

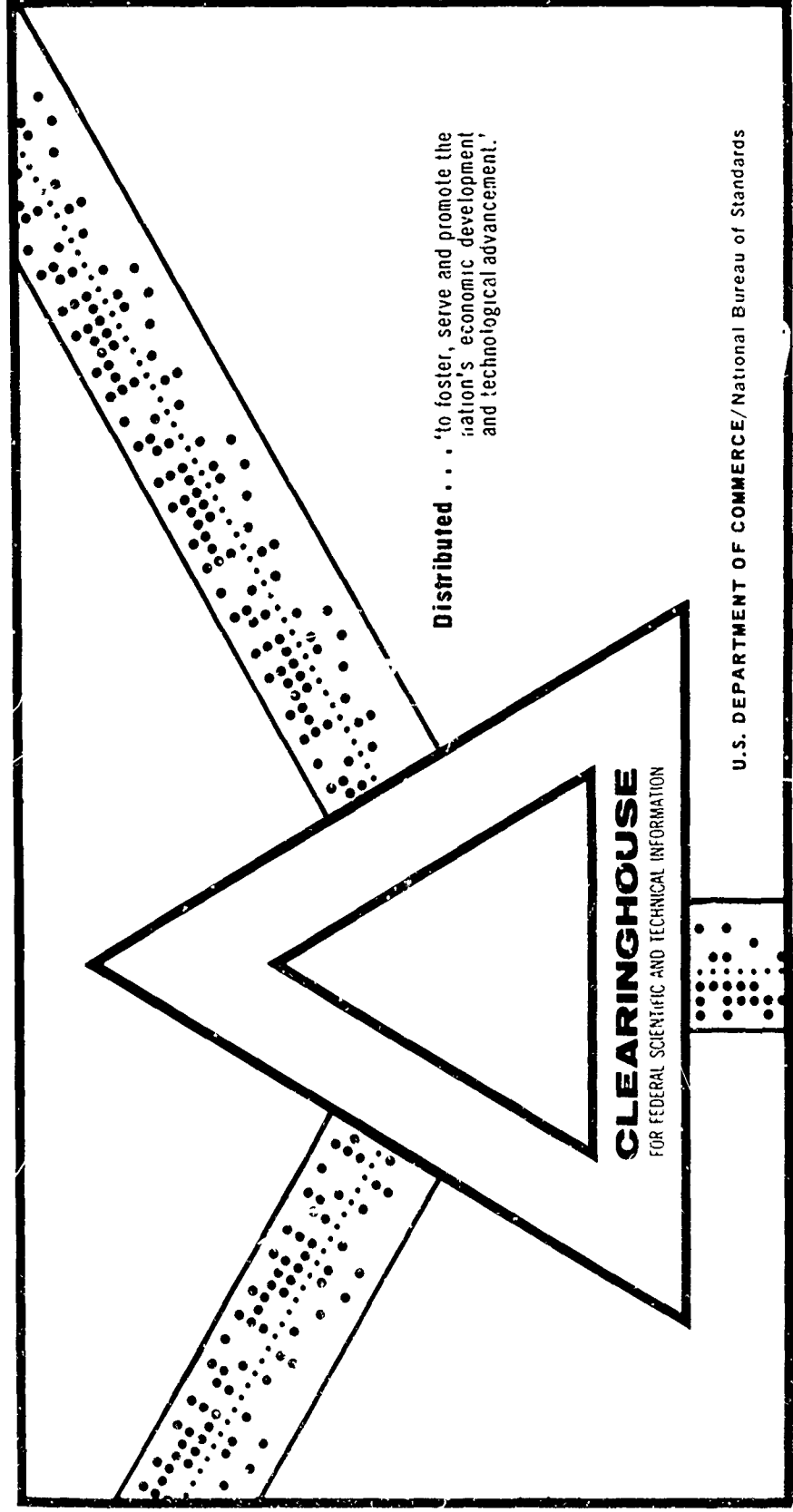
AD 698 794

HOBBY INTEREST AND LEISURE ACTIVITY BEHAVIOR AMONG STATION  
MEMBERS IN ANTARCTICA

Richard E. Doll, et al

Navy Medical Neuropsychiatric Research Unit  
San Diego, California

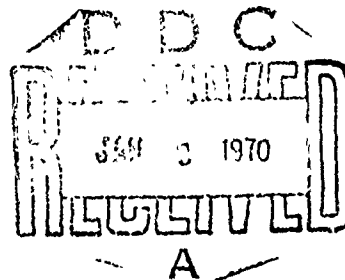
September 1969



AD 698794

**HOBBY INTEREST AND LEISURE ACTIVITY  
BEHAVIOR AMONG STATION MEMBERS  
IN ANTARCTICA**

**REPORT NUMBER: 69-34**



**NAVY MEDICAL  
NEUROPSYCHIATRIC RESEARCH UNIT**

CLEARING HOUSE

SAN DIEGO, CALIFORNIA 92152

BUREAU OF MEDICINE AND SURGERY DEPARTMENT OF THE NAVY  
WASHINGTON, D. C. 20390

Hobby Interest and Leisure Activity  
Behavior among Station Members in Antarctica

Richard E. Doll

and

E. K. Eric Gunderson

Navy Medical Neuropsychiatric Research Unit

San Diego, California 92152

Report Number 69-34, September 1969,

supported by the Bureau of Medicine and Surgery,

Department of the Navy, under Research Task MF12.524.001-9002.

The opinions expressed in this paper are those of the authors  
and are not to be construed as necessarily reflecting the views or  
endorsement of the Navy Department.

THIS DOCUMENT HAS BEEN APPROVED FOR PUBLIC RELEASE;

ITS DISTRIBUTION IS UNLIMITED.

## Hobby Interest and Leisure Activity Behavior among Station Members in Antarctica

### Introduction

During the dark winter months, the Antarctic volunteer usually has a great deal of "free" time to be spent at leisure activities. To date little research has been concerned with this particular area despite its prominent role in the life of Antarctic volunteers or any individuals exposed to prolonged periods of relative isolation in restricted environments.

The present study attempts to investigate questions concerning the kinds of hobby interests and the various leisure activities liked or disliked by different occupational groups in Antarctica, the relationships among them and over time.

### Method

Subjects. The subjects for this study consisted of 163 Navy enlisted men and 100 civilian scientists who wintered-over at one of the small stations between the years of 1964-1968, inclusively. The Navy enlisted group reflects two rather broad but distinct occupational groups, namely, Navy construction personnel (Seabees) and Navy technical-administrative personnel. Previous research (Doll, Gunderson, and Ryman, 1969) has suggested that it is prudent, in most analyses, to keep these two occupational groups, in addition to the civilians separate. The Navy enlisted sample divided into 89 Seabees and 74 technical-administrative types.

