FUNCTIONAL TURNOVER: AN EMPIRICAL ASSESSMENT (U)

AUG 81  D R DALTON, D M KRACKHARDT, L W PORTER NO0014-81-K-0026

UNCLASSIFIED  TR-5

END
DATE  10-81
PAGE 1
Functional Turnover: An Empirical Assessment

Dan R. Dalton
Indiana University

David M. Krackhardt
University of California, Irvine

Lyman W. Porter
University of California, Irvine

Technical Report No. 5
August 1981

Principal Investigators

Richard M. Steers, University of Oregon
Richard T. Mowday, University of Oregon
Lyman W. Porter, University of California, Irvine

Prepared under ONR Contract N00014-81-K-0026

NR 170-921

Distribution of this document is unlimited. Reproduction in whole or in part is permitted for any purpose of the United States Government.
Functional Turnover: An Empirical Assessment.

It has been argued that the traditional method of categorizing employee turnover as "voluntary" or "involuntary" has the effect of overstating the gravity of turnover on the organization. A recently suggested taxonomy is used to identify the extent of "functional/dysfunctional" and "unavoidable/controllable" employee separations. The analysis of data on employees (N=1389) of Western bank branches which considers both the replaceability and quality of department employees indicates substantial levels of functional (71%) and unavoidable (52%) turnover. The results (continued)
suggest that the traditional dichotomy may, in fact, substantially overstate the impact of voluntary turnover.
It would appear that the impact of employee turnover on the organization could hardly be overstated. The cost of replacing a single non-managerial employee has been estimated at over $2500 (Mirvis & Lawler, 1977). Not surprisingly, a large effort has been dedicated to the investigation of the turnover phenomenon; it has been estimated that over 1000 studies and articles have appeared in print on this subject (Muchinsky & Morrow, 1980; Steers & Mowday, in press). These works have a common thread—turnover is a costly organizational problem and should be reduced (Staw, in press).

Recent work, however, has questioned the fundamental assumption that turnover is invariably dysfunctional to the organization (Dalton & Todor, 1979; Dalton & Todor, in press (a), (b); Jeswald, 1974; Muchinsky & Tuttle, 1979; Muchinsky & Morrow, 1980; Staw, in press; Staw & Oldham, 1978). Dalton (1981) has suggested that levels of turnover, whether viewed positively or negatively, are overstated. Inappropriate measurement and reporting practices may be factors which lead to a systematic overstatement of the impact of turnover on the organization.

Turnover Recategorized

Comparing the categories in Tables 1 and 2 illustrates a fundamental difference between the traditional model of turnover and a model which identifies "functional" turnover (Functional turnover is beneficial to the organization). Notice that in both tables, cells "A" and "B" are identical. It is in the classification of "voluntary" turnover that the essential difference lies. In the traditional taxonomy (Figure 1), the organization's evaluation of the departing employee is ignored. In the expanded taxonomy (Figure 2), however, the evaluation of the employee is crucial.
The expanded taxonomy (cells "C" and "D" of Table 2) includes two different kinds of "voluntary" turnover (Dalton, Todor & Krackhardt, in press).

**Dysfunctional** (cell C) - The individual wants to leave the organization but the organization prefers to retain the individual. This, of course, represents dysfunctional turnover; and,

**Functional** (cell D) - The individual wants to leave the organization, but the organization is unconcerned. The organization has a negative evaluation of the individual. This represents functional turnover--turnover decidedly beneficial to the organization.

Clearly, the effects of these employee separations on the organization would be quite different. The fundamental point is that to combine the cases in the lower cells of Table 2 would have the effect of overstating the gravity of turnover on the organization. The benefits of functional turnover are disregarded. Of course, functional turnover is not without its costs to the organization. Recruitment, training, and a portion of the administrative overhead still must be defrayed. Even so, functional turnover may be, in the balance, a positive phenomenon for the organization. Consequently, an important objective is to separate dysfunctional from functional turnover.

**Another Concern: Unavoidable vs. Controllable Turnover**

Recent reviews suggest that turnover research has been aimed primarily towards identifying the antecedents of voluntary turnover (Porter & Steers, 1973; Price, 1977; Muchinsky & Tuttle, 1979; Mobley, Griffeth, Hand & Meglino, 1979). Presumably, such an identification may provide a means to reduce the incidence of turnover. However, if voluntary turnover is to be reduced, it must be under organizational control. Price (1977) persuasively argued that a primary reason for the reliance on voluntary turnover as a dependent variable is that it is more subject to
organizational control. Presumably, attempts to reduce any portion of voluntary turnover not subject to organizational control would be counter productive.

