

CHAPTER IV METHODOLOGY:

4.1 Introduction:

Chapter I provided an introduction to this study. Chapter II discussed the development of legends in tourism and hospitality, of which, legendary passenger ships is a subset. Chapter II also developed the constructs of commerce, an elite, and leisure as essential elements in the development of such legends and the additional roles of the constructs of attractiveness, power, and hospitality in this development. Chapter III discussed these constructs and their components as they appeared in the literature on legendary passenger ships. This chapter describes the methodology used for the study.

4.2 Generating Theory under the Grounded Theory Approach:

Glaser & Strauss (1999, 28) suggested that the “main goal in generating new theories is their purposeful systematic generation from the data of social research.” They stated that verification is important but not to the point where it prevents generation. This study differs in that the data comes from historical research, but the goal of systematic generation from the data remains the same. They (30) saw the strength of this approach as the generation of theory that “‘works or fits’ in a substantive or formal area (though further testing, clarification, or reformulation is still necessary), since the theory has been derived from data, not deduced from logical assumptions.” The data is continually compared and analyzed on the basis of its contents and not forced to fit a preconceived notion. The theory emerges from this process of comparative analysis. They (31) further wrote, “Grounded theory can be presented either as a well-codified set of propositions or in a running theoretical discussion, using conceptual categories and their properties.” They defended this choice by writing, “The form in which a theory is presented does not make it a theory; it is a theory because it explains or predicts something.”

The generated theory can be two kinds, substantive and formal. They define substantive theory as that developed for an empirical area of sociological inquiry. Common groups

are compared and the theory develops from their differences and relationships. The groups in this study are passenger ships. Formal theory is on a more conceptual basis. In the case of this study, the formal theory would apply to the concepts of the conditions that lead to the creation of legends. By applying relevant portions of that theory to other areas of tourism and hospitality, additional formal theory can be developed. However, the scope of this stage of the study is the verification and refinement of the suggested formal and substantive theory related to passenger ships. Expansion of this theory into railroads, hotels, and restaurants is an opportunity for further research.

Theory generated by comparative analysis has several elements. Glaser & Strauss (1999, 35-36) describe these as, “first, conceptual categories and their conceptual properties; and second, hypotheses or generalized relations among the categories and their properties.” Categories are the equivalents of constructs. They are at the conceptual level, such as attractiveness, power, and hospitality. These categories are made up of elements or conceptual aspects known as properties, such as appearance, speed or cuisine. These categories and their properties come from the data and vary in their degree of conceptual abstraction. The comparison of differences and similarities among groups also leads to an examination of the relations between them. This examination in turn leads to what Glaser & Strauss call suggested hypotheses. Suggested is used because they have not been tested, however, they are constantly being reviewed in the research process. This continuous joint collection, coding, and analysis lies at the heart of the grounded theory approach. Under the constant comparison method the emergent propositions and hypotheses are under constant review. Therefore, the main aim is to verify and revise the propositions in light of new perspectives emerging from the data.

4.3 Restatement of the Research Question - What is a legendary passenger ship?

A legendary passenger ship is a passenger ship so extraordinary, in comparison with other ships in its operational environment, that it captures the public imagination on, as a minimum, the local level or regional or international level. As a minimum such a ship

must be superior; within temporal, route, and technological constraints; in size, speed, beauty, and luxury, and excel in at least one of these.

4.4 How is a legendary passenger ship created?

Such a ship exists in a commercial environment created by the interaction of commerce, an elite, and leisure. Commerce must be of sufficiently high volume and have sufficient profit potential to encourage competition. An elite must exist in sufficient numbers to support competition; must have the means to pay for better; and must be willing to pay for better. Leisure must exist so that the elite has discretionary time and the desire to travel. The resulting ship competes in aspects of attractiveness, power, and hospitality. These aspects form the ship's competitive bundle. The minimum standards of this competitive bundle are determined by the ship's operational environment. Legendary passenger ships result from competition among firms exceeding these minimum standards in areas that passengers are willing to pay for. The higher the profit potential, the higher the probability of legendary ships. This operational environment varies according to the three system states, the Ocean Liner Era, the Cruise Era, and post-service. In the Ocean Liner Era, when ships were usually traded mostly on one route, the operational environment was route and market level based. In the Cruise Era, when ships are built in classes and traded worldwide, it is market level based. Their success in these system states contributes to their reputation in the Post-Service system state. The aspects of the primary categories of attractiveness, power, and hospitality can be divided into their constituent independent variables or properties.

4.5 The Categories and their Constituent Properties (independent variables):

The category of Attractiveness consists of the properties of size, appearance, symbolism, and legacy. Size can be measured in tons and length. This combination captures the strongest visual impact of the ship's appearance. Appearance is related to the requirement that the ship be pleasing to the eye, implying at a minimum the ship should be handsome. Symbolism refers to the ship's ability to take on a value greater than itself such as the

national flagship, war hero, or savior in a natural disaster. Legacy is the most complex. It consists of a combination the firm's reputation, the ship's reputation, her name, her predecessors, and the social history built up over time by the interaction between her passengers and crew. Size is the only tangible part of attractiveness that can be precisely measured. Appearance can be measured imprecisely as a matter of preference through experimental aesthetics. (Berlyne, 1974) Symbolism can be derived from examining the press and the literature. Arbitrary values can be assigned to the components of legacy. These values will vary over the life of the ship.

