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A STUDY OF AUTHORITARIANISM WITHIN AN
INDUSTRY.

The City University of New York, Ph.D., 1973
Business Administration

University Microfilms, A XEROX Company, Ann Arbor, Michigan

A STUDY OF AUTHORITARIANISM
WITHIN AN INDUSTRY

by

MARTIN J. SCHWIMMER

A dissertation submitted to the Graduate
Faculty in Business in partial fulfillment
of the requirements for the degree of Doctor
of Philosophy, The City University of New York.

1973

This manuscript has been read and accepted for the Graduate Faculty in Business in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

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Abstract

A STUDY OF AUTHORITARIANISM

WITHIN AN INDUSTRY

by

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The purpose of this study was to investigate relationships between institution and attitude. The U.S. Merchant Marine presented an opportunity to study authoritarianism as an attitude which would be congruent with a rigid and hierarchical institutional structure.

Authoritarianism as a subject of study in industrial settings was discussed and the formulation of the concept of authoritarianism was briefly traced. The development of the California F-scale as a measure of authoritarianism was described and the validity of the F-scale as an instrument to measure an attitude was examined.

After consideration of the Merchant Marine as an institution, six hypotheses were developed using The Authoritarian Personality as a guide. These hypotheses were tested by correlating the Merchant Marine officer's score on the F-scale with his responses to questions regarding biographical data, occupational facts and occupational attitudes. A mailback questionnaire format was employed and the data of over a thousand respondents was utilized.

The first hypothesis, that there would be a positive relationship between authoritarianism and job satisfaction, was based on the assumption that authoritarian attitudes would be congruent with the structure of the Merchant Marine and hence authoritarian officers would express satisfaction with their work. The second hypothesized relationship was between higher rank and authoritarianism based on the expectation that officers with authoritarian attitudes would stay within the framework of this institution and rise within this system and that if attitude change occurred, it would be in the direction of increasing authoritarianism. It was also expected that older officers would be more authoritarian than younger officers. This hypothesis replicated a similar hypothesis in The Authoritarian Personality. It was further hypothesized that there would be a positive correlation between years of sailing and authoritarianism because people would stay in an environment which is compatible and satisfying to their personal attitudes, while there would have been attrition among those who did not share the same compatibility to their environment.

Because of differential job opportunities existing outside of the Merchant Marine for Engine officers as opposed to Deck officers and because of the differences in authority relationships aboard ship between Deck and Engine officers, it was hypothesized that Deck officer's F-scale scores would correlate higher with job satisfaction, age, years of sailing, etc., than would Engine officer's scores. The sixth hypothesis retested a hypothesis of The Authoritarian Personality that there would be an inverse relationship between education and F-scale score.

Except for the hypothesis regarding the Deck/Engine dichotomy, the

hypothesized correlations, while low, were significant in the expected directions. A summary of all responses to the F-scale was presented as a profile of authoritarian attitudes held by a majority of the members of this industry who responded. Summary statistics were presented from which a profile was developed of the general personal history and occupational attitudes of Merchant Marine officers, as represented by the present sample.

The results of this study were discussed in terms of the utility of using attitudinal surveys for industrial/institutional analysis. Implications for effecting attitudinal and institutional congruence or incongruence in relation to changes and innovations within industry in general and the Merchant Marine in particular were examined with emphasis on the management problem of reducing attrition among new personnel.

Acknowledgement

I wish to thank my committee for their generous help, Professor Lawrence Zeitlin for his encouragement and consistent aid, Professors Sidney Lirtzman and Sheldon Zalkind for their thoughtful comments.

I also wish to thank Mr. Marvin Pitkin, Assistant Administrator, of the Federal Maritime Administration and Captain Lauren McCready (USMS), Director of the National Maritime Research Center for their encouragement and support of this project.

My final thanks go to the companies, unions and men of the American Merchant Marine without whose help this project could not have been completed.

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INTRODUCTION

The major purpose of the present study is to explore the relationships between attitude and institutional structure. The theme of authoritarianism has been the subject of research and study as a psychological factor necessary to maintain certain institutions as well as a personality syndrome fostered within certain institutions.

The institutional structure of the Merchant Marine has been described as autocratic, rigid, and unambiguous because of the clearly defined hierarchical authority chain and rigid life-style to which men aboard ship are regulated (Richardson, 1954). If an institution such as the Merchant Marine can be characterized as authoritarian, it would follow, based on the theory of personality developed by Adorno, et. al. in the book The Authoritarian Personality (1950), that members in this institution would exhibit attitudes described as authoritarian. Levinson, in The Authoritarian Personality, states "It would seem...that an autocratic social structure is best suited to the particular type of rationality exercised by the authoritarian personality" (p. 287). It is noteworthy that the Maritime group was the largest single group sample that the F-scale was tested on in the original Adorno et. al. study (Stanford, et. al. in Adorno et. al., p. 266).

Therefore, authoritarianism was measured with the use of the F-scale developed by the Adorno group to study the attitudes of the U. S. Merchant Marine officer in order to assess whether

such a theme exists within the Merchant Marine today, and, if it does, whether it bears a meaningful relationship to other variables such as age, education, job satisfaction, years of sailing and rank.

The idea that there is a reciprocal relationship between culture and attitude, which can be considered an aspect of personality, is not unique. Behavioral scientists have attempted to delineate normal, modal, typical or ideal personality structures within groups and sub-groups of people living within specified environmental conditions. While this tradition of attempting to characterize a population in terms of dominant personality characteristics or institutional structures certainly goes back through recorded history (e.g., Caesar, c. 50 B.C. and Tacitus, c. 100 A.D.), only recently have systematic attempts been made to assess and measure the existence of national characters or the patterning of attitudes within specified populations (for example, Benedict, 1959 and Kardiner, 1939, 1945).

Despite the fact that the members of the Merchant Marine are docking at either end of a run and are influenced by the larger society, their situation is unusual in the industrial setting in that the basic hierarchical institutional structure in which they work and live is relatively isolated and is replicated hundreds of times aboard ships with a lawful, legal form not readily subject to change. While social scientists have to deal with a multiplicity of variables in the open society, the Merchant Marine offers an opportunity to focus in on a subgroup living in a relatively limited environment for long periods of time.

In a large and complex society with diverse institutions, the

congruence of personality and institution takes on large theoretical and practical importance and might help in understanding social and institutional change. Some theorists, for example Fromm (1947, 1949), have suggested that an institutional analysis be made and from this institutional analysis a structure of personality be deduced that would be necessary to support the institution or could be used to characterize the dominant or typical personality existing within the institution. To the extent that institutions and institutional structures influence attitudes and personality, then social change might be effected through institutional change. This chicken-egg problem of whether institutions effect personality or whether personality develops institutions has been attacked and answered in different ways (see, for example, Inkeles and Levinson, 1953).

Rather than try to delineate a causal relationship between institution and attitude, the reciprocal relationship between them can be investigated to assess whether a basic personality type exists and is perpetuated within a particular institutional structure. In this study, an attempt will be made to analyze the Merchant Marine officer by correlating his responses to the F-scale with his responses to personal questions, such as age, rank, personal history, and attitudes toward his job and life in order to try to assess the relationships between institution and attitudes. To the extent that there is congruence between the institution and the personality supporting and working within the institution, one might expect satisfaction, both with the job and with life in general. Similarly, incongruence between personal attitudes and institutional structure might indicate the potential elements of change or the possible need for change.

PART I

HISTORICAL BACKGROUND

The Occupational Role of Authoritarianism

Central to many industrial studies are the themes of authoritarian leadership, authoritarian environment and authoritarian attitudes in both leaders and subordinates within the working environment in relationship to overall efficiency and productivity. Recent and current literature suggests the existence of certain attitudes and personality traits worthy of examination within the industrial framework, for example, differences in and among the personality types of those who would choose to enter one life style of work rather than another. It has been inferred that liking for the work, tolerance for it or dislike of it - the degree of job satisfaction - may be contingent to a great degree upon how people like to act. Hackman (1969) stated that there is little doubt that the nature of the job is an important determinant of how people act. Christie (in Christie and Jahoda, 1954) reported on studies which found that those men in the Army who performed well in military roles for leadership advancement became more authoritarian. Unterwagner (1967), interviewing numerous Merchant Marine officers, noted ambivalence, hostility, suspicion, and conformity.

Fleishman (1961) demonstrated a dual effect in discussing the findings of one of his studies, Leadership climate, human relations training and supervisory behavior (1953). He states:

It was also found that the behavior of foremen who returned to "climates" consistent to what they had

been taught in training conformed more closely to the leadership expectations of their work groups - no such improvements was found among foremen who returned to "climates" at a variance with the training course.

These results suggest that leadership training cannot be considered in isolation, from the social environment in which the foreman must actually function. In this sense, leadership training must be viewed as an attempt at social change which involves the reorganization of a complex perceptual field.

Fleishman and Harris (Patterns of leadership behavior related to employee grievances and turnover, 1962) cited two leadership patterns which identify with the authoritarian-democratic, equitarian mode. They are:

Consideration - includes behavior indicating mutual trust, respect and a certain warmth and rapport between the supervisor and his group. This does not mean that the dimension appears to emphasize a deeper concern for group members to seek and include such behavior as allowing subordinates more participation and decision making such and encouraging more two-way behavior.

Structure - includes behavior in which the supervisor organizes and defines group activities and his relation to the group. Thus, he defines the role he expects each member to assume, assigns tasks, plans ahead, establishes ways of getting things done and pushes for production. This dimension seems to emphasize overt attempts to achieve organizational goals.

This study indicates that there are significant relationships between the leader behavior of foremen and the labor grievances and employee turnover in their work groups. In general, low consideration and high structure go with high grievances and turnover.

Likert (1961) addressed management systems and defined four in depth, namely: "exploitive-authoritative", "benovolent-authoritative", "consultive" and "participative". He spoke of these environmental

systems and their respective effects as follows:

Each system tends to mold people in its own image. Authoritarian organizations tend to develop dependent people and few leaders. Participative organizations tend to develop emotionally and socially mature persons capable of effective interactions, initiative and leadership.

Further development of this theme and these systems with substantial supporting evidence is the subject of study in his later work, The Human Organization; its management and value, (1967).

It is evident that authoritarian leader behavior has been noted as a significant factor in institutions and is worthy of continued study. The most direct approach to the study of authoritarianism was the Adorno, et. al. study of the authoritarian personality and the construction of the F-scale as an objective indication of authoritarianism. It would seem reasonable to study whether authoritarianism as measured by the F-scale, will bear a relationship to authoritarian leader behavior as found in the American Merchant Marine (See Institutional Structure of the Merchant Marine, p12 of this study).

The authoritarian personality

The origins of the concept of the authoritarian personality are difficult to trace. Basically, the writers credited with the earliest theoretical work on the concept are Fromm (1941, 1947), Maslow (1943), and Adorno et. al. (1950). In his Escape From Freedom, Fromm pointed to authoritarianism as a major personality concept. In his broad treatment of the subject from the genesis of the personality in the family to the fully developed authoritarian, he describes the authoritarian personality as it leaves the original nurturing family:

Once the individual faces the world outside of himself as a completely separate entity, two courses are open to him since he has to overcome the unbearable state of powerlessness and aloneness. By one course he can progress to "positive freedom"; he can relate himself spontaneously to the world in love and work, genuine expression of his emotional, sensuous, and intellectual capacity; he can thus become one again with man, nature and himself, without giving up the independence and integrity of his individual self. The other course open to him is to fall back, to give up his freedom, and to try to overcome his aloneness by eliminating the gap that has arisen between the individual self and the world. This second course never reunites him with the world in the way he was related to it before he emerged as an individual...this course of escape, therefore, is characterized by its compulsive character, like every escape from threatening panic; it is also characterized by the more or less complete surrender of individuality and the integrity of the self. Thus it is not a solution which leads to happiness and positive freedom; it is, in principle, a solution which is to be found in all neurotic phenomena. It assuages an unbearable anxiety and makes life possible by avoiding panic; yet it does not solve the underlying problem and is paid for by a kind of life that often consists only of automatic or compulsive activities (1941, pp. 140-141)

The alternatives for escape open to the individual are, according to Fromm, authoritarianism - establishing a power-relationship to a hierarchy where the individual can place himself in a dominant or submissive position, destructiveness- an attempt to remove the forces outside the individual which appear to threaten him and isolate him, and automation conformity - escape from the pain of decision by submission in the form of conforming to roles provided by society.

Maslow (1943) conceives of the authoritarian personality as also springing from the environment of the family. He is characterized as living "...in a world...pictured by him as a sort of jungle in which [each] man's hand is necessarily against every other man's, or at least challenging, and in which human beings are conceived of as primarily selfish or evil or stupid." (p. 403).

Social psychology assigns the title "authoritarian" to behavior which tends to be condescending towards inferiors, resistant to scientific investigation, more sensitive to superiors than peers and prone to project its own attitudes upon others (Christie, 1954). Adorno, et. al. (1950, pp. 255 - 257), states that authoritarian personalities are typified by:

- A) conventionalism - rigid adherence to middle-class standards,
- B) authoritarian submission - uncritical attitudes toward in-group philosophies,
- C) authoritarian aggression - the tendency

to be on the lookout for and to reject and punish people who violate conventional values,

D) anti-intraception - opposition to the subjective, imaginative, the tenderminded,

E) superstition and stereotypy - the belief in mystical determinants of one's fate - the disposition to think in rigid categories,

F) power and toughness - a preoccupation with "dominance-submission" and "strong-weak", "leader-follower",

G) cynicism and destructiveness - general hostility,

H) projectivity - a disposition to believe that wild and dangerous things go on in the world, a projection outwards of unconscious emotional impulses, and

I) sex - an exaggerated concern with sexual "goings-on".

It is interesting to note that many thinkers have been drawn to explore this type of personality; for example, the long-shoreman philosopher Eric Hoffer in his book The True Believer, (1951) makes many of the same points as both Fromm and Adorno, et. al. by investigating history and literature with a phenomenological analysis.

The authoritarian syndrome is recognized by major studies such as Vernon (1964), Kerlinger (1964), Bettelheim and Janowitz (1964), Fleishman (1961), Rokeach (1960), Eysenck (1960), Christie and Jahoda (1954), and Allport (1968), among others. Replications

of findings, such as Milton (1952) and Gamp (1953) are to be found with similar results in the current literature (Zippel, 1966 and Higgins, 1965).

Rokeach (1956) assigns titles of dogmatism, opinionatedness and close-mindedness to authoritarianism. Eysenck (1965) assigns titles of extremism and acquiescence. Summarily, the authoritarian personality is one associated with discipline, conservatism, conformity, rigidity, toughness, opinionatedness, acquiescence and right-wing ideology. The opposite pole is identified as democratic, liberal, open-minded, questioning, nonconforming, imaginative, creative and accepting of other's points of view.

Perhaps the best description of authoritarian personality structure is given by Allport (1968):

What is the alleged authoritarian character structure? It is thought to be a complex syndrome of personality traits, difficult to describe because there is no one central organizing feature. The pattern most certainly involves the status-dread type of conformity we have described - often called "authoritarian submission". Within it goes the need for aligning oneself with a strong authority figure, and with a protective in-group. Present too, are a strong nationalism, a subservience to existing institutions, conventionalism, rigid moralism and a need for definiteness. Things are seen as black, or white, as right or wrong, as pure or impure, as all good or all bad. There are no shades of gray, no tentativeness, no suspended judgment. The authoritarian seeks well marked safety islands where he can resist the confusing crosscurrents of life in a democracy. a central theme is power. "We the good people must control them, the dangerous people." (p. 196).

The existence of this authoritarian syndrome is established by many studies and its close connection with autocratic ideology and with prejudice have been repeatedly demonstrated. The formulation will undoubtedly remain as one of the major psychological contributions of this century. (p. 197).

The major preliminary research into the concept is credited to Adorno, et. al., in the work, The Authoritarian Personality (1950). It describes the conceptualization, construction and validation of a number of paper/pencil tests designed to measure prejudice directly (the E or ethnocentrism tests) and indirectly (the F or Facist tests).

Institutional Structure of the Merchant Marine

Merchant Marine officers operate by tradition in a basically autocratic environment. The role of the American Merchant Marine officer is one of leadership and submission. The degree of leadership he must assume is dependent upon his rank and commensurate responsibility, clearly defined by law, licensing, government regulations and contracted labor agreements. The primacy of the Master is stressed in Rule 29, Rules of the Nautical Road (1965) and has been the subject of grievances, strikes and union agreements. The same is true for Chief Engineers, specifically identified in law and regulations, relative to their areas of functional competence.

The seagoing component of the maritime industry, the American Merchant Marine, is basically civilian, a commercial enterprise that functions in an autocratic environmental framework. This, too, is public knowledge, clearly expressed in law, interpretation of the law, labor agreements, tradition and practice. Authority for action, responsibility and decision making are oftentimes delegated by law to a single person, the Master or the Chief Engineer. All mates (Deck officers) and engineers must function within clearly defined and limited parameters founded upon an autocratic structure base.

Job requirements in the Merchant Marine are different from those in other industries that invite middle management to participate in corporate decision making. It would seem to follow that the amount of job satisfaction would be contingent

upon the compatibility of the personality structure to the job environment. Selection factors imposed by the applicant himself create tendencies for personality types to become clustered within different industries and occupations. Rokeach (1956) observed this self-selection factor among the Coast Guard cadets at the U. S. Coast Guard Academy.

Because of the historically closed and autocratic nature of the environment of the Merchant Marine officer (see, for example, in literature, Dana (Two Years Before the Mast, 1840), and Melville (Moby Dick, 1851), a valuable parameter to measure would be that of authoritarianism. Merchant Marine officers were tested by Adorno, et. al. in the mid-1940's and reported upon in the initial work The Authoritarian Personality (1950). If authoritarian tendencies are found to play a significant role today in the personalities of Merchant Marine officers in relationship to other questions such as job satisfaction, attitudes toward the industry and attitudes toward shipmates, then these personality factors should be considered in management planning.

Merchant Marine officers have both supervisory and professional roles. They fulfill their responsibilities through the leadership and supervision of many thousands of unlicensed crewmen. It is commonly agreed that the crew of the ship must work as a harmonious, well-coordinated team for optimum efficiency.

Therefore, in addition to the theoretical concerns, i.e., personality and institutional relationships, the purposes of the

present study are also to provide a partial profile of the personal characteristics of the U. S. Merchant Marine officer, to assess some of the effects of the Merchant Marine environment on the Merchant Marine officer, and to provide information for the development of criteria in the selection, training, and guidance of American Merchant Marine officers.

The F-scale

After World War II, the American Jewish Committee acted to advance beyond common sense notions and enlist the scientific method to attempt to identify the roots and relationships of bigotry and ethnic hatred. In May, 1944, the Committee formed the Department of Scientific Research, which in turn was responsible for bringing together the Adorno group, initiating and supporting the research.

The book, The Authoritarian Personality, published in 1950, is the report of five years of work - the results of the group's efforts. The Authoritarian Personality is multi-faceted in research methodology, analysis and theory. The first line of research explored by the Adorno group was to try to isolate and describe the components of personality which comprise the anti-Semite and the superpatriot. The Anti-Semitism (A-S) scale which was developed suggested further research to delineate the personality dynamics of the individual which generally seeks affirmation by belonging to a dominant group. In the words of Levinson:

- ...(a) If these trends are present, then they should also be found in various other ideological areas.
 - (b) These trends should be expressed in nonideological forms as well, that is, in ways of thinking about people and life generally.
 - (c) Intensive clinical study should reveal these and other trends directly, as well as their organization and function in the total personality, and their courses of development.
- (Levinson, in Adorno, et. al., 1950, p. 101).

The Ethnocentrism scale (E scale), and the Politico-Economic-Conservative (PEC) scale were developed through studying the relationships of anti-Semitism, anti-Negroism, patriotism and attitudes

toward minorities. These findings led Levinson to state:

The study of politico-economic ideology and group memberships has led to a broadening in our conception of the anti-democratic individual...There appears to be an affinity between conservatism and ethnocentrism, liberalism and anti-ethnocentrism.

In previous chapters we have seen that anti-Semitism or anti-Negroism, for example, are not isolated attitudes but parts of a relatively unified ethnocentric ideology. The present chapter suggests that ethnocentrism itself is but one aspect of a broader pattern of social thinking and group functioning. Trends similar to those underlying ethnocentric ideology are found in the same individual's politico-economic ideology. In short, ideology regarding each social area must be regarded as a facet of the total person and an expression of more central ("subideological") psychological dispositions. (Levinson in Adorno, et. al., p. 207)

Sanford then explored the relationships between religion and ethnocentrism and said in studying the principle characteristics of the authoritarian personality:

...we can approach an understanding of the relations between religion and ethnocentrism by paying attention to what the acceptance or the rejection of religion means to the individual. When the problem is approached from this point of view the psychological factors which appear as most important are much the same as those which came to the fore in the preceding chapters: conformity, conventionalism, authoritarian submission, determination by external pressures, thinking in ingroup-outgroup terms, and the like vs. nonconformity, independence, internalization of values, and so forth...An attitude of complete submissiveness toward "supernatural forces" and a readiness to accept the essential incomprehensibility of "many important things" strongly suggest the persistence in the individual of infantile attitudes toward the parents, that is to say, of authoritarian submission in a very pure form.

In general, it appeared that gross, objective factors - denomination and frequency of church attendance - were less significant for prejudice than were certain psychological trends reflected in the way the subject accepted - conventionalism, authoritarian submission, and so forth - were generally the same as those which came to the fore in preceding chapters, and we turn now to our attempt to investigate them directly. (Sanford in Adorno, et. al., pp. 220-221).

The emphasis then shifted to developing an objective tool to measure general anti-democratic tendencies.

At a certain stage of the study, after considerable work with the A-S and E scales had been done, there gradually evolved a plan for constructing a scale that would measure prejudice without appearing to have this aim and without mentioning the name of any minority group. (Sanford, et. al. in Adorno, et. al., p. 222)

This work led to the development of the Fascist (F) scale. The major concern is stated to deal with the "potentially fascistic individual, one whose personality structure is such as to render him particularly susceptible to anti-democratic trends in propaganda" (Adorno, et. al., p. 1). The test, over the course of time, achieved a form of construct validity. The F-scale measures only authoritarianism of the right. A low scoring person is one considered to be low in ascribed authoritarian traits, ergo more democratic, liberal.

Furthering their research into the authoritarian syndrome, Frenkel-Brunswik used the clinical interview and found, as Fromm (1941) and Maslow (1943) had suggested, that childhood training practices played a large role in the development of authoritarianism.

When we consider the childhood situation of the most prejudiced subjects, we find reports of a tendency toward rigid discipline on the part of the parents, with affection which is conditional rather than unconditional, i.e., dependent upon approved behavior on the part of the child. Related to this is a tendency apparent in families of prejudiced subjects to base roles of dominance and submission, in contra-distinction to equalitarian policies. Faithful execution of prescribed roles and the exchange of duties and obligations is, in the families of the prejudiced, often given preference over the exchange of free-flowing affection. The hypothesis may be offered that some of the traits of the prejudiced personality are an outcome of this family situation. (Frenkel-Brunswik in Adorno, et. al., p. 482)

This researcher also found that "one of the most pervasive formal aspects of the personality organization of the extremely prejudiced individual is his rigidity."

As far as positive goals are concerned, the relative lack of individuation is compensated for by taking over conventional cliches and values.

In order to keep the balance under these conditions, a simple, firm, often stereotypical, cognitive structure is required. There is no place for ambivalence or ambiguities. Every attempt is made to eliminate them, but they remain as potentials which might interfere at any time. In the course of these attempts a subtle but profound distortion of reality has to take place, precipitated by the fact that stereotypical categorizations can never do justice to all the aspects of reality. (Frenkel-Brunswik in Adorno, et. al., p. 480)

This paper concerns itself with but one of the approaches of the Adorno, et. al. group, "The Measurement of Implicit Anti-democratic Trends" (Sanford, et. al. in Adorno, et. al., pp. 222-279).

It is particularly concerned with the final major scale developed by the group, the F or Fascist scale, which is the most widely accepted instrument in use today to measure authoritarianism.

In the words of the researchers:

The research to be reported in this volume was guided by the following major hypothesis: That the political, economic, and social convictions of an individual often form a broad and coherent pattern, as if bound together by a "mentality" of "spirit" and that this pattern is an expression of deep-lying trends in his personality.
(Adorno, et. al., p.1)

Of the tables of results presented on the F-scale, it is significant to note the high mean F-scale score of the Maritime group, the largest single group sample that the F-scale was tested on in the Adorno study (Sanford, et. al., in Adorno, et. al., p. 266).

F-scale validation

The California F-scale, Part B of the questionnaire of the present study, is a more or less "standardized" form of the test. A bibliography of over 1,000 titles on the authoritarian personality and the use of the F-scale is reported in Allport (1968). Many more studies on the authoritarian personality and the F-scale have appeared since.

The literature is often vague as to what version or whether a modification of the F-scale was used except in instances where it is specifically specified that the California F-scale was used. The literature speaks of a tailor-made F-scale, a verbal F-scale, a variety of foreign language versions, a balanced F-scale and numerous modifications (Christie and Jahoda, 1954).

The complete descriptions of these various modifications are usually not available in the published literature. For example, Vroom (1959) states: "Authoritarianism. The degree of authoritarianism of the Ss is measured by the responses to 25 items from Forms 40 and 45 of the F-scale developed by Adorno...." The most common version is the California F-scale, a version of 30 items. Most reviews suggest that 25 to 30 items be employed for adequate results.