With respect to the expanded taxonomy (Figure 2), only cell C represents dysfunctional turnover. However, the total number of employees categorized in cell C does not necessarily represent turnover over which the organization has control. Employees who leave for education, family commitments, and health matters, for example, are not ordinarily subject to such control. If an aim of the organization is to reduce turnover, then the inclusion of such separations in its turnover reporting is misleading. For the theorist, this problem may provide a rationale for the relatively low associations between turnover and its suspected correlates. It may be that when using "voluntary" turnover as a dependent variable, we do not have a homogeneous subset.

Objectives

This research, then, addresses two questions with respect to voluntary turnover:

1) Is the functional portion of voluntary turnover sufficiently large to warrant separate identification?

and

2) What portion of dysfunctional turnover is essentially unavoidable?

METHOD

Termination records were collected on bank tellers (N=1389) at 190 bank branches for a seven month period. The immediate supervisor of each departing employee was required by the bank to complete termination forms
from which it was determined whether the employee left voluntarily or was dismissed. In addition, the supervisor was asked to fill out a form on each teller which included the following items:

1. Would you rehire this person to work for you?
   a. I would definitely hire this person to work for me again.
   b. I would slightly prefer to hire this person (rather than someone else) to work for me again.
   c. I am indifferent as to whether this person ever works for me again.
   d. I would prefer to hire someone else to work for me.
   e. Under no circumstances would I hire this person to work for me again.

2. How would you rate this person's performance as a teller while he or she was working for you?
   a. Inadequate; clearly failed to meet minimum job requirements.
   b. Generally adequate; met most job requirements; however, required close supervision.
   c. Competent; met all requirements; required only minimal supervision.
   d. High quality work; exceeded most requirements; made a valuable contribution and showed initiative.
   e. Exceptional; consistently demonstrated outstanding performance.

3. In general, how easy would it be to find someone who would do as good a job as this person did?
   a. Very easy
   b. Somewhat easy
   c. Somewhat difficult
   d. Very difficult

This information was then collapsed into two dichotomous metrics to represent the organization's evaluation of the departing employee (Dalton, et. al., in press):

**Quality of Employee.** If the supervisor indicated that s/he would prefer to hire someone else (responses "d" or "e") in question 1; OR if the supervisor rated the employee as "inadequate" on question 2, then the employee was considered low quality. Otherwise, the employee was considered acceptable or high quality.

**Replaceability of Employee.** If the supervisor indicated that an employee would be at least "somewhat easy" to replace (question 3, "a" or "b"), then the employee was considered easily replaced. Any other responses were interpreted to mean that the employee would be "difficult" to replace.
Employees were then placed into one of the four cells suggested by Tables 2 and 3. Inasmuch as there were two independent evaluative measures ("quality" and "replaceability" of employee), separate frequency tables were formed each representing a different concept of employee evaluation. Also, individual separation forms were examined to identify the reason for the voluntary terminations (e.g., retirement, health, family commitment, job abandonment) to determine which separations were under organizational control.

RESULTS

Extent of Functional Turnover

Table 1 represents the traditional categorization separating involuntary from voluntary turnover. Focusing on voluntary turnover as the "problem," the organization was experiencing a 32% turnover rate. This is a high percentage. The concern for such a turnover rate was, in fact, the primary reason that the sample organization granted permission for this research effort.

By dividing the "quit" category into dysfunctional and functional components, the turnover rate is greatly reduced. As indicated in Table 2, the proportion of turnover that involved valuable or at least acceptable employees is reduced to only 18%. If employees are evaluated by replaceability (Table 3), an arguably more relevant criterion, the dysfunctional turnover figure is less than 9%.

There are two points which should be noted. First, 9% or 18% turnover rates are not trivial; depending on the circumstances, such a rate could be disastrous. We would argue, however, that, osteria paribua, both 9% and 18% turnover rates are of less concern than the original 32%. Second, 42% of the voluntary turnover was actually beneficial to the organization by the "quality" standard; 185 people voluntarily left over the
period who were not recommended for rehire and/or were evaluated as inadequate (clearly failed to meet minimum job requirements). These "quits" represent functional turnover for the organization. By the "replaceability" standard, the results are somewhat more impressive: 314 employees (71% of the total voluntary turnover) left the organization over the test period who were evaluated as "easy to replace."

