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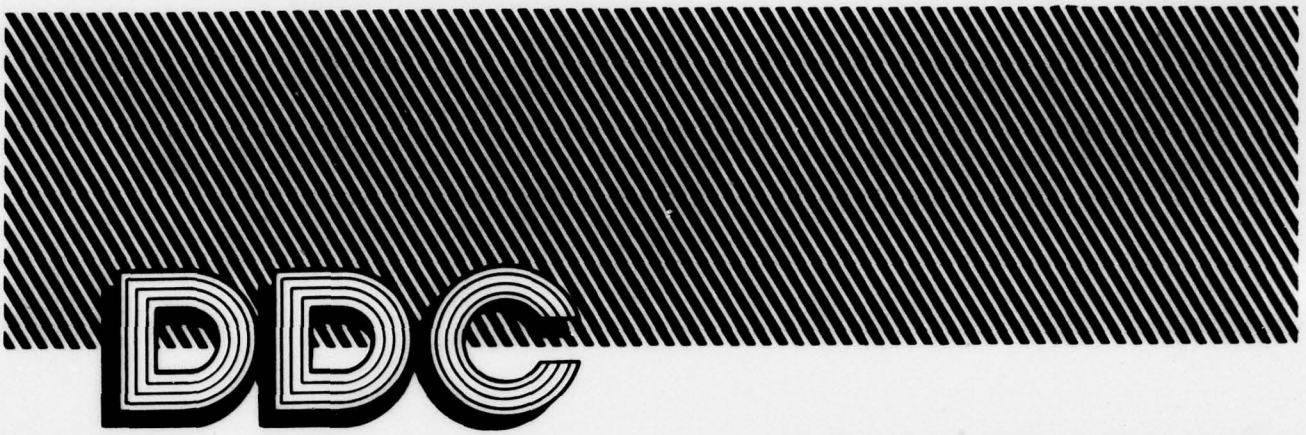

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DDC-TOS	2. GOVT ACCESSION NO. AD-	3. RECIPIENT'S CATALOG NUMBER
4. TITLE *(and Subtitle)* INNOVATION		5. TYPE OF REPORT & PERIOD COVERED Bibliography Aug. 1964 - Sept. 1977
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s)		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Defense Documentation Center Cameron Station Alexandria, Virginia 22314		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS PE 65601S
11. CONTROLLING OFFICE NAME AND ADDRESS		12. REPORT DATE March 1979
		13. NUMBER OF PAGES 50 pages
14. MONITORING AGENCY NAME & ADDRESS *(if different from Controlling Office)*		15. SECURITY CLASS. *(of this report)*
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT *(of this Report)*

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT *(of the abstract entered in Block 20, if different from Report)*

18. SUPPLEMENTARY NOTES

19. KEY WORDS *(Continue on reverse side if necessary and identify by block number)*

Innovation	Learning
Bibliographies	Innovative Process
Research Management	Management Planning
Human Resources	Innovative Methods Evaluation
Performance (Human)	System Innovation Evaluation

20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

This bibliography is a selection of unclassified and unlimited references on innovation; its applications, technology, administration and industry. These references are specifically concerned with technological change, impact, evaluation and measurement. Other applications cited are in education, training, organizational structure, decision making and politics. Four indexes are provided: Corporate Author-Monitoring Agency, Subject, Title, and Personal Author.

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SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

19. KEY WORDS

Technological Impact Assessment
Technology Forecasting
Technological Change
Technological Advancement
Measurement
Quantification
Innovation Resistance

F O R E W O R D

This unclassified and unlimited bibliography contains 55 selected citations of reports on *Innovation.*

The importance of research and development in the field of innovation is currently needed and is being highlighted by many industrial companies and government agencies today.

These citations measure and assess innovation by subjective evaluation and by the use of various studies and tests.

References were taken from entries processed into the Defense Documentation Center Technical Report (AD) data bank during the period of July 1964 to December 1978.

Individual entries are arranged in numerical descending sequence under the heading AD bibliographic references. Computer generated indexes of Corporate Author/Monitoring Agency, Subject, Title and Personal Author are provided.

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HUBERT E. SAUTER
Administrator
Defense Documentation Center

C O N T E N T S

FOREWORD..... iii

AD BIBLIOGRAPHIC REFERENCES..... 1

INDEXES

CORPORATE AUTHOR/MONITORING AGENCY..... O-1

SUBJECT..... D-1

TITLE..... T-1

PERSONAL AUTHOR..... P-1

AD-A050 460 5/10 6/4
SYSTEM RESEARCH LTD RICHMOND (ENGLAND)

The Influence of Learning Strategy and Performance Strategy upon Engineering Design. (U)

DESCRIPTIVE NOTE: Progress rept. no. 4, 1 May-30 Sep 76,
NOV 76 100P Bailey,R. ;Ensor,D. ;Pask, G. ;Watts,T. ;
CONTRACT: F44620-76-C-0003
PROJ: 2313
TASK: A2
MONITOR: AFOSR TR-78-0134

UNCLASSIFIED REPORT
Availability: Microfiche copies only.

DESCRIPTORS: *Creativity, *Learning, *Engineers, *Experimental design, Reasoning, Analogies, Comprehension, Problem solving, Strategy, Pattern recognition, Simulation, Students, Training, Test construction(Psychology), Computer applications, Teams(Personnel) (U)
IDENTIFIERS: *Engineering design, *Design analysis, Innovation, Cognition, Learning styles, Experienced personnel, PE61102F, WUAFOSR2313A2 (U)

This report answers questions raised in Progress Report 3 (AD-A050 460), and clarifies the hypotheses being tested and the measures being employed as determinants of cognitive style and design products (reaction simulator, in the first design task). The report contains a brief account of two designs produced by two expert designers. Since design time proved longer than expected, steps were taken to reduce design time. As a result, it should be possible to conduct the entire experiment (including tests and team design task) within 50 to 60 hours without losing the essential features of the first task; in particular, the designer may innovate by analogical reasoning within the (electronic) task domain or between the task domain and the (physical chemistry) application domain. An initial breakdown of the first design task is provided. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD-A050 298 5/10 6/4
SYSTEM RESEARCH LTD RICHMOND (ENGLAND)

The Influence of Learning Strategy and Performance Strategy upon Engineering Design. (U)

DESCRIPTIVE NOTE: Progress rept. no. 7, 1 Apr-30 Jun 77,
JUL 77 18P Bailey,R. ;Pask,Gordon ;
CONTRACT: F44620-76-C-0003
PROJ: 2313
TASK: A2
MONITOR: AFOSR TR-78-0128

UNCLASSIFIED REPORT

DESCRIPTORS: *Creativity, *Learning, *Engineers, Experimental design, Problem solving, Strategy, Pattern recognition, Students, Training, Reasoning, Analogies, Comprehension, Methodology, Teams(Personnel) (U)
IDENTIFIERS: *Engineering design, Experienced personnel, Innovation, Design analysis, Learning styles, Versatility training, PE61102F, WUAFOSR2313A2 (U)

The report describes the current status of work on the individual and team design tasks. One finding reported is a marked reliance upon analogical reasoning in design. (U)

AD-A047 125 5/1
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

The Roles and Identification of Innovators and Linkers in the Technology Transfer Process. (U)

DESCRIPTIVE NOTE: Master's thesis,
SEP 77 149P Hochberger,Lyle K. ;Woolley, Bill G. ;
REPT. NO. NPS-54Cf77092

UNCLASSIFIED REPORT

DESCRIPTORS: *Technology transfer, *Research management, Management engineering, Utilization, Identification, Information exchange, Inventions, Surveys, Questionnaires, Statistical analysis, Theses (U)
IDENTIFIERS: Innovation(Technology) (U)

The concept that the innovator is a unique and essential element in the process of technology transfer is advanced. Distinction is drawn between the innovator, the inventor, and the linker categories of individuals. An instrument is developed to identify both the innovator and the linker. The instrument is administered to a set of individuals and the ability of the instrument to differentiate is validated through the results of a series of interviews with a sample of the respondents. Extensive analysis is performed on the results of both the questionnaire and the personal interviews. Conclusions are drawn, and recommendations for additional investigation are provided. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD-A043 705 5/10 5/1
ARMY COMMAND AND GENERAL STAFF COLL FORT LEAVENWORTH KANS

Brainstorming to Increase Alternative Generation: A Comparison of Group Participation and Pooled Individual Effort. (U)

DESCRIPTIVE NOTE: Final rept.,
JUN 77 168P Wattendorf,John ;

UNCLASSIFIED REPORT
Availability: Microfiche copies only.
SUPPLEMENTARY NOTE: Master's thesis.

DESCRIPTORS: *Creativity, *Group dynamics, *Leadership, Problem solving, Social psychology, Behavior, Management, Theses (U)
IDENTIFIERS: *Brainstorming, Innovations, Organizational behavior, Human behavior (U)

The ability to creatively solve problems is a critical skill for a military commander/manager. Creative problem-solving depends upon creative alternative generation or ideation. An often espoused method of improving ideation is the use of group brainstorming. However, the findings reported from numerous brainstorming experiments cast doubt on the efficacy of group participation in brainstorming. Nevertheless, criticisms of the experiments abound and the technique continues to be a popular, recommended management tool. This pilot study compares the effectiveness of group brainstorming to individual brainstorming by contrasting the quantity and quality of ideas generated in a brainstorming group to the pooled ideas produced by an equal number of individuals working alone. The study reviews the major brainstorming experiments and attempts to directly address the major criticisms of those studies in the experimental design. The methodology maximizes the potential for effective group brainstorming within the constraint of practicality in a military setting in order to evaluate the technique and determine the desirability of a more comprehensive field study. The findings clearly support the superiority of individual over group brainstorming using currently recommended techniques. Nevertheless, the study demonstrates that the potential usefulness of group brainstorming is not a dead issue and further study is warranted. (U)

AD-A042 464 5/10
STATE UNIV OF NEW YORK AT BUFFALO DEPT OF PSYCHOLOGY

A Further Look at Leader Legitimacy, Influence, and Innovation. (U)

DESCRIPTIVE NOTE: Technical rept.,
JUN 77 21P Hollander,Edwin P. ;Julian, James W. ;
REPT. NO. TR-4
CONTRACT: N00014-76-C-0754

UNCLASSIFIED REPORT

DESCRIPTORS: *Leadership, Group dynamics, Personality, Replacement, Failure, Creativity, Males, Females (U)
IDENTIFIERS: Appointment, Electron, Successful leadership, Influence, Mixed sex groups, Verbal participation, Participation, Innovation, WUNR170824 (U)

A review of the findings of several lines of programmatic research on the interactive features of leadership is provided. Topics dealt with in these studies include: effects of appointment or election of leaders; success or failure of group; replacement of the leader; sex of leader in mixed-sex groups; emergent leadership as a function of quantity and quality of participation in discussion groups; task and personality factors in emergent leadership. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD-A036 480 5/10
NAVY PERSONNEL RESEARCH AND DEVELOPMENT CENTER SAN DIEGO CALIF

Sonar Operators' Attitudes and Beliefs: Effects of Introduction of New Systems. (U)

DESCRIPTIVE NOTE: Technical rept. Jul 75-Jun 76,
FEB 77 53P Abrams,Macy L. ;Sheposh, John P. ;Cohen,Peter A. ;Young,Leanne E. ;
REPT. NO. NPRDC-TR-77-18
PROJ: F55521
TASK: ZF55521021

UNCLASSIFIED REPORT

DESCRIPTORS: *Attitudes(Psychology), *Adjustment(Psychology), Sonar operators, Performance(Human), Behavior, Sonar equipment, Modification, Stress(Psychology), Acceptability, Naval training, Shipboard, Sonar personnel (U)
IDENTIFIERS: Innovation(Technology), AN/SQQ-23, WU5210210302, PE62763N (U)

The present study assessed the extent to which 41 sonar operators used the various functions and features of new systems properly, their evaluations of various aspects of the system, and the relationship of these evaluations to their performance on the system. Results indicated that: (1) None of the operators successfully performed all of the operations necessary to solve the problem; (2) The higher the level of operators' performance, the more routine their orientation toward the system; and (3) General indices, such as satisfaction with leadership or organization, were not related to performance. (Author) (U)

AD-A032 372 5/1
OFFICE OF THE DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING WASHINGTON D C

Report of the Defense Science Board Task Force on Technology Base Strategy. (U)

OCT 76 41P

UNCLASSIFIED REPORT

DESCRIPTORS: *Military planning, *Department of Defense, *Technology, *Military budgets, *Management planning and control, Scientific research, Military research, Military requirements, Resources, Allocations, Assessment, Laboratories, Advanced weapons, Weapon system effectiveness, Test and evaluation, Missions, Standardization (U)
IDENTIFIERS: Innovations (U)

The attached report of the Defense Science Board Task Force on Technology Base Strategy was prepared at the request of the Director of Defense Research and Engineering. The Task Force was chosen to include members from industry, medicine, government, and universities with a broad range of technology experience. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD-A032 273 5/10
AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO

Innovation and Productivity in Research and Development: Some Associated Individual and Organizational Variables. (U)

DESCRIPTIVE NOTE: Technical rept., MAY 76 282P Stahl,Michael J. ;
REPT. NO. AFIT-TR-76-10

UNCLASSIFIED REPORT

DESCRIPTORS: *Productivity, *Scientific research, Literature surveys, Computer applications, Theses, Group dynamics, Demography, Education, Participative management (U)
IDENTIFIERS: *Innovation, Age distribution, Rewards (U)

The relationships of organizational variables with innovation and productivity of scientists and engineers in R and D laboratories were explored. Peer ratings of innovation (original and useful output) and productivity (quantity of output) were utilized as criterion. Information was obtained on 154 scientists/engineers in 35 work groups in three Air Force R and D laboratories. Significant relationships found between organizational variables and innovation and productivity included: rewards for innovation, communication on technical matters with other scientists/engineers within the work group, and an age-education demographic group of variables. Level of participation in goal setting and group leader's level of empathy were also consistently related to level of productivity. (U)

