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TECHNICAL REPORT

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January 1965 - June 1966

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UNITED STATES ARMY
NATICK LABORATORIES
Natick, Massachusetts 01760



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U. S. ARMY NATICK LABORATORIES
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FOREWORD

This bibliography is a list of technical publications and papers by personnel of the U. S. Army Natick Laboratories and its contractors for the period January 1965 through June 1966. The Bibliography will be published on a fiscal year basis hereafter.

Reprints of journal articles, in some cases, are available from the individual authors. Copies of technical reports may be obtained from (1) the Defense Documentation Center, Cameron Station, Alexandria, Virginia 22314, or (2) the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151. The "AD" number should be cited when ordering copies of reports. Those reports marked with an asterisk (*) are not available for distribution outside the agencies of the Department of Defense.


W. M. MANTZ
Brigadier General, USA
Commanding

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ABSTRACT

A bibliographic listing of technical publications and papers by the personnel of the U. S. Army Natick Laboratories and its contractors for the period January 1965 through June 1966.

U. S. ARMY NATICK LABORATORIES

COMMANDING GENERAL

Technical Papers

1. VAUGHAN, W. W. Remarks. Army Executive Club, Boston, Mass., 2 February 1965.
2. _____ Remarks. U. S. Army Quartermaster School, Officer Career Class 66-1, Army Supply Officer Class 66-5, and Officer Basic Class 66-4 Graduations, Fort Lee, Va., 17 December 1965.
3. _____ Remarks. Military-Industry Conference, Research and Development Associates, Inc., Natick, Mass., 26 October 1965.
4. _____ Remarks. Seventy-Six Club, Boston, Mass., 12 March 1965.

COMMANDING OFFICER

Technical Papers

5. MANTZ, W. M. Remarks. Conference on Cellular Materials, U. S. Army Natick Laboratories, Natick, Mass., 13 April 1966.
6. _____ Leadership. Commissioning Ceremony, Northeastern University ROTC Graduates, Boston, Mass., 18 June 1966.
7. _____ Remarks. National Security Industrial Association, Natick, Mass., 21 June 1966.

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Technical Papers

8. FLANAGAN, J. H. Engineering at U. S. Army Natick Laboratories. AMC Board Study Group, The AMC Engineering Function, Aberdeen, Md., 14-15 July 1965.

OFFICE OF SCIENTIFIC DIRECTOR

Technical Papers (continued)

9. FLANAGAN, J. H. Maintaining incentives for professional engineering careers in Government Service, Massachusetts Society of Professional Engineers, Framingham, Mass., 20 May 1966.
10. _____ The role of science in the solution of logistical problems, National Security Industrial Assn. Symposium, Natick, Mass., 21 June 1966.
11. SIELING, D. H. Freeze-dried foods - a new revolution. Institute for Graduate Dietitians, Washington, D. C., 23 February 1965.
12. _____ Research and development to support the combat soldier. Norwood Rotary Club, Norwood, Mass., 26 April; Raytheon Company, Framingham, Mass., 28 June; and Armed Forces Communications and Electronics Association, Cambridge, Mass., 21 October 1965.
13. _____ Role of the Commodity Command's Chief Scientists as viewed by a Technical Director in an AMC Lab. AMC Chief Scientists Conference, Huntsville, Ala., 8 December 1965.
14. _____ Science in New England. Panel on Natural Resources and Sciences in New England, University of New Hampshire Centennial Convocation, Durham, N. H., 8 October 1965.
15. _____ Scientists are people too! Regional Junior Science and Humanities Symposium, Worcester Polytechnic Institute, Worcester, Mass., 26 April 1966.
16. _____ Thoughts for food. Northeast Area Conference on Food Distribution, Department of Agriculture, New York City, N. Y., 18 May 1965; 9th Annual Scientific Briefing for Tomorrow, Worcester Polytechnic Institute, Worcester, Mass., 6 April 1966; Wm. Underwood Co. Management Personnel from Latin America, Europe, and domestic operations, Waltham, Mass., 7 June 1966; and QM Women's Association, Natick, Mass., 8 June 1966.
17. _____ What is new for combat survival. Needham Exchange Club, Needham, Mass., 21 January 1965.

