Vehicle Capacity
4.4.8. Vessel Specifications - Vessel Length
4.4.9. Decks-Number per Vessel
4.4.10. Decks-Boarding Location - Upper or Lower
4.4.11. Decks-Discharge Location - Upper or Lower
3.4.12. Pets - Allow Dogs on Board
4.4.13. Pets - Releavement Areas
4.4.14. Hearing Impaired - Visual Aids Provided
4.4.15. Sight Impaired - Public Address System Provided
4.4.16. Mobility Impaired - Passenger Lift Provided
4.4.17. Telephones Provided
4.4.18. Thresholds - Minimum/Maximum Height
4.4.19. Aisle ways - Width - Minimum/Maximum
4.4.20. Doorways - Number per Vessel
4.4.21. Doorways - Width - Minimum/Maximum
4.4.22. Stairways - Number per Vessel
4.4.23. Stairways - Width - Minimum/Maximum
4.4.24. Stairways - Dimension - Step & Riser Combination
4.4.25. Stairways - Height - Railings
4.4.26 Rest rooms - Number per Vessel
4.4.27. Rest rooms - Length - Minimum/Maximum
4.4.28. Rest rooms - Width - Minimum/Maximum
4.4.29. Snack bars - Number of vessels
4.4.30 Snack bars - Number Per Vessel
4.4.31. Snack bars - Height of Counter
4.4.32. Snack bars - Width of Aisle way
4.4.33. Dining Area on Vessels
4.4.34. Dining Area - Number of Tables

4.5. Survey Results
4.5.1 General

The data base reports are a reflection of the input received from the mailing and the telephone follow-up. The information covers specifics on 108 vessels. Information on 83 vessels was compiled from 47 vessel operator surveys and 25 vessels from the 14 surveys with vessel design and construction firms. Each report was divided into four main categories: first, the type of vessel and the activities in which they are involved; second, specifications from each of the vessels; third, general vessel arrangements, concentrating upon areas where the application of specific requirements to allow total access for the disabled may become difficult; fourth, specific dimensions in these areas of concern. The survey of naval design and ship construction firms was limited in the number of firms, however, two firms reported on six or more vessels each. With very few exceptions, UHI was aware that these firms could, but most likely had not, design a passenger vessel with ADA specifications in mind.

4.5.2 Report Summaries - Vessel Operator Responses

Report #1 - Report 1 concerns the type of operation in which the vessels were engaged. Over 59% of the responses indicated that the vessels included in their responses were being utilized as ferries. Over 32% were excursion and dinner vessels and eight percent were a combination of the two categories.

REPORT 1. VESSEL DESIGNATION

OPERATIONS	VESSELS	PERCENT
FERRY	49	59.04
EXCURSION/DINNER	27	32.53
BOTH	7	8.43
NOT REPORTING	0	0.00
TOTAL	83	100.00

FIG 4.5.2.1

Report #2 - Report 2 concerns the type of vessel that is represented in the survey. Urban Harbors Institute asked if these vessels were classified as passenger handling, vehicular handling or a combination of the two. Over 66% of the vessels function as passenger only vessels. None of the ferries in the survey were reported to be operating exclusively as vehicular ferries, however, over 33% of the responses did report operating vessels that were capable of handling a combination of passengers and vehicles.

REPORT 2. VESSEL TYPE

CATEGORY	VESSELS	PERCENT
PASSENGER	55	66.27
VEHICLE	0	0.00
PASSENGER/VEHICLE	28	33.73
NOT REPORTING	0	0.00
TOTAL	83	100.00

FIG 4.5.2.2

Report #3 - Report 3 concerns the Vessel's classification. This would be as either a T-Boat or H-Boat. T-Boats are subdivided into either S or L classification. Over 80% of the vessels were reported as Subchapter T vessels, with a rating under 100 gross tons. Just over 19% were Subchapter H vessels, over 100 gross tons. Among the T boats, 25% were classified as S category, under 65 feet in length. Over 55% were classified in the L category, over 65 feet in length.

REPORT 3. VESSEL CLASSIFICATION

VESSEL TYPES	VESSELS	PERCENT
TBOAT:		
S	21	25.30
L	46	55.42
HBOAT	16	19.28
NOT REPORTING	0	0.00
TOTAL	83	100.00

FIG 4.5.2.3

Report #4 - Respondents to the survey were requested to report the tonnage of each of the vessels they were including. Over 61% of the responses indicated that the vessels were between one and 99 tons. Over 19% did not respond.

Note: **(There is the appearance of some inconsistency between the responses to this report and Report 3. As a matter of explanation, vessels in the T-Boat category are rated under 100 tons. Vessels over 100 tons are in the H-Boat category. On Report #3, 67 vessels 80%, were reported as T-Boats while on Report #4, 51 vessels or 61% of the vessels were reported in the 1 to 99 ton range (T vessels). These responses should be equal, however, on Report #4, it was noted that over 19% of the questionnaires returned did not include a report/response to this question. Looking at both, we should be safe in assuming that sixteen vessels not reporting in #4, are between 1 and 99 tons, T-Boats.**

REPORT 4. VESSEL SPECIFICATIONS - TONNAGE

RANGE	VESSELS	PERCENT
(1 - 99)	51	61.45
(100 - 200)	0	0.00
(201 - 349)	5	6.02
(350 - 700)	3	3.61
(701 - 1400)	2	2.41
(1401 - 2100)	1	1.20
(2101 - UP)	5	6.02
NOT REPORTING	16	19.28
TOTAL	83	100.00

FIG 4.5.2.4

Reports #5 & 6- The responses to the questions on passenger capacities and seating capacities, **Reports 5 & 6** respectively, also created a discrepancy. It is, more likely than not, that vessels would have more capacity than seating. Responses to **Report #5**, Passenger Capacity, were 100%. **Report #6**, Seating Capacity, however, indicates that 46% of the questionnaires did not include a response in this category. For the purposes of this report, we assumed that the lack of responses indicated a seating capacity at least equal to the passenger capacity.