One criticism of the F-scale argues that the items measure the conservatism of the right and do not allow for the dogmatism of the "hard liberal", the "crusader for splinter group causes". It does not identify the communist authoritarian as well as the

fascist authoritarian (Shils, in Christie and Jahoda, 1954; Rokeach, 1960; Vernon, 1964; Allport, 1968). Most of these criticisms have been responded to already in the literature, for example, with regard to the dogmatism of the "left", Rokeach (1956) perfected his Dogmatism and Opinionation scales in the mid-fifties. Next to the F-scale, they are the most popular instruments of this type. His claim that they are a better measure of "belief systems" is supported in the literature (Allport, 1968, Kerlinger, 1964). Much in the way of validation has been done comparing these two major scales, the F-scale and the Dogmatism scale. One study, by Kerlinger and Rokeach (1966), covers the validations and comparisons of both the F- and D-scales to each other and examines the strengths and weaknesses of the accrued evidence. The authors state: "Given the absence of systematic studies of the factorial content of the two scales, it is no wonder that some reviewers have been reluctant to accept the empirical reality of the F and D sets of conceptualizations." (Kerlinger and Rokeach, 1966, p. 392). The authors then go on to translate into empirical reality the following findings, briefly summarized:

1. Substantial correlation exists between the F-scale and Rokeach's Dogmatism scale by total scores, and there is little doubt that the F and D-scales are related phenomenon with probably a common core of authoritarianism.
2. Both tests, however, are factorially discriminable. The intra-test significances demonstrate that the F-test is strong in authoritarian aggression and submission. The D-scale is superior in the measure of "great

cause" and belief systems.

3. Support is given to the analyses that have been done which state that the D-scale is negligibly related, while the F-scale is substantially related to liberalism vs. conservatism.
4. The F-scale is best in measuring what the authors call factors of the "Protestant ethic", authoritarian submission, aggression, virtuous self-denial - the components of the authoritarianism of the right.

Hanson (1968), in a subsequent construct validity study, examined the relationship between authoritarianism and dogmatism. Tested in his study were hypotheses relevant to Rokeach's position that dogmatism, as measured, taps general authoritarianism, whereas authoritarianism, as measured, taps only rightist authoritarianism. Hanson concludes that an inherent relationship exists between the authoritarianism of the right and dogmatism but negates the position that authoritarians and non-authoritarians are equally dogmatic.

Another primary criticism of the F-scale is its unidirectionality leading respondents to score high in acquiescence. All statements are positive, so that a vote up the scale is a vote for authoritarianism. Some reliable and significant sources, for example Eysenck (1965), consider acquiescence to be a part of the authoritarian syndrome. This is demonstrated in the research of Couch and Kenniston (1960), of Allport (1968), or Kerlinger (1964) and of Vernon (1964). However, most findings and conclusions note the presence of acquiescence, at least inferentially, in their discussions and conclusions.

Many researchers have modified F-scale statements by the use

of reversals - the rewriting of many of the positively worded items into negative statements. The literature, both early and recent, attests to the long subscription to this practice. Many studies using this technique report unsatisfactory results. Lee and Warr (1969) agree with Kerlinger (1967) that when speaking of the construct validity of a "judgment structure" item, the "critical referent" should be positive. In short, an item stands to lose some of its value and factorial strength when overly manipulated into particularly negative terms.

Lee and Warr (1969), met those issues head on by constructing 30 positively worded statements, presented in random array, 15 of which invite a positive response for authoritarianism, and 15 of which invite a negative response to the statement for authoritarianism. Developed in the late sixties, their Balanced F-scale includes items which are relevant to the times. Many are the same as or closely resemble those F-scale items examined in the Kerlinger and Rokeach study (1966). In summary then, the F-scale is a widely used test, with high stability and internal reliability, statistically demonstrated by many investigators on large populations.

Kerlinger (1964) states that there is little doubt that the F-scale taps broad general attitudes or cores of values and personality traits and groups of traits within and among groups. The work of Scodel and Mussen (1953), Vroom (1959) and the report of Christie (in Christie and Jahoda, 1954) further cite the use of the instrument in subject study. It has been used many times

in modified form. It is modified in this study for relevancy to Merchant Marine officers. (For further discussion, see Procedure, Part IV).

Therefore, in conclusion, it seems reasonable to use the F-scale as a research instrument to study the relationships between attitude and institutional structure, job requirements, personal history, job satisfaction, etc., and to test hypotheses regarding the correlations of personality and these variables and institutional structure. It might also seem reasonable that knowledge about institutions and attitudes could be a factor in decision making.

PART II

HYPOTHESES

Introduction

Since one of the major components of the research instrument being used in this study is a measure of anti-democratic tendencies (California F-scale), and because authoritarianism is presumed to be a major personality and behavioral component that would be congruent within the Merchant Marine, specific hypotheses were developed utilizing some of the reasoning regarding personality theory developed by the Adorno group. While the testing of these hypotheses is often confounded by a multiplicity of variables similar to those which plagued the Adorno et. al. study (see Hyman and Sheatsley, in Christie and Jahoda, 1954), the F-scale as a measurement of an aspect of personality existing among people within this particular industry, can be regarded as a useful instrument to study a factor of personality and to explore its functional relationships to other variables (see above, Part I, F-scale-Validation). Several of the hypotheses discussed below are direct replications of hypotheses tested in the Adorno et. al. study (see, for example, Hypothesis 6, concerning education and F). Other hypotheses are derivations from the personality theory as presented by Adorno et. al.

Hypothesis 1

A higher F-scale score would be expected for those officers who profess to like their work compared to those who do not.

The nature of the Merchant Marine job and environment is highly structured, in fact, somewhat rigid. The rules are clearly stipulated and duties specified. As Adorno et. al. indicates, the authoritarian personality is compatible with an environment of clearly defined structure with many ordinary ambiguities already ironed out (Frenkel-Brunswik in Adorno et. al., p. 480). The Merchant Marine provides an officer with a recognizable place in a hierarchical chain. For this reason alone, it would be reasonable to expect high job satisfaction for persons with high F-scale scores. Secondly, on the basis of authoritarian submissiveness, an officer with a high F-scale score would theoretically tend to respond to a questionnaire from an authority figure (such as the present author who used his official title, see page 1, Appendix A) positively on the question of job satisfaction, even if his real feelings might be of dissatisfaction or frustration. The effects of authorship and letterhead on questionnaire response have not yet been adequately researched, but are currently under investigation (personal correspondence, L. Kanuk, 1973). Also, he might fear that indication of job dissatisfaction might bring about institutional change and the insecurities that accompany change.

As a further extension, it was also expected that job satisfaction and life satisfaction would yield similar results in terms of high F-scale score, especially in so far as the Merchant Marine officer spends a large segment of his life on the job, separated from the normal social milieu where job and life might have more distinct boundaries.

Hypothesis 2

Higher ranking officers will have higher F-scale scores than lower ranking officers.

This hypothesis was examined in a series of interrelated questions regarding rank, license, age and education in order to tease apart the confounding variables implicit in longitudinal measures of authoritarianism (see Hyman and Sheatsley in Christie and Jahoda, 1954). The factors of age and education are treated separately below in Hypotheses 3 and 6.

The question of Merchant Mariner license must be examined in conjunction with the rank that the officer is actually sailing under because actual leadership ability and ability to achieve a high license are not necessarily compatible, as Shils (in Christie and Jahoda, 1954) indicates. The concern with authority, as opposed to authoritarianism, seems not to be in its accepted presence, but in how it is accepted and how it is received - by the supervisor, by the subordinate, by the formal and informal organization - and how the situational determinants of both personality and environment are both affecting and affected in the industrial quest for efficiency and productivity.

It may be expected that higher ranking officers will have a higher F-scale score based on the idea that there should be ~~some~~ personality congruence between the rigidly structured

environment of the Merchant Marine and the personality constructs attributed to the authoritarian personality, i.e., conventionalism, authoritarian aggression, authoritarian submission, power and toughness, and the need for clearly defined structure. An officer with these traits would be expected to stay in the Merchant Marine and to rise within that system.

On one hand, the authoritarian may seek authority over others, and therefore pursue higher rank (Fromm, 1941, see pp. 7-8 of this study). On the other hand, an ambitious person, i.e., a person having high achievement motivation (McClelland and Atkinson, 1953), also seeks higher rank and in seeking such higher rank and achieving it may also adopt the roles and attitudes appropriate to his position, in this case, becoming more authoritarian.

In other words, increasing authoritarianism may be predicted on the basis of reducing cognitive dissonance (Festinger, 1957). However, this prediction is confounded by the expectation that an officer who is authoritarian to a degree which would impede his relationships with other men might not receive the promotion which he feels is his due or which his license would indicate. The frustration factor which this situation would induce might be expected to also produce a high F-scale score on the basis of anti-intraception tendencies, or the tendency to rationalize undeniable negative traits which lead to failure. Conversely, an officer who has managed to achieve a level of rank he finds consistent with his self-image would, being basically more secure, be able to "more

easily afford to see a discrepancy between ego-ideal and actual reality." (Frenkel-Brunswik in Adorno et. al., p. 432).

Hypothesis 3

Older officers will have higher F-scale scores than younger officers.

Adorno et. al. did not give an expanded rationale for predicting a relationship between age and ethnocentrism. They merely state: "It was hypothesized that younger people tend to be less conservative and less ethnocentric than their elders." (Levinson in Adorno et. al., p. 140). Other theorists, for example, Rokeach (1960), have suggested that conservatism tends to accompany age. In the present study, it is expected that there will be some confounding of age and education. However, in the Adorno et. al. study, the correlations between age and authoritarianism and education and authoritarianism, while marginally significant, were low. The reason for expecting age, of itself, to be confounded by education in this study, is that within the past 20 years higher education has become more available. It will be hard to assess the validity of the test of this hypothesis because the suggested lower amount of authoritarianism in the younger people of this study may be due to "youth" or due to greater educational opportunities, or both, even if the results support the hypothesis. This difficulty of separating age and education is already well known (Hyman and Sheatsley in Christie and Jahoda, 1954), but might be assessed through the use of partial correlations. Another reason to expect older officers to have a higher F-scale score is based on the proposition of personality and institutional congruence. This is expounded upon further in the following hypothesis.

Hypothesis 4

There will be a positive correlation between years of sailing and authoritarianism.

The interrelationships of basic personality structure and environmental influences are examined in the context of the relationship of age, years of having a license, and years of sailing to try to separate out these components. The hypothesis that older officers will have a higher F-scale score can be predicted by two lines of reasoning. First, that people will stay in an environment which is most compatible and satisfying to their basic personality structure, even if other alternatives are perceived as available. Bellows (1961) states: "If top management and bosses are authoritarian, a non-directive junior executive would be rated inefficient.... Use as little authority as possible, but as much as necessary." Bellows, of course, speaks to the pragmatic, the mode of behavior, he does not concern himself with the hows, whys and effects of the interaction. Yet, he recognizes in this interpretation of leader behavior, the concept that authority is not only a function of personality, but one of environment. This dual focus upon the exercise of authority, that it involves both the person and the environment in which he must function, is a basic tenet of Lewin (1951) and a recent concern of Hackman (1969). Vroom (1959) states:

...some emphasize personality conceived as the relative, enduring psychological properties of an individual, as the locus of the basic causes

of behavior, while others look to the environmental and personality determinants of behavior simultaneously.

In this case, the highly structured, autocratic environment of the Merchant Marine would be an environment with rich opportunities for authoritarianism to survive.

Time might filter out personalities less tolerant of rigid situations. Rokeach (1956) cites the training of Coast Guard cadets at the U.S. Coast Guard Academy as geared to discipline and deference to authority. He states that those who are not compatible with the system weed themselves out (two out of every three who enter as freshmen leave before graduation).

Schwimmer (1971) demonstrated high attrition rate among young Merchant Marine officers, borne out by the skewed mean age of all active officers. The findings of another, parallel Maritime Administration (MARAD) study of maritime cadets at the U.S. Merchant Marine Academy compared freshmen cadets to senior cadets for gain or loss in vocational interest prior to job actualization. It was found that cadets at the Academy, which assigns second year cadets to 10 months of sea duty with the actual merchant fleet, exhibited significant loss of interest for sea-going careers from freshmen to seniors, while all other maritime academies, which do not have a sea year, showed a gain (Schwimmer, 1969). This attrition might be due to cadets discovering in their sea year that they have personal incompatibilities with the institution. One possible source of incompatibility might be an unexpected rigidity and authoritarianism in their superior officers.

Second, given no differences in initial authoritarianism, and ignoring the possibilities of a selective factor over time, the rigid structure implicit on a ship might tend to encourage latent authoritarian tendencies as well as possibly instigate changes in personality toward conventionalism, toughness, and authoritarian aggression. Further, on this point, Schacter (1950) has shown that the effects of the group on "deviant" behavior is to try to change the deviant, or, failing in this, to reject him. In terms of the present study, given the closeness of shipboard conditions, the effects to be expected are obvious. Other personal and personality characteristics might also be congruent or incongruent, such as race, religion or nationality, but are beyond the scope of the present study.

Hypothesis 5

The correlational relationships between F-scale score and job satisfaction, life satisfaction, rank, license, age, and years of sailing will be stronger for Deck officers than for Engine officers, although the actual F-scale scores may be higher for Engine officers than for Deck officers.

These differences for Deck and Engine officers are hypothesized for the following reasons. One, job opportunities outside of the Merchant Marine are more limited for Deck officers than for Engine officers. Engine officers have skills that are easily transferred to industrial settings in the larger community. For example, stationary engineering, plant supervision, self employment opportunities in engineering, etc., are fields more readily available to workers with specific salable skills. This occupational flexibility allows the Engineering officer the option of changing his institutional affiliation to market his skills rather than attempting to adapt personality to the institutional structure of the Merchant Marine. This line of reasoning is supported in a recent Merchant Marine officers survey (Schwimmer, 1971) in which officers were asked, "Would you advise your son to do what you are doing (i.e. go to sea)":

When asked this question, despite the preponderance of plans to leave the Merchant Marine, 40.6 percent of the men responded in a favorable direction and 35.3 percent in an unfavorable direction. Most of those who responded favorably suggested that their sons go into the Engineering Department (33.7 percent [of those who responded favorably]) because it would prepare them for skilled jobs ashore.
(Chapter 2, p. 19)

The occupational flexibility of the Engine officer should result

in a sense of greater personal security and integrity of basic personality structure.

The second reason to expect a stronger relationship between authoritarianism and these other variables in Deck officers compared to Engine officers is based on the hierarchical order of power aboard a ship. The Master of a ship is invariably a Deck officer. In addition, Deck officers have always been regarded and regard themselves as having more prestige and power than Engine officers. They seat themselves at different tables in the mess hall, Deck officers receiving the more desired tables. The accommodations aboard ships are more commodious for Deck officers. The role that the Deck officer can ultimately assume is one of higher authority.

Perhaps another variable that could effect superior-inferior relationships between Deck and Engine officers is that of giving and receiving and obeying orders. It is the Deck officer, at all ranks, who orders the Engine officer, at all ranks, to adjust the speed and direction of the ship. The Deck officer might even be regarded as the eyes and brains of the ship. The Engine officer is the muscle following directions given from "above" from the bridge. Additionally, aboard ships carrying passengers, it is the Deck officer who is sought after and expected to fraternize with the passengers and represent the ship and the shipping line. Thus, the environment of the Deck officer is somewhat different from that of the Engine officer in that the Deck officer, with less job oppor-

tunities outside the Merchant Marine, should be more likely to adopt the attitudes and personality characteristics compatible with the institutional structure of this industry. It is the Deck officer who has greater pressure to change his attitudes to justify his behavior of staying in a job that is something of a prison and it is also the Deck officer who can exercise more authority.

Hypothesis 6

There will be an inverse relationship between education and F-scale score.

In the original Adorno study, the hypothesis that education would have an inverse relationship to ethnocentrism was based on the assumption that education tempers antidemocratic tendencies. "The relation between ethnocentrism and education is also likely to be significant but low. One of the main stated aims of our educational system is the teaching of democratic values as expressed in our Constitution and in other great documents. To the extent that we are succeeding in aims such as these, ethnocentrism and years of education ought to be negatively correlated, that is, the more the education the less the ethnocentrism." (Levinson in Adorno, et. al., p. 281).

The findings of the Adorno study showed a slight inverse relationship, although it was neither large nor highly reliable.

As Adorno et. al. state:

At any rate, examination of the various group means shows that two groups may have similar educational levels and very different E means, as well as similar E means and very different educational levels....

In summary, ethnocentrism seems to have a low but statistically significant relation to both intelligence and education, the most educated and intelligent subjects being, on the average, the least ethnocentric. Nevertheless, the present results do contradict seriously one of the commonly held theories of prejudice and fascism, namely that they are supported out of simple stupidity, igno-

rance or confusion. It would seem, rather, that an autocratic social structure is best suited to the particular type of rationality exercised by the authoritarian personality. (Levinson in Adorno, et. al., p. 287)

However, while Adorno et al. gives no clear and theoretically detailed reason to expect the predicted relationship, they suggest further research to uncover the effects of education on antidemocratic attitudes. Therefore, the present study attempts to retest and perhaps extend the Adorno et. al. hypothesis regarding education and antidemocratic tendencies.

Hyman and Sheatsley (in Christie and Jahoda, 1954) in their critique of The Authoritarian Personality state that:

We do not feel that we are being academic in raising the issue that the findings reported may reflect uncontrolled differences in education. As one examines the interview excerpts in the text, one is continually and vividly struck by the fact that some of the differences obtained, which are treated as determinants of ethnocentrism, seem actually mere reflections of formal education. (p. 91)

While the literature indicates the complexities of measuring prejudice across socio-economic lines (Harding, et. al., 1969 and Williams, 1964), several studies have found a negative correlation between prejudice and amount of formal education (Allport, 1954, Rose, 1948, Tumin, 1961, and Williams, 1964). The work of Rush (1967), Lipsitz (1965) and Stember (1961) suggests that education had a greater effect on authoritarian attitudes than income, occupation or social class of respondents.

A further argument to expect an inverse relationship between education and the F-scale score has not so much to do with education as an enlightening process, but rather with the validity of the test itself. With education and its consequent test wiseness, we might expect that the test questions would be seen through more readily and that more socially acceptable responses would be substituted for the actual attitudes that the respondent might hold.

While the amount of formal education can be correlated with F-scale scores, within the Merchant Marine many licenses are obtained through correspondence courses and other less formal types of education. In addition, life aboard ship is peculiar in that a large amount of leisure time is available for an unmeasurable amount of education to be informally acquired. The major interests of Merchant Marine officers usually "center around individual or solitary activities. When asked to state their interests, outside hobbies and sources of recreation, 40.5 percent of the respondents cited first some activity which generally was practiced alone, such as reading, writing, TV, gardening, home repair, etc." (Schwimmer, 1971, chapter 2, p. 5). In addition, another major source of informal education in the Merchant Marine is the sheer amount of exposure to different societies and customs. While this, again, is not susceptible to precise measurement, it would not be surprising that education would not be highly predictive of F-scale score.

PART III

METHOD

Since a primary purpose of the present study is to assess some of the major characteristics of the Merchant Marine officer including his attitude toward his job, industry, co-workers, etc., and derive a profile that would be descriptive of the officers of this industry, it was necessary to collect data from a large sample. For this reason, a questionnaire was constructed in such a way that it could be utilized with a mail-back format. The questionnaire had to measure some of the major variables that were hypothesized and yet be relatively short and simple to respond to. In addition, permission from the unions concerned to send out such a questionnaire had to be obtained and the anonymity of the respondents guaranteed. To insure some motivation to respond, the questionnaire had to have some face validity as possibly serving an ultimately practical purpose to the industry. Questions directly testing the hypotheses were interspersed with questions of a factual nature in order to create a set for direct responding. A summary of the research hypotheses is presented in Table 1.

TABLE 1

SUMMARY OF RESEARCH HYPOTHESES

Hypotheses	F-Scale Score
1. Job satisfaction a) Life satisfaction	Positive correlation Positive correlation
2. Increasing rank	Positive correlation
3. Increasing age	Positive correlation
4. Increasing years of sailing	Positive correlation
5. Deck officers vs. Engine officers	Higher correlation for Deck officers than for Engine officers
6. Increasing education	Inverse correlation

Questionnaire Construction - Part A
Personal History and Attitudes

Part A of the questionnaire had 51 numbered questions which dealt with three main categories - Occupational facts, Basic biographic data and familial background, and Occupational and general attitudes (for breakdown of questionnaire, Part A, See Appendix B). Most of these questions had Likert-scaled answers both for ease of responding and to allow correlational analyses to be performed. Several questions allowed for an open-ended answer, where it necessary to resolve ambiguous responses, otherwise, the purposes were to enrich the data, give face validity to the questionnaire, and probe areas for possible future research.

The Occupational fact data most important for the present study were questions 1 and 2 regarding license and present rank to measure the relationship between these two factors and authoritarianism and job satisfaction. Questions 5 and 36 regarding years of sailing and chronological age were most important for investigating the relationship between environmental influences upon personality and basic personality structure. Questions 3 and 4 were included for more detail concerning license. The relationship between education and authoritarianism was studied through questions 6, 7, and 35.

The Occupational and general attitude questions were included to measure the various components of job and life satisfaction and authoritarianism. These questions were 12 (job satisfaction), 13 (life satisfaction), 17 (shipboard life satisfaction), 20 (work at sea satisfaction), 21 (shipboard conditions), 22 (general satisfaction with shipmates), 23 (relationships with superior officers) and 24 (rela-

tionships with subordinate officers). Questions 14 and 15 and 16 concerning future employment opportunities in the Merchant Marine (general optimism about the industry), question 49 regarding present financial status and questions 18 and 19 regarding loneliness and boredom aboard ship were expected to compliment the data regarding satisfaction.

Other groups of questions were included to make a more rounded questionnaire in keeping with the stated purpose in the cover letter of the questionnaire as well as to probe other dimensions and variables regarding family history, working conditions and job expectations in relation to the stated hypotheses and to F-scale score as well as to help provide data for developing a profile of Merchant Marine officers.

Familial structure and history (Basic biographic data and familial background) were studied in question 25 (marital status), 26 (widowed?), 27 (number of times married), 28 (years married and number of children), 29 and 30 (attitudes of wives to sailing profession of husband), 38 through 41 (hierarchical placement of respondent within the family he grew up in), 37, 42, and 43 (geographical location and environment of childhood years), and 44 through 48 (socioeconomic status of the parents of the respondent).

Questions that were intended to explore working conditions and job expectations were 8 through 11 (shipping schedule facts and preferences), 31 (number and type of job related accidents), 32 and

33 (officer's view of the Merchant Marine as a career), and questions 50 and 51 (importance of the Merchant Marine in the respondent's overall financial status).

Questionnaire Construction - Part B - F-Scale

The second part of the questionnaire (Part B) consisted of a modified version of the Adorno, et. al. F-test, forms 45 and 40. One question (number 22, "It is best to use some prewar authorities in Germany to keep order and prevent chaos") was omitted to update the questionnaire and a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used. It was expected that the cluster analysis previously performed on the F-scale (see Appendix C and Tables 16, 17, and 21, in Part IV of this study) would continue to be valid for the present purpose of assessing important dimensions of attitude in the current population of Merchant Marine officers. Since the purpose of this study was not to test the reliability and validity of the clusters already developed, the method of analysis is the same as that established by Adorno, et. al. and subsequently tested (Kerlinger and Rokeach, 1966, Hanson, 1968, Lee and Warr, 1969, among others). An intercorrelation of clusters is presented in the present study (see Results section, Table 16). The scores obtained in the present study can be compared to the scores for Maritime men in the original Adorno et. al. study through transformations (see Appendix D of this study).

The absence of a neutral point in the original F-scale left only an omission of a response to a question as an option for "neither agree nor disagree" resulting in a score of 4, whereas in the present study the subject is offered an opportunity to ostensibly avoid committing himself. However, in this study too, an omit is also scored at the midpoint value as in the

original Adorno et. al. study. This scaling technique is also justifiable on the following grounds:

One: it suits the major purpose of the present study, which is not necessarily to compare the results to other numerical results on authoritarianism, but rather to survey and test hypotheses regarding the interactions of attitude and environment.

Two: while the change in scaling should not distort the cluster analysis and score analysis of authoritarianism, in respect to the variables of interest in this study, it might tend to lower the correlations obtained.

Three: the F-scale has been criticized as taking advantage of a set to respond with agreement to positively worded questions. The provision of a neutral point should modify that set and give a truer estimate of the subject's attitude by allowing him to make a response of abstention. Note that this provision of a neutral point does not actually make a neutral response a veridical response. For example, the statement "Nobody ever learned anything really important except through suffering." (Question 9 on the present questionnaire) should call for disagreement with a thoughtful response. The option of "neither agree nor disagree" might be tapping an important aspect of authoritarianism by giving the respondent an easy solution in that he can "avoid" making a commitment or revealing his attitudes.

A facsimile of the questionnaire, Parts A and B, may be found in Appendix A.

Eighty per cent of Merchant Marine officers belong to two major unions, the Marine Engineers Beneficial Association, and Masters, Mates and Pilots. Because such a high proportion of the Merchant Marine officer population belong to these two unions, it was necessary to secure the permission of the union officials to survey their membership. The questionnaire was submitted to the union officials prior to distribution. A condition for cooperation was the assurance of anonymity of the respondents. The two unions supplied mailing lists for the questionnaire. One thousand questionnaires were mailed out between June 1 and 9 of 1972 with a pre-stamped return envelope.

An attempt was made to tap non-union officers on non-contract ships by distributing 800 questionnaires, with pre-stamped, return envelopes, to Port Agents or Coast Guard officials in New York State, New Jersey and San Juan, Puerto Rico.

Tabulation of all questionnaires was begun on October 27, 1972 with an N of 1,108 and no further data was admitted after that date. Each subject's data was entered on computer cards and preliminary tabulation and analyses were conducted by a commercial computer firm.

PART IV

RESULTS

Introduction

The results presented in this study are based on data from 1,108 respondents to the questionnaire which were received before Oct. 27, 1972. This number of respondents represents approximately 1/4 of all active deep water officers in the entire Merchant Marine industry. Results of Part A of the questionnaire (Personal History and Attitudes) were coded for uniformity of direction on Likert scales. Results of Part A were analyzed in terms of relationship to total F-scale score and the F-scale clusters as developed by Adorno, et. al. (see Table 3 for F-scale clusters).

Part A of the Results Section provides the textual description of the partial profile of the Merchant Marine officer derived from responses to Part A of the questionnaire of this study. (For tables of these results, see Results Section, Part D.)

Part B of this section is concerned directly with the stated hypotheses. Analyses of variance were performed on the results of questions in respect to each hypothesis to assess the discriminating power of the categories of responses. Because of the large differences in the number of respondents in each category of response, all analyses of variance were simple one-way analyses of variance. These analyses were then followed up with a correlational analysis. Unless otherwise stated, all correlational analyses are based on the Pearson Product Moment Correlation Coefficient.

