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**SMITHSONIAN'S MANPOWER RESEARCH AND ADVISORY SERVICES:  
A 22-YEAR PARTNERSHIP WITH THE OFFICE OF NAVAL RESEARCH**

**H. Wallace Sinaiko**

**Final Report**

**April 1994**

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**Manpower Research and Advisory Services**

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## SMITHSONIAN'S MANPOWER RESEARCH AND ADVISORY SERVICES: A 22-YEAR PARTNERSHIP WITH THE OFFICE OF NAVAL RESEARCH

### THIS REPORT

From early 1972 through April 1994 the Smithsonian Institution enjoyed a unique contractual relationship with the Office of Naval Research (ONR). This final report summarizes that arrangement: how the program came about, its organization and management, and the nature of Smithsonian's involvement. Because we know of no similar effort, we feel that its documentation might be useful in other settings.

### BACKGROUND

**Antecedents.** For over thirty years, from 1940 to 1973, the nation used its Selective Service System as the primary mechanism for manning the Armed Forces. Conscription brought millions of men into the military to serve in World War II, Korea, Vietnam, and during interim Cold War periods. In 1971, in the face of a prolonged and unpopular war, the Administration announced that it would abolish the Draft. A voluntary mechanism would be the nation's principal means of providing new entrants to the Armed Forces. The last draftees entered the Services in mid-1973 and an "all-volunteer force" (AVF) was established.<sup>1</sup>

At about the time of the announced plan for an AVF, an *ad hoc* panel of the Naval Research Advisory Committee recommended to the Assistant Secretary of the Navy (R&D) and the Chief of Naval Research that a program be initiated to deal with anticipated personnel problems. The NRAC panel proposed a special mechanism for managing the program. Because of the complexity of the Navy's manpower system and the dynamic nature of research that would have to deal with it, NRAC recommended that a coordinating committee be established. Additionally, the panel felt that the issues and problems underlying naval manpower would cut across traditional scientific disciplinary fields. There would also be a need to coordinate research planning with the operational users of research outcomes. NRAC foresaw pressures to produce viable, policy-oriented results and to maintain close ties to related work in the other Services and the Office of the Secretary of Defense. Interestingly, the panel tactfully but forcefully stated that a new way of doing business would be essential:

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<sup>1</sup> Except during times of massive mobilization, the U.S. Navy has relied on volunteers to provide its new entrants; however, many volunteers, particularly during Vietnam, were "draft motivated" men who chose the Navy as an alternative to Army service.

Past research efforts enjoy a tradition of relying on a variety of unrelated, uni-disciplinary studies, of being unaware of the relevant implications of on-going research in other areas, and of failing to follow up on the considerable amount of incomplete and fragmentary research generated by the immediate needs of policy decisions that had to be met before thorough research could be completed. The effort proposed must change this tradition if it is to be successful. (Panel report to NRAC)

The Assistant Secretary of the Navy (R&D) provided a budget and assigned ONR the responsibility for organizing and executing the effort. Glenn Bryan, director of the Psychological Sciences Division was named Program Manager.<sup>2</sup>

Acknowledging that the new program would have to be run in ways quite different from ONR's traditional support of basic research, Bryan followed NRAC's guidelines. A *modus operandi* evolved that took these unique factors into account: a) the Navy and the Marine Corps would require responses to short-term problems; b) ONR would have to develop mechanisms for anticipating manpower problems not previously encountered by the Navy; c) research issues would be multidisciplinary in nature and several ONR scientific areas would have to be involved; and d) active participation by uniformed personnel in planning and oversight functions would be essential. The AVF work would also be subjected to a high degree of visibility and there would be pressures to produce tangible outcomes. A Manpower R&D Committee was established to serve the program manager in an advisory capacity.

The Committee.<sup>3</sup> Membership was multidisciplinary<sup>4</sup> within ONR and, eventually, navy-wide. Scientific officers from several of ONR's technical disciplines were represented, e.g., social psychology, operations research, computer science, cognitive psychology, etc. Also involved were uniformed Navy and Marine Corps officers, civilian managers, and scientists from outside ONR. Many organizations designated people to participate in committee meetings. These were regularly represented: the Bureau of Naval Personnel; Headquarters, Marine Corps; the Navy Personnel Research and Development Center; the Navy Recruiting Command; the Navy Secretariat; the Office of the Chief of

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<sup>2</sup> Bryan retired in 1983. His successor program managers have been Michael Curran and Stanley Collyer.

<sup>3</sup> The committee has been known by several names, e.g., All Volunteer Navy, All Volunteer Force, and Manpower, Personnel and Training (MPT) R&D. We will refer to it as the Manpower R&D Committee in this report.

<sup>4</sup> The multifaceted nature of the group sometimes created tensions that, while uncomfortable, made for a productive and relevant effort. An example was the question of whether the program should focus narrowly on a few issues or should take on almost anything that was presented; the latter course was followed in the early years, with a relatively narrow focus on a few general areas later on.

Naval Operations; the Navy Material Command; the Naval School of Health Sciences; and the Naval Education and Training Command.

The committee had two principal functions: a) continuous surveillance of military and civilian manpower trends -- and any other factors likely to affect the Navy's ability to recruit, train, retain, and utilize its people -- as a means of keeping members well informed; and b) identification of prospective investigators, and generating and evaluating research proposals. The first function called for a certain amount of futurology, a process that generally goes against the scientific grain but one which could not be ignored. It also meant that the committee had to discriminate those problems that were amenable to research from those that were not. The second function called for bringing the program to the attention of competent researchers and encouraging them to submit research proposals. The committee saw its mission as a high-risk, high-payoff enterprise. It also saw a need to support research on new methodologies in addition to more substantive work.

The Manpower R&D Committee was chaired by Robert Lundegard, director of ONR's Mathematical Sciences Division. From its inception demands on the group were considerable. Members continued in their primary roles as scientific officers in ONR's basic research programs, but they also carried new responsibilities for the Manpower Program. If the committee was to fulfill its mandate, members needed help in what was becoming an unanticipatedly heavy imposition on their normal routines.<sup>5</sup>

In Glenn Bryan's words the committee required a "full time worrier" to provide a secretariat and perform other functions, and he turned to the Smithsonian.

## SMITHSONIAN'S ROLE

Why the Smithsonian? Leonard Carmichael, an eminent experimental psychologist, former president of Tufts University and Secretary of the Smithsonian (1953-1964), had a long-standing interest and professional involvement in military manpower matters. Toward the end of his tenure at the Smithsonian, Carmichael served as principal investigator for a contract that provided consulting assistance to ONR's Psychological Sciences Division. Early in 1972 ONR expanded its contract with the Smithsonian as a way of bringing on board Bryan's "worrier."<sup>6</sup> Wallace Sinaiko was recruited to fill that role. Carmichael, at the time an emeritus Secretary of the Smithsonian and a Vice

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<sup>5</sup> These ONR scientific officers deserve special mention for their part in getting the Manpower Committee off the ground and for giving many hours of service: Marshall Farr, William Gaymon, Bert King, John Nagay, and Martin Tolcott (all in the Psychological Sciences Division); and, Marvin Denicoff, Randy Simpson, and Tom Varley (from the Mathematical Sciences Division).

<sup>6</sup> The Smithsonian has both federal and private components. The latter accepts grants and contracts to conduct work for other federal agencies; it is also the repository of bequests, endowments, and other non-appropriated funds.

President of the National Geographic Society, became the project's nominal principal investigator. Following Carmichael's death in 1974 Sinaiko assumed the role of PI and became Program Director, Manpower Research and Advisory Services (MR&AS), at the Smithsonian. Organizationally the ONR grant to the Smithsonian was attached to the Office of the Assistant Secretary for Research. Our relationship with that office is further explained in the final section of this report.

**Where the work was done.** There was no functional reason why Smithsonian's work for ONR should be located on the Mall. Because daily interactions with Bryan and the Manpower R&D Committee were essential, Smithsonian was provided with an office at ONR headquarters. In 1976 the staff moved to commercial space in Alexandria, Virginia.

**What was to be the project's duration?** Initially, ONR expected the AVF project to fulfill its objectives and likely go out of business in one year but possibly extend to a second year. Such was not the case, however, and proposals were solicited by ONR every year through 1993. The Smithsonian submitted proposals and contract renewals were granted each year for 22 years.

**Project staff.** The staff was small. In addition to the program director there was a full-time administrative officer -- Becky Graham (from 1972 until her retirement in 1989) and Marsha Morahan (from 1989 to the present). Carol Blair served as secretary on a half-time basis since 1976.<sup>7</sup> Quality, involvement, commitment, a can-do attitude, and talent -- rather than numbers -- are what they brought to the ONR project, and they deserve a full measure of credit for its accomplishments.

## WHAT THE SMITHSONIAN DID FOR ONR

**The Manpower Committee.** The Smithsonian's main role has been to support ONR's Manpower R&D Program. For both the committee and a smaller executive group, formal agendas were prepared and circulated prior to meetings, a procedure that insured meetings would be productive and contain no surprises for attendees. In addition to setting agendas, Smithsonian recorded and distributed minutes, and maintained essential documents, records, and reports. It also became our responsibility to follow up policy or funding decisions to see that they were executed.<sup>8</sup>

Because many of the substantive manpower issues facing the Navy were urgent, we developed mechanisms for moving the decision process at a relatively fast pace. For

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<sup>7</sup> During a one-year absence, Carol Blair's position was filled by Becky Caldwell.

<sup>8</sup> All decisions involving the Manpower R&D Program were, of course, the exclusive responsibility of ONR. Recognizing the possibility of conflict of interest, real or perceived, Smithsonian staff was careful to guard against becoming involved in the Committee's decision processes.



the research proposals that were funded, scientific oversight of the research became the responsibility of individual ONR scientific officers; however, the full committee retained an interest in progress and outcomes through briefings, special meetings, and technical reports.

The Manpower R&D Committee met about 465 times. During that time 965 research proposals and concept papers were submitted by prospective grantees and evaluated by the committee and its executive group. As a standard procedure, all full proposals and many concept papers, or pre-proposals, were also reviewed by people external to ONR. Many hundreds of hours were given by those outsiders -- professional staff in laboratories as well as Navy and Marine Corps officers -- in providing their professional judgments. Smithsonian arranged the external reviews and did the necessary tracking to see that they didn't fall through the cracks.

Many issues that became central to the success of the AVF could not be anticipated at the beginning of the Manpower R&D Program and it was necessary to "monitor the future." For example, no one in the Navy knew, at the inception of the volunteer force, that premature personnel losses through unscheduled attrition would become a serious problem. To keep on top of these evolving issues it became necessary to establish links with the non-R&D world. To that end we brought in authoritative speakers -- from academia, the press, independent research organizations, and the four Services, *inter alia* -- who addressed many topics felt to be important to the AVF.<sup>9</sup> Smithsonian also established a clipping service.

**Clippings.** Military manpower issues were covered thoroughly by the news media and other sources. The Smithsonian developed an extensive clipping service, our primary sources being the *Navy Times*, the *Washington Post*, and the *New York Times*. We also routinely distributed articles from, for example, Government Accounting Office reports, the Commission on Professionals in Science and Technology, the American Psychological Association's *Monitor* and *Science Agenda*, *Government Executive*, the American Psychological Society's *Observer*, and *Psychological Science*, *IEEE Spectrum*, *Wall Street Journal*, etc.<sup>10</sup> Clippings and other memos we prepared were sent to an extensive list of addressees, usually on a semi-monthly basis. The primary distribution list for clippings, memos, and committee minutes varied over the years from about fifty to nearly one hundred names. Some of the recipients routinely copied portions of Smithsonian mailings for further distribution within their organizations.

