

In the Wake of the Astrolabe: Content Analysis of Diaries Maintained by the Leaders and Physicians of French Remote Duty Stations

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Collaborators

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 - University of British Columbia

French Remote Duty Stations

- Dumont d'Urville, Terre-Adelie
- Kerguelen Island
- Crozet Island
- Amsterdam Island



Personnel

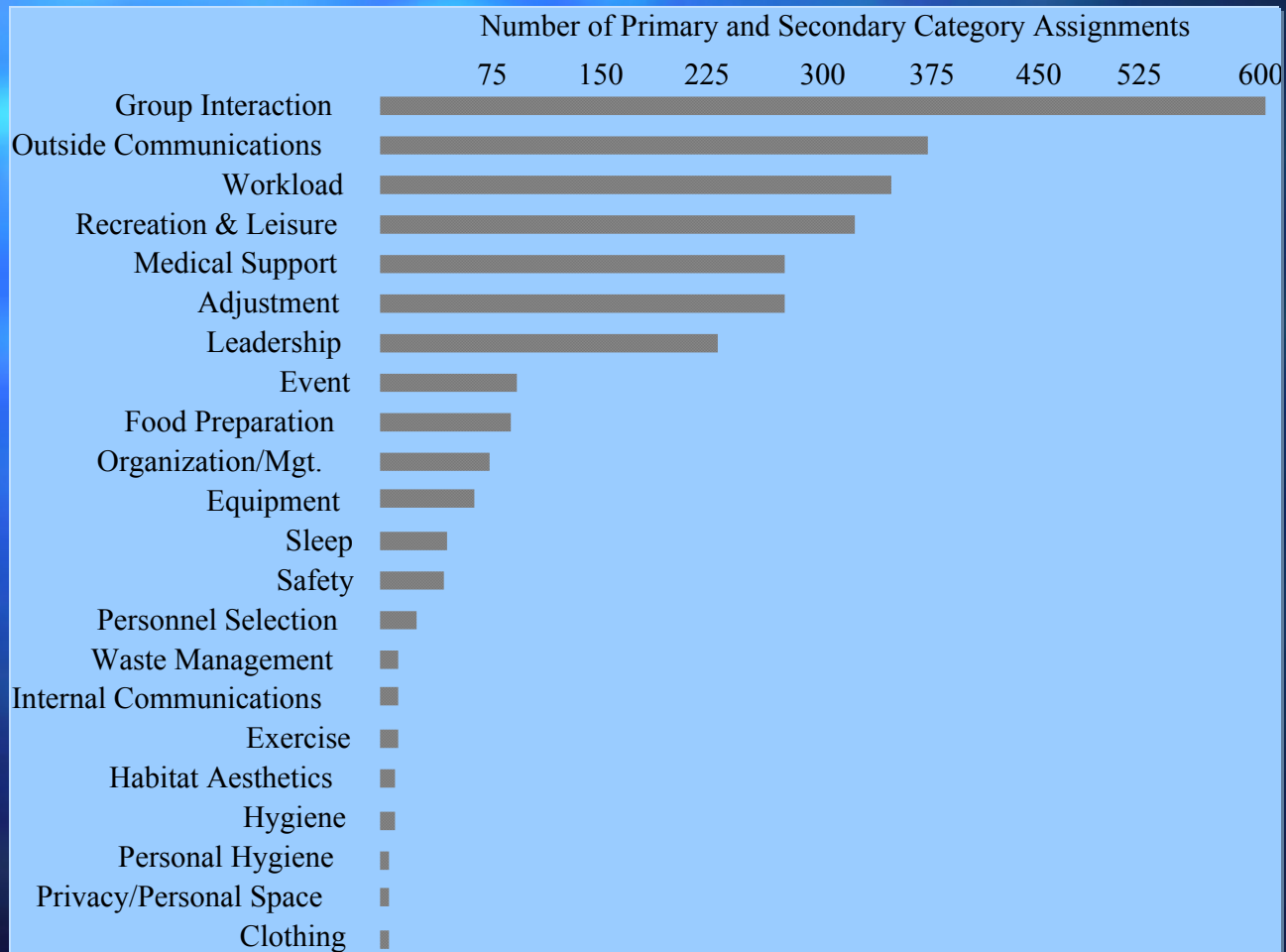
- Four Expedition Leaders
- Five Expedition Physicians



Advantages of Content Analysis

- Data are obtained unobtrusively;
- The entries demonstrate that subjects are attending to the task;
- Large volumes of quantifiable data are generated by the subjects; and,
- The subjects benefit from their participation in the activity.

