

BIBLIOGRAPHY

on

CLEAN ROOMS

by the

Biological Sciences Communication Project

of

The George Washington University

Work performed by

Donald E. Wright

Assisted by

Lydia Homann  
Lynn Zabriskie

C. W. Shilling, M.D.  
Director, BSCP

Work performed under NASA contract

NSR-09-010-027

TABLE OF CONTENTS

I. Preface . . . . .	Page	1
II. Bibliography . . . . .		4
III. Permuted Title Index . . . . .		33
IV. Author Index . . . . .		50

I. Preface

## PREFACE

Millions of dollars and thousands of man-hours have been lost as a result of particulate contaminants. With the burgeoning growth of the electronics industry, newer techniques required newer standards of cleanliness; both were the off-spring of newer requirements laid down by the aerospace program of the National Aeronautics and Space Administration. In just a few short years the state of the art of contamination control has been refined and polished to a high degree of operational success.

As recently as the Korean War the army found that 75% of its electronic equipment was inoperable at any given time (Austin, 1965). Similar consequences were reported by the other military services. Under the added impetus of aerospace requirements, it was imperative that standards for clean rooms be established.

1963 proved to be a milestone year in the field of contamination control. In order to establish criteria for its own programs, the Air Force first published Tech. Order 00-25-203 in 1961. Revisions and reclassification brought out the revised technical order in 1963. At the same time, the Sandia Corporation of Albuquerque, New Mexico (a prime contractor to the Atomic Energy Commission) hosted a group of industry and government representatives who developed guidelines applicable to problems of contamination control. The final result was Federal Standard No. 209, revised in the summer of 1966 and released as FS 209a. Its objective is "to prescribe air cleanliness classes and other air environmental conditions required for achieving and maintaining the levels of cleanliness specified in the product specification" (FS 209a, 1966).

The history of clean room operations may be said to have had its beginnings in the last century with the struggle of Semmelweiss to promote cleanliness in hospitals and the work of Lister in developing and promoting aseptic techniques. Over the years improvements in instruments, garments and sterilization techniques have been gradually accepted as standard in surgical suites. However, where the surgeon was concerned only with the control of infectious agents, the clean room worker was concerned with both viable and non-viable particulate matter.

The importance of contamination control is perhaps best realized by citing specifics: the two square meters of skin surface of an adult may release up to 30 million particles per sq. foot; exercise will increase this shedding rate even more. Average body movements produce one million particles per minute (Austin, 1966). Thus comes the realization that the human being is a continuous source of contaminants. To control this source of contamination requires the combined protective effects of proper clothing, techniques, design and operation.

The engineering contributions to the development and operation of clean rooms have been phenomenal. The use of HEPA (high efficiency particulate, air) filters reduces contamination by greater than 99%. Improved design and operation of ventilating systems have resulted in easier maintenance at lower cost. Instruments for detection of contaminants and for checking the efficiency of filters and clean room operation have been developed and refined. Proper use of air showers, garments and strict enforcement of rules have all contributed to the successful control of contaminating particles. Newer techniques of packaging reduce the number of contaminants released during handling and protect sensitive components from damaging humidity as well as dust.

Technological "feed-back" has enabled the medical profession and pharmaceutical industry to adopt techniques and methods originally designed for the aerospace industry. Indeed, such techniques may be required in the future by the cognizant federal agencies. Surgical suites benefit from improved knowledge of ventilating techniques, non-shedding, static-free garments and packaging and sterilization of instruments. Pharmaceutical houses have adopted clean room designs for their filling and packaging operations. Both benefit from the knowledge that personnel training and in-house regulations, rigidly controlled, can significantly reduce particulate "fall-out."

This bibliography on clean rooms was compiled in an effort to consolidate important developments for those persons involved in this rapidly advancing field of aerospace technology. Although the references cited are largely of work related to NASA-sponsored research, it is recognized that other government agencies such as the Food and Drug Administration, the Atomic Energy Commission, the Bureau of Standards and the Defense Department have supported research in clean room practices.

## REFERENCES

AUSTIN, P.R. and TIMMERMAN, S.W. Design and operation of clean rooms.  
Detroit, Mich., Business News Publishing Co. 1965.

GENERAL SERVICES ADMIN. Federal Standard No. 209a. Wash. D.C.  
GSA Business Service Center. Aug. 1966.

AUSTIN, P.R. Contamination Index. Contamination Control  
Lectures. June 1966.

II. General Bibliography

1939-1966

## GENERAL BIBLIOGRAPHY

1939 - 1966

1966

1. ANDERSON, D.C. Films vs. foil for clean packaging of aerospace hardware. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 4 p.
2. AUSTIN, P.R. Personnel emissions in laminar flow clean rooms. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 5 p.
3. BLANCHARD, M.B. and FARLOW, N.H. Contamination control during design, fabrication, test and launch of an upper atmospheric rocket payload. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 8 p.
4. BOLASNY, R.E. and PEARSALL, D.D. Ionized air for control of static charges. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 10 p.
5. CHARRON, G.R. Cleaning tubes for the Saturn S-1B. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 8 p.
6. CONLEY, D. Introduction to Apollo contamination control handbook. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 4 p.
7. CONNELLY, R.F. Relationships between contamination and system failure. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 8 p.
8. COWN, W.B. and KETHLEY, T.W. Dispersion of airborne bacteria in clean rooms. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 6 p.



9. CRAWFORD, J.G. and ZANKS, J.F. The assembly/sterilizer-A facility for the sterilization and assembly of spacecraft. Amer. Inst. of Aeronaut. and Astronaut./Amer. Astronaut. Soc., Baltimore, Md., Mar. 28-30, 1966. Proceedings. p.346-350.
10. ELLENBURG, J.Y. The field cleaning of corrosion-resistant steel tubing for lox and pneumatic service. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 4 p.
11. FAVERO, M.S. Assessment of microbial contamination on space hardware. Amer. Soc. for Microbiol., Los Angeles, Calif., May 1966. Proceedings.
12. FAVERO, M.S., PULEO, J.R., MARSHALL, J.H., et al. Comparative levels and types of microbial contamination detected in industrial clean rooms. Appl. Microbiol. 14(4): 539-551. July 1966. 10 Refs.
13. FINKELSTEIN, H., SCHEIR, R., and McDADE, J.J. Microbial accumulation on surfaces in industrial clean rooms. Amer. Inst. of Aeronaut. and Astronaut./Amer. Astronaut. Soc., Baltimore, Md., Mar. 28-30, 1966. Proceedings. p. 498-500.
14. FLANNER, L.T. Stability and compatibility characteristics of trichlorotrifluoroethane. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 9 p.
15. GOODRICH, E.O., Jr. Surgical application of laminar clean air flow. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 4 p.
16. GRAETZ, G.M. and SLATER, M.N. Operation of a class 100 down-flow room. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 8 p.
17. HALL, L.B. The objectives and technology of spacecraft sterilization. IN: PITTENDRIGH, C.S., VISHNIAC, W. and PEARMAN, J.P.T., Editors. Biology and the Exploration of Mars. Chapter 26. Pub. 1296. Wash., D.C., Natl. Acad. of Sciences, 1966. p. 463-466.
18. HALLIDAY, K.C., Jr. Cleaning in the aerospace industry. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 9 p.

19. HERTZSON, L. A standard method for determination of particle cleanliness in packaging films. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 8 p.
20. HEURING, H.F. Combining laminar flow with closed-loop cleaning. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 4 p.
21. HODKINSON, J.R. What aerosol counters and photometers measure. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 8 p.
22. HUME, W.A. Analysis of clean room practices. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 6 p.
23. INGRAM, F.A. A look at the role of the environment in surgical infections. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 4 p.
24. KAPPELL, G.F., McDADE, J.J. and GAVIN, T.R. Experimental Assembly and Sterilization Laboratory (EASL) Operations: Phase I. NASA (CR-75152). Pasadena, Calif., Jet Propulsion Lab., Apr. 15, 1966. 30 p. Refs.
25. KENAGY, J.A. Application of a laminar down-flow clean room to dust and fume control in a developmental plastics facility. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 4 p.
26. KING, J. Latest revisions to Federal Standard 209. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 3 p.
27. KRANZ, P., LEVENSON, S.M. and LADUKE, M. Designing for germ-free environments. ASHRAE (Amer. Soc. of Heating, Refrigerating and Air-conditioning Engineers, Inc.) Jour. Mar. 1966. 12 p. 32 Refs.
28. KRETZ, A.P. Jr., and ERNST, R.R. The roving probe. Contamination Control V(7): 18-26. July 1966.

29. LANGER, G. A further development of an acoustic particle counter. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 6 p.
30. LE DOUX, F.N. Biological decontamination of a spacecraft system. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 8 p.
31. LEWIS, T.W. Evaluation of an automatic aerosol particle counter for measuring the airborne contamination level in a controlled environment. NASA (TM-X-53416). Huntsville, Ala., Marshall Space Flight Ctr., Mar. 24, 1966. 39 p. Refs.
32. LIEBERMAN, A. Current state of the art in particle detection and monitoring. Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 3 p.
33. MARSH, R.C. Modifications for improving the response characteristics of the Royco Model PC200A particle counter. Tech. Memo. (SC-TM-66-155). Albuquerque, N. Mex., Sandia Corp., Apr. 1966. 17 p.
34. MARSH, R.C. Cleanliness meter and its application to solvent cleaning. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 4 p.
35. McDADE, J.J. Clean room concept in the control of microorganisms. Amer. Soc. for Microbiol., Los Angeles, Calif., May 1966. Proceedings.
36. McDADE, J.J. and PAIK, W.W. Microbiological studies conducted in the experimental assembly and sterilization laboratory. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 3 p.
37. MATTHEWS, F.E. A summary of three years' clinical experience with patient isolation. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 8 p.
38. MICHAELSEN, G.S., RUSCHMEYER, O.R. and VESLEY, D. The bacteriology of clean rooms. NASA (CR-68729). Minneapolis, Minn., Univ. of Minnesota, School of Public Health. July 1966. 86 p. 33 Refs.

39. NATL. AERONAUT. & SPACE ADMIN. Standard procedures for the microbiological examination of space hardware. Wash. D.C., Office of Space Science & Applications, NASA Headquarters. June 1, 1966. 40 p. 6 Refs.
40. NASA-GODDARD SPACE FLIGHT CENTER. Sterilization--A selected bibliography from the literature retrieval system. NASA (TM-X-55457). Greenbelt, Md., Space Biology Branch, NASA. March 1966. 25 p. 168 Refs.
41. PAIK, W., CHRISTENSEN, M. and McDADE, J.J. Survival of surface-exposed microorganisms in spacecraft assembly areas. Amer. Soc. for Microbiol., Los Angeles, Calif., May 1966. Proceedings.
42. PHILLIPS, G.B. Absolute barrier concept in the control of microorganisms. Amer. Soc. for Microbiol., Los Angeles, Calif., May 1966. Proceedings.
43. PHILLIPS, G.B., BUSENBARK, H.L., EDWARDS, R.W., et al. Microbiological barrier equipment and techniques. A state of the art report. Amer. Assoc. for Contamination Control, Mar. 1966. 45 p. 84 Refs.
44. PHS-COMMUNICABLE DISEASE CENTER. Laboratory for monitoring bacterial contamination of space components. Quarterly Rept No. 12. NASA (CR-74868). Phoenix, Ariz. Jan.-Mar. 1966. 8 p.
45. RAMSEY, R.B. Jr., and JACKSON, E. Maintenance cleaning of thermal-vacuum systems. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 4 p.
46. RAPER, D.J. What's new in the T.O. 00-25-203. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 12 p.
47. REID, S.F. Aircraft hydraulic contamination control. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 5 p.
48. RENO, C.D. Cleaning the 'Zip' gun for Astronaut White's walk in space. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 3 p.

49. RICE, R.S. Contamination control features of a precision photogrammetric laboratory. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 7 p.
50. SALRIN, R.E. One year's experience on a laminar flow clean room. Fifth Annual Tech. Mtgs., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 7 p.
51. SMYTH, H.F., Jr. Experimental derivation of health standards for contaminated atmospheres. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 7 p.
52. SOLTIS, C.W. Design construction of a laminar flow operating room. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 3 p.
53. SULLIVAN, J.F. and SONGER, J.R. Role of differential air pressure zones in the control of aerosols in a large animal isolation facility. Appl. Microbiol. 14(4): 674-678. July 1966.
54. THOMAS, J.W. Aerosol properties and aerosol filtration. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 6 p.
55. TREXLER, P.C. and BROWN, T.E. Applications of gnotobiotic isolator techniques to sterile insertion. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 6 p.
56. TREXLER, P.C. and ROTHSTEIN, A.A. The application of gnotobiotic techniques to the sterilization problem. Amer. Inst. of Aeronaut. and Astronaut./Amer. Astronaut. Soc., Baltimore, Md., Mar. 28-30, 1966. Proceedings. p. 522-525. 12 Refs.
57. U.S. ARMY-FT. DETRICK. Design criteria for microbiological facilities at Ft. Detrick. Vol. I. Introduction. Contract (DA-18-064-AMC-401). Frederick, Md., Army Biol. Labs., Tech. Inform. Div., Mar. 1, 1966. 41 p. 189 Refs.
58. U.S. ARMY-FT. DETRICK. Design criteria for microbiological facilities at Ft. Detrick. Vol. II. Design criteria. Contract (DA-18-064-AMC-401) Frederick, Md., Army Biol. Labs., Tech. Inform. Div., Mar. 1, 1966. 255 p.