AD-A026 970 5/3
BATTELLE COLUMBUS LABS OHIO

The Microcomputer: Technological Innovation and Transfer. (U)

DESCRIPTIVE NOTE: Working paper Sep-Nov 75,
DEC 75 41P Kleiman,Herbert S. ;
CONTRACT: MDA903-75-C-0131, ARPA Order-2857

UNCLASSIFIED REPORT

DESCRIPTORS: *Technology transfer, Microcomputers, Marketing, USSR, Microprocessors, Industrial production, Foreign technology, Inventions, Exports, Policies, Decision making (U)
IDENTIFIERS: Computer industry, Innovation(Technology), Electronics industry, Competition, Embargoes (U)

A research program to better understand technology transfer within the Soviet Union, whether that technology is obtained from outside or internal sources, is currently underway. Ultimately, this program should assist U.S. decisionmakers in analyzing a variety of related questions, including those associated with aspects of export embargo controls. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD-A022 235 5/9
RAND CORP SANTA MONICA CALIF

Macro and Micro Implementation, (U)

MAY 75 17P McLaughlin,Milbrey Wallin ; Berman,Paul ;
REPT. NO. P-5431

UNCLASSIFIED REPORT

DESCRIPTORS: *Education, *Evolution(General), *Management planning and control, *Behavioral science, Pattern recognition, Roles(Behavior), Interpersonal relations, Effectiveness, Policies, Cooperation, Surveys, Technology, Adaptation(Physiology), Environments (U)
IDENTIFIERS: *Educational change, Innovations (U)

Significant educational change requires more than the introduction of new technologies or the alteration of traditional curricula. Significant change cannot be accomplished without new patterns of behavior. That is, new roles and relationships for teachers, administrators, and students need to be defined and maintained. Implementing such change is a difficult and uncertain process, which neither social science theory nor practical wisdom has thus far been able to illuminate. This essay, drawing on an analysis of educational innovation attempted in 200 U.S. school districts, describes critical aspects of the implementation process and suggests conceptualization that might serve as a basis to guide the development of theory and practice. (U)

AD-A019 489 5/9 5/1
FLORIDA STATE UNIV TALLAHASSEE CENTER FOR EDUCATIONAL TECHNOLOGY

Interservice Procedures for Instructional Systems Development. Phase III. Develop. (U)

DESCRIPTIVE NOTE: Final rept. 25 Jun 73-31 Dec 75, AUG 75 396P Branson,Robert K. ;Rayner, Gail T. ;Cox,J. Lamarr ;Furman,John P. ; King,F. J. ;
CONTRACT: N61339-73-C-0150

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also Phase 2, AD-A019 488 and Phase 4 and 5, AD-A019 490.

DESCRIPTORS: *Military training, *Management planning and control, Learning, Methodology, Selection, Reviews, Instructional materials, Teaching methods, Experimental design, Validation, Performance, Effectiveness (U)
IDENTIFIERS: Objectives, *Interservice training, *Instructional systems, *Curriculum development, Guidelines, Innovations (U)

The volume outlines important procedures in developing interservice training effectiveness. Elements emphasized are setting guidelines for learning objectives, obtaining instructional cost effectiveness by mixing media, using existing proven materials or devising new ones, evaluating existing materials for appropriateness, developing new instruction where necessary, and validating all instructional materials. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD-A019 343 5/3
RAND CORP SANTA MONICA CALIF

Research on Technological Change in the American Economy: A Brief Discussion, (U)

JUN 74 19P Harman,Alvin J. ;
REPT. NO. P-5263

UNCLASSIFIED REPORT

DESCRIPTORS: *Technology, *Economics, Forecasting, United States, Policies, Commerce, International trade, Industrial research, Research management, Inventions (U)
IDENTIFIERS: Innovation(Technology), Technological change, Balance of trade (U)

AD-A018 152 1/3 5/9 15/7 5/3
SYSTEMS RESEARCH LABS INC DAYTON OHIO

Remotely Piloted Vehicles Design Option Decision Trees. (U)

DESCRIPTIVE NOTE: Interim rept. 3 Dec 73-15 Apr 75,
JUN 75 110P Potter,Norman R. ;Korkan , Kenneth D. ;Dieterly,Duncan L. ;
CONTRACT: F33615-74-C-4019
PROJ: AF-7907
TASK: 790700
MONITOR: AFHRL TR-75-29(3)

UNCLASSIFIED REPORT

Availability: Document partially illegible.
SUPPLEMENTARY NOTE: See also Rept. no. AFHRL-TR-74-71, AD-A000 051.

DESCRIPTORS: *Remotely piloted vehicles, *Human resources, *Decision making, *Technology, *Air Force personnel, Methodology, Reviews, Assessment, Forecasting, Air Force research, Mathematical prediction, Human factors engineering, Impact, Manpower, Information systems, Digital systems (U)
IDENTIFIERS: Design, Innovations, Decision tree options, Decision trees (U)

A multiphased study effort was conducted to lead to the development of methods for determining the components and measuring the effects of advances in technology on human resources in Air Force weapon systems. A first phase of the effort involved the conduct of an analysis of the literature to review the status of forecasting and assessing technology and of techniques for predicting the impact of technology on human resource parameters (AFHRL-TR-74-71). The second phase involved the development of Design Option Decision Trees (DODT) for two areas of Air Force systems technology (Digital Avionics Information System and Remotely Piloted Vehicle Systems). The third phase called for the development of unique methods or synthesis of existing techniques to result in a new method for measuring the effects of technology on Air Force human resources. The fourth phase involved application of the method developed under phase three. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD-A017 602 5/10 5/9
NAVY PERSONNEL RESEARCH AND DEVELOPMENT CENTER SAN DIEGO CALIF

The Use of Evidence in Influencing Technician Attitudes. (U)

DESCRIPTIVE NOTE: Technical rept. Jan 74-Jun 75,
SEP 75 47P Abrams,Alvin J. ;Sheposh, John P. ;Licht,Mark H. ;
REPT. NO. NPRDC-TR-76-10
PROJ: NR-170-762

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also report dated May 74, AD-782 331.

DESCRIPTORS: *Technicians, *Attitudes(Psychology), *Naval equipment, Personnel management, Applied psychology, Motivation, Shipboard, Naval planning, Effectiveness (U)
IDENTIFIERS: Change advocates, Innovations (U)

This report describes the second study in a larger research effort to assess the effect of a Change Advocate role and a change model in the introduction of a new hardware system. Previous research has shown that specific negative attitudes of technicians negatively affect system utilization. This study focused on a practical means of enhancing experienced technicians' awareness of the existence and adverse effects of their negative attitudes, while not discrediting the existence of other causitive factors which technicians correctly recognize. Objective evidence in the form of shipboard observations on the ASROC system were used to bring about the desired end. (U)

AD-A015 803 1/2
MCDONNELL DOUGLAS CORP LONG BEACH CALIF

Bird Strike Alleviation Techniques. Volume I. Technical Discussion. (U)

DESCRIPTIVE NOTE: Final rept. 18 Feb 74-18 Feb 75,
FEB 75 250P Lawrence,James H. , Jr.;
Bauer,A. B. ;Childers,C. A. ;Coker,M. J.
;Eng,R. K. ;
REPT. NO. MDC-J6840
CONTRACT: F33615-74-C-3038
PROJ: AF-2202
TASK: 220203
MONITOR: AFFDL TR-75-Vol-1

UNCLASSIFIED REPORT

DESCRIPTORS: *Bird strikes, *Aviation safety, Deterrence, Detectors, Protective equipment, Windshields, Lamps, Laser beams, Impact shock, Hazards, Warning systems, Acoustic equipment, Radar equipment, Electronic equipment (U)
IDENTIFIERS: Alternatives, Recommendations, Innovations (U)

This report presents an applicable series of exploratory studies, innovative design concepts and analytical methods associated with techniques to alleviate bird strike hazards to aircraft and crew compartments. In an endeavor to reduce the probability of aircraft/bird mid-air collisions research has been directed to bird deterring and detection systems, crew compartment protection devices, windshield designs, and analytical methods for future windshield/supporting structure bird impact designs. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD-A014 631 5/1
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Technological Forecasting and Management Action. (U)

DESCRIPTIVE NOTE: Master's thesis,
JUN 75 101P Jabery,Abdolhosein Mojtehed ;

UNCLASSIFIED REPORT

DESCRIPTORS: *Technology, *Forecasting, *Management, *Planning, Transfer, Sources, Diffusion, Inventions, Policies, Assessment, Feedback, Decision making, Industrial research, Military research, Long range(Time), Flow charting, Growth(General), Theses (U)
IDENTIFIERS: *Technology forecasting, *Technology transfer, Innovation, Goals (U)

This thesis addresses the relationship between technological forecasting, technology assessment, and technology transfer, and presents the view points of authors in the subject areas. It indicates how technology originates, is planned for and finally transfers into ultimate use. (Author) (U)

AD-A014 335 5/5 5/1 12/2
SYSTEMS RESEARCH LABS INC DAYTON OHIO

A Procedure for Quantification of Technological Changes on Human Resources. (U)

DESCRIPTIVE NOTE: Interim rept.,
JUN 75 90P Potter,Norman R. ;Korkan, Kenneth D. ;Dieterly,Duncan L. ;
CONTRACT: F33615-74-C-4019
PROJ: AF-7907
TASK: 790700
MONITOR: AFHRL TR-75-33

UNCLASSIFIED REPORT

DESCRIPTORS: *Human resources, *Technology, *Mathematical prediction, Forecasting, Methodology, Management planning and control, Human factors engineering, Decision theory, Air Force operations, Weapon systems, Impact, Trade off analyses, Decision making, Air Force personnel, Skills, Air Force training, Maintenance, Logistics support, Ratings, Analysis of variance, Correlation techniques, Allocations, Systems engineering (U)
IDENTIFIERS: Technology forecasting, Innovations, Design option decision trees, DODT(Design option decision trees), Design (U)

A long standing research objective of the human factors psychologist has been the capability to predict the human resource requirements of new equipment. An even more intriguing problem is the prediction of human resource requirements based on the introduction of new technology. The purpose of this study was to locate and apply an existing method, or to develop a new procedure for quantifying the effects of incoming technology. A procedure integrating the Design Option Decision Tree (DODT) with a modificaton of the method of summated ratings was developed to permit quantification of specific human resource components at each of the design options represented in the DODT. Using judgmental data collected from an Air Force operational unit, the method developed under this study effort was evaluated.

(U)

AD-A014 332 5/5 5/1 12/2
SYSTEMS RESEARCH LABS INC DAYTON OHIO

Development, Application, and Evaluation of a Procedure for Quantification of Technological Change Impact on Human Resources. (U)

DESCRIPTIVE NOTE: Final rept. 3 Dec 73-15 Apr 75,
JUN 75 48P Potter,Norman R. ;Korkan, Kenneth D. ;Dieterly,Duncan L. ;
CONTRACT: F33615-74-C-4019
PROJ: AF-7907
TASK: 790700
MONITOR: AFHRL TR-75-29(1)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-A014 333.

DESCRIPTORS: *Human resources, *Technology, *Mathematical prediction, Forecasting, Methodology, Management planning and control, Human factors engineering, Decision theory, Air Force operations, Weapon systems, Impact, Trade off analyses, Skills, Effectiveness, Air Force training, Maintenance, Manpower, Air Force personnel, Job analysis, Logistics support, Ratings, Measurement, Systems engineering (U)
IDENTIFIERS: Innovations, Technology forecasting, Design, Design option decision trees, DODT(Design option decision trees) (U)

A multiphased study was conducted to lead to the development of methods for determining the components and measuring the effects of advances in technology on human resources in Air Force weapon systems. The first phase of the study was reported in AD-A000 051. The second phase involved the development of Design Option Decision Trees (DODT) for two areas of Air Force systems technology: Digital Avionics Information System (DAIS) and Remotely Piloted Vehicle Systems (RPV). The third phase called for the development of unique methods or synthesis of existing techniques to result in a new method for measuring the effects of technology on Air Force human resources. A method integrating the DODT with a modification of the method of summated ratings was developed to arrive at a quantification of human resource effects of technological innovations.

