



NBS SPECIAL PUBLICATION **546**

1980 Edition

U.S. DEPARTMENT OF COMMERCE/National Bureau of Standards

Catalog of Federal Metrology and Calibration Capabilities

NATIONAL BUREAU OF STANDARDS

The National Bureau of Standards¹ was established by an act of Congress on March 3, 1901. The Bureau's overall goal is to strengthen and advance the Nation's science and technology and facilitate their effective application for public benefit. To this end, the Bureau conducts research and provides: (1) a basis for the Nation's physical measurement system, (2) scientific and technological services for industry and government, (3) a technical basis for equity in trade, and (4) technical services to promote public safety. The Bureau's technical work is performed by the National Measurement Laboratory, the National Engineering Laboratory, and the Institute for Computer Sciences and Technology.

THE NATIONAL MEASUREMENT LABORATORY provides the national system of physical and chemical and materials measurement; coordinates the system with measurement systems of other nations and furnishes essential services leading to accurate and uniform physical and chemical measurement throughout the Nation's scientific community, industry, and commerce; conducts materials research leading to improved methods of measurement, standards, and data on the properties of materials needed by industry, commerce, educational institutions, and Government; provides advisory and research services to other Government agencies; develops, produces, and distributes Standard Reference Materials; and provides calibration services. The Laboratory consists of the following centers:

Absolute Physical Quantities² — Radiation Research — Thermodynamics and
Molecular Science — Analytical Chemistry — Materials Science.

THE NATIONAL ENGINEERING LABORATORY provides technology and technical services to the public and private sectors to address national needs and to solve national problems; conducts research in engineering and applied science in support of these efforts; builds and maintains competence in the necessary disciplines required to carry out this research and technical service; develops engineering data and measurement capabilities; provides engineering measurement traceability services; develops test methods and proposes engineering standards and code changes; develops and proposes new engineering practices; and develops and improves mechanisms to transfer results of its research to the ultimate user. The Laboratory consists of the following centers:

Applied Mathematics — Electronics and Electrical Engineering² — Mechanical
Engineering and Process Technology² — Building Technology — Fire Research —
Consumer Product Technology — Field Methods.

THE INSTITUTE FOR COMPUTER SCIENCES AND TECHNOLOGY conducts research and provides scientific and technical services to aid Federal agencies in the selection, acquisition, application, and use of computer technology to improve effectiveness and economy in Government operations in accordance with Public Law 89-306 (40 U.S.C. 759), relevant Executive Orders, and other directives; carries out this mission by managing the Federal Information Processing Standards Program, developing Federal ADP standards guidelines, and managing Federal participation in ADP voluntary standardization activities; provides scientific and technological advisory services and assistance to Federal agencies; and provides the technical foundation for computer-related policies of the Federal Government. The Institute consists of the following centers:

Programming Science and Technology — Computer Systems Engineering.

¹Headquarters and Laboratories at Gaithersburg, MD, unless otherwise noted;
mailing address Washington, DC 20234.

²Some divisions within the center are located at Boulder, CO 80303.

Catalog of Federal Metrology and Calibration Capabilities

Kathryn O. Leedy

Office of Measurement Services
National Measurement Laboratory
National Bureau of Standards
Washington, D.C. 20234



U.S. DEPARTMENT OF COMMERCE, Philip M. Klutznick, Secretary

Luther H. Hodges, Jr., Deputy Secretary

Jordan J. Baruch, Assistant Secretary for Productivity, Technology and Innovation

NATIONAL BUREAU OF STANDARDS, Ernest Ambler, Director

Issued September 1980

Library of Congress Catalog Card Number: 80-600149

National Bureau of Standards Special Publication 546, 1980 Edition

Nat. Bur. Stand. (U.S.), Spec. Publ. 546, 1980 Edition, 69 pages (Sept. 1980)

CODEN: XNBSAV

Supersedes NBS SP 546, 1979 Edition

U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON: 1980

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

Price \$4.00

(Add 25 percent for other than U.S. mailing)

TABLE OF CONTENTS

	<u>PAGE NO.</u>
Abstract	1
I. Introduction	1
II. How to Use this Catalog	2
III. Laboratory Directory	4
IV. Laboratory Capabilities	31
V. Geographical Listing	49
Appendix I - PMTE Project Background	60
Appendix II - Category Descriptions	62
Appendix III - Other Information Sources	64

CATALOG OF FEDERAL METROLOGY AND CALIBRATION CAPABILITIES

Kathryn O. Leedy
PMTE Project
Office of Measurement Services
National Bureau of Standards
Washington, DC 20234

ABSTRACT

This publication lists Federal laboratories involved in metrology and calibration. Included is the name of a person to contact at each laboratory for more information as well as the laboratory telephone number and address. The capabilities of each laboratory are indicated in a tabular listing by agency. To provide geographical distribution, the laboratories are listed by States. In addition, the laboratories are shown on a map by coded number. Other references are described.

Key words: Calibration; Federal Government; laboratory; measurement; metrology; precision; test equipment.

I. INTRODUCTION

This is a directory of Federal measurement standards laboratories. For each laboratory listed in the directory, the citation includes the laboratory name, location, and a point of contact with telephone number. The capabilities of each laboratory are listed in chart form. A map depicting the geographical distribution of the laboratories is also provided.

The information in this catalog is assembled and maintained by the Office of Measurement Services (OMS) at the National Bureau of Standards (NBS) in conjunction with its program on the Federal Government's management and use of precision measuring and test equipment (PMTE). The PMTE Project was recently established as a special project to coordinate PMTE activities throughout the Federal Government, and to facilitate communications and cooperation among various Federal agencies. A description of the PMTE Project is given in Appendix I.

This catalog is designed to encourage cooperation among agencies and to promote the exchange of services and/or equipment in an effort to reduce the growth rate of Federal metrology and calibration facilities. The catalog, which will eventually include all Federal metrology and calibration laboratories, is only part of a broad plan to enable the Federal Government to reduce duplication of services and provide a better allocation of resources. Subsequent updated editions will be issued regularly. To obtain further information, contact the Office of Measurement Services.

National Bureau of Standards
Office of Measurement Services
Physics B362
Washington, DC 20234
(301) 921-2805

This catalog is a compilation of information received from the agencies and laboratories listed. It should not be construed as an endorsement or rating of the individual laboratories by the National Bureau of Standards.

II. HOW TO USE THIS CATALOG

To locate a particular laboratory, consult the directory in Section III. Here the laboratories are listed alphabetically within the sections for each agency. A code number is assigned each laboratory for use in the geographical index (see Section V).

To obtain policy information from any of the agencies listed, contact the person listed for each agency in Section III.

To identify a laboratory with a particular capability, review the charts in Section IV. Here the laboratories are listed by name within the sections for each agency. The categories of capability are listed across the top of the chart (an explanation of the categories is given in Appendix II). For each capability of a laboratory, there is a mark in the corresponding category column.

To locate laboratories in a given geographical area, consult Section V. It lists the laboratories by State and includes a map of the United States with the location of each laboratory noted by its number code.

Appendix II describes the capability categories used in Section IV. Other sources of information are given in Appendix III. Included are descriptions of the National Conference of Standards Laboratories and the Government-Industry Data Exchange Program (GIDEP) system.

III. LABORATORY DIRECTORY

DEPARTMENT OF COMMERCE

Policy information:

Jack L. Vogt
Project Manager for PMTE
Office of Measurement Services
Physics Bldg., Rm. B362
National Bureau of Standards
Washington, DC 20234

G12 NOAA Test and Evaluation
Laboratory
C654, Bldg. 160, Rm 306, WNYA
Rockville, MD 20852

Leo A. Sentiger, Jr.
(202) 426-9080

NATIONAL BUREAU OF STANDARDS

G1 National Bureau of Standards -
Boulder
325 Broadway
4640 Radio Building
Boulder, CO 80303

Edna Trump
(303) 497-3753

G2 National Bureau of Standards -
Gaithersburg
Directorate for Measurement Services
Office of Measurement Services
B366 Physics Building
Washington, DC 20234

Mary Anne Dewese
(301) 921-2807

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

G10 Environmental Research Laboratories
Atlantic Oceanographic and
Meteorological Laboratory
15 Rickenbacker Causeway
Miami, FL 33149

Greg Segur
FTS: 350-1350

G11 NOAA Research Facilities Center
Calibration Laboratory
P. O. Box 520197
Miami, FL 33152

Francis J. Merceret
(305) 526-2936
FTS: 350-2936

DEPARTMENT OF DEFENSE

Policy information:

Herbert L. Leonard, Jr.
Chairman, JTCG-METCAL
HQ AFLC/MAQ
Wright-Patterson AFB, OH 45433

(513) 257-7620

Alternative Policy Contacts:

Air Force

Herbert L. Leonard, Jr.
Chairman, JTCG-METCAL
HQ AFLC/MAQ
Wright-Patterson AFB, OH 45433

(513) 257-7620

Army

Jack Rivers
Directorate for Quality Assurance
DRCQA-PC
5001 Eisenhower Avenue
Alexandria, VA 22333

(202) 274-9868

Navy

Joe Siedlecki
MATO4T-2
HQ, Naval Material Command
Washington, DC 20360

(202) 692-2035

AIR FORCE

Laboratories:

A1 Air Force Measurement Standards
Laboratories
AGMC/ML
Newark AFS
Newark, OH 43055

Selden W. McKnight
(614) 522-7495
AV: 580-7495

Type IIA Laboratories:

A5 Bitburg AB GE
36 TFW/MACMP
APO, NY 09132

L. Johns
06561-6-7280/7841
AV: 455-7280/7841

A6 Clark AB Phil
3 CRS/MACMP
APO SF 96274

T. Narasaki
AV: 822-33694

A7 Elmendorf AFB
21 CRS/MACP
AK 99506

S. Barankiewicz
(907) 752-3314
AV: (317) 752-3483

A8 Hill AFB
00-ALC/PMKF
UT 84406

R. Blair
(801) 777-3577
AV: 458-3577

A9 Kelly AFB
SACC/OL-KP
TX 78241

A. Carter
(512) 925-6104
AV: 945-6104

A10 McClellan AFB
SM-ALC/PME
CA 95652

C. Franzen
(916) 643-3121/2573
AV: 633-3121/2573

Type IIB-1 Laboratories:

A20 Bolling AFB
OL-A, 89 FMS/MAAP
Washington, DC 20332

J. Fuentes
(202) 767-5295/4336
AV: 297-5295/4336

A21 Chanutte AFB
3345 CMS/MAA/PMEL
IL 61868

W. Allen
(217) 495-2446
AV: 862-2446 x2167

A22 Ellsworth AFB
28 AMS/MAAP
SD 57706

N. Sperle
(605) 399-7966
AV: 747-7966 x7549

A23 Malmstrom AFB
341 FMMS/MBAL
MT 59402

J. Hawkins, Jr.
(406) 731-3703/3097
AV: 632-3703

A24 Minot AFB
5 AMS/MAAP
ND 58705

J. Brown
(701) 727-4761 x3225
AV: 344-3225

A25 Whiteman AFB
351 FMMS/MBAL
MO 65305

R. Nagel
(816) 687-1110 x3415/3595
AV: 975-3415 x3595

Type IIB-2 Laboratories:

A40 Albrook AFS CZ
24 CAMS/MACL
APO Miami 34001

W. Walls
AV: 86-4138

A41 Altus AFB
443 AMS/MAAP
OK 73521

L. Crovo
(405) 481-6685
AV: 866-6685

A42 Andersen AFB Guam
43 AMS/MAAP
APO SF 96334

S. Henning
AV: (315) 366-5260/5269

A43 Aviano AB Italy
40 CAMS/MACMP
APO NY 09293

L. T. Hoffman, Jr.
0434-651141 ext. 563
AV: 632-5631

A44 Barksdale AFB
2 AMS/MAAP
LA 71110

G. M. Shuler
(318) 456-3842
AV: 781-3842

A45 Beale AFB
9 AMS/MAAP
CA 95903

PMEL Branch Chief
(916) 634-2293/2336
AV: 368-2293/2336

A46 Bergstrom AFB
67 CRS/MACL
TX 78743

D. Clark
(512) 385-4100 x2693/2694
AV: 685-2693/2694

A47 Blytheville AFB
97 AMS/MAAP
AR 72315

W. Price
(501) 762-7487/7558
AV: 637-7478 x7558

A48 Camp New Amsterdam AB NE
32 TFS/MACMP
APO NY 09292

D. White
08384-1944
AV: x415/429

A49 Cannon AFB
27 CRS/MACE
NM 88101

R. Fritz
(505) 784-3311 x2672/2673
AV: 681-2676/2673

<p>A50 Carswell AFB 7 AMS/MAAP TX 76127</p> <p>R. Koch (817) 735-7574/7787 AV: 739-7574/7787</p> <p>A51 Castle AFB 93 AMS/MAAP CA 95342</p> <p>R. Nielsen (209) 726-2811 x2302 AV: 347-2811 x2302</p> <p>A52 Charleston AFB 437 AMS/MAAP SC 29404</p> <p>A. Hoyte (803) 554-3281 x3683 AV: 583-3281 x3683</p> <p>A53 Columbus AFB 14 FMS/MAAP MS 39701</p> <p>R. Zimmerman (601) 434-7551 AV: 742-7551 x7883</p> <p>A54 Davis Monthan AFB 355 CRS/MACL AZ 85707</p> <p>R. Corrie (602) 748-4250 x5553 AV: 361-4250 x5553</p> <p>A55 Dover AFB 436 MAW/MAAP DE 19901</p> <p>R. Pollard (302) 678-6766/7293 AV: 455-6766/7293</p> <p>A56 Duluth IAP MN 4787 MATS/LGMEP Stp 27 Duluth IAP MN 55814</p> <p>PMEL Superintendent (218) 727-8211 x2580/2589 AV: 825-2580/2589</p> <p>A57 Dyess AFB 96 AMS/MAAP TX 79607</p> <p>D. Gill (915) 696-4148 x2534 AV: 461-4148 x2534</p>	<p>A58 Eielson AFB 5010 CAMS/MACP AK 99702</p> <p>B. Mitchell (907) 377-4292 AV: 317-377-4292</p> <p>A59 England AFB 23 CRS/MACL LA 71301</p> <p>L. Johnson (318) 448-5164/5165 AV: 683-5164/5165</p> <p>A60 F E Warren AFB 90 FMMS/MBAL WY 82001</p> <p>R. Bruellisauer (307) 775-2026 AV: 481-2026/3865</p> <p>A61 Fairchild AFB 92 AMS/MAAP WA 99011</p> <p>(509) 247-7212 x5270/2332 AV: 352-5270/2332</p> <p>A62 Feltwell England 48 AMS/MAAML APO NY 09179</p> <p>Harold T. Strickland AV: 226-3867/3673</p> <p>A63 Forbes AFB 190 AREFG/PMEL KS 66620</p> <p>R. Eckelberry (913) 862-1234 x4069 AV: 720-4069</p> <p>A64 George AFB 35 AMS/MAAL CA 92392</p> <p>J. Hopkins (714) 269-3171 AV: 353-3171/3476</p> <p>A65 Grand Forks AFB 319 AMS/MAAP ND 58205</p> <p>D. Skrypez (701) 594-6641/6642/3128 AV: 362-6641/6642/3128</p>
---	--

<p>A66 Grissom AFB 305 AMS/MAAP IN 46971</p> <p>E. Randall (317) 689-2362/2363 AV: 928-2362/2363</p> <p>A67 Hahn AB GE 50 CRS/MACMP APO NY 09109</p> <p>G. Gindlesberger 06543-5-7122/7656 AV: 453-7122/7656</p> <p>A68 Hickam AFB 15 AMS/LGMAMP HI 96853</p> <p>M. Iseri (808) 449-1318 AV: 430-0111</p> <p>A69 Homestead AFB 31 CRS/MACL FL 33039</p> <p>W. Fedorowicz (305) 257-7845 AV: 791-7845</p> <p>A70 Incirlik CDI Turkey TUSLOG DET 192/MAAML APO NY 09289</p> <p>C. Houston AV: 676-3120/6352</p> <p>A71 K I Sawyer AFB 410 AMS/MAAP MI 49842</p> <p>G. Ross (906) 346-2117 AV: 472-2117/2389</p> <p>A72 Kadena AB Okinawa 18 CRS/MACMP APO NY 96239</p> <p>P. Hunter AV: 630-1110 44215/42556</p> <p>A73 Keesler AFB 3380 AMS/MAAP MS 39534</p> <p>I. Arguelles (601) 377-3695 AV: 868-3695</p>	<p>A74 Keflavik Aprt Iceland 57 FIS/LGMCEP FPO NY 09571</p> <p>A. Greenman AV: 231-1290 x 6219/7724</p> <p>A75 Kunsan AB Korea 8 CRS/MACMP APO SF 96264</p> <p>C. Larson AV: 274-4101/4591</p> <p>A76 Lajes Field Azores 1605 CAMS/LGMA APO NY 09406</p> <p>L. Walker AV: 895-3490 x3273</p> <p>A77 Langley AFB 1 CRS/MACL VA 23665</p> <p>J. Moen (804) 764-3758/4696 AV: 432-3758/4696</p> <p>A78 Laughlin AFB 47 FMS/MAAP TX 78840</p> <p>G. Rine (512) 298-5714 AV: 732-5714</p> <p>A79 Little Rock AFB 314 AMS/MAAP AR 72076</p> <p>E. W. Bresnyan (501) 988-6766/3492 AV: 731-6766/3492</p> <p>A80 Loring AFB 42 AMS/MAAP ME 04750</p> <p>G. Schmelzer (207) 999-6287/7228 AV: 920-6287/7228</p> <p>A81 Lowry AFB 3415 CMS/MAABL CO 80230</p> <p>R. Bado (303) 388-3966 AV: 926-3966</p>
--	--