The category of Power consists of the properties of speed, non-marine technology, and marine engineering. Speed is tangible and can be precisely measured. Values can be assigned to non-marine technology such as elevators, air conditioning, escalators, interactive in-cabin computer systems, internet cafes, electronic key systems, satellite communications, etc., within temporal limits. Values can also be assigned for components of marine engineering such as propulsion systems (reciprocating engines, geared turbines, geared diesel, electric, gas turbine); power source (steam, diesel, gas turbine); propeller type (fixed pitch, controllable-pitch, adjustable-pitch, supercavitating, counter-rotating, azipod); and fuel type (coal, oil, nuclear), and hull form (medium speed, high speed), again, within temporal limits.

The category of Hospitality consists of the properties of the luxury triad, facilities, fittings and furnishings, service, and cuisine. For the Ocean Liner Era, these can be measured from the literature or by reviewing the travel press from that era. For the Cruise Era, Ward (2003) and Devol (2001 & 2003) provide objective rating systems. These were discussed in detail in Chapter III.

4.6 Restatement of the Propositions:

Based on the units, laws of interaction, boundaries, and system states discussed in Chapter III, the following propositions emerged from the data and are repeated here:

Proposition 1: Legendary ships substantially exceed the minimum competitive bundle/core competencies. This competitive bundle consists of attractiveness, power, and hospitality factors.

Proposition 2: The competitive bundle may vary, on a temporal and spatial basis, in the level of influence of the factors. While the competitive bundle may vary on the level of influence, it does not vary in its components.

Proposition 3: Legendary ships exist in three system states, the Ocean Liner Era, the Cruise Ship Era, and Post-Service. The strength of the ship's legendary status may vary according to the system state.

Proposition 4: Legendary ships exist on the local, regional, national, and international levels. The strength of the ship's legendary status in one level may result in her becoming a legend in the next level.

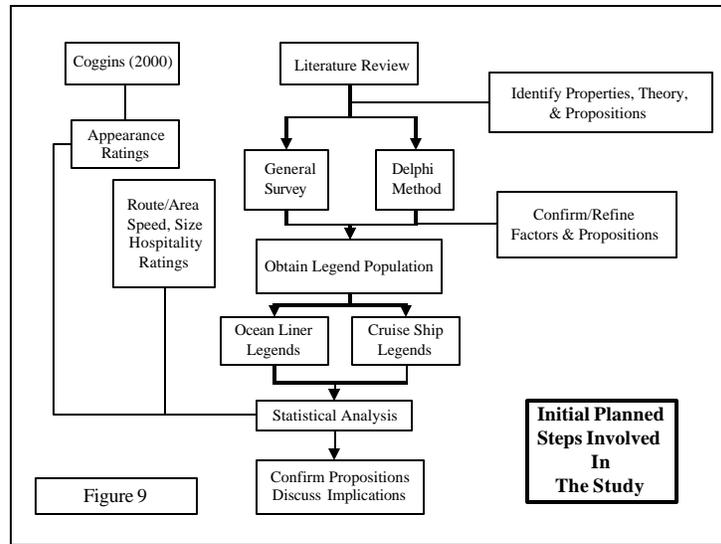
Proposition 5: The probability of becoming a legendary ship varies directly with the economic importance of the ship's operational environment.

Proposition 6: In the Cruise Ship Era, the high level of the minimum competitive bundle/core competencies makes an instant legend extremely difficult and expensive to achieve.

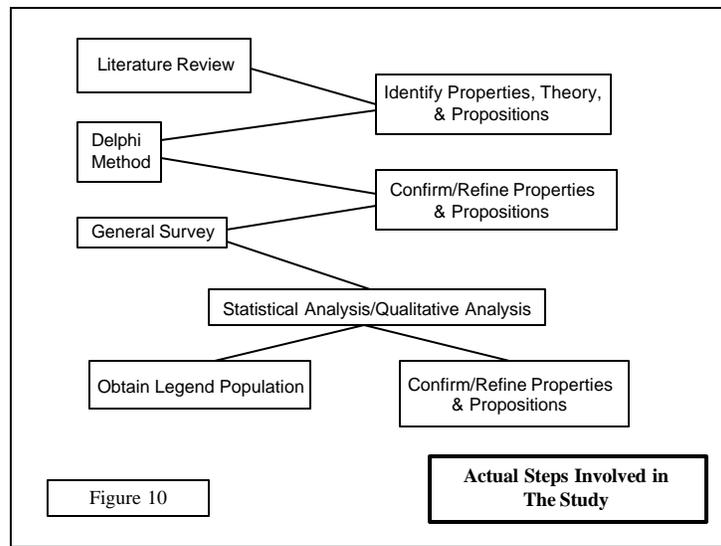
These propositions were confirmed by the results of the Delphi Method and the General Survey. Confirmation and modification are discussed in Chapter VI.

