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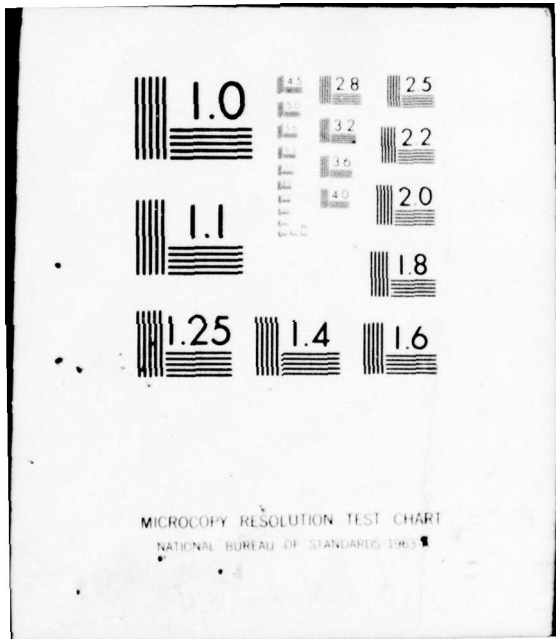NOV 76   J W MILLER

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THE 12th INTERNATIONAL SYMPOSIUM
ON APPLIED MILITARY PSYCHOLOGY

JAMES W. MILLER

22 NOVEMBER 1976

BRANCH
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LONDON
ENGLAND

UNITED STATES OF AMERICA

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This report describes the 12th International Symposium on Applied Military Psychology, held in Paris in April 1976. The Symposium was attended by 24 representatives from 10 countries. The theme of the conference was "The contribution of psychologists to military effectiveness". Each participant was requested to bring examples of successful and unsuccessful programs which were initiated and/or implemented by behavioral scientists. Topics of discussion included recruitment and selection of armed forces personnel, training programs, conscientious objectors, the growth of unions in the
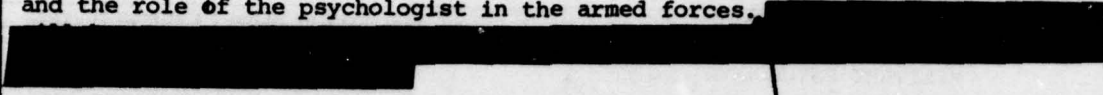
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armed forces, personnal research and training programs, leadership training, and the role of the psychologist in the armed forces. ████████████████

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ACKNOWLEDGEMENT

THE 12TH INTERNATIONAL SYMPOSIUM ON APPLIED MILITARY PSYCHOLOGY

INTRODUCTION

This series of annual conferences is designed to encourage the exchange of information among military psychologists about their programs, plans and problems. Although ONRL is a co-sponsor, each year a different country acts as host. This year the host country was France, and the organization of the meeting was in the capable hands of Dr. Jacques Brémond, Medecin-en-Chef, Center for Research in Aviation Psychology, 78, Saint-Cyr-l'Ecole, France. The Conference was held in the Western European Union Building, Paris, from 5-9 April 1976. It was attended by 24 representatives from 10 countries. A list of the participants is shown in Appendix A.

The theme of this year's conference was the "The contribution of psychologists (behavioral scientists) to military effectiveness." Each attendee was requested to bring examples of programs initiated and/or developed by psychological or allied scientists for implementation into military systems. In addition to an agenda, guidelines were distributed in advance to each participant containing criteria for successful and unsuccessful program implementation. Both agenda and the guidelines are shown in Appendix B.

Throughout the Conference, an effort was made to determine the reasons for success or failure of the programs discussed. Criteria for determining whether a program was successful included demonstrations that the program resulted in faster mobilization, reduced training or maintenance time, reduced accidents or cost, etc. Reasons for failure included failure to understand the problem, change in requirements, poor equipment or implementation, or simply bad timing and/or a change of commanding officers.

RECRUITMENT AND SELECTION

On the first day, following the usual introductions, Dr. Frederick W. Steege, (Ministry of Defense, FRG) presented an excellent survey of Personnel Psychology in the Federal Armed Forces (FAF) of Germany. There are about 130 psychologists in the FAF assigned to one of five branches i.e., personnel, aviation, clinical, social and ergonomics. Steege distributed a report containing organization charts and a description of each of these five branches (see Appendix C). However, his discussion was limited primarily to the activities of the Personnel Psychology Branch. This Branch is concerned with the selection and training of officers, volunteers, and conscripts, as well as the psychological assessment of civil servants.

Psychologists in the FAF are divided into three general groups. One consists of uniformed psychologists (officers) employed in the Navy, Army, and Air Force, and in medical and military colleges. They do work relating to ergonomics, clinical, social, personnel, and counselling psychology as well as applied research in these fields. The second group of psychologists (civilians) is employed in organizations such as the Federal Office of Military Technology and Procurement (Ergonomics) and the Central College of Forces Administration (instructional, personnel, counselling psychology). Psychologists also serve as Forces Administration Officers who are concerned with the selection and placement of recruits and the assessment of long-term volunteers and officer candidates. Laws in Germany preclude the use of psychological tests by anyone except psychologists. Steege remarked that although historically the psychologists' main task in the FAF has been that of selection and placement, since 1966 the roles have been greatly enlarged to encompass the activities mentioned above.

Of particular interest to the group was Steege's description of a new procedure for the selection and training of officers. Two new military universities recently have been established in Germany for this purpose. Under this new system, officer candidates are selected, after which they receive 15 months of military training. Upon successful completion of this training, they are assigned to one of the two military universities for three years.

The University courses available include pedagogy, humanities, economics, informatics, engineering and electronics. Although the students live in military surroundings, they wear civilian clothes and undergo no military training during the three years. They are, however, under military supervision and are subject to military law. As only 2,400 students are selected annually from a pool of 14,000 applicants, recruiting is not a problem; rather, the challenge is to select those with the best potential for military careers. The first class will graduate in the Fall of 1976.

This formation of new military universities in Germany stimulated considerable discussion. Several attendees asked why existing civilian universities were not used for officer academic training. Steege explained that it was an effort to raise the standards of the officer corps and was partially in response to the anti-military riots in the civilian universities in the 1960's and early 1970's. By comparison, in France where civilians go to military schools and vice versa there have been no disciplinary problems except in the Army academy.