(U)

AD-A009 934 17/7 5/1
NAVAL POSTGRADUATE SCHOOL MONTEREY CALIF

Development of a Modified Aids to Navigation Management Information System for the United States Coast Guard with an Illustrated Application Through Cost-Effectiveness and Malfunction Analyses. (U)

DESCRIPTIVE NOTE: Master's thesis, MAR 75 294P Stephan,Robert Marshall , Jr;

UNCLASSIFIED REPORT

DESCRIPTORS: *Navigational aids, *Management information systems, *Coast Guard, Modification, Cost effectiveness, Malfunctions, Short range(Distance), Buoys, Reviews, Storage batteries, Flash lamps, Solid state physics, Radar reflectors, Theses, Plastic lenses, Acoustic signals, Primary batteries, Replacement, Reports (U)
IDENTIFIERS: Innovations (U)

The purpose of this project is to identify, examine, and evaluate certain cost-effectiveness relationships of the Short Range Aids to Navigation (SRAN) Sub-System developed by the United States Coast Guard. It was determined that a need exists to modify the present Aids to Navigation Management Information System. In addition to providing information, this report provides a legal and historical record of the navaid. A modified management information system is presented and its application is illustrated through selected cost-effectiveness analyses. (U)

AD-A000 051 5/5
SYSTEMS RESEARCH LABS INC DAYTON OHIO

Methods for Predicting and Assessing the Impact of Technology on Human Resource Parameters: Report of the Literature. (U)

DESCRIPTIVE NOTE: Final rept., AUG 74 98P Potter,Norman R. ;Dieterly, Duncan L. ;
CONTRACT: F33615-74-C-4019
PROJ: AF-7907
TASK: 790700
MONITOR: AFHRL TR-74-71

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Human resources, *Technology, *Forecasting, Correlation techniques, Reviews, Assessment, Air Force research, Mathematical prediction, Human factors engineering, Impact (U)
IDENTIFIERS: Innovations (U)

A research objective of the Air Force Human Resources Laboratory is the development of methods for defining the components of innovative technology and for measuring the effects of the incoming technology on Air Force human resources. The human resource parameters of concern include manpower (e.g., numbers, job types, skill levels), training considerations, and cost data. Earlier investigations established the feasibility of using human resources data in design trade studies and of determining and graphically depicting the array of trade-off options available before inception of hardware design. The purpose of this review was to establish the current status of the methodology for forecasting and assessing technology and for quantizing human resource parameters with respect to the impact of incoming technologies. (Modified author abstract) (U)

AD- 891 310 5/10
AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF SYSTEMS AND LOGISTICS

The Politics of Innovation: Pattern of an Air Force Case. (U)

DESCRIPTIVE NOTE: Master's thesis,
AUG 71 46P Morris,David L. ;
REPT. NO. SLSR-15-71B

UNCLASSIFIED REPORT

DESCRIPTORS: (*AIR FORCE PERSONNEL, ATTITUDES(PSYCHOLOGY)), (*AIRCRAFT EQUIPMENT, MODIFICATION KITS), REVIEWS, EFFECTIVENESS, APPLIED PSYCHOLOGY, SEQUENCES(MATHEMATICS), THESES (U)
IDENTIFIERS: *INNOVATIONS, *RESISTANCE TO CHANGE (U)

To better understand how successful innovation advocates overcome initial resistance to their ideas, a case study approach provides insight into the politics used by the advocates. In the paper, a case study of an organizational innovation initiated within the Air Force Logistics Command was undertaken in order to examine the behavior patterns exhibited by innovators when their efforts to implement their ideas are thwarted by those with approving authority. The patterns observed in this case are compared with technological innovation caes observed and reported in the Navy to determine if common patterns exist in each case. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD- 874 789 5/10
HUMAN FACTORS RESEARCH INC GOLETA CALIF

Attitudinal Factors in the Acceptance of Innovations in the Navy. (U)

DESCRIPTIVE NOTE: Final rept.,
JUN 70 178P Mecherikoff,Michael ;Mackie, Robert R. ;
REPT. NO. 784-1
CONTRACT: N00014-68-C-0304
PROJ: NR-170-713

UNCLASSIFIED REPORT

DESCRIPTORS: (*ADJUSTMENT(PSYCHOLOGY), NAVAL PERSONNEL), (*ATTITUDES(PSYCHOLOGY), NAVAL TRAINING), MOTIVATION, CREATIVITY, REACTION(PSYCHOLOGY), ACCEPTABILITY, DESIGN, TRAINING DEVICES, NAVAL EQUIPMENT, LOADERS, SONAR EQUIPMENT, MAINTENANCE EQUIPMENT, PERCEPTION(PSYCHOLOGY), OPERATION, GROUP DYNAMICS, LEADERSHIP, INSTRUCTORS, QUESTIONNAIRES, HUMAN FACTORS ENGINEERING (U)
IDENTIFIERS: CONSERVATISM, *INNOVATIONS, INTERVIEWS, USER SURVEYS (U)

In response to evident resistance by military personnel to innovations in operating equipment, training devices, and operational procedures, sometimes culminating in outright rejection, an attempt was made to translate principles derived from laboratory research on attitude formation and change into practical guidelines that would maximize acceptance of innovations by Navy personnel. This attempt was only partially successful because of certain characteristics of much of the laboratory research. As a complementary approach, case studies were conducted of the actual introduction to Navy personnel of several innovations, including an operational equipment, a training device, and two operational procedures. The case studies, in addition to revealing a number of violations of good practice relating to the variables typically studied in laboratory investigations of attitude change, suggested that variables not typically studied in the laboratory are often crucial in practical situations, and provided insights which supplemented the principles reflected by the research literature. (U)

AD- 824 388 13/8 18/12 18/13
ANALYTIC SERVICES INC FALLS CHURCH VA

TECHNOLOGICAL INNOVATION IN CIVILIAN PUBLIC AREAS, (U)

SEP 67 261P Black,Ronald P. ;Foreman, Charles W. ;
CONTRACT: ACDA/E-118

UNCLASSIFIED REPORT

DESCRIPTORS: (*NUCLEAR INDUSTRIAL APPLICATIONS, URBAN PLANNING), INDUSTRIAL RESEARCH, NUCLEAR REACTORS, INDUSTRIES, DEPARTMENT OF DEFENSE, FEASIBILITY STUDIES, NUCLEAR PROPULSION, OPERATIONS RESEARCH, PROBLEM SOLVING, TRANSPORTATION, ARMS CONTROL, URBAN AREAS, RESEARCH MANAGEMENT, RAILROADS, NUCLEAR ENGINEERING, CIVIL ENGINEERING (U)
IDENTIFIERS: INNOVATION(TECHNOLOGY), RAPID TRANSIT (U)

Contents: The Process of Technological Change; The Civilian Nuclear Power Reactor; The Metropolitan Rapid Transit System; The Intercity Transport System; Findings and Recommendations. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD- 783 688 12/1 6/5
GEORGE WASHINGTON UNIV WASHINGTON D C DEPT OF STATISTICS

Analysis of Interactions between Categorical Variables. (U)

DESCRIPTIVE NOTE: Technical rept., AUG 74 21P Kullback,S. ;Reeves,P. N. ;
REPT. NO. TR-22
CONTRACT: N00014-67-A-0214-0015, AF-AFOSR-1513-69
PROJ: NR-042-267

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: *Multivariate analysis, *Hospitals, Data acquisition, Health, Discriminate analysis (U)
IDENTIFIERS: Contingency tables, Innovations (U)

The principle of minimum discrimination information estimation and associated procedures are applied to data from a survey of hospitals to determine the relationship of innovativeness on certain hospital characteristics. (Author) (U)

AD- 781 749 5/1 5/2
TEXAS UNIV AUSTIN COMPUTER-ASSISTED INSTRUCTION LAB

Technical Literature Review Concerning Management Information Systems. (U)

DESCRIPTIVE NOTE: Interim rept. 19 Mar 73-19 Jun 73, MAY 74 44P Logan,Robert ;O'Neil, Harold F. , Jr.;Judd,Wilson A. ;Harmon,E. Glynn ;
CONTRACT: F41609-73-C-0019
PROJ: AF-7000
MONITOR: AFHRL TR-74-50

UNCLASSIFIED REPORT

DESCRIPTORS: *Management information systems, *Data management, *On line systems, Research management, Interactions, Human factors engineering, Management planning and control, Technology, Evolution(Development), Assessment, Computer applications, Feasibility studies, Reviews, Bibliographies, Abstracts (U)
IDENTIFIERS: Innovations, Comparative studies (U)

The primary objective of the literature review was to obtain sources of information relevant to the feasibility and utility of an on-line data management system in support of the management and planning effort in the research and development environment of the Air Force Human Resources Laboratory. The formal documentation of the technical literature reviewed resulted in an annotated bibliography of 112 references. The intended audience for the bibliography was middle- and upper-level management personnel. Documents were selected that would familiarize such personnel with the context and interrelationships of the many aspects of management information systems (MIS); that is, with how analysis, design, operation, evaluation, and user considerations affect management information systems. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD- 777 417 5/9 13/10
NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER ANNAPOLIS MD

Reduced Bridge Manning without Equipment Augmentation Results of Ship Reports and Comments. (U)

DESCRIPTIVE NOTE: Research and development rept., APR 74 38P Lane,Richard ;Schwartz, Melvin A. ;
REPT. NO. NSRDC-27-756

UNCLASSIFIED REPORT

DESCRIPTORS: *Ship personnel, *Manpower utilization, *Shipboard, Manpower, Reduction, Personnel management, Cost effectiveness, Equipment, Variations, Performance(Human), Destroyers, Tenders(Vessels), Amphibious ships, Aircraft carriers, Job analysis, Escort ships, Frigates, Efficiency (U)
IDENTIFIERS: *Ship bridge manning, Recommendations, Innovations (U)

As one of several steps toward more effective personnel utilization and reduced manpower costs, the Chief of Naval operations (CNO) established a pilot program in September 1972 to reduce ship bridge manning. The objective of the program was to establish 'minimum' bridge watch requirements through the development and evaluation of innovative procedural changes and the introduction of state-of-the-art equipment to augment bridge capabilities. The report documents some of the major program findings and recommendations, based on subjective self-evaluations provided by the ships which participated in the program. (U)

AD- 772 087 5/1
FORECASTING INTERNATIONAL LTD ARLINGTON VA

Development of a Technology Assessment and Advanced Technology Transfer Program for the Department of the Army. Part 1. (U)

DESCRIPTIVE NOTE: Final rept.,
JUN 73 88P Cetron,Marvin J. ;Roepcke, Lewis ;
CONTRACT: DAHC19-72-C-0031

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: See also AD-771 874.

DESCRIPTORS: *Management planning and control, *Army, *Technology, Assessment, Transfer, Army research, Mathematical prediction, Impact, Environments, Forecasting, Classification (U)
IDENTIFIERS: Alternatives, Innovations (U)

The study has two primary purposes: to develop a management planning tool for the Department of the Army and to evaluate specific innovations by means of it. This tool, described and demonstrated herein, can be used to make continuous assessments of the potential impacts of alternative Army research programs--including impacts both on the Army itself and on the physical and social environment with which the Army interacts. The kinds of programs which can be assessed include a wide range of possible technological, administrative, and institutional innovations. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD- 768 070 5/9
RAND CORP SANTA MONICA CALIF

Models of Educational Innovation and Implications for Research, (U)

MAR 73 29P Klitgaard,Robert E. ;
REPT. NO. P-4977

UNCLASSIFIED REPORT

DESCRIPTORS: (*EDUCATION, *MANAGEMENT ENGINEERING), REVIEWS, SUBSTITUTES, MODEL THEORY, ORGANIZATIONS, RESEARCH MANAGEMENT (U)
IDENTIFIERS: INNOVATION(TECHNOLOGY), PUBLIC SCHOOLS, EDUCATION (U)

A discussion of innovative methods in education outlines the major logical elements that a theory of innovative behavior should comprise. These are objectives, implementation, production possibilities, and evaluation. Two competing explanatory models are developed, both with the same logical superstructure but with different emphases and parameter values. The paper attempts a step toward the formulation and research of testable propositions about innovation and the schools. (U)

AD- 766 861 5/9 5/1
RAND CORP SANTA MONICA CALIF

Incentives for Innovation in the Public Schools, (U)

JAN 73 48P Pincus,John :
REPT. NO. P-4946

UNCLASSIFIED REPORT

DESCRIPTORS: (*TEACHING METHODS, SYSTEMS ENGINEERING), (*MANAGEMENT PLANNING AND CONTROL, EDUCATION), THEORY, MOTIVATION, ATTITUDES(PSYCHOLOGY), ORGANIZATIONS, ANALOG SYSTEMS, ECONOMICS (U)
IDENTIFIERS: BUREAUCRACIES, PUBLIC SCHOOLS, RESEARCH AND DEVELOPMENT, INCENTIVES, INNOVATIONS (U)

The paper sets out some propositions about the structure and incentive systems of public schools as they relate to the adoption of innovations and to their implementation in the schools. The propositions may have certain systematic implications for education R and D policy as well as for broader questions, such as how to implement planned change in bureaucracies. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD- 760 116 5/9
APPLIED SCIENCE ASSOCIATES INC VALENCIA PA

Instructional Strategies for a Performance Oriented Techniian Course. (U)

DESCRIPTIVE NOTE: Final technical rept. Jul 71-Sep 72,
MAR 73 171P Pieper,William J. ;Foss, Frank C. ;Smith,Edgar A. ;
CONTRACT: F33615-71-C-1908
PROJ: AF-1193
TASK: 11930B
MONITOR: AFHRL TR-72-74

UNCLASSIFIED REPORT

DESCRIPTORS: (*AIR FORCE TRAINING, *TECHNICIANS), TEACHING METHODS, PROGRAMMED INSTRUCTION, COMPUTER PROGRAMMING, REVIEWS, STUDENTS, MANAGEMENT ENGINEERING, EFFECTIVENESS (U)
IDENTIFIERS: INNOVATIONS, COMPUTER AIDED INSTRUCTION (U)

A study was initiated to devise innovative instructional strategies to be used in a performance oriented technical training course. The strategies devised were student centered and applicable for self-pacing in a proposed computer based Advanced Instructional System (AIS). A detailed examination was made of the current course, concentrating on course content, instructional strategies, student characteristics, instructor characteristics, and course administration. Strategies were then generated based on data gathered during the course analysis. Of the 56 strategies generated, 5 were chosen for detailed development and demonstration of their feasibility in the current weapons mechanic (TAC) course. An evaluation of selected strategies will be performed in the near future. (Author) (U)

AD- 748 237 5/5
ILLINOIS UNIV SAVOY AVIATION RESEARCH LAB

Research and the Future of Engineering Psychology. (U)

SEP 71 21P Adams,Jack A. ;
REPT. NO. ARL-71-19/AFOSR-71-6
CONTRACT: F44620-70-C-0105
PROJ: AF-9778
MONITOR: AFOSR TR-72-1662

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented to The Society of Engineering Psychologists, Division 21 of the American Psychological Association, 4 Sep 71.