59. U.S. GOVERNMENT. Clean room and work station requirements, controlled environment. Federal Standard No. 209a. Wash. D.C., GSA, Business Service Center. Aug. 10, 1966. 21 p.
60. VAN DELLEN, D.B. A-prime surveys. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex., Mar. 29-Apr. 1, 1966. Proceedings. 4 p.
61. VESLEY, D., KEENAN, K.M. and HALBERT, M.M. Effect of time and temperature in assessing microbial contamination on flat surfaces. Appl. Microbiol. 14(2): 203-205. Mar. 1966. 7 Refs.
62. WHITFIELD, W.J. Monitoring a class 100 clean room. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex. Mar. 29-Apr. 1, 1966. Proceedings. 4 p.
63. WILLIAMSEN, C.T. Clean room for spacecraft assembly. Fifth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Houston, Tex. Mar. 29-Apr. 1, 1966. Proceedings. 3 p.

ADDENDUM

Recent acquisitions

1966

BEAKLEY, J.W., WHITFIELD, W.J. and MASHBURN, J.C. Evaluation of the efficiency of a class 100 laminar-flow clean room for viable contamination cleanup. (Part I of microbiological studies relating to clean environments). Rept. (SC-RR-66-385). Albuquerque, N. Mex., Sandia Corp., Sept. 1966. 9 p. 9 Refs.

BEAKLEY, J.W., WHITFIELD, W.J. and MASHBURN, J.C. Deposition of nutrients to surfaces by RODAC plates. (Part II of microbiological studies relating to clean environments). Rept. (SC-RR-66-386). Albuquerque, N. Mex., Sandia Corp., Sept. 1966. 9 p. 9 Refs.

WHITFIELD, W.J. and MASHBURN, J.C. Development of an increased sampling rate monitoring system. Rept. (SC-RR-66-585). Albuquerque, N. Mex., Sandia Corp., Oct. 1966. 9 p.

SULLIVAN, L. and WEHREBERG, C. Investigation of the reliability of sterile insertion techniques for spacecraft. Final Rept. (VOY-CR-66-9). Denver, Colo., Martin Co., Oct. 1966. 46 p. 3 Refs.

1965

64. AMER. ASSOC. FOR CONTAMINATION CONTROL. (Local Chapter). Technical Symposium. Part I. Contamination control and industrial problems. Part II. Microbiological contamination control of spacecraft. Part III. Contamination control and medical problems. Albuquerque, N. Mex., Sandia Corp., Apr. 2, 1965. 80 p.
65. ARNOLD, V.E., JACK, A.J., KING, J.G., et al. Preliminary report on microbiological studies in a laminar down-flow clean room. Rept. (SC-RR-65-47). Albuquerque, N. Mex., Sandia Corp., Jan. 1965. 27 p.
66. AUSTIN, P.R. and TIMMERMAN, S.W. Design and Operation of Clean Rooms. Detroit, Mich., Business News Publishing Co., 1965. 421 p.
67. BALLARD, D.W. Contamination control considerations for designers and manufacturing engineers. Rept. (SC-R-65-888). Albuquerque, N. Mex., Sandia Corp., Apr. 1965. 10 p.
68. BEYERLE, F.J. and LORSCH, H.G. Manufacturing and handling procedures for planetary spacecraft to be sterilized by heating. First Natl. Conf. on Spacecraft Sterilization Technology, Pasadena, Calif., Nov. 16-18, 1965. Proceedings. In press.
69. BLACK, H.L., GREIF, E.E., and McDONNELL, J.A. A "Space Age" sterile technics laboratory. Amer. Jour. Hosp. Pharm. 22: 446-453. 1965.
70. DRUMMOND, D., ANGELOTTI, R. and LEWIS, K.H. Visual monitoring as an assay technique. First Natl. Conf. on Spacecraft Sterilization Technology, Pasadena, Calif., Nov. 16-18, 1965. Proceedings. In press.
71. DRUMMOND, D. and MAGISTRALE, V. JPL spacecraft sterilization technology program. A status report. Rept. (TR-32-853). Pasadena, Calif., Jet Propulsion Lab., Calif. Inst. of Technology, Dec. 31, 1965. 102 p.
72. FAVERO, M.S., PULEO, J.R., MARSHALL, J.H., et al. Comparative levels and survival of naturally occurring microorganisms deposited on surfaces through handling and aerial fallout. NASA (CR-67267). Phoenix, Ariz., Public Health Service-CDC. 1965.



73. FAVERO, M.S., PULEO, J.R., MARSHALL, J.H., et al. Detection and quantitation of microbial contamination to which spacecraft are subjected during manufacture. NASA (Contract No. R-137). Phoenix, Ariz., Public Health Service-CDC. Mar. 18, 1965.
74. FINCHER, E.L. Surface sampling for bacteria. Fourth Annual Tech. Mtg., Amer. Assoc. for Contamination Control, Miami Beach, Fla., May 25-28, 1965. Proceedings.
75. FJELSETH, D.E., DAVIS, D.M., JONES, L.K., et al. Clean assembly practices guide. Albuquerque, N. Mex., Sandia Corp., Oct. 1965. 71 p.
76. HALL, L.B. Spacecraft sterilization--A new engineering and sanitation technology. Annual Mtg., Amer. Publ. Health Assoc., Chicago, Ill., Oct. 1965. 8 p.
77. HALL, L.B. NASA requirements for the sterilization of spacecraft. First Natl. Conf. on Spacecraft Sterilization Technology, Pasadena, Calif., Nov. 16-18, 1965. Proceedings. 17 p. In press.
78. HALL, L.B., MILES, J.R., BRUCH, C.W., et al. The objectives and technology of spacecraft sterilization. Amer. Astronaut. Society Symp., Denver, Colo., Feb. 1965. 5 p.
79. HANSEN, W., et al. Experimental study of sterile assembly techniques. Vol. 1. Final Report. JPL (Contr 950993). Sunnyvale, Calif., Lockheed Missiles and Space Co., Mar. 21, 1965. 187 p.
80. HAYNES, B.W., Jr. and HENCH, M.E. Hospital isolation system for preventing cross-contamination by Staphylococcal and Pseudomonas organisms in burn wounds. Ann. Surgery 162: 641-649. 1965.
81. JONAS, A.M. Laboratory animal facilities. Jour. Amer. Vet. Med. Assoc. 146: 600-606. 1965.
82. KETHLEY, T.W. Air quality specifications (Microbial): The sampling problem. Fourth Ann. Tech. Mtg., Amer. Assoc. for Contamination Control, Miami Beach, Fla., May 25-28, 1965. Proceedings. 15 p.

83. MARSH, R.C. and OSWALT, F.W. A freon TF solvent residue analyzer. Tech. Memo. (SC-TM-65-279). Albuquerque, N. Mex., Sandia Corp., June 1965. 11 p.
84. McDADE, J.J., FAVERO, M.S. and MICHAELSEN, G.S. Control of microbial contamination. First Natl. Conf. on Spacecraft Sterilization Technology, Pasadena, Calif., Nov. 16-18, 1965. Proceedings. In press.
85. PHILLIPS, G.B. Safety in the chemical laboratory. XIII. Microbiological hazards in the laboratory. Part One - Control. Jour. of Chem. Education 42(1): 43-48. Part Two - Prevention. 42(2): 117-130. Jan. 1965-Feb. 1965. 32 Refs.
86. PHILLIPS, G.B. Microbiological barrier techniques. First Natl. Conf. on Spacecraft Sterilization Technology, Pasadena, Calif., Nov. 16-18, 1965. Proceedings. In press.
87. PHILLIPS, G.B., EDWARDS, R.W., FAVERO, M.S., et al. Microbiological contamination control: A state of the art report. Jour. Amer. Assoc. Contamination Control 4: 16-19, 11: 22-25. 1965.
88. PHILLIPS, G.B. and JEMSKI, J.V. Microbiological safety bibliography. Miscel. Publication 6. Ft. Detrick, Md., U.S. Army Biol. Labs., July 1965. 79 p. 1043 Refs.
89. PORTNER, D.M., HOFFMAN, R.K. and PHILLIPS, C.R. Microbial contamination in clean rooms. Tech. Manuscript 209. Ft. Detrick, Md., U.S. Army Biol. Labs., March 1965. 20 p.
90. PORTNER, D.M., HOFFMAN, R.K. and PHILLIPS, C.R. Microbial control in assembly areas needed for spacecraft sterilization. Air Eng. 7(10): 46-49. Oct. 1965.
91. POWERS, E.M. Microbial profile of laminar flow clean rooms. Tech. Memo. NASA (X-600-65-308). Greenbelt, Md., Goddard Space Flight Ctr., Sept. 1965. 40 p. 15 Refs.
92. ROBERTS, D.L. and STOCKHAM, J. Survey of bioclean facilities. Vols. I, II, and III. NASA (NASr-65(06)). Chicago, Ill., IIT Research Inst., 1965. 403 p.

93. SHADOMY, S., GINSBERG, M.K., LaCONTE, M., et al. Evaluations of a patient isolator system. Arch. Environ. Health 11: 183-200, 652-661. 1965.
94. TENNEY, J.B., Jr. and CRAWFORD, R.G. Design requirements for the sterilization containers for planetary landers. Second Annual Mtg., Amer. Inst. of Aeronaut. and Astronaut., San Francisco, Calif., July 26-29, 1965. Proceedings. 29 p. 16 Refs.
95. VESLEY, D., RUSCHMEYER, O.R. and BOND, R.G. Spacecraft contamination resulting from human contact. First Natl. Conf. on Spacecraft Sterilization Technology, Pasadena, Calif., Nov. 16-18, 1965. Proceedings. In press.
96. WHITCOMB, J.G., WHITFIELD, W., KING, J.G., et al. Ultra-clean operating rooms. The Lovelace Clinic Review 2(2): 65-69. Apr. 1965.

1964

97. ANGELOTTI, R. and WILSON, J.L. Comparative evaluation of the cotton swab and Rodac Method for the recovery of Bacillus subtilis spore contamination from stainless steel surfaces. Health Lab. Sci. 1: 289-296. 1964.
98. BOND, R.G., HALBERT, M.M., PUTMAN, H.D., et al. Survey of microbial contamination in the surgical suites of 23 hospitals. Final Rept. (PH 86-63-96). Publ. Health Serv., U.S. Dept. HEW. 1964.
99. ERNST, R.R. and KRETZ, A.P., Jr. Compatibility of sterilization and contamination control with application to spacecraft assembly. Jour. Amer. Assoc. Contamination Control. 11(3). 1964.
100. FOX, G.W. Design of clean rooms - A classified list of selected references 1955-1964. PHS (Publ. No. 1219). Bethesda, Md., Natl. Inst. of Health, 1964. 15 p. 139 Refs.
101. HALL, L.B. and HARTNETT, M.J. Measurement of the bacterial contamination on surfaces in hospitals. Publ. Health Repts 79(11): 1021-1024. Nov. 1964.
102. HARRIS, G.J., GREMILLION, G.G. and TOWSON, P.H. Test new electric incinerator design for sterilizing laboratory air. Heating, Piping and Air Conditioning 36: 94-95. 1964.
103. JEMSKI, J.V. and PHILLIPS, G.B. Aerosol challenge of animals. IN: GAY, W.I., Editor. Methods in Animal Experimentation. New York, N.Y., Academic Press, Inc. 1964. p. 273-341.
104. JOSHI, N., BLACKWOOD, A.C. and DALE, D.G. A simple chemical method for the detection of leaks in flexible isolators. Canadian Jour. Comp. Med. Vet. Sci. 28: 126. 1964.
105. KETHLEY, T.W. Air: Its importance and control. Natl. Conf. on Institutionally Acquired Infections, Minneapolis, Minn., (Sept. 4-5-6, 1963). PHS (Publ. No. 1188). Wash. D.C., Publ. Health Serv., U.S. Dept. HEW. 1964. Proceedings. p. 35-46.
106. KETHLEY, T.W. and COWN, W.B. Experimental verification of ventilation equations. Amer. Indust. Hyg. Assoc. Jour. 25: 67-78. Jan-Feb. 1964.

107. KOONSE, H.J. Design, construction and operation experiences of a sterile biological processing building. Bull. of the Parenteral Drug Assoc. 18(2): 9-18. 1964.
108. KRANZ, P. Two theoretical considerations for practical air cleaning. Jour. Amer. Assoc. Contamination Control 11(2): 37. 1964.
109. KRIEGER, G.L. Improvements in use of the indium adhesion test for surface cleanliness. Tech. Memo. (SCTM-64-1722). Albuquerque, N. Mex., Sandia Corp., Nov. 1964. 21 p.
110. LEU, M. A device for the external supply of sterile water and a simple air sterilizing filter for germfree units. Jour. Appl. Bacteriol. 27: 41-44. Apr. 1964.
111. LEVENSON, S.M., TREXLER, P.C., LaCONTE, M., et al. Application of the technology of the germfree laboratory to special problems of patient care. Amer. Jour. Surg. 107(5): 710-722. May 1964.
112. MARSH, R.C. A combination final rinsing station using freon TF solvent. Tech. Memo. (SC-TM-64-604). Albuquerque, N. Mex., Sandia Corp., May 1964. 18 p.
113. MARSH, R.C., WHITFIELD, W.J., NEITZEL, W.E., et al. Standard tests for laminar flow devices. Tech. Memo. (SC-TM-64-637). Albuquerque, N. Mex., Sandia Corp., June 1964. 34 p. 5 Refs.
114. McDADE, J.J. The microbiological profile of clean rooms. Space Programs Summary 3229. Vol. IV. Pasadena, Calif., Jet Propulsion Lab., Oct. 31, 1964. p. 8-13.
115. McDADE, J.J. and HALL, L.B. Effect of the environment on virulence. Natl. Conf. on Institutionally Acquired Infections, Minneapolis, Minn., (Sept. 4-5-6, 1963). PHS (Publ. No. 1188). Wash. D.C. Publ. Health Serv., U.S. Dept. HEW. 1964. Proceedings. p. 91-97.
116. PHILLIPS, G.B. Control of microbiological hazards in the laboratory. Eleventh Natl. Conf. on Campus Safety. Monograph No. 19. Chicago, Ill., Natl. Safety Council. 1964. Proceedings. p. 31-50.