**Organizing conferences and symposia.** From the beginning, and until about the mid-1980s, the Smithsonian played a seminal part in organizing and running many meetings on a wide range of topics. Sponsorship, always involving ONR, frequently was shared with other agencies, e.g., the Office of the Secretary of Defense, the Navy

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<sup>9</sup> Appendix A contains a chronological list of the invited speakers who addressed Manpower R&D Committee meetings over the life of the Smithsonian contract.

<sup>10</sup> We estimate that we distributed over 3000 clippings.

Secretariat, the Bureau of Naval Personnel, the Navy Personnel Research and Development Center, and the Naval Postgraduate School. Many meetings were problem-oriented, bringing to bear academic and other expertise on specific issues; other meetings were geared toward methodological problems. Some of our conferences had as their aim to extract policy implications from completed research. On occasion Smithsonian arranged small one-on-one meetings to permit direct interchanges between academic researchers and high-level navy manpower executives.

Some of the topics addressed by conferences and workshops were: measuring the cost-effectiveness of military morale and recreation programs, the causes and possible remedies for high levels of personnel attrition, low personnel retention in the reserve forces, improved and unobtrusive techniques for determining attitudes and opinions, black representation in naval aviation, tactical decision making, navy R&D manpower management, human resource accounting methods, Hispanic participation in the naval force, and manpower problems of reserve forces. Outcomes of all meetings organized by the Smithsonian were published as technical reports or minutes.<sup>11</sup> The outcomes of meetings were frequently presented as action or policy-oriented findings, as well as agendas for new research.

We believe that the Smithsonian's cachet was an invaluable asset. The Institution was well-known for its chartered objective, "the increase and diffusion of knowledge," and we never encountered reluctance to accept invitations to participate. (Meetings were sometimes over-subscribed and we had to resort to a "by invitation" policy.) Since the Smithsonian had no vested interest in the subjects of the conferences, meetings were viewed as bias-free. We made a special effort to assure that contributors represented a range of opinions and viewpoints.

**Collateral secretariat functions.** During the life of Smithsonian's contract with the Office of Naval Research we worked, as a collateral responsibility, in two programs in addition to Manpower R&D. From October 1975 to June 1981 the Office of Naval Research and the Naval Material Command jointly ran a Procurement R&D Program "to study and recommend methods to improve major systems procurement practices" in the Navy. As a planning and oversight body an Acquisition Research Council was established along the same lines as the Manpower R&D Committee. Council members represented ONR's Mathematical Sciences Division, the Office of the Chief of Naval Operations, the Naval Material Command, the Naval Postgraduate School, etc. Research was carried out mainly in academic settings, e.g., UCLA, George Washington University, University of California (Berkeley), and the Naval Postgraduate School. The council met about 135 times over the life of the program. Smithsonian provided a secretariat function, e.g., scheduled bi-weekly meetings, kept and distributed minutes, and served generally as corporate memory for the work done by the Acquisition Council's grantees.

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<sup>11</sup> An annotated bibliography (Appendix B) includes reports of conferences and symposia supported by the Smithsonian.

A Recruiting Resources Allocation Study, set up at the direction of the Navy Secretariat and the Navy Recruiting Command, supported research aimed at understanding and alleviating recruiting problems. A steering group met aperiodically to oversee the work of academic contractors and Smithsonian served as the group's secretariat. The study ran for four years, from 1977 through 1981. Perhaps the most interesting component of the work was an experiment run by the Wharton School, University of Pennsylvania. Recruiting resources -- advertising dollars and numbers of recruiters -- were systematically varied in a national sample of navy recruiting districts and effects on accessions monitored. Results of the experiment, which were counter to the conventional wisdom of the time, were not well received by the sponsors; but they did support the Secretary of Defense and they did conform to good social science research design.

**Meetings attended.** From the beginning we felt, and our Navy sponsors strongly agreed, that it was essential for the Smithsonian's PI to attend meetings relevant to the substance of the ONR Manpower R&D Program. Consequently, our travel budgets were relatively strong. An essential part of attending workshops, conferences, symposia and the like was the feedback we provided to the naval manpower community. We did that in the form of briefings and summary memorandums.<sup>12</sup>

Among the meetings we attended were: biennial conferences of the Inter-University Seminar on Armed Forces and Society, annual conventions of the American Psychological Association, and biennial symposia on "Psychology in the Department of Defense." In addition we went to many other meetings, e.g., conferences of the Military Testing Association, and the International Applied Military Psychology Symposium; a conference on "The Armed Forces and Military Service in a Democratic Society," sponsored by the State Committee of the Russian Federation on Defense; a conference on "The Role of Education in Restructuring Defense," run by the U.S. Department of Education; formal reviews of basic research in the behavioral sciences sponsored by the Office of Naval Research and by the Army Research Institute; and a conference on "Military Leadership," sponsored by the U.S. Naval Academy and the Navy Personnel Research and Development Center.

**Panel membership.** A valuable window into international military manpower matters has been our long-standing participation in The Technical Cooperation Program (TTCP), a defense science consortium comprising the principal English-speaking nations -- Australia, Canada, New Zealand, the UK, and the U.S. Smithsonian's involvement took the form of membership in the technical panel on Military Human Resource Issues, which had its first meeting in 1978 and still continues to meet. The panel is composed of psychologists, sociologists and other professionals, in and out of uniform. Sinaiko served as U.S. National Leader from 1979 through 1993; during 1984-91 he also served as panel chairman. The panel meets annually on a rotational basis among the five countries. Smithsonian was responsible for hosting four annual meetings. Panel members developed an active network that, during interim periods, has supported frequent and voluminous exchanges of information, often stemming from specific (sometimes urgent) inquiries that

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<sup>12</sup> Appendix C contains an illustrative list of memos prepared by Smithsonian.

originated at high levels in the countries' defense establishments. Outcomes of the panel's work have been influential in manpower policymaking decisions in all the member nations, and in eliminating unnecessary duplication of research.

Fortuitously for U.S. defense manpower research, each of the other four countries had shifted from conscription to volunteer manning of their forces long before the advent of the AVF here. Thus, we stood to learn from those experiences. Illustrative of the topics with which the TTCP panel has dealt are: widening the supply base for entry level personnel; officer selection; validities of applicant screening techniques, e.g., biographical information, the interview, cognitive ability testing, artificial neural networks in personnel selection, and computer-based and computer-adaptive testing; military service as a socialization agent; management, selection and training of recruiters and recruiter productivity; military families and retention; utilization of military women; prediction of job satisfaction and attrition; military occupational structures; officer shortages; changing youth labor markets and demographic trends; survey research techniques among military populations; performance appraisal; ethnic participation; and manpower lessons from the Gulf War. The panel's publications appear in the annotated bibliography (Appendix B).

**Membership: Boards, committees and professional societies.** Smithsonian's principal investigator served on the Defense Science Board Panel on Training Technology, an *ad hoc* effort to lay out long-term research needs and recommend new areas of concentration. He also was a member of the Naval Research Advisory Committee's Ordnance Panel, a body that periodically reviewed research programs at the Naval Surface Warfare laboratories.

Also relevant to ONR's Manpower R&D Program was our participation in the Inter-University Seminar on Armed Forces and Society (IUS), an international forum for scholarly exchange in the behavioral and social sciences, focusing on military establishments and civil-military relations. IUS fellows include academics, active duty military people, and others from a variety of research settings. Fellows' disciplines include history, sociology, political science, psychology, law, economics, and international relations. Sinaiko attended and reported on many IUS biennial conferences. In addition he was a member of its Executive Council and has served as IUS Washington area regional coordinator (1985-1987), and as program co-chairman for the 1987 and 1991 IUS Biennial Conferences.

Sinaiko has been a representative to the Council of the American Psychological Association, and he served as president of the Society of Engineering Psychologists, a division of the APA.

During the late 1970s a *Navy Yearbook of Manpower, Personnel and Training* was published periodically. Produced at the direction of the Under Secretary of the Navy, the yearbook was intended to bring to the attention of top level navy manpower managers selected R&D issues and outcomes, ". . . in a style likely to be read and remembered." Sinaiko was a member of the three-person editorial board of the yearbook and he co-authored the lead article in the first issue. (See "Miscellaneous Publications" section of the annotated bibliography, Appendix B.)

## REFLECTIONS: WHAT DIDN'T WORK AND WHAT DID

**A disappointment.** We were never able to execute, to our own or to the ONR program manager's satisfaction, an acceptable record in the arena of research transitions. ("Research transition" means moving completed work to direct application in a navy installation. Transition can also occur when basic research outcomes are moved to more applied levels of research and development.)

Why were we not able to succeed in this arena? Partly it was because the emphasis on transition came late in the program. It was not until the mid- to late-1980s that ONR managers began to stress transition, by which time it was not possible to retrospectively execute transition activities for the many successful program elements that had been completed. Another factor was the long standing role of ONR as a major supporter of basic research in many fields. For several decades ONR built an enviable reputation for pushing back the frontiers of scientific knowledge with little necessity to emphasize further development or application. At the time the Manpower R&D Program and Smithsonian entered the scene, ONR's scientific officers had little interest or incentive in moving completed work to other laboratories or into the field.

On a more practical level there was never a group effort in the Manpower R&D Committee to lay out transition plans, objectives, and the like. Few people associated with the program knew how to bring about research transitions. Consequently, planning was largely an *ad hoc* and *ex post facto* exercise. Had there been commitments made at the inception of every research element, with firm agreements about what would be done if outcomes held promise, we might have been able to produce a much better record in this regard.

Still another reason for the failure of transition, and one beyond anyone's control, lay in the nature of exploratory developmental research, the category of research represented in the Manpower R&D Program. Some risk is always involved and there are as many dry holes as gushers that result from these programs. Thus, in some cases transition prospects were about as great as the proverbial snow ball's chance in hell, which should come as no surprise to anyone familiar with this type of research.

Last, if it was to work at all, transition required involvement of the uniformed naval services, a condition that evaporated during the last three or four years of the Smithsonian contract. The participation of ONR scientific officers, and others, in the Manpower R&D Committee gradually diminished, either because of lack of interest or, more likely, because other matters assumed higher priority.

**Successes.** These were more diffuse, but no less worth reporting, than the disappointment. The Smithsonian's role over the life of the ONR contract had many positive aspects. From the start we believed the name of the game was to "keep the players informed" and we think we were effective in that regard. (See earlier sections on clippings, meetings, conferences attended, and briefings.) We also developed fast and accurate ways to maintain the records of a research program that was atypical in ONR -- it had high external visibility, it was interdisciplinary, it dealt with many critical problems

of the moment, and (for ONR) it imposed very heavy demands in terms of processing research proposals. Smithsonian's emphasis on annotating research funding decisions, on keeping many people and organizations in the loop, on arranging for research findings to be disseminated by several means, on distributing a lot of information to a lot of people -- all were among our major commitments and successes.

The conferences and symposia we organized, described in detail elsewhere in this report, were generally received enthusiastically both by speakers and other participants. At the same time the meetings brought deserved recognition to ONR. It was never easy to orchestrate those meetings; but we feel they were well worth the effort. ONR's priorities began a gradual change in the mid-1980s and the conferences and symposia were discontinued. Unfortunately, no other organization took up the slack. We regret the demise of what had been a valuable contribution of the Smithsonian to the Navy's (and others') understanding of many manpower issues.