Unavoidable Turnover and Organizational Control

It has been suggested that organizational resources committed to reduce unavoidable turnover is money unwisely spent. Table 4 illustrates the extent to which this aspect of control confuses the reporting of organizational turnover.

(Insert Table 4 About Here)

As indicated in Table 4, there are substantial portions of both dysfunctional and functional turnover which are essentially unavoidable. Importantly, the unavoidable categories (i.e., temporary, summer, education, health, family commitment, personal, job abandonment) are provided by the management of the sample organization. Simply, no reasonable intervention would have prevented these separations.

In the case of functional turnover, these unavoidable separations are of little consequence. Frankly, it can be argued that it really does not matter why these individuals left; they are not valued by the organization in any case. With dysfunctional turnover, however, the unavoidable category is of marked importance. If an essential thrust of turnover research involves its reduction, the unavoidable category should be identified. This is particularly true if, as in this case, unavoidable separations amount to 45% or 52% ("quality" or "replaceability") of total dysfunctional turnover.
The "avoidable/controllable" turnover dichotomy should be viewed with some caution. There is no particular reason to believe that employees accurately report their reasons for leaving. Certainly, in some cases it would be easier for employees to say that they were leaving to return to school, for example, when in fact they simply do not like the job. Also, employees may not wish to "burn their bridges" behind them. Obviously, "reasons for leaving" stated without care may result in a recommendation not to rehire. While the "avoidable" category seems large, it may be somewhat overstated.

DISCUSSION

The invariably negative implications of turnover on the organization have recently been criticized (Dalton & Todor, 1979; Dalton & Todor, in press (a), (b); Muchinsky & Tuttle, 1979; Muchinsky & Morrow, in press; Staw, in press; Staw & Oldham, 1978). Whether a more positive or the traditional view of turnover is taken may be largely function of its measurement. The usual "voluntary/involuntary" dichotomization of turnover may be necessary, but insufficient, to evaluate turnover in its proper perspective. Perhaps by recognizing that turnover may be subject to dysfunctional and functional categorizations and appreciating that certain turnover is, for practical purposes, unavoidable, a more responsible estimate of the impact of turnover on the organization may be determined.

As indicated in the Table 5 compendium, whether relying on a "quality" or "replaceability" criterion, the amount of functional turnover is substantive. This summarization also suggests that the avoidable/controllable dichotomy is a meaningful one. Approximately half of the cases of dysfunctional turnover by either criterion were not avoidable; i.e.
no reasonable intervention by the organization would have prevented the employee separations.

(Insert Table 5 About Here)

The shaded portions of Table 5 represent dysfunctional turnover which is potentially controllable by the organization. These sections identify personnel who the organization prefers to retain. Also, organizational intervention may actually reduce the incidence of this turnover. Compare the amounts of controllable, dysfunctional turnover with the total voluntary turnover: 31.7% vs 10.0% by "quality"; 31.7% vs 4.3% by "replaceability." That may be testimony for overstatement, or at least misunderstanding, of the "voluntary" category.

The contributions of the expanded taxonomy are threefold. First, categorizing voluntary turnover in the manner endorsed by this research may lead to a more realistic portrayal of the impact of turnover on the organization. A program to reduce turnover may be actually shortsighted for organizations with relatively large portions of functional and/or unavoidable turnover. Arguably, functional turnover should not be reduced. Moreover, to commit organizational resources to reduce turnover which is essentially unavoidable is futile.

Second, as previously noted, the expanded taxonomy may provide a partial explanation for the ordinarily low associations between voluntary turnover and its suspected antecedents and determinants. Perhaps the correlates of functional and dysfunctional turnover are not the same; the "voluntary" categorization may not be homogeneous. This is especially bothersome inasmuch as Price (1977) noted that one of the primary reasons that researchers have relied on the voluntary/involuntary dichotomy is to assure homogeneity.
Lastly, individuals categorized as functional or dysfunctional separations may be predictably different from one another. They may, for example, respond to different types of intervention. To the extent that these individuals are dissimilar, organizations may be able to minimize dysfunctional without artificially suppressing functional turnover.

