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PARACHUTE TECHNOLOGY

Volume I of II Volumes

A DDC BIBLIOGRAPHY

March 1954 - September 1970

DDC-TAS-70-87-I

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MAY 1971

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13. ABSTRACT

The references in this bibliography are sorted into seven sections. Section I pertains to the testing or the results of testing of parachutes as a whole configuration; Section II to the theoretical and empirical studies of parachute aerodynamics; Section III to the materials involved in parachute systems; Section IV to the release mechanisms; Section V to parachute jumping and packs; Section VI to air drop operations; and Section VII to miscellaneous references.

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Drag Parachutes						
Parachute Fabrics						
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Aerodynamic Characteristics						
Aerial Pickup Systems						
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Aircraft Landings						
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Volume II, AD-515 800, is confidential.

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- BASE FLOW
- AIRCRAFT LANDINGS
- ATMOSPHERE TURBULENCE
- LANDING FIELDS AND RUNWAYS
- GLIDER AIRCRAFT AND SAILPLANES
- DESERT TEST OF MILITARY AIRCRAFT

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Aerodynamics decelerators
AD-664 046, 670 984,
675 181, 675 182

Alamo sling - shot systems
AD-609 366

Automatic uncouplers
AD-696 225

Ballistic hatch release
AD-647 361

Balloon parachutes
AD-681 455

Ballutes
AD-625 785, 664 046,
666 021, 681 455,
670 984

Barrels (Containers)
AD-691 005

Brake parachutes
AD-621 777, 661 943,
661 954

Canopy systems
AD-667 401

Cluster parachutes
AD-690 809

Concave bodies
AD-693 355

Decelerators
AD-696 644

Detachable pull loose
parachute packs
AD-683 066

Drag Cones
AD-667 401

Extraction parachutes
AD-670 965, 670 984,
671 682, 672 079,
672 081, 672 087

Gas cannons
AD-695 086

Gun launched projectiles
AD-666 746

Halo parachutes
AD-639 342

High altitude research program
AD-666 746

Lapes platforms
AD-691 436

Lift/drag ratio
AD-667 401

Lift parachutes
AD-672 087

Lift platforms
AD-667 401

Lifting of aerodynamic
decelerators
AD-669 665

Low altitude extraction
AD-691 436

Mach number
AD-606 569

Main parachutes
AD-693 466

Nomex yarns
AD-606 569, 670 180

LISTING OF IDENTIFIERS (Cont'd)

Parachute canopies
AD-669 665, 686 144, 693 355, 693 429, 693 466, 693 467, 695 086, 696 225

Parachute canopy release
AD-693 173

Parachute deploying mechanisms
AD-695 089

Parachute release assy
AD-683 211, 695 361

Parachute suspension lines
AD-688 584

Parachute test projectiles
AD-695 086

Parachute uncoupling locks
AD-686 504

Parachute vents
AD-687 307

Parafoil glider
AD-600 861

Paragliders
AD-646 578

Parasonic parachutes
AD-675 182

PBI fibers
AD-670 180

Perlon
AD-606 569

Personnel parachutes
AD-668 910

Persuasive communications
AD-631 019

Pilot parachutes
AD-693 466

Pogo
AD-654 430

Parachute retrorocket air drop
AD-699 342

Recovery parachutes
AD-672 087

Reefing line cutter
AD-647 361, 693 174, 695 360

Reefing lines
AD-693 174

Rescue parachutes
AD-694 355

Retardation devices
AD-666 021, 681 455

Rotating parachutes
AD-670 984, 695 088

Skydivers
AD-630 793, 631 019, 650 369

Thin spherical shells
AD-658 672

Transition flight
AD-670 965

Trolley air drop techniques
AD-671 682

Unsteady flow
AD-693 355

Volunteers
AD-631 049

I. PARACHUTES

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 72ONC2

AD-621 777
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
METHOD OF COMPENSATING THE AIRPLANE'S TURNING MOMENT
IN LANDING WITH A BRAKE PARACHUTE IN A STRONG SIDE
WIND. (U)
SEP 65 5P LIVSHITS,YA. A. BARETSKIY,
M. S. ;
REPT. NO. FTD-TT-65-506
MONITOR: TT , 65-64041

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF
RUSSIAN PATENT 163 079, PUB. 23 JAN 62, APPL. 751697/50-
23, 1P.

DESCRIPTORS: (*DRAG PARACHUTES, AIRPLANES),
(*LANDING AIDS, AIRPLANES), AIRCRAFT LANDINGS,
BRAKES, PATENTS, USSR (U)

THE OBJECT OF THE INVENTION IS A METHOD FOR
COMPENSATING THE TURNING MOMENT OF AN AIRPLANE ON
LANDING WITH A BRAKE PARACHUTE UNDER CONDITIONS OF A
STRONG SIDE WIND WHICH HAS THE DISTINGUISHING FEATURE
THAT FOR THE PURPOSE OF ASSURING A SAFE RUN OF THE
AIRPLANE ONE RELEASES AFTER THE BASIC BRAKE PARACHUTE
ONE OF TWO SUPPLEMENTARY STABILIZING PARACHUTES, AS
DEPENDS ON THE DIRECTION OF THE SIDE WIND, LOCATED ON
THE WINGS SYMMETRICALLY AT THE GREATEST DISTANCE FROM
THE CENTER OF GRAVITY OF THE AIRPLANE. (AUTHOR)
(U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 72ONC4

AD-625 785 14/2 4/2
GOODYEAR AEROSPACE CORP AKRON OHIO
DEVELOPMENT OF BALLUTE FOR RETARDATION OF ARCAS ROCKETSONDES. (U)
DESCRIPTIVE NOTE: FINAL REPT. MAY 64-DEC 65.
DEC 65 135P GRAHAM, J. J. ,JR.;
REPT. NO. GER-12317
CONTRACT: AF19(628)-4194
PROJ: AF-6682
TASK: 668206
MONITOR: AFCRL , 65-877

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*METEROLOGICAL INSTRUMENTS, PARACHUTE DESCENTS), (*PARACHUTES, METEROLOGICAL INSTRUMENTS), (*BALLOONS, PARACHUTE DESCENTS), DECELERATION, ATMOSPHERIC SOUNDING, SOUNDING ROCKETS, PARACHUTE FABRICS, POLYESTER PLASTICS, POLYAMIDE PLASTICS, DROP TESTING, SYSTEMS ENGINEERING, FLIGHT TESTING, RADIOSONDES, STABILIZATION (U)
IDENTIFIERS: BALLUTES (U)

A BALLUTE(A) RETARDATION SYSTEM FOR ARCAS ROCKETLAUNCHED METEORLOGICAL INSTRUMENTS WAS INVESTIGATED. VARIOUS BALLUTE CONFIGURATIONS WERE FABRICATED, TESTED, AND EVALUATED IN FOUR STAGES: AIRDOCK DROP TESTS; LOW-ALTITUDE HELICOPTER DROP TESTS; HIGH-ALTITUDE BALLOONBORNE DROP TESTS; AND ROCKET-LAUNCHED FLIGHT TESTS AT CAPE KENNEDY. THE PROGRAM CULMINATED IN THREE SUCCESSFUL ROCKET-LAUNCHED FLIGHTS OF THE FINAL CONFIGURATION WHICH, BECAUSE OF THE HIGH STABILITY OF THE SYSTEM, YIELDED TELEMETERED TEMPERATURE DATA OF UNPRECEDENTED QUALITY. THE BALLUTE SYSTEM THAT MEETS THE DESIGN GOALS OF RELIABILITY, STABILITY, DESCENT RATE, AND COST WILL BE MADE OF FRACTIONAL MIL PLASTIC FILM, WILL BE ABOUT 16-1/2 FT IN DIAMETER, AND WILL WEIGH ABOUT TWO POUNDS. FURTHER DEVELOPMENT AND SYSTEM QUALIFICATION TESTING ARE RECOMMENDED PRIOR TO INCORPORATION OF THE BALLUTE INTO THE OPERATIONAL SOUNDING SYSTEM. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-626 505 19/8
NAVAL AIRCRAFT TORPEDO UNIT WOONSET POINT R 1
TORPEDO STABILIZER MARK 31 MOD 0 DEVELOPMENT
PHASE. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
JAN 66 37P FERRIER,A. R. ;
REPT. NO. NAVAIRTORPU-TM-189,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*AIRCRAFT TORPEDOES, STABILIZATION SYSTEMS), HELICOPTERS, TORPEDO LAUNCHERS, TORPEDO TRAJECTORIES, DRAG PARACHUTES, TORPEDOES (U)

THIS FINAL REPORT DESCRIBES THE DEVELOPMENT OF THE PARACHUTE-TYPE TORPEDO STABILIZER MARK 31 MOD 0 CURRENTLY USED AS A TORPEDO MARK 46 HELICOPTER LAUNCHING ACCESSORY. THE STABILIZER INCORPORATES A NOVEL RELEASE MECHANISM WHICH HAS PROVEN TO BE A HIGHLY RELIABLE PRINCIPLE OF OPERATION. CALCULATED AND EXPERIMENTAL DATA IS PRESENTED TO VALIDATE THE DESIGN CONCEPT AND TO PROVIDE A BASIS FOR AN IMPROVED MODEL DEVELOPMENT PROGRAM. RECOMMENDATIONS ARE MADE FOR ITS USE WITH TORPEDOES MARK 44 AND 46 MOD 1 AT EXTENDED LAUNCHING CONDITIONS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 72DNC2

AD-645 704 1/3
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
DRAG PARACHUTE, (U)
SEP 66 5P KADYSHEV,I. G. (KHAKHILEV,S. D. (ANDNIYASHENKO,I. S.)
REPT. NO. FTD-TT-66-105

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF PATENT (USSR) 171 275, APPL. 702105/40-23, 16 APR 59.

DESCRIPTORS: (*DRAG PARACHUTES, ACTUATORS), PATENTS, USSR, RELIABILITY, SPRINGS, SAFETY (U)

THE OBJECT OF THE INVENTION IS A DRAG PARACHUTE. TO INCREASE THE RELIABILITY OF THE PARACHUTE AND JUMP SAFETY, IT IS MADE IN THE FORM OF A SPHERICAL SPRING MECHANISM WITH THE UPPER PART COVERED BY A DENSE FABRIC AND THE LOWER PART COVERED WITH A MESH AND EQUIPPED WITH AN EXTERNAL CONICAL SPRING. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-661 943 1/2
ADVISORY GROUP FOR AERONAUTICAL RESEARCH AND DEVELOPMENT
PARIS (FRANCE)
ETUDE DE L'EMPLOI DU PARACHUTE-FREIN A L'ATTERRISSAGE
(STUDY OF THE USE OF THE BRAKE PARACHUTE IN AIRCRAFT
LANDING). (U)
OCT 58 26P GREMONT, J. ;
REPT. NO. AGARD-229

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: NATO FURNISHED. TEXT IN FRENCH.
PREPARED FOR PRESENTATION AT THE MEETING OF THE
WORKING GROUP ON 'BLOWERS AND MOCK-UP STUDIES'
(14TH), HELD 20-21 OCTOBER 1958 AT COPENHAGEN,
DENMARK.

DESCRIPTORS: (*AIRCRAFT LANDINGS, *DRAG
PARACHUTES), BRAKING (U)

THE INCREASE IN WEIGHT AND LANDING SPEEDS OF
AIRCRAFT HAS FOR SOME YEARS BEEN SUCH AS TO MAKE THE
BRAKING OF AIRCRAFT AN INCREASINGLY DIFFICULT PROBLEM
TO SOLVE. ALTHOUGH NUMEROUS INVESTIGATIONS HAVE
BEEN MADE AND SOME NEW SOLUTIONS HAVE BEEN TRIED OUT,
FEW OF THESE HAVE BEEN ADOPTED IN PRACTICE. ONE OF
THESE SOLUTIONS - THE BRAKE PARACHUTE - IS NOW WIDELY
USED. THE REPORT REVIEWS A NUMBER OF FACTS ABOUT
THIS METHOD OF BRAKING, AND IS DIVIDED INTO THREE
PARTS. THE FIRST PART DISCUSSES THE PROBLEM
EXPERIMENTALLY, THE SECOND DEVELOPS THE THEORETICAL
ASPECTS AND THE THIRD CONTAINS OBSERVATIONS ON THE
VARIOUS RESULTS OF ITS USE IN SERVICE CONDITIONS.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZDNC2

AD-661 954 1/2
ADVISORY GROUP FOR AERONAUTICAL RESEARCH AND DEVELOPMENT
PARIS (FRANCE)
GROUND DECELERATION AND STOPPING OF LARGE AIRCRAFT. (U)

OCT 58 54P ZALOVCIK, JOHN A. ;
REPT. NO. AGARD-231

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: NATO FURNISHED. PRESENTED AT THE MEETING OF THE FLIGHT TEST PANEL (13TH), 20-25 OCT, 1958, COPENHAGEN, DENMARK.

DESCRIPTORS: (*AIRCRAFT, *BRAKING), DECELERATION, DRAG, DRAG PARACHUTES, THRUST REVERSE, FRICTION, LOADING(MECHANICS), HANDLING (U)

THE EFFECT OF VARIOUS FACTORS ON THE GROUND DECELERATION AND STOPPING DISTANCE OF AIRCRAFT IS DISCUSSED. SOURCES OF DECELERATION SUCH AS WHEEL BRAKING, AIRPLANE DRAG, AERODYNAMIC BRAKES, PARACHUTES, REVERSED TURBOJET THRUST, AND REVERSED THRUST OF TURBOPROPELLER ENGINES ARE CONSIDERED. THE EFFECT OF TIRE FRICTION, WHEEL LOAD, AND BRAKE CAPACITY ON WHEEL BRAKING AND THE EFFECT ON STOPPING DISTANCE OF AIRPLANE HANDLING TECHNIQUES THAT INVOLVE THE USE OF ELEVATORS, FLAPS, SPOILERS, AND NOSE-HIGH ATTITUDE ANGLES ARE COVERED IN SOME DETAIL. AN APPENDIX INCLUDES A MATHEMATICAL ANALYSIS OF SOME OF THE FACTORS AFFECTING DECELERATION AND STOPPING DISTANCE. (AUTHOR) (U)

AD-664 046 1/3 5/2
TECHNOLOGY INC DAYTON OHIO
COMPUTERIZED DATA CATALOG AND RETRIEVAL SYSTEM FOR DEPLOYABLE AERODYNAMIC DECELERATORS. (U)
DESCRIPTIVE NOTE: FINAL REPT. 15 DEC 66-15 JUN 67, NOV 67 45P HOGAN,THOMAS J. , JR.; SCHAUER,JOHN J. ;
CONTRACT: F33615-67-C-1232
PROJ: AF-6065
TASK: 606502
MONITOR: AFFDL TR-67-115

UNCLASSIFIED REPORT

DESCRIPTORS: (*DECELERATION, *PARACHUTES), (*DATA STORAGE SYSTEMS, DECELERATION), (*INFORMATION RETRIEVAL, DECELERATION), TEST METHODS, BALLOONS, RUTORCHUTES, DATA PROCESSING SYSTEMS, DROP TESTING, CODING, ROCKET-PROPELLED SLEDS, COMPUTER PROGRAMS, DEPLOYMENT (U)
IDENTIFIERS: BALLUTES, AERODYNAMIC DECELERATORS (U)

IN THE DEVELOPMENT OF A COMPUTERIZED DATA CATALOG AND DATA RETRIEVAL SYSTEM FOR DEPLOYABLE AERODYNAMIC DECELERATORS, THE RESULTS WERE TWOFOLD: (1) A LIST OF PARAMETERS WHICH COMPLETELY DEFINE THE INFORMATION PERTINENT TO THESE DECELERATORS; AND (2) A DATA BASE (THE STRUCTURE TO ARRANGE THE DATA ELEMENTS MAKING UP A UNIT OF INFORMATION) AND THE COMPUTER PROGRAM TO MANIPULATE THE DATA BASE. THE COMBINATION OF THESE RESULTS CONSTITUTES A SYSTEM TO STORE AND RETRIEVE BY COMPUTER TECHNIQUES ALL DATA RELATED TO DEPLOYABLE AERODYNAMIC DECELERATORS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /20NC2

AD-660 021 4/2
DAYTON UNIV OHIO RESEARCH INST
THE BALLUTE: A RETARDATION DEVICE AND WIND SENSOR. (U)

NOV 67 30P LUERS, JAMES K. ;
REPT. NO. SCIENTIFIC-3, UDRI-TR-67-144
CONTRACT: AF 19(628)-4796
PROJ: AF-6682
TASK: 668204
MONITOR: AFCRL 67-0659

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO SCIENTIFIC REPT. NO. 1, AD-657 810.

DESCRIPTORS: (METEOROLOGICAL INSTRUMENTS, PARACHUTES), SOUNDING ROCKETS, STABILIZATION SYSTEMS, MEASUREMENT, ANALYSIS, TEMPERATURE, TEST METHODS, ATMOSPHERIC SOUNDING, SENSORS, WIND (U)
IDENTIFIERS: BALLUTES, RETARDATION SYSTEMS (U)

EXPERIMENTAL TESTS HAVE BEEN MADE WITH VARIOUS CONFIGURATIONS OF THE BALLUTE IN ORDER TO DEVELOP A STABLE RETARDATION DEVICE FOR METEOROLOGICAL ROCKETSONDES. THIS REPORT DISCUSSES THE REDUCTION AND ANALYSIS OF THESE TESTS. SEVERAL OF THE BALLUTE CONFIGURATIONS ARE SHOWN TO SATISFY THE PROJECT GOAL OF PROVIDING THE REQUIRED STABILITY AS WELL AS A SUFFICIENTLY SLOW FALL VELOCITY TO ACCURATELY MEASURE WINDS AND TEMPERATURE. (AUTHOR) (U)

AD-670 984 1/3 15/7
GOODYEAR AEROSPACE CORP AKRON OHIO
PRELIMINARY INVESTIGATION OF BALLUTE-FLEXIBLE ROTOR CONCEPT FOR LOW-ALTITUDE CARGO AIRDROP. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
AUG 66 116P MANSFIELD,O. L. ;
REPT. NO. GER-12970
CONTRACT: DA-19-129-AMC-657(N)
PROJ: DA-1M121401D195
MONITOR: USA-NLABS TR-68-70-AD

UNCLASSIFIED REPORT

DESCRIPTORS: (*ROTORCHUTES, *ROTARY WINGS), (*CARGO PARACHUTES, *AIR DROP OPERATIONS), LOW ALTITUDE, FLEXIBLE STRUCTURES, CARGO, BALLOONS, TACTICAL AIR SUPPORT, ARMY OPERATIONS, INFLATABLE STRUCTURES, DESIGN, DESCENT, IMPACT, RELIABILITY, FLIGHT TESTING (U)
IDENTIFIERS: BALLUTES, AERODYNAMIC DECELERATORS, EXTRACTION PARACHUTES (U)

CONCEPTUAL DESIGN FOR AN AIRDROP SYSTEM FROM A 500 FT. ALTITUDE FOR PAYLOADS FROM 2,000 TO 35,000 LB USING A SPINNING BALLUTE FOR CARGO EXTRACTION AND INITIAL ROTOR SPIN-UP AND AN AUTOROTATING INFLATABLE FLEXIBLE ROTOR FOR TERMINAL DESCENT ARE REPORTED. BALLUTE WEIGHTS AND ROTOR SYSTEM SIZE AND WEIGHTS ARE EVALUATED FOR SYSTEMS WITH AND WITHOUT A FLARE MANEUVER TO MEET ACCEPTABLE IMPACT VELOCITY CONDITIONS. OPERATIONAL REQUIREMENTS AND A PRELIMINARY ESTIMATE OF RELIABILITY ARE PRESENTED. DESIGN AND FREE-FLIGHT TESTING OF A 5-FT. DIAMETER MODEL INFLATABLE ROTOR ARE DESCRIBED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-681 455 4/2 1/3
GOODYEAR AEROSPACE CORP AKRON OHIO
BALLUTE DEVELOPMENT FOR LOKI-DART AND ARCAS
ROCKETSONDES. (U)
DESCRIPTIVE NOTE: FINAL REPT. FEB 66-AUG 68,
NOV 68 51P GRAHAM,JOHN J. , JR
REPT. NO. GER-14010
CONTRACT: AF 19(628)-5851
PROJ: AF-6682
TASK: 668203
MONITOR: AFCRL 68-0622

UNCLASSIFIED REPORT

DESCRIPTORS: (*SOUNDING ROCKETS, PARACHUTES), DECELERATION, RADIOSONDES, STABILIZATION, ATMOSPHERIC SOUNDING, WIND, ATMOSPHERIC TEMPERATURE, MANUFACTURING METHODS, COSTS, FLIGHT TESTING, METEOROLOGICAL BALLOONS (U)
IDENTIFIERS: RETARDATION DEVICES, BALLOON PARACHUTES, ARCAS, LOKI-DART SOUNDING ROCKETS, PAN-88 SOUNDING ROCKETS, BALLUTES (U)

GOODYEAR AEROSPACE CORPORATION COMPLETED A PROGRAM TO DEVELOP A STABILIZING DECELERATOR FOR THE ARCAS AND LOKI-DART METEOROLOGICAL ROCKETSONDES. DURING THE PROGRAM OF CYCLIC MODIFICATION, TEST, AND EVALUATION, 53 DEVELOPMENT UNITS WERE FLIGHT TESTED AT THE AIR FORCE EASTERN TEST RANGE. THE DESIGN PERFORMANCE GOALS WERE REACHED FOR BOTH SYSTEMS. FIFTY-FIVE PREPRODUCTION UNITS OF THE LOKI-DART BALLUTE WERE FABRICATED FOR FURTHER EVALUATION BY AIR FORCE CAMBRIDGE RESEARCH LABORATORIES. AS A RESULT OF THIS PROGRAM THE LOKI-DART BALLUTE (PARACHUTE, METEOROLOGICAL A/B2BU-5) WAS INCORPORATED IN THE STANDARDIZED PAN-88 METEOROLOGICAL ROCKETSONDE CURRENTLY IN PRODUCTION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-686 144 1/3
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
PARACHUTE, (U)
MAR 69 7P LOBANOV,N. A. ;
REPT. NO. FSTC-HT-23-1019-68
PROJ: FSTC-95J9033A0906, FSTC-922362.2301

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 207 042, 8 DEC 67.

DESCRIPTORS: (*PARACHUTES, PATENTS), DESIGN, CORDAGE, BRAKING, USSR (U)
IDENTIFIERS: PARACHUTE CANOPIES, TRANSLATIONS (U)

A PARACHUTE IS DESCRIBED WHICH CONSISTS OF A CANOPY WITH A POLAR OPENING: CENTRAL SHROUD LINES WITH AN ELASTIC LINK, A BRAKING PARACHUTE ATTACHED BY THE ELASTIC LINK BY MEANS OF A CONNECTING PULL-LINE. TO RETARD THE FILLING AND OPENING OF THE CANOPY OF THE BASIC PARACHUTE THE LOWER EDGE OF THE CANOPY OF THE BASIC PARACHUTE IS EQUIPPED WITH A DRAW-IN LACING, WHICH BREAKS UPON THE PULLING OUT OF THE CONNECTING PULL-LINE, THIS LINE BEING ATTACHED TO THE SHROUD OF THE PULL-OUT PARACHUTE BY MEANS OF AN INTERMEDIARY LINK WHICH BREAKS IN THE AIR AFTER FULL STRETCH-OUT OF THE ELASTIC LINK OF THE CENTRAL SHROUD LINES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-693 429 1/3
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D
C
A PARACHUTE CANOPY WITH POCKETS. (U)
SEP 69 6P
REPT. NO. FSTC-HT-23-391-69
PROJ: FSTC-02RD500

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 193 941, 22 MAY 67.

DESCRIPTORS: (*PARACHUTES, DESIGN), STRUCTURAL PARTS, CONSTRUCTION, SAFETY, PATENTS, USSR (U)
IDENTIFIERS: PARACHUTE CANOPIES, TRANSLATIONS (U)

THE DOCUMENT DESCRIBES A PARACHUTE WITH POCKETS ON THE CANOPY AND HOLES BENEATH THE POCKETS DESIGNED TO ADMIT AIR AT THE HOLES TO ASSURE THAT THE CANOPY WILL OPEN FROM THE CENTRAL PORTION OUT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-693 467 1/3
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
PARACHUTE CANOPY. (U)
SEP 69 6P OSMOLOVSKII,I. V. ;
REPT. NO. FSTC-HT-23-408-69
PROJ: FSTC-0423100

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 205 611, 19 JAN 68.

DESCRIPTORS: (*PARACHUTES, DESIGN), AUTOMATIC, OPERATION, LOADING(MECHANICS), CORDAGE, CALIBRATION, PATENTS, USSR (U)
IDENTIFIERS: PARACHUTE CANOPIES, TRANSLATIONS (U)

THE INVENTION DESCRIBES AN IMPROVED PARACHUTE CANOPY, EQUIPPED WITH A DEVICE WHICH AUTOMATICALLY INCREASES THE SIZE OF THE CANOPY VENT UNDER A SPECIFIED CANOPY LOADING CONDITION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-693 429 1/3
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
A PARACHUTE CANOPY WITH POCKETS. (U)
SEP 69 6P
REPT. NO. FSTC-HT-23-391-69
PROJ: FSTC-02RD500

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 193 941, 22 MAY 67.

DESCRIPTORS: (*PARACHUTES, DESIGN), STRUCTURAL PARTS, CONSTRUCTION, SAFETY, PATENTS, USSR (U)
IDENTIFIERS: PARACHUTE CANOPIES, TRANSLATIONS (U)

THE DOCUMENT DESCRIBES A PARACHUTE WITH POCKETS ON THE CANOPY AND HOLES BENEATH THE POCKETS DESIGNED TO ADMIT AIR AT THE HOLES TO ASSURE THAT THE CANOPY WILL OPEN FROM THE CENTRAL PORTION OUT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-693 467 173
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
PARACHUTE CANOPY, (U)
SEP 69 6P OSMOLOVSKII, I. V. ;
REPT. NO. FSTC-HT-23-408-69
PROJ: FSTC-0423100

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 205 611, 19 JAN 68.

DESCRIPTORS: (*PARACHUTES, DESIGN), AUTOMATIC, OPERATION, LOADING(MECHANICS), CORDAGE, CALIBRATION, PATENTS, USSR (U)
IDENTIFIERS: PARACHUTE CANOPIES, TRANSLATIONS (U)

THE INVENTION DESCRIBES AN IMPROVED PARACHUTE CANOPY, EQUIPPED WITH A DEVICE WHICH AUTOMATICALLY INCREASES THE SIZE OF THE CANOPY VENT UNDER A SPECIFIED CANOPY LOADING CONDITION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-695 088 1/3
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
ROTARY PARACHUTE. (U)
SEP 69 7P
REPT. NO. FSTC-HT-23-402-69
PROJ: FSTC-0423100

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 205 609, 19 JAN 68.

DESCRIPTORS: (*CARGO PARACHUTES, USSR), PATENTS, CONFIGURATION, ROTORCHUTES (U)
IDENTIFIERS: TRANSLATIONS (U)

THREE ROTATING PARACHUTES ARE DESCRIBED. THEY CONSIST OF CONNECTED TRIANGLES WITH SHROUDS ON TWO SIDES OF THE TRIANGLES ONLY. AIR FLOW UNDER THE THIRD SIDE CAUSES THE PARACHUTES TO ROTATE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZDNCZ

AD-701 004 1/3
PIONEER PARACHUTE CO INC MANCHESTER CONN
PROTOTYPE CLUSTER-PARACHUTE RECOVERY SYSTEM FOR A
50,000-LB. UNIT LOAD. VOLUME I. DESIGN
STUDY. (U)
DESCRIPTIVE NOTE: FINAL REPT. MAY 68-JAN 69.
JAN 69 211P TONI,ROYCE A. ;MUELLER,
WOLFGANG R. ;KNORR,MILAN M. ;WOOD,MARCIA C.
;
CONTRACT: DAAG17-68-C-0142
PROJ: DA-1-F-162203-D-195
MONITOR: USA-NLABS TR-69-32-AD

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 2. AD-701 005.