Although it was not our explicit intention, we became the corporate memory for the Manpower R&D Program. In ONR, and particularly in the uniformed Navy where turnover is high, our ability to "know who knew" had many payoffs.

As a navy contractor we often felt we were treading through a minefield of privileged information, decision processes that were properly the prerogatives of government personnel, and procedural matters that (if we were improperly involved) could have proven embarrassing, unethical or worse. We took the position that it would be necessary at times to hold our ONR colleagues' feet to the fire when, say, they did not move research proposals through review procedures at a reasonably fast pace. In doing that we generated very little friction. We were also privy to hundreds of decisions and outcomes regarding research proposal submissions, a fact that often resulted in off-line requests for feedback information from prospective grantees.

Although we were careful to maintain a detached position with regard to decisions made by the Committee and the Executive Group, we developed strong relationships with many of the program's contractors and grantees during our tenure. It was not difficult to establish good rapport with principal investigators and their colleagues; part of our role was to be supportive and they recognized that as an asset. We visited most grantees in order to learn through informal discussion about their work and, more importantly, ways in which we could provide assistance. In some cases we introduced investigators to naval organizations whose cooperation was necessary for the conduct of the research. We arranged end-of-contract briefings to operational commands and to manpower policymakers in the Navy and the Department of Defense. We were instrumental in seeing that several grantees were invited to report on their research at professional meetings, both national and international.

A special success story has been our involvement with the Technical Cooperation Program (described above). Smithsonian's role in creating the technical panel on military human resources, our participation in collaborative cross-national research, and our contacts with colleagues from the other English-speaking countries were highly gratifying

-- both professionally and personally. We believe that the panel is a model of how the "C" in TTCP should be accomplished.

Perhaps most important, although not an enduring consequence of the ONR contract, the Smithsonian has helped to establish and sustain a unique community of interest covering a wide range of navy activities. That has been a great source of satisfaction. For some, the Manpower R&D Committee meetings served a watering hole function: the meetings brought people together who had common interests but who otherwise would have no regular opportunity to meet. Committee meetings were often feisty, a condition that was sometimes uncomfortable but never boring and, on balance, essential in keeping the Manpower R&D Program viable.

Last, we feel that our role as Glenn Bryan's "full-time worrier" was fulfilled. A fast-moving, problem-oriented, navy-relevant program -- one without precedent in ONR -- got up to speed in record time and survived for many years. The people who came together formed what was surely a unique community of research managers, Navy and Marine Corps officers, defense manpower policy people, and researchers from the academic and corporate sectors. We believe, with a great deal of satisfaction, that Smithsonian was a major force in building and sustaining the community.

## **RELATIONSHIP WITH THE SMITHSONIAN**

Throughout the life of the ONR contract we enjoyed an unusual relationship with our parent institution. In the Smithsonian's chain of command we reported to the Assistant Secretary for Research. The two secretaries for whom we worked, David Challinor and Robert Hoffman, held a loose rein on Smithsonian's work for ONR. Essentially, we operated in a near-independent mode. On those few occasions when it became necessary to ask for help, we did so without hesitation and assistance was always forthcoming.

Possibly this program has been one of the least visible in Smithsonian's history. Many times we have been asked, "What does your work have to do with the Smithsonian?" Our standard answer: "We have nothing to do with the Zoo, the art galleries, or the museums on the Mall. We exist to help the Navy with a special problem." That is why ONR came to the Smithsonian and that has been our only task.

## APPENDIX A

### Briefings Arranged by Smithsonian

1973

NAME <sup>1</sup>	AFFILIATION	SUBJECT
Dr. Jerald Bachman et al.*	University of Michigan	Perceptions of military service
Dr. Jerry Barney	Peer-Managed Learning Systems	Peer-managed instruction (PMI)
CAPT Robert Barton	BUMED	Navy medical personnel problems
Mr. Bard Battelle et al.*	Stanford Research Institute	Manpower policies
Professor James Bennett*	George Washington University	Marine Corps' combat arms bonus
Dr. J. R. Borsting et al.	Naval Postgraduate School	NPS manpower data bank
Ms. Karen Brody et al.*	Bureau-Social Science Research (BSSR)	Navy career information
Mr. Mike Brown et al.*	Operations Research, Inc.	The AVN and the schools
Dr. Ralph Canter	OSD(MR&A)	Summary of 15 studies
LCDR M. J. Connor	United States Naval Reserve	Naval Reserve research prospects
Dr. E. G. Devine	Center for Naval Analyses	Recruiting shortfalls
Mr. Ralph Dusek	Army Research Institute	Race relations & drug abuse
Professor Fred Fiedler	University of Washington	Contingency models of leadership
Dr. Eli Flyer	OSD(M&RA)	Manpower research at MARDAC
Dr. Albert Glickman*	American Institutes for Research	Navy career motivation
Dr. Barry Goodstadt et al.*	American Institutes for Research	Navy career motivation
Dr. Gloria Grace*	System Development Corporation	Career satisfaction and retention
Professor Richard Grinold*	University of California	Manpower planning models
Dr. Richard Hatch*	Decision Systems Associates, Inc.	Optimizing minority assignments
Mr. Stephen Herbits	OASD(M&RA)	Recruiting goals
CAPT Horace Holley	BUPERS (Corrections Division)	Navy's corrections problems
Mr. Richard Hovey et al.*	B-K Dynamics	Utility theory
LCDR J. S. Ibach	BUPERS	Human Goals Plan
Dr. Christopher Jehn	Center for Naval Analyses	Recruiting shortfalls
MAJ John Johnston	OASD(MRA&L)	Brookings study on the AVF
Dr. Bert King	Office of Naval Research	Retention rates & human resources
Mr. Will Lassiter*	Data Solutions Corporation	Naval officer retention
Dr. Robert Lockman	Center for Naval Analyses	Recruiting shortfall and prospects
Dr. Kneale Marshall	Naval Postgraduate School	Manpower data bank feasibility
Prof. Herbert Northrup*	University of Pennsylvania	Minority recruiting
Professor Robert Oliver*	University of California	Manpower planning models
Dr. John Proctor*	Data Solutions Corporation	Officer retention
Mr. Ken Scheflen	HumRRO	DOD manpower research studies
Mr. John Schmid*	B-K Dynamics	Utility theory
Dr. Henry Solomon*	George Washington University	Demographic trends and manpower
Professor Paul Wall*	Tuskegee Institute	Integration in all-white institutions
Dr. Geoffrey Watson*	Princeton University	Statistical problems and the AVF
Dr. Anthony Wermuth	Westinghouse Corporation	Proposed follow-on research

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<sup>1</sup> An asterisk in this column indicates speaker was a contractor of the ONR Manpower R&D Program.



Dr. Anita West\*  
Dr. Harry West

University of Denver  
OP-013

Reducing physical standards  
Manpower Analysis Group

1974

LT Ray Barrett  
Mr. Martin Binkin  
Dr. David Bowers  
CDR John Brame  
LCDR Dudley Cass  
Mr. Bruce Dunning et al.\*  
Dr. Allan Fisher\*  
Dr. Barry Goodstadt\*  
Dr. Gloria Grace\*  
Dr. Richard Hatch\*  
Mr. Dan Huck  
Mr. E. Hutchins  
MAJ John Johnston  
Professor Ezra Krendel\*  
Mr. Will Lassiter\*  
Dr. Robert Lockman  
CAPT Will Loggan  
Mr. L. Mehr  
Dr. Richard Niehaus  
Prof. Herbert Northrup\*  
Professor Robert Oliver\*  
CDR D. F. Parker  
Dr. John Proctor\*  
Prof. Charles Stewart et al.\*  
Mr. Robert Sulit et al.  
Mr. John Thomas  
Professor Paul Wall\*

BUPERS  
Brookings Institution  
University of Michigan  
CRUITCOM  
BUPERS  
Bureau of Social Science Research  
HumRRO  
American Institutes for Research  
System Development Corporation  
Decision Systems Associates, Inc.  
General Research Corporation  
Navy Personnel R&D Center  
OASD(MRA&L)  
University of Pennsylvania  
Data Solutions Corporation  
Center for Naval Analyses  
Bureau of Personnel  
PERS-72  
Office of Civilian Manpower Mgmt.  
University of Pennsylvania  
University of California  
Cornell University  
Data Solutions Corporation  
George Washington University  
Ship R&D Command  
Hudson Institute  
Tuskegee Institute

Five-year projection flow chart  
Women in the military  
Societal changes and implications  
Educational liaison  
Officer placement  
Marketing navy careers  
Structure of enlistment incentives  
Career motivation in an AVN  
Navy career counseling  
USAF training line simulator  
Econometric models  
Requirements & Resources Control  
Volunteer road maps  
Industrial democracy for the Navy  
Officer retention  
Selection and compensation  
Enlisted occupational system  
Navy's recreational program  
Manpower modelling  
Affirmative action  
Interactive manpower models  
Predicting early retirement  
Officer retention  
Factors influencing reenlistment  
Navy Tech Information Program  
Navy/civilian career comparison  
Minorities in all-white institutions

1975

Mr. Leonard Bassil  
Dr. Bruce Bell et al.  
Dr. Laurie Broedling et al.  
Dr. Alan Fechter  
Dr. Allan Fisher\*  
Dr. Albert Glickman\*  
Dr. Barry Goodstadt\*  
Dr. Sheldon Haber et al.\*  
Dr. Robert Holz  
CDR I. Kiland  
Mr. Sam Kleinman  
Professor Ezra Krendel\*  
Mr. Will Lassiter\*  
Mr. William Lindsay  
Dr. Robert Lockman et al.

National Academy of Sciences  
Army Research Institute  
Navy Personnel R&D Center  
The Urban Institute  
Hay Associates  
American Institutes for Research  
American Institutes for Research  
George Washington University  
Army Research Institute  
PERS-65  
Center for Naval Analyses  
University of Pennsylvania  
Data Solutions Corporation  
OASD(M&RA)  
Center for Naval Analyses

The seagoing workforce  
Military delinquency  
Feasibility of a research databank  
Manpower forecasting  
Navy recruitment in junior college  
Navy/Marine Corps attrition  
Navy/Marine Corps attrition  
USMC manpower management  
U. S. Army quality of life  
SITREP on Human Goals Program  
Reenlistment bonuses  
Industrial democracy in the Navy  
Selective retention of junior officers  
Guard and Reserve in Total Force  
Enlisted selection and tracking

Dr. Al Martin  
Dr. Richard Morey\*  
CDR John Neese  
CDR Dick Power et al.  
Mr. John Ruml  
LCOL R. A. Smaldone  
CDR Will Story  
Dr. Lorand Szalay\*  
Ms. Betty Vetter  
Professor Paul Wall\*  
Mr. W. L. Wilkinson

OASD(M&RA)  
Control Analysis Corporation  
CRUITCOM  
OASD(PA&E)  
OASD(PA&E)  
OASD(M&RA)  
OASD(M&RA)  
American Institutes for Research  
Scientific Manpower Commission  
Tuskegee Institute  
George Washington University

Marketing the AVF  
Cost-effectiveness of recreation  
Recruit quality  
Attrition and retention  
Research and action agencies  
Enlistment forms  
Navy manpower trends  
Cultural adaptation  
Manpower resources  
Minorities in all-white institutions  
Naval air training community