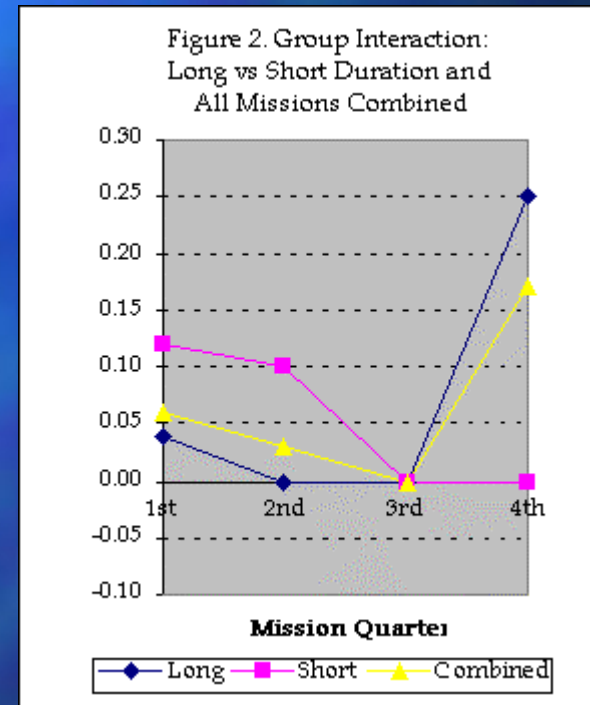
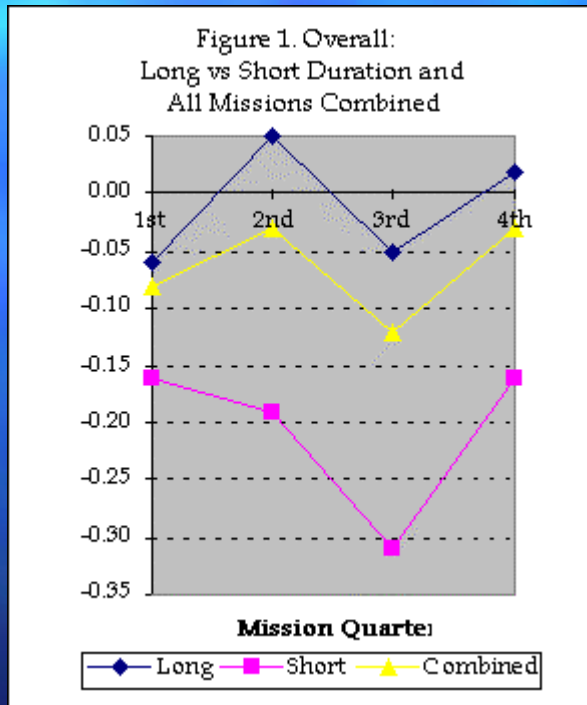
Category Analysis



Positive - Negative Analysis

- All diary entries were coded as positive (39%), negative (46%), or neutral (15%).
- Net Positivity/Negativity Calculated:
$$\text{NPN} = \text{pPositive} - \text{pNegative}$$
- Long vs Short Duration Missions
- Antarctic vs Insular Missions
- Physicians vs Leaders

Long vs Short Duration Missions



Long vs Short Duration Missions

Figure 3. Outside Communications:
Long vs Short Duration and
All Missions Combined

