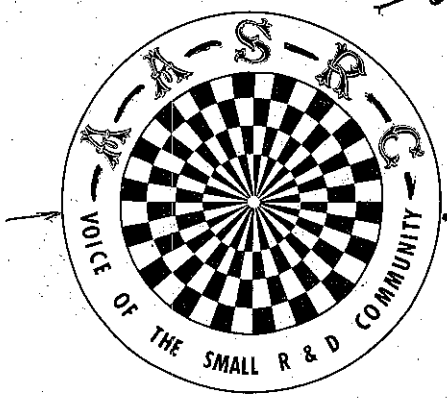
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CONTENTS

		Page
INTRODUCTION		i
SECTION I	GEOGRAPHICAL DISTRIBUTION	1
SECTION II	TECHNICAL FIELDS & MEMBER IDENTIFICATION NUMBERS	8
SECTION III	ALPHABETICAL LIST OF MEMBERS	17
ADDENDA		63

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17.	Chemistry	2, 6, 9, 14, 15, 19, 22, 24, 39, 40, 41, 51, 59, 61, 85, 89, 90, 93, 112, 113, 132, 143, 147, 148, 151, 155, 164, 167, 174, 175, 176, 187, 193, 195, 199, 202, 206, 210, 218, 219, 220, 226, 229, 230, 231, 232, 236, 239, 242, 248, 249, 254, 257
18.	Cleaning Compounds	59, 112, 113, 141, 176, 195, 202, 219, 231
19.	Coal Processing	8, 27, 38, 56, 59, 60, 62, 112, 121, 135, 137, 139, 143, 155, 165, 183, 197, 199, 210, 226, 232, 257, 260, 261
20.	Communications Sciences	12, 16, 26, 49, 50, 72, 91, 93, 120, 127, 135, 149, 150, 153, 163, 184, 208, 211, 217, 221, 228, 248, 249
21.	Computer Sciences	3, 11, 12, 16, 25, 26, 28, 29, 52, 61, 63, 65, 66, 73, 78, 85, 86, 121, 126, 127, 128, 129, 148, 150, 151, 153, 163, 164, 183, 194, 210, 211, 216, 217, 229
22.	Configuration Management	12, 19, 61, 63, 126, 144, 163, 194, 211, 241, 246, 264
23.	Consultants: Physical and Social Science	3, 9, 43, 49, 56, 61, 65, 66, 72, 76, 78, 93, 120, 137, 140, 147, 161, 175, 194, 210, 213, 221, 231, 232, 242, 246, 256, 257, 263, 264
24.	Consultants: Materials Research	6, 15, 19, 22, 35, 49, 51, 59, 61, 79, 89, 90, 113, 125, 138, 139, 143, 145, 147, 163, 175, 182, 183, 188, 193, 197, 210, 226, 231, 236, 239, 248, 249, 254, 257, 263
25.	Consultants: Transportation and Communication	10, 12, 20, 28, 43, 49, 58, 63, 69, 72, 82, 105, 108, 110, 114, 115, 120, 127, 128, 144, 160, 163, 184, 194, 211, 239, 246, 253, 257, 264
26.	Consultants: Instrumentation	19, 35, 43, 49, 59, 75, 93, 104, 110, 114, 144, 152, 160, 163, 171, 200, 216, 217, 222, 239, 257
27.	Consultants: Energy Conservation	15, 19, 38, 43, 46, 49, 56, 59, 60, 61, 62, 72, 76, 78, 82, 90, 96, 114, 118, 120, 127, 131, 136, 138, 138, 143, 163, 166, 182, 188, 210, 215, 216, 239, 241, 243, 258, 259, 264, 267
28.	Control Systems	16, 19, 27, 65, 76, 93, 102, 105, 114, 128, 135, 148, 153, 160, 162, 163, 172, 208, 217, 227, 258, 261, 268

45.	Energy: Sources, Systems, Conservation	1, 8, 9, 14, 15, 19, 23, 28, 37, 38, 41, 46, 50, 52, 56, 57, 59, 60, 61, 62, 63, 67, 68, 76, 78, 82, 88, 90, 93, 94, 96, 104, 107, 112, 114, 116, 118, 120, 122, 125, 131, 135, 137, 138, 139, 143, 148, 151, 159, 163, 165, 166, 168, 183, 184, 185, 188, 192, 194, 196, 197, 199, 202, 203, 209, 210, 213, 215, 216, 220, 224, 225, 228, 230, 239, 240, 241, 242, 243, 245, 251, 252, 255, 258, 259, 260, 261, 268
46.	Engines	19, 38, 56, 61, 96, 122, 125, 144, 188, 196, 197, 210, 217, 240
47.	Engineering	12, 14, 16, 19, 20, 38, 42, 51, 52, 56, 58, 61, 62, 65, 70, 76, 81, 82, 85, 90, 93, 96, 102, 105, 115, 121, 122, 123, 124, 131, 133, 137, 140, 145, 152, 160, 162, 163, 169, 175, 177, 178, 183, 188, 191, 194, 196, 197, 203, 208, 210, 211, 213, 216, 222, 228, 230, 231, 235, 239, 240, 246, 251, 252, 257, 259, 261, 270
48.	Environmental Protection Systems	1, 9, 14, 19, 20, 30, 40, 52, 54, 59, 60, 61, 62, 72, 78, 82, 97, 112, 118, 135, 140, 146, 163, 165, 168, 194, 199, 200, 210, 214, 220, 222, 226, 243, 251, 252, 253, 257, 259
49.	Equipment: Laboratory and Industrial	19, 27, 30, 31, 35, 38, 56, 79, 98, 132, 137, 146, 148, 163, 171, 172, 197, 210, 222, 232, 235, 259
50.	Film Production—Technical	59, 149, 175, 230, 231
51.	Filtration	1, 19, 59, 80, 82, 114, 139, 148, 175, 176, 188, 216, 226, 259
52.	Fluidized-bed Combustion	8, 56, 59, 62, 137, 139, 210
53.	Fuels: Synthetic	2, 8, 19, 59, 60, 62, 112, 121, 139, 143, 178, 199, 245, 256
54.	Food Products Processing	15, 19, 40, 59, 61, 78, 104, 112, 137, 147, 198, 226, 243
55.	Gas Chromatography	76, 136, 147, 176, 199, 219, 226, 229, 230, 231, 257
56.	Gas Liquefaction	27, 38, 56, 114, 138, 139, 163, 260, 261
57.	Gasdynamics	2, 23, 38, 56, 61, 114, 163, 188, 203, 210

75.	Law: Patents and Procurement	8, 36, 45, 47, 105, 127, 139, 165, 176, 177, 237
76.	Machinery & Tools	19, 34, 56, 125, 143, 163, 196, 197, 209, 240
77.	Marine Engineering & Products	20, 52, 61, 70, 115, 138, 152, 162, 169, 188, 194, 208, 214, 246, 264, 265
78.	Marketing	18, 33, 53, 59, 69, 72, 77, 78, 111, 124, 127, 219, 130, 162, 163, 165, 205, 210, 216A, 231, 239, 246, 256, 263, 268, 269
79.	Materials Engineers	15, 19, 35, 51, 52, 59, 61, 89, 125, 138, 143, 145, 163, 175, 176, 178, 183, 197, 210, 226, 231, 239, 248, 249, 257, 272
80.	Mathematical Sciences	11, 16, 19, 21, 28, 56, 58, 63, 73, 81, 90, 91, 163, 168, 190, 194, 203, 210, 211, 218, 221, 228, 239, 257
81.	Medical Research & Health Care	30, 31, 41, 66, 67, 85, 86, 118, 120, 127, 141, 151, 164, 193, 194, 206, 215, 218, 231, 234, 246, 259, 263, 268
82.	Metallurgy	14, 19, 50, 51, 59, 60, 89, 125, 138, 143, 159, 163, 183, 197, 226, 236, 248, 249, 257
83.	Meteorology	2, 3, 19, 51, 56, 65, 135, 262
84.	Microbiology	14, 19, 40, 41, 58, 86, 126, 129, 136, 146, 147, 148, 151, 164, 231, 257, 259
85.	Microfiche	149
86.	Modulation-Demodulation Techniques	19, 63, 84, 150, 153, 184, 190, 211, 228
87.	Naval Architectural Design	20, 52, 56, 58, 61, 81, 115, 178, 188, 194, 214, 264
88.	Nuclear Power	8, 14, 19, 38, 56, 59, 70, 84, 102, 104, 137, 144, 162, 163, 172, 183, 194, 197, 246, 261
89.	Oceanography	16, 58, 59, 61, 65, 76, 84, 109, 115, 135, 152, 194, 214, 246, 257, 259, 264
90.	Optics	13, 30, 31, 59, 65, 75, 98, 163, 169, 184, 203, 211, 228, 230, 257, 269

106.	Spectroscopy	2, 14, 19, 30, 59, 65, 75, 147, 175, 176, 184, 199, 204, 223, 229, 230, 236, 257
107.	Structural R&D	19, 51, 52, 58, 77, 82, 139, 152, 163, 169, 183, 239, 243, 253, 270
108.	Systems Engineering	12, 16, 19, 20, 21, 38, 40, 51, 52, 56, 61, 63, 65, 69, 82, 93, 98, 100, 104, 110, 114, 115, 118, 126, 128, 138, 144, 148, 155, 160, 162, 163, 172, 182, 194, 203, 210, 211, 217, 239, 241, 246, 253, 261, 262, 264, 269, 272
109.	Technology Transfer	8, 40, 51, 52, 53, 59, 61, 69, 76, 82, 118, 126, 127, 139, 140, 143, 153, 163, 165, 166, 175, 195, 205, 242, 250, 264
110.	Testing: Chemicals	19, 39, 40, 51, 59, 60, 79, 93, 113, 137, 147, 151, 164, 175, 176, 199, 219, 226, 229, 231, 257, 263, 264
111.	Testing: Electrical	19, 50, 79, 93, 163, 171, 210, 231, 239, 246, 248, 249
112.	Testing: Engineering	19, 38, 51, 61, 70, 84, 93, 96, 105, 137, 152, 163, 183, 208, 210, 216, 226, 239, 246, 253, 257, 263
112A.	Testing: Flow	19, 93, 162, 163
113.	Testing: Materials	15, 19, 35, 51, 59, 77, 79, 93, 114, 125, 145, 163, 175, 182, 183, 197, 210, 226, 231, 232, 239, 248, 249, 257, 263
113A.	Testing: Pressure	19, 93, 162, 163
114.	Thermodynamics	2, 19, 38, 51, 52, 56, 61, 76, 108, 122, 138, 163, 182, 188, 203, 210, 213, 230, 239, 246, 261
115.	Tribology	136, 143, 152, 216, 236
116.	Valves	19, 27, 59, 70, 102, 104, 114, 138, 163, 172, 176, 227
117.	Venture Capital	49, 59, 130, 163, 165, 205, 225, 231, 256, 269
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Valencia, PA 16059
John D. Folley, Jr., Pres. (412) 586-7771

39, 61, 62, 64, 71, 91, 96, 102

Research, development and consulting in improving the performance of people in systems through job design, training, equipment design, job performance aids, and improved technical documentation.

18. APPLIED SKILLS, INC.
12 Thurmont Road
West Caldwell, NJ 07006
Alfred J. Salomen, Pres. (201) 226-7049

78

Design and marketing of high technology expertise.

19. APPROVED ENGINEERING TEST LABS
Division of National Technical Services
15720 Ventura Blvd., Suite 608
Encino, CA 91436
Aaron Cohen, Pres.
(213) 783-5985 or 872-3701

1, 2, 3, 4, 6, 9, 10, 16, 17, 22, 24, 26, 27, 28, 29, 30, 34, 40, 41, 42, 44, 45, 46, 47, 48, 49, 51, 53, 54, 58, 63, 66, 70, 72, 76, 79, 80, 82, 83, 84, 86, 88, 91, 95, 98, 99, 100, 101, 103, 104, 105, 106, 107, 108, 110, 111, 112, 112A, 113, 113A, 114, 116, 118, 121, 124

Provides complete testing, field inspection services, certification and listing and labeling service in the commercial, industrial, construction (including Highrise), and aerospace fields. Additionally performs product safety evaluations, failure mode effects analyses (FMEA) and precision cleaning and packaging. Offers trained personnel and sophisticated equipment for: Temperature: pressure; flow; altitude; vibration; seismic; vacuum; solar

(continued)

26. AUERBACH ASSOCIATES, INC. 20, 21
121 N. Broad Street
Philadelphia, PA 19103
R. LeKashman, Pres. (215) 491-8200

Information systems architect; computer programming; consulting. Furnishes full range of services needed to use information as management and executive tool.

27. AUTOCLAVE ENGINEERS, INC. 19, 28, 30, 49, 56, 70, 92, 116
2930 West 22nd Street
P.O. Box 4007
Erie, PA 16512
Paul T. Bowser, Sales Mgr. (814) 838-2071

Designer and manufacturer of high pressure equipment (both components and complete package systems) for research and production in the chemicals, petrochemicals, pharmaceuticals, metals, ceramics, quartz, energy and other miscellaneous industries where high pressure/temperature equipment is required.

28. AUTOMATED SCIENCES GROUP, INC. 21, 25, 32, 37, 45, 68, 80
8555 - 16th Street, Suite 713
Silver Spring, MD 20910
Conrad Hipkins, Pres. (301) 587-8750

Analytical and computer-related consulting services; systems programming and applications software development; mathematical and statistical analysis; modeling, simulation and forecasting; ADP planning, computer hardware/software selection, evaluation and benchmark; operations research; organizational analysis; data collection, procedures development and training.