REPORT 5. VESSEL SPECIFICATIONS - PASSENGER CAPACITY

RANGE	VESSELS	PERCENT
(1 - 49)	2	2.41
(50 - 99)	4	4.82
(100 - 149)	12	14.46
(150 - 200)	13	15.66
(201 - 249)	3	3.61
(250 - 299)	7	8.43
(300 - 349)	6	7.23
(350 - 600)	27	32.53
(601 - 1200)	8	9.64
(1201 - UP)	1	1.20
NOT REPORTING	0	0.00
TOTAL	83	100.00

FIG 4.5.2.5

On **Report #5**, above, over 32% of the questionnaires indicated a capacity ranging from 350 to 600 passengers. On **Report #6**, only 25% reported seating in that range. Over 55%, (46 vessels) of the total questionnaires did not respond to this question. This is not reflected as seating capacities were assigned based upon passenger capacities.

REPORT 6. VESSEL SPECIFICATIONS - SEATING CAPACITY

RANGE	VESSELS	PERCENT
(1 - 49)	4	4.82
(50 - 100)	5	6.02
(100 - 149)	13	15.66
(150 - 200)	12	14.46
(201 - 249)	3	3.61
(250 - 299)	10	12.05
(300 - 349)	9	10.84
(350 - 400)	12	14.46
(401 - 600)	9	10.84
(601 - UP)	5	6.02
NOT REPORTING/PROVIDING	1	1.20
TOTAL	83	100.00

FIG 4.5.2.6

Report #7 - In response to our question on vehicle capacity, slightly over 33% of the operators responding indicated that they handled vehicles. Approximately 16% indicated that they carried between one and 20 vehicles, 13% between 21 and 100 vehicles, 3% carried over 100 and 66% no vehicles at all.

REPORT 7. VESSEL SPECIFICATIONS - VEHICLE CAPACITY

RANGE	VESSELS	PERCENT
(1 - 20)	14	16.87
(21 - 50)	6	7.23
(51 - 100)	5	6.02
(101 - UP)	3	3.61
NOT REPORTING/ALLOWING	55	66.27
TOTAL	83	100.00

FIG 4.5.2.7

Report # 8 - Operators responding to our question on their vessel length indicated that 25% of the total vessels were between one and sixty-five feet long. Over 74% were reported over 65 feet long.

REPORT 8. VESSEL SPECIFICATIONS - LENGTH

RANGE (ft)	VESSELS	PERCENT
(1 - 65)	21	25.30
(66 - UP)	62	74.70
NOT REPORTING	0	0.00
TOTAL	83	100.00

FIG 4.5.2.8

Report #9 - UHI requested information on the number of decks per vessel. A very small number, 8%, reported vessels with one deck. Over 56% reported two decks and 30 % reported three decks.

REPORT 9. DECKS - NUMBER PER VESSEL

RANGE	VESSELS	PERCENT
1	7	8.43
2	47	56.63
3	25	30.12
4	1	1.20
NOT REPORTING	3	3.61
TOTAL	83	100.00

FIG 4.5.2.9

Reports #10 & #11 - Responding to the inquiry concerning the deck level utilized for passenger discharge and loading, over 72% indicated that they loaded and discharged their passengers on a single deck, the lower deck. Only 6% indicated that they utilized the upper deck and 21% indicated that they utilized both decks.

REPORT 10. DECKS - BOARDING - UPPER OR LOWER DECK

OPTIONS	VESSELS	PERCENT
UPPER	5	6.02
LOWER	60	72.29
BOTH	18	21.69
NOT REPORTING	0	0.00
TOTAL	83	100.00

FIG 4.5.2.10

REPORT 11. DECKS - DISCHARGE - UPPER OR LOWER DECK

OPTIONS	VESSELS	PERCENT
UPPER	5	6.02
LOWER	60	72.29
BOTH	18	21.69
NOT REPORTING	0	0.00
TOTAL	83	100.00

FIG 4.5.2.11

Report #12 - Vessel operators responded that they allowed dogs onboard on over 69% of their vessels, while 28% of the vessels did not allow dogs.

REPORT 12. PETS - ALLOW DOGS ON BOARD

OPTIONS	VESSELS	PERCENT
YES	58	69.88
NO	24	28.92
NOT REPORTING	1	1.20
TOTAL	83	100.00

FIG 4.5.2.12

Report # 13 - In response to the follow-up question concerning the provision of a pet releavement area, an overwhelming percentage, over 93%, responded that they did not provide such an area. A number of operators report that they require owners to clean-up after their pets, however.

REPORT 13. PETS - RELEAVEMENT AREA

ACCESSIBLE	VESSELS	PERCENT
YES	5	6.02
NO	78	93.98
NOT REPORTING	0	0.00
TOTAL	83	100.00

FIG 4.5.2.13

Report #14, - Operators responding to the question on the installation of a public address system on board, indicated that they did provide such a system on over 68% of their vessels. Approximately 31% indicated that they did not. These aids were not specifically installed for accessibility for the sight impaired but are normal installation for excursion narrative and/or emergency purposes.

REPORT 14. SIGHT IMPAIRED - PUBLIC ADDRESS PROVIDED

ACCESSIBLE	VESSELS	PERCENT
YES	57	68.67
NO	26	31.33
NOT REPORTING	0	0.00
TOTAL	83	100.00

FIG 4.5.2.14

Report #15, - In the same light, responses to a question relating to the provision of visual aids for individuals with a hearing disability, were reversed. Over 62% indicated that they did not provide visual aids for the hearing impaired while 33% indicated that they did.

REPORT 15. HEARING IMPAIRED - VISUAL AIDS PROVIDED

ACCESSIBLE	VESSELS	PERCENT
YES	28	33.73
NO	52	62.65
NOT REPORTING	3	3.61
TOTAL	83	100.00

FIG 4.5.2.15

Report #16, Responses to the question concerning availability of a passenger lift on their vessels indicated that over 89% did not provide this capability for individuals utilizing a mobility aid.

REPORT 16. MOBILITY IMPAIRED - PASSENGER LIFT PROVIDED

OPTIONS	VESSELS	PERCENT
YES	9	10.84
NO	74	89.16
NOT REPORTING	0	0.00
TOTAL	83	100.00

FIG 4.5.2.16

Report #17 - Over 66% reported that they did not provide telephones on board the vessels. Over 28% reported that they did.