117. PORTNER, D.M. The level of microbial contamination in a clean room during a one year period. (PBR Test No. 11-65). Ft. Detrick, Md., U.S. Army Biol. Labs. Dec. 4, 1964. 20 p.
118. PORTNER, D.M., HOFFMAN, R.K., BUCHANAN, L.M., et al. Microbial contamination in a clean room when occupied by operating personnel. (PBR Test No. 1-65). Ft. Detrick, Md., U.S. Army Biol. Labs., Aug. 12, 1964.
119. RUBBO, S.M. Liberation of organisms from contaminated textiles. Jour. of Hyg. 61: 507-513. 1964.
120. SCHMITT, W.H. Control and analysis of particulate matter by membrane filtration. Bull. of the Parenteral Drug Assoc. 18(6): 25-31. 1964.
121. SHAFFER, J.G. and McDADE, J.J. The microbiological profile of a new hospital. 1. Hospitals. Jour. Amer. Hosp. Assoc. 38: 40-51. Mar. 1, 1964.
122. SHAFFER, J.G. and McDADE, J.J. The microbiological profile of a new hospital. 2. Hospitals. Jour. Amer. Hosp. Assoc. 38: 69-74. Mar. 16, 1964.
123. TREXLER, P.C. Microbic contamination control. Bull. of the Parenteral Drug Assoc. 18: 8-12. 1964.
124. VESLEY, D. Surface sampling techniques for the institutional environment--Present status. Natl Conf. on Institutionally Acquired Infections, Minneapolis, Minn., (Sept. 4-5-6, 1963). PHS (Publ. No. 1188). Wash. D.C., Publ. Health Serv., U.S. Dept. HEW. 1964. Proceedings. p. 101-103.
125. WEDUM, A.G. Laboratory safety in research with infectious aerosols. Publ. Health Repts 79(7): 619-633. July 1964. 70 Refs.
126. WEDUM, A.G. Airborne infection - How important for public health. II. Airborne infection in the laboratory. Amer. Jour. Publ. Health 54: 1669-1673. 1964.

127. WEDUM, A.G. and PHILLIPS, G.B. Criteria for design of a microbiological research laboratory. Jour. of the Amer. Soc. of Htg. Ref. and Air Cond. Engrs. Inc. Feb. 1964. 8 p. 17 Refs.
128. WHITFIELD, W.J., MASHBURN, J.C., NETTZEL, W.E., et al. Basic design requirements for laminar air flow dust control devices. Rept. (SC-64-145A). Albuquerque, N. Mex., Sandia Corp., May 1964. (Rev. Aug. 1964). 24 p.

1963

129. AGNEW, B. Laminar/Flow Clean Room Handbook. Garden Grove, Calif., Agnew Higgins, Inc. 1963.
130. AIBA, S., NISHIKAWA, S. and IKEDA, H. A new type of air sterilization filter. Jour. Gen. Appl. Microbiol. 9: 267-279. 1963.
131. ALG, R.L., HARRIS, G.J. and BARBEITO, M.S. Disinfection of microbial aerosol chamber with beta-propiolactone. Tech. Rept. 35. Ft. Detrick, Md., U.S. Army Biol. Labs. 1963.
132. ANDERSON, J.S. Quantitative detection of surface contaminants. Jour. Amer. Assoc. Contamination Control 11(6): 9. 1963.
133. BARRETT, J.P., Jr. See also #186.
134. BOND, R.G., HALBERT, M.M., KEENAN, K.M., et al. Development of a method for microbial sampling of surfaces with special reference to reliability. Final Rept. (PH-86-62-182). U.S. Dept. HEW, July 1963.
135. GODDARD, K.R. A procedure for microbiological testing of air filters. ASHRAE (Amer. Soc. of Htg. Ref. and Air Cond. Engrs., Inc.). Jour. Feb. 1963. 8 p. 12 Refs.
136. HAMILTON, H.A. Are clean rooms really necessary? Jour. Amer. Assoc. Contamination Control 11(8): 15. 1963.
137. HARRIS-SMITH, R., PIRT, S.J. and FINMAN, J.R. A ventilated germ-free cabinet for the microbiological laboratory. Biotechnol. Bioeng. 5: 53-58. 1963.
138. HOF, G.J. Present practices in the verification of cleanliness. Tech. Memo. (SCTM 147-63(25)). Albuquerque, N. Mex., Sandia Corp., 19 p. 17 Refs. Sept. 1963.
139. JEMSKI, J.V. and PHILLIPS, G.B. Microbiological safety equipment. Lab. Animal Care 13: 2-12. 1963.



140. KETHLEY, T.W., COWN, W.B. and FINCHER, E.L. Operating room ventilation evaluated. Architectural Record, Mar. 1963. 5 p. 7 Refs.
141. LANDY, J.J. Treatment of the burned patient: Use of the germfree plastic isolator as a barrier against hospital pathogens. Southern Med. Jour. 56: 1084-1088. 1963.
142. LIEBERMAN, A. Cleaniness versus need. Conference on Clean Room Specifications. Rept. (SCR-652). Albuquerque, N. Mex., Sandia Corp., Apr. 9-10, 1963. Proceedings. p.17-24
143. MARSH, R.C. The adaptability of laminar air flow for contamination control. Rept. (SCR-691). Albuquerque, N. Mex., Sandia Corp., July 1963. 8 p.
144. NATL. AERONAUT. & SPACE ADMIN. Unmanned Spacecraft Decontamination Policy. NASA Manual No. 4-4-1. Wash. D.C. Sept. 9, 1963.
145. PHILLIPS, G.B. and JEMSKI, J.V. Biological safety in the animal laboratory. Lab. Animal Care 13: 13-20. 1963.
146. PILGRIM, H.I. and THOMPSON, D.B. An inexpensive, autoclavable germ-free mouse isolator. Lab. Animal Care 13: 602-608. 1963.
147. TREXLER, P.C. An isolator system for control of contamination. Lab. Animal Care 13: 572-581. 1963.
148. USAF. Standards and guidelines for the design and operation of clean rooms and clean work stations. Tech. Order 00-25-203. Olmsted AFB, Pa. MAMA (AEPD) July 1, 1963.
149. U.S. GOVERNMENT. Clean room and work station requirements, controlled environment. Federal Standard No. 209. Dec. 10, 1963. 21 p.
150. WHITFIELD, W.J. State of the art (Contamination Control) and laminar airflow concept. Rept. (SCR-652). Conference on Clean Room Specifications. Albuquerque, N. Mex., Sandia Corp. Apr. 9-10, 1963. Proceedings. p.73-86

151. WHITFIELD, W.J. The design of a dust-controlled vented hood utilizing laminar air flow. Rept. (SC-4905(RR)). Albuquerque, N. Mex., Sandia Corp. June 1963. 20 p.
152. WHITFIELD, W.J., MASHBURN, J.C. and NEITZEL, W.E. New ways to control airborne contamination. Rept. (SCR-585). Albuquerque, N. Mex., Sandia Corp. Mar. 1963. 6 p.
153. WHITFIELD, W.J., NEITZEL, W.E., MASHBURN, J.C., et al. Evaluation of a curtained laminar down-flow clean room. Dev. Rept. (SCDR 221-63). Albuquerque, N. Mex., Sandia Corp. Aug. 1963. 15 p.

1962

154. AIBA, S. Design of fibrous air sterilization filters. Jour. Gen. Appl. Microbiol. 8: 169-177. 1962.
155. ARMBRUSTER, E.H. Evaluation of surface contamination. Jour. Environ. Health 25: 26-29. 1962.
156. CALIFORNIA, STATE OF. Cleaning, disinfection and sterilization. Berkeley, Calif., Dept. of Public Health, Bur. of Hospitals. 1962. 42 p. 18 Refs.
157. COLE, W.R. and HARVEY, R.B. Quantitative air sampling. Surgery 51: 658-662. 1962.
158. GARDEN, N.B. (Editor). Report on glove boxes and containment enclosures. Rept. (TID-16020). Wash. D.C. U.S. Atomic Energy Commission. June 20, 1962.
159. GREENE, V.W., VESLEY, D., BOND, R.G., et al. Microbiological contamination of hospital air. I. Quantitative studies. Appl. Microbiol. 10(6): 561-566. Nov. 1962.
160. GREENE, V.W., VESLEY, D., BOND, R.G., et al. Microbiological contamination of hospital air. II. Qualitative studies. Appl. Microbiol. 10(6): 567-571. Nov. 1962.
161. GREENE, V.W., VESLEY, D. and KEENAN, K.M. New method for microbiological sampling of surfaces. Jour. Bacteriol. 84: 188-189. 1962.
162. HALL, L.B. Patient accident causes and their control. 3. Sanitation: A part of the hospital program. Indust. Med. & Surg. 31(5): 223-225. May 1962. 10 Refs.
163. HALL, L.B. Air sampling for hospitals. Hospital Topics 40(6): 97-100. June 1962. 4 p.
164. LEVENSON, S.M., TREXLER, P.C., MALM, O.J., et al. A plastic isolator for operating in a sterile environment. Amer. Jour. of Surg. 104: 891-899. Dec. 1962.

165. MARSH, R.C. A comparison of dust count data obtained from different measuring methods. Special Tech. (Publ. #342). Amer. Soc. for Testing Matls., 1962. p. 24-28. 6 Refs.
166. MARSH, R.C. and WHITFIELD, W.J. Operating Manual for the Sandia clean bench. Rept. (SC-4733(M)). Albuquerque, N. Mex., Sandia Corp. Nov. 1962. 15 p.
167. MASHBURN, J.C., NEITZEL, W.E. and WHITFIELD, W.J. A portable clean work station. Rept. (SC-4690(RR)). Albuquerque, N. Mex., Sandia Corp. June 1962. 11 p.
168. SHAFFER, J.G. and McDADE, J.J. Airborne Staphylococcus aureus. A possible source in air control equipment. Arch. Environ. Health 5: 547-551. 1962.
169. WHITFIELD, W.J. A new approach to clean room design. Rept. (SC-4673-(RR)). Albuquerque, N. Mex., Sandia Corp. Mar. 1962. 28 p.

1961

170. BREWER, J.H. and McLAUGHLIN, C.B. Dehydrated sterilizer controls containing bacterial spores and culture media. Jour. of Pharmaceut. Sciences 50(2): 171-172. Feb. 1961.
171. BROWN, A.E. A portable protective cabinet for handling infective material. Jour. Med. Lab. Technol. 18: 272-275. 1961.
172. BRUCH, C.W. Decontamination of enclosed spaces with beta-propiolactone vapor. Amer. Jour. of Hyg. 73(1): 1-9. Jan. 1961. 15 Refs.
173. CHATIGNY, M.A. Protection against infection in the microbiological laboratory, devices and procedures. IN: UMBREIT, WAYNE W., Editor. Advances in Applied Microbiology, Vol. 3. New York, N.Y., Academic Press, 1961. p. 131-192.
174. U.S.ARMY-FT. DETRICK. Technical requirements for the design of bacteriological facilities. Ft. Detrick, Md., U.S. Army Chemical Corp. Biological Labs., Tech. Eng. Div., May 1, 1961.
175. WEDUM, A.G. Control of laboratory airborne infection. Bacteriol. Rev. 25: 210-216. 1961.

1960

176. ALG, R.L., BARBEITO, M.S. and HARRIS, G.J. Disinfection of aerosol chambers with beta-propiolactone. Proj. (4B11-05-015-01). Ft. Detrick, Md., U.S. Army Biological Labs. July 1960.
177. BLICKMAN, B.I. and LANAHAN, T.B. Ventilated work cabinets reduce laboratory risks. Safety Maintenance 120: 34-36, 44-45. 1960.
178. CHANDLER, G.I. Bibliographical study on dust control engineering: Methods, equipment and applications. Autonetics, Mar. 31, 1960.
179. GILES, F.J., Jr. Laboratory hoods - Their design and application. Safety Monograph No. 6. Third National Conference on Campus Safety, Chicago, Ill., National Safety Council. 1960. Proceedings. 5 p.
180. GREMILLION, G.G. The use of bacteria-tight cabinets in the infectious disease laboratory. Second Symp. Gnotobiotic Technol., Notre Dame, Ind., U. of Notre Dame Press. 1960. Proceedings. p. 171-182.
181. SCHLEY, D.G., HOFFMAN, R.K. and PHILLIPS, C.R. Simple improvised chambers for gas sterilization with ethylene oxide. Appl. Microbiol. 8: 15-19. 1960.
182. SPINER, D.R. and HOFFMAN, R.K. Method for disinfecting large enclosures with beta-propiolactone vapor. Appl. Microbiol. 8: 152-155. 1960. 8 Refs.
183. TREXLER, P.C. Flexible-wall plastic film isolators. Second Symp. Gnotobiotic Tech., Notre Dame, Ind., Univ. of Notre Dame Press. 1960. Proceedings. p. 55-60.
184. TREXLER, P.C. Sterile rooms. Second Symp. Gnotobiotic Technol., Notre Dame, Ind., Univ. of Notre Dame Press. 1960. Proceedings. p. 121-125.