DESCRIPTORS: (*CARGO PARACHUTES, DESIGN), FLIGHT
TESTING, DROP TESTING, PARACHUTE FABRICS,
SUSPENSION DEVICES, DRAG,
PERFORMANCE(ENGINEERING), AIR DROP OPERATIONS (U)
IDENTIFIERS: G-11A PARACHUTES, CLUSTER
PARACHUTES (U)

THE REPORT COVERS A RESEARCH AND DEVELOPMENT
PROGRAM TO DESIGN AND FABRICATE A PROTOTYPE CARGO-
RECOVERY PARACHUTE ASSEMBLY FOR AIRDROPPING HEAVY
UNIT LOADS IN THE ORDER OF 50,000 LB. THE DESIGN
STUDY COVERS THE TRADE-OFF ANALYSIS AND COST
EFFECTIVENESS ASPECTS FOR A COMPLETE PARACHUTE
ASSEMBLY. FROM THESE STUDIES, A DESIGN ANALYSIS
AND COMPLETE DETAILED DESIGN WERE MADE BASED ON THE
SPECIFIED PERFORMANCE AND DESIGN REQUIREMENTS. USE
OF DATA REDUCTION ON FULL-SCALE CARGO DROPS WITH G-
11A PARACHUTES WITH VENT-PULL DOWN CONFIGURATION,
SCALE MODEL WIND TUNNEL TESTS AND PARAMETRIC STUDIES
DETERMINED THAT IT IS FEASIBLE TO USE A CARGO
PARACHUTE OF 135 FT. DIAM. WITH A VENT-PULL DOWN IN A
CLUSTER OF SIX TO RECOVER A LOAD UNIT OF 50,000 LB.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-701 005 1/3
PIONEER PARACHUTE CO INC MANCHESTER CONN
PROTOTYPE CLUSTER-PARACHUTE RECOVERY SYSTEM FOR A
50,000-LB UNIT LOAD. VOLUME II. DIRECT DESIGN
ASPECTS. (U)
DESCRIPTIVE NOTE: FINAL REPT. MAY 68-JAN 69,
JAN 69 127P TONI,POYCE A. ;KNOR,MILAN
M. ;
CONTRACT: DAAG17-68-C-0142
PROJ: DA-1-F-162203-D-195
MONITOR: USA-NLABS TR-69-83-AD

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-701 004.

DESCRIPTORS: (*CARGO PARACHUTES, DESIGN),
PARACHUTE FABRICS, SUSPENSION DEVICES,
LOADING(MECHANICS), FORCE(MECHANICS),
MATHEMATICAL ANALYSIS, CONFIGURATION, STRESSES,
PERFORMANCE(ENGINEERING), AIR DROP
OPERATIONS (U)
IDENTIFIERS: G-11A PARACHUTES, CLUSTER
PARACHUTES (U)

THE REPORT COVERS THE DIRECT DESIGN ASPECTS OF THE SELECTED PROTOTYPE CARGO RECOVERY ASSEMBLY FOR AIRDROPPING HEAVY UNIT LOADS IN THE ORDER OF 50,000 POUNDS. THE DETAILED DESIGN OF THE COMPONENTS IS COVERED AS WELL AS STRESS ANALYSIS TO DETERMINE THE MARGINS OF SAFETY FOR THE MATERIALS SELECTED. MATERIAL LISTS AND WEIGHTS FOR THE COMPONENTS ARE PROVIDED. LABORATORY TESTING OF INDIVIDUAL COMPONENTS AND STRENGTH EFFICIENCY OF STITCH PATTERNS ARE SHOWN. (AUTHOR) (U)

II. AERODYNAMICS

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-600 861
MINNESOTA UNIV MINNEAPOLIS
AERODYNAMIC CHARACTERISTICS OF THE PARAFOIL GLIDER
AND OTHER GLIDING PARACHUTES. (U)
APR 64 58P HEINRICH,H. G. NIETZ,THOMAS
LIPPA,HARVEY ;
CONTRACT: AF33 616 8310
PROJ: 6065
TASK: 606503
MONITOR: RTD TDR63 4022

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PARACHUTES, AERODYNAMIC CHARACTERISTICS),
STABILITY, ANGLE OF ATTACK, LIFT, DRAG, MODEL TESTS,
AERODYNAMIC CHARACTERISTICS, DESIGN (U)
IDENTIFIERS: PARAFOIL GLIDER (U)

A NEWLY CONCEIVED GLIDING PARACHUTE, CALLED THE PARAFOIL GLIDER, AND SEVERAL EXISTING GLIDE PARACHUTES HAVE BEEN EXAMINED WITH REGARD TO THEIR GENERAL STABILITY, RESULTING STABLE ANGLE OF ATTACK, AND LIFT TO DRAG RATIO. THE PARAFOIL GLIDER ASSUMED STABLE ANGLES OF ATTACK UP TO 50 DEGREES AGAINST THE VERTICAL WHICH REPRESENTS A LIFT TO DRAG RATIO OF APPROXIMATELY 1.2. THE INVESTIGATED EXISTING PARACHUTES HAD LIFT TO DRAG RATIOS OF LESS THAN UNITY. THE TANGENTIAL FORCE COEFFICIENT OF THE PARAFOIL GLIDER AMOUNTS TO APPROXIMATELY 1.5 AT THE POSITION OF THE STABLE ANGLE OF ATTACK. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-605 671
MINNESOTA UNIV MINNEAPOLIS INST OF TECH
THEORETICAL PARACHUTE INVESTIGATIONS. (U)
DESCRIPTIVE NOTE: PROGRESS REPT. NO. 23, 1 SEP-30 NOV 62,
NOV 62 64P HEINRICH,H. G. ;RIABOKIN,T. ;IBRAHIM,S. K. ;HAAK,E. L.;NICCUM,R. K. ;
CONTRACT: AF33 616 8310
PROJ: 6065
TASK: 60252

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-605 144

DESCRIPTORS: (*PARACHUTES, AERODYNAMIC CHARACTERISTICS), CARGO PARACHUTES, RIBBON PARACHUTES, CONFIGURATION, DECELERATION, WAKE, DYNAMICS, WIND TUNNELS, PARACHUTE FABRICS, MODELS (SIMULATIONS), STABILITY, STATISTICAL ANALYSIS (U)

CONTENTS: INVESTIGATION OF WAKE EFFECTS ON THE BEHAVIOR OF PARACHUTES AND OTHER RETARDATION DEVICES BEHIND LARGE BODIES; INVESTIGATION OF BASIC STABILITY PARAMETERS OF CONVENTIONAL PARACHUTES; THEORETICAL STUDY OF SUPERSONIC PARACHUTE PHENOMENA; THEORETICAL ANALYSIS OF THE DYNAMICS OF THE OPENING PARACHUTE; STATISTICAL ANALYSIS OF EXTRACTION TIME, DEPLOYMENT TIME, OPENING TIME, AND DRAG COEFFICIENT FOR AERIAL DELIVERY PARACHUTES AND SYSTEMS; GLIDING AERODYNAMIC DECELERATOR; EFFECTIVE POROSITY STUDIES; STUDY OF FLOW PATTERNS OF AERODYNAMIC DECELERATORS BY MEANS OF THE SURFACE WAVE ANALOGY; STRESS ANALYSIS OF THE T-10 TROOP PARACHUTE; AERODYNAMIC CHARACTERISTICS OF THE PARACHUTE STABILIZED A-21 CARGO CONTAINER; AERODYNAMIC CHARACTERISTICS OF THE CROSS AND WAGON-WHEEL TYPE PARACHUTES; DETERMINATION OF MASS FLOW THROUGH PARACHUTES WITH INHERENT GEOMETRIC POROSITY. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 72DNC2

AD-607 036
COOK ELECTRIC CO NORTON GROVE ILL
STUDY OF PARACHUTE PERFORMANCE AND DESIGN PARAMETERS
FOR HIGH DYNAMIC PRESSURE OPERATION. (U)
DESCRIPTIVE NOTE: REPT. FOR 1 JUL 62-31 DEC 63,
MAY 64 141P PEDERSEN,P. E. !
CONTRACT: AF33 657 9152
PROJ: 6065
TASK: 606505
MONITOR: FDL , TDR64 66

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: LEGIBILITY OF THIS DOCUMENT IS IN PART UNSATISFACTORY. REPRODUCTION HAS BEEN MADE FROM BEST AVAILABLE COPY.

DESCRIPTORS: (*PARACHUTES, PERFORMANCE (ENGINEERING), DESIGN, AERODYNAMIC LOADING, AERODYNAMIC CHARACTERISTICS, ROCKET PROPELLED SLEDS, TESTS, SHOCK (MECHANICS), DRAG, STABILITY, TEMPERATURE, DECELERATI(U)

PARACHUTE DESIGN AND PERFORMANCE DATA WERE OBTAINED ON A SERIES OF 24 ROCKET-POWERED SLED TESTS. PARACHUTE DEPLOYMENT VELOCITIES, RANGING BETWEEN MACH 1.0 AND 1.5, WERE OBTAINED WITH THE TOMAHAWK PARACHUTE TEST SLED OPERATING IN EITHER SINGLE STAGE OR DOUBLE STAGE, PUSHER CONFIGURATION. PARACHUTE TYPES THAT WERE INVESTIGATED INCLUDED HYPERFLO, HEMISFLO, REEFED CONICAL RIBBON AND SUPERSONIC GUIDE SURFACE DESIGNS. THE DATA OBTAINED INCLUDED INFLATION CHARACTERISTICS, OPENING SHOCK FACTORS, DRAG COEFFICIENTS, INFLATED AREAS, STABILITY, CANOPY TEMPERATURES AND GENERAL STRUCTURAL AND AERODYNAMIC DESIGN CONSIDERATIONS. FROM THIS PARACHUTE DECELERATOR TEST PROGRAM, IT MAY BE CONCLUDED THAT THE HYPERFLO TYPE PARACHUTE, BOTH MESH AND RIBBON ROOF DESIGNS, AND THE HEMISFLO TYPE PARACHUTE CAN BE FABRICATED TO WITHSTAND AND OPERATE SUCCESSFULLY IN THE HIGH DYNAMIC PRESSURE REGION OF 3000 PSF. SUPERSONIC REEFED OPERATION AND DISREEF TO FULL OPEN WAS ALSO DEMONSTRATED AS PRACTICAL WITH A CONICAL RIBBON TYPE PARACHUTE DESIGN. THE TEST VEHICLE SYSTEM INCLUDING ASSOCIATED DEPLOYMENT AND RELEASE TECHNIQUES AND THE DATA ACQUISITION SYSTEM ARE ALSO DISCUSSED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 760NC2

AD-607 637
PHILCO NEWPORT BEACH CALIF AERONUTRONIC DIV
AERODYNAMIC CHARACTERISTICS OF THE HYPER-
ENVIRONMENTAL TEST SYSTEM DATA RECOVERY VEHICLE FOR
MACH NUMBERS 0.52 TO 0.96. (U)
DESCRIPTIVE NOTE: TECHNICAL OPERATING REPT.,
FEB 60 94P WARDEN,R. V. ;
REPT. NO. AERONUTRONIC U-826
CONTRACT: AF04 647 449

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COMPLIANCE WITH AFBM
EXHIBIT 58-1, SECTION 3.11.4. LEGIBILITY OF THIS
DOCUMENT IS IN PART UNSATISFACTORY. REPRODUCTIO HAS BEEN
MADE FROM BEST AVAILABLE COPY.

DESCRIPTORS: (*RECOVERY VEHICLES, STABILITY), TRANSONIC
FLIGHT, AERODYNAMIC CHARACTERISTICS, ENVIRONMENTAL
TESTS, MODEL TESTS, NOSE CONES, CONFIGURATION, PARACHUTE
JUMPING, WIND TUNNELS (U)

THE REPORT PRESENTS THE RESULTS OF A SERIES OF
TESTS IN CONVAIR'S HIGH-SPEED WIND TUNNEL TO
EVALUATE THE STABILITY OF THE HETS 609A RECOVERY
VEHICLE IN THE TRANSONIC REGIME. THE TESTS WERE
RUN WITH TWO NOSE CONFIGURATIONS AT MACH NUMBERS
0.52, 0.61, 0.67, 0.82, AND 0.96. BOTH
CONFIGURATIONS WERE SUFFICIENTLY STABLE TO PERMIT
PARACHUTE DEPLOYMENT DOWN TO MACH 0.6.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-608 305
MINNESOTA UNIV MINNEAPOLIS
DRAG COEFFICIENTS OF SEVERAL BODIES OF REVOLUTION AT TRANSONIC AND SUPERSONIC VELOCITY, (U)
SEP 64 54P HEINRICH,H. G. ;HESS,SHELDON R. ;STUMBRIS,GUNAR;
CONTRACT: AF33 616 8310
PROJ: 6065
TASK: 606503
MONITOR: ASD , TDR63 663

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: JOINTLY SPONSORED BY THE QM RESEARCH AND ENGINEERING COMMAND, DEPT. OF THE ARMY; AND BUREAU OF AERONAUTICS AND BUREAU OF ORDNANCE, DEPT. OF THE NAVY.

DESCRIPTORS: (*DRAG, BODIES OF REVOLUTION), (*BODIES OF REVOLUTION, DECELERATION), TRANSONIC FLOW, SUPERSONIC FLOW, ATMOSPHERE ENTRY, AERODYNAMIC LOADING, REENTRY VEHICLES, DRAG PARACHUTES, WAKE, WIND TUNNELS (U)

THE DRAG COEFFICIENTS OF SEVERAL BODIES OF REVOLUTION WHICH ARE SIGNIFICANT FOR THE PURPOSE OF AERODYNAMIC DECELERATION WERE MEASURED IN THE TRANSONIC FLOW REGIME AND AT SUPERSONIC SPEEDS OF MACH NUMBERS 4 AND 5. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /20NC2

AD-608 305
MINNESOTA UNIV MINNEAPOLIS
PRESSURE DISTRIBUTION MEASUREMENTS OF CONVENTIONAL
RIBBON PARACHUTES IN SUPERSONIC FLOW. (U)
SEP 64 36P HAAK,EUGENE L. ENICCOM.
RONALD J. I
CONTRACT: AF33 616 8310
PROJ: 6065
TASK: 606503
MONITOR: ASD , TDR63 662

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: JOINTLY SPONSORED BY THE DEPT. OF THE ARMY AND THE DEPT. OF THE NAVY. LEGIBILITY OF THIS DOCUMENT IS IN PART UNSATISFACTORY. REPRODUCTION HAS BEEN MADE FROM BEST AVAILABLE COPY.

DESCRIPTORS: (*RIBBON PARACHUTES, AERODYNAMIC CHARACTERISTICS), MODELS (SIMULATIONS), PARACHUTES, PRESSURE, DISTRIBUTION, SUPERSONIC FLOW, TEST METHODS, HIGH-SPEED PHOTOGRAPHY, WIND TUNNELS, EXPERIMENTAL DATA (U)

CONVENTIONALLY SHAPED RIBBON PARACHUTES DO NOT FUNCTION SATISFACTORILY AS AERODYNAMIC DECELERATORS IN SUPERSONIC FLOW. THEIR UNSTABLE BEHAVIOR IS PARTICULARLY OBJECTIONABLE. TO DETERMINE THE CAUSE OF THIS STRUCTURAL AND DYNAMIC INSTABILITY, A SERIES OF PRESSURE DISTRIBUTION MEASUREMENTS WERE MADE ON RIBBON PARACHUTES AT MACH NUMBERS OF 0.8, 1.08, 1.2, 3.0, AND 4.5. THE RESULTS OF MEASUREMENTS AND ATTEMPTS TO INDICATE THE EFFECT OF SUSPENSION LINES AND FOREBODIES ON THE PRESSURE DISTRIBUTION OF THE PARACHUTE CANOPY ARE PRESENTED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 72ONC2

AD-610 791
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
AERUHYDROMECHANIC THEORY OF WING IN A NONSTATIONARY FLO. (SELECTED PARTS) (U)
JAN 65 17P NEKRASOV,A. I. ;
REPT. NO. FTD-TT-64-777
MONITOR: TT , 65 61556

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF MONO. TEORETICHESKAYA I PRIKLADNAYA MEKHANIKA. SBORNIK STATEI, V. 2, MOSCOW, 1962, P. 100-101, 611-622.

DESCRIPTORS: (*AERODYNAMIC CHARACTERISTICS, WINGS), (*PARACHUTES, LOADING (MECHANICS)), AIRFOILS, NONEQUILIBRIUM FLO., PARACHUTE DESCENTS, ARRESTING GEAR, MATHEMATICAL MODELS, LIFT, USSR (U)

A FORMULA IS OBTAINED FOR THE POWER OF LIQUID PRESSURE ON A PROFILE SITUATED IN NONSTATIONARY MOTION. A MATHEMATICAL THEORY IS OFFERED OF AN ARRANGEMENT, PROPOSED FOR REDUCING THE RATE OF LANDING OF PARACHUTE LOADS. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-631 777 1/3 1/1
DEUTCHE FORSCHUNGSANSTALT FUER LUFT- UND RAUMFAHRT E V
BRUNSWICK (WEST GERMANY) INSTITUT FUER FLUGMECHANIK
PARACHUTE CANOPIES DURING INFLATION. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
SEP 65 137P MELZIG,H. D. ;SCHMIDT,P. K.
;
CONTRACT: AF 61(052)-681,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PARACHUTES, PRESSURE), AERODYNAMIC CHARACTERISTICS, EXPERIMENTAL DATA, SURFACES, PHOTOGRAPHIC ANALYSIS, TESTS, MATHEMATICAL MODELS, CORRELATION TECHNIQUES (U)

AN EXPERIMENTAL INVESTIGATION AND CORRELATIVE ANALYSIS WERE CONDUCTED TO DETERMINE THE PRESSURE DISTRIBUTION OVER THE SURFACE OF PARACHUTE CANOPIES DURING THE PERIOD OF INFLATION FOR THE INFINITE MASS CASE AND TO CORRELATE PRESSURE COEFFICIENTS WITH INFLATING CANOPY SHAPES. PARACHUTE CANOPY MODELS OF CIRCULAR FLAT, 10% EXTENDED SKIRT, RINGSLOT, AND RIBBON DESIGNS WERE TESTED UNDER INFINITE MASS CONDITIONS IN A 9 X 12 FT LOW SPEED WIND TUNNEL. EXTERNAL AND INTERNAL PRESSURE VALUES WERE MEASURED AT VARIOUS LOCATIONS OVER THE SURFACE OF THE MODEL CANOPIES THROUGHOUT THE PERIOD OF INFLATION, AND GENERALIZED CANOPY PROFILE SHAPES WERE OBTAINED BY MEANS OF PHOTOGRAPHIC ANALYSIS. PRESSURE COEFFICIENTS DERIVED FOR THE STEADY STATE (FULLY OPEN CANOPY) ARE QUITE COMPARABLE TO THE RESULTS OF PREVIOUS MEASUREMENTS. PEAK PRESSURE VALUES DURING THE UNSTEADY PERIOD OF INFLATION WERE FOUND TO BE UP TO 5 TIMES AS GREAT AS STEADY STATE VALUES. THE RELATIONSHIPS BETWEEN THE PRESSURE DISTRIBUTION AND TIME FOR EACH OF THE CANOPY MODELS DEPLOYED AT FREE-STREAM VELOCITIES BETWEEN 70 AND 160 FT/SEC ARE PRESENTED IN DETAIL AND CORRELATED WITH CHANGING CANOPY SHAPE. A COMPLETE SHAPE ANALYSIS IS MADE AND A MATHEMATICAL MODEL IS PROPOSED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 72DNC2

AD-635 185 4/2 22/2
TEXAS UNIV AUSTIN ATMOSPHERIC SCIENCE GROUP
DETERMINATION OF WINDS FROM METEOROLOGICAL
ROCKETSONDES. (U)
NOV 65 34P EDDY, ANDS (DUCHON, C. E. ;
HAASE, F. M. (HARGAN, D. R. ;
REPT. NO. 2.
CONTRACT: DA-23-072-AMC-1564.

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*METEOROLOGICAL INSTRUMENTS, SOUNDING ROCKETS), (*WIND, *ATMOSPHERIC SOUNDING), (*SOUNDING ROCKETS, ATMOSPHERIC SOUNDING), WIND-DIRECTION INDICATORS, RADIOSONDES, PARACHUTE DESCENTS, EQUATIONS OF MOTION (U)
IDENTIFIERS: ARCAS (U)

THE EQUATIONS OF MOTION ARE DERIVED FOR AN OBJECT FALLING UNDER THE INFLUENCE OF GRAVITY AND AERODYNAMIC DRAG. THESE EQUATIONS ARE USED TO EXAMINE THE RESPONSE OF THE ARCAS PARACHUTE TO HYPOTHETICAL WIND PROFILES IN THE REGION EXTENDING FROM 30 TO 60 KM. A COMPUTATIONAL SCHEME FOR DETERMINING THE HORIZONTAL WIND FROM THE OBSERVED MOTION OF ANY WIND SENSOR INFLUENCED ONLY BY THE ABOVE FORCES IS PRESENTED, ALONG WITH AN EXAMPLE OF ITS APPLICATION TO AN ARCAS PARACHUTE FLIGHT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 72ONCZ

AD-643 703 1/3
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
PARACHUTE. (U)
SEP 66 4P EFREMOV,E. F. ;PETKUS,G. V. ;
MOROZOV,K. S. ;
REPT. NO. FTD-HT-66-104

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF PATENT (USSR) 171 274, APPL. 460905/40-23, 4 JA. 65.

DESCRIPTORS: (*PARACHUTES, PATENTS), USSR, DESIGN, STABILIZATION SYSTEMS, LIFT, HEMISPHERICAL SHELLS, BODIES OF REVOLUTION, CONFIGURATION (U)

THE OBJECT OF THE INVENTION IS A PARACHUTE WITH A CANOPY IN THE FORM OF A CIRCULAR BELT. TO INCREASE ITS COEFFICIENT OF LIFT AND ITS STABILITY, IT IS EQUIPPED WITH A SMALL HEMISPHERICAL CANOPY. THE SHROUD LINES OF WHICH GO THROUGH AN EYE RING THAT IS FASTENED TO THE CENTRAL SHROUD LINE AND THE EXTERNAL RIM IS CONNECTED WITH THE INTERNAL EDGE BY FOUR MUTUALLY PERPENDICULAR SHROUD LINES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 72ONC2

AD-658 672 20/11
ARMY NATICK LABS MASS OFFICE OF THE SCIENTIFIC DIRECTOR
ON INEXTENSIONAL VIBRATIONS OF THIN SHELLS. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
JUL 67 34P ROSS,EDWARD W. , JR;
MONITOR: USA-NLABS TR-68-14-USD

UNCLASSIFIED REPORT

DESCRIPTORS: (*BODIES OF REVOLUTION, *VIBRATION), ELASTICITY, APPROXIMATION(MATHEMATICS), BOUNDARY VALUE PROBLEMS, SPHERES, TENTS, PARACHUTES, CONTAINERS, MATHEMATICAL ANALYSIS (U)
IDENTIFIERS: THIN SPHERICAL SHELLS (U)

IN THIS PAPER, THE NON-SYMMETRIC, FREE, ELASTIC VIBRATIONS OF THIN DOMES OF REVOLUTION ARE STUDIED. IT IS ASSUMED THAT THE FREQUENCY IS LOW. THE ASYMPTOTIC APPROXIMATIONS PREVIOUSLY GIVEN BY THE WRITER ARE USED TO ESTIMATE THE GENERAL SOLUTION TO THE SHELL VIBRATION EQUATIONS AT LOW FREQUENCIES. APPROXIMATIONS FOR THE LOW NATURAL FREQUENCIES AND MODES ARE DERIVED SYSTEMATICALLY UNDER A VARIETY OF EDGE CONDITIONS. LOW NATURAL FREQUENCIES ARE FOUND ONLY WHEN THE EDGE CONDITIONS IMPOSE NO FORCES TANGENT TO THE SHELL SURFACE. WHEN THE EDGE IS FREE (AND ONLY THEN) RAYLEIGH'S INEXTENSIONAL FREQUENCIES ARE RECOVERED. FOR CERTAIN OTHER EDGE CONDITIONS NEW NATURAL FREQUENCIES ARE FOUND THAT ARE ABOVE RAYLEIGH'S FREQUENCIES BUT STILL LOW COMPARED, E.G., WITH THE LOWEST MEMBRANE FREQUENCY. THE DISPLACEMENT MODES ASSOCIATED WITH THESE NEW FREQUENCIES ARE MOSTLY OF INEXTENSIONAL TYPE. THE GENERAL RESULTS ARE APPLIED TO ESTIMATE THESE NEW FREQUENCIES FOR SPHERICAL DOMES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 74DNC4

AD-669 665 1/3 15/7
STENCEL AERO ENGINEERING CORP ASHEVILLE N C
LIFTING OF AERODYNAMIC DECELERATORS. (U)
DESCRIPTIVE NOTE: FINAL TECHNICAL REPT.,
NOV 66 76P OATES,RONALD W. HYUST,
CHARLES A. ;MARTINEZ,A. L. ;
CONTRACT: DA-19-129-AMC-850(N)
PROJ: DA-1M121401D195
MONITOR: USA-NLABS TR-68-66-AD

UNCLASSIFIED REPORT

DESCRIPTORS: (*DRAG PARACHUTES, LIFT), (*AIR DROP OPERATIONS, *CARGO PARACHUTES), PERFORMANCE(ENGINEERING), COMPUTER PROGRAMS, TRAJECTORIES, INFLATABLE STRUCTURES, WEIGHT, GEOMETRIC FORMS, AVIATION SAFETY, COSTS, LOGISTICS, TRAINING, RELIABILITY, LOW ALTITUDE, ARMY OPERATIONS (U)
IDENTIFIERS: PARACHUTE CANOPIES, *LOADS(LIFTING OF AERODYNAMIC DECELERATORS), *LIFTING OF AERODYNAMIC DECELERATORS (U)

PROGRESS IS REPORTED FOR ALL WORK ACCOMPLISHED ON THE FOLLOWING ACTIVITIES: (1) ANALYTICAL STUDIES-PARACHUTE DYNAMICS, PARACHUTE PERFORMANCE REQUIRED FOR LOW LEVEL CARGO DELIVERY; COMPUTER TRAJECTORY PROGRAM, PERFORMANCE SUMMARY AND CONCLUSIONS; (2) RUNWAY LEVEL TEST RESULTS OF PARACHUTE INFLATION AND FORCE-TIME HISTORIES WITH AERODYNAMIC ASSISTANCE AND LIFTING CANOPIES; (3) WEIGHT AND SIZE LIMITS, FLIGHT SAFETY, SYSTEM WEIGHT AND COST, LOGISTICS AND TRAINING; (4) FUNCTIONAL RELIABILITY. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-675 181 1/3 20/4
GOODYEAR AEROSPACE CORP AKRON OHIO
ESTABLISHMENT OF AN UNSYMMETRICAL WAKE TEST
CAPABILITY FOR AERODYNAMIC DECELERATORS. VOLUME I.
TEST VEHICLE DESIGN MODIFICATION. (U)
DESCRIPTIVE NOTE: FINAL REPT. 1 MAR-15 OCT 68,
AUG 68 222P HENKE,DANIEL W. J
REPT. NO. GER-13528-VOL-1
CONTRACT: AF 33(615)-3595
PROJ: AF-6065
TASK: 606507
MONITOR: AFFDL TR-67-192-VOL-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 3, AD-675 182.