29. BAGANOFF ENGINEERING INC. 5, 21, 68, 70
380 Brookes Drive
Hazelwood, MO 63042
Fred Baganoff, Pres. (314) 831-0956

Flight testing. Instrumentation development. Scientific data processing. Special purpose computers.

30. BAIRD-ATOMIC, INC. 48, 49, 70, 81, 90, 95, 99 106
125 Middlesex Turnpike
Bedford, MA 01730
David F. Walsh (617) 276-6000, Ext. 6196

Electro-optical systems; spectrochemical, fluorometric, atomic absorption, and other analytical instrumentation; nuclear medicine and health systems and instruments; advanced electronic recording equipment; passive night vision devices.

31. BARNES ENGINEERING CO. 6, 49, 70, 90, 101, 105
30 Commerce Road
Stamford, CT 06904
Harry Benoit, Jr., VP/Eng'g and Programs
(203) 348-5381, Ext. 228 and 276

R&D and production——infrared and electro-optical systems, instruments and components, and optical alignment instrumentation. Full aerospace instrument manufacturing and test capabilities and facilities, including environmental testing laboratory and component reliability analysis lab.

tanks, alloys, hydrides, and hydrogen purifiers. Production of electrolyzers is envisioned in the near future. Can design a hydrogen system for almost any function or need.

39. BIOCHEMICAL INTERMEDIATES CORP. 17, 35, 73, 110
P. O. Box 1469
Rockville, MD 20850
Dr. M. H. Hajiyani

Custom synthesis. Synthesis of research chemicals with isotopes. Drug design and pharmacological screening.

40. (The) BIONETICS CORPORATION 6, 9, 12, 13, 17, 36, 48, 54, 66, 84, 95, 99, 108, 109, 110
18 Research Drive
Hampton, VA 23666
Dr. Joseph A. Stern, Pres.
(804) 838-8880

Provides support services to government and industry in fields of aerospace science & technologies, biomedical sciences, microbiology, systems engineering, quality control, environmental protection systems, industrial safety, pollution controls, instrument calibration, technical documentation services, computer/image processing, acoustics, sterilization techniques and flight crew equipment maintenance. Also provides chemical and microbiological analytical laboratory services specializing in analysis of water, waste water, food products and fuel for government and industry.

41. BIORESEARCH, INC. 10, 12, 17, 41, 45, 70, 81, 84, 95, 118
315 Smith Street
Farmingdale, NY 11735
Eugene Findl, Division Mgr. (516) 293-7219

Medical research and healthcare. Electrochemistry. Environmental monitoring. Microbiology. Biochemistry. Batteries. Fuel Cells. Electric vehicles.

42. DAVID H. BLASETTI 2, 47, 72A, 92
7019 Guilford Road
Upper Darby, PA 19082
(215) 622-5274

Independent inventor doing R&D on the transient response of sound reproduction systems. Has patent on technique for reverse bending vibration testing of items large or small. Originally conceptualized for testing at earthquake frequencies and accelerations, this technique allows frequency to be adjusted separately from acceleration. Has worked as a senior pipe stress analyst for Catalytic, Inc. in the petro-chemical field. Is interested in inertial propulsion system suitable for transportation and space travel; a system independent of air and gravity.

43. ROBERT A. BOLKE 23, 25, 26, 27
115 Mamanasco Road
Ridgefield, CT 06877
(203) 438-5597

Administrative consultant to R&D companies.

44. R. R. BOWKER CO. 97
1180 Avenue of the Americas
New York, NY 10036
Ruth Karpes

Publishers. Sell mailing lists of libraries and bookstores.

52. CADCOM, INC. — 1, 21, 32, 45, 47, 48, 63, 68, 77, 79, 87, 95, 103, 107, 108, 109, 114
107 Ridgely Avenue
Annapolis, MD 21401
Dr. Charles O. Heller, President
(301) 268-9010

High-technology firm active in computer-aided design, systems engineering, environmental and energy technology, technology transfer, safety engineering, and systems engineering. CADCOM employs 50 persons at three locations: Annapolis, MD, Arlington, VA and Norfolk, VA.

53. CANNON ASSOCIATES — 69, 78, 109
Box 2007
Reston, VA 22090
Peter J. Cannon, Pres. (703) 437-5888

Field marketing and sales. Market research and intelligence. Program development. R&D marketing. Technical hardware sales. Public relations. Contract administration. Marketing consultation. Government liaison.

54. CARY ARBORETUM — 36, 48, 103
P. O. Box AB
Millbrook, NY 12545
Daniel F. Brown (914) 677-5348

Solar energy systems and energy conservation in building construction; environmental safety; ecologically oriented research and education.

55. CELESTIAL SYNERGETICS CORP. — 93, 103
2 Houston Center—Suite 814
909 Fannin
Houston, TX 77002
Dr. Bryan J. Zwan, Chairman of the Board
(713) 654-4422

Basic, applied and product oriented research and development of Solar-to-Electric Energy conversion devices and systems with primary effort in photovoltaics.

56. CHAM OF NORTH AMERICA, INC. — 5, 6, 19, 21, 23, 27, 34, 45, 46, 47, 49, 52, 56, 57, 63, 65, 74, 76, 80, 83, 87, 88, 92, 93, 95, 103, 108, 114, 121, 123
3400 Blue Spring Rd.—Suite A7
Huntsville, AL 35810
Michael A. Spalding, Administration Mgr.
(205) 859-4440

Develops computer programs based on the mathematical modelling techniques of Prof. D. B. Spalding, to analyze and predict one, two, and three dimensional fluid flow phenomena, involving heat, mass and momentum transfer. Specific areas of interest include: the flow of fluids either liquid or gas; the flow of heat either by contact or radiation; and also with chemical reaction as in fuel mixing with air to give hot exhaust gases.

57. DR. HAN CHANG — 45
3629 Cal-Ken Drive
Murrysville, PA 15668
(412) 325-2585

Energy conversion and conservation.

63. COMMONWEALTH RESEARCH CORP. — 6, 14, 21, 22, 25, 31, 32, 37, 40, 45, 58, 60, 68, 72, 80, 86, 102, 108, 118
11800 Sunrise Valley Drive
Reston, VA 22091
Richard J. Taylor, Sr. Associate
(703) 620-3999

Transportation Systems Consulting. Railroad development. State and Local planning. Analytical services.

64. COMPUTER CORPORATION OF AMERICA
575 Technology Square
Cambridge, MA 02139
James B. Rothnie, Jr. (617) 491-3670

(No expertise submitted at time of printing)

65. COMPUTER GENETICS CORP. — 6, 21, 23, 28, 47, 70, 74, 83, 89, 90, 93, 106, 108
18 Lakeside Office Park
Wakefield, MA 01880
Bernard Caputo, Pres. (617) 246-2838

REMOTE SENSING: (1) water subsurface temperature and salinity, hazardous materials, oils and pollution in water, (2) atmospheric humidity, density, composition, pollution field studies, oceanographic research vessel and mobile laser van. ENGINEERING PHYSICS/ELECTRO OPTICS: optical diagnostic development; laser applications, design and fabrication of prototypes; scientific and industrial measurement and control instrumentation, gas laser design and development organization. REAL TIME SYSTEMS ENGINEERING: digital data acquisition, airborne and field systems process control, hardware and software systems, control and data processing, automated densitometers, drill ship, and combustion systems. APPLIED MATHEMATICS: computer simulation techniques, data reduction and analysis methods, data base management, information retrieval.

66. COMPUTER HORIZONS, INC. — 21, 23, 32, 37, 58, 68, 81, 93
1050 Kings Highway North
Cherry Hill, NJ 08034
Francis Narin, Pres. (609) 779-0911

R&D evaluation consultants, EDP consultants with background in mathematics, physics, chemistry, biomedicine, sociology, economics, library/information science, computer science and statistics. Computational facility: PDP 11/40 with 56k (bytes) useable core, 2 IBM compatible tapes, cartridge disks, line printer, card reader and paper tape reader/punch. Technical staff in Washington, D.C. also.

67. CONTAX — 45, 81, 91
P. O. Box 740
Silver Spring, MD 20901
Carolyn Bloch, Pres. (301) 622-4351

Research information in the areas of government procurement, occupational safety and energy. Perform government market research.

68. CONTEMPORARY SYSTEMS, INC. — 45, 103
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Jaffrey, NH 03452
John C. Christopher, Pres.
(603) 532-7972 or 532-7038

Manufacturers of an integrated warm air solar space heating system.

76. DESIGN ALTERNATIVES, INC. — 8, 23, 27, 28, 36, 38, 39, 45, 47, 55, 89, 95, 97, 102, 103, 109, 114
1312 - 18th Street, N.W.
Washington, DC 20036
Eugene Eccli, Pres. (202) 223-0830

Engineering, Program Design and Evaluation, and Policy Research in Energy Conservation, Solar Energy, and Appropriate Technology.

77. DESIGN-DEVELOP-SUPPLY — 78, 103, 107, 113, 119
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Livingston, AL 35470
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Comparative testing and observation of open and closed systems, and hot air systems. Residential and commercial applications. Also retrofits on low cost government housing.

78. DEVELOPMENT PLANNING AND RESEARCH ASSOCIATES, INC. — 14, 21, 23, 27, 37, 45, 48, 54, 78, 102, 123
200 Research Drive
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Manhattan, KS 66502
Robert J. Buzenberg (913) 539-3565

Research and consulting firm established in 1960 providing services in economics, marketing, agricultural economics, agriculture, financial analysis, energy economics, environmental economics and international development.

79. DOBLE ENGINEERING CO. — 24, 49, 70, 110, 111, 113
85 Walnut Street
P. O. Box 414
Watertown, MA 02172
Richard I. Lowe, Pres. (617) 926-4900

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80. DONALDSON CO., INC. — 2, 51, 95
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Thomas Donnelly, Program Mgr. (612) 887-3485

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81. DOTY ASSOCIATES, INC. — 2, 37, 40, 44, 47, 80, 87
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Aeronautical, naval and marine engineering. Electrical, electronic, mechanical and acoustical engineering. Mathematics, statistics, economics and operations research.

89. ELECTRO-SCIENCE LABORATORIES Inc. — 3, 16, 17, 24, 44, 79, 82, 103
2211 Sherman Avenue
P. O. Box 596
Pennsauken, NJ 08110
Dr. Sidney J. Stein, Pres. (609) 663-7777

Thick Film and Optoelectronic Materials including solder pastes, glass products, dielectrics, glass free conductors, overglazes, resin based products, conductive products, conductive epoxies and resistive.

90. ELECTROCHEMICAL TECHNOLOGY Corp. — 10, 17, 24, 27, 29, 34, 41, 45, 47, 80, 103
3935 Leary Way, N.W.
Seattle, WA 98107
Theodore R. Beck, Pres. (206) 632-5965

Areas of interest are contract research and development and consulting in the field of electrochemical engineering, including corrosion processes and control, batteries and fuel cells, industrial electrolytic processes, and electrochemical devices. Capabilities include laboratory and pilot plant testing, mathematical modeling, and process studies.

91. ELECTRONIC ASSOCIATES, INC. — 6, 12, 20, 80
185 Monmouth Parkway
West Long Branch, NJ 07764
Gary Kittler (201) 229-1100

Mathematical modeling and simulation in aerospace, biomedical and communication areas.

92 EMERGENCY CARE RESEARCH INSTITUTE
5200 Butler Pike
Plymouth Meeting, PA 19462
Darrell Foreman

(No expertise submitted at time of printing)

93. ENERGY DEVELOPMENT RESEARCH — 17, 20, 23, 26, 28, 41, 44, 45, 47, 70, 99, 101, 103, 108, 110, 111, 112, 112A, 113, 113A, 123
727-B N. Gordon Street
Pomona, CA 91768
Arnold T. Lloyd, Pres. (714) 629-4437

Energy Development Research consultant specializing in energy related technologies. Electrochemistry. Electric/Electronic Systems Engineering. Instrumentation Techniques. Systems Integration.

94. ENERGY DYNAMICS CORP. — 45, 103
6062 E. 49th Avenue
Commerce City, CO 80022
Michael McLaughlin, Pres. (303) 287-0149

Manufacturer of solar components. Solar grants.

95. ENERGY RESOURCES CO.
185 Alewite Brook Parkway
Cambridge, MA 02138
Henrietta Gates

(No expertise submitted at time of printing)

103. WILLIAM G. FLORENCE — 67, 68
400 Haddon Avenue——Apt. 503
Haddonfield, NJ 08033
(609) 429-1598

Expert Consultation on Government Security Classification Policies; Industrial Security Procedures; Export licenses for Technical Information; Elimination of Unrealistic and Unnecessary Secrecy.

104. FLOW TECHNOLOGY, INC. — 6, 14, 26, 34, 45, 54, 70, 88, 96, 101, 103, 108, 116
4250 E. Broadway
P. O. Box 21346
Phoenix, AZ 85036
Edward E. Francisco, Pres.
(602) 268-8776

Develops and manufactures fluid flow measurement and related calibration equipment.

105. ALBERT G. FONDA — 1, 25, 28, 47, 66, 72A, 75, 96, 97, 112, 118
545 Hughes Road
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(215) 687-3311

Consultant in Design and Dynamics of Mechanisms and Vehicles. Accident Investigation. Product Liability. Litigation. Testimony. Servomechanism design and analysis. Publications for and assistance to the innovator.