Procedure. The subjects filled out biographical, personality, and attitude inventories as part of the psychiatric assessment program for

Antarctic volunteers. These measures were administered to all volunteers during the screening phase. Among the measures was one designed to elicit the subject's attitude ("like strongly," "neutral," "dislike strongly") toward the following 20 hobbies:

- |  |                         |
|--|-------------------------|
| 1. Building models                     | 11. Collecting stamps   |
| 2. Working on radio gear               | 12. Hunting and fishing |
| 3. Listening to classical music        | 13. Team sports         |
| 4. Riding motorcycles                  | 14. Repairing things    |
| 5. Going to plays, dramas              | 15. Reading books       |
| 6. Listening to popular music          | 16. Hiking and camping  |
| 7. Painting and drawing                | 17. Going to movies     |
| 8. Participating in individual sports  | 18. Working on hot rods |
| 9. Reading magazines                   | 19. Photography         |
| 10. Listening to western-country music | 20. Playing cards       |

In addition to the above screening questionnaires, various questionnaires were administered on two occasions during the year of duty in Antarctica -- early in the period of winter isolation and again near the end of the winter isolation, approximately six months later. Among these was a questionnaire concerning the amount of time the subject spent in each of 20 different leisure activities during the previous three months. These activities were as follows:

- |  |  |
|--|--|
| 1. Attending movies  | 11. Writing letters  |
| 2. Bull sessions (talk about present job)                      | 12. Physical exercise (such as weight lifting, isometrics) |
| 3. Bull sessions (talk about past and future duty assignments) | 13. Painting and drawing                                   |
| 4. Bull sessions (talk about politics, religion, etc.)         | 14. "Happy Hour"   |
| 5. Reading fiction   | 15. Playing cards  |
| 6. Reading biographies   | 16. Playing chess or checkers                              |
| 7. Reading religious literature                                | 17. Shooting pool or billiards                             |
| 8. Reading technical magazines                                 | 18. Listening to classical music                           |
| 9. Studying for courses  | 19. Listening to popular music                             |
| 10. On the ham radio   | 20. Listening to western-country music                     |

A 3-point scale, viz., "like strongly," "neutral," and "dislike strongly" with a weighting system of 3, 2, and 1, respectively, was used for each of the

hobby attitude items. A 5-point scale, anchored at the ends by "not at all" and "every day" was used for each of the leisure activity items with a weighting range of 1 to 5.

Pearson product-moment correlations were computed between the hobby items and activity items for the three occupational groups separately. Correlations were also computed between the early and late administrations of the leisure activity questionnaires. Finally, rank-order correlations were computed between occupational groups for both the hobby interests and leisure activities.

### Results

The means and standard deviations of the hobby items and leisure activity items for the three occupational groups are presented in Appendices A through C. The correlations between hobby and activity items for the three groups are shown in Appendices D through I. These appendices reflect the basic data from which the following tables were developed. It should be noted at the outset that the N's vary somewhat from table to table and are a result of varying amounts of missing data depending upon the comparison being made.

Tables 1 and 2 indicate the relative attractiveness of the various hobbies for the three occupational groups. Only the hobby of hiking and camping was considered by all three occupational groups as being highly desirable. Both the Seabees and the technical-administrative types were attracted to reading magazines and team sports. The Seabees and the civilians shared a rather high interest in repairing things while the technical-administrative group and civilians were both attracted to individual sports and reading books. Each of the occupational groups were highly interested in one hobby which was not shared by the other two groups. For the Seabees, it was hunting and fishing; for the technical-administrative group, it was

Table 1

Rank-Order of Hobby Items within Occupational Groups

<u>Hobby</u>	<u>Seabee</u>	<u>Technical- Administrative</u>	<u>Civilian</u>
Models	12	12	11.5
Radio gear	17	17	6.5
Classical music	16	14	5
Motorcycles	15	19	17
Plays and dramas	19	15	10
Popular music	6	4	11.5
Painting and drawing	18	16	16
Individual sports	8.5	3	4
Reading magazines	2	5.5	6.5
Western-country music	10	13	19
Collecting stamps	20	20	20
Hunting and fishing	4	9	13
Team sports	5	1	9
Repairing things	1	8	3
Reading books	7	2	2
Hiking and camping	3	5.5	1
Movies	8.5	7	14
Hot rods	13	18	18
Photography	14	15	8
Cards	11	10	15
N	123	103	148

Table 2

The Five Most Desirable and Least Desirable  
Hobbies within Each Occupational Group

SeabeeMost Desirable

1. Repairing things
2. Reading magazines
3. Hiking and camping
4. Hunting and fishing
5. Team sports

Least Desirable

1. Collecting stamps
2. Plays and dramas
3. Painting and drawing
4. Radio gear
5. Classical music

Technical-Administrative

1. Team sports
2. Reading books
3. Individual sports
4. Popular music
5. Hiking and camping

1. Collecting stamps
2. Motorcycles
3. Hot rods
4. Radio gear
5. Painting and drawing

Civilian

1. Hiking and camping
2. Reading books
3. Repairing things
4. Individual sports
5. Classical music

1. Collecting stamps
2. Western-country music
3. Hot rods
4. Motorcycles
5. Painting and drawing



popular music; while, in the case of the civilians, it was classical music.

At the other end of the desirability continuum (i.e., least desirable), there was agreement by all three groups for the hobbies of collecting stamps and painting and drawing. In addition to these two hobby items, the Seabees and the technical-administrative groups agreed on the relative undesirability of working with radio gear as a hobby. The technical-administrative personnel and civilians shared a dislike for hot rods and motorcycles. The Seabees were unique in having a strong distaste for plays and dramas, painting and drawing and classical music (one of the civilians' favorite pastimes). The civilians, on the other hand, were unique in their rather extreme dislike of western-country music.

Tables 3, 4, and 5 indicate the relative position of the leisure activities on a participatory dimension from both the early and late estimation. Examination of these tables suggests a good deal of overlap among the three occupational groups for both the most participated in and least participated in activities. All three groups spent much of their leisure time attending movies, in bull sessions about their present job and in listening to popular music. The Seabees and technical-administrative groups shared an interest in listening to western-country music (a hobby dislike of the civilians) and discussing their past jobs. The civilians, on the other hand, were distinct from the other two groups in that they spent a relatively high proportion of their leisure time listening to classical music and reading technical magazines.