A82 Luke AFB
405 CRS/MACL
AZ 85309

D. Dittus
(602) 935-7411 x6177/6108
AV: 853-6177/6108

A83 MacDill AFB
56 CRS/MACL
FL 33608

G. Polenske
(813) 830-4254/3706
AV: 968-4254/3706

A84 Mather AFB
323 AMS/MAAP
CA 95655

J. Colosimo
(916) 364-2270
AV: 828-2270

A85 Maxwell AFB
3800 ABW/MAAP
AL 36112

J. Kitzman
(205) 293-7445/6554
AV: 875-7445/6554

A86 McChord AFB
62 AMS/MAAP
WA 98438

R. Madden
(206) 984-3167/5492
AV: 976-3167/5492

A87 McConnell AFB
384 AMS/MAAP
KS 67221

D. Behr
(316) 681-6405/5151
AV: 962-6405/5151

A88 McGuire AFB
438 AMS/MAAP
NJ 08641

J. Maier
(609) 724-2939/3441
AV: 440-2939/3441

A89 Misawa AB Japan
6112 ABW/LGM/PMEL
APO SF 96519

T. Goss
248-1101
AV: 226-3389/5229

A90 Moody AFB
347 CRS/MACL
GA 31601

J. Stewart
(912) 333-4211 x3696
AV: 460-3696/3514

A91 Mt. Home AFB
366 CRS/MACE
ID 83648

E. Harkins
(208) 828-6324
AV: 857-6324/6414

A92 Muniz ANGB PR
156 TFG/LGM
PR 00914

J. Reyes
(809) 791-4115
AV: 860-9142

A93 Myrtle Beach AFB
354 CRS/MACL
SC 29577

G. Newland
(803) 238-7950/7244
AV: 748-7950/7244

A94 Nellis AFB
57 CRS/MACL
NV 89191

J. C. Hoge
(702) 643-1800 x4027/4963
AV: 682-4027/4963

A95 Norton AFB
63 AMS/MAAP
CA 92409

P. Assini
(714) 382-4320/3161
AV: 876-4320/3161

A96 Offutt AFB
55 AMS/MAAP
NB 68113

P. Horne
(402) 294-6041/5261
AV: 271-6041/5261

A97 Osan AB Korea
51 CRS/MACMP
APO SF 96570

R. Williamson
AV: 284-6166/4246

A98 Otis AFB
102 CAMRON SQ/LGM-P
MA 02542

C. McCann
(617) 968-5125
AV: 557-5125

A99 Pease AFB
509 AMS/MAAP
NH 03801

R. Millett
(603) 430-3723/2547
AV: 852-3723/2547

A100 Peterson AFB
46 CAMS/LGMFE
CO 80914

W. Head
(303) 591-4496/4420
AV: 692-4496/4420

A101 Plattsburgh AFB
380 AMS/MAAP
NY 12903

L. Shultz
(518) 565-5270
AV: 689-5273/5274

A102 Pope AFB
317 TAW/MAAP
NC 28308

J. Marrett
(919) 394-4109
AV: 486-4109 x2475

A103 Ramstein AB Germany
86 CRS/MACMP
APO NY 09012

O. Moos
AV: 494-2491 x5525

A104 Randolph AFB
12 FMS/MAA
TX 78148

R. Rangel
(512) 652-3961
AV: 487-3961

A105 Reese AFB
64 FMS/MAAP/19
TX 79489

W. Mortensen
(806) 885-3480/3158
AV: 838-3480/3158

A106 San Vito Dei Normanni
7275 ABG/PMEL
IT
APO NY 09240

L. Getchell
AV: 622-1110 x3308

A107 Scott AFB
375 CAMS/MAAP
IL 62225

H. Crooks
(618) 256-3721
AV: 638-3721

A108 Selfridge ANGB
Det 1 HQ MI ANG/MAAP
MI 48045

G. Strassburg
(313) 466-5817
AV: 273-5817 x4302

A109 Seymour Johnson AFB
4 CRS/MACL
NC 27531

A. Griffin
(919) 736-0000 x5762/5493
AV: 488-5762/5493

A110 Shaw AFB
363 CRS/MACL
SC 29152

H. Caudle
(803) 668-8110 x2656/2604
AV: 965-2656 x2604

A111 Shemya AFB AK
5073 ABG/PMEL
APO Seattle 98736

A. Burke
(907) 572-3000 x7283
AV: 572-7283

A112 Sheppard AFB
3750 CMS/MAAP/234
TX 76311

H. Miller
(817) 851-2693
AV: 736-2693

A113 Tempelhof Cent Aprt GER
7350 AB GP/MAAML
APO NY 09611

P. Davis
AV: 411-5367 x5086

A114 Thule AB Greenland
ITT-FSI-BMEWS/FSTE
APO NY 09023

L. Russell
AV: 9-242

A115 Torrejon AB Spain
401 TFW/MACMP
APO NY 09283

H. Burrell
AV: 723-6844 x7075

A116 Travis AFB
60 AMS/MAAP
CA 94535

L. Johns
(707) 438-3244 x3245
AV: 837-3244 x3245

A117 Tyndall AFB
4756 CRS/MACL/19
FL 32403

R. Perham
(904) 283-2484
AV: 970-2484/4375

A118 Upper Heyford England
20 AMS/MAAML
APO NY 09194

J. Stewart
AV: 263-4949 x4241

A119 USAFA CO
USAFA/DFSEAL
CO 80840

F. Perry
(303) 472-4047
AV: 259-4047 x4137

A120 Vance AFB
71 FTW/NW-DAM/PMEL
OK 73701

J. Rose
(405) 237-2121 x7250
AV: 962-7250

A121 Williams AFB
82 FTW/MAAP
AZ 85224

D. Green
(602) 988-2611 x6770
AV: 474-6770

A122 Wurtsmith AFB
379 AMS/MAAP
MI 48753

T. Brown
(517) 739-6282
AV: 623-6282

A123 Yokota AB Japan
610 MASS/LGMAP
APO SF 96328

R. Renner
AV: 255-7156

Type IIC Laboratories:

A160 Edwards AFB
6515 AMS/LGMAP
CA 93523

C. Steen
(805) 277-4291 x3751
AV: 350-4291 x3751

A161 Eglin AFB
3242 AMS/LGMEP
FL 32542

J. Ratcliff
(904) 882-3546 x5631
AV: 872-3546 x5631

A162 Griffiss AFB
416 AMS/MAAP
NY 13441

A. Farr
(315) 330-4807
AV: 587-4807 x4948

A163 Hanscom AFB
3245 ABG/LGK
MA 01731

H. Vela
(617) 861-2661/2662
AV: 478-2661/2662

A164 Holloman AFB
49 CRS/MACL
NM 88330

D. Niemann
(505) 479-6511 x3806
AV: 867-3806

A165 Kirtland AFB
1550 FMS/MAAP
NM 87117

L. Baggette
(505) 844-9939/0882
AV: 244-9939/0882

A166 Patrick AFB
ESMC/PMEL/P
FL 32925

J. George
(305) 853-9412
AV: 467-9412

A167 Patrick AFB
ESMC/PMEL/E
FL 32925

R. Schnepf
(305) 494-2504
AV: 854-2504

A168 Vandenberg AFB
Kentron International, Inc.
P. O. Box 1038
Vandenberg AFB
CA 93437

W. Schone
(805) 866-6595
AV: 276-6595

A169 Wright-Patterson AFB
4950 Test Wing/MADE
OH 45433

J. Swink, Jr.
(513) 257-7707
AV: 787-7707

Type IID Laboratories:

A175 Newark AFS
AGMC/MANL
OH 43055

G. Lovejoy
(614) 522-7283
AV: 580-7346

A176 Robins AFB
WR-ALC/PMKF
GA 31098

B. Grimsley
(912) 926-4023/4511
AV: 468-4023/4511

A177 Tinker AFB
OC-ALC/PMKF
OK 73145

J. Pfieffer
(405) 734-3920
AV: 735-3920

ARMY

Type I Laboratory:

B1 Army Standards Laboratory
Commander
US Army Missile Command
US Army Metrology and Calibration Center
ATTN: DRSMI-MS, Bldg. 5435
Redstone Arsenal, AL 35809

J. C. McKinney, Jr.
(205) 876-7718
AV: 746-7718/2666

Type II Laboratories:

B5 (Army Area Calibration Laboratories)

ACRC Augsburg
Commander
ATTN: DRSMI-MEA
APO New York 09178

CPT C. Abner, Jr.
FLAK MIL 2581-4333/7334

B6 ACRC Pirmasens
Commander
ATTN: DRSMI-MEP
APO New York 09138

CPT S. H. Janroga
Pirmasens MIL 2211-8312/6301

B7 ACRC Schwanheim
Commander
ATTN: DRSMI-MES
APO New York 09057

CPT A. Williams
Frankfurt MIL 2311-8255/8237

B8 Anniston Army Depot
Commander
ATTN: SDSAN-DQ-QC
Anniston, AL 36201

Fred Read
(205) 238-6438
AV: 694-7314

B9 Letterkenny Army Depot
Commander
ATTN: SDSLE-QC
Chambersburg, PA 17201

Donald L. Flory
(717) 263-6012
AV: 242-6012

B10 Lexington-Blue Grass Army Depot
Activity
Commander
ATTN: SDSRR-LQC
Lexington, KY 40511

Douglas L. Hanna
(606) 293-3931/3455
AV: 745-3931/3455

B11 Materiel Support Center Korea
(Camp Carroll)
Commander
Army Calibration Laboratory
ATTN: EANC-MSC-C
APO SFO 96460

A. Padilla
TAEGU MIL 265-8531/8518

B12 95th Service Co. (Calibration)
Commander
ATTN: DRSMI-KRC
Redstone Arsenal, AL 35809

1LT J. Warren
(205) 876-3922
AV: 746-3922

B13 Pueblo Army Depot Activity
Commander
ATTN: SDSTE-PU-C
Pueblo, CO 81001

J. Courtney
(303) 549-4294
AV: 877-4294

B14 Sacramento Army Depot
Commander
ATTN: SDSSA-QMD
Sacramento, CA 95813

R. Johnson
(916) 388-3285
AV: 839-3285

B15 Tobyhanna Army Depot
Commander
ATTN: SDSTO-QT
Tobyhanna, PA 18466

R. L. Fedor
(717) 894-9255
AV: 247-9617

Type III Laboratories:
 B25 (Army Internal Calibration Laboratories)
 Aberdeen Proving Ground
 Commander
 ATTN: STEAP-QA-C (APG)
 Aberdeen Proving Ground, MD 21005
 W. J. Lehman, Jr.
 (301) 278-2224
 AV: 283-2224

B26 US Army Ballistic Research Lab ARRADCOM
 Commander
 ATTN: DRAR-TSB
 Aberdeen Proving Ground, MD 21005
 J. Dykstra
 (301) 278-2622
 AV: 283-2622

B27 US Army Chemical Systems Lab ARRADCOM
 Commander
 ATTN: DRDAR-QAC-MC
 Aberdeen Proving Ground, MD 21010
 L. Eney
 (301) 671-3908
 AV: 584-3908

B28 Applied Technology Lab (AVRADCOM)
 Director
 ATTN: DAVDL-ATL-TSE
 Ft. Eustis, VA 23604
 T. Mangrum
 (804) 878-5836
 AV: 927-5836

B29 US Army Aviation Engineering Flight
 Activity
 Commander
 ATTN: DAVTE-DI
 Edwards AFB, CA 93523
 William Roberts
 (805) 277-4723/4724
 AV: 350-4723/4724

B30 US Army Cold Regions Test Center
 Commander
 ATTN: STECR-LG-C
 APO Seattle 98733
 CWO G. Wilson
 (907) 914-872-2219
 AV: 317-872-2219

B31 Corpus Christi Army Depot
 Commander
 ATTN: SDSCC-QLM
 Corpus Christi, TX 78419
 Frank Martin
 (512) 939-2668
 AV: 861-2668

B32 US Army Dugway Proving Ground
 Commander
 ATTN: STEDP-QA-L
 Dugway, UT 84022
 D. Heebner
 (801) 522-5329
 AV: 789-5329

B33 US Army Electronic Proving Ground
 Commander
 ATTN: STEEP-LD-C
 Ft. Huachuca, AZ 85613
 A. Lane
 (602) 538-6535
 AV: 879-6535