DESCRIPTORS: (*LIFTING REENTRY VEHICLES, DECELERATION), (*SUPERSONIC TEST VEHICLES, WAKE), SUPERSONIC CHARACTERISTICS, FEASIBILITY STUDIES, FREE FLIGHT TRAJECTORIES, AERODYNAMIC HEATING, INFLATABLE STRUCTURES, RECOVERY, DRAG PARACHUTES, DESIGN, WIND TUNNEL MODELS (U)
IDENTIFIERS: *AERODYNAMIC DECELERATORS, ARAPAHO C TEST VEHICLES (U)

THE RESULTS OF WIND TUNNEL INVESTIGATIONS, ANALYSES, AND PRELIMINARY DESIGN EFFORTS PERFORMED IN ORDER TO SHOW THE FEASIBILITY OF ACCOMPLISHING SUPERSONIC FREE FLIGHT TESTS OF DEPLOYABLE AERODYNAMIC DECELERATORS IN THE WAKE OF AN UNSYMMETRICAL FOREBODY ARE DESCRIBED. THE RESULTS SHOW THAT THE SIMULATION OF THE WAKE OF A NONAXISYMMETRIC LIFTING BODY IS FEASIBLE AND PRACTICABLE BY INTEGRATING INFLATABLE AFT-APPENDAGES ON AN ARAPAHO C TEST VEHICLE AND THAT THE RESULTANT MODIFIED VEHICLE RETAINS THE SAME TEST CAPABILITIES AS THE BASIC ARAPAHO C. THE MODIFIED VEHICLE DESIGN ALSO INCLUDES MODIFICATIONS REQUIRED FOR COMPLIANCE WITH EGLIN AFB/EGLIN GULF TEST RANGE SAFETY CRITERIA. INCLUDED ARE RECOMMENDATIONS FOR FURTHER VEHICLE MODIFICATIONS THAT WOULD IMPROVE THE TEST CAPABILITIES OF THE BASIC ARAPAHO C TEST VEHICLE. A VEHICLE MOCKUP WAS CONSTRUCTED TO DEMONSTRATE FEASIBILITY OF THE APPROACH AND TO PRECLUDE MAJOR ASSEMBLY AND ACTUATION INTERFERENCE PROBLEMS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-675 182 1/3 20/4
GOODYEAR AEROSPACE CORP A. , OHIO
ESTABLISHMENT OF AN UNSYMMETRICAL WAKE TEST CAPABILITY FOR AERODYNAMIC DECELERATORS. VOLUME III. EXPERIMENTAL WAKE SURVEY AND BODY SURFACE PRESSURE DATA. (U)
DESCRIPTIVE NOTE: FINAL REPT. 1 MAR 66-1 JAN 68,
AUG 68 353P HENKE,DANIEL W. ;
REPT. NO. GER-13528-VOL-3
CONTRACT: AF 33(615)-3595
PROJ: AF-6065
TASK: 606507
MONITOR: AFFDL TR-67-192-VOL-3

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO VOLUME 1, AD-675 181.

DESCRIPTORS: (*LIFTING REENTRY VEHICLES, DECELERATION), (*SUPERSONIC TEST VEHICLES, DRAG PARACHUTES), WAKE, ASYMMETRIC BODIES, AXIALLY SYMMETRIC FLOW, BOUNDARY LAYER, SUPERSONIC CHARACTERISTICS, EXPERIMENTAL DATA, PRESSURE, DISTRIBUTION, TABLES, DRAG, SURFACE PROPERTIES, RECOVERY, WIND TUNNEL MODELS (U)
IDENTIFIERS: *AERODYNAMIC DECELERATORS, PRESSURE DISTRIBUTION, PARASONIC PARACHUTES (U)

A SERIES OF WIND TUNNEL TESTS WAS CONDUCTED TO DETERMINE PRESSURE DISTRIBUTION ON THE SURFACE OF AND IN THE WAKE OF AXISYMMETRIC AND ASYMMETRIC (ELLIPTICAL) FOREBODIES. THESE TESTS WERE CONDUCTED IN SUPPORT OF BOUNDARY LAYER AND WAKE ANALYSES REQUIRED AS A BASIS FOR ESTABLISHING AN ANALYTICAL METHOD FOR PREDICTING THE DRAG OF PARASONIC PARACHUTES DEPLOYED IN THE WAKES OF THESE FOREBODIES. THE ANALYSIS OF THE DATA OBTAINED DURING THIS TEST IS DESCRIBED IN VOLUMES I AND II OF THE REPORT. TABULATIONS OF THE DATA OBTAINED DURING THESE TESTS ARE PRESENTED IN THIS VOLUME. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZDNC2

AD-681 880 1/3
ARMY NATICK LABS MASS OFFICE OF THE SCIENTIFIC DIRECTOR
APPROXIMATE ANALYSIS OF A FLAT, CIRCULAR PARACHUTE IN STEADY DESCENT. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
DEC 68 52P ROSS,EDWARD W. , JR;
PROJ: DA-1-F-162203-D-195
MONITOR: USA-NLABS TR-69-51-USD

UNCLASSIFIED REPORT

DESCRIPTORS: (*PARACHUTES, DESIGN), DESCENT, PARACHUTE FABRICS, APPROXIMATION(MATHEMATICS), STRESSES, DEFORMATION, PRESSURE, DRAG, AERODYNAMIC CONFIGURATIONS, DEFLECTION, DISTRIBUTION, DIFFERENTIAL EQUATIONS, INTEGRATION, THEORY (U)
IDENTIFIERS: STRESS ANALYSIS, PRESSURE DISTRIBUTION (U)

A THEORY IS PRESENTED FOR THE STRESS ANALYSIS OF A FLAT, CIRCULAR PARACHUTE IN STEADY, VERTICAL DESCENT. UNLIKE PREVIOUS TREATMENTS OF THE PROBLEM, THIS THEORY DOES NOT ASSUME THAT THE SHAPE IS KNOWN. INSTEAD THE THEORY PRESENTS RELATIONS BETWEEN THE PRESSURE DISTRIBUTION IN THE OPENED CONDITION AND THE SHAPE, DRAG AND STRESSES IN LINES AND FABRIC. THE THEORY RESULTS IN A NON-LINEAR THIRD ORDER SYSTEM OF ORDINARY DIFFERENTIAL EQUATIONS WITH BOUNDARY CONDITIONS AT BOTH VENT AND SKIRT. THIS SYSTEM WAS SOLVED BY A COMPUTER PROGRAM BASED ON THE RUNGE-KUTTA METHOD OF NUMERICAL INTEGRATION. THE RESULTS ARE IN FAIRLY GOOD AGREEMENT WITH MEASUREMENTS ON PARACHUTES. THE COMPUTER PROGRAM CAN BE USED FOR STUDIES OF EFFECTS OF DESIGN CHANGES ON SHAPE, DRAG AND STRESS, AND THE RESULTS OF A SMALL STUDY OF THIS SORT ARE INCLUDED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-687 307 1/3
ARMY NATICK LABS MASS OFFICE OF THE SCIENTIFIC DIRECTOR
ANALYSIS OF A PARACHUTE WITH A PULLED-DOWN VENT. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
FEB 69 43P ROSS,EDWARD W. JR;
PROJ: DA-1-F-162203-D-195
MONITOR: USA-NLABS TR-69-21-USD

UNCLASSIFIED REPORT

DESCRIPTORS: (*PARACHUTES, AERODYNAMIC CONFIGURATIONS), PARACHUTE DESCENTS, STRESSES, AERODYNAMIC CONTROL SURFACES, MATHEMATICAL MODELS, NUMERICAL ANALYSIS, DESIGN, PROGRAMMING(COMPUTERS), PARACHUTE FABRICS, STRAIN(MECHANICS) (U)
IDENTIFIERS: PARACHUTE VENTS (U)

THE ANALYSIS FOR FLAT CIRCULAR CANOPIES IN STEADY DESCENT IS HERE EXTENDED TO DEAL WITH CANOPIES HAVING A PULLED-DOWN VENT. A GENERAL THEORY IS DEVELOPED, AND A PARTIAL, APPROXIMATE SOLUTION IS FOUND IN CLOSED FORM FOR CERTAIN CONDITIONS. THE GENERAL THEORY IS TAKEN AS THE BASIS OF A COMPUTER PROGRAM. AN EXAMPLE IS WORKED OUT TO DEMONSTRATE THE USE OF THE PROGRAM IN DETERMINING THE OPTIMUM LENGTH OF CENTER LINE. THE RESULTS ARE COMPARED WITH TESTS AND FAIRLY GOOD AGREEMENT IS OBTAINED. THE MOST INTERESTING OUTCOME IS THE PREDICTION THAT THE MAXIMUM FABRIC STRESS IS GREATLY REDUCED BY PULLING THE VENT DOWN. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. AZONC2

AD-693 152 1/2 9/2
TACTICAL AIRLIFT CENTER POPE AFB N C OFFICE OF OPERATIONS ANALYSIS
MINIMUM DROP ALTITUDES AND HORIZONTAL DISTANCES FOR HIGH ALTITUDE, REEFED PARACHUTE DROPS. (U)
DESCRIPTIVE NOTE: TECHNICAL MEMO.,
JUL 69 36P MANSON,A. R. J
REPT. NO. TALC-OA-TM-4

UNCLASSIFIED REPORT

DESCRIPTORS: (*PARACHUTE DESCENTS, MATHEMATICAL PREDICTION), LOADING(MECHANICS), TIME, RANGES(DISTANCE), ALTITUDE, COMPUTER PROGRAMS, REGRESSION ANALYSIS, STATISTICAL PROCESSES, OPERATIONS RESEARCH, TACTICAL AIR COMMAND (U)
IDENTIFIERS: RING SLOT PARACHUTES, COMPUTER ANALYSIS (U)

THE PAPER GIVES A PRACTICAL METHOD OF PREDICTING THE MINIMUM DROP ALTITUDE AND THE HORIZONTAL DISTANCE FOR G-12D, 28-FOOT RING-SLOT, AND 22-FOOT RING-SLOT PARACHUTES FOR LOADS USING 20, 30, AND 40 SECOND SQUIB, DISREEFING CUTTERS. THE STATISTICAL METHODS USED ARE THOSE OF MULTIPLE REGRESSION BASED ON THE OBSERVED THEODOLITE DATA FROM 46 DROPS. SUFFICIENT DETAIL IS GIVEN TO ALLOW EXTENSION OF THE TABLED RESULTS TO PHYSICAL SITUATIONS NOT SPECIFICALLY INCLUDED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZDNC2

AD-693 355 1/3 1/1 20/4
LOCKHEED MISSILES AND SPACE CO SUNNYVALE CALIF
UNSTEADY SOLUTION OF THE FLOWFIELD OVER CONCAVE BODIES. (U)
DESCRIPTIVE NOTE: TECHNICAL NOTES,
OCT 68 3P BASTIANON,RICARDO A. ;

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN AIAA JNL., V7 N3 P531-533 MAR 69.
SUPPLEMENTARY NOTE: REVISION OF REPORT DATED 12 SEP 68. PRESENTED AT AIAA AERODYNAMIC DECELERATION SYSTEMS CONFERENCE (2ND) EL CENTRO, CALIF. 23-25 SEP 68, PAPER 68-946. SPONSORED IN PART BY DEPARTMENT OF THE NAVY, WASHINGTON, D. C.

DESCRIPTORS: (*PARACHUTES, FLOW FIELDS), STABILITY, SUPERSONIC CHARACTERISTICS, CURVED PROFILES, SHOCK WAVES, INFLATABLE STRUCTURES, THREE-DIMENSIONAL FLOW, NUMERICAL ANALYSIS, AXIALLY SYMMETRIC FLOW (U)
IDENTIFIERS: UNSTEADY FLOW, PARACHUTE CANOPIES, CONCAVE BODIES (U)

THE FLUID FLOW AROUND A CONCAVE BODY IMMERSED IN A SUPERSONIC FREESTREAM SHOWS AERODYNAMIC INSTABILITY. THIS FACT HAS BEEN OBSERVED EXPERIMENTALLY IN SUPERSONIC PARACHUTES WHERE A SHOCK WAVE MOVES BACK AND FORTH AHEAD OF THE CANOPY TO AFFECT THE INFLATION STABILITY. THE REPORT ATTEMPTS TO EXPLAIN THIS INSTABILITY BY THE NUMERICAL COMPUTATION OF THE AXISYMMETRIC INVISCID FLOW OVER A NONPOROUS CAVITY. (AUTHOR) (U)

AD-698 456 1/3 17/7

ARMY NATICK LABS MASS

WIND EFFECT ON GLIDING PARACHUTE SYSTEMS WITH NON-PROPORTIONAL AUTOMATIC HOMING CONTROL. (U)

DESCRIPTIVE NOTE: TECHNICAL REPT.,

NOV 69 67P GOODRICK,THOMAS F. I

REPT. NO. USA-NLABS-TR-70-28-AD

PROJ: DA-1-F-162203-D-195

UNCLASSIFIED REPORT

DESCRIPTORS: (*PARACHUTE DESCENTS, *RADIO HOMING), (*IMPACT PREDICTION, PARACHUTE DESCENTS), PARAWINGS, REMOTE CONTROL SYSTEMS, RADIO EQUIPMENT, CIRCULAR ERROR PROBABLE, PROBABILITY, DEPLOYMENT, ITERATIONS, GLIDE PATH SYSTEMS, WIND, NONPOWERED FLIGHT (U)

EQUATIONS ARE PRESENTED AND EVALUATED FOR ESTIMATING THE WIND EFFECT ON THE APPROACH PATH AND DESCENDING ORBIT OF GLIDING PARACHUTE SYSTEMS WITH NON-PROPORTIONAL AUTOMATIC HOMING CONTROL. EXACT EQUATIONS ARE PRESENTED FOR DETERMINING CERTAIN CHARACTERISTIC FEATURES OF THE DESCENDING ORBIT. ITERATION EQUATIONS ARE PRESENTED INCORPORATING HOMING SIMULATION FOR CALCULATING POINTS AT EQUAL TIME INTERVALS ALONG THE GROUND TRACK. THE CONTROL RESPONSE TIME, EFFECT OF DEPLOYMENT POSITION, AND IMPACT POSITION PROBABILITY ARE DISCUSSED. AN EMPIRICAL EQUATION FOR THE RADIUS OF THE CIRCLE OF EQUAL PROBABILITY AS A FUNCTION OF TURNING RADIUS, WIND VELOCITY, AND SYSTEM VELOCITY IS PRESENTED. A PARAMETRIC ANALYSIS OF THE EQUATIONS IS GIVEN FOR SYSTEMS WITH GLIDE RATIOS FROM 2.0 TO 3.0 AND TURNING RADII OF 75 FT AND 100 FT IN WINDS OF FROM 4 TO 32 FPS. THE ANALYSIS SHOWS THAT ACCURACY IS MORE DEPENDENT ON HIGH GLIDE RATIO THAN ON TURNING RADIUS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 72ONC2

AD-713 520 1/3 1/1
ARMY NATICK LABS MASS
THE INTERNAL AND EXTERNAL FLOW FIELD ASSOCIATED WITH PARACHUTES DURING INFLATION. (U)
70 15P DE SANTIS,GREGORY C. ;

UNCLASSIFIED REPORT

DESCRIPTORS: (*PARACHUTES, *FLOW FIELDS), ANEMOMETERS, MODEL TESTS, WIND TUNNEL MODELS, AERODYNAMIC CHARACTERISTICS (U)
IDENTIFIERS: *INFLATING, C-9 PARACHUTE CANOPIES (U)

A HOT-WIRE ANEMOMETER WAS USED TO OBTAIN DATA ON THE FLOW FIELD ASSOCIATED WITH AN INFLATING PARACHUTE. SEVEN MODELS SIMULATING VARIOUS STAGES OF INFLATION OF THE C-9 PARACHUTE WERE FABRICATED AND TESTED IN A SPECIALLY CONSTRUCTED TEST SECTION WHERE THE TEMPERATURE COULD BE HELD UNIFORM. USING THIS METHOD, IT WAS POSSIBLE TO ACCURATELY MEASURE THE INTERNAL AND EXTERNAL FLOW SURROUNDING THE CANOPY. SOME POSSIBLE APPLICATIONS OF THE DATA TO FULL-SCALE PARACHUTE SYSTEMS ARE PRESENTED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONCZ

AD-718 608 1/3
NAVAL ORDNANCE LAB WHITE OAK MD
A NEW APPROACH TO THE DETERMINATION OF THE STEADY-STATE INFLATED SHAPE AND INCLUDED VOLUME OF SEVERAL PARACHUTE TYPES IN 24-GORE AND 30-GORE CONFIGURATIONS. (U)
SEP 70 56P LUDTKE,WILLIAM P. ;
REPT. NO. NOLTR-70-178

UNCLASSIFIED REPORT

DESCRIPTORS: (*PARACHUTES, AERODYNAMIC CONFIGURATIONS), INFLATABLE STRUCTURES, VOLUME, POROUS MATERIALS, MODEL TESTS, STRESSES, SHOCK(MECHANICS), RIBBON PARACHUTES (U)
IDENTIFIERS: PARACHUTE CANOPIES (U)

AD-702041 DOCUMENTED A NEW METHOD OF DETERMINING THE STEADY-STATE INFLATED SHAPE AND INCLUDED VOLUME OF SEVERAL TYPES OF PARACHUTES IN 12-GORE AND 16-GORE CONFIGURATIONS. THIS REPORT USES THE METHODS AND TECHNIQUE OF AD-702 041 TO EXTEND THE DATA TO 24-GORE AND 30-GORE CONFIGURATIONS OF THE FLAT CIRCULAR, 10 PERCENT EXTENDED SKIRT, 16 PERCENT POROUS RING SLOT AND 24 PERCENT POROUS RIBBON PARACHUTES. THE INFLATED ELLIPTICAL SHAPES OF THE VARIOUS CANOPIES WERE OBTAINED FROM PHOTOGRAPHIC RECORDS OF THE WIND-TUNNEL TESTS AT VARIOUS VELOCITIES FROM 17 MPH TO 200 MPH USING PARACHUTE MODELS OF APPROXIMATELY 40-INCH FLAT DIAMETER. THE STEADY-STATE CANOPY VOLUME INCLUDES THE VOLUME OF THE BILLOWED GORE PANEL AND AN AIR VOLUME AHEAD OF THE CANOPY SKIRT HEM. THE RESULTS OF THIS INVESTIGATION ARE PARTICULARLY APPLICABLE TO STUDIES OF CANOPY STRESS ANALYSIS AND DETERMINATION OF THE VOLUME OF AIR WHICH MUST BE COLLECTED DURING CANOPY INFLATION PROCESS FOR USE IN THE CALCULATION OF OPENING-SHOCK FORCE.
(AUTHOR) (U)

III. MATERIALS

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 72ONC4

AD-603 129
MRD DIV GENERAL AMERICAN TRANSPORTATION CORP NILES ILL
INSTANTANEOUS LOCAL TEMPERATURES OF AERODYNAMIC DECELERATORS. PART II. THERMAL PROPERTIES, (U)
DESCRIPTIVE NOTE: REPT. FOR JUL 59-AUG 60,
FEB 61 162P ENGHOLM,E. ILIS,S. J. ;
BAMBENECK,R. A. ;
CONTRACT: AF33 616 6673
PROJ: 7320
TASK: 73201
MONITOR: WADD ,P. TR60 670 P2; ,171954

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PARACHUTE FABRICS, THERMAL CONDUCTIVITY), (*RE-ENTRY VEHICLES, PARACHUTE FABRICS), NYLON, STAINLESS STEEL, GLASS TEXTILES, GRAPHITE, FIBERS (SYNTHETIC), ORGANIC MATERIALS, LOADING (MECHANICS), STRESSES, HEAT TRANSFER, TESTS, TEST EQUIPMENT, SATELLITES (ARTIFICIAL), AERODYNAMIC HEATING (U)
IDENTIFIERS: AF-1 (U)

MEASUREMENTS WERE MADE OF THE THERMAL CONDUCTIVITY OF THE FOLLOWING CANDIDATE PARACHUTE FABRICS: NYLON, STAINLESS STEEL, GLASS, GRAPHITE, AND AF-1 (AN ORGANIC FIBER). DATA WERE OBTAINED WITH A CENCO-FITCH DEVICE IN WHICH THE EFFECTS OF COMPRESSIVE LOAD WAS ESTABLISHED. A SIMILARITY RELATION DERIVED FROM DIMENSIONAL ANALYSIS WAS APPLIED TO THESE DATA AND RESULTED IN A SATISFACTORY CORRELATION. A NEW APPARATUS WAS DEVELOPED IN ORDER TO DETERMINE FABRIC CONDUCTIVITY UNDER VARYING CONDITIONS OF TEMPERATURE (212 TO 600F), AMBIENT PRESSURE (15 TO 0.046 PSIA), BIAXIAL TENSION (0 TO 90 PPI), AND COMPRESSION (1 TO 10 PSI). INITIAL DATA COLLECTED USING THE APPARATUS DEMONSTRATED ITS CAPABILITIES AND ANALYSIS OF THESE DATA INDICATE THE POSSIBILITY OF FURTHER DIMENSIONLESS CORRELATIONS IN WHICH THE EFFECTS OF BIAXIAL TENSION MAY BE NEGLIGIBLE. CONSIDERABLY MORE DETAILED DATA WILL HAVE TO BE OBTAINED TO ESTABLISH REPEATABILITY AND VERIFICATION OF THESE HYPOTHESES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 72ONC2

AD-607 894
PROJESCO INC PERKASIE PA.
DEVELOPMENT OF NOMEX MESH MATERIALS. (U)
DESCRIPTIVE NOTE: REPT. FOR JUN 63-JUN 64,
SEP 64 22P BROCKMAN,H. ;
CONTRACT: AF33 657 12267
PROJ: 5708
MONITOR: ML , TDR64 208

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PARACHUTE FABRICS, NYLON), (*NYLON, PARACHUTE FABRICS), PROCESSING, WEAVING, TENSILE PROPERTIES, POROSITY, PERMEABILITY (U)

THE OBJECTIVE OF THIS CONTRACT WAS TO DEVELOP A WOVEN MESH MATERIAL, USING NOMEX AS THE RAW MATERIAL YARN, HAVING A 100 POUNDS PER INCH BREAKING STRENGTH IN BOTH DIRECTIONS AND A GEOMETRIC POROSITY OF 35% OR A PERMEABILITY OF 900-1000 CUBIC FEET/MINUTE/SQUARE FOOT. TWIST LEVELS FROM 5 TO 20 TURNS PER INCH WERE EVALUATED IN BOTH WARP AND FILLING DIRECTIONS TO DETERMINE THE EFFECT OF TWIST ON THE PERMEABILITY. VARIOUS CONSTRUCTIONS AND WEAVES RANGING FROM PLAIN WEAVE TO MOCK LENO WERE USED TO DETERMINE THE MAXIMUM PERMEABILITY WITH THE REQUIRED BREAKING STRENGTH. THE MOCK LENO WEAVE WAS DETERMINED TO BE THE MOST SATISFACTORY TO ACHIEVE A PROPER BALANCE OF PROPERTIES. THE LEVEL OF TWIST AFFECTED THE AIR PERMEABILITY FAR MORE DRAMATICALLY THAN WAS EXPECTED WITH THE RESULT THAT A RATHER HIGH TWIST WAS USED IN THE FINAL PRODUCT. THIS STUDY DEMONSTRATED THE FEASIBILITY OF DESIGNING AND WEAVING A FABRIC FROM NOMEX NYLON WHICH WOULD HAVE THE PROPERTIES FOR USE IN SPECIAL TYPE OF PARACHUTE APPLICATIONS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 420NC2

AD-614 138
MINNESOTA UNIV MINNEAPOLIS
PARACHUTE STRESS ANALYSIS DURING INFLATION AND AT STEADY STATE. (U)
63 35P HEINRICH,H. G. ;JAMISON,L. R. ,JR.;
CONTRACT: AF33 657 11184

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH PIONEER PARACHUTE CO., INC., MANCHESTER, CONN. PRESENTED AT THE AIAA ENTRY TECHNOLOGY CONFERENCE, HELD AT WILLIAMSBURG, VA., 12-14 OCT 64.

DESCRIPTORS: (*PARACHUTES, STRESSES), (*PARACHUTE FABRICS, STRESSES), NUMERICAL ANALYSIS, DRAG, AERODYNAMIC LOADING, ELASTICITY, CONFIGURATION (U)

THE STRESSES OCCURRING IN THE CLOTH OF A PARACHUTE DURING THE PERIOD OF INFLATION AND UNDER STEADY STATE ARE CALCULATED FOR A NUMBER OF INSTANTANEOUS SHAPES WHICH ARE CHARACTERISTIC OF THE OPENING PROCESS AND THE STEADY STATE. THE METHOD IS GENERAL AND MAY BE APPLIED TO ANY TYPE OF PARACHUTE BUILT OUT OF SOLID CLOTH, CONCENTRIC RINGS OR RIBBONS. THE PRESENTED ANALYSIS IS RELATED TO CANOPIES CONSISTING OF TRIANGULAR GORES BUT CAN BE EXTENDED TO OTHER GORE PATTERNS. A NUMERICAL CALCULATION IS MADE FOR A SOLID FLAT CIRCULAR PARACHUTE DURING THE PERIOD OF OPENING AND AT STEADY STATE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 72ONC2

AD-617 930
PRODESCO INC PERKASIE PA.
WOVEN MESH FROM BRAIDED NYLON CORD. (U)
DESCRIPTIVE NOTE: REPT. FOR 1 JAN-1 JUL 64,
APR 65 22P BROCKMAN,H. C. ;MCGRATH,J.
C. ;RUSS,J. H. ;
CONTRACT: AF33 657 12257
PROJ: 5708
MONITOR: ML , TR-64-413

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*NYLON, TEXTILES), (*WEAVING, NYLON), CORDAGE, PARACHUTE FABRICS, FIBERS, FIBERS(SYNTHETIC), TENTILE PROPERTIES, POROSITY, PERMEABILITY (U)

THE OBJECTIVE OF THIS PROGRAM WAS TO DEVELOP A WOVEN MESH MATERIAL USING MIL-C-5040, TYPE I CORD AND COMMERCIAL GRADE, HIGH TENACITY NYLON YARN IN ORDER TO ACHIEVE A 1000-1200 LB./IN. BREAKING STRENGTH IN THE WARP AND FILLING DIRECTIONS AND A GEOMETRIC POROSITY OF 35%, OR A PERMEABILITY OF 800-900 CU.FT./SQ.FT./MIN. BINDER YARNS FROM 3. DENIER TO 200 DENIER WERE EVALUATED IN ORDER TO ACHIEVE THE STRONGEST POSSIBLE BOND BETWEEN WARP AND FILLING CORDS. VARIOUS CONSTRUCTIONS, RANGING FROM 7 ENDS AND PICKS OF CORD TO 9 ENDS AND PICKS OF CORD, WERE EVALUATED TO ACHIEVE THE OPTIMUM COMBINATION OF BREAKING STRENGTH AND AIR PERMEABILITY. UNUSUAL PROBLEMS WERE ENCOUNTERED IN WEAVING THE CORD BECAUSE OF ITS BULK AND STIFFNESS. CONSIDERABLE YARDAGE WOULD HAVE TO BE MANUFACTURED IN ORDER TO DETERMINE THE COMMERCIAL PRACTICALITY OF THE MANUFACTURING TECHNIQUE. THIS STUDY DEMONSTRATED THE FEASIBILITY OF DESIGNING AND WEAVING A FABRIC USING A 100 LB. BREAKING STRENGTH CORD IN A CRIMPLESS WEAVE FOR USE IN SPECIAL TYPES OF PARACHUTE APPLICATIONS.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 7ZONC2

AD-668 907 1175 1974
ARMY NATICK LABS MASS CLOTHING AND ORGANIC MATERIALS LAB
THE APPLICATION OF THE CONCEPT OF RELIABILITY TO TEXTILE PRODUCTS. (U)
DESCRIPTIVE NOTE: SUMMARY REPT. MAY 66-SEP 67,
SEP 67 30P KENNEDY,STEPHEN J. MEI ER, LOUIS A. I
REPT. NO. C/OM-TS-153
PROJ: DA-1C024401A329
MONITOR: USA-NLABS TR-68-23-CM

UNCLASSIFIED REPORT

DESCRIPTORS: (*TEXTILES, RELIABILITY), PARACHUTE FABRICS, BODY ARMOR, STRESSES, MALFUNCTIONS, STRENGTH, CLOTHING, FIBERS, CORDAGE, TOLERANCES(MECHANICS), QUALITY CONTROL, REVIEWS (U)