1959.

185. ALLEN, H.F. Air hygiene for hospitals. II. Efficiency of fibrous filters against Staphylococcic droplet nuclei and bacteria-bearing dust. Jour. Amer. Med. Assoc. 170: 261-267. May 16, 1959.
186. BARRETT, J.P., Jr. Sterilizing agents for LOBUND flexible film apparatus. Proc. Animal Care Panel 9: 127-133. 1959.
187. COULING, C.W. and REES, R.J.W. A protective cabinet for the post-mortem examination of infected animals. Jour. Hyg. 57: 407-409. 1959.
188. DAVEY, D.G. Establishing and maintaining a colony of specific pathogen-free mice, rats and guinea pigs. Lab. Animal Centre Collected Papers 8: 17-39. 1959.
189. GUSTAFSON, B.E. Lightweight stainless steel systems for rearing germ-free animals. Ann. N.Y. Acad. Sci. 78(1): 17-28. May 8, 1959.
190. HOFFMAN, R.K., KAYE, S. and FEAZEL, C.E. Sporocidal surface coatings. Official Digest, Federation of Paint and Varnish Production Clubs. Aug. 1959. 12 p.
191. LIDWELL, O.M. Impaction sampler for size grading airborne bacteria-carrying particles. Jour. Sci. Instr. 36(3): 1959.
192. MITCHELL, R.I. and PILCHER, J.M. Improved cascade impactor for measuring aerosol particle sizes in air, pollutants, commercial aerosols, and cigarette smoke. Indust. Eng. Chem. 51: 1039-1042. 1959.
193. REYNIERS, J.A. Design and operation of apparatus for rearing germ-free animals. Ann. N.Y. Acad. Sci. 78(1): 47-79. May 8, 1959.
194. TREXLER, P.C. The use of plastics in the design of isolator systems. Ann. N.Y. Acad. Sci. 78: 29-35. May 8, 1959.
195. WOLF, H.W., SKALIY, P., HALL, L.B., et al. Sampling microbiological aerosols. Public Health Monograph No. 60. Publ. Health Serv., U.S. Dept. HEW. 1959. 53 p. 82 Refs.

1958

196. ANDERSEN, A.A. A new sampler for the collection, sizing, and enumeration of viable airborne particles. Jour. Bacteriol. 76: 471-484. 1958.
197. ANGELOTTI, R. and FOTER, M.J. A direct surface agar plate laboratory method for quantitatively detecting bacterial contamination on non-porous surfaces. Food Res. 23: 170-174. 1958.
198. ANGELOTTI, R., FOTER, M.J., BUSCH, K.A., et al. A comparative evaluation of methods for determining the bacterial contamination of surfaces. Food Res. 23: 175-185. 1958.
199. FREDETTE, V. The bacteriological efficiency of air conditioning systems. Can. Jour. Surg. 1(3): 226-229. Apr. 1958.
200. HOFFMAN, R.K. and WARSHOWSKY, B. Beta-propiolactone vapor as a disinfectant. Appl. Microbiol. 6(5): 358-362. Sept. 1958.  
9 Refs.



1957

201. GORDIEYEFF, A.V. Studies of dispersion of solids as dust aerosols. A.M.A. Arch. Ind. Health 15: 510. 1957.
202. LIND, A. Ventilated cabinets in a tuberculosis laboratory. Bull. World Health Organ. 16: 448-453. 1957.
203. PHILLIPS, G.B., REITMAN, M., MULLICAN, C.L., et al. Applications of germicidal ultraviolet in infectious disease laboratories. III. The use of ultraviolet barriers on animal cage racks. Proc. Animal Care Panel 7: 235-244. 1957.
204. REYNIERS, J.A. The control of contamination in colonies of laboratory animals by the use of germfree techniques. Proc. Animal Care Panel 7: 9-29. 1957.
205. TREXLER, P.C. and REYNOLDS, L.I. Flexible film apparatus for the rearing and use of germ-free animals. Appl. Microbiol. 5(6): 406-412. 1957.
206. WEDUM, A.G. Development of specialized safety equipment in conjunction with biological warfare R and D programs. 12th Annual Mtg. Armed Forces Chem. Assoc., Wash. D.C. 1957.
207. WILLIAMS, R.E.O. and LIDWELL, O.M. A protective cabinet for handling infective material in the laboratory. Jour. Clin. Pathol. 10: 400-402. 1957.

1956

208. HERMAN, L.G. and MORELLI, F.A. Air sampling techniques in the hospital environment. *Bacteriol. Proceedings*, p. 114. 1956.
209. PHILLIPS, G.B. and NOVAK, F.E. Applications of germicidal ultraviolet in infectious disease laboratories. II. An ultraviolet pass-through chamber for disinfecting single sheets of papers. *Appl. Microbiol.* 4: 95-96. 1956.
210. REITMAN, M. and WEDUM, A.G. Microbiological safety. *Public Health Reports* 71: 659-665. 1956.
211. WEDUM, A.G., HANEL, E., PHILLIPS, G.B., et al. Laboratory design for study of infectious disease. *Amer. Jour. of Public Health* 46(9): 1102-1113. Sept. 1956. 31 Refs.
212. WEDUM, A.G., HANEL, E., and PHILLIPS, G.B. Ultraviolet sterilization in microbiological laboratories. *Public Health Repts* 71: 331-336. 1956.
213. WILLIAMS, R.E.O., LIDWELL, O.M., and HIRCH, A. The bacterial flora of the air of unoccupied rooms. *Jour. Hyg.* 54(4): 512-523. Dec. 1956.

1955

214. BRYCE, D.M. Tests for the sterility of pharmaceutical preparations: The design and interpretation of sterility tests. Jour. Pharm. Pharmacol. 8: 561-572. 1955.
215. HOFFMAN, R.K., YEAGER, S.B. and KAYE, S. A method for testing self-disinfecting surfaces. Soap & Chemical Specialties. Aug. 1955. 5 p. 28 Refs.
216. MILLER, O.T., SCHMITT, R.F. and PHILLIPS, G.B. Applications of germicidal ultraviolet in infectious disease laboratories. I. Sterilization of small volumes of air by ultraviolet radiation. Amer. Jour. Public Health 45: 1420-1423. 1955.
217. PHILLIPS, G.B., NOVAK, F.E. and ALG, R.L. Portable inexpensive plastic safety hood for bacteriologists. Appl. Microbiol. 3(4): 216-217. July 1955.
218. WALTER, W.G. Symposium on methods for determining bacterial contamination on surfaces. Bacteriol. Rev. 19: 284-287. 1955.

1954

219. JENSEN, K.A. Towards a standardization of laboratory methods. Bull. Intern. Union Against Tuberc. 24: 78. 1954.
220. SHERFEY, J.M. Concerning the types of dry boxes commercially available. Indust. Eng. Chem. 46: 435. 1954.

1953

221. KLARMANN, E.G., WRIGHT, E.S. and SHTERNOV, V.A. Prolongation of the antibacterial potential of disinfected surfaces. Appl. Microbiol. 1: 19-23. 1953.
222. WEDUM, A.G. Bacteriological safety. Amer. Jour. Public Health 43(11): 1428-1437. Nov. 1953.

1952

223. DECKER, H.M., GEILE, F.A., HARSTAD, J.B., et al. Spun glass air filters for bacteriological cabinets, animal cages and shaking machine-containers. Jour. Bacteriol. 63: 377-383. 1952.

1948

224. BREWER, J.H. Aseptic operation and control of ampul filling rooms. Jour. of the Amer. Pharmaceut. Assoc. Scientific Edition XXXVII(10): 415-420. Oct. 1948.
225. DALLAVALLE, J.M. Micrometrics: The technology of fine particles. New York City, N.Y., Pitman Publishing Corp. 1948.
226. DUGUID, J.P. and WALLACE, A.T. Air infection with dust liberated from clothing. Lancet 2: 845-849. 1948.

1945

227. SHEPARD, C.C., MAY, C.W. and TOPPING, N.H. A protective cabinet for infectious disease laboratories. Jour. Lab. Clin Med. 30: 712-716. 1945.

1943

228. REYNIERS, J.A. Introduction to the general problems of isolation and elimination of contamination micrurgical and germ-free techniques. Springfield, Ill., Charles C. Thomas Co. 1943. p. 95-113.

1939

229. WELLS, W.F., WELLS, M.W. and MUDD, S. Infection of air: Bacteriological and epidemiologic factors. Amer. Jour. Public Health 29(8): 863-879. Aug. 1939.

### III. Permuted Index

Key words in the title of each of the articles referenced in this work have been rotated to the beginning of the title and alphabetized.

Thus, if one should search for "microbiological barrier techniques" it would appear alphabetically at the beginning of the line for all titles in which it actually occurs.

The number at the right refers to the bibliographical citation number.

Accident causes and their control/Patient	162
Accumulation on surfaces in industrial clean rooms/Microbial	13
Acoustic particle counter/A further development of an	29
Adhesion test for surface cleanliness/Improvements in the use of th	109
Aerial fallout/Comparative levels and survival of naturally occurri	72
Aerosol challenge of animals/	103
Aerosol chamber with beta-propiolactone/Disinfection of microbial	131
Aerosol chambers with beta-propiolactone/Disinfection of	176
Aerosol counters and photometers measure/What	21
Aerosol filtration/Aerosol properties and	54
Aerosol particle counter for measuring the airborne contamination 1	31
Aerosol particle sizes in air, pollutants, commercial aerosols, and	192
Aerosol properties and aerosol filtration/	54
Aerosols, and cigarett smoke/Improved cascade impactor for measurin	192
Aerosols in a large animal isolation facility/Role of differential	53
Aerosols/Laboratory safety in research with infectious	125
Aerosols/Sampling microbiological	195
Aerosols/Studies of dispersion of solids as dust	201
Aerospace hardware/Films vs. foil for clean packaging of	1
Aerospace industry/Cleaning in the	18
Agar plate laboratory method for quantitatively detecting bacterial	197
Agents for LOBUND flexible film apparatus/Sterilizing	186
Air: bacteriological and epidemiologic factors/Infection of	229
Air cleaning/Two theoretical considerations for practical	108
Air conditioning systems/The bacteriological efficiency of	199
Air control equipment/Airborne <u>Staphylococcus aureus</u> . A possible so	168
Air filters for bacteriological cabinets, animal cages and shaking	223
Air flow dust control devices/Basic design requirements for laminar	128
Air flow/Surgical application of laminar clean	15
Air flow/The design of a dust-controlled vented hood utilizing lami	151
Air for control of static charges/Ionized	4
Air hygiene for hospitals. Efficiency of fibrous filters against St	185
Air: its importance and control/	105
Air/Microbiological contamination of hospital	159
Air/Microbiological contamination of hospital	160
Air of unoccupied rooms/The bacterial flora of the	213
Air, pollutants, commercial aerosols, and cigarette smoke/Improved	192
Air pressure zones in the control of aerosols in a large animal iso	53
Air quality specifications (Microbial): the sampling problem/	82
Air sampling for hospitals/	163
Air sampling/Quantitative	157
Air sampling techniques in a hospital environment/	208
Air sterilizing filter for germfree units/A device for the external	110
Air sterilization filter/A new type of	130
Air sterilization filters/Design of fibrous	154
Air/Test new electric incinerator design for sterilizing laboratory	102
Airborne bacteria--carrying particles/Impaction sampler for size gr	191
Airborne bacteria in clean rooms/Dispersion of	8
Airborne contamination level in a controlled environment/Evaluation	31
Airborne contamination/New ways to control	152
Airborne infection/Control of laboratory	175
Airborne infection-how important for public health. Airborne infect	126
Airborne particles/A new sampler for the collection, sizing, and en	196
Aircraft hydraulic contamination control/	47
Airflow concept/State of the art (Contamination control) and lamina	150