Part C of the Results Section gives the results of the F-scale as a whole, and provides a table of comparative Mean F-scale scores of populations from this and other selected studies.

Part D of this section gives the tables of results of Part A of the questionnaire as a whole.

Results - Part A - General Summary of Responses to Part A of the questionnaire

Using the responses to Part A of the questionnaire, a summary profile was constructed of the Merchant Marine officer who responded to this questionnaire. Tables of these responses are presented on pages 101 to 147 of this study, titled "Results - Part D - Tables of Responses to Part A of the questionnaire".

Biographical Data

The mean age of the Merchant Marine officer responding to this questionnaire was 44. He was born in the United States (92.9%) and usually came from a large coastal state. The size of the family he grew up in averaged 3.88 children and he was usually the first or second born (see Tables 41, 37, 42, 38, and 39).

He was usually raised in a small town or moderately sized city, relatively close to a seaport. He remembers his family as being either comfortable (54.5%) or at least as being able to make ends meet (28.2%). The most frequent response for father's occupation was that he was a skilled craftsman (29.3%). However, when this is combined with Maritime related employment, unskilled or semi-skilled worker, and farm worker, 52.6% of the respondents perceive their fathers as employed in what can be described as blue collar occupations. Many of the respondents (46.1%) report that their fathers had less than a high school education, whereas only 10.8% had fathers who graduated from college (23.2% of the respondents' fathers had a high school diploma). These data are displayed in Tables 46, 51, 49 and 50.

The majority of respondents indicate that their mothers were not employed during their childhood (65.3%) and 41.2% of the respondents'

mothers did not graduate from high school. Only 6.7% of the respondents' mothers had college degrees, while 32.2% graduated from high school (see Tables 47 and 48).

Concerning the respondents' own education, 25.1% received less than a high school diploma, 29.5% finished high school, and 26.1% graduated from college. Most respondents were married (70.8%) and have been married just once (65.4%) for over 20 years, with a mean family size of 2.59 children. When asked how their wives feel about their occupation, most of the respondents do not believe that their wives hold very strong attitudes either for or against their occupation, although there is some slight tendency for their wives to be dissatisfied with their husbands' occupation. Forty per cent of officers indicated that their wives are more accepting of their occupations now than they were in the beginning, although 36.7% do not perceive any difference in attitude over time (see Tables 36, 37, 39, 40, 67 and 78).

Occupational Facts

Questions concerning the Merchant Marine officer's job reveal that most officers are sailing at their licensed level. Slightly over half of the officers (54.5%) have been sailing for over 20 years and 66.9% originally sailed in an unlicensed position. The majority of officers indicated that they prepared themselves for their licensing examinations by attending one of the following types of schools: Maritime Academy (20.1%), a private upgrading school (18.7%), or a U.S. Maritime Commission school (15.5%) - 22.7% of officers reported that they taught themselves (see Tables 23, 24, 27, 25 and 28).

Most officers (83.6%) prefer to be on shipping schedules which would maximize their time at home and minimize their time at sea, and many of them indicate that they are on a less than preferred schedule, with 64% indicating that they would like to be

on voyages of less than two months duration, while only 42% actually have such schedules (see Tables 52, 53, 29 and 30).

Most of the respondents (91.9% ship out as a permanent livelihood, with 69.2% of officers reporting that they receive all their income from their jobs in the Merchant Marine and an additional 19.5% saying that they receive at least 3/4 of their income from the Merchant Marine. Most respondents (67.1%) perceive their financial status as 'comfortable', 21% feel they are well-off. These data are displayed in Tables 32, 34 and 69.

Occupational Attitudes

The series of questions that allowed for an evaluative response concerning satisfaction ('satisfied' and 'somewhat satisfied') can best be summarized as officers being moderately satisfied with their life in general (57.52%) and with their job (51.61%) (see Tables 54 and 55). Responses to the question concerning satisfaction with life at sea were mostly toward the positive side of the scale, but 17.56% indicated dissatisfaction (Table 59). Questions about life aboard ship, kind of work, and conditions aboard ship reveal the same tendency with the exception that 62.2% of the respondents find life aboard ship to be dull (Tables 60 through 63). When asked about compatibility in general with shipmates, almost 30% indicate dissatisfaction. There was a stronger tendency for officers to be unhappy with subordinates (27.72%) than with superiors (17%). However, excluding the neutral point ('neither satisfied nor dissatisfied') over 60% expressed satisfaction with shipmates in general as well as with superiors and subordinates (see Tables 64 through 66).

When asked about their projections for the Merchant Marine industry, there was a tendency for officers to feel that the situation would become worse before it became better. Many respondents (50.2%) expressed pessimism about the next five years of the industry, while a smaller number (38.9%) expressed pessimism for the industry in the long run (6 years or over). Sixty four per cent believe that there will be a decrease in the number of berths available in the Merchant Marine in the next five years, and 63% of respondents indicated that this belief would affect their future plans. More than half (53%) do not plan to sail for more than another six years (see Tables 55, 54, 58 and 33).

Number and percentages of responses to questions on Part A of the Questionnaire are presented in Tables 23-35 (Occupational Facts), Tables 36-51 (Basic Biographical Data and Familial Background) and Tables 52-69 (Occupational and General Attitudes) on pages 101 to 147, Results - Part D.

Results - Part B - Hypotheses

Hypothesis 1: A higher F-scale score would be expected for those officers who profess to like their work compared to those who do not.

The mean F-scale score for each level of satisfaction on Question 12 of the questionnaire ("At the present time, how satisfied are you with your job at sea?") was computed and a one-way analysis of variance was performed which was significant beyond the .01 level of confidence ($F=10.65$, $df=6,1045$, $p<.01$). These data are displayed on Table 2. A correlation was then calculated between scores on the F-scale and the different levels of satisfaction. This correlation performed on F-scale scores for each of the respondents and their respective responses to question 12 yields an r of .21 which was significant beyond the .01 level.

In order to find the main factors contributing to this correlation, the individual F-scale clusters were scored and correlated on the question of job satisfaction. Of the nine individual clusters, only that of "projectivity" was not significantly correlated. The three highest clusters in relationship to job satisfaction were 1) conventionalism ($r=.21$, $p<.01$); 2) authoritarian aggression ($r=.20$, $p<.01$); and 3) authoritarian submission ($r=.18$, $p<.01$). These data are displayed in Table 3.

While these correlations are low, they do indicate a statistically significant relationship between job satisfaction and authoritarianism. Because Question 12 (satisfaction with job at sea) was only one of the general satisfaction questions, the correlation between each satisfaction question and F-scale scores and F-scale clusters was run. The

questions were: 12 (job satisfaction), 13 (life satisfaction), 17 (shipboard life satisfaction), 20 (shipwork satisfaction), 21 (shipboard conditions), 22 (general satisfaction with shipmates), 23 (relations with superior officers), and 24 (relationships with subordinate officers). In addition, a Total Satisfaction score was obtained for all respondents by adding the value of all satisfaction questions for all subjects and this Total Satisfaction score was correlated with overall F-scale score and with the score on the F-scale clusters. The results are presented in Table 3. Of these correlations, the strongest are satisfaction with job at sea (Question 12, $r=.21$, $p<.01$), and satisfaction with life at sea (Question 17, $r=.8$, $p<.01$), and the Total Satisfaction score ($r=.17$, $p<.01$). The results were then separated by Deck officers and Engine officers (see Table 4) which by inspection showed stronger correlations between Engine officers and authoritarianism in terms of job satisfaction than between Deck officers and authoritarianism, contradicting hypothesis 5. While very few of the correlations for Deck officers are reliable, and most are low, the "Engine" are significant and seem to be contributing most weight to the overall correlations.

The supplementary hypothesis that there would be a positive relationship between job and general life satisfaction (Question 13) received support ($r=.34$, $p<.01$). For distribution of responses to the questions concerning satisfaction, see Tables 54, 55, 59 and 60-66 on pages 133-143. For distribution of Total Satisfaction scores, see Table 70, page 148.

TABLE 2

Levels of Job Satisfaction and Mean F-scale Score
(Most Satisfied to Least Satisfied)

	Most Satisfied 1	2	3	4	5	6	Least Satisfied 7
Mean F-scale score	3.19	3.08	3.00	3.17	2.89	2.84	2.68
SD	.55	.51	.53	.45	.48	.62	.59
N	205	378	165	95	106	58	45

$F = 10.65, df = 6, 1045. p < .01$

TABLE 3

SATISFACTION SCORES CORRELATED WITH F-SCALE SCORES AND F-SCALE CLUSTERS - DECK & ENGINE OFFICERS

	Over- all F	Cl 1 Conven- tional- ism	Cl 2 Author- itarian Sub- mission	Cl 3 Author- itarian Aggres- sion	Cl 4 Anti- Intra- cep- tion	Cl 5 Super- sti- tion & Stere- o- type	Cl 6 Power & Tough- ness	Cl 7 Destruc- & Cyni- cism	Cl 8 Pro- jec- tiv- ity	Cl 9 Sex	N
Q.12 Job Satisfac- tion	.21 **	.21 **	.18 **	.20 **	.14 **	.17 **	.15 **	.11 **	.06 **	.16 **	1,054
Q.13 Life Satisfac- tion	.08 **	.08 **	.06 *	.08 **	.04	.05	.05	.08 *	-.01	.07 *	1,097
Q.17 Ship- life Satis- faction	.18 **	.16 **	.18 **	.17 **	1.0 **	.14 **	.14 **	.06 *	.04	.13 **	1,088
Q.20 Ship- work Satis- faction	.12 **	.10 **	.11 **	.12 **	.07 *	.09 **	.12 **	.06 *	.08 **	.08 **	1,097
Q.21 Work- Conditions Satisfac- tion	.14 **	.16 **	.15 **	.12 **	.08 **	.09 **	.08 **	.04	.02	.10 **	1,090
Q.23 Super- riors Sat- isfaction	.06	.06	.10 **	.04	.01	.10 **	.05	-.01	.004	.03	909
Q.24 Sub- ordinates Satisfac- tion	.03	.01	.05	.002	.04	.06 *	.02	-.04	.001	.02	1,082
Total Satis- faction	.17 **	.15 **	.17 **	.15 **	.10 **	.15 **	.12 **	.07 *	.02	.13 **	1,108

* = .05

** = .01

TABLE 4

SATISFACTION SCORES CORRELATED WITH F-SCALE SCORES AND F-SCALE CLUSTERS - DECK/ENGINE OFFICERS											
Over- all F	CI 1 Conven- tiona- lism	CI 2 Authori- tarian Sub- mission	CI 3 Authori- tarian Aggres- sion	CI 4 Anti- Intra- ception	CI 5 Super- stition & Stereo- type	CI 6 Power & tough- ness	CI 7 Destruc- tiveness & Cyni- cism	CI 8 Pro- jec- tivity	CI 9 Sex	N	
Q. 12 Job Sa- tisfac- tion	.12/ .23 **	.12/ .23 **	.14/ *.19 **	.14/ *.22 **	.10/ .14 **	.13/ *.18 **	.09/ .18 **	.02/ .14 **	-.01/ .07 **	.15/ *.16 **	253/ 774
Q. 13 Life Satis- faction	.09/ .07 *	.12/ .06	.09/ .05	.07/ .09 *	.05/ .04	.06/ .04	.08/ .03	.14/ *.06	-.01/ -.02	.07/ .07 *	255/ 815
Q. 17 Shiplife Satis- faction	.04/ .21 **	.03/ .18 **	.05/ .20 **	.08/ .18 **	.01/ .11 **	.03/ .17 **	.04/ .17 **	-.02/ .08 **	-.07/ .08 **	.08/ .13 **	253/ 809
Q. 20 Shipwork Satis- faction	.08/ .13 **	.08/ .10 **	.07/ .12 **	.12/ .11 **	.06/ .06	.02/ .11 **	.04/ .14 **	.03/ .07 *	.03/ .09 *	.12/ .06	255/ 815
Q. 21 Work con- ditions Satisfaction	.02/ .17 **	.04/ .19 **	.02/ .18 **	.01/ .15 **	.03/ .09 **	.03/ .12 **	-.06/ .14 **	-.03/ .07 *	-.01/ .04	.08/ .11 **	253/ 810
Q. 22 People Satis- faction	-.003/ .08 *	-.11/ .08 *	.003/ .12 **	-.01/ .07 *	-.003/ .03	.04 .08 *	-.01 .04	-.09/ -.01	.02/ -.04	.06/ .08 *	255/ 803
Q. 23 Super- riors Satisfaction	.03/ .07	-.10/ .11 **	.04/ .12 **	-.04/ .06	-.01/ .01	.17/ *.09 *	.08/ .05	-.10/ .001	.03/ -.003	.04/ .03	214/ 672
Q. 24 Infer- riors Satisfaction	-.01/ .05	-.12/ *.05	.01/ .07	-.06/ .02	-.04/ .07	.10/ .06	.00/ .02	-.12/ -.01	.06/ -.01	.05/ .01	254/ 804
Total Satis- faction	.06/ .20 **	-.02/ .18 **	.08/ .19 **	.05/ .17 **	.01/ .11 **	.12/ .17 **	.05/ .15 **	-.06/ .11 **	.00/ .03 *	.12/ *.13 **	255/ 826

Numbers to left of slash refer to Deck officers
Numbers to right of slash refer to Engine officers

* = .05
** = .01

Hypothesis 2: Higher ranking officers will have higher F-scale scores than lower ranking officers.

The responses to Question 2 of the questionnaire ("In what position are you now sailing?") were correlated with the average F-scale score for each respondent and with the individual score on each cluster of the F-scale (see Table 5). In this table, the results are also separated by Deck officers and Engine officers. The correlation between rank of Deck officers and general authoritarianism is somewhat stronger than the general effects of rank and authoritarianism ($r=.21$, $p<.01$ for Deck officers, and $r=.12$, $p<.01$ overall). The correlation between rank of Engine officers and authoritarianism barely reaches significance at the .05 level and is a very weak relationship ($r=.09$). The F-scale scores associated with each rank are displayed in Table 7. A one way analysis of variance was performed on these data which was significant ($F=2.99$, $df=7, 933$; $p<.01$).

Comparisons between each rank and every other rank as a function of F-scale score were performed with t-tests and are displayed in Table 7. Significant differences were found between Master vs. Second Assistant Engineer and Third Mate, between First Assistant Engineer vs. Second Assistant Engineer and Third Mate and between Third Mate vs. Third Assistant Engineer.

The correlation between license and authoritarianism was also performed since it is possible that a significant number of officers with high authoritarianism may have a high license but not be sailing in their licensed capacity. If this is true, then a somewhat

stronger relationship might be found between license and authoritarianism than between rank and authoritarianism, as hypothesized. The results of Question 1 ("What is the highest license you have held?") in terms of F-scale score are presented in Table 8. An analysis of variance was performed on these data which was significant ($F = 4.83$, $df=7$, 1071 . $p < .01$).

Comparisons among license levels were performed with t-tests and are displayed in Table 8. Significant comparisons were found between Master vs. Second Assistant Engineer, Third Mate and Third Assistant Engineer, between Chief Engineer vs. Second Mate, Second Assistant Engineer, Third Mate and Third Assistant Engineer, between First Mate vs. Third Mate, between First Assistant Engineer vs. Third Mate and Third Assistant Engineer, and between Second Assistant Engineer vs. Third Mate.

The correlation of license (Question 1) to overall F-scale scores and the F-scale clusters are presented in Table 6. Note that the overall correlations are somewhat higher for license ($r = .17$, $p < .01$) than for rank ($r = .12$, $p < .01$) and that the correlations of officers holding deck licenses have a higher relationship to authoritarianism ($r = .22$, $p < .01$) than officers with engine licenses ($r = .16$, $p < .01$). Also, the correlation between engine license ($r = .16$) and authoritarianism is now significant beyond the .01 level of confidence.

Because of the above change in the strength of the correlations, a correlation was computed between rank and license which showed a very strong, but not perfect, relationship between the two. The

correlation between overall rank and overall license was .79 ($p < .01$), the correlation between Deck officers license and rank was .81 ($p < .01$), and the correlation between Engine officers license and rank was .78 ($p < .01$). Sixty-four percent of the officers are sailing at their license level. The relationship between license, rank and authoritarianism was examined in greater detail by constructing a contingency table between rank-license discrepancy and F-scale score. These data are presented in Table 9. A Chi-square was performed on these data and failed to reach significance, although there is a tendency for increasing authoritarianism with greater rank-license discrepancy.

TABLE 5

RANK CORRELATED WITH F-SCALE SCORES AND F-SCALE CLUSTERS - DECK VS. ENGINE OFFICERS

Over- all F	C1 1 Conven- tionalism	C1 2 Author- tarian Sub- mission	C1 3 Authori- tarian Aggres- sion	C1 4 Anti- Intra- ception	C1 5 Super- stition & Stereo- type	C1 6 Power & Tough- ness	C1 7 Destruc- tiveness & Cyni- cism	C1 8 Pro- jec- tiv- ity	C1 9 Sex	N	
Q. 2 Rank Overall	.12 **	.15 **	.13 **	.15 **	.07 **	.04	.09 **	.09 **	.03	.13 **	943
Deck Officers	.21 **	.27 **	.23 **	.25 **	.20 **	.13	.15 *	.09	.05	.18 **	241
Engine Officers	.09 *	.12 **	.09 *	.11 **	.03	.01	.07	.10 *	.02	.11 **	702

* = .05
** = .01

TABLE 6

LICENSE CORRELATED WITH F-SCALE SCORES AND F-SCALE CLUSTERS

	Over- all F	C1 1 Conven- tionalism	C1 2 Authori- tarian Sub- mission	C1 3 Authori- tarian Aggres- sion	C1 4 Anti- Intra- ception	C1 5 Super- stition & Stereo- type	C1 6 Power & Tough- ness	C1 7 Destruc- tiveness & Cyni- cism	C1 8 Pro- jec- tiv- ity	C1 9 Sex	N
Q1. License Overall	.17 **	.22 **	.16 **	.19 **	.15 **	.07 **	.10 **	.15 **	.08 **	.17 **	1,081
Deck Officers	.22 **	.30 **	.23 **	.24 **	.21 **	.10	.17 **	.12	.10	.20 **	255
Engine Officers	.16 **	.20 **	.14 **	.18 **	.14 **	.06	.09 *	.16 **	.08 *	.16 **	825

* = .05
** = .01

TABLE 7

RANK AND MEAN F-SCALE SCORE

<u>Rank</u>	<u>Mean F-scale Score</u>	<u>SD</u>	<u>N</u>
Master	3.16	.49	68
Chief Engineer	3.15	.49	171
1st Mate	3.14	.61	49
1st Asst. Engineer	3.13	.55	152
2nd Mate	3.01	.52	60
2nd Asst. Engineer	2.99	.50	147
3rd Mate	2.88	.59	63
3rd Asst. Engineer	3.06	.54	231

$$F = 2.99; df = 7,933; p < .01$$

t-TESTS BETWEEN F-SCALE SCORE AND RANK

	<u>Master</u>	<u>Chief Engin.</u>	<u>1st Mate</u>	<u>1st Asst. Engineer</u>	<u>2nd Mate</u>	<u>2nd Asst. Engineer</u>	<u>3rd Mate</u>	<u>3rd Asst. Engineer</u>
<u>Master</u>		.18	.14	.33	1.66	2.25*	2.97**	1.33
<u>Chief Engineer</u>			.02	.23	1.83	2.74**	3.54**	1.61
<u>1st Mate</u>				.12	1.24	1.72	2.33	.95
<u>1st Asst. Engineer</u>					1.48	2.28*	3.03**	1.25
<u>2nd Mate</u>						.21	1.33	.66
<u>2nd Asst. Engineer</u>							1.47	1.22
<u>3rd Mate</u>								2.35*
<u>3rd Asst. Engineer</u>								

* = .05
 ** = .01

TABLE 8

LICENSE AND MEAN F-SCALE SCORE

<u>Rank</u>	<u>Mean F-Scale Score</u>	<u>SD</u>	<u>N</u>
Master	3.12	.50	115
Chief Engineer	3.14	.51	350
1st Mate	3.03	.65	50
1st Asst. Engineer	3.07	.53	135
2nd Mate	2.96	.54	62
2nd Asst Engineer	2.97	.52	183
3rd Mate	2.75	.54	27
3rd Asst. Engineer	2.94	.54	157

$F = 4.83; df = 7,1071; p < .01$

t-TESTS BETWEEN F-SCALE SCORE AND HIGHEST LICENSE HELD

	<u>Master</u>	<u>Chief Engin.</u>	<u>1st Mate</u>	<u>1st Asst. Engineer</u>	<u>2nd Mate</u>	<u>2nd Asst. Engineer</u>	<u>3rd Mate</u>	<u>3rd Asst. Engineer</u>
<u>Master</u>		.34	.91	.69	1.95	2.50 *	3.43 **	2.77 **
<u>Chief Engineer</u>			1.29	1.22	2.48 *	3.63 **	3.78 **	3.92 **
<u>1st Mate</u>				.42	.65	.76	1.94 *	1.00
<u>1st Asst. Engineer</u>					1.37	1.78	2.89 **	2.10 *
<u>2nd Mate</u>						.08	1.70	.25
<u>2nd Asst. Engineer</u>							2.03 *	.45
<u>3rd Mate</u>								1.71
<u>3rd Asst. Engineer</u>								

* = .05
** = .01

TABLE 9

RANK-LICENSE DISCREPANCY* AND F-SCALE SCORE DISTRIBUTION

RANK-LICENSE DISCREPANCY						
F-Scale Score Distribution	0	1	2	3	Σ	%
1-1.99	13	3	1	1	18	2.0
2-2.99	239	128	20	9	396	44.5
3-3.99	258	106	25	11	400	45.1
4-5.00	45	20	3	6	74	7.85
Σ	555	257	49	27	888	99.45
%	62.5	28.9	5.5	3.0		99.90

* Discrepancy - A "0" discrepancy indicates that an officer is sailing in the position of his highest license held.
A "1" discrepancy indicates that he is sailing one rank below his highest license and so forth.

Hypothesis 3: Older officers will have a higher F-scale score than younger officers.

The responses to "What year were you born?" (Question 36) were tabulated and the mean F-scale scores associated with age are displayed in Table 10. An analysis of variance was performed on these scores which was significant ($F=20.62$, $df=10,1080$, $p < .01$). A correlation was then calculated between age and overall F-scale score ($r=.37$, $p < .01$) and between age and the F-scale clusters. The results are displayed in Table 11, line 1.

There is a positive correlation between age and F-scale scores ($r=.37$, $p < .01$), older officers generally score higher on the F-scale than younger officers. The resulting correlation of this study is especially noteworthy in comparison with the correlations obtained by Adorno et. al. The original study showed a low but significant correlation between age and F-scale score of .19 ($p < .05$).

Examination of the correlations between age and the F-scale clusters indicates that the cluster contributing most to the overall correlation to authoritarianism and age is "conventionalism" ($r=.36$, $p < .01$ and $r=.33$, $p < .01$, respectively).

TABLE 10

AGE AND MEAN F-SCALE SCORE

	Under 21	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	Over 65
Mean F-Score	3.48	2.73	2.71	2.85	2.96	3.10	3.04	3.18	3.19	3.44	3.33
SD	.30	.47	.40	.52	.44	.50	.51	.48	.58	.45	.63
N	3	78	161	59	35	84	213	206	148	81	23

$F = 20.62, df = 10, 1080, p < .01$

TABLE 11

AGE AND YEARS OF SAILING CORRELATED WITH F-SCALE SCORES AND F-SCALE CLUSTERS -
DECK VS. ENGINE OFFICERS

	Over- all F	C1 1 Conven- tionalism	C1 2 Authori- tarian Sub- mission	C1 3 Authori- tarian Aggres- sion	C1 4 Anti- Intra- ception	C1 5 Super- stition & Stereo- type	C1 6 Power & Tough- ness	C1 7 Destruc- tiveness & Cyni- cism	C1 8 Pro- jec- tivity	C1 9 Sex	N
Q. 36 Age Overall	.37 **	.38 **	.33 **	.36 **	.31 **	.21 **	.25 **	.16 **	.22 **	.33 **	1,096
Deck Officers	.38 **	.38 **	.34 **	.38 **	.32 **	.21 **	.31 **	.15 **	.24 **	.32 **	255
Engine Officers	.37 **	.38 **	.33 **	.36 **	.31 **	.21 **	.24 **	.17 **	.21 **	.32 **	814
Q. 5 Years of Sailing Overall	.38 **	.38 **	.33 **	.36 **	.30 **	.21 **	.27 **	.21 **	.23 **	.33 **	1,105
Deck Officers	.44 **	.42 **	.39 **	.44 **	.37 **	.24 **	.38 **	.14 **	.28 **	.38 **	255
Engine Officers	.37 **	.37 **	.32 **	.34 **	.28 **	.20 **	.23 **	.23 **	.21 **	.32 **	825

* = .05
** = .01

Hypothesis 4: There will be a positive correlation between years of sailing and authoritarianism.

A correlation coefficient was computed between years of sailing ("How many years have you been sailing?", Question 5) and overall F-scale score and the F-scale clusters. These data for all officers combined as well as for Deck/Engine separately, are displayed in Table 11. While the size of the correlation between years of sailing and overall F-scale score ($r=.38$, $p<.01$) is virtually the same as between age and overall F-scale score ($r=.37$, $p<.01$), the three highest correlations between years of sailing and F-scale clusters are "conventionalism" ($r=.38$), "authoritarian aggression" ($r=.36$), and "power and toughness" ($r=.27$) ($p<.01$ for all three).

The relationship of years of sailing and Mean F-scale score are presented in Table 12. An analysis of variance was also performed on these data which was significant ($F=25.18$, $df=7,1095$, $p<.01$).

Comparisons of adjacent groups were performed with t-tests (see Table 12) which indicate that the most significant differences in F-scale score as a function of years of sailing were 3-5 years vs. 6-10 years, 6-10 years vs. 11-15 years, and 26-30 years vs. over 30 years.

The relationships of F-scale score, years of sailing and age are investigated through the use of partial correlations in Table 15, page 79.