IN COMMON WITH MANY OTHER NATURAL PRODUCTS, THE NATURE AND USE PATTERNS OF ITEMS OF TEXTILE CLOTHING AND EQUIPAGE ARE SUCH THAT DATA FOR FORMULATING EXACT MODELS FOR PREDICTING RELIABILITY IN TERMS OF 'MISSION TIMES' AND 'MEAN-TIMES-BETWEEN FAILURES' ARE NOT EASILY OBTAINABLE. HOWEVER, RELIABILITY ANALYSIS BASED UPON THE PROBABILITY OF DETERMINING WHETHER OR NOT A GIVEN CHARACTERISTIC FALLS WITHIN THE USE REQUIREMENTS FOR THE MATERIAL OR MATERIAL SYSTEM HAS BEEN FOUND FEASIBLE IN MANY CASES. A CONSIDERABLE AMOUNT OF SUCH DATA IS AVAILABLE AND IS PRESENTED IN THE REPORT TO SUGGEST POSSIBLE APPROACHES FOR RELIABILITY ANALYSIS STUDIES. SOME OF THE INHERENT PROBLEMS IN APPLYING RELIABILITY ANALYSIS TO A BROAD RANGE OF TEXTILE END ITEMS ARE EXAMINED AND DISCUSSED. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-668 910 11/5 1/3
ARMY NATICK LABS MASS CLOTHING AND ORGANIC MATERIALS LAB
STRENGTH LOSSES IN NYLON PARACHUTE MATERIALS WITH TIME, EXPOSURE AND USE. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
MAR 68 59P FIGUCIA,FRANK , WR.WELLS, RICHARD D. ;
REPT. NO. C/UM-TS-156
MONITOR: USA-NLABS TR-68-45-CM

UNCLASSIFIED REPORT

NOT REPRODUCIBLE

DESCRIPTORS: (*PARACHUTE FABRICS, NYLON), LIFE EXPECTANCY, STRENGTH, PARACHUTES, EXPOSURE, STORAGE, WEAR RESISTANCE, PARACHUTE JUMPING, PERFORMANCE(ENGINEERING), DEGRADATION (U)
IDENTIFIERS: PERSONNEL PARACHUTES (U)

THE FINDINGS OF RECENT TESTS ON AGED AND USED NYLON PARACHUTES ARE REVIEWED WITH RESPECT TO SERVICE LIFE LIMITS AND TO IMPLICATIONS AS TO THE TECHNICAL NATURE OF THE DEGRADATION PROBLEM. THE DATA TEND TO CONFIRM THAT THE CURRENT 10 YEAR OR 100 JUMP LIMITS AND RELATED REPAIR COST LIMIT SCHEDULES DO NOT PRESENT A HAZARD. HOWEVER, THE SCATTER AND CONTRASTS OF RESULTS MAKE QUESTIONABLE THE VALIDITY OF SMALL SAMPLINGS AND EXTENDED PREDICTIONS. NO CONSISTENT AND PERVASIVE TRENDS WERE FOUND TO BE DIRECTLY RELATED TO TIME IN STORAGE OR SERVICE, OR TO JUMP HISTORY EXCEPT FOR INITIAL MECHANICAL EFFECTS ON SUSPENSION LINES. THE RESULTS EVIDENCED MARKED DIFFERENCES IN THE SPECIFIC SUSCEPTIBILITIES OF VARIOUS MATERIALS, AND A NUMBER OF DEGRADING INFLUENCES AND TYPES OF EFFECTS ON PHYSICAL PROPERTIES. IT IS CONCLUDED THAT A WIDE DISTRIBUTION OF STRENGTH LEVELS IS TO BE EXPECTED IN OLDER PARACHUTE POPULATIONS, AND THAT THE RISK PROBLEM IS WITH THE EXCEPTIONAL CASES RATHER THAN WITH THE AVERAGE CONDITION. A NUMBER OF POSSIBLE CHEMICAL AND STRUCTURAL CHANGE MECHANISMS ARE DISCUSSED. (AUTHOR) (U)

UNCLASSIFIED /ZONC2

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-670 180 11/5
FABRIC RESEARCH LABS INC DEDHAM MASS
INVESTIGATION OF THE HIGH-SPEED IMPACT BEHAVIOR OF
FIBROUS MATERIALS. (U)
DESCRIPTIVE NOTE: REPT. FOR FEB 66-DEC 67,
FEB 68 130P COSKREN,ROBERT J. ;
CONTRACT: AF 33(615)-3569
PROJ: AF-7381
TASK: 738106
MONITOR: AFML TR-68-46

UNCLASSIFIED REPORT

NOT REPRODUCIBLE

DESCRIPTORS: (*PARACHUTE FABRICS, MECHANICAL PROPERTIES), GLASS TEXTILES, FIBERS(SYNTHETIC), NYLON, BENZIMIDAZOLES, HEAT-RESISTANT MATERIALS, RUPTURE, TENSILE PROPERTIES, STAINLESS STEEL, TAPES, IMPACT, STRAIN(MECHANICS), THERMODYNAMICS (U)
IDENTIFIERS: NOMEX, PBI FIBERS, PRD-14 FIBERS, X-101 FIBERS (U)

FOUR NEWLY DEVELOPED FIBERS (PBI,X-101, PRD-14 AND BETA GLASS) WERE EVALUATED IN WEBBING FORM (3000-9000 LBS BREAKING STRENGTH) FOR RUPTURE ENERGY ABSORPTION CAPACITY AT 200,500, AND 700 FT/SEC (STRAIN RATES OF 5,000: 20,000 AND 28,000%/SEC BASED UPON AN INITIAL 2.5 FOOT GAGE LENGTH). THE DYNAMIC ENERGY ABSORPTION CAPABILITY OF THE PRD-14 WEBBING IS ESSENTIALLY UNCHANGED OVER THE ENTIRE SPEED RANGE STUDIED. THE RUPTURE ENERGY OF THE X-101 WEBBING IS DIMINISHED BY 20% AS TESTING SPEED IS INCREASED UP TO 500 FT/SEC AND THEN EXHIBITS A LOSS OF APPROXIMATELY 70% AT 700 FT/SEC. THE PBI EXHIBITS A 50% LOSS FROM QUASI-STATIC UP TO THE 500 FT/SEC TESTING SPEED AND DIMINISHES TO APPROXIMATELY 10% OF QUASI-STATIC AT 700 FT/SEC. THE ENERGY LEVEL OF THE BETA GLASS IMPROVES OR REMAINS ALMOST UNCHANGED IN THE ENTIRE SPEED RANGE. GENERALLY, HOWEVER, THIS LEVEL IS OF SUCH A LOW ORDER THAT THE USEFULNESS OF BETA GLASS IS LIMITED TO CASES WHERE EXPOSURE TO ELEVATED TEMPERATURES IN EXCESS OF 850F MAY BE ANTICIPATED. SIX FIBERS WERE EVALUATED IN TAPE FORM (300-675 LBS BREAKING STRENGTH) FOR ENERGY ABSORPTION CAPACITY AT SPEEDS OF 50, 100 AND 150 FT/SEC (STRAIN RATES OF 1,111: 2,222 AND 3,333%/SEC) AT VARIOUS TEMPERATURES. TO OBTAIN A BASIS FOR COMPARISON, QUASI-STATIC (INSTRON) TESTS WERE ALSO PERFORMED AT CORRESPONDING TEMPERATURES.

(U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-608 584 1/3 11/9
ARMY NATICK LABS MASS
CONSTRUCTIONAL EFFECTS ON IMPACT BREAKING STRENGTH
OF PARACHUTE SUSPENSION LINES. (U)
DESCRIPTIVE NOTE: MATERIAL EXAMINATION REPT.,
JUN 66 14P FIGUCIA,F. MCCAFFERTY,L.
1

UNCLASSIFIED REPORT

DESCRIPTORS: (*PARACHUTES, CORDAGE), FIBERS,
NYLON, IMPACT, IMPACT TESTS,
STRAIN(MECHANICS), STRESSES,
FAILURE(MECHANICS), TENSILE PROPERTIES,
ELONGATION, SPECIFICATIONS, EXPERIMENTAL DESIGN (U)
IDENTIFIERS: *PARACHUTE SUSPENSION LINES (U)

THIS REPORT INVESTIGATES THE EFFECTS OF STRUCTURE
(YARN PLYING AND BRAIDING) ON THE OVERALL
STRENGTH OF NYLON SUSPENSION LINES (MIL-C-5040B,
TYPE I AND TYPE II) WHEN TESTED AT HIGH
STRAIN RATES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-690 884 11/5 7/4
AMERICAN CYANAMID CO STAMFORD CONN CENTRAL RESEARCH DIV
A FEASIBILITY STUDY OF CHEMICAL LIGHTING FORMULATIONS FOR USE ON PARACHUTES. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
MAY 69 20P RAUHUT,MICHAEL W WHITMAN, ROBERT H.
CONTRACT: N00164-69-C-0411
MONITOR: NAD-CR,IDEP RDTR-1561-57-40.00.00-X9-3

UNCLASSIFIED REPORT

DESCRIPTORS: (*PARACHUTE FABRICS, *CHEMILUMINESCENCE), FEASIBILITY STUDIES, TEXTILES, FLUORESCENCE, SUBSTRATES, SOLVENTS, FREEZING, SPRAYS, LIFE EXPECTANCY, TEMPERATURE, STORAGE, STABILITY (U)

A NEW CHEMICAL LIGHTING SYSTEM WAS DEVELOPED, WHICH COMPRISES AN ESSENTIALLY DRY, TREATED FABRIC AND AN ACTIVATOR FLUID. LIGHT IS PRODUCED BY SPRAYING THE ACTIVATOR FLUID ON THE TREATED FABRIC. A BRIGHTNESS ON THE ORDER OF 1 FOOT LAMBERT OR GREATER IS PROVIDED FOR PERIODS EXCEEDING ONE HALF HOUR. THE ACTIVATOR FLUID WAS FORMULATED TO REMAIN MOBILE AT TEMPERATURES AT LEAST AS LOW AS -30F TO PERMIT ACTIVATION OF THE SYSTEM AT LOW TEMPERATURES. BOTH COMPONENTS OF THE NEW SYSTEM HAVE SUFFICIENT STORAGE STABILITY FOR DEMONSTRATION AND FEASIBILITY TESTING PURPOSES. DESIGN CRITERIA FOR SUBSTRATE CHEMICAL LIGHTING SYSTEMS DEVELOPED IN THE PROGRAM INDICATE THAT SUBSTANTIALLY BRIGHTER SYSTEMS CAN BE DEVELOPED. (AUTHOR) (U)

NOT REPRODUCIBLE

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-693 179 11/5 1/3
WRIGHT AIR DEVELOPMENT CENTER WRIGHT-PATTERSON AFB OHIO
BRIDLE LINE-PILOT CHUTE, PERSONNEL. (U)
DESCRIPTIVE NOTE: TECHNICAL NOTE,
MAR 55 11P ENGEL,H. , JR:
REPT. NO. WADC-TN-WCLE-5506
PROJ: AF-6068

UNCLASSIFIED REPORT

DESCRIPTORS: (*PARACHUTES, CORDAGE), (*CORDAGE, SAFETY), STRENGTH, DROP TESTING, NYLON (U)

THE PURPOSE OF THE TEST WAS TO SELECT A NEW PILOT CHUTE BRIDLE LINE DESIGNED TO OPERATE WITHOUT FAILURE DURING HIGH SPEED PARACHUTE DEPLOYMENT.
(AUTHOR) (U)

AD-676 644 11/5 2/3
WRIGHT AIR DEVELOPMENT DIV WRIGHT-PATTERSON AFB OHIO
AGING CHARACTERISTICS OF POLYAMIDE FIBROUS MATERIALS USED IN PERSONNEL DECELERATORS. (U)
DESCRIPTIVE NOTE: TECHNICAL NOTE,
FEB 61 27P MCGRATH,JOYCE C. ;
REPT. NO. WADD-TN-61-2

UNCLASSIFIED REPORT

DESCRIPTORS: (*PARACHUTES, TEXTILES), (*TEXTILES, DEGRADATION), STORAGE, LIFE EXPECTANCY, PHYSICAL PROPERTIES, CORDAGE, TEST METHODS, NYLON (U)
IDENTIFIERS: DECELERATORS (U)

A SERVICE LIFE EVALUATION PROGRAM WAS INAUGURATED IN JANUARY 1957 TO DETERMINE THE BREAKDOWN IF ANY, OF THE FIBROUS MATERIALS USED IN DECELERATOR ASSEMBLIES. TEN (10) TYPE T-10 PERSONNEL DECELERATORS, STORED UNDER NORMAL WAREHOUSE STORAGE CONDITIONS, WERE OBTAINED FOR THE EVALUATION. THE DECELERATORS HAD THE OLDEST MANUFACTURING DATES (2-4 YEARS OLD) AVAILABLE FOR DECELERATORS WHICH HAD NEVER BEEN USED. EACH YEAR, FOR A PERIOD OF FOUR YEARS, FIVE DECELERATORS WERE TAKEN AT RANDOM FROM THE TEN AND SAMPLES OF CLOTH AND SUSPENSION LINES REMOVED FOR PHYSICAL PROPERTY EVALUATION. (AUTHOR) (U)

IV. RELEASE MECHANISMS

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 72UNCL

AD-632 572 1/3 17/9 1/2 15/7
HARRY DIAMOND LABS WASHINGTON D C
HADOPAD RADAR ACTUATOR DESIGN AND PERFORMANCE. (U)
DESCRIPTIVE NOTE: TECHNICAL MEMO.,
FEB 65 92P ROACH,JOHN J. ; ISEMAN,
MALCOLM L. ;
REPT. NO. TM-66-2,
PROJ: DA-1A542703D346,HDL-47100

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RADAR, ACTUATORS), (*ACTUATORS, *PARACHUTES), (*AIR DROP OPERATIONS, PARACHUTE DESCENTS), REMOTE CONTROL SYSTEMS, RADAR EQUIPMENT, HEIGHT FINDING, DROP TESTING, PERFORMANCE(ENGINEERING) (U)
IDENTIFIERS: HADOPAD (U)

A LOW-COST RADAR ACTUATOR FOR USE AS A COMPONENT IN A DELAYED-OPENING PARACHUTE AERIAL-DELIVERY SYSTEM HAS BEEN DEVELOPED. THIS DEVICE IS KNOWN AS HADOPAD (HIGH-ALTITUDE DELAYED-OPENING PARACHUTE ACTUATING DEVICE). THE DEVICE, BASED ON RADAR PRINCIPLES, WILL OPEN A MAIN RECOVERY PARACHUTE AT EITHER OF TWO PRESET HEIGHTS (1000 OR 1700 FT) ABOVE THE GROUND. THE COMPLETE SYSTEM UTILIZES A DROGUE-PARACHUTE STABILIZING STAGE FOR FREE FALL FROM HIGH ALTITUDE FOLLOWED BY A MAIN-PARACHUTE RECOVERY STAGE WHICH IS INITIATED AT LOW ALTITUDE BY THE RADAR ACTUATOR. LIMITED FIELD TESTING OF THE RADAR ACTUATOR AT FORT DEVENS, MASS. HAS SHOWN THE FEASIBILITY OF THE DEVICE AS A PARACHUTE ACTUATOR, BUT SOME ADDITIONAL ENGINEERING AND COMPLETE ENVIRONMENTAL TESTS ARE NECESSARY BEFORE INITIATION OF QUANTITY PRODUCTION. FORTY ACTUATORS WERE CONSTRUCTED BY HDL DURING THE RESEARCH AND DEVELOPMENT PHASE. (AUTHOR) (U)

NOT REPRODUCIBLE

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 72DNC2

AD-697 904 1/3
ROYAL AIRCRAFT ESTABLISHMENT FARNBOROUGH (ENGLAND)
A METHOD OF INVESTIGATING THE DEPLOYMENT
CHARACTERISTICS OF MAN-CARRYING PARACHUTES. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
AUG 68 17P JOLLY,A. G. ;
REPT. NO. TR-68280

UNCLASSIFIED REPORT

DESCRIPTORS: (*PARACHUTES, DEPLOYMENT), MANNED,
TEST METHODS, ACCURACY,
PERFORMANCE(ENGINEERING), GREAT BRITAIN (U)

TEST RELEASES OF MAN-CARRYING PARACHUTES FROM BALLOONS, OR AIRCRAFT, DO NOT PERMIT OF ANY DETAILED EXAMINATION OF THE PROCESSES OF WITHDRAWING THE RIGGING LINES AND CANOPY FROM THE PACK (I.E. DEPLOYMENT). IRREGULARITIES DURING THIS PHASE MAY CAUSE MALFUNCTIONS TO DEVELOP DURING OPENING. THE METHOD OF TEST DESCRIBED PERMITS EXAMINATION OF THE DEPLOYMENT FROM THE PARACHUTE PACK AND REVEALS INFORMATION LACKING IN FLIGHT TESTS. IT IS PROPOSED THAT THIS TEST METHOD MAY BE USED TO INVESTIGATE THE BEHAVIOUR OF NEW, OR MODIFIED PARACHUTE SYSTEMS. (AUTHOR) (U)

NOT REPRODUCIBLE

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-683 211 1/3
FROST ENGINEERING DEVELOPMENT CORP ENGLEWOOD COLO
DESIGN, DEVELOPMENT, TEST, AND FABRICATION OF
CARGO PARACHUTE RELEASE ASSEMBLY, 12,000-POUND
CAPACITY. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
DEC 68 71P GRILLY,RONALD L. SMITH,
IVOR R. ;
CONTRACT: DAAG17-67-C-0197
PROJ: 0A-1-F-164204-D-183
TASK: 1-F-164204-D-18368
MONITOR: USA-NLABS TR-69-56-AD

NOT REPRODUCIBLE

UNCLASSIFIED REPORT

DESCRIPTORS: (*CARGO PARACHUTES, *RELEASE MECHANISMS), AIR DROP OPERATIONS, DROP TESTING, DESIGN, WEIGHT, MANUFACTURING METHODS (U)

A TILT-TYPE CARGO PARACHUTE RELEASE ASSEMBLY HAVING SUSPENDED CARGO CAPACITY OF 12,000 POUNDS WAS DEVELOPED. STATIC AND DYNAMIC STRUCTURAL TESTS PLUS A SERIES OF AIRDROP TESTS WERE CONDUCTED WITH THREE 12,000-POUND CAPACITY RELEASE FABRICATED FOR TEST. THESE TESTS DEMONSTRATED THAT THE DEVELOPED UNITS MET ALL THE DESIGN, PERFORMANCE, AND SERVICE REQUIREMENTS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-680 504 1/3 13/5
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
PARACHUTE UNCOUPLING LOCK. (U)
MAR 69 7P PRIVALOV,A. I. (DRYAZGOV, M. P. (BORISOV,G. N. ;
REPT. NO. FSTC-HT-23-1015-68
PROJ: FSTC-9509033A0906, FSTC-9223628230I

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 195 697, 4 MAY 67. BULL-10.

DESCRIPTORS: (*PARACHUTES, *LOCKING FASTENER DEVICES), TIMING DEVICES, PATENTS, SPRINGS, HOOKS, USSR (U)
IDENTIFIERS: *PARACHUTE UNCOUPLING LOCKS, TRANSLATIONS (U)

A PARACHUTE UNCOUPLING LOCK IS DESCRIBED, CONSISTING OF AN ANEROID-TIME MECHANISM; A TRIGGER APPARATUS WHICH CONTAINS A GUIDE WITH A SPRING-ACTUATED BUSHING; A DRIVE APPARATUS CONTAINING A CYLINDRICAL PLUNGER WITH A STOP TOOTH; AND AN OPERATING MECHANISM EQUIPPED WITH HOOKS FOR ENGAGING THE EYE RING OF A PARACHUTE, A LEVER TRANSMISSION, AND A FORK HAVING A STOP GUIDE. IN ORDER TO HEIGHTEN THE RELIABILITY OF ACTION, IN IT THE TRIGGER APPARATUS IS EQUIPPED WITH A SPRING-ACTUATED GUIDE WHICH HAS AT ONE END A PROJECTION UPON WHICH THE END PLANE OF THE PLUNGER OF THE DRIVE MECHANISM OPERATES, AND AT THE OTHER END A LUG ATTACHED BY A FORK TO THE STOP GUIDE OF THE OPERATING MECHANISM.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-693 173 13/9 1/3
WRIGHT AIR DEVELOPMENT CENTER WRIGHT-PATTERSON AFB OHIO
PARACHUTE CANOPY RELEASE. (U)
DESCRIPTIVE NOTE: TECHNICAL NOTE,
MAY 54 5P CARROLL,C. E. ;
REPT. NO. WADC-TN-WCLE-54-25

UNCLASSIFIED REPORT

DESCRIPTORS: (*PARACHUTES, RELEASE MECHANISMS), MAINTENANCE, DESIGN, PARACHUTE JUMPING, SAFETY HARNESS, LANDINGS, DRAG, REVIEWS (U)
IDENTIFIERS: *PARACHUTE CANOPY RELEASE DEVICES (U)

THE PURPOSE OF THE STUDY WAS TO REVIEW AND RECORD THE SERVICE REQUIREMENT FOR A PARACHUTE CANOPY RELEASE DEVICE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-693 433 1/3
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
MULTI-CANOPY CIRCULAR TYPE PARACHUTE SYSTEM. (U)
SEP 69 7P
REPT. NO. FSTC-HT-23-390-69
PROJ: FSTC-02R0500

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 199 687, 8 SEP 67.

DESCRIPTORS: (*CARGO PARACHUTES, DESIGN), RELEASE MECHANISMS, CORDAGE, LOADING(MECHANICS), ALTITUDE, ACTUATORS, PATENTS (U)
IDENTIFIERS: TRANSLATIONS (U)

A PARACHUTE FINAL RELEASE MECHANISM IN WHICH THE LAST SECTION OF THE LINES ATTACHING THE BASIC SHROUDS FROM EACH PARACHUTE TO THE LOAD IS KEPT COILED, UNTIL THE DESIRED ALTITUDE IS REACHED. AT THIS POINT THE RELEASE MECHANISM PERMITS THESE LINES TO RUN OUT TO THEIR FULL LENGTH. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-693 447 1/3
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
DEVICE FOR RELEASING ACTUATOR CABLE FROM PARACHUTE ASSEMBLY, (U)
SEP 69 7P GANIN,V. P. ;ZHURAELEV,A. N. ;RUSIKOV,V. V. ;OPUKHOVSKII,L. Y. ;
REPT. NO. FSTC-HT-23-405-69
PROJ: FSTC-0423100

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 210 673, 2 APR 68.

DESCRIPTORS: (*PARACHUTES, RELEASE MECHANISMS), ACTUATORS, AUTOMATIC, CONTROL SYSTEMS, BUSHINGS, PISTONS, GASKETS, HERMETIC SEALS, BELLOWS, PATENTS, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

THE INVENTION DESCRIBES A HERMETICALLY-SEALED DEVICE EQUIPPED WITH A MOVEABLE PISTON, DESIGNED FOR USE IN AUTOMATIC PARACHUTE ACTUATION SYSTEMS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-693 448 1/3
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
PARACHUTE, (U)
SEP 69 7P LOBANOV,N. A. ;
REPT. NO. FSTC-HT-23-406-69
PROJ: FSTC-0423100

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 207 042, 14 FEB 66.

DESCRIPTORS: (*PARACHUTES, DESIGN), VELOCITY, RELEASE MECHANISMS, DRAG PARACHUTES, BRAKING, PATENTS, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

THE INVENTION DESCRIBES AN IMPROVED PARACHUTE DESIGN WHICH PROVIDES FOR THE RELEASE OF THE PARACHUTE FROM AIRCRAFT TRAVELING AT HIGHER SPEEDS. THIS IS ACCOMPLISHED BY MEANS OF DELAYED OPENING OF THE CANOPY THROUGH THE USE OF A DEVICE AND A BRAKING PARACHUTE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-693 466 1/3
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
PARACHUTE.
SEP 69 6P LOBANOV,N. A. ; (U)
REPT. NO. FSTC-HT-23-407-69
PROJ: FSTC-0423100

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 237 040, 14 FEB 66.

DESCRIPTORS: (*CARGO PARACHUTES, DESIGN), AIR DROP OPERATIONS, RELEASE MECHANISMS, CORDAGE, PATENTS, USSR (U)
IDENTIFIERS: TRANSLATIONS, PILOT PARACHUTES, MAIN PARACHUTES, TIME DELAY MECHANISMS, PARACHUTE CANOPIES (U)

THE INVENTION DESCRIBES A CARGO PARACHUTE WHICH IS DESIGNED TO BE RELEASED FROM AIRCRAFT TRAVELLING IN EXCESS OF 450 KM/H. IN ORDER TO AVOID CARGO AND PARACHUTE DAMAGE A TIME-DEVICE IS EMPLOYED WHICH DELAYS OPENING OF THE PARACHUTE BY A PREVIOUSLY ESTABLISHED TIME INTERVAL. THE TIME-DELAY DEVICE IS ACTUATED BY A PILOT PARACHUTE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-694 580 1/3 15/7
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D
C
A DEVICE FOR DROPPING PARACHUTE MODELS. (U)
SEP 69 9P GLUSHKOV,I. L. ;BOIKO,G.
D. 1
REPT. NO. FSTC-HT-23-394-69
PROJ. FSTC-0423100

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 184 629, 15 SEP 66.

DESCRIPTORS: (*AIRMOBILE OPERATIONS, PARACHUTE DESCENTS), (*PARACHUTES, DROP TESTING), AIR DROP OPERATIONS, PATENTS, CUTTING, CORDAGE, RELEASE MECHANISMS, REMOTE CONTROL SYSTEMS, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

THE PROPOSED DEVICE FOR DROPPING PARACHUTE MODELS IS DISTINGUISHED BY THE FACT THAT THE CUTTER IS DESIGNED TO ENCIRCLE THE BRAKING HALYARD WITH INCANDESCENT FILAMENTS FROM THE POWER SOURCE, WHICH IS LOCATED IN THE COMMAND STATION. IN ADDITION, AT THE CENTRAL PART OF THE KNOT OF THE CANOPY, A PIVOT IS ATTACHED WHICH ELIMINATES TWISTING OF THE BRAKING HALYARD, RELEASE CORD, AND RETAINING LINE. (AUTHOR) (U)

NOT REPRODUCIBLE

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-695 DBY 1/3
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D
C
A PARACHUTE DEPLOYING APPARATUS, (U)
SEP 69 6P
REPT. NO. FSTC-HT-23-409-69
PROJ: FSTC-B42310D

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 205 615, 16 FEB 68.

DESCRIPTORS: (*PARACHUTES, RELEASE MECHANISMS), PATENTS, CORDAGE, DEPLOYMENT, SUPPORTS, USSR (U)
IDENTIFIERS: *PARACHUTE DEPLOYING MECHANISMS, TRANSLATIONS (U)

AN INDIVIDUAL PARACHUTE DEPLOYING APPARATUS IS DESCRIBED. THE APPARATUS IS LENGTHENED BY A FABRIC BELT WHICH IS TO BE CAUGHT BY THE AIRSTREAM DRAWING THE PARACHUTE AWAY FROM THE EDGE OF THE DOOR OF THE AIRCRAFT. (AUTHOR) (U)

NOT REPRODUCIBLE

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-695 364 1/3
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
CATCH FOR UNCOUPLING FREE ENDS OF A PARACHUTE. (U)
SEP 69 6P
REPT. NO. FSTC-HT-23-392-69
PROJ: FSTC-0423100

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 190 797, 15 FEB 67.

DESCRIPTORS: (*PARACHUTES, LANDINGS), (*LANDINGS, RELEASE MECHANISMS), PATENTS, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

A MORE RELIABLE MECHANISM FOR RELEASING A PARACHUTE AFTER LANDING IS DESCRIBED. THE MECHANISM WILL NOT LOCK UP UNDER LOADS UP TO 400 KILOGRAMS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-695 957 1/3
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
PARACHUTE SYSTEM, (U)
JUN 69 6P TKACHEV,F. D. ;
REPT. NO. FSTC-HT-23-389-69
PROJ: FSTC-9917003096; FSTC-9223626230I

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 213 595, 21 MAY 66.

DESCRIPTORS: (*CARGO PARACHUTES, RELEASE MECHANISMS), PATENTS, CORDAGE, CUTTING, DRAG PARACHUTES, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

A PARACHUTE SYSTEM IS DESCRIBED CONSISTING OF A RELEASE PARACHUTE, A MAIN PARACHUTE, THE CANOPY OF WHICH IS HELD CLOSED BY A CIRCULAR REEFING SHROUD, PASSING THROUGH HOLES WITH METAL EYES DISTRIBUTED AROUND THE PERIMETER OF THE CANOPY, AND HELD BY A RELEASING DEVICE, CONNECTED WITH THE RELEASE PARACHUTE AND WITH AN UNFURLING MECHANISM SET UP ON THE CANOPY. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-696 225 1/2 13/5 14/2
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
AUTOMATIC UNCOUPLER-INCLINOMETER, (U)
69 5P KACHALKOV,V. V. ;
VENTSENUSTSEV,V. N. ;
REPT. NO. FSTC-HT-23-404-69

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 142 156.