Analysis of clean room practices/	22
Analysis of particulate matter by membrane filtration/Control and Analyzer/A freon TF solvent residue	120
Animal facilities/Laboratory	83
Animal isolation facility/Role of differential air pressure zones i	81
Animal laboratory/Biological safety in the	53
Animals/Aerosol challenge of	145
Animals by the use of germfree techniques/The control of contaminat	103
Animals/Design and operation of apparatus for rearing germfree	204
Animals/Flexible film apparatus for the rearing and use of germ-free	193
Animals/Lightweight and stainless steel systems for rearing germ-fr	205
Antibacterial potential of disinfected surfaces/Prolongation of the	189
Apollo contamination control handbook/Introduction to	221
Apparatus for rearing germfree animals/Design and operation of	6
Apparatus for the rearing and use of germ-free animals/Flexible fil	193
Apparatus/Sterilizing agents for LOBUND flexible film	205
Application/Laboratory hoods-their design and	186
Application to solvent cleaning/Cleanliness meter and its	179
Applications/Bibliographical study on dust-control engineering:Meth	34
Applications of germicidal ultraviolet in infectious disease labora	178
A-prime surveys/	203
Assay technique/Visual monitoring as an	60
Assembly and sterilization laboratory/Experimental	70
Assembly and sterilization laboratory/Microbiological studies condu	24
Assembly areas needed for spacecraft sterilization/Microbial contro	36
Assembly areas/Survival of surface-exposed microorganisms in spacec	90
Assembly/Clean room for spacecraft	41
Assembly/Compatibility of sterilization and contamination control w	63
Assembly of spacecraft/The assembly-sterilizer-a facility for the s	99
Assembly practices guide/Clean	9
Assembly-sterilizer--a facility for the sterilization and assembly	75
Assembly techniques/Experimental study of sterile	9
Astronaut White's walk in space/Cleaning the "zip" gun for	79
Atmospheres/Experimental derivation of health standards for contami	48
Atmospheric rocket payload/Contamination control during design, fab	51
Autoclavable germfree mouse isolator/An inexpensive,	3
Automatic aerosol particle counter for measuring the airborne conta	146
	31
Bacteria in clean rooms/Dispersion of airborne	8
Bacteria/Surface sampling for	74
Bacteria-tight cabinets in the infectious disease laboratory/The us	180
Bacterial contamination of space components/Laboratory for monitori	44
Bacterial contamination on surfaces in hospitals/Measurement of the	101
Bacterial contamination on surfaces/Symposium on methods for determ	218
Bacterial flora of the air of unoccupied rooms/The	213
Bacterial spores and culture media/Dehydrated sterilizer controls c	170
Bacteriological and epidemiologic factors/Infection of air:	229
Bacteriological efficiency of air controlling systems/The	199
Bacteriological facilities/Technical requirements for the design of	174
Bacteriological safety/	222
Bacteriology of clean rooms/The	38
Barrier against hospital pathogens/Treatment of the burned patient:	141
Barrier concept in the control of microorganisms/Absolute	42
Barrier equipment and techniques/Microbiological	43
Barrier techniques/Microbiological	86



Beta-propiolactone/Disinfection of aerosol chambers with	176
Beta-propiolactone/Disinfection of microbial aerosol chamber with	131
Beta-propiolactone vapor as a disinfectant/	200
Beta-propiolactone vapor/Decontamination of enclosed spaces with	172
Beta-propiolactone vapor/Method for disinfecting large enclosures w	182
Bibliographical study on dust-control engineering: methods, equipme	178
Bibliography from the literature retrieval system/Sterilization-a s	40
Bibliography/Microbiological safety	88
Bioclean facilities/Survey of	92
Biological decontamination of a spacecraft system/	30
Biological processing building/Design, construction and operation e	107
Biological safety in the animal laboratory/	145
Biological warfare R and D program/Development of specialized safet	206
Building/Design, construction and operation of a sterile biological	107
Burned patient: use of the germfree plastic isolators as a barrier	141
Cabinet for handling infective material/A portable protective	171
Cabinet for handling infective material in the laboratory/A protect	207
Cabinet for infectious disease laboratories/A protective	227
Cabinet for the microbiological laboratory/A ventilated germ-free	137
Cabinet for the post-mortem examination of infected animals/A prote	187
Cabinets, animal cages and shaking machine-containers/Spun glass ai	223
Cabinets in a tuberculosis laboratory/Ventilated	202
Cabinets in the infectious disease laboratory/The use of bacteria-t	180
Cabinets reduce laboratory risks/Ventilated work	177
Cages and shaking machine-containers/Spun glass air filters for bac	223
Chamber with beta-propiolactone/Disinfection of microbial aerosol	131
Chambers for gas sterilization with ethylene-oxide/Simple improvise	181
Chambers with beta-propiolactone/Disinfection of aerosol	176
Characteristics of the Royco Model PC200A particle counter/Modifica	33
Charges/Ionized air for control of static	4
Chemical laboratory. microbiological hazards in the laboratory. par	85
Chemical method for the detection of leaks in flexible isolators/A	104
Class 100 clean room/Monitoring a	62
Class 100 down-flow room/Operation of a	16
Clean air flow/Surgical application of laminar	15
Clean assembly practices guide/	75
Clean-bench/Operating manual for the Sandia	166
Clean packaging of aerospace hardware/Film vs. foil for	1
Clean room and work station requirements, controlled environment/	59
Clean room and work station requirements, controlled environment/	149
Clean room concept in the control of microorganisms/	35
Clean room design/A new approach to	169
Clean room during a one year period/The level of microbial contamin	117
Clean room/Evaluation of a curtained laminar down-flow	153
Clean room for spacecraft assembly/	63
Clean room/Monitoring a class 100	62
Clean room/One year's experience on a laminar flow	50
Clean room practices/Analysis of	22
Clean room/Preliminary report on microbiological studies in a lamin	65
Clean room to dust and fume control in a developmental plastics fac	25
Clean room when occupied by operating personnel/Microbial contamina	118
Clean rooms-a classified list of selected references 1955-1964/Desi	100
Clean rooms and clean work stations/Standards and guidelines for th	148
Clean rooms/Comparative levels and types of microbial contamination	12
Clean rooms/Design and operation of	66

Clean rooms/Dispersion of airborne bacteria in	8
Clean rooms/Microbial accumulation on surfaces in industrial	13
Clean rooms/Microbial contamination in	89
Clean rooms/Microbial profile of laminar flow	91
Clean rooms/Personnel emissions in laminar flow	2
Clean rooms/The bacteriology of	38
Clean rooms/The microbiological profile of	114
Clean-work station/A portable	167
Cleaning/Cleanliness meter and its application to solvent	34
Cleaning/Combining laminar flow with closed-loop	20
Cleaning, disinfection and sterilization/	156
Cleaning in the aerospace industry/	18
Cleaning of corrosion-resistant steel tubing for lox and pneumatic	10
Cleaning of thermal-vacuum systems/Maintenance	45
Cleaning the "Zip" gun for astronaut White's walk in space/	48
Cleaning tubes for the Saturn S-1B/	5
Cleaning/Two theoretical considerations for practical air	108
Cleanliness/Improvements in the use of the indium adhesion test for	109
Cleanliness in packaging films/A standard method for determination	19
Cleanliness meter and its application to solvent cleaning/	34
Cleanliness/Present practices in the verification of	138
Cleanliness vs. need. conference on clean room specifications/	142
Clinical experience with patient isolation/A summary of three years	37
Closed-loop cleaning/Combining laminar flow with	20
Clothing/Air infection with dust liberated from	226
Coatings/Sporicidal surface	190
Collection, sizing, and enumeration of viable airborne particles/A	196
Colonies of laboratory animals by the use of germfree techniques/T	204
Colony of specific pathogen-free mice, rats and guinea pigs/Establ	188
Compatability characteristics of trichlorotrifluoroethane/Stabilit	14
Components/Laboratory for monitoring bacterial contamination of sp	44
Construction and operation experiences of a sterile biological pro	107
Construction of a laminar flow operating room/Design	52
Contact/Spacecraft contamination resulting from human	95
Containers for planetary landers/Design requirements for the steri	94
Containers/Spun glass air filters for bacteriological cabinets, an	223
Containment enclosures/Report on glove boxes and	158
Containments/Quantitative detection of surface	132
Contaminated atmospheres/Experimental derivation of health standars	51
Contaminated textiles/Liberation of organisms from	119
Contamination/An isolator system for control of	147
Contamination and system failure/Relationships between	7
Contamination control: a state of the art report/Micrbiological	87
Contamination control/Aircraft hydraulic	47
Contamination control and industrial problems/	64
(Contamination control) and laminar airflow concept/State of the ar	150
Contamination control and medical problems/	64
Contamination control considerations for designers and manufacturin	67
Contamination control during design, fabrication, test and launch o	3
Contamination control features of a precision photogrammetric labor	49
Contamination control handbook/Introduction to Apollo	6
Contamination control/Microbic	123
Contamination/Control of microbial	84
Contamination control of spacecraft/Microbiological	64
Contamination control/The adaptability of laminar air flow for	143
Contamination control with application to spacecraft assembly/Compa	99

Contamination detected in industrial clean rooms/Comparative levels	12
Contamination/Evaluation of surface	155
Contamination from stainless steel surfaces/Comparative evaluation	97
Contamination in a clean room during a one year period/The level of	117
Contamination in a clean room when occupied by operating personnel/	118
Contamination in clean rooms/Microbial	89
Contamination in colonies of laboratory animals by the use of germf	204
Contamination in the surgical suites of 23 hospitals/Survey of micr	98
Contamination level in a controlled environment/Evaluation of an au	31
Contamination micrurgical and germ-free techniques/Introduction to	228
Contamination/New ways to control airborne	152
Contamination of hospital air/Microbiological	159
Contamination of hospital air/Microbiological	160
Contamination of space components/Laboratory for monitoring bacteri	44
Contamination of surfaces/A comparative evaluation of methods for d	198
Contamination on flat surfaces/Effect of time and temperature in as	61
Contamination on non-porous surfaces/A direct surface agar plate la	197
Contamination on space hardware/Assessment of microbial	11
Contamination on surfaces in hospitals/Measurement of the bacterial	101
Contamination on surfaces/Symposium on methods for determining bact	218
Contamination resulting from human contact/Spacecraft	95
Contamination to which spacecraft are subjected during manufacture/	73
Control: a state of the art report/Microbiological contamination	87
Control/Air: its importance and	105
Control airborne contamination/New ways to	152
Control/Aircraft hydraulic contamination	47
Control and analysis of particulate matter by membrane filtration/	120
Control and industrial problems/Contamination	64
Control) and laminar airflow concept/State of the art (Contaminatio	150
Control and medical problems/Contamination	64
Control considerations for designers and manufacturing engineers/Co	67
Control devices/Basic design requirements for laminar air flow dust	128
Control during design, fabrication, test and launch of an upper atm	3
Control equipment/Airborne <u>Staphylococcus aureus</u> . a possible source	168
Control features of a precision photogrammetric laboratory/Contamin	49
Control handbook/Introduction to Apollo contamination	6
Control in assembly areas needed for spacecraft sterilization/Micro	90
Control/Microbic contamination	123
Control of aerosols in a large animal isolation facility/Role of di	53
Control of ampul filling rooms/Aseptic operation and	224
Control of contamination/An isolator system for	147
Control of contamination in colonies of laboratory animals by the u	204
Control of laboratory airborne infection/	175
Control of microbial contamination/	84
Control of microbiological hazards in the laboratory/	116
Control of microorganisms/Absolute barrier concept in the	42
Control of microorganisms/Clean room concept in the	35
Control of spacecraft/Microbiological contamination	64
Control. part two-prevention/Safety in the chemical laboratory. mic	85
Control/Patient accident causes and their	162
Control/The adaptability of laminar air flow for contamination	143
Control with application to spacecraft assembly/Compatability of ste	99
Controlled environment/Clean room and work station requirements	149
Controlled environment/Evaluation of an automatic aerosol particle	31
Controls containing bacterial spores and culture media/Dehydrated s	170
Cross-examination by Staphylococcal and Pseudomonas organisms in bu	80

Counter/A further development of an acoustic particle	29
Counter for measuring the airborne contamination level in a control	31
Counter/Modifications for improving the response characteristics of	33
Counters and photometers measure/What aerosol	21
Corrosion-resistant steel tubing for lox and pneumatic service/The	10
Culture media/Dehydrated sterilizer controls containing bacterial	170
Data obtained from different measuring methods/A comparison of dust	165
Decontamination of a spacecraft system/Biological	30
Decontamination of enclosed spaces with beta-propiolactone vapor/	172
Decontamination policy/Unmanned spacecraft	144
Design/A new approach to clean-room	169
Design and application/Laboratory hoods - their	179
Design and interpretation of sterility tests/Tests for the sterilit	214
Design and operation of clean rooms and clean work stations/Standar	148
Design and operation of apparatus for rearing germfree animals/	193
Design and operation of clean rooms/	66
Design, construction and operation experiences of a sterile biologi	107
Design construction of a laminar flow operating room/	52
Design criteria for microbiological facilities at Ft. Detrick	57
Design criteria for microbiological facilities at Ft. Detrick	58
Design, fabrication, test and launch of an upper atmospheric rocket	3
Design for sterilizing laboratory air/Test new electric incinerator	102
Design for study of infectious disease/Laboratory	211
Design of a dust-controlled vented hood utilizing laminar air flow/	151
Design of a micrbiological research laboratory/Criteria for	127
Design of bacteriological facilities/Technical requirements for the	174
Design of clean rooms-a classified list of selected references 1955	100
Design of fibrous air sterilization filters/	154
Design of isolator systems/The use of plastics in the	194
Design requirements for laminar air flow dust control devices/Basic	128
Design requirements for the sterilization containers for planetary	94
Designers and manufacturing engineers/Contamination control conside	67
Designing for germ-free environments/	27
Detection and monitoring/Current state of the art in particle	32
Detection and quantitation of microbial contamination to which spac	73
Detection of leaks in flexible isolators/A simple chemical method f	104
Device for the external supply of sterile water and a simple air st	110
Devices, and procedures/Protection against infection in the microbi	173
Differential air pressure zones in the control of aerosols in a lar	53
Disease laboratories/Applications of germicidal ultra-violet in inf	203
Disease laboratory/The use of bacteria-tight cabinets in the infect	180
Disinfectant/Beta-propiolactone as a	200
Disinfected surfaces/Prolongation of the antibacterial potential of	221
Disinfecting large enclosures with beta-propiolactone vapor/Method	182
Disinfection and sterilization/Cleaning	156
Disinfection of aerosol chambers with beta-propiolactone/	176
Disinfection of microbial aerosol chamber with beta-propiolactone/	131
Dispersion of airborne bacteria in clean rooms/	8
Dispersion of solids as dust aerosols/Studies of	201
Down-flow clean to dust and fume control in a development plastics	25
Down-flow clean room/Preliminary report on microbiological studies	65
Down-flow room/Operation of a class 100	16