106. FULMER RESEARCH INSTITUTE
1522 K Street, N.W.——Suite 334
Washington, DC 20005
K. J. O'Connor (202) 638-2652

(No expertise submitted at time of printing)

107. GENERAL ENERGY DEVICES — 45, 103
P. O. Box 5679
Clearwater, FL 33518
Leonard D. Levin

Developers and manufacturers of solar water and space heating products.

108. GENERAL TECHNICAL SERVICES, INC. — 12, 25, 31, 36, 37, 58, 63, 72, 93, 114
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Arthur S. Iberall (215) 449-2333
Samuel Z. Cardon

Extensive background in interdisciplinary R&D and general systems science in biomedical sciences including biophysics, biomodelling and bioinstrumentation; urban transportation; cybernetics; global ecology and economic theory; hydrodynamics; and thermodynamics.

109. GEOCHEM LABORATORIES — 9, 59, 89, 95
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Houston, TX 77043
Stephen J. Martin (713) 467-7011

Organic geochemical analyses; source rock evaluation; crude oil source rock correlation; crude oil characterization; geochemical prospecting; hydrocarbon baseline studies; marine pollution monitoring.

117. HITEC CORPORATION
65 Power Road
Westford, MA 01886
Diane Roland

(No expertise submitted at time of printing)

118. ROSS HOFMANN ASSOCIATES — 27, 45, 48, 65, 81, 95, 108, 109, 119
2908 Salzedo Avenue
Coral Gables, FL 33134
Ross E. Hofmann, Pres. (305) 445-5376

Health Care & System Engineering Consultants. Solid Waste-to-Energy Production Consultants.

119. HOYLE-TANNER & ASSOCIATES
1 Technology Park
Londonderry, NH 03053
Dr. Stanley Buckser (603) 669-5420

(No expertise submitted at time of printing)

120. HUMAN SCIENCES RESEARCH, INC, (HSR) — 20, 23, 25, 27, 45, 62, 64, 68, 81, 102
7710 Old Springhouse Road
Westgate Research Park
McLean, VA 22101
M. Dean Havron, Pres. (703) 893-5200, Ext. 32
William W. Chenault, Vice President, Ext. 53
(Principal Contact)

Fields: Applied Social Science Research in areas of program development; evaluation; survey research; equal opportunity analyses; health care delivery, product labeling; energy conservation; training; performance evaluation, management information systems; and disaster preparedness planning. Staff holds advanced degrees in psychology, communications, political science, statistics, sociology, industrial management, health education, criminal justice, and anthropology.

121. JOHN P. HUMPHREY — 19, 21, 45, 47, 53, 92, 103
5409 Mason Street
Midland, MI 48640
(517) 631-2935

Computer simulation. Small computer applications. Process and Pilot Plant Design. Solar Energy and Synthetic Fuels.

122. HYDRAGON CORPORATION — 7, 8, 45, 46, 47, 103, 114
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M. P. Frost, Pres. (305) 848-1066

Analytical design, engineering, and prototyping of vehicular Brayton, Rankine, and combined cycle engine systems.

123. IEC ELECTRONICS CORPORATION — 44, 47, 70
105 Norton Street
Newark, NY 14513
Dennis C. Mezzatesta, Govt. Mktg. Coordinator
(315) 331-7742, Ext. 11

Produces full line of VHF (150 MHz to 174 MHz) portable handheld transceivers and ancillary products in the RF Communications field. In addition, is one of the largest contract manufacturers in western New York with the capability to fabricate printed circuitboard assemblies, harnesses, chassis and full O.E.M. products to a customer's drawings.

130. INTERPRISE CORPORATION — 14, 78, 117
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Lawrence Levy, Pres. (617) 875-4131

International management consulting; product development financing; mergers and acquisitions; license arrangements and joint ventures.

131. INTERTECHNOLOGY/SOLAR CORP. — 8, 27, 45, 47, 95, 103
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132. IONICS, INC. — 17, 34, 41, 49
65 Grove Street
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Wayne A. McRae, VP/Research (617) 926-2500

Electrochemistry, charged (ion-exchange) membranes, water treatment; desalination of water by electrodialysis; real-time monitoring of total oxygen demand, total organic carbon, total carbon and other parameters in process streams; develop membranes for new applications; preparation of instruments for commercial production and commercial manufacture of equipment.

133. ISRAELI INDUSTRY CENTER FOR R&D (IICRD) — 12, 47, 70
33 Ogarit Street
Tel-Baruch, Tel-Aviv, ISRAEL
(03) 47 15 69

Purpose of the IICRD is to advance and promote high technology of the industry in Israel and to encourage industrial R&D. IICRD incorporates most of the R&D and high technology companies in Israel, and has close working connections with scientists dealing with applied research, Universities and the Government of Israel.

134. ITHACO, INC.
735 W. Clinton Street
Ithaca, NY 14850
E. W. Seymour

(No expertise submitted at time of printing)

135. J-TEC ASSOCIATES, INC. — 5, 8, 19, 20, 28, 44, 45, 48, 70, 83, 89, 95, 103, 123
317 - 7th Avenue, S.E.
Cedar Rapids, Iowa 52406
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154. C. H. LUHRS & CO. — 42, 49
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S. Hackensack, NJ 07606
C. H. Luhrs (201) 772-0620

Microwave devices.

155. MBAssociates — 2, 5, 6, 7, 15, 17, 19, 103, 108, 121
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San Ramon, CA 94583
Robert Mainhardt, Pres. (415) 837-7201

Passive Countermeasures Systems, Dispensers, Flare and Chaff, Small Ordnance Items, Pyrotechnics, Electro-Mechanical Systems, R&D.

156. MERADCOM — 60
(U.S. Army Mobility Equipment
R&D Command)
Small Business and Economic Utilization Advisor
Ft. Belvoir, VA 22060
ATTN: DRDME-ZV
(703) 664-2482

157. McLAUGHLIN RESEARCH CORP. — 22, 32, 44, 45, 50, 68, 87, 97, 108
1110 Spring Street
Silver Spring, MD 20910
Daniel Scherr (301) 585-7100

Systems engineering; Energy system analysis; Navy claims prevention and analysis; Management information systems; Configuration management; Integrated logistic support systems; Electronic data processing; Technical publications; Film production-technical, training and publicity. In conjunction with the NavOrd and NavShips, develops the ORDLIS and SECAS systems and the implementation handbooks for those systems.

158. Mac ARTHUR RESEARCH CO.
RD #2, Box 264
Malvern, PA 19355
Arthur MacArthur

(No expertise submitted at time of printing)

159. A. Mac DONALD ENGINEERING — 40, 45, 82
1235 Ashland Avenue
Wilmette, IL 60091
A. MacDonald (312) 256-4688

Energy conservation; Metal processing; Industrial foundries die casting. Utilization of electric energy from sources that are not constant. Supply varies.

160. MAN FACTORS, INC. — 1, 25, 26, 28, 38, 39, 47, 64, 66, 70, 72, 91, 96, 102, 108
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(continued)

165. MASSACHUSETTS SCIENCE AND TECHNOLOGY FOUNDATION — 12, 14, 19, 45, 48, 60, 75, 78, 103, 109, 117, 119, 123
10 Lakeside Office Park
Wakefield, MA 01880
Irving Sacks, Acting Director (617) 246-1250

Service agency dedicated to furthering the economic well-being of Massachusetts through improved liaison with the outstanding scientific and industrial communities in the Commonwealth. Within the scope of science and technology, activities may take many forms, but in each instance, the main objective will be to solve unavoidable and critical technical problems, and stimulate the general economy. It is the policy of the Foundation not to duplicate services and facilities available elsewhere within the Commonwealth, but rather to perform its function through the medium of existing talent and resources wherever possible. ACTIVITIES INCLUDE: Technology Exchange; Advisory Service; Program Management; Technology Grants; Study Initiation; Meeting Support.

166. MASSDESIGN ARCHITECTS & PLANNERS — 27, 45, 61, 97, 103, 109
138 Mt. Auburn Street
Cambridge, MA 02138
Gordon F. Tully (617) 491-0961

Energy Conservation Consultants. Energy; Graphic Arts; Publishers; Solar Energy; Technology Transfer.

167. MATACHEM RESEARCH CORP. — 17
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Cherry Hill, NJ 08034
Dr. Ralph Matalon (609) 667-8233

Chemistry. Manufacturer of perfume.

168. MATHEMATICAL SCIENCES NORTHWEST — 37, 45, 48, 74, 80
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Bellevue, WA 98009
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G. F. Kugler, VP/Administration
High energy gas laser technology; fusion technology; economic studies; environment, resource conversion and engineering studies.

169. MEGA ANALYTICAL RESEARCH SERVICES — 5, 40, 47, 77, 90, 107
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Silver Spring, MD 20904
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Specializes in design and analysis of prototype systems on a dedicated client basis including mechanical, electrical design of spacecraft systems, hydrospace systems, optical instruments and remote manipulator devices. Fabrication, test and evaluation of experimental verification units. Structural, thermal and mechanical R&D.

170. MERCURY COMMUNICATIONS — 97
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High-technology business publications and consulting.

171. MET ELECTRICAL TESTING CO., Inc. — 12, 26, 40, 49, 111
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Baltimore, MD 21230
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177. MORRIS & WARD
5817 Plainview Road
Washington, DC 20034
Dr. Alan D. Morris (301) 320-4900

40, 47, 65, 75

Technology assessment. Power Plant Siting. Mechanical, electrical and hydraulic systems. Science and law.

178. WILLIAM M. MOSCRIP
Route 2, Box 474
Fredericksburg, VA 22401
(703) 775-7207

16, 47, 53, 72A, 74, 79, 87, 94, 121, 123

Inventor. R&D in mechanical/electrical/materials science area. Naval science; Naval weapons; interior ballistics; guided projectiles. Hardware prototype development. Prestressing refractory brittle materials to be used in gun barrels; projective/missile control fin actuator. Wind energy conversion. Stirling engine design; gas turbine design; synthetic fuel processes; thermal energy storage; heat pipe technology; solar pond design. High temperature ceramics; amorphous metals. Machine design; automotive design; fluid power generation; ship design, high speed hydrofoils. Gun design technology; precision guided ordnance; high energy lasers.

179. MULTISYSTEMS, INC.
1050 Massachusetts Avenue
Cambridge, MA 02138
Carole J. Berkson (617) 864-5810

(No expertise submitted at time of printing)

180. NATIONAL TESTING SERVICES
1905 Chapel Hill Road
Durham, NC 27707
Carol Hill

(No expertise submitted at time of printing)

181. NAVAL AIR DEVELOPMENT CENTER
Street & Jacksonville Roads
Warminster, PA 18974
Rose G. Mandrack

(No expertise submitted at time of printing)

182. NORTHWEST RESEARCH AND COUNSELING SERVICE
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Amos F. Warren, General Manager
(509) 967-3684

3, 24, 27, 96, 99, 108, 113, 114

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183. O'DONNELL & ASSOCIATES, INC.
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Pittsburgh, PA 15232
William J. O'Donnell, President
Ray G. Fasiczka, Vice President
(412) 687-7715

1, 2, 19, 21, 24, 45, 47, 63, 79, 82, 88, 93, 96, 103, 107, 112, 113

Engineering design and analysis services. Activities include stress analysis and certification of components, dynamic and seismic analysis, elastic and plastic analysis, nuclear fuel studies, reliability analysis, systems

(continued)

192. JAMES L. PLUMMER
8913 Footstep Court
Annandale, VA 22003
(703) 978-2911

14, 37, 45

Economic modeling; benefit cost analysis; risk-benefit analysis; energy economics; environmental economics.

193. POLYSCIENCES, INC.
Paul Valley Industrial Park
Warrington, PA 18976
Dr. B. David Halpern, Pres.
(215) 343-6484

12, 13, 17, 24, 33, 43, 81, 94

Consultant and sponsored research in polymers, monomers, production, market development, formulations, applications and evaluation for all areas of plastics use. Specialties in medical and dental polymers, contact lenses, enzyme substrates, implant polymers, FDA materials, acrylics, PVC, polyvinyl alcohol, water-soluble polymers, thermosets, adhesives, latices, forest products, coatings, textiles and new monomers. 20,000 sq. ft. laboratories with full synthetic and pilot capability. Current confidential client relationships with major and small companies.

194. PRESEARCH, INC.
2361 S. Jefferson Davis Hwy.
Arlington, VA 22202
Leonard P. Gollobin, President
(703) 920-5740

2, 21, 22, 23, 25, 32, 40, 45, 47, 48, 58, 64, 65, 68, 71, 77, 80, 81, 87, 88, 89, 93, 99, 103, 108, 121

Performs studies and analyses and provides inputs for management decision-making; largely for the Department of Defense. Specific areas include naval warfare; strategic studies and projections; resource management (manpower, personnel and training, costing); and data processing support including systems analysis and programming.

195. PRODUCT RESOURCES INTERNATIONAL
90 Park Avenue
New York, NY 10016
Eugene F. Whelan (212) 682-2966

3, 10, 17, 18, 35, 69, 109

Represent selected inventors on a no-fee, share-of-the-action basis. Also conducts invention-searches on behalf of companies in return for a fee paid by the company(s). (The inventor or technology owner pays nothing.)

196. PRODUCTION COMPONENTS, INC.
Building I, El Tesoro Road
P.O. Box 7
Ranchita, CA 92066
E. S. Christensen, Pres. (714) 782-3339

45, 46, 47, 76, 103, 118, 123

Precision Machining——Tool and Die work. Thirty-two years in business of designing and building specialized machines-dies-equipment and processes. Holder of patent on thermal engine. Others pending.