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Following Steege's presentation a talk was given by Major Ivan N. Evonic, acting Commanding Officer of the Canadian Forces Personnel Applied Research Unit, Toronto. His topic was Recruiting and Retention in the Canadian Forces. Evonic emphasized that the manpower strength of the Canadian Forces is dwindling. Although increased recruiting efforts are being put forth they are not yet effective. Evonic feels this failure is due to the fact that they are not appealing to the right youths with the right pitch. He was lamenting the fact that no real effort has been made to assess properly the social and demographic characteristics of the potential volunteer pool. Recruiting techniques and the story line must change to attract the interests of today's youths. Sociological surveys are being developed in Canada to provide a basis for improved recruiting methods.

Evonic also gave a very comprehensive report of the findings of five recent Canadian studies dealing with the manning of the Armed Forces (see Appendix D). The results of these reports, which contained recommendations of policy changes, have been well received and are beginning to have an effect on current manning policies, although it is difficult to know which recommendations are actually implemented and how effective they are.

While the reader should refer to the above-mentioned reports for details, it is appropriate to quote the summary from Report 74-5, Trends and Projections to 1985, as the findings tend to reflect the experience of several countries represented at the conference.

"The traditional potential recruit with a grade 8, 9, or 10 education has virtually disappeared from the Canadian horizon, replaced by a person with grade 11 or more who is more knowledgeable and critical of employment prospects. The latter is more likely to be viewed as enrollable under current selection standards, but he displays a tendency to withdraw voluntarily from processing. In addition, the more educated recruit is more likely to be viewed as retainable after enrollment, but displays a disproportionate tendency to terminate service during his initial engagement. In short, those applicants and enrollees whom the Forces find most suitable for employment and who constitute the majority of potential recruits, are more likely to find the Forces less attractive as an initial or career employment option."

An interesting comment was made by Brémond at this point. He said that in France, the armed forces advertise

for openings in particular trades e.g., "We are looking for
500 --- Specialists in ", rather than a "Join the Forces" approach.

A discussion took place relating to the problem of
the conscientious objector in the armed forces. This discussion
began with a presentation entitled "Conscientious Objection
in the Federal Republic of Germany" by Hermann Flach of the
Empirische Psychologie, Anwendung und Forschung, Bonn. In
Germany the law "prohibits coercing a man to render war service
involving the use of arms if this is against the edicts of
his conscience." That this is a problem is reflected by the
fact that the overall number of applications for recognition
as a conscientious objector rose from 2,777 in 1964 to 35,192
in 1973. It is also of interest that the number of similar
applications from active-duty military personnel rose from
205 to 3,100 during the same period. The trend seems to be
decreasing slightly at the present time with an overall total
of 32,565 applications in 1975. Each applicant is thoroughly
screened, and if it is determined that he has a bonafide case
he is then compelled to serve for 18 months in a civilian capacity.
Those wishing further details regarding this study can obtain
them by writing directly to Flach.

In France if one wishes to be accepted as a conscientious
objector, he must apply three months in advance of his conscription
date. In France, as well as in Holland, there is an examining
board to determine the merits of each case. By contrast, in
Denmark one has only to claim he is a conscientious objector
to be excused from military service with no examination at
all. There is, however, a requirement for civilian service
as is the case in Holland, Sweden and France, although in Sweden
the only acceptable excuse for not entering the armed forces
is a medical one. In Switzerland there are no acceptable personal
reasons for not entering the military service.

Presentations were made by Dr. J.W. Van Neden and
Dr. F.J.B. Teerink, chief psychologists of the Royal Netherlands
Army and Air Force, respectively. One of the most interesting
aspects of their talks was the role of the unions within the
Dutch armed forces. These unions, which have existed since
1925, should really be regarded as pressure groups reflecting
the social climate, the law, and the press. They do not have
the legal right to strike and are mainly concerned with salary
and living conditions.

According to Teerink and Van Neden, the existence
of unions has not compromised the effectiveness of the Dutch
Armed Forces. According to Teerink, there does not seem to
be a problem in switching from a permissive atmosphere in

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the barracks to a disciplinary one in the field. Thus, the behavior problems which do exist, are found in the barracks and other off-duty locations. The writer in talking with a retired Dutch Army Colonel, has found that this feeling however is not a unanimous one. An interesting aspect of the Dutch system is that members of the armed forces work a regular 40-hour week, receive overtime pay (including officers up to the rank of captain), and are paid at least at the minimum Dutch wage level.

By contrast in France, according to Brémond, neither the politicians, officers nor enlisted men are in favor of unions within the armed forces, although the various political parties tacitly approve informal associations when and if they spring up. Along these same lines Brémond believes that resistance to social change in the armed forces will cause problems in the future.

In France, youths of military age do not seem to be basically opposed to military service but do rebel against make-work activities. This is consistent with the attitude in Holland where the image of the military appears to be high, as about 80% of the young people do not oppose membership in the armed forces. The anticipated reduction of the conscription period in France from one year to six months may well ease the objections of many young people now opposed to serving in the military. In general, according to the Symposium attendees, military effectiveness does not seem to have been reduced by improved service conditions achieved by the various armed forces associations. This is of particular interest to the US where the role of unions in the armed forces is now being considered. The writer would like to call attention to a thorough review article entitled "Trade Unions in the Armed Forces" by Gwyn Garries-Jenkins, University of Hull, HU6 7RX, England. This article reviews the situation in many European Countries and contains 56 references on the subject. This is an expanded version of a presentation made at the British Inter-University Seminar on "Armed Forces and Society," which took place in the Spring of 1976.