### 1976

CDR William Arata  
Mr. Martin Binkin  
Dr. David Bowers\*  
Dr. Jack Bregger et al.  
Mr. Maurice Callahan  
CAPT C.A.U. Cotton  
Dr. E. S. Flyer  
CDR J. Goodwin  
Dr. John Goral  
Dr. Gloria Grace\*  
Dr. Stan Horowitz  
Mr. Terence Jackson  
Mr. Douglas Johnston  
Prof. Ezra Krendel et al.\*  
Mr. R. K. Lehto  
CAPT Will Loggan  
Mr. James Miller  
Prof. Robert Oliver et al.\*  
Mr. Robert Russell  
Mr. Irwin Schiff  
Dr. Henry Solomon\*  
Dr. Will Steger et al.  
Dr. Lorand Szalay\*  
Dr. Richard Toikka\*  
Dr. Robert Vineberg\*

OP-02  
Brookings Institution  
University of Michigan  
Bureau of Labor Statistics  
PERS-23  
Canadian Forces  
OASD(M&RA)  
PERS-63  
MARDAC  
Systems Development Corporation  
Center for Naval Analyses  
Center for Productivity & Quality of Life  
DASN  
University of Pennsylvania  
Bureau of Personnel  
Bureau of Personnel  
Presearch, Inc.  
University of California  
Lulejian Associates  
OP-964  
George Washington University  
Consad Research Corporation  
American Institutes for Research  
Urban Institute  
HumRRO

Nuclear force retention problems  
Future of the Marine Corps  
Human resource accounting  
Current Population Survey  
Navy Occupational Task Analyses  
Personnel Applied Research Unit  
Manpower issues at the OSD level  
Navy discipline problems  
Youth Attitude Tracking Study  
Career counseling research  
Maintenance personnel effectiveness  
Description of Center  
Navy manpower issues  
Military collective bargaining  
Organizational change in BUPERS  
Legislative issues  
Fleet manpower policy study  
Manpower modelling  
Readiness reporting and analysis  
Manpower & Training CPAM  
Econometric manpower research  
Simulation of AF M&P system  
Acculturation of Filipino sailors  
Population survey  
Enlisted personnel performance

### 1977

Mr. Harry Day et al.\*  
Dr. William Gaymon\*  
Dr. David Grissmer  
Mr. Douglas Johnston  
MAJ John Johnston  
Professor William King  
Mr. Gus Lee

University City Science Center  
American Institutes for Research  
Rand Corporation  
DASN  
OASD(MRA&L)  
University of Pittsburgh  
HumRRO

Women in the Navy  
Recruits' life path experiences  
DOD manpower to year 2000  
Personnel management study  
Support for manpower research  
National Service  
Ending the Draft

CAPT Will Loggan et al.  
 John Massaro  
 CDR John Neese  
 Dr. Gary Nelson  
 LCOL William Osgood  
 Mr. Robert Panoff  
 Dr. John Proctor et al.\*  
 Dr. Bernard Rostker  
 CDR J. K. Ruland  
 Mr. Ken Schefflen et al.  
 Mr. Irwin Schiff  
 Dr. Richard Tiokka\*  
 Dr. Michael Wachter et al.\*  
 Robert Walker

Bureau of Personnel  
 Sergeant Major, USMC  
 CRUITCOM  
 Congressional Budget Office  
 U.S. Marine Corps  
 MPR Associates  
 Data Solutions Corporation  
 DASN(M&RA)  
 OP-01  
 DMDC  
 OP-964  
 Urban Institute  
 University of Pennsylvania  
 Master Chief Petty Officer, USN

Congressional perspectives  
 Enlisted perceptions  
 State-of-the-art in recruiting  
 Costs of defense manpower  
 USMC manpower perspectives  
 Ship design and navy manpower  
 Junior officer retention  
 Research on real problems  
 HARDMAN  
 DMDC program  
 Manpower perspective in OP-96  
 Economic and labor markets  
 Forecasting manpower economics  
 Predictors of success

1978

Mr. Rolf Clark et al.  
 CAPT Patrick Cleary  
 Dr. Kenneth Coffey  
 Prof. H. H. Hand et al.\*  
 Mr. Tim Kane  
 Ms. Cecile Landrum  
 Mr. Merle Malehorn  
 Prof. Bruce Meglino et al.\*  
 Professor Charles Moskos  
 CAPT F. E. O'Connor et al.  
 Mr. Jerry Reed  
 Dr. Bernard Rostker  
 CDR J. K. Ruland  
 Professor David Segal  
 Dr. Arthur Siegel  
 CAPT D. W. Timberlake

Brookings Institution  
 OP-10X  
 Naval Postgraduate School  
 University of South Carolina  
 B-K Dynamics  
 Air Force Studies and Analysis  
 OP-102X  
 University of South Carolina  
 Northwestern University  
 OP-01BC/PERS-1C  
 Congressional Fellow  
 PDASN  
 OP-122  
 University of Maryland  
 Applied Psychological Services, Inc.  
 PERS-65

Defense and civilian workforces  
 Navy personnel issues  
 Manpower for military mobilization  
 Pre-recruit training for the Marines  
 Computer simulation forecasting  
 Women in the military  
 New R&D organization in OP-01  
 Marine Corps enlisted attrition  
 Observations aboard navy vessels  
 Counter-attrition program  
 Rep. Beard's report: AVF Army  
 Research opportunities  
 HARDMAN  
 Civilian-Military interface  
 Forecasting by computer simulation  
 Advanced fleet personnel training

1979

Prof. Douglas Adie et al.\*  
 Dr. Albert Biderman\*  
 Dr. Johnnie Daniel et al.\*  
 Professor Ismail Ghazalah\*  
 Mr. Robert Goldich  
 Mr. Dan Huck et al.  
 Dr. Mary Lozano  
 Mr. Merle Malehorn  
 Prof. Wm. Mobley et al.\*  
 Dr. Richard Morey\*  
 Dr. Ann O'Keefe  
 LCDR A. S. Polk  
 Dr. Bernard Rostker et al.  
 Dr. R. G. Smith, Jr.

Ohio University  
 BSSR  
 Gibboney Associates  
 Ohio University  
 Congressional Research Service  
 Congressional Budget Office  
 Naval Material Command  
 OP-102  
 University of South Carolina  
 Duke University  
 OP-152  
 NMPC-6  
 DASN(M&RA)  
 OP-987

Voluntary attrition  
 Generational occupation succession  
 Life path predictions  
 Voluntary attrition  
 Views on military manpower issues  
 National service programs  
 Shore equal opportunity program  
 OP-01 R&D program plans  
 Enlisted attrition  
 Budget generation model  
 Navy family support program  
 Human resources management  
 Human resources R&D  
 "People related" R&D in OP-98

Dr. Robert Vineberg\* HumRRO  
 Dr. Michael Wachter\* University of Pennsylvania  
 Dr. E. L. Woisard OP-96  
 Dr. Stuart Youngblood\* University of South Carolina

Different mental categories  
 Implications of changing labor force  
 Assessing U.S. and Soviet navies  
 Enlisted personnel attrition

1980

CDR M. Boykin, USNR et al. University of South Carolina  
 Mr. John Brinkerhoff DASD(RA)  
 Mr. Vincent Carroll\* University of Pennsylvania  
 Dr. Ismail Ghazalah et al.\* Ohio University  
 Lt. Col. Alan Gropman United States Air Force  
 Dr. Sam Landau Navy Personnel R&D Center  
 Dr. Milton Maier Army Research Institute  
 LCDR William Nelson et al. OP-112  
 Mr. F. E. O'Connor\* Information Spectrum, Inc.  
 Professor Irwin Sarason\* University of Washington  
 Mr. Irwin Schiff OP-964D  
 Dr. Thomas Sicilia OASD(MRA&L)  
 Ms. Mary Snavelly-Dixon DASN(M)  
 Dr. James Tweedale OASN(MRA&L)  
 Mr. George Wilson Washington Post

Naval reserve retention survey  
 Reserve forces  
 Recruiting resources allocation  
 Compensation effects on separation  
 AF Long-range personnel policy  
 Retention and attrition  
 Norming problems in testing  
 New construction and fleet manning  
 Navy enlistments effects  
 Psych. approach to stress-attrition  
 Some unresolved MPT problems  
 Research and policy  
 Personnel readiness  
 Navy productivity  
 Troubles in defense manpower

1981

Dr. Robert Blanchard Navy Personnel R&D Center  
 Mr. Tom Blanco Navy Personnel R&D Center  
 Mr. Vincent Carroll\* University of Pennsylvania  
 CDR Paul Chatalier OUSDR&E(R&AT)  
 Dr. James Downs\* Development Research Associates  
 Dr. Mark Eitelberg\* HumRRO  
 CAPT Tice Eyler OP-15  
 CAPT Dana French OP-15  
 Mr. E. C. Grayson DASN(M)  
 MAJ R. R. Harris MPI-20  
 Dr. Robert Hayles ONR Code 452  
 Prof. Roger Little et al.\* United States Naval Academy  
 Mr. Merle Malehorn OP-115  
 Mr. J. J. Miller CRUITCOM  
 Mr. Walter Muller\* George Washington University  
 LCDR Bruce O'Neill OP-110D  
 Mr. Tom Philpott Navy Times  
 COL Frank Pinch Canadian Forces  
 CAPT Peter Puerling OP-110  
 Dr. D. N. Reyes ODASN(EO)  
 Professor Lee Sechrest\* University of Michigan  
 Mr. Michael Shoecraft Navy Personnel R&D Center  
 Dr. R. G. Smith, Jr. OP-0987H  
 LCOL A. Vazquez ODASN(EO)

EPICS (Career System)  
 Modeling logistic support  
 Recruiting resources experiences  
 Tech Base R&D  
 Historical study of discipline  
 Profile of American Youth  
 People and organizational support  
 Future of organizational support  
 Separation-logistics and manpower  
 Assessment of recruiting  
 Management skills  
 Characteristics of the AVF  
 General comments  
 Econometric models  
 Lateral placement policies  
 Navy Lateral Entry Program  
 Misnorming of the ASVAB  
 Canadian personnel R&D  
 Long range strategic planning  
 Hispanic demonstration project  
 Unobtrusive measures  
 Pacific logistical support  
 Organization and work of OP-98  
 Demonstration-Hispanic project

Mr. Brian Waters\*  
Dr. Michael West

HumRRO  
House Armed Services Committee

Profile of American youth study  
Observations about the AVF

1982

Dr. Michael Borus\*  
Dr. Wm. Bowman et al.\*  
Mr. Vincent Carroll\*  
CAPT Paul Chatelier  
Ms. Jane DePriest  
Dr. Zahava Doering  
Dr. James Downs\*  
LCOL David Evans  
Prof. Eric Flamholtz\*  
CAPT Dana French  
Mr. E. C. Grayson  
Mr. Stanley Horowitz  
Mr. Kyle Johnson  
Prof. Bruce Meglino et al.\*  
Dr. Richard Morey\*  
Mr. F. E. O'Connor\*  
Dr. Ann O'Keefe  
Professor Irwin Sarason\*  
Dr. Steve Sellman  
Dr. Joyce Shields  
Dr. H. Wallace Sinaiko\*  
Prof. Stanley Stephenson\*  
Col. Edwin Wilson

Ohio State University  
U.S. Naval Academy & Potomac Institute  
University of Pennsylvania  
OUSDR&E  
OP-141D  
OASD(MRA&L)  
Development Research Associates  
OASD(MRA&L) U. S. Marine Corps  
University of California  
OP-15  
DASN(M)  
Center for Naval Analyses  
DMDC  
University of South Carolina  
Duke University  
Information Spectrum, Inc.  
OP-152  
University of Washington  
OASD(M&RA)  
Army Research Institute  
Smithsonian Institution  
Penn State University  
Air Force Human Resources Lab

National Longitudinal Surveys  
Overview of lateral entry study  
Experiment on recruiting resources  
Developments in MPT R&D  
Compensation policy  
Profile of American youth  
Naval personnel-cultural/historical  
Defense readiness equation  
Human resources accounting  
Human resources mgt. support  
Navy Battle Group concept  
Manpower research at CNA  
National longitudinal youth survey  
Marine enlisted personnel attrition  
Summary of multi-year research  
Aviation officer requirements model  
Navy family service centers  
USMC drill instructors  
Profile of American Youth  
Manpower/Personnel Research Lab  
Report on 1982 TTCP meeting  
Prior service enlistment  
Manpower and Personnel Division

1983

Dr. Rob Akscyn\*  
Professor Colin Ash  
Dr. Jules Borack et al.  
Dr. David Bowers\*  
Dr. Kenneth Coffey  
Dr. Kathleen Fernandes  
Dr. John Frederiksen\*  
CAPT Tom Hale  
Mr. Carl Kannapel  
Dr. George Kettner\*  
Mr. William Lindahl  
Prof. Roger Little et al.  
CDR Lee Mairs  
Dr. Barbara Means\*  
Professor Irwin Sarason\*  
Mr. Irwin Schiff  
Dr. Bradley Schiller\*  
Dr. Thomas Sicilia  
Dr. R. G. Smith, Jr.