B34 US Army Electronics Research &
 Development Command
 Commander
 2800 Powder Mill Road
 ATTN: DRDEL-PA
 Adelphi, MD 20783
 J. E. Scott
 (301) 394-3330
 AV: 290-3330

B35 US Army Electronics Research &
 Development Command Technical
 Support Activity
 Commander
 ATTN: DELSD-C
 Ft. Monmouth, NJ 07703
 T. Perry
 (201) 544-2009
 AV: 995-2009

B36 US Army Jefferson Proving Ground
 Commander
 ATTN: STEJP-CA
 Madison, IN 47250
 A. Munier
 (812) 273-7523
 AV: 480-7523

B37 US Army Materials & Mechanics Research
 Center
 Director
 ATTN: DRXMR-DC
 Watertown, MA 02172

 Doody
 (617) 923-3645
 AV: 955-3645

B38 Missile Calibration Laboratory
 Commander
 ATTN: DRSMI-ML
 Redstone Arsenal, AL 35809

 B. Brown
 (205) 876-7630
 AV: 746-7630

B39 US Army Mobility Equipment Research &
 Development Command (MERADCOM)
 Commander
 ATTN: DRDME-TC
 Ft. Belvoir, VA 22060

 R. Woody
 (703) 664-5502
 AV: 354-5502

B40 US Army Natick Research & Development
 Command (NARADCOM)
 Commander
 ATTN: DRDNA-WR
 Natick, MA 01760

 E. Wright
 (617) 653-2051
 AV: 955-2051

B41 New Cumberland Army Depot
 Commander
 ATTN: SDSNC-QQ-T
 New Cumberland, PA 17070

 C. Miller
 (717) 782-6962
 AV: 977-6962

B42 US Army Night Vision & Electro-
 Optics Laboratories
 Commander
 ATTN: DELNV-TMS
 Ft. Belvoir, VA 22060

 Tom Boswell
 AV: 354-5062

B43 Pine Bluff Arsenal
 Commander
 ATTN: SARPB-QA
 Pine Bluff, AR 71611

 C. Holmes
 (501) 534-2113
 AV: 966-2113

B44 Red River Army Depot
 Commander
 ATTN: SDSRR-QA
 Texarkana, TX 75501

 T. Buzbee
 (214) 838-2525
 AV: 829-2525

B45 Rock Island Arsenal
 Commander
 ATTN: SARRI-QA
 Rock Island, IL 61299

 Tom Moore
 (309) 794-6178
 AV: 793-6178

B46 Rocky Mountain Arsenal
 Commander
 ATTN: SARRM-TOE-A
 Commerce City, CO 80022

 E. Jones
 (303) 289-2277
 AV: 556-2277

B47 Sierra Army Depot
 Commander
 ATTN: SDSSI-DSW
 Herlong, CA 96113

 L. Weed
 (916) 827-4426/9426
 AV: 830-9426

B48 US Army Tank-Automotive Materiel
 Readiness Command
 Commander
 ATTN: DRSTA-QTM
 Warren, MI 48090

 S. Cortis
 (313) 573-2498
 AV: 273-2498

B49 Tooele Army Depot
 Commander
 ATTN: SDSTE-QAC
 Tooele, UT 84074

 D. Pierce
 (801) 833-2644
 AV: 790-2644

B50 US Army Tropic Test Center
Commander
ATTN: STETC-LD-CRB
APO Miami, FL 34004

C. Kindick
AV: 313-285-5015

B51 Watervliet Arsenal
Commander
ATTN: SARWV-QA
Watervliet, NY 12189

John Turino
(518) 266-5231
AV: 974-5231

B52 US Army White Sands Missile Range
Commander
ATTN: STEWS-QA-C
White Sands, NM 88002

J. Harmon
(505) 678-3120
AV: 258-3120

B53 US Army Yuma Proving Ground
Commander
ATTN: STEYP-MTC
Yuma, AZ 85364

W. Phillips
(602) 328-2329
AV: 899-2329

NAVY

Type I Laboratories:

C1 Navy Primary Standards Department
Code 06
Naval Air Rework Facility, North Island
San Diego, CA 92135

O. J. Belzer
(714) 437-6991
AV: 951-6991

C2 Navy Primary Standards, East
NPSDE-064 Bldg. 219-2
Washington Navy Yard
Washington, DC 20374

D. Spangenburg
(202) 433-3078
AV: 288-2346

Type II Laboratories:

C5 Commanding Officer
Naval Air Rework Facility
US Naval Air Station
Navy Standards Lab, Type II, 660
Alameda, CA 94501

R. W. Fong
(415) 869-2461
AV: 686-2461

C6 Commanding Officer
Naval Air Rework Facility
Technical Services Section 35220
Bldg. V-88
Norfolk, VA 23511

Wiggins
(703) 444-4288
AV: 690-4288

C7 Commanding Officer Naval Air
Rework Facility, NAS
Type II Standards Lab
Attn: Code 430
Bldg. 3220, Rm. 111
Pensacola, FL 32508

(904) 452-2277
AV: 922-2277

C8 Navy Gage and Standards Center
Naval Weapons Station, Seal Beach,
Pomona Annex
Navy Stds Lab - Type II Code 620
P. O. Box 2426
Pomona, CA 91766

E. L. Bloch
(714) 629-5111 x253
AV: 360-2811

C9 Commanding Officer
US Navy Underwater Systems Center
Attn: Navy Standards Lab Type II
Newport, RI 02840

L. Gabriel
(401) 841-3239
AV: 948-3239/3658

C10 Commander
Pearl Harbor Naval Shipyard
Navy Standards Lab, Type II (Code 952)
Box 400
Pearl Harbor, HI 96860

W. Gould
AV: 430-0111 x471-3208

Navy Calibration Laboratories:

C20 Commander
Charleston Naval Shipyard
Attn: Metrology Laboratory Division
FAC Code 132, Bldg. 177
Charleston, SC 29408

W. Propst
(803) 743-6303
AV: 794-6303

C21 Commander
Long Beach Naval Shipyard
Attn: Navy CAL FAC, Code 134.2
Long Beach, CA 90802

D. McBride
(213) 547-6350
AV: 360-6350

C22 Commander
Mare Island Naval Shipyard
Attn: Metrology Laboratory,
Code 134.3
Vallejo, CA 94592

D. Jones
(707) 646-4565
AV: 253-4565

C23 Commanding Officer
US Marine Corps Air Station (H)
(FUTEMA, OKINAWA)
Attn: NAV CALAB Annex
P. O. Box 490
FPO Seattle 98772

B. P. Wagner
AV: 631-3091

C24 Director
US Navy Calibration Lab
Naval Aviation Logistic Command
US Marine Corps Air Station
FPO Seattle, WA 98764

A. Romanello
O/SEAS AV: 253-3456 ext. 4284

C25 Commanding Officer
US Marine Corps Air Station
Attn: US Navy CALAB Annex
Kaneohe Bay, HI 96863

J. R. Childers
AV: 257-2148

C26 Commanding General
Marine Corps Logistics Base
Attn: Code 360
Albany, GA 31704

J. Adair
(912) 439-5367
AV: 460-5367

C27 Commanding General
MCLB Barstow
Attn: Code B360 Calibration Br.
Barstow, CA 92311

(714) 577-2220
AV: 282-2220

C28 Commanding Officer
Naval Air Engineering Center
Test Dept. Code 947
Lakehurst, NJ 08733

E. La Cava
(201) 323-7738
AV: 624-7738

C29 Commanding Officer
US Naval Air Facility
(SIGONELLA, ITALY)
Attn: Navy Calibration Lab
Box 2607
FPO New York 09523

AV: 314-624-5206

C30 Commanding Officer
Naval Air Rework Facility
Attn: Navy CALAB, Code 942
Marine Corps Air Station
Cherry Point, NC 28533

(919) 466-3318
AV: 582-3318/3390

C31 Commanding Officer
Naval Air Rework Facility
Attn: Navy CALAB, Code 944
Naval Air Station
Jacksonville, FL 32212

F. G. Brooks
(904) 772-3268
AV: 942-3268

For additional information:

NES0, Metrology Branch (Code 324)
J. R. Smith
(904) 772-3216
AV: 942-3216

C32 Commanding Officer
Naval Air Rework Facility
Attn: Code 943, Bldg. 463
US NAS North Island
San Diego, CA 92135

C. D. Spiron
(714) 437-5011
AV: 951-5011

C33 Commanding Officer
US Naval Air Station Agana
(GUAM)
P. O. Box 87
FPO San Francisco 96637

C34 Commanding Officer
US Naval Air Station (BERMUDA)
Attn: Navy Cal. Lab.
FPO New York 09560