We can agree with Porter and Steers (1973) that our understanding of the manner in which actual withdrawal decisions are made is far from complete. Perhaps the expanded taxonomy may add to a somewhat better understanding.
REFERENCES


### Table 1

**TRADITIONAL CLASSIFICATION OF TURNOVER**  
(7 Month Period)  
Organization's Evaluation of Individual

<table>
<thead>
<tr>
<th></th>
<th>A: Employee Remains</th>
<th>B: Employee Fired</th>
<th>Total N=1389</th>
</tr>
</thead>
<tbody>
<tr>
<td>No initiation of voluntary turnover</td>
<td>n=856 (61.6%)</td>
<td>n=92 (6.6%)</td>
<td></td>
</tr>
<tr>
<td>Initiation of voluntary turnover</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Employee Quits**  

|                      | n=441 (31.7%)       |

### Table 2

**DYSFUNCTIONAL/FUNCTIONAL CLASSIFICATION OF TURNOVER BY QUALITY OF EMPLOYEE**  
(7 Month Period)

<table>
<thead>
<tr>
<th></th>
<th>A: Employee Remains</th>
<th>B: Employee Fired</th>
<th>Total N=1389</th>
</tr>
</thead>
<tbody>
<tr>
<td>No initiation of voluntary turnover</td>
<td>n=856 (61.6%)</td>
<td>n=92 (6.6%)</td>
<td></td>
</tr>
<tr>
<td>Initiation of voluntary turnover</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Employee quits**  

|                      | n=256 (18.4%)       |

|                      |                      | n=185 (13.3%)    |

**Dysfunctional Turnover**  

**Functional Turnover**
Table 3

DYSFUNCTIONAL/FUNCTIONAL CLASSIFICATION OF TURNOVER BY REPLACEABILITY OF EMPLOYEE (7 Month Period)

<table>
<thead>
<tr>
<th>Initiation of Voluntary Turnover</th>
<th>not easily replaced</th>
<th>easily replaced</th>
</tr>
</thead>
<tbody>
<tr>
<td>No initiation of voluntary turnover</td>
<td>A employee remains ( n=856 ) (61.6%)</td>
<td>B employee fired ( n=92 ) (6.6%)</td>
</tr>
<tr>
<td>Initiation of voluntary turnover</td>
<td>C employee quits Dysfunctional Turnover ( n=121 ) (8.8%)</td>
<td>D employee quits Functional Turnover ( n=314 ) (22.9%)</td>
</tr>
</tbody>
</table>

TOTAL \( N=1383 \) (100%)
Table 4
Unavoidable Turnover in Dysfunctional/Functional Classification

<table>
<thead>
<tr>
<th></th>
<th>BY QUALITY OF EMPLOYEE&lt;sup&gt;a&lt;/sup&gt;</th>
<th></th>
<th>BY REPLACEABILITY OF EMPLOYEE&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Voluntary Turnover (N=441)</td>
<td></td>
<td>Total Voluntary Turnover (N=435)</td>
</tr>
<tr>
<td>Dysfunctional (N=256; 58.0%)</td>
<td>Functional (N=185; 42.0%)</td>
<td>Dysfunctional (N=121; 27.8%)</td>
<td>Functional (N=314; 72.2%)</td>
</tr>
<tr>
<td>less: UNAVOIDABLE TURNOVER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temporary</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Summer</td>
<td>22</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>Education</td>
<td>30</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>Health</td>
<td>15</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>Family Commitment</td>
<td>37</td>
<td>20</td>
<td>23</td>
</tr>
<tr>
<td>Personal (undisclosed)</td>
<td>7</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>Job Abandonment</td>
<td>5</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>TOTAL UNAVOIDABLE SEPARATIONS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N=117 (45.7%)</td>
<td>N=87 (47.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N=62 (51.2%)</td>
<td>N=140 (44.6%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CONTROLLABLE SEPARATIONS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N=139 (54.2%)</td>
<td>N=98 (52.9%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N=59 (48.7%)</td>
<td>N=174 (55.4%)</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> number of cases from Table 2
<sup>b</sup> number of cases from Table 3
Table 5
Summary of Effects:
Dysfunctional/Functional Categorization with Unavoidable Separations