REPORT 17. TELEPHONE PROVIDED

TELEPHONES	VESSELS	PERCENT
YES	24	28.92
NO	55	66.27
NOT REPORTING	4	4.82
TOTAL	83	100.00

FIG 4.5.2.17

The remaining reports, **Reports 18 through 34** deal with critical interior measurements. The areas were selected as areas of the vessels where changes would be difficult. **Reports 20, 22, 26, 29, 30, 31, 32, 33 and 34** identify responses to specific requests for numbers in categories such as the number of doors on each vessel, number of stairways and the number or restrooms, etc. **Reports 18, 19, 21, 23, 24, 25, 27, and 28** tabulate responses to the various ranges UHI established for each. UHI also requested minimum and maximum dimensions where possible. Examples of the areas covered under these categories include thresholds, railing heights and stairway measurements.

Report #18 - Many of the operators responding to this question concerning thresholds, responded with the width dimension of the threshold at the doorway rather than the height of the threshold at each doorway. The question requested that vessel operators breakdown each category into minimums and maximum measurements. Over 50% of the responses received did not deal with this question concerning minimum heights and 42% did not respond to the question of maximum heights. Approximately 27% reported their minimum threshold heights in the range of one to three inches, 20% reported the one to three inch range as a maximum. In the range of four to six inches, 15% indicated that this measurement was a minimum, 22% identified it as a maximum. In the final range, 7 inches and up, 6% indicated this as a minimum and 14% as a maximum.

REPORT 18. THRESHOLDS - MINIMUM & MAXIMUM HEIGHT

RANGE (inch)	MINIMUM VESSELS	MINIMUM PERCENT	MAXIMUM VESSELS	MAXIMUM PERCENT
(1 - 3)	2	27.71	17	20.48
(4 - 6)	13	15.66	19	22.89
(7 - UP)	5	6.02	12	14.46
NOT REPORTING	42	50.60	35	42.17
TOTAL	83	100.00	83	100.00

FIG 4.5.2.18

Report #19 - Operators were requested to respond with measurements for aisle way widths on their vessels. UHI divided this category into four ranges: Over 21% reported their aisle widths to be in the range of up to twenty-five inches as a minimum, 4% reported this range as their maximum. Over 14% reported their minimum between 26 and 30 inches, 3.61% reported this range as their maximum. Over 27% indicated a minimum range of 31 to 36 inches while 16% reported this range as their maximum. Over 20% of the responses indicated a minimum range of from 37 inches or more, while 57% indicated that this range represented their maximum. Over 15% did not respond to the minimum category, 16% did not respond to the maximum category.

REPORT 19. AISLE WAYS - MINIMUM & MAXIMUM WIDTH

RANGE (inch)	MINIMUM VESSELS	MINIMUM PERCENT	MAXIMUM VESSELS	MAXIMUM PERCENT
(UP to 25)	18	21.69	4	4.82
(26 - 30)	12	14.46	3	3.61
(31 - 36)	23	27.71	14	16.87
(37 - UP)	17	20.48	48	57.83
NOT REPORTING	13	15.66	14	16.87
TOTAL	83	100.00	83	100.00

FIG 4.5.2.19

Report # 20-Operators reporting on this question concerning the number of doorways on each vessel, responded fairly evenly in four ranges. Over 21% indicated having one to two doors on their vessels. Again, over 21% indicated range two, three to four doors. Over 22% indicated range three, five to six doors. Over 21% indicated seven or more doors. Approximately 8% did not respond.

REPORT 20. DOORWAYS - NUMBER PER VESSEL

RANGE	VESSELS	PERCENT
(1 - 2)	18	21.69
(3 - 4)	18	21.69
(5 - 6)	19	22.89
(7 - UP)	18	21.69
NOT REPORTING	10	12.05
TOTAL	83	100.00

FIG 4.5.2.20

Report # 21 - Operators reported that the minimum and maximum door width dimension on each of their vessels ranged between 20 inches to more than 37 inches. In the range 20 to 25 inches, 21% indicated that this was their minimum, while 10% indicated that this range was their maximum. In the range 26 to 30 inches, 33% indicated that this was their minimum, while 8% indicated that this was their maximum. In the range 31 to 36 inches, 31% indicated that this was their minimum, 25% indicated that this was their maximum measurement. In the range 37 inches or more, 4% indicated that this was their minimum and 45% indicated that this was their maximum. Over 8% did not report in the minimum category and 9% did not report in the maximum category.

REPORT 21. DOORWAYS - MINIMUM & MAXIMUM WIDTH

	MINIMUM		MAXIMUM	
RANGE (inch)	VESSELS	PERCENT	VESSELS	PERCENT
(25 or less)	18	21.69	9	10.84
(26 - 30)	28	33.73	7	8.43
(31 - 36)	26	31.33	21	25.30
(37 - UP)	4	4.82	38	45.78
NOT REPORTING	7	8.43	8	9.64
TOTAL	83	100.00	83	100.00

FIG 4.5.2.21

Report #22 - UHI requested information on the number of stairways on each vessel. Over 24% reported that their vessel had one stairway. Over 30% reported that their vessels had two stairways. Over 12% reported three stairways and 25% indicated that they had four or more stairways.

REPORT 22. STAIRWAYS - NUMBER PER VESSEL

STAIRWAYS	VESSELS	PERCENT
1	20	24.10
2	25	30.12
3	10	12.05
4 - UP	21	25.30
NOT REPORTING	7	8.43
TOTAL	83	100.00

FIG 4.5.2.22

Report #23 - UHI also requested a response to questions concerning the width of stairways in both a minimum and maximum dimension. UHI suggested four ranges: a width of less than 25 inches, a width between 26 to 30 inches, a width between 31 to 36 inches and last, 37 inches and up. Slightly over 22% indicated that their minimum width was 25 inches or below while 15% percent indicated that 25 or less was their maximum dimension. In range two, 21% indicated that their minimum was between 26 and 30 inches while 12% indicated this measurement as their maximum. In range three, 31 to 36 inches, 24% indicated this as their minimum dimension, 19% their maximum. In range four, 37 and up, 24% responded that this range represented their minimum but 44% indicated that their maximum measurements fell in this category.