4.7 Steps involved in the Data Analysis and Verification of Propositions and Hypotheses:

The data analysis seeks to validate the constituent independent variables or properties that make up the primary categories, examine the relationship between the categories and their roles in making a legendary passenger ship, and verify the suggested propositions and hypotheses. The initial planned steps are illustrated in figure 9.



The actual steps are shown in Figure 10.



4.8 Restatement of the Research Question:

Reconsidering the definition, “A legendary passenger ship is a passenger ship so extraordinary, in comparison with other ships in its operational environment, that it captures the public imagination on, as a minimum, the local level or regional or international level. As a minimum such a ship must be superior; within temporal, route, and technological constraints; in size, speed, beauty, and luxury, and excel in at least one

of these.” it has become increasingly difficult for a ship to meet these criteria in today’s market place. The theory and propositions emerge from this definition. They were verified by a Delphi Exercise, conducted with a group of passenger shipping experts. The Delphi Exercise attempted to answer the question of “what makes a passenger ship a legend?” in terms of ship examples and properties. In the Ocean Liner Era, legends existed at the convergence of size, speed, beauty, innovation, and hospitality. The combination of superiority in these areas was enough to raise the ship above the pack and propel her into the ranks of legends. In the Cruise Era, has this formula changed? If so, how, and what is the new key to legendary status? The difficulty in meeting the criteria in the definition in today’s market place leads to the second set of questions.

The key words are superior and excel. If everyone is 90,000 or 150,000 tons, how does one excel, how is one superior? If the majority is at the four and four star plus level, how does one exceed that? If one is merely the newest version of something already in service, how does one excite the public imagination so that passengers are willing to pay a premium to sail with you? These are addressed in Chapter VI and Chapter VII. The General Survey provided a pool of ships that can be considered legendary in some aspect. It **was** expected that most of the ships in the pool would come from those discussed in Chapter II. The second part of the General Survey requested respondents to rate a list of properties, on a scale of 1 (not at all important) to 5 (very important), on their importance in a ship becoming a legend. These properties were derived from the literature and round two of the Delphi Exercise. In the final step, the pool of ships was examined for shared characteristics and properties that might explain differences in their frequency of selection.

In summary, this study proposes to examine these questions in three stages, through the Delphi Method and a panel of experts, through a survey open to the passenger shipping trade, past cruise passengers, and passenger ship enthusiasts, and through a statistical and qualitative analysis of the legendary ship population.

4.9 The Delphi Method:

Wong (1999) summarized the Delphi Method as a group communication process with a number of distinct characteristics. These are facilitation by a moderator, a goal of producing detailed critical examination and discussion, and avoidance of forcing a quick compromise. Adler & Ziglo (1996, 3-4) give the objective of the Delphi Method as the “reliable and creative exploration of ideas or the production of suitable information for decision-making.” They go on to write that Delphi Method is appropriate when the problem does not lend itself to precise analytical techniques but can benefit from subjective judgments on a collective basis; the problem at hand has no monitored history or adequate information on its present and future development; and addressing the problem requires the exploration and assessment of numerous issues connected with various policy options where the need for pooled judgment can be facilitated by judgmental techniques.

The data collection and analysis was well suited to the Delphi Method. Legends are made by pooled assessments by maritime historians, journalists, ship enthusiasts, and the general public. Though there are many books on passenger ships, this study was the first attempt to identify passenger ship legends, their characteristics, and the process by which they become legends. This required the exploration and assessment of various issues as provided by the Delphi Method.

The panel was made up of thirteen experts in the field of passenger shipping. The experts were recruited from the ranks of maritime historians, passenger shipping journalists, marine architects, naval architects, cruise industry analysts, ship brokers, and passenger ship enthusiasts. The data collection was by e-mail between the author and the participants.

The goals of the Delphi Method were to verify and refine the theory and its propositions. This was accomplished by establishing an agreed upon pool of legendary ships and using this reference pool to review and/or modify the study’s theory and propositions. The

experts were asked to list twenty legendary ships. In round 1, the aim was to identify a pool of agreed upon legendary ships. This pool consisted of those ships appearing on at least six of the thirteen lists. Twenty was chosen as a number large enough to produce diversity in the answers and at the same time small enough to allow spontaneous responses. Six was chosen as the cut-off number for legends because the thirteenth member of the panel didn't submit his input until after the Round Two Questionnaire went out. Thereby, those ships appearing on at least half of the initial twelve panel members' lists should truly reflect the pool of legendary ships. This pool of ships served as the basis for the dialog in round 2. In round 2, the goal **was** to harmonize the characteristics from the pool of legendary ships from round 1 with the characteristics from the literature review. In this round panel members were asked to allocate 100 points among the three characteristics of Attractiveness, Power, and Hospitality and to allocate those characteristic points among their constituent properties. Then panel members were asked to allocate up to 100 points among the characteristics for the pool of legendary ships from Round 1. They were also asked to allocate up to 100 points among the constituent properties for each ship. Panel members were allowed to add properties that they considered important and to allocate them points. It was intended to use the results of round 2 to confirm or modify the constructs of the theory and the propositions. The confirmed or modified propositions would then make up round 3. For purposes of confirmation each panel member would be asked whether or not they agree with the proposition. A modified version of the Jillson (1975) Expert's Self-reported Confidence Scale would be employed for this purpose. For each proposition they would be asked to indicate one of the following items on the scale:

- | | | |
|-----|-------------------|--|
| (1) | Highly agree | I am 80-99% in agreement with the proposition. |
| (2) | Agree | I am 60-79% in agreement with the proposition. |
| (3) | Either way | I am 40-59% in agreement with the proposition. |
| (4) | Disagree | I am 20-39% in agreement with the proposition. |
| (5) | Strongly disagree | I am 0-19% in agreement with the proposition. |

Jillson (1975) has been previously used by other researchers and is adapted in Adler & Ziglio (1996). In addition, space would be provided for non-mandatory comments from the participants on how they would change the propositions. Depending on the scoring of

the propositions, round 4 would be either a rerun of round 3 with revised propositions or feedback to the participants on the results of round 3 and how their answers in round 1 corresponded with the results of the general survey. However, due to the high attrition of panel members in round 2, only six responded, it was decided to terminate the Delphi Exercise with round 2.

The Delphi Exercise provided a pool of legendary ships and a numerical rating of the importance of the characteristics and their constituent properties. While the panel size was too small for a factor analysis of the characteristics and their constituent properties, the characteristic and property scores could be standardized to determine their relative importance. The Delphi Method generated 70 ships, including *France* and *Norway*, which were counted as separate ships. They were counted as separate ships because they were specifically named by panel members as *France* and as *Norway*. In the subsequent general survey, each ship was named on a sufficient number of lists to be considered as separate ships. With other similar ships such as *America/Australis*, *Europa/Liberté*, *Lurline/Ellinis*, *Monterey/Britanis* or the Ballin trio of *Imperator/Berengaria*, *Vaterland/Leviathan*, and *Bismarck/Majestic* the response rate under different names was not sufficient to consider them as separate ships. Cluster analysis is a multivariate technique that groups objects based on their similarities and differences (Hair, Anderson, Tatham, & Black, 1998). Using their selection frequency as a basis, these ships were analyzed by cluster analysis to determine if classes of legends existed and to provide a basis for comparison with the General Survey results. A detailed discussion of the results and their implications is contained in Chapters V and VI. The Delphi Exercise also served as a pilot study for the General Survey.

4.10 The General Survey:

Purpose:

The General Survey was intended provide a broad pool of legendary ships and sought to answer the following additional questions:

- 1) What ships do the passenger shipping public, persons interested in passenger shipping from a commercial, passenger, or enthusiast point of view, consider legendary?
- 2) Which properties did the respondents consider important in a ship becoming a legend?
- 3) If everyone is 90,000 or 150,000 tons, how does one excel, how is one superior?
- 4) If the majority is at the four and four star plus level, how does one exceed that?
- 5) If one is merely the newest version of something already in service, how does one excite the public imagination so that passengers are willing to pay a premium to sail with you?

The answers to these questions are discussed in Chapters V and VI. This pool of ships **was** expected to be broader than the pool from the Delphi Exercise and contain more ships from the Cruise Ship Era, since the respondents were more closely associated with those ships. The survey was located online at: <https://survey.vt.edu/survey/entry.jsp?id=1068495612655>. The survey was opened on May 7, 2004. Results as of August 20, 2004 were used for the statistical analysis. A copy of the survey is contained in Appendix A. This pool of ships was intended answer the first question. As one moved from one category of legend to the next one, the determining characteristics and their strengths were able to be identified. An analysis of this process answered the second, third, and fourth questions. If these ships could capture the imagination of pool of respondents that work with and think about ships on a daily basis, then an analysis of their characteristics should give an indication of their potential to capture the public imagination and command a premium. This analysis should answer the fifth question. That answer should indicate where resources should be allocated to achieve maximum return on investment. The exact amount of premium can be determined by an analysis of the cruise lines' load factors.

Survey Population:

The survey population was intended to be readers of the *Seatrade Insider*, a daily electronic newsletter providing current news and market intelligence to the worldwide cruise industry. The readers of *Seatrade Insider* are people interested in passenger shipping on a commercial or enthusiast basis. Given their worldwide distribution and broad range of interest, they can be considered a good indicator for the passenger shipping public. *Seatrade Insider* is located at <http://www.cruise-community.com> and is currently a free service. In November 2001, *Seatrade Insider* received close to 25,000 page views. That averaged out to approximately 834 views per day. Based on a 20-30% response rate, the number of returned surveys was estimated to be between 140 and 200. The site displays the articles from the previous seven days. The first article announcing the survey was one of eight articles posted on May 10, 2004. By May 12, 2004, 19 responses had been received. As a matter of policy, *Seatrade Insider* did not link to other sites from their articles, therefore, the respondents had to either print the article or write down the survey site address in order to participate. By May 22, 2004, a total of 27 responses had been received. *Seatrade Insider* ran a reminder article on May 24, 2004. By June 2, 2004, a total of 39 responses had been received. On June 7, 2004, a notice was placed in the *Ships Monthly* online forum with a link to the survey site in an attempt to increase the number of respondents. The target respondents were ship enthusiasts. *Ships Monthly* is a leading international shipping magazine and is published out of the U.K. The notice generated approximately 10 responses between June 7 and June 29, 2004. Other sources of respondents were readers of the *Weekly "E-News" Supplement to Ocean & Cruise News*, a posting on the Meeting Professionals International website's forum, acquaintances of Delphi Panel members, and personal acquaintances. By July 23, 2004, these sources had generated a total of 82 responses. A posting on the CruiseTalk website, <http://www.travelserver.net>, on July 23, 2004 brought the total responses to 112 by August 3, 2004. The survey was the lead article in the *Shipping News* section of *Maritime Matters*, <http://www.maritimematters.com>, on August 3, 2004. By August 16, 296 useable responses had been received. The whole General Survey data collection process was much more difficult and took much longer than anticipated.