AV: 938-3460 ext. 3187

C35 Director
NAVCALAB Cub. Pt.
P. O. Box 16
FPO San Francisco 96654

H. Livingston
AV: 5-3702 Code-a-phone AFTER
5-3194

<p>C36 Commanding Officer US Naval Air Station, Whidbey Island Attn: Navy CALAB Oak Harbor, WA 98278</p> <p>Howard W. Davis (206) 257-2142 AV: 820-2142</p>	<p>C43 Commanding Officer Naval Ship Repair Facility (GUAM) Attn: Navy CAL FAC, 955 FPO San Francisco, CA 96630</p> <p>T. Flores (671) 339-8160 AV: 322-1110</p>
<p>C37 Commander Naval Air Test Center Attn: TSD (Code TS243) Patuxent River, MD 20670</p> <p>(301) 863-4231 AV: 356-4231</p>	<p>C44 Commanding Officer Naval Ship Repair Facility (SUBIC BAY, PHIL) Attn: Navy CAL FAC, Code 950 FPO San Francisco 96651</p> <p>F. Collins Local 884-6120 AV: 844-1101</p>
<p>C38 Commanding Officer Naval Avionics Center Attn: Navy CALAB 6000 E. 21st Street Indianapolis, IN 46218</p> <p>T. Pearson (317) 353-3931 AV: 724-3931</p>	<p>C45 Commanding Officer US Naval Ship Repair Facility (YOKOSUKA, JPN) Attn: Navy CAL FAC Code 370 Box 8 FPO Seattle 98762</p> <p>Hickling AV: 234-7174</p>
<p>C39 Commanding Officer NAVELEXSYSENGCEN Charleston Attn: Code 504 4600 Goer Road North Charleston, SC 29406</p> <p>(803) 743-2030 x514 AV: 794-2045 x514</p>	<p>C46 Commanding Officer US Naval Station (ADAK, AK) Attn: Navy Calibration Lab Annex P. O. Box 49 FPO Seattle 98791</p> <p>R. Y. Izumihara AV: 579-2180</p>
<p>C40 Commanding Officer NAVELEXSYSENGCEN Portsmouth Attn: FCTR, Code 330 P. O. Box 55 Portsmouth, VA 23705</p> <p>H. Florke (804) 444-4501 AV: 690-4501</p>	<p>C47 Officer in Charge Navy Calibration Laboratory, Rota, Spain FPO New York 09540</p> <p>AV: 727-2599 x2588</p>
<p>C41 Commanding Officer US Naval Ordnance Station Attn: NAVCALAB Indian Head, MD 20640</p> <p>S. A. Collins (301) 743-4831 AV: 364-4831</p>	<p>C48 Officer in Charge Naval Surface Weapons Center White Oak Laboratory Attn: Metrology Branch, Code E15 Silver Spring, MD 20910</p> <p>A. E. Webb (301) 394-2181 AV: 290-2181</p>
<p>C42 Commanding Officer Naval Ordnance Station Attn: Code 403 Louisville, KY 40214</p> <p>W. L. Rhodes (502) 367-5522 AV: 989-5635</p>	<p>C49 Commanding Officer US Naval Weapons Center Attn: Code 3683 China Lake, CA 93555</p> <p>(714) 939-2103 AV: 245-2103</p>

C50 Commanding Officer
US Naval Weapons Station
Attn: Navy CALAB - Code 333, WQEC
Concord, CA 94520

T. Greenhalgh
(415) 671-5208
AV: 253-5208

C51 Commanding Officer
Naval Weapons Station, Earle
Attn: NAVCALAB, Building C-3
Colts Neck, NJ 07722

C. Campbell
(201) 462-9500 x370
AV: 449-1370

C52 Commanding Officer
Naval Weapons Support Center
NAVCALAB Code 40, Building 39
Crane, IN 47522

L. McPike
(812) 854-1379
AV: 482-1379

C53 Commanding Officer
Naval Weapons Station
Attn: NAVCALAB Code 31
Seal Beach, CA 90740

A. Richardson
(213) 594-7394
AV: 350-9394

C54 Commanding Officer
US Naval Weapons Station
Attn: NAVCALAB/WQEC 3041
Yorktown, VA 23491

J. Blandford
(804) 887-4583/4962
AV: 953-4583/4962

C55 Commanding Officer
US Naval Undersea Warfare
Engineering Station
Attn: Metrology Branch C/314
Weapons Quality Engineering Center
Keyport, WA 98345

D. Eide
(206) 396-2501
AV: 744-2501

C56 Commander
Norfolk Naval Shipyard
Attn: ELEC/ELEX Stds Lab
Code 134.3
Portsmouth, VA 23709

G. Waters
(804) 393-5209
AV: 961-5209

C57 Commanding Officer
Pacific Missile Test Center
Metrology Branch Code 4131
Point Mugu, CA 93042

J. Hubert
(805) 982-7926
AV: 351-7926

C58 Commander
Philadelphia Naval Shipyard
Attn: Navy CAL FAC, Code 134
Philadelphia, PA 19112

H. Lawyer
(215) 755-3457
AV: 443-3457

C59 Commander
Portsmouth Naval Shipyard
Attn: Navy Calibration Facility,
Code 134 Bldg. 240
Portsmouth, NH 03801

C. Gustafson
(207) 439-1000 x2317
AV: 684-1640

C60 Commander
Puget Sound Naval Shipyard
Attn: Navy CAL FAC, Code 134.2
Bremerton, WA 98314

J. B. Livingston
(206) 478-2397
AV: 439-2397

DEPARTMENT OF ENERGY

Policy information:

Department of Energy
MS E201
Washington, DC 20545

Robert Poe
(301) 353-5639
FTS: 233-5639

Field Office:

Albuquerque Operation Office
P. O. Box 5400
Albuquerque, NM 87115

George Polallis
(505) 844-4648
FTS: 844-4648

Laboratories:

D1 The Bendix Corporation
Kansas City Division
P. O. Box 1159
Kansas City, MO 64141

J. F. Hadley
(816) 997-3159
FTS: 926-3159

D2 General Electric Company
Neutron Devices Department
P. O. Box 11508
St. Petersburg, FL 33733

N. D. Stanisavljevich
(813) 544-2511, x350
FTS: 350-8350

D3 Los Alamos National Scientific
Laboratory
Metrology Laboratory
Mail Stop 472
Los Alamos, NM 87545

E. W. Colston
(505) 667-7216
FTS: 843-7216

D4 Mason and Hanger-Silas Mason Co.
P. O. Box 30020
Amarillo, TX 79177

R. A. Wilcox
(806) 355-1581, x2436
FTS: 572-2436

D5 Monsanto Research Corporation
Mound Facility
P. O. Box 32
Miamisburg, OH 45342

H. E. Bent
(513) 865-4109
FTS: 774-4109

D6 Rockwell International
Rocky Flats Plant
P. O. Box 464
Golden, CO 80401

R. A. Hilbig
(303) 497-2575
FTS: 320-2575

D7 Sandia National Laboratories
Livermore
Metrology Laboratory
Organization 8413-1
P. O. Box 969
Livermore, CA 94550

D. P. Van Dyke
(415) 422-2891
FTS: 532-2891

D8 Sandia National Laboratories
Albuquerque
Primary Standards Laboratory
Department 2550
Albuquerque, NM 87185

E. G. Franzak
(505) 844-3334
FTS: 844-3334

Field Office:

Chicago Operation Office
9800 South Cass Avenue
Argonne, IL 60439

Robert Bauer

Laboratories:

D13 Ames Laboratory
Iowa State University
Ames, IA 50011

Thomas Rush
(515) 294-1780
FTS: 865-1780

D14 Argonne National Laboratory
9700 South Cass Avenue
Argonne, IL 60439

Jess D. Cioffoletti
(312) 972-5705

D15 Brookhaven National Laboratory
Upton, NY 11973

Leonard C. Emma
(516) 345-3334
FTS: 666-3334

D16 Fermi National Accelerator Laboratory
P. O. Box 500
Batavia, IL 60510

H. Hinterberger
(312) 840-3394

D17 US Department of Energy
New Brunswick Laboratory
9800 S. Cass Avenue, Building 350
Argonne, IL 60439

James M. Scarborough
(312) 972-2445
FTS: 972-2445

Field Office:

Grand Junction Office
P. O. Box 2567
Grand Junction, CO 81502

Ben Bowyer
(303) 242-8621
FTS: 322-9203

Laboratories:

D22 Bendix Field Engineering Corporation
P. O. Box 1569
Grand Junction, CO 81502

R. B. Chessmore
(303) 242-8621
FTS: 322-9515

Field Office:

Idaho Operations Office
550 Second Street
Idaho Falls, ID 83401

J. H. Barry
(208) 526-0193
FTS: 583-0193

Laboratory:

D27 EG&G Idaho, Inc.
Idaho National Engineering Laboratory
P. O. Box 1625, CF 698
Idaho Falls, ID 83415

Roger W. Ellis
(208) 526-2656
FTS: 583-2656

Field Office:

Nevada Operations Office
P. O. Box 14100
Las Vegas, NV 89114

Shed R. Elliott
(702) 734-3237
FTS: 598-3237

Laboratories:

D32 EG&G Energy Measurements Group
680 East Sunset Road
Las Vegas, NV 89119

W. C. Roper, Jr.
(702) 647-5301

D33 Holmes & Narver, Inc.
OCTD/NTS
Cable/Connector Test Facility
P. O. Box I
Mercury, NV 89023

Anthony Swanic
(702) 986-0674
FTS: 546-0674

D34 Reynolds Electrical & Engineering
Co., Inc.
P. O. Box 14400
Mail Stop 625
Las Vegas, NV 89114

David Fine
(702) 986-9860
FTS: 546-9860

Field Office:

Oak Ridge Operations
P. O. Box E
Oak Ridge, TN 37830

Charles A. Keller
(615) 576-0891
FTS: 626-0891

Laboratories:

D39 Goodyear Atomic Corporation
Portsmouth Gaseous Diffusion Plant
P. O. Box 628
Piketon, OH 45661

R. W. Brown
(614) 289-2331 x2396
FTS: 975-2396

D40 National Lead Company of Ohio
P. O. Box 39158
Cincinnati, OH 45239

Carl E. Polson
(513) 738-1151
FTS: 774-8478

D41 Oak Ridge National Laboratory
P. O. Box X
Building 3500
Oak Ridge, TN 37830

R. L. Anderson
(615) 574-5686
FTS: 624-5686

D42 Union Carbide Corp.,
Nuclear Division
Analytical Services Department
Box P. ORGDP
Mail Stop 452
Oak Ridge, TN 37830

O. H. Howard
(615) 574-9611
FTS: 624-9611

D43 Union Carbide
Paducah Gaseous Diffusion Plant
P. O. Box 1410
Paducah, KY 42001

E. E. Kuhen
(502) 444-6311
FTS: 355-6494

D44 Union Carbide Corp.,
Nuclear Division
K-25 Plant, QC Services Dept.
P. O. Box P. ORGDP
Mail Stop 245
Oak Ridge, TN 37830

R. J. Graham
(615) 574-9370

D45 Union Carbide Corporation
Dimensional Standards Laboratory
Physical and Electrical Standards
Laboratory
Y-12 Plant
P. O. Box Y, Building 9723-11A
Oak Ridge, TN 37830

D. P. Bryant
(615) 576-3748
FTS: 626-3748

Field Office:

Richland Operations Office
P. O. Box 550
Richland, WA 99352

Jack L. Rhoades
(509) 942-7387
FTS: 444-7387

Laboratories:

D50 Pacific Northwest Laboratory
P. O. Box 999
Richland, WA 99352

D. M. Fleming
(509) 942-0041
FTS: 444-0041

D51 Westinghouse Hanford Physical and
Electrical Standards Laboratory
P. O. Box 1970
Richland, WA 99352

R. J. Ausere
(509) 942-3368

Field Office:

San Francisco Operations Office
1333 Broadway
Oakland, CA 94612

Calvin Jackson
(415) 273-7963
FTS: 536-7963

Laboratories:

D56 Lawrence Berkeley Laboratory
One Cyclotron Road
Berkeley, CA 94720

Lee Wagner
(415) 843-2740 x5443
FTS: 451-5443

D57 Lawrence Livermore Laboratory
University of California
P. O. Box 808
Livermore, CA 94550

Don W. Moon
(415) 422-8360
FTS: 532-8360

D58 Rockwell International
Energy Systems Group
Calibration & Standards
8900 DeSoto Avenue
Canoga Park, CA 91304

Gordon A. King
(213) 341-1000 x2807
FTS: 791-1120 x2807

D59 Stanford Linear Accelerator Center
Stanford University
P. O. Box 4349
Stanford, CA 94305

R. B. Neal
(415) 854-3300

Field Office:

Savannah River Operations Office
P. O. Box A
Aiken, SC 29801

R. L. Morgan
(803) 725-2277
FTS: 239-2277

Laboratory:

D64 E. I. du Pont de Nemours and Co.
Savannah River Laboratory
Aiken, SC 29808

W. N. Posey
(803) 725-3654
FTS: 239-3654

Field Office:

Bonneville Power Administration
P. O. Box 3621
Portland, OR 97208

Marvin Klinger
(503) 234-3361
FTS: 429-3361

Laboratory:

D69 Bonneville Power Administration
Instrumentation and Standards
Section
P. O. Box 491
Vancouver, WA 98666

Thomas L. Williams
(206) 696-0351 x586

Energy Technology Centers:

D74 Bartlesville Energy Technology Center
P. O. Box 1398
Bartlesville, OK 74003

Kenneth J. Hughes
(918) 336-2400 x202
FTS: 735-4202

John E. White
(918) 336-2400
FTS: 735-4377

D75 Grand Forks Energy Technology Center
Box 8213 University Station
Grand Forks, ND 58201

Harold H. Schobert
(701) 795-8171
FTS: 783-6363

D76 Laramie Energy Technology Center
P. O. Box 3395
University Station
Laramie, WY 82071

W. H. Weaver
(307) 721-2404
FTS: 328-4404

D77 Morgantown Energy Technology Center
P. O. Box 880
Collins Ferry Road
Morgantown, WV 26505

George E. Fasching
(304) 599-7374
FTS: 923-7374

D78 Pittsburgh Energy Technology Center
4800 Forbes Avenue
Pittsburgh, PA 15213

A. G. Sharkey, Jr.
(412) 892-2400 x310
FTS: 726-2310

DEPARTMENT OF HEALTH AND HUMAN SERVICES

PUBLIC HEALTH SERVICE

Laboratories:

H1 National Institute for Occupational
Safety and Health
Robert A. Taft Laboratories
4676 Columbia Parkway
Cincinnati, OH 45226

Robert Larkin
(513) 684-4263
FTS: 684-4263

DEPARTMENT OF TRANSPORTATION

Policy information:

Department of Transportation
Office of Installation and
Logistics M-65
400 7th Street, SW
Washington, DC 20590

R. M. Kee
(202) 426-4244

FEDERAL AVIATION ADMINISTRATION

Laboratories:

- E1 AAC-835 National Test Equipment
Shop
Federal Aviation Administration
Mike Monroney Aircraft Services Base
P. O. Box 25082
Oklahoma City, OK 73125

James E. Rayburn
(405) 686-2515
FTS: 732-2515

- E2 AMB-4 Laboratory - Alaska
Federal Aviation Administration
4610 International Airport Road
Anchorage, AK 99502

Roy G. Pebsworth
(907) 243-1121

- E3 Civil Aeromedical Institute
Mike Monroney Aeronautical Center
P. O. 25082, Code AAC-119
Oklahoma City, OK 73125

Richard F. Chandler
(405) 686-4851

- E4 FAA Depot Metrology and Standards
Laboratory
P. O. Box 25082, Code AAC-442A
6500 South MacArthur
Oklahoma City, OK 73125

Walter Lee
(405) 686-2730
FTS: 749-2730

- E5 Operations Field Unit
Federal Aviation Administration
Bldg. 3568
Worcester Avenue
Fort Kamehameha
Hickam AFB
Honolulu, HI 96853

Ernest Tomihama
(808) 422-0525

- E6 Standards and Calibration Laboratory
Federal Aviation Administration
Technical Center
Code ACT-151
Atlantic City, NJ 08405

I. S. McDaniel
(609) 641-8200 x3566
FTS: 346-3566

FEDERAL RAIL ADMINISTRATION

Laboratories

- E20 Transportation Test Center
Calibration Lab
Federal Rail Administration
Transportation Test Center
Code RTC-32
Pueblo, CO 81001

Larry McIrvin/Bill Walters
(303) 545-5660 x357
FTS: 326-9357

NATIONAL HIGHWAY TRANSPORTATION SAFETY ADMINISTRATION

Laboratories:

- E30 Uniform Tire Quality Grading
Facility
P. O. Box 1671
San Angelo, TX 76901

Harlan Galloway
(915) 655-0546

- E31 Vehicle Research & Test Center,
NHTSA
P. O. Box 37
East Liberty, OH 43319

Richard Radlinski
(513) 666-4511

UNITED STATES COAST GUARD

Laboratories:

E40 USCG Electronics Engineering Center
Commanding Officer
U.S. Coast Guard
Electronics Engineering Center
Wildwood, NJ 08260

W. C. Colberg
(609) 522-7231
FTS: 346-7231

E41 USCG Electronics Engineering
Laboratory
Commanding Officer
U.S. Coast Guard Station
7323 Telegraph Road
Alexandria, VA 22310

L. Batzer
(703) 557-5445
FTS: 557-5445

E42 USCG Oceanographic Unit
Commanding Officer
U.S. Coast Guard
Oceanographic Unit
Building 159-E Navy Yard Annex
Washington, DC 20590

R. A. Gagner
(202) 426-9140
FTS: 426-9140

E43 USCG Supply Center Brooklyn
Commanding Officer
U.S. Coast Guard Supply Center
Brooklyn, NY 11232

D. W. Flowers
(212) 965-5736
FTS: 663-5736

FEDERAL COMMUNICATIONS COMMISSION

Laboratories:

J1 Laurel Laboratory
7435 Oakland Mills Road
P. O. Box 429
Columbia, MD 21045

Will A. McGibbon/Edward T. Lang
(301) 725-1585

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Policy information:

Harry Quong
Manager, Reliability & Quality
Assurance
NASA Headquarters
Code DP-4
Washington, DC 20546

(202) 755-3087
FTS: 755-3087

Centers:

F1 Ames Research Center
Electronic Instrument Services Branch
Code RSE
Moffett Field, CA 94035

Peter Haro
(415) 965-5468
FTS: 448-5468

F2 Hugh L. Dryden Flight Research Center
Calibration and Environmental Test
Facility
P. O. Box 273
Edwards, CA 93523

Harry Curley
(805) 258-3311 x515
FTS: 948-8515

F3 Goddard Space Flight Center
Quality Support Office, Code 311
Greenbelt, MD 20771

Walter Owens
(301) 344-6134
FTS: 344-6134

F4 Jet Propulsion Laboratory
Instrumentation Section
4800 Oak Grove Drive
Pasadena, CA 91103

Robert E. Martin
(213) 354-3145
FTS: 792-3145

F5 Lyndon B. Johnson Space Center
Measurement Standards &
Calibration Lab.
Houston, TX 77058

Gerald C. Shows
(713) 483-2791
FTS: 525-2791

F6 John F. Kennedy Space Center
Calibration Standards Section
TI-INS-41
Kennedy Space Center, FL 32899

John P. Riley
(305) 867-4737
FTS: 823-4737

F7 Langley Research Center
Instrument Research Division
Hampton, VA 23665

F. A. Kern
(804) 827-3234
FTS: 928-3234

F8 Lewis Research Center
Equipment & Instrument Utilization
Branch
21000 Brookpark Road
Cleveland, OH 44135

Basil P. Kluchnik
(216) 433-6918
FTS: 294-6918

F9 George C. Marshall Space Flight Center
Standard & Calibration Branch, EC26
Marshall Space Flight Center,
AL 35812

G. T. Carpenter
(205) 453-0246
FTS: 872-0246

F10 National Space Technology
Laboratories
NSTL Station, MS 39529

Mark Payne
(601) 688-2000
FTS: 494-2000

F11 Wallops Flight Center
Wallops Island, VA 23337

J. B. Aaron
(804) 824-3411 x648
FTS: 928-5648

F12 White Sands Test Facility
Calibration Laboratory
P. O. Drawer MM
Las Cruces, NM 88001

Grady E. McCright
(505) 524-5154
FTS: 572-5154

**U.S. DEPARTMENT
OF COMMERCE**

Boulder, CO

Gaithersburg, MD

Environmental Research Laborator-
ies, Miami, FL

Research Facilities Center
Miami, FL

Test and Evaluation Laboratory
Rockville, MD

31

U.S. DEPARTMENT OF DEFENSE

AIR FORCE

Newark AFS

Type II A Laboratories
(see listing on page)

Type II B-1 Laboratories
(see listing on page)

Type II B-2 Laboratories
(see listing on page)

Type II C Laboratories
(see listing on page)

Type II D Laboratories
(see listing on page)

Electrical-DC/LF Electrical-RF/Microwave Magnetics, Dielectrics	Time and Frequency Mass, Force, Density Dimensional, Optics, Surface	Acoustics, Sound, Noise, Vibration Liquid or Gas Flow Humidity	Temperature Pressure, Vacuum Ionization Radiation, Radioactivity	Medical Instrumentation Automated Measuring Equipment Material & Products Testing	Chemical Analysis Radiometry and Photometry
X X X	X X X	X X	X X X		
X X X	X X X	X X X	X X X		
X X	X X X	X	X X X	X	
X X	X X X	X	X X X		
X X X	X X X	X X	X X X		
X X X	X X X	X X X	X X X		