There was even more agreement among the three groups regarding the least participated in activities for the early evaluations. Reading biographies, playing chess or checkers, reading religious literature, and painting and drawing were relatively avoided by all three groups. The technical-

Table 3  
 Rank-Order of Leisure Activity Means  
 (Early and Late) within Occupational Groups

<u>Activity</u>	<u>Seabee</u>		<u>Technical- Administrative</u>		<u>Civilian</u>	
	<u>Early</u>	<u>Late</u>	<u>Early</u>	<u>Late</u>	<u>Early</u>	<u>Late</u>
Movies	1	1	1	1	1	1
Bull sessions (present job)	2	2	4	4	4	4
Bull sessions (past job)	5	4	5	3	6	7
Bull sessions (general)	12	12	10	10	8	8
Reading fiction	14	9	12	6	7	6
Reading biographies	20	17	20	16	20	15
Reading religious literature	16	18	17	20	16	19.5
Reading technical magazines	7	6	9	8	5	5
Studying courses	10	7.5	7	7	9	9
Ham radio	9	14	8	9	11.5	11
Writing letters	13	16	13	18	10	18
Physical exercise	19	15	15	12	15	10
Painting and drawing	17	20	16	17	17	19.5
"Happy Hour"	11	7.5	14	15	14	13
Cards	15	11	18	14	19	17
Chess or checkers	18	19	19	19	18	14
Pool or billiards	8	10	11	11	11.5	16
Classical music	6	13	6	13	2	3
Popular music	4	3	3	2	3	2
Western-country music	3	5	2	5	13	12
N	91	84	74	70	101	81

Table 4

The Five Most Participated in Leisure Activities  
within Each Occupation Group

Seabee

Early

1. Movies
2. Bull sessions (present job)
3. Western-country music
4. Popular music
5. Bull sessions (past job)

Late

1. Movies
2. Bull sessions (present job)
3. Popular music
4. Bull sessions (past job)
5. Western-country music

Technical-Administrative

1. Movies
2. Western-country music
3. Popular music
4. Bull sessions (present job)
5. Bull sessions (past job)

1. Movies
2. Popular music
3. Bull sessions (past job)
4. Bull sessions (present job)
5. Western-country music

Civilian

1. Movies
2. Classical music
3. Popular music
4. Bull sessions (present job)
5. Reading technical magazines

1. Movies
2. Popular music
3. Classical music
4. Bull sessions (present job)
5. Reading technical magazines

Table 5

The Five Least Participated in Leisure Activities  
within Each Occupation Group

Seabee

Early

1. Reading biographies
2. Physical exercise
3. Chess or checkers
4. Painting and drawing
5. Reading religious literature

Late

1. Painting and drawing
2. Chess or checkers
3. Reading religious literature
4. Reading biographies
5. Writing letters

Technical-Administrative

1. Reading biographies
2. Chess or checkers
3. Cards
4. Reading religious literature
5. Painting and drawing

1. Reading religious literature
2. Chess or checkers
3. Writing letters
4. Painting and drawing
5. Reading biographies

Civilian

1. Reading biographies
2. Cards
3. Chess or checkers
4. Painting and drawing
5. Reading religious literature

1. Reading religious literature
2. Painting and drawing
3. Writing letters
4. Cards
5. Pool or billiards

administrative group and the civilians shared a common avoidance of playing cards. The Seabees were unique in their evasion of physical exercise as a leisure activity. This may be explained by the fact that the Seabees, in general, are physically the hardest working occupational group.

There are few remarkable changes between the early and late administrations in the relative rankings of the leisure activities at the extreme ends. One worthy of mention is the sharp drop in letter writing for all three groups. However, this is not surprising since the Mailman's Credo does not hold true during the winter months at Antarctica.

Table 6 gives the Pearson correlations between the early and late administrations of the leisure activity questionnaire. These correlations reflect the consistency of the responses to the items over time. Generally, it appears that "movies," "western-country music," "popular music," "classical music," and "ham radio" were the most consistently responded to items. In other words, the amount of leisure time spent by the individual subjects in these activities did not vary much over time in comparison to the other activities. However, it should be pointed out that the low correlation for "letter writing" was probably the result of a restriction of range artifact.

For certain hobby items there were counter-part leisure activity items. Table 7 gives the correlations between these overlapping items. For the Seabees, a significant relationship between the expressed feelings toward a hobby and its related leisure activity over both administrations was found only in the case of western-country music. Attending movies and playing cards, as hobby interests, were significantly related to their respective leisure activity only during the early part of the wintering-over period. As was true with the Seabees, the western-country music hobby-leisure activity

Table 6

Pearson Correlations between Early and Late  
Administrations of Leisure Activity Items within Groups

<u>Activity</u>	<u>Seabees</u>	<u>Technical- Administrative</u>	<u>Civilian</u>
Movies	.48	.50	.50
Bull session (present job)	.25	.32	.31
Bull session (past job)	.19	.38	.50
Bull session (general)	.36	.33	.46
Reading fiction	.51	.26	.41
Reading biographies	.47	.17	.58
Reading religious literature	.46	.34	.44
Reading technical magazines	.37	.39	.32
Studying courses	.39	.47	.44
Ham radio	.42	.66	.43
Writing letters	.28	.12	.04
Physical exercise	.52	.26	.22
Painting and drawing	.16	.28	.32
"Happy Hour"	.47	.29	.55
Cards	.49	.26	.22
Chess and checkers	.22	.01	.23
Pool or billiards	.38	.21	.16
Classical music	.44	.46	.60
Popular music	.43	.46	.37
Western-country music	.68	.45	.61
N	82	66	78

Table 7  
Correlations between "Overlapping" Hobby and Leisure Activity Items

<u>Hobby</u>	<u>Activity</u>	<u>Seabee</u>		<u>Technical- Administrative</u>		<u>Civilian</u>	
		<u>Early</u>	<u>Late</u>	<u>Early</u>	<u>Late</u>	<u>Early</u>	<u>Late</u>
Classical music	Classical music	.16	.18	.06	.26*	.30**	.41**
Popular music	Popular music	.18	.16	-.03	-.17	.28**	.31**
Painting and drawing	Painting and drawing	.12	.14	.12	.32**	.20*	.17
Western-country music	Western-country music	.30**	.34**	.37**	.39**	.53**	.34**
Reading books	Reading fiction	.19	.04	-.01	.07	.32*	.04
Reading books	Reading biographies	.15	.17	.11	.00	.17	.07
Going to movies	Attending movies	.26*	.17	.24*	.22	.15	.29**
Playing cards	Playing cards	.35**	.19	.15	.20	.10	.43**
	N	89	82	74	70	100	80

\*p ≤ .05

\*\*p ≤ .01

relationship was significant across both administrations within the technical-administrative group. Hobby-leisure activity relationships also reached statistical significance in the case of classical music (2nd administration), painting and drawing (2nd administration), and going to movies (1st administration).