<table>
<thead>
<tr>
<th>BY EMPLOYEE QUALITY</th>
<th>Unavoidable Functional Turnover (N=87; 6.2%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voluntary Turnover (N=441; 31.7%)</td>
<td></td>
</tr>
<tr>
<td>Functional Turnover (N=185; 13.3%)</td>
<td></td>
</tr>
<tr>
<td>Dysfunctional Turnover (N=256; 18.4%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Unavoidable Dysfunctional Turnover (N=117; 8.4%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Controllable Dysfunctional Turnover (N=139; 10.0%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BY EMPLOYEE REPLACEABILITY</th>
<th>Unavoidable Functional Turnover (N=140; 10.1%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voluntary Turnover (N=441; 31.7%)</td>
<td></td>
</tr>
<tr>
<td>Functional Turnover (N=314; 22.9%)</td>
<td></td>
</tr>
<tr>
<td>Dysfunctional Turnover (N=121; 8.8%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Unavoidable Dysfunctional Turnover (N=62; 4.5%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Controllable Dysfunctional Turnover (N=59; 4.3%)</td>
<td></td>
</tr>
</tbody>
</table>
LIST 1
MANDATORY

Defense Technical Information Center   (12 copies)
ATTN: DTIC DDA-2
Selection and Preliminary Cataloging Section
Cameron Station
Alexandria, VA 22314

Library of Congress
Science and Technology Division
Washington, DC 20540

Office of Naval Research   (3 copies)
Code 452
800 N. Quincy Street
Arlington, VA 22217

Naval Research Laboratory   (6 copies)
Code 2627
Washington, DC 20375

Office of Naval Research
Director, Technology Programs
Code 200
800 N. Quincy Street
Arlington, VA 22217

Office of Naval Research
Code 450
800 N. Quincy Street
Arlington, VA 22217

Office of Naval Research
Code 458
800 N. Quincy Street
Arlington, VA 22217

Office of Naval Research
Code 455
800 N. Quincy Street
Arlington, VA 22217
LIST 2
ONR FIELD

ONR Western Regional Office
1030 E. Green Street
Pasadena, CA 91106

Psychologist
ONR Western Regional Office
1030 E. Green Street
Pasadena, CA 91106

ONR Regional Office
536 S. Clark Street
Chicago, IL 60605

Psychologist
ONR Regional Office
536 S. Clark Street
Chicago, IL 60605

Psychologist
ONR Eastern/Central Regional Office
Bldg. 114, Section D
666 Summer Street
Boston, MA 02210

ONR Eastern/Central Regional Office
Bldg. 114, Section D
666 Summer Street
Boston, MA 02210
Deputy Chief of Naval Operations
(Manpower, Personnel, and Training)
Head, Research, Development, and
Studies Branch (Op-115)
1812 Arlington Annex
Washington, DC 20350

Director
Civilian Personnel Division (OP-14)
Department of the Navy
1803 Arlington Annex
Washington, DC 20350

Deputy Chief of Naval Operations
(Manpower, Personnel, and Training)
Director, Human Resource Management
Plans and Policy Branch (Op-150)
Department of the Navy
Washington, DC 20350

Deputy Chief of Naval Operations
(Manpower, Personnel, and Training)
Director, Human Resource Management
Plans and Policy Branch (Op-150)
Department of the Navy
Washington, DC 20350

Chief of Naval Operations
Head, Manpower, Personnel, Training
and Reserves Team (Op-964D)
The Pentagon, 4A478
Washington, DC 20350

Chief of Naval Operations
Assistant, Personnel Logistics
Planning (Op-987H)
The Pentagon, 5D772
Washington, DC 20350
LIST 4
NAVMAT & NPRDC

NAVMAT

Program Administrator for Manpower, Personnel, and Training
MAT 0722
800 N. Quincy Street
Arlington, VA 22217

Naval Material Command
Management Training Center
NAVMAT 09M32
Jefferson Plaza, Bldg #2, Rm 150
1421 Jefferson Davis Highway
Arlington, VA 20360

Naval Material Command
NAVMAT-00K
Washington, DC 20360

Naval Material Command
NAVMAT-00KB
Washington, DC 20360

Naval Material Command
(MAT-03)
Crystal Plaza #5
Room 236
2211 Jefferson Davis Highway
Arlington, VA 20360

NPRDC

Commanding Officer (5 Copies)
Naval Personnel R&D Center
San Diego, CA 92152

Navy Personnel R&D Center
Washington Liaison Office
Building 200, 2N
Washington Navy Yard
Washington, DC 20374
LIST 5
BUMED

