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RELATIONSHIP BETWEEN OFFICER DUTY PERFORMANCE AND CERTAIN MEASURES OF POTENTIAL

10 Arthur C. F. Gilbert

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Item 20 (Continued)

by final peer ratings and next best by grades, both in general and for personnel in noncombat arms branches. For combat arms personnel, however, final peer ratings and course grades appeared about equally predictive. These findings confirm other research on the value of peer ratings. ↖

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Technical Paper 371

RELATIONSHIP BETWEEN OFFICER DUTY PERFORMANCE AND CERTAIN MEASURES OF POTENTIAL

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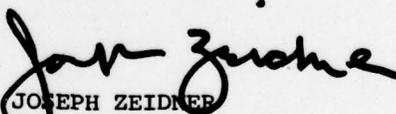
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FOREWORD

Part of the on-going research program on leadership in the Army Research Institute for the Behavioral and Social Sciences (ARI) is concerned with delineating and then measuring the major factors that collectively comprise leader behavior. ARI Research Reports 1172 and 1182 describe the development of eight broad dimensions of leadership performance, based on analyzing actual behavior in a simulated combat situation. These dimensions were used to construct the Performance Evaluation Form, which is designed to measure overall officer duty performance and evaluate potential performance. Technical Paper 344 reported the use of the Performance Evaluation Form as a criterion measure of Ranger duty performance in the validation of peer ratings obtained at Ranger school.

Technical Paper 345 confirmed the reliability of the Performance Evaluation Form itself and its ability to differentiate between requirements of different officer assignments. This paper analyzes performance data from the Officer Basic Course in relation to data on later duty performance to determine which school measures best predict officer potential.

The work was done in the Personnel and Manpower Technical Area, under Army Project 2Q162717A766. A version of this report was presented at the 1977 meeting of the Military Testing Association.


JOSEPH ZEIDNER
Technical Director

RELATIONSHIP BETWEEN OFFICER DUTY PERFORMANCE AND CERTAIN MEASURES
OF POTENTIAL

BRIEF

Requirement:

To determine the usefulness of certain Officer Basic Course (OBC) measures in predicting later duty performance.

Procedures:

Performance during OBC was measured on the seven scales of the Officer Evaluation Battery, OBC final grades, and peer ratings made half-way through the course and at the end of the course. Duty performance was assessed by ratings with the special-purpose Performance Evaluation Form and standard Officer Efficiency Report ratings.

Findings:

Statistical correlations indicated that duty performance was predicted best by the end-of-course peer ratings, and next best by course grades. For combat arms personnel, peer ratings and course grades were about equally predictive, but for noncombat arms personnel peer ratings alone correlated best.

Utilization of Findings:

The findings confirmed previous research on the predictive value of peer ratings.

RELATIONSHIP BETWEEN OFFICER DUTY PERFORMANCE AND CERTAIN
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RELATIONSHIP BETWEEN OFFICER DUTY PERFORMANCE
AND CERTAIN MEASURES OF POTENTIAL

INTRODUCTION

Previous leadership research identified eight broad domains of officer behavior in a realistic experimental combat situation (Helme, Willemin, & Grafton, 1971). The efficacy of the Differential Officer Battery in predicting performance in these domains was reported by Helme, Willemin, and Day (1971). Another area of related research concerned the validity of associate ratings in the assessment of officer potential (Parrish & Drucker, 1957; Haggerty, 1963; Gordon & Medland, 1965; Downey, Medland, & Yates, 1976; Gilbert & Downey, 1978).

Research based on the prediction utility of the Differential Officer Battery led to the development of the Officer Evaluation Battery (OEB), which consists of seven scales: Combat Leadership (cognitive), Technical Managerial Leadership (cognitive), Career Potential (cognitive), Combat Leadership (noncognitive), Technical-Managerial Leadership (noncognitive), Career Potential (noncognitive), and Career Intent. In design, this instrument reflects two of the major domains of leadership reported in the Helme, Willemin, and Grafton (1971) research.

The objective of this research was to determine the efficacy of certain measures obtained in the Officer Basic Course (OBC) in predicting subsequent on-the-job performance. The Officer Basic Course measures were scores on the seven scales of the OEB, OBC final course grades, midcourse peer ratings, and final course peer ratings. On-the-job performance measures consisted of a special-purpose Performance Evaluation Form and Officer Efficiency Report (OER) ratings.