197. PYROMET INDUSTRIES
595 Industrial Road
San Carlos, CA 94070
Tom Hikido, Vice President
(415) 591-7161, Ext. 35

3, 6, 7, 9, 15, 16, 19, 24, 45, 46, 47, 49, 74, 76, 79, 82, 88, 99, 103, 113, 119, 121

Brazing and heat treating. Metallurgical research & development. Production of aerospace hardware. Refurbishment of jet aircraft engine parts.

204. RESEARCH DYNAMICS, INC. 12, 41, 44, 93, 106
P.O. Box 65, Village Station
New York, NY 10014
Dr. Raymond DiMartini, Director

Electrochemistry, spectroscopy and biomedical instrumentation. Multi-disciplined research services are offered within these fields by utilizing contemporary microelectronics technology with novel interpretations of fundamental physical principles. Physical and chemical parameters of problems are investigated and interpreted in terms of up to date technological literature available and in terms of the development required to attain a specific goal or produce a specific device. Traditional approaches are critically reviewed and evaluated in relation to the interpretation developed.

205. ROCKVILLE CONSULTING GROUP, Inc. 14, 37, 69, 72, 78, 102, 109, 117
505 Second Street, N.E.
Washington, DC 20002
Stuart A. Lichtman, President
(202) 543-1040

Support to venture capitalists and other investors dealing with high technology firms.

206. ROOT DEVELOPMENT CORP. 9, 12, 17, 81
Orentreich Medical Group
909 Fifth Avenue
New York, NY 10021
Dr. Joseph H. Vogelman (212) 794-0835

Biomedical instruments and processes in endocrinology, heart measurements, thyroid responses, chemical responses. Measure blood levels, hormone levels, analysis of dermatological effects of household remedies on skin. Analysis of products for allergy potential. Computerized electrocardiagrams.

207. GEORGE KNOX ROTH
P.O. Box 811
Claremont, CA 91711
(714) 624-4801

(No expertise submitted at time of printing)

208. ROTHENBUHLER ENGINEERING CO. 20, 28, 40, 47, 77, 101, 103, 112, 123
Rhodes Road
P.O. Box 192
Sedro Woolley, WA 98284
Howard Rothenbuhler, Pres. (206) 856-0836

Originally founded to build radio control systems for the Forest Products Industry, company has grown to manufacture bank alarm systems, intrusion detection, scanning and monitoring equipment and single side band radios as well as the Talkie Tooter remote 2-way radio. Engineering testing, consulting, and custom engineering and manufacturing in the electronics field are also offerred with recent emphasis on wind generators and energy conservation.

B & S Screw Machine Products
a division of SGL Industries, Inc.
204 North Chester Pike
Glenolden, PA 19036
(215) 724-4366

Manufactures metal and plastic screw machined parts.

SGL Plastics
Route 248
Nazareth, PA 18064
(215) 759-0280

Produces custom components parts, through the injection molding, profile, and sheet extrusion processes.

SGL Graphics
John Fitch Industrial Park
Warminster, PA 18974
(215) 672-3600

Produces fiberglass signs and displays through the proprietary Modulite® and Moducal® processes which offer superior resistance to vandalism, sunlight, chemical fumes and weather.

SGL Homalite
11 Brookside Drive
Wilmington, DE 19804
(302) 652-3686

Produces crystal-clear and colored plastic sheets, tubes, and rods. Homalite™ plastics exhibit superior resistance to abrasion, impact and radiation. Produces Homalite-LR (low-glare) instrument panels and faceplates.

SGL Modern Creative
35 Market Street
Elmwood Park, NJ 07407
(201) 791-7700

Provides services to coat, frost and print glass and plastic containers.

SGL Modern Hard Chrome Service
Cover & River Roads
Pennsauken, NJ 08110
(609) 665-8600

Provides hard chromium, electroless nickel and copper plating.

SGL LUBE/systems
280 Midland Avenue
Saddle Brook, NJ 07662
(201) 791-6200

Manufacturer of automatic grease feeders used in industrial applications.

216. SHAKER RESEARCH CORP. 2, 6, 21, 26, 27, 40, 44, 45, 47, 51, 70 112, 115
Northway 10 Executive Park
Ballston Lake, NY 12019
John M. McGrew, Pres. (518) 877-8581

Structure and airborne vibration data processing; machinery and structural dynamics; high performance bearing design and analysis; lubrication; seal design and analysis; acoustic and mechanical vibration analysis; machinery design reviews; machinery failure protection.

216A. ALBERT SHAPERO 14, 37, 39, 78, 102
Ohio State University
Columbus, OH 43210

As of May 1978, William H. Davis Professor of American Free Enterprise System, Ohio State University, Columbus, Ohio. Formerly, Professor of Management at the University of Texas at Austin, Austin, Texas since December 1966 and a member of the Graduate Faculty of the School of Library and Information Science. He has been Chairman of the University of Texas' Department of Management, visiting faculty member of the International Institute for the Management of Technology in Milano, Italy (IIMT), and Director of the Technology Management Division at Stanford Research Institute. At Stanford, he was principal investigator and project leader or participant in a large number of research projects. As Director of Technology Management Programs, he developed and headed a multidisciplinary research organization that was concerned with the application of systems approaches to the solution of complex problems.

217. SHEPARD LABORATORIES 20, 21, 26, 28, 32, 40, 44, 46, 68, 69, 101, 108
19 Morris Court
Summit, NJ 07901
F. H. Shepard, Jr., Consulting Engineer
(201) 273-5255

Electronic-Electro-Mechanical Systems developed; computer peripherals; instrumentation & control; prototype construction.

218. RALPH L. SHERMAN 12, 17, 80, 81, 93
1019 Coronado, #25
Imperial Beach, CA 92032
(714) 429-7966
d/b/a J. M. Richards Laboratory
15133 Kercheval Avenue
Grosse Point Park, MI 48230

Biophysics. Biochemistry. Bioengineering. In abstracto modeling of hormonal, biochemical and bioelectrical factors associated with nonperiodic oscillations of CNS excitability; they serve as a foundation for continuing research in quantifying brain function in health/desease. Mathematical analysis of longitudinal EEG studies in clinical patients.

219. SHRADER ANALYTICAL LABORATORIES 9, 17, 18, 55, 92, 95, 110
3450 Lovett Avenue
Detroit, MI 48210
Dr. Stephen Shrader, Pres. (313) 894-4440

Analytical chemistry consultants. Specializing in identification of unknown materials——pollutants, drugs, contaminents in industrial products; experts in mass spectrometry and gas chromatography.

250. TRANTECH CORPORATION — 97, 109
P. O. Box 310
Newton, MA 02160
Martin Himmelfarb (617) 964-0699

Publishers. Technology Transfer.

251. TREADWELL CORPORATION — 41, 45, 47, 48, 119
1700 Broadway
New York, NY 10019
J. A. Johnson, Sr. Vice President
(212) 262-3120

Integrated engineering-construction firm with expertise in the ferrous and non-ferrous metals industries. Also has unique qualifications in electrochemistry and is the only producer of electrolytic oxygen equipment for nuclear submarines.

252. TREADWELL CORPORATION — 41, 45, 47, 48, 119
1700 Broadway
New York, NY 10019
John M. Schreiner (212) 262-3120

Integrated engineering-construction firm with expertise in the ferrous and non-ferrous metals industries. Also has unique qualifications in electrochemistry and is the only producer of electrolytic oxygen equipment for nuclear submarines.

253. UNIFIED INDUSTRIES, INC. — 25, 48, 99, 107, 108, 112, 118
205 S. Whiting St. ——Suite 201
Alexandria, VA 22304
Walter L. Ambrose, Procurement Mgr.
(703) 751-2200, Ext. 69 or 79

A minority-owned, small business corporation furnishing competent and reliable systems engineering and technical support services to government and industry. Structured with no proprietary interest in hardware, providing an environment for objectivity through an unbiased approach. Application of specialized disciplines in the electrical, electronic and mechanical fields provides for support services in a wide range of technologies.

254. UTILITY RESEARCH CO. — 3, 17, 24, 94
98 Greenwood Avenue
P.O. Box 107
Montclair, NJ 07042
Harry S. Katz (201) 744-8259

Consulting and R&D on plastic materials, advanced composites, adhesives, elastomers; formulation, prototype and shortrun molding and production liaison.

255. VAN ALLYN, INC. — 45, 72A, 122
310 East 44th Street
New York, NY 10017
Wayne P. LeVan, Pres. (212) 986-0550

Franchisor of inventions, U.S. and foreign, involving the use of vehicular traffic to generate electricity without the use of energy fuel using only the weight of vehicles.

256. VENCON MANAGEMENT, INC. — 14, 23, 37, 53, 60, 64, 78, 92, 94, 117
730 Fifth Avenue——Room 918
New York, NY 10019
Irvin Barash, Pres. (212) 581-8787

Evaluates entrepreneurs, technology, markets, businesses, and arranges for equity and debt capital. Analyzes plant site locations and identifies and studies acquisition candidates.

263. WESTWOOD RESEARCH LABORATORY
543 High Street
Westwood, MA 02090
John Cornell (617) 326-3965

9, 12, 23, 24, 33, 78, 81, 94, 110, 113

Independent dental research lab servicing clients in oral hygiene, chemical, drug and food industry. Specializes in developing models for dental disease, devise testing conditions which parallel those occurring in the mouth. Sets up screening programs which increase the chances for successful clinical investigation. Dental materials research, development and testing including specification testing. Specializing in polymeric materials.

264. WHEELER INDUSTRIES, INC.
1129 - 20th St., N.W.——Suite 403
Washington, DC 20036
E. Joseph Wheeler, Jr., Pres.
(202) 659-1867.

2, 12, 13, 22, 23, 25, 27, 63, 77, 87, 89, 91, 95, 103, 108, 109, 110, 112, 119

Involved in advance research and development planning in support of naval ship systems, underwater systems, and energy and environmental protection systems. Specializes in oceanographic and environmental research, as well as systems engineering for ship, air, electronic, mariculture and deep ocean systems.

265. WILFORD AIRCRAFT CORP.
300 Linden Lane
Merion Station, PA 19066
E. Burke Wilford (215) 664-1220

5, 6, 77

Aero architecture. Marine engineering.

267. GLEN W. WILTROUT (Consultant)
2028 N. Vermont Street
Arlington, VA 22207
(703) 528-9166

14, 27, 39, 60, 69

Government contract administration. Administrative management. Energy conservation education. Represents technical innovators (mechanical).

268. WIND-DE-GO, INC.
1940 W. Cheryl
Phoenix, AZ 85021
E. K. Hillman, Pres. (602) 943-0439

28, 44, 45, 72A, 78, 81, 103, 123

Performs first stage R&D on inventions for cost analysis. Develop control systems for hybrid solar/wind configurations. Co-develop product research on pain relief. Formulate marketing policy. Inventor.

269. WIND ENERGY RESOURCE DEVELOPMENT
P. O. Box 324
Bennett, CO 80102
Leslie J. Mathis, Pres. (303) 644-3710

4, 5, 16, 29, 30, 42, 44, 69, 78, 90, 94, 101, 103, 108, 117, 123

Engages in the design of wind energy systems and subsystems.

270. WOLCHUK AND MAYRBAURL
432 Park Avenue South
New York, NY 10016
Roman Wolchuk (212) 689-0220

47, 107

CONSULTANTS. Civil Engineering. Steel plate structures. Service platforms. Hoists. Stationary offshore oil drilling platforms. Transmission towers. Transformer foundations. Underground transformer vaults.

AMERICAN ASSOCIATION OF SMALL RESEARCH COMPANIES

MEMBERS DIRECTORY

Additional Members

14A. APPLIED BIOLOGICAL SCIENCES LABS. — 9, 12, 13, 17, 35, 66, 81, 84, 89, 110
6320 San Fernando Road
P.O. Box 3218
Glendale, CA 91201
Dr. J. B. Michaelson, Director
(213) 245-1318

Toxicity Testing Laboratory; Bio-assay; Pharmacology; Toxicology; Microbiology; Marine Biology; Chemistry; Forensic Medicine; Nutrition; Pathology; Water Analyses. R&D in biology and medicine; fish and wild life toxicology. Preparation of IND's and NDA's. Consultation on GMP's and GLP's.

30A. JOHN H. BANKS LABORATORIES — 9, 16, 17, 19, 36, 59, 82, 99, 106, 110, 113
49 Cannonball Road
Pompton Lakes, NJ 07442
Bruce P. McCloskey, Pres. (201) 839-3450

Analytical chemistry in the inorganic field including x-ray fluorescence, emission spectrography, spectrophotometry, atomic absorption spectrophotometry, and general wet chemistry.

82A. DYNA EAST CORPORATION — 6, 24, 47, 80, 113, 121
227 Hemlock Road
Wynnewood, PA 19096
Joseph Carleone, Chief Engineer
(215) 386-4885

Specializes in various aspects of ballistics, explosive-systems technology, composite materials, and computer-software development. Present areas of expertise include Engineering R&D of shaped charges, explosive-metal systems, composite materials, underwater explosions, ship-hull protection, impact and penetration. Warhead design is also a major interest. Recently developed a modern warhead synthesis procedure applicable to many types of conventional warheads.

90A. ELECTROFRAC CORPORATION — 19, 45, 70, 75, 78, 110, 111, 112, 123
308 W - 99 Terrace
P.O. Box 8558
Kansas City, MO 64114
Erich Sarapuu, Pres. (816) 942-5965

Electro-energetic enhanced oil recovery systems, in situ electro-energetic processing of fossil fuels (tar sand, coal, oil shale, Devonian shale). Electrical rock fragmentation systems - developments, manufacturing equipment.