PERSONNEL RESEARCH

In keeping with the theme of the Symposium, several participants presented examples of programs initiated and implemented by psychological scientists. Dr. Ole Sucksdorff (Danish Institute of Military Psychology) (DIMP) described a program developed by his organization referred to as the Organizational Survey Feedback System. This system, which was instituted in 1972,

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has been extremely well received throughout the Danish Armed Forces. It was originally developed for the lower ranks of a military unit, but the positive results led to its use for all operational, technical and training units. It works as follows; once a year all personnel in operational, technical and school units answer a questionnaire indicating their views on topics such as management and control, relations to immediate superiors, relations to peers, the job, and training effectiveness. The results are analyzed and tabulated by DIMP and fed back to commanding officers so as to permit comparisons with results obtained by other units and with one's own results from previous surveys. The anonymity of the individual respondents and their commanding officers is preserved at all levels. The company commander can evaluate the effectiveness of his own company relative to the average of all such companies, but he cannot compare it to any other individual company. The results provide a starting point for a dialogue between management and personnel about areas of the daily life in the unit where improvement is both desirable and possible.

Commanding Officers also can request consultation assistance from DIMP concerning the interpretation and utilization of survey results or any other organization development (OD) method they may wish to know about or use. Considerable work and progress on OD-oriented courses has been accomplished by DIMP, and it has been their experience that their consultants have been well received by all units.

A personnel problem common to many countries represented was that information gathering is being viewed more and more as an invasion of privacy in the armed forces. Most attendees said that there were now severe restrictions on the use of questionnaires and psychological tests in general, and on the use of the results of such tests in particular. In Canada, for example, efforts to obtain information relating to personal matters must be part of a research program and such information cannot be obtained on an individual basis. In Denmark, which has a freedom-of-information law, there are severe restrictions on the methods of obtaining information. Once obtained, however, the individual concerned has access to all the information pertaining to him or herself. This is quite similar in many respects to the situation in the US. In Germany, officers holding the rank of General, must approve all questionnaires and the computer storage of personal data. In France there are severe restrictions on the use of any kind of opinion surveys. A number of countries e.g., the US, Denmark, and Canada, attempt to minimize this problem by obtaining general personnel information by "buying space" in larger surveys.

THE ROLE OF THE BEHAVIORAL SCIENTIST IN THE TRAINING OF MILITARY

PERSONNEL

Col. G. Carpenter (Canadian Armed Forces) described leadership training at the Royal Military College (RMC) of Canada. He described how the RMC approach to the teaching of leadership has gradually changed over the years as a result of:

a. inserting a "professional development" module;
b. developing interpersonal communication skills, training exercises; and
c. developing a series of leadership laboratory exercises in which Officer Cadets are taught how to handle problems they may experience in their first appointment as officers.

The leadership laboratory prompted much discussion. All students at RMC are involved in the program, and the laboratory groups are, for some exercises, as small as six. The program has been well received by students and staff alike at the College. There are other "leadership" courses given to the Canadian Forces officers (Basic Officer Training Course, Staff School, Staff College, etc.) where some leadership is taught. This training is similar to that of the Belgium Army, but in Belgium a great deal of emphasis is placed upon tactics and control of military units, as is the case in the Canadian Land Forces Command and Staff Course. Dr. M. Tolcott (Director, Engineering Psychology, ONR) asked if T.O. Jacobs' approach to leadership had been considered at RMC. Carpenter replied that although Jacobs provides an excellent summary of leadership research, it was not well-suited to leadership skills training.

Carpenter also described the course content for the leadership course. The first year is primarily an introduction to general and social psychology with examples being taken from military situations. The third year concentrates on communication skills such as counseling, debating both with peers and superiors, public speaking and organizational communication. In the fourth year the emphasis is on the application of these skills within the military system. Unfortunately, this program is constrained by a severe limit on classroom time (160 hours over four years). Thus far, according to Carpenter, leadership texts and theory have not been of much value.

Dr. Marshall J. Farr (Director, Personnel and Training, ONR) described US activities in areas of computer assisted instruction (CAI) versus computer managed instruction (CMI).

The latter term describes the situation in which much of the student's time is spent away from the terminal; it is not as intimate a dialogue with the computer as is the case of CAI. CMI is essentially the use of the computer to manage instructional procedure (the computer tells you what and where to find the information, what to read, etc.). CMI is used in the US Navy in technical training. There reportedly has been up to a 50% reduction in training time by using CMI in some cases. There is some thought to using CMI on board ships in order to bring training to the job site via satellite. CAI, on the other hand, is difficult and expensive. The computer acts as a tutor in an instructional situation. It is preprogrammed or generated on-line with the computer probing the student.

Dr. Harry O'Neill (Advanced Research Projects Agency, US) described a CAI system called Plato IV. He commented that some mix of CMI, CAI, and instructor activity is often necessary to insure a successful training program. A continuous problem in the military is that while special training is provided to operate CAI systems, the policy of personnel rotation makes it difficult to assess the benefits of CAI or CMI training.

Brémond described a programmed learning experience in the French Air Force. Psychologists analyzed tasks and developed four basic packages for courses which could be conducted utilizing programmed learning. These included a statistics course at La Sorbonne, an air traffic control (ATC) language course, the development of a simulator to train students to react to hydraulic failures in flying, and a basic mathematics course. Results of the studies were mixed. Failures in effectiveness were due mainly to lack of experimental control, e.g., in the statistics course (over 50% success), the civilian instructor refused to cooperate with regard to experimental variation in the course i.e., by omitting and/or alternating the order of presentation of the concepts. Fortunately those courses conducted within the French Air Force enabled greater experimental control to be applied. A linguistic analysis of ATC procedures (which are conducted in English) used was performed. One of the things found was that pilots whose native language is English tended to use a lot of extra words which often confused the Controller who knew only essential key phrases in English. For example, such phrases as "May I suggest that---" or "Do you mind if I---" were used so that frequently there were two parts to a message, the one with real information and other with polite phrases. In the course, long phrases were eliminated and short ones substituted such as "Permission to take off," etc. Phonetics were used at the start of the project with more complex phrases being introduced after about 100 hours.

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The course, which normally lasted four years, was reduced in length by 33%. Unfortunately subsequent change in base personnel, including the senior officers, resulted in a return to the traditional method of teaching as they did not like the "new" way of instruction. Brémond remarked, in retrospect, that although he had attempted to get the instructors more involved in this program he felt he had not succeeded: perhaps a lesson learned. A program involving the use of programmed learning in connection with the use of a hydraulic failure trainer met defeat because of the resistance of the regular instructors. While the official reason for dropping the new training method was, "because the system was easy to maintain anyway and besides they were changing aircraft," the unofficial reason was resistance of the instructors who told the students to forget what they had learned previously as only 'they' could properly teach them.