Carnegie Mellon University  
University of Reading  
Navy Personnel R&D Center  
University of Michigan  
General Accounting Office  
Navy Personnel R&D Center  
Bolt, Beranek & Newman, Inc.  
OP-134  
CRUITCOM  
Information Spectrum, Inc.  
ODASN (M)  
United States Naval Academy  
OP-01B3  
HumRRO  
University of Washington  
OP-115  
Potomac Institute  
OASD(MRA&L)  
OP-987

The ZOG Project  
Econometric analysis of AVF  
GASP (analysis of survival)  
Project UPGRADE  
Military compensation  
Project RETAIN  
Advances in literacy remediation  
R&D for compensation issues  
Applications of research  
Project UPGRADE  
Informal talk  
Conference: AVF after a decade  
Economic Analysis Branch  
Educ. & Biographical Info. Survey  
Stress coping and DI's  
Research, Development & Studies  
Navy reenlistment patterns  
AVF after a decade  
Technology assessment

Professor Harry Triandis\*  
Mr. Bernard Udis

University of Illinois  
University of Colorado

Hispanic recruitment, retention, etc.  
Econometric analyses of AVF

1984

Prof. Leland Beik et al.\*  
Mr. Martin Binkin  
Professor Darrell Bock\*  
Dr. Robert Carroll  
Dr. Richard Elster  
Dr. Jean Fletcher  
Dr. Lawrence Goldberg\*  
Mr. Robert Goldich  
CAPT Bruce Herbert  
LCOL Mike Hester  
Professor Lawrence James\*  
Dr. George Kettner\*  
Dr. David Kieras\*  
LCDR James LaRocco  
Dr. Michael Laurence  
Dr. Barbara Means\*  
Dr. Del Nebeker  
Dr. Ann O'Keefe  
Mr. Murray Rowe  
Dr. Steve Sellman et al.  
Mr. Robert Sniffin  
Dr. Sabra Woolley  
MAJ Frank Yohannan

Penn State University  
Brookings Institution  
University of Chicago  
OP-01B7  
DASN(M)  
Center for Naval Analyses  
Economic Research Laboratory, Inc.  
Congressional Research Service  
OP-646  
MPI-20  
Georgia Institute of Technology  
Information Spectrum, Inc.  
University of Arizona  
NAVMEDCOM  
DMDC  
HumRRO  
Navy Personnel R&D Center  
OP-152  
Navy Personnel R&D Center  
OASD(M&RA)  
OCPM  
SRA Technologies  
MPI-20

Prior service personnel  
America's Volunteer Military  
Item factor analysis  
Master plan: Navy manpower R&D  
Bureaucracy, policy, management  
Active & Reserve force manpower  
Economic Early Warning  
Changing perceptions in military  
Reserves  
Manpower resources  
ASW teams effectiveness  
Project UPGRADE  
Computerized readability system  
Leadership Management-LMET  
Attitude Tracking Survey  
Educ. & Biographical Info. Survey  
Organization systems simulation  
Navy family service programs  
Officer force management R&D  
Accession policy  
NAVMAT civilian personnel  
Roadmap for civilian-military pers.  
CAT program

1985

Mr. David Atwater  
Professor Lee Beach\*  
CAPT C. J. Bustamante  
CDR Fenton Carey  
CAPT Paul Chatelier  
Dr. Kenneth Coffey  
CAPT Richard Curley  
CAPT Mike Curran  
Dr. Steve Dockstader  
Dr. Richard Elster  
CAPT Ted Fenno  
Prof. Cynthia Fisher et al.\*  
Professor Eric Flamholtz\*  
Dr. John Frederiksen\*  
Dr. Lawrence Goldberg\*  
Lt. Col. D. A. Harris  
MAJ R. R. Harris  
CDR John Imperato

Navy Personnel R&D Center  
University of Washington  
Office of Chief of Naval Operations  
OP-00K  
OUSDR&E  
Naval Postgraduate School  
OP-135  
Office of Naval Research  
Navy Personnel R&D Center  
DASN(M)  
OP-11H  
Texas A&M University  
University of California  
Bolt, Beranek & Newman, Inc.  
Economic Research Laboratory, Inc.  
OASD(M&RA)  
MPI-20  
OSD Yarmulke Panel

Integrating officer selection  
Decision aid for career counseling  
Minority officer accessions  
Task force on education  
Congressional budget actions  
MPT Analysis Chair  
Enlisted programs implementation  
Farewell address to the troops  
Navy logistics productivity  
Ambiguities, priorities, mechanisms  
Total force training  
Adjustments to personnel transfer  
Human resources accounting  
Computer-based instruction-reading  
Recruitment early warning system  
Job performance measurement  
Roles of OP-00K  
Religious practices in the military

Mr. Carl Kannapel  
 Dr. Jerry Laabs  
 Dr. Michael Laurence  
 Mr. G. W. Lewis  
 CDR Lee Mairs  
 Mr. Douglas May  
 Dr. J. S. McMichael  
 Dr. Barbara Means et al.\*  
 Dr. Richard Morey\*  
 Dr. Aline Quester  
 Prof. Ben Schneider\*  
 Dr. Steve Sellman  
 Mr. Robert Sniffin  
 Ms. Lynda Wheeler

CRUITCOM  
 Navy Personnel R&D Center  
 DMDC  
 Navy Personnel R&D Center  
 OP-01B3  
 ODASN(M)  
 Office of the Chief of Naval Operations  
 HumRRO  
 Duke University  
 Center for Naval Analyses  
 University of Maryland  
 OSD's Accession Policy Office  
 NCPC  
 OP-140

Utilization of ONR research  
 Job performance measurement  
 Attitude Tracking Survey  
 On-the-job performance predictions  
 Economic analysis research  
 General comments  
 Work of OP-98  
 Suitability for military service  
 Delayed entry programs  
 AVF outlook for the 80's & 90's  
 Work facilitation  
 Suitability screening  
 Logistics productivity R&D  
 Family service ROADMAP

1986

Dr. Robert Archer\*  
 Mr. Tom Blanco  
 Dr. Robert Carroll  
 CAPT Paul Chatelier  
 Dr. Kenneth Coffey  
 Dr. Robert Crain et al.\*  
 Dr. Paul Gade  
 Dr. John Gardenier  
 Ms. Jan Hart  
 Dr. Robert Hayles  
 Prof. Lawrence James\*  
 Mr. Carl Kannapel  
 Dr. Samuel Landau  
 Dr. William Maloy  
 Mr. Douglas May  
 Mr. Charles McPeters  
 Dr. Amiel Sharon  
 Dr. Thomas Sticht  
 Mrs. Alice Stratton  
 CAPT Rick Titus  
 Mr. John Turley  
 Dr. Wallace Wulfeck

Eastern Virginia Medical School  
 Navy Personnel R&D Center  
 OP-01B7  
 OUSDR&E  
 Naval Postgraduate School  
 Johns Hopkins University  
 Army Research Institute  
 United States Coast Guard  
 OP-11HD  
 OASN  
 Georgia Institute of Technology  
 CRUITCOM  
 Navy Personnel R&D Center  
 CNET Headquarters  
 ODASN(M)  
 OP-01B2P  
 NAVSEASYSKOM  
 Naval Postgraduate School  
 DASN(P&FM)  
 OP-00D  
 Ackman Associates  
 Navy Personnel R&D Center

Deployment effects on families  
 EPANS  
 OP-01 R&D master plan  
 MPT budget matters  
 Reflections on NPS MPT Chair  
 Productivity-naval aviation training  
 Army Experience Survey  
 Personnel research  
 Total Force training  
 View from OASN(R&E&S)  
 ASW team effectiveness research  
 FY85 accessions experiences  
 TQM at Navy industrial sites  
 CNET organizational changes  
 Secretariat perspectives  
 Navy long-range MPT strategy  
 Training in shipyards  
 Cast-off youth  
 Family Service Programs  
 Agenda for Personal Excellence  
 HARDMAN  
 Training technology research

1987

Dr. Earl Alluisi  
 Mr. David Atwater  
 Ms. Leanne Atwater  
 Dr. Kenneth Coffey  
 CDR Sandi Christensen  
 LCDR Tom Crosby  
 Mr. Steven Cylke  
 Dr. Richard Elster

OUSDR&E  
 Navy Personnel R&D Center  
 United States Naval Academy  
 DASN(Manpower)  
 NMPC-02CC  
 NAVAIRSYSKOM  
 OP-01B3  
 DASN(Manpower)

Training and Personnel Technology  
 NROTC admission procedures  
 Behavior, stress, etc.  
 Daugherty Committee  
 R&D at NMPC  
 Cockpit info. and PANDA  
 Cost Analysis Research Group  
 Outgoing review of Secretary Webb

Professor John Fitzgerald	United States Naval Academy	Pre-service delinquent behavior
Professor Steve Frantzich	United States Naval Academy	Individuals and organizations
LCDR Gary Habel	OP-01B2	Navy enlisted rotation system
LCDR Thomas Hilton	NSHS	Health Services Research
Professor Barbara Hutson*	Virginia Polytechnic Institute	Procedural directions
Mr. Carl Kannapel	CRUITCOM	JMARC and 10-Pt. papers review
Mr. Patrick Lerro	Syllogistics, Inc.	CAT Development
Professor Roger Little	United States Naval Academy	Planned manpower research
Ms. Jeri Marlowe et al.*	Mental Research Institute	Sources of stress in navy families
CDR Mike McFee	OP-135	Measurement of job performance
Dr. Richard Morey*	Duke University	Delayed Entry Program
Professor Ben Morgan*	Old Dominion University	Team evolution-maturation (TEAM)
Dr. William Murray*	FMC Corporation	Intelligent tutoring systems
Dr. Richard Niehaus	OP-160	IRM in OP-01
Dr. Nancy Perry	CNET	Training Tech Implementation
Ms. Susan Pinciario	Navy Personnel R&D Center	Forecasting PCS requirements
Dr. Barry Riegelhaupt*	HumRRO	EBIS
Dr. Eduardo Salas	NTSC	TEAM
Mr. Drew Sands	Navy Personnel R&D Center	CAT-ASVAB R&D
Dr. Carl Schneider	United States Naval Academy	R&D at the Academy
Prof. James Shaw et al.*	University of Baltimore	Performance feedback & appraisal
Dr. Perry Thorndyke*	FMC Corporation	Intelligent tutoring systems
MAJ Dewey Tucker	U.S. Marine Corps	Research & studies program
Professor John Warner	United States Naval Academy	Econometrics of enlistment supply
Dr. Wallace Wulfeck	Navy Personnel R&D Center	CAI(Computer Assisted Instruction)