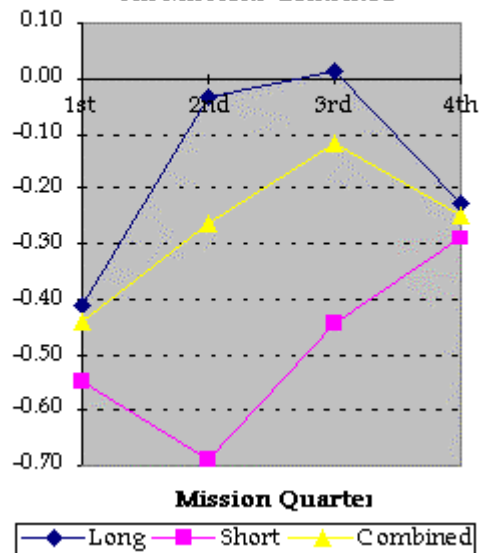
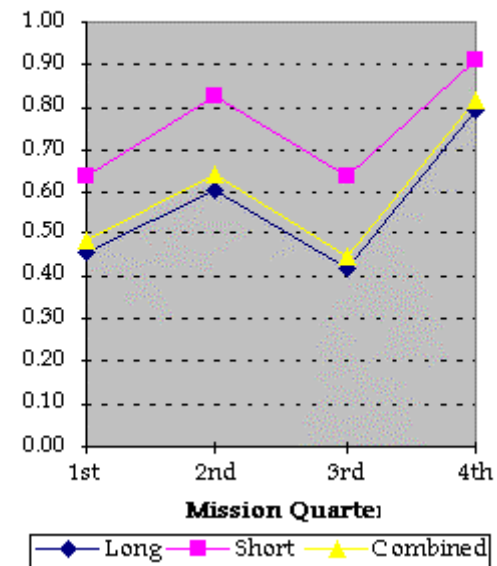
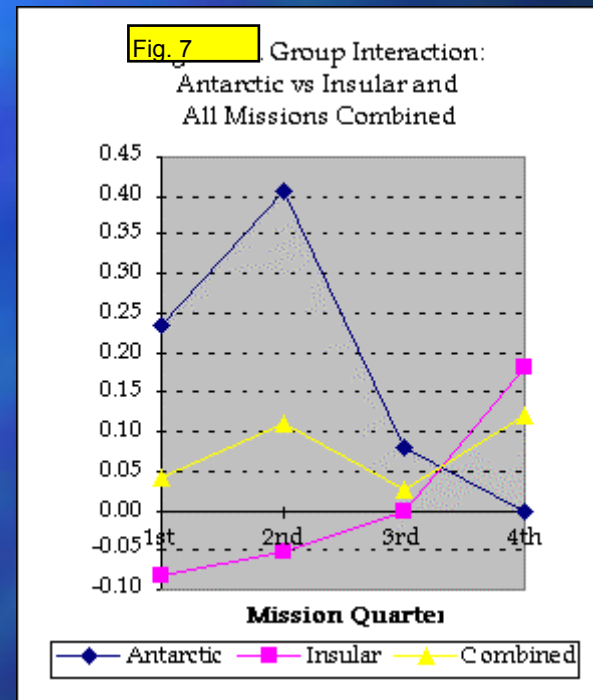
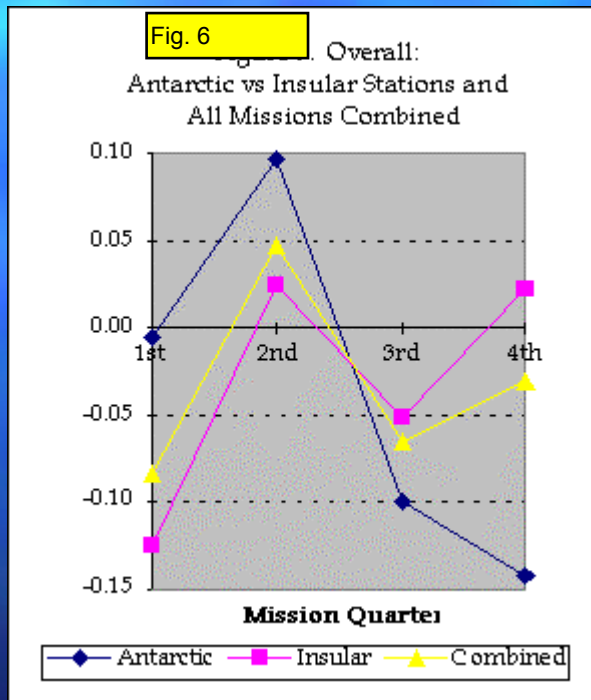