THE CHANGING ROLE OF THE MILITARY PSYCHOLOGIST

In keeping with the theme of the meeting, considerable discussion centered around the role of the psychologist in the military environment and how it has changed over the past few years. Teerink (Netherlands) said that Dutch psychologists are now heavily involved in many aspects of the military such as training, personnel problems, leadership, and living conditions, whereas until 1960 they were involved only in matters pertaining to selection. Teerink feels that psychologists are now in a favorable position to influence policy on many of the above issues. Two reports describing some of these efforts in Holland are referenced in Appendix D. Van Neden (Netherlands) also cited 1960 as a turning point with respect to the role of psychologists in the Dutch Armed Forces. He stated that after 1960 the government determined that the Royal Netherlands Army must be better integrated into Dutch society. This resulted in more social representation and democratization in the Forces. Because of this, social scientists began playing a more predominant role which has continued since that time.

Sucksdorff (Denmark) cited an example of a new role for psychologists in the Danish Armed Forces. In this instance it involves what is referred to as the "Systematic Hearing Method." This system, which has been used with over 600 people and has the blessing of the Chief of the Defence Staff, works in the following way. Various units of all administrative levels get together and list topical problems; following discussion, these problems are placed into two categories, those which can be solved by the unit itself and those which need assistance or a decision by a higher authority. The leader takes the

latter list and proceeds to repeat the process at the next
higher level and so on up to the commanding officer. In this
case the Chief of the Defence Staff wound up with over 200
pages of problems, many of which could have been solved at
lower levels. Nevertheless, he formed an action plan to resolve
them and promised feedback. While this method does not serve
as a panacea, it does get personnel at all levels to think
of problems at levels other than their own and to interact
more readily with persons outside their immediate purview.
According to Sucksdorff this program is an example of a successful
psychological effort, as the Chief of Danish Defence is going
to recommend that this decision process be used throughout
the Danish Military Establishment.

During the discussion, it was apparent that psychological
programs are initiated basically the same way in each country
represented, i.e., the emergence of a genuine need, a good
sales pitch by a psychologist, a pet idea of a high ranking
officer, or through the natural evolution of a situation or
zeitgeist, etc. In Denmark, the Survey Feedback Program described
earlier was a chief factor in psychologists coming into their
own. In Canada, according to Evonic, a shot in the arm for
psychology resulted from a performance assessment program
somewhat similar to the Danish one, in which the senior officers
were involved from the beginning. When this system was introduced
it was tied directly into careers and promotion as a result
of the numerous field interviews on which the assessment program
was based. Each representative at the Conference felt strongly
that the key element in a successful psychological effort is
to get support of the top command, in writing, at the outset
so that a continuity can be established that is not totally
dependent on the presence of a particular individual or commanding
officer. Brémond felt that many programs fail because they
are started before a real need is self-evident; thus, they
die on the vine, so that when the real need evolves it may
be too late. He did cite one example of a program, however,
that was completed and sat for four years until the need was there,
with the result that the problem and the solution occurred
simultaneously.

Another area in which psychologists have played a
role according to the conferees, is in the preparation of training
and maintenance manuals. A major problem here is language,
as many manuals are not accurately translated. This is a serious
shortcoming because of the increased use of the same equipment
by many nations. In the Netherlands, this problem is minimized,
at least with respect to the use of US equipment, because the
manuals are not translated at all. Dutch mechanics must learn
to read them in English.

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In France, on the other hand, buyers are fined if
they use foreign terminology in equipment manuals. In Denmark
and Holland mechanics "tinker" in order to learn directly from
the equipment, thereby being less dependent on the manual itself.
Further, in Holland the first ten of any items purchased are
allocated to maintenance groups in order that they may learn
the system. Tolcott suggested that a fundamental problem in
manual design is the literacy of the country; many people simply
cannot read manuals effectively. There was some discussion
of trends to develop machines which can diagnose their own
faults and of "repair by replacement" philosophies. While
this is becoming a more popular practice, it can create problems.
For example, the use of modular replacement in France is becoming
a problem because highly trained mechanics are complaining
that their skills are not being utilized effectively.

Lafleur presented an outline of how psychologists
contribute to decision making in the Canadian Forces. After
describing briefly the role of psychologists in the National
Defence Headquarters organization, he gave a brief account
of the development of the officers and other rank career development
programs, and the contribution of psychologists to these programs.
He pointed out that groups and organizations vary considerably
in structural rigidity and in the way they operate. At one
extreme are the highly formal groups in which there is an
integral system of positions with roles and duties that are
clearly defined by rules and regulations and in which there
is an expressed relationship between people. At the other
extreme are the highly informal groups in which the positions
and their associated roles are loosely defined. The formal
and informal activities of an organization together constitute
the social system which influences its members. He then described
an example of the interaction that exists between formal and
informal groups. The example cited was that of the implementation
of the "feeder trade" concept in the Canadian Forces (CF).
The feeder trade program (which goes into effect in the Fall
1976) allows enlisted men with three to eleven years' active
service who have not exceeded the rank of corporal to be "fed"
into a technical trade training program. There were however
some problems, in the early stages. For example, entrance tests
were given early in a man's career with no chance to take the
test again. Further, promises were made about admittance to
a particular trade which could not be fulfilled because of
changing requirements of the service. These "danger signals"
were discussed informally among behavioral scientists, and
papers were prepared which discussed the problems which could
be created by hasty implementation. These papers eventually
were passed through formal channels for presentation to senior
officers of the CF.

As a result, the group responsible for this program visited
the Personnel Research Unit for <u>formal</u> discussions regarding
those implications which were considered to be potentially
troublesome. A final implementation plan is now being drafted
which will take cognizance of the comments included in these
papers and subsequently discussed. As a footnote, Lafleur
remarked that the behavioral scientists' impact on military
planners is much more effective in the CF where the scientists
involved have operational credentials and experience. In Lofleur's
opinion these credentials are necessary before embarking on
a career as a behavioral scientist in the Canadian Forces.