Dry boxes commercially available/Concerning the types of	220
Dust aerosols/Studies of dispersion of solids as	201
Dust/Air hygiene for hospitals. Efficiency of fibrous filters again	185
Dust and fume control in a developmental plastics facility/Applicat	25
Dust control devices/Basic design requirements for laminar air flow	128
Dust-control engineering: methods, equipment and applications/Bibli	178
Dust-controlled vented hood utilizing laminar air flow/The design o	151
Dust-count data obtained from different measuring methods/A compari	165
Dust liberated from clothing/Air infection with	226
Efficiency of air conditioning systems/The bacteriological	199
Efficiency of fibrous filters against Staphylococcic droplet nuclei	185
Electric incinerator design for sterilizing laboratory air/Test new	102
Elimination of contamination micrurgical and germ-free techniques/I	228
Enclosed spaces with beta-propiolactone vapor/Decontamination	172
Enclosures/Report on glove boxes and containment	158
Enclosures with beta-propiolactone vapor/Method for disinfecting la	182
Engineering and sanitation technology/Spacecraft sterilization--a n	76
Engineering: methods, equipment and applications/Bibliographical st	178
Engineers/Contamination control considerations for designers and ma	67
Enumeration of viable airborne particles/A new sampler for the coll	196
Environment/A plastic isolator for operating in a sterile	164
Environment/Air sampling techniques in the hospital	208
Environment/Clean room and work station requirements, controlled	149
Environment/Evaluation of an automatic aerosol particle counter for	31
Environment in surgical infections/A look at the role of the	23
Environment on virulence/Effect of the	115
Environment--present status/Surface sampling techniques for the ins	124
Environments/Designing for germ-free	27
Epidemiologic factors/Infection of air: bacteriological and	229
Equations/Experimental verification of ventilation	106
Equipment/Airborne <u>Staphylococcus aureus</u> . a possible source in air	168
Equipment and applications/Bibliographical study of dust control en	178
Equipment and techniques/Microbiological barrier	43
Equipment in conjunction with biological warfare R and D program/De	206
Equipment/Microbiological safety	139
Establishing and maintaining a colony of specific pathogen-free mic	188
Ethylene-oxide/Simple improvised chambers for gas sterilization wit	181
Evaluation of a curtained laminar down-flow clean room/	153
Evaluation of an automatic aerosol particle counter for measuring t	31
Evaluation of surface contamination/	155
Evaluation of the cotton swab method and Rodac Method for the recov	97
Evaluations of a patient isolator system/	93
Examination of space hardware/Standard procedures for the microbiol	39
Experience with patient isolation/A summary of three years' clinica	37
Experimental assembly and sterilization laboratory/	24
Experimental assembly and sterilization laboratory/Microbiological	36
Fabrication, test and launch of an upper atmospheric rocket payload	3
Facilities at Ft. Detrick/Design criteria for microbiological	57
Facilities at Ft. Detrick/Design criteria for microbiological	58

Facilities/Laboratory animal	81
Facilities/Technical requirements for the design of bacteriological	174
Facility for the sterilization and assembly of spacecraft/The assem	9
Facility/Role of differential air pressure zones in the control of	53
Failure/Relationships between contamination and system	7
Federal standard 209/Latest revisions to	26
Filling rooms/Aseptic operation and control of ampul	224
Films/A standard method for determination of particle cleanliness i	19
Films vs. foil for clean packaging of aerospace hardware/	1
Filter/A new type of air sterilization	130
Filter for germfree units/A device for the external supply of steri	110
Filters/A procedure for microbiological testing of air	135
Filters against Staphylococcic droplet nuclei and bacteria-bearing	185
Filters/Design of fibrous air sterilization	154
Filtration/Aerosol properties and aerosol	54
Filtration/Control and analysis of particulate matter by membrane	120
Flexible film apparatus for the rearing and use of germfree animals	205
Flexible isolators/A simple chemical method for the detection of le	104
Flexible-wall plastic film isolators	183
Flora of the air of unoccupied rooms/The bacterial	213
Flow devices/Standard tests for laminar	113
Flow for contamination control/The adaptability of laminar air	143
Foil for clean packaging of aerospace hardware/Films vs.	1
Freon TF solvent/A combination final rinsing station using	112
Freon TF solvent residue analyzer/A	83
Fume control in a developmental plastics facility/Application of a	25
Gas sterilization with ethylene-oxide/Simple improvised chambers fo	181
Germfree animals/Design and operation of apparatus for rearing	193
Germ-free animals/Flexible film apparatus for the rearing and use o	205
Germ-free animals/Lightweight stainless steel systems for rearing	189
Germ-free cabinet for the microbiological laboratory/A ventilated	137
Germ-free environments/Designing for	27
Germfree laboratory to special problems of patient care/Application	111
Germfree mouse isolator/An inexpensive, autoclavable	146
Germfree plastic isolator as a barrier against hospital pathogens/T	141
Germ-free techniques/Introduction to the general problems of isolat	228
Germfree techniques/The control of contamination in colonies of lab	204
Germfree units/A device for the external supply of sterile water an	110
Germicidal ultraviolet in infectious disease laboratories/Applicati	203
Germicidal ultraviolet in infectious disease laboratories/Applicati	209
Germicidal ultraviolet in infectious disease laboratories/Applicati	216
Glove-boxes and containment enclosures/Report on	158
Gnotobiotic isolator techniques to sterile insertion/Applications o	55
Gnotobiotic techniques to the sterilization problem/The application	56
Guide/Clean assembly practices	75
Guidelines for the design and operation of clean rooms and clean wo	148
Handbook/Introduction to Apollo contamination control	6
Handbook/Laminar flow clean room	129
Handling and aerial fallout/Comparative levels and survival of natu	72

Hardware/Assesment of microbial contamination on space	11
Hardware/Films vs. foil for clean packaging of aerospace	1
Hardware/Standard procedures for the microbiological examination of	39
Hazards in the laboratory/Control of microbiological	116
Hazards in the laboratory. part one-control. part two-prevention/Sa	85
Health. airborne infection in the laboratory/Airborne infection-how	126
Health standards for contaminated atmospheres/Experimental derivati	51
Hood for bacteriologists/Portable inexpensive plastic	217
Hoods-their design and application/Laboratory	179
Hood utilizing laminar air flow/The design of a dust-controlled ven	151
Hospital air/Microbiological contamination of	159
Hospital air/Micrbiological contamination of	160
Hospital environment/Air sampling techniques in the	208
Hospital isolation system for preventing cross-contamination by Sta	80
Hospital pathogens/Treatment of the burned patient: use of the germ	141
Hospital/The microbiological profile of a new	121
Hospital/The microbiological profile of a new	122
Hospitals/Air sampling for	163
Hospitals. efficiency of fibrous filters against Staphylococcic dro	185
Hospitals/Measurement of the bacterial contamination on surfaces in	101
Hospitals/Survey of microbial contamination on the surgical suites	98
Human contact/Spacecraft contamination resulting from	95
Hydraulic contamination control/Aircraft	47
Hygiene for hospitals. efficiency of fibrous filters against Staphy	185
Impaction sampler for size grading airborne bacteria-carrying parti	191
Impactor for measuring aerosol particle sizes in air, pollutants, c	192
Improved cascade impactor for measuring aerosol particle sizes in a	192
Incinerator design for sterilizing laboratory air/Test new electric	102
Indium adhesion test for surface cleanliness/Improvements in the us	109
Industrial clean rooms/Comparative levels and types of microbial co	12
Industrial clean rooms/Microbial accumulation on surfaces in	13
Industrial problems/Contamination control and	64
Industry/Cleaning in the aerospace	18
Infected animals/A protective cabinet for the post-mortem examinati	187
Infection/Control of laboratory airborne	175
Infection-how important for public health. airborne infection in th	126
Infection in the microbiological laboratory, devices and procedures	173
Infection of air: bacteriolofigal and epidemiologic factors/	229
Infection with dust liberated from clothing/Air	226
Infections/A look at the role of the environment in surgical	23
Infectious aerosols/Laboratory safety in research with	125
Infectious disease laboratories/A protective cabinet for	227
Infectious disease laboratories/Applications of germicidal ultravio	203
Infectious disease laboratories/Applications of germicidal ultravio	209
Infectious disease laboratories/Applications of germicidal ultravio	216
Infectious disease/Laboratory design for study of	211
Infectious disease laboratory/The use of bacteria-tight cabinets in	180
Infective material/A portable protective cabinet for handling	171
Infective material in the laboratory/A protective cabinet for handl	207
Insertion/Applications of gnotobiotic isolator techniques to steril	55
Interpretation of sterility tests/Tests for the sterility of pharma	214
Ionized air for control of static charges/	4
Isolation/A summary of three years' clinical experience with patien	37

Isolation and elimination of contamination micrurgical and germ-fre	228
Isolation facility/Role of differential air pressure zones in the c	53
Isolation system for preventing cross-contamination by Staphylococc	80
Isolator/An inexpensive, autoclavable germfree mouse	146
Isolator as a barrier against hospital pathogens/Treatment of the b	141
Isolator for operating in a sterile environment/A plastic	164
Isolator system/Evaluations of a patient	93
Isolator system for control of contamination/An	147
Isolator systems/The use of plastics in the design of	194
Isolator techniques to sterile insertion/Applications of gnotobioti	55
Isolators/A simple chemical method for the detection of leaks in fl	104
Isolators/Flexible-wall plastic	183
Laboratories/A protective cabinet for infectious disease	227
Laboratories/Applications of germicidal ultraviolet in infectious d	203
Laboratories/Applications of germicidal ultraviolet in infectious d	209
Laboratories/Applications of germicidal ultraviolet in infectious d	216
Laboratories/Ultraviolet sterilization in microbiological	212
Laboratory/A protective cabinet for handling infective material in	207
Laboratory/A "Space Age" sterile technics	69
Laboratory animal facilities/	81
Laboratory/A ventilated germ-free cabinet for the microbiological	137
Laboratory air/Test new electric incinerator design for sterilizing	102
Laboratory airborne infection/Control of	175
Laboratory/Airborne infection-how important for public laelth. airb	126
Laboratory/Biological safety in the animal	145
Laboratory/Contamination control features of a precision photogramm	49
Laboratory/Control of microbiological hazards in the	116
Laboratory/Criteria for design of a microbiological research	127
Laboratory, devices and procedures/Protection against infection in	173
Laboratory/Experimental assembly and sterilization	24
Laboratory for monitoring bacterial contamination of space componen	44
Laboratory hoods-their design and application	179
Laboratory methods/Towards a standarization of	219
Laboratory. microbiological hazards in the laboratory. part one-con	85
Laboratory/Microbiological studies conducted in the experimental as	36
Laboratory. part one-control. part two-prevention/Safety in the che	85
Laboratory risks/Ventilated work cabinets	177
Laboratory to special problems of patient care/Application of the t	111
Laboratory safety in research with infectious aerosols/	125
Laboratory/The use of bacteria-tight cabinets in the infectious dis	180
Laboratory/Ventilated cabinets in a tuberculosis	202
Laboratory animals by the use of germfree techniques/The control of	204
Laminar airflow concept/State of the art (Contamination Control) an	150
Laminar air flow dust control devices/Basic design requirements for	128
Laminar air flow for contamination control/The adaptability of	143
Laminar air flow/The design of a dust-controlled vented hood utiliz	151
Laminar clean air flow/Surgical application of	15
Laminar down-flow clean room/Evaluation of a curtained	153
Laminar down-flow clean room/Preliminary report on microbiological	65
Laminar down-flow clean room to dust and fume control in a developm	25
Laminar flow clean room handbook/	129
Laminar flow clean room/One year's experience on a	50



Laminar flow clean rooms/Microbial profile of	91
Laminar flow clean rooms/Personnel emissions in	2
Laminar flow devices/Standard tests for	113
Laminar flow operating room/Design construction of a	52
Laminar flow with closed-loop cleaning/Combining	20
Landers/Design requirements for the sterilization containers for pl	94
Leaks in flexible isolators/A simple chemical method for the detect	104
Levels and survival of naturally occurring microorganisms deposited	72
Levels and types of microbial contamination detected in industrial	12
Lightweight stainless steel systems for rearing germ-free animals/	189
List of selected references 1955-1964/Design of clean rooms-a class	100
LOBUND flexible film apparatus/Sterilizing agents for	186
Lox and pneumatic service/The field cleaning of corrosion resistant	10