Commanding Officer
Naval Health Research Center
San Diego, CA 92152

CDR William S. Maynard
Psychology Department
Naval Regional Medical Center
San Diego, CA 92134

Naval Submarine Medical
Research Laboratory
Naval Submarine Base
New London, Box 900
Groton, CT 06349

Director, Medical Service Corps
Bureau of Medicine and Surgery
Code 23
Department of the Navy
Washington, DC 20372

Naval Aerospace Medical
Research Lab
Naval Air Station
Pensacola, FL 32508

Program Manager for Human
Performance
Naval Medical R&D Command
National Naval Medical Center
Bethesda, MD 20014

Navy Medical R&D Command
ATTN: Code 44
National Naval Medical Center
Bethesda, MD 20014
LIST 6
NAVAL ACADEMY AND NAVAL POSTGRADUATE SCHOOL

Naval Postgraduate School
ATTN: Dr. Richard S. Elster
Department of Administrative Sciences
Monterey, CA 93940

Naval Postgraduate School
ATTN: Professor John Senger
Operations Research and Administrative Science
Monterey, CA 93940

Superintendent
Naval Postgraduate School
Code 1424
Monterey, CA 93940

Naval Postgraduate School
ATTN: Dr. James Arima
Code 54-Aa
Monterey, CA 93940

Naval Postgraduate School
ATTN: Dr. Richard A. McGonigal
Code 54
Monterey, CA 93940

U.S. Naval Academy
ATTN: CDR J. M. McGrath
Department of Leadership and Law
Annapolis, MD 21402

Professor Carson K. Foyang
Naval Postgraduate School, Code 54EG
Department of Administration Sciences
Monterey, CA 93940

Superintendent
ATTN: Director of Research
Naval Academy, U.S.
Annapolis, MD 21402
LIST 7

Officer in Charge
Human Resource Management Detachment
Naval Air Station
Alameda, CA 94591

Officer in Charge
Human Resource Management Detachment
Naval Submarine Base New London
P.O. Box 81
Groton, CT 06340

Officer in Charge
Human Resource Management Division
Naval Air Station
Mayport, FL 32228

Commanding Officer
Human Resource Management Center
Pearl Harbor, HI 96860

Commander in Chief
Human Resource Management Division
U.S. Pacific Fleet
Pearl Harbor, HI 96860

Officer in Charge
Human Resource Management Detachment
Naval Base
Charleston, SC 29408

Commanding Officer
Human Resource Management School
Naval Air Station Memphis
Millington, TN 38054

Human Resource Management School
Naval Air Station Memphis (96)
Millington, TN 38054
List 7 (Continued)

Commanding Officer
Human Resource Management Center
1300 Wilson Boulevard
Arlington, VA 22209

Commanding Officer
Human Resource Management Center
5621-23 Tidewater Drive
Norfolk, VA 23511

Commander in Chief
Human Resource Management Division
U.S. Atlantic Fleet
Norfolk, VA 23511

Officer in Charge
Human Resource Management Detachment
Naval Air Station Whidbey Island
Oak Harbor, WA 98278

Commanding Officer
Human Resource Management Center
Box 23
FPO New York 09510

Commander in Chief
Human Resource Management Division
U.S. Naval Force Europe
FPO New York 09510

Officer in Charge
Human Resource Management Detachment
Box 60
FPO San Francisco 96651

Officer in Charge
Human Resource Management Detachment
COHNAVFORJAPAN
FPO Seattle 98762
LIST A
NAVY MISCELLANEOUS

Naval Military Personnel Command (2 copies)
HRM Department (NMPC-6)
Washington, DC 20350

Naval Training Analysis and Evaluation Group
Orlando, FL 32813

Commanding Officer
ATTN: TIC, Bldg. 2068
Naval Training Equipment Center
Orlando, FL 32813

Chief of Naval Education and Training (N-5)
Director, Research Development, Test and Evaluation
Naval Air Station
Pensacola, FL 32508

Chief of Naval Technical Training
ATTN: Dr. Norman Kerr, Code 017
NAS Memphis (75)
Millington, TN 38054

Navy Recruiting Command
Head, Research and Analysis Branch
Code 434, Room 8001
801 North Randolph Street
Arlington, VA 22203

Commanding Officer
USS Carl Vinson (CVN-70)
Newport News Shipbuilding & Drydock Company
Newport News, VA 23607
LIST 9
USMC