TABLE 12

YEARS OF SAILING AND MEAN F-SCALE SCORE

	0-2	3-5	6-10	11-15	16-20	21-25	26-30	Over 31
Mean F-Scale Score	2.72	2.70	2.86	3.12	3.05	3.13	3.15	3.26
SD	.44	.41	.53	.51	.53	.49	.51	.53
N	85	149	94	84	91	120	272	208

$F = 25.18, df = 7, 1095. p < .01$

t- Tests between F-scale score and Years of Sailing

0 - 2 vs. 3 - 5	<u>t Value</u>		11 - 15 vs. 16 - 20	<u>t Value</u>	
3 - 5 vs. 6 - 10	1.39	NS	16 - 20 vs. 21 - 25	.90	NS
6 - 10 vs. 11 - 15	2.62	**	21 - 25 vs. 26 - 30	1.12	NS
	3.24	**	26 - 30 vs. over 31	.51	NS
				2.26	*

* = .05
** = .01

Hypothesis 5: The correlational relationships between F-scale score and job satisfaction, life satisfaction, rank, license, age, and years of sailing will be stronger for Deck officers than for Engine officers.

The test of Hypothesis 5 is analyzed in the context of the questions on the questionnaire dealing with job satisfaction and life satisfaction (see Table 4), rank (see Table 5), license (see Table 6), and years of sailing (see Table 10). The correlations for rank, license and years of sailing show a stronger relationship between Deck officers and authoritarianism than between Engine officers and authoritarianism. Deck officers' correlations were: Rank ($r = .21, p < .01$), license ($r = .22, p < .01$), years of sailing ($r = .44, p < .01$). Engine officers' correlations were: rank ($r = .09, p < .05$), license ($r = .16, p < .01$), years of sailing ($r = .37, p < .01$). However, the correlation between satisfaction and authoritarianism is stronger for Engine officers ($r = .20, p < .01$) than for Deck officers ($r = < .06$), contrary to the hypothesized relationship. A test of significance between the correlations for Deck and Engine officers was performed with a Z' transformation. The only significant difference between Deck and Engine appeared on the relationship between job satisfaction and F-scale score ($Z' = 2.03, p < .05$), while the differences between Deck and Engine on rank approached significance at the .05 level ($Z' = 1.72$). Furthermore, there were no apparent differences in the correlations between age and authoritarianism as a function of department affiliation aboard ship (see Table 10). The correlation between Deck officers and age was $r = .38, p < .01$ and between Engine officers and age was $r = .37, p < .01$.

Thus the present hypothesis can neither be clearly accepted nor rejected.

Hypothesis 6: There will be an inverse relationship between education and F-scale score.

This hypothesis was investigated by correlating responses to Question 7 of the questionnaire ("What is the highest level of education you have completed?") with the overall F-scale score and the F-scale clusters. The relation between years of education and overall F-scale score was inverse, as predicted ($\underline{r} = -.41$, $\underline{p} < .01$). Inspection of the correlation coefficients between years of education and the F-scale clusters reveals that all the correlations are inverse and all significant beyond the .01 level of confidence (see Table 13). The three strongest inverse correlations are "authoritarian aggression" ($\underline{r} = -.40$), "sex" ($\underline{r} = -.37$) and "power and toughness" ($\underline{r} = -.34$) ($\underline{p} < .01$ on all three).

Mean F-scale scores for years of formal education are presented in Table 14 and show a highly significant effect of education on F-scale scores ($\underline{F} = 28.12$, $df = 8, 1079$, $\underline{p} < .01$).

TABLE 13

AGE, EDUCATION, YEARS OF SAILING, YEARS LICENSED CORRELATED WITH F-SCALE SCORES AND
F-SCALE CLUSTERS

	Over- all F	C1 1 Conven- tionalism	C1 2 Authori- tarian Sub- mission	C1 3 Authori- tarian Aggres- sion	C1 4 Anti- Intra- ception	C1 5 Super- stition & Stereo- type	C1 6 Power & Tough- ness	C1 7 Destruc- tiveness & Cyni- cism	C1 8 Pro- jec- tivity	C1 9 Sex	N
Q. 36 Age	.37 **	.38 **	.33 **	.36 **	.31 **	.21 **	.25 **	.16 **	.22 **	.33 **	1,096
Q. 7 Education	-.41 **	-.32 **	-.33 **	-.40 **	-.27 **	-.23 **	-.34 **	-.18 **	-.25 **	-.37 **	1,100
Q. 5 Years of Sailing	.38 **	.38 **	.38 **	.36 **	.30 **	.21 **	.27 **	.21 **	.23 **	.33 **	1,105
Q. 4 Years Licensed	.29	.33	.26	.30	.26	.14	.19	.17	.17	.28	1,096

* = .05
** = .01

TABLE 14

EDUCATION AND MEAN F-SCALE SCORE

	Some Elemen- tary School	Elemen- tary School Certif- icate	Six to 8 Years of School	Some High School	High School Di- ploma	Some Col- lege	Two Years Col- lege	Bache- lor's De- gree	Master's Degree	Ph.D. or other Doc- torate
Mean F-Score	3.56	3.10	3.29	3.28	3.15	3.05	2.92	2.72	2.53	3.31
SD	.28	.74	.52	.52	.47	.49	.55	.45	.44	.00
N	8	10	44	212	321	130	79	269	14	1

$F = 28.12, df = 8, 1079. p < .01$

Relationships between Intercorrelated Variables

Intercorrelations of F-scale scores, age, rank, years of sailing, job satisfaction and education are presented in Table 15. These major variables all intercorrelate significantly with each other. The three variables that intercorrelated highest with F-scale score were education ($r=.41$, $p<.01$), years of sailing ($r=.38$, $p<.01$) and age ($r=.38$, $p<.01$). The highest intercorrelation found was between age and years of sailing ($r=.78$, $p<.01$).

Partial correlations were then computed across relevant pairings of these variables. The results of these analyses are presented in Table 15c. Inspection of this table indicates that when rank and job satisfaction are partialled out from the other four variables, there is no notable reduction in the original correlations. The greatest reduction between F-scale score and job satisfaction ($r=.21$, $p .01$) is obtained when age is partialled out ($r=.13$) and when years of sailing is partialled out ($r=.13$). The partialling out of education also seems to have an effect upon authoritarianism and job satisfaction ($r=.15$). The effects of partialling out age, rank, years of sailing and education from the correlations between job satisfaction and these same four variables may be seen across the job satisfaction line on Table 15c. Once again, age and years of sailing seem to have the largest effects of reducing the intercorrelations of job satisfaction to the other four variables.

Second order correlations were computed to assess the effect of removing two variables at once from the intercorrelation between F-scale score and job satisfaction. See page 85. These figures are presented in Table 15d. When age and rank ($r=.35$, $p<.01$) are partialled out from

authoritarianism and job satisfaction, virtually no correlation remains ($r=.08$), which is not true when rank and years of sailing ($r=.47$, $p<.01$) or when years of sailing and education ($r=.12$, $p=.01$) are partialled out ($r=.17$ and $.12$, respectively). Thus, age and rank are important contributors to the correlation between F-scale score and job satisfaction.

On Table 15c, education has the effect of reducing the correlations among pairs of the other five variables, especially of F-scale score and age ($r=.37$, $p<.01$, with education partialled out the remaining correlation is $.19$). This suggests that education is a contributing factor to the correlations between authoritarianism and age and authoritarianism and years of sailing. As previously noted, younger officers, who might also be officers with less years of sailing (the intercorrelation between age and years of sailing is $.78$, $p<.01$), are also the officers with more formal education, which might account for the above reduction. However, it should be noted that education is inversely correlated with the other variables and the statistical validity of partialling out an inverse correlation has been questioned (McNemar, 1955, p. 166).

It was hoped that the partialling out of age and years of sailing might help to clarify the overall hypothesis regarding some of the effects of institution on attitude. Inspection of Table 15c shows that when age is partialled out from F-scale score and years of sailing ($r=.38$, $p<.01$) the resulting correlation is $.13$. When years of sailing is partialled out from F-scale score and age ($r=.37$, $p<.01$), the remaining correlation is $.11$. The remaining correlation between F-scale score and rank ($r=.12$, $p<.01$) almost disappears when age is removed

($r=.01$) than when years of sailing is removed ($r=.07$). The correlation between authoritarianism and job satisfaction ($r=.21$, $p<.01$) is reduced by the same amount when age or years of sailing is partialled out ($r=.13$ for both). When years of sailing is partialled out from F-scale score and education ($r=-.41$, $p<.01$) the remaining correlation is slightly smaller ($r=-.25$) than when age is partialled out ($r=-.28$). None of these differences between the reductions obtained from partialling out age and years of sailing are significant. It should be noted that these two variables are very highly intercorrelated with each other ($r=.78$, $p<.01$) and have virtually the same correlation with F-scale score (age, $r=.37$, $p<.01$), and years of sailing, $r=.38$, $p<.01$).

Since age and years of sailing seem to play important roles in the intercorrelations, several second order partial correlations were performed to try to ascertain the relative importance of these two variables (see Table 15d). An analysis of the effect of years of sailing on the correlations to authoritarianism was conducted by removing the effects of rank and age ($r=.35$, $p<.01$) from the correlation between F-scale score and years of sailing ($r=.38$, $p<.01$). This resulted in a larger remaining correlation ($r=.16$) than was obtained when years of sailing and rank ($r=.47$, $p<.01$) were partialled out from F-scale score and age ($r=.37$, $p<.01$) leaving a correlation of .11. When education and job satisfaction ($r=-.19$, $p<.01$) were partialled out from the correlation between F-scale score and age ($r=.37$, $p<.01$) the remaining correlation was .19, and the remaining correlation when these same variables were partialled out from F-scale

score and years of sailing ($r=.38$, $p<.01$) was .33. Further investigation was conducted by partialling out the effects of years of sailing and job satisfaction ($r=.25$, $p<.01$) from the correlation between age and rank ($r=.35$, $p<.01$), which left virtually no remaining correlation. When age and job satisfaction ($r=.23$, $p<.01$) were partialled out from years of sailing and rank ($r=.47$, $p<.01$) the remaining correlation was .28. While these correlations are not dramatic enough to support the contention that years of sailing is the primary variable contributing to the correlations to authoritarianism obtained in this study, neither can they support a claim that it is merely age which seems to encourage authoritarian attitudes over time. Inspection of both Tables 15c and 15d indicates that both years of sailing and age are important variables contributing to the correlations to authoritarianism.

Table 16 presents the intercorrelations of the F-scale Clusters as defined by Adorno, et. al. All of these intercorrelations are significant beyond the .01 level of confidence. While it is beyond the scope and purposes of this study to factor analyze the entire scale, it should be noted that the three clusters that correlate strongest with the overall F-scale score are Authoritarian Aggression ($r=.88$), Power and Toughness ($r=.85$) and Authoritarian Submission ($r=.83$).

These intercorrelations must not be construed as factors in the statistical sense, but rather as theoretical subheadings of dimensions of attitude. As Adorno et. al. pointed out, the scale as a whole attempts to capture "a more or less central trend in the person which,

in accordance with some dynamic process, expressed itself on the surface in ethnocentrism as well as in diverse psychologically related opinions and attitudes. . . . It will be noted . . . that the same item sometimes appears under more than one heading. This follows from our approach to scale construction. In order efficiently to cover a wide area it was necessary to formulate items that were maximally rich, that is, pertinent to as much as possible of the underlying theory - hence a single item was sometimes used to represent two, and sometimes, more, different ideas." (Adorno, et. al, pp. 228, 229). Since the same items appear in several clusters, it is not surprising that significant correlations between the clusters and between each cluster and overall F-scale score are found. As the original authors point out, these clusters are useful as "convenient ways of conceiving and grouping items." (p. 62). Research has indicated that while the clusters are not factorially pure, the scale as a unit has usefulness in measuring a Weltanschauung. Christie (in Christie and Jahoda, 1954) states ". . . it may be true that no rational scales to measure irrationality can be statistically purified to the desired extent. Any such attempt at isolation of "pure" dimensions faces serious problems." (p. 139). The relative weighting of certain clusters may vary from population to population and are presented here as a further analysis of authoritarianism as it exists in the Maritime population measured in the present study.

TABLE 15

INTERCORRELATIONS OF F-SCALE SCORES, AGE, RANK, YEARS OF SAILING, JOB SATISFACTION AND
EDUCATION

	<u>F-scale</u> <u>score</u>	<u>Age</u>	<u>Rank</u>	<u>Years of</u> <u>Sailing</u>	<u>Job Satis-</u> <u>faction</u>	<u>Education</u>
F-scale score		.37 **	.12 **	.38 **	.21 **	-.41 **
Age			.35 **	.78 **	.23 **	-.51 **
Rank				.47 **	.21 **	-.12 **
Years of Sailing					.25 **	-.59 **
Job Satis- faction						-.19 **

** = $p < .01$

TABLE 15b

INTERCORRELATIONS OF F-SCALE SCORES, AGE
AND YEARS OF SAILING FOR DECK/ENGINE OFFICERS

	F-scale score	Age	Years of Sailing
F-scale score			
Age	.38 **/ .37 **		
Years of sailing	.44 **/ .36 **	.81 **/ .81 **	

** = $p < .01$

TABLE 15c

PARTIAL CORRELATIONS OF F-SCALE SCORE, AGE, RANK, YEARS OF SAILING,
JOB SATISFACTION AND EDUCATION

Code: F = F-scale score
A = Age
R = Rank
Y = Years of sailing
J = Job satisfaction
E = Education

r_{FA}	.37								
-R	.35								
-Y	.11								
-J	.35								
-E	.21								
r_{FR}	.12	r_{AR}	.35						
-A	-.01	-Y	-.06						
-Y	.07	-J	.32						
-J	.08	-E	.34						
-E	.08								
r_{FY}	.38	r_{AY}	.78	r_{RY}	.47				
-A	.13	-R	.78	-A	.34				
-R	.37	-J	.77	-J	.41				
-J	.35	-E	.69	-E	.38				
-E	.19								
r_{FJ}	.21	r_{AJ}	.23	r_{RJ}	.21	r_{YJ}	.25		
-A	.13	-R	.17	-A	.14	-A	.11		
-R	.19	-Y	.05	-Y	.11	-R	.18		
-Y	.13	-E	.15	-E	.20	-E	.18		
-E	.15								
r_{FE}	-.41	r_{AE}	-.51	r_{RE}	-.12	r_{YE}	-.59	r_{JE}	-.19
-A	-.28	-R	-.51	-A	.07	-A	-.35	-A	-.08
-R	-.40	-Y	.10	-Y	.22	-R	-.60	-R	-.16
-Y	-.25	-J	-.49	-J	-.08	-J	-.57	-Y	-.05
-J	-.39								

TABLE 15 d

SECOND LEVEL CORRELATIONS

<u>Initial Correlations</u>	<u>r</u>	<u>Variables Partialled Out</u>	<u>Remaining r</u>
F-scale score and Age	.37	Years of Sailing and Rank	.11
F-scale score and Years of Sailing	.38	Age and Rank	.16
F-scale score and Age	.37	Job Satisfaction and Education	.19
F-scale score and Years of Sailing	.38	Job Satisfaction and Education	.33
Age and Rank	.35	Years of Sailing and Job Satisfaction	.003
Years of Sailing and Rank	.47	Age and Job Satisfaction	.28
F-scale score and Rank	.12	Age and Years of Sailing	.07
F-scale score and Rank	.12	Job Satisfaction and Education	.05
Age and Rank	.35	Job Satisfaction and Education	.32
F-scale score and Job Satisfaction	.21	Age and Rank	.08
F-scale score and Job Satisfaction	.21	Rank and Years of Sailing	.17
F-scale score and Job Satisfaction	.21	Years of Sailing and Education	.12

TABLE 16

INTERCORRELATIONS OF F-SCALE CLUSTERS WITH
EACH OTHER AND WITH OVERALL F-SCALE SCORE. *

Cl 1 Conven- tionalism	Cl 2 Authori- tarian Sub- mission	Cl 3 Authori- tarian Aggres- sion	Cl 4 Anti- Intra- ception	Cl 5 Super- stition & Stereo- type	Cl 6 Power & Tough- ness	Cl 7 Destruc- tiveness & Cyni- cism	Cl 8 Pro- jec- tiv- ity	Cl 9 Sex	Over- all F
Cl 1 Conven- tionalism	.62	.76	.72	.32	.53	.39	.34	.52	.73
Cl 2 Authori- tarian Sub- mission		.67	.49	.62	.69	.37	.39	.52	.83
Cl 3 Authori- tarian Aggression			.61	.44	.74	.42	.45	.80	.88
Cl 4 Anti- Intra- ception				.34	.47	.37	.48	.49	.69
Cl 5 Super- stition & Stereo- type					.53	.27	.54	.40	.69
Cl 6 Power & toughness						.44	.59	.59	.85
Cl 7 Destruc- tiveness & Cynicism							.36	.39	.56
Cl 8 Project- ivity								.54	.67
Cl 9 Sex									.76
Overall F									

* All intercorrelations are significant beyond the .01 level of confidence.

Results - Part C - General Summary of responses
to the F- scale and Comparative Mean F- scale Scores from Selected
Research

In order to construct a summary profile of authoritarian attitudes for Merchant Marine officers who responded to the questionnaire, overall F-scale score was computed for all respondents on each question of the F-scale. A tally was then made of the number and percentage of respondents on each level of the scale on each question. These were then arranged by clusters (Table 17) as defined by Adorno, et. al. (pp. 255-257). The data was further summarized by tabulating the number of respondents that "agreed" (scored an item 4 or 5), or "disagreed" (scored an item 1 or 2) or "neither agreed nor disagreed" (scored an item 3). Items which were "agreed" to or "disagreed" to by 50% or more of the respondents were ranked according to the magnitude of the percentage of respondents. These results are displayed in Tables 18 and 19. Items which were scored "neither agree nor disagree" by 25% or more of the respondents were also ranked according to the magnitude of the percentage of respondents (see Table 20).

Mean F-scale scores were computed for each cluster and these results are summarized in Table 21 in a frequency tabulation of number and percentage of respondents in each category of the Likert scale. While the differences between the mean F-scale scores are not large, they do suggest certain trends toward conventional values, cynicism,

an orientation toward power and toughness, and authoritarian submission. Also, noteworthy is the apparent rejection of superstition and stereotypes. The results of the present study are compared with the original Adorno et. al. study and findings of other selected studies in Table 22, page 99.

The purpose of Table 22 is to permit direct comparisons of F-scale scores for different types of populations. While it should be noted that the mean score derived from the present study is not the highest, it is certainly above the median. This table representing the original Adorno et. al. study and recent available literature suggests the need for more studies to be done for comparative purposes.

TABLE 17

FREQUENCY OF RESPONSES TO EVERY ITEM ON THE F-SCALE CLUSTERS

Cluster 1: Conventionalism

Q. 1 - Obedience and respect for authority are the most important virtues children should learn.

	1	2	3	4	5	
N	33	132	141	441	361	M=3.87
%	2.98	11.91	12.73	39.80	32.58	Md.=4 sd.=1.09

Q. 2 - A person who has bad manners, habits and breeding can hardly expect to get along with decent people.

	1	2	3	4	5	
N	34	144	174	436	320	M=3.78
%	3.07	13.00	15.70	39.35	28.88	Md.=4.00 sd.=1.093

Q. 3 - If people would talk less and work more, everybody would be better off.

	1	2	3	4	5	
N	48	181	301	393	185	M=3.439
%	4.33	16.34	27.17	35.47	16.70	Md.=4.000 sd.=1.081

Q. 4 - The businessman and the manufacturer are much more important to society than the artist and the professor.

	1	2	3	4	5	
N	208	444	285	120	51	M=2.424
%	18.77	40.07	25.72	10.83	4.60	Md.=2.000 sd.=1.055

"1" equals strongly disagrees with the statement
and
"5" equals strongly agrees with the statement.

Cluster 2: Authoritarian Submission

Q. 1 - Obedience and respect for authority are the most important virtues children should learn.

	1	2	3	4	5	
N	33	132	141	441	361	M=3.87
%	2.98	11.91	12.73	39.80	32.58	Md.=4 sd.=1.09

Q. 5 - Science has its place but there are many important things that can never possibly be understood by the human mind.

	1	2	3	4	5	
N	139	327	192	341	109	M=2.958
%	12.55	29.51	17.33	30.78	9.84	Md.=3.000 sd.=1.224

Q. 6 - Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down.

	1	2	3	4	5	
N	42	178	215	527	146	M=3.503
%	3.79	16.06	19.40	47.56	13.18	Md.=4.00 sd.=1.031

Q. 7 - What this country needs most more than laws and political programs is a few courageous, tireless, devoted leaders in whom the people can put their faith.

	1	2	3	4	5	
N	76	179	212	322	319	M=3.568
%	6.86	16.16	19.13	29.06	28.79	Md.=4.000 sd.=1.248

Q. 8 - No sane, normal, decent person could ever think of hurting a close friend or relative.

	1	2	3	4	5	
N	40	218	190	390	270	M=3.570
%	3.61	19.68	17.15	35.20	24.37	Md.=4.00 sd.=1.159

"1" equals strongly disagrees with the statement
and
"5" equals strongly agrees with the statement.

Q. 9 - Nobody ever learned anything really important
except through suffering.

	1	2	3	4	5	
N	379	479	165	59	25	M=1.981
%	34.24	43.27	14.91	5.33	2.26	Md.=2.00 sd.=0.953

Q.17 - Every person should have complete faith in
some supernatural power whose decisions he
obeys without question.

	1	2	3	4	5	
N	229	364	289	140	86	M=2.540
%	20.67	32.85	26.08	12.64	7.76	Md.=2.000 sd.=1.175

"1" equals strongly disagrees with the statement
and
"5" equals strongly agrees with the statement.

Cluster 3: Authoritarian Aggression

Q. 2 - A person who has bad manners, habits, and breeding can hardly expect to get along with decent people.

	1	2	3	4	5	
N	34	144	174	436	320	M= 3.780
%	3.07	13.00	15.70	39.35	28.88	Md.=4.000 sd.=1.093

Q. 3 - If people would talk less and work more, everybody would be better off.

	1	2	3	4	5	
N	48	181	301	393	185	M= 3.439
%	4.33	16.34	27.17	35.47	16.70	Md.=4.000 sd.=1.081

Q.10 - What the youth needs most is strict discipline, rugged determination and the will to work and fight for family and country.

	1	2	3	4	5	
N	70	212	274	336	215	M= 3.374
%	6.32	19.15	24.75	30.35	19.42	Md.=3.000 sd.=1.1777

Q.11- An insult to our honor should always be punished.

	1	2	3	4	5	
N	113	412	318	178	87	M= 2.742
%	10.20	37.18	28.70	16.06	7.85	Md.=3.000 sd.=1.090

Q.12 - Sex crimes, such as rape and attacks on children deserve more than mere imprisonment; such criminals ought to be publicly whipped, or worse.

	1	2	3	4	5	
N	109	256	174	235	334	M= 3.387
%	9.84	23.10	15.70	21.21	30.14	Md.=4.00 sd.=1.376

"1" equals strongly disagrees with the statement
and
"5" equals strongly agrees with the statement.

Q.13 - There is hardly anything lower than a person who does not feel a great love, gratitude and respect for his parents.

	1	2	3	4	5	
N	80	379	307	207	135	M=2.944
%	7.22	34.21	27.71	18.68	12.18	Md.=3.000 sd.=1.142

Q.14 - Most of our social problems would be solved if we could somehow get rid of the immoral, crooked and feeble-minded people.

	1	2	3	4	5	
N	172	424	257	167	88	M=2.616
%	15.52	38.27	23.19	15.07	7.94	Md.=2.00 sd.=1.152

Q.15 - Homosexuals are hardly better than criminals and ought to be severely punished.

	1	2	3	4	5	
N	185	511	309	58	45	M=2.338
%	16.70	46.12	27.89	5.23	4.06	Md.=2.000 sd.=0.952

"1" equals strongly disagrees with the statement
and
"5" equals strongly agrees with the statement.

Cluster 4: Anti-Intraception

Q. 3 - If people would talk less and work more, everybody would be better off.

	1	2	3	4	5	
N	48	181	301	393	185	M=3.493
%	4.33	16.34	27.17	35.47	16.70	Md.=4.00 sd.=1.081

Q. 4 - The businessman and the manufacturer are much more important to society than the artist and the professor.

	1	2	3	4	5	
N	208	444	285	120	51	M=2.424
%	18.77	40.07	25.72	10.83	4.60	Md.=2.000 sd.=1.055

Q.16 - When a person has a problem or a worry, it is best for him not to think about it but to keep busy with more cheerful things.

	1	2	3	4	5	
N	135	446	191	250	86	M=2.735
%	12.18	40.25	17.24	22.56	7.76	Md.=2.000 sd.=1.165

Q.17 - Every person should have complete faith in some supernatural power whose decisions he obeys without question.

	1	2	3	4	5	
N	229	364	289	140	86	M=2.540
%	20.67	32.85	26.08	12.64	7.76	Md.=2.000 sd.=1.175

"1" equals strongly disagrees with the statement
and

"5" equals strongly agrees with the statement.

Cluster 5: Superstition and Stereotypy

Q. 5 - Science has its place but there are many important things that can never possibly be understood by the human mind.

	1	2	3	4	5	
N	139	327	192	341	109	M=2.958
%	12.55	29.51	17.33	30.78	7.84	Md.=3 sd.=1.224

Q.17 - Every person should have complete faith in some supernatural power whose decisions he obeys without question.

	1	2	3	4	5	
N	229	364	289	140	86	M=2.540
%	20.67	32.85	26.08	12.64	7.76	Md.=2 sd.=1.175

Q.18 - Some people are born with an urge to jump from high places.

	1	2	3	4	5	
N	96	258	458	257	39	M=2.896
%	8.66	23.29	41.34	23.19	3.52	Md.=3 sd.=0.971

Q.19 - People can be divided into two distinct classes; the weak and the strong.

	1	2	3	4	5	
N	157	420	277	210	43	M=2.604
%	14.18	37.94	25.02	18.97	3.88	Md.=2 sd.=1.066

Q.20 - Some day it will probably be shown that astrology can explain a lot of things.

	1	2	3	4	5	
N	184	293	412	187	32	M=2.630
%	16.61	26.44	37.18	16.88	2.89	Md.=3 sd.=1.038

Q.21 - Wars and social troubles may someday be ended by an earthquake or flood that will destroy the whole world.