Manual for the Sandia clean-bench/Operating	166
Manufacture/Detection and quantitation of microbial contamination t	73
Manufacturing and handling procedures for planetary spacecraft to b	68
Material/A portable protective cabinet for handling infective	171
Material in the laboratory/A protective cabinet for handling infect	207
Matter by membrane filtration/Control and analysis of particulate	120
Measurement of the bacterial contamination on surfaces in hospitals	101
Measuring aerosol particle sizes in air, pollutants, commercial aer	192
Medical problems/Contamination control and	64
Membrane filtration/Control and analysis of particulate matter by	120
Meter and its application to solvent cleaning/Cleanliness	34
Method for determination of particle cleanliness in packaging films	19
Methods/A comparison of dust-count data obtained from different mea	165
Methods, equipment and applications/Bibliographical study on dust-c	178
Methods for determining the bacterial contamination of surfaces/A c	198
Methods/Towards a standardization of laboratory	219
Microbial aerosol chamber with beta-propiolactone/Disinfection of	131
Microbial accumulation on surfaces in industrial clean rooms/	13
Microbial contamination/Control of	84
Microbial contamination detected in industrial clean rooms/Comparat	12
Microbial contamination in a clean room during a one year period/Th	117
Microbial contamination in a clean room when occupied by operating	118
Microbial contamination in clean rooms/	89
Microbial contamination in the surgical suites of 23 hospitals/Surv	98
Microbial contamination on flat surfaces/Effect of time and tempera	61
Microbial contamination on space hardware/Assessment of	11
Microbial contamination to which spacecraft are subjected during ma	73
Microbial control in assembly areas needed for spacecraft steriliza	90
Microbial profile of laminar flow clean rooms/	91
Microbial sampling of surfaces with special reference to reliabilit	134
Microbic contamination control/	123
Microbiological aerosols/Sampling	195
Microbiological barrier equipment and techniques/	43
Microbiological barrier techniques/	86
Microbiological contamination control: a state of the art report	87
Microbiological contamination control of spacecraft/	64
Microbiological contamination of hospital air/	159
Microbiological contamination of hospital air/	160
Microbiological examination of space hardware/Standard procedures f	39

Microbiological facilities at Ft. Detrick/Design criteria for	57
Microbiological facilities at Ft. Detrick/Design criteria for	58
Microbiological hazards in the laboratory/Control of	116
Microbiological hazards in the laboratory. part one-control. part t	85
Microbiological laboratories/Ultraviolet sterilization in	212
Microbiological laboratory/A ventilated germ-free cabinet for the	137
Microbiological laboratory, devices and procedures/Protection again	173
Microbiological profile of a new hospital/The	121
Microbiological profile of a new hospital/The	122
Microbiological profile of clean rooms/The	114
Microbiological research laboratory/Criteria for design of a	127
Microbiological safety bibliography/	88
Microbiological safety/	210
Microbiological safety equipment/	139
Microbiological sampling of surfaces/New method for	161
Microbiological studies conducted in the experimental assembly and	36
Microbiological studies in a laminar down-flow clean room/Prelimina	65
Microbiological testing of air filters/A procedure	135
Micrometrics: the technology of fine particles/	225
Microorganisms/Absolute barrier concept in the control of	42
Microorganisms/Clean room concept in the control of	35
Microorganisms deposited on surfaces through handling and aerial fa	72
Microorganisms in spacecraft assembly areas/Survival of surface-exp	41
Micrurgical and germ-free techniques/Introduction to the general pr	228
Modifications for improving the response characteristics of the Roy	33
Monitoring as an assay technique/Visual	70
Monitoring bacterial contamination of space components/Laboratory f	44
Monitoring/Current state of the art in particle detection and	32
NASA requirements for the sterilization of spacecraft/	77
Objectives and technology of spacecraft sterilization/The	78
Operating manual for the Sandia clean-bench/	166
Operating room/Design construction of a laminar flow	52
Operating rooms/Ultra-clean	96
Operation and control of ampul filling rooms/Aseptic	224
Operation experiences of a sterile biological processing building/D	107
Operation of apparatus for rearing germfree animals/Design	193
Operation of clean rooms and clean work stations/Standards and guid	148
Operation of clean rooms/Design and	66
Organisms from contaminated textiles/Liberations of	119
Organisms in burn wounds/Hospital isolation system for preventing c	80
Packaging films/A standard method for determination of particle cle	19
Packaging of aerospace hardware/Films vs. foil for clean	1
Particle cleanliness in packaging films/A standard method for deter	19
Particle counter/A further development of an acoustic	29
Particle counter for measuring the airborne contamination level in	31
Particle counter/Modifications for improving the response character	33
Particle detection and monitoring/Current state of the art in	32

Particles/A new sampler for the collection, sizing and enumeration	196
Particles/Impaction sampler for size grading airborne bacteria-carr	191
Particles/Micrometrics: the technology of fine	225
Particulate matter by membrane filtration/Control and analysis of	120
Patient accident causes and their control/	162
Patient care/Application of the technology of the germ-free laborat	111
Patient isolation/A summary of three years' clinical experience wit	37
Patient isolator system/Evaluations of a	93
Patient: use of the germfree plastic isolator as a barrier against	141
Pathogen-free mice, rats and guinea pigs/Establishing and maintaini	188
Pathogens/Treatment of the burned patient: use of the germfree plas	141
Personnel emissions in laminar flow clean rooms/	2
Personnel/Microbial contamination in a clean room when occupied by	118
Pharmaceutical preparations: the design and interpretation of steri	214
Photogrammetric laboratory/Contamination control features of a prec	49
Photometers measure/What aerosol counters and	21
Planetary landers/Design requirements for the sterilization contain	94
Planetary spacecraft to be sterilized by heating/Manufacturing and	68
Plastic film isolators/Flexible-wall	183
Plastic isolator for operating in a sterile environment/A	164
Plastic safety hood for bacteriologists/Portable inexpensive	217
Plastics facility/Application of a laminar down-flow clean room to	25
Plastics in the design of isolator systems/The use of	194
Pneumatic service/The field cleaning of corrosion-resistant steel t	10
Policy/Unmanned spacecraft decontamination	144
Pollutants, commercial aerosols, and cigarette smoke/Improved casca	192
Portable clean-work station/A	167
Portable inexpensive plastic safety hood for bacteriologists/	217
Portable protective cabinet for handling infective material/A	171
Post-mortem examination of infected animals/A protective cabinet go	187
Practices in the verification of cleanliness/Present	138
Prevention/Safety in the chemical laboratory. microbiological hazar	85
Probe/The roving	28
Procedures for planetary spacecraft to be sterilized by heating/Man	68
Procedures for the microbiological examination of space hardware/St	39
Procedures/Protection against infection in the microbiological labo	173
Processing building/Design, construction and operation of a sterile	107
Profile of clean rooms/The microbiological	114
Properties and aerosol filtration/Aerosol	54
Protection against infection in the microbiological laboratory, dev	173
Pseudomonas organisms in burn wounds/Hospital isolation system for	80
Public health. airborne infection in the laboratory/Airborne infect	126
Recovery of <u>Bacillus subtilis</u> spore contamination from stainless st	97
References 1955-1964/Design of clean rooms-a classified list of sel	100
Reliability/Development of a method for microbial sampling of surfa	134
Report/JPL spacecraft sterilization technology program: a status	71
Requirements, controlled environment/Clean room and work station	59
Requirements controlled environment/Clean room and work station	149
Requirements for the design of bacteriological facilities/Technical	174
Requirements for the sterilization containers for planetary landers	94
Requirements for the sterilization of spacecraft/NASA	77
Research laboratory/Criteria for design of a microbiological	127

Residue analyzer/A freon TF solvent	83
Rinsing station using freon TF solvent/A combination final	112
Rocket payload/Contamination control during design, fabrication, te	3
Rodac Method for the recovery of <u>Bacillus subtilis</u> spore contaminat	97
Room handbook/Laminar flow	129
Room specification/Cleanliness vs. need. conference on clean	142
Room ventilation evaluated/Operating	140
Rooms/Aseptic operation and control of ampul filling	224
Rooms/Comparative levels and types of microbial contamination detectd	12
Rooms really necessary?/Are clean	136
Rooms/Sterile	184
Rooms/The bacterial flora of the air of unoccupied	213
Rooms/Ultra-clean operating	96
Roving probe/The	28
Safety/Bacteriological	222
Safety bibliography/Microbiological	88
Safety equipment in conjunction with biological warfare R and D pro	206
Safety in research with infectious aerosols/Laboratory	125
Safety in the animal laboratory/Biological	145
Safety in the chemical laboratory. microbiological hazards in the 1	85
Safety equipment/Microbiological	139
Safety/Microbiological	210
Sampler for the collection, sizing, and enumeration of viable airbo	196
Sampler for size grading airborne bacteria-carrying particles/Impac	191
Sampling for bacteria/Surface	74
Sampling for hospitals/Air	163
Sampling microbiological aerosols/	195
Sampling of surfaces/New method for microbiological	161
Sampling of surfaces with special reference to reliability/Developm	134
Sampling problem/Air quality specifications (Microbial): the	82
Sampling/Quantitative air	157
Sampling techniques for the institutional environment--present stat	124
Sampling techniques in the hospital environment/Air	208
Sanitation technology/Spacecraft sterilization--a new engineering a	76
Self-disinfecting surfaces/A method for testing	215
Sizing, and enumeration of viable airborne particles/A new sampler	196
Smoke/Improved cascade impactor for measuring aerosol particle size	192
Solids as dust aerosols/Studies of dispersion of	201
Solvent/A combination final rinsing station using freon TF	112
Solvent cleaning/Cleanliness meter and its application to	34
Solvent residue analyzer/A freon TF	83
Space components/Laboratory for monitoring bacterial contamination	44
Space hardware/Assessment of microbial contamination on	11
Space hardware/Standard procedures for the microbiological examinat	39
Spacecraft are subjected during manufacture/Detection and quantitat	73
Spacecraft assembly areas/Survival of surface-exposed microorganism	41
Spacecraft assembly/Clean room for	63
Spacecraft assembly/Compatability of sterilization and contaminatio	99
Spacecraft contamination resulting from human contact/	95
Spacecraft decontamination policy/Unmanned	144
Spacecraft/Microbiological contamination control of	64
Spacecraft/NASA requirements for the sterilization of	77

Spacecraft to be sterilized by heating/Manufacturing and handling p	68
Spacecraft sterilization--a new engineering and sanitation technolo	76
Spacecraft sterilization/Microbial control in assembly areas needed	90
Spacecraft sterilization technology program: a status report/JPL	71
Spacecraft sterilization/The objectives and technology of	17
Spacecraft sterilization/The objectives and technology of	78
Spacecraft system/Biological decontamination of a	30
Spacecraft/The assembly-sterilizer-a facility for the sterilization	9
Spaces with beta-propiolactone vapor/Decontamination of enclosed	172
Specifications/Cleanliness vs. need. conference on clean room	142
Specifications (Microbial): the sampling problem/Air quality	82
Spore contamination from stainless steel surfaces/Comparative evalu	97
Spores and culture media/Dehydrated sterilizer controls containing	170
Sporicidal surface coatings/	190
Spun glass air filters for bacteriological cabinets, animal cages a	223
Stability and compatability characteristics of trichlorotrifluoroet	14
Stainless steel surfaces/Comparative evaluation of the cotton swab	97
Standard 209/Latest revisions to Federal	26
Standardization of laboratory methods/Towards a	219
Standards and guidelines for the design and operation of clean room	148
Standards for contaminated atmospheres/Experimental derivation of h	51
Staphylococcal and Pseudomonas organisms in burn wounds/Hospital is	80
<u>Staphylococcus aureus</u> . a possible source in air control equipment/A	168
Static charges/Ionized air for control of	4
Station/A portable clean-work	167
Status report/JPL spacecraft sterilization technology program: a	71
Steel systems for rearing germ-free animals/Lightweight stainless	189
Steel tubing for lox and pneumatic service/The field cleaning of co	10
Sterile assembly techniques/Experimental study of	79
Sterile biological processing building/Design, construction and ope	107
Sterile environment/A plastic isolator for operating in a	164
Sterile insertion/Applications of gnotobiotic isolator techniques t	55
Sterile rooms/	184
Sterile technics laboratory/A "Space Age"	69
Sterile water and a simple air sterilizing filter for germfree unit	110
Sterility tests/Tests for the sterility of pharmaceutical preparati	214
Sterilization--a new engineering and sanitation technology/Spacecra	76
Sterilization--a selected bibliography from the literature retrieva	40
Sterilization and contamination control with application to spacecr	99
Sterilization/Cleaning, disinfection	156
Sterilization containers for planetary landers/Design requirements	94
Sterilization filter/A new type of air	130
Sterilization filters/Design of fibrous air	154
Sterilization in microbiological laboratories/Ultraviolet	212
Sterilization laboratory/Experimental assembly and	24
Sterilization laboratory/Microbiological studies conducted in the e	36
Sterilization/Microbial control in assembly areas needed for spacec	90
Sterilization of spacecraft/NASA requirements for the	77
Sterilization problem/The application of gnotobiotic techniques to	56
Sterilization technology program: a status report/JPL spacecraft	71
Sterilization/The objectives and technology of spacecraft	17
Sterilization/The objectives and technology of spacecraft	78
Sterilization with ethylene-oxide/Simple improvised chambers for ga	181
Sterilized by heating/Manufacturing and handling procedures for pla	68
Sterilizer-a facility for the sterilization and assembly of spacecr	9
Sterilizer controls containing bacterial spores and culture media/D	170