U.S. DEPARTMENT OF DEFENSE (Continued)

ARMY

Type I Laboratory:

Army Standards Laboratory
Redstone Arsenal, AL

Type II Laboratories:

(Army Area Calibration Laboratories)

ACRC Augsburg, Germany

ACRC Pirmasens, Germany

ACRC Schwanheim, Germany

Anniston Army Depot, AL

Mobile Teams operate throughout:
Alabama, Florida, Georgia,
Louisiana, Mississippi,
S. Carolina and the Caribbean

Satellite Facilities are
located at: Ft. Gordon, GA
and Ft. Rucker, AL

Electrical-DC/LF Electrical-RF/Microwave Magnetics, Dielectrics	Time and Frequency Mass, Force, Density Dimensional, Optics, Surface	Acoustics, Sound, Noise, Vibration Liquid or Gas Flow Humidity	Temperature Pressure, Vacuum Ionization Radiation, Radioactivity	Medical Instrumentation Automated Measuring Equipment Material & Products Testing	Chemical Analysis Radiometry and Photometry
X X X	X X X	X X X	X X X	X	X X
X X	X X	X X	X X		
X X	X X X	X X	X X X		
X X	X X X	X X X	X X	X	X
X X	X X X	X X X	X X	X	
X X	X X X	X X	X X		
X X	X X X	X X	X X	X	
X X	X X X	X X	X X		

U.S. DEPARTMENT OF DEFENSE

(Continued)

ARMY

Type II (continued)

Letterkenny Army Depot, PA
Mobile Teams: Delaware,
District of Columbia, Maryland,
Michigan (lower peninsula only),
N. Carolina, Ohio, Pennsyl-
vania (except NE area),
Virginia, and West Virginia.

Satellite Facilities: Ft.
Bragg, NC (near Fayetteville)

Lexington-Blue Grass Army Depot, KY
Mobile Teams: Arkansas,
Illinois, Indiana, Iowa,
Kentucky, Michigan (upper
peninsula only), Minnesota,
Missouri, Tennessee,
Wisconsin, and Canada

Materiel Support Center Korea
(Camp Carroll)

95th Service Co. (Calibration)
Redstone Arsenal, AL

Electrical-DC/LF Electrical-RF/Microwave Magnetics, Dielectrics	Time and Frequency Mass, Force, Density Dimensional, Optics, Surface	Acoustics, Sound, Noise, Vibration Liquid or Gas Flow Humidity	Temperature Pressure, Vacuum Ionization Radiation, Radioactivity	Medical Instrumentation Automated Measuring Equipment Material & Products Testing	Chemical Analysis Radiometry and Photometry
X X	X X X	X X X	X X	X X	X
X X	X X X	X X	X X		
X X X	X X X	X X X	X X X		
X X	X X X	X X X	X X X		X
X X	X X X	X X X	X X		

**U.S. DEPARTMENT
OF DEFENSE**
(Continued)

ARMY

Type II (continued)

Pueblo Army Depot Activity, CO
Mobile Teams: Colorado, Kansas,
Montana, Nebraska, New Mexico,
N. Dakota, Oklahoma, S. Dakota,
Texas, and Wyoming

Satellite Facilities:
Ft. Bliss, TX (El Paso)
Ft. Hood, TX (Killeen)

Sacramento Army Depot, CA
Mobile Teams: Arizona, Cali-
fornia, Idaho, Nevada (Carson
City only), Oregon, Utah, and
Washington

Satellite Facilities:
Ft. Lewis, WA (near Seattle)
Ft. Shafter, HI
Long Beach, CA

Tobyhanna Army Depot, PA
Mobile Teams: Connecticut,
Greenland, Maine, Massachu-
setts, New Hampshire, New
Jersey, New York, Pennsylvania
(NE area), Rhode Island,
Vermont, and Iceland.

Satellite Facility: Ft.
Devens, MA

Electrical-DC/LF Electrical-RF/Microwave Magnetics, Dielectrics	Time and Frequency Mass, Force, Density Dimensional, Optics, Surface	Acoustics, Sound, Noise, Vibration Liquid or Gas Flow Humidity	Temperature Pressure, Vacuum Ionization Radiation, Radioactivity	Medical Instrumentation Automated Measuring Equipment Material & Products Testing	Chemical Analysis Radiometry and Photometry
X X	X X X	X X	X X		X
X X X X	X X X X X X	X X X X	X X X X		
X X X	X X X	X X X	X X X	X X	X X
X X X X X	X X X X X X X X	X X X X X X	X X X X X X	X	
X X	X X X	X X X	X X	X	
X X	X X X	X X	X X		

U.S. DEPARTMENT OF DEFENSE (Continued)

ARMY

Type III Laboratories:

(Army Internal Calibration Laboratories)

Aberdeen Proving Ground, MD

Ballistic Research Lab

Chemical Systems Labs ARRADCOM

Applied Technology Lab,
Ft. Eustis, VA

Aviation Systems Test Activity,
Edwards Air Force Base, CA

Cold Regions Test Center, AK

Corpus Christi Army Depot, TX

Dugway Proving Ground, UT

Electronic Proving Ground, AZ

Electronics Research & Develop-
ment Command, MD

Electronics Research & Develop-
ment Command Technical Support
Activity, NJ

Electrical-DC/LF Electrical-RF/Microwave Magnetics, Dielectrics	Time and Frequency Mass, Force, Density Dimensional, Optics, Surface	Acoustics, Sound, Noise, Vibration Liquid or Gas Flow Humidity	Temperature Pressure, Vacuum Ionization Radiation, Radioactivity	Medical Instrumentation Automated Measuring Equipment Material & Products Testing	Chemical Analysis Radiometry and Photometry
X X X	X X X	X X X	X X X		X
X	X X X		X		
X	X X X	X X X	X X X	X	
X	X X X	X	X X		
X	X X		X		
X	X X X	X X	X X	X X	
X X X	X X X	X X X	X X X	X X	X
X X	X X X	X X	X X	X	X
X X	X X	X	X X	X X	
X X X	X X X	X X	X X		
X X X	X	X	X	X X	

U.S. DEPARTMENT OF DEFENSE

(Continued)

ARMY

Type III (Continued)

Jefferson Proving Ground, IN
Materials & Mechanics Research
Center, MA
Missile Calibration Laboratory
Redstone Arsenal, AL
Mobility Equipment Research &
Development Command, VA
Natick Research & Development
Command, MA
New Cumberland Army Depot, New
Cumberland, PA
Night Vision Laboratory, Ft.
Belvoir, VA
Pine Bluff Arsenal, AR
Red River Army Depot, TX
Rock Island Arsenal, IL
Rocky Mountain Arsenal, CO

Electrical-DC/LF Electrical-RF/Microwave Magnetics, Dielectrics	Time and Frequency Mass, Force, Density Dimensional, Optics, Surface	Acoustics, Sound, Noise, Vibration Liquid or Gas Flow Humidity	Temperature Pressure, Vacuum Ionization Radiation, Radioactivity	Medical Instrumentation Automated Measuring Equipment Material & Products Testing	Chemical Analysis Radiometry and Photometry
X	X X X	X X	X X		
X	X X X				
X X	X X X	X X X	X X	X	
X X	X X X	X X X	X X	X X	
X X	X X X	X X X	X X		X
X	X X X	X X	X X		
X	X				
X	X X	X	X X X		
X	X X X	X X	X X X	X	
X	X X X		X X	X	
X	X X	X	X X		X

U.S. DEPARTMENT OF DEFENSE

(Continued)

ARMY

Type III (Continued)

Sierra Army Depot, Herlong, CA
 Tank-Automotive Materiel Readiness Command, MI
 Tooele Army Depot, UT
 Tropic Test Center, CZ
 Watervliet Arsenal, NY
 White Sands Missile Range, NM
 Yuma Proving Grounds, AZ

Electrical-DC/LF Electrical-RF/Microwave Magnetics, Dielectrics	Time and Frequency Mass, Force, Density Dimensional, Optics, Surface	Acoustics, Sound, Noise, Vibration Liquid or Gas Flow Humidity	Temperature Pressure, Vacuum Ionization Radiation, Radioactivity	Medical Instrumentation Automated Measuring Equipment Material & Products Testing	Chemical Analysis Radiometry and Photometry
X	X	X	X X X	X	
X	X X X	X X	X	X	X
X X	X X X	X X	X X		
X	X X X	X X	X X		X
X	X X X	X	X X	X	
X X X	X X X	X X	X X X	X X X	X
X	X X X	X	X X	X X	

U.S. DEPARTMENT OF DEFENSE (Continued)

NAVY

Navy Standards Laboratories
Type I
(see listing on page)

Navy Standards Laboratories
Type II
(see listing on page)

Navy Calibration Laboratories
(see listing on page)

Electrical-DC/LF Electrical-RF/Microwave Magnetics, Dielectrics	X X X	X X X	X X X	X X X	X X	X	X
Time and Frequency Mass, Force, Density Dimensional, Optics, Surface	X X X	X X X	X X X	X X X	X X		
Acoustics, Sound, Noise, Vibration Liquid or Gas Flow Humidity	X X X	X X X	X X X	X X X	X X		
Temperature Pressure, Vacuum Ionization Radiation, Radioactivity	X X	X X	X X	X X	X X		
Medical Instrumentation Automated Measuring Equipment Material & Products Testing	X	X	X	X	X		
Chemical Analysis Radiometry and Photometry	X	X	X	X	X		

U.S. DEPARTMENT OF ENERGY

Albuquerque Operations Office

Bendix Corp., Kansas City Div.

General Electric Co., Neutron
Devices Department

Los Alamos Scientific Lab.

Mason & Hanger-Silas Mason Co.