PROCEDURE

Data Collection

Approximately 5,000 officers in the 13 career branches who attended the Officer Basic Course in FY 1974 and administered the Officer Evaluation Battery were used as subjects in this research program. Peer ratings were obtained at the midpoint of the OBC and again at the end of the course. Final course grades were obtained from each OBC in either actual grades or in class standing within each OBC class, or both.

The Performance Evaluation Form has been described in detail elsewhere (Gilbert, 1975; Gilbert & Grafton, 1978; Gilbert, Hooper, & Hicks, 1977). This instrument was designed to measure overall duty performance and rankings and ratings of potential performance along 10 leadership dimensions. Five of these leadership dimensions correspond to factors derived by Helme, Willemin, and Grafton (1971) and also to the factors

of consideration and initiation of structure identified by Fleishman (1974) and Stogdill (1974). In addition, the form required ratings along the more global dimensions of combat leadership and technical-managerial leadership identified by the Helme, Willemin, and Grafton research.

Figure 1 shows the dimensions assessed by the Performance Evaluation Form with the corresponding scale of the form and the abbreviated title of each scale. Figure 2 shows the 7-point scale (adapted from Willemin, 1965) that was used for each rating. Raters were required to rank seven of the scales in terms of an officer's potential for future performance, and then to rate the officer in these seven scales. Three of the scales--Duty Performance, Combat Leadership, and Technical-Managerial Leadership--required ratings only.

Wherever possible, ratings on the Performance Evaluation Form were obtained from four raters: the officer's immediate supervisor, a superior officer other than the officer's immediate supervisor but not necessarily the OER-indorsing official, and two close associates.

Data Preparation

The OBC grades and class standings were equated by ranking (within the class) the grades of officers for whom class grades only were available. These rankings were then converted to standard scores. When class rankings were available, they were converted to standard scores within the different OBC classes. Scores were standardized with a mean of 100 and a standard deviation of 20. For the purpose of analysis, the ratings on the Performance Evaluation Form were averaged, if ratings were available from at least two raters.

RESULTS AND DISCUSSION

Table 1 shows reliability estimates for each of the 10 scales of the Performance Evaluation Form. These estimates are based on cases for which all four ratings were available in the sample. Estimates were obtained by averaging the six possible correlations among the four raters and adjusting the resulting average by the Spearman-Brown Prophecy formula.

The reliability estimates ranged from .70 for the Combat Leadership scale to .55 for the Logistical Knowledge scale. These estimates support the findings of Willemin (1965).

Table 2 shows the correlations between the 10 predictor variables and each of the 10 scales of the Performance Evaluation Form for the entire sample. Table 2 also shows the multiple correlations between the 10 predictor variables. This table reveals that final course peer ratings yielded the highest zero-order correlations for eight of the scales; the two exceptions were for the Technical-Managerial scale and

Performance Evaluation Form scale	Factor	Abbreviated title of scale
Part I		
Duty performance		Duty performance
Part II		
Applying tactical knowledge and skills in support of combat operations	Tactical staff skills ^a	Tactical knowledge
Understanding the mission and clearly defining personal roles of subordinates in its accomplishment	Team leadership ^a	Defining personal roles
Making decisions and initiating actions under pressure	Command of men ^a	Making decisions
Defining functional roles and duties in the process of developing subordinates to fill assignments for long-term unit effectiveness	Initiation of structure ^{b,c}	Defining functional roles
Planning and organizing manpower and materiel to meet situational requirements	Executive direction ^a	Planning and organization
Motivating troops to accomplishing the mission by taking into consideration their well-being and morale	Consideration ^{b,c}	Motivating troops
Applying knowledge of logistics and technical matters to solve support problems	Technical staff skills ^a	Technical knowledge
Part III		
Combat leadership	Combat leadership ^a	Combat leadership
Technical-managerial leadership	Technical-managerial leadership ^a	Technical-managerial leadership

^a Helme, Willemin, and Grafton (1971).

^b Fleishman (1974).

^c Stogdill (1974).

Figure 1. Performance Evaluation Form scales and corresponding factors and abbreviated scale titles.