Brémond commented that in his opinion psychologists
can best influence from within the organization on an informal
basis and from without on a formal basis. Teerink commented
that in the Netherlands the feeder concept probably would not
have been necessary because the problems would have been discussed
with the troops and there would have been collective bargaining
between the planners and the troops.

Farr described the organizational funding of research
in the US. The Office of Naval Research supports both basic
and applied research and contracts most of the work to universities
and research organizations. He went on to point out that ONR's
task is to steer basic research toward a military goal and
that one way this is accomplished is to get the anticipated
operational user to approve the initial proposal and partially
fund it, thereby increasing the commitment to the application
of the research. He described some examples of ONR initiatives
in military psychology. These included the use of testing
theory procedures developed by Guilford and Gullickson, the
Educational Testing Service's cognitive testing procedures,
and the Strong Vocational Interest Blank in the selection of
Naval Academy applicants. The latter is used to help in identifying
those applicants who should choose engineering and science
majors and remain in the service during their training (this
has resulted in a saving of training money and fewer dropouts).
All these research programs resulted in implementation of new
procedures.

Extensive discussions were held relating to the causes
of successful and unsuccessful programs and how programs in
the future might be implemented more effectively. The very
nature of psychological programs, e.g., selection, training,
morale, etc., is such that it elicits strong feelings on the
part of management and senior officers. Farr presented a list
of 14 factors favoring the implementation of personnel and
training programs (see Appendix E). While many factors are

involved in the collective opinion of the attendees, the single
most important element for assuring successful program implementation
is, to obtain top-level, highly visible support at the initial
development stage. While this is an obvious advantage for
any program, it seems particularly important for those relating
to the psychological sciences.

In general, the Symposium was both interesting and
productive. The discussion, for the most part, was lively
and yet informal. The reception provided by our French hosts
and arranged for by Col. Brémond was delightful and set a standard
that will be hard to follow. At the close of the meeting the
Canadian representatives announced that Canada will be pleased
to host the next meeting at the Canadian Forces Base Europe,
Lahr, West Germany. The dates wqre tentatively set for 25-29
April 1977.

Several topics were suggested by the attendees for
inclusion in the 13th Symposium, including:
a. morale;
b. social happenings in the military (e.g.,
   increase in child abuse, unionization, drugs, etc.)
c. training (general, philosphy, technical, officer and
   leadership);
d. social changes: development in society and impact
   on the military;
e. military manpower resources planning;
f. organizational development;
g. links between the military and society;
h. compensation for military hardship;
i. relocation of military personnel;
j. lateral entry;
k. deviant behavior in Armed Forces;
l. how to improve the image of the military in young
   people;
m. females in the forces.

These topics seem to fall into three general areas which could be
used as a theme for next year's conference: Military Manning and
Societal Trends, Training and Individual Development, and Social
Change and Organizational Development. The overall theme might be
"The Military and Society."

APPENDIX A

LIST OF PARTICIPANTS

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APPENDIX B

AGENDA AND GUIDELINES FOR CONFEREES

AGENDA

Monday   Recruitment, Selection and Retention of Military

            Personnel

Tuesday   Training

            Organizational Structure in the Military

Wednesday   Administrative and Field Communication

Thursday   Equipment Design

Friday   Decision Making

GUIDELINES FOR ATTENDEES

The purpose of this conference is to assess and analyze the contributions to military organizations made by the psychological sciences. Accordingly, each attendee is requested to bring to the meeting examples of programs which have been initiated and/or developed by psychological or allied scientists and subsequently implemented into military systems. If programs, recommendations, or results were either not implemented, or were implemented and later dropped, include the reasons in your discussion. Both successes and failures should be considered. The agenda outlines categories in which to place these examples or case histories.

In analyzing the success or failure of a program, attention should be given to specific criteria and reasons for failure such as those listed below. It is recognized that all criteria do not apply to all programs, however, every effort should be made to employ rigid criteria whenever possible. Let's take a hard look at ourselves.

Examples of Some Applicable Criteria

Did the program result in:

1. Faster mobilization of personnel in response to emergencies
2. Increased re-enlistment rate and reduced turnover
3. Reduced training time
4. Reduced maintanance, less equipment down-time
5. Improved performance; i.e., more targets detected and/or destroyed, fewer navigational errors, fewer false alarms, more efficient use of equipment, etc.
6. Reduced accident rate
7. Reduced cost
8. Fewer lost manhours
9. Improved quality of life for military personnel.

Examples of Identifiable Reasons for Failure

Was the failure due to:

1. Failure to understand the problem
2. Change in requirements
3. Bad equipment design
4. Resistance to change
5. Improper indoctrination at the time of introducing new equipment procedures

6. Failure to foresee impact of recommended changes
7. Failure to follow through on the implementation of results
8. Inopportune timing -- etc.

It would be extremely useful if each attendee would bring any existing reports or other documents describing or relating to the program discussed. Admittedly, a critical analysis such as this is difficult. It frequently is not easy to determine the impact of specific programs when the results are but part of a large system. In today's highly competitive budgetary environment, however, an assessment such as this could be very beneficial to all concerned.

APPENDIX C

PERSONNEL PSYCHOLOGY IN THE FEDERAL ARMED FORCES OF GERMANY

Dr. F.W. Steege
Ministry of Defense

I. The Psychological Service in the Federal Armed Forces

The Psychological Service in the Federal Armed Forces (FAF) comprises about 130 positions for psychologists. These are divided among five special branches: Personnel psychology, Aviation psychology, Psychological Ergonomics, Clinical psychology and Social psychology.

The complexity of tasks of the Psychological Service may be summarized in the following definition: Development, application and instruction of scientifically proved knowledge and procedures in the Armed Forces and the Armed Forces Administration.

A cursory survey about the organization of the Psychological Service in the FAF is given in diagram 1. The positions of the psychologists are part of the complex military organization and/or administration. There is technical supervision of the psychologists which is one of the tasks of the special section of the Ministry of Defense (P II 4). The main tasks on the ministerial level are the definition of targets and the coordination of their performance.

The essential tasks of the special branches (without personnel psychology, see II.) are:

- Aviation psychology: Selection of pilot candidates and other aircraft crew members (insofar a part of personnel psychology, but separated because of its close relation to the pilot training); one other aviation psychology section is concerned with basic investigations of psychophysiological functions of the flying personnel. There are close relationships between the fields of Ergonomics and Clinical psychology.