REPORT 23. STAIRWAYS - MINIMUM & MAXIMUM WIDTH

	MINIMUM		MAXIMUM	
RANGE (inch)	VESSELS	PERCENT	VESSELS	PERCENT
LESS THAN 25	19	22.89	13	15.66
(26 - 30)	18	21.69	10	12.05
(31 - 36)	20	24.10	16	19.28
(37 - UP)	20	24.10	37	44.58
NOT REPORTING	6	7.23	7	8.43
TOTAL	83	100.00	83	100.00

FIG 4.5.2.23

Report # 24 also dealt with stairway dimensions, the combination measurement of step and riser. Responses to the questionnaire established ranges from 12.5" combination to 20" combination. Thirty-eight percent reported range one as their minimum and thirty-seven percent reported it as their maximum dimension. Over 27% indicated that range two was their minimum while 22% indicated that it was their maximum. Over 18% indicated that range three was their minimum and 10% indicated that it was their maximum. Slightly over 1% indicated that range four was their minimum, 21% indicated that it was their maximum.

24. STAIRWAYS - DIMENSION - STEP & RISER COMBINATION

RANGE (inch)	MINIMUM VESSELS	MINIMUM PERCENT	MAXIMUM VESSELS	MAXIMUM PERCENT
(10.00 - 12.59)	2	2.41	1	1.20
(12.60 - 15.59)	4	4.82	4	4.82
(15.60 - 18.59)	34	40.96	32	38.55
(18.60 - 22.59)	11	13.25	14	16.87
NOT REPORTING	32	38.55	32	38.55
TOTAL	83	100.00	83	100.00

FIG 4.5.2.24

Report #25 - UHI's fourth request concerning stairway dimensions dealt with railing heights. Four ranges were suggested. Range one, 20 inches or less was indicated as the minimum height for 3% of the vessels, the maximum in this range was 0%. Range two, 21 to 40 inches, represents the minimum dimension for 54% of the respondents and 42% indicate that it is their maximum. Over 26% classify range three, 41 inches and up, as their minimum and 42% indicate it as their maximum.

REPORT 25. STAIRWAYS-RAILING HEIGHTS

RANGE (inch)	MINIMUM VESSELS	MINIMUM PERCENT	MAXIMUM VESSELS	MAXIMUM PERCENT
LESS THAN 20	3	3.61	0	0.00
(21 - 40)	45	54.22	35	42.17
(41 - UP)	22	26.51	35	42.17
NOT REPORTING	13	15.66	13	15.66
TOTAL	83	100.00	83	100.00

FIG 4.5.2.25

Report # 26 - The respondents indicated the number of rest rooms on each of their vessels. Over 9% report that they have one rest room. Over 39% indicate that they have two rest rooms, 6%, three rest rooms and over 26% indicate from four to eight restrooms. It is particularly important to note that in the responses in the not reporting category the lack of a response is possibly due to the fact that the U.S. Coast Guard does not specify that vessels provide rest rooms for passengers on certain voyages and many responders did not. Approximately 18% of the questionnaires had no response. (This does not, however, necessarily mean that they do not have a rest room.)

REPORT 26. REST ROOMS - NUMBER PER VESSEL

REST ROOMS	VESSELS	PERCENT
1	8	9.64
2	33	39.76
3	5	6.02
4 - 8	22	26.51
NOT REPORTING	15	18.07
TOTAL	83	100.00

FIG 4.5.2.26

Reports #27 and #28 UHI sought minimum and maximum dimensions on the length and width of rest rooms, ranging from anything up to 75 inches to more than 225 inches. Over 28% percent did not respond to either the request for the minimum length dimension or the maximum length dimension. Over 24% did not respond to the minimum width dimension and 26% did not respond to the maximum dimension.

Report #27 - The minimum range included any dimension up to 75 inches. It is represented in 40% of the vessels. Over 31% of the respondents reported that their maximum rest room length was up to 75 inches. Approximately 22% of the responses indicated that their minimum rest room length was between 76 and 150 inches. Approximately 26% indicated that this measurement was their maximum length. Seven percent indicated that both the minimum and maximum range for their rest room length was from 151 to 225. Zero percent reported a length of 226 inches or more as their minimum and 6% indicated it as their maximum length.

REPORT 27. REST ROOMS - MINIMUM & MAXIMUM LENGTH

RANGE (inch)	MINIMUM VESSELS	MINIMUM PERCENT	MAXIMUM VESSELS	MAXIMUM PERCENT
UP to 75	34	40.96	26	31.33
76 - 150	19	22.89	22	26.51
151 - 225	6	7.23	6	7.23
226 - UP	0	0.00	5	6.02
NOT REPORTING	24	28.92	24	28.92
TOTAL	83	100.00	83	100.00

FIG 4.5.2.27

REPORT 28. REST ROOMS - MINIMUM & MAXIMUM WIDTH

RANGE (inch)	MINIMUM VESSELS	MINIMUM PERCENT	MAXIMUM VESSELS	MAXIMUM PERCENT
UP to 75	50	60.24	33	39.75
76 - 125	11	13.25	22	26.51
126 - 190	2	2.41	6	7.23
NOT REPORTING	20	24.10	22	26.51
TOTAL	83	100.00	83	100.00

FIG 4.5.2.28

Report #28 - To establish the minimum and maximum widths of the rest rooms on the vessels in question, UHI suggested three dimensional ranges. In rest rooms up to 75 inch wide, 60% of the responses indicated that this was their minimum, 39% indicated that it was their maximum dimension. In the second range, 76 to 125 inches, 13% indicated that this measurement represented their minimum rest room width, while 26% indicated it as their maximum. In the 126 to 190 inch range, 2% indicated it as their minimum and 7% as their maximum.

Reports 29, 30, 31, 32, 33 and 34 deal with the number and the minimum and maximum dimensions of specific areas in snack bars and dining facilities on vessels.

Report 29 - Responses indicate that 67% of the respondent's vessels did have snack bar facilities, 32% did not have them on their vessels.

REPORT 29. SNACK BARS - NUMBER OF VESSELS

SNACK BARS	VESSELS	PERCENT
YES	56	67.47
NO	27	32.53
NOT REPORTING	0	0.00
TOTAL	83	100.00

FIG 4.5.2.29

Report 30 - Responses indicate that 42% of the vessels that did have snack bars, had one snack bar, 13% had two snack bars and 4% had three or more.