	1	2	3	4	5	
N	241	315	416	98	38	M=2.438
%	21.75	28.43	37.55	8.84	3.43	Md.=2 sd.=1.032

"1" equals strongly disagrees with the statement
and
"5" equals strongly agrees with the statement.

Cluster 6: Power and Toughness

Q. 7 - What this country needs most, more than laws and political programs, is a few courageous, tireless, devoted leaders in whom the people can put their faith.

	1	2	3	4	5	
N	76	179	212	322	319	M=3.568
%	6.86	16.16	19.13	29.06	28.79	Md.=4 sd.=1.248

Q.10 - What the youth needs most is strict disciplines, rugged determination and the will to work and fight for family and country.

	1	2	3	4	5	
N	70	212	274	336	215	M=3.374
%	6.32	19.15	24.75	30.35	19.42	Md.=3 sd.=1.177

Q.11 - An insult to our honor should always be punished.

	1	2	3	4	5	
N	113	412	318	178	87	M=2.742
%	10.20	37.18	28.70	16.06	7.85	Md.=3 sd.=1.090

Q.19 - People can be divided into two distinct classes; the weak and the strong.

	1	2	3	4	5	
N	157	420	277	210	43	M=2.604
%	14.18	37.94	25.02	18.97	3.88	Md.=2 sd.=1.066

Q.22 - No weakness or difficulty can hold us back if we have enough will power.

	1	2	3	4	5	
N	29	185	170	504	220	M=3.633
%	2.62	16.70	15.34	45.49	19.86	Md.=4 sd.=1.059

Q.23 - Most people don't realize how much our lives are controlled by plots hatched in secret places.

	1	2	3	4	5	
N	139	262	323	298	86	M=2.937
%	12.55	23.65	29.15	26.90	7.76	Md.=3 sd.=1.147

"1" equals strongly disagrees with the statement
and

"5" equals strongly agrees with the statement.

Cluster 6: Power and Toughness

Q. 7 - What this country needs most, more than laws and political programs, is a few courageous, tireless, devoted leaders in whom the people can put their faith.

	1	2	3	4	5	
N	76	179	212	322	319	M = 3.568
%	6.86	16.16	19.13	29.06	28.79	Md. = 4 sd. = 1.248

Q.10 - What the youth needs most is strict disciplines, rugged determination and the will to work and fight for family and country.

	1	2	3	4	5	
N	70	212	274	336	215	M = 3.568
%	6.32	19.15	24.75	30.35	19.42	Md. = 3 sd. = 1.177

Q.11 - An insult to our honor should always be punished.

	1	2	3	4	5	
N	113	412	318	178	87	M = 2.742
%	10.20	37.18	28.70	16.06	7.85	Md. = 3 sd. = 1.090

Q.19 - People can be divided into two distinct classes; the weak and the strong.

	1	2	3	4	5	
N	157	420	277	210	43	M = 2.604
%	14.18	37.94	25.02	18.97	3.88	Md. = 2 sd. = 1.066

Q.22 - No weakness or difficulty can hold us back if we have enough will power.

	1	2	3	4	5	
N	29	185	170	504	220	M = 3.633
%	2.62	16.60	15.34	45.49	19.86	Md. = 4 sd. = 1.059

Q.23 - Most people don't realize how much our lives are controlled by plots hatched in secret places.

	1	2	3	4	5	
N	139	262	323	298	86	M = 2.937
%	12.55	23.65	29.15	26.90	7.76	Md. = 3 sd. = 1.147

"1" equals strongly disagrees with the statement
and
"5" equals strongly agrees with the statement.

Cluster 7 - Destructiveness and Cynicism

Q.24 - Human nature being what it is, there will always be war and conflict.

	1	2	3	4	5	
N	30	105	154	601	218	M=3.787
%	2.71	9.48	13.90	54.24	19.68	Md.=4 sd.=0.956

Q.25 - Familiarity breeds contempt.

	1	2	3	4	5	
N	66	272	352	308	110	M=3.112
%	5.96	24.55	31.77	27.80	9.93	Md.=3 sd.=1.071

"1" equals strongly disagrees with the statement
and
"5" equals strongly agrees with the statement.

Cluster 8: Projectivity

Q.21 - Wars and social troubles may someday be ended by an earthquake or flood that will destroy the whole world.

	1	2	3	4	5	
N	241	315	416	98	38	M=2.438
%	21.75	28.43	37.55	8.84	3.43	Md.=2 sd.=1.032

Q.23 - Most people don't realize how much our lives are controlled by plots hatched in secret places.

	1	2	3	4	5	
N	139	262	323	298	86	M=2.937
%	12.55	23.65	29.15	26.90	7.76	Md.=3 sd.=1.147

Q.26 - Nowadays when so many different kinds of people move around and mix together so much, a person has to protect himself especially carefully against catching an infection or disease from them.

	1	2	3	4	5	
N	125	457	311	181	33	M=2.584
%	11.29	41.28	28.09	16.35	2.98	Md.=2 sd.=0.988

Q.27 - Nowadays more and more people are prying into matters that should remain personal and private.

	1	2	3	4	5	
N	20	123	255	452	258	M=3.727
%	1.81	11.10	23.01	40.79	23.29	Md.=4 sd.=0.998

Q.28 - The wild sex life of the old Greeks and Romans was tame compared to some of the goings-on in this country, even in places where people might least expect it.

	1	2	3	4	5	
N	53	230	467	234	123	M=3.130
%	4.79	20.78	42.19	21.14	11.11	Md.=3 sd.=1.019

"1" equals strongly disagrees with the statement
and
"5" equals strongly agrees with the statement.

Cluster 9: Sex

Q.12 - Sex crimes, such as rape and attacks on children deserve more than mere imprisonment; such criminals ought to be publicly whipped, or worse.

	1	2	3	4	5	
N	109	256	174	235	334	M=3.387
%	9.84	23.10	15.70	21.21	30.14	Md.=4 sd.=1.376

Q.15 - Homosexuals are hardly better than criminals and ought to be severely punished.

	1	2	3	4	5	
N	185	511	309	58	45	M=2.338
%	16.70	46.12	27.89	5.23	4.06	Md.=2 sd.=0.952

Q.28 - The wild sex life of the old Greeks and Romans was tame compared to some of the goings-on in this country, even in places where people might least expect it.

	1	2	3	4	5	
N	53	230	467	234	123	M=3.130
%	4.79	20.78	42.19	21.14	11.11	Md.=3 sd.=1.019

"1" equals strongly disagrees with the statement
and
"5" equals strongly agrees with the statement.

TABLE 18

QUESTIONS ON THE F-SCALE TO WHICH 50% OR MORE RESPONDENTS AGREED
("agree" or "strongly agree")

24. Human nature being what it is, there will always be war and conflict. (73.92%)
1. Obedience and respect for authority are the most important virtues children should learn. (72.38%)
2. A person who has bad manners, habits, and breeding can hardly expect to get along with decent people. (68.23%)
22. No weakness or difficulty can hold us back if we have enough will power. (65.35%)
27. Nowadays more and more people are prying into matters that should remain personal and private. (64.08%)
6. Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down. (60.74%)
8. No sane, normal, decent person could ever think of hurting a close friend or relative. (59.57%)
7. What this country needs most, more than laws and political programs, is a few courageous, tireless, devoted leaders in whom the people can put their faith. (57.85%)
10. What the youth needs most is strict discipline, rugged determination and the will to work and fight for family and country. (55.77%)
3. If people would talk less and work more, everybody would be better off. (52.17%)
12. Sex crimes, such as rape and attacks on children deserve more than mere imprisonment; such criminals ought to be publicly whipped, or worse. (51.35%)

TABLE 19

QUESTIONS ON THE F-SCALE TO WHICH 50% OR MORE RESPONDENTS DISAGREED

("disagree" to "strongly disagree")

9. Nobody ever learned anything really important except through suffering. (77.53%)
15. Homosexuals are hardly better than criminals and ought to be severely punished. (62.84%)
14. The businessman and the manufacturer are much more important to society than the artist and the professor. (58.84%)
14. Most of our social problems would be solved if we could somehow get rid of the immoral, crooked and feebleminded people. (53.79%)
17. Every person should have complete faith in some supernatural power whose decisions he obeys without question. (53.52%)
16. When a person has a problem or worry, it is best for him not to think about it, but to keep busy with more cheerful things. (52.43%)
26. Nowadays when so many different kinds of people move around and mix together so much, a person has to protect himself especially carefully against catching an infection or disease from them. (52.57%)
19. People can be divided into two distinct classes: the weak and the strong. (52.12%)
21. Wars and social troubles may someday be ended by an earthquake or flood that will destroy the whole world. (50.18%)

TABLE 20

QUESTIONS ON THE F-SCALE TO WHICH 25% OR MORE RESPONDENTS EITHER
OMITTED THE QUESTION OR SCORED "NEITHER AGREE NOR DISAGREE"

- 28. The wild sex life of the Old Greeks and Romans was tame compared to some of the goings-on in this country, even in places where people might least expect them. (42.19%)
- 18. Some people are born with an urge to jump from high places. (41.34%)
- 21. Wars and social troubles may someday be ended by an earthquake or flood that will destroy the whole world. (37.55%)
- 20. Some day it will probably be shown that astrology can explain a lot of things. (37.18%)
- 25. Familiarity breeds contempt. (37.77%)
- 23. Most people don't realize how much our lives are controlled by plots hatched in secret places. (29.15%)
- 11. An insult to our honor should always be punished. (28.70%)
- 15. Homosexuals are hardly better than criminals and ought to be severely punished. (27.89%)
- 4. The businessman and the manufacturer are much more important to society than the artist and the professor. (25.72%)
- 13. There is hardly anything lower than a person who does not feel a great love, gratitude and respect for his parents. (27.71%)
- 3. If people would talk less and work more, everybody would be better off. (27.17%)
- 17. Every person should have complete faith in some supernatural power whose decisions he obeys without question. (26.08%)
- 19. People are born with an urge to jump from high places. (25.02%)

TABLE 21
MEAN SCORES FOR F - SCALE CLUSTERS
 (Total N = 1,108)

		1.00-1.99	2.00-2.99	3.00-3.99	4.00-5.00	Mean F-Scale Cluster Score	Median F-Scale Cluster Score	S.d.
Cluster 1	N	33	222	554	299	3.378	3.500	.741
Conventionalism	%	2.97	20.04	50.00	26.97			
Cluster 2	N	26	363	596	123	3.142	3.143	.634
Authoritarian Submission	%	2.34	32.78	53.79	11.09			
Cluster 3	N	60	397	503	144	3.078	3.125	.732
Authoritarian Aggression	%	5.77	35.83	45.40	12.99			
Cluster 4	N	27	402	548	131	3.081	3.000	.666
Anti-Intracception	%	2.43	36.28	49.45	11.82			
Cluster 5	N	123	589	371	25	2.678	2.667	.610
Superstition & Stereotype	%	11.09	53.17	33.48	2.25			
Cluster 6	N	40	357	564	147	3.143	3.167	.682
Power & Toughness	%	3.60	32.22	50.90	13.27			
Cluster 7	N	30	143	514	421	3.449	3.500	.805
Destructiveness & Cynicism	%	2.70	12.90	46.39	38.00			
Cluster 8	N	47	444	545	72	2.963	3.000	.616
Projectivity	%	4.24	40.07	49.18	6.50			
Cluster 9	N	105	391	450	162	2.952	3.000	.823
Sex	%	9.48	35.29	40.62	14.61			
Overall F-Score	N	24	490	551	43	3.045	3.036	.514
	%	2.16	44.22	49.72	3.87			

TABLE 22

COMPARATIVE MEAN F-SCALE SCORES FROM SELECTED RESEARCH

<u>Source</u>	<u>Culture</u>	<u>Institution</u>	<u>N</u>	<u>Mean</u>	
Adorno et. al. (Form 45) (1950, p. 266)	U.S.A.	Testing Class Women	59	3.62	
		San Quentin Men Prisoners	110	4.73	
		Psychiatric Clinic Women	71	3.69	
	(Form 40)	U.S.A.	Psychiatric Clinic Men	50	3.82
			George Wash. Univ. Women	132	3.51
			Calif. Service Club Men	63	4.08
			Middle - Class Women	154	3.62
			Middle - Class Men	69	3.69
			Working - Class Women	53	3.86
			Working - Class Men	61	4.19
	(Forms 40 & 45)	U.S.A.	Los Angeles Women	130	3.49
			Los Angeles Men	117	3.68
			Employment Service Men Veterans	106	3.74
			Maritime School Men	343	4.06
Meade & Whittaker (1967)	U.S.A.	Trinity College, Conn.;			
		Western Wash. State College	85	3.16	
	India	Agra College, Agra, U.P.	54	5.06	
	Rhodesia	Untali College, Untali;			
		Univ. College, Salisbury	73	4.91	
	Brazil	Sao Paulo Univ., Sao Paulo	70	4.02	
	Arabia	American Univ., Beirut	59	4.45	
	Hong Kong	Chung Chi College, Chung Chi	62	4.61	
Orpen (1970)	South Africa	Afrikaans - Medium Univ., Stellenbosch	100	4.88	
Hogan (1970)	U.S.A.	Tulane Univ., New Orleans	72	3.10*	
		Parish Prison, New Orleans	52	5.07*	
Schwimmer (1973)	U.S.A.	Maritime Men	1,108	4.28*	

* Starred items were transformed from the original material presented for comparative purposes.

The Hogan (1970) scores were not divided by the number of questions in the questionnaire. Therefore, for comparative purposes the Hogan scores were derived by dividing his results by the number of questions on his questionnaire. The original Schwimmer (1973) score on the 5 point scale is 3.05.

Results - Part D - Tables of Responses to Part A of the Questionnaire

Using the responses to the first part of the questionnaire, a summary profile was constructed of the Merchant Marine officer who responded to this questionnaire. The textual description of this profile is presented on pages 51 to 54 of this study. Number and percentage of responses to questions on Part A of the questionnaire follow below. Tables 23-35 present the responses to questions concerning Occupational Facts, Tables 36-51 give the responses to questions concerning Basic Biographical data and Familial Background, and Tables 52-69 give responses to questions on Occupational and General attitudes.

TABLE 23

Category A: Occupational Facts

1. What is the highest license you have held?

	N	%
1. Third Mate _____	27	2.5
2. Second Mate _____	62	5.7
3. First Mate _____	50	4.6
4. Master _____	16	10.7
5. Third Asst. Engineer _____	158	14.6
6. Second Asst. Engineer _____	183	17.0
7. First Asst. Engineer _____	135	12.5
8. Chief Engineer _____	350	32.4

~~Table 24~~ Table 24

Category A: Occupational Facts

2. In what position are you now sailing?

	N	%
1. Third Mate _____	63	6.7
2. Second Mate _____	60	6.4
3. First Mate _____	49	5.2
4. Master _____	69	7.2
5. Third Asst. Engineer _____	232	24.5
6. Second Asst. Engineer _____	147	15.6
7. First Asst. Engineer _____	152	16.2
8. Chief Engineer _____	171	18.2

TABLE 25²⁵

Category A: Occupational Facts

3. Did you first sail in an unlicensed position?

	N	%
1. yes _____	719	66.9
2. no _____	355	33.1

TABLE 26

Category A: Occupational Facts

4. How many years have you had a license?

	N	%
1. 0-2 years _____	95	8.7
2. 3-5 years _____	183	16.7
3. 6-10 years _____	127	11.5
4. 11-15 years _____	81	7.4
5. 16-20 years _____	78	7.1
6. 21-25 years _____	112	10.2
7. 26-30 years _____	330	30.2
8. over 31 years _____	90	8.1

TABLE 23--

Category A: Occupational Facts

5. How many years have you been sailing?

	N	%
1. 0-2 years _____	85	7.7
2. 3-5 years _____	149	13.5
3. 6-10 years _____	94	8.5
4. 11-15 years _____	84	7.6
5. 16-20 years _____	92	8.3
6. 21-25 years _____	120	10.9
7. 26-30 years _____	273	24.7
8. over 31 years _____	208	18.9

TABLE 28

Category A: Occupational Facts

6. How did you prepare yourself for your 3rd Mate or 3rd Assistant license? If more than one, please check each one.

	N	%
a) Did you prepare yourself by going		
1. to a union-sponsored school. which one? _____	74	5.0
2. to a company-sponsored school. which one? _____	9	.6
3. to a U.S. Maritime Commission School. which one? _____	229	15.5
4. to a private upgrading school. which one? _____	276	18.7
5. to another kind of school (specify) _____	51	3.5
6. to a Maritime Academy (specify) _____	297	20.1
b) by taking		
7. a USMC correspondence course _____	48	3.3
8. a private correspondence course _____	73	4.9
9. another kind of correspondence course (specify) _____	27	1.8
c) by teaching		
10. myself _____	335	27.7
d) by doing		
11. something else (specify) _____	14	.9
12. question not applicable: I am not at that level yet. _____	43	2.9

TABLE 229

Category A: Occupational Facts

9. Which type of shipping schedule are you now on?

	N	%
1. quick turnaround and long layover at home port _____	863	83.6
2. longer layover at port away from home _____	169	16.4

TABLE 30

Category A: Occupational Facts

10. How many days are you away from home on the average run?

	N	%
1. under 30	245	24.8
2. 30-59	166	16.8
3. 60-89	246	24.9
4. 90-119	175	17.7
5. 120-149	70	7.1
6. 150-179	11	1.1
7. 180-209	36	3.6
8. 210-239	9	.9
9. 240-269	8	.8
10. 270-300	3	.3
11. over 300	19	1.9

~~Table 31~~

Category A: Occupational Facts

31. Have you had any accidents during the past three years while you were working aboard ship? While you were working ashore as the ship was being loaded or unloaded?

		N	%		N	%
While working aboard	yes	128	11.8	no	958	88.2
While working ashore	yes	16	1.6	no	998	98.4

a) How many accidents did you have during the past three years?

Mean .77 - Median 1

b) How many days of work altogether did you lose during the past three years because of these accidents?

Mean 31.29 - Median 0

TABLE 32
 TABLE 32

Category A: Occupational Facts

32. I ship out as a

	N	%
1. permanent livelihood _____	953	91.9
2. casual employment _____	84	8.1

~~TABLE~~ e 333

Category A: Occupational Facts

33. I plan to sail for _____ years more.

	N	%
1. 1-2 _____	156	19.5
2. 3-4 _____	110	13.7
3. 5-6 _____	161	20.1
4. 7-8 _____	59	7.4
5. 9-10 _____	124	15.5
6. 11-15 _____	116	14.5
7. 16-20 _____	64	8.0
8. 21-25 _____	7	.9
9. 26-30 _____	2	.2
10. over 30 _____	3	.4

Table 34

Category A: Occupational Facts

50. Last year, how much of your total income came from your work in the Merchant Marine?

	N	%
1. all _____	958	69.2
2. most (3/4) _____	213	19.5
3. about half _____	44	4.0
4. some (1/4) _____	14	1.3
5. very little (less than 1/4) _____	26	2.4
6. none _____	40	3.7

~~Table 35~~
Table 35

Category A: Occupational Facts

51. How about four years ago? How much of your total income came from your work in the Merchant Marine?

	N	%
1. all _____	731	67.6
2. most (3/4) _____	143	13.1
3. about half _____	26	2.4
4. some (1/4) _____	9	.9
5. very little (less than 1/4) _____	10	.9
6. none _____	164	15.1

TABLE 36

Category B: Basic Biographic Data and
Familial Background

7. What is the highest level of education you have completed?

	N	%
1. some elementary school_____	8	.7
2. elementary school certificate_____	10	.9
3. six to eight years of school_____	45	4.0
4. some high school_____	213	19.5
5. high school diploma_____	321	29.5
6. some college_____	130	11.9
7. two years college_____	79	7.3
8. bachelor's degree_____	269	24.7
9. master's degree_____	14	1.3
10. Ph.D. degree or other doctorate_____	1	.1
11. Professional degree(specify)_____	0	

~~Table~~ 37

Category B: Basic Biographic Data and
Familial Background

25. What is your present marital status? (If more than one, please check each one)

	N	%
1. Married and living with wife _____	780	70.8
2. Married but legally separated _____	15	1.4
3. Divorced _____	69	6.3
4. Divorced but now remarried _____	45	4.1
5. Widowed _____	15	1.4
6. Never married _____	163	14.8
7. Other arrangement _____	14	1.3

Table 38

Category B: Basic Biographic Data and
Familial Background

26. Have you ever been widowed?

	N	%
0. Not applicable; never married _____	0	
1. yes _____	48	5.6
2. no _____	811	94.4

TABLE 39
Table 39

Category B: Basic Biographic Data and
Familial Background

27. How many times have you been married?

	N	%
1. never _____	160	14.8
2. once _____	706	65.4
3. twice _____	178	16.5
4. three times _____	33	3.1
5. more than 3 times _____	3	.3

TABLE 40
Table 40

Category B: Basic Biographic Data and
Familial Background

28. How many years have you been married to your present wife?

	N	%
1. 1-2	103	12.2
2. 3-5	110	13.0
3. 6-10	82	9.7
4. 11-15	87	10.3
5. 16-20	120	14.2
6. 21-25	129	15.3
7. 26-30	138	16.4
8. 31-35	57	6.8
9. 36-40	16	1.9
10. 41-45	1	.1
11. over 46	0	0

a) How many children and stepchildren do you have?

1. 0	0	0
2. 1	174	22.9
3. 2	246	32.4
4. 3	171	22.5
5. 4	84	11.1
6. 5	45	5.9
7. 6	20	2.6
8. 7	9	1.2
9. 8	2	.3
10. 9	0	0

~~Table 41~~
Table 41

Category B: Basic Biographic Data and
Familial Background

36. What year were you born?

	N	%
1. under 21	3	.3
2. 21-25	78	7.1
3. 26-30	161	14.8
4. 31-35	59	5.4
5. 36-40	35	3.2
6. 41-45	84	7.7
7. 46-50	213	19.5
8. 51-55	206	18.8
9. 56-60	148	13.6
10. 61-65	81	7.4
11. over 65	23	2.1

TABLE 422
Table

Category B: Basic Biographic Data and
Familial Background

37. Where were you born?

	N	%
1. Foreign _____	76	7.1
2. U.S. _____	1,002	92.9

TABLE 433

Category B: Basic Biographic Data and
Familial Background

38. How many children were there in your family
(including yourself)?

	N	%
1. 1	108	9.9
2. 2	238	21.9
3. 3	243	22.4
4. 4	168	15.5
5. 5	122	11.2
6. 6	68	6.3
7. 7	50	4.6
8. 8	37	3.4
9. 9	17	1.6
10. 10	14	1.3
11. over 10	22	2.0

TABLE 44

Category B: Basic Biographic Data and
Familial Background

39. What was the order of your birth in the family?
Were you the first, second, third...eighth child
born?

	N	%
1. 1st _____	472	44.2
2. 2nd _____	275	25.8
3. 3rd _____	135	12.7
4. 4th _____	76	7.1
5. 5th _____	49	4.6
6. 6th _____	28	2.6
7. 7th _____	13	1.2
8. 8th _____	9	.8
9. 9th _____	9	.8
10. 10th or over _____	1	.1

TABLE 45

Category B: Basic Biographic Data and
Familial Background

42. Where did you spend most of your boyhood years?

	N	%
1. a farm or country area _____	201	19
2. a small town _____	317	29.9
3. a moderate sized city _____	246	23.2
4. a big city _____	208	19.6
5. moved around quite a lot _____	88	8.3

~~Table~~ 46

Category B: Basic Biographic Data and
Familial Background

43. About how many miles from where you lived was the closest seaport?

	N	%
1. 0-5	348	34.1
2. 6-10	91	8.9
3. 11-20	85	8.3
4. 21-50	50	12.4
5. 51-100	112	11.0
6. 101-200	66	6.5
7. 201-300	54	5.3
8. 301-400	22	2.2
9. 401-500	25	2.4
10. over 500	92	9.0

~~Table~~ 47

Category B: Basic Biographic Data and
Familial Background

44. Before you were 10 years old, your mother

	N	%
1. was employed full or part time during many of the years _____	195	18
2. was employed full or part time during a few of the years _____	120	11.1
3. did volunteer (unpaid) work for a few years, but was not employed _____	41	3.8
4. was not employed _____	706	65.3
5. I did not know _____	19	1.8

TABLE 48

Category B: Basic Biographic Data and
Familial Background

45. Concerning your mother's schooling

	N	%
1. she did not complete the 8th grade _____	167	15.3
2. she finished the 8th grade or more but did not graduate from high school _____	291	26.6
3. she graduated from high school _____	352	32.2
4. she had some college work _____	123	11.3
5. she graduated from college or went beyond _____	73	6.7
6. don't know _____	87	8.0

~~Table~~ 49

Category B: Basic Biographic Data and
Familial Background

46. The occupation which your father followed for most of his life may best be described as:

	N	%
1. clerical worker _____	33	3.1
2. farm worker _____	90	8.4
3. professional man _____	113	10.5
4. business executive _____	61	5.7
5. store or shop owner _____	62	5.8
6. service worker (barber, chauffeur, etc.) _____	27	2.5
7. skilled craftsman (carpenter, machinist, etc.) _____	314	29.3
8. unskilled or semi-skilled worker _____	98	9.1
9. sales _____	99	9.2
10. Military _____	34	3.2
11. Maritime related _____	62	5.8
12. don't know or other _____	80	7.5

TABLE 50

Category B: Basic Biographic Data and
Familial Background

47. Concerning your father's schooling

	N	%
1. he did not complete the eighth grade _____	238	21.8
2. he finished the 8th grade or more but did not graduate from high school _____	266	24.3
3. he graduated from high school _____	254	23.2
4. he has some college work _____	133	12.2
5. he graduated from college or went beyond _____	118	10.8
6. don't know _____	84	7.7

TABLE 51

**Category B: Basic Biographic Data and
Familial Background**

48. What was your family's financial status when you were growing up?

	N	%
1. very well off _____	10	.9
2. well off _____	55	5.0
3. comfortable _____	594	54.4
4. just made ends meet but were not comfortable _____	308	28.2
5. poor; couldn't make ends meet but not desperate _____	99	9.1
6. very poor _____	25	2.3

TABLE 52

Category C: Occupational and General Attitudes

8. Which type of shipping schedule do you prefer to sail on?

	N	%
1. quick turnaround and long layover at home port _____	368	48.7
2. longer layover at port away from home _____	388	51.3

TABLE 53

Category C: Occupational and General Attitudes

11. How many days would you prefer to be away from home on an average run?

	N	%
1. under 30	327	35.6
2. 30-59	259	28.2
3. 60-89	213	23.2
4. 90-119	94	10.2
5. 120-149	16	1.17
6. 150-179	1	.1
7. 180-209	4	.4
8. 210-239	1	.1
9. 240-269	1	.1
10. 270-299	0	0
11. over 300	3	.3

TABLE 54¹Category C: Occupational and General Attitudes

12. At the present time, how satisfied are you, on the whole, with your job at sea?

	N	%
1. very satisfied _____	205	19.54
2. satisfied _____	378	35.86
3. somewhat satisfied _____	165	15.75
4. neither satisfied nor dissatisfied _____	95	9.01
5. somewhat dissatisfied _____	106	10.06
6. dissatisfied _____	58	5.50
7. very dissatisfied _____	45	4.27

TABLE 55

Category C: Occupational and General Attitudes

13. At the present time, how satisfied are you with your life in general?

	N	%
1. very satisfied _____	291	26.62
2. satisfied _____	478	43.57
3. somewhat satisfied _____	152	13.95
4. neither satisfied nor dissatisfied _____	60	5.47
5. somewhat dissatisfied _____	81	7.38
6. dissatisfied _____	19	1.73
7. very dissatisfied _____	14	1.28

TABLE 56

Category C: Occupational and General Attitudes

14. Some people have expressed optimism about the next 5 years of the U.S. Merchant Marine: others have expressed pessimism. What are your feelings on the matter?