DESCRIPTORS: (*CARGO PARACHUTES, LANDINGS), (*CABLE ASSEMBLIES, DEFLECTION), (*DISCONNECT FITTINGS, TEST METHODS), PATENTS, PARACHUTE DESCENTS, CARGO, AUTOMATIC, STRUCTURAL PARTS, OPERATION, USSR (U)
IDENTIFIERS: INCLINOMETERS, TRANSLATIONS, *AUTOMATIC UNCOUPLERS, ANGLE OF DEFLECTION, PARACHUTE CANOPIES (U)

AN AUTOMATIC UNCOUPLER-INCLINOMETER IS DESCRIBED FOR DISENGAGING THE PARACHUTE SYSTEM FROM THE DROPPED LOAD UPON LANDING, CONSISTING OF A CYLINDRICAL BODY WITH A LUG FOR ATTACHING THE LEVER-CLAMPS OF THE CLAMPING DEVICE AND BRAKING BUSHINGS WITH A LUG OF THE LOAD SUSPENSION. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /20NC2

AD-851 110 13/5 1/3
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER .ASHINGTON D C
LATCH FOR THE EXTRACTION-FORCE TRANSFER DEVICE OF A CARGO PARACHUTE SYSTEM, (U)
MAR 69 6P SKULANOV,B. S. ;PANTSEV,V. A. ;MODIN,P. I. ;
REPT. NO. FSTC-HT-23-1016-68
PROJ: FSTC-9223628230 1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 190 794, 29 DEC 66.

DESCRIPTORS: (*CARGO PARACHUTES, RELEASE MECHANISMS), (*PINS(MECHANICAL), PATENTS), STRUCTURAL PARTS, FASTENINGS, SPRINGS, DESIGN, UPTENTS, LOCKING FASTENER DEVICES, USSR, PATENTS (U)
IDENTIFIERS: TRANSLATIONS (U)

THE INVENTION APPLIES TO THE LATCHES OF EATRACTION PARACHUTES IN CARGO PARACHUTE SYSTEMS, THESE LATCHES BEING INTENDED FOR FASTENING OF THE CARGO PLATFORM TO THE FLOOR OF THE AIRCRAFT, FOR PULLING OF THE PLATFORM OUT OF THE AIRCRAFT, AND FOR DISCONNECTION OF THE EXTRACTION PARACHUTE. THE PECULIARITY OF THE PROPOSED LATCH CONSISTS IN THE FACT THAT THE LIFT LEVER OF THE PIN IS SET UP ON AN AXLE FIXED INTO THE CASE OF THE LATCH AT BOTH ENDS, WHEREBY INSEPARABILITY OF THE LEVER FROM THE LATCH IS BROUGHT ABOUT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-851 610 1/3
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
PARACHUTE PULL-OUT APPARATUS. (U)
MAR 69 6P BALAKIREVA,K. P. ;KAD'SHEV, I. L. ;MATYTSIN,E. YA. ;PUGACHOV,V. B. ; STEPANENKO,I. S. ;
REPT. NO. FSTC-HT-23-1021-68
PROJ: FSTC-9509033A0906, FSTC-9223626230I

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 205 615, 13 NOV 67.

DESCRIPTORS: (*PARACHUTES, RELEASE MECHANISMS), STABILIZATION SYSTEMS, CORDAGE, TEXTILES, AERODYNAMIC CHARACTERISTICS, SUPPORTS, USSR, PATENTS (U)
IDENTIFIERS: *PARACHUTE PULL OUT APPARATUS, TRANSLATIONS, PARACHUTE CANOPIES (U)

A DESCRIPTION IS GIVEN OF A PROPOSED PARACHUTE PULL-OUT APPARATUS DESIGNED TO AVOID IRREGULAR MOVEMENT OF THE PARACHUTIST AS THE CANOPY OF THE STABILIZING PARACHUTE IS FILLED, WHICH MAY LEAD TO TANGLING OF THE PARACHUTE. IN ORDER TO KEEP THE PARACHUTE AS HIGH AND AS DISTANT AS POSSIBLE FROM THE AIRCRAFT, THE PULL-OUT CORD IS EQUIPPED WITH A HOLD-UP ELEMENT IN THE FORM OF A STRIP OF NOVEL MATERIAL. (AUTHOR) (U)

V. JUMPING

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-615 534
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
THE DYNAMICS OF EMOTIONAL-VOLITIONAL PROCESSES DURING PARACHUTE JUMPS BY ASTRONAUTS, (U)
MAY 65 17P KHLEBNIKOV,G. F. ILEBEDEV,V.
I. ;
REPT. NO. FTD-TT-65-437
MONITOR: TT , 65-62301

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. OF VOPROSY PSIKHOLOGII (USSR) V10 N5 P3-10 1964.

DESCRIPTORS: (*ASTRONAUTS, PARACHUTE JUMPING), (*PARACHUTE JUMPING, ASTRONAUTS), PSYCHOPHYSIOLOGY, TRAINING, EMOTIONS, ELECTROCARDIOGRAPHY, PULSE RATE, PERFORMANCE (HUMAN), BEHAVIOR, USSR (U)

SOVIET COSMONAUTS WERE OBSERVED DURING THEIR PRELIMINARY PARACHUTE JUMPING TRAININGS. BEFORE EMPLANING, IN THE PLANE AND AFTER LANDING, THE HEART-RATE WAS MEASURED AND THE DYNAMOMETRY OF HANDS WAS CARRIED OUT AS WELL. THE REGISTRATION OF CHANGES OF HANDS' STRENGTH AND THOSE OF THE HEART-RATE DISCLOSED THE DYNAMICS OF THE EMOTIONAL 'TUNING' OF COSMONAUTS TO THE COMING PARACHUTE JUMPINGS. ON THE FIRST DAY OF PARACHUTE JUMPING THE EMOTIONAL REACTIONS WERE SIGNIFICANT AND WERE MARKEDLY DIFFERENT FROM EMOTIONAL REACTIONS OF WELL-TRAINED PARACHUTISTS. SUBSEQUENTLY, THE REACTIONS BECAME MORE ADEQUATE AND DUE TO THE TRAINING OF VOLITIVE PROCESSES THE EMOTIONAL MANIFESTATION AT THE REPEATED PARACHUTE JUMPINGS BECAME WEAK. THE EMOTIONAL REACTIONS TO DANGER ARE CHARACTERIZED BY 'STHENIC' EXCITATION WHICH IS EVOKED BY THE ACTIVATION OF THE CONSCIOUS REGULATION OF BEHAVIOR. ALL COSMONAUTS HAD THE MOST STABLE POSITIVE EMOTIONS AT THE SECOND STAGE OF PARACHUTE JUMPING TRAININGS (JUMPING ONTO THE WATER, DURING NIGHTS, IN THE DIVING SUITS). (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-616 943
ARMED FORCES INST OF PATHOLOGY WASHINGTON D C
SURVEY OF MILITARY SPORT PARACHUTING DEATHS. (U)
65 3P KIEL,FRANK W. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PUB. IN AEROSPACE MEDICINE V36 N4 P361-2 APR 1965 (COPIES NOT AVAILABLE TO DDC OR CLEARINGHOUSE CUSTOMERS).

DESCRIPTORS: (*AVIATION ACCIDENTS, PARACHUTE JUMPING), (*PARACHUTE JUMPING, ACCIDENTS), SOURCES, PARACHUTES, MALFUNCTIONS, HAZARDS, RECREATION, ANALYSIS, INJURIES, IMPACT SHOCK, TRAINING, WIND (U)
IDENTIFIERS: DEATH (U)

SPORT PARACHUTING HAS BECOME A POPULAR ACTIVITY WITH MILITARY PERSONNEL, AND MANY CLUBS HAVE BEEN ORGANIZED AND SPONSORED ON BASES THROUGHOUT THE WORLD. AS THE NUMBER OF JUMPERS HAS INCREASED SO HAS THE NUMBER OF DEATHS INCREASED. THERE HAVE BEEN 27 MILITARY PERSONS KILLED IN SPORT PARACHUTING THROUGH JUNE 1964. IN ADDITION TO THE LARGE PROBLEM OF FAILURE TO ACTIVATE THE PARACHUTE THERE ARE OTHER HAZARDS ALSO, SUCH AS HITTING THE AIRPLANE, COLLIDING WITH ANOTHER JUMPER, MALFUNCTIONING OF THE CHUTE AND LANDING IN THE WATER. ANALYSIS OF THE ACCIDENTS SHOWS THAT ONE-THIRD OCCURRED DURING THE PRELIMINARY TRAINING PERIOD BUT IN OTHERS JUMPERS WITH LONG EXPERIENCE HAVE DIED ALSO. WIND APPEARS TO BE A FACTOR IN INADVERTENT WATER LANDINGS, BUT OTHER WEATHER FACTORS LACK IMPORTANCE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-619 013
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
WORKING DAY OF A SPACE PIONEER, YA. G. GAGARIN RE-
ENTERS SPACE TRAINING, (U)
MAR 64 6P BELIKOV,V. ;
REPT. NO. FTD-TT-64-149
MONITOR: TT , 64-15397

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: UNEDITED ROUGH DRAFT TRANS. FROM
IZVESTIYA (USSR) 9 AUG P4 1963.

DESCRIPTORS: (*ASTRONAUTS, USSR), PARACHUTE JUMPING,
TRAINING (U)

PARACHUTE JUMPING BY RUSSIAN COSMONAUT, Y. GAGARIN.

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-619 389
BUREAU OF SOCIAL SCIENCE RESEARCH INC WASHINGTON D C
FEAR AND ENTHUSIASM IN SPORT PARACHUTING, (U)
MAY 65 35P KLAUSNER,SAMUEL Z. ;
CONTRACT: AF49 638 992
MONITOR: AFOSR , 65-1329

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR INCLUSION IN MOTIVATIONS IN SPORTS BY RALPH SLOVENKO AND JAMES A. KNIGHT TO BE PUBLISHED BY CHARLES C. THOMAS, SPRINGFIELD, ILLINOIS.

DESCRIPTORS: (*PARACHUTE JUMPING, RECREATION), (*FEAR, PARACHUTE JUMPING), EMOTIONS, MOTIVATION, ATTITUDES, PERSONALITY, PSYCHOMETRICS, SOCIAL SCIENCES, ANALYSIS OF VARIANCE, STATISTICAL DATA (U)

REPLIES TO A MAIL QUESTIONNAIRE BY 625 SPORT PARACHUTISTS AFFILIATED WITH 103 PARACHUTE CLUBS ARE THE DATA OF THIS STUDY. QUESTIONNAIRES WERE ADMINISTERED BY OFFICIALS OF THE INDIVIDUAL CLUBS AND ASKED ABOUT THE EXPERIENCE OF FEAR AND ENTHUSIASM, PERSONAL AND SOCIAL CHARACTERISTICS OF THE PARACHUTISTS, ATTITUDES RELEVANT TO SPORT PARACHUTING, AND INCLUDED THE MA AND MY SCALES FROM THE MMPI, A DRAW-A-PERSON TEST, AND FOUR STORYSTIMULUS PICTURES OF PARACHUTING SITUATIONS. ONLY THE JUMP EXPERIENCE, AN ANALYSIS OF THE STORIES TOLD ABOUT ONE PICTURE, AND A FEW SOCIAL CHARACTERISTICS ARE REPORTED IN THIS PAPER. (U)

AD-620 370
NAVAL SCHOOL OF AVIATION MEDICINE PENSACOLA FLA
COMPARISON OF DIFFERENT TYPES OF PARACHUTE HARNESS WITH PARTICULAR REFERENCE TO EASE OF RELEASE. (U)
DESCRIPTIVE NOTE: RESEARCH REPT.,
20P GEMMILL,C. L. ;STILWELL,S. C. ;
DIETZ,A. D. ;RILEY,R. L. ;ZWIERLEIN,T. J. ;
REPT. NO. NSAM-766
MONITOR: NAVMED , A-292 (AV-168-U)

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: AVAILABLE COPY WILL NOT PERMIT FULLY LEGIBLE REPRODUCTION. REPRODUCTION WILL BE MADE IF REQUESTED BY USERS OF DDC. COPY IS AVAILABLE FOR PUBLIC SALE.

DESCRIPTORS: (*PARACHUTES, SAFETY HARNESS), (*DISCONNECT FITTING, PARACHUTES), TESTS, SIMULATION, ENVIRONMENTAL TESTS, AVIATION SAFETY, RELEASE MECHANISMS (U)

THE U. S. NAVY TYPE AND THE BRITISH 'QUICK RELEASE' TYPE OF PARACHUTE HARNESS WERE TESTED WITH RESPECT TO THE EASE AND SPEED OF RELEASE UNDER THE FOLLOWING CONDITIONS: (1) ON LAND UNDER GOOD CONDITIONS. (2) ON LAND IN SIMULATED BAD WEATHER: (A) IN HIGH WIND, (B) WITH WET HANDS AND HARNESS, (C) AT 0 F, (D) WITH HEAVY FLYING MITTENS. (3) IN THE WATER AND SUSPENDED ABOVE THE WATER: (A) IN THE WATER, (B) SUSPENDED 8 FT. ABOVE WATER, (C) IN THE WATER; LIFE JACKET INFLATED. (4) USING ONE HAND: (A) DRY, (B) WITH WET HANDS AND HARNESS. TWO EXAMPLES OF ACCIDENTAL JAMMING ARE DISCUSSED AND THE SUBJECT OF ACCIDENTAL RELEASE IS CONSIDERED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /20NC2

AD-623 622
ARMED FORCES INST OF PATHOLOGY WASHINGTON D C
PARACHUTING FOR SPORT, (U)
65 5P KIEL,FRANK W. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PUB. IN JOURNAL OF AMERICAN MEDICAL ASSOCIATION V194 P264-8 OCT 18 1965 (COPIES NOT AVAILABLE TO DDC OR CLEARINGHOUSE CUSTOMERS).

DESCRIPTORS: (*PARACHUTE JUMPING, RECREATION), (*ACCIDENTS, PARACHUTE JUMPING), SURVIVAL, TRAINING, WOUNDS - INJURIES (U)

PARACHUTING HAS EXISTED FOR 180 YEARS BUT HAS GAINED MANY ADHERENTS ONLY IN RECENT YEARS. SPORT PARACHUTING IS ESTIMATED TO HAVE 50,000 PARTICIPANTS IN 1964. ALTHOUGH PARACHUTING IS A POTENTIALLY DANGEROUS ACTIVITY, FATALITIES ARE RARE-APPROXIMATELY 1 IN 17,000 JUMPS. FATALITIES, THOUGH USUALLY THOUGHT OF AS THE RESULT OF MULTIPLE EXTREME INJURIES SUSTAINED IN ABRUPT GROUND DECELERATION, HAVE MANY OTHER CAUSES. AMONG THESE CAUSES OF DEATH HAVE BEEN COLLISION OF JUMPERS, LANDING ON A POWER LINE, HEART ATTACK DURING DESCENT, AND DROWNING. MAJOR FACTORS BEHIND MANY OF THESE ACCIDENTS HAVE BEEN (1) LACK OF PROPER REPETITIVE TRAINING BY QUALIFIED INSTRUCTORS AND (2) LACK OF ADEQUATE SUPERVISION, PARTICULARLY OF STUDENTS. ANALYSIS OF THE ACCIDENTS HAS SHOWN THAT ONE THIRD OCCURRED DURING THE PRELIMINARY TRAINING PERIOD, BUT IN OTHERS, JUMPERS WITH LONG EXPERIENCE HAVE DIED ALSO. TEMPERATURE, CLOUD CONDITIONS, AND WIND HAVE NOT BEEN SHOWN TO BE MAJOR FACTORS. A FEW MIRACULOUS ESCAPES ARE KNOWN IN PARACHUTING-SURVIVAL OF A FALL FROM GREAT HEIGHT WITHOUT THE AID OF A PARACHUTE. SUCH EVENTS USUALLY HAVE THE BENEFIT OF A LONG DECELERATIVE INTERVAL BECAUSE OF LANDING IN PLOWED FIELDS OR TREES AND AN OPTIMAL DIFFUSION OF BODY IMPACT, AS IN LANDING ON THE BACK IN A SPREAD-EAGLE POSITION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /20NC2

AD-630 466 6/7 6/14
NAVAL AVIATION SAFETY CENTER NORFOLK VA
BODY-BUILD AND SURVIVAL IN EJECTIONS FROM NAVY
AIRCRAFT. (U)
65 16P LODGE,GEORGE T. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*SURVIVAL, PHYSICAL FITNESS),
(*PARACHUTE JUMPING, SURVIVAL), (*ANTHROPOMETRY,
SURVIVAL), AVIATION ACCIDENTS, NAVAL AIRCRAFT,
ESCAPE SYSTEMS(AEROSPACE), EJECTION, PILOTS (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-630 793 5/10 5/11
BUREAU OF SOCIAL SCIENCE RESEARCH INC WASHINGTON D C
WORSHIP AND THE DANGEROUS LIFE: A STUDY OF CHURCH
ATTENDANCE AMONG SPORT PARACHUTISTS. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT., 1963-1965,
DEC 65 55P KLAUSNER,SAMUEL Z. I
CONTRACT: AF 49(638)-1510,
PROJ: AF-9779,
TASK: 977901,
MONITOR: AFOSR , 66-0124

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*RELIGION, PSYCHOLOGY), (*PARACHUTE JUMPING, RELIGION), RECREATION, EMOTIONS, FEAR, MOTIVATION, BEHAVIOR, ANXIETY, ATTITUDES, PERSONALITY, PROJECTIVE TECHNIQUES, REACTION(PSYCHOLOGY), ANALYSIS OF VARIANCE, STATISTICAL ANALYSIS, SOCIAL SCIENCES (U)

THE DATA FOR THIS STUDY WERE DRAWN FROM 825 QUESTIONNAIRES RETURNED BY MEMBERS OF AMERICAN SPORT PARACHUTING CLUBS. AMONG PROTESTANT PARACHUTISTS, THE EMOTIONALLY VOLATILE ARE MORE FREQUENT CHURCH ATTENDERS THAN THE RELATIVELY CALM. AMONG CATHOLICS THE REVERSE IS TRUE: THE CALMER TYPES GO TO CHURCH WHILE THE MORE VOLATILE TEND TO STAY AWAY. SKYDIVERS WHO AVOID THINKING ABOUT THEIR FEAR OF JUMPING ARE, ESPECIALLY AMONG PROTESTANTS, MORE FREQUENT CHURCH ATTENDERS THAN THOSE SKYDIVERS WHO EXPRESS THEIR FEAR. CATHOLICS WHO EXPRESS THE FEELING OF FREE FALL IN SENSORY AND ESTHETIC TERMS ARE MORE FREQUENT CHURCH ATTENDERS THAN THE CATHOLICS WHO CONFRONT THIS EXPERIENCE IN A SIMPLE, DESCRIPTIVE, MATTER-OF-FACT WAY. PROTESTANTS WHO GRASP THE FREE FALL EXPERIENCE IN A MATTER-OF-FACT WAY WERE MORE FREQUENT WORSHIPPERS IN THEIR CHURCHES THAN THOSE PROTESTANTS FOR WHOM FREE FALL IS AN ESTHETIC OR SENSORY EXPERIENCE. PROTESTANTS WHO FELT THAT HARM BEFALLING A SKYDIVER WAS DUE TO FATE--THAT IS, PREDESTINED OR DETERMINED, RATHER THAN A RESULT OF THE JUMPER'S IRRESPONSIBLE BEHAVIOR, ARE MORE FREQUENT CHURCH ATTENDERS. CATHOLICS FOR WHOM SKYDIVER INJURY IS DUE TO HIS OWN RESPONSIBILITY ARE MORE LIKELY THAN FATALISTI CATHOLICS TO BE FREQUENT ATTENDERS AT MASS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /20NC4

AD-631 019 5/11 5/10
BUREAU OF SOCIAL SCIENCE RESEARCH INC WASHINGTON D C
THE IMPACT OF THE MEANS OF RECRUITMENT ON PERFORMANCE IN A DANGEROUS SPORT: SOCIAL, ENTHUSIASTIC AND EXHIBITIONIST SKYDIVERRS. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT., 1963-1966,
JAN 66 32P KLAUSNER,SAMUEL Z. ;
CONTRACT: AF 49(638)-1510,
PROJ: AF-9779,
TASK: 977901,
MONITOR: AFOSR , 66-0122

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PARACHUTE JUMPING, MOTIVATION), SOCIAL COMMUNICATION, READING, TELEVISION COMMUNICATION SYSTEMS, RECREATION, ATTITUDES, DECISION MAKING, PERSONALITY, PSYCHOMETRICS, ANXIETY, SOCIAL SCIENCES (U)
IDENTIFIERS: PERSUASIVE COMMUNICATIONS (U)

MANY SKYDIVERS ARE RECRUITED BY FRIENDS; RELATIVELY FEW ARE RECRUITED THROUGH THE MASS MEDIA. WRITTEN MATERIALS ARE LIKELY TO ATTRACT OLDER AND MORE EDUCATED INDIVIDUALS TO THE SPORT. INDIVIDUALS RECRUITED BY THEIR FRIENDS TEND TO PLACE THE SOCIAL GROUP AHEAD OF THE SPORT AND MAY SHIFT TO ANOTHER SPORT RATHER THAN CHANGE THEIR GROUP WHEN FACED WITH A CHOICE. THOSE WHO ARE RECRUITED THROUGH WRITTEN MATERIALS TEND TO BE MORE ACTIVE AND ENTHUSIASTIC SKYDIVERS. THOSE RECRUITED THROUGH TELEVISION ARE MORE INTERESTED IN THE EXHIBITIONISTIC ASPECTS OF SKYDIVING AND, IN THEIR PERSONALITIES, TEND TO BE MORE PASSIVE. THOSE RECRUITED BY FRIENDS ARE MORE LIKELY TO BE 'LOCALS', CONCERNED WITH THE ACTIVITY OF THEIR IMMEDIATE SKYDIVING GROUP, WHILE THOSE RECRUITED THROUGH THE MASS MEDIA ARE MORE LIKELY TO BE 'COSMOPOLITANS', CONCERNED WITH NATIONAL ASPECTS OF SKYDIVING. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZGNCZ

AD-631 020 5/11 5/10
BUREAU OF SOCIAL SCIENCE RESEARCH INC WASHINGTON D C
THE TRANSFORMATION OF FEAR. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT., 1963-1966,
JAN 66 41P KLAUSNER,SAMUEL Z. ;
CONTRACT: AF 49(638)-1510,
PROJ: AF-9779,
TASK: 977901,
MONITOR: AFOSR , 66-0123

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PARACHUTE JUMPING, FEAR), ANXIETY, MOTIVATION, EMOTIONS, STRESS(PSYCHOLOGY), BEHAVIOR, ATTITUDES, PERSONALITY, PSYCHOMETRICS, RECREATION, CORRELATION TECHNIQUES, SOCIAL SCIENCES (U)

HYPOTHESIS: (1) FEAR AND ENTHUSIASM ARE NEGATIVELY CORRELATED COMPONENTS OF AFFECTUAL EXCITEMENT. (2) IN ACTING DESPITE FEAR, FEAR IS TRANSFORMED INTO ENTHUSIASM (THE AFFECTUAL VALENCE SHIFT FROM NEGATIVE TO POSITIVE): I.E., FEAR AT ONE POINT IS POSITIVELY CORRELATED WITH ENTHUSIASM AT A LATER POINT IN THE ACT. A SAMPLE OF 825 AMERICAN SPORT PARACHUTISTS INDICATED THE DEGREES OF FEAR AND ENTHUSIASM EXPERIENCED DURING THEIR FIRST JUMP. THE DATA WERE EXAMINED BY REGRESSION ANALYSIS OF THE FEAR AND ENTHUSIASM SCORES. DURING THE JUMP PREPARATION BOTH FEAR AND ENTHUSIASM INCREASE. AT THE START OF THE JUMP RUN, FEAR DECREASES AND ENTHUSIASM INCREASES. A NADIR AND ZENITH, RESPECTIVELY, ARE REACHED WHEN THE PARACHUTE IS OPENED. FEAR AGAIN INCREASES AND ENTHUSIASM DECREASES NEAR LANDING. UPON TOUCHING THE GROUND, FEAR DROPS TO A NEW NADIR AND ENTHUSIASM RISES TO A ZENITH ABOVE THE FIRST. THE MEAN SCORES FOR FEAR AND FOR ENTHUSIASM AT SUCCESSIVE POINTS DURING THE JUMP ARE NEGATIVELY CORRELATED. AT SINGLE POINTS, INDIVIDUAL FEAR AND ENTHUSIASM SCORES ARE ALSO NEGATIVELY CORRELATED. THESE FINDINGS SUPPORT THE FIRST HYPOTHESIS. THE INDIVIDUAL FEAR SCORES AT THE FIRST ZENITH OF FEAR ARE LESS NEGATIVELY AND THEN MORE POSITIVELY CORRELATED WITH INDIVIDUAL ENTHUSIASM AT SUCCESSIVE SUBSEQUENT POINTS; THIS FINDING SUPPORTS THE SECOND HYPOTHESIS. A DEVIANT CASE ANALYSIS SHOWED THAT THOSE WHO TRANSFORM THEIR FEAR INTO A RELATIVELY GREAT AMOUNT OF ENTHUSIASM TEND TO BE INDEPENDENT, ENERGETIC PERSONALITIES, WHILE THOSE WHO FAIL, RELATIVELY, TO TRANSFORM THE FEAR INTO ENTHUSIASM (U)

UNCLASSIFIED /ZGNCZ

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZDNC2

AD-631 049 5/11 5/10
BUREAU OF SOCIAL SCIENCE RESEARCH INC WASHINGTON D C
VOLUNTEERS FOR A HIGH RISK SPORT. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT., 1963-1966.
JAN 66 49P KLAUSNER,SAMUEL Z. 3
CONTRACT: AF 49(638)-1510.
PROJ: AF-9779.
TASK: 977901.
MONITOR: AFOSR , 66-0121

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PARACHUTE JUMPING, RECREATION), UNITED STATES, DISTRIBUTION, ATTITUDES, PUBLIC OPINION, NEWSPAPERS, ANXIETY, MOTIVATION, PERSONALITY, FEAR, SOCIAL SCIENCES, STATISTICAL DATA (U)
IDENTIFIERS: VOLUNTEERS (U)

SPORT PARACHUTISTS TEND TO BE OVER-REPRESENTED IN THE WESTERN REGION OF THE UNITED STATES. THEY ARE, BY AND LARGE, RELATIVELY YOUNG MALES WHO LOOK UPON THE SPORT AS A MASCULINE EXPRESSION. THE SPORT IS OBJECTIVELY DANGEROUS, AS MEASURED BY THE ACCIDENT RATE, AND IS SUBJECTIVELY PERCEIVED AS SUCH. SPORT PARACHUTISTS TEND TO BE SINGLE-MINDED IN THEIR ATTITUDE TO THE SPORT, SOMETIMES GIVING IT PRIORITY OVER THEIR COMMITMENT TO FAMILY ROLES. PRESS REPORTAGE EMPHASIZES THE SPECTACULAR AND EXHIBITIONISTIC ASPECTS OF PARACHUTING RATHER THAN ITS COMPETITIVE SPORT ASPECTS. NEWSPAPERS SEE THE ACTIVITY AS EXHIBITING FUN AND 'GUTS' AND AS DANGEROUS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-633 630 1/2
ARMY AEROMEDICAL RESEARCH UNIT FORT RUCKER ALA
EXPECTED INJURY RATES FOR EXPERIMENTAL AIRBORNE
OPERATIONS, (U)
JUN 66 13P AVNER,R. A. ;
REPT. NO. USAARU-66-7,
PROJ: DA-3A0-2560-1A-815,
TASK: 036,

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PARACHUTE JUMPING, AVIATION INJURIES), (*AVIATION INJURIES, MATHEMATICAL PREDICTION), PROBABILITY, CASUALTIES, EXPERIMENTAL DESIGN, STATISTICAL ANALYSIS, ARMY PERSONNEL (U)

PROBABILITY OF INJURY FOR ARMY PARATROOPERS UNDER CONDITIONS OF FULL COMBAT LOAD AND UNPREPARED DROP ZONE WAS ESTIMATED TO BE .006 (STANDARD ERROR = .002, N = 5,253). TABLES WERE COMPUTED TO ALLOW TESTS OF DEPARTURE FROM THIS RATE UNDER EXPERIMENTAL CONDITIONS INVOLVING UP TO 50 JUMPERS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-639 342 5/9 1/2 6/19
ARMY AEROMEDICAL RESEARCH UNIT FORT RUCKER ALA
PHYSIOLOGICAL TRAINING OF HALO PARACHUTISTS. (U)
SEP 66 23P SCHANE, W. P. ;
REPT. NO. USAARU-67-2,
PROJ: DA-3-A-025601-A-819
TASK: 3-A-025601-A-61903

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PARACHUTE JUMPING, *TRAINING), HIGH ALTITUDE, STRESS(PHYSIOLOGY), AVIATION MEDICINE (U)
IDENTIFIERS: HALO PARACHUTISTS (U)

THE REPORT REVIEWS THE ENVIRONMENT IN WHICH A HALO PARACHUTIST OPERATES, INDICATES SOME AREAS IN TRAINING WHICH DESERVE SPECIAL ATTENTION, AND MAKES SOME SPECIFIC OPERATIONAL RECOMMENDATIONS WHICH, IF ADOPTED, WOULD REDUCE THE POSSIBILITY OF INJURY OR DISEASE CAUSED BY THE MAN-ENVIRONMENT INTERACTION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 7ZDNC2

AD-650 369 5/10 5/11
BUREAU OF SOCIAL SCIENCE RESEARCH INC WASHINGTON D C
THE PASSION FOR SKYDIVING. (U)
MAR 67 140P KLAUSNER,SAMUEL Z. ;
CONTRACT: AF 49(638)-1510
PROJ: AF-9777
TASK: 977901
MONITOR: AFOSR 67-0392

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: SEE ALSO AD-630 793, AD-631 019, AD-631 020, AND AD-631 049.