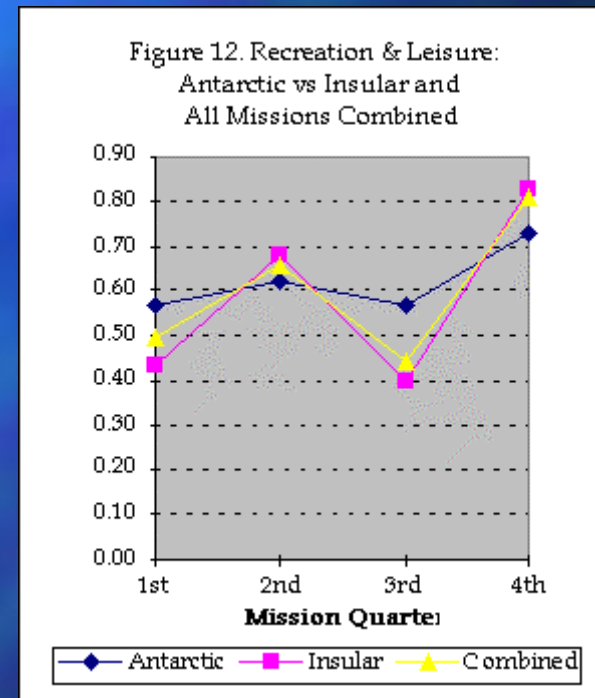
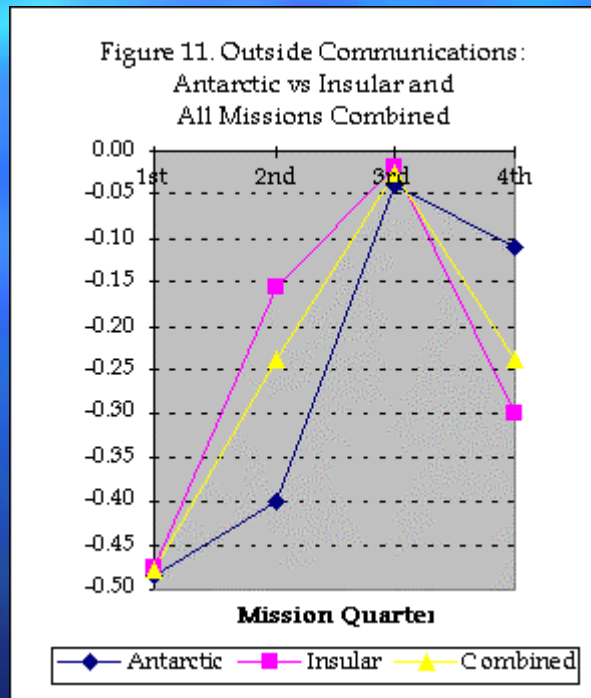
Figure 5. Recreation & Leisure:
Long vs Short Duration and
All Missions Combined



Antarctic vs Insular Missions



Antarctic vs Insular Missions



Doctors vs Leaders

Figure 17. Overall:
Doctors vs Leaders

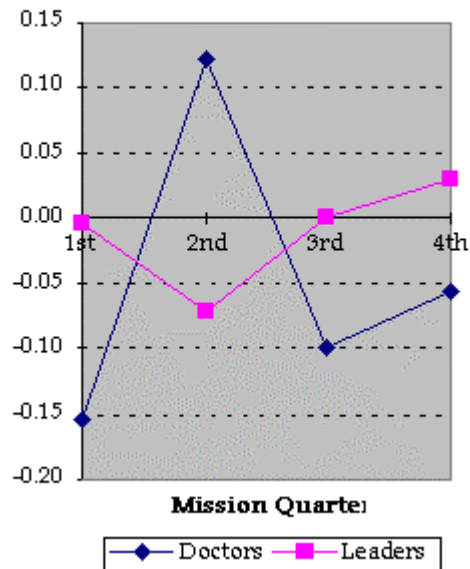
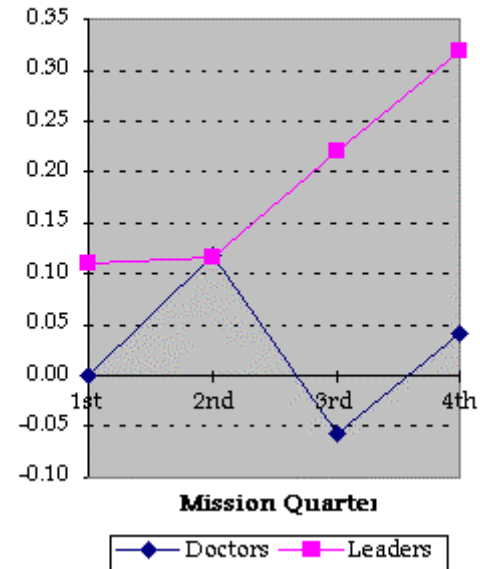