	N	%
1. very optimistic	56	5.1
2. optimistic	238	21.8
3. neither optimistic nor pessimistic	188	17.2
4. pessimistic	397	36.4
5. very pessimistic	151	13.8
6. don't know	62	5.7

TABLE 57

Category C: Occupational and General Attitudes

15. What are your feelings about the long run (more than 6 years)?

	N	%
1. don't know _____	238	22.7
2. very pessimistic _____	138	13.1
3. pessimistic _____	271	25.8
4. neither pessimistic nor optimistic _____	155	14.8
5. optimistic _____	203	19.3
6. very optimistic _____	45	4.3

TABLE 58

Category C: Occupational and General Attitudes

16. Do you believe that there will be a significant change in the number of berths available in the Merchant Marine in the next five years?

	N	%
1. increase greatly _____	24	2.01
2. increase somewhat _____	151	13.55
3. stay about the same as now _____	219	19.87
4. decrease _____	566	51.65
5. decrease greatly _____	141	12.91

a) Has this affected your future plans in the Merchant Marine?

1. yes _____	681	63
2. no _____	397	37

Category C: Occupational and General Attitudes

17. Now let's look specifically at the kind of life you ordinarily live aboard ship while at sea. Do you find the life to be

	N	%
1. very satisfying _____	85	7.81
2. satisfying _____	406	37.50
3. somewhat satisfying _____	254	23.35
4. neither satisfying nor dissatisfying _____	150	13.79
5. somewhat dissatisfying _____	111	10.20
6. dissatisfying _____	46	4.23
7. very dissatisfying _____	34	3.13

TABLE 60

Category C: Occupational and General Attitudes

18. Life aboard ship is

	N	%
1. very lonely _____	55	5.05
2. lonely _____	181	16.62
3. half and half _____	289	26.54
4. sometimes lonely _____	420	38.57
5. never lonely _____	143	13.13

TABLE 61

Category C: Occupational and General Attitudes

19. Life aboard ship is

	N	%
1. often dull	240	22.1
2. sometimes dull	436	40.1
3. undecided	39	3.6
4. rarely dull	276	25.5
5. never dull	97	8.8

TABLE 62

Category C: Occupational and General
Attitudes

20. How about the kind of work you usually have to do aboard ship while at sea? Do you find the kind of work itself

	N	%
1. very satisfying _____	257	23.43
2. satisfying _____	534	48.77
3. somewhat satisfying _____	189	17.32
4. neither satisfying nor dissatisfying _____	69	6.29
5. somewhat dissatisfying _____	27	2.46
6. dissatisfying _____	13	1.19
7. very dissatisfying _____	6	.55

TABLE 63

Category C: Occupational and General
Attitudes

21. What about the kinds of conditions under which you have to do your work aboard ship while at sea? Do you find the working conditions

	N	%
1. very dissatisfying_____	41	3.76
2. dissatisfying_____	80	7.34
3. somewhat dissatisfying_____	205	18.90
4. neither satisfying nor dissatisfying_____	143	13.12
5. somewhat satisfying_____	175	16.06
6. satisfying_____	386	35.50
7. very satisfying_____	58	5.32

TABLE 64

Category C: Occupational and General Attitudes

22. How satisfied are you generally with the kinds of people whom you have to work with aboard ship?
Are you generally

	N	%
1. very satisfied _____	65	5.99
2. satisfied _____	359	33.09
3. somewhat satisfied _____	230	21.29
4. neither satisfied nor dissatisfied _____	112	10.41
5. somewhat dissatisfied _____	211	19.45
6. dissatisfied _____	58	5.35
7. very dissatisfied _____	48	4.42

TABLE 65

Category C: Occupational and General Attitudes

23. How about the Masters, Chiefs and other persons in higher authority under whom you have sailed? In general, how satisfied have you been with them? Have you been

	N	%
1. very dissatisfied	30	2.8
2. dissatisfied	41	3.8
3. somewhat dissatisfied	112	10.4
4. neither satisfied nor dissatisfied	75	7.0
5. somewhat satisfied	156	14.5
6. satisfied	395	36.5
7. very satisfied	99	9.2
8. I generally sail as Master or Chief	172	15.9

~~Table~~ 56

Category C: Occupational and General Attitudes

24. How about your subordinates and other persons of lower authority with whom you have sailed? In general, how satisfied have you been with them?

	N	%
1. very satisfied _____	67	6.19
2. satisfied _____	331	30.59
3. somewhat satisfied _____	275	25.51
4. neither satisfied nor dissatisfied _____	108	9.98
5. somewhat dissatisfied _____	196	18.11
6. dissatisfied _____	66	6.19
7. very dissatisfied _____	37	3.42

TABLE 66

Category C: Occupational and General Attitudes

29. How does your wife feel about your seafaring life?
Would you say she is

	N	%
1. very much for it _____	33	4.3
2. for it _____	194	25.1
3. no strong feeling either way _____	249	32.3
4. against it _____	203	26.3
5. very much against it _____	75	9.7
6. question does not apply _____	18	2.3

Table 68

Category C: Occupational and General Attitudes

30. Does your wife seem more accepting, or less accepting of your Merchant Marine career today than she was when you were first married to her?

	N	%
1. more accepting _____	320	40.8
2. less accepting _____	139	17.7
3. there's no difference in her attitude _____	288	36.7
4. question does not apply _____	37	4.7

TABLE 69

Category C: Occupational and General
Attitudes

49. At the present time, how do you view your own financial status? Do you consider yourself to be

	N	%
1. very well off _____	42	3.8
2. well off _____	229	21.0
3. comfortable _____	733	67.1
4. just make ends meet but not comfortable _____	79	7.2
5. poor; couldn't make ends meet but not desperate _____	8	.7
6. very poor _____	2	.2

TABLE 70

DISTRIBUTION OF MEAN TOTAL SATISFACTION
SCORES

	<u>N</u>	<u>%</u>
1. Very satisfied	2	.18
2. Satisfied	8	.54
3. Somewhat satisfied	45	4.05
4. Neither satisfied nor dissatisfied	158	14.28
5. Somewhat dissatisfied	397	35.81
6. Dissatisfied	412	37.18
7. Very Dissatisfied	88	7.95

PART V

DISCUSSION

Introduction

In this discussion section, the results of the tests of the hypotheses will be explored and an examination will be made of the Merchant Marine officer in the context of the responses to the F-scale. Further, an integration of the results of the tests of the hypotheses, of the demographic data, and of the interrelationships of the variables reported upon will be attempted to arrive at some practical applications and implications for the industry examined here, as well as for other limited industrial-social aggregations. Finally, the value of attitudinal surveys in industrial personnel research will be explored in terms of possible applications to industrial decision making.

Discussion - Part A - Hypotheses

The hypotheses investigated in this study were based primarily on the assumption that an analysis of an institution can be made in terms of the type of personalities needed to support it. The structure of the Merchant Marine is presumed to be autocratic, rigid and unambiguous. This type of structure was predicted to be most amenable to authoritarianism because of the hierarchical authority chain and rigid life-style required of men aboard ship. This presumption was tested in a series of inter-related hypotheses regarding job satisfaction, life satisfaction, rank, age, years of sailing, amount of education, and the existence of opportunities to escape the institution. Except for Hypothesis 5, concerning the Deck/Engine dichotomy, the results generally supported the hypotheses.

The first hypothesis tested in the present study was that F-scale score and job and life satisfaction responses would be positively correlated. It is especially noteworthy that satisfaction with the job at sea while low is best correlated with the F-scale score, though satisfaction with life at sea and the total satisfaction score also correlated with F-scale score, as predicted. A man with a career that entails personal sacrifice might be expected to justify his situation by responding positively to the job and life satisfaction questions, but this, in itself, does not explain the correlations to authoritarianism obtained. It is the institutional structure that might account for these specific correlations.

Authoritarianism in an authoritarian institutional structure, is congruent, while authoritarianism in a liberal structure, or liberalism in an authoritarian structure, would be incongruent, and changes would be expected to occur to bring congruence about. Among the ways change might

occur are through institutional change or through membership change.

One might ask here, what happens to a personality in an institution in which he is not compatible? In the context of the present hypothesis, incongruence between personality and institution could lead to low job satisfaction. It would seem important, therefore, that this hypothesis might be investigated more thoroughly in other institutional contexts which would predict another personality characteristic to be congruent or incongruent with particular institutional environments. The data presented in this work suggests that officers who have already left the American Merchant Marine might have had important personality characteristics required by the institutional structure of the Merchant Marine, and that they were unable or did not have the desire to make the attitudinal adjustments necessary to remain in the Merchant Marine. A possible important and heuristic follow-up study would be a study of officers who have left the industry.

Since interactions between personality and institution are operating continuously aboard a ship, the predictions made regarding rank and years of sailing and authoritarianism follow naturally. Given low probability for institutional change, one would therefore expect the burden for change to fall upon the members of the institution, which is consistent with what was found in the present study. It was found that increased years of sailing, higher rank and age went with higher authoritarianism. This may be due to one of the following alternatives: (1) to personalities who are initially compatible with the institution staying within it and advancing; (2) to personalities who are incongruent

with the institution and leaving it, hence the members who survive over time are those who have compatible personalities; or (3) to personalities who, when presented with conflict, resolve it by adapting their attitudes to the institution; or (4) most simply, there may be some relationship between advancing age and increasing authoritarianism. Further analysis of these alternatives was performed by measuring the relationships of years of sailing, rank, age, education and job satisfaction using partial correlations to offset the effects of these variables upon each other. The resulting data indicated that there is still some relationship between years of sailing and authoritarianism which, bearing in mind the parallel relationship between age and authoritarianism, does not contradict the contention that institutions effect attitudes. But neither does it contradict the assertion that increasing age could be a factor. These interrelationships between the effects of an institution upon attitude and the effects of age on attitude change would have to be disentangled through studying other attitudes in other institutions over time.

The data presented on family background suggests that while social class per se may play some role in the development of authoritarian attitudes, these data were not sufficiently detailed to determine how social class interacts with the major variables investigated in the present study. The Merchant Marine officer might be described as being "marginal both in terms of social class outside of the Merchant Marine and within the hierarchical structure of the Merchant Marine itself. For example, given the licensing of Merchant Marine officers by the Coast Guard, given his Naval Reserve standing and

the quasi-military trappings of his position, the officer may identify his social class as that equivalent to the professional military. On the other hand, his predominantly "blue collar" origins and the nature of his job does not preclude identification with his subordinates and their social class, i.e., working class. Furthermore, the continuous impetus of the Merchant Marine officer to advance from one rung of the hierarchical ladder to the next within the industry itself could place him in a position role ambiguity. As Adorno, et. al. has indicated, marginality in social class seems to be highly correlated with authoritarianism. While these factors are of obvious importance in themselves, they do not seem to explain the results obtained in the present study, e.g., the relationships of age and years of sailing to authoritarianism. It seems clear that social class effects, age, institutional structure and education are variables which require elaborate research designs to determine the manner of their interactions.

Another factor which may play a part in effecting attitudes within the Merchant Marine is role ambiguity in another sense. In the language of Filley and House (1968): Is the Merchant Marine officer a professional or is he a bureaucrat? ("cosmos" vs. "locals" [Filley and House, 1968, pp. 270 - 274]). While in many respects the Merchant Marine officer is encouraged to view himself as a professional with professional associations, external licensing, etc., he is placed in an institution which is highly rigid in terms of decision making and regulated in terms of advancement. The hierarchical structure of advancement in this industry might tend

to increase an officer's identification with the values inherent in the managerial position he holds and the absence of corporate decision making could stifle his interest in "knowledge extension" (Filley and House, 1968, p. 271). This idea of conflict between professionalism vs. bureaucracy could also be perpetuated by the fact that the officers are hired through the unions, thus their first loyalty might not be to the shipping line, but to the outside referent, the professional union, but to become a Master of a ship or to advance to higher managerial positions might require a shift of primary identification and loyalty to the company (shipping line) rather than to the professional union. This conflict between the officer being able to view himself as either a professional or as a bureaucrat could result in role ambiguity which might be resolved through the adoption of rigid behavior patterns and attitudes consistent with the more authoritarian personality structure. It might also, as Filley & House (1968) suggests, partly account for the level of job dissatisfaction found in the present study. Thus it seems that the dimensions of role conflict and role ambiguity warrant further study and analysis in the context of the effects that institutions may have upon attitudes.

The largest source of personality - institutional incongruence found in the present study was the inverse correlation between years of education and authoritarianism. These results support the assumption that education has a liberalizing tendency (Levinson in Adorno, et. al., p. 281) and also suggests that education might offset the effects of institution on attitude change.

Perhaps a major finding of the present study is the degree of congruence between personality and institution which seems to increase between the participants of the institution and the institution over time (years of sailing and age). While it is probably true that part of this congruence is due to attrition among incompatible personality types as discussed above, the factors causing this attrition should be carefully analyzed. For example, Asch (1951) and Schacter and Singer (1962) indicate that large disagreements between a groups' opinion and a single individual's opinion result in either conformity in the individual or in the group expelling that individual. Such an effect would be magnified in this particular industry. Small irritations and disagreements can become exaggerated out of proportion to their importance aboard a ship. The pressure to conform would become intense. For the nonconformist, few alternatives avail themselves. Perhaps the simplest solution is to conform, or to pretend to conform, or to leave the industry. If conformity is the individual's solution, then the change in behavior can be expected to result in a change in attitude in the direction of the group's attitudes (e.g., Festinger, 1957, Festinger and Carlsmith, 1959).

Discussion - Part B - The F-scale

The F-scale was used in this study as a vehicle to assess the effects and the interrelationships of institution and personality via agreement or disagreement to positively worded statements of attitude. Using the conventional method of analysis, these interrelationships resulted in the predicted directions.

The tabulation of statements agreed with and disagreed with by a majority of respondents suggests that additional research instruments of this sort might be used to produce a more complete analysis of the effects of institution and attitude on each other. Furthermore, while it is indeed useful to utilize well validated instruments in a study of institution and personality, on-going social, political, and economic realities may distort the meaningfulness of particular statements and change their utility in assessing the presence of particular attitudes. For example, 73.92% of the respondents agreed with the statement, "Human nature being what it is, there will always be war and conflict." This question on the F-scale is said to measure "Destructiveness and Cynicism". However, many of the respondents have been in the Merchant Marine since World War II, and have thus experienced a succession of wars and conflicts. It is not unreasonable then to expect the obtained responses of agreement from such a large proportion of these men. Instead of being categorized as "Destructiveness and Cynicism", this statement might be an index of "Pessimism and Defeatism". Agreement with the above statement does not rule out the possibility that the respondent believes that human nature is capable of change and that there must not always be war and conflict.

Similarly, agreement with the statement, "A person who has bad manners, habits, and breeding can hardly expect to get along with decent people", (68.23%) is perfectly understandable when one examines the tensions and pressures of shipboard life. A ship is in many ways like a prison, the inmates of which are ostensibly there voluntarily. These men live and work together for months at a time in a severely constricted space. Bad manners, i.e., lack of consideration, could make a bad situation worse,

even intolerable. For a man in this situation this statement might not be an index of 'Conventionalism' or 'Authoritarian Aggression', but simply a basic observation about the social realities of shipboard group dynamics.

This post-hoc analysis of these statements seems rather weak in the light of the correlations found between F-scale scores and F-scale clusters in the predicted directions. The scale as a whole, rather than the responses to particular questions and their possible rationalizations for particular populations, has demonstrated validity (see, for example, the discussion in Part I of this study [F-scale - Validation, p. 20] of Allport [1968], Christie and Jahoda [1954], Kerlinger and Rokeach [1966], Rokeach [1960], Vernon [1964] Eysenck [1965], and Lee and Warr [1969]). Inspection of the statements disagreed with by more than 50% of the respondents indicates the rejection of certain tendencies toward superstition, stereotypes, and sexual problems presumed to be characteristic elements of the authoritarian personality. However, despite the rejection of these tendencies, the observed agreement toward conformity for youth, and the high F-scale scores obtained overall point to the importance of considering the scale as a whole as tapping a general attitude.

Several attempts have been made to develop a factorially pure test to measure authoritarianism, for example Rokeach (1956), and, as indicated in Part I of the present study (F-scale - Validation), have met with varied success. Given the fact that the F-scale is not factorially pure, it might be useful to ignore the clusters as defined by the Adorno group to to redefine the clusters empirically rather than theoretically when applied to specific populations. This alternative, however, would have little theoretical meaning, thus negating one of the strengths of The Authoritarian Personality, and of the scales which developed from that study. Current researchers investigating constructs of attitude

such as authoritarianism must by necessity find themselves in a dilemma between using a tool with precedent to build upon or between using a new tool which, while possibly better statistically, has not been empirically tested to the same extent. While it is not the purpose of the present study to develop a new scale or to statistically validate the old scale, further research into the development of more statistically pure scales tested on the same populations would be of great advantage.

Discussion - Part C - Implications for Industry

The results suggest a possible application of the use of attitude questions in industrial analyses. One might measure the strength of an attitude and the effect it will have in the context of the particular institution as well as the effect it will have on the individual or individuals in that institution. Consider, for example, the possibility of reducing the attrition rate of young Merchant Marine officers, who have higher education levels than the older officers, by trying to create compatible crews on particular ships. On the other hand, effecting social change might be achieved by creating incongruence.

It costs large amounts of money and expenditure of resources to train a Merchant Marine officer, yet the attrition rate is extremely high. What then is management to do? Much of the attrition rate occurs among young Academy graduates who find themselves in incompatible institutions. As indicated earlier, it may be possible to put compatible crews together, but this, given the industrial realities, is impractical.

The Academy graduate, during his education, had to take about 40% of his course work in humanities and social sciences. Since we have seen the effect of education on F-scale score, these courses and the types of people giving them may be fostering the attitudes that later become incompatible with the industry. Given the fact that it is possible to fill the need for officers by providing only vocational education as was done during World War II, and given the further fact that men with this limited education will not easily be able to change occupations as the Academy graduate is able to, it might be expedient to close the Academy or limit its educational mission to vocational courses only. This would make

sense only in a static system, assuming that the industry is not changing, but makes no sense in the context of rapid industrial innovation.

The incongruence found between education and institutional structure may require not a change in the personalities of the young men entering the industry, but rather a change in the institution. It is the institutional structure that may become incongruent with technological innovation, and economic and social realities. The organizational structure of the Merchant Marine derives from a long historical tradition going back through recorded history, from the time when men first began trading and exploring. The first major change that occurred in relatively recent times was the adoption of the propeller and the steam engine. These technological innovations necessitated the institutional change which we see reflected today by two parallel command structures aboard a ship, Deck and Engine.

Recent innovations in technology point to the possibilities of another major change in the structure of the institution. With the development of more efficient engines, electronic control systems, global satellite communications and computer assisted cargo handling, fewer men will be needed to do the same job. Just as the changes wrought so far have been resisted, so the changes already available are resisted now. For example, many older officers do not fully utilize the radar in navigation. On some modern ships, control of the engines is available directly from the bridge, but this direct control is resisted and still today the old fashioned telegraph is being used to communicate orders to the engine room. This is an inefficient and dangerous tradition. These problems illustrate the need for middle management personnel who are flexible and not fearful of innovations that exist now or of changes that are needed in the future. One of the important characteristics of the authoritarian personality is that it is non-adaptive to change, resists it. In any industry that is undergoing

change, the desirable personnel are those who are willing, eager, and able to accept change, to adapt to it, and even to initiate it themselves.

Therefore, the proposal to limit middle management personnel in this industry to the less flexible personality described in this study may be a proposal for industrial self-destruction. What then can be done to reduce the attrition rate among young officers? One possibility is to reduce the institutional authoritarianism that creates incongruence between the types of officers needed for the future and the institution offered to him today. Elimination of the ranking structure, which may have been appropriate for the sailing vessel of 100 years ago, and replacing it with something like a ship's board or a ship's committee may be one solution. The growing accessibility of computer controlled equipment and satellite communications makes many of the rules and regulations, duties and ~~responsibilities~~ of today's officer virtually unnecessary on the ship of tomorrow. Eventual elimination of the Deck-Engine dichotomy might be possible. Perhaps the ship's officer should be considered something like an airline pilot or truck driver and the institutional structure changed to reflect this position.

Since modifications will be needed in both law and contracts to renovate the institutional structure of the Merchant Marine, change will probably be quite slow, and because it is important now not to lose the young officer who will be the instigator and vehicle for change, some of the conditions of ship-board life might be amended now to make his job more personally satisfying. This could be a fruitful area for future research.

In the results concerning the hypothesis that job satisfaction would correlate with authoritarianism, it is interesting to note that officers expressed greater dissatisfaction with subordinates than with superiors.

This difference suggests sources of conflict between the young officer and his superiors and could be an additional source of demoralization in the industry (see, for example, responses to the questions regarding "optimism" for the industry (Tables 56, 57, and 58 in Part IV of this paper). Again, these effects might be reduced with educational programs and workshops to increase the awareness of common problems and interests between the older and younger officers, and between higher and lower ranking officers.

While there is no evidence to prove that a more satisfied employee is a better worker, it has been observed that more satisfied employees have less grievances, turnover, accidents and lateness (Brayfield and Crockett, 1955). The results of the present study indicate that most officers (83.6%) would prefer to be on shipping schedules that would maximize their time at home and generally make voyages of less than two months duration. If physical isolation is difficult to modify, then a psychological approach may be in order. One possibility for promoting higher morale in the industry for those officers who are more prone to authoritarianism would be to increase some of the external trappings of their positions leading to greater prestige and self-image.

Although it is probably not feasible to measure personality characteristics and thus assign compatible crews to sail together or to assign more adaptable crews to more modern ships, yet it may be possible to make some aspects of ship-board life more agreeable for all crew members and at the same time offset some of the effects of the institution on attitude change as observed by this study, i.e., a tendency in higher ranks, ages and years of sailing toward increasing authoritarianism.

It is hoped that this study will aid the industry involved by providing another source of information on its workers at different levels. Furthermore, it is hoped that this work will make a contribution to management

theory by exploring the importance of institutional structure in shaping behavior, attitudes, and personalities.

SUMMARY

The major purpose of the present study has been to investigate the relationships between institutional structure and attitude. The U.S. Merchant Marine provides a unique opportunity for such a study in that the institutional structure is codified in law and tradition and is clear and unambiguous. In addition, men aboard ships lead lives that are more isolated from the larger social milieu for long periods of time than do men in most industrial settings.

An analysis based on the structure of the Merchant Marine suggested that if institutions do attract, perpetuate or effect attitudes, then one type of attitude that this institution would be congruent with is that of authoritarianism. Summarily, the authoritarian personality is one associated with discipline, conservatism, conformity, rigidity, toughness, opinionatedness, acquiescence and right-wing ideology. Therefore, a major part of the present study was concerned with the measurement of authoritarian attitudes. The first object of this study was to determine whether authoritarianism actually does exist within the Merchant Marine and, secondly, given its presence, to try to establish how this attitude might be linked to certain variables, such as years of sailing, rank, job satisfaction, education and age in order to explore the interrelationships between attitude and institution.

A review of the development of the concept of authoritarianism suggested that The Authoritarian Personality could serve as a theoretical guide to formulate hypotheses regarding correlations between authoritarian attitudes and environmental influences and conditions. The theoretical analysis and the empirical validation of the F-scale and the dimensions of personality as reflected by the sub-scales (Conventionalism, Authoritarian Submission, Authoritarian Aggression, Anti-intraception, Superstition and Stereotyping, Power and Toughness, Cynicism and

Destructiveness, Projectivity, Sexual Problems) were not, in themselves, the objects of study. The major focus of this study was to use a well-validated, directly relevant instrument to explore the interrelationships between attitude and institution.

Six hypotheses were developed in which various parameters of occupational attitudes, occupational facts and personal background were correlated with authoritarianism. The first hypothesis that there would be a positive relationship between authoritarianism and job satisfaction was based on the assumption that authoritarian attitudes would be congruent with the hierarchical structure of the Merchant Marine and hence authoritarian officers would express satisfaction with their work. The second hypothesized relationship between higher rank and authoritarianism was based on the expectation that officers with authoritarian attitudes would stay within the framework of this institution and rise within it, and that if attitude change did occur, it would be in the direction of increasing authoritarianism. It was also expected that older officers would be more authoritarian than younger officers. This hypothesis replicated a similar hypothesis in The Authoritarian Personality. It was further hypothesized that there would be a positive correlation between years of sailing and authoritarianism based on the expectation that people would stay in an environment which is compatible and satisfying to their personal attitudes, while there would have been attrition among those who did not share the same compatibility with their environment.

