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MEMORANDUM

6 September 1949
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To: Staff
From: Joseph M. Goldsen
Subject: ATTACHED SUMMARY OF RDB REPORT
cc: J. Allen, B. Haydon, Social Science Staff

1. Attached is a summary of the annual report of the RDB's Committee on Human Resources. This was prepared by W. A. Rudlin in our Washington office.
2. In view of the increased authority given to the RDB under the National Defense Act of 1949, the recommendations for 1950-51 are of special importance.
3. You will notice a number of references to RAND and the Air Force (e.g., pp. 4,5,7,8,9 ff.). Dr. Speier helped draft a number of the key recommendations in his capacity as a panel member and sub-panel chairman (Panel on Human Relations and Morale, sub-panel on Psychological Warfare).
4. The recommendations affect all of RAND, even though the emphasis is on social science and economics. For example, there is a recommendation for more research on organizational structure, theory of planning, etc., and a notice of too much emphasis on "human engineering" and psycho-physiology (human error) relative to the kind of studies now going on in RAND's Social Science Division.
5. A comparison of the RDB's report with D-574 (Summary of Research Program of Social Science Division, The RAND Corporation) shows that RAND, and therefore the Air Force, should be viewed very favorably by the RDB.

J. M. G.

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August 29, 1949

RESEARCH AND DEVELOPMENT IN HUMAN RESOURCES.

Reproduced below are those portions of the most recent Report* of the Committee on Human Resources of the Research and Development Board which deal with subjects of particular interest to the RAND program.

ABSTRACT

"This edition of the integrated plan of research and development in the field of Human Resources is designed to provide long-range program guidance and to assist the military Departments in the preparation of their fiscal year 1951 budgets. Its recommendations cover the following aspects of such guidance: necessary level of effort, major changes in emphasis, and relative emphases on programs. These facets of program guidance are based on evaluations of current programs and needs of the military Departments, on the technical promise of the proposed programs, and on the emphasis given to the field in current strategic guidance papers...

"The field of Human Resources includes four major areas: Human Engineering and Psychophysiology; Personnel and Training; Manpower; and Human Relations and Morale...

"Recommendations of the Committee are summarized, as follows:

"(1) Level of Effort: The estimated maximum level of effort in the fiscal year 1950, including research and development to be supported on operating funds, is 9.2 millions or 1.8 per cent of the total research and development budget. An adequate integrated plan will require 20.0 millions, exclusive of facilities. It is recommended that this level be reached at latest by the fiscal year 1952.

"(2) Change in Emphasis: An adequate integrated plan requires increased support for all four major areas of Human Resources. However, the balance of emphasis among the areas should be changed to provide the greatest expansion in the area of human relations and morale, which includes military management, psychological warfare, strategic planning and intelligence, military government of occupied areas, and civil

* Integrated Plan of Research and Development in Human Resources, A Report of Program Guidance prepared by The Committee on Human Resources, 10 February 1949. Report Series No. 23. HR 32/5.

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defense. Next in emphasis should be the area of manpower, which includes the manpower aspects of military requirements, military resources, strategic intelligence, and mobilization methods, as well as the research aspects of the scientific personnel problem.

"(3) Basic Research, Development, and Operations Evaluation: An integrated plan in Human Resources, as in other fields, can proceed most efficiently only by a proper balance among basic research, development, and operations evaluation. The importance of this balance was clearly demonstrated during the past war in the fields of physical science and has, since then, become an accepted principle in utilizing science for military purposes. However, in the fields of human resources at the present time, most types of developmental work and practically all of the operations evaluation are being done without systematic professional participation. Hence, existing scientific knowledge is not being adequately utilized for developmental purposes, and gaps in basic knowledge necessary to military programs cannot be clearly formulated.

"It is thus recommended that in human resources, as in other fields, increased attention be given to professional participation in development and operations evaluation.

"(4) Facilities and Personnel: An increased level of effort and changes in emphasis will require expansion in facilities and personnel.

"Departmental planning of facilities for human resources programs and the inclusion of substantial facilities requests in the fiscal year 1951 budgets are strongly supported.