Within the civilian sample there appears to be a greater consistency between their expressed attitudes towards certain hobbies and their behavioral involvement with the related activity. Attitudes toward classical music, popular music, and western-country music were significantly related to the amount of time spent in these activities for both evaluation periods. Significant hobby-leisure activity relationships were found for reading books (fiction, 1st administration), painting and drawing (1st administration), going to movies (2nd administration), and playing cards (2nd administration).

In Table 8 are shown the rank-order correlations ( $\rho$ ) between the occupational groups for the leisure activities and hobby interests. On the bases of the hobby interests it seems evident that the two most similar groups are the Seabees and technical-administrative types with a  $\rho$  of .79 and the two most dissimilar groups are the Seabees and the civilians with a  $\rho$  of .48. The same similarity pattern appears to exist for the leisure activity dimension except that all three groups are more similar here than on the hobby dimension. These findings would tend to support the notion that the Antarctic situation reduces the range of potential leisure activities forcing the occupational groups to spend their leisure time more similarly than would be predicted on the basis of their hobby interests.

#### Discussion

It would appear that the two Navy groups were rather similar in both



Table 8

Rank-Order Correlations between Occupational Groups  
for Leisure Activities (Early and Late) and Hobby Interests

<u>Variable</u>	Comparison		
	Seabee vs. Technical- Administrative	Seabee vs. Civilian	Technical- Administrative vs. Civilian
Hobbies	.79	.48	.72
Activities (Early)	.94	.80	.85
Activities (Late)	.89	.76	.80

their attitude toward the various hobbies and the amount of time spent in certain leisure activities. However, the civilian scientists differed sharply from the Seabees in attitude toward the hobbies. Of special note was the conflict of attitudes toward western-country music and classical music. The Seabees expressed a rather favorable attitude toward listening to western-country music as a hobby but indicated strong distaste for classical music. Alternately, the civilians indicated a highly favorable attitude toward classical music but considered listening to western-country music as an undesirable hobby. Since both groups spent a large part of their leisure time listening to their favorite type of music one must wonder about the possibility of Navy-civilian conflict involving music. Whether this is a "bone of contention" between the groups needs to be more closely examined. However, the close quarters in which these men must exist would tend to enhance such a possibility.

There did not appear to be any striking changes, between early and late administrations, in the way the groups spent their leisure activity. As might be expected there was a rather substantial increase in physical exercise and decrease in letter writing for all groups. There was also an increase in reading books of fiction, especially in the case of the two Navy groups. Finally, it should be noted that there was a sharp increase in the avoidance of listening to classical music within the two Navy groups.

In general, the most popular activities kept their relative status throughout the wintering-over period. Perhaps more noteworthy than the leisure activity changes over time were the nature of the activities participated in and avoided. Activities of competition, viz., chess or checkers, cards, and pool were among the least participated in activities. This is rather remarkable since all three occupational groups seemed to express an interest in

competitive types of hobbies, i.e., individual sports and team sports. Of course, one possible explanation would be that there was a limited number of chess boards, checker boards, pool tables, and decks of cards. A more intriguing, but perhaps less parsimonious, interpretation would involve the men's need for harmony. It is easy to imagine that the Antarctic situation, with its close quarters, confinement, and its isolation from the "outside" world for extended periods of time, exerts certain pressures to maintain as harmonious a psychological atmosphere as possible. This premise was supported in an earlier study by the authors (Doll and Gunderson, 1969) which suggested that the most desirable trait of station members as seen by peers was emotional stability and social compatibility as opposed to task performance and leadership behavior.

Clearly the more appreciated leisure activities were attending movies, bull sessions, and music, although the type of music depended upon the occupational group being considered. However, "popular" music was appreciated by all three groups. The popularity of movies is not surprising since no other leisure activity would provide a more effective means of escapism. The fact that some of the films were shown in excess of fifty times during one year would seem to support such a supposition.

Movies, music, and involvement with ham radio appeared to be the more sustaining leisure activities for those interested in them and/or the more consistently avoided activities for those men not interested. This was true for all three occupational groups.

It is difficult to know exactly why attitudes toward certain hobbies related significantly with the amount of time spent in their counterpart leisure activities while for other hobbies no such relationship existed.

Also, there is no easy explanation for there being substantially more significant hobby-leisure activity relationships within the civilian scientist sample than for the Seabees. However, it would seem that either the scientists were more discerning in their responses to the questionnaires or there was a stronger relationship between attitudes and behavior among the civilian sample as opposed to the Seabee group.

It should be noted that the findings reported in this study were based upon a pooling of information across stations and years. It is safe to assume that inter-station and inter-year differences did exist. However, it is doubtful that any station for any year deviated radically from the general picture portrayed herein.

## References

- Doll, R. E. and Gunderson, E. K. E. The relative importance of selected behavioral characteristics of group members in an extreme environment. Unit Report No. 69-31, 1969, U.S. Navy Medical Neuropsychiatric Research Unit, San Diego, California 92162.
- Doll, R. E. and Gunderson, E. K. E. Relative predictability of occupational groups and performance criteria in an extreme environment. Clinical Psychology, in press.

## Appendix A

## Hobby Means and Standard Deviations for Winter-Over Personnel

<u>Hobbies</u>	<u>Technical- Administrative</u>		<u>Seabee</u>		<u>Civilian</u>	
	<u>Means</u>	<u>S.D.</u>	<u>Means</u>	<u>S.D.</u>	<u>Means</u>	<u>S.D.</u>
Models	2.24	.79	2.35	.78	2.37	.67
Radio	2.30	.83	2.01	.81	2.57	.57
Classical music	2.19	.83	2.02	.85	2.62	.58
Motorcycles	1.81	.82	2.12	.88	1.98	.62
Plays and dramas	2.00	.79	1.68	.77	2.38	.60
Popular music	2.69	.54	2.69	.62	2.37	.59
Painting and drawing	1.90	.79	1.86	.85	2.09	.63
Individual sports	2.70	.56	2.63	.63	2.66	.52
Reading magazines	2.68	.56	2.81	.43	2.57	.55
Western-country music	2.20	.84	2.53	.72	1.82	.65
Collecting stamps	1.58	.67	1.45	.58	1.80	.57
Hunting and fishing	2.51	.70	2.75	.55	2.35	.60
Team sports	2.80	.49	2.72	.56	2.47	.63
Repairing things	2.60	.68	2.90	.32	2.70	.48
Reading books	2.74	.56	2.67	.61	2.82	.40
Hiking and camping	2.68	.61	2.76	.51	2.84	.37
Movies	2.62	.63	2.63	.63	2.31	.56
Hot rods	1.85	.77	2.25	.79	1.97	.59
Photography	2.09	.82	2.22	.78	2.50	.57
Cards	2.37	.82	2.36	.79	2.18	.64
N	103		123		148	