Scale value	Description
7 <u>OUTSTANDING</u>	<u>Far above the requirements of the situation, suggesting the highest kind of formal recognition through meritorious award, or decoration.</u>
6 <u>SUPERIOR</u>	<u>Markedly above the requirements of the situation, suggesting formal recognition through a special (favorable) efficiency report, or letter of commendation.</u>
5 <u>ABOVE AVERAGE</u>	<u>Somewhat above the requirements of the situation, suggesting informal recognition through specific favorable comment in his regular efficiency report, and through informal appreciation or commendation.</u>
4 <u>AVERAGE</u>	<u>Fully up to the requirements of the situation, suggesting general appreciation (perhaps mostly unexpressed).</u>
3 <u>BELOW AVERAGE</u>	<u>Somewhat below the requirements of the situation, though suggesting only the mildest kind of corrective action through informal recommendation for improvement, or through change of duty assignment within the organization.</u>
2 <u>MARGINAL</u>	<u>Markedly below the requirements of the situation, suggesting formal corrective action through a special (unfavorable) efficiency report, administrative admonition, letter or reprimand, summary court, or transfer out of the organization.</u>
1 <u>UNSATISFACTORY</u>	<u>Far below the requirements of the situation, suggesting the most drastic kind of formal corrective action through reclassification, demotion, general court, or boarding out of the Army.</u>

Figure 2. Officer performance scale.^a

^aAdapted from Willemin (1965).

the Tactical Knowledge scale. Final course peer ratings were most predictive of Duty Performance, Combat Leadership, and Making Decisions.

Table 1

Reliability Estimates for Each Scale of the
Performance Evaluation Form

Scale	Reliability estimate
Duty Performance	.67
Combat Leadership	.70
Technical-Managerial Leadership	.58
Tactical Knowledge	.68
Understanding Mission	.59
Making Decisions	.66
Defining Functional Roles	.58
Planning and Organizing	.57
Motivating Troops	.60
Logistical Knowledge	.55

Table 3 shows the correlations among the same set of variables and for corresponding multiple correlations for the combat arms branches. These branches are air defense, armor, field artillery, and infantry. In this analysis, final course peer ratings yielded higher or equal zero-order correlations with the criteria, as did other predictors in all but two instances--the Technical-Managerial Leadership scale and the Logistical Knowledge scale.

Table 4 shows the correlations between each set of predictors and each of the 10 criteria and corresponding multiple correlations for the branches other than the combat arms branches. For all of the criteria, with the exception of the Technical-Managerial scale, the zero-order correlations between final course peer ratings and the criteria were higher than or equal to the zero-order correlations between each of the other variables and each of the criteria.

In general, the results of these analyses indicate that final OBC peer ratings are the best predictors of duty performance when measured by the Duty Performance scale of the Performance Evaluation Form for the total sample. The zero-order correlation in this instance is .26 between final course peer ratings and duty performance; the next highest zero-order correlation is .19 between duty performance and OBC final grades.

Table 2

Correlation Between Each Predictor and Each Scale of the Performance Evaluation Form for the Total Sample (N = 2,108)

Variable	Predictor ^a										Multiple correlation R
	CLC	TMC	CPC	CLNC	TMNC	CPNC	CI	OBCG	PRM	PRF	
Duty Performance	.10**	.04*	.07**	.10**	.08**	.04*	.01	.19**	.16**	.26**	.29**
Combat Leadership	.21**	.07**	.11**	.26**	.15**	.22**	.06**	.19**	.18**	.25**	.39**
Technical-Managerial Leadership	.08**	.08**	.08**	.02	.07**	-.04*	-.05*	.19**	.10**	.18**	.25**
Tactical Knowledge	.23**	.10**	.12**	.27**	.15**	.22**	.09**	.19**	.14**	.22**	.38**
Understanding Mission	.09**	.01	.05*	.09**	.07**	.04*	.00	.19**	.15**	.21**	.26**
Making Decisions	.11**	.01	.05**	.14**	.12**	.08**	.01	.18**	.16**	.26**	.31**
Defining Roles	.05**	.02	.03	.04*	.06**	-.01	-.02	.14**	.12**	.18**	.21**
Planning and Organizing	.07*	.02	.05*	.04*	.05*	-.01	-.03	.17**	.12**	.21**	.25**
Motivating Troops	.03	-.06**	-.04*	.06**	.05*	.03	.01	.10**	.18**	.25**	.28**
Logistical Knowledge	.12**	.09**	.11**	.05**	.08**	-.01	-.04*	.16**	.08**	.18**	.24**