"The human resources personnel problem must be attacked on a broad front, including (1) raising personnel ceilings, (2) instituting post-graduate research training programs for inservice personnel, (3) improving the status of inservice scientists, and (4) taking the initiative in establishing a national fellowship program, on the predoctoral level, for increasing the supply of research personnel.

"(5) Program Guidance for Immediate Action: It is recommended that the following programs be begun as soon as possible, and that, for all of them, adequate planning be instituted immediately:

- (a) Population Standards on Psychological and Physical Traits.
- (b) Criteria of Military Performance.
- (c) Integration of Manpower Analysis Systems.
- (d) Analysis of Captured Documents.
- (e) Human Behavior under Combat Conditions.
- (f) Interrogation of Current Refugees from Eastern Europe.
- (g) Flying Safety."

(pp. vii-viii)

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"AN INTEGRATED PLAN OF RESEARCH AND DEVELOPMENT
IN HUMAN RESOURCES: BASIC CONSIDERATIONS AND SUMMARY

"Field of Interest.

"The Committee on Human Resources is concerned with the research and development programs and requirements of the military establishment in the psychological and social sciences. As stated in our previous report, military interest in these fields arises in part from the fact that advances in natural science and technology have created problems which can be solved only through commensurate advances in the sciences of man and his social relations. The development of military machines, for example, has reached the point where the psychobiological make-up of the operator becomes an increasingly critical factor in over-all military effectiveness. Moreover, the occupational and organizational complexity of a modern military establishment requires increasing attention to systematic procedures in the selection, training, and utilization of manpower. In the broad fields of military management, such difficult problems as leadership and morale require intensive research in psychology, social anthropology, and sociology. Investigation in these fields is likewise essential to the improvement of many aspects of strategic planning and intelligence and to the development of techniques of civil defense, military government, and psychological warfare.

"These important aspects of the "human factor" in national defense have been classified by the Committee into the following major areas.

"(1) Human Engineering and Psychophysiology: including basic sensory and motor capacities; human factors in the selection, design, and operation of equipment; psychophysiology of special organic and environmental conditions.

"(2) Personnel and Training: including psychological traits, selection, classification, and assignment of personnel; evaluation of performance; training and education.

"(3) Manpower: including military manpower requirements and resources; scientific and specialized personnel problems; manpower mobilization methods; foreign manpower intelligence.

"(4) Human Relations and Morale: including military management; civil defense; military government; strategic planning and intelligence; and psychological warfare." (p. 1)

"Current Balance of Emphasis Within Departments:

"Air Forces: There will be, in the fiscal year 1950, a considerable increase in all four areas and a change in the balance of emphasis.

"This change of emphasis is noticeably in the direction of the Committee's recommendations. The increases in human engineering and psychophysiology and in personnel and training represent expansion of inservice facilities to monitor well-balanced programs in these fields. The increase in manpower and human

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relations and morale, however, represent specialized programs, primarily of a contract nature, such as the Air Comptroller's SCOOP program that deals with manpower and the Rand Corporation's social science program that deals with human relations and morale...Thus the Air Force not only has raised the level of all areas but has properly changed the relative emphasis among them, even though the changes are of different types." (p. 6)

"Current Balance of Emphasis Within Major Areas of Effort:

"Human Engineering and Psychophysiology: There have been no major shifts of emphasis in these fields from the fiscal year 1949 to the fiscal year 1950. Human engineering maintains first place in budget allocations, but the recommended increases have not been made, nor has there been an appreciable shift toward greater employment of psychophysiological advice in the early stages of selecting and designing weapons and weapons systems.

"Work on sensory discrimination and perception continues along the same lines, although there is some decrease in support from the Office of Naval Research.

"The recommended increase in support for studies of motor skills and of organic and environmental factors has not materialized. Work in this field continues along the same lines at an inadequate level of expenditure...