30. SNACK BARS - NUMBER PER VESSEL

SNACK BARS	VESSELS	PERCENT
1	35	42.17
2	11	13.25
3 - UP	4	4.82
NOT REPORTING	33	39.76
TOTAL	83	100.00

FIG 4.5.2.30

Report 31 - UHI requested information on the height of the counter at each snack bar. Respondents indicated that the height on 10% of the vessel snack bar counters was 36 inches or less and between 37 and 42 inches on 20% of the vessels. Counters were 43 inches high or more on 26% of the vessels. Although 42% did not report in this category, a large portion of the respondents are among the 30% that do not have snack bars.

REPORT 31. SNACK BARS - HEIGHT OF COUNTER

HEIGHT OF COUNTER (inch)	VESSELS	PERCENT
36 or LESS	9	10.84
37 - 42	17	20.48
43 or MORE	22	26.51
NOT REPORTING	35	42.17
TOTAL	83	100.00

FIG 4.5.2.31

Report 32 - The second report dealing with overall snack bar dimensions concerns service aisle way widths. Respondents indicate that 10% of the aisle ways at their snack bars are 30 inches wide or less. Over 10% of the aisle ways are in the 31 to 36 inch range and 18% are 37 inches or more. Over 61% did not respond. This is not alarming since a number of vessels do not have snack bars nor do the vessels that have snack bars, have designated aisle ways.

REPORT 32. SNACK BARS - WIDTH OF AISLE WAY

WIDTH (inch)	VESSELS	PERCENT
30 or LESS	9	10.84
31 - 36	9	10.84
37 or MORE	15	18.07
NOT REPORTING	50	60.24
TOTAL	83	100.00

FIG 4.5.2.32

Report 33 - A number of the vessels included in this survey are dinner/excursion vessels and UHI requested information on the number of dining areas on these vessels. Over 45% of the total vessels responding indicated that their vessels did have at least one dining area. Over 49%, however, reported that they did not have a dining area.

REPORT 33. DINING AREA ON VESSEL

DINING AREA	VESSELS	PERCENT
YES	38	45.78
NO	41	49.40
NOT REPORTING	4	4.82
TOTAL	83	100.00

FIG 4.5.2.33

Report 34 - As a follow-up to the number of dining areas, UHI requested information on the number of tables in these areas. Responses indicate that 2% of the vessels reporting have between one to three tables in their dining area, 3% have four to six tables and 39% have between seven and ten tables. Over 54% of the respondents did not report.

REPORT 34. DINING AREA - NUMBER OF TABLES

NUMBER OF TABLES	VESSELS	PERCENT
1 - 3	2	2.41
4 - 6	3	3.61
7 - 10	33	39.77
NOT REPORTING	45	54.21
TOTAL	83	100.00

FIG 4.5.2.34

4.5.3 Report Summaries - Vessel Design and Construction Firm Responses

Urban Harbors Institute also sought the assistance of the naval architectural and ship building communities in the development of information to complete this data base. These two segments of the passenger vessel industry have been extremely active in the efforts to determine the feasibility of applying ADA standards to vessels and will be the creators of the accessible vessels of the future. UHI requested information on the vessels that these industries presently have either under design or in the water. UHI received responses on 25 vessels. Based upon these responses UHI designed reports similar to those in the operator portion of this survey.

Report #1 - UHI requested that the respondents indicate the type of operations for which the vessels they created were designated. The responses fell fairly evenly between ferry and excursion/dinner cruise vessels. Exactly 48% of the responses indicate that their vessels were being utilized as ferry vessels and 52% percent were being utilized for excursion and dinner purposes.

REPORT 1. TYPE OF VESSEL OPERATION

OPERATIONS	VESSELS	PERCENT
FERRY	12	48
EXCURSION OR DINNER	13	52
BOTH	0	0
NOT REPORTING	0	0
TOTAL	25	100

FIG 4.5.3.1

Report #2 - Respondents were asked to classify their vessels between pure passenger vessels, vessels handling vehicles only or combination passenger and vehicle. Responses indicate that over 88% of the vessels were reported as passenger vessels. None of the ferries in this survey were reported to be operating exclusively as vehicle ferries. Over 12% of the vessels reported, handled a combination of passengers and vehicles.

REPORT 2 - TYPE OF ACTIVITIES

CATEGORY	VESSELS	PERCENT
PASSENGER	22	88
VEHICLE	0	0
PASSENGER/VEHICLE	3	12
NOT REPORTING	0	0
TOTAL	25	100

FIG 4.5.3.2

Report #3 - Over 80% of these vessels were reported as Subchapter T vessels, being under 100 gross tons. Just over 20% were designed as Subchapter H vessels, over 100 gross tons. Among the T boats, 20% were classified as S category, under 65 feet in length. Over 60% were classified in the L category or over 65 feet in length.

REPORT 3 - VESSEL CLASSIFICATION

VESSEL TYPES	VESSELS	PERCENT
T BOAT:		
S	5	20
L	15	60
H BOAT	5	20
NOT REPORTING	0	0
TOTAL	25	100

FIG 4.5.3.3

Report #4 - The respondents indicated that 68% of their vessels were rated between one and 99 tons. 0% responded to the category 100 tons and up. Over 32% did not respond. Based upon the number of H boats indicated, five of the vessels in the not reporting category are in the 100 ton and up range.

REPORT 4. VESSEL DATA: TONNAGE (As responded to)

RANGE	VESSELS	PERCENT
(1 - 99)	17	68
(100 - UP)	0	0
NOT REPORTING	8	32
TOTAL	25	100

FIG 4.5.3.4

Note: **(Again, a peculiarity in dealing with this response when comparing it with Report 3. Report 3, Classification of Vessels and Report 4, Vessel Specifications, Tonnage, should have ultimately reported similar results. However, Report #4 of this particular survey group had 32% not responding to this question. (UHI has added the five vessels reported as H boats in Report #3 to the 100 - up category and the remainder to the 1 - 99 ton category in Report #4 (a) below.)**

REPORT 4.(a) VESSEL DATA: TONNAGE

RANGE	VESSELS	PERCENT
(1 - 99)	20	80
(100 - UP)	5	20
TOTAL	25	100

FIG 4.5.3.4a

Reports #5 & 6 - The responses to the questions concerning passenger capacities and passenger seating capacities respectively, also create a dilemma. (Please see our earlier comments in the Vessel Operator Section concerning these categories. In this section, **Report #5**, passenger capacity, was responded to on every questionnaire while 52% of the questionnaires did not include a response on **Report #6**, seating capacity.