^a Predictor CLC = Combat Lead. (cog) TMC = Tech-Manager. Lead. (cog) CPC = Career Pot. (cog) CLNC = Tech-Manager. Lead. (noncog) TMNC = Tech-Manager. Lead. (noncog) CPNC = Career Pot. (noncog) CI = Career Intent OBCG = OBC Course Grade PRM = Midcourse Peer Ratings PRF = Final Peer Ratings *Significant at the .05 level. **Significant at the .01 level.

Table 3

Correlation Between Each Predictor and Each Scale of the Performance Evaluation Form and Corresponding Multiple Correlation for the Combat Arms Branches (N = 1,193)

Variable	Predictor ^a										Multiple correlation R
	CLC	TMC	CPC	CLNC	TMNC	CPNC	CI	OBCG	PRM	PRF	
Duty Performance	.08**	.03	.06*	.05*	.05*	.02	.00	.21**	.13**	.23**	.27**
Combat Leadership	.12**	.03	.07*	.13**	.10**	.11**	.03	.21**	.16**	.26**	.31**
Technical-Managerial Leadership	.06**	.08**	.05*	-.02	.03	-.06*	-.05*	.17**	.09**	.14**	.22**
Tactical Knowledge	.14**	.08**	.10**	.12**	.11**	.13**	.05*	.23**	.13**	.25**	.31**
Understanding Mission	.05*	.02	.04	.05	.05*	.01	-.02	.19**	.11**	.19**	.24**
Making Decisions	.06*	.01	.03	.07**	.08**	.05	-.01	.20**	.13**	.25**	.29**
Defining Roles	.03	.03	.04	-.00	.04	-.03	-.03	.15**	.09	.16**	.21**
Planning and Organizing	.07**	.04	.05*	.00	.02	-.02	.17**	.18**	.08**	.17**	.23**
Motivating Troops	.02	-.03	-.03	.03	.05	.01	-.02	.14**	.16**	.23**	.26**
Logistical Knowledge	.08**	.08**	.09**	.02	.04	-.02	-.02	.15**	.02	.11**	.19**

^aPredictor CLC = Combat Lead. (cog) CPNC = Career Pot. (noncog) *Significant at the .05 level.
 TMC = Tech-Manager. Lead. (cog) CI = Career Intent
 CPC = Career Pot. (cog) OBCG = OBC Course Grade **Significant at the .01 level.
 CLNC = Tech-Manager. Lead. (noncog) PRM = Midcourse Peer Ratings
 TMNC = Tech-Manager. Lead. (noncog) PRF = Final Peer Ratings

Table 4

Correlation Between Each Predictor and Each Scale of the Performance Evaluation Form for Branches Other Than Combat Arms (N = 915)

Variable	Predictor ^a										Multiple correlation R
	CLC	TMC	CPC	CLNC	TMNC	CPNC	CI	OBCG	PRM	PRF	
Duty Performance	.11**	.04	.07	.12**	.11**	.03	.01	.16**	.20**	.30**	.33**
Combat Leadership	.22**	.07	.15**	.31**	.20**	.18**	.05	.17**	.20**	.31**	.44**
Technical-Managerial Leadership	.13**	.08*	.11**	.07	.12**	-.01	-.04	.23**	.12**	.23**	.30**
Tactical Knowledge	.23**	.08*	.14**	.31**	.20**	.17**	.07	.13**	.17**	.26**	.41**
Understanding Mission	.10*	-.01	.05	.10*	.09*	.04	.01	.18**	.19**	.25**	.30**
Making Decisions	.12**	.00	.07	.17**	.16**	.05	.02	.15**	.20**	.29**	.35**
Defining Roles	.07	-.00	.03	.08*	.09*	.00	-.01	.13**	.15**	.21**	.24**
Planning and Organizing	.08*	.00	.04	.08*	.08*	.01	-.01	.15**	.16**	.26**	.29**
Motivating Troops	.02	-.10*	-.05	.07	.05	.02	.04	.04	.21**	.29**	.32**
Logistical Knowledge	.17**	.10*	.14**	.11**	.12**	.00	-.05	.17**	.14**	.25**	.32**