- Psychological Ergonomics: Psychological factors in the study and techniques of the optimum co-ordination of man, machine and the environment in the work process.

-Clinical psychology: Diagnostic examinations and therapeutic treatments of maladjusted/or people with functional disorders. Clinical psychologists shall also cooperate with the branches

for general social support, aid and welfare. This is especially
important for the prevention of deviant behavior (as attempted
suicide, drug abuse).

- Social psychology: Empirically proved support of decisions
for the higher political and military guidance. There are
four main fields of investigations: Attractiveness of the
Armed Forces, integration of Armed Forces and society, the
Armed Forces as agent of secondary socialization, and morale
within the Armed Forces (cf. the paper of H. Flach, Bonn).

II. Tasks of personnel psychology in the FAF

The development of the Psychological Service in the FAF
has been essentially directed by the work of personnel psychologists,
which serves for the preparation of personnel decisions.
These are (according to diagram 2) to take:

- in connection with the enlistment of officers and long-term
volunteers or the recruitment of conscripts (before entering the
military service) and
- in connection with the training and education within the Armed Forces
(during the military service).

Similar tasks refer to the career categories of the administrative
services.

1. Selection procedures for the enlistment/recruitment of
soldiers

   - Officers' Selection
The selection of officer candidates takes place in a center
in Köln, it lasts 2 1/2 days for each applicant. The
procedure consists of test batteries, written essays, an
interview by an examination committee (2 officers, 1 psychologist)
and a leaderless group discussion. Personality
traits are rated. The final decision is the so-called
"degree of aptitude", which is the result of evaluating
the information of each step in the selection procedure
by the whole committee.

   -Selection of long-term volunteers
There are four centers for the selection of men and
NCOs, who want to have long-term service, in Wilhelmshaven,
Hannover, Düsseldorf and München. The procedure,
basically similar to that applied to the officer
candidates, lasts 1 1/2 days. The main test battery is
adapted from the US "Army General Classification Test
Battery"; the main factors measured by this battery are
general intelligence, machanical comprehension and
perceptual speed and accuracy (concentration).

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One special task of the volunteer selection centers is the pre-selection of pilot candidates, who after having passed this first step are examined by the special pilot selection center in Fürstenfeldbruck.

-- Placement of conscripts
All physically fit conscripts have to perform a so-called "Aptitude and Placement Examination (Test)". There are 32 centers all over the FRG in so called Sub-region Recruiting Offices. A group of 50-55 conscripts are examined per day in a one day procedure in each of the centers. The placement has to be supported by a computer system. Conscripts who show significantly bad performance and/or conscripts with special abilities have to be interviewed by the psychologist.

2. Psychological activities concerning training and education within military service

- Vocational Aptitude Testing
Vocational aptitude testing is part of the reorganization of training and education of NCOs and special officers. The aim is to enlarge the normal volunteer testing procedure by elements of civil occupations (see diagram 3). Additional vocational tests are performed with regard to vocational advancement after completion of the enlistment period.

- General military career planning for NCOs and selection of special officers
Aim of the so called general military aptitude assessment is to estimate the special career provided for the individual NCO. The Psychological Service has to test the special officer candidates and in the Air Force to counsel the candidates. In the Air Force the psychologist belongs to the admission committee.

3. Psychological assessment of civil servants

- Employment of applicants: The Psychological Service is engaged in the selection of candidates for the intermediate and the higher non-technical administrative services. A special task is the selection of civil servants in the field of electronic reconnaissance, in the intermediate and the higher services too.

- Advancement from one service (level) to the next higher: The decision about advancement is supported by the Psychological Service. Special importance in this field has the advancement procedure to the senior services, which is executed in special training and selection courses at the Federal Academy for Military Administration and Technology (see chapter III.).

III. Current problems of personnel psychology in the FAF

1. Military service

The reorganization of training and education of NCOs and officers of the FAF starts from among other things the point of view that military and society be compatible and comparable insofar as the central elements of military training can be performed. The analysis of military positions shows that most cases can be differentiated among job elements comparable to civilian occupations. With respect to the personnel management of NCOs and officers the result according to diagram 3 is a differentiation of the selection in the sense of sequential stages. In addition to the previously exclusively-examined military aptitude the special (occupational and/or studies) qualification has to be regarded now as a second domain.

According to the officer candidates' selection the problem is whether the qualifications of a graduate from the University of the FAF can be predicted. Taking under consideration the problem of the so-called numerus clausus (limitation of the number of students to be admitted to a university) the administration of the education system in the FRG tries to have constructed standardized tests for scholastic aptitude. An exchange between military and civilian institutions in this field is intended.

In the military field analytical studies (situational analyses) have not yet been finished. First hints can give school marks, especially in mathematics.

Nevertheless the percentage of students who have previously passed the first step of the new universities of the FAF (the first final examinations is in autumn, 1976) is not less than that of civil universities. This might be considered as a success.

The scholastic aptitude testing as well as the vocational aptitude tests - mentioned above - are extensions of the hitherto existing tasks of the Psychological Service. They might form the basis of the reformulation of the principles which the psychological examination committees had previously constituted and evaluated.

2. Civil service

Refinement of the selection strategies is one of the primary

decisions. The last comprise psychophysiological and psychomotor methods, standardized tests or test batteries and personality tests/questionnaires.

According to the general selection strategy the model of personality assessment in **diagram 4** is our line of direction (cf. Wiggins, 1973).

The application of tests bears the following questions:

- tests become broadly known since they are applied to many samples of subjects. Consequently it is necessary to construct a large number of different tests or test batteries, a sisyphus work indeed which seems hardly acceptable to the administration.

- tests have to be evident in the sense of the requirements of the vocation/military career; this is especially important because it is necessary to verify juridically many personnel decisions even in the military personnel management.