DESCRIPTORS: (*MAN MACHINE SYSTEMS, DESIGN), (*HUMAN FACTORS ENGINEERING, *REVIEWS), SCIENTIFIC RESEARCH, RESEARCH MANAGEMENT, EFFECTIVENESS (U)
IDENTIFIERS: RESEARCH AND DEVELOPMENT, HINDSIGHT PROJECT, INNOVATION(TECHNOLOGY) (U)

The vigor of engineering psychology as an applied discipline in engineering and psychology is dependent upon the robustness of the scientific knowledge that it applies to the design of man-machine systems. As a field, engineering psychology mostly has its practitioners applying knowledge and comparatively few generating new knowledge, with the result that the capability for system innovation is not as strong as it should be. Project Hindsight of the Department of Defense and Project TRACES of the National Science Foundation show that rather long-term basic and applied research is necessary for generating the knowledge that brings impressive innovations in products. The demands of product development have called for too much short-term research and too little long-term research of the kind most effective for producing important innovations in new systems. Several remedial courses of action are considered. (Author) (U)

AD- 738 922 13/10
NAVAL UNDERSEA RESEARCH AND DEVELOPMENT CENTER SAN DIEGO CALIF

Transparent Hull Submersibles and the Makakai. (U)

DESCRIPTIVE NOTE: Research and development rept., FEB 72 27P Talkington,Howard R. ; Murphy,Douglas W. ;
REPT. NO. NUC-TP-283

UNCLASSIFIED REPORT

DESCRIPTORS: (*UNDERWATER VEHICLES, HULLS(MARINE)), WEIGHT, MANEUVERABILITY, VISIBILITY, DESIGN, ACRYLIC RESINS, MATERIALS, STRUCTURES, DATA PROCESSING, MARINE PROPULSION, CONTROL SYSTEMS, LIFE SUPPORT (U)
IDENTIFIERS: MANNED SUBMERSIBLES, INNOVATIONS (U)

The transparent hull submersible (THS), MAKAKAI (Hawaiian for 'Eye of the Sea'), can carry two men within its transparent acrylic hull to depths of 183 m. All-around visibility and a very high strength-to-weight ratio are special features of its design. The objectives of the development program, the design constraints, the ordinary technical problems encountered, and the innovations made during the submersible's development are described. Included among the innovations are specialized designs in materials, structures, data processing, propulsion control, and life-support equipment. The uses of the craft and the experience gained during the early at-sea operations are also discussed, and photographs of the undersea operations are included. (U)

AD- 734 790 5/1
SUSSEX UNIV BRIGHTON (ENGLAND) SCIENCE POLICY RESEARCH UNIT

Diffusion of Technical Innovation. (U)

DESCRIPTIVE NOTE: Final scientific rept. 1 Dec 69-31 May 71,
NOV 71 8P Freeman,Christopher ;
CONTRACT: EOOAR-70-0077
PROJ: AF-9769
MONITOR: AFOSR TR-72-0006

UNCLASSIFIED REPORT

DESCRIPTORS: (*INDUSTRIAL RESEARCH, DISSEMINATION), FACTOR ANALYSIS, RESEARCH PROGRAM ADMINISTRATION, GREAT BRITAIN (U)
IDENTIFIERS: *INNOVATION(TECHNOLOGY) (U)

Project SAPPHO (Scientific Activity Predictor from Patterns with Heuristic Origins) analyzed the innovative sequence in industry. SAPPHO was designed to test explanations of success and failure in industrial innovation. Fifty pairs of similar innovators were selected, each consisting of a 'success' and a 'failure', and data collected to determine factors bearing on their success or failure. Key factors were found to include: better understanding of user needs; greater attention to marketing; more efficient development; more effective use of outside technology and advice; and greater seniority and authority of responsible officers. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD- 734 387 5/1
NEW MEXICO STATE UNIV UNIVERSITY PARK

Conference on Industrial Innovation through Contract Research, 15-16 April 1971 - University of Newcastle upon Tyne. (U)

DESCRIPTIVE NOTE: Conference rept.,
AUG 71 18P Hein,Robert A. ;
REPT. NO. ONRL-C-17-71

UNCLASSIFIED REPORT

DESCRIPTORS: (*INDUSTRIAL RESEARCH, *CONTRACTS), (*SYMPOSIA, INDUSTRIAL RESEARCH), UNITED STATES, EUROPE, GREAT BRITAIN, ORGANIZATIONS (U)
IDENTIFIERS: RESEARCH AND DEVELOPMENT, *INNOVATION(TECHNOLOGY) (U)

The meeting was comprised of four sessions devoted to American Scene; European Scene;'Contract Research in the U.K.; and Contract Research and Regional Development. Details were given of the history and mode of operation of various R and D organizations in the US and abroad. The role of 'entrepeneurship' was also discussed in this regard. In addition the role of the research park came in for examination. (Author) (U)

AD- 732 664 5/9
RAND CORP SANTA MONICA CALIF

Institutions, Innovation, and Incentives, (U)

MAY 71 16P Levien,Roger E. ;
REPT. NO. P-4640

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented at the Purdue 1971 Symposium on Application of Computers to Electrical Engineering Education, held in Lafayette, Inc., on 26-28 Apr 71. Errata sheet inserted.

DESCRIPTORS: (*EDUCATION, *COMPUTERS), DESIGN, TEACHING METHODS (U)
IDENTIFIERS: INCENTIVES, INNOVATION(TECHNOLOGY) (U)

A discussion is presented of the importance which institutional design has for the process of educational innovation. An example of the instructional use of the computer in higher education is given. (U)

AD- 711 734 5/1 13/2
RAND CORP SANTA MONICA CALIF

EVALUATION AND INNOVATION IN URBAN RESEARCH, (U)

AUG 70 49P Brewer,Garry D. ;
REPT. NO. P-4446

UNCLASSIFIED REPORT

DESCRIPTORS: (*URBAN PLANNING, RESEARCH MANAGEMENT), (*DECISION MAKING, MATHEMATICAL MODELS), THEORY, EFFECTIVENESS, ATTITUDES(PSYCHOLOGY), COMPUTER PROGRAMMING, PROBLEM SOLVING, PHILOSOPHY (U)
IDENTIFIERS: MANAGEMENT INFORMATION SYSTEMS, INNOVATIONS, COMPUTERIZED SIMULATION, EVALUATION (U)

Computer simulation is a relatively new methodology in the social sciences whose basic characteristics correspond quite well with the requirement to understand and manage complexly organized systems. However, the 'in principle' arguments advanced in support of the method have been insufficiently tempered by honest appraisal of the 'in practice' experiences registered to date. Thus a continuation of existing trends could have harmful effects both for the method and for greater processes of problem-solving in the social context. An initial problem is the development of an appraisal function, a series of questions or criteria, against which a computer simulation may be judged. Several possible components of such a function are discussed, stressing the so-called policy-assisting class of simulation models. Several innovative recommendations are advanced that might alleviate the identified problem and aid eventual realization of the in principle myth. (Author) (U)

AD- 707 511 5/9
AIR FORCE HUMAN RESOURCES LAB BROOKS AFB TEX

INNOVATIONS IN AIR FORCE TECHNICAL AND FLYING TRAINING, (U)

JUN 70 31P Valverde,Horace H. ;
REPT. NO. AFHRL-TR-70-13

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented at the Symposium on Evaluation of Educational Technology Applications, 22-26 Jun 70, Naval Academy, Annapolis, Maryland.

DESCRIPTORS: (*AIR FORCE TRAINING, TEACHING METHODS), MAINTENANCE PERSONNEL, ELECTRONIC EQUIPMENT, PROGRAMMED INSTRUCTION, EFFECTIVENESS, PILOTS, ELECTRONIC RECORDING SYSTEMS, STANDARDS, CORRELATION TECHNIQUES, REVIEWS (U)
IDENTIFIERS: RECORDING SYSTEMS, SOUND, VIDEO SIGNALS, COMPARISON, INNOVATION(TECHNOLOGY), EVALUATION (U)

Two innovations in technical and flying training are described. The first is an application of the systems approach to electronics maintenance training. The systems approach resulted in a fourteen-week course. The conventional course required twenty four weeks. Graduates of the two courses were compared on various criteria. The second effort pertains to the development and evaluation of audio/video recordings in undergraduate pilot training. Equipment mounted in the aircraft produced audio/video recordings that were of substantial help to the students when viewed after flight. (Author) (U)

AD- 705 702 5/1
STANFORD RESEARCH INST MENLO PARK CALIF

CRITERIA FOR THE DESIGN OF NEW FORMS OF ORGANIZATION. (U)

DESCRIPTIVE NOTE: Final rept. 1 Dec 66-28 Feb 70,
FEB 70 15P Vollmer,Howard M. ;
McPherson,Joseph H. ;
CONTRACT: F44620-67-C-0039
PROJ: AF-9779
MONITOR: AFOSR 70-0947TR

UNCLASSIFIED REPORT

DESCRIPTORS: (*ORGANIZATIONS, EXPERIMENTAL DESIGN), (*MANAGEMENT ENGINEERING, STANDARDS), THEORY, BEHAVIOR, ANALYSIS OF VARIANCE, TRANSFORMATIONS, PERSONNEL MANAGEMENT, INTERACTIONS, LEADERSHIP, GROUP DYNAMICS (U)
IDENTIFIERS: *MANAGEMENT INFORMATION SYSTEMS, INNOVATION(TECHNOLOGY) (U)

Criteria and guidelines were developed for managers and consultants involved in the design of innovative kinds of organization in government or private settings, based upon case studies of major design efforts in a variety of federal government and private organizations. These criteria and guidelines are formulated in terms of a general systems approach to organizational design, rather than a more limited engineering or behavioral approach. The systems approach considers the interactions of a number 99of (1) process variables, (2) external viewing variables, and (3) internal viewing variables in organizational systems. Particular attention is given to the design of organizational entities that accommodate to the needs, values, and aspirations of individuals and groups involved in these entities. (Author) (U)

AD- 704 889 5/9
RAND CORP SANTA MONICA CALIF

RAND SYMPOSIUM ON PILOT TRAINING AND THE PILOT CAREER: RECOLLECTIONS OF THE CHAIRMAN, (U)

MAR 70 16P Stewart,W. A. ;
REPT. NO. RM-6282-PR
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (*PILOTS, TRAINING), (*PROGRAMMED INSTRUCTION, SYMPOSIA), PERSONNEL MANAGEMENT, EDUCATION, MOTIVATION, TRANSFER OF TRAINING, FLIGHT SIMULATORS, REPORTS (U)
IDENTIFIERS: INNOVATION(TECHNOLOGY) (U)

The document reports on a symposium held in Santa Monica in 1970 that included Air Force officers engaged in flight training operations and in career planning, representatives of the Canadian Armed Forces and the Royal Air Force, and a cross-section of civilian research specialists in flight training problems. Topics discussed included the economics of flight training, the flying career, college versus high school graduates, defining the trained pilot, motivation and selection, innovation in pilot training, goals of training, transfer of training, and the role of simulators. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD- 704 808 5/1
WISCONSIN UNIV MILWAUKEE SCHOOL OF BUSINESS ADMINISTRATION

TESTING A HYPOTHESIS ON INNOVATION BY MEASUREMENT OF ORGANIZATIONAL GOAL STRUCTURES. (U)

DESCRIPTIVE NOTE: Technical rept.,
APR 70 13P Haberstroh,Chadwick J. ;
CONTRACT: N00014-67-A-0128-0005
PROJ: NR-177-921

UNCLASSIFIED REPORT

DESCRIPTORS: (*ORGANIZATIONS, MANAGEMENT PLANNING AND CONTROL), PERFORMANCE(HUMAN), COMPUTER PROGRAMMING, ANALYSIS OF VARIANCE, FAILURE, STATISTICAL PROCESSES, DATA PROCESSING, THEORY, COMMUNICATION SYSTEMS (U)
IDENTIFIERS: OBJECTIVES, INNOVATIONS, COMPUTER ANALYSIS (U)

A set of measures of innovation in an organization is derived from content-analysis of organization communication at successive time points. The data are used to test a hypothesis that innovation in divisionally controlled programs is positively related to division performance. (Author) (U)

AD- 702 331 11/6 20/11 10/1
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

CAVITATION AND HYDRAULIC ABRASIVE STABILITY OF METALS IN HYDRAULIC TURBINES (SELECTED ARTICLES), (U)

OCT 69 35P Gavranek,V. V. ;Seleznev, A. G. ;Makoev,Kn. S. ;Dulnev,V. B. ; Vedeneev,B. E. ;
REPT. NO. FTD-MT-24-267-69
PROJ: FTD-6040102

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Edited machine trans. of mono. Kavitatsiya i Gidroshlifuyushchaya Stoikost Metallov v Gidravlicheskikh Turbinakh, n.p., 1965 p105-125.