Sterilizing agents for LOBUND flexible film apparatus/	186
Sterilizing filter for germfree units/A device for the external sup	110
Sterilizing laboratory air/Test new electric incinerator design for	102
Studies conducted in the experimental assembly and sterilization la	36
Study of sterile assembly techniques/Experimental	79
Summary of three years' clinical experience with patient isolation/	37
Supplyof sterile water and a simple air sterilizing filter for germ	110
Surface agar plate laboratory method for quantitatively detecting b	197
Surface cleanliness/Improvements in the use of the indium adhesion	109
Surface coatings/Sporicidal	190
Surface contamination/Evaluation of	155
Surface contaminants/Quantitative detection of	132
Surface-exposed microorganisms in spacecraft assembly areas/Surviva	41
Surface sampling for bacteria/	74
Surface sampling techniques for the institutional environment--pres	124
Surfaces/A comparative evaluation of methods for determining the ba	198
Surfaces/A direct surface agar plate laboratory method for quantita	197
Surfaces/A method for testing self-disinfecting	215
Surfaces/Comparative evaluation of the cotton swab and Rodac Method	97
Surfaces/Effect of time and temperature in assessing microbial cont	61
Surfaces in hospitals/Measurement of the bacterial contamination on	101
Surfaces/New method for microbiological sampling of	161
Surfaces/Prolongation of the antibacterial potential of disinfected	221
Surfaces/Symposium on methods for determining bacterial contaminati	218
Surfaces through handling and aerial fallout/Comparative levels and	72
Surfaces with special reference to reliability/Development of a met	134
Surgical application of laminar clean air flow/	15
Surgical infections/A look at the role of the environment in	23
Surgical suites of 23 hospitals/Survey of microbial contamination i	98
Survey of bioclean facilities/	92
Survey of microbial contamination in the surgical suites of 23 hosp	98
Survival of naturally occurring microorganisms deposited on surface	72
Survival of surface-exposed microorganisms in spacecraft assembly a	41
Swab and Rodac Method for the recovery of <u>Bacillus subtilis</u> spore c	97
System/Biological decontamination of a spacecraft	30
Systems failure/Relationships between contamination and	7
Systems/Maintenance cleaning of thermal-vacuum	45
S-1B/Cleaning tubes for the Saturn	5
Technics laboratory/A "Space Age" sterile	69
Technique/Visual monitoring as an assay	70
Techniques/Experimental study of sterile assembly	79
Techniques/Microbiological barrier	86
Techniques/Microbiological barrier equipment and	43
Techniques to sterile insertion/Applications of gnotobiotic isolato	55
Techniques to the sterilization problem/The application of gnotobio	56
Technology of spacecraft sterilization/The objectives and	17
Technology of spacecraft sterilization/The objectives and	78
Technology program: a status program/JPL spacecraft sterilization	71
Temperature in assessing microbial contamination on flat surfaces/E	61
Test and launch of an upper atmospheric rocket payload/Contaminatio	3
Test new electric incinerator design for sterilizing laboratory air	102
Testing of air filters/A procedure for microbiological	135

Tests for laminar flow devices/Standard	113
Textiles/Liberation of organisms from contaminated	119
Theoretical considerations for practical air cleaning/Two	108
Thermal-vacuum systems/Maintenance cleaning of	45
Time and temperature in assessing microbial contamination on flat s	61
Trichlorotrifluoroethane/Stability and compatability characteristic	14
Tubes for the Saturn S-1B/Cleaning	5
Types of microbial contamination detected in industrial clean rooms	12
Ultra-clean operating rooms/	96
Ultraviolet in infectious disease laboratories/Applications of germ	203
Ultraviolet in infectious disease laboratories/Applications of germ	209
Ultraviolet in infectious disease laboratories/Applications of germ	216
Ultraviolet sterilization in microbiological laboratories	212
Ventilated cabinets in a tuberculosis laboratory/	202
Ventilated germ-free cabinet for the microbiological laboratory/A	137
Ventilated work cabinets reduce laboratory risks/177	177
Ventilation equations/Experimental verification of	106
Ventilation evaluated/Operating room	140
Verification of cleanliness/Present practices in the	138
Virulence/Effect of the environment on	115
Visual monitoring as an assay technique/	70
Warfare R and D program/Development of specialized safety equipment	206
Water and a simple air sterilizing filter for germfree units/A devi	110
Work station requirements, controlled environment/Clean room and	59
Work station requirements, controlled environment/Clean room and	149
Work stations/Standards and guidelines for the design and operation	148
'Zip' gun for astronaut White's walk in space/Cleaning the	48
00-25-203/What's new in the	46
209/Latest revisions to Federal Standard	26
209a/Revised (1966) Fed. Standard	59

#### IV. Author Index

The following is a listing of all authors, whether senior, sole or one of multiple authors whose works are cited in this bibliography. The numbers at the right refer to the bibliographical citation number.



AUTHOR INDEX

Agnew, B. ....	129
Aiba, S. ....	130,154
Alg, R.L. ....	131,176,217
Allen, H.F. ....	185
Amer. Assoc. for Contamination Control .....	64
Andersen, A.A. ....	196
Anderson, D.C. ....	1
Anderson, J.S. ....	132
Angelotti, R. ....	70,97,197,198
Armbruster, E.H. ....	155
Arnold, V.E. ....	65
Austin, P.R. ....	2,66
Ballard, D.W. ....	67
Barbeito, M.S. ....	131,176
Barrett, J.P. Jr. ....	186
Beyerle, F.J. ....	68
Black, H.L. ....	69
Blackwood, A.G. ....	104
Blanchard, M.B. ....	3
Blickman, B.I. ....	177
Bolasny, R.E. ....	4
Bond, R.G. ....	95,98,134,159,160
Brewer, J.H. ....	170,224
Brown, A.E. ....	171
Brown, T.E. ....	55
Bruch, C.W. ....	78,172
Bryce, D.M. ....	214
Buchanan, L.M. ....	118
Busch, K.A. ....	198
Busenbark, H.L. ....	43
California, State of .....	156
Chandler, G.I. ....	178
Charron, G.R. ....	5
Chatigny, M.A. ....	173
Christensen, M. ....	41
Cole, W.R. ....	157
Conley, D. ....	6
Connelly, R.F. ....	7
Couling, C.W. ....	187
Cown, W.B. ....	8,106,140
Crawford, J.G. ....	9
Crawford, R.G. ....	94

Dale, D.G. ....	104
DallaValle, J.M. ....	225
Davey, D.G. ....	188
Davis, D.M. ....	75
Decker, H.M. ....	223
Drummond, D. ....	70,71
Duguid, J.P. ....	226
Edwards, R.W. ....	43,87
Ellenberg, J.Y. ....	10
Ernst, R.R. ....	28,99
Farlow, N.H. ....	3
Favero, M.S. ....	11,12,72,73,84,87
Feazel, C.E. ....	190
Fincher, E.L. ....	74,140
Finkelstein, H. ....	13
Finman, J.R. ....	137
Fjelseth, D.E. ....	75
Flanner, L.T. ....	14
Foter, M.J. ....	197,198
Fox, G.W. ....	100
Fredette, V. ....	199
Garden, N.B. ....	158
Gavin, T.R. ....	24
Geile, F.A. ....	223
Giles, F.J., Jr. ....	179
Ginsberg, M.K. ....	93
Goddard, K.R. ....	135
Goodrich, E.O., Jr. ....	15
Gordieyeff, A.V. ....	201
Graetz, G.M. ....	16
Greene, V.W. ....	159,160,161
Greif, E.E. ....	69
Gremillion, G.G. ....	102,180
Gustafson, B.E. ....	189
Halbert, M.M. ....	61,134
Hall, L.B. ....	17,76,77,78,101 115,162,163,195
Halliday, K.C. Jr. ....	18
Hamilton, H.A. ....	136
Hanel, E. ....	211,212

Hansen, W. ....	79
Harris, G.J. ....	102, 131, 176
Harris-Smith, R. ....	137
Harstad, J.B. ....	223
Hartnett, M.J. ....	101
Harvey, R.B. ....	157
Haynes, B.W. Jr. ....	80
Hench, M.E. ....	80
Herman, L.G. ....	208
Hertzson, L. ....	19
Heuring, H.F. ....	20
Hirsch, A. ....	213
Hodkinson, J.R. ....	21
Hof, G.J. ....	138
Hoffman, R.K. ....	89, 90, 118, 181 182, 190, 200, 215
Hume, W.A. ....	22
Ikeda, H. ....	130
Ingram, F.A. ....	23
Jack, A.J. ....	65
Jemski, J.V. ....	88, 103, 139, 145
Jensen, K.A. ....	219
Jonas, A.M. ....	81
Jones, L.K. ....	75
Joshi, N. ....	104
Kapell, G.F. ....	24
Kaye, S. ....	190, 215
Keenan, K.M. ....	61, 134, 161
Kenagy, J.A. ....	25
Kethley, T.W. ....	8, 82, 105, 106, 140
King, J. ....	26, 65, 96
Klarsmann, E.G. ....	221
Koonse, H.J. ....	107
Kranz, P. ....	27, 108
Kretz, A.P. Jr. ....	28, 99
Krieger, G.L. ....	109
LaConte, M. ....	93, 111
Laduke, M. ....	27
Lanaham, T.B. ....	177
Landy, J.J. ....	141
Langer, G. ....	29

LeDoux, F.N. ....	30
Leu, M. ....	110
Levenson, S.M. ....	27,111,164
Lewis, K.H. ....	70
Lewis, T.W. ....	31
Lidwell, O.M. ....	191,207,213
Lieberman, A. ....	32,142
Lind, A. ....	202
Lorsch, H.G. ....	68
Magistrale, V. ....	71
Malm, O.J. ....	164
Marsh, R.C. ....	33,34,83,112 113,143,165,166
Marshall, J.H. ....	12,72,73
Mashburn, J.C. ....	128,152,153,167
Matthews, F.E. ....	37
May, C.W. ....	227
McDade, J.J. ....	13,24,35,36,41,84 114,115,121,122,168
McDonnell, J.A. ....	69
McLaughlin, C.B. ....	170
Michaelsen, G.S. ....	38,84
Miles, J.R. ....	78
Miller, O.T. ....	216
Mitchell, R.I. ....	192
Morelli, F.A. ....	208
Mudd, S. ....	229
Mullican, C.L. ....	203
Nat'l. Aeronaut. & Space Admin. ....	39,144
NASA-Goddard SFC ....	40
Neitzel, W.E. ....	113,128,152,153,167
Nishikawa, S. ....	130
Novak, F.E. ....	209,217
Oswalt, F.W. ....	83
Paik, W.W. ....	36,41
Pearsall, D.D. ....	4
PHS-Communicable Disease Ctr. ....	44
Phillips, C.R. ....	89,90,181
Phillips, G.B. ....	42,43,85,86,87 88,103,116,127 139,145,203,209 211,212,216,217
Pilcher, J.M. ....	192

Pilgrim, H.I. ....	146
Pirt, S.J. ....	137
Portner, D.M. ....	89, 90, 117, 118
Powers, E.M. ....	91
Puleo, J.R. ....	12, 72, 73
Putman, H.D. ....	98
Ramsey, R.B. ....	45
Raper, D.J. ....	46
Rees, R.J.W. ....	187
Reid, S.F. ....	47
Reitman, M. ....	203, 210
Reno, C.D. ....	48
Reyniers, J.A. ....	193, 204, 228
Reynolds, L.I. ....	205
Rice, R.S. ....	49
Roberts, D.L. ....	92
Rothstein, A.A. ....	56
Rubbo, S.M. ....	119
Ruschmeyer, O.R. ....	38, 95
Salrin, R.E. ....	50
Scheir, R. ....	13
Schley, D.G. ....	181
Schmitt, R.F. ....	216
Schmitt, W.H. ....	120
Shadomy, S. ....	93
Shaffer, J.G. ....	121, 122, 168
Shepard, C.C. ....	227
Sherfey, J.M. ....	220
Shternov, V.A. ....	221
Skaliy, P. ....	195
Slater, M.N. ....	16
Smyth, H.F., Jr. ....	51
Soltis, C.W. ....	52
Songer, J.R. ....	53
Spiner, D.R. ....	182
Stockham, J. ....	92
Sullivan, J.F. ....	53
Tenney, J.B., Jr. ....	94
Thomas, J.W. ....	54
Thompson, D.B. ....	146
Timmerman, S.W. ....	66
Topping, N.H. ....	227
Towson, P.H. ....	102

Trexler, P.C. ....	55,56,111,123,147 164,183,184,194,205
U.S. Army, Ft. Detrick .....	57,58,174
U.S. Air Force .....	148
U.S. Government .....	59,149
Van Dellen, D.B. ....	60
Vesley, D. ....	38,61,95,124 159,160,161
Wallace, A.T. ....	226
Walter, W.G. ....	218
Warshowsky, B. ....	200
Wedum, A.G. ....	125,126,127,175 206,210,211,212,222
Wells, M.W. ....	229
Wells, W.F. ....	229
Whitcomb, J.G. ....	96
Whitfield, W.J. ....	62,96,113,128 150,151,152,153 166,167,169
Williams, R.E.O. ....	207,213
Williamsen, C.T. ....	63
Wilson, J.L. ....	97
Wolf, H.W. ....	195
Wright, E.S. ....	221
Yeager, S.B. ....	215
Zanks, J.F. ....	9