Diagram 1 : Organization of the Psychological Services in the Federal Armed Forces of Germany

C-26-76

Ministry of Defence P II 4

Federal Armed Forces

Federal Armed Forces Administration (civilians)

Central military agencies (Personnel, Social Psychology)

Officer Candidates Selection Center

4 Volunteer Selection Centers

Section for applied scientific work in Personnel and Social Psychology

Medical agencies (Clinical Psychology)

Federal Armed Forces Hospitals Psychol. services within sections for Neurology and Psychiatry

Service Air Force (Aviation Psychology, Psychol. Ergonomics)

2 Aviation Psychology Selection Centers (pilot selection)

2 Aviation Psychology Sections (Psychol. Ergonomics; Clinical Psychology)

Counseling in military career training courses

Service Navy (Personnel Psychology, Psychol. Ergonomics)

Medical Institute of the Navy: Ergonomic Section

University of the Federal Armed Forces (Personnel Psychology)

University Didactics Center: studies counseling

Federal Armed Forces Administration Offices (Personnel Psychology)

7 coordinating sections within upper and middle (=military district) administration offices

32 Selection and Placement Centers within Military Sub-region Recruiting Offices

Federal Office for Military Technology and Procurement (BwB) (Psychol. Ergonomics)

coordinating section within BwB

4 Psychol. Sections in the armament testing agencies

Central Colleges of the Federal Armed Forces Administration (Instruction, Personnel Psychology)

Federal Academy for Military Administration and Technology (teacher and counseling psychologist)

Federal Armed Forces Administration Schools; teachers in psychology and sociology

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Diagram 2 : Psychological Aptitude Testing in the Federal Armed Forces of Germany

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                    ┌──────────────────┐
                    │ for military jobs│
                    │ and/or careers   │
                    └──────────────────┘
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enlistment of soldiers		psychological activities in connection with the reorganization of training and education during the career
officer career patterns (pattern groups): selection procedure (examination), pre-selection of pilot-/battlefield observer officers		vocational aptitude testing: specialist training and/or vocational advancement
career patterns of men/ NCO's: - selection procedure - pre-selection of pi- lot- and/or battle- field observer candi- dates and officer candidates		selection of officer specialists (from volunteer NCO's)
conscripts: - aptitude and place- ment testing		selection of other specialists (e.g. mi- litary pyrotechnist, frogman

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                    ┌──────────────────┐
                    │ for jobs/careers │
                    │ within the Federal│
                    │ Armed Forces Ad- │
                    │ ministration     │
                    └──────────────────┘
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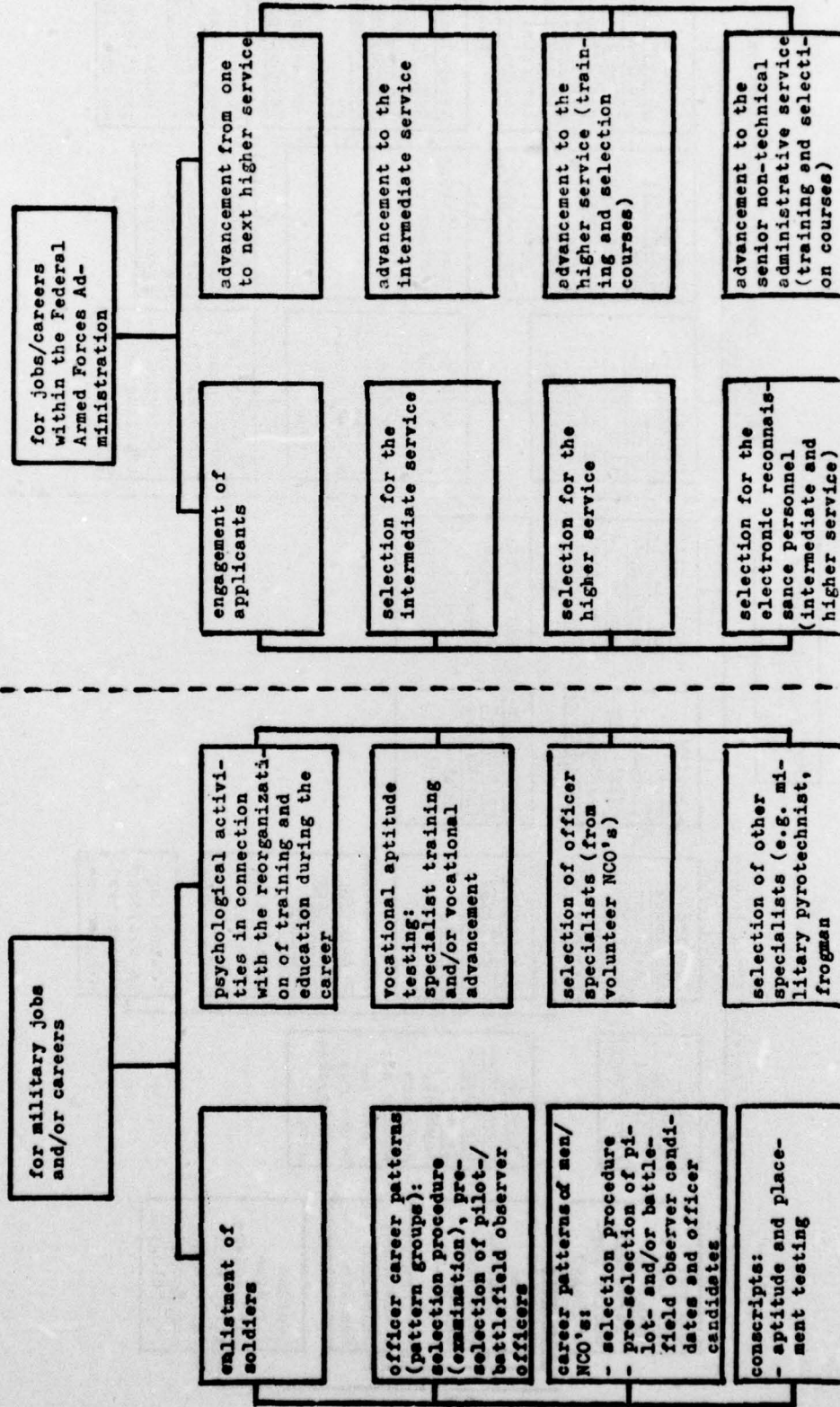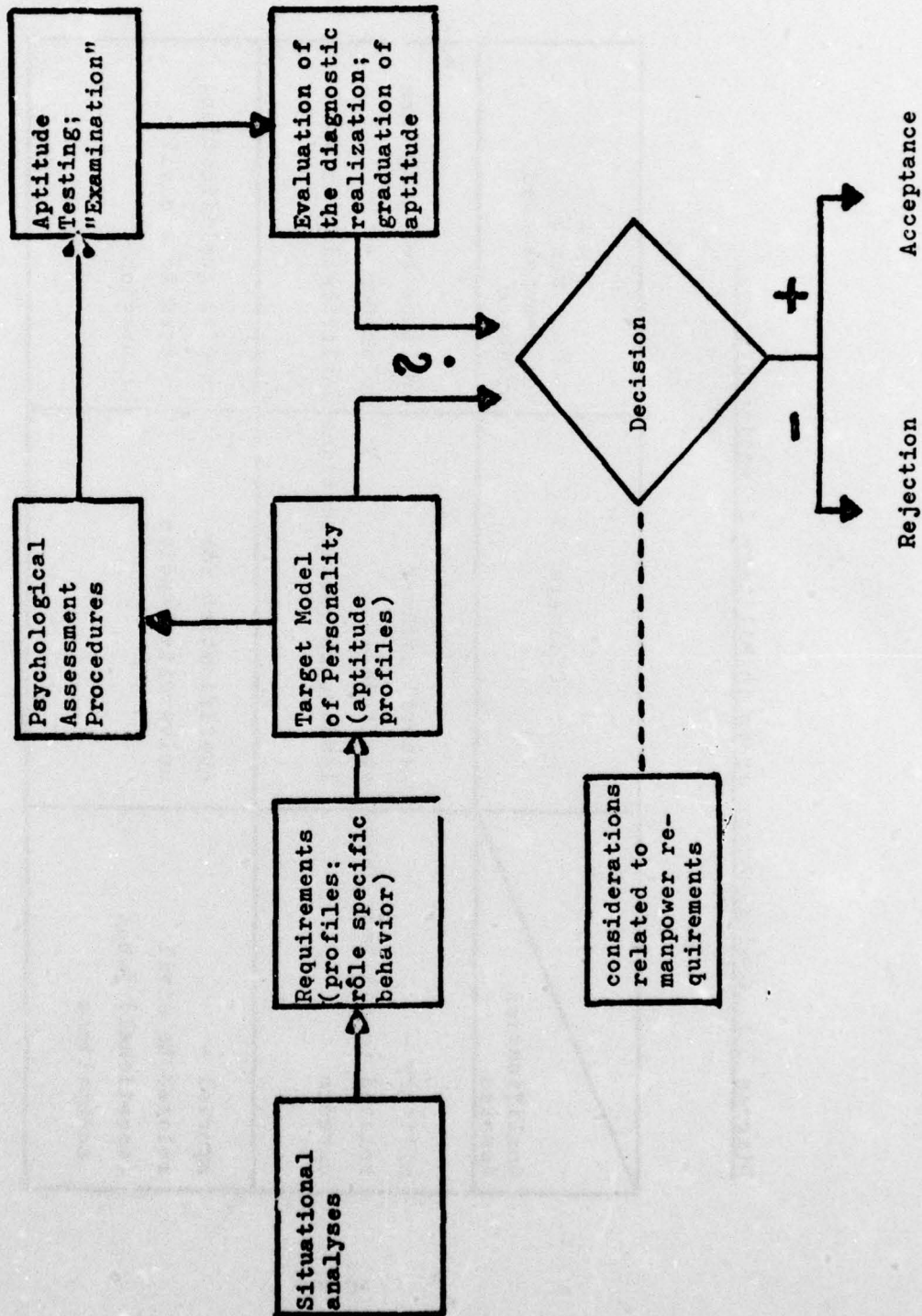| engagement of applicants | | advancement from one to next higher service |
selection for the intermediate service		advancement to the intermediate service
selection for the higher service		advancement to the higher service (train- ing and selection courses)
selection for the electronic reconnais- sance personnel (intermediate and higher service)		advancement to the senior non-technical administrative service (training and selecti- on courses)

