

Unclassified-Unlimited

AD-675 900

**A DDC BIBLIOGRAPHY ON
COST EFFECTIVENESS ANALYSIS**

VOLUME I of IV VOLUMES

DDC-TAS-68-14

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AUGUST 1968

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Information Springfield Va 22151

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DEFENSE SUPPLY AGENCY**

U N C L A S S I F I E D - U N L I M I T E D

AD-675 900

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DEFENSE DOCUMENTATION CENTER
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SCIENTIFIC and TECHNICAL INFORMATION
Cameron Station, Alexandria, Virginia 22314

U N C L A S S I F I E D - U N L I M I T E D

P R E F A C E

This bibliography consists of a compilation of 160 Unclassified-Unlimited references, pertaining to Cost Effectiveness Analysis, selected from the DDC collection and covering a period from 1967 through the first half of 1968.

This report is an update of DDC report bibliographies on Cost Effectiveness Analysis: AD-808 900, AD-808 901, AD-808 902, AD-379 600, AD-379 601, AD-379-602 and AD-379 603.

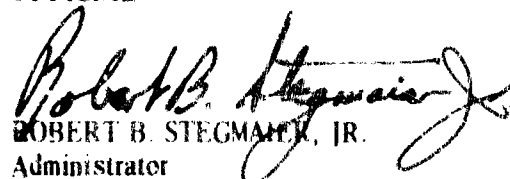
Cost Effectiveness Analysis and Cost in this volume relate to program evaluations, management techniques, research and development decision making, management problems, design tradeoffs, related cost analysis and methodology, and systems value engineering.

Individual entries are arranged by AD number in numerical sequence. Computer-generated indexes of Title, Corporate Author, Subject, Personal Author, Contract Number, Report Number and AD-Numeric are also included.

This Volume (I) is supplemented by Volume II (AD-840 900) Unclassified-Limited, Volume III (AD-393 202) Secret, and Volume IV (AD-393 203) Secret Restricted Data.

BY ORDER OF THE DIRECTOR, DEFENSE SUPPLY AGENCY

OFFICIAL



ROBERT B. STEGMAIER, JR.
Administrator
Defense Documentation Center

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OPTIMALITY OF MYOPIC INVENTORY POLICIES FOR SEVERAL SUBSTITUTE PRODUCTS,
OPTIMUM MAINTENANCE WITH INCOMPLETE INFORMATION,
PROCESS FUNCTION FOR RAIL LINEHAUL OPERATIONS,
PROCUREMENT: MULTIPLE INCENTIVE CONTRACTING, SCIENTIFIC CONTRACTING WITH ACCENT ON TRADE-
PRODUCTION SMOOTHING WITH STOCHASTIC DEMAND AND RELATED INVENTORY PROBLEMS,
PROGRAM FOR ON-LINE ANALYSIS OF NONLINEAR ELECTRONIC CIRCUITS,
PROPOSED CONTENT OF AN OFFICER PERSONNEL COST MODEL,
SOCIAL COST OF PERTIC ULCER,
SOME COMMENTS ON SYSTEMS ANALYSIS,
STOCHASTIC DYNAMIC MULTIMODE TRANSPORTATION MODEL,
STRUCTURE AND DYNAMICS OF RESEARCH AND EXPLORATORY DEVELOPMENT IN DEFENSE R AND D (INDU-
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STUDY OF DOCUMENTATION PROCEDURES AND MECHANISMS,
SYSTEM DESIGN: EVALUATION AND COSTING--IN PLAIN ENGLISH,
TOWARD A STUDY OF BIDDING PROCESSES. PART IV, GAME WITH UNKNOWN COSTS,
TRAINING TIME AND COSTS FOR NAVY MATING AND RECS,
TWO PAPERS ON ADAPTIVE INVENTORY CONTROL,
UNINTERRUPTIBLE POWER SYSTEM MODULE ANALYSIS,
WIDEBAND DIGITAL MODULATION AND DETECTION TECHNIQUES FOR TROPOSCATTER,

TOTAL TITLES

27

653639
648116
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658426
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UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-646 847 13/13 15/3
HAYES SEAY MATTEN AND MATTEN ROANOKE VA
METHODS OF SHELTER COST ANALYSIS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
FEB 67 168P BARKSDALE, BYRD H. ;
WADE, SAMUEL R. ;

UNCLASSIFIED REPORT

DESCRIPTORS: (*FALLOUT SHELTERS, COSTS), DATA
PROCESSING SYSTEMS, STANDARDS, DESIGN,
CONSTRUCTION MATERIALS, LIGHTING EQUIPMENT,
COOLING + VENTILATING EQUIPMENT, LABOR,
MAINTENANCE, CONSTRUCTION, BUILDINGS, CIVIL
DEFENSE SYSTEMS (U)

THE REPORT PRESENTS THE RESULTS OF AN EXAMINATION
OF COMPUTER METHODS OF DETERMINING IMMEDIATE AND
LONG-TERM TOTAL COST OF SHELTER INCORPORATED WITHIN A
BUILDING AT A PRELIMINARY DESIGN STAGE. ALL COST
ITEMS COMPRISING TOTAL COST WERE INVESTIGATED AND
ANALYZED. THIS STUDY CONCLUDED THAT MANY OF THE
ITEMS COMPRISING LONG-TERM TOTAL COST WERE
INDETERMINATE TO SUCH A DEGREE THAT COMPUTER METHODS
OF ANALYSIS WOULD NOT PRODUCE DEFENSIBLE ESTIMATES.
TO DEVELOP A METHOD OF SHELTER COST ANALYSIS, AT A
PRELIMINARY DESIGN STAGE, WILL REQUIRE DEVELOPMENT OF
STANDARDS AND DESIGN LOGIC TO ANALYZE THE EFFECTS OF
CHANGES IN BUILDING GEOMETRY AND COMPONENTS TO
PROVIDE PROTECTION AGAINST EFFECTS OF NUCLEAR
WEAPONS. THESE FACTORS, WHICH MAY BE IDENTIFIED,
INFLUENCE COSTS AND A PROGRAM MAY BE DEVELOPED TO
ACCOUNT FOR THE FACTORS IN PRODUCING ESTIMATES.
ONCE THIS DATA IS DEVELOPED, AND WITH THE
APPLICATION OF AN IN-PLACE UNIT METHOD OF
COST ESTIMATING, REALISTIC IMMEDIATE ALTERNATIVE
SHELTER COST ESTIMATES MAY BE PRODUCED. IT IS
BELIEVED THAT DEVELOPMENT AND IMPLEMENTATION OF THESE
TECHNIQUES WOULD MAKE IT PRACTICAL TO QUICKLY ASSESS
PROTECTION FACTORS AND THE IMPACT OF COST OF CHANGES
IN GEOMETRY, MASS, APERTURE, LIGHTING AND
VENTILATION. PROBABLY ONE OF THE MOST USEFUL
APPLICATIONS WOULD BE IN SENSITIVITY ANALYSIS OF
SEVERAL ALTERNATIVES TO DETERMINE OPTIMUM SHELTER
COST. (AUTHOR) (U)

UNCLASSIFIED

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DGC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-647 057 13/2 13/13 5/1
RAND CORP SANTA MONICA CALIF
THE GRAND CANYON CONTROVERSY: LESSONS FOR FEDERAL
COST-BENEFIT PRACTICES, (U)
FEB 67 22P CARLIN, ALAN ;
REPT. NO. P-3505

UNCLASSIFIED REPORT

DESCRIPTORS: (*WATER SUPPLIES, DAMS), (*DAMS,
CONSTRUCTION), ECONOMICS, UNITED STATES
GOVERNMENT, NUCLEAR POWER PLANTS, RECLAMATION,
COSTS, ELECTRIC POWER PRODUCTION, TRANSMISSION
LINES, POWER PLANTS(ESTABLISHMENTS) (U)

THE LATEST ROUND OF THE GRAND CANYON
CONTROVERSY PROVIDES AMPLE MATERIAL CONCERNING THE
DEFICIENCIES OF THE ECONOMIC CRITERIA CURRENTLY USED
BY FEDERAL WATER RESOURCE AGENCIES. IT IS THE
PURPOSE OF THIS ARTICLE TO REVIEW THIS MATERIAL.
ALTHOUGH THE CONTROVERSY OVER THE DAMS HAS LED TO A
REVERSAL OF THE ADMINISTRATION'S STAND ON THEM AND
SOME EXPRESSIONS BY THE LEADERSHIP OF THE INTERIOR
DEPARTMENT OF A DESIRE TO EXAMINE ALTERNATIVES TO
THESE PARTICULAR DAMS AND IN THE FUTURE TO ALL
PROJECTS BEFORE THEY ARE SUBMITTED TO CONGRESS,
THERE IS LITTLE INDICATION THAT THE ADMINISTRATION
PLANS THE MAJOR OVERHAUL OF THE ECONOMIC CRITERIA AND
PROJECT REVIEW PROCEDURES THAT WOULD BE REQUIRED TO
INSURE THAT THE FUTURE DEVELOPMENT OF WATER RESOURCES
WOULD BE MORE IN ACCORD WITH ECONOMIC PRINCIPLES. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-647 243 13/10 9/2
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM
SHIPBOARD SYSTEMS COSTS. A FUNCTIONAL ANALYSIS OF
WORK ABOARD SHIP. USNS BLUE JACKET, AN M. S. T. S.
REFRIGERATED SHIP. USNS COMET, AN M. S. T. S. ROLL-
ON, ROLL-OFF SHIP. (U)
JAN 67 47P
CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: RESEARCH SUPPORTED IN PART BY
DEPARTMENT OF COMMERCE, WASHINGTON, D. C.

DESCRIP ORS: (*FUNCTIONAL ANALYSIS, *MERCHANT
VESSELS), DATA STORAGE SYSTEMS, COSTS, WAGES,
COMPUTERS, MAINTENANCE, TIME (U)

THIS REPORT IS ONE IN A SERIES DETAILING THE
RESULTS OF SYSTEMS ANALYSIS WORK ABOARD TWENTY
(20) DIFFERENT MERCHANT SHIPS. IT PRESENTS
INFORMATION RELATING TO ONE OF THESE SHIPS. THIS
REPORT ALSO DESCRIBES A SYSTEM FOR THE RETRIEVAL AND
ANALYSIS OF DATA REQUIRED FOR THE EFFECTIVE
MANAGEMENT OF A SHIP. (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-647 393 1/2 1/5 5/3
SYSTEMS ANALYSIS AND RESEARCH CORP BOSTON MASS
AIR TRAFFIC GROWTH, AIRLINE FINANCES, AND PUBLIC
BENEFITS IN RELATION TO THE COST OF NEW PROGRAMS TO
ALLEVIATE JET AIRCRAFT NOISE NEAR AIRPORTS. (U)
JAN 67 135P
REPT. NO. XG-489-67
CONTRACT: FA-67-WA-1656

UNCLASSIFIED REPORT

DESCRIPTORS: (*JET PLANE NOISE, AIRPORTS),
(*AIRPORTS, CIVIL AVIATION), AIR TRAFFIC,
COSTS, JET TRANSPORT PLANES, AIR TRANSPORTATION,
JET ENGINE NOISE, ECONOMICS, TURBOPROP
ENGINES (U)

EFFECTIVE NEW PROGRAMS FOR COPING WITH AIRCRAFT
NOISE PROBLEMS AROUND AIRPORTS WILL PROBABLY INVOLVE
NEW EXPENDITURES. IF SUCH COSTS ARE PASSED ON TO
AIRLINE TRAFFIC, THEY WILL AFFECT TRAFFIC GROWTH
THROUGH PRICE ELASTICITY OF DEMAND. A 1-PERCENT
INCREASE IN FARES AND RATES IS ESTIMATED TO DECREASE
TRAFFIC BY 1.3 PERCENT; A 5-PERCENT INCREASE WOULD
REDUCE TRAFFIC BY 6.3 PERCENT. SEPARATE
ELASTICITIES ARE ESTIMATED BY MAJOR AIRLINE GROUPS:
-1.28 FOR DOMESTIC TRUNKLINE PASSENGERS, -1.6 FOR
INTERNATIONAL PASSENGERS, -1.0 FOR LOCAL SERVICE
PASSENGERS, AND -1.5 FOR CARGO TRAFFIC. THE
AIRLINES APPEAR TO HAVE A COMFORTABLE FINANCIAL
FUTURE TO COVER ALL EXPENSES AND A FAIR RETURN ON
INVESTMENT, BUT NOT SUFFICIENT TO PAY LARGE
ADDITIONAL EXPENSES OUT OF FORECAST REVENUES WITHOUT
PAISING THEIR FARE AND RATE LEVELS. THE DIRECT
BENEFICIARIES OF AIR TRANSPORTATION -- PASSENGERS AND
SHIPPERS -- ARE THE LOGICAL PERSONS TO PAY FOR NOISE
PROGRAMS, THROUGH THE PRICING SYSTEM OF AIRLINES AND
THE COSTS OF GENERAL AVIATION FLYING. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-647 613 13/10 5/1 5/9
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM
SHIPBOARD SYSTEMS COSTS: A FUNCTIONAL ANALYSIS OF
WORK ABOARD SHIP. THE SS HAWAIIAN MERCHANT: A DRY
CARGO SHIP IN THE U.S. PACIFIC COAST-HAWAIIAN
SERVICE. (U)
JAN 67 36P
CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

DESCRIPTORS: (*MERCHANT VESSELS, SYSTEMS
ENGINEERING), (*CARGO SHIPS, MANPOWER),
COSTS, LABOR, WAGES, JOB ANALYSIS,
SHIPPING(MARINE), MANAGEMENT ENGINEERING,
FUNCTIONAL ANALYSIS, SHIPS(NONMILITARY) (U)

THIS REPORT IS ONE IN A SERIES DETAILING THE
RESULTS OF SYSTEMS ANALYSIS WORK ABOARD TWENTY
(20) DIFFERENT MERCHANT SHIPS. IT PRESENTS
INFORMATION RELATING TO ONE OF THESE SHIPS. THIS
REPORT ALSO DESCRIBES A SYSTEM FOR THE RETRIEVAL AND
ANALYSIS OF DATA REQUIRED FOR THE EFFECTIVE
MANAGEMENT OF A SHIP. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-647 753 13/10

NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM
SHIPBOARD SYSTEMS COSTS, A FUNCTIONAL ANALYSIS OF
WORK ABOARD SHIP: THE SS EDGAR F. LUCKENBACH, A DRY
CARGO SHIP IN THE INTER-COASTAL TRADE. (U)

JAN 67 38P

CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

DESCRIPTORS: (*CARGO SHIPS, SYSTEMS
ENGINEERING), (*MERCHANT VESSELS, FUNCTIONAL
ANALYSIS), COSTS, COMMERCE, MANAGEMENT
ENGINEERING, INFORMATION RETRIEVAL,
TRANSPORTATION, MANPOWER, WAGES, JOB ANALYSIS (U)

THIS REPORT IS ONE IN A SERIES DETAILING THE
RESULTS OF SYSTEMS ANALYSIS WORK ABOARD TWENTY
(20) DIFFERENT MERCHANT SHIPS. IT PRESENTS
INFORMATION RELATING TO ONE OF THESE SHIPS. THIS
REPORT ALSO DESCRIBES A SYSTEM FOR THE RETRIEVAL AND
ANALYSIS OF DATA REQUIRED FOR THE EFFECTIVE
MANAGEMENT OF A SHIP. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-647 975 16/4 9/2 14/1
RAND CORP SANTA MONICA CALIF
MISCOM: AN INDIVIDUAL MISSILE WEAPON SYSTEM COMPUTER
COST MODEL. (U)
FER 67 145P CLAPP, R. E. BROEN, H. E.
, JR;
REPT. NO. PM-5142-1-PR
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTER PROGRAMS, *COSTS),
(*GUIDED MISSILE COMPUTERS, COSTS), GUIDED
MISSILES, MODELS(SIMULATIONS), COMPUTER
PERSONNEL, AIRFRAMES, WEAPON SYSTEMS (U)
IDENTIFIERS: MIS COM (U)

THE REPORT CONTAINS AN EXPLANATION OF THE COST
MODEL AND COMPUTER PROGRAM USED BY THE RAND COST
ANALYSIS DEPARTMENT IN DETERMINING THE RESOURCE
REQUIREMENTS OF MISSILE SYSTEMS. THE MODEL CAN
COST ALL TYPES OF MISSILE SYSTEMS; WITHIN A TYPE, IT
CAN HANDLE, FOR EXAMPLE, 2 GUIDANCE SYSTEMS, 3 TYPES
OF AIRFRAME/MOTOR AND 3 TYPES OF AIRCRAFT AT ONCE.
PERSONNEL REQUIREMENTS CAN BE COMPUTED FOR SAC,
ADC, OR TAC SYSTEMS, OR CAN BE INPUTS. THE
TYPE OF INPUT DATA NEEDED IS LISTED. THE COMPUTER
PROGRAM IS DESCRIBED, INCLUDING THE FLOW OF
OPERATIONS, INPUT PROCEDURES, OUTPUT FORMATS, AND A
SYMBOLIC LISTING OF THE FORTRAN-IV SOURCE
PROGRAM. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-648 136 5/3 15/5
RAND CORP SANTA MONICA CALIF
ON THE SEPARATION OF PRODUCTION FROM THE
DEVELOPER,
FEB 67 17P ARDITTI, FRED D. ;
REPT. NO. P-3542

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROCUREMENT, COSTS), (*WEAPON
SYSTEMS, PROCUREMENT), (*INDUSTRIAL PRODUCTION,
WEAPON SYSTEMS), AIRCRAFT INDUSTRY, GOVERNMENT
PROCUREMENT, DEFENSE SYSTEMS, MATHEMATICAL
MODELS

(U)

THE PAPER PRESENTS A MODEL WHICH POINTS TOWARD THE
CORRECT WAY IN WHICH THE COST OF SEPARATION SHOULD BE
MEASURED. THE MODEL IS APPLIED TO THE TWO CASES OF
CO-PRODUCTION WHICH OCCURRED IN THE AIRCRAFT INDUSTRY
-- THE F-84F AND THE B-47E. THE ADDED COST
THAT THE CUSTOMER INCURRED FROM SEPARATION WAS
CALCULATED TO BE 6.6 PERCENT ABOVE THE COST THAT
WOULD HAVE BEEN INCURRED IF SEPARATION HAD BEEN
AVOIDED. A SIMILAR CALCULATION YIELDED 7.0 PERCENT
FOR THE CASE OF THE B-47E. IF THESE EXTRA COST
ESTIMATES ARE REPRESENTATIVE, THEN THE COSTS OF
SEPARATION APPEAR TO BE SUBSTANTIAL. THIS
STATEMENT IS FURTHER REINFORCED IF ONE ADDS TO THE
ABOVE COST FIGURES THE PRODUCTION LICENSING FEES
CHARGED BY THE DEVELOPER. ON THE OTHER HAND, IT IS
POINTED OUT THAT THE THREAT OF SEPARATION MADE
CREDIBLE BY THE UNDERTAKING OF A FEW SUCH CASES BY
THE GOVERNMENT MAY MAKE THE AIRCRAFT INDUSTRY MORE
COMPETITIVE. CERTAINLY THERE ARE COST BENEFITS TO
BE DERIVED BY THE GOVERNMENT FROM FOSTERING SUCH
COMPETITION. WHETHER OR NOT THESE BENEFITS OFFSET
THE ADDED COST OF SEPARATION REMAINS TO BE SHOWN.
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-648 409 12/2 5/3 13/8
CALIFORNIA UNIV BERKELEY OPERATIONS RESEARCH CENTER
THE COST FUNCTION. (U)
DESCRIPTIVE NOTE: RESEARCH REPT.,
JAN 67 47P SHEPPARD, RONALD W. J
REPT. NO. ORC-67-5
CONTRACT: NONR-222(83), NSF-GP-4593
PROJ: NR-047-033

UNCLASSIFIED REPORT

DESCRIPTORS: (*COSTS, *INDUSTRIAL PRODUCTION),
OPERATIONS RESEARCH (U)

THE REPORT DISCUSSES THE FOLLOWING: THE
PRODUCTION STRUCTURE; DEFINITION OF THE COST
FUNCTION; GEOMETRIC INTERPRETATION OF THE COST
FUNCTION; PROPERTIES OF THE MINIMUM TOTAL COST
FUNCTION; COST FUNCTION OF A HOMOTHETIC PRODUCTION
STRUCTURE; COST STRUCTURE; EFFICIENT PRICE VECTORS
OF THE COST STRUCTURE; MINIMUM OUTPUT FUNCTION; AND
COST STRUCTURE OF HOMOTHETIC PRODUCTION STRUCTURE. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-648 507 13/13 14/1
NAVAL CIVIL ENGINEERING LAB PORT HUENEME CALIF
HYDRAULIC-PNEUMATIC FLOATING FENDER - ADDITIONAL IN-
SERVICE TESTS, SECOND SERIES. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAR 67 28P LEE, T. T. I
REPT. NO. NCEL-TR-516
PROJ: YF015-10-03-315

UNCLASSIFIED REPORT

DESCRIPTORS: (*PIERS, VIBRATION ISOLATORS),
(*VIBRATION ISOLATORS, FLOATS), DAMAGE,
PNEUMATIC DEVICES, HYDRAULIC SYSTEMS, ENERGY,
ABSORPTION, FLOATING BODIES, SHIPS, COST
EFFECTIVENESS (U)

TWO EXPERIMENTAL HYDRAULIC-PNEUMATIC FLOATING
FENDERS UNDERWENT IN-SERVICE TESTS AT TWO SITES IN
SAN DIEGO BAY FOR 12 MONTHS. A PREVIOUS
SERIES OF IN-SERVICE TESTS WITH THE SAME FENDERS
LASTED 19 MONTHS - 14 MONTHS IN A WELL-PROTECTED
HARBOR (PORT HUENEME, CALIFORNIA) AND THEN 5
MONTHS IN A MODERATELY EXPOSED HARBOR (SAN
DIEGO). EACH FENDER CONSISTS OF A BULKHEAD
(50 FEET LONG) FRONTED WITH TWO AIR-FILLED AND
TWO WATER-FILLED RUBBER BAGS, CHAINS WITH WEIGHTS TO
MAINTAIN THE TOTAL ASSEMBLY IN POSITION, AND A KEEL
WITH CONCRETE BALLAST. TWO UNITS ARE NECESSARY TO
SERVE ONE BERTH. EACH FENDER ASSEMBLY HAS A TOTAL
MINIMUM ENERGY-ABSORPTION CAPACITY OF 490 INCH-TONS
AND A MAXIMUM OF 2,300 INCH-TONS. DURING THE
SECOND SERIES OF TESTS THE FENDERS SERVED
APPROXIMATELY 50 NAVAL AND MERCHANT SHIPS
SATISFACTORILY. DESPITE THEIR HIGH COMBINED
INITIAL AND MAINTENANCE COSTS, THE TEST FENDERS WOULD
BE ECONOMICAL AND FEASIBLE FOR BOTH SHELTERED AND
EXPOSED LOCATIONS WHERE MECHANICAL DAMAGE BY SHIPS
AND BIOLOGICAL DETERIORATION BY MARINE BORERS TO
FIXED FENDER SYSTEMS CONSTITUTE A SERIOUS PROBLEM.
THE FENDERS SHOULD BE USEFUL IN INCREASING THE
ENERGY-ABSORPTION CAPACITY OF EXISTING PIER FENDER
SYSTEMS. THE COST EFFECTIVENESS OF THE TEST
FENDERS IS COMPARED WITH SOME OTHER NEW CONCEPTS
WHICH ARE PROMISING AND WHICH MAY BE MORE FAVORABLE
THAN THE TEST FENDERS. IT IS RECOMMENDED THAT THE
IN-SERVICE TESTS OF THE EXPERIMENTAL FENDER BE
CONTINUED UNTIL THE END OF FISCAL YEAR 1967 AND
THAT CONSIDERATION BE GIVEN TO TESTING AND EVALUATING
A FLOATING FENDER SYSTEM CONSISTING OF RUBBER TUBES
AND ASSEMBLED IN A DOUBLE LAYER BETWEEN TIMBER (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-648 554 14/1 17/2.1
NAVY ELECTRONICS LAB SAN DIEGO CALIF
COST-EFFECTIVENESS ANALYSIS APPLIED TO HF
COMMUNICATIONS LINK. (U)
DESCRIPTIVE NOTE: RESEARCH AND DEVELOPMENT REPT., JUN
65-SEP 66,
JAN 67 63P DISHONG, W. R. , JR.;
MARLOTH, R. T. J
REPT. NO. NEL-1422
PROJ: XF-006-01-07
TASK: 7592

UNCLASSIFIED REPORT

DESCRIPTOR : (*COMMUNICATION SYSTEMS, *COST
EFFECTIVENESS), STATISTICAL ANALYSIS, HIGH
FREQUENCY, NAVAL EQUIPMENT, SYSTEMS ENGINEERING (U)

A STATISTICAL METHOD FOR ANALYZING COST-
EFFECTIVENESS DEVELOPED EARLIER AT NEL IS APPLIED
TO AN HF FLEET BROADCAST LINK AS A DEMONSTRATION OF
FEASIBILITY. THE CONTRIBUTIONS OF VARIOUS SYSTEM
PARAMETERS TO OVERALL SYSTEM PERFORMANCE ARE
ESTABLISHED BY MEANS OF A PERFORMANCE MODEL.
INFORMATION RELIABILITY AND INFORMATION RATE ARE
CONSIDERED. LATER WORK WILL INCORPORATE OTHER
OBJECTIVES INTO THE OVERALL MODEL. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 070123

AD-648 748 1/5 5/3
CALIFORNIA UNIV BERKELEY INST OF TRANSPORTATION AND
TRAFFIC ENGINEERING
ALLOCATING THE COSTS OF ALLEVIATING SUBSONIC JET
AIRCRAFT NOISE. (U)
DESCRIPTIVE NOTE: SPECIAL REPT.,
FEB 67 27P DYGERT, PAUL K. ;

UNCLASSIFIED REPORT

DESCRIPTORS: (*NOISE, *JET PLANES), (*COSTS,
NOISE); AIR TRANSPORTATION; AIRPORTS; URBAN
AREAS; UNITED STATES GOVERNMENT; MONEY;
TRANSPORTATION (U)

THE PROBLEM OF AIRCRAFT NOISE AROUND AIRPORTS
CONTAINS TWO PRINCIPAL ELEMENTS: (1) QUIET JET
AIRCRAFT ARE AND WILL REMAIN (BARRING MAJOR
PROGRESS IN AIRFRAME AND ENGINE TECHNOLOGY)
PROHIBITIVELY INEFFICIENT IN TERMS OF PAYLOAD AND
REVENUE-GENERATING CAPACITY; (2) JET AIRPORTS
ARE AND WILL REMAIN (BARRING CHANGES IN LAND-USE
AND TRANSPORTATION PLANNING) CENTERS OF ECONOMIC
ACTIVITY, INCLUDING DENSE RESIDENTIAL DEVELOPMENT.
CONFLICTS IN PUBLIC POLICY ALSO APPEAR TO HAVE
CONTRIBUTED TO THE NOISE PROBLEM. ON THE ONE HAND,
IT IS IN THE PUBLIC INTEREST TO KEEP NOISE AT AS LOW
A LEVEL AS POSSIBLE; ON THE OTHER HAND, AIRCRAFT
BECOME TECHNICALLY LESS EFFICIENT AND MORE COSTLY AS
THEY ARE MADE QUIETER. PUBLIC POLICY ENCOURAGES
BOTH A QUIET SOCIETY AND THE DEVELOPMENT OF MORE
EFFICIENT AIR TRANSPORTATION. FINALLY, UNDER U.
S. TRANSPORTATION POLICY, AIRLINES ARE PRIVATE
ENTERPRISES, FREE TO MAKE THEIR OWN BUSINESS
DECISIONS WITHIN ECONOMIC AND SAFETY CONSTRAINTS.
SINCE THE AIR CARRIERS DO NOT PAY THE COSTS OF
AIRCRAFT NOISE, THEY TEND TO IGNORE THESE COSTS IN
MAKING BUSINESS DECISIONS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-648 750 9/2 5/1
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
MANAGEMENT HANDBOOK FOR THE ESTIMATION OF COMPUTER
PROGRAMMING COSTS. (U)
DESCRIPTIVE NOTE: TECHNICAL MEMO.,
MAR 67 149P NELSON, E. A. ;
REPT. NO. TM-3225/000/01
CONTRACT: AF 19(628)-5166; F19628-67-C-0132
MONITOR: ESD TR-67-66

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMING(COMPUTERS),
COSTS), (*COMPUTER PROGRAMS, COSTS),
MANAGEMENT ENGINEERING, HANDBOOKS, STATISTICAL
ANALYSIS, EQUATIONS, MAINTENANCE, DATA
PROCESSING SYSTEMS, DOCUMENTATION (U)

GUIDELINES ARE PRESENTED TO HELP MANAGERS ESTIMATE
THE COSTS OF COMPUTER PROGRAMMING. THE GUIDELINES
SUMMARIZE A STATISTICAL ANALYSIS OF 169 COMPUTER
PROGRAMMING EFFORTS WITH EQUATIONS TO ESTIMATE MAN
MONTHS, COMPUTER HOURS, AND MONTHS ELAPSED, AND ALSO
PLANNING FACTORS SUCH AS MAN MONTHS PER THOUSAND
INSTRUCTIONS. OPINIONS, RULES OF THUMB, AND
EXPERIENCE DATA BASED UPON LITERATURE SEARCH AND
EXPERIENCE SUPPLEMENT THE STATISTICAL RESULTS.
FORMS WITH THE GUIDELINES ARE ORGANIZED INTO SIX
SECTIONS CORRESPONDING TO A SIX-STEP DIVISION OF THE
COMPUTER PROGRAMMING PROCESS. ADVICE IS GIVEN ON
THE INTEGRATION OF COST ESTIMATES INTO A COST
ANALYSIS TO JUSTIFY AND PLAN ADP PROJECTS. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-648 806 18/5 10/2

RAND CORP SANTA MONICA CALIF

THE GRAND CANYON CONTROVERSY -- 1967: FURTHER
ECONOMIC COMPARISONS OF NUCLEAR ALTERNATIVES, (U)

MAR 67 20P CARLIN, ALAN P. ;

HOEHN, WILLIAM E. ;

REPT. NO. P-3546

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-648 807.

DESCRIPTORS: (*NUCLEAR POWER PLANTS,
ECONOMICS); (*POWER PLANTS(ESTABLISHMENTS),
COSTS); DAMS; FEASIBILITY STUDIES; SITE
SELECTION; REACTOR FUELS; REACTOR CORES; NUCLEAR
REACTORS; MAINTENANCE; TRANSMISSION LINES (U)

THE PURPOSE OF THIS PAPER IS TO PRESENT NEW
CALCULATIONS INCORPORATING REVISED COST ESTIMATES OF
THE NUCLEAR POWERPLANT ALTERNATIVES AND REFLECTING
THE INCREASED IMPORTANCE OF ONE OF THE PROPOSED DAMS,
THE HUALAPAI (FORMERLY BRIDGE CANYON)
PROJECT. THE NEW CALCULATIONS ALSO INTRODUCE
SEVERAL REFINEMENTS ON EARLIER METHODS. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-648 807 18/5 10/2
RAND CORP SANTA MONICA CALIF
WHAT THE PARSONS STUDY REALLY SAYS ABOUT NUCLEAR
POWER ECONOMICS: THE GRAND CANYON CONTROVERSY,
ROUND,
MAR 67 27P HOFHN, WILLIAM E. ;
REPT. NO. P-3548

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-648 806.

DESCRIPTORS: (*NUCLEAR POWER PLANTS,
ECONOMICS), (*POWER PLANTS(ESTABLISHMENTS),
COSTS), NUCLEAR ENERGY, DAMS, CONSTRUCTION,
RECLAMATION, REACTOR FUELS, SITE SELECTION,
DESALINATION, DISTILLING PLANTS, REACTOR CORES,
FUEL BURN UP, TRANSMISSION LINES

(U)

THE PRINCIPAL CONCLUSIONS OF THE PARSONS STUDY
ARE: (1) COMPARING NUCLEAR ALTERNATIVES WITH
THE HYDROELECTRIC PLANTS ON A PEAKING BASIS SHOWS
THAT THE NUCLEAR PLANTS THEMSELVES WILL NEVER PAY OUT
SINCE THE ANNUAL INTEREST PAYMENTS ARE GREATER THAN
THE NET REVENUES AS DEMONSTRATED IN THE
CONSOLIDATED PAYOUT SCHEDULES HEREIN. (2)
THIS STUDY ALSO COMPARES THE FUNDS ACCUMULATION
FROM A BASE-LOADED NUCLEAR PLANT WITH THOSE
ACCUMULATED FROM THE HYDROELECTRIC PLANTS. WHILE
THIS COMPARISON ACCRUES THE MOST FUNDS FROM THE
VARIOUS NUCLEAR ALTERNATIVES CONSIDERED IN THIS
STUDY, THE FUNDS ACCUMULATED ARE SUBSTANTIALLY LESS
THAN THOSE ACCUMULATED FROM THE HYDROELECTRIC PLANTS.
(3) EVEN AT THE FEDERAL FINANCING INTEREST RATE
OF 3.222%, THE BASELOADED NUCLEAR POWER PLANTS
COULD NOT REPAY THEIR COSTS IF IT WERE NOT FOR THE
OUTSIDE CONTRIBUTIONS TO THE COMBINED FUND OF
REVENUES FROM HOOVER, PARKER, AND DAVIS DAMS
IN LATER YEARS OF THE ANALYSIS. (4) EVALUATING
ONLY THE ECONOMICS OF NUCLEAR ENERGY PRODUCTION AT
THE PLANTS -- BY NEGLECTING ALL TRANSMISSION COSTS --
THE FOUR NUCLEAR PLANTS, BASELOADED, COULD NOT REPAY
THEIR COSTS IF THE AGGREGATE FIXED CHARGE RATE
(INCLUDING DEPRECIATION) WERE IN EXCESS OF 6.1%
PER ANNUM.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-649 372 13/10 5/9

NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM
SHIPBOARD SYSTEMS COSTS: A FUNCTIONAL ANALYSIS OF
WORK ABOARD SHIP: THE SS PRESIDENT ARTHUR, A DRY
CARGO SHIP IN THE TRANS-PACIFIC SERVICE. (U)

FEB 67 42P

CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-649 387.

DESCRIPTORS: (*CARGO SHIPS, *MANPOWER STUDIES),
SYSTEMS ENGINEERING, COST EFFECTIVENESS,
OPERATIONS RESEARCH, MANAGEMENT PLANNING, DATA
PROCESSING SYSTEMS, INFORMATION RETRIEVAL,
MERCHANT VESSELS, SHIPPING(MARINE),
FUNCTIONAL ANALYSIS (U)

THE REPORT DETAILS THE RESULTS OF SYSTEMS ANALYSIS
WORK ABOARD TWENTY (20) DIFFERENT MERCHANT SHIPS.
IT PRESENTS INFORMATION RELATING TO ONE OF THESE
SHIPS. THE REPORT ALSO DESCRIBES A SYSTEM FOR THE
RETRIEVAL AND ANALYSIS OF DATA REQUIRED FOR THE
EFFECTIVE MANAGEMENT OF A SHIP. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-649 387 13/10 5/9
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM
SHIPBOARD SYSTEMS COSTS, A FUNCTIONAL ANALYSIS OF
WORK ABOARD SHIP: THE SS BAYOU STATE, A DRY CARGO
SHIP IN THE GULF COAST - FAR EAST SERVICE. (U)
FEB 67 40P
CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-649 372.

DESCRIPTORS: (*CARGO SHIPS, *MANPOWER STUDIES),
SYSTEMS ENGINEERING, COST EFFECTIVENESS,
OPERATIONS RESEARCH, MANAGEMENT PLANNING, DATA
PROCESSING SYSTEMS, INFORMATION RETRIEVAL,
MERCHANT VESSELS, FUNCTIONAL ANALYSIS,
SHIPPING(MARINE) (U)

THE REPORT DETAILS THE RESULTS OF SYSTEMS ANALYSIS
WORK ABOARD TWENTY (20) DIFFERENT MERCHANT SHIPS.
IT PRESENTS INFORMATION RELATING TO ONE OF THESE
SHIPS. THE REPORT ALSO DESCRIBES A SYSTEM FOR THE
RETRIEVAL AND ANALYSIS OF DATA REQUIRED FOR THE
EFFECTIVE MANAGEMENT OF A SHIP. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-649 849 5/3

YALE UNIV NEW HAVEN CONN COWLES FOUNDATION FOR RESEARCH
IN ECONOMICS

MATHEMATICAL STRUCTURE AND ANALYSIS OF THE
NONSYMMETRIC GAME. PART IV. (U)

MAR 67 42P LEVITAN, RICHARD I

SHUBIK, MARTIN I

REPT. NO. COWLES DISCUSSION PAPER-219

CONTRACT: NONR-3055(U0)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH IBM
WATSON RESEARCH CENTER, YORKTOWN HEIGHTS, N.
Y.

DESCRIPTORS: (*GAME THEORY, ECONOMICS),
(*ECONOMICS, MATHEMATICAL MODELS), EQUATIONS,
COMMERCE, MATHEMATICAL ANALYSIS, COSTS,
BUDGETS, INDUSTRIES, MONEY (U)

THE PRIME CONCERN OF THE PAPER WAS THE FORMULATION
AND EXPLORATION OF AN EXPLICIT MATHEMATICAL MODEL OF
A NONSYMMETRIC OLIGOPOLISTIC MARKET. THERE ARE
MANY DIFFERENT CONCEPTS OF 'SOLUTION' WHICH MAY BE
APPLIED TO SUCH A STRUCTURE. IT IS BELIEVED THAT
(AT LEAST BASED UPON EXPERIENCE WITH OLIGOPOLY
GAMES) THE NONCOOPERATIVE EQUILIBRIUM SOLUTION IS
THE BEST SHORT TERM PREDICTOR OF BEHAVIOR. IT WAS
OBSERVED THAT BY MAKING BOTH BEHAVIORAL
(NONCOOPERATIVE EQUILIBRIUM) AND STRUCTURAL
(THE QUADRATIC PAYOFF FUNCTIONS) ASSUMPTIONS,
PARAMETERS COULD BE ESTIMATED FROM CORPORATE AND
OTHER MARKET INFORMATION. A GAME WAS PRODUCED WITH
PARAMETERS THAT LOOK 'SOMEWHAT LIKE' AN ACTUAL
INDUSTRY AND HAS THE PROPERTY THAT THE NONCOOPERATIVE
SOLUTION GIVES THE PROFITS, SALES AND PRICES OF THAT
INDUSTRY AT A POINT IN TIME. THE ASSUMPTIONS OF A
LINEAR AGGREGATE DEMAND FUNCTION AND OF CONSTANT
AVERAGE COSTS WITH CAPACITY LIMITATIONS LEAD, IN THE
SYMMETRIC CASE, TO QUADRATIC PAYOFF FUNCTIONS FOR THE
FIRMS AND IN THE NONSYMMETRIC CASE TO THE MODEL
FORMULATED. GIVEN THE DIFFICULTIES IN
MICROECONOMIC MEASUREMENT AND THE COMPLEXITY OF EVEN
HIGHLY SIMPLIFIED N-FIRM MARKET MODELS THE DETAILED
EXPLORATION OF SOLUTIONS OF MODELS WITH MORE COMPLEX
DEMAND OR COST FUNCTIONS DOES NOT APPEAR TO BE
MERITED AT THIS TIME. IT IS NOT EVIDENT THAT ANY
QUALITATIVELY DIFFERENT PHENOMENA WILL BE ENCOUNTERED
BY USING QUADRATIC OR HIGHER APPROXIMATIONS FOR
DEMAND OR COST CONDITIONS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 129 14/1 12/2 5/1
RAND CORP SANTA MONICA CALIF
COST-EFFECTIVENESS: SOME TRENDS IN ANALYSIS, (U)
MAR 67 19P QUADE, E. S. I
REPT. NO. P-3529

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION DURING THE
COURSE, 'COST EFFECTIVENESS-THE ECONOMIC
EVALUATION OF ENGINEERED SYSTEMS', HELD AT THE
CALIFORNIA UNIV., LOS ANGELES, 27-31 MAR 67.