## Appendix B

Activity Means and Standard Deviations for  
Wintering-Over Personnel (Early)

<u>Activities</u>	<u>Technical- Administrative</u>		<u>Seabee</u>		<u>Civilian</u>	
	<u>Means</u>	<u>S.D.</u>	<u>Means</u>	<u>S.D.</u>	<u>Means</u>	<u>S.D.</u>
Movies	4.20	1.10	4.36	.82	3.83	1.14
Bull session (present job)	3.50	1.14	4.06	.97	3.37	1.04
Bull session (past job)	3.43	1.17	3.57	1.15	3.02	1.06
Bull session (general)	2.65	1.27	2.62	1.21	2.87	1.13
Reading fiction	2.60	1.47	2.40	1.37	2.92	1.30
Reading biography	1.69	.99	1.74	.85	1.72	.94
Reading religious literature	1.99	1.29	2.04	1.20	1.98	1.33
Reading technical magazines	2.82	1.38	3.03	1.17	3.13	1.36
Studying courses	2.96	1.45	2.85	1.21	2.74	1.45
Ham radio	2.89	1.31	2.86	1.20	2.56	1.13
Writing letters	2.57	1.44	2.60	1.47	2.60	1.16
Physical exercise	2.37	1.36	1.78	1.20	2.19	1.47
Painting and drawing	2.01	1.37	1.99	1.27	1.81	1.13
"Happy Hour"	2.53	1.33	2.78	1.43	2.24	1.27
Cards	1.97	1.23	2.06	1.18	1.79	1.05
Chess or checkers	1.81	1.25	1.80	1.16	1.80	1.15
Pool or billiards	2.62	1.51	3.06	1.42	2.56	1.49
Classical music	3.23	1.58	3.11	1.51	3.74	1.28
Popular music	3.61	1.43	3.98	1.15	3.56	1.37
Western-country music	3.69	1.27	4.01	1.30	2.54	1.47
N	74		91		101	

## Appendix C

Activity Means and Standard Deviations for  
Wintering-Over Personnel (Late)

<u>Activities</u>	<u>Technical Administrative</u>		<u>Seabee</u>		<u>Civilian</u>	
	<u>Means</u>	<u>S.D.</u>	<u>Means</u>	<u>S.D.</u>	<u>Means</u>	<u>S.D.</u>
Movies	4.16	1.18	4.55	.68	4.01	.93
Bull sessions (present job)	3.63	1.16	4.11	1.01	3.36	1.15
Bull sessions (past job)	3.73	.99	3.98	.97	3.14	1.10
Bull sessions (general)	2.59	1.27	2.56	1.14	2.90	1.13
Reading fiction	3.20	1.34	2.83	1.19	3.26	1.23
Reading biography	1.86	1.07	1.68	.95	2.00	1.19
Reading religious literature	1.40	.81	1.61	.86	1.44	.87
Reading technical magazines	2.76	1.23	2.88	1.13	3.29	1.21
Studying courses	2.86	1.33	2.87	1.16	2.78	1.46
Ham radio	2.71	1.36	2.38	1.16	2.51	1.22
Writing letters	1.73	1.17	1.76	1.08	1.46	.74
Physical exercise	2.49	1.41	2.04	1.39	2.67	1.58
Painting and drawing	1.74	1.11	1.51	.80	1.44	.87
"Happy Hour"	2.32	1.32	2.87	1.48	2.31	1.06
Cards	2.43	1.28	2.57	1.30	1.80	1.23
Chess or checkers	1.60	.89	1.58	.93	2.06	1.38
Pool or billiards	2.57	1.40	2.74	1.36	1.96	1.15
Classical music	2.46	1.38	2.39	1.47	3.54	1.37
Popular music	3.91	1.11	4.05	1.16	3.82	1.20
Western-country music	3.46	1.38	3.84	1.27	2.35	1.37
N	70		84		81	



# Appendix D

Correlations between Hobby and Activity Items, Early (Seabees)

Hobbies	1a	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Models	-01	-11	-11	-13	-03	03	-02	-03	-19	-04	-07	-18	13	-13	-15	06	01	-16	-13	-13
Radio gear	06	-04	-15	09	-20	02	15	18	12	05	07	05	-06	-29	-23	62	-19	18	03	-07
Classical music	10	00	13	31	12	09	06	24	14	-17	05	25	10	-01	06	02	-04	16	20	-09
Motorcycles	13	-07	08	-04	04	-25	-08	-12	02	-01	-01	-04	07	02	04	-10	17	02	-12	05
Plays and dramas	-03	-11	02	21	08	08	25	21	08	08	-22	15	07	11	12	34	09	18	12	-02
Popular music	-07	-01	-01	11	05	24	01	22	-13	-25	09	21	-02	18	02	07	-09	-04	18	-14
Painting and drawing	05	-21	-08	-04	-09	19	23	16	21	12	-02	00	12	-15	-15	12	04	08	-04	-03
Individual sports	01	01	05	-08	-10	-03	16	08	12	-01	14	08	12	-17	00	-09	-12	15	02	11
Reading magazines	12	-05	06	05	12	21	11	06	-13	-19	19	-08	08	08	02	-01	-01	02	26	02
Western-country music	02	03	-20	-12	-02	-06	15	-20	-14	03	02	-22	14	-01	02	-05	02	-21	-11	30
Stamp collecting	-02	05	11	28	04	11	11	11	-02	16	-09	-05	04	08	-02	04	07	04	02	00
Hunting and fishing	12	-06	03	-08	02	00	-06	15	05	-07	06	05	-14	02	20	-07	19	-23	02	-12
Team sports	13	27	17	16	03	16	23	07	15	01	01	07	10	00	11	19	01	-02	16	00
Repairing things	23	05	21	04	23	03	01	07	-13	05	01	-03	-05	-02	10	-02	-08	-09	03	03
Reading books	12	01	27	00	19	15	-09	12	06	-03	01	08	01	10	09	-11	-12	00	26	10
Hiking and camping	17	09	03	10	-02	04	19	-03	-03	09	03	04	07	-08	06	03	07	-04	10	-12
Going to movies	26	-11	-07	-06	-03	04	-04	03	-16	01	-06	-05	11	-08	-02	01	02	06	15	-10
Working on hot rods	01	00	-04	-11	-01	00	07	07	-08	27	-24	-05	24	06	-06	14	19	07	-05	09
Photography	-13	-05	-08	07	12	-04	17	18	-05	-05	10	17	09	10	-02	16	02	16	09	12
Playing cards	-05	12	01	00	-03	-04	-07	01	-12	-01	06	-06	15	12	35	06	16	-09	-10	-10

N = 89, p < .05 = .20

<sup>a</sup> 1 = Attending movies; 2 = Bull sessions (present job); 3 = Bull sessions (past job); 4 = Bull sessions (general);  
5 = Reading fiction; 6 = Reading biography; 7 = Reading religious literature; 8 = Reading technical magazines;  
9 = Studying courses; 10 = Ham radio; 11 = Writing letters; 12 = Physical exercise; 13 = Painting and drawing;  
14 = "Happy Hour"; 15 = Playing cards; 16 = Chess or checkers; 17 = Pool or billiards; 18 = Classical music;  
19 = Popular music; 20 = Western-country music.