173B. MIDLAND ENERGY INSTITUTE
906 Grand Avenue——Suite 100
Kansas City, MO 64106
Glen Hand, Executive Director
(816) 842-2459

27, 39, 45, 97, 103, 123

(No further expertise submitted)

197A. QUAD CORPORATION
1852 Dale Avenue
Highland Park, IL 60035
Harold J. Rafson, Pres. (312) 432-3210

18, 27, 45, 47, 48, 54, 84, 95, 99, 108, 109, 119

Air Pollution Control Systems: odor control, particulate removal, energy recovery from emissions. Food Sanitation Systems: continuous process sanitizing, direct application on foods, equipment and facilities. Food Process Engineering. Energy Recovery: from emissions; through process modifications. Refrigerated Facilities Design. Food Manufacturing and Procurement Quality Assurance Systems.

201A. RAPIDEX, INC.
8 Ray Avenue
Burlington, MA 01803
Robert E. Wallhagen, Project Manager
(617) 273-2102

19, 47, 76, 103, 118, 123

Specializes in Research and Equipment Design and Development in the Coal and Hard-rock mining industry. Active areas of interest include drilling, mining, tunneling, crushing, concrete forming, and heavy equipment development.

204A. JOHN S. ROBERTS, Ph. D.
Technology Development Consultant
17 Shattuck Street
Natick, MA 01760
(617) 653-8505

9, 10, 14, 20, 21, 22, 23, 60, 68, 69, 79, 82, 94

Practice directed at improving the effectiveness of the R&D function of smaller manufacturing firms. Services include assembly, co-ordination and control of R&D programs for companies with limited or non-existent "in-house" R&D facilities; technological forecasting; technology transfer; quality assurance analysis; formation of funds for R&D programs; analysis of the overall innovative process of the firm. Dr. Roberts, a Senior Scientist at the Worcester Foundation, has been a research director and consultant in the biomedical field for over ten years. He has published numerous technical articles and has lectured extensively at universities here and abroad. In addition to his extensive training and experience as a scientist and administrator, Dr. Roberts had an early background in economics and business. He has served as a consultant to small enterprises in fields as diverse as chemicals, pharmaceuticals, food services, educational materials and automobile accessories.

222A. SISA, Incorporated
767B Concord Avenue
Cambridge, MA 02138
Dr. Harry G. Pars, Pres. (617) 354-2800

12, 17, 23, 35, 49, 55, 70, 81, 110

Principal purpose of the corporation is to engage in laboratory research and development, and in commercially developing drugs from conception through Phase II clinical trials. Current areas of interest include non-addicting analgesics and sedative hypnotics, anti-hypertensive agents, anti-convulsants, anti-diarrheals, anti-glaucoma agents, anti-anxiety drugs, tranquilizers, broad spectrum anti-biotics and drugs useful in the treatment of narcotic addiction.

237A. SURFACE TECHNOLOGY, INC. 17, 24, 29, 41, 44
3684 U.S. Highway #1
P.O. Box 2027
Princeton, NJ 08540
Dr. Nathan Feldstein, Pres. (609) 452-2929

R&D of plating applications, in particular in chemical plating for the electronics industry. Process development for improved reliability and decreased pollution. Miscellaneous specialty solutions as well as manufacturing capabilities of specialty items.

255A. VECTOR RESEARCH, INC. 45, 48, 65, 80, 81, 108
2536 Packard Road
P.O. Box 1506
Ann Arbor, MI 48106
Cynthia J. Sorensen, Director of Administration
(313) 973-9210

Independently-owned company organized to assist government and industry in the structuring and solution of complex operating and planning problems. Primary applications areas are defense, energy and health.

270A. WOODS R&D 15, 17, 21, 32, 36, 59, 69, 117
1 E. King Street
P. O. Box 1016
Yakima, WA 98907
Jay Woods, Manager (509) 452-9133

Pesticide formulation; particle size reduction; agricultural by-products; natural plant products; computer applications; basalt mineral utilization.

97A. ESSEX RECON CORPORATION — 65, 76, 116, 123
310 Erie Street
Lancaster, NY 14086
David W. Birch, Pres. (716) 684-4470

Work in electronics has been in R&D accoustically sensitive alarm devices and radio signals that will conform to new FCC regulations. Product engineering has consisted of improvements in a prototype archery release and a series of medical implements to make them more effective in applications and more attractive for sales, and several special adaptations of valves to suit specific customer requirements. Manufacturing processes include designing and building a large scale material handling interface system for Westinghouse LRA plant in Pittsburgh and a method of forming small tubes from the inside - out.

103A. Center for Educational Technology — 20, 39, 62, 64, 81, 108, 109
FLORIDA STATE UNIVERSITY
1-A Tully Gym
Tallahassee, FL 32306
Dr. Robert K. Branson, Director, CET
(904) 644-4720

The Center for Educational Technology is committed to research and development efforts in the area of instructional design and development. The emphasis is on the most effective and efficient use of systems design principles and state-of-the-art technology in developing curricula and courses, instructional materials, and in program planning, management and evaluation.

136A. T. JAYNE CO. — 1, 5, 6, 7, 12, 13, 17, 23, 24, 26, 27, 28, 29, 41, 42, 43, 45, 46, 48, 53, 57, 58, 63, 70, 72, 74, 77, 82, 87, 89, 90, 93, 94, 101, 103, 106, 107, 108, 115, 116, 118, 119, 123, 124
10234 Johnnycake
Painesville, OH 44077
Ted D. Jayne, Consultant
(216) 357-5060

Applied Research and Technical Consulting aid for industry research and engineering groups. Consultants are available for a wide range of disciplines. Areas of interest are not limited, but points of view taken are limited to those of natural science.

144A. KOOGLE & POULS ENGINEERING — 23, 47, 50
8338A Comanche, N.E.
Albuquerque, NM 87110
H. G. Koogle, Pres. (505) 294-5051

Company is not involved in direct research or equipment development. Provide a consulting service in photogrammetric and related civil engineering and surveys. Firm uses and is highly interested in all new research and developments related to its field of activity.

173A. MICRO CRAFT, INC. — 6, 28, 70
207 Big Springs Avenue
P.O. Box 370
Tullahoma, TN 37388
R. L. Kilts, Administrative Asst.
(615) 455-2664

Design and fabrication of precision scale-size models of airplanes and space vehicles to be used in wind tunnel testing for aerospace R&D programs. (Includes force and pressure instrumentation, control systems, and mounting systems.)

271. DONALD WORTH 60
336 Beacon St., Apt. 5
Boston, MA 02176

Employed by Massachusetts Department of Commerce & Development. Presently working for a State Task Force on economic development in Massachusetts of high technology companies.

272. DR. STANLEY W. ZEHR 79, 103, 108
1760 Lomitas Avenue
Livermore, CA 94550
(415) 443-2541

Materials Science——interested particularly in high efficiency solar cell development and device fabrication as well as overall systems design and analysis.

257. VERSAR, INC.
6621 Electronic Drive
P.O. Box 1549
Springfield, VA 22151
Dr. Michael Markels, Jr., Pres.
(703) 354-3350

9, 13, 15, 17, 19, 23, 24, 25, 26, 30, 36, 37, 42, 47, 48, 55, 59, 66, 70, 74, 79, 80, 82, 84, 89, 90, 93, 95, 106, 110, 112, 113, 119

High technology firm dealing in studies relating to environmental quality, resource recovery, energy research, materials research, applied physics, and life sciences.

258. VERTREX CORPORATION
808 - 106th Ave., N.E.
Bellevue, WA 98004
Albert H. Rooks, Pres. (206) 455-4718

27, 28, 44, 45

Manufactures an electronic control device whose purpose is to reduce energy and cost consumption in building HVAC systems.

259. VETERINARY RESOURCES AMERICAS
12930 North A1A
Vero Beach, FL 32960
Dr. M. L. Simmons, Pres.

8, 12, 13, 27, 32, 36, 45, 47, 48, 49, 51, 81, 84, 89, 94, 103, 119, 123

Consulting firm specializing in biomedical aspects of energy conservation and experimental animal facility design and program management. Veterinarians, designers, and engineers working together.

260. VIRGINIA ENERGY OFFICE
823 E. Main St. ——Room 300
Richmond, VA 23219
Louis R. Lawson, Jr., Director
(804) 786-8451

19, 45, 56, 103

Created by Governor Mills E. Godwin, Jr. in 1974 to serve as a focal point for energy related information, programs and planning for the State. RESPONSIBLE FOR: Keeping the Secretary of Commerce and Resources informed on energy developments and measures to minimize energy shortages in Virginia; Coordinating the flow of information between the various agencies of State government and working with the Federal and local governments and the private sector in implementing energy associated projects; Coordinating the development of energy plans and their strategies for implementation; Conducting action-oriented studies of alternative energy projects and programs; Developing and coordinating energy conservation programs for industry, commerce and private citizens; Cooperating with specific requests for the development of energy information, studies, projects, programs, or surveys; Maintaining continuous liaison with energy suppliers and distributors, agencies of other States and Federal agencies concerned with energy matters; Working closely with volunteer groups; and, Providing energy information to the public through the Virginia Energy Information and Conservation Center.

261. WVS ENGINEERS
12248 Spring Trail
Lakeview Terrace, CA 91342
William V. Susel, Pres. (213) 344-9936

19, 28, 34, 40, 45, 47, 56, 58, 70, 88, 92, 95, 103, 108, 114

Engineering management.

262. WESTERN SCIENTIFIC SERVICES
328 Airpark Drive
P.O. Box 1965
Ft. Collins, CO 80522
James F. Hedrick, VP (303) 482-3364

70, 83, 108, 123

Weather science, remote sensing, meteorological and environmental data monitoring system interfaced to satellite.

243. TECHNOLOGICAL INNOVATORS CO. — 15, 27, 34, 45, 48, 54, 64, 103, 107, 123
21,441 Highvale Trail
Topanga, CA 90290
Robert L. Woodbury, Chief Scientist
(213) 455-1721

Performs research, development and consulting in the field of Appropriate Technology (technologies that are ecologically and sociologically compatible), and require no petrochemical fuels, pesticides or non-renewable resources to make economic development possible.

244. TECHNOLOGY CLEARING HOUSE, INC. — 68
1105 Market Street——Suite 801
Wilmington, DE 19801
Ernest Breton, Pres. (302) 658-7831

Publishers of New Technology Index. Will index clients technology by function to permit retrieval of information on new technology on the basis of the needs that it satisfies.

245. TELEDYNE ENERGY SYSTEMS — 41, 45, 53, 73
110 West Timonium Road
Timonium, MD 21093
William C. Kincaide (301) 252-8220, Ext. 278

Engaged in the research and development and manufacture of electrochemical and thermoelectrical energy conversion devices, including water electrolysis systems, fuel cell systems, space power systems, and related equipment.

246. TENSOR INDUSTRIES, INC. — 2, 4, 6, 22, 23, 25, 32, 40, 44, 47, 58, 59, 60, 61, 64, 65, 68, 74, 77, 78, 81, 88, 89, 99, 100, 101, 108, 111, 112, 114, 118, 121
8415 Arlington Blvd.
Fairfax, VA 22030
Gaylord Leonard, Contract Mgr.
(703) 573-1204

R&D activities center around systems engineering, reliability and maintainability, and systems acquisition management. A wide variety of engineering, technical and management skills are represented on its staff. Company has no hardware products.

247. THERMOTRON CORPORATION — 14, 40
Kollen Park Drive
Holland, MI 49423
John J. Sexton, Pres. (616) 392-1491

Business Administration. Electrical Engineering.

248. TRANS-TECH, INC. — 9, 10, 16, 17, 20, 24, 40, 42, 43, 44, 79, 82, 93, 94, 99, 100, 111, 113
12 Meem Avenue
P.O. Box 457
Gaithersburg, MD 20760
A. C. Blankenship, VP/Engineering
(301) 948-3800, Ext. 73

Producers of Microwave Materials; Ferrites, Garnets, Ceramic Dielectrics; Custom Research and Development Facilities; Diamond Wheel Machine Shop.

249. TRANS-TECH, INC. — 9, 10, 16, 17, 20, 24, 40 42, 43, 44, 79, 82, 93, 94, 99, 100, 111, 113
12 Meem Avenue
P.O. Box 457
Gaithersburg, MD 20760
R. G. West, Sr. Staff Engineer
(301) 948-3800

Producers of Microwave Materials; Ferrites, Garnets, Ceramic Dielectrics; Custom Research and Development Facilities; Diamond Wheel Machine Shop.

232. STANDARD LABORATORIES, INC. 9, 17, 19, 23, 49, 99, 113
3322 Pennsylvania Avenue
Charleston, WV 25302
Dick Kelly, Technical Director
(304) 343-5173

Provides expert water and coal testing capabilities as well as innovative coal testing capabilities. Complete coal testing services include: sampling, proximate analysis, ultimate analysis of coal and coal ash, fluidity studies, and washability and/or preparation plant performance studies.

233. STANFORD RESEARCH INSTITUTE
1611 N. Kent Street
Arlington, VA 22209
Dr. William D. Theriault
(703) 524-2053, Ext. 366

(No expertise submitted at time of printing)

234. STEWART-TODD ASSOCIATES, INC. 12, 65, 66, 81, 96
No. 10 Valley Forge Executive Mall
530 E. Swedesford Rd., Suite #344
Wayne, PA 19087
Dr. W. Wayne Stewart, Pres. (215) 687-2030

Plan, develop and implement environmental health programs, nationally and internationally, including occupational medical programs; industrial hygiene surveys by certified Industrial Hygienists; toxicological test design, monitoring and interpretation. Biological and environmental health research, product safety and product liability. Expertise in training of occupational physicians, industrial hygienists and monitoring staff; augment client professional capabilities as needed.