DESCRIPTORS: (*COST EFFECTIVENESS, SYSTEMS
ENGINEERING), (*MAN-MACHINE SYSTEMS,
COMPUTERS), DECISION MAKING, GAME THEORY,
INTERACTIONS, PREDICTIONS, OPERATIONS RESEARCH,
MATHEMATICAL ANALYSIS (U)

COST-EFFECTIVENESS ANALYSIS IS NOT A STATIC CRAFT;
WHILE IT STILL MAY BE MORE AN ART THAN A SCIENCE, ITS
PRACTITIONERS ARE CONSTANTLY STRIVING TO WIDEN ITS
AREA OF APPLICATION AND TO IMPROVE IT BY INTRODUCING
BETTER METHODS OF ANALYSIS. NEW APPROACHES AND
TECHNIQUES ARE BEING PROPOSED CONSTANTLY. MOST OF
THESE ARE PRIMARILY MATHEMATICAL IN NATURE, BUT A FEW
ARE DIRECTED TOWARD A BETTER TREATMENT OF THOSE
ASPECTS OF ITS PROBLEMS THAT CANNOT BE HANDLED BY
PURELY QUANTITATIVE METHODS. EMPHASIS IN THIS
PAPER WILL BE ON THE LATTER. THE AUTHOR DOES NOT
ATTEMPT TO BE COMPREHENSIVE BUT MERELY NOTES THREE
TRENDS INVOLVING, RESPECTIVELY: COMPUTERS,
MATHEMATICS, AND THE DIRECT USE OF EXPERTISE. THE
AUTHOR DISCUSSES THE FIRST TWO ONLY BRIEFLY, BUT
DESCRIBES THE LAST IN SOME DETAIL. (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 253 14/1 5/1
MITRE CORP BEDFORD MASS
A COST DATA RESEARCH PROGRAM PROPOSAL WITH SPECIAL
EMPHASIS ON A TECHNICAL CHARACTERISTICS DICTIONARY, (U)
MAR 67 31P JONES, M. V. ;
REPT. NO. MTR-266
CONTRACT: AF 19(628)-5165
PROJ: AF-1820
MONITOR: ESD TR-67-69

UNCLASSIFIED REPORT

DESCRIPTORS: (*COSTS, *MANAGEMENT ENGINEERING),
(*OPERATIONS RESEARCH, *AIR FORCE), DATA
PROCESSING SYSTLMS, ACCURACY, EQUATIONS, SPARE
PARTS, LOGISTICS, SYSTEMS ENGINEERING, COST
EFFECTIVENESS (U)

THIS REPORT DESCRIBES A COMPREHENSIVE PROGRAM OF
COST DATA RESEARCH PROPOSED FOR IMPROVING THE
CREDIBILITY AND ACCURACY OF FUTURE COST ESTIMATES FOR
AIR FORCE SYSTEMS. (U)

UNCLASSIFIED

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DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 328 9/5 20/14
NAVY ELECTRONICS LAB SAN DIEGO CALIF
A NUMERICAL ANALYSIS OF HF EXTENDED-SECTOR GROUND
SYSTEMS. (U)
DESCRIPTIVE NOTE: RESEARCH AND DEVELOPMENT REPT., NOV
65-MAY 66,
JAN 67 54P HORN, J. M. ;
REPT. NO. NEL-1430
PROJ: SF-006-03-05
TASK: 7916 (NEL B14571)

UNCLASSIFIED REPORT

DESCRIPTORS: (*ANTENNA RADIATION PATTERNS, HIGH
FREQUENCY), (*ANTENNA COMPONENTS,
GROUND(ELECTRICAL)),
PERFORMANCE(ENGINEERING), NUMERICAL ANALYSIS,
ANTENNAS, WIRE, ELECTROMAGNETIC PROPERTIES,
NETS, COST EFFECTIVENESS, COMPUTER PROGRAMS (U)

IN AN EFFORT TO DETERMINE SHORE ANTENNA
REQUIREMENTS, ENHANCED, LOW-ANGLE, VERTICALLY
POLARIZED RADIATION WAS STUDIED BY GREATLY EXTENDED
GROUND PLANES, AND A NUMERICAL ANALYSIS CONDUCTED.
IT WAS FOUND THAT (1) THE MODIFIED RADIAL
GROUND SYSTEM IS SUPERIOR TO MESH GROUND SYSTEMS; AND
(2) THE RESULTS SHOULD BE APPLIED TO INDIVIDUAL
DESIGNS ON A COST EFFECTIVENESS BASIS.
(AUTHOR) (U)

UNCLASSIFIED

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 502 5/1 9/2
RAND CORP SANTA MONICA CALIF
MANPOWER REQUIREMENTS PREDICTION AND ALLOCATION FOR
UNSCHEDULED MAINTENANCE ON AIRCRAFT, (U)
FEB 67 64P KIVIAT, P. J. ;
REPT. NO. RM-5215-PR
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (*MANPOWER, *MATHEMATICAL
PREDICTION), AIRCRAFT, MAINTENANCE, COSTS,
COMPUTERS, SIMULATION, EFFECTIVENESS (U)

A STATISTICAL MODEL FOR PREDICTING, BY SHOP AND
SKILL LEVEL, MAN-HOUR DEMANDS FOR UNSCHEDULED
MAINTENANCE ON AIRCRAFT. THE MANPOWER PREDICTION
TECHNIQUE AND MANPOWER ALLOCATION MODEL ARE
DESCRIBED. THE PREDICTION TECHNIQUE ESTIMATES
FUTURE MANPOWER REQUIREMENTS BY INTEGRATING
STATISTICAL ESTIMATES OF AIRCRAFT REPAIR
CHARACTERISTICS AND PROJECTED AIRCRAFT FLYING
PROGRAMS. THE ALLOCATION MODEL TAKES A SYSTEMS
APPROACH TO MANPOWER DISTRIBUTION, USING THE
PREDICTED DEMANDS ALONG WITH MANPOWER COST AND
EFFECTIVENESS DATA TO MATCH A BASE'S SHOP MANNING
WITH ITS PROJECTED FLYING PROGRAM. (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 560 1/3 5/1 9/2

RAND CORP SANTA MONICA CALIF

DAPCA: A COMPUTER PROGRAM FOR DETERMINING AIRCRAFT
DEVELOPMENT AND PRODUCTION COSTS. (U)

FEB 67 89P BOREN, H. E., JR.

REPT. NO. RM-5221-PR

CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (*AIRCRAFT, COSTS), (*COSTS,
*COMPUTER PROGRAMS), PRODUCTION, AIRFRAMES,
AIRCRAFT ENGINES, SUBROUTINES, MATHEMATICAL
PREDICTION (U)

IDENTIFIERS: DAPCA (U)

THE MEMORANDUM PRESENTS A DESCRIPTION OF A COMPUTER
PROGRAM (DAPCA) DEVELOPED TO COMPUTE DEVELOPMENT
AND PRODUCTION COSTS FOR THE MAJOR SUBSYSTEMS
(I.E., AIRFRAMES, ENGINES, AND AVIONICS) OF
FLYAWAY AIRCRAFT. THIS PROGRAM IS BASED ON THE
METHODOLOGIES DESCRIBED IN RM-4585-PR, RM-4670-
PR (ABRIDGED) (AD-624 094), AND RM-4851-
PR (ABRIDGED) (AD-633 636). (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 325 13/10 5/9

NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL
WASHINGTON D C SHIP BOARD MECHANIZATION/MANPOWER COMM
SHIPBOARD SYSTEMS COSTS: A FUNCTIONAL ANALYSIS OF
WORK ABOARD SHIP. THE SS SHELDON LYKES: A DRY CARGO
SHIP IN THE SOUTH ATLANTIC SERVICE. (U)

MAR 67 36P

CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

DESCRIPTORS: (*CARGO SHIPS; *MANPOWER STUDIES);
(*MERCHANT VESSELS; SYSTEMS ENGINEERING);
COSTS; FUNCTIONAL ANALYSIS; INFORMATION
RETRIEVAL; JOB ANALYSIS; MANAGEMENT ENGINEERING;
MANPOWER (U)

THE REPORT IS ONE IN A SERIES DETAILING THE RESULTS
OF SYSTEMS ANALYSIS WORK ABOARD TWENTY (20)
DIFFERENT MERCHANT SHIPS. IT PRESENTS INFORMATION
RELATING TO ONE OF THESE SHIPS. THE REPORT ALSO
DESCRIBES A SYSTEM FOR THE RETRIEVAL AND ANALYSIS OF
DATA REQUIRED FOR THE EFFECTIVE MANAGEMENT OF A SHIP.
(AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 764 13/3 14/1
GENERAL MOTORS CORP CLEVELAND OHIO ALLISON DIV
A STUDY TO DETERMINE THE FEASIBILITY OF DEFINING
EARTHMOVING VEHICLE SYSTEMS BY ANALYTICAL TECHNIQUES(U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
APR 67 179P JAGUISH, P. E. IERICKSON, G.
B. JOBARIS, J. E. I
CONTRACT: DA-44-009-AMC-1593(T)

UNCLASSIFIED REPORT

DESCRIPTORS: (*EARTH-HANDLING EQUIPMENT, SYSTEMS
ENGINEERING), FEASIBILITY STUDIES, VEHICLES,
COST EFFECTIVENESS, COMPUTER PROGRAMS, DESIGN,
CONSTRUCTION (U)

THE FEASIBILITY OF DEFINING EARTHMOVING VEHICLE
SYSTEMS BY ANALYTICAL TECHNIQUES WAS DEMONSTRATED.
THE BASIC METHODOLOGY AND SKELETAL COMPUTER PROGRAM
WAS DEVELOPED TO DETERMINE THE COST/EFFECTIVENESS
ADVANTAGES OF SPECIAL EQUIPMENT SYSTEMS SUCH AS THOSE
CONSISTING OF MULTIPURPOSE, MULTIFUNCTION VEHICLES.
THE COMPUTER PROGRAM DEVELOPED HAS VERIFIED THE
ANALYTICAL APPROACH BY STRUCTURING A HYPOTHETICAL
VEHICLE SYSTEM WHOSE COST FOR PERFORMING A SPECIFIC
AIRFIELD CONSTRUCTION WAS SUBSTANTIALLY LESS THAN THE
COST INCURRED BY EACH OF THREE SPECIFIED ENGINEER
COMBAT BATTALIONS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 843 13/10 5/9
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM
SHIPBOARD SYSTEMS COSTS: A FUNCTIONAL ANALYSIS OF
WORK ABOARD SHIP. SS CITIES SERVICE BALTIMORE: A
TANKER IN THE ATLANTIC COASTAL SERVICE. (U)
MAR 67 35P
CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

DESCRIPTORS: (*TANKERS, *MANPOWER STUDIES),
(*MERCHANT VESSELS, SYSTEMS ENGINEERING),
COSTS, FUNCTIONAL ANALYSIS, INFORMATION
RETRIEVAL, MANPOWER, DECISION MAKING, MANAGEMENT
ENGINEERING (U)

THE REPORT IS ONE IN A SERIES DETAILING THE RESULTS
OF SYSTEMS ANALYSIS WORK ABOARD TWENTY (20)
DIFFERENT MERCHANT SHIPS. IT PRESENTS INFORMATION
RELATING TO ONE OF THESE SHIPS. THE REPORT ALSO
DESCRIBES A SYSTEM FOR THE RETRIEVAL AND ANALYSIS OF
DATA REQUIRED FOR THE EFFECTIVE MANAGEMENT OF A SHIP.
(AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 933 5/9 14/1
NAVAL PERSONNEL RESEARCH ACTIVITY SAN DIEGO CALIF
QUANTIFICATION OF PERSONNEL PERFORMANCE FOR COST
EFFECTIVENESS DECISIONS: I. AN ANNOTATED
BIBLIOGRAPHY. (U)

DESCRIPTIVE NOTE: RESEARCH MEMO.,
APR 67 68P WILLIS, JOE E. IDOW, ANDREW
N. 1
REPT. NO. SRM-67-15
PROJ: PF-016020801

UNCLASSIFIED REPORT

DESCRIPTORS: (*NAVAL PERSONNEL,
PERFORMANCE(HUMAN)), (*COST EFFECTIVENESS,
SYSTEMS ENGINEERING), BIBLIOGRAPHIES,
PREDICTIONS, EFFECTIVENESS, RELIABILITY,
MANPOWER (U)

AS THE FIRST PHASE OF A PROJECT TO DEVELOP A METHOD
OF PREDICTING PERSONNEL PERFORMANCE EFFECTIVENESS, A
SEARCH OF THE LITERATURE WAS MADE. QUOTES, NOTES,
AND COMMENTS FOR THE USE OF THE RESEARCH TEAM WERE
MADE FOR EACH ARTICLE. FROM THE MATERIALS
ASSEMBLED, 115 ITEMS WERE SELECTED FOR AN ANNOTATED
BIBLIOGRAPHY COVERING FIVE AREAS: (1)
PERSONNEL PERFORMANCE EFFECTIVENESS MEASUREMENT,
(2) PERSONNEL PERFORMANCE EFFECTIVENESS
PREDICTION, (3) HUMAN RELIABILITY IN SYSTEMS,
(4) PERSONNEL PERFORMANCE DATA UTILIZATION
PROBLEMS, AND (5) FUNCTION ALLOCATION. (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-651 167 15/3

PITTSBURGH UNIV PA DEPT OF SOCIOLOGY
COST AND FINANCING OF CIVIL DEFENSE: SOME PUBLIC
VIEWS.

(U)

FEB 67 77P COLEMAN, ALAN N. ;
CONTRACT: DAHC20-67-C-0122, NSF 611309

UNCLASSIFIED REPORT

DESCRIPTORS: (*CIVIL DEFENSE SYSTEMS,
ECONOMICS), COSTS, FALLOUT SHELTERS, PUBLIC
OPINION

(U)

THE REPORT ATTEMPTS TO BRING TOGETHER, FROM A
NUMBER OF NATIONAL AND COMMUNITY STUDIES, THE RESULTS
REGARDING THE AMERICAN PUBLIC'S VIEWS ON THE COST
AND FINANCING OF CIVIL DEFENSE MEASURES AND PROGRAMS.
GIVEN THE LIMITATIONS IMPOSED BY THE NUMBER AND
DIVERSITY OF THE STUDIES USED, THE FOLLOWING
GENERALIZATIONS OBTAINED: (1) INCREASING CIVIL
DEFENSE EXPENDITURES IN GENERAL IS BELIEVED
DESIRABLE; (2) MANY CITIZENS ARE UNCERTAIN ABOUT
WHAT FALLOUT PROTECTION SHOULD COST; (3) PERSONAL
ASSUMPTION OF THE TOTAL OR EVEN PARTIAL COST FOR
FAMILY SHELTERS IS NOT FAVORED; (4) MAJOR
OBJECTIONS TO FAMILY FALLOUT SHELTERS INVOLVE COST;
(5) FAVORABILITY OF PUBLIC AS WELL AS FAMILY
FALLOUT SHELTERS IS INCREASED WHEN FEDERAL OR STATE
FINANCIAL ASSISTANCE IS INCLUDED; (6) A
SUBSTANTIAL PORTION OF THE CITIZENRY FAVORS A TAX
REDUCTION OR EXEMPTION FOR SHELTERS; (7) INDIRECT
INDUCEMENTS FOR BUILDING SHELTERS GENERALLY MEET THE
APPROVAL OF THE PUBLIC; (8) SPECIFIED ALTERNATIVE
METHODS OF FINANCING SHELTERS HAVE BEEN MET WITH
DISAPPROVAL OR UNCERTAINTY; (9) PUBLIC SHELTERS
ARE VIEWED AS EFFECTIVE AND WORTH THE COST; (10)
AMONG ALTERNATIVE PROGRAMS, EDUCATION AND HEALTH RANK
AHEAD OF CIVIL DEFENSE MEASURES, AND VERY FEW PEOPLE
CURRENTLY AGREE THAT CIVIL DEFENSE MONIES WOULD BE
BETTER SPENT ON MISSILES AND BOMBERS. THE MAJORITY
OF THE STUDIES UTILIZED WERE CONDUCTED IN THE EARLY
1960'S--A TIME WHEN THE FAMILY SHELTER CONTROVERSY
REACHED IT APEX. GENERAL COST AND FINANCING ISSUES
AND ALTERNATIVES HAVE NOT BEEN PROBED EXTENSIVELY IN
NATIONAL AND COMMUNITY SURVEYS. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-651 481 13/10 5/9 14/1 15/5
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM
SHIPBOARD SYSTEMS COSTS: A FUNCTIONAL ANALYSIS OF
WORK ABOARD SHIP. SS DEL MUNDO. A DRY CARGO SHIP IN
THE SOUTH AMERICAN SERVICE. SS DEL ORO. A DRY CARGO
SHIP IN THE AFRICAN SERVICE. (U)
MAR 67 51P
CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-649 387.

DESCRIPTORS: (*CARGO SHIPS, *ANALYSIS),
(*MANPOWER STUDIES, *DATA PROCESSING SYSTEMS),
COSTS, MANPOWER, INFORMATION RETRIEVAL,
MERCHANT VESSELS, DATA STORAGE SYSTEMS, SHIP
AUXILIARY EQUIPMENT, LABOR, WAGES, TABLES,
COMPUTERS, SYSTEMS ENGINEERING, EFFECTIVENESS,
AFRICA, AUTOMATION, SOUTH AMERICA (U)

THE REPORT IS ONE IN A SERIES DETAILING THE RESULTS
OF SYSTEMS ANALYSIS WORK ABOARD TWENTY DIFFERENT
MERCHANT SHIPS. IT PRESENTS INFORMATION RELATING
TO TWO OF THESE SHIPS. THE REPORT ALSO DESCRIBES A
SYSTEM FOR THE RETRIEVAL AND ANALYSIS OF DATA
REQUIRED FOR THE EFFECTIVE MANAGEMENT OF A SHIP.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-651 482 13/10 5/9 14/1 15/5
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM
SHIPBOARD SYSTEMS COSTS: A FUNCTIONAL ANALYSIS OF
WORK ABOARD SHIP. SS GLOBE CARRIER. A BULK CARRIER
IN THE TRANS-ATLANTIC SERVICE. ST OCEAN ANNA. A
TANKER IN THE PACIFIC-COASTAL SERVICE. (U)
MAR 67 53P
CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-651 481.

DESCRIPTORS: (*CARGO SHIPS, *ANALYSIS),
(*MANPOWER STUDIES, *DATA PROCESSING SYSTEMS),
MANPOWER, COSTS, MANAGEMENT ENGINEERING,
INFORMATION RETRIEVAL, MERCHANT VESSELS, LABOR,
DATA STORAGE SYSTEMS, SHIP AUXILIARY EQUIPMENT,
TABLES, COMPUTERS, SYSTEMS ENGINEERING,
EFFECTIVENESS, AUTOMATION, PACIFIC OCEAN (U)

THE REPORT IS ONE OF A SERIES DETAILING THE RESULTS
OF SYSTEMS ANALYSIS WORK ABOARD TWENTY DIFFERENT
MERCHANT SHIPS. IT PRESENTS INFORMATION RELATING
TO TWO OF THESE SHIPS. THE REPORT ALSO DESCRIBES A
SYSTEM FOR THE RETRIEVAL AND ANALYSIS OF DATA
REQUIRED FOR THE EFFECTIVE MANAGEMENT OF A SHIP.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-651 486 5/2 14/1
ARMY ENGINEER RESEARCH AND DEVELOPMENT LABS FORT BELVOIR
VA TECHNICAL INFORMATION AND LIBRARY BRANCH
AN APPROACH TO COST EFFECTIVENESS OF A SELECTIVE
MECHANIZED DOCUMENT PROCESSING SYSTEM, (U)
MAR 67 73P SEGARRA, CARLOS O. ;
MONITOR: ATLIS 12

UNCLASSIFIED REPORT

DESCRIPTORS: (*TECHNICAL INFORMATION CENTERS,
AUTOMATION), (*DATA PROCESSING SYSTEMS, COST
EFFECTIVENESS), SELECTION, LIBRARIES, REPORTS,
DOCUMENTATION, SYSTEMS ENGINEERING, PUNCHED
CARDS (U)

THE PURPOSE OF THE PROJECT WAS TO IDENTIFY AND
DEFINE THE PARAMETERS OF AN ECONOMICAL AND PRACTICAL
INFORMATION SYSTEM FOR THE U. S. ARMY
ENGINEER RESEARCH AND DEVELOPMENT
LABORATORIES. THE PROGRAM INCLUDED FOUR
PHASES: DATA REQUIREMENTS DEFINITION; COST
ANALYSIS AND SYSTEM DEFINITION; HARDWARE SELECTION;
SYSTEM TEST AND EVALUATION; AND DEVELOPMENT OF
SOFTWARE. THE METHOD OF APPROACH FOR EACH PHASE IS
GIVEN, AND THE PROCEDURES USED AND DECISION CRITERIA
DEVELOPED ARE DISCUSSED. RESULTS OF DECISION TO
MECHANIZE OPERATIONS IN THE INFORMATION CENTER LEAD
TO THE SELECTION AND INSTALLATION OF FOUR MACHINES.
ALL COMPONENTS OF THE IBM 870 DOCUMENT WRITING
SYSTEM, WITHIN A RENTAL BUDGET OF \$7,000 PER
YEAR. RESULTS OF MECHANIZING, AFTER OPERATION FOR
ONE YEAR, INCLUDED: REDUCED PROCESSING COSTS BY
REJECTING REPORTS HAVING NO RELEVANCY TO ON-GOING
TASKS; ELIMINATED THE NEED FOR OVERTIME REQUIRED
UNDER MANUAL CONDITIONS; REDUCED ACTUAL PROCESSING
COSTS OF DOCUMENTS; REDUCED PROCESSING TIME PER
REPORT FROM 75 DAYS TO 5 DAYS; AND RELIEVED STAFF OF
ROUTINE CLERICAL WORKLOADS, THEREBY EXTENDING THEIR
CAPACITY TO OPTIMIZE OTHER INFORMATION FUNCTIONS.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-651 531 15/5 21/4
AIR FORCE LOGISTICS COMMAND WRIGHT-PATTERSON AFB OHIO
LOGISTICS SIMULATION CENTER
BID EVALUATION FOR PROCUREMENT OF AVIATION FUEL AT
DFSC: A CASE HISTORY, (U)
MAR 67 16P *AGGENER, HERMAN A. ;
SUZUKI, GEORGE ;

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN NAVAL RESEARCH
LOGISTICS QUARTERLY V14 N1 P115-29 MAR 1967.
SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH NAVY
MANAGEMENT OFFICE.

DESCRIPTORS: (*AVIATION FUELS, *ARMED FORCES
PROCUREMENT), JET ENGINE FUELS, COSTS,
COMPUTERS, COST EFFECTIVENESS, SYSTEMS
ENGINEERING (U)
IDENTIFIERS: BIDDING, EVALUATION (U)

THE COMPUTER SYSTEM FOR BID EVALUATION HAS PROVEN
SUCCESSFUL AND IS USED OPERATIONALLY BY DFSC
BUYERS. IT REDUCED OVERTIME ENOUGH TO PAY FOR
ITSELF AND HAS PROVIDED BENEFITS AND CAPABILITIES
NEVER BEFORE POSSIBLE. NOT THE LEAST OF THESE IS
ASSURANCE OF A MINIMUM COST AWARD PATTERN WITH NEARLY
ALL CALCULATIONS MADE FOR THE BUYERS. IT DOES NOT
REPLACE THE EXPERIENCE, JUDGEMENT AND PERCEPTION OF
THE BUYERS, BUT IT PROVIDES THEM WITH THE MOST
SCIENTIFIC TOOL YET AVAILABLE TO SOLVE AN EXTREMELY
COMPLEX PROBLEM. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-651 533 12/2
MICHIGAN UNIV ANN ARBOR
A QUEUEING PROCESS WITH BILEVEL HYSTERETIC SERVICE-
RATE CONTROL, (U)
67 14P GERHARD, RICHARD J

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN NAVAL RESEARCH
LOGISTICS QUARTERLY V14 N1 P55-67 MAR 1967.

DESCRIPTORS: (*QUEUEING THEORY, CONTROL);
THEORY, MATHEMATICAL MODELS, PROBABILITY,
COSTS (U)

THE PURPOSE OF THIS PAPER IS TO ANALYZE THE EFFECT
OF A PARTICULAR CONTROL DOCTRINE APPLIED TO THE
SERVICE MECHANISM OF A QUEUEING PROCESS. A BILEVEL
HYSTERETIC CONTROL BASED ON QUEUE LENGTH CONTROL
LEVELS IS EMPLOYED IN AN M/M/1 QUEUEING SYSTEM.
EXPRESSIONS ARE OBTAINED FOR QUEUE LENGTH
PROBABILITIES, THE FIRST TWO FACTORIAL MOMENTS OF
QUEUE LENGTH AND TWO FIGURES OF MERIT FOR DESCRIBING
CONTROL PERFORMANCE UNDER THE ASSUMPTION OF
STATISTICAL EQUILIBRIUM. COMPUTATIONAL EXAMPLES
ILLUSTRATE THE EFFECTS ON QUEUEING PROCESSES SUBJECT
TO THIS TYPE OF CONTROL. SEVERAL COST FORMULAE ARE
CONSIDERED FOR COMPARISON OF COSTS WHEN THE QUEUE
CONTROL DOCTRINE IS VARIED. SITUATIONS IN WHICH
HYSTERETIC CONTROL IS USEFUL ARE DISCUSSED.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-651 546 13/10 5/9 14/1 15/5
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM
SHIPBOARD SYSTEMS COSTS: A FUNCTIONAL ANALYSIS OF
WORK ABOARD SHIP. THE SS SONOMA. A DRY CARGO SHIP
IN THE SOUTH PACIFIC SERVICE. (U)
MAR 67 38P
CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-651 482.

DESCRIPTORS: (*CARGO SHIPS; *ANALYSIS);
(*MANPOWER STUDIES; *DATA PROCESSING SYSTEMS);
MANPOWER; COSTS; INFORMATION RETRIEVAL;
MERCHANT VESSELS; LABOR; WAGES; DATA STORAGE
SYSTEMS; SHIP AUXILIARY EQUIPMENT; TABLES;
COMPUTERS; SYSTEMS ENGINEERING; EFFECTIVENESS;
AUTOMATION; SOUTHERN HEMISPHERE; PACIFIC
OCEAN (U)

THE REPORT IS ONE IN A SERIES DETAILING THE RESULTS
OF SYSTEMS ANALYSIS WORK ABOARD TWENTY DIFFERENT
MERCHANT SHIPS. IT PRESENTS INFORMATION RELATING
TO ONE OF THESE SHIPS. THE REPORT ALSO DESCRIBES A
SYSTEM FOR THE RETRIEVAL AND ANALYSIS OF DATA
REQUIRED FOR THE EFFECTIVE MANAGEMENT OF A SHIP.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-651 766 6/5
RAND CORP SANTA MONICA CALIF
SOCIAL COST OF PEPTIC ULCER, (U)
APR 67 25P BLUMENTHAL-I.
REPT. NO. P-3588

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION AT THE
CONFERENCE ON DIGESTIVE DISEASE AS A NATIONAL
PROBLEM, BETHESDA, MD., FEB 5-7 1967.

DESCRIPTORS: (*ULCERS; PUBLIC HEALTH);
MORTALITY RATES; POPULATION; ECONOMICS;
BIOMETRY; DIGESTIVE SYSTEM DISEASES; STATISTICAL
DATA (U)

CONTENTS: DEATHS DUE TO PEPTIC ULCER;
PREVALENCE OF PEPTIC ULCER; ECONOMIC COSTS OF
PEPTIC ULCER; THE CONCEPT; LOSS DUE TO DISABILITY;
LOSS DUE TO DEATH; COSTS OF MEDICAL CARE; THE TOTAL
ECONOMIC COST; SOME RESULTS FROM RECENT STUDIES ON
THE ECONOMIC COSTS OF ILLNESS. (U)

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UNCLASSIFIED

DGC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-651 483 5/9 14/1
NAVAL PERSONNEL PROGRAM SUPPORT ACTIVITY WASHINGTON D C
PERSONNEL RESEARCH LAB
PROPOSED CONTENT OF AN OFFICER PERSONNEL COST
MODEL, (U)
APR 67 41P GETTINGS, ROY W. I
REPT. NO. WRM-67-31
PROJ: PF016010 02

UNCLASSIFIED REPORT

DESCRIPTORS: (*OFFICER PERSONNEL, *COSTS),
ANALYSIS, TRAINING, WAGES, TRANSPORTATION,
PROCUREMENT, NAVAL PERSONNEL, REPORTS,
COMPUTERS, DATA PROCESSING SYSTEMS,
EFFECTIVENESS (U)

THE REPORT PRESENTS AN OUTLINE OF A PROPOSED
OFFICER PERSONNEL COST MODEL. THE NEED TO
DEVELOP SUCH A COMPUTERIZED COST MODEL HAS BECOME
EVIDENT WITH THE INCREASING NUMBER OF REQUESTS FOR
COST DATA FROM A WIDE VARIETY OF NAVY AND
DEPARTMENT OF DEFENSE OFFICES. THE SECRETARY
OF DEFENSE HAS, ACCORDINGLY, DESIGNATED THE
SECRETARY OF THE NAVY TO DEVELOP THE COST MODEL
TO BE USED IN DESIGN TRADE-OFFS. THE APPROACH HAS
INVOLVED AN ANALYSIS OF THE PRESENT OFFICER
PERSONNEL COST SYSTEM IN TERMS OF INPUT, PROCESSING,
AND OUTPUT. REVISED OUTPUTS HAVE BEEN DESIGNED TO
PROVIDE CONCISE REPORTS OF INFORMATION FREQUENTLY
REQUIRED. MODIFICATION TO PRESENT REPORTING
SYSTEMS AND DEVELOPMENT OF NEW REPORTING SYSTEMS WILL
BE REQUIRED FOR THE IMPLEMENTATION OF THE PROPOSED
MODEL. SOME RECOMMENDATIONS ARE MADE FOR AREAS OF
FUTURE RESEARCH. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-652 198 15/5 5/3 12/2
RAND CORP SANTA MONICA CALIF
ON THE SEPARATION OF PRODUCTION FROM THE
DEVELOPER;
MAY 67 23P ARDITTI, FRED D. I
REPT. NO. P-3542-1

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (*ARMED FORCES PROCUREMENT,
COSTS); (*MATHEMATICAL MODELS, *COSTS);
INDUSTRIAL PRODUCTION, ECONOMICS, DECISION
THEORY, MANAGEMENT ENGINEERING

(U)

THE PAPER IS AN ATTEMPT TO PRESENT AND TEST A MODEL
WHICH ALLOWS ONE TO ESTIMATE THE COSTS OF
TRANSFERRING PRODUCTION FROM THE DEVELOPER TO SOME
OTHER PRODUCER AND THE OPTIMAL TIME FOR THIS
SEPARATION.

(U)

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DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-652 231 5/1 14/1 15/3
STANFORD RESEARCH INST MENLO PARK CALIF
THE STRUCTURE AND DYNAMICS OF RESEARCH AND
EXPLORATORY DEVELOPMENT IN DEFENSE R AND D INDUSTRY. (U)
DESCRIPTIVE NOTE: RESEARCH AND DEVELOPMENT STUDIES SERIES,
AUG 67 50P HOWELL, RICHARD P. ;
SHAPER, ALBERT ;
CONTRACT: SD-158
PROJ: SRI-IMU-4370

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-652 230.

DESCRIPTORS: (*MANAGEMENT ENGINEERING, *NATIONAL
DEFENSE), (*DEFENSE SYSTEMS, DYNAMICS),
COSTS, ECONOMICS, MANPOWER, SYSTEMS
ENGINEERING, DEPARTMENT OF DEFENSE, WAGES,
TABLES, EMPLOYMENT, EDUCATIONS, SCIENTIFIC
PERSONNEL, ENGINEERING PERSONNEL, PROCUREMENT,
MONEY (U)

THE RESULTS OF THIS STUDY ARE CONSIDERED TO HAVE
THE FOLLOWING IMPLICATIONS TO THE DEPARTMENT OF
DEFENSE: EXPENDITURES IN DEFENSE R AND ED
HAVE AN IMPACT, DOLLAR FOR DOLLAR, IN PROVIDING
(A) GREATER GEOGRAPHICAL DISTRIBUTION OF
RESOURCES THAN OTHER CATEGORIES, (B) LESS
CONCENTRATION OF RESOURCES WITH LARGE BUSINESS,
(C) A GREATER NUMBER OF PERFORMERS, AND (D)
GREATER LEVELS OF EMPLOYMENT; THE MUCH SMALLER
SIZE OF THE TYPICAL R AND ED CONTRACT AND THE
GREATER UNCERTAINTIES ENTAILED SUGGEST THAT ONE WAY
TO REDUCE UNCERTAINTIES IS TO AWARD MULTIPLE PARALLEL
STUDIES, THEREBY ACHIEVING GREATER STATISTICAL
CHANCES OF PRODUCING RESULTS WITHOUT UNDUE ADDITIONAL
COSTS; THE INFREQUENT USE OF UNIVERSITIES AND
NONPROFIT ORGANIZATIONS AS SUBCONTRACTORS BY
COMMERCIAL DEFENSE CONTRACTORS RAISES A QUESTION
CONCERNING THE ADEQUACY OF PRESENT MECHANISMS FOR
USING THE R AND ED RESULTS THAT ARE BEING
PRODUCED BY THE LARGE INVESTMENTS IN THESE
CATEGORIES; THE TREND OF INCREASING EXPENDITURES
IN THE FRACTION OF RDT&E FUNDS GOING TO R AND ED
SUGGESTS THAT THE WORK PERFORMED IN THE POTENTIAL
BRIDGING CATEGORIES OF EXPLORATORY DEVELOPMENT
AND ADVANCED DEVELOPMENT BE STUDIED TO DETERMINE
WHETHER THERE IS TRANSFER AND FULL USE OF THE RESULTS
OF R AND ED AND WHETHER THIS SITUATION CAN BE
IMPROVED. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-652 458 14/1 16/1 22/2
RAND CORP SANTA MONICA CALIF
AUTOMATIC CHECKOUT OF SPACE SYSTEMS,
MAY 67 17P MAST, LAWRENCE T. I
REPT. NO. P-3603

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (*GROUND SUPPORT EQUIPMENT,
*SPACECRAFT), (*COST EFFECTIVENESS,
*MANAGEMENT ENGINEERING), AUTOMATION, COSTS,
CHECKOUT EQUIPMENT, LAUNCHING SITES, LAUNCH
VEHICLES(AEROSPACE), PROGRAMMING(COMPUTERS),
MAN-MACHINE SYSTEMS, INTEGRATED CIRCUITS,
DIGITAL COMPUTERS, PERFORMANCE(ENGINEERING)

(U)

THE EXTENT OF AUTOMATION AND THE TIMING OF ITS
INTRODUCTION IN AGE SHOULD BE THE RESULT OF COST-
EFFECTIVENESS STUDIES. THE TEST PLAN, MAN-MACHINE
CAPABILITIES AND LIMITATIONS, ALTERNATIVE APPROACHES,
COSTS, AND SCHEDULE INFLUENCES SHOULD ENTER THIS
STUDY. THE INTRODUCTION OF AUTOMATIC AGE
INVOLVES RISKS TO THE MISSION-SUCCESS RATE OF A
SYSTEM. MOREOVER, THE INSTALLATION AND CHECKOUT OF
AUTOMATIC AGE IS USUALLY A TROUBLESOME, COSTLY
PROCESS. TO MINIMIZE THESE DANGERS, A BUILDING-
BLOCK APPROACH TO AUTOMATION OF AGE IS RECOMMENDED.
THE FUTURE WILL REVEAL AN INCREASING USE OF
AUTOMATION IN CHECKOUT AND OTHER LAUNCH-RELATED
AREAS. TO ACCOMPLISH THIS, EXPLOITATION OF
INTEGRATED CIRCUITS IN ONBOARD CHECKOUT EQUIPMENT,
EXTENSIVE USE OF DIGITAL COMPUTATION EQUIPMENT, AND
ADVANCES IN PROGRAMMING ARE NEEDED. INTEGRATED
CIRCUITS WITH THEIR IMPACT ON DIGITAL EQUIPMENT AND
ONBOARD CHECKOUT EQUIPMENT ARE ESSENTIALLY WITH US.
LARGE PROGRAMMING ADVANCES APPEAR TO BE POSSIBLE IN
THE NEAR FUTURE.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-652 579 13/10 5/1 15/5
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM
SHIPBOARD SYSTEMS COSTS: A FUNCTIONAL ANALYSIS OF
WORK ABOARD SHIP - THE USNS KIMBRO, A DRY CARGO
SHIP. (U)

MAR 67 33P
CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

DESCRIPTORS: (*MERCHANT VESSELS, *MANAGEMENT
ENGINEERING), (*CARGO SHIPS, MANPOWER),
INFORMATION RETRIEVAL, SYSTEMS ENGINEERING, JOB
ANALYSIS, EFFECTIVENESS, SHIPBORNE, COSTS,
FUNCTIONAL ANALYSIS (U)

THE REPORT IS ONE IN A SERIES DETAILING THE RESULTS
OF SYSTEMS ANALYSIS WORK ABOARD TWENTY (20)
DIFFERENT MERCHANT SHIPS. IT PRESENTS INFORMATION
RELATING TO ONE OF THESE SHIPS. THIS REPORT ALSO
DESCRIBES A SYSTEM FOR THE RETRIEVAL AND ANALYSIS OF
DATA REQUIRED FOR THE EFFECTIVE MANAGEMENT OF A
SHIP. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-652 797 12/2

STANFORD UNIV CALIF DEPT OF STATISTICS
NON-DISCOUNTED DENUMERABLE MARKOVIAN DECISION
MODELS.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAY 67 39P ROSS, SHELDON M. I
REPT. NO. TR-94
CONTRACT: NONR-225(53)
PROJ: NR-042-002

UNCLASSIFIED REPORT

DESCRIPTORS: (*COSTS, *MATHEMATICAL MODELS),
(*DECISION THEORY, *PROBABILITY), STATISTICAL
PROCESSES, OPERATIONS RESEARCH, DYNAMIC
PROGRAMMING, OPTIMIZATION, REPLACEMENT THEORY,
EFFECTIVENESS, SEQUENCES, THEOREMS

(U)

COUNTABLE STATE, FINITE ACTION MARKOVIAN DECISION
PROCESSES ARE STUDIED UNDER THE AVERAGE COST
CRITERION. THE PROBLEM IS STUDIED BY USING THE
KNOWN RESULTS FOR THE DISCOUNTED-COST PROBLEM.
SUFFICIENT CONDITIONS ARE GIVEN FOR THE EXISTENCE
OF AN OPTIMAL RULE WHICH IS OF THE STATIONARY
DETERMINISTIC TYPE. THIS RULE IS SHOWN TO BE, IN
SOME SENSE, A LIMIT POINT OF THE OPTIMAL DISCOUNTED-
COST RULES. SUFFICIENT CONDITIONS ARE ALSO GIVEN
FOR THE OPTIMAL DISCOUNTED-COST RULES TO BE EPSILON-
OPTIMAL WITH RESPECT TO THE AVERAGE COST CRITERION.
IT IS SHOWN THAT IF THERE IS A REPLACEMENT ACTION
THEN THERE EXISTS AN OPTIMAL RULE BUT IT MAY NOT BE
OF THE STATIONARY DETERMINISTIC TYPE. IT IS ALSO
SHOWN HOW, IN A SPECIAL CASE, THE AVERAGE COST
CRITERION CAN BE REDUCED TO THE DISCOUNTED COST
CRITERION. LASTLY, AN EXAMPLE IS GIVEN OF A
PROCESS FOR WHICH THERE EXISTS AN OPTIMAL
NONSTATIONARY RULE WHICH IS BETTER THAN ANY
STATIONARY RULE.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-652 977 5/9 13/10

TEMPLE UNIV PHILADELPHIA PA

AN INVESTIGATION OF THE PROBLEM OF MECHANIZATION AND
WORKER SECURITY IN THE MARITIME INDUSTRY-LONGSHOREMEN
ASPECT.

(U)

DESCRIPTIVE NOTE: MASTER'S THESIS,
67 123P LEWIS, STEPHEN J

UNCLASSIFIED REPORT

DESCRIPTORS: (*LABOR UNIONS, *MARINE
ENGINEERING), (*SHIPPING(MARINE), LABOR),
PIERS, CARGO, HANDLING, PERSONNEL,
ECONOMICS, LEADERSHIP, MANAGEMENT ENGINEERING,
COSTS

(U)

WORKER RESISTANCE TO TECHNOLOGICAL CHANGE SHOULD BE
EXPECTED IN VIEW OF THEIR BITTER EXPERIENCE IN THE
PAST WITH BOTH EMPLOYER AND UNION GROUPS ALIKE.
PSYCHOLOGICALLY, IT CANNOT BE EXPECTED THAT THE
WORKFORCE WILL BE AGREEABLE TO CHANGE WHICH MIGHT
AFFECT A CHANGE IN THOSE BENEFITS THEY HAVE FOUGHT SO
HARD TO ACQUIRE--WHETHER THE CHANGE BE GOOD OR BAD,
IT IS THE CHANGE ITSELF THAT THEY WOULD RESIST,
EITHER BECAUSE OF THE REAL OR IMAGINATIVE PROBLEMS IT
WILL CREATE. TECHNOLOGICAL CHANGE WILL BRING ABOUT
A REDUCTION IN THE MANHOURS REQUIRED TO HANDLE CARGO
MOVEMENT. RECENT STUDIES HAVE CONCLUDED THAT
UNITIZED HANDLING, BOTH PALLETS AND CONTAINERIZATION,
WILL REDUCE LONGSHORE HANDLING COSTS. THIS DOES
NOT MEAN THAT THE LONGSHORE INDUSTRY WILL EXPERIENCE
A REDUCTION IN THE NUMBER OF LONGSHOREMEN REQUIRED.
THE ILWU-PMA AGREEMENT CONCLUDED IN 1960, WHICH
ALLOWED FOR THE INTRODUCTION OF TECHNOLOGICAL
IMPROVEMENTS, HAS NOT RESULTED IN A REDUCTION OF THE
WORKFORCE REQUIRED. INDEED, LONGSHOREMEN
REQUIREMENTS HAVE INCREASED.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-653 159 17/2.1 9/5
COMMUNICATION SYSTEMS INC PARAMUS N J
WIDEBAND DIGITAL MODULATION AND DETECTION TECHNIQUES
FOR TROPOSCATTER. (U)
DESCRIPTIVE NOTE: QUARTERLY REPT. NO. 3, 1 JAN-31 MAR
67,
MAY 67 44P LEVINE, E. ; ADAMS, P. T. ;
GROBERT, P. ;
REPT. NO. CSI-67-TR-2380
CONTRACT: DA-28-043-AMC-02542(E)
MONITOR: ECOM 02542-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-648 952.