DESCRIPTORS: (*TURBINES, DEGRADATION), (*STEEL, WEAR RESISTANCE), POWER PLANTS(ESTABLISHMENTS), RIVER CURRENTS, PARTICLES, CAVITATION, CARBON ALLOYS, REPORTS, MATHEMATICAL PREDICTION, MECHANICAL PROPERTIES, TEST METHODS, USSR (U)
IDENTIFIERS: HYDRAULIC TURBINES, TRANSLATIONS (U)

In the planning of new hydroelectric power plants located on mountain rivers it is necessary to estimate the abrasive ability of river deposits and degree of their danger for hydroturbines. Such appraisal can be made on the basis of comparison of conditions of deposits on the planned hydroelectric power plant and any others close to it in pressure and composition of deposits of an operational hydroelectric power plant equipped with analogous turbines, under the condition that on latest hydroelectric power plants there is well studied the wear of turbined and conditions of deposits. Using the proposed method, a forecast can be made of the degree of danger of erosional destruction under influence of deposits contained in river water both on the whole for turbines made from carbon steel of newly planned hydroelectric power plants and for their individual parts. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD- 701 001 5/10 5/1
OFFICE OF RESEARCH ANALYSES HOLLOMAN AFB N MEX

ON THE DIFFUSION OF INNOVATIONS RESEARCH TRADITION. (U)

DESCRIPTIVE NOTE: Final rept.,
NOV 69 48P Quesada,Gustavo M. ;
REPT. NO. ORA-69-0016
PROJ: AF-7909
TASK: 790900

UNCLASSIFIED REPORT

DESCRIPTORS: (*SCIENTIFIC RESEARCH, MANAGEMENT ENGINEERING), (*DECISION MAKING, REVIEWS), THEORY, ATTITUDES(PSYCHOLOGY), AIR FORCE RESEARCH (U)
IDENTIFIERS: *INNOVATIONS, TECHNOLOGY TRANSFER, *TECHNOLOGY UTILIZATION (U)

The report analyzes the decision-making process of the diffusion of technological innovations and attempts to make the analysis more meaningful for the Air Force by emphasizing the role of authoritarian, contingent, and collective type of decisions. The author describes the characteristics of innovations, different types of adopter categories (while emphasizing the role of the earlier adopters), and the diffusion process and adoption stages. (Author) (U)

AD- 678 029 5/4
PITTSBURGH UNIV PA CENTER FOR INTERNATIONAL STUDIES

BUREAUCRATIC CONSERVATISM AND INNOVATION IN EASTERN EUROPE, (U)

OCT 68 21P Beck,Carl ;
CONTRACT: AF-AFOSR-622-64, AF-AFOSR-622-65
PROJ: AF-9779
TASK: 977902
MONITOR: AFOSR 68-2546

UNCLASSIFIED REPORT
Availability: Pub. in Comparative Political Studies, v1 n2 p275-294 Jul 68.

DESCRIPTORS: (*POLITICAL SCIENCE, EASTERN EUROPE), HISTORY, TRANSFORMATIONS, COMMUNISM, GROUP DYNAMICS, LEADERSHIP, ORGANIZATIONS, ECONOMICS, LABOR, MANAGEMENT ENGINEERING, ATTITUDES(PSYCHOLOGY), PREDICTIONS (U)
IDENTIFIERS: BUREAUCRACIES, CONSERVATISM, INNOVATIONS, POLITICS (U)

A study of change and constancy in the relationship of state bureaucrats to politics in Eastern Europe viewing innovation as employing three roles: initiator, advocate and enforcer. The study suggests that innovation in East Europe does not rest with the bureaucracy but with extra bureaucratic forces. The character of the leadership is used as one indicator along with changes in trade union and governmental agencies. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD- 677 980 5/11 5/10
GEORGE WASHINGTON UNIV ALEXANDRIA VA HUMAN RESOURCES RESEARCH OFFICE

THE PROCESS OF EFFECTING CHANGE, (U)

OCT 68 30P McClelland,William A. ;
REPT. NO. HUMRRO professional paper-32-68
CONTRACT: DA-44-188-ARO-2
PROJ: DA-2-J-024701-A-712
TASK: 2-J-024701-A-71201

UNCLASSIFIED REPORT

DESCRIPTORS: (*SOCIAL PSYCHOLOGY, *CULTURE), ATTITUDES(PSYCHOLOGY), ACCEPTABILITY, EDUCATION, MILITARY PSYCHOLOGY, INDUSTRIAL PSYCHOLOGY, ANTHROPOLOGY, THEORY, ORGANIZATIONS (U)
IDENTIFIERS: *CHANGE, *INNOVATION (U)

The report indicates the importance of improving our understanding of the process of change and summarizes some of the relevant literature on the diffusion of innovations drawing from studies in rural sociology, cultural anthropology, industry, education, and psychology. There also is a brief outline of two paradigms or pre-models of change which may have utility to practitioners as well as suggesting to scholars the large gaps in the knowledge that must be filled before a theory of change can be formulated. (Author) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD- 673 722 15/3 13/13 5/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF

A STUDY OF THE ADOPTION-DIFFUSION PROCESS IN THE DEVELOPMENT OF SHELTER IN NEW CONSTRUCTION. (U)

DESCRIPTIVE NOTE: Technical memo.,
JUN 68 73P Streich,Eugene R. ;
Wellisnch,Jean B. ;
REPT. NO. SDC-TM-3892/001/00
CONTRACT: DAHC20-67-C-0178

UNCLASSIFIED REPORT

DESCRIPTORS: (*FALLOUT SHELTERS, *BUILDINGS), (*CIVIL DEFENSE, FALLOUT SHELTERS), DESIGN, COMMUNICATION SYSTEMS, DIFFUSION, EDUCATION, SOCIAL COMMUNICATION, FALLOUT, NUCLEAR RADIATION, SHOCK WAVES, PROTECTION, BLAST (U)
IDENTIFIERS: INNOVATION(TECHNOLOGY), OVERPRESSURE (U)

A study of the diffusion process involved in implementing civil defense programs directed toward encouraging the incorporation of fallout shelter in new construction was performed. The theoretical literature on diffusion-adoption processes concerning the adoption or rejection of innovations was examined for applicability, the actual program implementation process was examined, and to determine the effectiveness of program implementation measures, interviews were conducted with both program personnel and potential adopters -- building owners and architects -- in two Civil Defense Regions. An analysis of the data was made, results described, and suggestions for further study presented. (Author) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD- 669 816 5/3 5/1
AIR FORCE OFFICE OF SCIENTIFIC RESEARCH ARLINGTON VA

SCIENTIFIC RESEARCH AND INNOVATION, (U)

APR 68 26P Price,William J. ;
REPT. NO. AFOSR-68-1022
PROJ: AF-61445014

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented at the Symposium on the Innovative Process in Industry, at the ACS Meeting, San Francisco, 2 April 1968.

DESCRIPTORS: (*SCIENTIFIC RESEARCH, REVIEWS), INDUSTRIES, INDUSTRIAL PRODUCTION, INTERACTIONS, RESEARCH MANAGEMENT, SCIENTIFIC ORGANIZATIONS, INDUSTRIAL RESEARCH, NONLINEAR SYSTEMS, MANAGEMENT ENGINEERING (U)
IDENTIFIERS: *INNOVATION(TECHNOLOGY), RESEARCH AND DEVELOPMENT, TECHNOLOGY (U)

Topics include: invention, innovation, and scientific research; some recent studies of the innovative process; description of the innovative process; the scientific research activity of a mission-oriented organization. (U)

AD- 662 376 5/3 5/1
RAND CORP SANTA MONICA CALIF

THE TECHNOLOGY GAP: ANALYSIS AND APPRAISAL, (U)

DEC 67 35P Nelson,Richard R. ;
REPT. NO. P-3694-1

UNCLASSIFIED REPORT

Availability: Available from the Twentieth Century Fund, 41 East 70th Street, New York, N. Y. 10021.

SUPPLEMENTARY NOTE: Prepared for presentation at a conference jointly sponsored by the Agnelli Foundation and the Tocqueville Project of the Twentieth Century Fund held in Turin (Italy) 17-19 Nov 67.

DESCRIPTORS: (*MANAGEMENT PLANNING AND CONTROL, ECONOMICS), (*DISTRIBUTION(ECONOMICS), REVIEWS), NATURAL RESOURCES, SALARIES, SYSTEMS ENGINEERING, CREATIVITY, INDUSTRIES, SCIENTIFIC RESEARCH (U)
IDENTIFIERS: COMPETITION, INNOVATION(TECHNOLOGY), TECHNOLOGY GAP (U)

The paper considers the following five points: First, the technological gap is a meaningful concept, and the phenomenon probably is real. Second, it is nothing new; something like a technological gap between the United States and Europe has existed for upwards of one hundred years. Third, what is new about the situation and what lies behind the present strongly articulated concern expressed by Europeans has less to do with general economic well-being than with issues of national autonomy, prestige, and military power. Fourth, the reasons for the long-standing gap are complex and poorly understood but, aside from military and space technology, they probably have far less to do either with U. S. Government R and D policy, or with the size of the U. S. corporate giants, than many people seem to believe. Fifth, well meant American arguments that economic growth will not be furthered by expensive defense and space R and D programs or the development of giant corporations in Europe will not be persuasive, given the real issues involved. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD- 661 589 5/2 5/3
AIR FORCE OFFICE OF SCIENTIFIC RESEARCH ARLINGTON VA DIRECTORATE OF INFORMATION SCIENCES

POLICY PLANNING FOR TECHNICAL INFORMATION IN INDUSTRY, (U)

NOV 67 19P Wooster,Harold ;
PROJ: AF-9769
MONITOR: AFOSR 67-2588

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Proceedings presented at the FID/DC Symposium, Bad Godesberg (Germany), 29 Nov 67.

DESCRIPTORS: (*DOCUMENTS, *MANAGEMENT PLANNING AND CONTROL), (*INDUSTRIES, DOCUMENTS), SCIENTIFIC RESEARCH, INDUSTRIAL PRODUCTION, SCIENTISTS, ENGINEERS, INFORMATION RETRIEVAL, ECONOMICS, SOURCES (U)
IDENTIFIERS: INNOVATION(TECHNOLOGY), TECHNOLOGY (U)

The paper is divided into three parts (I) management of research and development in industry; (II) information transfer in industrial research and development, and (III) responsibilities of the documentalist in industry. (I) stresses that research and development can only flourish in a properly oriented national environment; (II) points out the heavy reliance of engineers on informal, oral internal sources of information, but says that documentalists aren't all that different (III) discusses the allocation of information sources and services to meet users' real or imagined needs. (Author) (U)

AD- 659 735 15/5 1/3 5/1
RAND CORP SANTA MONICA CALIF

INNOVATION AND MILITARY REQUIREMENTS: A COMPARATIVE STUDY, (U)

AUG 67 90P Perry,Robert L. ;
REPT. NO. RM-5182-PR
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (*RESEARCH MANAGEMENT, *AERONAUTICS), (*CREATIVITY, MILITARY REQUIREMENTS), FEASIBILITY STUDIES, HISTORY, VARIABLE SWEEP WINGS, COSTS, EFFECTIVENESS, TURBOJET ENGINES, DESIGN, PROPULSION SYSTEMS, AIRCRAFT, ECONOMICS, INDUSTRIES, ENGINEERING, ANALYSIS (U)
IDENTIFIERS: INNOVATION(TECHNOLOGY) (U)

A detailed examination of two major innovations in military aeronautics--turbojet propulsion and the variable-sweep wing--using the classical economic investment model. Three phases of the innovation process are distinguished: invention or conception, demonstration of feasibility, and acceptance or adoption. Patterns of innovation characterizing the evolution of jet engines and of variable-sweep wings tend to resemble one another. All evidence suggests that once an innovation reaches the stage where appraisal is appropriate, technical feasibility demonstrations should be conducted as quickly and cheaply as possible. Feasibility should not be subordinated to an existing requirement, but the requirement should be built around the demonstration capability of the innovation. Wartime stresses encourage early exploitation of innovations, but during peacetime the military must have more compelling evidence of technical feasibility before investing in novel devices. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD- 659 038 5/11
GEORGE WASHINGTON UNIV ALEXANDRIA VA HUMAN RESOURCES RESEARCH OFFICE

THE PROCESS OF CROSS-CULTURAL INNOVATION, (U)

AUG 67 21P Niehoff,Arthur H. ;Anderson, J. Charnel ;
REPT. NO. HUMRRO professional paper-36-67
CONTRACT: DA-44-188-ARO-2
PROJ: DA-2J024701A712-01

UNCLASSIFIED REPORT

DESCRIPTORS: (*CULTURE, *SOCIOLOGY), SOCIAL PSYCHOLOGY, ATTITUDES(PSYCHOLOGY), MOTIVATION, FOREIGN POLICY, LEADERSHIP, RELIGION, ECONOMICS, RECREATION (U)
IDENTIFIERS: INNOVATION(TECHNOLOGY) (U)

The paper explores cross-cultural innovation by analyzing data based on actual field studies. The primary criterion for case selection was that the characteristics of the innovator and the recipient groups be described. The country where the innovation was attempted is listed, along with the specific type of innovation proposed and the specific description of the change effort. The cases are then evaluated in terms of success and failure, and the most important factors, positive or negative, influencing the outcome are analyzed. The emerging pattern of the total process is discussed. (Author) (U)

AD- 658 473 5/11 5/1 9/2
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF

TECHNOLOGICAL CHANGE AND PUBLIC ADMINISTRATION. (U)

DESCRIPTIVE NOTE: Professional paper,
AUG 67 20P Rowan,Thomas C. ;
REPT. NO. SP-2817

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: Presented at the 1967 Conference of the American Society for Public Administration, San Francisco, March 1967.