Questions on the Survey:

The respondents were asked to list up to ten ships that they consider as legendary. Up to ten was chosen as a number in response to experience with the Delphi Method. They were also asked to rate the following properties on a Likert scale of 1 (not at all important) to 5 (very important) on their importance in a passenger ship becoming a legend:

- External Aesthetic Appeal
- Aesthetic Appeal of Layout/Plan/Passenger Flow
- Size
- History (Life, Disasters, War, Symbolism)
- Legacy (Company, Predecessors, Name, Tradition)
- Route/Cruising Area
- Speed
- Marine Technology
- Non-Marine Technology
- Facilities, Fittings & Furnishings
- Quality of Service & Cuisine
- Repeat Passenger Patronage
- Funnel Shape/Design
- Media Attention

The Likert scale of 1 to 5 was chosen; both for its ease of administration (Zikmund, 1997) and to accommodate the wide range of ability and willingness among the respondents to discriminate the importance of the properties. The properties were derived from the literature review, with the exceptions of Repeat Passenger Patronage and Funnel Shape/Design, which came from Round 2 of the Delphi Exercise, and Media Attention, which was added at the suggestion of my Committee. The responses to these questions were analyzed by the data reduction technique, factor analysis, to determine if they could be reduced to underlying non observable factors.

In addition, respondents were asked to provide the following demographic data:

Gender

Age

Nationality

City & Country of Residence

Cruising Experience: None

1-5 Cruises

6-10 Cruises

11-14 Cruises

More than 14 Cruises

Profession¹: Shipyards

Contractors/Outfitters

Design & Fittings

Marine Equipment

Ship Management

Ship Hotel Suppliers

Food & Beverage Suppliers

Passenger Onboard Services

Corporate Services

Airlines

Sales & Marketing (Cruise Line & Port Associations)

Cruise Ports

Shipping Agents

Shore Excursion Operators

Cruise Lines

Travel Agents

Press

Enthusiast

Other.

¹ Based on CIN (2003) segmentation.

Survey Distribution Method:

The general survey was set up on Virginia Tech's survey web site,

<http://www.survey.vt.edu>. The survey's address was

<https://survey.vt.edu/survey/entry.jsp?id=1068495612655>. Participants were self-selected by going to the survey web site and answering the questions.

4.11 Additional Data Analysis:

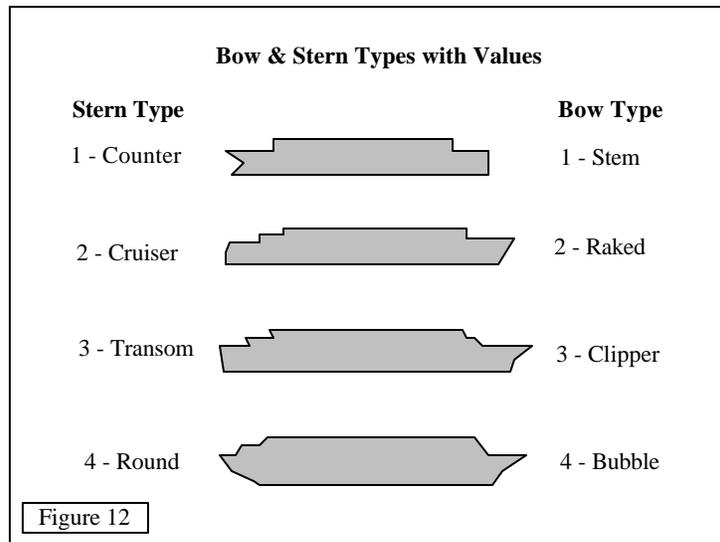
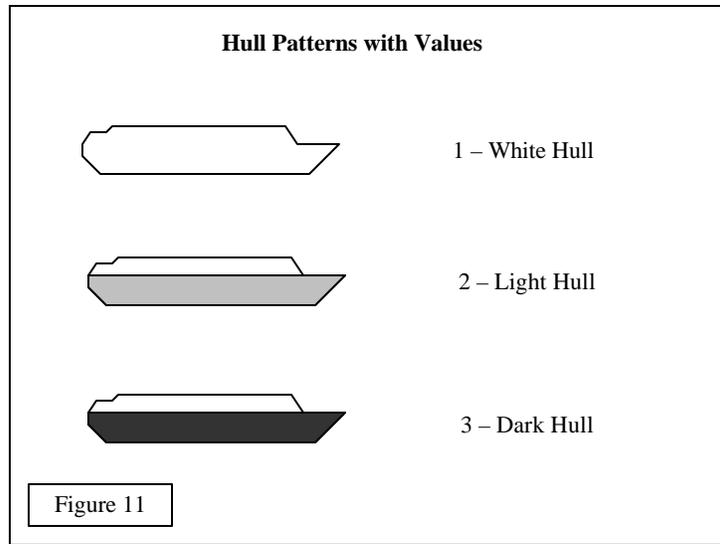
The population of legendary ships resulting from the Delphi Method and the general survey was planned to be further measured on a number of factors, which could also be used in cluster analysis. The size, length, and speed designations listed in Chapter I can be assigned the following numerical values.