Headquarters, U.S. Marine Corps
Code MPI-20
Washington, DC 20380

Headquarters, U.S. Marine Corps
ATTN: Dr. A. L. Slafkosky,
    Code RD-1
Washington, DC 20380

Education Advisor
Education Center (E031)
MCDEC
Quantico, VA 22134

Commanding Officer
Education Center (E031)
MCDEC
Quantico, VA 22134

Commanding Officer
U.S. Marine Corps
Command and Staff College
Quantico, VA 22134
LIST 10
DARPA

Defense Advanced Research
Projects Agency
Director, Cybernetics
Technology Office
1400 Wilson Blvd, Rm 625
Arlington, VA 22209

Mr. Michael A. Daniels
International Public Policy
Research Corporation
6845 Elm Street, Suite 212
McLean, VA 22101

Dr. A. F. K. Organski
Center for Political Studies
Institute for Social Research
University of Michigan
Ann Arbor, MI 48106
LIST II
OTHER FEDERAL GOVERNMENT

Dr. Douglas Hunter
Defense Intelligence School
Washington, DC 20374

Dr. Brian Usilaner
GAO
Washington, DC 20548

National Institute of Education
ATTN: Dr. Fritz Mulhauser
EOLC/SMO
1200 19th Street, N.W.
Washington, DC 20208

National Institute of Mental Health
Division of Extramural Research Programs
5600 Fishers Lane
Rockville, MD 20852

National Institute of Mental Health
Minority Group Mental Health Programs
Room 7-102
5600 Fishers Lane
Rockville, MD 20852

Office of Personnel Management
Office of Planning and Evaluation
Research Management Division
1900 E Street, N.W.
Washington, DC 20415

Office of Personnel Management
ATTN: Ms. Carolyn Burstein
1900 E Street, NW.
Washington, DC 20415

Office of Personnel Management
ATTN: Mr. Jeff Kane
Personnel R&D Center
1900 E Street, N.W.
Washington, DC 20415

Chief, Psychological Research Branch
ATTN: Mr. Richard Lanterman
U.S. Coast Guard (G-P-1/2/TP42)
Washington, DC 20543
LIST 11 CONT’D

Social and Developmental Psychology
 Program
National Science Foundation
Washington, DC 20550

24 June 1981
LIST 12
ARMY

Headquarters, FORSCOM
ATTN: AFPR-HR
Ft. McPherson, GA 30330

Army Research Institute
Field Unit - Leavenworth
P.O. Box 3122
Fort Leavenworth, KS 66027

Technical Director
Army Research Institute
5001 Eisenhower Avenue
Alexandria, VA 22333

Director
Systems Research Laboratory
5001 Eisenhower Avenue
Alexandria, VA 22333

Director
Army Research Institute
Training Research Laboratory
5001 Eisenhower Avenue
Alexandria, VA 22333

Dr. T. O. Jacobs
Code PERI-IM
Army Research Institute
5001 Eisenhower Avenue
Alexandria, VA 22333

COL Howard Prince
Head, Department of Behavior Science and Leadership
U.S. Military Academy, New York 10996
LIST 13
AIR FORCE

Air University Library/LSE 76-443
Maxwell AFB, AL 36112

COL John W. Williams, Jr.
Head, Department of Behavioral
Science and Leadership
U.S. Air Force Academy, CO 80840

MAJ Robert Gregory
USAFA/DFBL
U.S. Air Force Academy, CO 80840

AFOSR/NL (Dr. Fregly)
Building 410
Bolling AFB
Washington, DC 20332

LTCOL Don L. Presar
Department of the Air Force
AF/MPXHH
Pentagon
Washington, DC 20330

Technical Director
AFHRL/WO(T)
Brooks AFB
San Antonio, TX 78235

AFMPC/MPCYPR
Randolph AFB, TX 78150
LIST 14:
MISCELLANEOUS

Australian Embassy
Office of the Air Attache (S3B)
1601 Massachusetts Avenue, N.W.
Washington, DC 20036

British Embassy
Scientific Information Officer
Room 509
3100 Massachusetts Avenue, N.W.
Washington, DC 20008

Canadian Defense Liaison Staff,
Washington
ATTN: CDRD
2450 Massachusetts Avenue, N.W.
Washington, DC 20008

Commandant, Royal Military
College of Canada
ATTN: Department of Military
Leadership and Management
Kingston, Ontario K7L 2W3