DEPUTY COMMANDER

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18. RIORDAN, C. T. Dismount and fight on foot. Memorial Day Observance, Sudbury, Mass., 30 May 1966.
19. _____ NLABS supports the Combat Soldier. U. S. Army Quartermaster School, Quartermaster Officer Refresher (Reserve Component) Class 66-2 Graduation, Fort Lee, Va., 28 January 1966.
20. _____ Remarks. Orientation - Northeastern ROTC Students, U. S. Army Natick Laboratories, Natick, Mass., 24 February 1965; Research & Development Associates, Inc., Denver, Colo., 6 April 1965; Military-Industry Conference, Research & Development Associates, Inc., Chicago, Ill., 12 April 1966.
21. _____ R&D work - your neighbor. National Honor Society (Induction of Members), Framingham South High School, Framingham, Mass., 3 March 1965.
22. _____ The Soldier and the R&D Laboratory. U. S. Army Quartermaster School, Quartermaster Officer Refresher (Reserve Component) Class 66-1 Graduation, Fort Lee, Va., 30 July 1965.
23. _____ They fight - not for the glory. Minutemen Chapter, Association of the U. S. Army National Guard, Worcester, Mass., 24 March 1966.

TECHNICAL PLANS OFFICE

Books

24. PETERSON, M. S., and D. K. TRESSLER (Avi Publishing Co., Inc.), editors. Food technology the world over, Vol. II. Avi Publishing Co., Inc., Westport, Conn. (1965).

AIRDROP ENGINEERING DIVISION

Technical Reports

25. Airdrop impact capability of the Redeye missile in models 2 and 3 tripak containers, H. E. ANTKOWIAK. 66-13 AD, March 1966 (AD 480880).
26. Airdrop impact capability of the Redeye missile tripak container (production model), A. P. MASCHI. 66-45 AD, May 1966. (AD 485104).
27. Airdrop of supplies and equipment rigging drinking water for free type airdrop, J. N. SHUMAN, 24 March 1966.
28. Free-drop containers for liquids (laboratory evaluation), E. BARNICLE, 18 March 1966.
29. Lightweight gantry system (EDT), M. J. LYNCH, June 1966.
30. Military potential test of in-aircraft lift system for rigging vehicles for airdrop, M. J. LYNCH and J. N. SHUMAN. In-house Summary, Final, September 1965.

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31. BROWN, E. J. Report of sub-group C (platforms) of the Joint Technical Coordinating Group for Airdrop, Joint Technical Coordinating Group, Andrews Air Force Base, 26 January 1966 and Naval Air Recovery Facility, El Centro, Calif., 20 April 1966.
32. _____ Problems associated with airdrop equipment under the cognizance of the Mechanical Equipment Branch, National Security Industrial Association, Natick, Mass., 21 June 1966.
33. GIONFRIDDO, M. P. Aeronautical system-airdrop. National Security Industrial Association, Natick, Mass., 21 June 1966.
34. LEWIS, W. R. Parachute and related textile equipment. National Security Industrial Association, Natick, Mass., 21 June 1966.
35. WEITZLER, I. M. Introduction to airdrop engineering requirements and problems. National Security Industrial Association, Natick, Mass., 21 June 1966.

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37. Apollo A-50 testing program, S. C. GRAVINA. NASA, T-43367-G, Monthly Progress Reports 1-4, 4 February, 4 March, 12 May, and 3 June 1966.
38. Armor materials research. Part I. Proceedings of a meeting of armor materials research contractors, 19-20 May 1964. C&CM-5, August 1965 (AD 621246).
39. Ballistic resistance of needle-punched nylon felts, R. C. KEITH, The Felters Co., Contract No. DA19-129-AMC-204(N). 66-39 CM (Textile Series 137), May 1966 (AD 633881).
40. Camouflage of the individual soldier, F. J. RIZZO. MRE 65-3, May 1965.
41. Degradation of halopolymers by exposure to high-intensity thermal pulses, W. J. BARNES and W. E. C. YELLAND. MRE 65-4, May 1965.
42. Design and development of an articulated armor garment, W. R. WEIR, Illinois Institute of Technology, Contract No. DA19-129-QM-1809. Textile Series 130, March 1965 (AD 465119).
43. Development of charcoal impregnation process for CW protective overgarment, GAGLIARDI RESEARCH CORP., Contract No. DA19-129-AMC-675(N), Progress Reports, October 1965, February 1966, and June 1966.
44. Development of shade standards for ribbon colors, F. J. RIZZO, A. M. CAMPBELL, and R. J. EVANS. MRE 65-5, June 1965.
45. Development of thermoelectric heating and ventilating system, A. H. BERNARD and L. J. FOX, Westinghouse Electric Corp., Contract No. DA19-129-QM-1981, April 1965.
46. Evaluation of finishes for bronze grave markers, J. P. URBANEK. MRE 65-2, April 1965.