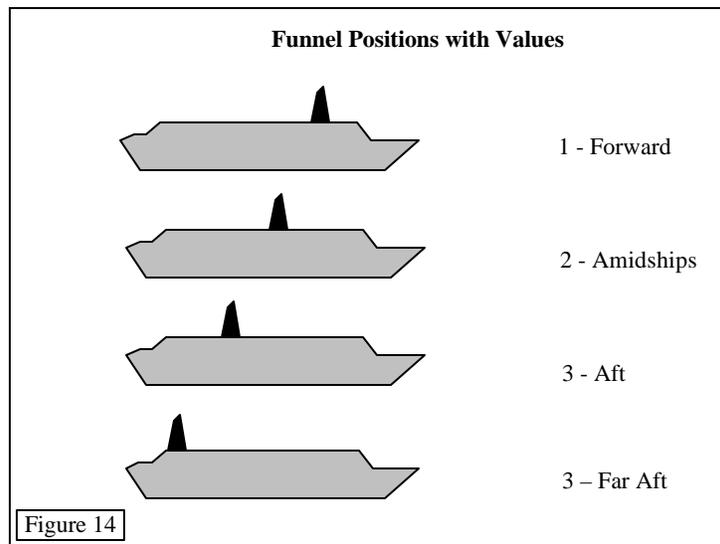
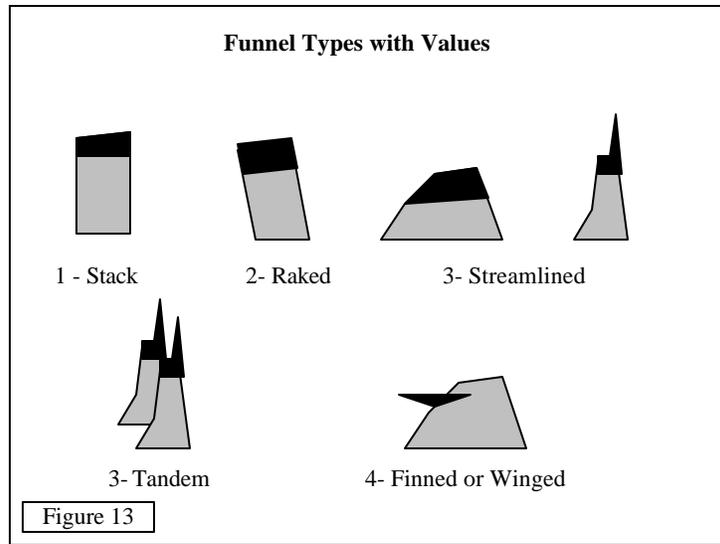
Size:		Assigned Value:
Small ships	Less than 20,000 tons	1
Medium ships	20,000-29,999 tons	2
Large ships	30,000-49,999 tons	3
Super-sized ships	50,000-79,999 tons	4
Mega-sized ships	80,000-99,999 tons	5
Ultra-sized ships	100,000+ tons	6
Short ships	Less than 500 feet (152.4m)	1
Standard ships	500-649 feet (197.8m)	2
Long ships	650-799 feet (198.1-243.5m)	3
Very long ships	800-999 feet (243.8-304.5m)	4
Super-long ships	1,000+ feet (304.8+m)	5

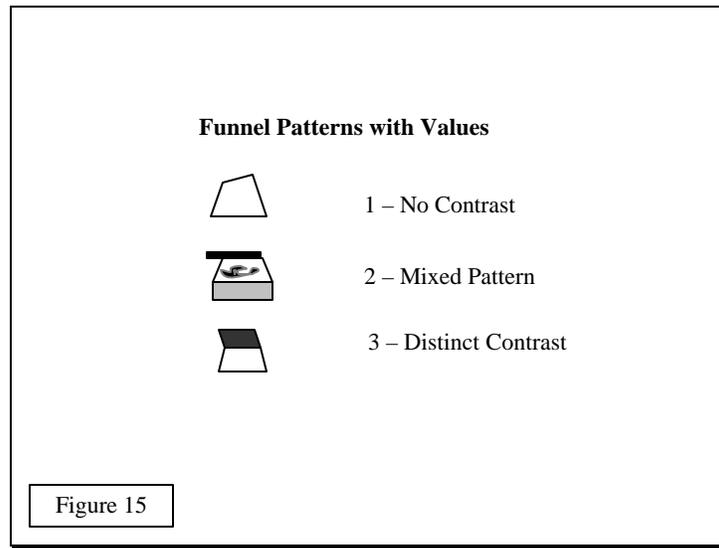
Speed:

Slow ships	Less than 14.9 knots	1
Moderate ships	15-18.9 knots	2
Fast ships	19-23.9 knots	3
Express ships	24-26.9 knots	4
Super-express ships	27+ knots	5

Coggins (2000) studied the visual impression of passenger ships. The first survey rated 84 scaled ship profiles on the visual impression of beauty, speed, and comfort on a Likert scale of 1 to 5. The second survey ranked 30 ship profiles on the respondent's desire to sail on the ship based solely on the ship's visual impression. The drawings were from Emmons (1970). The subjects were college students. A total of 205 samples of the first survey and 155 samples of the second survey were collected between 1998 and 2000. Based on the survey results, size and appearance were found to be powerful characteristics. Big was preferred over small. Modern was preferred over traditional. This designation, as modern or traditional, was determined by the shape of the bow and stern and the position and shape of the funnels. Clipper bow and curved stern were preferred. The bow took precedence over the stern. Streamlined and aft or amidships positioned funnels were preferred. The color and pattern for both the hull and funnel mattered. Variations resulted in significantly different scores for the same or similar ship profiles. Dark hulls and contrasting/patterned funnels were preferred. Based on this study, values can be assigned to hull and funnel forms and patterns. These apply across all three system states. The assigned values and their visual depictions are shown in figures 11 through 16.







The various major routes from the Ocean Liner Era can also be assigned a numerical value based on their commercial importance. This value was determined by taking the tonnage of 186 ships from the Ocean Liner Era and totaling it for each route from Chapter III. The ships begin with *Kaiser Wilhelm der Grosse*, which can be considered the first twentieth century ocean liner, in 1897 and end with *Vistafford* in 1973. The assigned value is the weighted value of the sum of the weighted values of the tonnage and number of ships for each route. Table 12 shows the routes and their assigned values.

Table 12 Routes and Their Weighted Values

Routes		Assigned Value		
From	To	Tonnage	Ships	Wgtd. Route Value
New York	Northern Europe	1,959,684	54	4.24
New York	Mediterranean	448,465	16	1.08
North America	Europe	247,744	10	.64
North America	South America	336,667	24	1.18
North America	Far East	204,470	10	.58
North America	Australia & New Zealand	100,907	6	.32
United Kingdom	South Africa	365,132	16	.97
United Kingdom	Australia & New Zealand	465,274	18	1.16
Europe	South America	399,316	19	1.11
Europe	Australia & New Zealand	68,428	3	.18
Europe	Far East	67,089	4	.22
Europe	Africa	102,708	6	.32

Cartwright & Baird (1999, 145-150) listed 15 cruise areas. They surveyed a group of 100 cruisers on the main categories of attractions, scenery and wildlife (S&W); lifestyle (LS); shopping (SHP); culture and history (C&H); and activities (ACT). The cruisers were asked to allocate 10 points between the areas' attractions. The assigned value is the weighted value of the sum of the area's weighted scores. These scores can be used to test the Cruise Era ships in the legendary ship population. When comparing Cruise Era ships these scores can be added to the appearance, speed, and size scores. For example, *Queen Elizabeth 2*, which cruises in the Caribbean, Mediterranean, Asia, Eastern US Seaboard & Bermuda, Panama Canal, Eastern Atlantic Isles, and Hawaii areas would receive a score of 6.48, while *Adventure of the Seas*, which cruises only in the Caribbean would receive a score of .81. Table 13 gives the areas and their weighted values.

Table 13 Cruising Areas and Their Weighted Values

Area	Weighted Scores					Area Total (Wgtd. Value)
	S&W	LS .	SHP	C&H	ACT	
	.29	.33	.05	.29	.04	
Caribbean	.58	.99	.10	.58	.04	2.29 (.054)
Mediterranean	.29	.99	.05	1.45	0	2.78 (.066)
Alaska	2.32	.66	0	0	0	2.98 (.070)
Asia	.29	1.65	.10	.58	0	2.62 (.062)
Eastern US Seaboard & Bermuda	.58	.99	.05	.87	.04	2.53 (.060)
Panama Canal	1.16	.33	.05	.87	.04	2.45 (.058)
US West Coast	0	1.32	0	1.16	.08	2.56 (.060)
Eastern Atlantic Isles	.58	1.65	0	.87	0	3.10 (.073)
Baltic	0	1.32	0	1.74	0	3.06 (.072)
Norway	2.61	.33	0	0	0	2.94 (.069)
Hawaii	.87	.99	0	.58	.04	2.48 (.059)
South America	1.16	1.32	0	.58	0	3.06 (.072)
Black Sea	0	1.65	0	1.45	0	3.10 (.073)
British Isles	.58	1.32	0	1.16	0	3.06 (.072)
Africa	1.74	.99	0	.58	0	3.31 (.078)

A rating for hospitality may be included for the Cruise Era ships by including a standardized rating from Ward for all ships. If a Cruise Era ship is rated in Devol, the standardized score would be added to its total. Once a value is determined for each ship in the legendary ship population, cluster analysis can be performed, on the total population, the Ocean Liner Era population, and the Cruise Era population. This step of the study is well suited for cluster analysis. According to Hair, Anderson, Tatham & Black (1998), cluster analysis attempts to group objects based on their similarity to each and their dissimilarity to other objects. It seeks to maximize homogeneity within the cluster and at the same time maximize heterogeneity between the clusters. By analyzing the clusters, the basis for the clustering could be determined. The results can be used to confirm the categories and their properties.