Report #5 - Over 80% of the vessels from the design/construction responses were capable of handling passenger capacities in the range of 100 to to 600 passengers. The percentage in the 200 to 600 category was over 56% of that percentage.

REPORT 5. PASSENGER CAPACITY

RANGE	VESSELS	PERCENT
(1 - 99)	1	4
(100 - 199)	5	20
(200 - 600)	14	56
(601 -1200)	2	8
(1201 - UP)	2	8
NOT REPORTING	1	4
TOTAL	25	100

FIG 4.5.3.5

Report #6 - Only 12% of the vessels were reportedly designed with a seating capacity below 100 passengers. Over 24% have a capacity of 100 to 200 and 52% of the total vessels responded in the 201 to 600 category.

REPORT 6. SEATING CAPACITY

RANGE	VESSELS	PERCENT
(1 - 99)	3	12
(100 -200)	6	24
(201 - 400)	11	44
(401 - 600)	2	8
(601 - UP)	3	12
NOT REPORTING/PROVIDING	0	0
TOTAL	25	100

FIG 4.5.3.6

Report #7 - Respondents to the UHI question on vehicle capacity indicate that 12% of their vessels (three) handled vehicles. Approximately 4% indicated that their vessels carry between one and 20 vehicles, 4% between 21 and 50 and 4% more than 51 vehicles and 88% did respond.

REPORT 7. VEHICLES CAPACITY

RANGE	VESSELS	PERCENT
(1 - 20)	1	4
(21 - 50)	1	4
(51 - UP)	1	4
NOT HANDLING VEHICLES	22	88
TOTAL	25	100

FIG 4.5.3.7

Report #8 - The responding firms answering the question on vessel length indicate that 52% of their vessels were between 20 and 100 feet long. Over 48% were reported over 100 feet long.

REPORT 8. VESSEL SPECIFICATIONS - LENGTH

RANGE (ft)	VESSELS	PERCENT
20 - 65	5	20
66 - 99	8	32
100 - 200	9	36
200 - UP	3	12
NOT REPORTING	0	0
TOTAL	25	100

FIG 4.5.3.8

Report #9 - The responding firms answering the question concerning the number of decks per vessel, indicate that only 12% of their vessels were designed with one deck. Over 44% reported two decks, 32 % reported three decks and 12% reported 4 decks.

REPORT 9. DECK AVAILABILITY

RANGE	VESSELS	PERCENT
1	3	12
2	11	44
3	8	32
4	3	12
NOTREPORTING	0	0
TOTAL	25	100

FIG 4.53.9

Reports #10 & #11 - Responding to the deck level utilized for passenger boarding and discharge, designers and builders indicated that over 84% of their vessel were designed for loading and discharge of passengers on the lower deck. No one indicated that they utilized the upper deck and 12% indicated that they utilized both decks.

REPORT 10. DECKS - BOARDING LOCATION - UPPER OR LOWER

OPTIONS	VESSELS	PERCENT
UPPER	0	0
LOWER	21	84
BOTH	3	12
NOT REPORTING	1	4
TOTAL	25	100

FIG 4.5.3.10

REPORT 11. DECKS - DISCHARGE LOCATION - UPPER OR LOWER

OPTIONS	VESSELS	PERCENT
UPPER	0	0
LOWER	21	84
BOTH	3	12
NOT REPORTING	1	4
TOTAL	25	100

FIG 4.5.3.11

Report #12 - Respondents indicated that they did provide for the installation of a public address system in 92% of the responses. Only two of the vessels (8%) represented in the responses did not provide a public address system.

REPORT 12. SIGHT IMPAIRED - PUBLIC ADDRESS PROVIDED

ACCESSIBLE	VESSELS	PERCENT
YES	23	92
NO	2	8
NOT REPORTING	0	0
TOTAL	25	100

FIG 4.5.3.12

Report # 13 - Firms responding to the installation of a visual aid system on board the vessels, indicated that over 84% of the vessels did not provide for the installation of such a system. Approximately 16% indicated that they did. Everyone responded.

REPORT 13. HEARING IMPAIRED - VISUAL AIDS PROVIDED

ACCESSIBLE	VESSELS	PERCENT
YES	4	16
NO	21	84
NOT REPORTING	0	0
TOTAL	25	100

FIG 4.5.3.13

Report #14 - Those firms responding to the availability of a passenger lift on their vessels, indicated in over 88% of the responses that they did not provide this capability for individuals utilizing a mobility aid. Approximately 8% indicated that they did provide this amenity and 4% did not respond.

REPORT 14. PASSENGER LIFT

OPTIONS	VESSELS	PERCENT
YES	2	8
NO	22	88
NOT REPORTING	1	4
TOTAL	25	100

FIG 4.5.3.14

Report #15 - Firms responding to the question on whether they provide a telephone on board the vessels, indicated in over 80% of the responses, that they did not provide telephones. Over 16% reported that they did and 4% did not respond.

REPORT 15. TELEPHONE PROVIDED

AVAILABLE	VESSELS	PERCENT
YES	4	16
NO	20	80
NOT REPORTING	1	4
TOTAL	25	100

FIG 4.5.3.15

Reports 16 through 33 deal with the interior measurements of specific areas in the vessels. **Reports 18, 20, 24, 27, 28, 29, 30, 31, 32 and** 33 summarize responses to requests for specific numbers in each category, ie. number of doors on each vessel or number of stairways. **Reports 16, 17, 19, 21, 22, 23, 25, and 26** identify responses to dimensional ranges established by UHI and include minimum and maximum measurements, for threshold, doorway and stairway widths, heights, steps and railings.

Report #16 - Responses to the question concerning thresholds, were requested on the heights of the thresholds available in each vessel, based upon specific ranges. The survey requested that vessel design and build firms breakdown each category by minimums and maximums. Over 72% of the responses received did not deal with minimum heights and 16% did not respond to maximum heights. 0% reported minimum thresholds in the range of one to three inches high, 32% reported this range as their maximum. In the range of four to six inches, 28% indicated that this measurement was a minimum, 36% a maximum. In the range of 7 inches and up, 0% indicated this as a minimum and 12% as a maximum.