Because of differential job opportunities existing outside of the Merchant Marine for Engine officers as opposed to Deck officers and because of the differences in authority relationships aboard ship, between Deck and Engine officers, it was hypothesized that Deck officers' F-scale scores would correlate higher with job satisfaction, life satisfaction, age, rank, license and years of sailing than would Engine officers'

scores. The sixth hypothesis retested a hypothesis of The Authoritarian Personality that there would be an inverse relationship between education and F-scale score, based on the expectation that education tempers anti-democratic tendencies.

In order to further characterize the members of this institution, it was also necessary to gather information which would give data for a limited profile of Merchant Marine officers in terms of authoritarian attitudes as well as in terms of job related attitudes, family history, and occupational facts.

A questionnaire with a mail-back format was utilized in order to tap as large a sample of U.S. Merchant Marine officers as possible. The questionnaire consisted of two parts necessary to test the hypotheses and to develop the profiles. The first part of the questionnaire had 51 numbered questions which dealt with three main categories - Occupational facts, Basic biographical data and familial background, and Occupational and general attitudes. Most questions called for a scaled response to provide a basis for correlational analyses. The second part of the questionnaire consisted of a modified version of the California F-scale. Approximately 25% of all active deep water Merchant Marine officers responded to the questionnaire.

Overall F-scale score was computed for each respondent and these scores were used primarily to test the hypotheses. Further analyses were performed using the clusters derived from The Authoritarian Personality.

The results tended to support the hypotheses regarding job satisfaction and authoritarianism ($\underline{r} = .21, \underline{p} < .01$), increased rank and authoritarianism ($\underline{r} = .12, \underline{p} < .01$), age and authoritarianism ($\underline{r} = .37, \underline{p} < .01$), and years of sailing and authoritarianism ($\underline{r} = .38, \underline{p} < .01$), and the inverse relation-

ship between education and authoritarianism ($r=.41, p < .01$).

Ambiguous results were obtained regarding the hypothesis that there would be correlational differences in the results between Deck and Engine officers. The results indicated that authoritarian attitudes are present among officers in the Merchant Marine, as expected from the institutional analysis, suggesting that institutions and the attitudes of their members are interrelated.

The implications of this study for industry were explored both in the context of industrial harmony and of industrial change. The value of performing institutional analyses and conducting attitudinal surveys in industry was explored. Problems for future research, such as the relationships between institutional change and attitude change, between institutional attitudes and membership turnover, and the possible effects of education, life style and age differences on institutions and attitudes were examined.

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U. S. DEPARTMENT OF COMMERCE
MARITIME ADMINISTRATION
UNITED STATES MERCHANT MARINE ACADEMY
KINGS POINT, NEW YORK 11024

DATE:

1972

REPLY TO
ATTN OF:

Martin J. Schwimmer
Director of Management Research

SUBJECT:

Personnel Research (Anonymous)

TO:

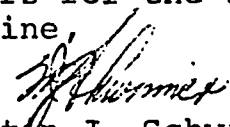
The Officers of the American Merchant Marine

During 1970, we conducted a very enlightening survey which many of you were kind enough to answer. The results have been published by a number of professional associations within the Maritime Industry. If any of you would like the results of the 1970 survey, please drop me a line under separate cover and I'll mail a reprint out to you.

The attached survey also needs your support. The 1970 survey was answered by over 2100 officers. In these surveys, we are seeking information about the good and the bad parts of the seaman's job as only you can tell us. The questionnaire attached to this letter is fairly long but you should find it interesting.

Take time to consider your answers. (All parts are important). DO NOT PUT YOUR NAME ON THE QUESTIONNAIRE. We do not want to know who you are. What we need are honest and uninhibited answers and opinions. Say whatever you please in whatever way you care to say it. If you need more space, use the back of the page. Everything you put down will be of help and interest. The Maritime Administration is determined that we will be first at sea -- the best ships with satisfied men. Here is your chance to put in your oar.

Yours for the strongest Merchant
Marine,


Martin J. Schwimmer
Director, Management Research

P.S. If you attended a U.S. Maritime Commission School during World War II or shortly after the war, it is particularly important that you answer this survey because we lack information on this group.

MERCHANT MARINE OFFICERS SURVEY
1972

This survey deals with two distinct studies. The first part deals with your opinions about life in the Merchant Marine, the second part is a general public opinion survey of which Merchant Marine men are only one part.

On any matter of opinion, there is no right or wrong answer. Please answer openly and freely.

The information you provide about your own background is necessary in order to understand properly your opinions. Please answer all of the questions. If you want to add any additional comments or comment on any of your answers, use the back of the page.

ALL RESPONSES WILL REMAIN CONFIDENTIAL.
PLEASE DO NOT PUT YOUR NAME ON ANY OF THE PAGES!

1. What is the highest license you have held?

- | | |
|---|---|
| <input type="checkbox"/> 1. Third Mate | <input type="checkbox"/> 5. Third Asst. Engineer |
| <input type="checkbox"/> 2. Second Mate | <input type="checkbox"/> 6. Second Asst. Engineer |
| <input type="checkbox"/> 3. First Mate | <input type="checkbox"/> 7. First Asst. Engineer |
| <input type="checkbox"/> 4. Master | <input type="checkbox"/> 8. Chief Engineer |
| <input type="checkbox"/> 9. Other (specify) _____ | |

2. In what position are you now sailing?

- | | |
|---|---|
| <input type="checkbox"/> 1. Third Mate | <input type="checkbox"/> 5. Third Asst. Engineer |
| <input type="checkbox"/> 2. Second Mate | <input type="checkbox"/> 6. Second Asst. Engineer |
| <input type="checkbox"/> 3. First Mate | <input type="checkbox"/> 7. First Asst. Engineer |
| <input type="checkbox"/> 4. Master | <input type="checkbox"/> 8. Chief Engineer |
| <input type="checkbox"/> 9. Other (specify) _____ | |

3. Did you first sail in an unlicensed position?

- | | |
|---------------------------------|---------------------|
| <input type="checkbox"/> 1. yes | In what year? _____ |
| <input type="checkbox"/> 2. no | |

4. How many years have you had a license?

- | | |
|---|---|
| <input type="checkbox"/> 1. 0-2 years | <input type="checkbox"/> 5. 16-20 years |
| <input type="checkbox"/> 2. 3-5 years | <input type="checkbox"/> 6. 21-25 years |
| <input type="checkbox"/> 3. 6-10 years | <input type="checkbox"/> 7. 26-30 years |
| <input type="checkbox"/> 4. 11-15 years | <input type="checkbox"/> 8. over 31 years |

5. How many years have you been sailing?

- | | |
|---|---|
| <input type="checkbox"/> 1. 0-2 years | <input type="checkbox"/> 5. 16-20 years |
| <input type="checkbox"/> 2. 3-5 years | <input type="checkbox"/> 6. 21-25 years |
| <input type="checkbox"/> 3. 6-10 years | <input type="checkbox"/> 7. 26-30 years |
| <input type="checkbox"/> 4. 11-15 years | <input type="checkbox"/> 8. over 31 years |

6. How did you prepare yourself for your 3rd Mate or 3rd Assistant license? If more than one, please check each one.
- a) Did you prepare yourself by going
- 1. to a union-sponsored school
Which one? _____
 - 2. to a company-sponsored school
Which one? _____
 - 3. to a U.S. Maritime Commission School
Which one? _____
 - 4. to a private upgrading school
Which one? _____
 - 5. to another kind of school (specify) _____
 - 6. to a Maritime Academy (specify) _____

In what years did you attend the above schools? _____

- b) by taking
- 7. a USMC correspondence course
 - 8. a private correspondence course
 - 9. another kind of correspondence course (specify) _____
- c) by teaching
- 10. myself
- d) by doing
- 11. something else (specify) _____
 - 12. question not applicable; I am not at that level yet.

7. What is the highest level of education you have completed?
- 1. Some elementary school
 - 2. Elementary school certificate
 - 3. Six to eight years of school
 - 4. Some high school
 - 5. High school diploma
 - 6. Some college
 - 7. Two years college
 - 8. Bachelor's Degree
 - 9. Master's Degree
 - 10. Ph.D Degree or other Doctorate
 - 11. Professional Degree (specify) _____

8. Which type of shipping schedule do you prefer to sail on?
- 1. quick turnaround and long layover at home port.
 - 2. longer layover at port away from home.

9. Which type of shipping schedule are you now on?
- 1. quick turnaround and long layover at home port.
 - 2. longer layover at port away from home.

10. How many days are you away from home on an average run? _____
11. How many days would you prefer to be away from home on an average run? _____
12. At the present time, how satisfied are you, on the whole, with your job at sea?
- ___ 1. very satisfied
 - ___ 2. satisfied
 - ___ 3. somewhat satisfied
 - ___ 4. neither satisfied nor dissatisfied
 - ___ 5. somewhat dissatisfied
 - ___ 6. dissatisfied
 - ___ 7. very dissatisfied

a) What is it about your job at sea that makes you feel this way? (use other side of page if necessary).

13. At the present time, how satisfied are you with your life in general?
- ___ 1. very satisfied
 - ___ 2. satisfied
 - ___ 3. somewhat satisfied
 - ___ 4. neither satisfied nor dissatisfied
 - ___ 5. somewhat dissatisfied
 - ___ 6. dissatisfied
 - ___ 7. very dissatisfied

a) What is it about your life in general that makes you feel this way? (use other side of page if necessary).

14. Some people have expressed optimism about the next 5 years of the U.S. Merchant Marine; others have expressed pessimism. What are your feelings on the matter?
- Are you
- ___ 1. very optimistic
 - ___ 2. optimistic
 - ___ 3. neither optimistic nor pessimistic
 - ___ 4. pessimistic
 - ___ 5. very pessimistic
 - ___ 6. don't know

a) Why do you feel this way? _____

24. How about your subordinates and other persons of lower authority with whom you have sailed? In general, how satisfied have you been with them?

Have you been

- 1. very satisfied
- 2. satisfied
- 3. somewhat satisfied
- 4. neither satisfied nor dissatisfied
- 5. somewhat dissatisfied
- 6. dissatisfied
- 7. very dissatisfied

Now let's turn to your present family and other background situations.

25. What is your present marital status? (If more than one, please check each one)

- 1. married and living with wife
- 2. married but legally separated
- 3. divorced
- 4. divorced but now remarried
- 5. widowed
- 6. never married
- 7. other arrangement _____

26. Have you ever been widowed?

- 0. not applicable; never married
- 1. yes 2. no

27. How many times have you been married?

- 1. never 4. three times
- 2. once 5. more than 3 times
- 3. twice

28. How many years have you been married to your present wife? _____

- a) How many children and stepchildren do you have? _____
How many sons? _____ How many daughters? _____
- b) What is the current age of the youngest child? _____
Of the oldest? _____

29. How does your wife feel about your seafaring life?

Would you say she is

- 1. very much for it
- 2. for it
- 3. no strong feeling either way
- 4. against it
- 5. very much against it
- 6. question does not apply

15. What are your feelings about the long run (more than 6 years)?

Are you

- 1. don't know
- 2. very pessimistic
- 3. pessimistic
- 4. neither pessimistic nor optimistic
- 5. optimistic
- 6. very optimistic

a) Why do you feel this way? _____

16. Do you believe that there will be a significant change in the number of berths available in the Merchant Marine in the next five years?

Do you think the number of berths will

- 1. increase greatly
- 2. increase somewhat
- 3. stay about the same as now
- 4. decrease
- 5. decrease greatly

a) Has this affected your future plans in the Merchant Marine?

- 1. yes
- 2. no

If yes, in what ways have your own plans been affected? _____

17. Now let's look specifically at the kind of life you ordinarily live aboard ship while at sea.

Do you find this kind of life to be

- 1. very satisfying
- 2. satisfying
- 3. somewhat satisfying
- 4. neither satisfying nor dissatisfying
- 5. somewhat dissatisfying
- 6. dissatisfying
- 7. very dissatisfying

18. Life aboard ship is
 1. very lonely
 2. lonely
 3. half and half
 4. sometimes lonely
 5. never lonely
19. Life aboard ship is
 1. often dull
 2. sometimes dull
 3. undecided
 4. rarely dull
 5. never dull
20. How about the kind of work you usually have to do aboard ship while at sea?
 Do you find the kind of work itself
 1. very satisfying
 2. satisfying
 3. somewhat satisfying
 4. neither satisfying nor dissatisfying
 5. somewhat dissatisfying
 6. dissatisfying
 7. very dissatisfying
21. What about the kinds of conditions under which you have to do your work aboard ship while at sea?
 Do you find the working conditions
 1. very dissatisfying
 2. dissatisfying
 3. somewhat dissatisfying
 4. neither satisfying nor dissatisfying
 5. somewhat satisfying
 6. satisfying
 7. very satisfying
22. How satisfied are you generally with the kinds of people whom you have to work with aboard ship?
 Are you generally
 1. very satisfied
 2. satisfied
 3. somewhat satisfied
 4. neither satisfied nor dissatisfied
 5. somewhat dissatisfied
 6. dissatisfied
 7. very dissatisfied
23. How about the Masters, Chiefs and other persons in higher authority under whom you have sailed? In general, how satisfied have you been with them? Have you been
 1. very dissatisfied
 2. dissatisfied
 3. somewhat dissatisfied
 4. neither satisfied nor dissatisfied
 5. somewhat satisfied
 6. satisfied
 7. very satisfied
 8. I generally sail as Master or Chief

18. Life aboard ship is
 1. very lonely
 2. lonely
 3. half and half
 4. sometimes lonely
 5. never lonely
19. Life aboard ship is
 1. often dull
 2. sometimes dull
 3. undecided
 4. rarely dull
 5. never dull
20. How about the kind of work you usually have to do aboard ship while at sea?
 Do you find the kind of work itself
 1. very satisfying
 2. satisfying
 3. somewhat satisfying
 4. neither satisfying nor dissatisfying
 5. somewhat dissatisfying
 6. dissatisfying
 7. very dissatisfying
21. What about the kinds of conditions under which you have to do your work aboard ship while at sea?
 Do you find the working conditions
 1. very dissatisfying
 2. dissatisfying
 3. somewhat dissatisfying
 4. neither satisfying nor dissatisfying
 5. somewhat satisfying
 6. satisfying
 7. very satisfying
22. How satisfied are you generally with the kinds of people whom you have to work with aboard ship?
 Are you generally
 1. very satisfied
 2. satisfied
 3. somewhat satisfied
 4. neither satisfied nor dissatisfied
 5. somewhat dissatisfied
 6. dissatisfied
 7. very dissatisfied
23. How about the Masters, Chiefs and other persons in higher authority under whom you have sailed? In general, how satisfied have you been with them? Have you been
 1. very dissatisfied
 2. dissatisfied
 3. somewhat dissatisfied
 4. neither satisfied nor dissatisfied
 5. somewhat satisfied
 6. satisfied
 7. very satisfied
 8. I generally sail as Master or Chief

24. How about your subordinates and other persons of lower authority with whom you have sailed? In general, how satisfied have you been with them?

Have you been

- 1. very satisfied
- 2. satisfied
- 3. somewhat satisfied
- 4. neither satisfied nor dissatisfied
- 5. somewhat dissatisfied
- 6. dissatisfied
- 7. very dissatisfied

Now let's turn to your present family and other background situations.

25. What is your present marital status? (If more than one, please check each one)

- 1. married and living with wife
- 2. married but legally separated
- 3. divorced
- 4. divorced but now remarried
- 5. widowed
- 6. never married
- 7. other arrangement _____

26. Have you ever been widowed?

- 0. not applicable; never married
- 1. yes 2. no

27. How many times have you been married?

- 1. never 4. three times
- 2. once 5. more than 3 times
- 3. twice

28. How many years have you been married to your present wife? _____

a) How many children and stepchildren do you have? _____

How many sons? _____ How many daughters? _____

b) What is the current age of the youngest child? _____

Of the oldest? _____

29. How does your wife feel about your seafaring life?

Would you say she is

- 1. very much for it
- 2. for it
- 3. no strong feeling either way
- 4. against it
- 5. very much against it
- 6. question does not apply

37. Where were you born? _____
Country
- _____ State (if born in U.S.A.)
38. How many children were there in your family (including yourself)? _____
39. What was the order of your birth in the family? Were you the first, second, third...eighth child born? Please indicate which number child you were _____
40. How many older brothers did you have? _____
Older sisters? _____
41. How many younger brothers did you have? _____
Younger sisters? _____
42. Where did you spend most of your boyhood years?
Was it in
 _____ 1. a farm or country area
 _____ 2. a small town
 _____ 3. a moderate sized city
 _____ 4. a big city
 _____ 5. moved around quite a lot
43. About how many miles from where you lived was the closest seaport? _____
44. Before you were 10 years old, your mother
 _____ 1. was employed full or part time during many of the years
 _____ 2. was employed full or part time during a few of the years
 _____ 3. did volunteer (unpaid) work for a few years, but was not employed
 _____ 4. was not employed
 _____ 5. I did not know
45. Concerning your mother's schooling
 _____ 1. she did not complete the eighth grade
 _____ 2. she finished the 8th grade or more but did not graduate from high school
 _____ 3. she graduated from high school
 _____ 4. she had some college work
 _____ 5. she graduated from college or went beyond
 _____ 6. don't know

46. The occupation which your father followed for most of his life may best be described as:
- 1. clerical worker
 - 2. farm worker
 - 3. professional man
 - 4. business executive
 - 5. store or shop owner
 - 6. service worker (barber, chauffeur, etc.)
 - 7. skilled craftsman (carpenter, machinist, etc.)
 - 8. unskilled or semi-skilled worker
 - 9. sales
 - 10. Military
 - 11. Maritime related
 - 12. Don't know or other _____
47. Concerning your father's schooling
- 1. he did not complete the eighth grade
 - 2. he finished the 8th grade or more but did not graduate from high school
 - 3. he graduated from high school
 - 4. he had some college work
 - 5. he graduated from college or went beyond
 - 6. don't know
48. What was your family's financial status when you were growing up?
Were they
- 1. very well off
 - 2. well off
 - 3. comfortable
 - 4. just made ends meet but were not comfortable
 - 5. poor; couldn't make ends meet but not desperate
 - 6. very poor
49. At the present time, how do you view your own financial status? Do you consider yourself to be
- 1. very well off
 - 2. well off
 - 3. comfortable
 - 4. just make ends meet but not comfortable
 - 5. poor; couldn't make ends meet but not desperate
 - 6. very poor
50. Last year, how much of your total income came from your work in the Merchant Marine?
- 1. all
 - 2. most (3/4)
 - 3. about half
 - 4. some (1/4)
 - 5. very little (less than 1/4)
 - 6. none
51. How about four years ago? How much of your total income came from your work in the Merchant Marine?
- 1. all
 - 2. most (3/4)
 - 3. about half
 - 4. some (1/4)
 - 5. very little (less than 1/4)
 - 6. none

Survey of General Public Opinion:
Instructions

We are trying to find out what the general public feels and thinks about a number of important social questions.

We are sure you will find the enclosed survey interesting. You will find in it many questions and social issues which you have thought about, read about in newspapers and magazines, and heard about on the radio and TV.

This is not an intelligence test nor an information test. There are no "right" or "wrong" answers. The best answer is your personal opinion. You can be sure that, whatever your opinion may be on a certain issue, there will be many people who agree, many who disagree. And this is what we want to find out: how is public opinion really divided on each of these socially important topics?

INTRODUCTION

- a) Read each statement carefully and mark it according to your first reaction. It isn't necessary to take a lot of time for any one question.
- b) Answer each question.
- c) Give your personal point of view. Don't talk the questions over with anyone until you have finished.
- d) Be as sincere, accurate, and complete as possible in the limited time and space.

Put a "1" if you strongly disagree with the statement.
 Put a "2" if you disagree with the statement.
 Put a "3" if you neither agree nor disagree.
 Put a "4" if you agree with the statement.
 Put a "5" if you strongly agree with the statement.

1. Obedience and respect for authority are the most important virtues children should learn.
2. A person who has bad manners, habits, and breeding can hardly expect to get along with decent people.
3. If people would talk less and work more, everybody would be better off.
4. The businessman and the manufacturer are much more important to society than the artist and the professor.

- ___ 5. Science has its place, but there are many important things that can never possibly be understood by the human mind.
- ___ 6. Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down.
- ___ 7. What this country needs most, more than laws and political programs, is a few courageous, tireless, devoted leaders in whom the people can put their faith.
- ___ 8. No sane, normal, decent person could ever think of hurting a close friend or relative.
- ___ 9. Nobody ever learned anything really important except through suffering.
- ___ 10. What the youth needs most is strict discipline, rugged determination and the will to work and fight for family and country.
- ___ 11. An insult to our honor should always be punished.
- ___ 12. Sex crimes, such as rape and attacks on children deserve more than mere imprisonment; such criminals ought to be publicly whipped, or worse.
- ___ 13. There is hardly anything lower than a person who does not feel a great love, gratitude and respect for his parents.
- ___ 14. Most of our social problems would be solved if we could somehow get rid of the immoral, crooked and feeble-minded people.
- ___ 15. Homosexuals are hardly better than criminals and ought to be severely punished.
- ___ 16. When a person has a problem or worry, it is best for him not to think about it, but to keep busy with more cheerful things.

Put a "1" if you strongly disagree with the statement.
Put a "2" if you disagree with the statement.
Put a "3" if you neither agree nor disagree.
Put a "4" if you agree with the statement.
Put a "5" if you strongly agree with the statement.

- ___ 17. Every person should have complete faith in some supernatural power whose decisions he obeys without question.
- ___ 18. Some people are born with an urge to jump from high places.
- ___ 19. People can be divided into two distinct classes; the weak and the strong.
- ___ 20. Some day it will probably be shown that astrology can explain a lot of things.
- ___ 21. Wars and social troubles may someday be ended by an earthquake or flood that will destroy the whole world.
- ___ 22. No weakness or difficulty can hold us back if we have enough will power.
- ___ 23. Most people don't realize how much our lives are controlled by plots hatched in secret places.
- ___ 24. Human nature being what it is, there will always be war and conflict.
- ___ 25. Familiarity breeds contempt.
- ___ 26. Nowadays when so many different kinds of people move around and mix together so much, a person has to protect himself especially carefully against catching an infection or disease from them.
- ___ 27. Nowadays more and more people are prying into matters that should remain personal and private.
- ___ 28. The wild sex life of the old Greeks and Romans was tame compared to some of the goings-on in this country, even in places where people might least expect it.

Put a "1" if you strongly disagree with the statement.

Put a "2" if you disagree with the statement.

Put a "3" if you neither agree nor disagree.

Put a "4" if you agree with the statement.

Put a "5" if you strongly agree with the statement.

APPENDIX B

QUESTIONNAIRE CONSTRUCTION, PART A OF THE QUESTIONNAIRE

Category A: Occupational Facts

1. What is the highest license you have held?
2. In what position are you now sailing?
3. Did you first sail in an unlicensed position?
4. How many years have you had a license?
5. How many years have you been sailing?
6. How did you prepare yourself for your 3rd Mate or 3rd Assistant license?
9. Which type of shipping schedule are you now on?
10. How many days are you away from home on an average run?
31. Have you had any accidents during the past three years while you were working aboard ship? While you were working ashore as the ship was being loaded or unloaded?
 - a) How many accidents did you have during the past three years?
 - b) How many days of work altogether did you lose during the past three years because of these accidents?
 - c) Which of these was your most serious accident?
 - d) How many days of work did you lose because of the accident?
32. I ship out as a
 1. permanent livelihood
 2. casual employment
33. I plan to sail for _____ years more.
35. Did you attend a U.S. Maritime Commission School?
50. Last year, how much of your total income came from your work in the Merchant Marine?
51. How about four years ago? How much of your total income came from your work in the Merchant Marine?

Category B: Basic biographic data and familial background

7. What is the highest level of education you have completed?
25. What is your present marital status?
26. Have you ever been widowed?
27. How many times have you been married?
28. How many years have you been married to your present wife?
36. What year were you born?
37. Where were you born?
38. How many children were there in your family (including yourself?)
39. What was the order of your birth in the family?
Were you the first, second, third...eighth child born?
40. How many older brothers did you have? older sisters?
41. How many younger brothers did you have? younger sisters?
42. Where did you spend most of your boyhood years?
43. About how many miles from where you lived was the closest seaport?
44. Before you were 10 years old, your mother
 1. was employed...
 4. was not employed
 5. I did not know
45. Concerning your mother's schooling
 1. she did not complete the eighth grade...
 5. she graduated from college or went beyond
 6. don't know
46. The occupation which your father followed for most of his life may be best described as (12 choices, see Questionnaire, Appendix H).
47. Concerning your father's schooling
 1. he did not complete the eighth grade...
 5. he graduated from college or went beyond
 6. don't know
48. What was your family's financial status when you were growing up?

Category C: Occupational and General Attitudes

8. Which type of shipping schedule do you prefer to sail on?
11. How many days would you prefer to be away from home on an average run?
12. At the present time, how satisfied are you, on the whole, with your job at sea?
13. At the present time, how satisfied are you with your life in general?
14. Some people have expressed optimism about the next 5 years of the U.S. Merchant Marine; others have expressed pessimism. What are your feelings on the matter?
15. What are your feelings about the long run (more than 6 years)?
16. Do you believe that there will be a significant change in the number of berths available in the Merchant Marine in the next five years?
 - a) Has this affected your future plans in the Merchant Marine?
17. Now let's look specifically at the kind of life you ordinarily live aboard ship while at sea. Do you find this kind of life to be
 1. very satisfying...
 7. very dissatisfying
18. Life aboard ship is
 1. very lonely...
 5. never lonely
19. Life aboard ship is
 1. often dull
 5. never dull
20. How about the kind of work you usually have to do aboard ship while at sea? Do you find the work itself
 1. very satisfying...
 7. very dissatisfying

21. What about the kinds of conditions under which you have to do your work aboard ship while at sea? Do you find the working conditions
 1. very satisfying...
 7. very dissatisfying
22. How satisfied are you generally with the kinds of people whom you have to work with aboard ship?
23. How about the Masters, Chiefs and other persons in higher authority under whom you have sailed? In general, how satisfied have you been with them?
24. How about your subordinates and other persons of lower authority with whom you have sailed? In general, how satisfied have you been with them?
29. How does your wife feel about your seafaring life?
30. Does your wife seem more accepting, or less accepting of your Merchant Marine career today than she was when you were first married to her?
49. At the present time, how do you view your own financial status?