235. T. E. STIVERS ASSOCIATES 47, 49, 60A
P. O. Box 608
Decatur, GA 30031
T. E. Stivers, Pres. (404) 378-1392

Basically R&D for mechanical processing of agricultural and food products and by-products.

236. STRUCTURE PROBE, INC. 3, 4, 9, 12, 16, 17, 24, 33, 43, 82, 94, 96, 106, 115
535 E. Gay Street
P.O. Box 342
West Chester, PA 19380
Dr Charles A. Garber, President
(215) 436-5400

Analytical and consulting laboratory equipped with some of the most advanced electron optical equipment available for materials analysis——including a combination Auger/ESCA/Scanning Auger Microprobe system for Surface Analysis plus electron microscopy (scanning and transmission), x-ray diffraction, and many other peripheral capabilities for complete materials research. Applications in failure and contamination analyses, on-line production problems, quality control, patent support, product liability in areas such as ceramics, metals, microelectronics, foods, fibers, cosmetics, air and water pollution.

237. SUGHRUE, ROTHWELL, MION, ZINN & MACPEAK 75
1776 K Street, N.W.
Washington, DC 20006
G. Franklin Rothwell (202) 293-7060

Law: Patents and Procurement.

220. SIERRACIN CORPORATION
12780 San Fernando Road
Sylmar, CA 91342
B. P. Levin (213) 367-6184

5, 17, 44, 45, 48, 93, 94

Applied research directed toward heatable, anti-reflective coatings applied directly on plastic or glass substrates usable in heatable transparencies. Additional efforts fall into the areas of solar energy research, life cycle testing, environmental testing and flight environment simulation.

221. SIGNATRON, INC.
12 Hartwell Avenue
Lexington, MA 02173
Dr. Julian J. Bussgang, Pres.
(617) 861-1500

20, 23, 40, 80

Consulting, research, development and system studies in electronic communications, radar, signal transmission and reception, mathematical modeling, performance test and evaluation, special purpose electronic instrumentation, digital interfaces, expert review and testimony.

222. ANATOLE J. SIPIN CO., INC.
425 Park Avenue South
New York, NY 10016
Anatole J. Sipin, President
(212) 689-2550

2, 26, 40, 47, 48, 49, 66, 70, 95

Instruments to monitor organic solvents, vinyl chloride, and other toxic gases and vapors, personal pumps, charcoal and other sorbent tubes, gas collection bags, and direct reading colorimetric dosimeter tubes. R&D on medical devices, energy conversion devices, non-destructive testing, ultrasonics.

223. C. BRANSON SMITH
Planning & Analysis
U.S. DEPARTMENT OF ENERGY
20 Massachusetts Ave., N.W.
Washington, DC 20545

60

224. SOL ENERGY CORPORATION
761 Rohde
Hillside, IL 60162
Joseph Kelly, Pres. (312) LI 7-5912

45

Solar energy research & development. Facility at Rutland, Illinois to use solar energy to manufacture photovoltaic cells and a general education facility open to the public.

225. SOLAR INVESTORS ASSOCIATES
325 Prospect Avenue
Mamaroneck, NY 10523
A. W. Adler, President (212) 952-9400

45, 103, 117

Management and financial consulting. Venture capital with emphasis on alternative energy firms.

226. SOUTHWESTERN LABORATORIES
222 Cavalcade Blvd.
P.O. Box 8768
Houston, TX 77009
Joe W. Jeanes, P.E., President
(713) 692-9151

9, 15, 17, 19, 24, 43, 48, 51, 54, 55, 59, 79, 82, 95, 99, 103, 106, 110, 112, 113

Materials, Environmental, and Geotechnical Consultation and Contract Research; Fundamental Testing and Analytical Services.

210. STD RESEARCH CORPORATION
150 E. Foothill Blvd.
P. O. Box "C"
Arcadia, CA 91005
Dr. John C. Cutting, VP
(213) 445-7000

5, 6, 7, 17, 19, 21, 23, 24, 27, 34, 40, 42, 44, 45, 46, 47, 48, 49, 52, 57, 58, 63, 68, 70, 74, 78, 79, 80, 93, 95, 103, 108, 111, 112, 113, 114, 119, 122, 123

Analytical modeling and systems analysis of open cycle MHD. Detailed thermodynamics analysis of combustion liquefication and gasification of coal. Interests: Conservation, oil, coal, gas utilization, solar energy.

211. SACHS/FREEMAN ASSOCIATES, INC.
5809 Annapolis Rd. ——Suite 512
Bladensburg, MD 20710
Ernest Freeman, President
(301) 927-4980

20, 21, 22, 25, 32, 40, 42, 44, 47, 61, 68, 71, 74, 80, 86, 90, 93, 100, 108, 121

COMMUNICATION SYSTEMS: Public Safety; Emergency Medical; 911; Radio Common Carrier. ENGINEERING SERVICES: EMC; Specifications and Stadards Development; ECM; Communication and Radar Systems Analysis; Electro-Mechanical Design; Laser/Optics; Design/Drafting. MANAGEMENT SCIENCES: ILS/CM/Training. COMPUTER SCIENCES: Systems Design and Specifications; ADP; Simulation/Modeling/Displays/ Analysis.

212. SAMANIE, INC.
P.O. Box 694
Alexandria, VA 22303
Anne B. Bryan

(No expertise submitted at time of printing)

213. SCIENTIFIC ASSOCIATES, INC.
1639 - 12th Street
Santa Monica, CA 90404
Dr. Eugene B. Nebeker, President
(213) 451-1344

23, 45, 47, 114, 123

Performs R&D and consulting services within the general field of chemical and mechanical engineering. Typical activities involve both theoretical and experimental work in fluid mechanics, heat and mass transport, and thermodynamics. Primary ongoing activities are in development of original concepts for oil spill skimming in high seas, rock excavation with water jets; and wind-energy conversion. The company has also been engaged in industrial consulting on environmental impact studies.

214. SEAWARD INTERNATIONAL, INC.
6269 Leesburg Pike
Falls Church, VA 22090
E. F. Daly, VP (703) 534-3500

48, 63, 77, 87, 89, 95

Development of equipment for control of marine pollution, particularly that due to oil and hazardous materials. Search and recovery of lost underwater objects. General ocean engineering.

215. SERVICE ENGINEERING ASSOCIATES
3960 Peachtree Road, N.E.
Atlanta, GA 30319
Clyde H. Gordon, Sr. Consultant
(404) 261-2050

27, 45, 65, 81

Consultants, energy conservation and management; industrial operation and maintenance; evaluation and field testing of products, methods and equipment relating to institutional sanitation.

209. SGL INDUSTRIES, INC. 10, 44, 45, 76, 104
76 Euclid Avenue
Haddonfield, NJ 08033
Jonathan R. Lax, Vice President
(609) 429-7400

Manufacturers of electrical and electronic, metal and plastic products. Providers of industrial services. Divisions include:

SGL Batteries Manufacturing
14650 Dequindre
Detroit, MI 48212
(313) 868-6410

Specializes in producing lead-acid batteries for "high-drain" applications such as in-plant equipment, electric-powered golf carts, electric automobiles, and trucks and buses——SGL Deep Cycle TM batteries.

SGL Auburn Spark Plug Co.
89 York Street
Auburn, NY 13021
(315) 252-9501

Manufactures Auburn TM line of engineered, specialty igniters, liquid level control electrodes, electric feed-throughs, motor terminals, and observation ports.

SGL WABER Electric
300 Harvard Avenue
Westville, NJ 08093
(609) 456-5400

Manufactures SGL Waber R electric power outlet boxes, SGL Power Master TM multiple outlet strips, and instrument transports.

SGL Electronics
300 Harvard Avenue
Westville, NJ 08093
(609) 456-7300

Manufactures high-performance magnetic components, magnetic laminations and cores.

SGL Printed Circuits
827 Black Oak Ridge Road
Wayne, NJ 07479
(201) 835-2765

Produces custom electronic circuitry.

SGL Abrasives
North Pitt Street Extended
Carlisle, PA 17013
(717) 243-3471

Manufactures grinding wheels and abrasive shapes, "super-speed" grinding wheels, and abrasive segments.

SGL Piping Systems
302 Falco Drive
Newport, DE 19804
(302) 995-6136

Manufactures Galaxie TM line of piping components (stub ends, coils and pipe elbows) used in petrochemical plants; integrated piping systems.

198. QUALITY BAKERS OF AMERICA CORP. — 54
1515 Broadway
New York, NY 10036
Dr. Simon S. Jackel, Vice President
(212) 790-9225

Full service laboratory and consulting facilities for bakery foods and for application of ingredients, processes and products in the baking industry.

199. QUEST RESEARCH INTERNATIONAL, Inc. (formerly Howe-Baker Engineers) — 9, 17, 19, 45, 48, 53, 55, 66, 92, 95, 99, 106, 110
P. O. Box 478
Tyler, TX 75710
Tom H. Cheavens, Research Director
(214) 597-4174

Process research, refining and petrochemicals; combustion analytical services; industrial hygiene; waste water; petroleum products.

200. RAD SERVICES, INC. — 26, 48, 66, 70, 95
9381 "C" Davis Avenue
Laurel, MD 20810
Edward Wellner, Operational Manager
(301) 953-9583

Transportation, packaging, storage and disposal of radioactive and chemical waste. Maintenance, calibration, repair, leasing, purchasing and sales of radiation instrumentation. Radioactive laundry service and environmental monitoring services including consultation, instrumentation and TLD, film badge dosimetry.

201. RADIATION MANAGEMENT
Science Center Building Two
3508 Market Street—Suite 30
Philadelphia, PA 19104
Bernard T. Geehan

(No expertise submitted at time of printing)

202. E. RAU ENTERPRISES — 14, 15, 17, 18, 45, 61, 103
40 Salisbury Avenue, Stewart Manor
Garden City, NY 11530
(Mailing address: P.O. Box 443
Floral Park, NY 11001
Dr. Emil D. Rau, President
(201) 440-3277 or (516) 488-2796

Saline chemicals. Fermentation. Wood chemistry. Coal chemistry. Agricultural systems. Solar energy.

203. REMTECH, INC. — 2, 5, 6, 7, 27, 32, 40, 45, 47, 57, 63, 74, 80, 90, 93, 95, 101, 103, 108, 114, 123
2603 Artie Street, Suite 21
Huntsville, AL 35805
Charles E. Fuller, VP (205) 536-8581

Firm is qualified to conduct programs in Energy Transfer, Fluid Mechanics, Environmental Control, and System Analysis. Experience includes Combustion, Gaseous Radiation, and Aerodynamic Heating Analyses; Laser Doppler Velocimetry, Ground Test Support and Instrumentation Design; Building Noise Surveys conducted for the government, universities and industry. The company has amplified its technical capabilities for Solar Energy System Design, Building Heat Load Analysis, and Energy Resource/Conservation Studies.

analysis, fatigue and failure analysis. High pressure and high temperature component analysis and criteria development.

184. OPTELECOM, INC. — 20, 25, 45, 74, 86, 90, 93, 103, 105, 106, 121
15940 Shady Grove Road
Gaithersburg, MD 20760
William H. Culver, Pres. (301) 948-4232

Manufactures and designs modulators, semiconductor lasers, laser arrays, high brightness illuminators, optical fibers, fiber optic cables, solar concentrators, and communications systems.

185. OTISCA INDUSTRIES, LTD. — 45
P. O. Box 186
LaFayette, NY 13084
Clay D. Smith, Pres. (315) 475-5543

Fossil fuel mining, extraction, and upgrading research and development and process construction.

186. PACIFIC SIERRA RESEARCH CORP.
1456 Cloverfield Blvd.
Santa Monica, CA 90404
Richard J. Boberg (213) 828-7461

(No expertise submitted at time of printing)

187. PANDALAI COATINGS CO. — 17
618 Dahlia Drive
Monroeville, PA 15146
Krish Pandalai (412) 373-7493

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188. PAYNE, INC. — 5, 6, 7, 24, 27, 34, 45, 46, 47, 51, 57, 63, 77, 87, 103, 114, 119, 123
1933 Lincoln Drive
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Peter R. Payne, Chmn. (301) 268-6150

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190. PENETRADAR CORP. — 6, 40, 42, 44, 70, 80, 86, 100, 101
6865 Walmore Road
Niagara Falls, NY 14304
Anthony V. Alongi, Pres. (716) 731-5937

Ground-Penetrating-Radar Technology. High-Resolution Radar. Radar Propagation and Scattering. Target Identification. Radar Systems Analysis and Design. Electronic Warefare Analysis.

191. PENN STATE ENGINEERING — 47
P.O. Box 177
State College, PA 16801
Norman A. Katz, Pres. (814) 238-5013

Civil engineering.

172. METAL BELLOWS CORP. — 6, 12, 28, 49, 70, 88, 108, 116
1075 Providence Highway
Sharon, MA 02067
Elton M. Tucker, Assistant Division Mgr.
(617) 668-3050, Ext. 118

Design, development and production of metal bellows components and systems for sealing, pumping, sensing and controlling in nuclear, medical, aerospace and industrial process applications. Application of advanced technology to precision forming, brazing and welding of foil thickness metals.