# Appendix E

## Correlations between Hobby and Activity Items, Late (Seabees)

Hobbies	1 <sup>a</sup>	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Models	04	09	-13	08	05	-01	-09	01	-15	13	10	-15	-03	-02	-03	-02	03	-18	-11	-12
Radio gear	-06	01	-03	07	-09	04	02	-06	-08	14	06	03	-08	-23	-07	-02	-09	01	02	-01
Classical music	13	05	06	15	08	20	08	14	07	02	-14	39	17	-09	08	20	-04	18	27	-11
Motorcycles	32	07	-15	-02	04	-15	-05	12	-05	10	-09	13	13	06	05	00	16	-04	-04	00
Plays and dramas	05	13	10	26	17	22	13	09	03	15	11	27	25	-09	-01	27	-09	15	13	01
Popular music	02	22	02	11	18	19	09	-09	-04	-01	11	15	20	04	09	05	10	-13	16	-04
Painting and drawing	19	00	-05	15	07	01	06	07	07	22	24	16	14	-08	-05	-11	-06	02	05	10
Individual sports	15	-02	-13	-13	-07	04	22	01	15	-02	12	14	02	-07	01	15	-02	08	02	09
Reading magazines	13	17	15	10	15	13	06	04	03	-15	06	-11	-03	-11	17	08	-19	-03	25	08
Western-country music	-07	-07	-05	05	-24	-02	05	05	-01	-11	-15	-23	-16	-10	06	-33	-05	00	-17	34
Stamp collecting	00	17	14	28	05	19	05	-01	-09	41	-05	12	03	03	-21	06	-01	-20	09	16
Hunting and fishing	17	-07	-10	-05	-17	-03	05	16	10	-07	14	-06	05	-25	27	20	-09	-01	-17	-09
Team sports	27	09	-04	02	14	07	23	06	12	10	23	02	12	-04	22	11	23	-12	-04	10
Repairing things	07	08	-01	07	19	10	06	19	06	-06	-06	-02	-01	-10	15	02	-22	-14	-05	-12
Reading books	19	-09	01	-09	04	17	-05	14	05	-03	-02	07	-10	12	12	-03	21	-06	06	-03
Hiking and camping	15	13	-11	19	19	21	-01	05	-02	07	15	09	07	-15	19	05	-07	-05	-02	-03
Going to movies	17	14	-05	11	20	08	-02	00	-04	-15	10	05	11	-13	-01	-07	-08	01	07	-14
Working on hot rods	-04	10	01	-04	01	-07	07	13	03	16	02	00	13	00	01	09	-13	04	-05	09
Photography	00	27	11	21	23	04	10	11	-03	03	-03	13	11	03	-03	12	18	10	41	14
Playing cards	06	02	-02	01	12	04	-12	08	-01	04	-02	-17	01	32	19	05	17	-09	-03	11

N = 82, p < .05 = .22

1<sup>a</sup> = Attending movies; 2 = Bull session (present job); 3 = Bull session (past job); 4 = Bull session (general); 5 = Reading fiction; 6 = Reading biography; 7 = Reading religious literature; 8 = Reading technical magazines; 9 = Studying courses; 10 = Ham radio; 11 = Writing letters; 12 = Physical exercise; 13 = Painting and drawing; 14 = "Happy Hour"; 15 = Playing cards; 16 = Chess or checkers; 17 = Pool or billiards; 18 = Classical music; 19 = Popular music; 20 = Western-country music

# Appendix F

Correlations between Hobby and Activity Items, Early (Technical-Administrative)

Hobbies	1 <sup>a</sup>	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Models	-20	-09	-07	-04	05	22	19	18	-05	04	08	-20	12	10	-01	08	-04	05	-19	16
Radio gear	-26	-23	-29	09	06	00	13	26	-04	25	-11	18	05	-06	-03	09	-04	11	-19	-08
Classical music	-11	-09	-02	-25	02	15	07	10	17	19	03	-04	00	01	-13	-18	07	06	20	-07
Motorcycles	03	-14	-14	08	27	08	-08	-09	-06	11	00	-05	-07	-17	-03	01	-05	-06	-12	02
Plays and dramas	-04	08	06	-10	13	18	03	-07	-06	-05	-12	-10	-06	01	-07	01	-02	02	04	08
Popular music	-12	11	27	06	05	02	17	-02	02	10	-27	05	-03	01	-17	01	08	09	-03	09
Painting and drawing	-12	05	-03	06	-06	16	09	14	-20	-05	11	04	12	04	15	28	12	04	-03	-04
Individual sports	10	-01	-23	-12	01	01	09	-03	-09	07	-04	21	-10	-27	-19	06	15	-12	22	24
Reading magazines	09	11	01	01	19	16	11	03	19	05	15	03	17	-10	-03	-07	02	21	29	21
Western-country music	-04	14	12	-06	08	01	-10	-15	-02	-24	07	10	07	08	07	-01	-03	-29	-07	37
Collecting stamps	-18	01	-11	-05	09	15	03	-05	-13	-02	-05	-13	01	-21	13	24	20	09	-20	-12
Hunting and fishing	01	-09	-29	-03	-08	08	04	14	10	10	15	-02	02	09	12	17	-09	-01	-08	18
Team sports	-10	-08	-19	-19	07	00	08	12	-05	13	14	-11	09	03	11	15	01	10	-02	-02
Repairing things	-02	-09	-20	-16	-01	11	05	02	15	01	-07	-13	04	-09	-13	-17	-03	09	05	19
Reading books	-04	-03	00	-07	-08	07	06	17	-06	-01	08	-13	15	09	02	04	-01	05	-17	01
Hiking and camping	24	00	04	-01	-18	-09	01	-08	-06	01	03	-03	13	05	00	-08	01	-01	00	03
Going to movies	-30	-02	-12	04	09	-03	25	20	-14	-03	20	-17	04	-01	02	24	07	02	-14	27
Working on hot rods	-10	-02	-16	-03	01	08	10	16	-10	00	-14	-01	20	-22	-01	02	-11	-15	-33	-07
Photography	-10	10	-04	-03	-21	-19	04	-02	-14	-06	18	-15	14	05	15	-02	04	-07	-25	09
Playing cards																				