"Human Relations and Morale: ...The only likely gains in the fiscal year 1950 are (1) Army programs in psychological warfare and interpersonal relations, and (2) definite plans for expanding the Air Force program both in the Air Force itself and through the Rand Corporation Contract. However, these Air Force programs are directed almost entirely to psychological warfare and strategic intelligence, the only exception being a small increase in the Air Force's military management budget. Hence, the prospect for the fiscal year 1950 is confined to emphasis on psychological warfare, with secondary consideration of intelligence problems and military management.

"Current Duplication: The Committee has no evidence that undesirable duplication of projects exists at the present time in the programs of the three Departments. However, the possibility of undesirable duplication will be considerably greater in the fiscal year 1950. The considerable expansion of the Air Force into personnel, training, and psychophysiology programs, on which the Army and Navy have always placed their major emphasis, makes coordination essential. Moreover, the addition to the Air Force program of Army and Navy programs in psychological warfare would also require close coordination." (pp.6-9)

"NME Readiness to Implement an Integrated Plan in Human Resources - Report on a Year's Progress.

"Department of the Air Force: Of first importance is the establishment of a Division of Human Resources under the Director of Research and Development, Deputy Chief of Staff, Materiel. The Division has a military chief and an authorized staff of 15 members headed by a P-9 scientist, who has now reported for duty. There are five branches, four of which correspond to the panels of the Committee on Human Resources in name and types of research. The fifth is concerned with scientific planning and analysis as undertaken by the Air

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Comptroller, and is named Planning and Administration. The Division will have a Human Resources Board consisting of representatives from other headquarters offices and field Commands having direct concern with research and development in human resources. This Board will review and approve projects and programs to be undertaken. The Division and the Human Resources Board are to be given technical advice by a Professional Advisory Committee composed of outstanding professionals in psychology and the social sciences. It is further planned that this Committee or some of its members will be added to the Scientific Advisory Board where their services will thus be available to the Chief of Staff. With the assistance of these groups, the Division will coordinate research and development in human resources throughout the Air Force by approving work to be undertaken, by presenting and defending the budget, by acting as a center of information and service, and by providing liaison with outside agencies...

"There has been considerable increase of interest and activity within the Directorate of Intelligence in research and development, particularly in the fields of strategic vulnerability and psychological warfare. The Strategic Vulnerability Branch has established the Air Research Unit of the Library of Congress to meet some of its needs, and the Rand Corporation is available for others. The Psychological Warfare Branch is at present referring its research needs to the Rand Corporation.

"The Rand Corporation, an independent non-profit research institute supported largely by Air Force funds, has a Social Sciences Division and an Economics Division to investigate problems of strategic significance. Rand's services are available to other interested agencies, but Air Force requirements take precedence. The staffs of these Divisions have been increased, an office has been established in Washington, D.C., and an extensive program has been begun. In addition to the work done by the staff, some research will be carried on by universities and other institutions under subcontract." (pp. 14-15)

"The Integrated Plan; A Summary and Some General Considerations

"The Committee reiterates its recommendation of last year:

....that the balance of emphasis among the four areas be changed to give top priority to the area of human relations and morale... Almost as great stress is recommended for the field of manpower...

"The justification is, likewise, the same: (1) present strategic guidance gives special prominence to certain human relations and morale technical fields and give as strong support to manpower as to other personnel operations objectives; (2) military support for these two areas has lagged considerably behind that for human engineering and psychophysiology and for personnel and training, and the fiscal year 1950 budgets are not sufficiently affecting this imbalance; (3) technical promise in these fields is sufficient to justify the increased emphasis." (p. 13)

"The Committee wishes, however, to repeat its previous judgment that basic research is a very necessary part of its integrated plan. Solutions to pressing problems in human resources are required every day, and to continue to base such solutions on inadequate knowledge is indefensible.

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"It is only common sense that existing sources of knowledge should be fully exploited for developmental purposes. Yet this has not been done except in the better-supported areas of the Committee's field of interest....The Panel on Human Engineering and Psychophysiology is strongly of the opinion that professional skills of psychophysicists are not being called on sufficiently in the design of equipment and synthetic trainers. The Panel on Human Relations and Morale has pointed to the unexploited experience of the past war that could yield rich gains for combat performance, psychological warfare, and other of its technical fields. However, until budget provision is made for such developmental work, present knowledge cannot be used for military purposes in any systematic or effective way." (p. 19)

"The Committee does, however, recommend that the following programs be begun as soon as possible, and that, for all of them, adequate planning be initiated immediately.