^aPredictor CLC = Combat Lead. (cog) CPNC = Career Pot. (noncog) *Significant at the .05 level.
 TMC = Tech-Manag. Lead. (cog) CI = Career Intent
 CPC = Career Pot. (cog) OBCG = OBC Course Grade **Significant at the .01 level.
 CLNC = Tech-Manag. Lead. (noncog) PRM = Midcourse Peer Ratings
 TMNC = Tech-Manag. Lead. (noncog) PRF = Final Peer Ratings

In the combat arms branches, there is little difference between the predictive value of peer ratings and OBC final grades for duty performance. For branches other than the combat arms, however, the correlation between final course ratings and duty performance is .30; the correlation between grades and duty performance is .16.

The last analyses involved the relationships between the predictors and the weighted average OER ratings. Table 5 shows the results of these analyses. For the total sample, final course peer ratings yielded a correlation of .21 with OER ratings; however, the final grades obtained in the OBC yielded a correlation of .20. In the combat arms branches, OBC final course grades yielded a slightly higher zero-order correlation with OER ratings, whereas the opposite occurred in branches other than combat arms.

The results of this research are similar to results of other reports on the utility of associate ratings or peer ratings in predicting subsequent performance (Helme, 1969; Gilbert, 1975; Gilbert & Downey, 1978). Further research will explore how the predictive utility of peer ratings may be enhanced. One possible approach would be to divide the sample into individual career branches, since some differences in predictive power between combat arms branches and the other branches were observed in this research. Another possibility would be to divide the sample according to the similarities of specialties in which the officers are engaged.

Table 5

Correlation Between Each Predictor and Weighted Average Officer
Efficiency Ratings and Corresponding Multiple Correlations
for Combat Arms, Branches Other Than Combat Arms,
and Total Sample

Predictor	Combat arms (n = 2,486)	Branches other than combat arms (n = 2,120)	Total (n = 4,506)
Combat Leadership (cognitive)	.06	.05	.06
Technical-Managerial Leadership (cognitive)	.02	-.01	.01
Career Potential (cognitive)	.01	.04	.02*
Combat Leadership (noncognitive)	.08*	.10**	.09**
Technical-Managerial Leadership (noncognitive)	.10**	.09**	.10**
Career Potential (noncognitive)	.02	.01	.02
Career Intent	.02	.06	.04
OBC grades	.25**	.15**	.20**
Midcourse peer ratings	.12**	.11**	.11**
Final peer ratings	.22**	.21**	.21**
Multiple correlations	.30**	.24**	.26**

*Significant at the .05 level.