N = 74, p < .05 = .22

<sup>a</sup>1 = Attending movies; 2 = Bull sessions (present job); 3 = Bull sessions (past job); 4 = Bull sessions (general);  
 5 = Reading fiction; 6 = Reading biography; 7 = Reading religious literature; 8 = Reading technical magazines;  
 9 = Studying courses; 10 = Ham radio; 11 = Writing letters; 12 = Physical exercise; 13 = Painting and drawing;  
 14 = "Happy Hour"; 15 = Playing cards; 16 = Chess or checkers; 17 = Pool or billiards; 18 = Classical music;  
 19 = Popular music; 20 = Western-country music

# Appendix G

## Correlations between Hobby and Activity Items, Late (Technical-Administrative)

Hobbies	1a	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Models	10	05	06	00	11	01	01	04	-04	-02	-10	12	07	08	09	14	15	00	17	19
Radio gear	-06	-10	02	-17	-12	-14	10	12	-17	20	-16	15	01	02	20	-01	06	-03	-04	-14
Classical music	-20	-23	-21	-33	-11	-14	-03	09	01	11	-27	-21	07	04	-16	09	-02	26	20	22
Motorcycles	12	02	05	-08	02	-04	-11	14	-05	02	-06	-01	-17	-11	00	-15	17	-01	-03	-06
Plays and dramas	-24	10	-01	10	01	28	17	-01	10	-29	-24	-01	-06	-19	-04	06	02	08	05	00
Popular music	25	-07	13	08	-03	11	-16	-01	04	-14	-06	05	-05	-17	21	-05	19	00	-17	16
Painting and drawing	-24	01	-01	-06	10	04	-17	-04	-08	-13	-12	02	32	-21	18	-06	10	10	09	-13
Individual sports	09	12	-09	-01	15	05	03	17	23	-03	-05	14	-07	12	-05	09	17	-03	15	17
Reading magazines	-09	17	19	03	-06	08	10	08	24	-13	21	00	06	-06	01	23	01	16	23	08
Western-country music	12	04	-13	09	08	03	-15	04	06	-18	-07	-10	02	04	-02	-05	11	-11	10	39
Collecting stamps	-12	-09	-11	14	05	06	-23	12	00	-09	-10	15	24	-23	01	-06	05	11	16	-01
Hunting and fishing	-22	-28	-19	04	-02	-07	-16	-18	-04	03	-13	-09	-07	14	24	14	00	-09	09	24
Team sports	19	07	-09	01	06	02	-12	15	15	-13	11	30	-10	04	12	11	21	-25	-11	03
Repairing things	07	-09	00	-11	-17	-11	08	00	-21	26	-05	-03	03	-02	02	13	-02	-01	16	18
Reading books	-04	03	01	-24	07	00	-15	16	19	-25	-12	-11	-05	04	11	11	03	-05	07	22
Hiking and camping	-06	-20	-01	07	08	-12	-24	06	04	-13	09	08	00	-04	04	16	-12	05	-09	00
Going to movies	22	-04	-00	10	-02	-15	03	07	18	-17	17	06	17	-08	07	15	21	08	01	03
Working on hot rods	-02	-03	11	02	02	-01	01	08	-09	-02	05	-04	-05	-08	19	-01	21	-01	07	11
Photography	-06	-15	-06	-05	-15	-17	12	24	-08	-02	-11	02	24	-14	13	-01	06	-02	07	06
Playing cards	-18	-05	-17	-03	-14	-13	-04	-04	10	-13	18	-06	20	-17	20	17	-01	00	-08	00

N = 70, p < .05 = .23

- a<sub>1</sub> = Attending movies; 2 = Bull sessions (present job); 3 = Bull sessions (past job); 4 = Bull sessions (general);  
5 = Reading fiction; 6 = Reading biography; 7 = Reading religious literature; 8 = Reading technical magazines;  
9 = Studying courses; 10 = Ham radio; 11 = Writing letters; 12 = Physical exercise; 13 = Painting and drawing;  
14 = "Happy Hour"; 15 = Playing cards; 16 = Chess or checkers; 17 = Pool or billiards; 18 = Classical music;  
19 = Popular music; 20 = Western-country music

# Appendix H

## Correlations between Hobby and Activity Items, Early (Civilians)

Hobbies	1 <sup>a</sup>	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Models	06	21	13	11	-06	-01	08	02	-02	15	14	-11	15	-04	02	10	04	05	-01	-11
Radio gear	-03	22	06	19	-03	10	28	22	15	14	17	-05	21	-14	08	-07	-08	18	-02	12
Classical music	01	-03	-06	-11	09	17	-01	06	17	16	14	08	08	04	03	-09	-06	30	15	-12
Motorcycles	-03	01	00	-02	00	09	-16	-04	-07	-07	-18	33	00	15	08	04	14	-05	22	-08
Plays and dramas	06	10	-08	-10	16	17	11	05	21	05	07	04	07	06	08	-02	-10	26	14	04
Popular music	03	-06	-09	01	00	14	-10	09	-13	15	00	07	-05	01	01	16	13	28	03	03
Painting and drawing	03	-08	-03	-09	-01	16	05	-04	33	-03	-04	11	20	06	05	-06	-04	16	-07	-13
Individual sports	08	09	04	06	19	12	-10	16	06	-01	-12	19	02	18	-14	06	-01	-02	28	-02
Reading magazines	03	07	08	-06	14	14	-05	20	-24	-06	10	19	-06	01	04	12	03	01	19	-01
Western-country music	10	-08	01	02	01	23	00	19	-06	-10	-25	05	15	-01	08	13	-02	-07	17	53
Collecting stamps	-10	-09	-06	-02	10	06	05	01	10	-13	04	02	-07	-22	04	13	03	-09	-17	-05
Hunting and fishing	06	-01	-05	-08	-14	13	-08	10	-13	01	04	09	03	06	-12	04	06	09	14	12
Team sports	14	01	-11	-02	-18	07	12	-04	-12	-14	-01	14	21	10	-09	15	18	-05	07	04
Repairing things	-01	-01	-20	-05	-06	-02	-03	29	-06	11	09	03	-02	04	-31	-08	-14	11	13	05
Reading books	-10	-14	-06	-10	32	17	-10	03	-16	21	-12	09	-12	16	04	21	-01	10	24	-01
Hiking and camping	-08	11	-01	10	-05	10	06	10	01	17	-03	20	-05	01	-01	-04	-17	-02	-01	09
Going to movies	15	30	24	-08	09	-03	-09	07	00	09	20	07	01	07	08	07	06	-04	17	-02
Working on hot rods	-06	09	03	03	16	01	-10	-16	07	00	-19	05	07	-11	01	-08	-06	-04	-13	-13
Photography	07	03	-01	-20	08	07	-09	02	-12	-02	06	04	-08	-13	-06	03	-06	-06	02	-09
Playing cards	-06	13	11	17	14	05	20	-02	13	05	16	00	17	06	10	15	10	13	-02	-05