DESCRIPTORS: (*DATA PROCESSING, SOCIOLOGY), (*SOCIOLOGY, *SYSTEMS ENGINEERING), DECISION MAKING, TRANSPORTATION, AIR POLLUTION, EDUCATION, LASERS, TIME SHARING, MANAGEMENT PLANNING AND CONTROL (U)
IDENTIFIERS: INNOVATION(TECHNOLOGY), PRIVACY (U)

The rapidly accelerating rate of technological change is discussed in relation to social goals. The impact of scientific and technological developments are affecting the quality of life sooner and more intensely than ever before. Techniques for facilitating change and example of two areas of technology, communication and information processing, as they impact on public administration are discussed. Developments in concepts, hardware, information management techniques and some problem areas for decision makers are specified. (Author) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD- 646 360 5/10
LIFE SCIENCES INC FORT WORTH TEX

THE ROLE OF TRIAL IN THE ACCEPTANCE AND ADOPTION OF NEW EQUIPMENT: A REVIEW AND SUMMARY. (U)

DESCRIPTIVE NOTE: Final rept.,
AUG 66 69P Berger,P. K. ;Matheny,W. G. ;
Newmiller,C. E. ;
REPT. NO. TR-66-1
CONTRACT: Nonr-4097(00)

UNCLASSIFIED REPORT

DESCRIPTORS: (*MACHINES, ACCEPTABILITY), (*MILITARY PERSONNEL, *ADJUSTMENT(PSYCHOLOGY)), ATTITUDES(PSYCHOLOGY), DISPLAY SYSTEMS, ALTIMETERS, ANALYSIS OF VARIANCE, PSYCHOLOGICAL TESTS (U)
IDENTIFIERS: INNOVATION(TECHNOLOGY) (U)

The report reviews three experiments and a substantial amount of related research literature concerned with the acceptance of innovations. The particular aim of the review is to consolidate information describing how trial usage or exposure can exhance the acceptability of new equipment developed for military utilization. The relations of individual differences to acceptance and adoption processes also are discussed. It is concluded that studies of acceptance behavior tend to be excessively restricted to specific products, personnel and situations. A more fruitful approach is believed to lie in systematic examinations of the acceptance-rejection processes and personal, attitudinal, and group variables which affect innovativeness. (Author) (U)

AD- 636 529 5/1
MATERIALS ADVISORY BOARD NAS-NRC WASHINGTON D C

AD HOC COMMITTEE ON PRINCIPLES OF RESEARCH-ENGINEERING INTERACTION. (U)

DESCRIPTIVE NOTE: Final rept.
JUL 66 363P
REPT. NO. MAB-222-M,
CONTRACT: SD-118,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RESEARCH MANAGEMENT, DEPARTMENT OF DEFENSE), (*ENGINEERING, SCIENTIFIC RESEARCH), SOCIAL COMMUNICATION, MATERIALS, MANAGEMENT ENGINEERING, MOTIVATION (U)
IDENTIFIERS: INNOVATION(TECHNOLOGY) (U)

Ten separate material developments were investigated and case histories are presented. A technique of analysis was developed and applied to the case histories to identify common elements and patterns which might be used as guides by the Department of Defense to stimulate research-engineering interactions in the solution of materials problems. The analysis identified several elements which were prominent in many of the cases. Among these are: (1) Flexibility for the individual investigators to make major changes in direction and goals was frequently required; (2) Close and frequent communications between organizationally independent groups were often essential; (3) Key individuals played essential roles in bridging the geographical, organizational, and functional barriers between groups; (4) The recognition of an important need was most frequently the principal factor in stimulating research-engineering interactions; and (5) Often technical approaches were available and lay dormant for some time before their pertinence to a specific need was recognized. (Author) (U)

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AD- 635 194 5/1 5/9
ARIZONA UNIV TUCSON DEPT OF SOCIOLOGY

FINAL SCIENTIFIC REPORT. (U)

JUN 66 9P
CONTRACT: AF-AFOSR-91-64,
MONITOR: AFOSR 66-1180

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*MANAGEMENT ENGINEERING, ANALYSIS), PERSONNEL MANAGEMENT, BEHAVIOR, EDUCATION, STATISTICAL ANALYSIS (U)
IDENTIFIERS: INNOVATION(TECHNOLOGY) (U)

The work accomplished is reported under four categories: (1) Exploration of the nature of and interrelations among a number of variables representing technological change, career progress, and personal and organizational factors; (2) Reporting results of the work to the scientific public; (3) Reporting results of the work to potential users; (4) Anticipated publications as a result of the research performed. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. Z0M09

AD- 445 144
LOCKHEED MISSILES AND SPACE CO SUNNYVALE CALIF

CREATIVITY, INNOVATION, AND INVENTION: AN ANNOTATED BIBLIOGRAPHY, (U)

AUG 64 16P Evans,George R. ;Stromer, Peter R. ;
REPT. NO. SB64 15 .5 10 64 5

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*MOTIVATION, BIBLIOGRAPHIES), (*BIBLIOGRAPHIES, MOTIVATION), SCIENTIFIC RESEARCH, REASONING, INDUSTRIES (U)
IDENTIFIERS: INNOVATION, INVENTIONS (U)

The recent business management literature was surveyed to assess current trends and developments in the field of creativity, innovation, and invention. The accelerating pace of technological change and its effect on aerospace research and development activities prompted this survey. The literature reveals that some tentative yardsticks are now available to identify creative talent and the means for optimizing its usage in industry. The importance of innovation and its successful implementation by both the military and aerospace industry is stressed as companies seed to adapt their work force and facilities to new markets.
(Author) (U)

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INNOVATIONS IN AIR FORCE TECHNICAL AND FLYING TRAINING,
AD- 707 511

* * *

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Instructional Strategies for a Performance Oriented Techniian Course.
AD- 760 116

* * *

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AD- 678 029

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AD- 705 702

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AD- 734 790

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Research and the Future of Engineering Psychology,
AD- 748 237

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FORT LEAVENWORTH KANS

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AD- 646 360

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CREATIVITY, INNOVATION, AND INVENTION: AN ANNOTATED BIBLIOGRAPHY,
AD- 445 144

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SB64 15
CREATIVITY, INNOVATION, AND INVENTION: AN ANNOTATED BIBLIOGRAPHY,
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AD-A017 602

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AD- 678 029

*RAND CORP SANTA MONICA CALIF

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P-3694-1
THE TECHNOLOGY GAP: ANALYSIS AND APPRAISAL,
AD- 662 376

* * *

P-4446
EVALUATION AND INNOVATION IN URBAN RESEARCH,
AD- 711 734

* * *

P-4640
Institutions, Innovation, and Incentives,
AD- 732 664

* * *

P-4946
Incentives for Innovation in the Public Schools,
AD- 766 861

* * *

P-4977
Models of Educational Innovation and Implications for Research,
AD- 768 070

* * *

P-5263
Research on Technological Change in the American Economy: A Brief Discussion,
AD-A019 343

* * *

P-5431
Macro and Micro Implementation,
AD-A022 235

* * *

RM-5182-PR
INNOVATION AND MILITARY REQUIREMENTS: A COMPARATIVE STUDY,
AD- 659 735

* * *

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RAND SYMPOSIUM ON PILOT TRAINING AND THE PILOT CAREER: RECOLLECTIONS OF THE CHAIRMAN,
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AD- 705 702

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AD- 734 790

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AD-A014 335

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AD-A018 152

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TESTING A HYPOTHESIS ON INNOVATION BY MEASUREMENT OF ORGANIZATIONAL GOAL STRUCTURES.

CORP AUTHOR-MONITOR AGENCY-4
UNCLASSIFIED Z0M09

SUBJECT INDEX

*ADJUSTMENT(PSYCHOLOGY)
Sonar Operators' Attitudes and Beliefs: Effects of Introduction of New Systems.*
AD-A036 480

MILITARY PERSONNEL
THE ROLE OF TRIAL IN THE ACCEPTANCE AND ADOPTION OF NEW EQUIPMENT: A REVIEW AND SUMMARY.*
AD- 646 360

NAVAL PERSONNEL
Attitudinal Factors in the Acceptance of Innovations in the Navy.*
AD- 874 789

*AERONAUTICS
RESEARCH MANAGEMENT
INNOVATION AND MILITARY REQUIREMENTS: A COMPARATIVE STUDY,*
AD- 659 735

*AIR FORCE PERSONNEL
Remotely Piloted Vehicles Design Option Decision Trees.*
AD-A018 152

ATTITUDES(PSYCHOLOGY)
The Politics of Innovation: Pattern of an Air Force Case.*
AD- 891 310

*AIR FORCE TRAINING
TEACHING METHODS
INNOVATIONS IN AIR FORCE TECHNICAL AND FLYING TRAINING,*
AD- 707 511

TECHNICIANS
Instructional Strategies for a Performance Oriented Techniian Course.*
AD- 760 116

*AIRCRAFT EQUIPMENT
MODIFICATION KITS
The Politics of Innovation: Pattern of an Air Force Case.*
AD- 891 310

*ARMY
Development of a Technology Assessment and Advanced Technology Transfer Program for the Department of the Army. Part 1.*
AD- 772 087

*ATTITUDES(PSYCHOLOGY)
The Use of Evidence in Influencing Technician Attitudes.*
AD-A017 602
Sonar Operators' Attitudes and Beliefs: Effects of Introduction of New Systems.*
AD-A036 480

NAVAL TRAINING
Attitudinal Factors in the Acceptance of Innovations in the Navy.*
AD- 874 789

*AVIATION SAFETY
Bird Strike Alleviation Techniques. Volume I. Technical Discussion.*
AD-A015 803

*BEHAVIORAL SCIENCE
Macro and Micro Implementation,*
AD-A022 235

*BIBLIOGRAPHIES
MOTIVATION
CREATIVITY, INNOVATION, AND INVENTION: AN ANNOTATED BIBLIOGRAPHY,*
AD- 445 144

*BIRD STRIKES
Bird Strike Alleviation Techniques. Volume I. Technical Discussion.*
AD-A015 803

*BUILDINGS
FALLOUT SHELTERS
A STUDY OF THE ADOPTION-DIFFUSION PROCESS IN THE DEVELOPMENT OF SHELTER IN NEW CONSTRUCTION.*
AD- 673 722

*CIVIL DEFENSE
FALLOUT SHELTERS
A STUDY OF THE ADOPTION-DIFFUSION PROCESS IN THE DEVELOPMENT OF SHELTER IN NEW CONSTRUCTION.*
AD- 673 722

*COAST GUARD
Development of a Modified Aids to Navigation Management Information System for the United States Coast Guard with an Illustrated Application Through Cost-Effectiveness and Malfunction Analyses.*
AD-A009 934

*COMPUTERS
EDUCATION
Institutions, Innovation, and Incentives,*
AD- 732 664

*CONTRACTS
INDUSTRIAL RESEARCH
Conference on Industrial Innovation through Contract Research, 15-16 April 1971 - University of Newcastle upon Tyne.*
AD- 734 387

*CREATIVITY
Brainstorming to Increase Alternative Generation: A Comparison of Group Participation and Pooled Individual Effort.*
AD-A043 705
The Influence of Learning Strategy and Performance Strategy upon Engineering Design.*
AD-A050 298
The Influence of Learning Strategy and Performance Strategy upon Engineering Design.*
AD-A050 460

MILITARY REQUIREMENTS
INNOVATION AND MILITARY REQUIREMENTS: A COMPARATIVE STUDY,*
AD- 659 735

*CULTURE
SOCIAL PSYCHOLOGY
THE PROCESS OF EFFECTING change,*
AD- 677 980

SOCIOLOGY
THE PROCESS OF CROSS-CULTURAL INNOVATION,*
AD- 659 038

*DATA MANAGEMENT
Technical Literature Review Concerning Management Information Systems.*
AD- 781 749

*DATA PROCESSING
SOCIOLOGY
TECHNOLOGICAL CHANGE AND PUBLIC ADMINISTRATION.*
AD- 658 473

*DECISION MAKING
Remotely Piloted Vehicles Design Option Decision Trees.*
AD-A018 152

MATHEMATICAL MODELS
EVALUATION AND INNOVATION IN URBAN RESEARCH,*
AD- 711 734

REVIEWS
ON THE DIFFUSION OF INNOVATIONS RESEARCH TRADITION.*
AD- 701 001

*DEPARTMENT OF DEFENSE
Report of the Defense Science Board Task Force on Technology Base Strategy.*
AD-A032 372

*DISTRIBUTION(ECONOMICS)
REVIEWS
THE TECHNOLOGY GAP: ANALYSIS AND APPRAISAL,*
AD- 662 376

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MANAGEMENT PLANNING AND CONTROL
POLICY PLANNING FOR TECHNICAL INFORMATION IN INDUSTRY,*
AD- 661 589

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Research on Technological Change in the American Economy: A Brief Discussion,*
AD-A019 343

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Macro and Micro Implementation,*
AD-A022 235

COMPUTERS
Institutions, Innovation, and Incentives,*
AD- 732 664

MANAGEMENT ENGINEERING
Models of Educational Innovation and Implications for Research,*
AD- 768 070

*ENGINEERING
SCIENTIFIC RESEARCH
AD HOC COMMITTEE ON PRINCIPLES OF RESEARCH-ENGINEERING INTERACTION.*
AD- 636 529

*ENGINEERS
The Influence of Learning Strategy and Performance Strategy upon Engineering Design.*
AD-A050 298
The Influence of Learning Strategy and Performance Strategy upon Engineering Design.*
AD-A050 460

*EVOLUTION(GENERAL)
Macro and Micro Implementation,*
AD-A022 235

*EXPERIMENTAL DESIGN
The Influence of Learning Strategy and Performance Strategy upon Engineering Design.*
AD-A050 460

*FALLOUT SHELTERS
BUILDINGS
A STUDY OF THE ADOPTION-DIFFUSION PROCESS IN THE DEVELOPMENT OF SHELTER IN NEW CONSTRUCTION.*
AD- 673 722

*FORECASTING
Methods for Predicting and Assessing the Impact of Technology on Human Resource Parameters: Report of the Literature.*
AD-A000 051
Technological Forecasting and Management Action.*
AD-A014 631

*GROUP DYNAMICS
Brainstorming to Increase Alternative Generation: A Comparison of Group Participation and Pooled Individual Effort.*
AD-A043 705

*HOSPITALS
Analysis of Interactions between Categorical Variables.*
AD- 783 688

*HUMAN FACTORS ENGINEERING
REVIEWS
Research and the Future of Engineering Psychology,*
AD- 748 237

*HUMAN RESOURCES
Methods for Predicting and Assessing the Impact of Technology on Human Resource Parameters: Report of the Literature.*
AD-A000 051
Development, Application, and Evaluation of a Procedure for Quantification of Technological

Change Impact on Human Resources.*
AD-A014 332
A Procedure for Quantification of Technological Changes on Human Resources.*
AD-A014 335
Remotely Piloted Vehicles Design Option Decision Trees.*
AD-A018 152

*INDUSTRIAL RESEARCH
CONTRACTS
Conference on Industrial Innovation through Contract Research, 15-16 April 1971 - University of Newcastle upon Tyne.*
AD- 734 387