National Defence Headquarters
ATTN: DPAR
Ottawa, Ontario K1A 0K2

Mr. Luigi Petrullo
2431 North Edgewood Street
Arlington, VA 22207
LIST 15
CURRENT CONTRACTORS

Dr. Richard D. Arvey
University of Houston
Department of Psychology
Houston, TX 77004

Dr. Arthur Blaiwes
Human Factors Laboratory, Code N-71
Naval Training Equipment Center
Orlando, FL 32813

Dr. Joseph V. Brady
The Johns Hopkins University
School of Medicine
Division of Behavioral Biology
Baltimore, MD 21205

Dr. Stuart W. Cook
Institute of Behavioral Science #6
University of Colorado
Box 482
Boulder, CO 80309

Dr. L. L. Cummings
Kellogg Graduate School of Management
Northwestern University
Nathaniel Leverone Hall
Evanston, IL 60201

Dr. Henry Emurian
The Johns Hopkins University
School of Medicine
Department of Psychiatry and
Behavioral Science
Baltimore, MD 21205

Dr. John P. French, Jr.
University of Michigan
Institute for Social Research
P.O. Box 1248
Ann Arbor, MI 48106

Dr. Paul S. Goodman
Graduate School of Industrial
Administration
Carnegie-Mellon University
Pittsburgh, PA 15213
LIST 15 (Continued)

Dr. J. Richard Hackman  
School of Organization and Management  
Box 1A, Yale University  
New Haven, CT 06520

Dr. Lawrence R. James  
School of Psychology  
Georgia Institute of Technology  
Atlanta, GA 30332

Dr. Allan Jones  
Naval Health Research Center  
San Diego, CA 92152

Dr. Frank J. Landy  
The Pennsylvania State University  
Department of Psychology  
417 Bruce V. Moore Building  
University Park, PA 16802

Dr. Bibb Latane  
The Ohio State University  
Department of Psychology  
404 B West 17th Street  
Columbus, OH 43210

Dr. Edward E. Lawler  
University of Southern California  
Graduate School of Business Administration  
Los Angeles, CA 90007

Dr. Edwin A. Locke  
College of Business and Management  
University of Maryland  
College Park, MD 20742

Dr. Fred Luthans  
Regents Professor of Management  
University of Nebraska - Lincoln  
Lincoln, NE 68588
LIST 15 (Continued)

Dr. R. R. Mackie
Human Factors Research
Santa Barbara Research Park
6780 Cortona Drive
Goleta, CA 93017

Dr. William H. Mobley
College of Business Administration
Texas A&M University
College Station, TX 77843

Dr. Thomas M. Ostrom
The Ohio State University
Department of Psychology
116E Stadium
404C West 17th Avenue
Columbus, OH 43210

Dr. William G. Ouchi
University of California, Los Angeles
Graduate School of Management
Los Angeles, CA 90024

Dr. Irwin G. Sarason
University of Washington
Department of Psychology, NI-25
Seattle, WA 98195

Dr. Benjamin Schneider
Department of Psychology
Michigan State University
East Lansing, MI 48824

Dr. Saul B. Sells
Texas Christian University
Institute of Behavioral Research
Drawer C
Fort Worth, TX 76129

Dr. Edgar H. Schein
Massachusetts Institute of Technology
Sloan School of Management
Cambridge, MA 02119
Dr. H. Wallace Sinaiko
Program Director, Manpower Research
and Advisory Services
Smithsonian Institution
801 N. Pitt Street, Suite 120
Alexandria, VA 22314

Dr. Richard M. Steers
Graduate School of Management
University of Oregon
Eugene, OR 97403

Dr. Gerald R. Stoffer
Aerospace Psychologist
LT, Medical Service Corp.
Code N-712
NAVTRAECOMPEN
Orlando, FL 32813

Dr. Siegfried Streufert
The Pennsylvania State University
Department of Behavioral Science
Milton S. Hershey Medical Center
Hershey, PA 17033

Dr. James R. Terborg
University of Oregon
West Campus
Department of Management
Eugene, OR 97403

Dr. Harry C. Triandis
Department of Psychology
University of Illinois
Champaign, IL 61820

Dr. Howard M. Weiss
Purdue University
Department of Psychological Sciences
West Lafayette, IN 47907

Dr. Philip G. Zimbardo
Stanford University
Department of Psychology
Stanford, CA 94305