**Significant at the .01 level.

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 1 USA Rsch Ofc, Durham, ATTN: Life Sciences Dir
 2 USARIEM, Natick, ATTN: SGRD-UE-CA
 1 USAITC, Ft Clayton, ATTN: STIC-MO-A
 1 USAIMA, Ft Bragg, ATTN: ATSU-CTD-OM
 1 USAIMA, Ft Bragg, ATTN: Marquat Lib
 1 US WAC Ctr & Sch, Ft McClellan, ATTN: Lib
 1 US WAC Ctr & Sch, Ft McClellan, ATTN: Tng Dir
 1 USA Quartermaster Sch, Ft Lee, ATTN: ATSM-TE
 1 Intelligence Material Dev Ofc, EWL, Ft Holabird
 1 USA SE Signal Sch, Ft Gordon, ATTN: ATSO-EA
 1 USA Chaplain Ctr & Sch, Ft Hamilton, ATTN: ATSC-TE-RD
 1 USATSCH, Ft Eustis, ATTN: Educ Advisor
 1 USA War College, Carlisle Barracks, ATTN: Lib
 2 WRAIR, Neuropsychiatry Div
 1 DLI, SDA, Monterey
 1 USA Concept Anal Agcy, Bethesda, ATTN: MOCA-MR
 1 USA Concept Anal Agcy, Bethesda, ATTN: MOCA-JF
 1 USA Arctic Test Ctr, APO Seattle, ATTN: STEAC-PL-MI
 1 USA Arctic Test Ctr, APO Seattle, ATTN: AMSTE-PL-TS
 1 USA Armament Cmd, Redstone Arsenal, ATTN: ATSK-TEM
 1 USA Armament Cmd, Rock Island, ATTN: AMSAR-TDC
 1 FAA-NAFEC, Atlantic City, ATTN: Library
 1 FAA-NAFEC, Atlantic City, ATTN: Human Engr Br
 1 FAA Aeronautical Ctr, Oklahoma City, ATTN: AAC-44D
 2 USA Fld Arty Sch, Ft Sill, ATTN: Library
 1 USA Armor Sch, Ft Knox, ATTN: Library
 1 USA Armor Sch, Ft Knox, ATTN: ATSB-DI-E
 1 USA Armor Sch, Ft Knox, ATTN: ATSB-DT-TP
 1 USA Armor Sch, Ft Knox, ATTN: ATSB-CD-AD
 2 HQUSACDEC, Ft Ord, ATTN: Library
 1 HQUSACDEC, Ft Ord, ATTN: ATEC-EX-E-Hum Factors
 2 USAEEC, Ft Benjamin Harrison, ATTN: Library
 1 USAPACDC, Ft Benjamin Harrison, ATTN: ATCP-HR
 1 USA Comm-Elect Sch, Ft Monmouth, ATTN: ATSN-EA
 1 USAEC, Ft Monmouth, ATTN: AMSEL-CT-HDP
 1 USAEC, Ft Monmouth, ATTN: AMSEL-PA-P
 1 USAEC, Ft Monmouth, ATTN: AMSEL-SI-CB
 1 USAEC, Ft Monmouth, ATTN: C, Fac Dev Br
 1 USA Materials Sys Anal Agcy, Aberdeen, ATTN: AMXSY-P
 1 Edgewood Arsenal, Aberdeen, ATTN: SAREA-BL-H
 1 USA Ord Ctr & Sch, Aberdeen, ATTN: ATSL-TEM-C
 2 USA Hum Engr Lab, Aberdeen, ATTN: Library/Dir
 1 USA Combat Arms Tng Bd, Ft Benning, ATTN: Ad Supervisor
 1 USA Infantry Hum Rsch Unit, Ft Benning, ATTN: Chief
 1 USA Infantry Bd, Ft Benning, ATTN: STEBC-TE-T
 1 USASMA, Ft Bliss, ATTN: ATSS-LRC
 1 USA Air Def Sch, Ft Bliss, ATTN: ATSA-CTD-ME
 1 USA Air Def Sch, Ft Bliss, ATTN: Tech Lib