DISSEMINATION
Diffusion of Technical Innovation.*
AD- 734 790

*INDUSTRIES
DOCUMENTS
POLICY PLANNING FOR TECHNICAL INFORMATION IN INDUSTRY,*
AD- 661 589

*LEADERSHIP
A Further Look at Leader Legitimacy, Influence, and Innovation.*
AD-A042 464
Brainstorming to Increase Alternative Generation: A Comparison of Group Participation and Pooled Individual Effort.*
AD-A043 705

*LEARNING
The Influence of Learning Strategy and Performance Strategy upon Engineering Design.*
AD-A050 298
The Influence of Learning Strategy and Performance Strategy upon Engineering Design.*
AD-A050 460

*MACHINES
ACCEPTABILITY
THE ROLE OF TRIAL IN THE ACCEPTANCE AND ADOPTION OF NEW EQUIPMENT: A REVIEW AND SUMMARY.*
AD- 646 360

*MAN MACHINE SYSTEMS
DESIGN
Research and the Future of Engineering Psychology,*
AD- 748 237

*MANAGEMENT
Technological Forecasting and Management Action.*
AD-A014 631

*MANAGEMENT ENGINEERING
ANALYSIS
Technological Change and management.
AD- 635 194

EDUCATION
Models of Educational Innovation and Implications for Research,*
AD- 768 070

STANDARDS
CRITERIA FOR THE DESIGN OF NEW FORMS OF ORGANIZATION.*
AD- 705 702

*MANAGEMENT INFORMATION SYSTEMS
Technical Literature Review Concerning Management Information Systems.*
AD- 781 749
Development of a Modified Aids to Navigation Management Information System for the United States Coast Guard with an Illustrated Application Through Cost-Effectiveness and Malfunction Analyses.*
AD-A009 934

*MANAGEMENT PLANNING AND CONTROL
Development of a Technology Assessment and Advanced Technology Transfer Program for the Department of the Army. Part 1.*
AD- 772 087
Interservice Procedures for Instructional Systems Development. Phase III. Develop.*
AD-A019 489
Macro and Micro Implementation,*
AD-A022 235
Report of the Defense Science Board Task Force on Technology Base Strategy.*
AD-A032 372

DOCUMENTS
POLICY PLANNING FOR TECHNICAL INFORMATION IN INDUSTRY,*
AD- 661 589

ECONOMICS
THE TECHNOLOGY GAP: ANALYSIS AND APPRAISAL,*
AD- 662 376

EDUCATION
Incentives for Innovation in the Public Schools,*
AD- 766 861

*MANPOWER UTILIZATION
Reduced Bridge Manning without Equipment Augmentation Results of Ship Reports and Comments.*
AD- 777 417

*MATHEMATICAL PREDICTION
Development, Application, and Evaluation of a Procedure for Quantification of Technological Change Impact on Human Resources.*
AD-A014 332
A Procedure for Quantification of Technological Changes on Human Resources.*
AD-A014 335

*MILITARY BUDGETS
Report of the Defense Science Board Task Force on Technology Base Strategy.*
AD-A032 372

*MILITARY PERSONNEL
ADJUSTMENT(PSYCHOLOGY)
THE ROLE OF TRIAL IN THE ACCEPTANCE AND ADOPTION OF NEW EQUIPMENT: A REVIEW AND SUMMARY.*
AD- 646 360

*MILITARY PLANNING
Report of the Defense Science Board Task Force on Technology Base Strategy.*
AD-A032 372

*MILITARY TRAINING
Interservice Procedures for Instructional Systems Development. Phase III. Develop.*
AD-A019 489

*MOTIVATION
BIBLIOGRAPHIES
CREATIVITY, INNOVATION, AND INVENTION: AN ANNOTATED BIBLIOGRAPHY,*
AD- 445 144

*MULTIVARIATE ANALYSIS
Analysis of Interactions between Categorical Variables.*
AD- 783 688

*NAVAL EQUIPMENT
The Use of Evidence in Influencing Technician Attitudes.*
AD-A017 602

*NAVIGATIONAL AIDS
Development of a Modified Aids to Navigation Management Information System for the United States Coast Guard with an Illustrated Application Through Cost-Effectiveness and Malfunction Analyses.*
AD-A009 934

*NUCLEAR INDUSTRIAL APPLICATIONS
URBAN PLANNING
TECHNOLOGICAL INNOVATION IN CIVILIAN PUBLIC AREAS,*
AD- 824 388

*ON LINE SYSTEMS
Technical Literature Review Concerning Management Information Systems.*
AD- 781 749

*ORGANIZATIONS
EXPERIMENTAL DESIGN
CRITERIA FOR THE DESIGN OF NEW FORMS OF ORGANIZATION.*
AD- 705 702

MANAGEMENT PLANNING AND CONTROL
TESTING A HYPOTHESIS ON INNOVATION BY MEASUREMENT OF ORGANIZATIONAL GOAL STRUCTURES.*
AD- 704 808

*PILOTS
TRAINING
RAND SYMPOSIUM ON PILOT TRAINING AND THE PILOT CAREER: RECOLLECTIONS OF THE CHAIRMAN,*
AD- 704 889

*PLANNING
Technological Forecasting and Management Action.*
AD-A014 631

*POLITICAL SCIENCE
EASTERN EUROPE
Reprint: Bureaucratic conservatism and innovation in Eastern Europe.
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*PRODUCTIVITY
Innovation and Productivity in Research and Development: Some Associated Individual and Organizational Variables.*
AD-A032 273

*PROGRAMMED INSTRUCTION
SYMPOSIA
RAND SYMPOSIUM ON PILOT TRAINING AND THE PILOT CAREER: RECOLLECTIONS OF THE CHAIRMAN,*
AD- 704 889

*REMOTELY PILOTED VEHICLES
Remotely Piloted Vehicles Design Option Decision Trees.*
AD-A018 152

*RESEARCH MANAGEMENT
The Roles and Identification of Innovators and Linkers in the Technology Transfer Process.*
AD-A047 125

AERONAUTICS
INNOVATION AND MILITARY REQUIREMENTS: A COMPARATIVE STUDY,*
AD- 659 735

DEPARTMENT OF DEFENSE
AD HOC COMMITTEE ON PRINCIPLES OF RESEARCH-ENGINEERING INTERACTION.*
AD- 636 529

*REVIEWS
HUMAN FACTORS ENGINEERING
Research and the Future of Engineering Psychology,*
AD- 748 237

*SCIENTIFIC RESEARCH
Innovation and Productivity in Research and Development: Some Associated Individual and Organizational Variables.*
AD-A032 273

MANAGEMENT ENGINEERING
ON THE DIFFUSION OF INNOVATIONS RESEARCH TRADITION.*
AD- 701 001

REVIEWS
SCIENTIFIC RESEARCH AND INNOVATION,*
AD- 669 816

*SHIP PERSONNEL
Reduced Bridge Manning without Equipment Augmentation Results of Ship Reports and Comments.*
AD- 777 417

*SHIPBOARD
Reduced Bridge Manning without Equipment Augmentation Results of Ship Reports and Comments.*
AD- 777 417

*SOCIAL PSYCHOLOGY
CULTURE
THE PROCESS OF EFFECTING change.*
AD- 677 980

*SOCIOLOGY
CULTURE
THE PROCESS OF CROSS-CULTURAL INNOVATION.*
AD- 659 038

SYSTEMS ENGINEERING
TECHNOLOGICAL CHANGE AND PUBLIC ADMINISTRATION.*
AD- 658 473

*STEEL
WEAR RESISTANCE
Cavitation and hydraulic abrasive stability of metals in hydraulic turbines (selected articles)--Translation.
AD- 702 331

*SYMPOSIA
INDUSTRIAL RESEARCH
Conference on Industrial Innovation through Contract Research, 15-16 April 1971 - University of Newcastle upon Tyne.*
AD- 734 387

*SYSTEMS ENGINEERING
SOCIOLOGY
TECHNOLOGICAL CHANGE AND PUBLIC ADMINISTRATION.*
AD- 658 473

*TEACHING METHODS
SYSTEMS ENGINEERING
Incentives for Innovation in the Public Schools,*
AD- 766 861

*TECHNICIANS
The Use of Evidence in Influencing Technician Attitudes.*
AD-A017 602

AIR FORCE TRAINING
Instructional Strategies for a Performance Oriented Techniian Course.*
AD- 760 116

*TECHNOLOGY
Development of a Technology Assessment and Advanced Technology Transfer Program for the Department of the Army. Part 1.*
AD- 772 087
Methods for Predicting and Assessing the Impact of Technology on Human Resource Parameters: Report of the Literature.*
AD-A000 051
Development, Application, and Evaluation of a Procedure for Quantification of Technological Change Impact on Human Resources.*
AD-A014 332
A Procedure for Quantification of Technological Changes on Human Resources.*
AD-A014 335
Technological Forecasting and Management Action.*
AD-A014 631
Remotely Piloted Vehicles Design Option Decision Trees.*
AD-A018 152
Research on Technological Change in the American Economy: A Brief Discussion,*
AD-A019 343
Report of the Defense Science Board Task Force on Technology Base Strategy.*
AD-A032 372

*TECHNOLOGY TRANSFER
The Microcomputer: Technological Innovation and Transfer.*
AD-A026 970
The Roles and Identification of Innovators and Linkers in the Technology Transfer Process.*
AD-A047 125

*TURBINES
DEGRADATION
Cavitation and hydraulic abrasive stability of metals in hydraulic turbines (selected articles)--Translation.
AD- 702 331

*UNDERWATER VEHICLES
HULLS(MARINE)
Transparent Hull Submersibles and the Makakai.*
AD- 738 922

*URBAN PLANNING
RESEARCH MANAGEMENT
EVALUATION AND INNOVATION IN URBAN RESEARCH,*
AD- 711 734

TITLE INDEX

AD HOC COMMITTEE ON PRINCIPLES OF RESEARCH-ENGINEERING INTERACTION.
AD- 636 529

Analysis of Interactions between Categorical Variables.
AD- 783 688

Attitudinal Factors in the Acceptance of Innovations in the Navy.
AD- 874 789

Bird Strike Alleviation Techniques. Volume I. Technical Discussion.
AD-A015 803

Brainstorming to Increase Alternative Generation: A Comparison of Group Participation and Pooled Individual Effort.
AD-A043 705

BUREAUCRATIC CONSERVATISM AND INNOVATION IN EASTERN EUROPE,
AD- 678 029

CAVITATION AND HYDRAULIC ABRASIVE STABILITY OF METALS IN HYDRAULIC TURBINES (SELECTED ARTICLES),
AD- 702 331

Conference on Industrial Innovation through Contract Research, 15-16 April 1971 - University of Newcastle upon Tyne.
AD- 734 387

CREATIVITY, INNOVATION, AND INVENTION: AN ANNOTATED BIBLIOGRAPHY,
AD- 445 144

CRITERIA FOR THE DESIGN OF NEW FORMS OF ORGANIZATION.
AD- 705 702

Development, Application, and Evaluation of a Procedure for Quantification of Technological Change Impact on Human Resources.
AD-A014 332

Development of a Modified Aids to Navigation Management Information System for the United States Coast Guard with an Illustrated Application Through Cost-Effectiveness and Malfunction Analyses.
AD-A009 934

Development of a Technology Assessment and Advanced Technology Transfer Program for the Department of the Army. Part 1.
AD- 772 087

Diffusion of Technical Innovation.
AD- 734 790

EVALUATION AND INNOVATION IN URBAN RESEARCH,
AD- 711 734

FINAL SCIENTIFIC REPORT.
AD- 635 194

A Further Look at Leader Legitimacy, Influence, and Innovation.
AD-A042 464

Incentives for Innovation in the Public Schools,
AD- 766 861

The Influence of Learning Strategy and Performance Strategy upon Engineering Design.
AD-A050 298

The Influence of Learning Strategy and Performance Strategy upon Engineering Design.
AD-A050 460

INNOVATION AND MILITARY REQUIREMENTS: A COMPARATIVE STUDY,
AD- 659 735

Innovation and Productivity in Research and Development: Some Associated Individual and Organizational Variables.
AD-A032 273

INNOVATIONS IN AIR FORCE TECHNICAL AND FLYING TRAINING,
AD- 707 511

Institutions, Innovation, and Incentives,
AD- 732 664

Instructional Strategies for a Performance Oriented Technician Course.
AD- 760 116

Interservice Procedures for Instructional Systems Development. Phase III. Develop.
AD-A019 489

Macro and Micro Implementation,
AD-A022 235

Methods for Predicting and Assessing the Impact of Technology on Human Resource Parameters: Report of the Literature.
AD-A000 051

The Microcomputer: Technological Innovation and Transfer.
AD-A026 970

Models of Educational Innovation and Implications for Research,
AD- 768 070

ON THE DIFFUSION OF INNOVATIONS RESEARCH TRADITION.
AD- 701 001

POLICY PLANNING FOR TECHNICAL INFORMATION IN INDUSTRY,
AD- 661 589

The Politics of Innovation: Pattern of an Air Force Case.
AD- 891 310

A Procedure for Quantification of Technological Changes on Human Resources.
AD-A014 335

THE PROCESS OF CROSS-CULTURAL INNOVATION,
AD- 659 038

THE PROCESS OF EFFECTING CHANGE,
AD- 677 980

RAND SYMPOSIUM ON PILOT TRAINING AND THE PILOT CAREER: RECOLLECTIONS OF THE CHAIRMAN,
AD- 704 889

Reduced Bridge Manning without Equipment Augmentation Results of Ship Reports and Comments.
AD- 777 417

Remotely Piloted Vehicles Design Option Decision Trees.
AD-A018 152

Report of the Defense Science Board Task Force on Technology Base Strategy.
AD-A032 372

Research and the Future of Engineering Psychology,
AD- 748 237

Research on Technological Change in the American Economy: A Brief Discussion,
AD-A019 343