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47. Explosive ordnance disposal protective suit design and review analysis, V. D. IACONO, Picatinny Arsenal. Project No. PRON GG53754601GGBG, 6 April 1966.
48. Extent and cause of deterioration of nylon mountain climbing rope, L. I. WEINER and L. J. SHEEHAN. 66-24-CM (Textile Series 135), March 1966 (AD 631428).
49. Feasibility study of personnel shirt-sleeve clothing and disposal. NASA, Order L-67,067,M.5.138, Final Progress Report, Phase I, June 1966.
50. Flash protection device, E. HARTOUNI, General Dynamics Corp., Contract No. DA19-129-AMC-368(N). Thermal Protective Materials 65-6, July 1965 (AD 479164).
51. Gemini extravehicular life test program, S. C. GRAVINA. NASA, T-23772-G, Progress Reports 1 and 2, September and October 1965.
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53. Improved Natick Laboratories colorimeter for textile fabric inspection, R. S. HUNTER and J. B. CHRISTIE, Hunter Associates Laboratory, Inc., Contract No. DA19-129-QM-1976. 66-19-CM (Textile Series 139), February 1966 (AD 480214).
54. Inspection system for thermal protective coverall, V. D. IACONO and S. J. WERKEWSKI. NASA, T-32387-G, April 1965.
55. Interior corrosion of steel five-gallon military water cans, J. P. URBANEK. 66-40-CM (MRE 66-1), May 1966 (AD 633214).
56. Investigation of organic compounds for thermal protection, A. W. BERGER and J. A. PIROG, Monsanto Research Corp., Contract No. DA19-129-QM-1773(X). C&OM-12, October 1965 (AD 477682).
57. Mass, permeability, and thickness changes in abraded fabrics, L. I. WEINER. Textile Series 136, October 1965 (AD 629603).
58. Measurement of rubber elasticity at low temperatures using a twist recovery apparatus, A. WILSON. 66-4-CM (C&OM-14), January 1966 (AD 630909).

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59. The met and the clo. Part I. Restatement of the original definitions. D. L. FISKE. 66-21-CM (MRE 66-2), May 1966 (AD 634271).
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61. Photographic study of stress wave propagation and crack growth in a transparent plastic, A. F. WILDE and J. J. RICCA. 66-46-CM (C&OM-19), May 1966 (AD 633891).
62. Physical and rheological properties of nitroso rubbers, G. L. BALL III, I. O. SALYER, J. V. PUSTINGER, and F. N. HODGSON, Monsanto Research Corp., Contract No. DA19-129-AMC-151(N). Quarterly Reports 7, 8, and 9, April, July, and October 1965 (AD 628001, 628002, and 628003).
63. Polyester batting for clothing and mitten liners, H. MADNICK. 66-23-CM (C&ED 40), March 1966.
64. Polymerization studies leading to high strength chemical resistant elastomers serviceable at temperature extremes, D. I. RELYEA, H. P. SMITH, and A. N. JOHNSON, U. S. Rubber Co., Contract No. DA19-129-AMC-487(N). Semiannual Reports, July and December 1965 (AD 480181L).
65. Preliminary study of two passive thermal control systems using permeable membranes, F. VOTTA, JR. NASA, R-135, August 1965.
66. Qualification test of Gemini space suit assembly, S. C. GRAVINA. NASA, T-23772-G, February 1965.
67. Qualification test plan and procedures for thermal protective coverall assembly (TPCA) for space environmental simulation laboratory (SESL) use, V. D. IACONO. NASA, T-32387-G, July 1965.
68. Qualification test report of Gemini extravehicular gloves, S. C. GRAVINA. NASA, T-23772-G, August 1965.
69. Radiation characteristics of military clothing observed with a passive detection system, A. O. RAMSLEY and A. P. MEROLA. 66-16-CM (Textile Series 140), March 1966 (AD 481656).