DESCRIPTORS: (*DATA TRANSMISSION SYSTEMS,
*MULTIPATH TRANSMISSION), MODULATION, DIGITAL
SYSTEMS, TRANSMITTER-RECEIVERS,
RELIABILITY (ELECTRONICS), COSTS, SIGNAL-TO-
NOISE RATIO, DEMODULATORS, MODULATORS (U)

THE PROGRAM OBJECTIVE IS TO IDENTIFY AND BREADBOARD
THE MODULATION TECHNIQUE OFFERING BEST PERFORMANCE
FOR TRANSMISSION OF HIGH DIGITAL DATA RATES OVER
TACTICAL TROPOSCATTER PATHS OF 50 TO 150 MILES AT 5
GHZ. THE STUDY IS CONCERNED WITH HIGHER ORDER
MODULATION CODING, IN-BAND DIVERSITY AND OTHER
TECHNIQUES THAT MAY BRING ABOUT AN OPTIMAL MATCH TO
THE MEDIUM. THE PRIME TRAFFIC RATES UNDER
CONSIDERATION ARE 0.576 AND 1.15 MEGABITS PER SECOND.
DURING THIS QUARTER, A SPECIFIC NEAR-OPTIMUM
MODULATION TECHNIQUE WAS CHOSEN FOR IMPLEMENTATION,
AND THE NECESSARY CIRCUITS FOR TRANSMITTER AND
RECEIVER WERE PLANNED AND ANALYZED IN DETAIL. A
TENTATIVE SET OF CIRCUIT BLOCK DIAGRAMS WAS
COMPLETED. THIS CIRCUIT WAS THEN REFINED AND IT
WAS FOUND POSSIBLE TO SIMPLIFY PARTS OF THE RECEIVER
CIRCUITRY BY MODIFYING THE SPECIFIC DETECTION PROCESS
USED WITH THE FIRST-CHOICE MODULATION PATTERN
FULLY ANALYZED, AND THE REQUIRED CIRCUITS OUTLINED IN
DETAIL, IT BECAME POSSIBLE TO CONSIDER TRADE-OFFS OF
COST, COMPLEXITY, PROBABLE RELIABILITY AND SIZE
FACTORS, AND OVERALL PERFORMANCE AS A FUNCTION OF
SIMPLIFICATION AND MODIFICATION IN THE CHOICE OF
PATTERN. A PARTICULARLY ATTRACTIVE SIMPLIFIED
CHOICE OF MODULATION PATTERN RESULTS IN ABOUT TWO TO
ONE REDUCTION IN CIRCUIT COST AND COMPLEXITY, AND
APPEARS TO HAVE THEORETICAL ADVANTAGES IN LINKS
HAVING A WIDE CORRELATION BANDWIDTH, ALLOWING WIDER
FREQUENCY SPACING FOR IN-BAND DIVERSITY.
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-653 177 5/3 5/1
RAND CORP SANTA MONICA CALIF
THE COST OF BASIC SCIENTIFIC RESEARCH IN EUROPE:
DEPARTMENT OF DEFENSE EXPERIENCE, 1956-1966, (U)
APR 67 57P BRUNNER, E. D. I
REPT. NO. RM-5275-PR
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (*SCIENTIFIC RESEARCH, COSTS),
(*EUROPE, SCIENTIFIC RESEARCH), (*DEPARTMENT
OF DEFENSE, BUDGETS), SCIENTIFIC PERSONNEL,
WAGES, FEDERAL BUDGETS, STATISTICAL DATA (U)

AN ANALYSIS IS PRESENTED OF THE COST OF BASIC
SCIENTIFIC RESEARCH OBTAINED IN EUROPE AND ISRAEL
FROM 1956 THROUGH 1966 BY AGENCIES OF THE
DEPARTMENT OF DEFENSE. COST-SHARING AGREEMENTS
WITH EUROPEAN INSTITUTIONS AND GRANTS HAVE
PREVENTED THE AVERAGE COST OF RESEARCH AGREEMENTS
FROM RISING BETWEEN 1961-1962 AND 1965-1966. IN
THE CASE OF NON-COST-SHARING AGREEMENTS, HOWEVER, THE
COST HAS INCREASED THROUGHOUT THE ENTIRE PERIOD.
AN ANALYSIS OF THE AVERAGE COST PER SCIENTIST PER
MAN-MONTH FOR ALL TYPES OF RESEARCH REVEALS THAT THE
COST OF BASIC RESEARCH OBTAINED IN THE UNITED
STATES RANGED FROM THREE TO FOUR TIMES THE COST IN
EUROPE. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-653 508 5/3 17/1
RAND CORP SANTA MONICA CALIF
A METHOD FOR SELECTING CONTRACT COST INCENTIVES. (U)
MAR 67 74P MILLER, RALPH E. ;
REPT. NO. RM-5122-PR
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (*CONTRACTS, COST EFFECTIVENESS),
(*GOVERNMENT PROCUREMENT, DECISION MAKING),
SELECTION, COSTS, PROBABILITY, ECONOMICS (U)
IDENTIFIERS: INCENTIVE CONTRACTING (U)

SELECTION OF AN APPROPRIATE SHARING RATE FOR COST
INCENTIVE CONTRACTS MIGHT SAVE THE FEDERAL
GOVERNMENT LARGE SUMS OF MONEY EACH YEAR.
THEORETICAL CRITERIA FOR MAKING THIS CHOICE HAVE
LONG BEEN KNOWN; HOWEVER, NO RESULTS HAVE BEEN
ESTABLISHED BECAUSE SUITABLE EMPIRICAL ANALYSES OF
THE PROBLEM ARE LACKING. THE MEMORANDUM CONSIDERS
THE EMPIRICAL EVIDENCE NECESSARY FOR DETERMINING
APPROPRIATE SHARING PROPORTIONS. IT SHOWS WHAT
DATA ARE NEEDED, INDICATES HOW THEY SHOULD BE USED,
AND PROPOSES A METHOD FOR COLLECTING THEM.
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-653 636 1/5 4/2 1/4
COLD REGIONS RESEARCH AND ENGINEERING LAB HANOVER N H
FOG DISPERSAL EXPERIMENTS USING PROPANE AT WALLA
WALLA, WASHINGTON. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
APR 67 18P HICKS, J. R. J
REF. NO. CRREL-TR-198
TASK: DA-1V014501B52402

UNCLASSIFIED REPORT

DESCRIPTORS: (*FOG, WASHINGTON(STATE)),
(*PROPANE, *METEOROLOGICAL PHENOMENA),
VISIBILITY, ARTIFICIAL PRECIPITATION, AIR
TRAFFIC, AIRPORTS, RUNWAYS, SNOW, SCATTERING,
COSTS, FREEZING, BRAKING (U)

PROPANE IS AN EFFECTIVE AGENT CAUSING GLACIATION OF
SUPERCOOLED FOG DROPLETS AND SUBSEQUENT IMPROVEMENT
OF VISIBILITY. WHEN WIND IS LESS THAN 5 OR 6 KNOTS
AND STEADY WITH RESPECT TO DIRECTION, TWO OR THREE
DISPENSERS, EACH EMITTING 2.5 TO 3 LB/MIN. OF LIQUID
PROPANE, COULD PROBABLY KEEP AN AIRFIELD OPEN TO AIR
TRAFFIC AT A COST OF ABOUT 20 DOLLARS PER HOUR.
THE PROPANE SYSTEM IS EASY TO USE, INEXPENSIVE,
REQUIRES NEITHER PREPARATION NOR PERSONNEL STANDBY
TIME AFTER THE INITIAL INSTALLATION, AND IS EFFECTIVE
AT TEMPERATURES HIGHER THAN THE EFFECTIVE TEMPERATURE
OF THE MORE COMMONLY USED AGENTS. NO COMBUSTIBLE
MIXTURE HAS BEEN FOUND BEYOND 8 FT FROM THE DISCHARGE
NOZZLE OF THE PROPANE-AIR MIXTURE. ON AIRPORTS
WITH SHORT RUNWAYS, THE REDUCED AIRCRAFT BRAKING
INDEX CAUSED BY SNOW ACCUMULATION MIGHT BE SUFFICIENT
TO RENDER THE SYSTEM UNSUITABLE UNLESS THE DISPENSERS
COULD BE POSITIONED FAR ENOUGH FROM THE AIRPORT TO
ALLOW THE SNOW TO FALL UPWIND OF THE RUNWAY. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-653 643 5/3 15/5
ARMY AVIATION MATERIEL COMMAND ST LOUIS MO
PROCUREMENT: MULTIPLE INCENTIVE CONTRACTING, (U)
SCIENTIFIC CONTRACTING WITH ACCENT ON TRADE-OFF, (U)
MAY 67 115P SMITH, NORMAN H. J
MONITOR: DA-PAM 715-3

UNCLASSIFIED REPORT

DESCRIPTORS: (*CONTRACTS, *PROCUREMENT),
DECISION MAKING, COSTS, COST EFFECTIVENESS, (U)
ANALYSIS, MANAGEMENT ENGINEERING (U)
IDENTIFIERS: INCENTIVE CONTRACTING (U)

INCENTIVE CONTRACTS, THOSE CONTRACTS IN WHICH THE
SELLER IS REWARDED (OR PENALIZED) ACCORDING TO
PERFORMANCE ACHIEVED, CAN WORK TO THE ADVANTAGE OF
THE SELLER OR THE BUYER, TO BOTH, OR TO NEITHER.
THE REPORT EMPHASIZES THE NEED FOR A METHOD OF
ANALYSIS OF INCENTIVE ARRANGEMENTS SO THAT THE TRUE
RELATIONSHIPS BETWEEN COST AND PERFORMANCE AND THEIR
INFLUENCE ON FEE EARNED MAY BE KNOWN IN ADVANCE OF
NEGOTIATION OR SIGNING OF A CONTRACT. THE REPORT
IS WRITTEN PRIMARILY FOR MANAGEMENT AND HAS LITTLE OF
THE TECHNICAL DETAILS. THERE ARE MANY EXAMPLES
WITH GRAPHS SHOWING THE RELATIONSHIP OF COST,
PERFORMANCE AND FEE. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-653 669 13/13
STANFORD RESEARCH INST MENLO PARK CALIF
COST TRENDS OF MASS PRODUCTION AS APPLIED TO 5-10 PSI
SHELTERS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
FEB 67 92P CURIONE, CHARLES I
PROJ: SRI-MU-4949-022

UNCLASSIFIED REPORT

DESCRIPTORS: (*SHELTERS, COSTS), INDUSTRIAL
PRODUCTION, PREFABRICATED BUILDINGS, CONSTRUCTION,
CONCRETE, WEIGHT (U)

THE PRIMARY OBJECTIVE OF THE STUDY WAS TO DETERMINE
THE COST REDUCTION POTENTIAL OF MASS PRODUCTION
TECHNIQUES APPLIED TO 5-10 PSI SHELTER CONSTRUCTION
PROGRAMS. VARIOUS INDUSTRIES EMPLOYING MASS
PRODUCTION METHODS IN THE MANUFACTURE OF STRUCTURES
OR STRUCTURAL COMPONENTS WERE INVITED TO PROVIDE
COMMENTS PERTINENT TO THIS RESEARCH. REPORTS AND
STUDIES COVERING SHELTER COSTS WERE REVIEWED, AND
APPLICABLE COST DATA WERE INTEGRATED INTO THE REPORT.
THE FINDINGS OF THIS RESEARCH INDICATE THAT SOME
COST REDUCTION CAN BE ACHIEVED BY USE OF MASS
PRODUCTION TECHNIQUES WHERE SUCH TECHNIQUES ARE
APPLIED TO SHELTER CONSTRUCTION. HOWEVER, MASS
PRODUCTION DOES NOT ALWAYS ACHIEVE THE MAGNITUDE OF
COST REDUCTION THAT ONE MIGHT EXPECT FROM THIS
TECHNIQUE. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-653 885 15/5 5/1

STANFORD UNIV CALIF DEPT OF OPERATIONS RESEARCH
OPTIMALITY OF MYOPIC INVENTORY POLICIES FOR SEVERAL
SUBSTITUTE PRODUCTS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,

JUN 67 51P IGNALL, EDWARD ;

VEINOTT, ARTHUR F. , JR;

REPT. NO. TR-8

CONTRACT: NONR-225(77)

PROJ: NR-347-010

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH
COLUMBIA UNIV., NEW YORK. CONTRACT NONR-
266(55).

DESCRIPTORS: (*PROCUREMENT, DECISION MAKING),
(*INVENTORY, OPTIMIZATION), INVENTORY
ANALYSIS, INVENTORY CONTROL, COSTS, NONLINEAR
PROGRAMMING, DYNAMIC PROGRAMMING, STOCHASTIC
PROCESSES (U)

MULTIPRODUCT INVENTORY SYSTEMS WITH PROPORTIONAL
ORDERING COSTS AND STOCHASTIC DEMANDS ARE STUDIED.
NEW CONDITIONS ARE OBTAINED UNDER WHICH A MYOPIC
ORDERING POLICY (A POLICY OF MINIMIZING EXPECTED
COST IN THE CURRENT PERIOD ALONE) IS OPTIMAL FOR A
SEQUENCE OF PERIODS FOR ALL INITIAL INVENTORY LEVELS.
AN IMPORTANT ONE OF THESE, THE SUBSTITUTE PROPERTY,
HOLDS WHEN THE MYOPIC POLICY IS SUCH THAT INCREASING
THE INITIAL INVENTORY OF ONE PRODUCT DOES NOT
INCREASE THE QUANTITY ORDERED OF ANY PRODUCT.
CONDITIONS ON THE ONE PERIOD EXPECTED HOLDING AND
SHORTAGE COST FUNCTION, WHICH ARE OF INDEPENDENT
INTEREST IN NONLINEAR PROGRAMMING, ARE SHOWN TO IMPLY
THE SUBSTITUTE PROPERTY. APPLICATIONS OF THESE
CONDITIONS TO MODELS WITH STORAGE OR INVESTMENT
LIMITATIONS AND TO A MULTIECHELON MODEL ARE GIVEN.
UNDER BACKLOGGING THE USUAL EXTENSION TO A FIXED
DELIVERY LAG IS OBTAINED. SOME NON-STATIONARY
CASES ARE ALSO TREATED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-654 181 15/5 14/1 5/1
LOGISTICS MANAGEMENT INST WASHINGTON D C
LIFE CYCLE COSTING IN EQUIPMENT PROCUREMENT. (U)
DESCRIPTIVE NOTE: SUPPLEMENTAL REPT.
FEB 67 112P
CONTRACT: SD-271
TASK: 66-3

UNCLASSIFIED REPORT

DESCRIPTORS: (*LOGISTICS, *COSTS), (*COST
EFFECTIVENESS, *ARMED FORCES PROCUREMENT),
PERFORMANCE(ENGINEERING), EFFECTIVENESS,
RELIABILITY, MAINTAINABILITY, MANAGEMENT
ENGINEERING, DECISION MAKING, DEPARTMENT OF
DEFENSE (U)
IDENTIFIERS: *LIFE EXPECTANCY, LIFE CYCLE
COSTING (U)

THE REPORT SUMMARIZES PROGRESS OF THE DOD
LIFE CYCLE COSTING TEST PROGRAM SINCE ITS
ESTABLISHMENT IN JULY 1965. THAT PROGRAM, A
COLLECTIVE EFFORT OF THE OFFICE OF THE SECRETARY
OF DEFENSE, THE MILITARY DEPARTMENTS, AND DEFENSE
INDUSTRY, IS ASSESSING THE PRACTICABILITY OF MAKING
CONTRACT AWARDS ON THE BASIS OF ESTIMATED FUTURE
LOGISTICS COSTS AS WELL AS PURCHASE PRICE. THE
THIRTY-FIVE QUESTIONS MOST FREQUENTLY ASKED DURING
THE TEST PROGRAM ARE PRESENTED AND ANSWERED. SEVEN
TEST PROCUREMENTS ARE DESCRIBED. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-654 384 9/2 14/1 5/1 12/2
NAVAL RESEARCH LAB WASHINGTON D C
THE THROUGHPUT AND COST EFFECTIVENESS OF
MONOPROGRAMMED, MULTIPROGRAMMED, AND MULTIPROCESSING
DIGITAL COMPUTERS. (U)
DESCRIPTIVE NOTE: DOCTORAL THESIS,
APR 67 136P WALD, BRUCE ;
REPT. NO. NRL-6549
PROJ: RF-001-08-41

UNCLASSIFIED REPORT

DESCRIPTORS: (*DIGITAL COMPUTERS, *COST
EFFECTIVENESS), ECONOMICS, THESES, COSTS,
OPERATIONS RESEARCH, COMPUTER STORAGE DEVICES,
SYSTEMS ENGINEERING, PROGRAMMING (COMPUTERS),
MATHEMATICAL MODELS (U)
IDENTIFIERS: MULTIPROGRAMMING, (U)
MULTIPROCESSING

A GENERALIZED MODEL OF A DIGITAL COMPUTER SYSTEM
WITH A WORKLOAD DRAWN FROM A PROFFERED INFINITE
WORKLOAD WAS INVESTIGATED TO DETERMINE THE FACTORS
THAT AFFECT THROUGHPUT AND COST EFFECTIVENESS TO
ALLOW OPTIMIZATION OF THE SYSTEM PARAMETERS.
THROUGHPUT WAS DEFINED AS THE SUM OF THE PRODUCTS
OF THE COST OF EACH COMPONENT AND THE PROPORTION OF
THE TIME EACH COMPONENT WAS BENEFICIALLY USED.
COST EFFECTIVENESS WAS DEFINED AS THE QUOTIENT OF
THROUGHPUT AND SYSTEM COST, WITH UNITY BEING THE
IDEAL QUOTIENT. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-650 578 15/5 14/1
GEORGE WASHINGTON UNIV WASHINGTON D C LOGISTICS RESEARCH
PROJECT
SIMULATION OF A MULTI-ECHELON LOGISTICS SUPPORT
SYSTEM, (U)
JUN 67 54P HARBER, SHELDON E. ;
REPT. NO. SERIAL T-192
CONTRACT: N00014-67-A-0214
PROJ: NR-047-001
TASK: 0001

UNCLASSIFIED REPORT

DESCRIPTORS: (*LOGISTICS, COMPUTER PROGRAMS),
COST EFFECTIVENESS, INVENTORY CONTROL, BALLISTIC
MISSILE SUBMARINES, WEAPON SYSTEMS, STOCK LEVEL
CONTROL, SIMULATION, TENDERS(VESSELS) (U)

A COMPUTER PROGRAM FOR SIMULATING ALTERNATIVE
INVENTORY POLICIES FOR A MULTI-ECHELON LOGISTICS
SUPPORT SYSTEM IS DESCRIBED. IN ITS PRESENT FORM,
THE COMPUTER PROGRAM SIMULATES A FORCE COMPOSED OF
NINE POLARIS SUBMARINES, ONE TENDER AND ONE DEPOT.
ATTENTION IS GIVEN IN THE PAPER TO THE
REPRESENTATION OF THE PHYSICAL SYSTEM, DIVERGENCIES
FROM THE ACTUAL ENVIRONMENT, DECISION RULES INTERNAL
TO THE COMPUTER PROGRAM AND COMPUTER INPUTS AND
OUTPUTS. AN ACTUAL SIMULATION EXPERIMENT IS
DESCRIBED AND EVALUATED IN TERMS OF THE COST AND
EFFECTIVENESS MEASUREMENTS PERMITTED VIA UTILIZATION
OF THE SIMULATOR. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-654 893 20/7

STANFORD UNIV CALIF HIGH ENERGY PHYSICS LAB
DESIGN OF A HIGH ENERGY, HIGH DUTY CYCLE RACETRACK
MICROTRON,

(U)

MAY 67 36P WILK, R. H. ; WILSON, P. B.

REPT. NO. HEPL-493

CONTRACT: NONR-225(67)

UNCLASSIFIED REPORT
SUBMITTED FOR PUBLICATION IN NUCLEAR INSTRUMENTS AND
METHODS.

DESCRIPTORS: (*CYCLOTRONS, ELECTRON
ACCELERATORS), DESIGN, COSTS, ELECTRON BEAMS,
ELECTRON OPTICS, RADIOFREQUENCY POWER, PHASE,
STABILITY

(U)

IDENTIFIERS: MICROTRONS

(U)

THE CALCULATED PROPERTIES OF THE SPLIT-MAGNET
RACETRACK MICROTRON COMPARE VERY FAVORABLY WITH THE
PROPERTIES OF OTHER TYPES OF ELECTRON ACCELERATORS IN
THE 100-600 MEV ENERGY RANGE. IN COMPARISON
WITH AN ELECTRON LINAC USING A COMPARABLE AMOUNT OF
AVERAGE RF POWER, THE ENERGY HOMOGENEITY AND DUTY
CYCLE OF THE MICROTRON ARE SUPERIOR BY AN ORDER OF
MAGNITUDE, WHILE THE AVERAGE CURRENT IS COMPARABLE.
IN ADDITION, THE MICROTRON IS CONSIDERABLY MORE
COMPACT. COMPARED WITH OTHER CIRCULAR
ACCELERATORS, THE MICROTRON HAS THE ADVANTAGE OF HIGH
AVERAGE CURRENT AND THE EASE OF BEAM EXTRACTION
ASSOCIATED WITH A LINAC. A ROUGH ESTIMATE WAS MADE
OF THE COST OF THE MAJOR COMPONENTS FOR THE PROPOSED
MICROTRON. INCLUDED IN THE ESTIMATE IS THE COST OF
MAGNETS, QUADRUPOLES, KLYSTRONS, MODULATORS, RF
COMPONENTS, ACCELERATING STRUCTURES, VACUUM CHAMBER,
INJECTOR, AND AN ALLOWANCE FOR MISCELLANEOUS ITEMS.
THE COST OF THESE COMPONENTS FOR THE 400 MEV
MACHINE, USING THE LOWER POWER 3% DUTY CYCLE RF
SYSTEM, IS ESTIMATED TO BE LESS THAN 1-1/2 MILLION
DOLLARS. FOR THE 600 MEV MICROTRON, USING THE
HIGHER DUTY CYCLE RF SYSTEM, THE COST OF THE BARE
MACHINE IS ESTIMATED TO BE ABOUT TWO MILLION DOLLARS.
THE COST OF HOUSING, INSTALLATION, AND EXPERIMENTAL
FACILITIES MUST BE ADDED TO THE PRECEDING FIGURES.
IT IS ESTIMATED THAT THE COST FOR A COMPLETED
MACHINE OF THE DESIGN PROPOSED HERE WOULD BE ABOUT 20
TO 30% OF THE COST FOR AN ELECTRON LINAC WITH
COMPARABLE ENERGY AND DUTY CYCLE. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-655 189 5/1 14/1 13/6
PLANNING RESEARCH CORP LOS ANGELES CALIF
STUDY OF A PLANNING-PROGRAMMING-BUDGETING SYSTEM FOR
TRANSPORTATION. VOLUME III. EXERCISING THE P P B
SYSTEM. (U)
APR 67 162P
REPT. NO. PRC-R-1003-VOL-3
CONTRACT: C-204-66

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-655 187 AND AD-655
188.

DESCRIPTORS: (*TRANSPORTATION, *MANAGEMENT
PLANNING), (*FEDERAL BUDGETS, *DECISION
MAKING), OPERATIONS RESEARCH, SYSTEMS
ENGINEERING, COSTS, SAFETY, ECONOMICS,
EFFICIENCY, MONEY, NUMERICAL ANALYSIS (U)

THIS VOLUME EXERCISES THE SYSTEM DESCRIBED IN
VOLUME II AND REPORTS ON AN INITIAL ATTEMPT TO
ORDER AND QUANTIFY OBJECTIVES, NEEDS, GOALS,
CONSTRAINTS, PROGRAM COSTS, PFP, AND THEIR
INTERRELATIONSHIPS. TWO OF THE PRINCIPAL
OBJECTIVES FROM THE LIST OF 19 IDENTIFIED NATIONAL
TRANSPORTATION OBJECTIVES WERE QUANTIFIED IN SOME
DEPTH. TREATING THESE TWO OBJECTIVES IN DETAIL
TENDED TO IDENTIFY PROBLEMS OF IMPORTANCE IN
VALIDATING AND EXTENDING PPB TO THE OPERATIONAL
LEVEL. SIGNIFICANT INSIGHTS WERE OBTAINED IN THE
PROCESS. A CONCLUDING SECTION DISCUSSES
ALTERNATIVES TO THE CURRENTLY EXPRESSED OBJECTIVES OF
THE NATIONAL TRANSPORTATION SYSTEM. (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-655 284 15/3
IIT RESEARCH INST CHICAGO ILL
CIVIL DEFENSE SHELTER OPTIONS FOR FALLOUT AND BLAST
PROTECTION (DUAL-PURPOSE). (U)
DESCRIPTIVE NOTE: FINAL REPT. AND SUMMARY MAR 65-NOV
66,
MAY 67 234P LONGINOW, A. I
PROJ: IITRI-M6101

UNCLASSIFIED REPORT

DESCRIPTORS: (*CIVIL DEFENSE SYSTEMS, *FALLOUT
SHELTERS), RADIOACTIVE FALLOUT, NUCLEAR
EXPLOSION DAMAGE, PROTECTION, DESIGN,
UNDERGROUND EXPLOSIONS, COSTS, UNDERGROUND
STRUCTURES, EFFECTIVENESS, BLAST, MAPS,
ECONOMICS, CONSTRUCTION, TABLES (U)

THE EFFORT REPORTED HEREIN IS CONCERNED WITH
CIVILIAN DUAL-USE PERSONNEL SHELTERS. ITS PRIMARY
OBJECTIVES ARE: TO DETERMINE FOR NUCLEAR WEAPONS
ENVIRONMENTS OTHER THAN FALLOUT RADIATION ALONE, THE
EXTENT OF THE ECONOMIC ADVANTAGES OF DUAL-USE SHELTER
SYSTEMS WITH RESPECT TO EXPECTED PERCENT OF
POPULATION THUS SHELTERED. TO BRING INTO SHARPER
FOCUS THOSE AREAS IN WHICH MORE RESEARCH OR ANALYSIS
IS NECESSARY IN ORDER TO INCREASE THE EFFECTIVENESS
OF THIS SHELTERING CONCEPT. TOPICS SUPPLEMENTARY
TO THE ABOVE OBJECTIVES INCLUDE: ESTIMATED
CONSTRUCTION TRENDS IN SELECTED TYPES OF
CONSTRUCTION; A LIMITED STUDY ON THE USE OF
EXPRESSWAY GRADE SEPARATIONS AS DUAL-USE SHELTERS,
AND COST ESTIMATING AND COST REPORTING AS APPLIED TO
DUAL-USE SHELTERS. RESULTS OF THIS EFFORT DEALING
WITH A LARGE NUMBER OF EXISTING RELATED TOPICS ARE
CONTAINED IN THIS REPORT. THESE RESULTS ARE IN THE
FORM OF ASSEMBLED AND UPDATED COSTS AS WELL AS
PHYSICAL AND ENVIRONMENTAL DATA AND CONCLUSIONS.
(AUTHOR) (U)

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DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-655 342 22/2
RAND CORP SANTA MONICA CALIF
ORBITAL BASING: KEY TO LOW COST SPACE
OPERATIONS,
JUL 67 25P SEARS, G. A. ;
REPT. NO. P-3570

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (*SPACE STATIONS, COSTS),
MANNED, RECOVERY, LIFE EXPECTANCY, TRAFFIC,
LAUNCHING, OPERATION, WEIGHT

(U)

A COMPARISON IS MADE OF SOME OF THE OPERATIONAL AND COST-INFLUENCING CHARACTERISTICS OF LOW-ORBIT SPACE OPERATIONS CONDUCTED FROM A MANNED ORBITAL BASE AND FROM AN EARTH BASE. THE EARTH-BASED MODE OF OPERATION IS THAT EMPLOYED TODAY, WHEREBY EXPENDABLE SPACECRAFT ARE PLACED IN MISSION ORBITS WITH EXPENDABLE LAUNCH VEHICLES. IN THE ORBITAL-BASING CONCEPT THE SPACECRAFT ARE BASED AT A MANNED SPACE STATION, ARE INJECTED INTO THEIR MISSION ORBITS AS REQUIRED, AND SUBSEQUENTLY RENDEVOUS WITH THE SPACE STATION FOR REJUVENATION AND REUSE. REUSE HAS LONG BEEN CONSIDERED THE KEY TO LOWERING THE VERY HIGH COST OF SPACE OPERATIONS; HOWEVER, MOST REUSE CONCEPTS STUDIED IN DEPTH HAVE INVOLVED RECOVERY TO EARTH OF LAUNCH VEHICLES AND/OR SPACECRAFT. THE REASONS WHY DEVELOPMENT OF REUSABLE SYSTEMS HAS NOT BEEN INITIATED ARE MANY, PROMINENT AMONG WHICH ARE THESE: (1) VERY SIGNIFICANT WEIGHT PENALTIES ARE ASSOCIATED WITH RECOVERY GEAR, PARTICULARLY ORBITAL RECOVERY GEAR; (2) REFURBISHMENT COSTS AND USEFUL LIFE OF RECOVERED VEHICLES ARE DIFFICULT TO APPRAISE; AND (3) TRAFFIC RATES ARE NOT FORESEEN WHICH ARE ADEQUATE TO AMORTIZE R AND D COSTS OF BILLIONS OF DOLLARS OVER A REASONABLE TIME PERIOD. THESE PROBLEMS ARE ALL ASSOCIATED WITH RECOVERY, HOWEVER, AND CAN BE AVOIDED BY REUSE OF EQUIPMENT ON ORBIT. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-655 344 12/2 15/5 5/1
RAND CORP SANTA MONICA CALIF
A STOCHASTIC DYNAMIC MULTIMODE TRANSPORTATION
MODEL,
JUL 67 39P MIDLER, J. L. :
REPT. NO. RM-5250-PR
CONTRACT: F44620-67-C-0045

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (*TRANSPORTATION, MATHEMATICAL
MODELS), (*DYNAMIC PROGRAMMING, OPERATIONS
RESEARCH), STOCHASTIC PROCESSES, SCHEDULING,
MANAGEMENT PLANNING, OPTIMIZATION, ALGORITHMS,
COSTS, ECONOMICS

(U)

IDENTIFIERS: OPTIMAL CONTROL THEORY

(U)

A MATHEMATICAL MODEL AND TWO SOLUTION TECHNIQUES
FOR SELECTING PREFERRED COMBINATIONS OF DIFFERENT
TRANSPORTATION MODES OVER CONSECUTIVE PERIODS IN THE
FACE OF UNCERTAINTY. SOME ACQUAINTANCE WITH
CONTROL THEORY, DYNAMIC PROGRAMMING, AND NONLINEAR
PROGRAMMING IS ASSUMED. THE MODEL IS FORMULATED AS
A PROBLEM OF OPTIMAL STOCHASTIC CONTROL THEORY. IT
ASSIGNS INDIVIDUAL COMMODITY CLASSES TO VARIOUS
CARRIERS, DETERMINES WHICH SUPPLY POINTS SERVE WHICH
DESTINATIONS, AND REROUTES CARRIERS WHERE THEY WILL
BE MOST EFFECTIVE. IT TAKES ACCOUNT OF
DIFFERENTIAL TRANSIT TIMES AND COSTS, AVAILABILITIES,
COSTS OF STORAGE, OVER-SUPPLY AND SHORTAGES. THE
SYSTEM DYNAMICS CONSIST OF INVENTORY BALANCE
EQUATIONS RELATING END-OF-PERIOD STOCKS AT EACH POINT
TO INFLOWS AND OUTFLOWS. AN ALTERNATIVE METHOD IS
ALSO PRESENTED FOR CASES IN WHICH THE ASSUMPTIONS
REQUIRED FOR THE DYNAMIC PROGRAMMING ALGORITHM ARE
NOT VALID.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-655 922 17/7 1/2
PARAMETRICS INC WALTHAM MASS
RADIOISOTOPE TAXI GUIDANCE SYSTEM PHASE I.
FEASIBILITY STUDY. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
MAR 67 74P SELLERS, B. THUNERWADEL, J. I
ZIEGLER, C. I
CONTRACT: F2-65-WA-1334
PROJ: FA-320-108-01N
MONITOR: FAA-RD 67-18

UNCLASSIFIED REPORT

DESCRIPTORS: (*TAXIING, GUIDANCE),
(*GUIDANCE, RADIOACTIVE ISOTOPES), FEASIBILITY
STUDIES, GAMMA COUNTERS, COLLIMATORS, RUNWAYS,
COSTS, POSITION FINDING, PIPES, KRYPTON,
SAFETY (U)

METHODS UTILIZING RADIOISOTOPES AS AN INTEGRAL PART OF AN ALL WEATHER, ZERO VISIBILITY, GROUND GUIDANCE SYSTEM HAVE BEEN EVALUATED. THE MOST PROMISING TECHNIQUE HAS BEEN SELECTED AND EXAMINED IN DETAIL BOTH THEORETICALLY AND EXPERIMENTALLY AND A SYSTEM DESIGN IS PRESENTED. THE METHOD EMPLOYS A STATIONARY AVIONIC GAMMA RAY DETECTOR ENCLOSED BY A ROTATING COLLIMATOR, WHICH SENSES THE POSITION OF THE AIRCRAFT RELATIVE TO A RADIOISOTOPIC LINE SOURCE OF RADIATION BURIED BENEATH THE RUNWAY CENTERLINE. THE AVIONIC UNIT, APPROXIMATELY ONE CUBIC FOOT IN VOLUME, CAN BE MOUNTED IN THE INTERIOR OF THE AIRCRAFT AND NO STRUCTURAL MODIFICATIONS OF THE AIRCRAFT ARE REQUIRED. THE INFORMATION DISPLAYED FOR THE PILOT IS THE POSITION OF THE AIRCRAFT RELATIVE TO THE CENTERLINE, WITH AN ACCURACY OF BETTER THAN PLUS OR MINUS 5 FEET AT THE CENTERLINE. THE STANDARD RADARSCOPE CAN BE USED AS A DISPLAY. A KEY FEATURE OF THE SYSTEM IS THAT IT USES A CHEMICALLY INERT RADIOACTIVE GAS, KRYPTON-85, WHICH IS DEPLOYED IN THE PIPE LAID IN THE RUNWAY. WHEN NOT IN USE THE GAS CAN BE REMOVED FROM THE RUNWAY USING CONVENTIONAL GAS HANDLING AND PUMPING APPARATUS. RADIATION SAFETY ASPECTS OF AN OPERATIONAL SYSTEM HAVE BEEN EXAMINED AND FOUND TO PRESENT NO HAZARD BEYOND NORMAL INDUSTRIAL PRACTICE. AN ADDITIONAL FEATURE OF THE RADIOISOTOPE SYSTEM IS THAT IT CAN FORM THE BASIS FOR AN AIRCRAFT LOCATION AND GROUND CONTROL SYSTEM. THE ESTIMATED TOTAL INSTALLATION COST OF THE GROUND GUIDANCE SYSTEM IN A TYPICAL AIRPORT (DULLES) IS ABOUT \$41,000. THE AVIONIC UNITS WILL COST BETWEEN \$2,300 AND (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-655 581 5/9
NAVAL PERSONNEL PROGRAM SUPPORT ACTIVITY WASHINGTON D C
PERSONNEL RESEARCH LAB
ON-THE-JOB TRAINING COSTS: AN ANALYSIS, (U)
JUN 67 44P ARZIGIAN, SIMON ;
REPT. NO. WRY-67-52
PROJ: PFO16010302

UNCLASSIFIED REPORT

DESCRIPTORS: (*NAVAL TRAINING, COSTS),
PERSONNEL MANAGEMENT, NAVAL PERSONNEL, LEARNING,
WAGES (U)
IDENTIFIERS: ON-THE-JOB TRAINING (U)

THE STUDY PRESENTS THE RESULTS OF A PRELIMINARY INVESTIGATION OF THE FEASIBILITY OF COMPUTING ON-THE-JOB TRAINING COSTS. FOR THE PURPOSE OF THIS STUDY ON-THE-JOB TRAINING IS THAT WHICH INVOLVES LEARNING OR IMPROVING JOB PERFORMANCE UNDER ACTUAL WORKING CONDITIONS. AT PRESENT THERE IS NO SYSTEM WITHIN THE NAVY TO 'COST OUT' ON-THE-JOB TRAINING. TRAINING COST REPORTING IS LIMITED TO FORMAL, OR SCHOOL, TRAINING. THE ADDITION OF AN ON-THE-JOB TRAINING COST TO THE SCHOOL COST (IF ANY) WOULD PROVIDE A MORE 'COMPLETE' TRAINING COST. TRAINING COSTS PLAY A MAJOR PART IN MANY PERSONNEL MANAGEMENT DECISIONS; THEREFORE A TRAINING COST WHICH REFLECTS ALL THE TRAINING PROVIDED AN INDIVIDUAL WOULD PROVE VALUABLE. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-656 613 5/9 4/1
GEORGE WASHINGTON UNIV ALEXANDRIA VA HUMAN RESOURCES
RESEARCH OFFICE
COMPUTER-ADMINISTERED INSTRUCTION VERSUS
TRADITIONALLY ADMINISTERED INSTRUCTION:
ECONOMICS; (U)

JUN 67 43P KOPSTEIN, FELIX F. ;
SEIDEL, ROBERT J. ;
REPT. NO. PROFESSIONAL PAPER 31-67
CONTRACT: DA-44-188-ARO-2
PROJ: DA-2J024701A712-01

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE NATIONAL SOCIETY
FOR PROGRAMMED INSTRUCTION, BOSTON, MASS., APRIL
1967.

DESCRIPTORS: (*TEACHING METHODS; COST
EFFECTIVENESS); COMPUTERS; INSTRUCTORS;
PROGRAMMED INSTRUCTION; ECONOMICS; EDUCATION;
MILITARY TRAINING; PROGRAMMING (COMPUTERS) (U)

AN ATTEMPT IS MADE TO ASSAY THE ECONOMICS OF
COMPUTER-ADMINISTERED INSTRUCTION (CAI) VERSUS
TRADITIONALLY ADMINISTERED INSTRUCTION (TAI) IN
CONTROLLING THE STRUCTURE OF THE LEARNER'S STIMULUS
ENVIRONMENT IN TEACHING AND TRAINING SITUATIONS.
THERE IS A DISCUSSION OF THE NEED FOR A SOUND,
OBJECTIVE ECONOMIC APPRAISAL OF THE VALUE TO SOCIETY
AS A WHOLE OF INCREMENTS IN THE BREADTH AND DEPTH OF
EDUCATION IN THE POPULATION, AND OF THE INFLUENCE OF
VARYING RATES WITH WHICH THESE INCREMENTS ARE BROUGHT
ABOUT. THE NECESSITY FOR RELIABLE, OBJECTIVE
INFORMATION CONCERNING COST DATA IS EMPHASIZED.
PROJECTED COST/EFFECTIVENESS COMPARISONS BASED ON
THE ASSUMPTION OF EQUAL EFFECTIVENESS FOR CAI AND
TAI ARE DISCUSSED FOR BOTH CIVILIAN AND MILITARY
INSTRUCTION. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-656 940 5/1 15/3 13/13
RESEARCH TRIANGLE INST DURHAM N C OPERATIONS RESEARCH AND
ECONOMICS DIV
BUDGE ALLOCATION FOR SHELTER SYSTEMS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
JUN 67 107P McMULLAN, PHILIP S. ;
WRIGHT, JAMES C. ; ANDERSON, HELEN S. ;
TRUSTMAN, STANLEY ;
REPT. NO. RTI-OU-230-1

UNCLASSIFIED REPORT

DESCRIPTORS: (*FALLOUT SHELTERS, *BUDGETS),
(*CIVIL DEFENSE SYSTEMS, BUDGETS),
OPTIMIZATION, PROBABILITY, COST EFFECTIVENESS,
MANAGEMENT PLANNING (U)

A COMPUTER MODEL WHICH PREPARES OPTIMUM CIVIL
DEFENSE SHELTER POSTURES BUILT UPON THE BASE OF THE
CURRENT NATIONAL FALLOUT SHELTER SURVEY IS
DEVELOPED, PROGRAMMED, AND DEMONSTRATED. 'OPTIMUM'
CAN BE BASED ON THE USER-SPECIFIED OBJECTIVE OF
EITHER MINIMUM FATALITIES OR MINIMUM CASUALTIES.
THE USER DETERMINES THE LEVEL OF RISK BY SUPPLYING
AN ATTACK ENVIRONMENT (BOTH BLAST AND FALLOUT)
WHICH IS USED TO CALCULATE THE PROBABILITY OF
FATALITY (OR CASUALTY) FOR A PERSON IN EACH
EXISTING SHELTER AND IN EACH PROPOSED SHELTER OPTION
IN EACH STANDARD LOCATION. POPULATION IS THEN
ASSIGNED TO EXISTING AND PROPOSED SHELTER IN AN
OPTIMUM MANNER, SUBJECT TO THE SPECIFIED BUDGET.
THE MATHEMATICAL FORMULATION IS EQUIVALENT TO A
LINEAR PROGRAM. THE MODEL ALSO PERMITS AN
EVALUATION OF SHELTER IMPROVEMENT PROGRAMS AGAINST
ANY USER SUPPLIED ATTACK ENVIRONMENT. AT THE
OPTION OF THE USER, THE FOLLOWING INPUTS MAY BE
VARIED: (A) BUDGET LEVEL, (B) DEGREE OF
RISK OR HAZARD, (C) DEFINITION OF SHELTER FALLOUT
OR BLAST VULNERABILITY, AND (D) COST PER SPACE OF
SHELTER. THE MODEL WAS DEMONSTRATED USING THE
STATE OF RHODE ISLAND. THE MODEL CAN BE USED
PRIMARILY IN SYNTHESIS AND ANALYSIS OF 'NEAR FUTURE'
SHELTER SYSTEMS AND CAN BE MODIFIED FOR USE IN MORE
COMPREHENSIVE SYSTEM STUDIES (E.G., COMBINED
WARNING, MOVEMENT, AND SHELTER SYSTEM STUDIES) AND
COST-EFFECTIVENESS EVALUATIONS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-657 010 16/4
RAND CORP SANTA MONICA CALIF
OPTIMUM MAINTENANCE WITH INCOMPLETE INFORMATION, (U)
AUG 67 29P ECKLES, JAMES E. I
REPT. NO. RM-5390-PR
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (*GUIDED MISSILES(AIR-TO-AIR);
RANDOM VARIABLES); (*MAINTENANCE; *COSTS);
PERFORMANCE(ENGINEERING); DYNAMIC PROGRAMMING;
MATHEMATICAL MODELS; STOCHASTIC PROCESSES;
EQUATIONS; AGING(MATERIALS); DETERIORATION;
PROBABILITY; OPTIMIZATION (U)

AN ANALYSIS OF THE MAINTENANCE OF SYSTEMS WITH
RANDOMLY DECREASING PERFORMANCE LEVELS THAT CAN BE
ESTIMATED ONLY BY COSTLY IMPERFECT INSPECTION. A
MODEL IS DEVELOPED TO DETERMINE THE SEQUENCE OF
ACTIONS THAT MINIMIZES THE TOTAL COST OF OPERATION.
UNLIKE MOST INVESTIGATIONS, THE STUDY TREATS
MAINTENANCE AS A SEQUENTIAL DECISION PROCESS. THIS
VIEW LEADS TO THE CONSIDERATION OF MAINTENANCE
POLICIES IN WHICH CORRECTIVE AND INSPECTION SCHEDULES
ARE DEPENDENT ON THE RESULTS OF RECENT INSPECTIONS.
A DYNAMIC-PROGRAMMING TECHNIQUE IS USED TO DERIVE A
FUNCTIONAL EQUATION FOR THE OPTIMUM MAINTENANCE
POLICY. IT IS SHOWN THAT AN OPTIMUM ACTION
(REPLACEMENT, REPAIR, INSPECTION, ETC.) IS
DETERMINED BY THE SYSTEM'S AGE AND THE POSTERIOR
DISTRIBUTION OVER THE SYSTEM'S STATES. SIMPLE
POLICIES SUCH AS PERIODIC INSPECTION ARE READILY SEEN
TO BE NONOPTIMAL IN THE FACE OF IRREGULAR
DETERIORATION. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-657 168 12/2 5/3
INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA RESEARCH AND
ENGINEERING SUPPORT DIV
A HEURISTIC COMPROMISE BETWEEN PROBABILITY OF SUCCESS
AND LIMITED RESOURCES. (U)
DESCRIPTIVE NOTE: RESEARCH PAPER,
AUG 67 43P TUROFF, MURRAY I
REPT. NO. RP-P-338
CONTRACT: DAH15-67-C-0011
TASK: T-28
MONITOR: IDA/HQ 67-6135

UNCLASSIFIED REPORT

DESCRIPTORS: (*DECISION THEORY, MATHEMATICAL
MODELS), EFFECTIVENESS, MANAGEMENT PLANNING,
PROBABILITY, UNCERTAINTY, ECONOMICS, COSTS,
OPTIMIZATION (U)
IDENTIFIERS: UTILITY FUNCTIONS, DENSITY
FUNCTIONS (U)

THIS PAPER PROPOSES AN ANALYTICAL TECHNIQUE FOR
MODELING BY THE ANALYST OF A PARTICULAR DECISION
SITUATION. EVIDENCE SUPPORTING THE BASIC PROPOSAL,
PROPERTIES OF THE TECHNIQUE, DISCUSSIONS OF ITS
POSSIBLE APPLICATIONS, AND EXAMPLES ARE ALSO
PRESENTED. THE BASIC PROBLEM IS A COMPROMISE
BETWEEN THE PROBABILITY OF SUCCESS IN A SINGLE TRIAL
VERSUS THE TOTAL EXPECTED NUMBER OF SUCCESSES OVER
MANY TRIALS UNDER THE CONSTRAINT OF A LIMITED AND
UNCERTAIN RESOURCE. THE ANALOGOUS SITUATION OF
CHOOSING AN OPERATING POINT FOR A SYSTEM WHICH IS A
COMPROMISE BETWEEN THE EFFECTIVENESS OF THE SYSTEM
AND ITS EFFICIENCY (EFFECTIVENESS DIVIDED BY
COST) IS ALSO DISCUSSED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-657 195 1/3 14/1
MARINE CORPS WASHINGTON D C
TACTICAL SUPPORT TRANSPORT AIRCRAFT STUDY. (U)
AUG 67 174P

UNCLASSIFIED REPORT

DESCRIPTORS: (*TRANSPORT PLANES, MILITARY
REQUIREMENTS), DECISION MAKING, TACTICAL AIR
SUPPORT, MARINE CORPS, COST EFFECTIVENESS (U)

THE STUDY IDENTIFIES THE TACTICAL SUPPORT
TRANSPORT (TST) AIRCRAFT MISSION AND PROVIDES
SUPPORT FOR SELECTION OF A NEW TST AIRCRAFT PROGRAM
TO REPLACE THE C117/47/54. IT CONCISELY PRESENTS
THE COST EFFECTIVENESS ADVANTAGES IN RETAINING THE
TST AIRCRAFT ORGANIC TO THE MARINE CORPS. IT
RECOMMENDS RECOGNITION OF THE TST MISSION AND
RETENTION OF THE CURRENT C117/47/54 AIRCRAFT TO
PERFORM THE TST MISSION UNTIL A SUITABLE
REPLACEMENT AIRCRAFT CAN BE ORDERLY PROGRAMMED.
(AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-657 330 1/3 1/2
FEDERAL AVIATION ADMINISTRATION WASHINGTON D C SYSTEMS
RESEARCH AND DEVELOPMENT SERVICE
ECONOMIC AND TECHNICAL FEASIBILITY ANALYSIS OF
ESTABLISHING AN ALL-WEATHER V/STOL TRANSPORTATION
SYSTEM. (U)
DESCRIPTIVE NOTE: MASTER'S THESIS,
MAY 67 141P DEL BALZO, JOSEPH M. I
REPT. NO. FAA-RD-67-36

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH Drexel
INST. OF TECH., PHILADELPHIA, PA.