THE ROLE OF TRIAL IN THE ACCEPTANCE AND ADOPTION OF NEW EQUIPMENT: A REVIEW AND SUMMARY.
AD- 646 360

The Roles and Identification of Innovators and Linkers in the Technology Transfer Process.
AD-A047 125

SCIENTIFIC RESEARCH AND INNOVATION,
AD- 669 816

Sonar Operators' Attitudes and Beliefs: Effects of Introduction of New Systems.
AD-A036 480

A STUDY OF THE ADOPTION-DIFFUSION PROCESS IN THE DEVELOPMENT OF SHELTER IN NEW CONSTRUCTION.
AD- 673 722

Technical Literature Review Concerning Management Information Systems.
AD- 781 749

TECHNOLOGICAL CHANGE AND PUBLIC ADMINISTRATION.
AD- 658 473

Technological Forecasting and Management Action.
AD-A014 631

TECHNOLOGICAL INNOVATION IN CIVILIAN PUBLIC AREAS,
AD- 824 388

THE TECHNOLOGY GAP: ANALYSIS AND APPRAISAL,
AD- 662 376

TESTING A HYPOTHESIS ON INNOVATION BY MEASUREMENT OF ORGANIZATIONAL GOAL STRUCTURES.
AD- 704 808

Transparent Hull Submersibles and the Makakai.
AD- 738 922

The Use of Evidence in Influencing Technician Attitudes.
AD-A017 602

PERSONAL AUTHOR INDEX

*ABRAMS, ALVIN J.
* * *
The Use of Evidence in Influencing Technician Attitudes.
AD-A017 602

*ABRAMS, MACY L.
* * *
Sonar Operators' Attitudes and Beliefs: Effects of Introduction of New Systems.
AD-A036 480

*ADAMS, JACK A.
* * *
Research and the Future of Engineering Psychology,
AD- 748 237

*ANDERSON, J. CHARNEL
* * *
THE PROCESS OF CROSS-CULTURAL INNOVATION,
AD- 659 038

*BAILEY, R.
* * *
The Influence of Learning Strategy and Performance Strategy upon Engineering Design.
AD-A050 298
* * *
The Influence of Learning Strategy and Performance Strategy upon Engineering Design.
AD-A050 460

*BAUER, A. B.
* * *
Bird Strike Alleviation Techniques. Volume I. Technical Discussion.
AD-A015 803

*BECK, CARL
* * *
BUREAUCRATIC CONSERVATISM AND INNOVATION IN EASTERN EUROPE,
AD- 678 029

*BERGER, P. K.
* * *
THE ROLE OF TRIAL IN THE ACCEPTANCE AND ADOPTION OF NEW EQUIPMENT: A REVIEW AND SUMMARY.
AD- 646 360

*BERMAN, PAUL
* * *
Macro and Micro Implementation,
AD-A022 235

*BLACK, RONALD P.
* * *
TECHNOLOGICAL INNOVATION IN CIVILIAN PUBLIC AREAS,
AD- 824 388

*BRANSON, ROBERT K.
* * *
Interservice Procedures for Instructional Systems Development. Phase III. Develop.
AD-A019 489

*BREWER, GARRY D.
* * *
EVALUATION AND INNOVATION IN URBAN RESEARCH,
AD- 711 734

*CETRON, MARVIN J.
* * *
Development of a Technology Assessment and Advanced Technology Transfer Program for the Department of the Army. Part 1.
AD- 772 087

*CHILDERS, C. A.
* * *
Bird Strike Alleviation Techniques. Volume I. Technical Discussion.
AD-A015 803

*COHEN, PETER A.
* * *
Sonar Operators' Attitudes and Beliefs: Effects of Introduction of New Systems.
AD-A036 480

*COKER, M. J.
* * *
Bird Strike Alleviation Techniques. Volume I. Technical Discussion.
AD-A015 803

*COX, J. LAMARR
* * *
Interservice Procedures for Instructional Systems Development. Phase III. Develop.
AD-A019 489

*DIETERLY, DUNCAN L.
* * *
Methods for Predicting and Assessing the Impact of Technology on Human Resource Parameters: Report of the Literature.
AD-A000 051
* * *
Development, Application, and Evaluation of a Procedure for Quantification of Technological Change Impact on Human Resources.
AD-A014 332
* * *
A Procedure for Quantification of Technological Changes on Human Resources.
AD-A014 335
* * *
Remotely Piloted Vehicles Design Option Decision Trees.
AD-A018 152

*DULNEV, V. B.
* * *
CAVITATION AND HYDRAULIC ABRASIVE STABILITY OF METALS IN HYDRAULIC TURBINES (SELECTED ARTICLES),
AD- 702 331

*ENG, R. K.
* * *
Bird Strike Alleviation Techniques. Volume I. Technical Discussion.
AD-A015 803

*ENSOR, D.
* * *
The Influence of Learning Strategy

and Performance Strategy upon Engineering Design.
AD-A050 460

*EVANS, GEORGE R.
* * *
CREATIVITY, INNOVATION, AND INVENTION: AN ANNOTATED BIBLIOGRAPHY,
AD- 445 144

*FOREMAN, CHARLES W.
* * *
TECHNOLOGICAL INNOVATION IN CIVILIAN PUBLIC AREAS,
AD- 824 388

*FOSS, FRANK C.
* * *
Instructional Strategies for a Performance Oriented Techniian Course.
AD- 760 116

*FREEMAN, CHRISTOPHER
* * *
Diffusion of Technical Innovation.
AD- 734 790

*FURMAN, JOHN P.
* * *
Interservice Procedures for Instructional Systems Development. Phase III. Develop.
AD-A019 489

*GAVRANEK, V. V.
* * *
CAVITATION AND HYDRAULIC ABRASIVE STABILITY OF METALS IN HYDRAULIC TURBINES (SELECTED ARTICLES),
AD- 702 331

*HABERSTROH, CHADWICK J.
* * *
TESTING A HYPOTHESIS ON INNOVATION BY MEASUREMENT OF ORGANIZATIONAL GOAL STRUCTURES.
AD- 704 808

*HARMAN, ALVIN J.
* * *
Research on Technological Change in the American Economy: A Brief Discussion,
AD-A019 343

*HARMON, E. GLYNN
* * *
Technical Literature Review Concerning Management Information Systems.
AD- 781 749

*HEIN, ROBERT A.
* * *
Conference on Industrial Innovation through Contract Research, 15-16 April 1971 - University of Newcastle upon Tyne.
AD- 734 387

*HOCHBERGER, LYLE K.
* * *
The Roles and Identification of Innovators and Linkers in the Technology Transfer Process.
AD-A047 125

*HOLLANDER, EDWIN P.
* * *
A Further Look at Leader Legitimacy, Influence, and Innovation.
AD-A042 464

*JABERY, ABDOLHOSEIN MOJTEHED
* * *
Technological Forecasting and Management Action.
AD-A014 631

*JUDD, WILSON A.
* * *
Technical Literature Review Concerning Management Information Systems.
AD- 781 749

*JULIAN, JAMES W.
* * *
A Further Look at Leader Legitimacy, Influence, and Innovation.
AD-A042 464

*KING, F. J.
* * *
Interservice Procedures for Instructional Systems Development. Phase III. Develop.
AD-A019 489

*KLEIMAN, HERBERT S.
* * *
The Microcomputer: Technological Innovation and Transfer.
AD-A026 970

*KLITGAARD, ROBERT E.
* * *
Models of Educational Innovation and Implications for Research,
AD- 768 070

*KORKAN, KENNETH D.
* * *
Development, Application, and Evaluation of a Procedure for Quantification of Technological Change Impact on Human Resources.
AD-A014 332
* * *
A Procedure for Quantification of Technological Changes on Human Resources.
AD-A014 335
* * *
Remotely Piloted Vehicles Design Option Decision Trees.
AD-A018 152

*KULLBACK, S.
* * *
Analysis of Interactions between Categorical Variables.
AD- 783 688

*LANE, RICHARD
* * *
Reduced Bridge Manning without Equipment Augmentation Results of Ship Reports and Comments.

AD- 777 417

*LAWRENCE, JAMES H., JR
* * *
Bird Strike Alleviation Techniques. Volume I. Technical Discussion.
AD-A015 803

*LEVIEN, ROGER E.
* * *
Institutions, Innovation, and Incentives,
AD- 732 664

*LICHT, MARK H.
* * *
The Use of Evidence in Influencing Technician Attitudes.
AD-A017 602

*LOGAN, ROBERT
* * *
Technical Literature Review Concerning Management Information Systems.
AD- 781 749

*MACKIE, ROBERT R.
* * *
Attitudinal Factors in the Acceptance of Innovations in the Navy.
AD- 874 789

*MAKOEV, KH. S.
* * *
CAVITATION AND HYDRAULIC ABRASIVE STABILITY OF METALS IN HYDRAULIC TURBINES (SELECTED ARTICLES),
AD- 702 331

*MATHENY, W. G.
* * *
THE ROLE OF TRIAL IN THE ACCEPTANCE AND ADOPTION OF NEW EQUIPMENT: A REVIEW AND SUMMARY.
AD- 646 360

*MCCLELLAND, WILLIAM A.
* * *
THE PROCESS OF EFFECTING CHANGE,
AD- 677 980

*MCLAUGHLIN, MILBREY WALLIN
* * *
. Macro and Micro Implementation,
AD-A022 235

*MCPHERSON, JOSEPH H.
* * *
CRITERIA FOR THE DESIGN OF NEW FORMS OF ORGANIZATION.
AD- 705 702

*MECHERIKOFF, MICHAEL
* * *
Attitudinal Factors in the Acceptance of Innovations in the Navy.
AD- 874 789

*MORRIS, DAVID L.
* * *
The Politics of Innovation: Pattern of an Air Force Case.
AD- 891 310

*MURPHY, DOUGLAS W.
* * *
Transparent Hull Submersibles and the Makakai.
AD- 738 922

*NELSON, RICHARD R.
* * *
THE TECHNOLOGY GAP: ANALYSIS AND APPRAISAL,
AD- 662 376

*NEWMILLER, C. E.
* * *
THE ROLE OF TRIAL IN THE ACCEPTANCE AND ADOPTION OF NEW EQUIPMENT: A REVIEW AND SUMMARY.
AD- 646 360

*NIEHOFF, ARTHUR H.
* * *
THE PROCESS OF CROSS-CULTURAL INNOVATION,
AD- 659 038

*O'NEIL, HAROLD F., JR
* * *
Technical Literature Review Concerning Management Information Systems.
AD- 781 749

*PASK, G.
* * *
The Influence of Learning Strategy and Performance Strategy upon Engineering Design.
AD-A050 460

*PASK, GORDON
* * *
The Influence of Learning Strategy and Performance Strategy upon Engineering Design.
AD-A050 298

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INNOVATION AND MILITARY REQUIREMENTS: A COMPARATIVE STUDY,
AD- 659 735

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Instructional Strategies for a Performance Oriented Technician Course.
AD- 760 116

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Incentives for Innovation in the Public Schools,
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Methods for Predicting and Assessing the Impact of Technology on Human Resource Parameters: Report of the Literature.
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Development, Application, and Evaluation of a Procedure for Quantification of Technological

Change Impact on Human Resources.
AD-A014 332

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A Procedure for Quantification of Technological Changes on Human Resources.
AD-A014 335

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Remotely Piloted Vehicles Design Option Decision Trees.
AD-A018 152

*PRICE, WILLIAM J.

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SCIENTIFIC RESEARCH AND INNOVATION,
AD- 669 816

*QUESADA, GUSTAVO M.

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ON THE DIFFUSION OF INNOVATIONS RESEARCH TRADITION.
AD- 701 001

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Interservice Procedures for Instructional Systems Development. Phase III. Develop.
AD-A019 489

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Analysis of Interactions between Categorical Variables.
AD- 783 688

*ROEPCKE, LEWIS

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Development of a Technology Assessment and Advanced Technology Transfer Program for the Department of the Army. Part 1.
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TECHNOLOGICAL CHANGE AND PUBLIC ADMINISTRATION.
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Reduced Bridge Manning without Equipment Augmentation Results of Ship Reports and Comments.
AD- 777 417

*SELEZNEV, A. G.

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CAVITATION AND HYDRAULIC ABRASIVE STABILITY OF METALS IN HYDRAULIC TURBINES (SELECTED ARTICLES),
AD- 702 331

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The Use of Evidence in Influencing Technician Attitudes.
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Sonar Operators' Attitudes and Beliefs: Effects of Introduction of New Systems.
AD-A036 480

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Instructional Strategies for a Performance Oriented Techniian Course.
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Innovation and Productivity in Research and Development: Some Associated Individual and Organizational Variables.
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Development of a Modified Aids to Navigation Management Information System for the United States Coast Guard with an Illustrated Application Through Cost-Effectiveness and Malfunction Analyses.
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RAND SYMPOSIUM ON PILOT TRAINING AND THE PILOT CAREER: RECOLLECTIONS OF THE CHAIRMAN,
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A STUDY OF THE ADOPTION-DIFFUSION PROCESS IN THE DEVELOPMENT OF SHELTER IN NEW CONSTRUCTION.
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CREATIVITY, INNOVATION, AND INVENTION: AN ANNOTATED BIBLIOGRAPHY.
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INNOVATIONS IN AIR FORCE TECHNICAL AND FLYING TRAINING,
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CRITERIA FOR THE DESIGN OF NEW FORMS OF ORGANIZATION.
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The Influence of Learning Strategy and Performance Strategy upon Engineering Design.
AD-A050 460

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The Roles and Identification of Innovators and Linkers in the Technology Transfer Process.
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POLICY PLANNING FOR TECHNICAL INFORMATION IN INDUSTRY,
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Sonar Operators' Attitudes and Beliefs: Effects of Introduction of New Systems.
AD-A036 480