APPENDIX C

F-SCALE CLUSTERS

(Adorno, et. al., pp. 255-257)

- A) Conventionalism: Rigid adherence to conventional, middle-class values.
1. Obedience and respect for authority are the most important virtues children should learn.
 2. A person who has bad manners, habits, and breeding can hardly expect to get along with decent people.
 3. If people would talk less and work more, everybody would be better off.
 4. The businessman and the manufacturer are much more important to society than the artist and the professor.
- B) Authoritarian Submission: Submissive, uncritical attitude toward idealized moral authorities of the ingroup.
1. Obedience and respect for authority are the most important virtues children should learn.
 5. Science has its place, but there are many important things that can never possibly be understood by the human mind.
 6. Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down.
 7. What this country needs most, more than laws and political programs, is a few courageous, tireless, devoted leaders in whom the people can put their faith.
 8. No sane, normal, decent person could ever think of hurting a close friend or relative.
 9. Nobody ever learned anything really important except through suffering.
 17. Every person should have complete faith in some supernatural power whose decisions he obeys without question.

C) Authoritarian Aggression: Tendency to be on the lookout for and to condemn, reject, and punish people who violate conventional values.

2. A person who has bad manners, habits, and breeding can hardly expect to get along with decent people.
3. If people would talk less and work more, everybody would be better off.
10. What the youth needs most is strict discipline, rugged determination and the will to work and fight for family and country.
11. An insult to our honor should always be punished.
12. Sex crimes, such as rape and attacks on children deserve more than mere imprisonment; such criminals ought to be publicly whipped, or worse.
13. There is hardly anything lower than a person who does not feel a great love, gratitude, and respect for his parents.
14. Most of our social problems would be solved if we could somehow get rid of the immoral, crooked and feeble-minded people.
15. Homosexuals are hardly better than criminals and ought to be severely punished.

D) Anti-Intracception: Opposition to the subjective, the imaginative, the tender-minded.

3. If people would talk less and work more, everybody would be better off.
4. The businessman and the manufacturer are much more important to society than the artist and the professor.
16. When a person has a problem or worry, it is best for him not to think about it, but to keep busy with more cheerful things.
17. Every person should have complete faith in some supernatural power whose decisions he obeys without question.

E) Superstition and Stereotypy: The belief in mystical determinants or the individual's fate; the disposition to think in rigid categories.

5. Science has its place, but there are many important things that can never possibly be understood by the human mind.
17. Every person should have complete faith in some supernatural power whose decisions he obeys without question.
18. Some people are born with an urge to jump from high places.
19. People can be divided into two distinct classes; the weak and the strong.
20. Some day it will probably be shown that astrology can explain a lot of things.
21. Wars and social troubles may someday be ended by an earthquake or flood that will destroy the whole earth.

F) Power and "Toughness": Preoccupation with the dominance-submission, strong-weak, leader-follower dimension; identification with power figures; overemphasis upon the conventional attributes of the ego; exaggerated assertion of strength and toughness.

7. What this country needs most, more than laws and political programs, is a few courageous, tireless, devoted leaders in whom the people can put their faith.
10. What the youth needs most is strict discipline, rugged determination and the will to work and fight for family and country.
11. An insult to our honor should always be punished.
19. People can be divided into two distinct classes; the weak and the strong.
22. No weakness or difficulty can hold us back if we have enough will power.
23. Most people don't realize how much our lives are controlled by plots hatched in secret places.

G) Destructiveness and Cynicism: Generalized hostility,
vilification of the human.

24. Human nature being what it is, there will always
be war and conflict.

25. Familiarity breeds contempt.

H) Projectivity: The disposition to believe that wild and
dangerous things go on in the world;
the projection outwards of unconscious
emotional impulses.

21. Wars and social troubles may someday be ended by
an earthquake or flood that will destroy the
whole world.

23. Most people don't realize how much our lives are
controlled by plots hatched in secret places.

26. Nowadays when so many different kinds of people
move around and mix together so much, a person
has to protect himself especially carefully
against catching an infection or disease from them.

27. Nowadays more and more people are prying into
matters that should remain personal and private.

28. The wild sex life of the old Greeks and Romans
was tame compared to some of the goings-on in
this country, even in places where people might
least expect it.

I) Sex: Exaggerated concern with sexual "goings-on".

12. Sex crimes, such as rape and attacks on children
deserve more than mere imprisonment; such criminals
ought to be publicly whipped, or worse.

15. Homosexuals are hardly better than criminals and
ought to be severely punished.

28. The wild sex life of the old Greeks and Romans was
tame compared to some of the goings-on in this
country, even in places where people might least
expect it.

10/24/72

F-T SCALE EQUIVALENCES TABLE BY .01

PAGE

MEAN	-Z- SCORE	EQUIV	-F- COUNT	CUMM. COUNT	-F- %	CUMM %
1.00	4.00-	.98	0	0	.00	.00
1.01	3.98-	1.00	0	0	.00	.00
1.02	3.96-	1.01	0	0	.00	.00
1.03	3.94-	1.03	0	0	.00	.00
1.04	3.92-	1.04	0	0	.00	.00
1.05	3.90-	1.06	0	0	.00	.00
1.06	3.88-	1.07	0	0	.00	.00
1.07	3.86-	1.09	0	0	.00	.00
1.08	3.84-	1.10	0	0	.00	.00
1.09	3.82-	1.12	0	0	.00	.00
1.10	3.80-	1.13	0	0	.00	.00
1.11	3.78-	1.15	0	0	.00	.00
1.12	3.76-	1.16	0	0	.00	.00
1.13	3.75-	1.17	0	0	.00	.00
1.14	3.73-	1.19	0	0	.00	.00
1.15	3.71-	1.20	0	0	.00	.00
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1.17	3.67-	1.23	0	0	.00	.00
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MEAN	-Z- SCORE	EQUIV	-F- COUNT	CUMM. COUNT	-F- %	CUMM %
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1.56	2.90-	1.83	0	1	.00	.09
1.57	2.88-	1.84	1	2	.09	.18
1.58	2.86-	1.86	0	2	.00	.18
1.59	2.84-	1.87	0	2	.00	.18
1.60	2.82-	1.89	0	2	.00	.18
1.61	2.80-	1.90	0	2	.00	.18
1.62	2.78-	1.92	0	2	.00	.18
1.63	2.76-	1.93	0	2	.00	.18
1.64	2.75-	1.94	1	3	.09	.27
1.65	2.73-	1.96	0	3	.00	.27
1.66	2.71-	1.97	0	3	.00	.27
1.67	2.69-	1.99	0	3	.00	.27
1.68	2.67-	2.00	0	3	.00	.27
1.69	2.65-	2.02	0	3	.00	.27
1.70	2.63-	2.03	0	3	.00	.27
1.71	2.61-	2.05	1	4	.09	.36
1.72	2.59-	2.07	0	4	.00	.36
1.73	2.57-	2.08	0	4	.00	.36
1.74	2.55-	2.10	0	4	.00	.36
1.75	2.53-	2.11	0	4	.00	.36
1.76	2.51-	2.13	0	4	.00	.36
1.77	2.49-	2.14	0	4	.00	.36
1.78	2.47-	2.16	0	4	.00	.36
1.79	2.45-	2.17	1	5	.09	.45
1.80	2.43-	2.19	0	5	.00	.45
1.81	2.41-	2.20	0	5	.00	.45
1.82	2.39-	2.22	2	7	.18	.63
1.83	2.37-	2.24	0	7	.00	.63
1.84	2.35-	2.25	0	7	.00	.63
1.85	2.33-	2.27	0	7	.00	.63
1.86	2.31-	2.28	2	9	.18	.81
1.87	2.29-	2.30	0	9	.00	.81
1.88	2.27-	2.31	0	9	.00	.81
1.89	2.25-	2.33	5	14	.45	1.26
1.90	2.24-	2.34	0	14	.00	1.26
1.91	2.22-	2.35	0	14	.00	1.26
1.92	2.20-	2.37	0	14	.00	1.26
1.93	2.18-	2.38	5	19	.45	1.71
1.94	2.16-	2.40	0	19	.00	1.71
1.95	2.14-	2.41	0	19	.00	1.71
1.96	2.12-	2.43	5	24	.45	2.16
1.97	2.10-	2.44	0	24	.00	2.16
1.98	2.08-	2.46	0	24	.00	2.16
1.99	2.06-	2.47	0	24	.00	2.16
2.00	2.04-	2.49	2	26	.18	2.34
2.01	2.02-	2.50	0	26	.00	2.34
2.02	2.00-	2.52	0	26	.00	2.34
2.03	1.98-	2.54	0	26	.00	2.34

MEAN	-Z- SCORE	EQUIV	-F- COUNT	CUMM. COUNT	-F- %	CUMM %
2.04	1.96-	2.55	8	34	.72	3.06
2.05	1.94-	2.57	0	34	.00	3.06
2.06	1.92-	2.58	0	34	.00	3.06
2.07	1.90-	2.60	6	40	.54	3.60
2.08	1.88-	2.61	0	40	.00	3.60
2.09	1.86-	2.63	0	40	.00	3.60
2.10	1.84-	2.64	0	40	.00	3.60
2.11	1.82-	2.66	3	43	.27	3.87
2.12	1.80-	2.67	0	43	.00	3.87
2.13	1.78-	2.69	0	43	.00	3.87
2.14	1.76-	2.70	7	50	.63	4.50
2.15	1.75-	2.71	0	50	.00	4.50
2.16	1.73-	2.73	0	50	.00	4.50
2.17	1.71-	2.74	0	50	.00	4.50
2.18	1.69-	2.76	7	57	.63	5.13
2.19	1.67-	2.77	0	57	.00	5.13
2.20	1.65-	2.79	0	57	.00	5.13
2.21	1.63-	2.80	6	63	.54	5.67
2.22	1.61-	2.82	0	63	.00	5.67
2.23	1.59-	2.84	0	63	.00	5.67
2.24	1.57-	2.85	0	63	.00	5.67
2.25	1.55-	2.87	1	64	.09	5.76
2.26	1.53-	2.88	0	64	.00	5.76
2.27	1.51-	2.90	0	64	.00	5.76
2.28	1.49-	2.91	0	64	.00	5.76
2.29	1.47-	2.93	9	73	.81	6.57
2.30	1.45-	2.94	0	73	.00	6.57
2.31	1.43-	2.96	0	73	.00	6.57
2.32	1.41-	2.97	15	88	1.35	7.92
2.33	1.39-	2.99	0	88	.00	7.92
2.34	1.37-	3.01	0	88	.00	7.92
2.35	1.35-	3.02	0	88	.00	7.92
2.36	1.33-	3.04	8	96	.72	8.64
2.37	1.31-	3.05	0	96	.00	8.64
2.38	1.29-	3.07	0	96	.00	8.64
2.39	1.27-	3.08	14	110	1.26	9.90
2.40	1.25-	3.10	0	110	.00	9.90
2.41	1.24-	3.11	0	110	.00	9.90
2.42	1.22-	3.12	0	110	.00	9.90
2.43	1.20-	3.14	15	125	1.35	11.25
2.44	1.18-	3.15	0	125	.00	11.25
2.45	1.16-	3.17	0	125	.00	11.25
2.46	1.14-	3.18	19	144	1.71	12.96
2.47	1.12-	3.20	0	144	.00	12.96
2.48	1.10-	3.21	0	144	.00	12.96
2.49	1.08-	3.23	0	144	.00	12.96
2.50	1.06-	3.24	21	165	1.90	14.86
2.51	1.04-	3.26	0	165	.00	14.86
2.52	1.02-	3.27	0	165	.00	14.86
2.53	1.00-	3.29	0	165	.00	14.86
2.54	.98-	3.31	18	183	1.62	16.48
2.55	.96-	3.32	0	183	.00	16.48

MEAN	-Z- SCORE	EQUIV	-F- COUNT	CUMM. COUNT	-F- %	CUMM %
2.56	.94-	3.34	0	183	.00	16.48
2.57	.92-	3.35	24	207	2.17	18.65
2.58	.90-	3.37	0	207	.00	18.65
2.59	.88-	3.38	0	207	.00	18.65
2.60	.86-	3.40	0	207	.00	18.65
2.61	.84-	3.41	30	237	2.71	21.36
2.62	.82-	3.43	0	237	.00	21.36
2.63	.80-	3.44	0	237	.00	21.36
2.64	.78-	3.46	23	260	2.08	23.44
2.65	.76-	3.47	0	260	.00	23.44
2.66	.75-	3.48	0	260	.00	23.44
2.67	.73-	3.50	0	260	.00	23.44
2.68	.71-	3.51	22	282	1.99	25.43
2.69	.69-	3.53	0	282	.00	25.43
2.70	.67-	3.54	0	282	.00	25.43
2.71	.65-	3.56	22	304	1.99	27.42
2.72	.63-	3.57	0	304	.00	27.42
2.73	.61-	3.59	0	304	.00	27.42
2.74	.59-	3.61	0	304	.00	27.42
2.75	.57-	3.62	18	322	1.62	29.04
2.76	.55-	3.64	0	322	.00	29.04
2.77	.53-	3.65	0	322	.00	29.04
2.78	.51-	3.67	0	322	.00	29.04
2.79	.49-	3.68	27	349	2.44	31.48
2.80	.47-	3.70	0	349	.00	31.48
2.81	.45-	3.71	0	349	.00	31.48
2.82	.43-	3.73	35	384	3.16	34.64
2.83	.41-	3.74	0	384	.00	34.64
2.84	.39-	3.76	0	384	.00	34.64
2.85	.37-	3.78	0	384	.00	34.64
2.86	.35-	3.79	27	411	2.44	37.08
2.87	.33-	3.81	0	411	.00	37.08
2.88	.31-	3.82	0	411	.00	37.08
2.89	.29-	3.84	42	453	3.79	40.87
2.90	.27-	3.85	0	453	.00	40.87
2.91	.25-	3.87	0	453	.00	40.87
2.92	.24-	3.88	0	453	.00	40.87
2.93	.22-	3.89	29	482	2.62	43.49
2.94	.20-	3.91	0	482	.00	43.49
2.95	.18-	3.92	0	482	.00	43.49
2.96	.16-	3.94	32	514	2.89	46.38
2.97	.14-	3.95	0	514	.00	46.38
2.98	.12-	3.97	0	514	.00	46.38
2.99	.10-	3.98	0	514	.00	46.38
3.00	.08-	4.00	35	549	3.16	49.54
3.01	.06-	4.01	0	549	.00	49.54
3.02	.04-	4.03	0	549	.00	49.54
3.03	.02-	4.04	0	549	.00	49.54
3.04	.00	4.06	29	578	2.62	52.16
3.05	.02	4.08	0	578	.00	52.16
3.06	.04	4.09	0	578	.00	52.16
3.07	.06	4.11	27	605	2.44	54.60

MEAN	-Z- SCORE	EQUIV	-F- COUNT	CUMM. COUNT	-F- %	CUMM %
3.08	.08	4.12	0	605	.00	54.60
3.09	.10	4.14	0	605	.00	54.60
3.10	.12	4.15	0	605	.00	54.60
3.11	.14	4.17	23	628	2.08	56.68
3.12	.16	4.18	0	628	.00	56.68
3.13	.18	4.20	0	628	.00	56.68
3.14	.20	4.21	39	667	3.52	60.20
3.15	.22	4.23	0	667	.00	60.20
3.16	.24	4.24	0	667	.00	60.20
3.17	.25	4.25	0	667	.00	60.20
3.18	.27	4.27	28	695	2.53	62.73
3.19	.29	4.28	0	695	.00	62.73
3.20	.31	4.30	0	695	.00	62.73
3.21	.33	4.31	21	716	1.90	64.63
3.22	.35	4.33	0	716	.00	64.63
3.23	.37	4.34	0	716	.00	64.63
3.24	.39	4.36	0	716	.00	64.63
3.25	.41	4.38	30	746	2.71	67.34
3.26	.43	4.39	0	746	.00	67.34
3.27	.45	4.41	0	746	.00	67.34
3.28	.47	4.42	0	746	.00	67.34
3.29	.49	4.44	28	774	2.53	69.87
3.30	.51	4.45	0	774	.00	69.87
3.31	.53	4.47	0	774	.00	69.87
3.32	.55	4.48	34	808	3.07	72.94
3.33	.57	4.50	0	808	.00	72.94
3.34	.59	4.51	0	808	.00	72.94
3.35	.61	4.53	0	808	.00	72.94
3.36	.63	4.55	22	830	1.99	74.93
3.37	.65	4.56	0	830	.00	74.93
3.38	.67	4.58	0	830	.00	74.93
3.39	.69	4.59	19	849	1.71	76.64
3.40	.71	4.61	0	849	.00	76.64
3.41	.73	4.62	0	849	.00	76.64
3.42	.75	4.64	0	849	.00	76.64
3.43	.76	4.65	29	878	2.62	79.26
3.44	.78	4.66	0	878	.00	79.26
3.45	.80	4.68	0	878	.00	79.26
3.46	.82	4.69	15	893	1.35	80.61
3.47	.84	4.71	0	893	.00	80.61
3.48	.86	4.72	0	893	.00	80.61
3.49	.88	4.74	0	893	.00	80.61
3.50	.90	4.75	18	911	1.62	82.23
3.51	.92	4.77	0	911	.00	82.23
3.52	.94	4.78	0	911	.00	82.23
3.53	.96	4.80	0	911	.00	82.23
3.54	.98	4.81	11	922	.99	83.22
3.55	1.00	4.83	0	922	.00	83.22
3.56	1.02	4.85	0	922	.00	83.22
3.57	1.04	4.86	18	940	1.62	84.84
3.58	1.06	4.88	0	940	.00	84.84
3.59	1.08	4.89	0	940	.00	84.84

MEAN	-Z- SCORE	EQUIV	-F- COUNT	CUMM. COUNT	-F- %	CUMM %
3.60	1.10	4.91	0	940	.00	84.84
3.61	1.12	4.92	20	960	1.81	86.65
3.62	1.14	4.94	0	960	.00	86.65
3.63	1.16	4.95	0	960	.00	86.65
3.64	1.18	4.97	16	976	1.44	88.09
3.65	1.20	4.98	0	976	.00	88.09
3.66	1.22	5.00	0	976	.00	88.09
3.67	1.24	5.01	0	976	.00	88.09
3.68	1.25	5.02	15	991	1.35	89.44
3.69	1.27	5.04	0	991	.00	89.44
3.70	1.29	5.05	0	991	.00	89.44
3.71	1.31	5.07	9	1000	.81	90.25
3.72	1.33	5.08	0	1000	.00	90.25
3.73	1.35	5.10	0	1000	.00	90.25
3.74	1.37	5.11	0	1000	.00	90.25
3.75	1.39	5.13	12	1012	1.08	91.33
3.76	1.41	5.15	0	1012	.00	91.33
3.77	1.43	5.16	0	1012	.00	91.33
3.78	1.45	5.18	0	1012	.00	91.33
3.79	1.47	5.19	16	1028	1.44	92.77
3.80	1.49	5.21	0	1028	.00	92.77
3.81	1.51	5.22	0	1028	.00	92.77
3.82	1.53	5.24	10	1038	.90	93.67
3.83	1.55	5.25	0	1038	.00	93.67
3.84	1.57	5.27	0	1038	.00	93.67
3.85	1.59	5.28	0	1038	.00	93.67
3.86	1.61	5.30	5	1043	.45	94.12
3.87	1.63	5.32	0	1043	.00	94.12
3.88	1.65	5.33	0	1043	.00	94.12
3.89	1.67	5.35	8	1051	.72	94.84
3.90	1.69	5.36	0	1051	.00	94.84
3.91	1.71	5.38	0	1051	.00	94.84
3.92	1.73	5.39	0	1051	.00	94.84
3.93	1.75	5.41	9	1060	.81	95.65
3.94	1.76	5.42	0	1060	.00	95.65
3.95	1.78	5.43	0	1060	.00	95.65
3.96	1.80	5.45	5	1065	.45	96.10
3.97	1.82	5.46	0	1065	.00	96.10
3.98	1.84	5.48	0	1065	.00	96.10
3.99	1.86	5.49	0	1065	.00	96.10
4.00	1.88	5.51	6	1071	.54	96.64
4.01	1.90	5.52	0	1071	.00	96.64
4.02	1.92	5.54	0	1071	.00	96.64
4.03	1.94	5.55	0	1071	.00	96.64
4.04	1.96	5.57	2	1073	.18	96.82
4.05	1.98	5.58	0	1073	.00	96.82
4.06	2.00	5.60	0	1073	.00	96.82
4.07	2.02	5.62	7	1080	.63	97.45
4.08	2.04	5.63	0	1080	.00	97.45
4.09	2.06	5.65	0	1080	.00	97.45
4.10	2.08	5.66	0	1080	.00	97.45
4.11	2.10	5.68	7	1087	.63	98.08

MEAN	-Z- SCORE	EQUIV	-F- COUNT	CUMM. COUNT	-F- %	CUMM %
4.12	2.12	5.69	0	1087	.00	98.08
4.13	2.14	5.71	0	1087	.00	98.08
4.14	2.16	5.72	4	1091	.36	98.44
4.15	2.18	5.74	0	1091	.00	98.44
4.16	2.20	5.75	0	1091	.00	98.44
4.17	2.22	5.77	0	1091	.00	98.44
4.18	2.24	5.78	3	1094	.27	98.71
4.19	2.25	5.79	0	1094	.00	98.71
4.20	2.27	5.81	0	1094	.00	98.71
4.21	2.29	5.82	2	1096	.18	98.89
4.22	2.31	5.84	0	1096	.00	98.89
4.23	2.33	5.85	0	1096	.00	98.89
4.24	2.35	5.87	0	1096	.00	98.89
4.25	2.37	5.88	2	1098	.18	99.07
4.26	2.39	5.90	0	1098	.00	99.07
4.27	2.41	5.92	0	1098	.00	99.07
4.28	2.43	5.93	0	1098	.00	99.07
4.29	2.45	5.95	2	1100	.18	99.25
4.30	2.47	5.96	0	1100	.00	99.25
4.31	2.49	5.98	0	1100	.00	99.25
4.32	2.51	5.99	2	1102	.18	99.43
4.33	2.53	6.01	0	1102	.00	99.43
4.34	2.55	6.02	0	1102	.00	99.43
4.35	2.57	6.04	0	1102	.00	99.43
4.36	2.59	6.05	2	1104	.18	99.61
4.37	2.61	6.07	0	1104	.00	99.61
4.38	2.63	6.09	0	1104	.00	99.61
4.39	2.65	6.10	0	1104	.00	99.61
4.40	2.67	6.12	0	1104	.00	99.61
4.41	2.69	6.13	0	1104	.00	99.61
4.42	2.71	6.15	0	1104	.00	99.61
4.43	2.73	6.16	1	1105	.09	99.70
4.44	2.75	6.18	0	1105	.00	99.70
4.45	2.76	6.19	0	1105	.00	99.70
4.46	2.78	6.20	0	1105	.00	99.70
4.47	2.80	6.22	0	1105	.00	99.70
4.48	2.82	6.23	0	1105	.00	99.70
4.49	2.84	6.25	0	1105	.00	99.70
4.50	2.86	6.26	0	1105	.00	99.70
4.51	2.88	6.28	0	1105	.00	99.70
4.52	2.90	6.29	0	1105	.00	99.70
4.53	2.92	6.31	0	1105	.00	99.70
4.54	2.94	6.32	0	1105	.00	99.70
4.55	2.96	6.34	0	1105	.00	99.70
4.56	2.98	6.35	0	1105	.00	99.70
4.57	3.00	6.37	1	1106	.09	99.79
4.58	3.02	6.39	0	1106	.00	99.79
4.59	3.04	6.40	0	1106	.00	99.79
4.60	3.06	6.42	0	1106	.00	99.79
4.61	3.08	6.43	0	1106	.00	99.79
4.62	3.10	6.45	0	1106	.00	99.79
4.63	3.12	6.46	0	1106	.00	99.79

MEAN	-Z- SCORE	EQUIV	-F- COUNT	CUMM. COUNT	-F- %	CUMM %
4.64	3.14	6.48	0	1106	.00	99.79
4.65	3.16	6.49	0	1106	.00	99.79
4.66	3.18	6.51	0	1106	.00	99.79
4.67	3.20	6.52	0	1106	.00	99.79
4.68	3.22	6.54	0	1106	.00	99.79
4.69	3.24	6.55	0	1106	.00	99.79
4.70	3.25	6.56	0	1106	.00	99.79
4.71	3.27	6.58	0	1106	.00	99.79
4.72	3.29	6.59	0	1106	.00	99.79
4.73	3.31	6.61	0	1106	.00	99.79
4.74	3.33	6.62	0	1106	.00	99.79
4.75	3.35	6.64	1	1107	.09	99.88
4.76	3.37	6.65	0	1107	.00	99.88
4.77	3.39	6.67	0	1107	.00	99.88
4.78	3.41	6.69	0	1107	.00	99.88
4.79	3.43	6.70	0	1107	.00	99.88
4.80	3.45	6.72	0	1107	.00	99.88
4.81	3.47	6.73	0	1107	.00	99.88
4.82	3.49	6.75	0	1107	.00	99.88
4.83	3.51	6.76	0	1107	.00	99.88
4.84	3.53	6.78	0	1107	.00	99.88
4.85	3.55	6.79	0	1107	.00	99.88
4.86	3.57	6.81	0	1107	.00	99.88
4.87	3.59	6.82	0	1107	.00	99.88
4.88	3.61	6.84	0	1107	.00	99.88
4.89	3.63	6.86	0	1107	.00	99.88
4.90	3.65	6.87	0	1107	.00	99.88
4.91	3.67	6.89	0	1107	.00	99.88
4.92	3.69	6.90	0	1107	.00	99.88
4.93	3.71	6.92	0	1107	.00	99.88
4.94	3.73	6.93	0	1107	.00	99.88
4.95	3.75	6.95	0	1107	.00	99.88
4.96	3.76	6.96	0	1107	.00	99.88
4.97	3.78	6.97	0	1107	.00	99.88
4.98	3.80	6.99	0	1107	.00	99.88
4.99	3.82	7.00	0	1107	.00	99.88
5.00	3.84	7.02	1	1108	.09	99.97

FIGURE 1. F-SCORE EQUIVALENCIES (ADORNO, et. al., MARITIME MEN, P.
AND PRESENT STUDY)