N = 100, p < .05 = .20

a1 = Attending movies; 2 = Bull sessions (present job); 3 = Bull sessions (past job); 4 = Bull sessions (general);  
5 = Reading fiction; 6 = Reading biography; 7 = Reading religious literature; 8 = Reading technical magazines;  
9 = Studying courses; 10 = Ham radio; 11 = Writing letters; 12 = Physical exercises; 13 = Painting and drawing;  
14 = "Happy Hour"; 15 = Playing cards; 16 = Chess or checkers; 17 = Pool or billiards; 18 = Classical music;  
19 = Popular music; 20 = Western-country music.

# Appendix I

## Correlations between Hobby and Activity Items, Late (Civilians)

Hobbies	1 <sup>a</sup>	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Models	-03	05	09	12	-17	02	-01	-03	-04	19	-02	-14	17	04	10	-07	20	-14	12	-08
Radio gear	04	22	12	12	-06	22	16	15	16	20	20	04	14	-13	06	06	01	15	03	15
Classical music	09	09	12	-02	24	23	00	10	10	03	-01	07	13	-03	-13	07	-05	41	19	07
Motorcycles	-01	-18	-12	-17	-07	-11	-03	-02	09	-12	-06	03	-03	03	00	-05	17	-14	-04	-10
Plays and drama	09	-06	04	-09	05	11	14	-04	14	06	-01	-01	00	-18	04	12	-11	35	-01	-04
Popular music	28	-07	-06	-03	08	11	-07	07	-11	-04	02	23	-05	01	04	11	07	09	31	03
Painting and drawing	-06	-01	-08	-16	-26	14	-10	-09	33	01	05	-11	17	02	00	-16	-05	13	-10	02
Individual sports	12	-02	09	-03	03	-03	02	15	09	-09	09	24	24	03	-12	-02	10	-09	13	05
Reading magazines	17	-08	01	-02	01	04	06	15	-07	-09	-27	-04	02	-02	04	09	29	-01	06	04
Western-country music	21	-14	-03	16	06	17	04	-07	02	-02	-01	11	31	12	-06	24	08	-08	06	34
Collecting stamps	10	05	-07	15	20	25	01	09	02	-18	12	07	00	-15	-04	-08	-04	01	-09	-06
Hunting and fishing	04	-22	-26	-06	-01	00	11	13	17	-07	08	04	00	-07	-08	04	01	06	05	05
Team sports	14	-04	-09	01	-09	04	17	05	07	-18	-02	16	25	07	15	-08	09	-14	-04	-10
Repairing things	01	02	06	-15	-19	08	07	41	13	07	24	06	16	-15	-07	-14	-03	21	13	09
Reading books	-03	-33	-07	06	04	07	14	-04	-13	-21	-09	15	04	-11	-07	-10	10	-08	-02	04
Hiking and camping	07	04	05	03	-18	04	16	06	05	08	26	-01	13	-06	00	-06	21	13	-11	00
Going to movies	29	01	06	-01	12	05	05	02	01	-21	10	-09	09	04	-01	-02	34	-05	-01	-05
Working on hot rods	-03	19	10	-12	04	-04	-17	09	01	-06	15	-22	-13	-14	-04	00	02	08	-07	-18
Photography	08	-05	-12	-09	11	19	-21	01	05	-08	17	-12	-02	-18	-16	06	15	-12	-09	-09
Playing cards	04	20	23	26	-05	12	09	-09	-03	-07	02	13	10	-05	43	09	31	01	05	-07

N = 80,  $p < .05 = .22$

a<sub>1</sub> = Attending movies; 2 = Bull sessions (present job); 3 = Bull sessions (past job); 4 = Bull sessions (general);  
 5 = Reading fiction; 6 = Reading biography; 7 = Reading religious literature; 8 = Reading technical magazines;  
 9 = Studying courses; 10 = Ham radio; 11 = Writing letters; 12 = Physical exercise; 13 = Painting and drawing;  
 14 = "Happy Hour"; 15 = Playing cards; 16 = Chess or checkers; 17 = Pool or billiards; 18 = Classical music;  
 19 = Popular music; 20 = Western-country music.

UNCLASSIFIED

Security Classification

DOCUMENT CONTROL DATA - R & D		
Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified		
1. ORIGINATING ACTIVITY (Corporate author) Navy Medical Neuropsychiatric Research Unit San Diego, California 92152		2a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED
		2b. GROUP
3. REPORT TITLE Hobby Interest and Leisure Activity Behavior among Station Members in Antarctica		
4. DESCRIPTIVE NOTES (Type of report and inclusive dates)		
5. AUTHOR(S) (First name, middle initial, last name) Richard E. Doll and E. K. Eric Gunderson		
6. REPORT DATE September 1969	7a. TOTAL NO. OF PAGES 27	7b. NO. OF REFS 2
8a. CONTRACT OR GRANT NO.	9a. ORIGINATOR'S REPORT NUMBER(S) 69-34	
b. PROJECT NO. MF12.524.001-9002		
c.	9b. OTHER REPORT NUMBER(S) (Any other numbers that may be assigned this report)	
d.		
10. DISTRIBUTION STATEMENT This document has been approved for public release; its distribution is unlimited.		
11. SUPPLEMENTARY NOTES		12. SPONSORING MILITARY ACTIVITY Bureau of Medicine and Surgery Department of the Navy Washington, D.C. 20390
13. ABSTRACT This study attempted to investigate questions concerning the kinds of hobby interests and the various leisure activities liked or disliked by different occupational groups (two Navy and one civilian) in Antarctica, the relationships among them and over time. Results suggested that the two Navy occupational groups (i.e., Seabees and technical-administrative) were rather similar in both their attitudes toward the various hobbies and the amount of time spent in certain leisure activities. There were also similarities between the Navy and civilian groups. However, for certain hobbies and activities the Navy and civilian groups contrasted sharply. The similarities and dissimilarities among the groups are discussed and possible implications are drawn.		

DD FORM 1473 (PAGE 1)  
1 NOV 65  
GPO 1-807-6801

UNCLASSIFIED

Security Classification

**Security Classification**

14	KEY WORDS	LINK A		LINK B		LINK C	
		ROLE	WT	ROLE	WT	ROLE	WT
	Hobby interest						
	Leisure activity						
	Antarctic personnel						