173. METEX CORPORATION — 124
970 New Durham Road
Edison, NJ 08817
Bertram R. Rashkow (201) 287-0800

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174. MILMARK RESEARCH, INC. — 9, 13, 17, 35, 66
P. O. Box 87
Bernville, PA 19506
Dr. Sheldon L. Clark (215) 488-6002

Industrial hygiene (laboratory services), toxicology, including drug screening and quantitation. Biological and biochemical research, including enzymes, lipids, steroids, proteins, immuno-chemical analysis, tissue cultures. Product formulation, testing and manufacturing for private labels.

175. MOLECULON RESEARCH CORP. — 3, 9, 17, 23, 24, 35, 41, 47, 50, 51, 63, 65, 73, 74, 79, 93, 94, 99, 103, 105, 106, 109, 110, 113, 124
139 Main Street
Cambridge, MA 02142
Arthur S. Obermayer, President
(617) 547-2353

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176. MONA INDUSTRIES, INC. — 9, 17, 18, 29, 51, 55, 66, 67, 68, 70, 75, 79, 91, 94, 95, 96, 99, 106, 110, 116
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including development of performance-oriented training objectives and course curricula, training aids, content and design of presentation methodology; investigations of work capabilities of divers at various depths, performing various tasks; requirements and layout analysis of displays and controls of man-operated systems; analysis of environmental hazards and their effects.

161. MAN-SYSTEMS, INC. — 12, 23, 61, 64, 91, 102
3107 McDow Avenue
Huntsville, AL 35805
Edward L. Saenger, Pres. (205) 536-3983

Primarily specializing in Human Factors Engineering, Evaluation of Environmental Hazards and Industrial/Graphics Design.

162. MAROTTA SCIENTIFIC CONTROLS, Inc. — 28, 47, 77, 78, 88, 108, 112A, 113A
Boonton Avenue
Boonton, NJ 07005
William T. Browne, Jr. (201) 334-7800, Ext. 275
Director of Sales & Marketing

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163. MARTIS ASSOCIATES — 2, 3, 5, 6, 7, 9, 14, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 34, 37, 40, 44, 45, 47, 48, 49, 56, 57, 58, 60, 63, 67, 68, 70, 74, 76, 78, 79, 80, 82, 88, 90, 93, 95, 99, 100, 101, 103, 107, 108, 109, 111, 112, 112A, 113, 113A, 114, 116, 117, 118, 121
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164. MASON RESEARCH INSTITUTE — 12, 13, 17, 21, 30, 32, 81, 84, 110
57 Union Street
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149. LINK ENTERPRISES, INC. — 4, 20, 38, 39, 50, 72, 85, 103
P. O. Box 11073
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Katherine S. Link, President
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Delivery address:
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150. LINKABIT CORPORATION — 20, 21, 86, 93
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Dr. I. M. Jacobs, Pres. (714) 453-7007

Systems studies; software and hardware manufacturing; digital communications with emphasis on satellite communications; error-correcting coders and decoders; modulation-demodulation techniques; television and voice data compression; applications of microprocessors to communication; optical fiber communication.

151. LITRON LABORATORIES, LTD. — 9, 12, 13, 17, 21, 32, 35, 45, 72, 81, 84, 110
1351 Mt. Hope Avenue
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(716) 275-4008

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152. LITTLETON RESEARCH & ENGINEERING — 2, 26, 30, 32, 47, 63, 70, 77, 87, 89, 107, 112, 115
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136. JACOBS-WINSTON LABORATORIES, Inc. — 9, 27, 40, 55, 65, 84, 99, 115
25 Mt. Vernon Street
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137. JENIKE & JOHANSON, INC. — 9, 19, 23, 45, 47, 49, 52, 54, 88, 110, 112
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140. JONES ASSOCIATES — 23, 36, 38, 47, 48, 60, 61, 65, 95, 109
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141. KAR LABORATORY — 9, 12, 15, 18, 81, 99, 119
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142. ALAN B. KAMMERMAN — 93
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125. INDUSTRIAL MATERIALS TECHNOLOGY — 24, 45, 46, 76, 79, 82, 113
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127. INNOVATIVE SYSTEMS RESEARCH, Inc. — 2, 6, 9, 12, 13, 14, 20, 21, 25, 27, 31, 32, 37, 38, 39, 40, 74, 75, 78, 81, 102, 103, 109
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and
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128. INPUT OUTPUT COMPUTER SCIENCES — 21, 25, 28, 32, 68, 108
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Cambridge, MA 02138
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(617) 661-8700

Computer Sofeware & Systems Engineering Services; Division in Aerospace, Transportation and Resident Services.

129. INTERNATIONAL VENTURE RESEARCH — 9, 21, 37, 78, 84, 99
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Chaska, MN 55318
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110. GLEN A. GILBERT & ASSOCIATES — 5, 25, 26, 99, 108
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Washington, DC 20037
Glen A. Gilbert, Principal (202) 965-0765

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111. R. J. GILLIS ASSOCIATES — 78
2600 Jefferson Davis Highway
P. O. Box 2686
Arlington, VA 22202
Richard J. Gillis, Principal (703) 684-7677

Government R&D. Marketing Consultants.

112. W. R. GRACE & CO. — 3, 10, 12, 13, 16, 17, 18, 19, 29, 34, 41, 45, 48, 53, 54, 61
Research Division
7379 Route 32
Columbia, MD 21044
C. W. Orgell, Mgr/Commercial Planning
(301) 531-5711, Ext. 258

Research and development of specialty materials and chemicals for industry.

113. GUMBS ASSOCIATES, INC. — 3, 17, 18, 24, 94, 103, 110, 119
26 Avenue "B"
Newark, NJ 07114
Dr. Ronald W. Gumbs, Pres.
(201) 824-5110

Research and development in chemicals, polymers, adhesives and coatings.

114. J. CHARLES HALPINE — 25, 26, 27, 28, 30, 45, 51, 56, 57, 58, 70, 72A, 108, 113, 116
d/b/a Fluid Measurement Systems, Inc.
2030 E. Mohawk Blvd.
P. O. Box 2903
Tulsa, OK 74101
(918) 428-3836

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115. FREDERIC R. HARRIS, INC. — 25, 37, 47, 59, 63, 77, 87, 89, 108
1850 K Street, N.W.——Suite 215
Washington, DC 20006
Eugene H. Harlow, Exec. VP (202) 293-1335

Consulting engineering primarily in waterfront and marine structures, ports, harbors, highways, bridges, transit & transportation facilities, ocean engineering.

116. ARTHUR L. HAWK — 44, 45, 60, 103
535 W. Great Falls Street
Falls Church, VA 22046
(703) 534-5143

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120.	Wave Track Theory	
121.	Weaponry	16, 19, 23, 34, 56, 100, 155, 163, 178, 184, 194, 197, 211, 246
122.	Weight Power Electricity Generation	23, 210, 255
123.	Wind Energy	3, 8, 56, 59, 60, 61, 78, 82, 84, 93, 135, 139, 165, 178, 188, 196, 203, 208, 210, 213, 240, 243, 259, 262, 268, 269
124.	Wire Products	19, 61, 173, 175

91.	Personnel Safety & Evaluation	17, 19, 21, 61, 67, 144, 147, 160, 161, 176, 264
92.	Petrochemicals Engineers	8, 14, 27, 42, 56, 59, 61, 121, 139, 143, 199, 219, 256, 261
93.	Physics	2, 12, 15, 46, 51, 55, 56, 59, 61, 65, 66, 75, 108, 142, 150, 163, 175, 183, 184, 194, 203, 204, 210, 211, 218, 220, 228, 230, 248, 249, 257
94.	Plastics	6, 50, 51, 59, 61, 113, 138, 175, 176, 178, 193, 220, 231, 236, 239, 248, 249, 254, 256, 259, 263, 269
95.	Pollution Controls	1, 9, 14, 19, 30, 40, 41, 52, 56, 59, 60, 61, 76, 80, 82, 109, 118, 131, 135, 139, 140, 147, 148, 163, 176, 199, 200, 203, 210, 214, 219, 222, 226, 239, 257, 261, 264
96.	Product Liability	17, 45, 51, 104, 105, 160, 176, 182, 183, 234, 236, 239
97.	Publishers	5, 14, 44, 76, 105, 166, 170, 231, 250
98.	Pyrotechnics	19, 59, 239
99.	Quality Control	9, 19, 30, 35, 40, 51, 59, 61, 93, 110, 129, 136, 141, 147, 163, 175, 176, 182, 194, 197, 199, 226, 229, 232, 246, 248, 249, 253
100.	Radar Technology	4, 16, 19, 32, 100, 153, 163, 190, 211, 228, 246, 248, 249
101.	Remote Sensing	16, 19, 31, 32, 84, 93, 97, 104, 153, 163, 190, 203, 208, 217, 228, 230, 246, 269
102.	Social Sciences	14, 17, 63, 76, 78, 85, 120, 127, 160, 161, 205, 216A, 228
103.	Solar Energy	2, 3, 8, 9, 14, 15, 19, 37, 46, 50, 52, 54, 55, 56, 58, 59, 60, 61, 68, 76, 77, 85, 89, 90, 93, 94, 96, 104, 107, 113, 116, 121, 122, 127, 131, 135, 138, 139, 149, 155, 163, 165, 166, 175, 183, 184, 188, 194, 196, 197, 202, 203, 208, 210, 225, 226, 227, 231, 239, 243, 259, 260, 261, 264, 268, 269, 272
104.	Spark Plugs	19, 138, 209
105.	Spectroradiometry	19, 31, 59, 175, 184, 230

58.	General Systems Science	19, 61, 63, 66, 108, 114, 163, 194, 210, 239, 246, 261
59.	Geology	4, 32, 51, 59, 60, 109, 115, 226, 246, 257
60.	Government	8, 63, 116, 139, 140, 156, 163, 165, 223, 246, 256, 267, 271
60A.	Grain Processing	235
61.	Graphic Arts	17, 59, 61, 73, 112, 126, 140, 161, 166, 202, 211, 239, 246
62.	Health Education	17, 120
63.	Hydrodynamics	19, 20, 52, 56, 58, 61, 108, 115, 152, 163, 175, 183, 188, 207, 210, 214, 227, 264
64.	Human Factors Engineering	17, 59, 61, 73, 120, 144, 160, 161, 194, 239, 241, 243, 246, 256
65.	Industrial Engineers	14, 56, 59, 118, 136, 140, 175, 177, 194, 215, 234, 239, 246
66.	Industrial Safety	14, 19, 40, 105, 147, 160, 174, 176, 199, 200, 222, 234, 239, 257
67.	Industrial Security	103, 163, 176
68.	Information Systems	25, 28, 29, 52, 63, 66, 69, 73, 85, 103, 120, 126, 128, 163, 176, 194, 210, 211, 217, 228, 239, 244, 246
69.	Innovator's Representatives	49, 53, 143, 195, 205, 217, 267, 269
70.	Instrumentation	2, 4, 19, 23, 27, 29, 30, 31, 32, 35, 41, 59, 65, 75, 79, 84, 93, 104, 114, 123, 133, 135, 144, 145, 148, 152, 160, 163, 172, 176, 190, 200, 210, 216, 222, 227, 228, 229, 239, 257, 261, 262
71.	Integrated Logistics	17, 61, 144, 194, 211, 241
72.	Interdisciplinary Bridges	19, 63, 108, 149, 151, 160, 205
72A.	Inventors	42, 105, 114, 178, 255, 268
73.	Isotopes	15, 39, 51, 59, 175, 245
74.	Laser Technology	56, 65, 102, 124, 127, 163, 168, 175, 178, 184, 197, 207, 210, 211, 238, 246, 257

29.	Corrosion Prevention	6, 19, 51, 59, 90, 112, 163, 176, 242, 269
30.	Cryogenics	19, 27, 38, 75, 102, 114, 138, 152, 163, 164, 257, 269
31.	Cybernetics	63, 108, 127, 163
32.	Data Processing	3, 4, 11, 12, 28, 52, 61, 63, 66, 73, 84, 85, 86, 126, 127, 128, 151, 152, 153, 163, 164, 194, 203, 211, 217, 227, 228, 239, 246, 259
33.	Dental Research	193, 236, 263
34.	Desalination of Water	19, 56, 82, 90, 104, 112, 132, 139, 163, 188, 210, 231, 243, 261
35.	Drugs	39, 85, 147, 151, 174, 175, 195, 231
36.	Ecology	1, 14, 40, 54, 59, 61, 72, 76, 82, 85, 86, 108, 140, 231, 257, 259
37.	Economics	8, 10, 28, 63, 66, 78, 81, 108, 115, 127, 129, 163, 168, 192, 205, 216A, 256, 257
38.	Editing	61, 76, 124, 127, 140, 149, 160, 241
39.	Educational Evaluation	17, 76, 87, 97, 127, 149, 160, 216A, 267
40.	Electrical Engineering	12, 14, 19, 46, 63, 81, 82, 124, 127, 136, 148, 159, 163, 169, 171, 177, 190, 194, 203, 208, 210, 211, 216, 217, 221, 222, 239, 246, 247, 248, 249, 261
41.	Electrochemistry	14, 19, 41, 50, 59, 90, 93, 112, 132, 148, 175, 204, 230, 245, 251, 252
42.	Electromagnetic Analysis	16, 19, 190, 210, 211, 228, 248, 249, 257, 269
43.	Electron Microscopy	14, 51, 193, 226, 236, 248, 249
44.	Electronics	11, 16, 19, 32, 81, 88, 89, 93, 116, 121, 123, 124, 135, 145, 148, 163, 190, 204, 209, 210, 211, 216, 217, 220, 227, 228, 238, 246, 248, 249, 258, 268, 269