DESCRIPTORS: (*HELICOPTERS, ALL-WEATHER
AVIATION), (*AIR TRANSPORTATION, FEASIBILITY
STUDIES), ECONOMICS, NAVIGATION, SHORT TAKE-
OFF PLANES, AIR TRAFFIC, AIRPORTS, COSTS (U)

THE NEED AND POTENTIAL OF AN AIRCRAFT HAVING
VERTICAL AND/OR SHORT TAKE OFF AND LANDING CAPABILITY
(V/STOL) IS CONSIDERED. THE TECHNICAL AND
ECONOMIC FEASIBILITY OF ESTABLISHING AN ALL WEATHER
V/STOL TRANSPORTATION SYSTEM IS EXPLORED.
TRAFFIC FORECASTS FOR THE V/STOL FOR THE YEARS
1968 THROUGH 1980 ARE POSTULATED. THE ENROUTE,
TERMINAL, AND APPROACH AND LANDING NAVIGATION SYSTEM
REQUIREMENTS FOR THE V/STOL ARE ANALYZED.
ANTICIPATED OPERATING COSTS AND REVENUE, BASED ON
AN ANALYSIS OF THE NEW YORK BOSTON AIR SHUTTLE
ROUTE, ARE PRESENTED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-657 348 5/9 9/2
GENERAL LEARNING CORP WASHINGTON D C*
A PLAN FOR THE ESTABLISHMENT OF A COMPUTER-AIDED
INSTRUCTION RESEARCH AND DEVELOPMENT CENTER. (U)
DESCRIPTIVE NOTE: FINAL REPT. 17 OCT 66-16 JUL 67,
JUL 67 200P TORR, DONALD V. I
MOLELLO, SAM I PREVEL, JAMES J. I
CONTRACT: N00014-67-C-0219
PROJ: R4303

UNCLASSIFIED REPORT

DESCRIPTORS: (*PROGRAMMED INSTRUCTION,
*COMPUTERS), FEASIBILITY STUDIES, COMPUTER
PERSONNEL, LEARNING, PERFORMANCE(HUMAN),
COSTS, TIME SHARING, INPUT-OUTPUT DEVICES,
PERSONNEL MANAGEMENT (U)
IDENTIFIERS: COMPUTER-AIDED INSTRUCTION, COMPUTER
SOFTWARE, COMPUTER HARDWARE (U)

THE REPORT PRESENTS A PLAN FOR THE ESTABLISHMENT OF
A COMPUTER-AIDED RESEARCH AND DEVELOPMENT
CENTER. THE PLAN IDENTIFIES COMPUTER SYSTEMS,
PERSONNEL, AND FACILITY REQUIREMENTS. A FIVE-YEAR
IMPLEMENTATION SCHEDULE AND A FIVE-YEAR COST ESTIMATE
ARE PROVIDED. (AUTHOR) (U)

UNCLASSIFIED

DC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-657 788 5/2
HERNER AND CO WASHINGTON D C
SYSTEM DESIGN, EVALUATION AND COSTING--IN PLAIN
ENGLISH. (U)
MAR 67 17P HERNER, SAUL ;
CONTRACT: AF 49(638)-1424
PROJ: AF-9769
TASK: 976901
MONITOR: AFOSR 67-1998

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION AT ADI
INST. ON INFORMATION SCIENCE, 15 DEC. 66.

DESCRIPTORS: (*INFORMATION RETRIEVAL, MANAGEMENT
PLANNING), LIBRARIES, INDEXES, SYSTEMS
ENGINEERING, OPTIMIZATION, COMPUTERS, COSTS,
SCHEDULING, DESIGN (U)
IDENTIFIERS: SYSTEMS ANALYSIS, EVALUATION (U)

THE CONCEPTS OF SYSTEM DESIGN, EVALUATION, AND
COSTING ARE AMONG THE MOST OFTEN DISCUSSED AND WIDELY
MISUNDERSTOOD IN THE INFORMATION FIELD. THIS
REPORT ATTEMPTS, VIA CASE ILLUSTRATIONS, TO DESCRIBE
AND EXPLAIN THE STEPS AND PROCESSES INVOLVED, SO AS
TO TAKE SOME OF THE MYSTERY AND WITCHCRAFT OUT OF
SYSTEMS AND TO FACILITATE THE RETURN OF DESIGN AND
OPERATION OF INFORMATION SERVICES TO WHERE THEY
RIGHTFULLY BELONG: TO THE PEOPLE WHO HAVE THE DAY-
TO-DAY JOB OF MAKING THEM GO AND PERFORM.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-657 793 9/2 5/1
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
COST REPORTING FOR DEVELOPMENT OF INFORMATION
PROCESSING SYSTEMS, (U)
APR 67 83P NELSON, EDWARD A. ;
FLEISHMAN, THOMAS ;
REPT. NO. TM-3411
CONTRACT: F19628-67-C-0132
MONITOR: ESD TR-67-452

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMPUTER PROGRAMS, *COSTS),
(*DATA PROCESSING SYSTEMS, COMPUTER PROGRAMS),
OPERATORS(PERSONNEL), SYSTEMS ENGINEERING,
PROGRAMMING(COMPUTERS), DEPARTMENT OF
DEFENSE, MANAGEMENT CONTROL SYSTEMS,
ORGANIZATIONS, MANAGEMENT PLANNING, MANAGEMENT
ENGINEERING, COMPUTER PERSONNEL (U)

THE REPORT DESCRIBES A SYSTEM FOR THE COLLECTING
AND REPORTING ON DATA ON THE RESOURCES EXPENDED IN
THE PRODUCTION OF COMPUTER PROGRAMS. THE SYSTEM IS
INTENDED TO: (1) PROVIDE INFORMATION TO
FACILITATE MANAGEMENT CONTROL DURING THE PROGRESS OF
A COMPUTER PROGRAMMING EFFORT; (2) BUILD A DATA
BANK FROM WHICH BETTER COST-ESTIMATING RELATIONSHIPS
AND PLANNING TOOLS CAN BE DEVELOPED; (3)
ACCOMPLISH THE ABOVE WITH A MINIMUM OF INTERFERENCE
WITH OPERATING PERSONNEL. THE REPORT WAS DESIGNED
TO PROVIDE SAMPLE MATERIALS NECESSARY FOR THE
IMPLEMENTATION OF COST REPORTING IN ANY ORGANIZATION
IN WHICH COMPUTER PROGRAMMING IS PERFORMED; IT
INCLUDES A DESCRIPTION OF THE STEPS THAT CONSTITUTE
THE COMPUTER PROGRAMMING PROCESS; THE KINDS OF
PERSONNEL WHO WOULD BE INVOLVED IN THE COST-
COLLECTION AND -REPORTING SYSTEM; A RECOMMENDED WORK
FLOW AND SUGGESTED FORMS FOR USE IN DATA COLLECTION
AND REPORTING; A WORK BREAKDOWN STRUCTURE FOR
ASSOCIATING COSTS WITH ACTIVITIES; AND A BRIEF
DISCUSSION OF THE RELATIONSHIP OF THIS SYSTEM WITH
SEVERAL EXISTING DEPARTMENT OF DEFENSE MANAGEMENT
PROCEDURES. (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-657 941 5/1 5/9 10/1

NAVAL PERSONNEL RESEARCH ACTIVITY SAN DIEGO CALIF
A PERSONNEL COST DATA BANK FOR USE IN STUDIES OF COST
AND EFFECTIVENESS. (U)

DESCRIPTIVE NOTE: RESEARCH MEMO.,

AUG 67 54P CONNELLY, MARILEE N. F

REPT. NO. NPRA-SRM-68 3

TASK. PF-0160201H01

UNCLASSIFIED REPORT

DESCRIPTORS: (*COST EFFECTIVENESS,
PREDICTIONS), (*NAVAL PERSONNEL, *COSTS),
SYSTEMS ENGINEERING, COMPUTERS, FEASIBILITY
STUDIES, DECISION MAKING, MAN-MACHINE SYSTEMS,
TRAINING, NAVAL RESEARCH, PERSONNEL
MANAGEMENT (U)

THE PURPOSE OF THIS STUDY IS TO DEVELOP THE
STRUCTURE OF A DATA BANK SYSTEM WHICH WILL FACILITATE
THE ACQUISITION AND COMPUTATION OF PERSONNEL COSTS
NEEDED FOR COST/EFFECTIVENESS PREDICTIONS. THE
NAVY'S NEED FOR ADEQUATE PERSONNEL COST
INFORMATION, ESPECIALLY DURING THE DEVELOPMENT OF NEW
SYSTEMS, WAS INVESTIGATED. DATA BANK SYSTEMS AND
COST MODELS WERE EXAMINED. NONE, HOWEVER, COULD
PROVIDE PREDICTIVE, SYSTEM ORIENTED PERSONNEL COSTS
UPON WHICH TO BASE FUNCTION ALLOCATION DECISIONS.
THE CONCEPT OF USING A COMPUTERIZED SYSTEM FOR COST
ACQUISITION AND COMPUTATION WAS EVALUATED AND FOUND
FEASIBLE. CONSEQUENTLY, THE STRUCTURE, CONTENTS,
AND FORMULAE TO BE USED IN SUCH A DATA BANK SYSTEM
WERE DERIVED AND ARE FORMALLY PROPOSED WITHIN THIS
REPORT. THE TASKS REQUIRED TO DEVELOP THE SYSTEM
ARE DELINEATED. ON THE BASIS OF THIS RESEARCH, IT
IS RECOMMENDED THAT THE PERSONNEL COST DATA BANK
SYSTEM PROPOSED HEREIN BE FULLY DEVELOPED AS SOON AS
POSSIBLE. SOLUTIONS TO THE PROBLEMS OF
ESTABLISHING, MAINTAINING, AND USING THE SYSTEM FOR
SYSTEM DEVELOPMENT CYCLE SUPPORT SHOULD BE SOUGHT
DURING THE TIME THE COST DATA SYSTEM IS BEING
DEVELOPED. THE SYSTEM SHOULD BE IMPLEMENTED,
MAINTAINED, AND USED AS SOON AS POSSIBLE. (U)

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DLC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-658 426 5/1 15/3 14/1
RAND CORP SANTA MONICA CALIF
SOME COMMENTS ON SYSTEMS ANALYSIS, (U)
SEP 67 18P FISHER, C. H. I
REPT. NO. P-3677

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION AT THE
'SYSTEMS ANALYSIS AND COST-EFFECTIVENESS' SESSION OF
A MORS SYMPOSIUM, STATE DEPT. AUDITORIUM,
WASHINGTON, OCT 67.

DESCRIPTORS: (*DEPARTMENT OF DEFENSE,
MANAGEMENT PLANNING), (*MANAGEMENT PLANNING,
OPTIMIZATION), DECISION MAKING, SCHEDULING,
COSTS, COST EFFECTIVENESS (U)
IDENTIFIERS: SYSTEMS ANALYSIS (U)

SYSTEMS ANALYSIS DENOTES THE PROCESS OF HELPING TO
SHARPEN THE INTUITION AND JUDGMENT OF THE
DECISIONMAKERS THROUGH THE MORE PRECISE STATEMENT OF
PROBLEMS, THOROUGH IDENTIFICATION (AND OFTEN
INVENTION) OF THE RELEVANT ALTERNATIVES,
MEASUREMENT OF THEIR COSTS, IDENTIFICATION OF THEIR
PROBABLE BENEFITS, EXPLICIT TREATMENT OF THE
UNCERTAINTIES INVOLVED, AND A SERIOUS ATTEMPT TO
ESTIMATE THE EFFECTS OF POLICY ALTERNATIVES. THESE
ARE COMMONSENSICAL IDEAS, BUT ACTUALLY DOING THEM IS
OFTEN EXTRAORDINARILY COMPLEX AND DEMANDING. MUCH
PROGRESS HAS BEEN MADE TO DATE, BUT A GREAT DEAL
REMAINS TO BE DONE IN THE FUTURE. FURTHER PROGRESS
WILL REQUIRE INGENIOUS THINKING, AND ABOVE ALL JUST
PLAIN HARD WORK. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-658 428 5/3
RAND CORP SANTA MONICA CALIF
COST-BASED PRICING AND LABOR ELASTICITY, (U)
SEP 67 24P ARDITTI, FRED D. ;
PECK, MERTON J. ;
REPT. NO. P-3438-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH YALE
UNIV., NEW HAVEN, CONN.

DESCRIPTORS: (*LABOR, ELASTICITY), (*WAGES,
INDUSTRIES), (*AIRCRAFT INDUSTRY, TRAINING),
COSTS, ECONOMICS, INEQUALITIES, EMPLOYMENT,
INDUSTRIAL PROCUREMENT, MONEY, EDUCATION, JOB
ANALYSIS (U)

EXAMINES THE LABOR ELASTICITY OF THE AIRCRAFT
INDUSTRY, THAT IS, THE VARIATION IN LABOR INPUTS
ASSOCIATED WITH SALES VARIATIONS. THE HYPOTHESIS
IS THAT THE AIRCRAFT INDUSTRY ADJUSTS ITS LABOR
SUPPLY MORE SLUGGISHLY THAN OTHER MANUFACTURING
INDUSTRIES BECAUSE MUCH OF THEIR SALES ARE TO THE
GOVERNMENT THROUGH CONTRACTS THAT CALL FOR PRICES
BASED ON INCURRED COSTS. SUCH A HYPOTHESIS IS NOT
PARTICULARLY NOVEL; A COMMON OBSERVATION IS THAT
DEFENSE PROJECT CANCELATION LEADS TO AN OVERALL
EMPLOYEE REDUCTION SIGNIFICANTLY LESS THAN THE
NUMBERS INVOLVED IN THE PROJECT. SECTION II OF
THIS PAPER USES A SIMPLE PROFIT MAXIMIZATION MODEL TO
DEMONSTRATE WHY THIS OCCURS. SECTION III
QUANTIFIES AND TESTS THE MODEL. SECTION IV
CONSIDERS THE IMPLICATIONS OF RESULTS. (U)

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DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-656 454 22/1

AIR FORCE AERO PROPULSION LAB WRIGHT-PATTERSON AFB
OHIO

AN ASSESSMENT OF THE PRACTICALITY OF ORBITAL
MAINTENANCE, (U)

AUG 67 23P VAN SCHAIK, PETER N. ;

REPT. NO. AFAPL-CONF-66-3

PROJ: AF-8170

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE AIAA CONFERENCE ON
SPACE PROGRAMS ISSUES OF THE 70'S, SEATTLE, WASH.,
28-30 AUG 67.

DESCRIPTORS: (*SPACE MAINTENANCE, FEASIBILITY
STUDIES), SPACE STATIONS, MANNED SPACECRAFT,
RELIABILITY, REDUNDANT COMPONENTS, SYSTEMS
ENGINEERING, MAINTAINABILITY, SPARE PARTS,
EXTRAVEHICULAR ACTIVITY, COST EFFECTIVENESS (U)

SPACECRAFT AND SPACE STATIONS ORBITING THE EARTH
FOR LONG PERIODS OF TIME WILL INCUR MANY MALFUNCTIONS
REQUIRING REDUNDANCY OR ORBITAL MAINTENANCE.
REDUNDANCY WILL SUFFICE FOR THE SHORTER PERIODS
WHILE MAINTENANCE BECOMES A NECESSITY IN THE LONG
RUN. FOR MAINTENANCE TO BECOME A REALITY IT MUST
BE BOTH SYSTEM AND COST EFFECTIVE. IT WILL NEVER
BECOME EFFECTIVE UNLESS THE SPACECRAFT IS
MAINTAINABLE, SPARES ARE INTERCHANGEABLE, AND MAN CAN
MAKE IN-SPACE REPAIRS. CURRENT PROGRAMS ARE SLOWLY
ADVANCING THE TECHNOLOGIES BUT A CONCENTRATED,
COMPREHENSIVE PROGRAM IS NEEDED TO MAKE MAINTENANCE A
REALITY REASONABLY SOON. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-658 471 14/1 13/12
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
COST-EFFECTIVENESS ANALYSIS FOR THE FIRE SERVICE: AN
OVERVIEW. (U)
DESCRIPTIVE NOTE: PROFESSIONAL PAPER.
SEP 67 20P JARRETT, HILTON F. ;
REPT. NO. SP-2938

UNCLASSIFIED REPORT

DESCRIPTORS: (*COST EFFECTIVENESS, REVIEWS),
(*FIRE SAFETY, MANAGEMENT PLANNING), DECISION
MAKING, OPTIMIZATION, SUPERVISORY PERSONNEL,
MODELS(SIMULATIONS), SYSTEMS ENGINEERING,
ANALYSIS (U)

THE REPORT EXAMINES THE TECHNIQUE OF COST-
EFFECTIVENESS ANALYSIS, INCLUDING ITS ADVANTAGES AND
LIMITATIONS, AND DISCUSSES ITS POTENTIAL USEFULNESS
TO THE FIRE SERVICE. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-658 476 5/11 9/2 5/8
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
APPLICATIONS OF COMPUTERS IN EDUCATION.
DESCRIPTIVE NOTE: PROFESSIONAL PAPER,
AUG 67 18P SILBERMAN, HARRY F. ;
REPT. NO. SP-2909/000/01

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE AMERICAN
MANAGEMENT ASSOCIATION CONFERENCE, AMERICANA
HOTEL, NEW YORK, AUGUST 9, 1967.

DESCRIPTORS: (*EDUCATION, COMPUTERS), (*TIME
SHARING, *MAN-MACHINE SYSTEMS),
PROGRAMMING(COMPUTERS), DIGITAL COMPUTERS,
COMPUTER PROGRAMS, PERFORMANCE(HUMAN),
INPUT-OUTPUT DEVICES, COST EFFECTIVENESS
IDENTIFIERS: COMPUTER-AIDED INSTRUCTION

(U)

(U)

FOUR AREAS OF COMPUTER APPLICATIONS TO EDUCATION
ARE DESCRIBED: (1) THE COMPUTER AS A SUBJECT OF
INSTRUCTION; (2) AS A TOOL OF INSTRUCTION,
(3) AS A RESEARCH AND DEVELOPMENT TOOL; AND
(4) AS A MANAGEMENT TOOL. THESE APPLICATIONS
ARE VIEWED IN THE CONTEXT OF AN OPERATIONAL TIME-
SHARING SYSTEM CONNECTING MANY SCHOOLS WITH A CENTRAL
COMPUTER. THREE PROBLEM AREAS IN IMPLEMENTING SUCH
A SYSTEM ARE DISCUSSED: (1) MAN-MACHINE
COMMUNICATION; (2) COST-EFFECTIVENESS; AND (3)
USER ACCEPTANCE. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-658 514 1/2 17/7 17/2
FEDERAL AVIATION ADMINISTRATION WASHINGTON D C SYSTEMS
RESEARCH AND DEVELOPMENT SERVICE
COST/BENEFIT ANALYSIS OF TELEVISED RADAR FOR GENERAL
AVIATION. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
AUG 67 42P ERICKSON, JUEL E. J
REPT. NO. FAA-RD-67-54
PROJ: FAA-197-641-01R

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADAR NAVIGATION, TELEVISION
COMMUNICATION SYSTEMS), (*AVIATION SAFETY, RADAR
NAVIGATION), AIRBORNE, COSTS, RADAR EQUIPMENT,
FEASIBILITY STUDIES, AIRPORT RADAR SYSTEMS,
METEOROLOGICAL RADAR, AIR TRAFFIC CONTROL SYSTEMS (U)

AN ECONOMIC EVALUATION OF THE COSTS AND POTENTIAL
BENEFITS OF BROADCASTING RADAR INFORMATION TO GENERAL
AVIATION AIRCRAFT VIA TV RELAY WAS PERFORMED.
BENEFITS WERE EQUATED TO COSTS OF GENERAL AVIATION
ACCIDENTS THAT MIGHT BE PREVENTED BY BROADCASTING
WEATHER DATA, AREA ROUTE INFORMATION OR POSITIONS OF
OTHER AIRCRAFT. OVER 90 PERCENT OF GENERAL
AVIATION ACCIDENTS WHICH MIGHT BE PREVENTED BY THE
USE OF TV RADAR INDICATE WEATHER AS THE PRIMARY
BENEFIT AREA. THEREFORE IT WAS DETERMINED THAT THE
MOST PROMISING AREA FOR IMPROVEMENT IS IN PROPERLY
PRESENTING WEATHER DATA. IT WAS DETERMINED THAT
BENEFITS OF TV RADAR WOULD EXCEED COSTS IF AT LEAST
50 PERCENT OF ALL GENERAL AVIATION AIRCRAFT INSTALLED
EQUIPMENT AND ALSO THAT AT LEAST 50 PERCENT OF
GENERAL AVIATION ACCIDENT COSTS WOULD BE ELIMINATED
AS A RESULT. HOWEVER, DUE TO THE PROBABILITY OF
TOO FEW PARTICIPATING GENERAL AVIATION AIRCRAFT, THE
STUDY CONCLUDES THAT NO JUSTIFICATION EXISTS FOR
PURSUING THE TV RADAR CONCEPT FURTHER AT THIS TIME.
FUTURE IMPROVEMENTS IN RADAR, TRANSMISSION
CAPABILITY, FREQUENCY AVAILABILITY AND AVAILABILITY
OF SUITABLE EQUIPMENT FOR GENERAL AVIATION AIRCRAFT
MAY INDICATE A NEED FOR FURTHER REASSESSMENT AT THAT
TIME. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-658 753 1/3 5/8 5/5
LITTON SYSTEMS INC WOODLAND HILLS CALIF GUIDANCE AND
CONTROL SYSTEMS DIV
INTEGRATED COCKPIT RESEARCH PROGRAM. APPENDIX
I. (U)

DESCRIPTIVE NOTE: FINAL REPT.,
JAN 67 249P MURPHY, JOHN V. ;
PIZZICARA, DONALD J. ; BELCHER, JAMES J. ;
HAMSON, ROBERT L. ; BERNBERG, RAYMOND E. ;
CONTRACT: NONR-4951(00)
PROJ: NR-213 041

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-658 754.

DESCRIPTORS: (*COCKPITS, SYSTEMS ENGINEERING),
COST EFFECTIVENESS, HUMAN ENGINEERING, DISPLAY
SYSTEMS, PILOTS, PERFORMANCE(HUMAN),
CONTROL, ANALYSIS, MAN-MACHINE SYSTEMS (U)

THE INTEGRATED COCKPIT RESEARCH PROGRAM WAS
DESIGNED TO DEVELOP A METHODOLOGY FOR AVIONIC SYSTEM
DESIGN APPLICATION TO AIRCRAFT IN AN ADVANCED TIME
PERIOD. EMPHASIS WAS PLACED ON TWO MAJOR
ACTIVITIES. ONE WAS CONCERNED WITH IDENTIFYING THE
REQUIREMENTS FOR THE OPERATOR/AVIONIC SYSTEM IN THE
FUTURE TIME PERIOD, AND A SECOND ACTIVITY WAS
CONCERNED WITH IDENTIFYING THE TECHNOLOGICAL STATE-
OF-THE-ART THAT WOULD BE AVAILABLE IN THE ADVANCED
TIME PERIOD TO MEET THOSE REQUIREMENTS. SUCCESSIVE
ASPECTS OF THE STUDY WERE CONCERNED WITH SYNTHESIZING
AN AVIONIC SYSTEM, COMPLETING A COST EFFECTIVENESS
EVALUATION, AND THE PREPARATION OF A COCKPIT MOCKUP.
APPENDIX I CONTAINS THE FUNCTION FLOW DIAGRAMS
AND THE MATRIX ANALYSES FOR ALL THREE MISSIONS.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-658 754 1/3 5/8 5/5
LITTON SYSTEMS INC WOODLAND HILLS CALIF GUIDANCE AND
CONTROL SYSTEMS DIV
INTEGRATED COCKPIT RESEARCH PROGRAM. APPENDIX
II. (U)

DESCRIPTIVE NOTE: FINAL REPT.,

JAN 67 93F MURPHY, JOHN V. ;
PIZZICARA, DONALD J. ; BELCHER, JAMES J. ;
HAMSON, ROBERT L. ; BERNBERY, RAYMOND E. ;
CONTRACT: NONR-4951(00)
PROJ: NR-213-041

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-658 753.

DESCRIPTORS: (*COCKPITS, SYSTEMS ENGINEERING),
COST EFFECTIVENESS, HUMAN ENGINEERING, DISPLAY
SYSTEMS, PILOTS, AUTOMATIC, DATA PROCESSING
SYSTEMS, CONTROL, SPECIFICATIONS (U)

THE INTEGRATED COCKPIT RESEARCH PROGRAM WAS
DESIGNED TO DEVELOP A METHODOLOGY FOR AVIONIC SYSTEM
DESIGN APPLICATION TO AIRCRAFT IN AN ADVANCED TIME
PERIOD. EMPHASIS WAS PLACED ON TWO MAJOR
ACTIVITIES. ONE WAS CONCERNED WITH IDENTIFYING THE
REQUIREMENTS FOR THE OPERATOR/AVIONIC SYSTEM IN THE
FUTURE TIME PERIOD, AND A SECOND ACTIVITY WAS
CONCERNED WITH IDENTIFYING THE TECHNOLOGICAL STATE-
OF-THE-ART THAT WOULD BE AVAILABLE IN THE ADVANCED
TIME PERIOD TO MEET THOSE REQUIREMENTS. SUCCESSIVE
ASPECTS OF THE STUDY WERE CONCERNED WITH SYNTHESIZING
AN AVIONIC SYSTEM, COMPLETING A COST EFFECTIVENESS
EVALUATION, AND THE PREPARATION OF A COCKPIT MOCKUP.
APPENDIX II CONTAINS THE DATA PROCESSING ANALYSIS
WITH BLOCK DIAGRAMS OF THE MAJOR FUNCTIONAL AREAS.
(AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-658 816 17/2 13/6 5/1 5/4
MASSACHUSETTS INST OF TECH CAMBRIDGE CENTER FOR
INTERNATIONAL STUDIES
COMMUNICATIONS OR TRANSPORT: DECISION-MAKING IN
DEVELOPING COUNTRIES, (U)
AUG 67 236P SHAPIRO, PAUL S. ;
REPT. NO. C/67-8
CONTRACT: AF 49(638)-1237, ARPA ORDER-427
PROJ: 920F-9717

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMMUNICATION SYSTEMS, *MANAGEMENT
PLANNING), (*TRANSPORTATION, *DECISION
MAKING), ECONOMICS, POLITICAL SCIENCE, FOREIGN
AID, COSTS, ROADS, CONSTRUCTION, TELEPHONE
COMMUNICATION SYSTEMS, RADIO COMMUNICATION SYSTEMS,
ATTITUDES (U)

COMPARISON IS MADE OF THE USES OF INVESTMENT IN
TRANSPORT AND IN COMMUNICATIONS FOR DEVELOPING
COUNTRIES. A METHOD FOR INVESTMENT DECISION-MAKING
IS PROPOSED, AND RELEVANT DATA ARE PRESENTED AND
ANALYZED. IT IS HYPOTHESIZED THAT IN ACHIEVING
DEVELOPMENT GOALS TRANSPORT AND COMMUNICATIONS MAY BE
SUBSTITUTABLE OR AT LEAST COMPLEMENTARY. NATIONAL
INVESTMENT STRATEGIES ARE SEEN TO DEPEND ON
COMMUNIST OR NON-COMMUNIST IDEOLOGY, ON THEORIES
OF ECONOMIC PLANNING, ON SITUATIONAL CONDITIONS, AND
ON METHODS OF ANALYSIS. THE CONSTRUCTION OF RURAL
ROADS IS POSITED AS THE MAJOR TRANSPORT INVESTMENT
FOR DEVELOPING COUNTRIES IN THE FUTURE. IT IS
SUGGESTED THAT INCREASED RATIONALITY IN DECISION-
MAKING IN THE TRANSPORT AND COMMUNICATIONS SECTOR IS
POSSIBLE THROUGH THE APPLICATION OF COST-BENEFIT
ANALYSIS AT THE VILLAGE LEVEL. THIS IS SEEN TO
REQUIRE THE COLLECTION OF COST AND DESCRIPTIVE DATA
FOR A RANGE OF COMMUNICATIONS MEDIA AND FOR VARIOUS
TYPES OF ROADS, AS WELL AS INCREASED KNOWLEDGE OF THE
BENEFITS THEY AFFORD. A MODEL IS PROPOSED FOR THE
STAGING OF INVESTMENT. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-658 841 14/2 21/A.2
AIR FORCE MISSILE DEVELOPMENT CENTER HOLLOMAN AFB N MEX
DIRECTORATE OF TEST TRACK
CRITERIA FOR SELECTING SOLID ROCKET MOTORS AS TRACK
TEST PROPULSION, (U)
JUN 67 47P RASMUSSEN, HANS J. I
MONITOR: MDC TR-67-76

UNCLASSIFIED REPORT

DESCRIPTORS: (*ROCKET-PROPELLED SLEDS, *ROCKET
MOTORS(SOLID PROPELLANT)), SELECTION,
EQUATIONS OF MOTION, PROPULSION, STANDARDS,
DESIGN, COST EFFECTIVENESS,
PERFORMANCE(ENGINEERING), ACCELERATION (U)

CLOSED FORM SOLUTIONS OF THE SIMPLIFIED EQUATION OF
MOTION OF A ROCKET SLED ARE USED TO DEFINE SPECIFIC
CHARACTERISTICS GOVERNING THE APPLICABILITY OF
INDIVIDUAL SOLID ROCKET MOTORS FOR TRACK TEST
PROPULSION PURPOSES. SOME OF THE INTERACTIONS
BETWEEN MOTOR PERFORMANCE PARAMETERS, SLED DESIGN
CONSIDERATIONS, AND TRACK LENGTH CONSTRAINTS ARE
REVIEWED. CRITERIA ARE DEVELOPED FOR DETERMINING
APPLICABILITY RANGES AND PERFORMANCE LIMITS OF
VARIOUS ROCKET UNITS, AND TO ARRIVE AT A BASIS FOR
COMPARING THE RELATIVE COST EFFECTIVENESS OF
COMPETING MOTORS FOR ROCKET SLED OPERATION.
(AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-659 329 22/2 15/5 5/1
AEROSPACE CORP EL SEGUNDO CALIF EL SEGUNDO TECHNICAL
OPERATIONS
USE OF AN EMPIRICAL PRODUCT-ORIENTED COST DATA BANK
FOR PREDICTING AND NEGOTIATING FUTURE SATELLITE
SYSTEM COSTS. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT. 1 JUL 63-12 JUN 67,
JUN 67 29P SILVER, HYMAN ;
REPT. NO. TR-1001(2573-34)-1
CONTRACT: AF-04(695)-1001
MONITOR: SSD TR-67-150

UNCLASSIFIED REPORT

DESCRIPTORS: (*COMMUNICATION
SATELLITES(ACTIVE); *COSTS); GOVERNMENT
PROCUREMENT; MANAGEMENT PLANNING; DEPARTMENT OF
DEFENSE; VALUE ENGINEERING; RESEARCH PROGRAM
ADMINISTRATION (U)
IDENTIFIERS: PERT COST SYSTEM; AEROSPACE
INDUSTRY (U)

THIS REPORT OUTLINES AND ANALYZES ONE APPROACH
TOWARD SOLVING THE GENERALIZED PROBLEM OF POOR COST
ESTIMATING PROCEDURES WITHIN THE AEROSPACE INDUSTRY.
THIS APPROACH DEALS WITH THE REPLACEMENT OF THE
TRADITIONAL 'FUNCTIONAL' SYSTEM OF ESTIMATING,
NEGOTIATING AND REPORTING COSTS WITH THE PRODUCT OR
END ITEM ORIENTED TECHNIQUE. SPECIFICALLY, THE
MILITARY COMSAT IDCSP PROGRAM END ITEM COST
SYSTEM IS DESCRIBED, AND THE MANNER BY WHICH IT WAS
USED TO FORM A COMPREHENSIVE COST DATA BANK AND THE
SUBSEQUENT USAGE OF THE DATA BANK TO ESTIMATE NEW
PROGRAM COSTS ARE ANALYZED. IT ALSO DESCRIBES THE
BENEFITS ACCRUING TO THE UNDERSTANDING OF BOTH
PARTIES IN NEGOTIATING CONTRACT COSTS THAT HAVE BEEN
ESTIMATED ON A DETAILED PRODUCT ORIENTED BASIS.
THE ACTUAL RE-ESTIMATING PROCEDURES THAT WERE
UTILIZED ON A CURRENT COMSAT PROGRAM ARE DESCRIBED
IN DETAIL. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-659 356 14/1 15/7 5/1
RAND CORP SANTA MONICA CALIF
PROJECT COST ESTIMATING,
SEP 67 34P PETRUSCHELL, R. L. ;
REPT. NO. P-3687

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION AT
MANAGEMENT STUDIES GROUP OF THE ROYAL
AERONAUTICAL SOCIETY IN JUN 67.

DESCRIPTORS: (*COSTS, *DECISION MAKING),
(*COST EFFECTIVENESS, MANAGEMENT PLANNING),
(*MILITARY REQUIREMENTS, ADVANCED PLANNING),
ECONOMICS, WEAPON SYSTEMS, GUIDED
MISSILES (UNDERWATER-TO-SURFACE), AIRCRAFT,
MILITARY TACTICS, OPTIMIZATION
IDENTIFIERS: SYSTEMS ANALYSIS

(U)

(U)

ONE PLACE WHERE COST ESTIMATING HAS, IN RECENT
YEARS, BEEN ALLOWED TO PLAY ITS PROPER ROLE IS IN
MILITARY LONG-RANGE PLANNING, AND THE REWARDS HAVE
INDEED BEEN GREAT. THE GENERAL PHILOSOPHY OF THE
MILITARY PLANNER AND THE CONCEPTS AND METHODS OF THE
COST ESTIMATOR THAT HAVE PERMITTED THIS TO HAPPEN ARE
DISCUSSED IN THE FIRST PART OF THIS PAPER. IN THE
SECOND PART, AN EXAMPLE OF A COST ANALYSIS IN SUPPORT
OF A MILITARY PLANNING PROBLEM IS PRESENTED. THE
EXAMPLE POINTS UP THE FACT THAT COST ESTIMATING CAN
BE AN INTELLECTUALLY STIMULATING ACTIVITY WORTHY OF
THE APPLICATION OF THE BEST ANALYTICAL SKILLS
AVAILABLE; AND SECOND, THAT IT CAN PROVIDE USEFUL
ANSWERS TO DIFFICULT AND IMPORTANT QUESTIONS EVEN
WHEN UNCERTAINTY IS GREAT AND QUANTIFICATION IS
DIFFICULT.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-659 373 5/3 15/5 1/3
RAND CORP SANTA MONICA CALIF
AIRCRAFT CO-PRODUCTION AND PROCUREMENT STRATEGY, (U)
MAY 67 236P HALL, G. R. JOHNSON, R.
E. J.
REPT. NO. R-450-PR
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (*AIRCRAFT INDUSTRY, *JAPAN),
(*INDUSTRIAL PRODUCTION, AIRCRAFT), (*ARMED
FORCES PROCUREMENT, AIRCRAFT), FOREIGN AID,
CONTRACTS, ECONOMICS, COSTS, COMMERCE,
PATROL PLANES, JET FIGHTERS, JET TRAINING
PLANES (U)
IDENTIFIERS: F-86 AIRCRAFT, F-104 AIRCRAFT, P-2
AIRCRAFT, T-33 AIRCRAFT (U)

AN ANALYSIS OF THE CO-PRODUCTION IN 1955-1964 OF
FOUR U.S. MILITARY AIRCRAFT--THE T-33A,
P2V-7, F-86F, AND F-104J--BY JAPANESE
FIRMS. THE PROCESS OF TRANSFERRING THE REQUIRED
MANUFACTURING TECHNOLOGY IS EXAMINED. FOR THE F-
104J THE COSTS OF TRANSFER ARE ALSO ANALYZED.
THESE COSTS WERE LOWER THAN EXPECTED--SUFFICIENTLY
SO, THAT WHEN COMBINED WITH JAPAN'S LABOR-COST
ADVANTAGE, THE JAPANESE-BUILT F-104JS COST AT
LEAST 10 PERCENT LESS THAN LOCKHEED'S LIKELY
SELLING PRICE. CO-PRODUCTION'S AID TO THE
DEVELOPMENT OF JAPAN'S AVIATION INDUSTRY AND TO
MAKING THE ACQUISITION OF MILITARY AIRCRAFT
POLITICALLY FEASIBLE HAS IMPORTANT IMPLICATIONS FOR
FOREIGN AID POLICY. CO-PRODUCTION ALSO SUGGESTS
THAT CONVENTIONAL VIEWS ABOUT THE COSTS AND BENEFITS
OF REPROCURING WEAPON SYSTEMS ONLY FROM THE DEVELOPER
MAY BE ERRONEOUS. A POLICY OF SEPARATING PROGRAMS
FOR CONTRACTING PURPOSES COULD GREATLY EXPAND THE
ROLE OF COMPETITION AND RELIANCE ON MARKET-GENERATED
PRICES IN WEAPON SYSTEM PROCUREMENT. THE BENEFITS
OF SUCH A POLICY COULD BE SUBSTANTIAL. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-659 625 5/2
HERNER AND CO WASHINGTON D C
STUDY OF DOCUMENTATION PROCEDURES AND
MECHANISMS.
DESCRIPTIVE NOTE: FINAL SCIENTIFIC REPT.,
AUG 67 10P HERNER, SAUL ;
CONTRACT: AF 49(638)-1424
PROJ: AF-9769
TASK: 976901
MONITOR: AFOSR 67-2248

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (*DOCUMENTATION, REVIEWS),
COSTS, PSYCHOMETRICS, DATA PROCESSING SYSTEMS,
SCIENTIFIC RESEARCH, DESIGN, ANALYSIS,
EFFECTIVENESS

(U)

THE WORK AND PUBLICATIONS DISCUSSED ARE ON THE
FOLLOWING TOPICS: ASLIB-CRANFIELD EVALUATION
TECHNIQUES; SYSTEM DESIGN, EVALUATION, AND COSTINGS;
REVIEW OF USER STUDIES; MACHINE ANALYSIS OF
PSYCHIATRIC INTERVIEWS; FUNCTIONAL ASPECTS OF
INFORMATION NETWORKS; INFORMATION-RELATED EQUIPMENT.
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-659 653 15/5 12/2
TECHNICAL UNIV OF DENMARK LINBY INST OF MATHEMATICAL
STATISTICS AND OPERATIONS RESEARCH
THE MANY-PRODUCT CARGO LOADING PROBLEM, (U)
SEP 67 11P PRUZAN, PETER MARK ;
JACKSON, J. T. ROSS ;

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN NAVAL RESEARCH
LOGISTICS QUARTERLY VOL N3 P381-90 SEP 1967.
SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH
OPERATIONS ANALYSIS CORP., COPENHAGEN
(DENMARK).