 1 USA Air Def Bd, Ft Bliss, ATTN: FILES
 1 USA Air Def Bd, Ft Bliss, ATTN: STEBD-PO
 1 USA Cmd & General Stf College, Ft Leavenworth, ATTN: Lib
 1 USA Cmd & General Stf College, Ft Leavenworth, ATTN: ATSW-SF-L
 1 USA Cmd & General Stf College, Ft Leavenworth, ATTN: Ed Advisor
 1 USA Combined Arms Cmbt Dev Act, Ft Leavenworth, ATTN: DepCdr
 1 USA Combined Arms Cmbt Dev Act, Ft Leavenworth, ATTN: CCS
 1 USA Combined Arms Cmbt Dev Act, Ft Leavenworth, ATTN: ATCASA
 1 USA Combined Arms Cmbt Dev Act, Ft Leavenworth, ATTN: ATCACO-E
 1 USA Combined Arms Cmbt Dev Act, Ft Leavenworth, ATTN: ATCACO-CI
 1 USAECOM, Night Vision Lab, Ft Belvoir, ATTN: AMSEL-NV-SD
 3 USA Computer Sys Cmd, Ft Belvoir, ATTN: Tech Library
 1 USAMERDC, Ft Belvoir, ATTN: STSFB-DQ
 1 USA Eng Sch, Ft Belvoir, ATTN: Library
 1 USA Topographic Lab, Ft Belvoir, ATTN: ETL-TD-S
 1 USA Topographic Lab, Ft Belvoir, ATTN: STINFO Center
 1 USA Topographic Lab, Ft Belvoir, ATTN: ETL-GSL
 1 USA Intelligence Ctr & Sch, Ft Huachuca, ATTN: CTD-MS
 1 USA Intelligence Ctr & Sch, Ft Huachuca, ATTN: ATS-CTD-MS
 1 USA Intelligence Ctr & Sch, Ft Huachuca, ATTN: ATSI-TE
 1 USA Intelligence Ctr & Sch, Ft Huachuca, ATTN: ATSI-TEX-GS
 1 USA Intelligence Ctr & Sch, Ft Huachuca, ATTN: ATSI-CTS-OR
 1 USA Intelligence Ctr & Sch, Ft Huachuca, ATTN: ATSI-CTD-DT
 1 USA Intelligence Ctr & Sch, Ft Huachuca, ATTN: ATSI-CTD-CS
 1 USA Intelligence Ctr & Sch, Ft Huachuca, ATTN: DAS/SRD
 1 USA Intelligence Ctr & Sch, Ft Huachuca, ATTN: ATSI-TEM
 1 USA Intelligence Ctr & Sch, Ft Huachuca, ATTN: Library
 1 CDR, HQ Ft Huachuca, ATTN: Tech Ref Div
 2 CDR, USA Electronic Prvg Grd, ATTN: STEFP-MT-S
 1 HQ, TCATA, ATTN: Tech Library
 1 HQ, TCATA, ATTN: AT-CAT-OP-Q, Ft Hood
 1 USA Recruiting Cmd, Ft Sheridan, ATTN: USARCPM-P
 1 Senior Army Adv., USAFAGOD/TAC, Elgin AF Aux Fld No. 9
 1 HQ, USARPAC, DCSPER, APO SF 96558, ATTN: GPPE-SE
 1 Stimson Lib, Academy of Health Sciences, Ft Sam Houston
 1 Marine Corps Inst., ATTN: Dean-MCI
 1 HQ, USMC, Commandant, ATTN: Code MTMT
 1 HQ, USMC, Commandant, ATTN: Code MPI-20-28
 2 USCG Academy, New London, ATTN: Admission
 2 USCG Academy, New London, ATTN: Library
 1 USCG Training Ctr, NY, ATTN: CO
 1 USCG Training Ctr, NY, ATTN: Educ Svc Ofc
 1 USCG, Psychol Res Br, DC, ATTN: GP 1/62
 1 HQ Mid-Range Br, MC Det, Quantico, ATTN: P&S Div