1988

Professor Bernard Bass*	SUNY at Binghamton	Forecasting leadership performance
Dr. David Bowers*	University of Michigan	Performance and readiness
Dr. Kenneth Coffey	DASN(M)	Current legislation affecting Navy
Dr. Carson Eoyang	PERSEREC	Defense personnel security
Professor T. Govindaraj*	Georgia Institute of Technology	Intelligent tutoring aid
Professor Robert Hogan*	University of Tulsa	Team performance
Professor David Johnson*	University of Minnesota	Team learning in navy training
Professor Gavan Lintern*	University of Illinois	Unconventional visual displays
Professor George Miller*	Princeton University	WordNet
Dr. Timothy Niblett*	Turing Institute	Navy personnel assignment models
Dr. Eduardo Salas	NTSC	Team performance
Mr. Joseph Silverman et al.	Navy Personnel R&D Center	Navy personnel assignment models

1989

Professor Thomas Bever*	University of Rochester	Making text comprehensible
CDR Guy Carrier	CRUITCOM	Recruiting research coordination
Dr. Kenneth Coffey	DASN(M)	Turnover in the Secretariat
Professor Paul Feltovich*	University of Illinois	Independent duty corpsman
Professor Clark Glymour	Carnegie Mellon University	Computer aided diagnosis
Professor T. Govindaraj*	Georgia Institute of Technology	Qualitative simulation



Professor George Miller\* Princeton University  
 Dr. Robert Morrison Navy Personnel R&D Center  
 Dr. William Murray\* FMC Corporation  
 Dr. Dave Robertson Navy Personnel R&D Center  
 Dr. Dan Sewell\* Search Technology, Inc.  
 Dr. Nicholas Van Matre Navy Personnel R&D Center  
 Dr. Wallace Wulfeck Navy Personnel R&D Center

WordNet  
 Aviation retention models  
 Intelligent tutoring systems  
 Occupational physical standards  
 Graphic displays for maintenance  
 Computer networks in training  
 Making text comprehensible

1990

Dr. David Alderton Navy Personnel R&D Center  
 Dr. Herbert Baker Navy Personnel R&D Center  
 Dr. Meryl Baker OP-01  
 Professor Thomas Bever\* University of Rochester  
 Dr. William Bowman United States Naval Academy  
 Professor Fritz Drasgow\* University of Illinois  
 Professor T. Govindaraj\* Georgia Institute of Technology  
 CDR Bruce Holdt OP-136  
 Mr. Carl Kannapel CNRC  
 Prof. Michael Levine et al.\* University of Illinois  
 Professor Roger Little United States Naval Academy  
 Dr. James McMichael Office of the Undersecretary of Defense  
 Mr. Charles McPeters OP-012P  
 Mr. Robert Silberman ODASN(M)  
 Dr. Lawrence Stricker\* Educational Testing Service

Validation of new selection tests  
 Stress management  
 Current manpower issues  
 Phrase sensitive formatting  
 Experience--job performance  
 Polychotomous measurement  
 Complex dynamic systems  
 Recruiting Information Delivery  
 JMARC summarization  
 Polychotomous measurement  
 Comparing wives' earnings  
 Acquisition training in DOD  
 Management initiatives  
 Navy manpower: priority concerns  
 Response latency measures

1991

Dr. Meryl Baker OP-01  
 Dr. Richard Barnes et al. General Accounting Office  
 Prof. Pat Carpenter et al.\* Carnegie Mellon University  
 Professor Richard Coulson\* Southern Illinois University  
 Professor Clark Glymour\* Carnegie Mellon University  
 Dr. Douglas Jones\* Rutgers University  
 Professor Marshall Jones\* Pennsylvania State University  
 Dr. Jeff Kennington\* Southern Methodist University  
 Mr. Charles McPeters OP-012P  
 Mr. Theodore Thompson Navy Personnel R&D Center  
 Dr. Wallace Wulfeck Navy Personnel R&D Center  
 Professor Jan Zytkow\* Wichita State University

Experience as science advisor  
 Military training  
 Visual thinking  
 Conceptual knowledge foundations  
 The TETRAD Project  
 Optimal sequential designs  
 Performance test theory  
 Optimizing personnel assignment  
 History of CNP Science Advisors  
 Experience as science advisor  
 Experience as science advisor  
 Database Explorer

1992

Mr. David DuBois\* Personnel Decisions Research Institute  
 Dr. Jack Edwards Navy Personnel R&D Center  
 Professor Robert Hogan University of Tulsa  
 Prof. Michael Mumford\* George Mason University  
 Dr. Wm. Rouse et al.\* Search Technology, Inc.  
 Dr. Kent Williams\* Virginia Polytechnic Institute

Job knowledge test design  
 Surveying by computer  
 Building effective teams  
 Adapting to new situations  
 Big graphics and little screens  
 Intelligent tutoring systems

1993

Prof. Pat Brockett et al.*	University of Texas	Navy training pipelines
Professor David Budescu*	Haifa University	Unidimensional item pools
Professor Fred Collopy*	Case Western Reserve University	Rule-based forecasting
Dr. Jack Edwards	Navy Personnel R&D Center	Experience as science advisor
Dr. Jeff Kennington*	Southern Methodist University	Personnel assignment optimization
Dr. Pat Mackin*	SAG Corporation	Retention behavior of 6-yr. recruits
Dr. Steve Sorensen	Navy Personnel R&D Center	Optimizing navy training schedules
Dr. Kent Williams*	Virginia Polytechnic Institute	Intelligent tutoring systems

## APPENDIX B

### Annotated Bibliography

#### Smithsonian Technical Reports

1. **"Cost benefits of Navy Recreation: Summary of a Conference,"** H. W. Sinaiko and R.W. Graham, August 1974. Report of a one-day meeting convened at the request of Navy Bureau of Personnel recreation program administrators to address two issues: a) evidence that would support the benefits of Navy recreation programs, and b) gaps in that body of information that could be filled by research. Briefings dealt with the nature of navy recreation, profiles of the people for whom recreation programs are targeted, perceptions of Special Services managers regarding current and anticipated problems in navy recreation, cost-benefit techniques used in the Navy and in non-military programs; and the sociology of leisure and recreation. Outcomes of the meeting included: a taxonomy of issues facing navy recreation, an enumeration of policies that needed to be re-examined in light of the changing nature of the force, identification of unresolved management issues and innovative approaches to correct them, and action recommendations.

2. **"Perspectives on Attitude Assessment: Surveys and their Alternatives,"** H. W. Sinaiko and L. B. Broedling, (Eds.) August 1975. Proceedings of a three-day conference on innovative alternative approaches to traditional survey methods. Eighteen papers were commissioned, from an interdisciplinary group of scholars, and presented at the meeting. Participants, in addition to the main presenters, included about 65 people from navy and other defense behavioral science research establishments, academia, and non-military government agencies. In addition, special interest groups met during the conference to permit in-depth technical discussions. The meeting was jointly sponsored by ONR and the Navy Personnel Research and Development Center and it was held in Santa Fe, New Mexico. (Also published as a book by Pendleton Press, September 1976)

Formal presentations, each appearing as a chapter in the report, were: an admiral's perspectives on the importance of measuring attitudes of navy personnel; an overview of survey programs in the Navy and other services; a review and defense of conventional survey methods; the institutionalization of survey research and some alternative approaches; legal and ethical issues in surveys; current legislative constraints on surveys and, in general, all statistical studies; the utility of field experiments in complementing surveys; an update on "unobtrusive measures" as alternatives to surveys; observational methods in tracking societal trends; systematic social observation in theory testing; the use of archeological methods in understanding contemporary cultures; uses of physical measures -- body temperature, voice tremor, patterns of looking and talking -- to assess attitudes; applications of ECHO, a technique for estimating value systems in familiar and unfamiliar cultures; the randomized response technique for measuring attitudes toward highly sensitive issues; controlled experiments for testing personnel policies; research settings, subject populations, and independent variables in attitude assessment; and, a review of the main themes of the meeting (e.g., over-dependence on survey methodology

in social science research, barriers to methodological innovation, selection of methods, feedback, ethical issues, and privacy vs. public need for information).

3. **"First Term Enlisted Attrition: Proceedings of a Conference," Vol. I: Papers.** H. W. Sinaiko (ed.) June 1977. Compilation of twenty-six formal presentations at a conference sponsored by the Office of the Secretary of Defense and the Office of Naval Research, and organized by the Smithsonian. The meeting was held in Leesburg, Virginia. Purposes of the meeting were: a) to review what was known about personnel attrition -- magnitude, trends, costs, and management; b) to learn about relevant research, inside and outside of the DoD, that could be useful in reducing attrition; and c) to identify gaps in knowledge that could be addressed by R&D. Participants included uniformed representatives of each Service, civilian scientists and research managers from the Services' personnel directorates, academic scientists, and contractors who were currently working on attrition-related matters. Technical papers were presented, small workshops convened, and a panel of flag officers discussed their concerns. (See following entry.)

Some of the principal topics of the presentations were: changing expectations of military service, trends in first-term attrition, enlisted attrition policies and practices, Canadian Forces research applications, absorbing newcomers, organizational commitment and attrition, post-high school dropouts and stayers, a longitudinal study of attrition in the Marine Corps, job changing behavior among young civilians, a private company's approach to turnover, attrition rates among minority personnel in the DoD, coping skills and the reduction of attrition, the Navy's voluntary release program, cost impacts of attrition, and Air Force identification of high attrition risk personnel.

4. **"First Term Enlisted Attrition," Vol II: Summary.** H.W. Sinaiko. August 1977. A summary of the outcomes of the conference (shown as item 3 above) presented as 11 candidate areas for research, and a like number of policy and action recommendations. Among the former were: organizational issues, recruiting, job change and mobility, new data requirements, the job (redesign, enrichment, training), personnel management, special training approaches, predicting attrition, human factors engineering, societal trends, and the economics of attrition. Policy and action recommendations addressed the following topics: defense missions, easy discharge programs, up or out career progression, rotation, personal rights and entitlements, special concessions, literacy training, enlistment contracts, brief enlistments, inter- and intra-service transfers, and unit management techniques.

5. **"Operational Decision Aids: A Program of Applied Research for Naval Command and Control Systems."** H.W. Sinaiko. July 1977. Reviews the Operational Decision Aids (ODA) Project of the Office of Naval Research: objectives, history, approach, and progress. Summarizes research in two domains -- support activities (e.g., development of tactical warfare scenarios, case studies of command and control systems, development of a general purpose laboratory test facility), and prototype decision aids (e.g., "outcome calculators," innovative displays of risk in tactical decision-making situations, automatic alerters or warnings). Discusses the extent to which ODA objectives had been met and

raises issues having to do with the use of decision aids in task force operations. Emphasizes the importance of experimentation with prototype aids.

6. **"Marine Corps and Navy Manpower: Requirements and Considerations."** H.W. Sinaiko and V.R. Hayles. June 1978. Summarizes a conference on research dealing with demographic trends inimical to naval recruiting. Main topics considered by panels of conference participants were: physical and mental standards, civilianization and direct procurement, under-utilized subpopulations, and organizational factors. The conference was held in Leesburg, Virginia.