DESCRIPTORS: (*CARGO, HANDLING), (*CARGO
VEHICLES, SCHEDULING), (*DYNAMIC PROGRAMMING,
TRANSPORTATION), ALGORITHMS, COSTS,
OPTIMIZATION, MANAGEMENT PLANNING, OPERATIONS
RESEARCH, APPROXIMATION(MATHEMATICS),
NUMERICAL METHODS AND PROCEDURES (U)

AN ALGORITHM, BASED UPON DYNAMIC PROGRAMMING, IS
DEVELOPED FOR A CLASS OF FIXED-COST CARGO LOADING
PROBLEMS. THE PROBLEMS CAN BE FORMULATED AS
INTEGER PROGRAMMING PROBLEMS, BUT CANNOT BE
EFFICIENTLY SOLVED AS SUCH BECAUSE OF COMPUTATIONAL
DIFFICULTIES. THE ALGORITHM DEVELOPED HAS PROVED
TO BE VERY EFFICIENT IN AN ACTUAL OPERATIONS RESEARCH
STUDY INVOLVING OVER 500 DIFFERENT CARGO ITEMS, MORE
THAN 40 POSSIBLE STOPS AND SEVERAL TYPES OF
TRANSPORTATION VEHICLES. A NUMERICAL ILLUSTRATION
IS PROVIDED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-659 729 15/5 14/1 12/2
RAND CORP SANTA MONICA CALIF
COST AND EFFECTIVENESS IMPACTS OF ORDER QUANTITY
CHANGES, (U)
OCT 67 36P HOUGHTEN, JAMES W. ;
FEPT. NO. RM-4796-PR
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (*AIR FORCE PROCUREMENT, *COST
EFFECTIVENESS), (*INVENTORY ANALYSIS, AIR FORCE
PROCUREMENT), ECONOMICS, OPTIMIZATION, COSTS,
SCHEDULING, MANAGEMENT PLANNING, MATHEMATICAL
MODELS, PREDICTIONS, LOGISTICS (U)

THE REPORT DESCRIBES TWO METHODS FOR ESTIMATING THE
INCREASED COSTS OF SETTING A MINIMUM REPROCUREMENT
QUANTITY OF ONE YEAR'S WORTH OF STOCK FOR AIR
FORCE ECONOMIC ORDER QUANTITY ITEMS WHOSE
ANNUAL ISSUES ARE IN THE \$1,000 TO \$10,000
CATEGORY. ONE METHOD REQUIRES THAT ITEMS BE
SPECIFIED BY THEIR ANNUAL ISSUE VALUE; THE OTHER THAT
THEY BE SPECIFIED BOTH BY ANNUAL DEMAND RATES AND
UNIT PRICES. ALTHOUGH MORE DIFFICULT AND EXPENSIVE
TO USE, THE SECOND METHOD IS MORE ACCURATE,
PARTICULARLY FOR ITEMS WITH LOW ANNUAL DEMAND RATES. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-659 731 14/1 15/5 5/1
RAND CORP SANTA MONICA CALIF
DEFENSE PROCUREMENT AND PUBLIC UTILITY
REGULATION,
SEP 67 53P HALL, GEORGE R. ;
REPT. NO. RM-5285-PR
CONTRACT: F44620-67-C-0045

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (*ARMED FORCES PROCUREMENT,
CONTROL), (*INDUSTRIES, CONTROL), (*COST
EFFECTIVENESS, CONTROL SYSTEMS), BUDGETS,
DEPARTMENT OF DEFENSE, MANAGEMENT PLANNING,
WEAPON SYSTEMS, COSTS

(U)

IDENTIFIERS: PUBLIC UTILITIES, PROFIT,
REGULATION, SYSTEMS ANALYSIS

(U)

THIS STUDY COMPARES THE CONTROL OF PROCUREMENT
PRICES AND PROFITS WITH THE SYSTEM APPLIED TO PUBLIC
UTILITIES. THE POSSIBLE APPLICATION OF PUBLIC
UTILITY REGULATION TO WEAPON SYSTEM PRODUCERS IS ALSO
CONSIDERED BUT REJECTED. DESPITE DIFFERENCES IN
THE REASONS FOR REGULATION AND IN PROFIT
DETERMINATION, BOTH SYSTEMS BASE PRICES AND PROFITS
ON COSTS. SINCE THE MAJOR PROCUREMENT PROBLEMS
STEM FROM THE COST-BASED NATURE OF PROFITS, THEY
WOULD NOT BE SOLVED BY PUBLIC UTILITY REGULATION.
POLICY EMPHASIS SHOULD BE ON MINIMIZING THE NEED
FOR REGULATION BY ENCOURAGING COMPETITION THROUGH
TOTAL-PROGRAM-PACKAGE PROCUREMENTS, SECOND-SOURCING
AND OTHER ATYPICAL ACQUISITION STRATEGIES.
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-659 800 13/2 13/13 14/1
STANFORD RESEARCH INST MENLO PARK CALIF
SHELTER WATER SUPPLY STUDY: COST IMPLICATIONS OF
EMERGENCY SOURCES. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
AUG 67 186P JENSEN, GORDON F. ;
CONTRACT: DAHC20-67-C-0136
PROJ: SRI-MU-6300-170

UNCLASSIFIED REPORT

DESCRIPTORS: (*FALLOUT SHELTERS, *CIVIL DEFENSE
SYSTEMS), (*WATER SUPPLIES, SOURCES), COSTS,
WATER TANKS, WATER WELLS, TANKS(CONTAINERS),
COST EFFECTIVENESS, RADIOACTIVE FALLOUT,
SURVIVAL (U)

THE STUDY COMPARES SELECTED ALTERNATIVE METHODS OF
SUPPLYING EMERGENCY DRINKING WATER TO INHABITANTS OF
FALLOUT SHELTERS. THE RESPECTIVE COSTS AND SOME OF
THE QUALITATIVE CONSIDERATIONS OF EACH SYSTEM WERE
INVESTIGATED, WITH PARTICULAR EMPHASIS ON COMPARISONS
OF MUNICIPAL SYSTEMS, TRAPPED WATER, WATER
CONTAINERS, TANKS, AND WELLS. THIS STUDY REPORTS
ON THE TRADEOFFS BETWEEN COST, SHELTER SIZE, AND WELL
DEPTH OF EMERGENCY WATER SOURCES. THE TRADEOFFS
ARE INVESTIGATED BY A SERIES OF COST-SENSITIVITY
CURVES. THE CAPABILITIES AND DETAILS OF THE
MUNICIPAL WATER SOURCES FOR TWO SAMPLE CITIES ARE
ALSO REPORTED. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-659 993 12/2 13/8 5/1 15/5

STANFORD UNIV CALIF
PRODUCTION SMOOTHING WITH STOCHASTIC DEMAND AND
RELATED INVENTORY PROBLEMS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,

AUG 67 173P SOBEL, MATTHEW J. ;

REPT. NO. TK-96

CONTRACT: NONR-225(53), NSF-GP-3739

PROJ: NR-042-002

UNCLASSIFIED REPORT

DESCRIPTORS: (*PRODUCTION CONTROL, *INVENTORY
ANALYSIS), (*MANAGEMENT PLANNING, SCHEDULING),
(*STOCHASTIC PROCESSES, MATHEMATICAL MODELS),
COSTS, OPTIMIZATION, DECISION MAKING,
EMPLOYMENT, UNCERTAINTY, ALGORITHMS,
STATISTICAL PROCESSES, DYNAMIC PROGRAMMING (U)
IDENTIFIERS: PRODUCTION SMOOTHING (U)

THE DYNAMIC SINGLE PRODUCT INVENTORY PROBLEMS
TREATED HERE HAVE COSTS THAT DEPEND ON CHANGES IN
PRODUCTION RATES AS WELL AS ON THE RATES THEMSELVES
AND ON INVENTORY LEVELS. ALL BUT ONE OF THE MODELS
HAVE STOCHASTIC DEMAND AND BACKORDER EXCESS DEMAND.
A DISCRETE TIME MODEL IN WHICH SMOOTHING COSTS ARE
PROPORTIONAL TO THE DIFFERENCE BETWEEN PRODUCTION
RATES IN SUCCESSIVE PERIODS IS SHOWN TO HAVE AN
OPTIMAL POLICY IN WHICH PRODUCTION DECREASES AS
INVENTORY INCREASES; UNIFORM BOUNDS ARE GIVEN FOR THE
OPTIMAL POLICY PARAMETER VALUES. THE MODEL
GENERALIZES TO ONE IN WHICH EMPLOYMENT LEVEL AND
PRODUCTION RATE ARE SEPARATE VARIABLES. A
GENERALIZED STATIONARY ANALYSIS IS GIVEN FOR THE
SIMPLER CASE. WHEN UNITS ARE MADE SEQUENTIALLY IN
TIME AND DEMAND IS A RENEWAL PROCESS, THE PRESENCE OF
SMOOTHING COSTS LEADS TO OPTIMAL POLICIES FOR THE
MINIMIZATION OF AVERAGE COST PER UNIT TIME WHICH ARE
BASED ON ONLY TWO PARAMETERS AND WHICH ARE EASILY
ADMINISTERED. ANALOGOUS RESULTS ARE OBTAINED FOR A
SIMILAR DISCRETE TIME MODEL AND THE RESULTING
STATIONARY DISTRIBUTIONS OF STATE VARIABLES IS GIVEN
FOR THE CASES OF DEMAND BEING A POISSON PROCESS AND
EITHER CONSTANT OR EXPONENTIALLY DISTRIBUTED
PRODUCTION TIMES. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-660 118 14/1 10/2 5/3
RAND CORP SANTA MONICA CALIF
THE GRAND CANYON CONTROVERSY: LESSONS FOR FEDERAL
COST-BENEFIT PRACTICES, (U)
OCT 57 26P CARLIN, ALAN ;
REPT. NO. P-3505-1

UNCLASSIFIED REPORT

DESCRIPTORS: (*COST EFFECTIVENESS, UNITED STATES GOVERNMENT), (*DAMS, ARIZONA), COSTS, ECONOMICS, POWER PLANTS(ESTABLISHMENTS), ELECTRIC POWER PRODUCTION, NATURAL RESOURCES, CALIFORNIA, NEVADA, UTAH, TRANSMISSION LINES, POWER REACTORS (U)
IDENTIFIERS: COST-BENEFIT ANALYSIS, MARBLE CANYON PROJECT, INTEREST RATES (U)

THIS REVIEW AND ANALYSIS OF THE ECONOMIC CONTROVERSY OVER THE PROPOSED GRAND CANYON DAMS HAS POINTED OUT SEVERAL FEDERAL EVALUATION PRACTICES NOT FULLY BROUGHT OUT IN PREVIOUS ANALYSES OF SENATE DOCUMENT 97: (1) THE USE OF THE DOCUMENT'S 'MOST LIKELY' WORDING TO EXCLUDE LOWER COST ALTERNATIVES FROM CONSIDERATION; (2) THE INCLUSION OF HIGHER INTEREST RATES AND TAXES IN EVALUATING A PRIVATE ALTERNATIVE TO A PUBLIC PROJECT; (3) USE OF UNREASONABLE ASSUMPTIONS WITH REGARD TO THE TRANSMISSION COSTS OF ALTERNATIVES; (4) THE PARTICULARLY INADEQUATE INTEREST RATES USED IN COMPUTING THE COST OF PROPOSED PROJECTS DURING PERIODS WHEN RATES ARE RELATIVELY HIGH COMPARED TO PREVIOUS DECADES. THE SIGNIFICANCE OF THE GRAND CANYON CONTROVERSY FOR THE EVALUATION OF FEDERAL WATER PROJECTS GOES BEYOND UNDERLINING THE INADEQUACIES OF SENATE DOCUMENT 97, HOWEVER, TO RAISE THE QUESTION OF WHETHER IT IS POSSIBLE FOR FEDERAL WATER AGENCIES TO OBJECTIVELY EVALUATE PROJECTS WHICH THEY WOULD LATER BE ASKED TO BUILD. (U)

UNCLASSIFIED

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DJC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-660 328 15/7 12/2 14/1
RESEARCH ANALYSIS CORP MCLEAN VA
A FORMULATION OF GROUND COMBAT MISSIONS IN
MATHEMATICAL PROGRAMMING FORM.
DESCRIPTIVE NOTE: TECHNICAL PAPER,
JUL 67 35P TIEDE, ROLAND V. ;
REPT. NO. RAC-TP-265
CONTRACT: DA-44-188-ARO-1

(U)

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, COST
EFFECTIVENESS), (*TACTICAL WARFARE,
*MATHEMATICAL PROGRAMMING), (*COST
EFFECTIVENESS, TACTICAL WARFARE), MATHEMATICAL
MODELS, COMMAND + CONTROL SYSTEMS,
EFFECTIVENESS, OPTIMIZATION

(U)

AN ATTEMPT TO DEVELOP GENERAL METHODS FOR MEASURING
COST AND EFFECTIVENESS IMPLICATIONS OF ADDING
AUTOMATIC DATA PROCESSING TO COMMAND CONTROL SYSTEMS
FOR GROUND COMBAT REQUIRED THE DEVELOPMENT OF
TECHNIQUES FOR MARGINAL-EFFECTIVENESS ANALYSIS.
ONE NECESSARY STEP FOR SUCH ANALYSIS WAS THE
FORMULATION OF GROUND COMBAT MISSIONS TO PERMIT
MEASUREMENT OF MARGINAL MISSION PERFORMANCE.
EXAMINATION OF TYPICAL COMBAT MISSIONS IDENTIFIES
THREE DIMENSIONS: RESOURCES, TIME, AND AREA
CONTROLLED BY A MILITARY FORCE. TYPICAL MISSIONS
ARE RELATED TO A CLOSED CONTINUUM OF TACTICAL
POSTURES ORDERED ON THE BASIS OF RELATIVE POTENTIAL
ENERGY AND MOVEMENT RATE. THREE CLASSES OF
INCREASINGLY SEVERE CONSTRAINTS ARE IDENTIFIED AND
ASSOCIATED WITH DECREASING POTENTIAL ENERGY. TWO
OBJECTIVE FUNCTIONS ARE IDENTIFIED: MAXIMIZATION
OF RATE OF ADVANCE FOR HIGH-ENERGY POSTURES AND
MINIMIZATION OF RATE OF RESOURCE EXPENDITURE FOR LOW-
ENERGY POSTURES. THE QUANTIFIABILITY OF THE THREE
DIMENSIONS OF MISSION SPACE IS EXAMINED, AND
DIFFICULTIES IN AGGREGATING DIFFERENT CLASSES OF
RESOURCES AND TERRAIN OF VARYING TACTICAL VALUE ARE
RECOGNIZED. A MEASURE FOR ASSESSING THE DEGREE OF
CONTROL OVER AN AREA BY A MILITARY FORCE IS
POSTULATED AND TESTED IN A SIMPLE MATHEMATICAL MODEL.
RELATING THE PERFORMANCE OF A MIX OF MILITARY
MISSIONS TO COMBAT EFFECTIVENESS IS DISCUSSED.
(AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-660 392 5/10

RUTGERS - THE STATE UNIV NEW BRUNSWICK N J
COST, PROFIT, CERTAINTY AND FAILURE.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,

OCT 67 17P STREUFERT, SIEGFRIED J

KLIGER, SUSAN C. :

REPT. NO. TR-6

CONTRACT: N00014-67-A-0115

PROJ: NR-177-911

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH PURDUE
UNIV., LAFAYETTE, IND.

DESCRIPTORS: (*GROUP DYNAMICS, *DECISION
MAKING), (*BARGAINING, SOCIAL PSYCHOLOGY),
ECONOMICS, PROBABILITY, GAME THEORY, COSTS,
GAME THEORY, PERFORMANCE (HUMAN), STATISTICAL
ANALYSIS

(U)

DYAD DECISION MAKING TEAMS SPENT SEVEN CONSECUTIVE
HALF HOUR PERIODS PLAYING AN EXPERIMENTAL INTERNATIONAL
GAME CONTAINING TACTICAL, ECONOMIC, NEGOTIATION AND
INTELLIGENCE COMPONENTS. TEAMS RECEIVED SEVEN
INFORMATIVE MESSAGES PER ONE/HALF HOUR PERIOD.
INCREASING FAILURE WAS INDUCED BY INCREASING THE
PROPORTION OF FAILURE TO NEUTRAL MESSAGES OVER
PERIODS. AFTER EACH ONE/HALF HOUR PERIOD, SUBJECTS
ESTIMATED THEIR PRESENT AND ANTICIPATED 'COST',
'PROFIT' AND 'CERTAINTY' LEVELS ON RATING SCALES.
RATINGS WERE ANALYZED IN A THREE WAY WITHIN ANOV
DESIGN. A SIGNIFICANT TRIPLE INTERACTION WAS
OBTAINED. THE RESULTS SUGGEST THAT GENERALLY
ANTICIPATED LEVELS OF 'PSYCHO-ECONOMIC' VARIABLES ARE
ABOVE PRESENT LEVELS, THAT COST AND PROFIT ARE NOT
INVERSE UNIDIMENSIONAL EFFECTS, AND THAT ESTIMATES OF
COST FOLLOW REAL FAILURE LEVELS MOST CLOSELY WHILE
CERTAINTY ESTIMATES DO NOT DROP IMMEDIATELY AND
PROFIT ESTIMATES DO NOT DROP UNTIL THE FAILURE LEVELS
ARE RATHER HIGH.

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-660 537 5/3 5/9 5/4
HOWARD UNIV WASHINGTON D C DEPT OF ECONOMICS
MILITARY TRANSFER OF TECHNOLOGY: INTERNATIONAL
TECHNO-ECONOMIC TRANSFERS VIA MILITARY BY-PRODUCTS
AND INITIATIVE BASED ON CASES FROM JAPAN AND OTHER
PACIFIC COUNTRIES, (U)
MAR 67 278P SPENCER, DANIEL L. :
CONTRACT: AF-AFOSR-533-67
PROJ: AF-9779
TASK: 977902
MONITOR: AFOSR 67-0231

UNCLASSIFIED REPORT

DESCRIPTORS: (*ECONOMICS, *JAPAN), (*ARMED
FORCES(UNITED STATES), *TRANSFER OF
TRAINING, TAIWAN, SOUTH KOREA, COST
EFFECTIVENESS, FOREIGN AID, EMPLOYMENT, CIVILIAN
PERSONNEL, FOREIGN POLICY, INDUSTRIES, ARMED
FORCES PROCUREMENT, INDUSTRIAL PRODUCTION,
CONTRACTS, MILITARY PERSONNEL (U)
IDENTIFIERS: MILITARY ASSISTANCE (U)

THE TRANSFER OF TECHNOLOGY THROUGH MILITARY AND
RELATED CHANNELS IS DISCUSSED. CASE STUDIES ARE
DRAWN FROM JAPAN, TAIWAN, AND KOREA. THE
MATERIALS CONSTITUTE A FIRST ATTEMPT TO BULLDOZE
THROUGH A NEW DIMENSION IN COST/BENEFIT ASSESSMENTS
OF MILITARY ACTIVITY OVERSEAS. THE REPORT
CONCLUDES THAT A DOLLAR SPENT ON MILITARY ASSISTANCE
MAY PRODUCE AS MUCH BENEFIT AS, OR MORE THAN, A
DOLLAR SPENT ON ECONOMIC ASSISTANCE. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-660 659 14/1 15/5 5/1
LOGISTICS MANAGEMENT INST WASHINGTON D C
LIFE CYCLE COSTING IN INDUSTRY. (U)
SEP 67 18P
CONTRACT: SD-271
TASK: 67-21

UNCLASSIFIED REPORT

DESCRIPTORS: (*GOVERNMENT PROCUREMENT, DEPARTMENT
OF DEFENSE), (*DEPARTMENT OF DEFENSE,
CONTRACTS), (*COST EFFECTIVENESS,
LOGISTICS), ECONOMICS, OPTIMIZATION, ARMED
FORCES SUPPLIES, MANAGEMENT PLANNING, LIFE
EXPECTANCY, DECISION MAKING, MAINTENANCE,
REVIEWS (U)
IDENTIFIERS: LIFE CYCLE COSTING (U)

THE WIDESPREAD USE OF LIFE CYCLE COSTING IN
NON-DEFENSE INDUSTRY AND THE ENTHUSIASM EXHIBITED
TOWARD IT BY COMPANY OFFICIALS GIVE STRONG SUPPORT TO
THE VALUE AND THE VALIDITY OF THE LIFE CYCLE
COST CONCEPT. INDUSTRY'S ABILITY TO OVERCOME
PROBLEMS ASSOCIATED WITH LIFE CYCLE COSTING
PROVIDES ASSURANCE TO THE DOD AS TO THE
USEFULNESS OF THE CONCEPT. THE ENVIRONMENT FOR
LCC IN INDUSTRY VARIES SO SUBSTANTIALLY FROM THAT
IN THE DOD THAT MOST PRACTICES USED IN INDUSTRY
ARE NOT APPLICABLE TO THE GOVERNMENT ENVIRONMENT.
INDUSTRY HAS PLACED MUCH MORE EMPHASIS ON THE
METHODS OF ANALYZING COST ESTIMATES THAN HAS THE
DOD. WHILE INDUSTRY HAS DEVELOPED DISCOUNTED
RETURN ON INVESTMENT METHODS, DOD TEST
PROCUREMENTS HAVE MERELY ADDED UP THE COSTS AND
AWARDED ON THE BASIS OF LOWEST TOTAL COST. THE
GOVERNMENT COULD LEARN FROM INDUSTRY EXPERIENCE IN
THIS PARTICULAR AREA EVEN THOUGH THE OBJECTIVES OF
PROFIT MAXIMIZATION AND COST MINIMIZATION ARE
DIFFERENT. (U)

UNCLASSIFIED

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-660 905 5/1
RAND CORP SANTA MONICA CALIF
THE ROLE OF QUANTITATIVE ANALYSIS AND THE COMPUTER IN
PROGRAM BUDGETING, (U)
OCT 67 8P NOVICK, DAVID I
REPT. NO. P-3716

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION AT INST.
FOR BUDGET MANAGEMENT TRAINING, NATL. ASSOC. OF
STATE BUDGET OFFICERS, NATURAL BRIDGE STATE
PARK, KENTUCKY 20 SEP 67.

DESCRIPTORS: (*BUDGETS, COMPUTER PROGRAMS);
DECISION MAKING; MANAGEMENT PLANNING; SYSTEMS
ENGINEERING; MATHEMATICAL MODELS; QUANTITATIVE
ANALYSIS; COST EFFECTIVENESS (U)

PLANNING-PROGRAMMING-BUDGETING IS NOT
DECISIONMAKING BY MATHEMATICAL MODEL, MATHEMATICAL
AND STATISTICAL TECHNIQUES, OR COMPUTING MACHINES.
PPB HAS THESE ESSENTIAL CHARACTERISTICS: (1)
CAREFUL SPECIFICATION AND SYSTEMATIC ANALYSIS OF
OBJECTIVES. (2) A SEARCH FOR THE RELEVANT
ALTERNATIVES AND THE DIFFERENT WAYS AVAILABLE FOR
ACHIEVING THE OBJECTIVES. (3) AN ESTIMATE OF
THE TOTAL COSTS OF EACH ALTERNATIVE--DIRECT AND
INDIRECT COSTS, AND BOTH INITIAL COSTS AND THOSE TO
WHICH THE ALTERNATIVE COMMITS US FOR FUTURE YEARS.
(4) AN ESTIMATE OF THE EFFECTIVENESS OF EACH
ALTERNATIVE, OR OF HOW CLOSE IT COMES TO SATISFYING
THE OBJECTIVE. (5) A COMPARISON AND ANALYSIS
OF THE ALTERNATIVES, SEEKING THAT COMBINATION OF
ALTERNATIVES THAT PROMISES THE GREATEST
EFFECTIVENESS, FOR GIVEN RESOURCES, IN ACHIEVING THE
OBJECTIVES. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-661 052 14/1 12/2
ARMY MATERIEL COMMAND WASHINGTON D C
LEARNING CURVE METHODOLOGY FOR COST ANALYSTS: (U)
OCT 67 29P DAILHAUSE FRANK J. I
ROU, JOSEPH S. I

UNCLASSIFIED REPORT

DESCRIPTORS: (*COST EFFECTIVENESS; MANAGEMENT
PLANNING); (*MANAGEMENT PLANNING; COSTS);
LEARNING CURVES; REGRESSION ANALYSIS; CURVE
FITTING; PRODUCTION CONTROL; ARMY; MATHEMATICAL
MODELS; DECISION MAKING (U)
IDENTIFIERS: COST ANALYSIS (U)

COST ESTIMATES ARE SOMETIMES POORLY PREPARED
BECAUSE THE LEARNING CURVE IS MISUNDERSTOOD OR BADLY
APPLIED. THE LEARNING CURVE AS A TOOL, REGRESSION
ANALYSIS AS A CURVE FITTING TECHNIQUE AND VARIOUS
DEVICES FOR ADJUSTING LEARNING DATA FROM PRACTICAL
PROCESS KNOWLEDGE ARE ADDRESSED SEPARATELY IN A
VOLUMINOUS LITERATURE. THIS PAPER PUTS DOWN THE
MAIN FRAMEWORK OF NECESSARY CONCEPTS IN THE
APPLICATION OF THE LEARNING CURVE WITH APPROPRIATE
REFERENCES TO THE LITERATURE. EXPERIENCE SHOWS
THAT, AT SOME POINT IN AN ANALYSIS, THE ESTIMATOR IS
REQUIRED TO ENTER OPINIONS BECAUSE OF LACK OF DATA,
INCOMPLETE KNOWLEDGE OF THE PROCESS OR OTHER CAUSES
BEYOND HIS CONTROL. THE EMPHASIS IN THIS PAPER IS
TO DISTINGUISH BETWEEN MATHEMATICS AND JUDGMENT;
BETWEEN CALCULATION AND INTUITION; PUTTING CAUTIONS
ON THE ANALYST TO PROVIDE THE REVIEWER WITH
VISIBILITY AS TO WHERE ONE ENDS AND THE OTHER BEGINS.
TOPICS INCLUDE A DESCRIPTION OF THE FORMS OF THE
LEARNING CURVE WITH DISTINCTIONS AMONG POSSIBLE
VARIABLES; VARIOUS NECESSARY CALCULATIONS AND
CONVERSIONS; FUNDAMENTAL CONCEPTS RELATED TO THE
LOCATION OF A STRAIGHT LINE IN TWO DIMENSIONAL SPACE;
FACTORS WHICH CONTRIBUTE TO LEARNING IN INDUSTRIAL
PROCESSES AND ADJUSTMENTS FOR SPECIAL CIRCUMSTANCES.
THE DOCUMENT WAS PREPARED AS GUIDANCE TO COST
ANALYSTS IN THE US ARMY MATERIEL COMMAND.
(AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-661 254 14/1 22/2 5/1
AEROSPACE CORP EL SEGUNDO CALIF EL SEGUNDO TECHNICAL
OPERATIONS
UNCERTAINTY IN LAUNCH VEHICLE COST ESTIMATING EL
SEGUNDO TECHNICAL OPERATIONS. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
OCT 67 28P FISH, JEROME G. ;
REPT. NO. TR-1001(2515-01)-1
CONTRACT: AF-04(695)-1001
MONITOR: SAMSJ TR-67-33

UNCLASSIFIED REPORT

DESCRIPTORS: (*LAUNCH VEHICLES(AEROSPACE),
*COST EFFECTIVENESS), STATISTICAL ANALYSIS,
ERRORS, MANAGEMENT PLANNING, COSTS,
MATHEMATICAL MODELS (U)

THE REPORT PRESENTS PRELIMINARY RESULTS OF A STUDY
OF THE UNCERTAINTY IN ESTIMATING FUTURE AIR FORCE
LAUNCH VEHICLE PROGRAM COSTS. THIS STUDY IS PART
OF A LARGER PROJECT TO DEVELOP A LAUNCH VEHICLE
PROGRAM COST ESTIMATING MODEL FOR THE SPACE
SYSTEMS DIVISION OF THE AIR FORCE SYSTEMS
COMMAND. THIS MODEL, AS WELL AS THE UNCERTAINTY
ANALYSIS, IS BEING PREPARED IN SUPPORT OF LONG RANGE
PLANNING AND IS NOT DIRECTED TOWARD COST ESTIMATING
PROBLEMS ASSOCIATED WITH CONTRACT PRICING AND
NEGOTIATIONS. THE RESULTS OF THE ANALYSIS CONSIST
OF THE FIRST OF A TWO-PHASE STATISTICAL EXPERIMENT
CONCERNING THE CONFIDENCE REGION ASSOCIATED WITH THE
VARIATION OF COST ESTIMATES DERIVED BY USING INDUSTRY
COST MODELS. THIS FIRST PHASE EXAMINES HAND-
CALCULATED ESTIMATES USING COST ESTIMATING
RELATIONSHIPS PUBLISHED BY INDUSTRY AND OTHERS.
THE SECOND PHASE, TO BE REPORTED ON LATER, WILL
DEAL WITH INDUSTRY-COMPUTED ESTIMATES BASED ON THEIR
OWN COMPUTER COST MODELS. STATISTICAL ANALYSES
WERE MADE OF THE MEAN AND STANDARD ERRORS OF A SMALL
SAMPLE OF HAND-COMPUTED ESTIMATES FOR TOTAL PROGRAM
AND SUBSYSTEM COSTS FOR A LIQUID AND A SOLID FUELED
LAUNCH VEHICLE. SOME TENTATIVE INFERENCES ARE
DRAWN CONCERNING POSSIBLE CAUSES OF THE VARIATIONS OF
ESTIMATES. THE SAMPLE STANDARD DEVIATIONS
CALCULATED RANGED FROM 7 TO 40 PERCENT OF THE
CORRESPONDING MEAN VALUES. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-661 801 13/10 1/3
NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER ANNAPOLIS MD
ANN POLIS DIV
REFERENCE DESIGN STUDY OF MIST-JET PROPULSION SYSTEMS
IN CAPTURED-AIR-BUBBLE SHIPS, (U)
NOV 67 72P SMITH, JACK ; FOX, R. M. ;
MONITOR: NSRDC 2496

UNCLASSIFIED REPORT

DESCRIPTORS: (*GROUND EFFECT MACHINES, MARINE
PROPULSION), (*JET PROPULSION, AEROSOLS),
(*MARINE PROPULSION, TWO-PHASE FLOW),
EFFICIENCY, DESIGN, LIQUID JETS,
PROPELLERS(MARINE),
PERFORMANCE(ENGINEERING), COST
EFFECTIVENESS (U)
IDENTIFIERS: CAPTURED AIR BUBBLE SHIPS, MIST JET
PROPULSION (U)

A REFERENCE DESIGN STUDY WAS MADE TO EVALUATE THE
MIST-JET PROPULSION SYSTEM. PERFORMANCE
CHARACTERISTICS OF 100-, 500-, AND 2500-TON CAPTURED-
AIR-BUBBLE SURFACE EFFECT SHIPS WITH A MIST-JET,
A WATER-JET, AND A PROPELLER PROPULSION SYSTEM WERE
EXAMINED. BASED ON COST PER TON MILE, PAYLOAD, AND
FUEL USE VS SPEED FOR VARIOUS OPERATIONAL RANGES, IT
WAS CONCLUDED THE MIST JET IS A SUPERIOR
PROPULSION SYSTEM IN THE 100-TON SIZE FOR SHORT-
RANGE, HIGH-SPEED OPERATION. THE MIST JET IS
COMPETITIVE WITH THE OTHER TWO SYSTEMS IN LARGER SIZE
SHIPS AT LONGER RANGE. IT IS RECOMMENDED THE
DEVELOPMENT OF THE MIST JET BE PURSUED AS IT
OFFERS ADDITIONAL ADVANTAGES OF NO MOVING PARTS IN
CONTACT WITH THE WATER, THE USE OF STATE-OF-THE-ART
EQUIPMENT, AND LOW DEVELOPMENT COST AS COMPARED TO
THE WATER-JET OR THE SUPERCAVITATING CONTROLLABLE-
PITCH PROPELLER SYSTEMS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-661 850 1/2 14/1 17/7
SPEAS (R DIXON) ASSOCIATES MANHASSET N Y
COST/BENEFIT ANALYSIS FOR ALL-WEATHER LANDING SYSTEM
(AWLS) CATEGORY II AND III. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
OCT 67 100P SPEAS, R. D. ; SMITH, M. H.
; SCHMIDT, HARRY P. ;
CONTRACT: FA-67-WA-1642
PROJ: FAA-320-102-01A
MONITOR: FAA-RD 67-28

UNCLASSIFIED REPORT

DESCRIPTORS: (*ALL-WEATHER AVIATION, COST
EFFECTIVENESS), (*INSTRUMENT LANDINGS, COST
EFFECTIVENESS), AIRCRAFT LANDINGS,
INSTRUMENTATION, PREDICTIONS, AIRBORNE,
ECONOMICS, AIRPORTS (U)

THE STUDY DETERMINES THE COSTS AND BENEFITS
RESULTING FROM IMPLEMENTATION OF CATEGORY II AND
III ALL-WEATHER SYSTEMS DURING THE 1967-1980 TIME
PERIOD, AND ESTABLISHES THE OPTIMUM PRACTICAL GROUND-
AIRBORNE IMPLEMENTATION SCHEDULE, INCLUDING THE
PRIORITY-RANKED ORDER FOR EQUIPPING FORTY INDIVIDUAL
AIRPORTS. THE IMPLEMENTATION SCHEDULE CALLS FOR
THE FOLLOWING EQUIPMENT EFFECTIVENESS: (1)
CATEGORY II BY 1970, (2) CATEGORY IIIA
BY 1975, (3) CATEGORY IIIC BY 1980. THE
COST BENEFITS, AS CONSERVATIVELY QUANTIFIED IN THIS
STUDY, SHOW IN GENERAL SUMMARY TERMS THAT: (1)
CATEGORY II HAS IMMEDIATE (BY 1970) NET
ECONOMIC BENEFITS. (2) CATEGORY IIIA AND
IIIB SHOW NEARLY THE SAME RESULTS AND PROVIDE NET
ECONOMIC BENEFITS IF MORE THAN TWENTY-THREE AIRPORTS
ARE IMPLEMENTED BY 1975. (3) CATEGORY IIIC
WILL PRODUCE NET ECONOMIC BENEFITS ONLY IF THE
MAJORITY OF THE FORTY AIRPORTS ARE IMPLEMENTED BY
1980. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-661 983 9/2 14/1
SYSTEM DEVELOPMENT CORP SANTA MONICA CALIF
AN ANALYTICAL COST COMPARISON OF COMPUTER OPERATING
SYSTEMS. (U)
DESCRIPTIVE NOTE: TECHNICAL MEMO.,
JUN 67 213P ERIKSON, WARREN J. ;
REPT. NO. TM-3525
CONTRACT: F19628-67-C-0000

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING SYSTEMS,
PERFORMANCE(ENGINEERING)), (*TIME SHARING,
PERFORMANCE(ENGINEERING)), (*COST
EFFECTIVENESS, DATA PROCESSING SYSTEMS),
MANAGEMENT PLANNING, DECISION MAKING,
OPTIMIZATION, MATHEMATICAL MODELS, MAINTENANCE,
PROGRAMMING(COMPUTERS) (U)
IDENTIFIERS: BATCH PROCESSING (U)

THE REPORT ATTEMPTS TO ANSWER SOME OF THE QUESTIONS
CONCERNING THE ADVANTAGES AND DISADVANTAGES OF TIME-
SHARING. TO ACCOMPLISH THIS, THE GENERAL PROBLEM
OF EVALUATING COMPUTER SYSTEM PERFORMANCE IS FIRST
ADDRESSED. GENERAL SYSTEM CHARACTERISTICS ARE
SPECIFIED THAT INCLUDE THE COMPUTER AND ITS OPERATING
SYSTEM, AND USERS AND THEIR JOBS. THE MAIN
EMPHASIS IS PLACED UPON THE OPERATING SYSTEM; THE
EFFECTS OF HAVING DIFFERENT COMPUTERS, USERS, OR JOBS
ARE TREATED AS PARAMETERS. THE MOST IMPORTANT
EVALUATION CRITERION IS CONSIDERED TO BE COST, WHICH
INCLUDES BOTH USER COST AND COMPUTER SYSTEM COST.
QUANTITATIVE MODELS ARE DEVELOPED THAT DESCRIBE
COMPUTER CENTER USERS, THE PROGRAMS THEY RUN, AND THE
DIFFERENT OPERATING SYSTEMS THEY MIGHT USE. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-662 185 1/3 5/8 5/5
LITTON SYSTEMS INC WOODLAND HILLS CALIF GUIDANCE AND
CONTROL SYSTEMS DIV
INTEGRATED COCKPIT RESEARCH PROGRAM, VOLUME I. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
JAN 67 148P MURPHY, JOHN V. ;
PIZZICARA, DONALD J. ; BELCHER, JAMES J. ;
HAMSON, ROBERT L. ; BERNBERG, RAYMOND E. ;
CONTRACT: NONR-4951(00)
PROJ: NR-213-041

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-662 186.

DESCRIPTORS: (*COCKPITS, SYSTEMS ENGINEERING),
COST EFFECTIVENESS, MILITARY REQUIREMENTS, HUMAN
ENGINEERING, DISPLAY SYSTEMS, CONTROL SYSTEMS,
PILOTS, AIRCRAFT, PREDICTIONS (U)

THE PROGRAM WAS DESIGNED TO DEVELOP A METHODOLOGY
FOR AVIONIC SYSTEM DESIGN APPLICATION TO AIRCRAFT IN
AN ADVANCED TIME PERIOD. EMPHASIS WAS PLACED ON
TWO MAJOR ACTIVITIES. ONE WAS CONCERNED WITH
IDENTIFYING THE REQUIREMENTS FOR THE OPERATOR/AVIONIC
SYSTEM IN THE FUTURE TIME PERIOD, AND A SECOND
ACTIVITY WAS CONCERNED WITH IDENTIFYING THE
TECHNOLOGICAL STATE-OF-THE-ART THAT WOULD BE
AVAILABLE IN THE ADVANCED TIME PERIOD TO MEET THOSE
REQUIREMENTS. SUCCESSIVE ASPECTS OF THE STUDY WERE
CONCERNED WITH SYNTHESIZING AN AVIONIC SYSTEM,
COMPLETING A COST/EFFECTIVENESS EVALUATION, AND THE
PREPARATION OF A COCKPIT MOCKUP. VOLUME I
DESCRIBES A 27-STEP PROCESS THAT CAN BE APPLIED TO
ANY AIRCRAFT SYSTEM EARLY IN THE DEVELOPMENTAL CYCLE.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-662 186 1/3 5/8 5/5
LITTON SYSTEMS INC WOODLAND HILLS CALIF GUIDANCE AND
CONTROL SYSTEMS DIV
INTEGRATED COCKPIT RESEARCH PROGRAM. VOLUME II. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
JAN 67 231F MURPHY, JOHN V. ;
PIZZICARA, DONALD J. ; BELCHER, JAMES J. ;
HAMSON, ROBERT L. ; BERNBERG, RAYMOND E. ;
CONTRACT: NONR-4951(00)
PROJ: NR-213-041

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-662 186; AND
APPENDICES, AD-658 753, AND AD-658 754.

DESCRIPTORS: (*COCKPITS, SYSTEMS ENGINEERING),
SHORT TAKE-OFF PLANES, VERTICAL TAKE-OFF PLANES,
COST EFFECTIVENESS, MILITARY REQUIREMENTS, HUMAN
ENGINEERING, DISPLAY SYSTEMS, CONTROL SYSTEMS,
PILOTS, PREDICTIONS (U)

THE PROGRAM WAS DESIGNED TO DEVELOP A METHODOLOGY
FOR AVIONIC SYSTEM DESIGN APPLICATION TO AIRCRAFT IN
AN ADVANCED TIME PERIOD. EMPHASIS WAS PLACED ON
TWO MAJOR ACTIVITIES. ONE WAS CONCERNED WITH
IDENTIFYING THE REQUIREMENTS FOR THE OPERATOR/AVIONIC
SYSTEM IN THE FUTURE TIME PERIOD, AND A SECOND
ACTIVITY WAS CONCERNED WITH IDENTIFYING THE
TECHNOLOGICAL STATE-OF-THE-ART THAT WOULD BE
AVAILABLE IN THE ADVANCED TIME PERIOD TO MEET THOSE
REQUIREMENTS. SUCCESSIVE ASPECTS OF THE STUDY WERE
CONCERNED WITH SYNTHESIZING AN AVIONIC SYSTEM,
COMPLETING A COST/EFFECTIVENESS EVALUATION, AND THE
PREPARATION OF A COCKPIT MOCKUP. VOLUME II
DESCRIBES THE APPLICATION/RESULTS OF THE DEVELOPED
METHODOLOGY FOR AVIONIC SYSTEM DESIGN IN A V/STOL
AIRCRAFT FOR AN ADVANCED TIME PERIOD. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-662 229 5/3

YALE UNIV NEW HAVEN CONN COWLES FOUNDATION FOR RESEARCH
IN ECONOMICS

A NOTE ON TAXATION, INCREASING RETURNS DUE TO SET-UP
COSTS AND COMPETITIVE EQUILIBRIUM, (U)

NOV 67 13P SHUBIK, MARTIN ;

REPT. NO. COWLES FOUNDATION PAPER-237

CONTRACT: NONR-3055(01)

UNCLASSIFIED REPORT

DESCRIPTORS: (*ECONOMICS, MATHEMATICAL MODELS),
OPTIMIZATION, COSTS, GAME THEORY (U)

IDENTIFIERS: COMPETITION, TAXES, SET-UP
COSTS (U)

GIVEN THE FOLLOWING PROBLEM: SUPPOSE THAT A
CLOSED ECONOMY HAS ALL OF THE PROPERTIES OF CONVEXITY
OF PREFERENCE SETS AND PRODUCTION SETS EXCEPT THAT IN
ORDER TO USE CERTAIN PRODUCTION PROCESSES SET-UP
COSTS MUST BE PAID. THE SET UP COSTS CAUSE
INCREASING RETURNS AND DESTROY THE COMPETITIVE
EQUILIBRIUM; IS THERE A TAX POLICY WHICH RESTORES THE
EQUILIBRIUM AND WOULD IT ALWAYS BE APPROVED
UNANIMOUSLY OR BY A MAJORITY VOTE. THIS PROBLEM IS
DISCUSSED IN THIS REPORT. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-662 266 21/4 10/2 13/13
BATTELLE MEMORIAL INST COLUMBUS OHIO COLUMBUS LABS
DETERIORATION OF FUELS AND FUEL-USING EQUIPMENT. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
AUG 67 86P TRAYSER, DAVID A. ;
HEIN, GLEN M. ; ELLIS, WARREN C. ;

UNCLASSIFIED REPORT

DESCRIPTORS: (*FUELS, DEGRADATION, (*FUEL
SYSTEMS, DEGRADATION), (*FALLOUT SHELTERS,
*AUXILIARY POWER PLANTS), STORAGE,
MAINTENANCE, INSTALLATION, PRESERVATION,
DRYING, CORROSION INHIBITION, LUBRICANTS,
INTERNAL COMBUSTION ENGINES, DIESEL ENGINES,
COST EFFECTIVENESS (U)

THE STUDY COVERED TWO CLOSELY RELATED AREAS OF INVESTIGATION: (1) THE DETERIORATION OF FUELS AND EQUIPMENT IN STORAGE AND (2) THE STANDBY MAINTENANCE REQUIREMENTS OF AUXILIARY POWER SYSTEMS FOR COMMUNITY PROTECTIVE SHELTERS. DETERMINATION OF THE STATE-OF-KNOWLEDGE AND CURRENT PRACTICES IN THE FIRST AREA OF INVESTIGATION LED TO THE DEVISING OF SPECIFIC PLANS OF ACTION IN THE SECOND AREA. A NUMBER OF PLANS FOR STANDBY-MAINTENANCE ROUTINES FOR COMMUNITY SHELTER POWER SYSTEMS WERE DEVISED DURING THE STUDY. THESE PLANS ARE BASED ON THE BEST INFORMATION AVAILABLE FROM THE LITERATURE AND FROM FIELD EXPERIENCE. THE COSTS FOR ACQUISITION, INSTALLATION, AND MAINTENANCE OF THESE SYSTEMS AND FOR THE STANDBY MAINTENANCE ROUTINES ARE ESTIMATED AND COMPARED ON THE BASIS OF 5-, 10-, AND 15-YEAR STANDBY PERIODS. FROM THE RESULTS IT APPEARS THAT A GASOLINE ENGINE POWER SYSTEM UTILIZING COMMERCIAL FUELS AND PRESERVATIVES, MAINTAINED IN A LOW-HUMIDITY ENVIRONMENT, AND EXERCISED EVERY 6 WEEKS, WOULD PROVIDE MAXIMUM COST EFFECTIVENESS CONSIDERING THE PRESENT STATE OF KNOWLEDGE. IT WAS NOTED DURING THIS STUDY THAT INFORMATION IS PARTICULARLY SPARSE IN THE AREAS OF: LONG-TERM STORAGE EFFECTS ON COMMERCIAL AND SPECIAL FUELS AND LUBRICANTS, INACTIVE STORAGE OF ENGINE-GENERATOR SETS IN A REASONABLE STATE OF READINESS, AND THE FUEL-DETERIORATION TOLERANCE OF GASOLINE AND DIESEL ENGINES. RECOMMENDED SPECIFIC RESEARCH PROGRAMS TO CLOSE EACH OF THESE TECHNOLOGICAL GAPS ARE BRIEFLY DESCRIBED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-662 338 15/5 5/3
RAND CORP SANTA MONICA CALIF
A PROCESS FUNCTION FOR RAIL LINEHAUL OPERATIONS, (U)
NOV 67 49P DESALVO, JOSEPH S. I
REPT. NC. P-3729

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION AT THE
ECONOMETRIC SOCIETY MEETINGS IN WASHINGTON, D.
C., 28 DEC 67. PREPARED IN COOPERATION WITH
NORTHWESTERN UNIV., LAFAYETTE, IND., ECONOMETRICS
RESEARCH CENTER.