The proposed scoring technique is illustrated by figure 16 and table 13. Three hypothetical ships are presented, one from the Ocean Liner Era and two from the Cruise Era. Ship A is a transatlantic liner of 65,000 tons, with a length of 1,000 feet and speed of 28 knots. Ship B is a cruise ship of 75,000 tons, with a length of 900 feet and speed of 22 knots. She cruises Alaska in the summer, does a series of trans-Panama Canal cruises in the fall, and spends Christmas to early May in the Caribbean. Ship C is a cruise ship of 80,000 tons, with a length of 950 feet and speed of 25 knots. She cruises the Mediterranean, the Baltic, Norway, and the British Isles in the summer. She cruises the Caribbean in the winter with several cruises to South America around Carnival Time.

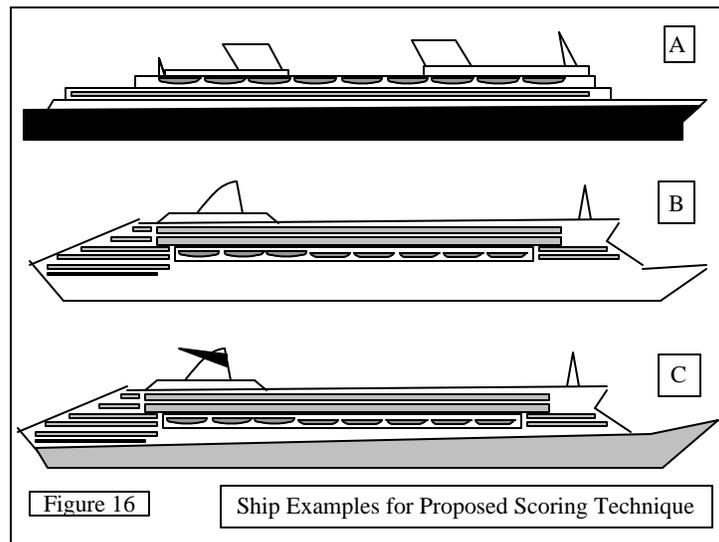


Table 14 Example of Proposed Scoring Technique

Characteristic	Assigned Values		
	Ship A	Ship B	Ship C
Tonnage	4 - 65,000	4 - 75,000	5 - 80,000
Length	5 - 1,000	4 - 900	4 - 950
Speed	5 - 28 knots	3 - 22 knots	4 - 25 knots
Hull Pattern	3 - Dark Hull	1 - White Hull	2 - Light Hull
Stern Type	2 - Cruiser	3 - Transom	3 - Transom
Bow Type	3 - Clipper	4 - Bubble	4 - Bubble
Funnel Type	2 - Raked	3 - Streamlined	4 - Finned
Funnel Position	2 - Amidships	3 - Aft	3 - Aft
Funnel Pattern	1 - No Contrast	1 - No Contrast	3 - Distinct Contrast
Route	4.24 - NY-Nor EU		
Areas		.070 - AK, .058 - PC, .054 - CARIB, TOT = .182	.066 - MED, .072 - BAL, .069 - NOR, .078 - BI, .072 - SA, TOT = .357
Ward		1.3	1.5
Devol		1.4	1.4
Total Score Not State Specific (comparison across states)	27	26	32
Total Score State Specific (comparison within states)	31.24	28.7	34.9

This additional statistical analysis was not conducted. The preponderance of North Atlantic passenger liners in the population of legendary ships derived from the general survey rendered such analysis irrelevant to the purpose of this study.

4.12 Summary:

The purpose of this chapter has been to describe the proposed techniques and procedures that were used to verify the theory and propositions developed in Chapters II and III. Verification was accomplished through a Delphi Method Panel of passenger shipping experts and a general survey of participants with an interest in passenger shipping. The Delphi Method Panel attempted to achieve a consensus and dialog on what makes a passenger ship a legend. The results were used to verify the theory and modify it as appropriate. The Delphi Method also served as a pilot study for the General Survey. The pool of ships, generated by the Delphi Method, were analyzed by cluster analysis to develop an initial classification of legendary passenger ships. The responses to the Properties' Questions of the General Survey were analyzed by factor analysis. The pool of ships generated by the General Survey was analyzed by cluster analysis to develop a classification of legendary passenger ships in the eyes of the shipping public. The results of the factor analysis and cluster analyses, served as an independent verification of the propositions developed under the grounded theory approach. The results of this analysis are discussed in Chapters V and VI.