7. **"Assessment of Attitudes and Opinions."** H.W. Sinaiko, and N.D. Glassman. July 1978. Review and summary of a meeting on the assessment of attitudes and opinions, with the main focus on innovative methodologies. Workshops considered survey needs in these areas: utilization of women, unionization, family services, and work incentives and productivity. One of the main outcomes of the meeting was an enumeration of candidates for research support that would lead to new methods for assessing attitudes, e.g., observing vs. surveying, retrospective pre-testing, exploitation of archival data, longitudinal databases, consumer panels, expert consultant data banks, and synthetic organizations used to probe expectancies and values. The meeting was held in Annapolis, Maryland.

8. **"Management of Navy Research and Development Manpower."** W.W. Cooper, H.W. Sinaiko, and N.E. Glassman. January 1979. Summarizes a one-day conference, convened at the request of the Navy's R&D Secretariat, that brought together navy and academic managers of scientific laboratories. Participants presented and discussed formal papers on these issues, among others: the optimal mix of support and technical staff, applications of quantitative techniques to reduce subjective judgement in the management of laboratory manpower, estimating navy R&D manpower requirements, and alternate models of laboratory management. The report also contains statements by four academic consultant-participants. The conference was held in Arlington, Virginia.

9. **"Naval Personnel Supply: Report of a Workshop."** H.W. Sinaiko, H.A. Levien, and R. B. Grafton. September 1979. A two-day workshop on the supply of personnel to the Navy and Marine Corps was convened to address two factors counterproductive to recruiting high quality volunteers: the current "demographic trough" that characterized the availability of 17- to 21-year-old candidates for naval service and competition for entry level youth from non-military government programs. Deputy Assistant Secretaries from the Office of the Secretary of Defense and the Department of the Navy provided their perspectives and formal presentations were made by six academic and industry consultants. The latter talks covered personnel supply modeling, population trends and labor market participation, covariance of earnings and population, recruiting resources effects on enlistments, individuals' career choices, and industrial human resource planning practices. The workshop took place in Arlington, Virginia.

10. **"Department of Defense and Navy Personnel Supply Models."** J.A. Cirie, J.J. Miller, and H.W. Sinaiko (eds). May 1981. Models used to predict the supply of manpower to the military services differed in their outcomes. The Deputy Assistant Secretary of the Navy (Manpower) requested a technical analysis of several of those

models and three academic consultants were engaged to that end. A conference was held to present the consultants' analyses. Relevant papers were also given by academic and government scholars expert on manpower modeling. The conference took place in Arlington, Virginia.

11. **"Military Personnel Attrition and Retention: Research in Progress."** H.W. Sinaiko, P.R. Chatelier, *et al* (eds). October 1981. In 1981 a workshop sponsored by the Office of the Secretary of Defense brought together researchers from government, academia, and corporate laboratories who were working on personnel attrition and retention problems. The purposes of the meeting were to discuss progress, methodological problems, tentative findings, and plans for future work. The conference was held in Santa Monica, California.

Summaries of the 21 presentations are included. These issues are among the topics discussed: a) a shift from research efforts focused on the individual, i.e., characteristics predictive of who would drop out, to the study of organizational factors in attrition; b) the uses of comprehensive databases; c) the study of cohorts, an effort that led to strategies for handling high-risk, attrition prone individuals; d) the effects of interactions between recruits and the styles of leadership to which they were subjected; e) experiments on new intervention programs; f) occupational factors; g) retention of career personnel; and h) the use of attitude measures in predicting attrition-proneness.

12. **"Manpower Issues of the Eighties: An Agenda for Research."** H.W. Sinaiko. Technical Memorandum No. 2, April 1982. A joint memorandum, distributed Navy-wide from the Chief of Naval Research and the Deputy Assistant Chief of Naval Operations for Total Force Management, requested point papers from headquarters and fleet commands. ONR's Manpower R&D Planning Committee reviewed over 100 responses and a meeting was held at the University of Maryland to consider the extent to which operational perspectives were (or should have been) addressed by research.

This paper summarizes the conference, with emphasis on issues judged to be amenable to new R&D agendas that could be put in place in the 1980s. Priority issues included: manpower as a critical component of weapon systems, societal change, performance evaluation of naval personnel, manpower applications of computer technology, recruiting from an older age range, officer recruitment, dealing with the new morality (e.g, inculcating into recruits positive attitudes toward naval service), human resources accounting, and computer-assisted instruction. Other, less urgent issues were: improving performance of the Recruiting Command, managing training, managing special manpower problems (e.g., mobilization, retention, dual military career patterns), family matters, leadership, and productivity measurement.

13. **"Proceedings of the Joint Service Workshop on Recruiter Productivity."** B.E. Goodstadt, G.T. Sicilia, and H.W. Sinaiko. May 1983. Documents major presentations and discussions that took place during a meeting at the Naval Postgraduate School. Purposes of the meeting were to discuss productivity measurement and to identify significant gaps in our knowledge of factors affecting recruiter performance. Twelve papers were organized into three main topics: current practices and problems of measuring and

managing productivity, new data sources and data bases, and analytic studies of recruiter productivity.

14. **"Productivity Programs and Research in U.S. Government Agencies."** B.T. King, A.W. Lau, and H.W. Sinaiko (eds). December 1983. Summarizes a meeting, convened by the Organizational Effectiveness program of the Office of Naval Research, on productivity in the federal sector. The meeting was held in Arlington, Virginia. The objective was to bring together productivity-enhancement researchers and managers so that they could exchange information on their respective programs, and identify issues and problems that would benefit from new or expanded research. Eighteen papers were presented by speakers from the American University Graduate School of Business Administration, the National Science Foundation, the Army Material Command, NASA, the GAO, Air Force Human Resources Laboratory, the Department of Labor, the Office of the Secretary of Defense, the Department of Education, the Navy Personnel Research and Development Center, and the Naval Material Command.

15. **"Hispanic Subpopulations and Naval Service."** H.W. Sinaiko, P.M. Curran, *et al.* (eds). May 1985. A workshop brought together researchers, personnel managers, and policymakers to address problems of Hispanic Americans and naval service. Among the questions addressed were: What do we know about the predilections of Hispanic Americans to serve in the military? What are the barriers to naval service in that group? How do Hispanics differ from other subpopulations in the ways they perceive military service? What can the naval services do to increase Hispanic participation? The workshop took place in Arlington, Virginia.

There were six formal presentations: A demographic overview of Hispanic America, cultural patterns of Hispanics vis-a-vis military service, psychocultural findings, historical data on Hispanics in the U.S. military, education and training for Hispanic subpopulations, and career patterns. Personnel policy implications focused on English language competency, special recruiting appeals that took into account unique Hispanic cultural factors, attainment of equal opportunity goals, and "mutual adaptation" vs. "acculturation."

16. **"Reserve Manpower, Personnel and Training Research: Proceedings of a Workshop."** H.W. Sinaiko and K.J. Coffey (eds.) September 1986. Summarizes a three-day conference on personnel issues affecting the "part-time force." Significant differences between active duty and reserve personnel were highlighted. Topics addressed in formal presentations included: the supply of people to reserve forces, personnel retention, training, the individual ready reserve, utilization of reserve units, comparative costs of active and reserve units, available reserve personnel databases, psychological and social issues, and some current research programs. The conference was held at the Naval Postgraduate School in Monterey, California.

## **TTCP Reports<sup>1</sup>**

17. **"Enlisted First-term Attrition: Literature Review and Discussion."** M.F. Wiskoff, D.C. Atwater, M.M. Houle, and H.W. Sinaiko. June 1980. Reviews archival literature and technical reports on personnel attrition in the military forces of Australia, Canada, the UK, and the United States. Discusses trends and shifts in research focus. Recommends a conceptual framework that will provide more coherent direction to research on personnel attrition, reviews statistical and other analytical techniques, and recommends a more multidisciplinary approach in order to be maximally useful in developing policy.

18. **"Attrition in the Armed Services of Canada, the UK, and the U.S.: A Collaborative Study."** H.W. Sinaiko, K.C. Scheflen, *et al.* October 1980. Report of a cross-national analysis of first-term enlisted attrition in the armed forces of Canada, the UK, and the United States. Background information included age at entry, educational level, mental ability, and military occupation. Complete cohorts of men who entered the service during 1974-75 were tracked for three years. While overall attrition rates in the three countries were not dissimilar, the timing of personnel losses differed. Age at entry also differentiated attriters. A significant predictor of premature loss was prior education: non-high school graduates were twice as likely to drop out as were graduates; the effect held across all three nations. A natural experiment in which the U.S. Army and U.S. Marine Corps reversed their policies on easy release from obligated service was reported.

19. **"Correlates of First Term Attrition: A Comparison Across TTCP Nations."** H.W. Sinaiko, K.C. Scheflen *et al.* December 1982. This was the second in a series of studies of entering cohorts of men and women in the forces of Canada, Australia, New Zealand, the UK and the United States. Individuals were tracked for three years and attrition rates analyzed. Officer loss rates were also compiled for New Zealand and the United States.

Findings indicated that attrition was related to military occupation among Canadian, British, and American personnel, e.g., combat arms personnel losses were relatively high compared with those in technical occupations. Age at entry was a factor among New Zealand personnel, with younger entrants tending toward higher loss rates.

20. **"Part-Time Soldiers, Sailors and Airmen: Reserve Force Manpower in Australia, Canada, New Zealand, the UK, and the U.S."** H.W. Sinaiko. May 1985. Describes some characteristics of part-time (i.e., reserve, Guard, and militia) military people who serve in organized, drilling units. Personnel research on reserve personnel is reviewed, primarily in the Australian and New Zealand defence forces. Major issues treated are: seasonal factors (Canada), effect of NCO leadership on morale and retention (New Zealand, reasons for leaving (UK), and high post-training attrition rates (United States). Statistical data is presented for reserve personnel in all five countries.

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<sup>1</sup> The Technical Cooperation Program (TTCP) is a consortium of defense research organizations from Australia, Canada, New Zealand, the United Kingdom, and the United States. The reports cited in this section were collaborative efforts.



21. **"Reading and Writing: Literacy Issues in the Armed Services of TTCP Nations."** H.W. Sinaiko. August 1986. Summarizes a collaborative investigation of the prevalence and nature of literacy problems in Australian, Canadian, New Zealand, UK, and U.S. forces. More specifically the inquiry sought to: explore the magnitude of literacy deficits ("literacy" defined to include reading and writing abilities); estimate their effects on performance; learn how literacy is assessed at the point of entry into the Services; and understand the policies that dictate how literacy problems were handled.

Outcomes of the project were as follows. Australian, New Zealand and U.S. forces did report literacy problems, as did the Royal Navy and the RAF. Canadian Forces excepted, all the countries used tests to screen applicants' abilities to read. Few reading problems were reported among officers, but there was evidence of writing deficiencies. Literacy deficiencies were handled in a variety of ways, ranging from separation to remediation programs (some of the latter being self-study programs). No country cited literacy standards specific to military occupations. Given the then-anticipated diminution of the manpower pool, it was predicted that future entry standards might have to be compromised and more remediation provided to correct literacy deficits. Military equipment could be expected to increase in complexity, suggesting an increased dependence on a highly literate force.