DESCRIPTORS: (*RAILROADS, CARGO),
(*ECONOMICS, RAILROADS), CARGO VEHICLES,
WAGES, SCHEDULING, COSTS, TRANSPORTATION (U)

LIKE MANY PRODUCTIVE ACTIVITIES, RAIL FREIGHT
TRANSPORTATION MAY BE DIVIDED INTO VARIOUS PROCESSES.
ONE DIVISION THAT HAS BEEN USED BEFORE IS:
(1) ASSEMBLY, (2) LINEHAUL, (3) LOADING
AND UNLOADING. THIS PAPER IS CONCERNED WITH THE
SECOND OF THESE EXCLUSIVELY. THE AIM IS TO DEVELOP
A PRODUCTION FUNCTION FOR THE LINEHAUL PROCESS
(HEREAFTER CALLED A LINEHAUL PROCESS FUNCTION).
SUCH A PROCESS FUNCTION IS INTERESTING IN ITS OWN
RIGHT: WITH IT ONE MAY INVESTIGATE VARIOUS
PRODUCTIVITY RELATIONSHIPS, ISOQUANTS, AND RETURNS TO
SCALE FOR THE LINEHAUL PROCESS. THE PROCESS
FUNCTION MAY ALSO BE USED TO EXAMINE THE BEHAVIOR OF
LINEHAUL COSTS. IN ADDITION, IT WOULD BE POSSIBLE
TO SYNTHESIZE RAILWAY COSTS IF PROCESS FUNCTIONS FOR
ALL THREE PROCESSES WERE AVAILABLE. IN THIS PAPER,
ALL BUT THE LAST OF THESE IS ATTEMPTED. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-668 659 15/5
INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA SYSTEMS
EVALUATION DIV
ON THE ECONOMIC APPLICATION OF AIRLIFT TO RESUPPLY
AND ITS IMPACT ON INVENTORY LEVELS. (U)
DESCRIPTIVE NOTE: RESEARCH PAPER,
OCT 67 80P SORIANO, A. IGROSS, D. J
REPT. NO. RP-P-370
CONTRACT: DAHC15-67-C-0012
MONITOR: IDA/HQ 67-6813

UNCLASSIFIED REPORT

DESCRIPTORS: *INVENTORY CONTROL, OPERATIONS
RESEARCH), (* AIR TRANSPORTATION, *STOCK LEVEL
CONTROL), COSTS, ECONOMICS, TIME,
SHIPPING(MARINE), STATISTICAL ANALYSIS (U)

THE STUDY DEMONSTRATES HOW, IN A SUPPLY SYSTEM, THE
INVENTORY STOCK LEVELS NEEDED FOR A SPECIFIED LEVEL
OF CUSTOMER SERVICE VARY AS A FUNCTION OF THE
REQUISITION LEAD TIME AND PATTERN. THE STUDY
PRESENTS A PRACTICAL METHOD TO DETERMINE THE SAVINGS
IN INVENTORY HOLDING COST MADE POSSIBLE BY REDUCING
REQUISITION LEAD TIME FOR PROBLEMS INVOLVING SEVERAL
MILLION DIFFERENT LINE ITEMS. THE APPROACH
DEVELOPED WAS APPLIED SUCCESSFULLY TO THE PEACETIME
MILITARY OVERSEAS RESUPPLY PROBLEM INVOLVING OVER 200
SUPPLY DISTRIBUTION POINTS WITH MORE THAN TWO MILLION
DIFFERENT LINE ITEMS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-662 661 5/9
INSTITUTE FOR DEFENSE ANALYSES ARLINGTON VA PROGRAM
ANALYSIS DIV
THE SUPPLY OF FIRST-TERM MILITARY OFFICERS, (U)
MAR 67 110P FECHTER, ALAN E. J
REF. NO. S-290
CONTRACT: SD-50
MONITOR: IDA/HQ 67-6607

UNCLASSIFIED REPORT

DESCRIPTORS: (*OFFICER PERSONNEL; RECRUITING);
WAGES; PROCUREMENT; PERSONNEL MANAGEMENT;
FEDERAL BUDGETS; DEPARTMENT OF DEFENSE; COSTS;
MILITARY PERSONNEL (U)

THE STUDY EXAMINES THE EFFECTS OF POPULATION TRENDS, MILITARY CONSCRIPTION, AND PAY ON THE SUPPLY OF NEWLY COMMISSIONED OFFICERS AND, BASED ON THESE FACTORS, ESTIMATES THE ADDITIONAL BUDGETARY COSTS THAT WOULD BE INCURRED BY THE DEPARTMENT OF DEFENSE IN ELIMINATING THE DRAFT AS A PROCUREMENT FACTOR FOR OFFICERS. THE STUDY REVIEWS CURRENT TRENDS AND PATTERNS OF OFFICER-PROCUREMENT; DISCUSSES THE FACTORS WHICH ARE THOUGHT TO BE IMPORTANT DETERMINANTS OF OFFICER-SUPPLY--ELIGIBLE POPULATION, THE DRAFT, AND EARNINGS OPPORTUNITIES FOR POTENTIAL OFFICERS IN MILITARY AND NONMILITARY CAREERS; CONTAINS ESTIMATES OF THE EFFECT OF POPULATION TRENDS ON THE SUPPLY OF NEWLY COMMISSIONED OFFICERS; EXAMINES THE EFFECTS OF MILITARY CONSCRIPTION; INVESTIGATES THE EFFECTS ON OFFICER SUPPLY OF MILITARY AND NONMILITARY EARNINGS OPPORTUNITIES; AND PRESENTS AN ILLUSTRATIVE EXAMPLE OF HOW THE FINDINGS MAY BE USED TO ESTIMATE THE COST OF SHIFTING TO AN ALL-VOLUNTEER OFFICER FORCE. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-662 749 13/13 15/3
STANFORD RESEARCH INST MENLO PARK CALIF
SHELTER ENTRANCEWAYS AND OPENINGS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
SEP 67 184P WIFHLF, CARL K. ;
CONTRACT: DAHC20-67-C-0136
PROJ: SRI-MU-6300-070

UNCLASSIFIED REPORT

DESCRIPTORS: (*FALLOUT SHELTERS, DESIGN),
DOORS, CONSTRUCTION, STRUCTURAL PARTS, TESTS,
COSTS, CONFIGURATION, BLAST, SHIELDING (U)

THE OBJECTIVE OF THE INVESTIGATION WAS TO DEVELOP, TEST, AND EVALUATE LOW COST SHELTER ENTRANCEWAYS AND OPENINGS FOR PROVIDING PROTECTION AGAINST THE EFFECTS OF NUCLEAR WEAPONS IN THE OVERPRESSURE REGIONS UP TO 20 PSI. THE APPROACH ADOPTED WAS (1) TO IDENTIFY AS MANY FACTORS AS POSSIBLE THAT INFLUENCE, LIMIT, OR CONSTRAIN THE ENTRANCEWAY DESIGN; (2) TO ATTEMPT TO IDENTIFY THE MULTITUDE OF INTERACTING SITUATIONS; AND (3) TO ESTABLISH THE SITUATIONS MOST IMPORTANT TO THE DESIGN OF ENTRANCEWAYS FOR CIVIL DEFENSE SHELTERS. FROM AN EXAMINATION OF THE NUMEROUS INFLUENCING FACTORS, PARAMETERS WERE SELECTED AS THE BASIS FOR PERFORMING COST ANALYSES FOR VARIOUS ENTRANCEWAY CONFIGURATIONS. COST ESTIMATES WERE THEN PREPARED FOR 36 INDIVIDUAL ENTRANCEWAYS AND 2 ESCAPE EXITS. FROM THESE DATA, IT WAS POSSIBLE TO DEVELOP THE TOTAL CONSTRUCTION COST OF SHELTER ENTRANCEWAYS FOR LOADING CAPACITIES UP TO 1,000 PERSONS/MIN FOR SIX GENERAL TYPES OF ENTRANCEWAYS APPLICABLE FOR CIVIL DEFENSE FALLOUT AND BLAST SHELTERS. SINCE THE LOADING CAPACITY REQUIRED FOR A SPECIFIC ENTRANCEWAY SYSTEM CANNOT BE DETERMINED IN A GENERAL MANNER BEFOREHAND (AS EXPLAINED IN THE BODY OF THE REPORT), THE COST DATA ARE PRESENTED ON THE BASIS OF THE ENTRANCEWAY COST/PERSON FOR SHELTER CAPACITIES UP TO 10,000 PERSONS FOR THE SIX ENTRANCEWAY TYPES AND FOR ENTRANCEWAY LOADING CAPACITIES BETWEEN 67 AND 1,000 PERSONS/MIN. (U)
(AUTHOR)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-662 781 15/3 5/1
STANFORD RESEARCH INST MENLO PARK CALIF
THE COST AND FEASIBILITY OF EMERGENCY COOPERATION
AMONG LOCAL GOVERNMENTS, (U)
OCT 67 93P MOLL, KENDALL ;
HIRSHBERG, RICHARD ;
PROJ: SRI-MU-4949-410

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON CIVIL DEFENSE
ORGANIZATION STUDIES.

DESCRIPTORS: (*CIVIL DEFENSE SYSTEMS, *MANAGEMENT
PLANNING), MANAGEMENT ENGINEERING, CIVIL DEFENSE
PERSONNEL, COSTS, FEASIBILITY STUDIES, UNITED
STATES GOVERNMENT, CONTROL, POLITICAL
SCIENCE (U)

FROM QUANTITATIVE CONSIDERATIONS OF THE NEED FOR
EMERGENCY INTERACTIONS AMONG LOCAL GOVERNMENT
FUNCTIONS, THE REPORT CONCLUDES THAT AN ESSENTIALLY
NEW FORM OF ORGANIZATION MUST BE PLANNED FOR
EMERGENCY COORDINATION. A NEW ORGANIZATION WILL
REQUIRE ABOUT 200 SPECIALLY TRAINED COORDINATORS IN
SANTA CLARA COUNTY, CALIFORNIA. REALISTIC
PLANNING, RECRUITING, TRAINING, AND TESTING ESTIMATES
FOR SUCH A PROGRAM IMPLY A NATIONAL CIVIL DEFENSE IN
THE ORDER OF \$2 MILLION PER YEAR. ANALYSES OF
THE LEGAL BASIS AND POTENTIAL LOCAL ACCEPTANCE OF
CENTRALIZED COORDINATION IN SANTA CLARA COUNTY
INDICATE THAT AN EMERGENCY ORGANIZATION WOULD BE
FEASIBLE TO ESTABLISH USING CERTAIN PROGRAM
GUIDELINES. FIRST, PROGRAM DIRECT COSTS WOULD BE
MOST ACCEPTABLE IF SUPPORTED BY THE FEDERAL
GOVERNMENT. SECOND, THE ORGANIZATION SHOULD BE
LOCALLY TAILORED TO EXISTING GOVERNMENT STRUCTURES
RATHER THAN PATTERNED UNIFORMLY THROUGHOUT THE
COUNTRY. THIRD, THE ORGANIZATION SHOULD BE
FLEXIBLE TO PERMIT PRE-EMPTION OF LOCAL AUTHORITY IN
PROPORTION TO THE SEVERITY OF THE EMERGENCY.
(AUTHOR) (U)

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DDC REPORT BIBL OGRAPHY SEARCH CONTROL NO. 000123

AD-662 886 14/1 15/3 22/4
AEROSPACE CORP EL SEGUNDO CALIF EL SEGUNDO TECHNICAL
OPERATIONS
TECHNICAL DIRECTION AND EVALUATION OF COST ANALYSIS
FOR SPACE SYSTEM STUDIES, (U)
MAY 67 45P NEISS, JOSEPH A. ;
BROWN, HERBERT ;
REPT. NO. TR-1001(2515-01)-2
CONTRACT: AF 04(695)-1001
MONITOR: SSD TR-67-98

UNCLASSIFIED REPORT

DESCRIPTORS: (*COST EFFECTIVENESS, AIR
FORCE), (*SPACECRAFT, COST EFFECTIVENESS),
ECONOMICS, BUDGETS, COSTS, OPTIMIZATION,
ADVANCED PLANNING, PREDICTIONS, DECISION MAKING (U)
IDENTIFIERS: COST ESTIMATING RELATIONSHIPS, SPACE
SYSTEMS, COST ANALYSIS (U)

ECONOMIC AND COST EFFECTIVENESS ANALYSES OF
PROPOSED SYSTEM CONCEPTS HAVE BECOME VITAL
REQUIREMENTS IN VIRTUALLY ALL U. S. AIR FORCE
SPACE SYSTEMS DIVISION STUDIES. SINCE
DEVELOPMENT OF A SPACE SYSTEM IS EXTREMELY COSTLY,
LEAD TIME IS LENGTHY, AND BUDGET LIMITATIONS ARE
SEVERE, THERE IS A CLEAR NEED TO FORECAST THE TOTAL
SYSTEMS COST AND EFFECTIVENESS OF A PROPOSED NEW
SYSTEM AS EARLY IN THE PLANNING CYCLE AS POSSIBLE.
THIS REPORT PRESENTS HIGHLIGHTS OF THE SIGNIFICANT
ASPECTS OF TECHNICAL DIRECTION EFFORTS IN SYSTEMS
COST AND COST EFFECTIVENESS ANALYSES. MAJOR
OBJECTIVES OF THIS EFFORT ARE TO ENSURE THAT THE
INDUSTRY CONTRACTOR: (A) PERFORMS A TOTAL
SYSTEM COST ANALYSIS OF SUFFICIENT DEPTH AND VALIDITY
TO PERMIT ANALYSIS AND EVALUATION; (B)
IDENTIFIES THOSE OPERATIONAL DESIGN AND HARDWARE
CONCEPTS WHICH WILL PROVIDE THE GREATEST SAVINGS IN
TOTAL SYSTEMS COST; (C) PROPERLY VALIDATES
THOSE SIGNIFICANT CONCEPTS AND COST RELATIONSHIPS
WHICH WILL LEAD TO THE SELECTION OF AN OPTIMUM
CONFIGURATION. RECOMMENDATIONS ON THE APPROACH AND
TECHNIQUES TO FULFILL THESE OBJECTIVES ARE PROVIDED.
THE USES AND LIMITATIONS OF INDUSTRY COST MODELS,
COST ESTIMATING RELATIONSHIPS, AND OTHER ESTIMATING
METHODS ARE DISCUSSED. COMMON PIT-FALLS IN SYSTEM
COST ANALYSIS ARE ILLUSTRATED TO INDICATE THE
GUIDANCE NECESSARY. (U)

UNCLASSIFIED

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 089 17/7 1/5 1/2 14/1
FEDERAL AVIATION ADMINISTRATION WASHINGTON D C SYSTEMS
RESEARCH AND DEVELOPMENT SERVICE
ALTERNATIVE APPROACHES FOR REDUCING DELAYS IN
TERMINAL AREAS. (U)

DESCRIPTIVE NOTE: STAFF STUDY,
NOV 67 136P MEISNER, MILTON ; VAN
DUYNE, EDWARD ; FAISON, WALTER ;
REPT. NO. FAA-RD-67-70
PROJ: FAA-177-611-01R

UNCLASSIFIED REPORT

DESCRIPTORS: (*AIR TRAFFIC CONTROL TERMINAL AREAS,
OPERATIONS RESEARCH); (*SCHEDULING,
*AIRPORTS); (*AIR TRAFFIC CONTROL SYSTEMS,
OPTIMIZATION); COST EFFECTIVENESS; AUTOMATION;
REDUCTION; AIR TRAFFIC (U)

THE STUDY PRESENTS ALTERNATIVE APPROACHES,
REGULATORY AND TECHNICAL, TO REDUCING AIRCRAFT DELAYS
IN TERMINAL AREAS. DELAYS AND BENEFITS VERSUS COST
WERE EXAMINED FOR RUNWAY, TAXIWAY, AND ILS
IMPROVEMENTS; NEW AIRPORTS; AIR TRAFFIC CONTROL
PROCEDURAL CHANGES; AUTOMATION OF THE FINAL APPROACH
CONTROL FUNCTION; AND REDUCTION OF SCHEDULE PEAKS.
THE SPECIFIC AIRPORTS STUDIED WERE: KENNEDY
INTERNATIONAL, LA GUARDIA, NEWARK,
WASHINGTON NATIONAL, CHICAGO O'HARE, LOS
ANGELES, SAN FRANCISCO AND OAKLAND.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 097 12/2

STANFORD UNIV CALIF DEPT OF STATISTICS
MIXED INTEGER PROGRAMMING ALGORITHMS FOR SITE
SELECTION AND OTHER FIXED CHARGE PROBLEMS HAVING
CAPACITY CONSTRAINTS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,

NOV 67 135P GRAY, PAUL ;

REPT. NO. TR-101

CONTRACT: NONR-225(53)

PROJ: NR-042-002

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: RESEARCH SUPPORTED IN PART BY ARO
AND NSF.

DESCRIPTORS: (*SITE SELECTION, ALGORITHMS),
(*LINEAR PROGRAMMING, OPTIMIZATION), COSTS,
FLOW CHARTING, TRANSPORTATION, THESES, PROBLEM
SOLVING (U)

IDENTIFIERS: FIXED CHARGE PROBLEM (U)

ALGORITHMS FOR SOLVING SITE-SELECTION AND SIMILAR
FIXED CHARGE PROBLEMS WITH UPPER BOUND CONSTRAINTS
ARE PRESENTED. THE BASIC APPROACH IS TO FORMULATE
THE PROBLEM AS A MIXED INTEGER PROGRAM AND TO SOLVE
THESE PROGRAMS BY DECOMPOSING THEM INTO A MASTER
INTEGER PROGRAM AND A SERIES OF SUBPROBLEMS WHICH ARE
LINEAR PROGRAMS. TO REDUCE THE NUMBER OF VERTICES
TO BE EXAMINED TO MANAGEABLE PROPORTIONS, THE BOUND-
AND-SCAN ALGORITHM BY F. S. HILLIER WAS ADAPTED
TO THE FIXED CHARGE PROBLEM. ALGORITHMS ARE
PRESENTED FOR FOUR CLASSES OF PROBLEMS: (1)
FIXED CHARGE PROBLEM WITH LINEAR VARIABLE COSTS AND
A FIXED CHARGE FOR EACH VARIABLE AT NON-ZERO LEVEL.
(2) PROBLEM 1 WITH SEPARABLE CONCAVE OR CONVEX
VARIABLE COSTS. (3) A WAREHOUSE LOCATION
PROBLEM IN WHICH VARIABLE COSTS AND CONSTRAINTS ARE
OF THE TRANSPORTATION TYPE. A FIXED CHARGE IS
ASSOCIATED WITH EACH WAREHOUSE OPENED. (4) THE
FIXED CHARGE TRANSPORTATION PROBLEM IN WHICH A FIXED
CHARGE IS ASSOCIATED WITH EACH ROUTE RATHER THAN WITH
EACH WAREHOUSE. COMPUTATIONAL RESULTS FOR
PROBLEMS 1, 2, AND 4 ARE PRESENTED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 155 13/10 5/1
NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL
WASHINGTON D C SHIPBOARD MECHANIZATION/MANPOWER COMM
SHIPBOARD SYSTEMS COSTS: A FUNCTIONAL ANALYSIS OF
WORK ABOARD SHIP. (U)
DESCRIPTIVE NOTE: SUMMARY REPT.
NOV 67 61P
CONTRACT: NONR-2300(23)

UNCLASSIFIED REPORT

DESCRIPTORS: (*MERCHANT VESSELS, *MANAGEMENT
ENGINEERING), COSTS, MANPOWER STUDIES,
EFFECTIVENESS, FUNCTIONAL ANALYSIS, PERSONNEL
MANAGEMENT (U)

THE REPORT IS ONE OF A SERIES ON THE RESULTS OF
ANALYSIS OF WORK ABOARD 20 MERCHANT SHIPS. IT
SUMMARIZES INFORMATION REPORTED PREVIOUSLY ON
INDIVIDUAL SHIPS. IN THE REPORT, A SYSTEM FOR THE
COLLECTION AND ANALYSIS OF INFORMATION REQUIRED FOR
EFFECTIVE SHIP MANAGEMENT IS DESCRIBED AND THE
PLANNED DEVELOPMENT OF THE SYSTEM FOR INDUSTRY-WIDE
USE IS DISCUSSED. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 187 5/3 12/2
YALE UNIV NEW HAVEN CONN COWLES FOUNDATION FOR RESEARCH
IN ECONOMICS
TOWARD A STUDY OF BIDDING PROCESSES. PART IV. GAMES
WITH UNKNOWN COSTS. (U)
67 20P SHUBIK, MARTIN ;
GRIESMER, JAMES H. ; LEVITAN, RICHARD E. ;
CONTRACT: NONR-3055(01)

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN NAVAL RESEARCH
LOGISTICS QUARTERLY V14 N4 P415-33 DEC 1967.
SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH IBM
WATSON RESEARCH CENTER, YORKTOWN HEIGHTS, N. Y.

DESCRIPTORS: (*GAME THEORY, ECONOMICS);
(*ECONOMICS, MATHEMATICAL MODELS), COSTS,
DECISION MAKING, MANAGEMENT PLANNING,
THEOREMS (U)
IDENTIFIERS: BIDDING, COMPETITION (U)

THE PAPER REPRESENTS A CONTINUATION OF THREE
PREVIOUS PAPERS IN THE STUDY OF COMPETITIVE BIDDING
PROCESSES. IT TREATS THE CASE WHERE A BIDDER'S
KNOWLEDGE OF HIS COMPETITOR'S COST IS GIVEN BY A
PROBABILITY DISTRIBUTION OVER A CERTAIN INTERVAL.
THE RESULTS OBTAINED EXTEND THE WORK OF VICKREY
TO THE CASE WHERE THE COST INTERVALS ARE NOT
NECESSARILY SYMMETRIC. (U)

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DEC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 410 14/1 5/1 5/9
RAND CORP SANTA MONICA CALIF
SYSTEMS ANALYSIS AND THE CERTIFIED PUBLIC
ACCOUNTANT,
DEC 67 19P TENZER, A. J. :
REPT. NO. P-3739

(U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION AT THE
GRADUATE STUDY CONFERENCE, 1967 SPONSORED BY THE
CALIFORNIA CPA FOUNDATION FOR EDUCATION AND
RESEARCH HELD AT STANFORD UNIVERSITY, STANFORD
CALIFORNIA IN AUGUST 1967.

DESCRIPTORS: (*COST EFFECTIVENESS, *MANAGEMENT
PLANNING), DECISION MAKING,
MODELS(SIMULATIONS), SYSTEMS ENGINEERING,
PERSONNEL

(U)

THE COST-EFFECTIVENESS ASPECTS OF THE SYSTEMS
ANALYSIS APPROACH ARE ILLUSTRATED THROUGH TWO
EXAMPLES. AN ATTEMPT IS MADE TO DETERMINE THE ROLE
OF THE ACCOUNTANT IN THE FUTURE.

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 411 5/1 14/1
RAND CORP SANTA MONICA CALIF
REVIEW OF 'SYSTEMS ENGINEERING METHODS' BY HAROLD
CHESTNUT, (U)
DEC 67 4P BLUM, F. H. ;
REPT. NO. P-3754

UNCLASSIFIED REPORT

DESCRIPTORS: (*SYSTEMS ENGINEERING, *MANAGEMENT
ENGINEERING), COST EFFECTIVENESS, DESIGN,
DECISION MAKING, RELIABILITY, REVIEWS (U)

THE BOOK BEING REVIEWED COVERS (1) THE
ENVIRONMENT FOR SYSTEMS ENGINEERING, (2) SYSTEM
ORGANIZATION, SCHEDULING, AND RECORD-KEEPING, (3)
FORMULATING AND STRUCTURING THE SYSTEM, (4)
FACTORS FOR JUDGING THE VALUE OF A SYSTEM, (5)
COST-ESTIMATION AND COST-EFFECTIVENESS ANALYSIS,
(6) OPERATIONAL MEANINGS AND EFFECTS OF TIME, AND
PERT-TYPE NETWORK ANALYSIS, (7) RELIABILITY,
AND (8) FUTURE OPPORTUNITIES FOR SYSTEMS
ENGINEERING. IT IS BELIEVED THAT FEW SUBJECTS ARE
COVERED DEEPLY ENOUGH TO MAKE THE BOOK USEFUL AS A
TEXT OR SELF-STUDY GUIDE WITHOUT CONSIDERABLE
SUPPLEMENTARY READING. (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 414 22/2 9/3

AEROSPACE CORP EL SEGUNDO CALIF EL SEGUNDO TECHNICAL
OPERATIONS

A TECHNIQUE FOR ESTIMATING SPACE POWER SYSTEM
COSTS.

(U)

DESCRIPTIVE NOTE: REPT. FOR 4 JAN 66-4 SEP 67,

OCT 67 JOP FISH, J. G. I

REPT. NO. TR-0158(3515-01)-1

CONTRACT: F04695-67-C-0158

MONITOR: SAMSO TR-67-112

UNCLASSIFIED REPORT

DESCRIPTORS: (*POWER EQUIPMENT, COSTS),
(*SPACECRAFT, POWER EQUIPMENT), AUXILIARY
POWER PLANTS, SOLAR CELLS, NUCLEAR REACTORS,
THERMOELECTRICITY, THERMIONIC CONVERTERS,
DYNAMICS, RADIATORS, ISOTOPES, ELECTRICITY,
COST EFFECTIVENESS, SPACECRAFT COMPONENTS,
STATISTICAL ANALYSIS

(U)

A TECHNIQUE IS PRESENTED FOR ESTIMATING DEVELOPMENT
AND PROCUREMENT COSTS FOR SPACE POWER SUBSYSTEMS.
THE DATA EMPLOYED IN DERIVING THE COSTING
RELATIONSHIPS PRIMARILY STEM FROM THE 1966 DOD
SPACE POWER STUDY AND THE AEROSPACE
CORPORATION'S EXPERIENCE AND DATA SOURCES. THESE
SOURCES REPRESENT THE MOST CURRENT AND EXTENSIVE
SURVEY OF BOTH COSTS AND TECHNOLOGIES OF THE SPACE
POWER FIELD THAT EXIST TODAY. ENERGY SOURCES AND
POWER CONVERSION SCHEMES ARE ANALYZED SEPARATELY AND
JOINTLY IN FEASIBLE COMBINATIONS OF POWER SYSTEMS
APPLICABLE TO FUTURE SPACE MISSIONS. COST-SCALING
FACTORS ARE PROVIDED FOR INTEGRATING EACH TYPE OF
POWER SUBSYSTEM INTO A PAYLOAD. ESTIMATED
PROJECTIONS OF SPACE POWER SUBSYSTEM COSTS FOR
FIFTEEN YEARS INTO THE FUTURE ARE ALSO PROVIDED.
DUE TO THE VAST UNCERTAINTY INVOLVED IN ESTIMATING
FUTURE SYSTEM COSTS, ALL PERTINENT DETAILS OF THE
ESTIMATING PROCEDURE ARE GIVEN SO THAT THE TECHNIQUE
CAN BE READILY ALTERED BY REPLACING ANY OF THE
PARAMETERS THAT APPEAR QUESTIONABLE. (AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 525 9/5 9/2
MASSACHUSETTS INST OF TECH CAMBRIDGE RESEARCH LAB OF
ELECTRONICS
A PROGRAM FOR ON-LINE ANALYSIS OF NONLINEAR
ELECTRONIC CIRCUITS, (U)
67 6P KATZENELSON, JACOB ;
EVANS, DAVID S. ; LEE, HARRY B. ;
CONTRACT: DA-36-039-AMC-03200(E), NSG-496
PROJ: DSR-6152, DSR-9442

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN IEEE INTERNATIONAL
CONVENTION RECORD PT. 5 PA9-94 1967.
SUPPLEMENTARY NOTE: RESEARCH SUPPORTED IN PART BY AIR
FORCE, ARPA, AND NONR.

DESCRIPTORS: (*ELECTRICAL NETWORKS, ANALYSIS),
DATA PROCESSING SYSTEMS, TIME SHARING, COSTS,
NONLINEAR SYSTEMS, REMOTE CONTROL SYSTEMS,
PROGRAMMING (COMPUTERS), DISPLAY SYSTEMS,
INPUT-OUTPUT DEVICES (U)
IDENTIFIERS: COMPATIBLE TIME-SHARING SYSTEM, ON-
LINE SYSTEMS, AEDNET, BATCH PROCESSING (U)

USERS HAVE FOUND THAT AEDNET PROGRAM TO BE
ATTRACTIVE BECAUSE OF THE EASE WITH WHICH IT CAN BE
USED, THE SPEED OF RESPONSE, AND THE FACT THAT A USER
NEED NOT SPECIFY THE COURSE OF HIS ANALYSIS AT THE
OUTSET. THE COST OF TERMINAL HARDWARE AND PROGRAM
DEVELOPMENT PRESENTLY IS HIGH. HOWEVER, COSTS
SHOULD BE GREATLY REDUCED WHEN ON-LINE COMPUTATIONAL
FACILITIES BECOME COMMERCIALY AVAILABLE AND USERS
COOPERATE IN PROGRAM DEVELOPMENT. THUS IT APPEARS
LIKELY THAT ON-LINE CIRCUIT ANALYSIS PROGRAMS WILL
FIND EXTENSIVE USE IN BOTH INDUSTRY AND EDUCATION.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-653 680 12/2
BOEING SCIENTIFIC RESEARCH LABS SEATTLE WASH MATHEMATICS
RESEARCH LAB
ON A BRANCH-AND-BOUND METHOD FOR SEPARABLE CONCAVE
PROGRAMS. (U)
SEP 67 21P WALKUP, D. W. ;
REPT. NO. D1-82-0670, MATHEMATICAL NOTE-527

UNCLASSIFIED REPORT

DESCRIPTORS: (*MATHEMATICAL PROGRAMMING, PROBLEM
SOLVING), LINEAR PROGRAMMING, ALGORITHMS,
OPTIMIZATION, COSTS, SET THEORY, INEQUALITIES,
THEOREMS (U)
IDENTIFIERS: SEPARABLE CONCAVE PROGRAMS, FIXED
CHARGE PROBLEM (U)

A SEPARABLE CONCAVE PROGRAM IS DEFINED TO BE ANY
PROGRAM OF THE FORM: MINIMIZE $Z(x)$ SUBJECT
TO x IN K , WHERE K IS ANY SUBSET OF N -SPACE AND
 $Z(x)$ IS A SEPARABLE CONCAVE FUNCTION, I.E. CAN BE
WRITTEN AS A SUM OF N CONCAVE FUNCTIONS EACH OF WHICH
DEPENDS ON ONLY ONE OF THE COMPONENTS OF THE VECTOR
 x . (A FAMILIAR SPECIAL CASE IS THE SO-CALLED FIXED
CHARGE LINEAR PROGRAM.) IT IS SHOWN HOW A BRANCH-
AND-BOUND ALGORITHM FOR A SEPARABLE CONCAVE PROGRAM
CAN ALWAYS BE OBTAINED IF THE RELATED PROGRAM OF
MINIMIZING A LINEAR FUNCTION OVER K CAN BE
PERFORMED EFFICIENTLY. A SPECIAL CASE IS
CONSIDERED IN WHICH K IS A VERY LARGE DISCRETE SET
BUT CAN BE DESCRIBED AS THE VECTOR SUM OF SMALLER
SETS. THE BRANCH-AND-BOUND ALGORITHM FOR THIS
SPECIAL CASE HAS BEEN PROGRAMMED AND APPLIED TO A
PROBLEM OF SELECTING A MINIMUM COST FLEET OF SPACE
VEHICLES. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 732 14/1 17/9
RAND CORP SANTA MONICA CALIF
AN ANALYSIS OF COST VERSUS PERFORMANCE RELATIONSHIPS
FOR PHASED ARRAY RADARS, (U)
NOV 67 87P RONDINELLI, L. A. J
REPT. NO. RM-5380-PR
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

DESCRIPTORS: (*RADAR, PHASED ARRAYS), (*COST
EFFECTIVENESS, RADAR), COSTS, SEARCH RADAR,
OPTIMIZATION, DESIGN (U)
IDENTIFIERS: PHASED ARRAY RADAR (U)

COST ESTIMATING RELATIONSHIPS BETWEEN THE
PERFORMANCE REQUIREMENTS OF PHASED ARRAY RADARS AND
THEIR HARDWARE AND INSTALLATION COST ARE DEVELOPED
FOR BOTH THE SEARCH AND TRACKING FUNCTIONS.
APPROPRIATE PERFORMANCE PARAMETERS FOR EACH
FUNCTION ARE DERIVED FROM SYSTEM OPERATIONAL
REQUIREMENTS, AND LAGRANGE MULTIPLIERS ARE USED TO
OBTAIN THE OPTIMUM DESIGN FORMULAS AND MINIMUM-COST
EQUATIONS. RESULTS OF SEVERAL PHASED ARRAY COST
EXAMPLES ARE ANALYZED TO TEST THE SENSITIVITY OF THE
COST ESTIMATES TO VARIATIONS IN REQUIRED SYSTEM
PERFORMANCE AND IN THE COST COEFFICIENTS OF THE COST
EQUATIONS. THE USE OF HIGHER POWER MODULES AT
LOWER COST PER WATT RESULTS IN LESS EXPENSIVE SEARCH
ARRAYS. FOR TRACKING ARRAY DESIGNS, THE SITUATION
IS REVERSED. BY A COMPROMISE DESIGN, THE SAME
ARRAY CAN BE USED FOR BOTH FUNCTIONS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 795 1/3 17/7
SYLVANIA ELECTRONIC SYSTEMS-CENTRAL WILLIAMSVILLE N Y
VALUE ENGINEERING QUARTERLY REPORT FOR LIGHT
OBSERVATION HELICOPTER AVIONICS PACKAGE. (U)
DESCRIPTIVE NOTE: QUARTERLY REPT. NO. 5, 22 JUL-21 OCT
67.
NGV 67 8P ALLIS, JAMES B. ;
SRNIUK, WALTER ;
CONTRACT: DA-28-043-AMC-01943(E)
MONITOR: ECOM 01943-6

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-659 799.

DESCRIPTORS: (*HELICOPTERS, AIRCRAFT
EQUIPMENT), (*AIRCRAFT EQUIPMENT, *VALUE
ENGINEERING), MANAGEMENT PLANNING, COSTS,
RADIO NAVIGATION, MANPOWER, TRAINING (U)
IDENTIFIERS: AVIONICS, AN/ARN-89 (U)

THE REPORT HIGHLIGHTS ACCOMPLISHMENTS, FUTURE
PLANS, PROBLEMS EXPERIENCED AND ANTICIPATED, AND
PLANS FOR RESOLUTION OF PROBLEMS, IF ANY. THE
REPORT PROVIDES A MEANS OF MEASURING SYLVANIA'S
ADHERENCES TO AND COMPLIANCE WITH THE SYLVANIA
VALUE ENGINEERING DESIGN PLANS, AS SUBMITTED
TO ECOM. THE V.E. PROGRAM EFFORT APPLIED BY
EMI-COSSOR, SUBCONTRACTOR FOR THE ADF SET
AN/ARN-89, WAS MONITORED AND EVALUATED DURING
AUGUST. SYLVANIA V.E. QUARTERLY REPORT
NO. 5 WAS APPROVED BY ECOM AND DISTRIBUTED PER
THE ECOM DISTRIBUTION LIST. INHERENT V.E.
CHANGES TO DATE HAVE RESULTED IN ESTIMATED COST
AVOIDANCES OF \$6,034,603. TEN (10)
SYLVANIANS ARE ENROLLED UNDER COMPANY SPONSORSHIP
IN THE CREATIVE VALUE ENGINEERING COURSE
OFFERED BY THE STATE UNIVERSITY OF NEW YORK
AT BUFFALO. TEAM EFFORT IS BEING APPLIED TO A
LOHAP WORK PROJECT AS PART OF THEIR CURRICULUM.
THE COST MODEL WAS UPDATED DURING THIS PERIOD.
COMMODITY PRICES WERE RE-EVALUATED. VALUE
ANALYSIS EFFORT WITH SUPPLIERS WAS ACCELERATED,
PARTICULARLY IN THE AREA OF MECHANICAL ITEMS.
(AUTHOR)

(U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-563 825 12/2

RESEARCH ANALYSIS CORP MCLEAN VA

A BRANCH-AND-BOUND ALGORITHM FOR MULTILEVEL FIXED-COST PROBLEMS. (U)

DESCRIPTIVE NOTE: TECHNICAL PAPER,

OCT 67 24P JONES, ARNOLD P. ;

SOLAND, RICHARD M. ;

REPT. NO. RAC-TP-285

CONTRACT: DA-44-188-ARO-1

PROJ: DA-077.115

UNCLASSIFIED REPORT

DESCRIPTORS: (*MATHEMATICAL PROGRAMMING,
*ALGORITHMS), COSTS, PROBLEM SOLVING,
OPTIMIZATION, FLOW CHARTING, CONVEX SETS,
PROGRAMMING(COMPUTERS), INEQUALITIES (U)

MULTILEVEL FIXED-COST PROBLEMS ARE MATHEMATICAL OPTIMIZATION PROBLEMS IN WHICH THE SEPARABLE PORTION OF THE OBJECTIVE FUNCTION IS THE SUM OF PIECEWISE CONTINUOUS FUNCTIONS OF A SINGLE VARIABLE. THIS PAPER DESCRIBES A BRANCH-AND-BOUND ALGORITHM THAT WILL FIND A GLOBAL SOLUTION TO THIS TYPE OF PROBLEM. THE ALGORITHM HAS THE FEATURE THAT A GOOD FEASIBLE SOLUTION IS GENERATED AT THE START. MOREOVER, AT EACH STEP OF THE ALGORITHM AN ADDITIONAL FEASIBLE SOLUTION MAY BE GENERATED FOR COMPARISON WITH THE BEST SOLUTION FOUND PREVIOUSLY. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-663 970 5/1 12/1 14/1
CASE-WESTERN RESERVE UNIV CLEVELAND OHIO
ADVANCED MATERIAL SYSTEMS PLANNING, (U)
JAN 67 26P DEAN, BURTON V. ;
HAUSER, LAWRENCE E. I
CONTRACT: DAHC04-67-C-0022, NONR-1141(19)
PROJ: DA-1A750203M613
MONITOR: AROD 7146:2

UNCLASSIFIED REPORT

AVAILABILITY: PUBLISHED IN IEEE TRANSACTIONS ON
ENGINEERING MANAGEMENT VEM-14 N1 P21-43 MAR 1967.
SUPPLEMENTARY NOTE: PRESENTED AT THE MILITARY
OPERATIONS RESEARCH SYMPOSIUM (MORS) (13TH),
FORT BRAGG, N. C., OCT 66.

DESCRIPTORS: (*MANAGEMENT ENGINEERING,
*OPERATIONS RESEARCH), MATHEMATICAL MODELS,
SYSTEMS ENGINEERING, COST EFFECTIVENESS,
COMPUTER PROGRAMS, DECISION MAKING, PROBLEM
SOLVING, PROBABILITY (U)

THE REPORT IS CONCERNED WITH THE DEVELOPMENT OF
MATHEMATICAL MODELS, COMPUTER PROGRAMS, AND DATA
REQUIREMENTS TO CONDUCT DEVELOPMENT SYSTEMS PLANNING
IN LARGE RESEARCH AND DEVELOPMENT ORGANIZATIONS.
THE SPECIFIC PLANNING DECISION PROBLEMS ARE (1)
THE SELECTION OF TECHNICAL ALTERNATIVES, (2) THE
FUNDING OF SYSTEM COMPONENTS, AND (3) THE FUNDING
OF SYSTEMS. COST-EFFECTIVENESS RELATIONSHIPS ARE
DEVELOPED. A MANUAL IS PRESENTED FOR USE IN THE
TRAINING OF PLANNERS IN THE UTILIZATION OF COMPUTER
RESULTS. TESTS WERE CONDUCTED UTILIZING SIMULATED
COST, RISK, AND VALUE DATA. (AUTHOR) (U)

UNCLASSIFIED

DLC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 039 1545 972
RAND CORP SANTA MONICA CALIF
COMBAT -- A SERIES OF ON-LINE COMPUTER PROGRAMS FOR
FORCE COST ANALYSIS: (U)
DEC 67 28P TENG, C. TENZER, A. J.
REPT- NO. P-3646

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PRESENTED AT THE 1967 COMPUTER
SUMMER WORKSHOP SPONSORED BY THE INDUSTRIAL COLLEGE
OF THE ARMED FORCES AND THE UNITED STATES MILITARY
ACADEMY, WEST POINT, N. Y., JUL 20 1967.

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, ARMED
FORCES OPERATIONS), (*ARMED FORCES OPERATIONS,
COST EFFECTIVENESS), COSTS, COMPUTER PROGRAMS,
DATA PROCESSING SYSTEMS, MILITARY REQUIREMENTS,
DECISION MAKING, EFFECTIVENESS, MATHEMATICAL
MODELS, ITERATIVE METHODS (U)
IDENTIFIERS: ON-LINE SYSTEMS, COMBAT(COST
ORIENTED MODELS BUILT TO ANALYZE TRADE-
OFFS), TRADE OFFS (U)

THE REPORT DESCRIBES A NEW FORCE STRUCTURE COST-
ESTIMATING MODEL CALLED COMBAT. IT IS PROGRAMMED
FOR AN ON-LINE COMPUTER SYSTEM, AND DESIGNED WITH THE
WAR GAMING ACTIVITY IN MIND. COMBAT STANDS FOR
COST ORIENTED MODELS BUILT TO ANALYZE TRADE-OFFS. (U)

UNCLASSIFIED

UNCLASSIFIED

DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000125

AD-668 324 15/5 5/1 14
RAND CORP SANTA MONICA CALIF
A MANAGEMENT PERSPECTIVE ON METRIC-MULTI-ECHELON
TECHNIQUE FOR RECOVERABLE ITEM CONTROL. (U)
JAN 68 27P SHERBROOKE, CRAIG C. F
REPT. NO. RM-5078/1-PR
CONTRACT: F44620-67-C-0045

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-645 684.