"Analysis of Captured Documents: Such analysis...is necessary to psychological warfare, intelligence, and military government programs, particularly as these relate to the development of techniques for specific situations.

"Human Behavior Under Combat Conditions: A systematic analysis is needed of the documentary sources and of the experience of combat veterans, and experimental study is needed of simulated combat situations.

"Interrogation of Current Refugees from Eastern Europe: A scientifically designed continuing survey of the attitudes and information of such refugees for purposes of strategic target analysis is most important for strategic bombing, psychological warfare, and other planning purposes.

"Flying Safety: The increasing speed and size of planes, the development of blind flying, etc., coupled with the growing importance of airborne operations to national security, require greatly expanded attention to the human factor in flying accidents. A relatively small investment in research would be more than repaid by expected savings in life and material." (p. 20)

PROGRAM GUIDANCE IN MANPOWER

Organizational Analysis:

"Program I--Analysis of Organization of Military Units (Relative Emphasis A): There is required in this field a program of research and development applicable to the efficient structuring of military units of every sort. The following phases appear to be most important:

"(a) Types and Theories of Military Organization: Research in the theory of military organizations appears to be lacking among current activities. Studies of types of military units and their organization in terms of missions under a variety of probable conditions should be initiated, including experimental composition and appraisal of such organizations.

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"(b) Work-Measurement Appraisal of Organizational Structures: Research should be undertaken in work-measurement in relation to effectiveness of organizational structure, management, and personnel composition. The interrelationships among such factors with respect to over-all effectiveness of military units should be determined.

"(c) Guides for Efficient Use of Personnel: Research directed toward the development of guides and policies for the most efficient utilization of military and civilian personnel (including women and limited-duty personnel) in appropriate organizational structures is important as a long-term program.

"Program II--Methodology of Organizational Analysis (Relative Emphasis C): A program of basic research should be undertaken on fundamental concepts and methods in organizational analysis, including the following phases:

"(a) Methodology of Organizational Analysis: Basic research should be undertaken in the methodology of organizational analysis, and procedures should be developed for uniformly measuring and appraising the effectiveness of military organizational structures.

"(b) Methodology of Tables or Organizations: Research should be initiated toward improvement of methodology for the construction of tables of organization, manning tables, and complements. Development of standard techniques for the construction and continuous evaluation of such tables, uniform among the Departments, is the goal of this effort.

"Program III--Occupational Structure of War Industry (Relative Emphasis B): Research should be undertaken on the occupational structure of war-supporting industries, as essential to efficient planning, draft-deferment policy, labor-training programs, plant-location plans, call-up of reserves, etc. Work of this sort has been undertaken by both the Bureau of Labor Statistics and the United States Employment Service. A vigorous and adequate program will probably require military support, but will be monitored by the chief civilian agency concerned.

Manpower Needs:

"Program I--Projections of Military and Civilian Manpower Needs (Relative Emphasis A): This program should be directed toward projections of military and civilian requirements for manpower. The following phases are recommended:

"(a) Actuarial Analysis of Military Manpower Expectations: Studies of current patterns and wartime experience in attrition and work-life expectancy in critical military occupations. This should include application of actuarial and statistical techniques to selected critical military occupations to yield information on the work potential in military occupations and the phasing of mobilization requirements and replacements.