DESCRIPTORS: (*PARACHUTE JUMPING, *FEAR), RECREATION, ANXIETY, PERSONALITY, PROJECTIVE TECHNIQUES, PERSONALITY TESTS, EMOTIONS, GROUP DYNAMICS, ATTITUDES, SOCIAL PSYCHOLOGY, BEHAVIOR, QUESTIONNAIRES, DEFENSE MECHANISMS(PSYCHOLOGY) (U)

THE REPORT IS COMPOSED OF SIX PAPERS ON THE EMOTIONAL ASPECTS OF SPORT PARACHUTING AND ITS MEANING FOR THE SELF-EVALUATION OF THE INDIVIDUAL. SOME MECHANISMS SKYDIVERS EMPLOY TO MANAGE THE FEARFUL COMPONENT OF THE SKYDIVING EMOTION, AND MECHANISMS ENABLING THEM TO ACT DESPITE IT, ARE DISCUSSED. THE FIRST PAPER EXAMINES SOME EMOTIONAL QUALITIES WHICH SKYDIVERS ASSOCIATE WITH FREE FALL. THE SECOND PAPER ATTEMPTS TO ASSESS THE IMPACT OF THE ACT OF PARACHUTING ON THE SKYDIVER'S EVALUATION OF HIMSELF. THE THIRD PAPER EXAMINES SOME OF THE CONDITIONS UNDER WHICH AN INDIVIDUAL WILL RECOGNIZE OR FAIL TO RECOGNIZE HIS FEAR. THE FOURTH PAPER STUDIES FEAR OF FAILURE AS ONE SIGNIFICANT SOURCE OF FEAR. THE FIFTH PAPER DEALS WITH SOME RATIONAL AND NONRATIONAL MECHANISMS FOR MANAGING BEHAVIOR, AND THE LAST PAPER DESCRIBES SOME DIFFERENCES BETWEEN SKYDIVERS WHO ADOPT AN ATTITUDE OF FATALISM OR OF EFFECTIVISM TOWARD THE OUTCOME OF SKYDIVING. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC4

AD-653 598 6/19
ARMY AEROMEDICAL RESEARCH UNIT FORT RUCKER ALA
CONTINUOUS EKG RECORDING DURING FREE-FALL
PARACHUTING. (U)
JUN 67 32P SCHANE, W. P. ISLINDE,
KENNETH E. ;
REPT. NO. USAARU-67-7
PROJ: DA-3A025601-1A-619
TASK: 038

UNCLASSIFIED REPORT

DESCRIPTORS: (*PARACHUTE JUMPING,
ELECTROCARDIOGRAPHY), STRESS(PHYSIOLOGY),
PULSE RATE, HEART, RESPONSES (U)

AN ATTEMPT WAS MADE TO DETERMINE HEART RATE AND RHYTHM OF EXPERIENCED PARACHUTISTS DURING FREE-FALL AND DURING THE PERIODS IMMEDIATELY BEFORE AND AFTER THE JUMPS. CONTINUOUS EKG RECORDINGS WERE MADE OF 49 EXPERIENCED PARACHUTISTS WHILE EACH PARTICIPATED IN FREE-FALL PARACHUTING EXERCISES. A TOTAL OF 98 INDIVIDUAL EXITS FROM AIRCRAFT IN FLIGHT WERE RECORDED. MEAN R-R INTERVAL WAS 0.403 SECONDS JUST PRIOR TO EXIT FROM THE AIRCRAFT, 0.363 SECONDS DURING FREE-FALL, 0.336 SECONDS IMMEDIATELY AFTER PARACHUTE OPENING, 0.369 AT LANDING, AND 0.465 5 MINUTES AFTER LANDING. ALTHOUGH THERE WAS VARIATION IN THE R-R INTERVAL AMONG INDIVIDUALS, THE PROGRESSIVE DECREASE OF R-R INTERVAL THROUGHOUT THE EXIT AND FREE-FALL WITH A NADIR AT PARACHUTE OPENING, WAS THE COMMON THING. THERE IS MARKED INDIVIDUAL DIFFERENCE IN THE DURATION OF TACHYCARDIA BEFORE AND AFTER JUMPS. OVER THE ENTIRE GROUP, MEAN DURATION PER SUBJECT WAS 19.4 MINUTES OF TACHYCARDIA PRIOR TO EXIT, AND 30.4 MINUTES OF TACHYCARDIA AFTER PARACHUTE OPENING. IN THE INDIVIDUALS WHO MADE AT LEAST 2 JUMPS ON ANY ONE DAY, THE R-R INTERVAL MEASURED ON A SINGLE INDIVIDUAL ON THE FIRST AND SECOND JUMPS WERE REMARKABLY SIMILAR, AND WITHIN THE GROUP NOT STATISTICALLY DIFFERENT. A CORRELATION MATRIX WAS COMPUTED TO SHOW RELATIONSHIPS BETWEEN VARIOUS PARAMETERS STUDIED. THE CORRELATION BETWEEN R-R INTERVAL AND TOTAL NUMBER OF JUMPS WAS OPPOSITE IN DIRECTION TO THAT WHICH WAS EXPECTED, AND NEARLY ATTAINED VALUES THAT WERE STATISTICALLY SIGNIFICANT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-683 066 1/3
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
DETACHABLE PULL-LOOSE PARACHUTE PACK OUTFIT, (U)
FEB 69 6P LYAKHOV,[illegible] A. ;STEPANENKO, I. S. ;PUGACHOV,V. B. ;
REPT. NO. FSTC-HT-23-1020-68
PROJ: FSTC-9509033A0906, FSTC-9223626 2301

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 205 616 13 NOV 67.

DESCRIPTORS: (*PARACHUTES, USSR), RELEASE MECHANISMS, RUBBER, RELIABILITY, CORDAGE (U)
IDENTIFIERS: DETACHABLE PULL LOOSE PARACHUTE PACKS, TRANSLATIONS (U)

A DETACHABLE PARACHUTE PACK PULL OUTFIT, IS DESCRIBED INVOLVING A MULTI-PIN PULL CORD THE UPPERMOST PIN OF WHICH IS OF L-SHAPE, A MANUAL OPENING CORD, AND A PULL CORD, THE LOOPS OF WHICH ARE ATTACHED TO THE SADDLE OF THE L-SHAPED PIN, A SAFETY DEVICE FASTENED TO THE PARACHUTE PACK, AN ARRESTOR COUPLING SET UP ON THE PULL CORD, AND A POCKET FOR THE L-SHAPED PIN, SEWED TO THE PACK; BEING DISTINGUISHED THROUGH THE FACT THAT WITH A VIEW TO ENHANCING RELIABILITY OF OPERATION, IN IT THE L-SHAPED PIN IS FITTED WITH A PLIABLE LINK, MADE (FOR EXAMPLE) OF PACK RUBBER AND ATTACHED AT ONE END TO THE PIN AND AT THE OTHER TO THE PACK BENEATH THE POCKET. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-692 322 1/2 5/9
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
TWO JUMPS EARLIER. (U)
AUG 69 11P ZHORNIK,D. I
REPT. NO. FSTC-HT-23-122-69
PROJ: FSTC-04231002301

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF UNIDENTIFIED RUSSIAN LANGUAGE ARTICLE.

DESCRIPTORS: (*PARACHUTE JUMPING, *TRAINING), DESCENT, STABILIZATION SYSTEMS, TRAINING DEVICES, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

A NEW TRAINING PROGRAM FOR BEGINNING PARACHUTISTS INTRODUCES THE STABILIZED FALL AND MANUAL OPENING OF THE THIRD JUMP. A DESCRIPTION OF GROUND AND THEORETICAL TRAINING IS GIVEN; THE PROKICHEV TRAINER WITH ADAPTATIONS IS DESCRIBED AND ILLUSTRATED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-693 169 1/3
WRIGHT AIR DEVELOPMENT CENTER WRIGHT-PATTERSON AFB
OHIO
TEST OF PACK - PARACHUTE, AUTOMATIC OPENING
QUICK ATTACHABLE CHEST. (U)
DESCRIPTIVE NOTE: TECHNICAL NOTE,
MAR 54 13P PARKER,C. G. ;
REPT. NO. WADC-TN-WCLE-54-14

UNCLASSIFIED REPORT

DESCRIPTORS: (*PARACHUTE JUMPING, HIGH ALTITUDE),
(*PACKS(PARACHUTE),
PERFORMANCE(ENGINEERING)), AUTOMATIC,
OPERATION, DROP TESTING, RELEASE MECHANISMS (U)

THE PURPOSE OF THE STUDY WAS TO TEST AN AUTOMATIC
OPENING CHEST STYLE PARACHUTE FOR AIR CREWMEMBER USE
IN HIGH ALTITUDE BAIL OUT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-693 228 1/3
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
PURPOSE AND DESIGN OF PARACHUTES. (U)
AUG 69 14P DMITRIEV,G. I
REPT. NO. FSTC-HT-23-1098-68
PROJ: FSTC-0423100230I

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM KRYLYA RODINY (USSR) V19 NOV 68.

DESCRIPTORS: (*PARACHUTES, DESIGN), STRUCTURAL PARTS, PACKS(PARACHUTE), PARACHUTE JUMPING, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

THE TRANSLATION GIVES A BRIEF HISTORICAL SKETCH OF THE DEVELOPMENT OF THE PARACHUTE AND THEN GOES ON TO DESCRIBE, IN DETAIL, THE DESIGN OF PRESENT-DAY PARACHUTES, USING THE D-1-8, SERIES 3 PARACHUTE USED BY THE SOVIET AIRBORNE TROOPS AS AN EXAMPLE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONCZ

AD-693 432 1/3
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
PARACHUTE SUSPENSION SYSTEM. (U)
SEP 69 6P
REPT. NO. FSTC-HT-23-388-69
PROJ: FSTC-02RD500

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 199 688, 8 SEP 67.

DESCRIPTORS: (*PACKS(PARACHUTE), DESIGN), SUSPENSION DEVICES, SAFETY HARNESS, PILOTS, PATENTS, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

THE PATENT INVOLVES A PARACHUTE SUSPENSION SYSTEM WHICH PERMITS ONE MAN TO PUT ON AND TIGHTEN THE COMPLETE PARACHUTE AND PACK AS A UNIT WITHOUT OUTSIDE ASSISTANCE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-894 355 1/3
ARMY NATICK LABS MASS AIRDROP ENGINEERING LAB
EMERGENCY RESCUE PARACHUTES IN HELICOPTERS. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
JUL 69 22P WOLFF,JAMES W. I
PROJ: DA-1-F-162203-D-195
MONITOR: USA-NLABS TR-70-19-AD

UNCLASSIFIED REPORT

DESCRIPTORS: (*HELICOPTERS, *PARACHUTES), COCKPITS, COMPATIBILITY, AIRCRAFT SEATS, CONFIGURATION, SURVIVAL KITS, BODY ARMOR, SAFETY, ARMY AIRCRAFT (U)
IDENTIFIERS: RESCUE PARACHUTES (U)

THE STUDY EVALUATED THE PRESENT EMERGENCY RESCUE PARACHUTES IN ARMY HELICOPTERS. AN INVESTIGATION WAS CONDUCTED WITH EACH EMERGENCY RESCUE PARACHUTE TO DETERMINE COMPATIBILITY WITH COCKPIT GEOMETRY AND SEAT DESIGN. COMPATIBILITY OF THE AIRCREW PROTECTIVE ARMOR AND OVERWATER SURVIVAL KIT WITH THE EMERGENCY RESCUE PARACHUTES WAS ALSO TESTED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-700 943 15/7
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
PARACHUTISTS - AIRBORNE LANDING, (U)
DEC 69 287P LISOV,I. I. ;
REPT. NO. FSTC-HT-23-27-69
PROJ: FSTC-0423100

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF MONO. DESANTNIKI - VOZDUSHNYE DESANTY, N.P., 1968 P1-319.

DESCRIPTORS: (*TACTICAL AIR SUPPORT, *AIRMOBILE OPERATIONS), (*PARACHUTE JUMPING, REVIEWS), MILITARY TACTICS, HISTORY, AIRMOBILE OPERATIONS, USSR (U)
IDENTIFIERS: TRANSLATIONS, *AIRBORNE TROOPS, *WORLD WAR 2 (U)

THE AUTHOR OF THE BOOK INVOLVES HIMSELF WITH HEROIC CASES OF COMBAT EMPLOYMENT OF SOVIET AIRBORNE TROOPS AT VARIOUS STAGES OF THE GREAT PATRIOTIC WAR. MUCH EMPHASIS IS PLACED UPON THE IMPORTANCE OF THE AIRBORNE AS A MAJOR COMBATIVE STRATAGEM. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-702 997 1/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
THEORETICAL BASES OF JUMPING. (U)
DEC 69 18P KRAVTSOV,I. I
REPT. NO. FTD-MT-24-314-69
PROJ: FTD-4160002

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED MACHINE TRANS. OF KRYLYA RODINY (USSR) V20 N5 P26-28 1969, BY RAY E. ZARZA.

DESCRIPTORS: (*PARACHUTE JUMPING, THEORY), PILOTS, OPERATION, PARACHUTE DESCENTS, LANDING IMPACT, USSR, TRANSPORT PLANES, UTILITY PLANES, ALTITUDE, TRAINING (U)
IDENTIFIERS: COLT, TRANSLATIONS (U)

PARACHUTING TECHNIQUES FROM AN AN-2 AIRCRAFT AT 900 M AND 800 M ARE DESCRIBED. DIRECTIONS ARE GIVEN FOR CHUTE PLACEMENT BEFORE THE JUMP, OPENING THE CHUTE, CHUTE MANEUVERING, DESCENT RATE, AND LANDING. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-706 159 1/3
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
PARACHUTE PACKING. (U)
FEB 70 16P SHTENNIKOV,YU. ;
REPT. NO. FTD-HT-23-586-69
PROJ: FTD-4160002

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: EDITED TRANS. OF KRYLYA RODINY (USSR) V20 N2 P26-29 FEB 69, BY H. PECK.

DESCRIPTORS: (*PARACHUTES, PACKAGING), RIBBON PARACHUTES, VISUAL INSPECTION, ASSEMBLING, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

THE ARTICLE IS A SEQUENCE TO STUDY NO. 11 DATED 1966, WHICH DESCRIBED A PARACHUTE, INTERACTION OF PARTS, SEQUENCE AND RELIABILITY. THE AUTHOR NOW DISCUSSES, IN DETAIL, PARACHUTE PACKING FOR SAFETY PURPOSES. SOME HINTS ARE GIVEN TO SKYDIVING INSTRUCTORS FOR CONDUCTING PARACHUTE PACKING CLASSES. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-874 725 15/7 5/5
ARMY TEST AND EVALUATION COMMAND ABERDEEN PROVING GROUND MD
AIRDROP ITEMS FOR PERSONNEL. (U)
DESCRIPTIVE NOTE: FINAL REPT. ON MATERIEL TEST PROCEDURE.
JUL 70 11P
REPT. NO. MTP-7-3-076
PROJ: AMCR-310-6

UNCLASSIFIED REPORT

DESCRIPTORS: (*PARACHUTE JUMPING, HUMAN ENGINEERING), AIR DROP OPERATIONS, PARACHUTE DESCENTS, PERFORMANCE(HUMAN), MILITARY TRAINING, AVIATION PERSONNEL, COMBAT READINESS, EFFECTIVENESS (U)
IDENTIFIERS: PARATROOPS, EVALUATION (U)

THIS ARMY SERVICE TEST PROCEDURE DESCRIBES TEST METHODS AND TECHNIQUES FOR EVALUATING THE PERFORMANCE AND CHARACTERISTICS OF PARACHUTES, HARNESSES, RELEASE DEVICES, AND OTHER ITEMS FOR AIRDROP OF PERSONNEL - AND FOR DETERMINING THEIR SUITABILITY FOR SERVICE USE BY THE U. S. ARMY. THE EVALUATION IS RELATED TO CRITERIA EXPRESSED IN APPLICABLE QUALITATIVE MATERIEL REQUIREMENTS (QMR), SMALL DEVELOPMENT REQUIREMENTS (SDR), AND TECHNICAL CHARACTERISTICS (TC), OR OTHER APPROPRIATE DESIGN REQUIREMENTS AND SPECIFICATIONS. (U)

VI. AIR DROP OPERATIONS

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-600 741
ARMY NATICK LABS MASS AIRDROP ENGINEERING LAB
MINIMUM AIRDROP ALTITUDES USING STANDARD PARACHUTE EQUIPMENT. (U)
APR 64 21P LEWIS, WILLIAM H. ;
REPT. NO. ADED-64-2

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*PARACHUTE DESCENTS, LOW ALTITUDE), (*AIRDROP OPERATIONS), PARACHUTES, AIR-DROP OPERATIONS, TRANSPORT PLANES (U)

REQUIREMENTS OF THE AIR FORCE COMPUTED AIR RELEASE POINT SYSTEM (CARP), PARACHUTE BALLISTIC DATA INPUT TO THE CARP SOLUTION, AIRDROP CAPABILITY OF TROOP CARRIER AIRCRAFT, PRESENT AND RECOMMENDED AIRDROP ALTITUDES, PERFORMANCE CAPABILITY OF EXISTING STANDARD PARACHUTE EQUIPMENT AND CHANGES TO EXSTING STANDARD PARACHUTE EQUIPMENT HAVING POTENTIAL FOR IMPROVING ITS CAPABILITY FOR USE AT LOWER AIRDROP ALTITUDES, WERE REVIEWED. MINIMUM AIRDROP ALTITUDES CONSIDERED FEASIBLE USING EXISTING UNMODIFIED STANDARD PARACHUTE EQUIPMENT WERE DETERMINED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC4

AD-602 637
ARMY NATICK LABS MASS APPLIED ENTOMOLOGY GROUP
QUALITATIVE EVALUATION OF THE AIRDROP IMPACT CAPABILITY OF THE STERILIZER, AUTOCLAVE FOR SPECIAL FORCES. (U)
SEP 63 19P ANTKOWIAK,H. E. ;
REPT. NO. AE-016

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*MEDICAL EQUIPMENT, AIR DROP OPERATIONS), (*AIR DROP OPERATIONS, MEDICAL EQUIPMENT), CARGO PARACHUTES, DEFORMATION, LANDING IMPACT, VELOCITY, STRESSES, DAMAGE, ARMED FORCES SUPPLIES, PARACHUTE DESCENTS, HONEYCOMB CORES, SANDWICH CONSTRUCTION, PAPER, PACKING MATERIALS (U)

THE AIRDROP IMPACT CAPABILITY OF THE FUEL-HEATED PRESSURE AUTOCLAVE DRESSING STERILIZER WAS EVALUATED. SIX ANDSTATIC AND ONE AIRDROP WERE CONDUCTED. RESULTS INDICATE THERE WAS NO EVIDENCE OF STRUCTURAL DEFORMATION OR FUNCTIONAL DEFECTS. IT WAS CONCLUDED THAT THE STERILIZER DESIGN IS ADEQUATE FOR AIRDROP ON A PARACHUTIST AND BY STANDARD AIRDROP TECHNIQUES, USING PAPER HONEYCOMB AS AN ENERGY DISSIPATER. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /20NC2

AD-606 188
ARMY TRANSPORTATION RESEARCH COMMAND FORT EUSTIS VA
SUPPLEMENTARY STUDY OF DESIGN FACTORS IN AIR DELIVERY FOR CV-7 CARIBOU AIRCRAFT. (U)
AUG 64 35P JONES, R. D. H. ;
TASK: 1D643324059806
MONITOR: TRECOM , TR64 46

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*TRANSPORT PLANES, DESIGN), (*CONTAINERS, MOTION), CARGO, CARGO PARACHUTES, AIR DROP OPERATIONS, SHORT TAKE-OFF PLANES, FLOORS, FRICTION, STABILITY, LOADING (MECHANICS), VECTOR ANALYSIS, SAFETY, GUSTS, HANDLING, PROGRAMMING LANGUAGES (U)
IDENTIFIERS: V-2 AIRCRAFT, V-7 AIRCRAFT (U)

A STUDY WAS MADE OF THE EXTRACTION OF LOADS BY PARACHUTE FROM THE CV-7 CARIBOU AIRCRAFT. TWO FORTRAN PROGRAMS ARE INCLUDED TO SHOW THE CALCULATION OF THE MAXIMUM SAFE ENVELOPE FOR THE LOADS; VARIOUS CONDITIONS WITH A WIDE RANGE OF ADJUSTABLE PARAMETERS ARE CONSIDERED. IN THE PROGRAMS, THE PARAMETERS MAY BE SET AS DATA TO SIMULATE ANY VALUES, SUCH AS THOSE FOR THE EXTRACTIVE FORCE OF THE EJECTION PARACHUTE, FOR THE COEFFICIENT OF SLIDING FRICTION BETWEEN THE FLOOR AND THE LOAD, AND FOR THE LENGTH OF THE PALLET ON WHICH THE LOAD IS MOUNTED. THE CONCLUSIONS REACHED ARE NEGATIVE IN CHARACTER, BUT THEY CAN BE OF VALUE AS A BASIS FOR FURTHER STUDIES. THE LOAD TIPS SO LITTLE AT THE SILL OF THE FLOOR WITH THE RAMP UP THAT THE MAXIMUM SAFE ENVELOPE DEPARTS ONLY SLIGHTLY FROM THE RECTANGULAR FORM. IT IS BELIEVED THAT THE EFFECTS OF GUST DISTURBANCES AND OF POSSIBLE JAMMING IN THE RAIL RESTRAINT AND RELEASE SYSTEM SHOULD BE INVESTIGATED, SINCE, FROM TIME TO TIME, THESE INFLUENCES WILL CAUSE THE LOAD TO TIP THROUGH ANGLES OF INCLINATION OF A HIGHER ORDER OF MAGNITUDE THAN THOSE DUE TO DYNAMICAL CONSIDERATIONS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 7ZONC2

AD-609 366
TACTICAL AIR COMMAND LANGLEY AFB VA
OPERATIONAL TEST AND EVALUATION OF C-119, ALAMO SLING SHOT AERIAL DELIVERY SYSTEM. (U)
DEC 64 84P
MONITOR: TAC , TR64 60

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: LEGIBILITY OF THIS DOCUMENT IS IN PART UNSATISFACTORY. REPRODUCTION HAS BEEN MADE FROM BEST AVAILABLE COPY.