DESCRIPTORS: (*INVENTORY CONTROL, MATHEMATICAL
MODELS), (*LOGISTICS, MANAGEMENT CONTROL
SYSTEMS), SPARE PARTS, COST EFFECTIVENESS, AIR
FORCE BUDGETS, STOCK LEVEL CONTROL, DECISION
MAKING, SUPPLY DEPOTS, STANDARDIZATION (U)
IDENTIFIERS: METRIC (U)

A SHORTER, INFORMAL, NONTECHNICAL VERSION OF AD-
668 684, DESCRIBES THE MATHEMATICAL MODEL OF A BASE-
DEPOT SUPPLY SYSTEM FOR RECOVERABLE ITEMS OF THE KIND
THAT REPRESENT ALMOST 80 PERCENT OF THE AIR
FORCE'S INVESTMENT IN SPARES. METRIC-GENERATED
COST-EFFECTIVENESS CURVES SHOULD BE OF GREAT HELP IN
DEFENDING BUDGET REQUESTS. THE USE OF MORE
PARAMETERS, INCLUDING UNIT COST, AND A MORE
SOPHISTICATED MEASURE OF DEMAND PREDICTION FOR LOW-
DEMAND ITEMS SHOULD PROVIDE BETTER STOCKAGE
DECISIONS. THE USE OF ONE STANDARD PROCEDURE FOR
BOTH REQUIREMENTS AND DISTRIBUTION SHOULD HELP IN
SOLVING MANY OF THE PRESSING INTERFACE PROBLEMS.
(AUTHOR) (U)

UNCLASSIFIED

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 456 12/2 13/8 5/1
STANFORD UNIV CALIF DEPT OF STATISTICS
A MARKOV DECISION PROCESS WITH COSTLY
INSPECTION.

(U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
JAN 68 51P TAFEEN, STEPHEN M. ;
REPT. NO. TR-107
CONTRACT: NONR-225(53)
PROJ: NR-142-002

UNCLASSIFIED REPORT

DESCRIPTORS: (*DECISION THEORY, OPTIMIZATION),
(*PRODUCTION CONTROL, OPTIMIZATION), NUMERICAL
ANALYSIS, MANAGEMENT PLANNING, DECISION MAKING,
MAINTENANCE, STATISTICAL PROCESSES,
APPROXIMATION(MATHEMATICS), BANACH SPACE,
CONTROL, COSTS, LINEAR PROGRAMMING, OPERATIONS
RESEARCH, PROBABILITY, SET THEORY, THEOREMS
IDENTIFIERS: MARKOV DECISION PROCESSES, OPTIMAL
CONTROL THEORY

(U)

(U)

A SIMPLE PRODUCTION PROCESS WHICH HAS ONLY TWO
STATES IN WHICH PRODUCTION IS POSSIBLE, AND TWO OTHER
STATES IN WHICH NO PRODUCTION CAN TAKE PLACE IS
STUDIED. THE ITEMS PRODUCED ARE CLASSIFIED AS
EITHER ACCEPTABLE OR DEFECTIVE. COSTS ARE
ASSOCIATED WITH PRODUCING DEFECTIVE ITEMS, INSPECTING
ITEMS AND REPAIRING THE PROCESS. IMMEDIATELY AFTER
REPAIR, AND ONLY THEN, IS THE PROCESS STATE KNOWN.
AN OPTIMAL CONTROL RULE, WHICH TELLS WHEN TO
INSPECT ITEMS AND WHEN TO REPAIR THE MACHINERY, BASED
ON THE PAST HISTORY OF THE PROCESS IS SOUGHT. THE
PROBLEM IN WHICH INSPECTION COSTS ARE NIL, AND HENCE
100% INSPECTION IS USED, HAS BEEN STUDIED BY
GIRSHICK AND RUBIN. WHEN THE PROCESS SATISFIES
CERTAIN CONDITIONS, AN OPTIMAL CONTROL RULE IS
CHARACTERIZED, AND A METHOD FOR OBTAINING THE RULE IS
PRESENTED. SEVERAL OTHER METHODS ARE GIVEN WHICH
PRODUCE ALMOST OPTIMAL SOLUTIONS WHEN THESE
CONDITIONS ARE VIOLATED. (AUTHOR)

(U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 457 12/2 15/5 5/1
STANFORD UNIV CALIF DEPT OF STATISTICS
MULTIPRODUCT INVENTORY MODELS WITH SET-UP. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
JAN 68 141P WHEELER, ALAN ;
REPT. NO. TR-106
CONTRACT: NONR-225(53)
PROJ: NR-042-002

UNCLASSIFIED REPORT

DESCRIPTORS: (*INVENTORY CONTROL,
OPTIMIZATION), (*DECISION THEORY, INVENTORY
CONTROL), MANAGEMENT PLANNING, DECISION MAKING,
OPERATIONS RESEARCH, MATHEMATICAL MODELS,
STOCHASTIC PROCESSES, RANDOM VARIABLES,
NUMERICAL METHODS AND PROCEDURES, DYNAMIC
PROGRAMMING, DISTRIBUTION FUNCTIONS, SPECIAL
FUNCTIONS(MATHEMATICAL), COSTS, THEOREMS (U)
IDENTIFIERS: SET-UP COSTS (U)

THE REPORT PRESENTS A MATHEMATICAL MODEL OF AN INVENTORY PROBLEM FREQUENTLY ENCOUNTERED IN PRACTICE AND STUDIES THE NATURE OF THE BEST ORDERING POLICY TO USE FOR IT. AT THE BEGINNING OF EACH OF A SEQUENCE OF PERIODS AN INVENTORY MANAGER MUST DECIDE WHETHER OR NOT TO PLACE AN ORDER AND, IF SO, HOW MUCH OF WHICH PRODUCTS. HIS ORDER IS FILLED IMMEDIATELY AND THEN DURING THE PERIOD A RANDOM DEMAND DRAWS UPON HIS INVENTORY UNTIL AT THE BEGINNING OF THE NEXT PERIOD HE MAKES ANOTHER ORDERING DECISION. WHEN HE ORDERS, A UNIT COST FOR EACH ITEM AND A SET-UP COST FOR THE ORDER ARE CHARGED. THE SET-UP COST IS THUS INDEPENDENT OF THE SIZE OF THE ORDER AND MAY REPRESENT THE PRICE OF SUCH THINGS AS PAPERWORK, TOOLING UP FOR A PRODUCTION RUN, OR CONSTRUCTION OF FACILITIES. ON THE BASIS OF THE INVENTORY LEVELS AT THE END OF A PERIOD AN INVENTORY COST IS CHARGED. THIS REPRESENTS A HOLDING COST FOR THOSE PRODUCTS STILL IN STOCK AND A PENALTY COST FOR THOSE WHOSE SUPPLY IS DEPLETED. SINCE THE ACTUAL DEMAND IS NOT KNOWN BUT RANDOM, THE INVENTORY MANAGER DOES NOT HAVE FULL CONTROL OVER THE COSTS HE WILL BE CHARGED. IT IS ASSUMED, HOWEVER, THAT HE CAN OBTAIN HIS EXPECTED COSTS BY AVERAGING OVER THE RANDOM DEMANDS, AND HIS AIM THEN IS TO USE AN ORDERING POLICY WHICH MINIMIZES HIS EXPECTED COSTS. AS THE MATHEMATICAL INVENTORY LITERATURE IS QUITE LARGE IT IS IMPORTANT TO EMPHASIZE FOUR DISTINCTIVE FEATURES OF THE MODEL IN THIS REPORT: PERIODIC REVIEW, RANDOM DEMAND, SET-UP COSTS, AND INTERDEPENDENCE OF PRODUCT COSTS. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 459 12/2 13/8 5/1
STANFORD UNIV CALIF DEPT OF STATISTICS
ARBITRARY STATE MARKOVIAN DECISION PROCESSES. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
 JAN 68 16P ROSS, SHELDON M. ;
REPT. NO. TR-105
CONTRACT: NONR-225(53)
PROJ: NR-042-002

UNCLASSIFIED REPORT

DESCRIPTORS: (*DECISION THEORY, OPTIMIZATION),
 (*STATISTICAL PROCESSES, MANAGEMENT PLANNING),
 COSTS, OBSOLESCENCE THEORY, SET THEORY,
 SPECIAL FUNCTIONS(MATHEMATICAL), DECISION
 MAKING, OPERATIONS RESEARCH, THEOREMS (U)
IDENTIFIERS: MARKOV DECISION PROCESSES (U)

ARBITRARY STATE, FINITE ACTION MARKOVIAN DECISION
PROCESSES ARE STUDIED WITH RESPECT TO THE (LONG-
RUN) AVERAGE COST CRITERION. THE PROBLEM IS
TREATED BOTH AS A LIMITING CASE OF THE DISCOUNTED
COST PROBLEM AND ALSO AS A LIMIT OF THE N-STAGE
PROBLEM. SUFFICIENT CONDITIONS ARE GIVEN FOR THE
EXISTENCE OF AN OPTIMAL RULE AND FOR IT TO BE OF
STATIONARY DETERMINISTIC TYPE. (AUTHOR) (U)

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DOC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AU-664 546 13/5
AEROSPACE CORP EL SEGUNDO CALIF LAB OPERATIONS
CRITERIA FOR FASTENER SYSTEM DESIGN. (U)
OCT 67 29P RAYMOND, L. KENDALL, L. G. ;
STANLEY, J. K. ;
REPT. NO. TR-0158(3250-10)-2
CONTRACT: F04595-67-C-0158
MONITOR: SAMS0 TR-67-94

UNCLASSIFIED REPORT

DESCRIPTORS: (*MECHANICAL FASTENERS, SYSTEMS
ENGINEERING); PERFORMANCE(ENGINEERING);
DESIGN; ANALYSIS; MATERIALS; HEAT TREATMENT;
LUBRICATION; COATINGS; CORROSION INHIBITION;
TORQUE; COMPATIBILITY; COST EFFECTIVENESS;
FRACTURE(MECHANICS); CORROSION (U)

CRITERIA FOR FASTENER SYSTEM DESIGN ARE SUGGESTED.
THE APPLICATION OF SYSTEM ANALYSIS TO MATED PARTS
HELD TOGETHER WITH A HIGH-STRENGTH FASTENER IS
DISCUSSED. THE TORQUE-TENSION RELATIONSHIP OF EACH
SYSTEM SHOULD BE MEASURED, AND FRACTURE MECHANICS
SHOULD BE USED TO INDEX ENVIRONMENTAL COMPATIBILITY.
THIS APPROACH CAN ALSO BE USED TO PRODUCE A COST-
EFFECTIVE FASTENER SYSTEM DESIGN. (AUTHOR) (U)

UNCLASSIFIED

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 617 13/10 14/1
TRAVELERS RESEARCH CENTER INC HARTFORD CONN
A STUDY OF THE FEASIBILITY OF NATIONAL DATA BUOY
SYSTEMS. VOLUME 1, PART 1. NATIONAL REQUIREMENTS FOR
MARINE METEOROLOGICAL AND OCEANOGRAPHIC DATA. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
APR 67 271P AUBERT, EUGENE J. ;
REPT. NO. TRC-7485-253
CONTRACT: TCG-16790-A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 3, AD-664 621.

DESCRIPTORS: (*BUOYS, NETWORKS); (*MARINE
ENGINEERING, BUOYS), COST EFFECTIVENESS,
OCEANOLOGY, MARINE METEOROLOGY, OCEANOGRAPHIC
DATA, COAST GUARD, OCEAN BOTTOM, GREAT
LAKES, METEOROLOGICAL PARAMETERS, OCEANS,
FEASIBILITY STUDIES, NATIONAL DEFENSE, SENSORS,
WEATHER FORECASTING (U)
IDENTIFIERS: GLOBAL BUOY SYSTEM (U)

THE STUDY WAS INITIATED BY THE PANEL ON OCEAN
ENGINEERING OF THE INTERAGENCY COMMITTEE ON
OCEANOGRAPHY (ICC) (NOW THE COMMITTEE ON
MARINE RESEARCH, EDUCATION, AND FACILITIES OF
THE NATIONAL COUNCIL ON MARINE RESOURCES AND
ENGINEERING DEVELOPMENT). IT WAS UNDERTAKEN
UNDER A MULTIAGENCY-FUNDED CONTRACT. ITS PURPOSE
WAS TO DETERMINE THE NATIONAL REQUIREMENTS OVER THE
NEXT FIFTEEN YEARS FOR MARINE METEOROLOGICAL AND
OCEANOGRAPHIC DATA THAT CAN, ON A COST-EFFECTIVE
BASIS, BEST BE ACQUIRED BY BUOY SYSTEMS, AND TO
DEVELOP PLANS FOR MEETING THESE DATA REQUIREMENTS.
(AUTHOR) (U)

UNCLASSIFIED

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D. C. REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 618 13/10 14/1
TRAVELERS RESEARCH CENTER INC HARTFORD CONN
A STUDY OF THE FEASIBILITY OF NATIONAL DATA BUOY
SYSTEMS. VOLUME 1: PART 2. BUOY AND BUOY COMPONENTS
DATA COMPILATION AND ANALYSIS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
JUL 67 1984 WALDEN, ROBERT G. ;
AUBERT, EUGENE J. ;
REPT. NO. TRC-7485-256
CONTRACT: TCG-16790-A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, PART 1, AD-
664 617.

DESCRIPTORS: (*BUOYS, NETWORKS); (*MARINE
ENGINEERING, BUOYS). COST EFFECTIVENESS,
OCEANOLOGY, MARINE METEOROLOGY, OCEANOGRAPHIC
DATA, COAST GUARD, RELIABILITY, MOORING,
LIFE EXPECTANCY, SENSORS, OPERATION,
FEASIBILITY STUDIES, NATIONAL DEFENSE, DATA
PROCESSING SYSTEMS, DEPLOYMENT, CLASSIFICATION (U)
IDENTIFIERS: GLOBAL BUOY SYSTEM (U)

THE STUDY WAS INITIATED BY THE PANEL ON OCEAN
ENGINEERING OF THE INTERAGENCY COMMITTEE ON
OCEANOGRAPHY (ILC) (NOW THE COMMITTEE ON
MARINE RESEARCH, EDUCATION, AND FACILITIES OF
THE NATIONAL COUNCIL ON MARINE RESOURCES AND
ENGINEERING DEVELOPMENT). IT WAS UNDERTAKEN
UNDER A MULTIAGENCY-FUNDED CONTRACT. ITS PURPOSE
WAS TO DETERMINE THE NATIONAL REQUIREMENTS OVER THE
NEXT FIFTEEN YEARS FOR MARINE METEOROLOGICAL AND
OCEANOGRAPHIC DATA THAT CAN, ON A COST-EFFECTIVE
BASIS, BEST BE ACQUIRED BY BUOY SYSTEMS, AND TO
DEVELOP PLANS FOR MEETING THESE DATA REQUIREMENTS.
(AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 618 13/10 14/1
TRAVELERS RESEARCH CENTER INC HARTFORD CONN
A STUDY OF THE FEASIBILITY OF NATIONAL DATA BUOY
SYSTEMS. VOLUME 1, PART 3. A COST EFFECTIVENESS
EVALUATION OF BUOY AND NON-BUOY SYSTEMS TO MEET THE
NATIONAL REQUIREMENTS FOR MARINE DATA. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
SEP 67 228P JENKINS, CARL F. ;
AUBERT, EUGENE J. ; CARUTH, W. R. BRIAN ;
CLEM, LEROY H. ; WALDEN, ROBERT G. ;
REPT. NO. TRC-7485-274
CONTRACT: TCG-16790-A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, PART 2, AD-
664 618.

DESCRIPTORS: (*BUOYS, NETWORKS); (*MARINE
ENGINEERING, BUOYS); COST EFFECTIVENESS,
OCEANOLOGY, MARINE METEOROLOGY, OCEANOGRAPHIC
DATA, COAST GUARD, RELIABILITY, OCEANOGRAPHIC
VESSELS, PROBABILITY, COSTS, FEASIBILITY
STUDIES, NATIONAL DEFENSE, SENSORS, DEPLOYMENT,
COMMUNICATION SYSTEMS, OCEANS (U)
IDENTIFIERS: GLOBAL BUOY SYSTEM (U)

THE STUDY WAS INITIATED BY THE PANEL ON OCEAN
ENGINEERING OF THE INTERAGENCY COMMITTEE ON
OCEANOGRAPHY (ICC) (NOW THE COMMITTEE ON
MARINE RESEARCH, EDUCATION, AND FACILITIES OF
THE NATIONAL COUNCIL ON MARINE RESOURCES AND
ENGINEERING DEVELOPMENT). IT WAS UNDERTAKEN
UNDER A MULTI-AGENCY-FUNDED CONTRACT. ITS PURPOSE
WAS TO DETERMINE THE NATIONAL REQUIREMENTS OVER THE
NEXT FIFTEEN YEARS FOR MARINE METEOROLOGICAL AND
OCEANOGRAPHIC DATA THAT CAN, ON A COST-EFFECTIVE
BASIS, BEST BE ACQUIRED BY BUOY SYSTEMS, AND TO
DEVELOP PLANS FOR MEETING THESE DATA REQUIREMENTS.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 620 13/10 14/1

TRAVELER'S RESEARCH CENTER INC HARTFORD CONN
A STUDY OF THE FEASIBILITY OF NATIONAL DATA BUOY
SYSTEMS. VOLUME 2. COST-BENEFITS FOR A NATIONAL
DATA BUOY SYSTEM: AN ESSAY. (U)

DESCRIPTIVE NOTE: FINAL REPT.,

OCT 67 134P NORTHROP, GAYLORD M. ;

CARUTH, W. R. BRIAN ; DAVIS, EARL L. ;

REED, LAWRENCE J. ; RUSSO, JOHN A. , JR. ;

REPT. NO. TRC 7485-280

CONTRACT: TCG-10790-A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, PART 3, AD-
664 615

DESCRIPTORS: (*BUOYS, NETWORKS), (*MARINE
ENGINEERING, BUOYS), COST EFFECTIVENESS,
OCEANOLOGY, MARINE METEOROLOGY, OCEANOGRAPHIC
DATA, COAST GUARD, DECISION MAKING, NATIONAL
DEFENSE, SENSORS, CLIMATOLOGY, FEASIBILITY
STUDIES, DATA TRANSMISSION SYSTEMS, NATIONAL
DEFENSE, DEPLOYMENT (U)

IDENTIFIERS: GLOBAL BUOY SYSTEM (U)

THE STUDY WAS INITIATED BY THE PANEL ON OCEAN
ENGINEERING OF THE INTERAGENCY COMMITTEE ON
OCEANOGRAPHY (ICC) (NOW THE COMMITTEE ON
MARINE RESEARCH, EDUCATION, AND FACILITIES OF
THE NATIONAL COUNCIL ON MARINE RESOURCES AND
ENGINEERING DEVELOPMENT). IT WAS UNDERTAKEN
UNDER A MULTIAGENCY-FUNDED CONTRACT. ITS PURPOSE
WAS TO DETERMINE THE NATIONAL REQUIREMENTS OVER THE
NEXT FIFTEEN YEARS FOR MARINE METEOROLOGICAL AND
OCEANOGRAPHIC DATA THAT CAN, ON A COST-EFFECTIVE
BASIS, BEST BE ACQUIRED BY BUOY SYSTEMS, AND TO
DEVELOP PLANS FOR MEETING THESE DATA REQUIREMENTS.
(AUTHOR) (U)

UNCLASSIFIED

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 621 13/10 14/1
TRAVELERS RESEARCH CENTER INC HARTFORD CONN
A STUDY OF THE FEASIBILITY OF NATIONAL DATA BUOY
SYSTEMS. VOLUME 3. TECHNICAL DEVELOPMENT PLANS FOR
THE NATIONAL DATA BUOY SYSTEM. (U)
DESCRIPTIVE NOTE: FINAL REPT,
OCT 67 111P AUBERT, EUGENE J. ;
BOSTICK, ARTHUR W. ; CLEM, LEROY H. ;
WALDEN, ROBERT G. ;
REPT. NO. TRC-7485-270
CONTRACT: DLG-16790-A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2, AD-664 620.

DESCRIPTORS: (*BUOYS, NETWORKS), (*MARINE
ENGINEERING, BUOYS), COST EFFECT* NESS,
OCEANOLOGY, MARINE METEOROLOGY, OCEANOGRAPHIC
DATA, COAST GUARD, RELIABILITY,
MAINTAINABILITY, PERFORMANCE (ENGINEERING),
FEASIBILITY STUDIES, NATIONAL DEFENSE, DATA
TRANSMISSION SYSTEMS, DEPLOYMENT (U)
IDENTIFIERS: ORAL BUOY SYSTEM (U)

THE STUDY WAS INITIATED BY THE PANEL ON OCEAN
ENGINEERING OF THE INTERAGENCY COMMITTEE ON
OCEANOGRAPHY (ICC) (NOW THE COMMITTEE ON
MARINE RESEARCH, EDUCATION, AND FACILITIES OF
THE NATIONAL COUNCIL ON MARINE RESOURCES AND
ENGINEERING DEVELOPMENT). IT WAS UNDERTAKEN
UNDER A MULTIAGENCY-FUNDED CONTRACT. ITS PURPOSE
WAS TO DETERMINE THE NATIONAL REQUIREMENTS OVER THE
NEXT FIFTEEN YEARS FOR MARINE METEOROLOGICAL AND
OCEANOGRAPHIC DATA THAT CAN, ON A COST-EFFECTIVE
BASIS, BEST BE ACQUIRED BY BUOY SYSTEMS, AND TO
DEVELOP PLANS FOR MEETING THESE DATA REQUIREMENTS.
(AUTHOR) (U)

UNCLASSIFIED

UNCLASSIFIED

DOD REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 700 5/3 14/1
LOGISTICS MANAGEMENT INST WASHINGTON D C
DEFENSE INDUSTRY PROFIT REVIEW: VOLUME 1. (U)
NOV 67 76P
CONTRACT: SO-271
TASK: LMI-66-25

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2: AD-664 701.

DESCRIPTORS: (*MUNITIONS INDUSTRY, *ECONOMICS),
COSTS, COST EFFECTIVENESS, BUDGETS, COMMERCE,
CONTRACTS, MONEY, DEPARTMENT OF DEFENSE,
MANAGEMENT PLANNING, INDUSTRIES, REVIEWS,
STATISTICAL DATA (U)
IDENTIFIERS: PROFITS, INVESTMENT RETURNS, COST-
BENEFIT ANALYSIS (U)

CONTENTS: SUMMARY FINDINGS (COMPARISON OF
PROFIT ON DEFENSE BUSINESS WITH PROFIT ON COMMERCIAL
BUSINESS; ANALYSIS OF DEFENSE PROFITS, CAPITAL MARKET
ANALYSIS); PROFIT/CAPITAL INVESTMENT RATIOS AND
CAPITAL INVESTMENT TURNOVER; PROFIT/SALES RATIOS
(PROFIT BY TYPE OF BUSINESS (DEFENSE/
COMMERCIAL); PROFIT BY TYPE CONTRACT);
DEPARTMENT OF DEFENSE PROFIT REVIEW SYSTEM;
UNALLOWABLE AND NONRECOVERABLE COSTS; CAPITAL
MARKET ANALYSIS; DISCUSSIONS WITH DEFENSE INDUSTRY
(GENERAL; WHY DEFENSE BUSINESS PROFITABILITY IS
WHAT IT IS; WHAT DEFENSE PROFITS SHOULD BE; WHAT
CHANGES, IF ANY, SHOULD BE MADE IN DOD POLICIES
AND PRACTICES AS THEY AFFECT PROFIT; UNSOLICITED
COMMENTS OF DEFENSE INDUSTRY). (U)

UNCLASSIFIED

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 748 15/5 5/1 12/2 5/3
RESEARCH ANALYSIS CORP MCLEAN VA
COSTS OF OPERATION AND MAINTENANCE ACTIVITIES (ARMY):
TECHNIQUES FOR ANALYSIS AND ESTIMATION. (U)
DESCRIPTIVE NOTE: TECHNICAL PAPER,
JAN 68 85P PHILLIPS, JOHN G. ;
REPT. NO. RAC-TP-242-REV
CONTRACT: DA-44-188-ARO-1
PROJ: DA-007.106

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REVISION OF PAPER PUBLISHED APR
67.

DESCRIPTORS: (*ARMY OPERATIONS, *ADVANCED
PLANNING), (*ARMY BUDGETS, LOGISTICS),
MILITARY TRAINING, MILITARY REQUIREMENTS,
DECISION MAKING, OPERATIONS RESEARCH, MANAGEMENT
PLANNING, STOCK LEVEL CONTROL, MAINTENANCE,
COSTS, ECONOMICS, MONEY, MATHEMATICAL
PREDICTION, SUPPLY DEPOTS (U)
IDENTIFIERS: COST ANALYSIS, SENSITIVITY
ANALYSIS (U)

THE RESEARCH REPORTED IN THIS PAPER DEVELOPS A
METHODOLOGY FOR DETERMINING THE COST IMPACT OF THE
OPERATION AND MAINTENANCE, ARMY (OMA)
APPROPRIATION FOR THE ANALYSIS OF PROPOSED FORCE
CHANGES. THE METHODOLOGY IS BUILT AROUND THE
ARMY'S FINANCIAL ACCOUNTING SYSTEM AND RELIES
PRIMARILY ON ARMY BUDGET DATA. EACH ACCOUNT IS
CLASSIFIED AT A LEVEL OF ACTIVITY DETAIL THAT CAN BE
MATCHED WITH QUANTITIES, EITHER PHYSICAL OR MEASURED
IN DOLLARS, AND FOR WHICH THERE ARE DESCRIPTIONS OF
WHAT SPECIFIC OMA COSTS THE ACCOUNT INCLUDES.
CLASSIFICATION OF OMA ACTIVITIES AS TO TYPE OF
FORCE DEPENDENCY ENABLES THE COMPUTATION OF
COEFFICIENTS THAT RELATE SPECIFIC ACTIVITY COSTS TO
PHYSICAL MEASURES. A COMPLETE SET OF OMA COST-
ESTIMATING RELATIONS (CERS) EXCEPT FOR COSTS OF
TRAINING MILITARY OCCUPATIONAL SPECIALTIES
ILLUSTRATES HOW CERS CAN BE DEVELOPED FROM THE
ARMY'S FINANCIAL ACCOUNTING SYSTEM. (U)
(AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-064 702 1378 1272
BALLISTIC RESEARCH LABS ARDEN PROVING GROUND MD
DOUBLE SAMPLING FOR DESTRUCTIVE TESTING, (U)
DEC 67 41P JONAS, GEORGE H. ;
REPT. NO. BRL-1362
PROJ: RDT/E-1T014501A33E

UNCLASSIFIED REPORT

DESCRIPTORS: (*QUALITY CONTROL, *SAMPLING),
COSTS, APPROXIMATION MATHEMATICS), TEST
METHODS, PROBABILITY, ACCEPTABILITY, MANAGEMENT
PLANNING, PRODUCTION CONTROL, NUMERICAL ANALYSIS,
TABLES (U)
IDENTIFIERS: DESTRUCTIVE TESTING, DOUBLE
SAMPLING, DODGE-ROMIG SAMPLING TABLES (U)

EQUATIONS BY DODGE-ROMIG FOR DOUBLE SAMPLING
FOR NON-DESTRUCTIVE TESTING HAVE BEEN MODIFIED TO BE
USABLE FOR DESTRUCTIVE TESTING. CUMBERSOME
EXPRESSIONS HAVE BEEN REPLACED BY SUITABLE
APPROXIMATIONS SO CERTAIN MANIPULATIONS CAN BE MADE
TO FACILITATE THE CONSTRUCTION OF TABLES. THE
CONSUMER'S RISK IS SET EQUAL TO 0.10 AND IS
EVENLY SUBDIVIDED BETWEEN THE TWO SAMPLES AS IN THE
DODGE-ROMIG TABLES. THE TABLES ARE COMPRISED
OF SAMPLE SIZES, ACCEPTANCE NUMBERS AND LOT SIZES FOR
VARIOUS COMBINATIONS OF VALUES OF $\bar{X}$, $\bar{P}$, THE PROCESS
AVERAGE, P SUB T, THE LOT TOLERANCE FRACTION
DEFECTIVE, AND THE COST RATIOS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-664 825 14/1 15/5
RAND CORP SANTA MONICA CALIF
AN INTRODUCTION TO EQUIPMENT COST ESTIMATING, (U)
JAN. 68 149P LARGE, J. P. I
REPT. NO. RM-5470-SA
CONTRACT: DAHC15-67-C-0150

UNCLASSIFIED REPORT

DESCRIPTORS: (*ARMED FORCES SUPPLIES, COSTS),
(*COSTS, MATHEMATICAL PREDICTION), DEPARTMENT
OF DEFENSE, GUIDED MISSILES, AIRCRAFT,
SPACECRAFT, WEAPON SYSTEMS, COST EFFECTIVENESS,
STATISTICAL ANALYSIS, UNCERTAINTY, PROBABILITY (U)
IDENTIFIERS: COST ESTIMATING (U)

THE STUDY DISCUSSES THE FUNDAMENTAL PROBLEMS OF
ESTIMATING MAJOR EQUIPMENT COSTS AND SUGGESTS THAT
FOR MANY PURPOSES, PARTICULARLY FOR GOVERNMENT COST
ANALYSTS, A STATISTICAL APPROACH IS THE MOST
SUITABLE. THE KIND OF DATA REQUIRED AND THE
ADJUSTMENTS NEEDED TO MAKE THE DATA USEFUL ARE
DISCUSSED IN SOME DETAIL. THE USE OF REGRESSION
ANALYSIS IN DERIVING COST ESTIMATING RELATIONSHIPS IS
DESCRIBED, BUT IT IS EMPHASIZED THAT UNQUESTIONING
USE OF ESTIMATING RELATIONSHIPS OBTAINED IN THIS
MANNER CAN RESULT IN SERIOUS ERRORS. THE CONCEPTS
UNDERLYING THE COST-QUANTITY RELATIONSHIP GENERALLY
KNOWN AS THE LEARNING CURVE ARE PRESENTED ALONG WITH
INSTRUCTIONS FOR ITS USE. FINALLY, THE PROBLEM OF
UNCERTAINTY IN COST ESTIMATING IS DISCUSSED, AND A
FEW SUGGESTIONS FOR DEALING WITH THE PROBLEM ARE
INCLUDED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-365 029 12/2 13/8
NAVAL MISSILE CENTER POINT MUGU CALIF
A DECISION THEORY APPROACH TO ACCEPTANCE
TESTING, (U)
JAN 68 36P SIMMONS, E. D. WISLER, C.
L. I.
REPT. NO. NMC-TM-67-77
PROJ: L-2492

UNCLASSIFIED REPORT

DESCRIPTORS: (*DECISION THEORY, SAMPLING),
QUALITY CONTROL, COMPUTER PROGRAMS, STATISTICAL
DISTRIBUTIONS, ANALYSIS OF VARIANCE, NUMERICAL
ANALYSIS, COSTS, UNCERTAINTY, OPTIMIZATION,
ACCEPTABILITY, REVIEWS (U)
IDENTIFIERS: BAYESIAN STATISTICS, ACCEPTANCE
TESTING (U)

THE REPORT DISCUSSES THE APPLICATION OF STATISTICAL
DECISION THEORY TO THE PROBLEM OF ACCEPTANCE TESTING
BY ATTRIBUTES. THE CLASSICAL APPROACH TO
ACCEPTANCE TESTING IS INTRODUCED AND DISCUSSED SO
THAT IT MAY BE CONTRASTED WITH THE DECISION THEORY
APPROACH. THE DECISION THEORY APPROACH, WHICH
ATTEMPTS TO FIND AN OPTIMAL TRADE-OFF BETWEEN THE
EXPECTED COSTS OF WRONG DECISIONS AND SAMPLING COSTS,
IS ILLUSTRATED BY AN EXAMPLE USING THE BAYESIAN
STATISTICAL VIEWPOINT. IN THE EXAMPLE, SAMPLE SIZE
IS ASSUMED TO BE PREDETERMINED AND THE PROBLEM IS TO
SELECT THE OPTIMAL ACTION BASED UPON PRIOR KNOWLEDGE
AND THE RESULTS OF THE SAMPLE INSPECTION. THE
PROBLEM IS THEN BROADENED TO INCLUDE THE TRADE-OFF
BETWEEN THE COSTS OF WRONG DECISIONS AND THE COSTS OF
SAMPLING INSPECTION. A NUMERICAL EXAMPLE IS SOLVED
VIA A SIMPLE COMPUTER PROGRAM TO ILLUSTRATE THE
RESULTS OF THE ANALYSIS. A SURVEY OF THE
LITERATURE DEALING WITH THE APPLICATION OF DECISION
THEORY TO ACCEPTANCE TESTING IS PRESENTED, THE
CONTENTS OF THE REPORT DISCUSSED, AND SUGGESTIONS FOR
FURTHER WORK MADE. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-665 030 15/5 12/2 5/1
STANFORD UNIV CALIF DEPT OF OPERATIONS RESEARCH
OPTIMAL INVENTORY POLICY WITH MULTIPLE SET-UP
COSTS. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,
JAN 68 109P LIPPMAN, STEVEN A. :
REPT. NO. TR-14
CONTRACT: NONR-225(77), NSF-GK-1420
PROJ: NR-347-010

UNCLASSIFIED REPORT

DESCRIPTORS: (*INVENTORY CONTROL,
OPTIMIZATION), STOCHASTIC PROCESSES,
MATHEMATICAL MODELS, MANAGEMENT PLANNING,
DECISION MAKING, STOCK LEVEL CONTROL, PERIODIC
VARIATIONS, ECONOMICS, COSTS, ALGORITHMS,
SCHEDULING, NAVAL PROCUREMENT, THEOREMS (U)
IDENTIFIERS: SET-UP COSTS (U)

THE REPORT DESCRIBES A DETERMINISTIC, SINGLE
PRODUCT, DISCRETE REVIEW, FINITE TIME HORIZON
INVENTORY PROBLEM, CALLED THE MULTIPLE SET-UP COST
PROBLEM. THE HOLDING COST IN EACH PERIOD IS A
NONDECREASING (AND SOMETIMES CONCAVE) FUNCTION.
IT IS ASSUMED THAT THE ORDER IN PERIOD I IS
DELIVERED IN TRUCKS WITH CAPACITY M SUB I AND THAT
THE COST OF DELIVERY FOR EACH TRUCK IS A
NONDECREASING CONCAVE FUNCTION OF THE AMOUNT
DELIVERED BY THAT TRUCK. THE EXISTENCE OF AN
OPTIMAL PRODUCTION SCHEDULE IS ESTABLISHED SUCH THAT
FOR EACH PERIOD (1) THERE ARE NO PARTIALLY FILLED
TRUCKS IN PERIOD I IF THE INVENTORY ENTERING PERIOD I
IS POSITIVE AND (2) THE INVENTORY AT THE END OF
PERIOD I IS LESS THAN M SUB I . EXPLOITING THIS
INFORMATION, AN EFFICIENT ALGORITHM IS DEVELOPED.
NEXT, THE STATIONARY, INFINITE HORIZON VERSION OF
THE MULTIPLE SET-UP COST PROBLEM IS CONSIDERED.
FINALLY, A STOCHASTIC INVENTORY PROBLEM WHEREIN THE
ORDERING COST FUNCTION IS MERELY ASSUMED TO BE
NONDECREASING AND SUBADDITIVE IS DISCUSSED. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-665 158 1/3 21/5 14/4
SYSTEMS ENGINEERING GROUP WRIGHT-PATTERSON AFB OHIO
DEVELOPMENT AND TEST OF THE ENGINE ANALYZER
SYSTEM.

(U)

DESCRIPTIVE NOTE: REPT. FOR 15 APR 66-30 APR 67,
AUG 67 171P ZERKLE, HOLLIS G. I

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: REPORT ON PROJ. 'EASY.'

DESCRIPTORS: (*JET FIGHTERS, TURBOJET ENGINES),
(-TURBOJET ENGINES, *CHECKOUT EQUIPMENT),
AUTOMATIC, MALFUNCTIONS, MAINTENANCE, JET
BOMBERS, AIRBORNE, GROUND SUPPORT EQUIPMENT,
TEST EQUIPMENT, PERFORMANCE (ENGINEERING),
DATA PROCESSING SYSTEMS, COST EFFECTIVENESS (U)

IDENTIFIERS: ENGINE ANALYZERS, EASY PROJECT, F-
4 AIRCRAFT, F-105 AIRCRAFT, J-75 ENGINES, J-79
ENGINES (U)

THE REPORT ON PROJECT EASY DESCRIBES THE
RESULTS OF THE DEVELOPMENT AND 12-MONTH SERVICE TEST
OF AN ENGINE ANALYZER SYSTEM COMBINING AIRBORNE AND
GROUND EQUIPMENT TO AUTOMATICALLY COLLECT AND PROCESS
ENGINE PERFORMANCE AND STRESS DATA TO VERIFY THAT AN
ENGINE WILL ACCOMPLISH THE NEXT MISSION WITH HIGH
CONFIDENCE, DIAGNOSE A FAULTY ENGINE, AND PREDICT
MAINTENANCE REQUIREMENTS. A DETAILED DESCRIPTION
OF THE EASY EQUIPMENT, ITS AIRCRAFT INSTALLATION,
AND MAINTENANCE EXPERIENCE IS INCLUDED. EASY TEST
EXPERIENCE AND RESULTS WITH TABLES, FIGURES, DATA
PLOTS AND NARRATIONS RELATING TO COMPUTER PROGRAMS,
DATA PRINTOUTS, ANALYSIS, AND DIAGNOSTIC PROCEDURES
OF TYPICAL ENGINE MALFUNCTIONS ARE PRESENTED.
ECONOMIC JUSTIFICATION BASED UPON THE RESULTS OF AN
EXTENSIVE COST EFFECTIVENESS ANALYSIS IN
ACCORDANCE WITH DOD INSTRUCTIONS 7041.3.
'ECONOMIC ANALYSIS OF PROPOSED DEPARTMENT OF
DEFENSE INVESTMENTS,' DATED 19 DECEMBER 1966,
IS ALSO INCLUDED. FLEET IMPLEMENTATION
CONSIDERATIONS, PERTAINING TO EASY EQUIPMENT
IMPROVEMENTS, INSTALLATION RECOMMENDATIONS, PERSONNEL
TRAINING, AND DATA PROCESSING AND DOCUMENTATION, ARE
DISCUSSED. ALTHOUGH THE EASY EQUIPMENT USED IN
SERVICE TEST WAS CONFIGURED FOR THE F-4C/J79-
GE-15 AND F-105F/J75-P-19W AIRCRAFT-
ENGINE COMBINATIONS, MODIFICATION TO ACCOMMODATE
OTHER ENGINE TYPES AND SUBSYSTEMS AS WELL AS OTHER
PARAMETERS NOT PRESENTLY INCLUDED CAN READILY BE
MADE. THE SYSTEM EQUIPMENT IS GENERAL PURPOSE BUT
THE INSTALLATION AND DATA PROGRAMMING MUST BE (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-665 314 13/10 5/1

TRAVELERS RESEARCH CENTER INC HARTFORD CONN
STUDY OF THE FEASIBILITY OF NATIONAL DATA BUOY
SYSTEMS: SUMMARY. (U)

DESCRIPTIVE NOTE: FINAL REPT.,

FEB 68 77P AUBERT, E. J. ; CLEM, LEROY

H. JENKINS, CARL F. ; NORTHROP, GAYLORD M. ;

REPT. NO. TRC-7485-286

CONTRACT: TCG-16790A

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-664 617, AD-664 618,
AD-664 619, AD-664 620, AND AD-664 621.

DESCRIPTORS: (*MARINE METEOROLOGY, *BUOYS),
NETWORKS, SYSTEMS ENGINEERING, FEASIBILITY
STUDIES, PREDICTIONS, DESIGN, EFFECTIVENESS,
RELIABILITY, SPECIFICATIONS, NAVIGATIONAL AIDS,
DATA STORAGE SYSTEMS, DATA TRANSMISSION SYSTEMS,
COST EFFECTIVENESS (U)

THE PURPOSE OF THE STUDY WAS TO DETERMINE THE
NATIONAL REQUIREMENTS OVER THE NEXT FIFTEEN YEARS FOR
MARINE METEOROLOGICAL AND OCEANOGRAPHIC DATA THAT
CAN, ON A COST-EFFECTIVE BASIS, BEST BE ACQUIRED BY
BUOY SYSTEMS, AND TO DEVELOP PLANS FOR MEETING THESE
DATA REQUIREMENTS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-665 390 13/1
ARMY NATICK LABS MASS GENERAL EQUIPMENT AND PACKAGING
LAB
DEVELOPMENT OF THE HEATER IMMERSION, M-67, LIQUID-
FUEL-FIRED, FOR CORRUGATED CANS. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
NOV 67 25P MCKEOWN, CORNELIUS J. ;
PROJ: AE-7054257
MONITOR: USA-NLABS TR-68-25-6P

UNCLASSIFIED REPORT

DESCRIPTORS: (*HEATERS, WATER); (*ARMY
OPERATIONS, HEATERS); DESIGN, SPECIFICATIONS,
COSTS, GASOLINE, FOOD DISPENSING,
VAPORIZATION, PORTABLE,
PERFORMANCE(ENGINEERING) (U)
IDENTIFIERS: CORRUGATED CANS, M-67 HEATERS (U)

THIS REPORT DESCRIBES THE DEVELOPMENT OF AN
IMPROVED HEATER, IMMERSION, LIQUID-FUEL-
FIRED, FOR CORRUGATED CANS, DESIGNATED AS M-
67. THE NEW HEATER IS EXPECTED TO RESULT IN A
15% REDUCTION IN MANUFACTURING COST; 50%
REDUCTION IN ERECTION TIME; REDUCTION IN THE NUMBER
OF PARTS REQUIRED TO FORM A HEATER; AND A HEATER MORE
ACCEPTABLE FOR FIELD USE. THE SPECIFICATION FOR
THE IMMERSION HEATER HAS BEEN REVISED TO THE DESIGN
OF THE M-67. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-565 464 1/3 5/3
AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHOOL OF
ENGINEERING
INVESTIGATION OF LEARNING CURVE AND COST ESTIMATION
METHODS FOR CARGO AIRCRAFT. (U)
DESCRIPTIVE NOTE: MASTERS THESIS,
DEC 67 179P BROCKMAN, WILLIAM F. ;
DICKENS, FREDDIE D. ;
REPT. NO. GSM/SM-67-2/7

UNCLASSIFIED REPORT

DESCRIPTORS: (*JET TRANSPORT PLANES, *COSTS);
MATHEMATICAL PREDICTION, LEARNING CURVES,
MANPOWER STUDIES, LABOR, AIRCRAFT INDUSTRY,
ACCURACY, REGRESSION ANALYSIS (U)
IDENTIFIERS: *COST ESTIMATING, C-5A AIRCRAFT,
C-5 AIRCRAFT, C-141A AIRCRAFT, C-141
AIRCRAFT (U)

LEARNING CURVES ARE DEVELOPED FOR NINE CARGO
AIRCRAFT USING LOG-LINEAR, LOG-QUADRATIC, AND LOG-
CUBIC FORMS WITH BEST RESULTS BEING OBTAINED WITH THE
LOG-QUADRATIC. ESTIMATING RELATIONS FOR THE
PREDICTION OF NEW AIRCRAFT COSTS ARE DERIVED USING
CURRENT METHODS AND TESTED FOR ACCURACY ON THE
ORIGINAL SAMPLE AND ON THE C-141A; A COST
PREDICTION FOR THE C-5A IS ALSO OBTAINED.
PREDICTIONS WERE ALSO OBTAINED USING A RECENT RAND
CORPORATION DEVELOPED EQUATION. PREDICTIVE
ACCURACY IN ALL CASES WAS POOR AND THE CONCLUSION WAS
REACHED THAT PRESENT METHODS ARE INADEQUATE FOR THE
ESTIMATION OF DIRECT-LABOR COSTS. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-665 499 15/3 15/6 14/1

URS CORP BURLINGAME CALIF
CONCEPTUAL DEVELOPMENT OF AN ANALYTICAL SYSTEM FOR
EVALUATING ALTERNATIVE CIVIL DEFENSE
COUNTERMEASURES.