"(b) Study of War-Industrial Labor Needs: The Air Force should continue its use of the inter-industry relations technique to develop a mathematical model of the wartime economy capable of furnishing estimates of the size and detailed composition of the labor force required for various levels of war production. Work should proceed in conjunction with the National Security Resources Board program in this field." (pp. 47-48)

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"Manpower Resources"

"Program II--Study of National Manpower Resources (Relative Emphasis B): The National Security Resources Board is planning a program of study of potential national manpower resources, including estimates of the composition of the population, labor-force surveys, and collection of information on physical and mental fitness. The Military Establishment should be represented in the planning and budgetary support of this program. The detailed nature of this program and of the NRE's interests in it were given in last year's Report." (p. 49)

"Foreign Manpower Intelligence"

"Program I--Establishment of a Central Research Activity for Foreign Population Data (Relative Emphasis A): The many needs for foreign manpower intelligence require that there be established a centralized research activity concerned with bringing together, organizing, and evaluating foreign demographic data from all available sources. Such a center could also specify requirements for future data collection and could serve as an instrument for refining data and methods and for providing useful manpower reports. The center should be sufficiently well financed and professionally staffed to be nationally useful and recognized. There are at present plans for such an activity under Central Intelligence Agency-State-Military sponsorship, but they have not yet been implemented. The Military Establishment should take a vigorous part in the planning and support of this essential research agency.

"Program II--Research on Socio-Economic Factors in Foreign Population Trends (Relative Emphasis B): It is recommended that this research should be particularly supported in universities which are sponsoring area research programs, in order that the relations between socio-economic and demographic factors can be more systematically studied. The program should include whatever research in foreign countries is necessary to insure its success.

"Program III--Development of New and Improved Techniques for Collecting Population Data in Novel Situations (Relative Emphasis B): Methods of assessing the population of foreign nations under novel conditions of mobility, customs, and disorganization. Methods of assessing population from aerial photographs should also be studied. These and other techniques should be evaluated in relation to problems encountered in undeveloped areas.

"Program IV--Development of Strategic Population Indexes (Relative Emphasis B): Continuous effort must be expended to use present demographic information and the results of the foregoing programs to determine relative war potential and to select targets. Because of security considerations, this research should be accomplished within the Military Departments. Last year's recommendation that professional staffs adequate for this program be formed is repeated." (pp. 50-51)

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PERIODIC GUIDANCE IN HUMAN RELATIONS AND MORALE

"General Status of the Field of Interest.

"Civil Defense: There was no program in this field in any Department in the fiscal year 1948. In the fiscal year 1949 the Air Force, through the Rand Corporation, supported a project to survey the literature on disasters and develop a manual for studies of current disaster reactions. In the fiscal year 1950 it is expected that a start will be made under the auspices of the Special Committee on Civil Defense, RDB; although the level of support has not yet been determined.

"Strategic Planning and Intelligence: In the fiscal year 1948 the only projects supported by research and development funds were an ONR contract for research on the conference process and an Air Force project on prediction. Moreover, no program supported by other funds could be called research and development in our use of these terms. In the fiscal year 1949 the ONR contract was continued, and the Air Force instituted a program of Soviet studies and a project on content analysis methods. In the fiscal year 1950 the only probable change is further expansion of the Air Force program.

"Psychological Warfare: In the fiscal year 1948 there were only two projects relevant to this field--ONR contracts on cultural differences and mass media of communication. In the fiscal year 1949 these have been continued; the Air Force has instituted a substantial start and the Army has begun a program. In the fiscal year 1950, the Air Force program may expand slightly, and the Army program will be in operation." (pp. 56-57)

"General Deficiencies:

"(1) There is a general lack of recognition that research, development, and operations evaluation must go hand-in-hand in these programs as in those of a physical science nature. A little basic research here, a small program of operations evaluation there, coupled with an almost complete absence of developmental programs, is an inadequate approach to the problem and is not conducive to the economical use of funds. Research must actually be put to use for military purposes if its expense is to be justified, and the uses to which it is put must be evaluated. Moreover, these complicated processes must be managed by professional personnel.

"(2) There is general lack of recognition of the urgency for exploiting the lessons of the past war by professional analysis of captured and other documents and of the unrecorded experience of participants. To analyze this mass of experience would require a large-scale program as described in several following sections, but it is estimated that it would not only obviate much more expensive research but would provide guidance that research under the simulated conditions of peace could not provide. This matter is considered of great importance to all technical fields of human relations and morale." (p. 57)

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