REPORT 16. THRESHOLDS - MINIMUM & MAXIMUM

	MINIMUM		MAXIMUM	
RANGE (inch)	VESSELS	PERCENT	VESSELS	PERCENT
- 1 - 3	0	0	8	32
3 - 6	7	28	9	36
7 - UP	0	0	1	4
NOT REPORTING	18	72	7	28
TOTAL	25	100	25	100

FIG 4.5.3.16

Report #17 - Responding to UHI's question on aisle way widths, firms were requested to provide dimensions within a breakdown of four ranges. Over 16% were reported up to 25 inches as a minimum, 0% reported this range as their maximum. Over 32% reported a minimum of between 26 and 30 inches, 8% reported this range as their maximum. Over 20% indicated a minimum range of 31 to 36 inches while 36% reported this range as their maximum. Over 20% indicted that their minimum range was 37 inches or more, 44% indicated this range as their maximum. Approximately 12% did not respond to the minimum and maximum categories.

REPORT 17. AISLE WAYS - MINIMUM & MAXIMUM WIDTH

	MINIMUM		MAXIMUM	
RANGE (inch)	VESSELS	PERCENT	VESSELS	PERCENT
UP to 25	4	16	0	0
26 - 30	8	32	2	8
31 - 36	5	20	9	36
37 - UP	5	20	11	44
NOT REPORTING	3	12	3	12
TOTAL	25	100	25	100

FIG 4.5.3.17

Report # 18 - The responses to the question on the number of doorways on each vessel, were in five ranges. Over 60% of the vessels have one to five doors, 20%, six to ten doors. The remaining five vessels have from eleven to thirty-one or more.

REPORT 18. DOORWAYS - NUMBER PER VESSEL

RANGE	VESSELS	PERCENT
1 - 5	15	60
6 - 10	5	20
11 - 15	2	8
16 - 30	1	4
31 - UP	1	4
NOT REPORTING	1	4
TOTAL	25	100

FIG 4.5.3.18

Report # 19 - Responses to the question on the minimum and maximum width of the doorways on each vessel indicated that 12% of the vessels had doors that were a minimum of 20 to 25 inches wide. In the width range of 26 to 30 inches, 44% indicated that this was their minimum, while 4% indicated that this was their maximum. In the range 31 to 36 inches, 36% indicated that his was their minimum while 48% indicated that this was their maximum measurement. In the range from 37 on up, 44% indicated that this was their maximum. Over 4% did not report in the minimum category and 4% did not report in the maximum category.

REPORT 19. DOORWAYS - MINIMUM & MAXIMUM WIDTH

	MINIMUM		MAXIMUM	
RANGE (inch)	VESSELS	PERCENT	VESSELS	PERCENT
UP to-25	3	12	0	0
26 - 30	11	44	1	4
31 - 36	10	40	12	48
37 - UP	0	0	11	44
NOT REPORTING	1	4	1	4
TOTAL	25	100	25	100

FIG 4.5.3.19

Report #20 - Four ranges were established on the survey for the responses on the question concerning the number of stairways on each vessel - one, two, three and four stairways and more. Over 4% reported that their vessel had one stairway, 48% reported that their vessels had two stairways. Over 20% reported three stairways and 24% indicated that they had four or more stairways. Approximately 4% did not respond to this question.

REPORT 20. STAIRWAYS - NUMBER PER VESSEL

STAIRWAYS	VESSELS	PERCENT
1	1	4
2	12	48
3	5	20
4 - UP	6	24
NOT REPORTING	1	4
TOTAL	25	100

FIG 4.5.3.20

Report #21 - Responses on the width of the stairways were divided into four ranges: less than 25 inches, between 26 and 30 inches, between 31 and 36 inches and 37 inches, up. Approximately 12% indicated that their minimum width was 25 inches and below, 0 indicated that 25 or less was their maximum dimension. In range two, 40% indicated that their minimum was between 26 and 30 inches while 20% indicated this measurement as their maximum. In range three, 31 to 36 inches, 24% indicated this as their minimum dimension, 40% their maximum. In range four, 37 and up, 16% responded that this range represented their minimum, 32% indicated that their maximum measurements fell in this category. A combination of 8% and 8% did not respond to the minimum and maximum category respectively.

REPORT 21. STAIRWAYS - MINIMUM & MAXIMUM WIDTH

	MINIMUM		MAXIMUM	
RANGE (inch)	VESSELS	PERCENT	VESSELS	PERCENT
LESS THAN 25	3	12	0	0
26 - 30	10	40	5	20
31 - 36	6	24	10	40
37 - UP	4	16	8	32
NOT REPORTING	2	8	2	8
TOTAL	25	100	25	100

FIG 4.5.3.21

Report#22 - This report deals with the combination measurement of step and riser. The questionnaire established two ranges: ten inches to fifteen inches and sixteen to twenty-two inches. Approximately 36% reported range one as their minimum and 12% reported it as their maximum dimension.

22. STAIRWAYS - DIMENSION - STEP & RISER COMBINATION

	MINIMUM		MAXIMUM	
RANGE (inch)	VESSELS	PERCENT	VESSELS	PERCENT
10.00 - 12.59	4	16	4	16
12.60 - 15.59	2	8	0	0
15.60 - 18.59	6	24	7	28
18.60 - 22.59	0	0	1	4
NOT REPORTING	13	52	13	52
TOTAL	25	100	25	100

FIG 4.5.3.22

Report #23 - This report is the fourth report dealing with a stairway dimension. Two ranges were established for stairway railing heights. Range one, 20 to 40 inches, represents the minimum for 76% of the respondents and 32% indicate that it is their maximum. Over 16% classify range two, 41 inches and up as their minimum and 60% indicate it as their maximum.