22 - 29. **Annual Meeting Minutes of Technical Panel UTP-3, Military Human Resource Issues, The Technical Cooperation Program.** H.W. Sinaiko (ed.) 1984, 1985, 1986, 1987, 1988, 1989, 1990, and 1991. These reports summarized both technical and administrative outcomes of the annual panel meetings. Illustrative of the issues with which the panel dealt over the years shown are: officer entry selection; widening the manpower base; uses of biographical information in screening applicants; military service as a socialization agent; the interview as a selection technique; the management, selection and training of recruiters; military families and retention; women in combat; increasing the employment of military women; prediction of job satisfaction and attrition; policy-capturing methodology; cognitive ability testing; computer-based and computer adaptive testing; military occupational structures; officer shortages; changing youth labor markets; survey research and military populations; performance appraisal; global demographic trends; ethnic participation; recruiter productivity; manpower lessons of the Gulf War; job performance measurement research; artificial neural networks in personnel selection; and measurement of productive capacity.

### Books

30. Gerver, D. and Sinaiko, H.W. eds. 1977. *Language Interpretation and Communication*. New York and London: Plenum Press. Proceedings of an interdisciplinary conference on practical and theoretical aspects of language interpretation techniques. The international body of speakers included academic psychologists, linguists, and sociologists as well as practitioners -- translators, interpreters, teachers of interpretation, and managers of language services. Practitioners represented the United Nations, NATO, the European Community, and the European Parliament. The meeting was supported by NATO's Scientific Affairs Division and was held in Venice, Italy.

31. Sinaiko, H.W. and Broedling, L.A. eds. 1976. *Perspectives on Attitude Assessment: Surveys and their Alternatives*. Champaign, Ill: Pendleton Publications. (See Item 2 above.)

32. Segal, D.R., and Sinaiko, H.W. eds. 1985. *Life in the Rank and File: Enlisted Men and Women in the Armed Forces of the United States, Australia, Canada, and the United Kingdom*. Washington: Pergamon-Brassey's. An examination of the lives and career patterns of enlisted personnel, particularly from the perspective of changes taking place in the mid-1980s. Sociologists, historians, psychologists, anthropologists, social workers, professional military officers and former enlisted personnel contributed to the volume. Among the issues covered were new rank structures brought about by technological advances, increased utilization of military women, and the emergence of the military family as a social institution.

### Miscellaneous publications

33. Sinaiko, H.W. "Officer acquisition training and professional development education." In Defense Science Board *Summary Report of the Task Force on Training Technology*. 1976. Office of the Director of Defense Research and Engineering. Report of an investigation of applications of training technology employed by ROTC, the service academies, and other officer education programs in the Department of Defense.

34. Marshall, K.T. and Sinaiko, H.W. "How are we going to keep them from going back to the farm?" Research on personnel loss in the Navy. *U.S. Navy Yearbook of Manpower, Personnel, and Training*. 1980. Washington: Deputy Chief of Naval Operations (Manpower, Personnel and Training) Summary of research-based information personnel attrition and retention.

35. Sinaiko, H.W. "European psychology and the Office of Naval Research." *American Psychologist*, 1985. An account of the contributions of psychologists who served as liaison scientists in the ONR European Branch.

36. Sinaiko, H.W. and Elster, R. "Manpower: The key ingredient." *Naval Forces: International Forum for Maritime Power*. 1989. Description of how the U.S. Navy recruits, trains, and manages its people. Major topics covered are the supply of people to the Navy, personnel screening and assignment, training and education, and special problems (e.g., attrition, officer retention, family problems, and dual careers. There is also a brief account of in-house manpower and personnel research in navy laboratories.

37. Sinaiko, H.W. "The last American draftees." *Armed Forces and Society*. 1990. Vol. 16, No. 2, Winter. An analysis of two cohorts -- approximately 158,000 volunteers and 32,000 draftees -- who entered the U.S. Army during 1973, the final year of the draft. The database incorporated a fifteen-year record of participation, including evidence about tenure and performance (defined in terms of voluntary and involuntary departures from military service). Findings generally supported the belief that few draftees extend their

service beyond that minimally required. However, a small percentage of draftees did remain in the Army for at least fifteen years and their quality and performance records equalled those of long-serving volunteers.

38. Sinaiko, H.W. "Military manpower in an era of smaller forces: Some issues and opportunities for applied psychology." *Proceedings of the International Applied Military Psychology Symposium (IAMPS)*. 1992. Topics included are strategies and policy guidelines for force downsizing, some consequences of downsizing for nations, for military forces, and for individuals who are affected. The paper focuses on new areas, brought about by force reductions, where military psychology can contribute, e.g., defining people requirements for new roles and missions, the need to expand our human capital, building new organizational cultures, occupational analysis, and life course research. The paper also urges instituting cross-national, collaborative research and suggests mechanisms for such an effort.

## APPENDIX C

### Memos Prepared for the ONR Manpower R&D Committee <sup>1</sup>

#### 1972 - 1976

ONR AVF Program Status Report <sup>2</sup>

Meeting with Mathematica Staff on Recruiting Market Research

USAF's Project Volunteer

Short Range Planning Exercise

Action Recommendations from an ONR Manpower R&D Contractor's Meeting

Evaluating Navy Recreation

Tri-Service Meeting on AVF Research

OASD (M&RA) Workshop, Sustaining the Volunteer Force

Hampton Institute, National Conference on Testing in Education and Employment

ONR Manpower R&D Program: Evidence of Impact

Recruiting for the Royal Navy

University of Michigan Symposium, Utilization of Organizational Indicator Data

Long-range Manpower Problems: Meetings with British Counterparts

ONR Manpower R&D Program Work on Personnel Attrition

Southeast Regional meeting, Inter-University Seminar on Armed Forces and Society

Some Selected Manpower Comparisons for 1972-1976

Parkinson's Law Lives: Friday Afternoon with a Slide Rule

Developments at CruittCom's Recruiting Support Department

Rand Conference, Defense Manpower

Brookings Seminar, Environmental Dynamics and Some Implications for ONR

#### 1977 - 1981

GAO Study: Recruiting for the AVF: A Summary of Costs and Achievements

Thoughts of the Friends Peace Committee *et al*: New Obstacles to Attaining and Sustaining an AVF

Biennial Conference, Inter-University Seminar on Armed Forces and Society

GAO Study: A Need to Address Illiteracy Problems in the Military Services

U.S. Military Academy Senior Conference, National Compulsory Service

TTCP Technical Panel, Military Manpower Trends <sup>3</sup>

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<sup>1</sup> This partial listing of Smithsonian memos contains about half of our output.

<sup>2</sup> Program Status Reports were generated every year.

<sup>3</sup> Memos summarizing meetings of this group covered the period from 1979 to 1993.

Navywide Retention Conference  
OUSDRE Topical Review, Manpower Modeling Research  
Some Selected Views of Secretary Brown Vis-a-vis Manpower and Personnel Matters  
NPRDC Conference, Productivity  
Mutiny and Murder: Some Aspects of Life in the U.S. Navy 175 Years Ago

Report Card on the Service Academies  
IUS Regional Conference, Air University  
Navy Counter Attrition and ONR's Contributions  
Seminar on Women in the Armed Forces  
Western Regional Conference, Inter-University Seminar on Armed Forces and Society

Conference, Work in America: The Decade Ahead  
Congressional Budget Office Seminar, Military Educational Assistance  
American Psychological Association Symposium, Struggling for Military Manpower  
Research Utilization  
TTCP Subgroup U (Behavioral Sciences)  
CNO Long Range Planning Sub-panel on Navy Manpower

Conference, The Changing Composition of the Work Force  
Mutiny: A Conference on Civil/Military Relations  
Ongoing and Planned Thesis Research in the Naval Postgraduate School's MPT Program

### **1982 - 1986**

Policy Implications of Naval Academy Report, "Socioeconomic Characteristics of the AVF"  
NPRDC Workshop, Behavioral Correlates of System Operational Readiness  
CNA Conference, Naval Manpower Research in the 1980s  
Air Force Academy Symposium, Psychology in the DoD  
OSD conference, The AVF after a Decade: Retrospect and Prospect

Biennial Conference, Inter-University Seminar on Armed Forces and Society  
Changes Confronting the Army, GEN E. C. Meyer (Ret.), Chief of Staff, U.S. Army  
The Way it Was: Some Naval Manpower Practices in the Good Old Days  
NATO Symposium, Motivation and Morale  
Defense Training Data and Analysis Center

ONR Symposium, Minorities in High-Technology Organizations  
Meetings with UK Military Psychologists  
U.S. Army Manpower Economics Conference  
Reporting the Pentagon: IUS Panel of Journalists  
Lowered Standards for Military Accessions: Second Thoughts about Marginal Personnel

Conference, Institutional and Occupational Trends in Military Organizations  
Center for Strategic and International Studies, Conference, Strategic Dimensions of  
Military Manpower  
National Security Industrial Association Conference, Factors in Systems Effectiveness  
Secretary Weinberger: The Role of the Press and National Defense  
Manpower Issues in the Naval Services: Annual Reports of the Secretary of the Navy, the  
Chief of Naval Operations, and the Commandant of the Marine Corps

Some National Manpower Trends in Science and Engineering  
Manpower Issues in the DoD: SecDef's Annual Report to the Congress, FY 1987  
Congressional Research Service Report, A Short Case for Conscription: The Political-  
Military Perspective

### **1987 - 1991**

National Defense University Workshop: Global Demographic Trends and National  
Security  
CAPT David Hart-Dyke, RN, Loss of HMS Coventry in the Falklands  
DMDC Colloquium, 1985 DoD Surveys of Military Personnel and Spouses  
OSD-ETS Conference, Job Performance Measurement Technologies  
Meeting of the Joint Market and Advertising Research Committee

Data on Navy Attrition and Long-term Retention  
Socioeconomic Trends in Manpower Policymaking: An Example from the Royal Navy  
Monitoring the Future: Trend Data on Drug Use, Drinking, and Smoking  
Combat Roles for Military Women  
Soviet Military Power

National Survey of Young Adults  
Eastern Europe at Year's End: Some Thoughts from an Unexpected Source  
Mr. Ben Wattenberg, American Enterprise Institute, Global Economics in the Nineties  
OSD's FY 1991 Manpower Requirements Report  
Peace May Not Mean the End of Civilization as We Have Known it

Organizational Downsizing  
Something Interesting Came Through the (E-mail) Transom  
Conference: Education's Role in the Restructuring of Defense and Other Industries  
CNO's Training Message  
The DoD Youth Tracking Study: Some Recent Findings

### **1992 - 1994**

State Committee of the Russian Federation on Defense, Conference: The Armed Forces  
and Military Service in a Democratic Society  
Training in the Navy: How many are trained? How much does it cost?

U.S. Army DCS/PER Conference, Marching Toward the 21st Century  
Army Research Institute Workshop: Sociocultural Designs for the Future Army  
Defense Manpower Data Center, Workshop: ASVAB Revision  
Undercurrents in the Force Drawdown  
With Difficulty by a Stout Englishman

Undergraduate Backgrounds of Naval Officers: Commissioning Source and Return of  
Service

Reactions to Mobilization in the Gulf War: A Survey of U.S. Naval Reserve Physicians  
Prof. Charles Moskos, Northwestern University: Armed Forces and Postmodern Society  
SecNav O'Keefe: New Naval Strategy (Implications for MPT Research)  
Military Testing Association Conference

Questions about Homosexual Exclusion Put to President Clinton

Congressional Research Service, Naval Force-Structure Planning: Breaking Old Habits of  
Thought

GEN Max Thurman, Vice Chief of Staff, U.S. Army (Ret.): The Presidential Commission  
on Women in the Armed Forces

Dr. Brian Waters, HumRRO: "it Ain't over till It's Over: Implementing Behavioral  
Science R&D," Address to the American Psychological Association Conference  
Commemorating the 20th Anniversary of the All-Volunteer Force

Navy Manpower: Some Stats