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70. Redesign and modifications to autodeployable face mask, R. E. SEBRING and G. A. M. EUTTERWORTH, Fabric Research Laboratories, Contract No. DA19-129-AMC-173(N). C&OM-11, July 1965 (AD 475533).
71. Research compounding of nitroso rubber, C. B. GRIFFIS. C&OM-13, October 1965 (AD 625815).
72. Research compounding of nitroso rubber terpolymers, C. B. GRIFFIS and C. W. SHURTLEFF. 66-42-CM (C&OM-21), May 1966 (AD 635114).
73. Research and development of blast protective footwear, E. S. FUJINAKA and J. L. MacDONALD, Illinois Institute of Technology, Contract No. DA19-129-QM-2061. Textile Series 131, March 1965 (AD 471324).
74. Research on phototropic behavior of materials for flash-blindness protection, A. F. HADERMANN and S. S. NELSON, Melpar, Inc., Contract No. DA19-129-AMC-389(N). Thermal Protective Materials 65-3, August 1965 (AD 471409).
75. Research on synthesis of unsaturated fluorocarbon compounds, P. TARRANT, D. PERRY, J. TANDON, A. WRIGHT, and S. MISAKI, University of Florida, Contract No. DA19-129-AMC-79(N). Semiannual Reports 4 and 5, March and September 1965 (AD 466967 and AD624867), and No. 6, 66-41-CM, March 1966 (AD 634116).
76. The resistance of nylon/cotton and nylon/rayon poplins to ignition by thermal radiation, W. M. KOZA. MRE 65-1, January 1965.
77. Silica-reinforced ethylene-propylene diene (EPD) rubbers, P. DUNN and V. S. JAVIER. C&OM-7, August 1965 (AD 620694).
78. Sources of thermal radiation for nuclear weapons effects studies, E. T. WALDRON. Textile Series 134, August 1965 (AD 470270).
79. Studies in the perforation of thin metallic plates by projectile impact: I. Normal impact of circular cylinders, L. E. FUGELSO and F. H. BLOEDOW, General American Transportation Corp., Contract No. DA19-129-AMC-247(N). 66-58-CM (C&OM-9), June 1966.
80. Study of dynamic birefringence and strain produced in transparent polymers by mechanical impact, A. F. WILDE, J. J. RICCA, and F. deS. LYNCH. 66-6-CM (C&OM-18), February 1966 (AD 630913).

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81. A survey of the deterioration of nylon mountain climbing rope, L. I. WEINER and L. J. SHEEHAN. MRE 65-6, July 1965, and Textile Series 135, March 1966.
82. Synthesis of chromotropic colorants, R. A. COLEMAN, W. H. FOSTER, JR., J. KAZAN, and M. MASON, American Cyanamid Co., Contract No. DA19-129-AMC-269(N). 66-9-CM (Textile Series 138), February 1966 (AD 630903).
83. Synthesis of high-strength chemical resistant elastomers for extreme temperature service, E. W. COOK, C. A. ERICKSON, and J. A. GANNON, FMC Corp., Contract No. DA19-129-AMC-147(N). C&OM-4, January 1965 (AD 463850).
84. Synthesis of organolead compounds, M. C. HENRY and H. GÖRTH. Quarterly Reports 15 and 16, March and June 1965.
85. Synthesis and polymerization of fluorinated sulfur-modified nitroso rubber, E. C. STUMP, W. H. OLIVER, and C. D. PODGETT, Peninsular Chemical Research Co., Inc., Contract No. DA19-129-AMC-152(N). Quarterly Report No. 9, December 1965 (AD 633058), and No. 10, 66-52-CM, March 1966 (AD 634728).
86. The synthesis of special fluorine-containing monomers, J. D. PARK and J. R. LACHER, University of Colorado, Contract No. DA19-129-QM-1926. Semiannual Reports 2 and 3, May and October 1965 (AD 465114 and AD 625935), and 66-54-CM (C&OM-17), January 1966.
87. Textiles for thermal radiation protection, E. T. WALDRON. Textile Series 132, April 1965 (AD 617707).*
88. Theoretical and experimental study of low-velocity penetration phenomena, E. T. CANNON, Utah Research and Development Co., Inc., Contract No. DA19-129-AMC-150(X). Semiannual Report, December 1965.
89. Thermal equilibrium headgear assembly, E. A. UMINSKI, Mine Safety Appliance Co., Contract No. DA19-129-QM-2045. January 1965.
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92. Thermal protective coverall, design and review analysis, V. D. IACONO. NASA, T-32387-G, March 1965.
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122. GREEN, J., and E. COTTRILL (Thiokol Chemical Corp.), and J. A. CASTELLANO (RCA). Aromatic polyfluoronitroso monomers and polymers. Regional Meeting, American Chemical Society, Philadelphia, Pa., 3 February 1966.
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141. _____ Requirements for textile processing of military textiles. Hudson-Mohawk Section, American Association of Textile Chemists and Colorists, Albany, N. Y., 6 May 1966.
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