Figure 18. Group Interaction:
Doctors vs Leaders



Doctors vs Leaders

Figure 19. Outside Communications:
Doctors vs Leaders

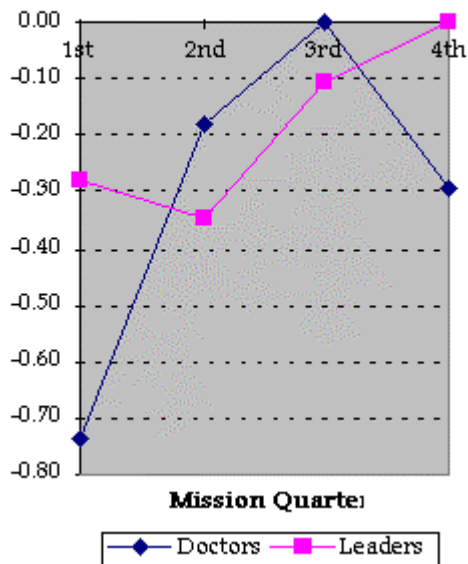
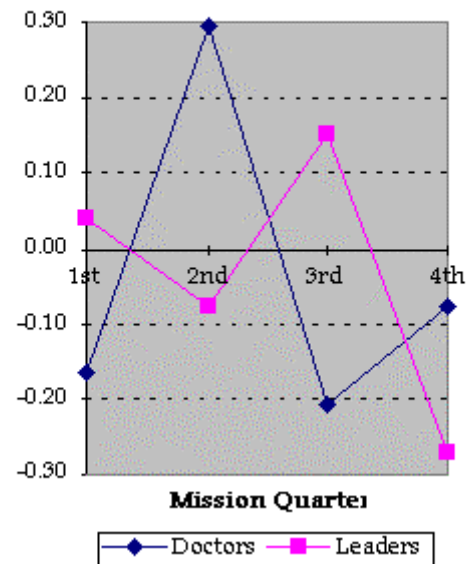