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Diagram 3 : Qualification areas in Military Selection Systems

Qualification domains	Officers	Men / non commissioned officers
military - related to military jobs/ careers	general officer aptitude - leadership qualifications	aptitude for long term volunteer - qualification to NCO
special - related to civil (vocational) jobs/ occupations	qualification for university studies	special qualification, related to a civil occupation

Diagram 4 : Basic Model of Personnel Psychology

Aptitude Testing; "Examination"

Evaluation of the diagnostic realization; graduation of aptitude

Psychological Assessment Procedures

Target Model of Personality (aptitude profiles)

Requirements (profiles: rôle specific behavior)

Situational analyses

considerations related to manpower requirements

Decision

+ Acceptance

− Rejection

APPENDIX D

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APPENDIX E

Factors Favoring the Implementation of Personnel and Training R&D

A number of factors, neither exhaustive nor independent, which repeatedly surface in any analysis of the personnel and training R&D implementation problem are listed below. The factors are stated in their positive form. Obviously, factors which are unfavorable are the inverse.

1. Active involvement/commitment of user personnel.
2. Early cooperation/interaction of the personnel or training R&D staff and/or user or hardware R&D personnel.
3. Project was clearly in response to an external requirement, rather than internally generated by the R&D activity.
4. The R&D results confirmed the prejucice of the consumer.
5. High-level support for implementation quite visible.
6. Cost benefits clearly demonstrated or convincingly projected.
7. The _absolute_ cost to implement was minimal.
8. The _relative_ cost to implement was minimal.
9. Implementation did not threaten training budget or instructor billets.
10. R&D personnel able to "nursemaid" early implementation steps.
11. Repercussions of the innovation on other aspects of the personnel system fully anticipated.
12. Effects of innovation on existing fleet doctrine anticipated.
13. Unambiguous specification of the Command responsible for funding implementation.
14. Personnel stability both at the user level and the Command responsible for establishing the requirement. This problem is all pervasive. Virtually every case of successful implementation is under threat of capricious discontinuance as Command personnel are rotated. In one sense, _securing_ implementation is a far easier problem than maintaining implementation.