DESCRIPTORS: (*AIR DROP OPERATIONS, POSITIONING DEVICES (MACHINERY)), (*POSITIONING DEVICES (MACHINERY), AIR DROP OPERATIONS), TRANSPORT PLANES, AIRCRAFT EQUIPMENT, HANDLING, RELEASE MECHANISMS, CARGO, PARACHUTE DESCENTS, CONTAINERS, AIR FORCE OPERATIONS, AIR FORCE TRAINING, LOGISTICS, FEASIBILITY STUDIES, AIR TRANSPORTATION (U)
IDENTIFIERS: C-119 AIRCRAFT, ALAMO SLING-SHOT SYSTEMS (U)

THE OBJECTIVE OF THIS OPERATIONAL TEST WAS TO EVALUATE THE CAPABILITY, SUITABILITY, AND TRAINING REQUIREMENTS OF THE 'ALAMO SLING-SHOT SYSTEM' FOR AERIAL DELIVERY FROM C-119 AIRCRAFT. IT WAS DETERMINED THAT C-119 AIRDROP CAPABILITY WAS GREATLY IMPROVED BY USE OF THE 'ALAMO SLING-SHOT SYSTEM,' DUE TO A VAST IMPROVEMENT IN AIRDROP ACCURACY, RELIABILITY, EASE OF LOADING, RIGGING, VERSATILITY, AND MINIMUM AIRCREW TRAINING REQUIRED TO OBTAIN PROFICIENCY. IT IS RECOMMENDED THAT THE 'ALAMO SLING-SHOT SYSTEM' BE APPROVED FOR OPERATIONAL USE IN AIRDROPPING A-22 CONTAINERS AND OTHER SIMILAR LOADS FOR WHICH RIGGING PROCEDURES HAVE BEEN ESTABLISHED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-633 249 15/7 1/2
LOCKHEED-GEORGIA CO MARIETTA
C-141A ENGINEERING FLIGHT TEST RESULTS OF THE AERIAL DELIVERY SYSTEM TESTS, (U)
FEB 66 603P PIEPER,J. W. ;HOBBS,J. . ;
REPT. NO. ER-5473,

- UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*FLIGHT TESTING, *AIR DROP OPERATIONS), (*JET TRANSPORT PLANES, FLIGHT TESTING, PACKAGING, EXPERIMENTAL DATA, CARGO, EJECTION, PERFORMANCE(ENGINEERING), HANDLING, CARGO PARACHUTES, LOADING(MECHANICS), MECHANICAL FASTENERS, DISCONNECT FITTINGS (U)
IDENTIFIERS: C-141 AIRCRAFT (U)

AERIAL DELIVERY SYSTEMS TESTS WERE ACCOMPLISHED WITH THE C-141A, AF63-8077 (LAC 6008) AT THE NAVAL AIR FACILITY, EL CENTRO, CALIFORNIA. THESE TESTS CONSISTED OF PERSONNEL DELIVERY DROPS (DUMMY DROPS), EXTRACTION LINE LENGTH TESTS, EXTRACTION PARACHUTE TOW TESTS, SINGLE PACKAGE CARGO DROPS, AND MULTIPLE PACKAGE CARGO DROPS, QUALITATIVE EVALUATIONS, AIRPLANE RESPONSE PARAMETERS, AND AIRPLANE LOADS OBTAINED DURING THESE TESTS ARE CONTAINED IN THIS REPORT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-646 578 1/3
ARMY AVIATION MATERIEL LABS FORT EUSTIS VA
INVESTIGATION OF DEPLOYMENT AND LANDING LOADS WITH A
LIMP PARAGLIDER. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
SEP 66 51P SOBCZAK,JOHN W. ;
REPT. NO. USAAVLABS-TR-66-82
PROJ: DA-1L013001A91A

UNCLASSIFIED REPORT

DESCRIPTORS: (*PARACHUTES, *GLIDERS), LANDING
IMPACT, WINGS, LOADING(MECHANICS), PARACHUTE
JUMPING, DROP TESTING (U)
IDENTIFIERS: PARAGLIDERS (U)

THE REPORT COVERS THE INITIAL EVALUATION OF THE
NATIONAL AERONAUTICS AND SPACE
ADMINISTRATION'S (NASA) 24-FOOT LIMP PARAWING FOR
USE AS A MANNED AERIAL DELIVERY SYSTEM. A
SATISFACTORY APPLICATION OF THE PARAWING TO THIS USE
WILL PROVIDE THE CAPABILITY OF OFFSET PRECISION
AERIAL DELIVERY OF PERSONNEL, AIDED BY A
NAVIGATIONAL SYSTEM. THE PARAWING COULD BE EMPLOYED
DURING NIGHT AND DURING CONDITIONS OF ADVERSE
VISIBILITY. THE PRIMARY OBJECTIVE OF THE
EVALUATION WAS THE ACQUISITION OF DEPLOYMENT LOAD
DATA ON THE PARAWING. TESTING, WHICH INCLUDED
DUMMY DROP TESTS AND LIVE DROP TESTS, WAS CONDUCTED
FROM 16 MARCH 1966 TO 20 APRIL 1966. IN
GENERAL, THE MEASURED AND OBSERVED CHARACTERISTICS OF
THE PARAWING, COUPLED WITH THE COMMENTS OF THE
MEMBERS OF THE U. S. ARMY PARACHUTE TEAM
(USAPT) WHO FLEW THE WING, INDICATE THAT THE
PARAWING HAS POTENTIAL AND MERITS FURTHER
INVESTIGATION. SPECIFICALLY, THE LOADS WERE FOUND
TO BE WITHIN HUMAN TOLERANCE AND WERE NO GREATER THAN
THOSE EXPERIENCED IN JUMPING CONVENTIONAL PARACHUTES.
THE GLIDE RATIO OF THE PARAWING APPEARS TO BE IN
EXCESS OF 2:1. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 72ONC2

AD-667 401 15/7
GOODYEAR AEROSPACE CORP AKRON OHIO
PRELIMINARY INVESTIGATION OF CONCEPTS FOR LOW-ALTITUDE AIRDROP OF PERSONNEL - EXPLORATORY DEVELOPMENT. (U)
DESCRIPTIVE NOTE: FINAL REPT. 30 NOV 65-1 NOV 66, DEC 66 177P LAU,RICHARD A. ;
REPT. NO. GER-12888
CONTRACT: DA-19-129-AMC-855(N)
PROJ: DA-1M121401D195
MONITOR: USA-NLABS TR-68-43-AD

UNCLASSIFIED REPORT

DESCRIPTORS: (*INFANTRY, AIRBORNE), (*ARMY PERSONNEL, AIR DROP OPERATIONS), DESCENT, DECELERATION, LOW ALTITUDE, PARACHUTES, ROTARY WINGS, GLIDERS, WING WINGS, PARAWINGS, PERFORMANCE(ENGINEERING), STABILITY, RECOVERY, VELOCITY, DRAG, AERODYNAMIC LOADING, MATHEMATICAL ANALYSIS (U)
IDENTIFIERS: DRAG CONES, LIFT PLATFORMS, CANOPY SYSTEMS, LIFT/DRAG RATIO (U)

THE REPORT PRESENTS THE RESULTS OF AN ANALYTICAL STUDY THAT WAS CONDUCTED OF VARIOUS AERODYNAMIC DECELERATORS TO DETERMINE THE FEASIBILITY OF USE, DURING MASS TROOP JUMPS, AT ALTITUDES OF 500 FEET OR BELOW, FROM FIXED AND ROTARY WING AIRCRAFT FLYING AT SPEEDS OF 40 TO 150 KNOTS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZBNC2

AD-670 965 1/3 15/7
LTV AEROSPACE CORP DALLAS TEX LTV VOUGHT AERONAUTICS
DIV
DYNAMIC RESPONSE OF THE XC-142A TILT-WING V/STOL
AIRCRAFT TO IN-FLIGHT CARGO DELIVERY AT SLOW SPEEDS.(U)
DESCRIPTIVE NOTE: FINAL REPT.,
MAR 68 123P WILSON,JERRY W. ISCHIRA,
MIKE P. ;DEITERING,J. STEVE ;
REPT. NO. 2-53310/6R-6098
CONTRACT: DA-44-177-AMC-327(T)
PROJ: DA-1F121401A254
MONITOR: USAAVLABS TR-68-4

UNCLASSIFIED REPORT

DESCRIPTORS: (*TRANSPORT PLANES, *AIR DROP OPERATIONS), (*VERTICAL TAKE-OFF PLANES, AIR DROP OPERATIONS), CARGO, AIRSPEED, PAYLOAD, HOVERING, GROUND EFFECT, CARGO PARACHUTES, MILITARY PERSONNEL, TILT WINGS, SIMULATION, MATHEMATICAL MODELS (U)
IDENTIFIERS: XC-142A AIRCRAFT, C-142 AIRCRAFT, TRANSITION FLIGHT, EXTRACTION PARACHUTES, GRAPHS(CHARTS) (U)

THE POTENTIAL ABILITY OF V/STOL AIRCRAFT TO PERFORM ARMY DROP MISSIONS AT VARIOUS ALTITUDES WHILE FLYING AT SPEEDS FROM HOVER TO CONVENTIONAL FLIGHT COULD PROVIDE A BASIS FOR PRECISION IN-FLIGHT DELIVERY AND COULD OVERCOME MAJOR OPERATIONAL RESTRICTIONS ASSOCIATED WITH MANY OF THE CONVENTIONAL AIR-DROP TECHNIQUES. THE STUDY WAS PARTIALLY BASED ON ACTUAL AIR-DROP DEMONSTRATIONS. SINGLE CARGO LOADS OF UP TO 3,000 POUNDS WERE GRAVITY DROPPED IN HOVER AND AT 30 KNOTS, AND LOADS OF UP TO 4,000 POUNDS WERE EXTRACTED BY PARACHUTE AT 127 KNOTS. USING THESE FLIGHT DATA TO SET UP A REALISTIC SIMULATION, A MATHEMATICAL MODEL OF THE XC-142A AIRPLANE AND A HUMAN PILOT WERE USED TO EXAMINE THE AIRCRAFT'S RESPONSE WITH CARGO WEIGHTS UP TO THE AIRPLANE'S MAXIMUM PAYLOAD OF 8,000 POUNDS IN THE LOW-SPEED PORTION OF TRANSITION AND 12,000 POUNDS AT A 127-KNOT FLIGHT CONDITION. THE STUDY SHOWS THAT THE MAXIMUM PAYLOAD COULD BE SUCCESSFULLY DROPPED WITH PROPER PILOT TECHNIQUE. MEANS OF EXTENDING THE AIRPLANE'S AIR-DROP CAPABILITY THROUGH THE USE OF SPECIAL EXTRACTION FORCES AND PARAMETERS APPLICABLE TO THE AIR-DROP SYSTEM WERE STUDIED.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-671 682 15/7
LOCKHEED-GEORGIA CO MARIETTA
PRELIMINARY INVESTIGATION OF TROLLEY LOW ALTITUDE AIRDROP CONCEPT. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
APR 68 202P MILLER,C. W. ;ALFORD,D. E. ;KOMODOWSKI,H. E. ;STOKES,F. H. ;
CONTRACT: DA-19-129-AMC-856(N)
PROJ: DA-1F121401D196
MONITOR: USA-NLABS TR-68-55-AD

UNCLASSIFIED REPORT

DESCRIPTORS: (*AIR DROP OPERATIONS, LOW ALTITUDE), FEASIBILITY STUDIES, CARGO PARACHUTES, LANDING IMPACT, TOWED BODIES, CABLES(MECHANICAL), AVIATION SAFETY, BRAKING, TRANSPORT PLANES, CARGO, HANDLING, COMPATIBILITY, JET TRANSPORT PLANES, SHORT TAKE-OFF PLANES (U)
IDENTIFIERS: C-130 AIRCRAFT, EXTRACTION PARACHUTES, COMPUTER SIMULATION, TROLLEY AIR DROP TECHNIQUES, C-141A AIRCRAFT, C-141 AIRCRAFT, CV-7A AIRCRAFT, CV-7 AIRCRAFT, CV-2 AIRCRAFT (U)

THE LOCKHEED TROLLEY LOW ALTITUDE AIRDROP CONCEPT EMPLOYS A TOWED PARACHUTE TO MAINTAIN TENSION IN A LONG CABLE FROM WHICH A LOAD MAY BE SUSPENDED UNTIL IT CONTACTS THE GROUND. AFTER IT IS EXTRACTED BY THE FORCE OF THE PARACHUTE, THE LOAD SLIDES BENEATH THE CABLE UNTIL IT CONTACTS THE GROUND. RATE OF DESCENT IS CONTROLLED BY A WINCH IN THE AIRCRAFT THAT REELS IN THE CABLE AS NEEDED TO MINIMIZE IMPACT VELOCITY. THIS PRELIMINARY CONCEPT-ORIENTED INVESTIGATION WAS UNDERTAKEN TO DETERMINE THE FEASIBILITY OF DEVELOPING THIS SYSTEM FOR OPERATIONAL USE. THE STUDY CONSISTS OF ANALYTICAL EVALUATION OF THE OPERATIONAL PARAMETERS, LIMITED COMPONENT TESTING, AND CONSIDERATION OF BASIC HARDWARE REQUIREMENTS. DIGITAL AND ANALOG COMPUTER SIMULATIONS OF TROLLEY AIRDROP ARE AMONG THE ANALYTICAL METHODS EMPLOYED. TWO TESTS OF A PARACHUTE TOWED ON A TROLLEY CABLE BEHIND A C-130 AIRCRAFT ARE EVALUATED. LABORATORY TESTS OF CERTAIN COMPONENTS ARE ANALYZED WITH RESPECT TO FLIGHT SAFETY. RESULTS OF THE STUDY INDICATE NO PROBLEMS WHICH PRECLUDE THE DEVELOPMENT OF THE TROLLEY AIRDROP CONCEPT INTO AN OPERATIONAL SYSTEM FOR AIRDROPPING INDIVIDUAL LOADS OF 2,000 TO 10,000 POUNDS FROM A C-130 BELOW 500 FEET. COMPARISON OF TROLLEY TO CONVENTIONAL AIRDROP SHOWS: (1) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-672 579 1577 1/3
AAI CORP COCKEYSVILLE MD
GROUND SLIDE AIRDROP STUDY: PHASE I (ADDENDUM). (U)
AUG 66 147P NIBLER,R. C. ;FOSTER,J.
E. ;
REPT. NO. ER-3841-ADD
CONTRACT: DA-19-129-AMC-337(N)
PROJ: DA-1F121401D195
MONITOR: USA-NLABS TR-69-15-AD

UNCLASSIFIED REPORT

DESCRIPTORS: (*AIR DROP OPERATIONS, TESTS), LANDING IMPACT, CURVE FITTING, DESCENT, COMPUTER PROGRAMS, CARGO, TRANSPORT PLANES, CARGO PARACHUTES (U)
IDENTIFIERS: GRAPHS(CHARTS), COMPUTER ANALYSIS, EXTRACTION PARACHUTES (U)

THE OBJECT OF THE REPORT IS TO PRESENT THE FINDINGS OF THE EXPLORATORY TEST PHASE, PHASE II, AND TO COMPARE THE ACTUAL FINDINGS TO THOSE PREDICTED BY THE PHASE I STUDY. RESULTS OF LIMITED FLIGHT TESTS ARE PRESENTED AND COMPARED TO ANALYTICAL RESULTS WHICH WERE GENERATED USING TEST CONDICTIONS AS INPUT VALUES. IN GENERAL, THE TEST VALUES AND THE COMPUTED VALUES ARE IN CLOSE AGREEMENT. ALSO INCLUDED ARE ALL CHANGES, DELETIONS AND REVISIONS TO BE INCORPORATED IN THE PRELIMINARY DESIGN SPECIFICATIONS OF THE PHASE I REPORT. (AUTHOR) (U)

AD-672 081 1/3 15/7
AAI CORP COCKEYSVILLE MD
PARACHUTE REEL-OUT REEL-IN LOW ALTITUDE AIRDROP EXPLORATORY DEVELOPMENT. (U)
DESCRIPTIVE NOTE: FINAL REPT.,
AUG 66 242P MILLS,R. R. , JR.;PAYNE, R. S. , JR.;CRITCHER,J. L. ;RUNKLES,M. V. , III;
CONTRACT: DA-19-129-AMC-847(N)
PROJ: DA-1M121401D195
MONITOR: USA-NLABS TR-69-13-AD

UNCLASSIFIED REPORT

DESCRIPTORS: (*AIR DROP OPERATIONS, LOW ALTITUDE), (*CARGO PARACHUTES, REELS), LANDING IMPACT, DESCENT, CARGO, PERFORMANCE(ENGINEERING), RELIABILITY, SYSTEMS ENGINEERING, DESCENT TRAJECTORIES (U)
IDENTIFIERS: EXTRACTION PARACHUTES (U)

RESULTS AND CONCLUSIONS ARE REPORTED FOR WORK ACCOMPLISHED ON THE PROGRAM, DURING THE PERIOD 30 NOVEMBER 1965 THROUGH 31 AUGUST 1966, OF EVALUATING PARACHUTE REEL IN/REEL OUT SYSTEMS DESIGNED TO PERMIT AIRDROPS TO BE MADE FROM ALTITUDES OF 500 FEET OR LESS AND WITH VERTICAL VELOCITIES OF THE CARGO AT GROUND IMPACT NOT EXCEEDING 28.5 FPS, WITH AS LITTLE HORIZONTAL MOTION AS POSSIBLE. THE WEIGHT RANGE OF THE CARGOS OF INTEREST IS BETWEEN 2000 AND 35000 LB. CARGO DESCENT TRAJECTORY DATA AND CANDIDATE REEL SYSTEM DESIGNS ARE PRESENTED AND DISCUSSED IN THE REPORT. A REVIEW OF THE PROGRAM REQUIREMENTS IS ALSO INCLUDED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-672 087 1/3 15/7
PIONEER PARACHUTE CO INC MANCHESTER CONN
ELEVATION OF RECOVERY PARACHUTE; LOW-ALTITUDE
AIRDROP OF EXPLORATORY DEVELOPMENT. (U)
DESCRIPTIVE NOTE: FINAL TECHNICAL REPT. 30 NOV 65-31
AUG 66,
AUG 66 62P VICKERY,EDWIN D. ;
CONTRACT: DA-19-129-AMC-849(N)
PROJ: DA-1M121401D195
MONITOR: USANLABS TR-69-12-AD

UNCLASSIFIED REPORT

DESCRIPTORS: (*CARGO PARACHUTES,
PERFORMANCE(ENGINEERING)), (*AIR DROP
OPERATIONS, LOW ALTITUDE), CARGO, DECELERATION,
LIFT, FLIGHT PATHS, FEASIBILITY STUDIES,
ECONOMICS (U)
IDENTIFIERS: LIFT PARACHUTES, RECOVERY PARACHUTES,
EXTRACTION PARACHUTES (U)

THE REPORT DISCUSSES THE APPROACHES PURSUED, AND
THE RESULTS AND CONCLUSIONS REACHED, DURING THE
PRELIMINARY STUDY CONDUCTED TO INVESTIGATE THE
FEASIBILITY OF ELEVATING THE MAIN RECOVERY PARACHUTES
ABOVE THE FLIGHT PATH OF AN AIRDROP AIRCRAFT BY MEANS
OF AUXILIARY LIFTING PARACHUTES. PRELIMINARY
ANALYTICAL STUDIES AND EXPERIMENTAL TESTS WERE
CONDUCTED DURING THE EVALUATION PERIOD. THE
OVERALL OBJECTIVE WAS TO DETERMINE THE TECHNICAL,
OPERATIONAL, AND ECONOMIC FEASIBILITY OF ELEVATING
THE MAIN RECOVERY PARACHUTE TO ACHIEVE A LOW-ALTITUDE
AIRDROP CAPABILITY OF 500 FT (ABSOLUTE) ALTITUDE
OR LESS, AS A BASIS FOR DETERMINING IF FURTHER 'IN-
DEPTH' STUDY WERE WARRANTED. THE RESULTS INDICATE
THAT THE ELEVATION OF RECOVERY PARACHUTES BY
AUXILIARY LIFTING PARACHUTES IS NOT FEASIBLE.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-690 808 1/3 1/2 15/7
ARMY NATICK LABS MASS AIRDROP ENGINEERING LAB
TWO BODY TRAJECTORY ANALYSIS OF A PARACHUTE CARGO AIRDROP SYSTEM. (U)
DESCRIPTIVE NOTE: RESEARCH REPT.,
APR 69 46P GIONFRIDDO,MAURICE P. ;
REPT. NO. TR-69-80-AD
PROJ: DA-1-F-162203-D-195

UNCLASSIFIED REPORT

DESCRIPTORS: (•CARGO PARACHUTES, •AIR DROP OPERATIONS), (•PARACHUTE DESCENTS, •DESCENT TRAJECTORIES), EQUATIONS OF MOTION, ALTITUDE, OPTIMIZATION, DRAG, AERODYNAMIC CHARACTERISTICS, NUMERICAL ANALYSIS (U)
IDENTIFIERS: •CLUSTER PARACHUTES (U)

EQUATIONS OF MOTION FOR A THREE-DEGREE-OF-FREEDOM, TWO-BODY AIRDROP SYSTEM WERE DERIVED AND NUMERICAL SOLUTIONS OBTAINED BY USE OF A DIGITAL COMPUTER. IT WAS ASSUMED THAT, FOR GIVEN INITIAL CONDITIONS, THE PARACHUTE DRAG AREA WAS A FUNCTION OF TIME ONLY. THE RESULTS INDICATED THAT: (1) THE DERIVED EQUATIONS OF MOTION RESULT IN CALCULATED TRAJECTORIES WHICH ARE GOOD REPRESENTATIONS OF ACTUAL AIRDROP TRAJECTORIES. (2) THE PARAMETER WHICH MOST AFFECT ALTITUDE LOSS TO EQUILIBRIUM ARE PARACHUTE-CARGO LINE LENGTH AND PARACHUTE OPENING TIME. (3) THERE IS AN OPTIMUM PARACHUTE OPENING TIME WHICH RESULTS IN MINIMUM ALTITUDE LOSS TO EQUILIBRIUM. LONGER OR SHORTER OPENING TIMES WILL RESULT IN GREATER ALTITUDE LOSSES TO EQUILIBRIUM. (4) MODERATE VARIATIONS OF AIRCRAFT FLIGHT PATH INCLINATION, INITIAL CARGO ACCELERATION, AND INITIAL CARGO VELOCITY HAVE ONLY A SMALL EFFECT ON ALTITUDE LOSS TO EQUILIBRIUM. (5) FOR A GIVEN EQUILIBRIUM VELOCITY, A CLUSTER OF SMALL PARACHUTES APPEARS TO BE A BETTER CHOICE THAN A SINGLE LARGE PARACHUTE FOR OBTAINING MINIMUM ALTITUDE LOSS TO EQUILIBRIUM. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-691 005 1/2 13/9
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D
C
SHOCK ABSORBER FOR PARACHUTED LOAD, (U)
JUN 69 6P TKASHEV,F. D. ;PICHUGIN,A.
A. ;PINAEV,E. N. ;KUTYKOV,V. G. ;
REPT. NO. FSTC-HT-23-395-69
PROJ: FSTC-99170030906, FSTC-92236282301

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 173 127, 7
JUL 65.

DESCRIPTORS: (*AIR DROP OPERATIONS, PALLETS),
(*PACKS(PARACHUTE), SHOCK ABSORBERS), IMPACT
TESTS, WOOD, ELASTICITY, PATENTS, USSR (U)
IDENTIFIERS: TRANSLATIONS,
BARRELS(CONTAINERS) (U)

A SHOCK ABSORBER IS PROPOSED, WHICH IS PRIMARILY DESIGNED FOR PARACHUTE AIRDROPPING OF BARRELS OF FLUID. THE INVENTION IS DISTINGUISHED BY THE FACT THAT THE LOAD IS PROTECTED AT THE MOMENT OF LANDING BY A BEARING MADE OF WOOD OR OTHER ELASTIC MATERIAL, ATTACHED BY MEANS OF A BAND. THE CENTER OF THE SPHERICAL SURFACE OF THE BEARING IS PLACED ABOVE THE CENTER OF GRAVITY OF THE VESSEL. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 72ONC2

AD-691 436 1/2 15/7
TACTICAL AIRLIFT CENTER POPE AFB N C OFFICE OF OPERATIONS ANALYSIS
A COMPUTER PROGRAM FOR DETERMINING THE TRAJECTORY AND PLATFORM ATTACK ANGLE OF A LAPES PLATFORM DURING FREE FALL. (U)
DESCRIPTIVE NOTE: TECHNICAL MEMO.,
JUN 69 20P LINK,DAVID A. ;
REPT. NO. TALC-OA-TM-3

UNCLASSIFIED REPORT

DESCRIPTORS: (*CARGO, AIR DROP OPERATIONS), (*PARACHUTE DESCENTS, DESCENT TRAJECTORIES), TACTICAL AIR SUPPORT, MATHEMATICAL MODELS, FREE FALL MODELS, EQUATIONS OF MOTION, ANGLE OF ATTACK, ATTITUDE CONTROL SYSTEMS, ROTATION, CENTER OF MASS, PROGRAMMING(COMPUTERS) (U)
IDENTIFIERS: LAPES(LOW EXTRACTION SYSTEM), LOW ALTITUDE EXTRACTION SYSTEM, LAPES PLATFORMS, COMPUTER ANALYSIS, COMPUTERIZED SIMULATION (U)

THIS MEMORANDUM CONTAINS A DYNAMIC ANALYSIS OF THE FREE-FALL PORTION OF THE LAPES TRAJECTORY. THE ANALYSIS WAS MADE IN RESPONSE TO A REQUEST FOR A MORE EXACT METHOD FOR LOCATING THE ATTITUDE CONTROL BAR FOR UNUSUAL SINGLE-PLATFORM LOADS, SUCH AS VEHICLES. RESULTS ARE PRESENTED IN THE FORM OF A PROGRAM IN THE CONTINUOUS SYSTEM MODELING PROGRAM (CSMP) LANGUAGE FOR SOLVING THE EQUATIONS OF MOTION AND GRAPHS FOR AN EXAMPLE CALCULATION. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-691 553 13/4 15/5
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
AIRDROP CONTAINERS. (U)
JUN 69 7P PRIVALOV,A. I. ;LUKASHEV, B. F. ;SOSNIN,A. I. ;
REPT. NO. FSTC-HT-23-393-69
PROJ: FSTC-99170030906, FSTC-92236282301

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 184 152, 8 SEP 66.

DESCRIPTORS: (*AIR DROP OPERATIONS, CARGO), (*CARGO, *CONTAINERS), CARGO PARACHUTES, PALLETS, SHOCK ABSORBERS, PATENTS, USSR (U)
IDENTIFIERS: TRANSLATIONS (U)

A CONTAINER FOR AIRDROPPING CARGO, CONSISTING OF A CYLINDRICAL HOUSING WITH A REINFORCED BOTTOM AND DETACHABLE LID, WITH A CHAMBER FOR A PARACHUTE INSIDE A PORTABLE CASE FOR PACKING THE CARGO AND STABILIZING THE PARACHUTE, WHICH IS ATTACHED TO THE LID OF THE CONTAINER, IS DESCRIBED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZDNC2

AD-693 176 11/5 15/5 15/7
WRIGHT AIR DEVELOPMENT CENTER WRIGHT-PATTERSON AFB OHIO
THE DESIGN AND FABRICATION OF AERIAL DELIVERY SLING SUSPENSIONS FROM WOVEN NYLON WEBBING. (U)
DESCRIPTIVE NOTE: TECHNICAL NOTE.
AUG 54 50P INGERSOLL,H. H. , JRI
REPT. NO. WADC-TN-WCLE-54-40
TASK: 61547

UNCLASSIFIED REPORT

DESCRIPTORS: (*CARGO, AIR DROP OPERATIONS), (*CORDAGE, DESIGN), STRENGTH, COSTS, MANUFACTURING METHODS, NYLON, THICKNESS, CARGO PARACHUTES, LOADING(MECHANICS), TENSILE PROPERTIES, ELONGATION (U)

THE PURPOSE OF THE STUDY WAS TO REDESIGN THE EXISTING SLING SUSPENSIONS CURRENTLY USED FOR AERIAL DELIVERY PURPOSES IN ORDER TO REDUCE THE HIGH COST OF MANUFACTURE AND TO INCREASE THE STRENGTH EFFICIENCY OF THE SLING. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONCZ

AD-699 342 1577 2178
ARMY NATICK LABS MASS
A PARACHUTE RETROROCKET RECOVERY SYSTEM FOR AIRDROP OF HEAVY LOADS. (U)
DESCRIPTIVE NOTE: TECHNICAL REPT.,
NOV 69 35P CHAKOIAN,GEORGE T
REPT. NO. USA-NLABS-TR-70-34-AD
PROJ: DA-1-F-162203-D-195

UNCLASSIFIED REPORT

DESCRIPTORS: (*AIR DROP OPERATIONS, CARGO PARACHUTES), (*CARGO PARACHUTES, *RETRO ROCKETS), LOW ALTITUDE, RECOVERY, DEPLOYMENT, SENSORS, DROP TESTING, DESCENT TRAJECTORIES, LANDING IMPACT, DESIGN, LOGISTICS (U)
IDENTIFIERS: PRADS(PARACHUTE RETROROCKET AIR DROP SYSTEMS), PARACHUTE RETROROCKET AIR DROP SYSTEMS (U)

THE REPORT PRESENTS THE RESULTS OF AN IN-DEPTH EXPLORATORY DEVELOPMENT STUDY OF A PARACHUTE RETROROCKET RECOVERY SYSTEM FOR THE AIRDROP OF CARGO LOADS WEIGHING UP TO 50,000 POUNDS AND THE RESULTS OF ACTUAL DROP TESTS OF LOADS WEIGHING FROM 3000 TO 35,000 POUNDS. THE STUDY INDICATES THAT A PARACHUTE RETROROCKET RECOVERY SYSTEM IS PARTICULARLY FEASIBLE FOR THE RECOVERY OF AIRDROP LOADS AND MAY PROVE TO BE THE ONLY PRACTICAL SYSTEM FOR HEAVY LOADS, ESPECIALLY IF LOW ALTITUDE IS A REQUIREMENT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-700 685 6/7 1/3
AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB OHIO (U)
LONG LINE LOITER.
69 5P COULTER,RICHARD P. I.
REPT. NO. AMRL-TR-70-2
PROJ: AF-7184
TASK: 718405

UNCLASSIFIED REPORT
AVAILABILITY: PUB. IN INTERCEPTOR, P10-12 DEC 69.

DESCRIPTORS: (*AERIAL PICKUP SYSTEMS, RESCUES), CABLES(MECHANICAL), AIR DROP OPERATIONS, TURNING FLIGHT, TOWED BODIES, HOISTS, PARACHUTE DESCENTS (U)
IDENTIFIERS: LLL(LONG LINE LOITER), LONG LINE LOITER, LONG LINE LOITER SYSTEMS (U)

MANEUVERING TECHNIQUES FOR FIXED WING AIRCRAFT POSITIONING A TOWED MASS NEAR THE CENTER OF AN ON-PYLON TURN ARE DISCUSSED. POSSIBLE RESCUE USES OF THE CIRCLING LINE TECHNIQUE ARE SUGGESTED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-640 366 1 OF 7
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
ATTACKERS FROM THE SKY, (U)
68 9P MARGELOV,V. I
REPT. NO. FSTC-HT-23-245-68
PROJ: FSTC-8223628230I

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. FROM KRASNAYA ZVEZDA (USSR) P2, 20 FEB 68.