Figure 20. Workload:
Doctors vs Leaders



Positive - Negative Overall

Proportion of Diary Entries

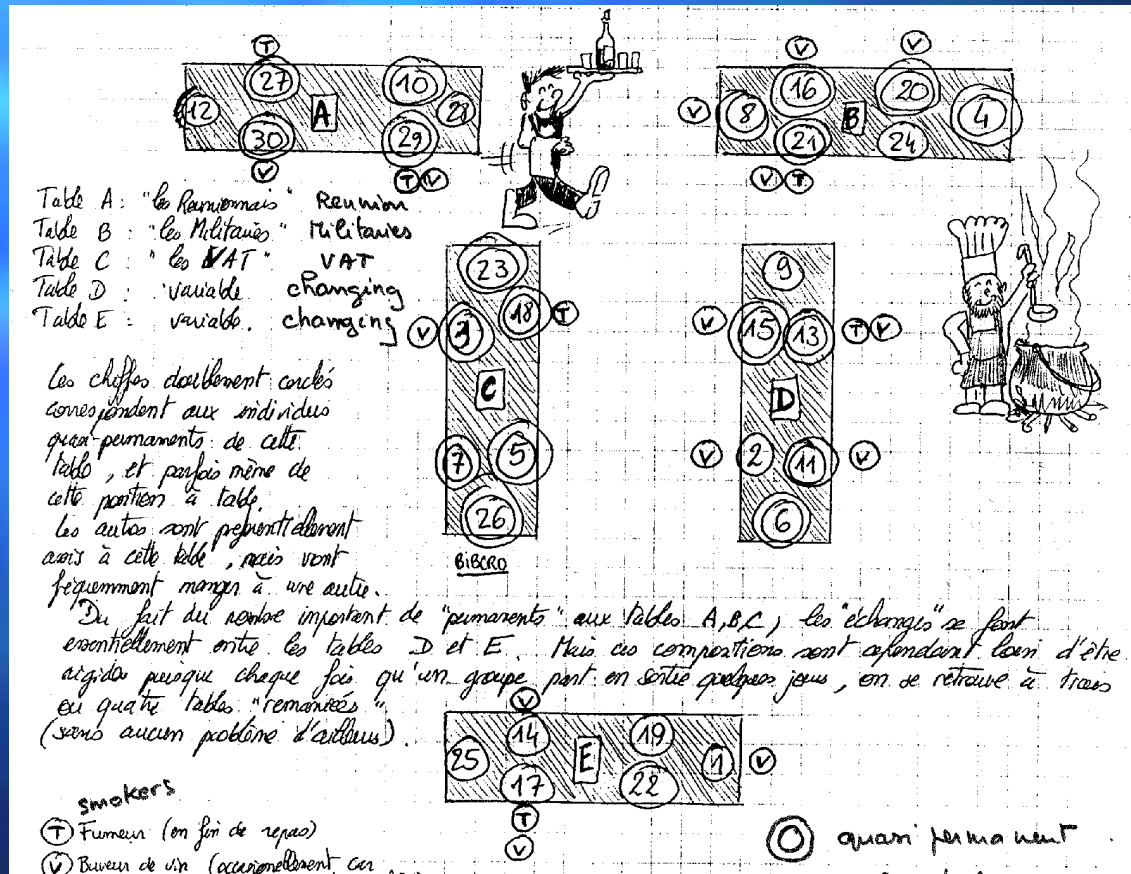
	Duration		Location		Role	
	Long	Short	Antarctic	Insular	Doctors	Leaders
Positive	0.420	0.316	0.398	0.410	0.408	0.404
Negative	0.435	0.526	0.427	0.452	0.461	0.417
Neutral	0.145	0.157	0.176	0.137	0.132	0.179
Net Pos/Neg*	-0.015	-0.210	-0.029	-0.042	-0.053	-0.013

*Net positivity/negativity = Positive - Negative proportions

Thematic Analysis: Group Interaction

- Interpersonal Conflict
- Celebration/Special Meal Brings Us Together
- Teamwork/Solidarity
- Group Discussion
- Not Fitting In
- Problems with Crew-Relief/Switchover
- Fitting In
- No, Or Resolved Interpersonal Conflict
- Trivial Issues Are Exaggerated
- Withdrawal From the Group

Thematic Analysis: Group Interaction



Thematic Analysis: Outside Communications

- Receive Replacement Personnel or Visitors
- Receive Information From Outside
- Receive Mail or Fax From Friends or Family
- I Write, Fax, or Telephone to Friends or Family
- Angry or Confused by Message From Headquarters
- Good News or Pleasant Message From Home
- Bad News or Unpleasant Message From Home
- I call or Fax Headquarters
- Headquarters Does Not Respond in a Timely Fashion
- No Mail or News From Home

Thematic Analysis: Outside Communications

Proportion of Diary Entries Type of Outside Communication

	Personal	Headquarters	General Admin.
Positive	0.462	0.212	0.214
Negative	0.437	0.647	0.554
Neutral	0.101	0.141	0.232
Net Pos/Neg*	0.025	-0.435	-0.340

*Net positivity/negativity = Positive - Negative proportions

Summary of Results

- Group Interaction is the most salient (i.e., important) category of behavioral issues, by far.
- Other important issues are, in order of their salience:
 - Outside Communications
 - Workload (i.e., work performed)
 - Recreation and Leisure
 - Medical Support
 - Adjustment
 - Leadership
 - Food

Summary of Results

- All expeditions, short and long, Antarctic and insular, decline in overall net positivity/negativity (NPN) during the third quarter (i.e., regardless of duration and location).
- Physicians experience the third quarter phenomenon, but leaders experience their greatest decline in NPN during the second quarters of their missions.

Summary of Results

- Relatively frequent visits by outsiders are disruptive and contribute to the greater negativity experienced at the insular stations, compared to the more isolated Antarctic base.
- The greatest overall difference in NPN was found between short and long duration missions, with the shorter missions characterized by substantially greater negativity.