REPORT 23. STAIRWAYS - HEIGHT - RAILINGS

	MINIMUM		MAXIMUM	
RANGE (inch)	VESSELS	PERCENT	VESSELS	PERCENT
20 - 40	19	76	8	32
41 - UP	4	16	15	60
NOT REPORTING	2	8	2	8
TOTAL	25	100	25	100

FIG 4.5.3.23

Report # 24 - This report deals with the number of restrooms on each vessel. Forty percent report that they have one or two restrooms. Over 12% indicate that they have three restrooms on board, 24%, four restrooms and 16%, 5 or more. The not reporting category is not as significant on this question. Even though the U.S. Coast Guard does not specify that vessels provide restrooms for passengers on certain voyages. In the responses from this survey group, approximately only 8% of the questionnaires did not respond. (In comparison to the operators responses to this question, the newer vessels were including restrooms regardless of the requirement.

REPORT 24. REST ROOMS - NUMBER PER VESSEL

RESTROOMS	VESSELS	PERCENT
1 - 2	10	40
3	3	12
4	6	24
5 - UP	4	16
NOT REPORTING	2	8
TOTAL	25	100

FIG 4.5.3.24

Reports #25 and #26 - These two reports deal with the length and width of the rest rooms. The ranges suggested, are below 75 inches to more than 226 inches and up. Eight percent did not report the minimum length dimension while twenty percent did not report the maximum length dimension. Eight percent did not respond to the minimum width dimension and twenty percent did not respond to the maximum width dimension.

Report #25 - The minimum length range, below 75 inches, is represented by 56% of the vessels, 36% indicate it as there maximum. Approximately 32% of the responses indicated that their minimum rest room length was between 76 and 150 inches. Approximately 36% indicated that this measurement was their maximum length. Four percent indicated that their minimum length was from 151 to 225. Over 12% indicated that this measurement was the maximum range for their rest rooms. Zero percent reported a length of 226 inches or more as their minimum and 4% indicated it as their maximum length.

REPORT 25. REST ROOMS - MINIMUM & MAXIMUM, LENGTH

	MINIMUM		MAXIMUM	
RANGE (inch)	VESSELS	PERCENT	VESSELS	PERCENT
UP TO 75	14	56	9	36
76 - 150	8	32	9	36
151 - 225	1	4	3	12
226 - UP	0	0	2	8
NOT REPORTING	2	8	2	8
TOTAL	25	100	25	100

FIG 4.5.3.25

Report # 26 - Three ranges were established for the minimum and maximum widths of vessel rest rooms. In the up to 75 inch range, 64% indicated that this was their minimum, 56% indicated that it was their maximum dimension. In the 76 to 125 inch range, 28% indicated that this measurement represented their minimum while 24% indicated it as their maximum. In the 126 to 190 inch range, 0% indicated it as their minimum and 8% as their maximum.

REPORT 26. REST ROOMS - WIDTH - MAXIMUM & MINIMUM

	MINIMUM		MAXIMUM	
RANGE (inch)	VESSELS	PERCENT	VESSELS	PERCENT
Up to 75	16	64	14	56
76 - 125	7	28	6	24
126 - 190	0	0	2	8
NOT REPORTING	2	8	3	12
TOTAL	25	100	25	100

FIG 4.5.3.26

Reports #27, 28, 29, 30, 31, 32 and 33 covered both the number and combined dimensions of snack bar and dining facilities on vessels.

Report #27 indicates that 76% of the respondents did plan snack bar facilities on their vessels, 24% did not.

REPORT 27. SNACK BARS - NUMBER OF VESSELS

OPTIONS	VESSELS	PERCENT
YES	19	76
NO	6	24
NOT REPORTING	0	0
TOTAL	25	100

FIG 4.5.3.27

Report #28 indicated that 44% of the vessels had one snack bar, 20% had two snack bars and 4% had three or more.

REPORT 28. SNACK BARS - NUMBER PER VESSEL

SNACKBARS	VESSELS	PERCENT
1	11	44
2	5	20
3 - UP	1	4
NOT REPORTING	8	32
TOTAL	25	100

FIG 4.5.3.28

Report #29 - Responses dealing with the height of snack bar counters, indicated that counters were 40 inches or less off the floor on 12% of the vessels, 41 inches or more on 48% of the vessels and 40% did not report in this category.

REPORT 29. SNACK BARS - HEIGHT OF COUNTER

HEIGHT OF COUNTER (inch)	VESSELS	PERCENT
40 or LESS	3	12
41 or MORE	12	48
NOT REPORTING	10	40
TOTAL	25	100

FIG 4.5.3.29

Report #30 - Firms responded that 12% of the vessels had snack bar aisle ways with a width of 30 inches or less, 24%, 31to 36 inches in width and 12%, 37 inches or more. Over 52% did not respond.

REPORT 30. SNACK BARS - WIDTH OF AISLE WAY

WIDTH (inch)	VESSELS	PERCENT
30 or LESS	3	12
31 - 36	6	24
37 or MORE	3	12
NOT REPORTING	13	52
TOTAL	25	100

FIG 4.5.3.30

Report #31 - Dining areas can be formal areas on dinner cruise vessels or eating areas connected to snack bar facilities. This report deals with the number of dining areas on both ferry and excursion vessels. Over 56% reported that their vessels did have at least one dining area. Over 44%, however, reported that they did not have a dining area.

REPORT 31. DINING AREA ON VESSELS

AVAILABLE	VESSELS	PERCENT
YES	14	56
NO	11	44
NOT REPORTING	0	0
TOTAL	25	100

FIG 4.5.3.31

Report #32 - Responses to this report indicate that 8% of the vessels reporting have between 5 to 75 tables in their dining area, 4 % have 76 to 150 tables. Over 88% of the respondents did not report.

REPORT 32. DINING AREA - NUMBER OF TABLES

NUMBER OF TABLES	VESSELS	PERCENT
5-75	2	8
76-150	1	4
NOT REPORTING	22	88
TOTAL	25	100

FIG 4.5.3.32

Report #33 - This report indicates that vessel design and build firms planned between 1,000 and 3,000 square feet of dining area on 24% of the vessels and 20% between 3,001 and 8,000 square feet. Over 68% did not respond to this question.

REPORT 33. DINING AREA - SQUARE FOOTAGE

DINING AREA (sq. ft.)	VESSELS	PERCENT
1000 - 3000	3	12
3001 - 8000	5	20
NOT REPORTING	17	68
TOTAL	25	100

FIG 4.5.3.33

4.6 Data Base Extracts - Vessel Reports (See Appendix 2)