SECTION II - TECHNICAL FIELDS & MEMBER IDENTIFICATION NUMBERS

	Technical Field	Member Identification Number
1.	Accident Investigation	19, 51, 52, 105, 160, 183, 239
2.	Acoustics	19, 42, 58, 61, 80, 81, 127, 152, 153, 155, 163, 183, 194, 203, 216, 222, 246, 264
3.	Adhesives	6, 15, 19, 50, 59, 89, 112, 113, 163, 175, 182, 195, 197, 231, 236, 254
4.	Advertising	19, 72, 149, 236, 246, 269
5.	Aerodynamics	23, 29, 56, 61, 110, 135, 145, 155, 163, 169, 188, 203, 210, 220, 227, 240, 265, 269
6.	Aerospace Science & Techniques	19, 23, 31, 40, 49, 56, 61, 63, 65, 84, 91, 102, 104, 127, 144, 145, 155, 163, 172, 188, 190, 197, 203, 210, 216, 227, 228, 230, 239, 240, 246, 265
7.	Airbreathing Propulsion Systems	61, 96, 122, 144, 155, 163, 188, 197, 203, 210, 240
8.	Airconditioning	76, 82, 122, 131, 135, 259
9.	Analytical Laboratory	9, 14, 19, 40, 50, 51, 60, 82, 109, 127, 129, 136, 137, 141, 146, 147, 151, 163, 174, 175, 176, 197, 199, 206, 219, 226, 229, 231, 232, 236, 239, 248, 249, 257, 263
10.	Batteries	19, 23, 41, 50, 90, 112, 139, 144, 195, 209, 248, 249
11.	Bicycles	37
12.	Biomedical Sciences	14, 40, 41, 61, 86, 91, 108, 112, 127, 133, 139, 141, 151, 161, 164, 165, 171, 172, 193, 204, 206, 218, 229, 231, 234, 236, 239, 259, 263, 264
13.	Biology	14, 15, 40, 86, 112, 127, 147, 151, 164, 174, 193, 231, 257, 259, 264
14.	Business Administration	10, 21, 45, 59, 63, 69, 72, 78, 82, 104, 127, 130, 143, 163, 165, 192, 202, 205, 216A, 231, 247, 256, 267
15.	By-Product Utilization	1, 15, 51, 59, 138, 141, 147, 155, 197, 202, 226, 231, 243, 257

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FWG Associates, Inc., R.R. 3, Box 331, Tullahoma (37388) 32

TEXAS

Ana-Lab Corporation, 2600 Dudley Road, Kilgore (75662) 18
Celestial Synergetics Corp., Two Houston Center, #814, Houston (77002) 25
Geochem Laboratories, 1143-C Brittmore Road, Houston (77043) 33
Quest Research International, P.O. Box 478, Tyler (75710) 48
Southwestern Laboratories, 222 Cavalcade Blvd., Houston (77071) 54
Spectrix Corporation, 7408 Fannin, Houston (77054) 55

UTAH

Billings Energy Corporation, P.O. Box 555, Provo (84601) 22

VERMONT

Dufresne-Henry Engineering, Prec ... ld (05150) 30

1 copy this page

Aerospace Industrial Associates, F ... 22132) 17
Applied Radiant Energy Co., 2432 ... (24501) 19
Bionetics Corporation, 18 Researcl 23
Cannon Associates, P.O. Box 2007 25
Chi & Associates, 1011 Arlington F ... 9) 26
Columbia Research Corp., 2531 Jef ... n (22202) 26
Commonwealth Research, 11800 Su ... eston (22091) 27
Farnsworth Cannon, Inc., 7926 Jor ... 22101) 32
R. J. Gillis Associates, P.O. Box 34
Arthur L. Hawk, 535 W. Great Fal ... 046) 34
Human Sciences Research, 7710 Ol ... n (22101) 35
Intertechnology Corporation, P.O. ...) 37
Theodore Jonas/Associates, 2009 I ... ngton (22201) 38
MERADCOM, U.S. Army, Ft. Bel 41
William M. Moscrip, Route 2, Box ... 1) 45
James L. Plummer, 8913 Footstep 47
Presearch, Inc., 2361 S. Jefferso ... (22202) 47
Samanie, Inc., P.O. Box 694, Alexandria (22306) 52
Seaward International, 6269 Leesburg Pike, Falls Church (22090) 52
Spectro-Systems, Inc., 8000 Forbes Place, Springfield (22151) 55
Stanford Research Institute, 1611 N. Kent Street, Arlington (22209) 56
Tensor Industries, Inc., 8415 Arlington Blvd., Fairfax (22030) 58
Unified Industries, Inc., 205 S. Whiting St., #201, Alexandria (22304) 59
Versar, Inc., P.O. Box 1549, Springfield (22151) 60
Virginia Energy Office, 823 E. Main St., Room 300, Richmond (23219) 60
Glen W. Wiltrout, 2028 N. Vermont Street, Arlington (22207) 61

WASHINGTON

Electrochemical Technology Corp., 3935 Leary Way NW, Seattle (98107) 31
Mathematical Sciences Northwest, P.O. Box 1887, Bellevue (98009) 43
Northwest Research and Counseling Service, Box 461, Richland (99352) 45
Rothenbuhler Engineering, Rhodes Road, Sedro Woolley (98284) 49
Vertrex Corporation, 808 - 106th Avenue NE, Bellevue (98004) 60

MINNESOTA

Donaldson Co., Inc., P.O. Box 1299, Minneapolis (55440) 29
International Venture Research, 11 Peavey Road, Chaska (55318) 36

MISSOURI

Baganoff Engineering, Inc., 380 Brookes Drive, Hazelwood (63042) 21
Labconco Corporation, 8811 Prospect, Kansas City (64132) 39

NEVADA

Barth Electronics, Inc., 1300 Wyoming Street, Boulder City (89005) 22

NEW HAMPSHIRE

Contemporary Systems, 68 Charlonne Street, Jaffrey (03452) 27
Hoyle-Tanner Associates, 1 Technology Park, Londonderry (03053) 35

NEW JERSEY

Aerochem Research Laboratories, P.O. Box 12, Princeton (08540) 17
Alva-Tech, Inc., P.O. Box 308, Bradley Beach (07720) 17
Applied Skills, Inc., 12 Thurmont Road, West Caldwell (07006) 19
Business Psychology Int'l, 342 Westminater Ave., #228, Elizabeth (07208) 24
Computer Horizons, Inc., 1050 Kings Highway North, Cherry Hill (08034) 27
Descriptive Design & Development Corp., 59 Farnham Ave., Garfield(07026) 28
Electro-Science Laboratories, Inc., P.O. Box 596, Pennsauken (08110) 31
Electronic Associates, Inc., 185 Monmouth Pkway., W. Long Branch(07764) 31
Flodyne Controls, Inc., 48 Commerce Drive, Murray Hill (07974) 32
William G. Florence, 400 Haddon Ave., Apt. 503, Haddonfield (08033) 33
Gumbs Associates, Inc., 26 Avenue B, Newark (07114) 34
Innovative Systems Research, 103 E. Cooper River Plaza, Pennsauken(08109) 36
Jacob-Winston Laboratories, 25 Mt. Vernon Street, Ridgefield Park (07660) 38
C. H. Luhrs & Co., P.O. Box 1786, South Hackensack (07606) 41
Marotta Scientific Controls, Inc., Boonton Avenue, Boonton (07005) 42
Matachem Research Corp., 432 Cherry Hill Blvd., Cherry Hill (08034) 43
Metex Corporation, 970 New Durham Road, Edison (08817) 44
Mona Industries, Inc., P.O. Box 397, Paterson (07524) 44
SGL Industries, Inc., 76 Euclid Avenue, Haddonfield (08033) 50
Shepard Laboratories, 19 Morris Court, Summit (07901) 53
Utility Research Co., P.O. Box 107, Montclair (07042) 59

NEW YORK

American Identification Products, 145 - 58th, Brooklyn (11220) 18
Angenieux Corp. of America, 1500 Ocean Ave., Bohemia (11716) 18
Bioresearch, Inc., 315 Smith Street, Farmingdale (11735) 23
R. R. Bowker Co., 1180 Avenue of the Americas, NYC (10036) 23
Dayton T. Brown, Inc., Church Street, Bohemia (11716) 24
Cary Arboretum, P.O. Box AB, Millbrook (12545) 25
Claremont Polychemical Corp., 501 Winding Road, Old Bethpage (11804) 26
Combustion Processes, Inc., 50 E. 41st Street, NYC (10017) 26
Data Transformation Corp., 10 Columbus Circle, #1675, NYC (10019) 28
Electrides Corporation, 1010 Forest Avenue, Staten Island (10310) 30
IEC Electronics Corp., 105 Norton Street, Newark (14513) 35
Ithaco, Inc., 735 W. Clinton Street, Ithaca (14850) 37
Litron Laboratories, Ltd., 1351 Mt. Hope Ave., #207, Rochester (14620) 40
Otisca Industries, Ltd., P.O. Box 186, Lafayette (13084) 46
Penetradar Corp., 6865 Walmore Road, Niagara Falls (14304) 46
Product Resources International, 90 Park Avenue, NYC (10016) 47
Quality Bakers of America, Inc., 1515 Broadway, NYC (10036) 48
E. Rau Enterprises, P.O. Box 443, Floral Park (11001) 48

(continued)

CONNECTICUT

Barnes Engineering Co., 30 Commerce Road, Stamford (06904) 21
Bellmore-Johnson Tool Co., 445 Putnam Avenue, Hamden (06517) 22
Robert A. Bolke, 115 Mamanasco Road, Ridgefield (06877) 23
E-B Industries, Inc., 660 Hopmeadow Street, Simsbury (06070) 30
Imprint Services, 482 Summer Street, Stamford (06901) 36
Springborn Laboratories, Water Street, Enfield (06082) 55

DELAWARE

Technology Clearing House, Inc., 1105 Market St., #801, Wilmington (19801) ... 58

DISTRICT OF COLUMBIA

American Petroleum Institute, 2101 L Street, N.W. (...) 18
W. C. Beckwith Associates, 1026 National Press 22
Bernard & Brown, 1700 K Street, N.W. (20...) 22
Robert B. Bowytz, Esq., 2000 L Stree... 24
Design Alternatives, Inc., 1312 - 18th 29
Ebon Research Systems, 1542 - 9th Str... 30
Fulmer Research Institute, 1522 K Stree... 33
Glen A. Gilbert & Associates, 2500 Virg... 34
Frederic R. Harris, Inc., 1850 K Street, ... 34
Morris & Ward, 5817 Plainview Road (200... 45
Rockville Consulting Group, Inc., 505 Secc... 49
C. Branson Smith, Planning & Analysis, D... 45) 54
Sughrue, Rothwell, Mion, Zinn & MacPeak, ... 56
Wheeler Industries, Inc., 1129 - 20th St., N. 61

FLORIDA

General Energy Devices, P.O. Box 5679, Clear... .. 33
Ross Hofmann Associates, 2908 Salzedo, Coral G... .. 35
Hydragon Corporation, 1326 S. Killian Drive, La... 35
Charles Klabosh Co., P.O. Drawer 5690, Jackson... 39
Veterinary Resources Americas, Inc., 12930 N. A... ...ach (32960) 60

GEORGIA

Service Engineering Associates, 3960 Peachtree Rd., N.E., Atlanta (30319) .. 52
T. E. Stivers Associates, P.O. Box 608, Decatur (30031) 56

ILLINOIS

A. MacDonald Engineering, 1235 Ashland Avenue, Wilmette (60091) 41
Sol Energy Corporation, 761 Rohde, Hillside (60162) 54

IOWA

J-Tec Associates, Inc., 317 Seventh Avenue, S.E., Cedar Rapids (52406) 37

KANSAS

Development Planning & Research Associates, Box 727, Manhattan (66502) 29

MARYLAND

Arctec, Inc., 9104 Red Branch Road, Columbia (21045) 20
Arinc Research Corporation, 2551 Riva Road, Annapolis (21401) 20
Associated Management Information Consultants,
11813 Gregerscoft Road, Potomac (20854) 20
Automated Sciences Group, 8555 - 16th St., #713, Silver Spring (20910) 21
Bicycles & Exotic Energy, 5761 Elkridge Hgts. Rd., Baltimore (21227) 22

(continued)

The AMERICAN ASSOCIATION OF SMALL RESEARCH COMPANIES was organized in 1972 to obtain a more equitable share of R&D funding for small R&D and high technology companies. It has grown from 28 members to 300 and has been successful in its efforts to bring to the attention of government and private industry the many problems facing small R&D companies and simultaneously establishing the vital necessity of maintaining this group as a viable entity. Their talents are well described by the following page from the AASRC brochure.

IMPORTANCE OF SMALL R&D COMPANIES IN OUR SOCIETY

"From a number of different points of view we are convinced that a unique cost-benefit opportunity exists in the provision of incentives aimed at encouraging independent inventors, inventor-entrepreneurs and small technologically based businesses. The cost of special incentives to them is likely to be low. The benefits are likely to be high." (Taken from a Department of Commerce report called "Technological Innovation: Its Environment and Management", 1967.)

The report makes special note of the fact that some very important innovative contributions have been made by independent innovators and small companies. The range and diversity of these individuals are very impressive. The following is a partial list since 1900:

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INSULIN	Frederick Banting
VACUUM TUBE	Lee de Forest
ROCKETS	Robert Goddard
STREPTOMYCIN	Selman Waksman
PENICILLIN	Alexander Fleming
TITANIUM	W. J. Knoll
SHELL MOLDING	Johannes Croning
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