Summary of Results

- Meals, special meals, and celebrations are extremely important to the members of the expeditions and contribute to group solidarity and individual adjustment.
- The celebration of traditional holidays is not very enjoyable to remote duty personnel. It is the celebration of expedition-unique events, such as Midwinter and special theme dinners, that is enjoyed, talked about, and remembered.

Summary of Results

- Trivial issues are exaggerated.
- Subgroups will form and can negatively affect group harmony, if permitted to develop to an extreme.
- Communications between headquarters and remote duty personnel frequently are sources of frustration for remote duty personnel.

Summary of Results

- Communications with loved ones also can be problematic for remote duty personnel (e.g., misunderstandings, negative news, stimulating longings for home).
- Outside Communications increase substantially in NPN during the third quarters of expeditions, at the same time the values of other behavioral categories decline.

Summary of Results

- Work is a primary source of satisfaction. Too much or too little work results in negativity and can threaten individual adjustment.
- Helping others with novel tasks provides welcome variety in a monotonously routine schedule.
- Recreation and Leisure provide variety of experience and contribute to group solidarity and individual adjustment.

Summary of Results

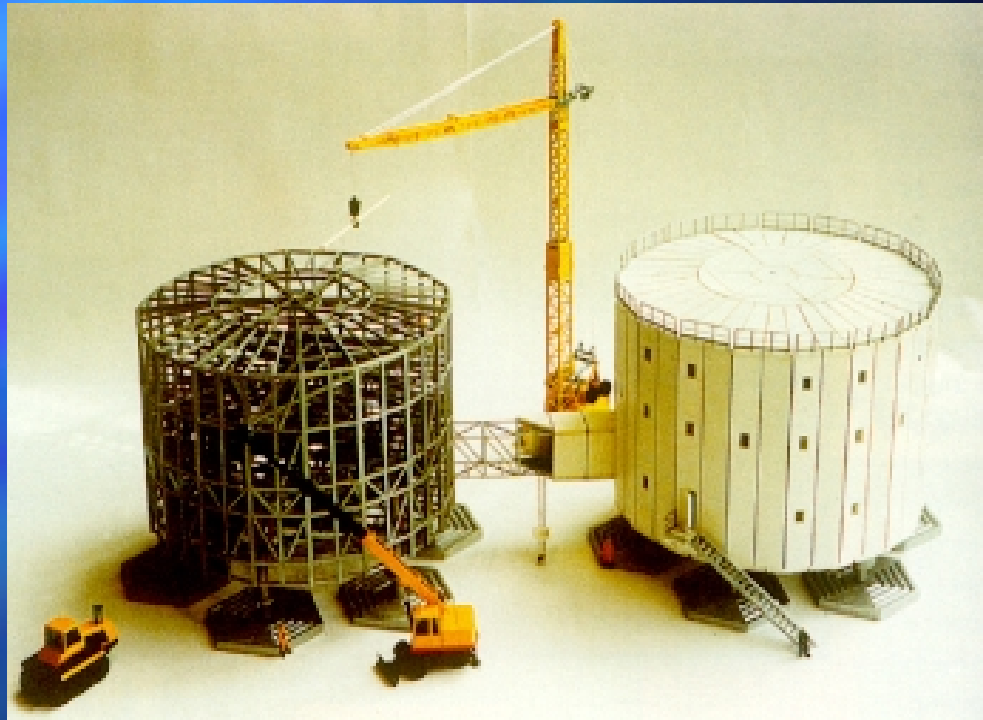
- A broad range of medical problems occurs at remote duty stations.
- Physicians experience considerable anxiety about their abilities to handle medical problems that are outside their specialties, and with limited diagnostic resources.
- Physicians and leaders benefit from opportunities to communicate with the physicians and leaders of other remote duty stations.

Summary of Results

- Time seems to slow down in isolation and confinement.
- Milestones, celebrations, and other events help mark the passage of time.
- Food assumes added importance when customary sources of gratification are denied.
- Some individuals adjust quickly to isolation and confinement; others adjust slowly; a few fail to adjust and remain miserable.

Recommendation

Conduct High-Fidelity Simulations of Space Expeditions in Antarctica



Thank You!