1 US Marine Corps Liaison Ofc, AMC, Alexandria, ATTN: AMCGS-F
 1 USATRADOCC, Ft Monroe, ATTN: ATRO-ED
 6 USATRADOCC, Ft Monroe, ATTN: ATPR-AD
 1 USATRADOCC, Ft Monroe, ATTN: ATTS-EA
 1 USA Forces Cmd, Ft McPherson, ATTN: Library
 2 USA Aviation Test Bd, Ft Rucker, ATTN: STEBG-PO
 1 USA Agcy for Aviation Safety, Ft Rucker, ATTN: Library
 1 USA Agcy for Aviation Safety, Ft Rucker, ATTN: Educ Advisor
 1 USA Aviation Sch, Ft Rucker, ATTN: PO Drawer O
 1 HQUSA Aviation Sys Cmd, St Louis, ATTN: AMSAV-ZDR
 2 USA Aviation Sys Test Act., Edwards AFB, ATTN: SAVTE-T
 1 USA Air Def Sch, Ft Bliss, ATTN: ATSA TEM
 1 USA Air Mobility Rsch & Dev Lab, Moffett Fld, ATTN: SAVDL-AS
 1 USA Aviation Sch, Res Trng Mgt, Ft Rucker, ATTN: ATST-T-RTM
 1 USA Aviation Sch, CO, Ft Rucker, ATTN: ATST-D-A
 1 HQ, DARCOM, Alexandria, ATTN: AMXCD-TL
 1 HQ, DARCOM, Alexandria, ATTN: CDR
 1 US Military Academy, West Point, ATTN: Serials Unit
 1 US Military Academy, West Point, ATTN: Ofc of Milt Ldrshp
 1 US Military Academy, West Point, ATTN: MAOR
 1 USA Standardization Gp, UK, FPO NY, ATTN: MASE-GC
 1 Ofc of Naval Rsch, Arlington, ATTN: Code 452
 3 Ofc of Naval Rsch, Arlington, ATTN: Code 458
 1 Ofc of Naval Rsch, Arlington, ATTN: Code 450
 1 Ofc of Naval Rsch, Arlington, ATTN: Code 441
 1 Naval Aerospic Med Res Lab, Pensacola, ATTN: Acous Sch Div
 1 Naval Aerospic Med Res Lab, Pensacola, ATTN: Code L51
 1 Naval Aerospic Med Res Lab, Pensacola, ATTN: Code L5
 1 Chief of NavPers, ATTN: Pers-OR
 1 NAVAIRSTA, Norfolk, ATTN: Safety Ctr
 1 Nav Oceanographic, DC, ATTN: Code 6251, Charts & Tech
 1 Center of Naval Anal, ATTN: Doc Ctr
 1 NavAirSysCom, ATTN: AIR-5313C
 1 Nav BuMed, ATTN: 713
 1 NavHelicopterSubSqua 2, FPO SF 96601
 1 AFHRL (FT) Williams AFB
 1 AFHRL (TT) Lowry AFB
 1 AFHRL (AS) WPAFB, OH
 2 AFHRL (DOJZ) Brooks AFB
 1 AFHRL (DOJN) Lackland AFB
 1 HQUSAF (INYSO)
 1 HQUSAF (DPXXA)
 1 AFVTG (RD) Randolph AFB
 3 AMRL (HE) WPAFB, OH
 2 AF Inst of Tech, WPAFB, OH, ATTN: ENE/SL
 1 ATC (XPTD) Randolph AFB
 1 USAF AeroMed Lib, Brooks AFB (SUL-4), ATTN: DOC SEC
 1 AFOSR (NL), Arlington
 1 AF Log Cmd, McClellan AFB, ATTN: ALC/DPCRB
 1 Air Force Academy, CO, ATTN: Dept of Bel Scn
 5 NavPers & Dev Ctr, San Diego
 2 Navy Med Neuropsychiatric Rsch Unit, San Diego
 1 Nav Electronic Lab, San Diego, ATTN: Res Lab
 1 Nav TrngCen, San Diego, ATTN: Code 9000-Lib
 1 NavPostGraSch, Monterey, ATTN: Code 55Aa
 1 NavPostGraSch, Monterey, ATTN: Code 2124
 1 NavTrngEquipCtr, Orlando, ATTN: Tech Lib
 1 US Dept of Labor, DC, ATTN: Manpower Admin
 1 US Dept of Justice, DC, ATTN: Drug Enforce Admin
 1 Nat Bur of Standards, DC, ATTN: Computer Info Section
 1 Nat Clearing House for MH-Info, Rockville
 1 Denver Federal Ctr, Lakewood, ATTN: BLM
 12 Defense Documentation Center
 4 Dir Psych, Army Hq, Russell Ofcs, Canberra
 1 Scientific Advsr, Mil Bd, Army Hq, Russell Ofcs, Canberra
 1 Mil and Air Attache, Austrian Embassy
 1 Centre de Recherche Des Facteurs, Humaine de la Defense Nationale, Brussels
 2 Canadian Joint Staff Washington
 1 C/Air Staff, Royal Canadian AF, ATTN: Pers Std Anal Br
 3 Chief, Canadian Def Rsch Staff, ATTN: C/CRDS(W)
 4 British Def Staff, British Embassy, Washington
 1 Def & Civil Inst of Enviro Medicine, Canada
 1 AIR CRESS, Kensington, ATTN: Info Sys Br
 1 Militaerpsykologisk Tjeneste, Copenhagen
 1 Military Attache, French Embassy, ATTN: Doc Sec
 1 Medecin Chef, C.E.R.P.A.-Arsenal, Toulon/Naval France
 1 Prin Scientific Off, Appl Hum Engr Rsch Div, Ministry of Defense, New Delhi
 1 Pers Rsch Ofc Library, AKA, Israel Defense Forces
 1 Ministeris van Defensie, DOOP/KL Afd Sociaal Psychologische Zaken, The Hague, Netherlands