(U)

DESCRIPTIVE NOTE: FINAL REPT.,

JUN 67 64P HAWKINS, MYRON B. ;

REPT. NO. URS-667-4

CONTRACT: OCD-OS-64-201

UNCLASSIFIED REPORT

DESCRIPTORS: (*CIVIL DEFENSE SYSTEMS,
COUNTERMEASURES); COST EFFECTIVENESS, NUCLEAR
WARFARE CASUALTIES, NUCLEAR EXPLOSION DAMAGE,
URBAN AREAS, PREDICTIONS, KILL PROBABILITIES,
POPULATION, COMPUTER PROGRAMS, THERMAL
RADIATION, SURVIVAL, AIRBURST, RADIATION
HAZARDS, RADIOACTIVE FALLOUT, FIRES, DISEASES,
STARVATION, RADIATION INJURIES

(U)

THE CONCEPT OF A SYSTEM FOR EVALUATING THE COST-EFFECTIVENESS OF CIVIL DEFENSE COUNTERMEASURES IS FORMULATED. EFFECTIVENESS WILL BE DETERMINED BY COMPARING THE NUMBER OF CASUALTIES RESULTING FROM A BASE-LINE 'NO-COUNTER-MEASURE' PREDICTION TO THOSE OCCURRING WHEN THE USE OF VARIOUS COUNTERMEASURES IS ASSUMED. THE COST OF THE COUNTERMEASURE WILL BE DERIVED IN A SEPARATE COMPUTATION. THE PREDICTION OF CASUALTIES RESULTING FROM THE USE OF A COUNTERMEASURE IN A SINGLE URBAN AREA WOULD BE DERIVED BY SUMMING THE CASUALTIES PREDICTED FOR A LARGE NUMBER OF SUBAREAS OR CELLS, EACH PERHAPS 1 KILOMETER SQUARE. PHYSICAL DESCRIPTIONS OF EACH CELL MUST INCLUDE THOSE CHARACTERISTICS OF THE AREA THAT AFFECT THE NUMBER OF CASUALTIES AND THAT ARE MODIFIED BY ANY COUNTERMEASURE SUBJECT TO TEST. THE PREDICTION PROGRAM SUCCESSIVELY SUBJECTS EACH POPULATION GROUP TO THE ENVIRONMENTS OR HAZARDS IN THE SAME ORDER THEY WILL OCCUR, AND TABULATES AFTER EACH HAZARD THE NUMBER OF KILLED, INJURED, AND UNHURT. THE CENSUS OF SURVIVORS AFTER EACH HAZARD BECOMES THE INPUT POPULATION FOR THE NEXT RISK. THE PROGRAM USES THREE MAJOR PHASES OR TIME PERIOD: THE IMMEDIATE-EFFECTS PERIOD (THERMAL RADIATION AND AIR BLAST HAZARDS); THE EARLY-EFFECTS PERIOD (FIRE AND FALLOUT RADIATION HAZARDS); AND THE POST-EMERGENCY PERIOD (DISEASE, STARVATION RECOVERY FROM INJURIES AND OTHER EFFECTS).

(AUTHOR)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-666 016 11/6 5/1 14/1
RAND CORP SANTA MONICA CALIF
A STATISTICAL-ENGINEERING APPROACH TO ESTIMATING
RAILWAY COST FUNCTIONS. (U)
MAR 68 17P DESALVO, JOSEPH S. ;
LAVE, LESTER B. ;
REPT. NO. P-3781

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH
CARNEGIE-MELLON UNIV., PITTSBURGH, PA.

DESCRIPTORS: (*RAILROADS, COSTS),
TRANSPORTATION, RAILROAD CARS, WAGES, FUEL
OIL, LIFE EXPECTANCY, OPERATIONS RESEARCH,
STATISTICAL ANALYSIS, MANAGEMENT ENGINEERING,
ECONOMICS (U)

STATISTICAL AND ENGINEERING METHODS BOTH POSSESS
ADVANTAGES AND DISADVANTAGES IN THE DETERMINATION OF
COST BEHAVIOR. THIS PAPER ILLUSTRATES A WEDDING OF
THE TWO APPROACHES FOR THE CASE OF RAIL COSTS. THE
STATISTICAL APPROACH OF MEYER, PECK, STENASON,
AND ZWICK IS USED FOR ALL COST COMPONENTS EXCEPT
LINEHAUL AND EQUIPMENT DEPRECIATION. AN
ENGINEERING PROCESS FUNCTION IS USED ALONG WITH INPUT
COSTS TO DEVELOP LINEHAUL COSTS. DEPRECIATION
COSTS FOR CARS AND LOCOMOTIVES ARE ESTIMATED FROM
EQUIPMENT PRICES AND ESTIMATED LIFETIMES. THE
RESULTING STATISTICAL-ENGINEERING COST FUNCTION
PERMITS A DETAILED ESTIMATION OF THE COST OF A TRAIN
TRIP. IT IS MUCH MORE FLEXIBLE THAN THE PURE
STATISTICAL APPROACH AS IT PERMITS CHANGES IN
EQUIPMENT, ROADWAY, AND LOADING CONDITIONS. IN
ADDITION, IT INCLUDES COSTS NOT AMENABLE TO
ENGINEERING ANALYSIS, SUCH AS SELLING AND
ADMINISTRATION. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-666 443 9/2 5/5
BOLT BERANEK AND NEWMAN INC CAMBRIDGE MASS
HUMAN FACTORS AND THE DESIGN OF TIME SHARING COMPUTER
SYSTEMS. (U)
NOV 67 25P NICKERSON, R. S. ; ELKIND, J.
I. ; CARBONELL, J. R. ;
REPT. NO. SCIENTIFIC-2
CONTRACT: F19628-68-C-0125
PROJ: AF-8668
TASK: 866800
MONITOR: AFCRL 68-0054

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO SCIENTIFIC REPT. NO. 3,
AD-666 065.

DESCRIPTORS: (*TIME SHARING, HUMAN
ENGINEERING), DIGITAL COMPUTERS, MAN-MACHINE
SYSTEMS, PROGRAMMING LANGUAGES, ALGORITHMS,
OPTIMIZATION, COSTS (U)
IDENTIFIERS: TRADEOFFS (U)

THE ADVENT OF COMPUTER TIME SHARING POSES AN
EXTRAORDINARY CHALLENGE TO HUMAN FACTORS RESEARCH
DURING THE NEXT DECADE. BEFORE TIME SHARING, TWO
FACTS COMBINED TO DE-EMPHASIZE THE IMPORTANCE OF
HUMAN FACTORS CONSIDERATIONS IN THE DESIGN OF
COMPUTER SYSTEMS: (1) THE COST OF THE
COMPUTER'S TIME WAS EXORBITANTLY HIGH RELATIVE TO THE
COST OF USERS' TIME, AND (2) THE USERS
CONSTITUTED A SELECT, HIGHLY SKILLED AND HIGHLY
MOTIVATED GROUP OF SPECIALISTS. TWO OF THE
PROMISES OF TIME SHARING, HOWEVER, ARE (1) A
DRASTIC REDUCTION IN THE COST OF COMPUTER TIME TO THE
INDIVIDUAL USER, AND (2) THE LARGE SCALE
AVAILABILITY OF COMPUTER FACILITIES TO INDIVIDUALS
UNTRAINED IN ANY AREAS OF COMPUTER TECHNOLOGY.
HUMAN FACTORS CONSIDERATIONS THEN BECOME IMPORTANT
BOTH FOR ECONOMIC AND PSYCHOLOGICAL REASONS. THIS
PAPER BRIEFLY NOTES WHAT A FEW OF THESE
CONSIDERATIONS ARE. (AUTHOR) (U)

UNCLASSIFIED

JDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-666 506 1/3 14/1 15/5
MARINE CORPS WASHINGTON D C
A LINEAR PROGRAMMING MODEL FOR MINIMUM-COST
PROCUREMENT AND OPERATION OF MARINE CORPS TRAINING
AIRCRAFT, (U)
68 18P BURNHAM, PHILIP R. ;

UNCLASSIFIED REPORT
AVAILABILITY: PUBLISHED IN NAVAL RESEARCH
LOGISTICS QUARTERLY, V15 N1 P81-97 MAR 1968.

DESCRIPTORS: (*JET TRAINING PLANES, COST
EFFECTIVENESS), NAVAL AIRCRAFT, MARINE CORPS,
NAVAL TRAINING, NAVAL PROCUREMENT, LINEAR
PROGRAMMING, JET FIGHTERS, JET BOMBERS, ATTACK
BOMBERS, MATHEMATICAL MODELS, RECONNAISSANCE
PLANES (U)
IDENTIFIERS: TRADEOFFS, F-4 AIRCRAFT, RF-4
AIRCRAFT, A-6 AIRCRAFT, EA-6 AIRCRAFT (U)

IN MILITARY SITUATIONS OF SHARPLY INCREASING COMBAT
ACTIVITY THE MARINE CORPS IS FACED WITH TRAINING
PROBLEMS IN ITS EXPANDING AVIATOR CORPS.
ADDITIONAL TRAINING AIRCRAFT ARE REQUIRED, AND
PROCUREMENT DECISIONS MUST BE MADE. IN VIEW OF THE
SIGNIFICANT COSTS INVOLVED IN PROCUREMENT AND
OPERATION OF NEW HIGH PERFORMANCE AIRCRAFT, IT IS
VERY DESIRABLE TO BUY AND OPERATE AN EFFICIENT MIX OF
AIRCRAFT NECESSARY FOR TRAINING THE PILOTS TO MAKE
THE MARINE AIRCRAFT WINGS ESSENTIALLY 100-
PERCENT TACTICALLY QUALIFIED. THE MATHEMATICAL
MODEL PRESENTED ENABLES COMPUTATION OF A LEAST-COST
MIX OF TRAINING AIRCRAFT WHICH SATISFIES CERTAIN
SPECIFIED TRAINING REQUIREMENTS. THE BASIC ELEMENT
ALLOWING TRADEOFFS IS THE COMMONALITY OF TRAINING
AVAILABLE IN THE F4, RF4, A6, AND EA6 TYPES
OF AIRCRAFT. BOTH AIRFRAME ORIENTED AND MISSION
ORIENTED TRAINING ARE NECESSARY, BUT THE AIRFRAME
ORIENTED TRAINING CAN BE CONDUCTED IN EITHER OF THE
AIRCRAFT POSSESSING THE COMMONALITY. TRAINING
REQUIREMENTS OVER A FIVE YEAR PERIOD ARE CONSIDERED,
AND THE MIX OF TRAINING AIRCRAFT HAS THE MINIMUM FIVE
YEAR PROCUREMENT AND OPERATING COST. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-666 574 15/5 12/2
DECISION STUDIES GROUP PALO ALTO CALIF
TWO PAPERS ON ADAPTIVE INVENTORY CONTROL. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
JAN 68 25P GLIER, ROBERT ;
CONTRACT: NONR-4457(00)
PROJ: NR-347-001

UNCLASSIFIED REPORT

DESCRIPTORS: (*INVENTORY CONTROL, ADAPTIVE
SYSTEMS); (*DYNAMIC PROGRAMMING, INVENTORY
CONTROL); OPTIMIZATION, COSTS, RANDOM
VARIABLES, SAMPLING, MATHEMATICAL PREDICTION,
STOCK LEVEL CONTROL, STOCHASTIC PROCESSES,
DECISION THEORY (U)
IDENTIFIERS: BAYESIAN ANALYSIS (U)

TWO PAPERS ON ADAPTIVE INVENTORY CONTROL ARE
PRESENTED. THE FIRST USES PROCESS CONTROL
TECHNIQUES TO OBTAIN AN OPTIMAL POLICY FOR AN
INVENTORY PROBLEM IN WHICH ORDERS ARE PLACED AT THE
START OF EACH OF AN INFINITE NUMBER OF INTERVALS.
THE COST OF ORDERING IS C AND IS BALANCED AGAINST
A COST PROPORTIONAL TO THE SQUARE OF THE ON-HAND
INVENTORY (OR SHORTAGE). DELIVERY LEAD TIME
IS T UNITS. THE SECOND PAPER CONSIDERS A SIMILAR
MULTIPERIOD PROBLEM IN WHICH THERE IS A HOLDING COST
AND SHORTAGE COST. THE INVENTORY PROCEDURE IS
ADAPTIVE IN THAT BAYESIAN PROCEDURES ARE USED WITH
THE ACCUMULATED DEMAND DATA TO ESTIMATE THE UNKNOWN
PARAMETERS OF THE DEMAND DISTRIBUTION. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-666 656 5/1 5/3 14/1 12/2
RAND CORP SANTA MONICA CALIF
COST FUNCTIONS AND BUDGETS (COST CONSIDERATIONS IN
SYSTEMS ANALYSIS), (U)
FEB 68 42P FISHER, G. H. I
REPT. NO. P-3789

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION TO A
CONFERENCE ON THE ECONOMIC ANALYSIS OF PUBLIC
PRODUCTS AT PRINCETON UNIVERSITY IN APRIL 1968,
SPONSORED BY THE UNIVERSITIES-NATIONAL BUREAU OF
ECONOMIC RESEARCH COMMITTEE ON PRODUCTION AND
DISTRIBUTION OF PUBLIC PRODUCTS.

DESCRIPTORS: (*MANAGEMENT PLANNING, *COST
EFFECTIVENESS), SYMPOSIA, AIRCRAFT INDUSTRY,
ECONOMICS, DECISION MAKING, BUDGETS, SYSTEMS
ENGINEERING, SAMPLING, DEPARTMENT OF DEFENSE,
DATA PROCESSING SYSTEMS, OPERATIONS RESEARCH (U)
IDENTIFIERS: SYSTEMS ANALYSIS (U)

SYSTEMS ANALYSIS FORMS THE CENTRAL CORE OF A
PROGRAM BUDGETING ACTIVITY. A VITALLY IMPORTANT
PART OF SYSTEMS ANALYSIS IS A COST ANALYSIS
CAPABILITY TO GENERATE ESTIMATES OF THE RESOURCE
IMPACT OF ALTERNATIVE COURSES OF ACTION BEING
CONSIDERED FOR THE DISTANT FUTURE. SOME OF THE
PRINCIPAL CHARACTERISTICS OF A SYSTEMS COST ANALYSIS
CAPABILITY ARE GIVEN. ESTABLISHING AND MAINTAINING
A COST ANALYSIS CAPABILITY TO SUPPORT SYSTEMS
ANALYSIS STUDIES INVOLVES NUMEROUS DIFFICULTIES.
ONE OF THE MOST TROUBLESOME IS THE DATA BASE
PROBLEM. SOLUTION TO PARTS OF THE DATA PROBLEM MAY
BE THROUGH MAJOR OVERHAUL OF PRESENT FORMAL
INFORMATION SYSTEMS AND THROUGH THE ESTABLISHMENT OF
NEW COMPLETE ENUMERATION SYSTEMS. THIS, HOWEVER,
DOES NOT APPEAR FEASIBLE AS A GENERAL SOLUTION--AT
LEAST IN THE FORESEEABLE FUTURE. SHORT OF SUCH
MAJOR EFFORTS ARE NUMEROUS ALTERNATIVE POSSIBILITIES.
SOME EXAMPLES ARE GIVEN. (U)

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DCC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-666 732 15/5 12/2
OFFICE OF NAVAL RESEARCH WASHINGTON D C
NAVAL RESEARCH LOGISTICS QUARTERLY. VOLUME 15, NO.
1, MARCH 1968. (U)
68 127P

UNCLASSIFIED REPORT

AVAILABILITY: HARD COPY AVAILABLE FROM
SUPERINTENDENT OF DOCUMENTS, GPO, WASHINGTON, D.
C. 20402 \$0.50 AS D210.12-VOL. 15/NO. 1.
SUPPLEMENTARY NOTE: SEE ALSO VOLUME 14 NO. 1, AD-651
848.

DESCRIPTORS: (*NAVAL RESEARCH, LOGISTICS),
(*OPERATIONS RESEARCH, LOGISTICS), REPORTS,
LINEAR PROGRAMMING, DYNAMIC PROGRAMMING,
DEPARTMENT OF DEFENSE, DECISION THEORY,
GOVERNMENT PROCUREMENT, MILITARY TRAINING,
OPTIMIZATION, SCHEDULING, FUNCTIONS,
ECONOMICS, HANDLING, COSTS, THEOREMS (U)
IDENTIFIERS: INTEGER PROGRAMMING, QUADRATIC
ASSIGNMENT PROBLEM, MILITARY THEORY (U)

CONTENTS: ON NONLINEAR OPTIMIZATION IN
INTEGERS; THE SEQUENCING OF 'RELATED' JOBS; ON
THE MINIMIZATION OF A CERTAIN CONVEX FUNCTION ARISING
IN APPLIED DECISION THEORY; SUBOPTIMAL ALGORITHMS
FOR THE QUADRATIC ASSIGNMENT PROBLEM; ECONOMIC
IMPACT AND THE NOTION OF COMPENSATED PROCUREMENT; A
LINEAR PROGRAMMING MODEL FOR MINIMUM-COST PROCUREMENT
AND OPERATION OF MARINE CORPS TRAINING AIRCRAFT;
AIRCRAFT LOADING CONSIDERATIONS; A SORTIE
GENERATOR FOR USE IN PLANNING MILITARY TRANSPORT
OPERATIONS; SOME NOTES ON MILITARY THEORY. (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-666 756 15/5 6/17
ARMY NATICK LABS MASS CLOTHING AND ORGANIC MATERIALS
LAB
DIRECT MOLDED SOLE BOOTS. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
SEP 67 24P PARK, ALICE F. ;
SWAIN, DOUGLAS S. ;
PROJ: DA-1M643303D54712
MONITOR: USA-NLABS, FL TR-68-20-CM, 19

UNCLASSIFIED REPORT

DESCRIPTORS: (*SHOES, MANUFACTURING METHODS),
MOLDING, ARMY PERSONNEL, TROPICAL REGIONS,
LEATHER, RUBBER, VULCANIZATION, COST
EFFECTIVENESS, MAINTENANCE, HONEYCOMB CORES,
PROTECTION, ARMED FORCES SUPPLIES, SHIELDING,
SHOCK RESISTANCE, MILITARY REQUIREMENTS, METAL
PLATES (U)
IDENTIFIERS: *BOOTS, *DIRECT MOLDED SOLES (U)

THE U.S. ARMY NATICK LABORATORIES
MODIFIED A METHOD OF FOOTWEAR CONSTRUCTION KNOWN AS
DIRECT MOLDED SOLE (DMS) FOR THE ARMY'S
TROPICAL AND ALL-LEATHER COMBAT BOOTS. NLABS
DEVELOPED THE SPECIAL COMPONENT MATERIALS, BOOT
DESIGNS AND FABRICATION TECHNIQUES REQUIRED TO
PRODUCE MILITARY FOOTWEAR BY THE DMS PROCESS.
THE SOLE AND HEEL OF THE NEW DMS BOOTS ARE MOLDED
DIRECTLY TO THE BOOT UPPERS ON HIGH-PRESSURE
VULCANIZING MACHINES, ELIMINATING THE SOLE STITCHING
AND HEEL NAILING WHICH WERE THE MAJOR POINTS OF
FAILURE IN WELT COMBAT FOOTWEAR. THE DMS BOOTS
ARE SIGNIFICANTLY MORE DURABLE AND MORE COMFORTABLE
THAN WELT CONSTRUCTION BOOTS, AND WILL SAVE THE
MILITARY MONEY BOTH IN PRODUCTION COST AND BY
REDUCING BOOT REPAIR AND MAINTENANCE PROBLEMS. THE
DMS PROCESS HAS ENABLED NLABS TO INCORPORATE
SPECIAL PROTECTIVE FEATURES INTO THE TROPICAL COMBAT
BOOT, INCLUDING A STEEL SHIELD TO RESIST PENETRATION
OF THE BOOT BOTTOM BY PUNJI STAKES, AND A WEDGE SHANK
TO DEFLECT AND ABSORB THE IMPULSE OF ANTIPERSONNEL
LAND MINES. (AUTHOR: (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 00-123

AD-686 823 10/2 17/7
GARRETT CORP TORRANCE CALIF AIRESEARCH MFG DIV
UNINTERRUPTIBLE POWER SYSTEM MODULE ANALYSIS. (U)
DESCRIPTIVE NOTE: INTERIM REPT.
NOV 67 74P PLEDGER, E. R. 1
CONTRACT: FA-67-WA-1748
PROJ: FAA-450-101-05E
MONITOR: FAA-RD 67-62

UNCLASSIFIED REPORT

DESCRIPTORS: (*AIR TRAFFIC CONTROL SYSTEMS,
*POWER EQUIPMENT), MODULES(ELECTRONICS),
ELECTRICAL EQUIPMENT, POWER SUPPLIES, REDUNDANT
COMPONENTS, RELIABILITY, STABILITY, RECTIFIERS,
INVERTERS, STORAGE BATTERIES, POWER
TRANSFORMERS, STAND-BY GENERATORS, DIESEL ENGINES,
COST EFFECTIVENESS (U)
IDENTIFIERS: MEAN TIME BETWEEN FAILURES (U)

A MODULE ANALYSIS WAS CONDUCTED TO DETERMINE THE
OPTIMUM RATING OF MODULE WHICH, TOGETHER WITH
IDENTICAL MODULES, WOULD BEST SATISFY THE CONTRACTUAL
REQUIREMENTS FOR AN UNINTERRUPTIBLE AC POWER (U-
P) SUPPLY SYSTEM FOR USE IN FEDERAL AVIATION
ADMINISTRATION (FAA) AIR ROUTE TRAFFIC
CONTROL CENTERS. IN DETERMINING THE OPTIMUM
MODULE OUTPUT CAPACITY, DUE CONSIDERATION WAS GIVEN
TO INCURRING THE LOWEST INITIAL AND RECURRING COST
OVER A 10-YEAR PERIOD. THE POSSIBILITY OF FUTURE U-P
SUPPLY INSTALLATIONS AT 18 OTHER CENTERS IN ADDITION
TO THE PRESENT ISLIP, N.Y., INSTALLATION UNDER
CONTRACT WITH REGARD TO (1) THEIR INITIAL
CRITICAL LOAD MAGNITUDES (98-381 KVA); (2)
ULTIMATE LOADS OF 500 KVA; (3) ULTIMATE LOADS OF
A PRESENTLY INDETERMINABLE KVA; AND (4) THE
INTERCHANGEABILITY OF MODULES BETWEEN AIR ROUTE
TRAFFIC CONTROL CENTERS. ALSO CONSIDERED IN
THIS ANALYSIS WAS A QUANTITATIVE ECONOMIC AND
OPERATIONAL DETERMINATION OF VARIOUS MODULE OUTPUT
CAPACITIES AND MODULE CIRCUIT CONFIGURATIONS AS THEY
RELATE TO CRITICAL LOADS OF BOTH A STEADY STATE AND
TRANSIENT NATURE, ELECTRICAL PERFORMANCE, EFFICIENCY,
REDUNDANCY, MAINTAINABILITY, SPACE AND FUTURE
EXPANSION REQUIREMENTS, AND RELIABILITY REQUIREMENTS.
SIX BASIC CIRCUIT CONFIGURATIONS WERE INVESTIGATED
AT POWER LEVELS RANGING FROM 50 KVA MODULES TO 250
KVA MODULES. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-666 834 13/10
NEW HAMPSHIRE UNIV DUDHAM ENGINEERING DESIGN AND ANALYSIS
LAB
UNIVERSITY SEALAB. CAPITAL AND OPERATING COST
ANALYSIS FOR A SATURATION DIVING FACILITY FOR THE
NATIONAL OCEANOGRAPHIC COMMUNITY. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
DEC 67 82P SAVAGE, GODFREY H. ;
REPT. NO. TR-101
CONTRACT: NONR-3710(04)

UNCLASSIFIED REPORT

DESCRIPTORS: (*UNDERWATER VEHICLES, DEEP
SUBMERGENCE), OCEAN BOTTOM SAMPLING, COSTS,
LABORATORIES, DESIGN, MOBILITY, BUDGETS,
OPERATION, MAINTENANCE, LIFE SUPPORT, MARINE
BIOLOGY, TABLES (U)
IDENTIFIERS: SEDOPOD UNDERWATER VEHICLE, OSCILAB
UNDERWATER VEHICLE, MANNED SUBMERSIBLES, SEALAB
PROJECT (U)

A DETAILED ENGINEERING DESIGN STUDY HAS BEEN
CONDUCTED TO DETERMINE THE TECHNICAL AND ECONOMIC
FEASIBILITY OF CONSTRUCTING A MOBILE SATURATION
DIVING FACILITY FOR THE NATIONAL OCEANOGRAPHIC
COMMUNITY. THIS DOCUMENT, WHICH CONTAINS THE
COST ANALYSIS, IS AN ADDENDUM TO THE MAIN REPORT
ENTITLED, 'UNIVERSITY SEALAB,' PUBLISHED BY THE
UNIVERSITY OF NEW HAMPSHIRE, EDAL TECHNICAL
REPORT NO. 100, JANUARY 1967. THE
UNIVERSITY SEALAB PROJECT WAS SPONSORED BY THE
OFFICE OF AVAL RESEARCH, CONTRACT NO.
NONR 3710-04. THE CAPITAL INVESTMENTS AND
OPERATING COSTS FOR A UNIVERSITY SEALAB ARE
EVALUATED AND DISCUSSED. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-667 459 17/2 15/3

GAUTNEY AND JONES COMMUNICATIONS INC WASHINGTON, D C
COMMUNICATIONS STUDY STATE OF MISSISSIPPI. (U)

DESCRIPTIVE NOTE: REPORT ON PHASE 1.

JAN 67 121P

REF. NO. TR-66.0012.001

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH
MISSISSIPPI RESEARCH AND DEVELOPMENT CENTER, AND
MISSISSIPPI CIVIL DEFENSE COUNCIL. SEE ALSO
FINAL REPORT, AD-667 461, AND REPORT ON PHASE 2, AD-
667 460.

DESCRIPTORS: (*COMMUNICATION SYSTEMS, *CIVIL
DEFENSE SYSTEMS), NATIONAL DEFENSE, COST
EFFECTIVENESS, ADVANCED PLANNING, INVENTORY,
TELEPHONE COMMUNICATION SYSTEMS, RADIO
COMMUNICATION SYSTEMS, COMMUNICATION EQUIPMENT,
LIFE EXPECTANCY, QUESTIONNAIRES, TELEPHONE
EQUIPMENT, POLICE, EARLY WARNING SYSTEMS,
MAINTENANCE, UNIVERSITIES, MISSISSIPPI (U)

BETWEEN NOVEMBER 17 AND DECEMBER 16, 1966,
EXTENSIVE INVESTIGATIONS AND INTERVIEWS WERE
CONDUCTED IN CONNECTION WITH PHASE I OF THE
COMMUNICATIONS STUDY FOR THE STATE OF
MISSISSIPPI. PHASE I IS AN INVENTORY OF
COMMUNICATIONS CAPABILITY, OPERATIONAL COSTS,
EFFECTIVENESS, AND INVESTMENT. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-667 461 17/2 15/3
GAUTNEY AND JONES COMMUNICATIONS INC WASHINGTON, D C
COMMUNICATIONS STUDY STATE OF MISSISSIPPI. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
NOV 67 165P GREEN, THOMAS L. ;
SNEAD, JAMES M. ; HOWARD, GLENN ; BAKER, MARVIN
C. ; JR. ; WADLOW, KENNETH S. ;
REPT. NO. TR-66.0012.003

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH
MISSISSIPPI RESEARCH AND DEVELOPMENT CENTER, AND
MISSISSIPPI CIVIL DEFENSE COUNCIL. SEE ALSO
REPORT ON PHASE 1, AD-667 452, AND REPORT ON PHASE
2, AD-667 450.

DESCRIPTORS: (*COMMUNICATION SYSTEMS, *CIVIL
DEFENSE SYSTEMS), COST EFFECTIVENESS, TELEPHONE
COMMUNICATION SYSTEMS, RADIO COMMUNICATION SYSTEMS,
DATA PROCESSING SYSTEMS, COMMUNICATION EQUIPMENT,
MAINTENANCE, BUDGETS, EFFICIENCY, STANDARDS,
NATIONAL DEFENSE, ADVANCED PLANNING,
MISSISSIPPI (U)

ONE OF THE MOST SIGNIFICANT FINDINGS OF THE STUDY
LIES IN THE AREA OF INCREASED EFFECTIVENESS AND
REDUCED COSTS WHICH WILL RESULT FROM CENTRALIZATION
OF COMMUNICATIONS SERVICES. NOT UNLIKE MOST OTHER
STATES, MISSISSIPPI AGENCIES HAVE ATTEMPTED TO
SOLVE COMMUNICATIONS PROBLEMS ON AN INDIVIDUAL AGENCY
BASIS. AS A RESULT, EACH AGENCY WHICH HAS A
SPECIALIZED COMMUNICATIONS SYSTEM HAS ALSO BUILT UP A
SMALL COMMUNICATIONS STAFF TO DEAL WITH THE PROBLEMS
INHERENT IN THE ACQUISITION, OPERATION AND
MAINTENANCE OF THESE SYSTEMS. IN THIS DOCUMENT,
SEVERAL CHANGES ARE RECOMMENDED IN TELEPHONE
PRACTICES WITHIN THE STATE GOVERNMENT. ULTIMATELY,
THE STATE SHOULD ACQUIRE AN INTEGRATED, DEDICATED
TELEPHONE NETWORK TO HANDLE THE PROBLEMS OF
INTRASTATE TOLL SERVICES, AND TO SERVE AS A CENTRAL
BACKBONE NETWORK FOR OTHER COMMUNICATIONS SUCH AS
DATA, TELEMETRY, CONTROL AND VOICE. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-667 522 9/2 14/1
MITRE CORP BEDFORD MASS
APPLICATION OF COST-EFFECTIVENESS ANALYSIS TO EDP
SYSTEM SELECTION, (U)
MAR 68 60P PORTER, J. D. ; RUDWICK, B.
H. I
REPT. NO. MTR-527
CONTRACT: AF 19(628)-5165
PROJ: AF-8510
MONITOR: ESD TR-67-412

UNCLASSIFIED REPORT

DESCRIPTORS: (*DATA PROCESSING SYSTEMS, COST
EFFECTIVENESS), SELECTION,
PERFORMANCE(ENGINEERING), SOURCES, COSTS,
TIME, COMPUTER PERSONNEL, COMPUTER STORAGE
DEVICES, COMPUTER PROGRAMS, PROBABILITY,
UNCERTAINTY, DECISION MAKING, DESIGN,
MAINTENANCE, DOCUMENTATION (U)

A CONCEPTUAL APPROACH FOR EVALUATING AND SELECTING
AMONG ALTERNATIVE ELECTRONIC DATA PROCESSING
(EDP) SYSTEMS PROPOSED TO MEET A SET OF EDP USER
NEEDS HAS BEEN DEVELOPED BY APPLYING COST-
EFFECTIVENESS METHODS AND TECHNIQUES TO THE SOURCE
SELECTION PROBLEM. THE REPORT PROVIDES A FRAMEWORK
THAT ALLOWS THE EDP SYSTEM EVALUATOR TO COMBINE THE
SELECTED RELEVANT SYSTEM PERFORMANCE MEASURES AND THE
RELATED COST ELEMENTS TO ARRIVE AT A RATIONAL
DEFENDABLE SELECTION DECISION. (AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-667 578 5/9
NAVAL PERSONNEL PROGRAM SUPPORT ACTIVITY WASHINGTON D C
PERSONNEL RESEARCH LAB
TRAINING TIME AND COSTS FOR NAVY RATINGS AND
NECS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
JAN 68 648P CLARY, JAMES N. ;
REPT. NO. NM-68-13
PROJ: PF0160101C01

UNCLASSIFIED REPORT

DESCRIPTORS: (*NAVAL TRAINING, COSTS), NAVAL
PERSONNEL, STUDENTS, INSTRUCTORS,
CLASSIFICATION, TABLES, CLOTHING, MANAGEMENT
PLANNING (U)

INITIALLY, THE OBJECTIVE OF THIS STUDY WAS TO
DETERMINE THE TRAINING TIME AND COSTS FOR RATINGS AND
NECS IN THE PROFICIENCY PAY CATEGORY; HOWEVER,
COVERAGE WAS EXTENDED TO PROVIDE SUCH DATA FOR ALL
RATINGS AND PRIMARY NECS. ENLISTED PERSONNEL
COSTS INCLUDED IN THESE STUDIES ARE: (1)
ACCESSION, ACCESSION TRAVEL, INITIAL UNIFORM ISSUE,
AND RECRUIT TRAINING; (2) APPROPRIATE BASIC
(CLASS A) TRAINING FOR A PARTICULAR RATING;
(3) ADVANCED AND/OR SPECIALIZED TRAINING LEADING
TO THE ASSIGNMENT OF A NAVY ENLISTED
CLASSIFICATION CODE (NEC); (4) STUDENT PAY
AND ALLOWANCES DURING SUCH TRAINING PERIODS; (5)
VALUE OF LEAVE ACCRUED BY STUDENTS, INSTRUCTOR AND
SUPPORT PERSONNEL DURING TRAINING; AND (6) TRAVEL
COSTS INCURRED AS A RESULT OF TRAINING. (AUTHOR) (U)

UNCLASSIFIED

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AJ-667 738 6/14 5/9
NAVAL PERSONNEL PROGRAM SUPPORT ACTIVITY WASHINGTON D C
PERSONNEL RESEARCH LAB
MEDICAL COST REPORTING: AN ANALYSIS. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
DEC 67 45P TAYLOR, JOSEPH L. ;
REPT. NO. WRM-68-11
PROJ: PF0160101C01

UNCLASSIFIED REPORT

DESCRIPTORS: (*MILITARY MEDICINE, COSTS),
ARMED FORCES BUDGETS, NAVAL PERSONNEL, MEDICAL
PERSONNEL, TRAINING, HOSPITALS, MEDICAL
EQUIPMENT (U)

THE PURPOSE OF THIS REPORT IS TO IDENTIFY AND
EVALUATE THE PROBLEM AREAS ASSOCIATED WITH THE
DETERMINATION OF MEDICAL COSTS AS INCURRED BY THE
DEPARTMENT OF THE NAVY FOR ITS MILITARY
PERSONNEL. TO ESTABLISH A VALID MEDICAL COST,
INDIVIDUAL TRAINING COST STUDIES SHOULD BE COMPLETED
FOR HM'S, DT'S, MEDICAL CORPS, DENTAL
CORPS, NURSE CORPS, MEDICAL SERVICE
CORPS, AND THE CHAPLAIN CORPS. CURRENTLY TEN
MANAGEMENT BUREAUS ARE INVOLVED WITH THE DISTRIBUTION
OF FUNDS FOR NAVAL MEDICAL ACTIVITIES. THE
BUREAU OF MEDICINE AND SURGERY FUNDS A PORTION
OF THE COMPLETE MEDICAL BUDGET, AND IT IS THIS FIGURE
WHICH IS USED IN THE COMPUTATION OF A PER MAN PER
YEAR MEDICAL COST. A CLOSE EXAMINATION OF THE
CURRENT MEDICAL ACCOUNTING SYSTEM SHOULD BE
UNDERTAKEN TO DETERMINE THE ECONOMIC FEASIBILITY OF
ESTABLISHING ONE CENTRAL MEDICAL COST REPORTING
AGENCY. THIS WOULD PROVIDE A COMPLETE COST OF
MEDICAL SERVICES WHICH COULD THEN BE COMBINED WITH
THE TRAINING COSTS AND PRORATED ON A PER MAN PER YEAR
BASIS TO ARRIVE AT A MORE VALID ANNUAL COST. UNTIL
THIS HAS BEEN ACCOMPLISHED, IT IS RECOMMENDED THAT
THE MEDICAL COST AS CURRENTLY REPORTED BY THE
BUREAU OF MEDICINE AND SURGERY BE UTILIZED.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-667 766 11/12 13/13 2/6

FOREST PRODUCTS LAB MADISON WIS

CONSTRUCTION OF NU-FRAME RESEARCH HOUSE: UTILIZING
NEW WOOD-FRAME SYSTEM. (U)

DESCRIPTIVE NOTE: FOREST SERVICE RESEARCH PAPER,

MAR 68 42P ANDERSON, L. O. I

REPT. NO. FSRP-FPL-88

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH
WISCONSIN UNIV., MADISON.

DESCRIPTORS: (*WOOD, CONSTRUCTION MATERIALS),
(*STRUCTURES, WOOD), HOUSING, COSTS,
WALLS, STANDARDS, ROOFS,
PANELS(STRUCTURAL), SHEETS, PLASTICS,
STUDS, THERMAL INSULATION, PLYWOOD, ADHESIVES,
BONDING, FORESTRY, DESIGN, FLEXURAL STRENGTH,
MANUFACTURING METHODS (U)

A 28- BY 40-FOOT RESEARCH HOUSE WAS COMPLETED USING
THE NU-FRAME SYSTEM OF CONSTRUCTION. THIS FIVE-
COMPONENT WOOD-FRAME SYSTEM, IS AIMED AT REDUCED COST
AND UTILIZATION OF LOWER GRADES OF WOOD.
(AUTHOR) (U)

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 000123

AD-815 392 13/2

BATTELLE MEMORIAL INST COLUMBUS OHIO REMOTE AREA CONFLICT
INFORMATION CENTER

A FEASIBILITY STUDY OF A REMOTE AREA LAND
TRANSPORTATION CONCEPT. (U)

DESCRIPTIVE NOTE: TASK REPT.,

MAR 67 49P DE LONG, MAX M. ;

GOSS, DAVID M. ;

REPT. NO. RACIC-TR-59

CONTRACT: F33657-67-C-0810, ARPA ORDER-935

UNCLASSIFIED REPORT

DESCRIPTORS: (*ROADS, TROPICAL REGIONS),
THAILAND, FEASIBILITY STUDIES, TRANSPORTATION,
CARGO VEHICLES, TRAFFIC, VOLUME,
TRAFFICABILITY, CONSTRUCTION, MAINTENANCE,
COSTS, COMPATIBILITY, AMPHIBIOUS VEHICLES,
PASSENGER VEHICLES, ECONOMICS (U)

IDENTIFIERS: AGILE PROJECT, ROTE (ROLLIGON BAG
OR TERRA-TIRE EQUIPPED), OFF-ROAD VEHICLES,
ALL-WEATHER TRANSPORTATION (U)

THIS REPORT IS A FEASIBILITY STUDY OF A REMOTE AREA
LAND TRANSPORTATION CONCEPT CONSISTING OF A VEHICLE-
ROADWAY COMBINATION. THE CONCEPT DESCRIPTION
INCLUDES A DISCUSSION OF THE ROTE VEHICLES AND OF
THE REQUIRED CAPACITY AND CONSTRUCTION OPERATIONS FOR
MINIMAL ROADS. THE PRELIMINARY ASSESSMENT OF THE
CONCEPT'S FEASIBILITY INCLUDES DISCUSSIONS OF COSTS
FOR (1) ROAD CONSTRUCTION AND MAINTENANCE,
(2) THREE EXAMPLES, AND (3) VEHICLE
OPERATION, AND DISCUSSION OF POTENTIAL USEFULNESS OF
THE CONCEPT FOR (1) LAW-ENFORCEMENT AGENCIES,
(2) PASSENGER TRANSPORTATION, AND (3) FREIGHT
HAULING. THERE IS A COMPARISON OF MINIMAL- AND
CONVENTIONAL-ROAD INVESTMENT AND RETURN. (AUTHOR) (U)

UNCLASSIFIED

CORPORATE AUTHOR - MONITORING AGENCY

•AEROSPACE CORP EL SEGUNDO CALIF EL
SEGUNDO TECHNICAL OPERATIONS

TR-0158(3515-01)-1
A TECHNIQUE FOR ESTIMATING
SPACE POWER SYSTEM COSTS.
(SAMSO-TR-67-112)
AD-663 414

TR-1001(2515-01)-1
UNCERTAINTY IN LAUNCH VEHICLE
COST ESTIMATING EL SEGUNDO
TECHNICAL OPERATIONS.
(SAMSO-TR-67-33)
AD-661 254

TR-1001(2515-01)-2
TECHNICAL DIRECTION AND
EVALUATION OF COST ANALYSIS FOR
SPACE SYSTEM STUDIES.
(SSD-TR-67-98)
AD-662 886

TR-1001(2573-34)-1
USE OF AN EMPIRICAL PRODUCT-
ORIENTED COST DATA BANK FOR
PREDICTING AND NEGOTIATING FUTURE
SATELLITE SYSTEM COSTS.
(SSD-TR-67-150)
AD-659 329

•AEROSPACE CORP EL SEGUNDO CALIF LAB
OPERATIONS

TR-0158(3250-10)-2
CRITERIA FOR FASTENER SYSTEM
DESIGN.
(SAMSO-TR-67-94)
AD-664 546

•AIR FORCE AERO PROPULSION LAB WRIGHT-
PATTERSON AFB OHIO

AFAPL-CONF-68-3
AN ASSESSMENT OF THE
PRACTICALITY OF ORBITAL
MAINTENANCE.
AD-658 454

•AIR FORCE CAMBRIDGE RESEARCH LABS L G
HANSCOM FIELD MASS

AFCLR-68-0054
HUMAN FACTORS AND THE DESIGN OF
TIME SHARING COMPUTER SYSTEMS.
AD-666 443

•AIR FORCE INST OF TECH WRIGHT-
PATTERSON AFB OHIO SCHOOL OF

ENGINEERING

GSN/SH-67-2/7

INVESTIGATION OF LEARNING CURVE
AND COST ESTIMATION METHODS FOR
CARGO AIRCRAFT.
AD-665 464

•AIR FORCE LOGISTICS COMMAND WRIGHT-
PATTERSON AFB OHIO LOGISTICS
SIMULATION CENTER

BID EVALUATION FOR PROCUREMENT
OF AVIATION FUEL AT DFSC: A CASE
HISTORY.
AD-651 531

•AIR FORCE MISSILE DEVELOPMENT CENTER
HOLLOMAN AFB N MEX DIRECTORATE OF
TEST TRACK

MDC-TR-67-76
CRITERIA FOR SELECTING SOLID
ROCKET MOTORS AS TRACK TEST
PROPULSION.
AD-658 841

•AIR FORCE OFFICE OF SCIENTIFIC
RESEARCH ARLINGTON VA

AFOSR-67-0231
MILITARY TRANSFER OF
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