DESCRIPTORS: (*ARMED FORCES(FOREIGN), *AIR DROP OPERATIONS), ARMED FORCES OPERATIONS, AIRBORNE, CARGO PARACHUTES, TRANSPORT PLANES, HISTORY, PREDICTIONS, NUCLEAR WARFARE, USSR (U)
IDENTIFIERS: *AIRBORNE FORCES, TRANSLATIONS, PARATROOPERS (U)

THIS ARTICLE IS BASICALLY A HISTORICAL SKETCH OF THE DEVELOPMENT OF THE AIRBORNE FORCES IN THE USSR. THE AUTHOR DISCUSSES THE DEVELOPMENT OF THE AIRBORNE FORCES AND MENTIONS SEVERAL INSTANCES DURING W. 2 IN WHICH THE FORCES WERE USED. THE AUTHOR STATES THAT IN MODERN WARFARE, THE NUCLEAR MISSILE IS THE BASIC MEANS OF DESTRUCTION AND THAT THE PRESENT ROLE OF THE WINGED INFANTRY STEMS FROM THIS FACT. IT INVOLVES THE CAPABILITY TO QUICKLY AND MOST EFFECTIVELY EXPLOIT THE RESULTS OF ATOMIC WEAPON USE AND TO COOPERATE WITH GROUND FORCES IN THE SEIZURE OF VITALLY IMPORTANT AREAS IN THE THEATER OF WAR OPERATIONS. THE AUTHOR THEN DISCUSSES SOME OF THE MODERN COMBAT MISSIONS OF SOLDIER-PARATROOPERS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-851 494 15/7 1/2
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D
C
SOVIET AIRBORNE FORCES, (U)
APR 69 103P LISOV,I. I. ;
REPT. NO. FSTC-HT-23-564-68
PROJ: FSTC-82236282301

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF MONO. SOVETSKIE VOZDUSHNO-DESANTNYE VOISKA, MOSCOW, 1967.

DESCRIPTORS: (*AIRMOBILE OPERATIONS, ARMED FORCES(FOREIGN)), (*AIR DROP OPERATIONS, PARACHUTE JUMPING), TACTICAL WARFARE, MILITARY TACTICS, PARACHUTES, COMMUNISTS, CLOSE SUPPORT, TRANSPORT PLANES, PROPAGANDA, USSR (U)
IDENTIFIERS: TRANSLATIONS, SKYDIVING (U)

THIS BOOKLET PRESENTS A SHORT HISTORY OF THE DEVELOPMENT OF THE AIRBORNE FORCES AND OF THE SPORT OF SKYDIVING, WHICH IS CLOSELY ASSOCIATED WITH THESE FORCES. THE HISTORY OF AIRBORNE ACTIVITIES DURING THE SECOND WORLD WAR IS INCLUDED.
CONTEMPORARY PARACHUTE LANDING METHODS AND AVIATION-TRANSPORT EQUIPMENT ARE DESCRIBED, AND THE DEVELOPMENT OF THE SPORT OF SKYDIVING AND OF PARACHUTE TESTING PROGRAMS ARE OUTLINED.
(AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZUNC2

AD-871 344 1970
ARMY TEST AND EVALUATION COMMAND ABERDEEN PROVING GROUND MD
ARCTIC ENVIRONMENTAL TEST OF AIRDROP PLATFORMS. (U)
DESCRIPTIVE NOTE: FINAL REPT. ON MATERIEL TEST PROCEDURE, MAY 70 102P
REPT. NO. MTP-7-4-009
PROJ: AMCR-310-6

UNCLASSIFIED REPORT

DESCRIPTORS: (*AIR DROP OPERATIONS, CONTAINERS), (*CONTAINERS, COLD WEATHER TESTS), ARCTIC REGIONS, SIMULATION, VISUAL INSPECTION, ASSEMBLING, REACTION KINETICS, HANDLING, IMPACT SHOCK, PERFORMANCE(ENGINEERING) (U)
IDENTIFIERS: AIRDROP PLATFORMS (U)

THIS ENVIRONMENTAL TEST PROCEDURE DESCRIBES TEST METHODS AND TECHNIQUES FOR EVALUATING THE PERFORMANCE AND CHARACTERISTICS OF AIRDROP PLATFORMS UNDER ARCTIC WINTER ENVIRONMENTAL CONDITIONS. EVALUATION IS RELATED TO CRITERIA ESTABLISHED BY QUALITATIVE MATERIEL REQUIREMENTS (QMR), SMALL DEVELOPMENT REQUIREMENTS (SDR), TECHNICAL CHARACTERISTICS (TC), AND OTHER DESIGN REQUIREMENTS OR SPECIFICATIONS. (AUTHOR) (U)

VII. MISCELLANEOUS

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DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-606 569
COOK ELECTRIC CO MORTON GROVE ILL
STUDY AND EXPLORATORY FREE-FLIGHT INVESTIGATIO OF
DEPLOYABLE AERODYNAMIC DECELERATORS OPERATING AT HIGH
ALTITUDES AND AT HIGH MACH NUMBERS, (U)
JUL 64 209P NICKEL,W. E.E. ISIMS,L. W. ;
PROJ: 6065
TASK: 606505
MONITOR: FDL , TDR-64 35 V1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: LEGIBILITY OF THIS DOCUMENT IS IN PART UNSATISFACTORY. REPRODUCTION HAS BEEN MADE FROM BEST AVAILABLE COPY.

DESCRIPTORS: (*PARACHUTES, REENTRY VEHICLES), (*REENTRY VEHICLES, PARACHUTES), (*PARACHUTE DESCENTS, SUPERSONIC CHARACTERISTICS), PARACHUTE FABRICS, ATMOSPHERE ENTRY, AERODYNAMIC HEATING, DECELERATION, HIGH ALTITUDE, HEATRESISTANT MATERIALS, STAINLESS STEEL, TELEMETRY, OSCILLATION, TEMPERATURE, REYNOLDS NUMBER, WIND TUNNEL MODELS, HEAT TRAANSFER COEFFICIENTS, FREE FLIGHT TRAJECTORIES, STRESSES, ENVIRONMENTAL TESTS (U)
IDENTIFIERS: MACH NUMBER. CREE VEHICLE, NOMEX YARNS, PERLON (U)

THIRTEEN PARACHUTE DECELERATOR TESTS WERE PERFORMED AT THE GULF TEST RANGE OF THE AIR PROVING GROUND CENTER AT EGLIN AIR FORCE BASE, FLORIDA. THESE TESTS WERE ACCOMPLISHED THROUGH THE USE OFOF MULTISTAGE ROCKEKKET BOOSTERS. THE CREE PAYYLOAD VEHICLE WAS USED AS THE TEST PLATFORM AND DATA GATHERING SYSTEM. THESE TESTS WERE CONDUCTED USING BOTH HYPERFLO AND HEMISFLO PARACHUTES WHICH WERE DEPLOYED AT PREDETERMINED MACH NUMBERALTITUDE REGIMES. TESTS WERE ACCOMPLISHED OVER A MACH NUMBER RANGE OF 0.2 TO 4.4 AND AN ALTITUDE RANGE OF 45,000 TO 190,000 FEET. THE DATA PRESENTED INCLUDES DRAG COEFFICIENTS VERSUS MACH NUMBER, DYNAMIC PRESSURE, REYNOLDS NUMBER AND VELOCITY, CANOPY ANGLES OF OSCILLATION, CANOPY TEMPERATURES AND GENERAL DESIGN CONSIDERATIONS. FROM THIS PARACHUTE DECELERATOR TEST PROGRAM, IT MAY BE CONCLUDED THAT PERLON MESH ROOF HYPERFLO PARACHUTES PERFORM SATISFACTORILY THROUGH MACH 2.1, THAT NOMEX RIBBON HYPERFLO PARACHUTES PERFORM SATISFACTORILY THROUGH MACH 4.0 AND THAT NOMEX HEMISFLO PARACHUTES PERFORM SATISFACTORILY THROUGH MACH 3.4. (AUTHOR) (U)

UNCLASSIFIED

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZDNC4

AD-610 885
AEROSPACE CORP EL SEGUNDO CALIF
PERFORMANCE AND CHARACTERISTICS OF 67.2 FT EXTENDED SKIRT CANOPY PARACHUTE WITH SINGLE CONICAL EXTENSION (U)

APR 65 26P EPPLE,HEINRICH K.
REPT. NO. TDR-469(5110-01)-2
CONTRACT: AF04 695 469
MONITOR: SD TDR-65-42

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (PARACHUTES, AERIAL PICKUP SYSTEMS), PERFORMANCE(ENGINEERING), CONICAL BODIES, AERODYNAMIC CHARACTERISTICS, PAYLOAD, DROP TESTING, RECOVERY, STABILITY, DRAG (U)

THE DETAILS AND RESULTS OF TWO PARACHUTE DROP TESTS MADE AT EL CENTRO, CALIFORNIA, ON 22 OCTOBER 1964, ARE DISCUSSED. THE PARACHUTES WERE A MODIFICATION OF A BASIC DESIGN TO PERMIT THE AERIAL RECOVERY OF PAYLOADS UP TO APPROXIMATELY 1500 POUNDS. DISCUSSIONS AND CONCLUSIONS PERTAINING TO THE DYNAMIC PERFORMANCE OF THESE MODIFIED PARACHUTES DURING DESCENT AND THEIR PHYSICAL CONDITION AFTER ENGAGEMENT WITH THE AIRCRAFT RETRIEVAL SYSTEM HARDWARE ARE INCLUDED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-608 205 8/7 1/2
DEPUTY INSPECTOR GENERAL FOR INSPECTION AND SAFETY (AIR FORCE) NORTON AFB CALIF LIFE SCIENCES DIV
TRENDS IN USAF AIRCREW ESCAPE. (U)
DESCRIPTIVE NOTE: REPT. FOR 1 JAN 50-30 JUN 64.
JUN 64 16P SHANNON,ROBERT H. ;CHUNN, SAMUEL P. ;DETRICK,WILLIAM R. ;

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE:

DESCRIPTORS: (*AVIATION PERSONNEL, SURVIVAL), (*AIR FORCE PERSONNEL, *ABANDONMENT), (*SURVIVAL, AIR FORCE PERSONNEL), AIRCRAFT, JETTISONABLE COCKPITS, AVIATION SAFETY, AVIATION ACCIDENTS, AIRCRAFT FIRES, PARACHUTE JUMPING, EJECTION SEATS, REVIEWS, BAILOUT, EJECTION (U)

THERE HAS BEEN VERY LITTLE CHANGE IN THE BASIC EQUIPMENT AND METHOD OF UTILIZATION FOR ESCAPE FROM INFLIGHT EMERGENCIES FROM THE INTRODUCTION OF THE PARACHUTE DURING WORLD WAR I TO THE END OF WORLD WAR II. ESCAPE FROM HIGH PERFORMANCE AIRCRAFT, HOWEVER, REQUIRED THE USE OF AN EJECTION SEAT TO INSURE CLEARANCE OF THE COCKPIT AND EXTERNAL STRUCTURES. FOLLOWING WORLD WAR II EJECTION SEATS WERE TESTED AND INSTALLED IN USAF AIRCRAFT AND FIRST USED AS A MEANS OF ESCAPE IN 1949. THE LARGEST SINGLE CAUSE OF ESCAPE FATALITIES REGARDLESS OF METHOD OF SEPARATION FROM THE AIRCRAFT WAS VIOLENT IMPACT WITH THE GROUND. INABILITY TO SURVIVE PARACHUTE WATER LANDINGS WAS THE SECOND LEADING CAUSE. THE MAJORITY OF MAJOR INJURIES REGARDLESS OF METHOD OF ESCAPE OCCURRED DURING PARACHUTE LANDING. THE MOST CRITICAL FACTOR IN DETERMINING THE OUTCOME OF THE ESCAPE IS THE AMOUNT OF TIME AVAILABLE FOR COMPLETION OF THE SEQUENCE. THIS IS BORNE OUT BY THE HIGH FATALITY RATE IN ESCAPE ATTEMPTS AT LOW ALTITUDES PARTICULARLY BELOW 500 FEET. WITH THE SEAT EJECTION SYSTEM, HOWEVER, MANY SUCCESSFUL ATTEMPTS HAVE BEEN MADE AT LOW ALTITUDE THAT WOULD NOT HAVE BEEN POSSIBLE WITH CONVENTIONAL BAILOUT. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC

AD-647 361 1971 13/4
FRANKFORD ARSENAL PHILADELPHIA PA PROPELLANT ACTUATED DEVICES DIV
FEASIBILITY STUDY OF A BALLISTIC HATCH RELEASE (XM5) FOR THE HIGH SPEED AERIAL DELIVERY CONTAINER (CONTAINER, AERIAL DELIVERY, CTU-1/A). (U)
DESCRIPTIVE NOTES: TECHN. REPT.,
JAN 67 19P TRAVOR,BRUCE W.
MONITOR: FA M67-11-1

UNCLASSIFIED REPORT

DESCRIPTORS: (*EXPLOSIVE ACTUATORS, HATCHES), FEASIBILITY STUDIES, CONTAINERS, AIRBORNE, DELAY ELEMENTS(EXPLOSIVE), PARACHUTE DESCENTS, RELEASE MECHANISMS. (U)
IDENTIFIERS: CTU-1/A CONTAINER (U)

A STUDY WAS CONDUCTED TO DETERMINE THE FEASIBILITY OF USING A MODIFIED M9 REEFING LINE CUTTER AS A BALLISTIC HATCH RELEASE ON THE CTU-1/A HIGH SPEED AERIAL DELIVERY CONTAINER (FORMERLY THE M5) TO OBVIATE THE POSSIBILITY OF A COLLISION BETWEEN THE JETTISONED PARACHUTE HATCH AND THE AIRFRAME. THE MODIFICATIONS REQUIRED WERE DETERMINED AND ASSOCIATED NEW HARDWARE WAS DESIGNED AND FABRICATED. THE UNIT WAS DESIGNATED 'RELEASE, CARTRIDGE ACTUATED, XM5.' THE MECHANICAL INTEGRITY OF THE BALLISTIC HATCH RELEASE TO SUSTAIN AN INITIAL LOCK LOAD OF 500 LB WAS DETERMINED. A BALLISTIC CHARGE CAPABLE OF PRODUCING A 500-LB THRUST OVER A 1-1/2 INCH STROKE AND A 0.3-SEC DELAY ELEMENT CHARGE WERE ESTABLISHED. THE NEW CARTRIDGE WAS DESIGNATED AM226. VERIFICATION TESTING (PHASE I) AND TYPE I CERTIFICATION TESTING AS ESTABLISHED BY THE NAVAL WEAPONS LABORATORY (PHASE II) WERE SATISFACTORILY ACCOMPLISHED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONCZ

AD-654 430 1/3
TEXAS UNIV AUSTIN ELECTRICAL ENGINEERING RESEARCH LAB
REFLECTING CHARACTERISTICS OF POGO PARACHUTE MODELS D556, D503-6 AND P/N509-330. (U)
DESCRIPTIVE NOTE: TECHNICAL REVIEW,
JAN 60 29P BRITT,C. O. ;KRAUSE,L. C. ;BAHN,W. W. ;
REPT. NO. EERL-3-24
CONTRACT: NORD-16498
TASK: UTA-1

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED IN COOPERATION WITH JOHNS HOPKINS UNIV., SILVER SPRING, MD., APPLIED PHYSICS LAB., CF-2847.

DESCRIPTORS: (*PARACHUTES, *RADAR ECHO AREAS), MODELS(SIMULATIONS), ROTATION, DATA, RADAR, SCATTERING, TRANSMITTER-RECEIVERS, REFLECTION, BALLOONS, SUSPENSION DEVICES, ANTENNAS, FREQUENCY, MEASUREMENT (U)
IDENTIFIERS: POGO (U)

THE REPORT CONTAINS THE MEASURED RADAR SCATTERING CROSS SECTIONS OF THREE MODEL POGO PARACHUTES, DESIGNATED AS D 503-6, D 556 AND P/N 509-330. OBSERVATIONS MADE WITH 1/6 SCALE MODELS WILL PERMIT THE RESULTS TO BE SCALED FROM A MODELING FREQUENCY OF 35 KMCS TO A SIMULATED FREQUENCY OF 5.83 KMCS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-663 912 22/2
FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO
THE ABC OF OUTER-SPACE PILOTING, (U)
JUL 67 14P MERKULOV,I. ;
REPT. NO. FTD-HT-23-891-67

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTES: UNEDITED ROUGH DRAFT TRANS. OF TEKHNIKA MOLODEZHI (USSR) NI P20-3 1966.

DESCRIPTORS: (*SPACECRAFT, USSR), SPACECRAFT COMPONENTS, ASTRONAUTICS, GUIDANCE, STABILIZATION SYSTEMS, LANDING GEAR, DECELERATION, SOFT LANDINGS, DRAG PARACHUTES (U)

SPACECRAFT GUIDANCE, CONTROL, STABILIZATION, CORRECTION, DECELERATION, AND LANDING SYSTEMS ARE DISCUSSED. IT IS NOTED THAT THE EXHAUST VELOCITY OF A SPACECRAFT IS 2000 - 4000 M/SEC AND THAT A PARACHUTE-LANDING ENGINE SYSTEM WAS EMPLOYED IN THE SOFT LANDING OF THE 'VOSKHOD' SPACECRAFT. THE ENGINE WAS SWITCHED ON WHEN THE SPACECRAFT WAS CLOSE TO THE EARTH'S SURFACE SO THAT IT DECELERATED THE DROP OF THE PARACHUTE REDUCING THE VELOCITY TO A NEGLIGIBLE VALUE AT THE MOMENT OF LANDING. (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 72ONC4

AD-666 746 4/1 1968
MCGILL UNIV MONTREAL (QUEBEC) SPACE RESEARCH INST
AEROSPACE APPLICATION OF GUN LAUNCHED PROJECTILES AND ROCKETS. (U)
FEB 68 46P MURPHY, CHARLES H. (BULL, GERALD V.)
REPT. NO. SRI-R-24

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: PREPARED FOR PRESENTATION AT THE AMERICAN ASTRONAUTICAL SOCIETY SYMPOSIUM 'FUTURE SPACE PROGRAMS AND IMPACT ON RANGE NETWORK DEVELOPMENT,' N. MEX., MAR 1967. PAPER NO. 67-38.

DESCRIPTORS: (*SABOT PROJECTILES, ATMOSPHERIC SOUNDING), GUN LAUNCHED, SENSORS, TERRESTRIAL MAGNETISM, TEMPERATURE, ELECTRONS, DENSITY, PAYLOAD, ACCURACY, SYMPOSIA, IONOSPHERE, WIND, PARACHUTES, SOUNDING ROCKETS, ACCELERATION, COSTS, MODIFICATION KITS (U)
IDENTIFIERS: *HIGH ALTITUDE RESEARCH PROGRAM, HARP, *GUN LAUNCHED PROJECTILES (U)

PROJECT HIGH ALTITUDE RESEARCH PROGRAM (HARP) IS DIRECTED TOWARD THE USE OF GUNS FOR SCIENTIFIC PROBING OF THE UPPER ATMOSPHERE. THE ATTRACTIVE FEATURES OF GUNS FOR THIS PURPOSE ARE THE BASIC ECONOMY OF SUCH A SYSTEM AND THE HIGH INHERENT ACCURACY OF GUNS FOR PLACEMENT AT ALTITUDE AS WELL AS ACCURACY IN GROUND IMPACT. THE BASIC LIABILITY FOR SUCH AN APPROACH LIES IN THE VERY HIGH ACCELERATIONS EXPERIENCED BY GUN-LAUNCHED PAYLOADS. THE GUNS USED IN PROJECT HARP VARY IN SIZE FROM 5-INCH AND 7-INCH EXTENDED GUNS ON MOBILE MOUNTS TO TRANSPORTABLE FIXED 16-INCH GUNS. ALTITUDE PERFORMANCE VARIES FROM 20 POUND, 5-INCH PROJECTILES REACHING 240,000 FEET TO 185-POUND, 16-INCH PROJECTILES REACHING 590,000 FEET. SCIENTIFIC RESULTS TO DATE ARE PRIMARILY WIND PROFILES MEASURED BY RADAR CHAFF, ALUMINIZED BALLOONS AND PARACHUTES, AND TRI-METHYL-ALUMINUM TRAILS, ALTHOUGH A NUMBER OF SUCCESSFUL 250 MHZ AND 1750 MHZ TELEMETRY FLIGHTS HAVE BEEN MADE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. 72DNCA

AD-667 908 4/1
ATMOSPHERIC SCIENCES LAB WHITE SANDS MISSILE RANGE N MEX
GUN LAUNCHED PROBES - PARACHUTE EXPULSION TESTS UNDER SIMULATED ENVIRONMENT. (U)
FEB 68 31P WILLIAMSON,L. EDWIN
PROJ: DA-1T6-5U212-A-127
TASK: 1T6-5U212-A-127-03
MONITOR: ECOM 5179

UNCLASSIFIED REPORT

DESCRIPTORS: (*ATMOSPHERIC SOUNDING, SABOT PROJECTILES), (*METEOROLOGICAL INSTRUMENTS, GUN LAUNCHED), (*SABOT PROJECTILES, *PARACHUTES), PACKS(PARACHUTE), HIGH-SPEED CAMERAS, PAYLOAD, EJECTION, METEOROLOGICAL PARAMETERS, ENVIRONMENTAL TESTS, SIMULATION, VACUUM, SPHERES, RELIABILITY, RADIOSONDES, MATERIALS, DAMAGE, PHOTOGRAPHS, NEW MEXICO (U)
IDENTIFIERS: GUN PROBE PROJECT (U)

EXPERIENCE GAINED DURING THE EARLY PHASES OF PROJECT GUN PROBE AT WSMR REVEALED EVIDENCE THAT THE PARACHUTE PACKAGING AND/OR EXPULSION TECHNIQUES USED AT THAT TIME WERE UNSATISFACTORY. TESTS WERE PLANNED TO EVALUATE THE TECHNIQUE VISUALLY, UTILIZING HIGH-SPEED CAMERAS AND SIMULATED ENVIRONMENTS. THE 60-FOOT VACUUM SPHERE AT THE NASA FACILITY AT LANGLEY RESEARCH CENTER WAS MADE AVAILABLE, AND SIX TESTS WERE SUCCESSFULLY CONDUCTED. RESULTS OF THE TESTS INDICATED THAT ONLY MINOR MODIFICATIONS TO THE EXISTING TECHNIQUE WERE NECESSARY TO PRODUCE A COMPLETELY ACCEPTABLE SYSTEM. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-693 174 1971 1/3
WRIGHT AIR DEVELOPMENT CENTER WRIGHT-PATTERSON AFB OHIO
NON-EXPENDABLE REEFING LINE CUTTER. (U)
DESCRIPTIVE NOTE: TECHNICAL NOTE,
AUG 54 29P INGAINE,H. H. , JR;
REPT. NO. WADC-TN-WCLE-54-34

UNCLASSIFIED REPORT

DESCRIPTORS: (*PARACHUTES, CORDAGE), (*CORDAGE, CUTTING), EXPLOSIVE ACTUATORS, NYLON, TENSILE PROPERTIES, DROP TESTING, ENVIRONMENTAL TESTS (U)
IDENTIFIERS: REEFING LINES, *REEFING LINE CUTTERS (U)

A REEFING LINE CUTTER WAS DEVELOPED FOR USE IN ALL ENVIRONMENTS COMMONLY EXPERIENCED IN PARACHUTE DROP CONDITIONS. THE REEFING LINE CUTTER AS TESTED CUTS ANY NYLON LINE UP TO AND INCLUDING A 3,000 POUND TENSILE STRENGTH; IT IS OPERABLE WITHOUT SPECIAL TOOLS AND IT IS NON-EXPENDABLE. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-695 066 1/3 14/2
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
A PROJECTILE FOR TESTING PARACHUTE SYSTEMS WITH REALISTIC MODELS (MANIKINS). (U)
SEP 69 7P
REPT. NO. FSTC-HT-23-387-69
PROJ: FSTC-0423100

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 199 689, 8 SEP 67.

DESCRIPTORS: (*PARACHUTES, TEST FACILITIES), PROJECTILES, LOADING(MECHANICS), RELEASE MECHANISMS, PNEUMATIC DEVICES, PATENTS, USSR (U)
IDENTIFIERS: PARACHUTE CANOPIES, TRANSLATIONS, *PARACHUTE TEST PROJECTILES, *GAS CANNONS (U)

A PARACHUTE TEST PROJECTILE FOR GAS AND PNEUMATIC CANNONS IS DESCRIBED. THE SYSTEM TO BE TESTED IS FASTENED TO A FACE PLATE OUTSIDE THE BARREL OF THE CANNON AND NEED NOT FIT WITHIN THE BARREL. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-695 360 1/3
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D C
A DEVICE FOR CUTTING A PARACHUTE REEFING CORD. (U)
SEP 69 6P GANIN,V. P. ;MOROZOV,N. F. ;OPUKHOVSKIIL. E. ;
REPT. NO. FSTC-HT-23-398-69
PROJ: FSTC-0423100

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 199 690, 8 SEP 67.

DESCRIPTORS: (*PARACHUTES, CORDAGE), (*CORDAGE, CUTTING), PATENTS, ACTUATORS, USSR (U)
IDENTIFIERS: TRANSLATIONS, *REEFING CUTTERS (U)

A DEVICE FOR CUTTING THE REEFING CORD OF A PARACHUTE, WHICH INCLUDES A TIME LAG MECHANISM AND ACTUATING LEVER MECHANISM, SUPPLIED WITH A FLAT CUTTER, IS DISTINGUISHED BY THE FACT THAT THE PURPOSE OF INSURING DUSTPROTECTION OF THE TIME LAG MECHANISM, THE CUTTER IS LOCATED IN A GROOVE WHICH IS SEPARATED FROM THE INTERNAL CAVITY OF THE APPARATUS BY THE CHASSIS WALL, ON WHICH THE AXIS OF ROTATION OF THE CUTTER IS MOUNTED. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /20NC2

AD-699 080 1/3 13/12
ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER WASHINGTON D
C
AN AUTOMATIC DEVICE FOR PARACHUTE RESCUE SYSTEM, (U)

NOV 69 8P IMIRGOV,I. L. IKUCAKOV,V.
V. IRASTEGAEV,E. IGOVOROV,A. V. I
REPT. NO. FSTC-HT-23-403-69
PROJ: FSTC-0423100230I

UNCLASSIFIED REPORT

SUPPLEMENTARY NOTE: TRANS. OF PATENT (USSR) 132
957.

DESCRIPTORS: (*ESCAPE SYSTEMS(AEROSPACE),
EJECTION SEATS), (*PARACHUTES, RELEASE
MECHANISMS), CATAPULTS, TIMING DEVICES,
SERVOMECHANISMS, REACTION KINETICS, PATENTS (U)
IDENTIFIERS: TRANSLATIONS (U)

THE REPORT DESCRIBES A DEVICE FOR AUTOMATICALLY ACTIVATING A PARACHUTE RESCUE SYSTEM DURING CATAPULTING, WHICH INCLUDES ACTUATING POWER, MEMBRANE-BLOCKING AND WATCH MECHANISMS. (AUTHOR) (U)

DDC REPORT BIBLIOGRAPHY SEARCH CONTROL NO. /ZONC2

AD-702 752 1/3 1971
NAVAL AMMUNITION DEPOT CRANE IND
MK 45 AIRCRAFT PARACHUTE FLARE OPTIMIZATION
PROGRAM PRELIMINARY EVALUATION OF EXPERIMENTAL
PARACHUTES AND PARACHUTE MATERIALS FLIGHT TEST
SERIES NO. 1. (U)
NOV 69 26P KOCH, CLENNETH R. ;
REPT. NO. NAD-CR-RDTR-163

UNCLASSIFIED REPORT

DESCRIPTORS: (*PARACHUTE FLARES, PARACHUTES), (*PARACHUTE FABRICS, RELIABILITY), FLIGHT TESTING, PARACHUTE DESCENTS, OSCILLATION, CONFIGURATION, STABILITY, OPTIMIZATION, BURNING RATE (U)
IDENTIFIERS: MARK-45 FLARES (U)

THIS REPORT DEPICTS THE RESULTS OF MK 45 AIRCRAFT PARACHUTE FLARE FLIGHT TESTS (EXPERIMENTAL PARACHUTES) CONDUCTED AT NAVAL WEAPONS CENTER, CHINA LAKE, CALIFORNIA, ON 26 JUNE 1969 THROUGH 7 OCTOBER 1969. THIS WORK WAS PERFORMED AS AUTHORIZED BY AIRTASK NO. A05-532-057/323-1/44203-03. DATA OBTAINED FROM THESE FLIGHT TESTS INDICATE THE CROSS TYPE PARACHUTE POSSESSES THE MOST ADVANTAGEOUS CHARACTERISTICS FOR INCORPORATION INTO MK 45 AIRCRAFT PARACHUTE FLARE. (AUTHOR) (U)

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