Monsanto Research Corporation
Mound Facility

Rockwell International, Rocky
Flats Plant

Sandia National Laboratories
Livermore, Metrology Laboratory

Sandia National Laboratories
Albuquerque, Primary Standards
Laboratory

Chicago Operations Office

Ames Laboratory

Argonne National Laboratory

Electrical-DC/LF Electrical-RF/Microwave Magnetics, Dielectrics	Time and Frequency Mass, Force, Density Dimensional, Optics, Surface	Acoustics, Sound, Noise, Vibration Liquid or Gas Flow Humidity	Temperature Pressure, Vacuum Ionization Radiation, Radioactivity	Medical Instrumentation Automated Measuring Equipment Material & Products Testing	Chemical Analysis Radiometry and Photometry
X X X	X X X	X X X	X X X	X X	X X
X	X X X	X X X	X X X	X X X	X
X	X X X	X X X	X X X	X	X X
X X	X X X	X	X X	X X	X
X	X X X	X X X	X X X	X X	X
X	X X X	X X	X X X	X X X	X X
X	X X X	X	X X	X	
X X X	X X X	X X X	X X X	X X	X X
X	X	X X	X X		X
X	X X		X		

U.S. DEPARTMENT OF ENERGY

(Continued)

Brookhaven National Laboratory
 Fermi National Accelerator Lab
 New Brunswick Laboratory
Grand Junction Office
 Bendix Field Engineering Corp.
Idaho Operations Office
 EG&G Idaho
Nevada Operations Office
 EG&G, Las Vegas
 Holmes & Narver
 Reynolds
Oak Ridge Operations
 Goodyear Atomic, Portsmouth
 National Lead Company of Ohio
 Oak Ridge National Laboratory

Electrical-DC/LF Electrical-RF/Microwave Magnetics, Dielectrics	Time and Frequency Mass, Force, Density Dimensional, Optics, Surface	Acoustics, Sound, Noise, Vibration Liquid or Gas Flow Humidity	Temperature Pressure, Vacuum Ionization Radiation, Radioactivity	Medical Instrumentation Automated Measuring Equipment Material & Products Testing	Chemical Analysis Radiometry and Photometry
X X X	X X X		X X	X	
					X
			X		X X
X	X X X	X X	X X X	X X	X
X X	X X X	X X	X X X	X	
X X X	X X X		X X	X X	X
	X X	X X	X X X	X X	X X
X	X		X X		X
X	X X X	X X	X X	X X	X

**U.S. DEPARTMENT
OF ENERGY**
(Continued)

	Electrical-DC/LF Electrical-RF/Microwave Magnetics, Dielectrics		Time and Frequency Mass, Force, Density Dimensional, Optics, Surface			Acoustics, Sound, Noise, Vibration Liquid or Gas Flow Humidity			Temperature Pressure, Vacuum Ionization Radiation, Radioactivity			Medical Instrumentation Automated Measuring Equipment Material & Products Testing		Chemical Analysis Radiometry and Photometry	
Union Carbide, Analytical Services											X			X	
Union Carbide, Paducah Plant					X				X	X					
Union Carbide, K-25 Plant			X	X	X	X	X			X			X	X	
Union Carbide, Y-12 Plant	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<u>Richland Operations Office</u>															
Packfic Northwest Labs											X				
Westinghouse Hanford Lab	X		X	X	X		X	X	X	X		X			X
<u>San Francisco Operations Office</u>															
Lawrence Berkeley Laboratory	X	X	X		X				X	X	X			X	X
Lawrence Livermore Laboratory	X	X	X	X	X	X			X	X	X	X	X	X	X
Rockwell International	X		X	X	X		X		X	X	X			X	
Stanford Linear Accelerator Ctr.	X	X	X	X	X	X	X	X	X	X	X	X		X	X
<u>Savannah River Operations Center</u>															
E. I. du Pont de Nemours & Co. Savannah River Laboratory	X		X	X	X		X		X	X					

**U.S. DEPARTMENT
OF ENERGY**
(Continued)

Bonneville Power Administration

Bonneville Laboratory

Energy Technology Centers

Bartlesville Laboratory

Grand Forks Laboratory

Laramie Energy Technology Center

Morgantown Energy Technology Ctr.

Pittsburgh Energy Technology Ctr.

Electrical-DC/LF Electrical-RF/Microwave Magnetics, Dielectrics	Time and Frequency Mass, Force, Density Dimensional, Optics, Surface	Acoustics, Sound, Noise, Vibration Liquid or Gas Flow Humidity	Temperature Pressure, Vacuum Ionization Radiation, Radioactivity	Medical Instrumentation Automated Measuring Equipment Material & Products Testing	Chemical Analysis Radiometry and Photometry
X		X	X		X
	X	X	X X X		X
X		X	X		X
		X	X		X
X		X X	X	X	X
				X	X

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

PUBLIC HEALTH SERVICE

National Institute for Occu-
pational Safety and Health
(Robert A. Taft Laboratories)

Electrical-DC/LF Electrical-RF/Microwave Magnetics, Dielectrics	X X
Time and Frequency Mass, Force, Density Dimensional, Optics, Surface	X
Acoustics, Sound, Noise, Vibration Liquid or Gas Flow Humidity	X X X
Temperature Pressure, Vacuum Ionization Radiation, Radioactivity	X X X
Medical Instrumentation Automated Measuring Equipment Material & Products Testing	X X
Chemical Analysis Radiometry and Photometry	X X

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL AVIATION ADMINISTRATION

AAC-835 National Test Equipment
Shop, Oklahoma City, OK

AMB-4 Laboratory - Alaska

Civil Aeromedical Institute
Oklahoma City, OK

FAA Depot Metrology and Standards
Laboratory, Oklahoma City, OK

Operations Field Unit
Honolulu, HI

Standards and Calibration
Laboratory, Atlantic City, NJ

FEDERAL RAIL ADMINISTRATION

Transportation Test Center
Calibration Lab, Pueblo, CO

NATIONAL HIGHWAY TRANSPOR- TATION SAFETY ADMINISTRATION

Uniform Tire Quality Grading
Facility, San Angelo, TX

Vehicle Research & Test Center
East Liberty, OH

Electrical-DC/LF Electrical-RF/Microwave Magnetics, Dielectrics	Time and Frequency Mass, Force, Density Dimensional, Optics, Surface	Acoustics, Sound, Noise, Vibration Liquid or Gas Flow Humidity	Temperature Pressure, Vacuum Ionization Radiation, Radioactivity	Medical Instrumentation Automated Measuring Equipment Material & Products Testing	Chemical Analysis Radiometry and Photometry
X X	X				
X X	X X	X	X X		
X	X X	X	X X X	X	X
X X	X		X		
X X	X				
X X	X X X	X X	X X	X X	X
X	X X X	X	X X	X	
	X X	X X	X X	X X	
	X		X X		

**U.S. DEPARTMENT
OF TRANSPORTATION**
(Continued)

UNITED STATES COAST GUARD

USCG Electronics Engineering
Center, Wildwood, NJ

USCG Electronics Engineering
Laboratory, Alexandria, VA

USCG Oceanographic Unit,
Washington, DC

USCG Supply Center Brooklyn,
Brooklyn, NY

Electrical-DC/LF Electrical-RF/Microwave Magnetics, Dielectrics	X X	X			
Time and Frequency Mass, Force, Density Dimensional, Optics, Surface	X X	X			
Acoustics, Sound, Noise, Vibration Liquid or Gas Flow Humidity					
Temperature Pressure, Vacuum Ionization Radiation, Radioactivity			X X		
Medical Instrumentation Automated Measuring Equipment Material & Products Testing					
Chemical Analysis Radiometry and Photometry					

FEDERAL COMMUNICATIONS COMMISSION

Laurel Laboratory, Columbia, MD

	X X	Electrical-DC/LF Electrical-RF/Microwave Magnetics, Dielectrics
	X	Time and Frequency Mass, Force, Density Dimensional, Optics, Surface
		Acoustics, Sound, Noise, Vibration Liquid or Gas Flow Humidity
		Temperature Pressure, Vacuum Ionization Radiation, Radioactivity
	X	Medical Instrumentation Automated Measuring Equipment Material & Products Testing
		Chemical Analysis Radiometry and Photometry

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Ames Research Center

Dryden Flight Research Center

Goddard Space Flight Center

Jet Propulsion Laboratory

Johnson Space Center

Kennedy Space Center

Langley Research Center

Lewis Research Center

Marshall Space Flight Center

National Space Technology
Laboratories

Wallops Flight Center

White Sands Test Facility

Electrical-DC/LF Electrical-RF/Microwave Magnetics, Dielectrics	Time and Frequency Mass, Force, Density Dimensional, Optics, Surface	Acoustics, Sound, Noise, Vibration Liquid or Gas Flow Humidity	Temperature Pressure, Vacuum Ionization Radiation, Radioactivity	Medical Instrumentation Automated Measuring Equipment Material & Products Testing	Chemical Analysis Radiometry and Photometry
X	X X	X	X X	X	
	X X X	X	X X		
X X	X X X		X X		
X X	X X X	X X	X X	X X X	X
X X	X X X	X X X	X X	X	X X
X X X	X X X	X X X	X X X	X X	X X
X X	X X X	X X X	X X X	X	X
X X	X X	X X	X X	X	
X X	X X X	X X X	X X	X	
X X X	X X		X X		X
X	X X X	X X	X X	X	X

V. GEOGRAPHICAL LISTING

This section is designed to assist in the location of a laboratory in a given geographical area. First there is a listing of laboratories by States. Each laboratory, listed by name only, is assigned a code. This code can be used to obtain further information about the laboratory by consulting the listings in Section III. The appropriate pages are given as follows:

<u>ORGANIZATION</u>	<u>CODE</u>	<u>PAGE</u>
DEPARTMENT OF COMMERCE	G	4
National Bureau of Standards		4
National Oceanic and Atmospheric Administration		4
DEPARTMENT OF DEFENSE		5
Air Force	A	5
Army	B	13
Navy	C	17
DEPARTMENT OF ENERGY	D	21
DEPARTMENT OF HEALTH AND HUMAN SERVICES	H	25
Public Health Services		25
DEPARTMENT OF TRANSPORTATION	E	26
Federal Aviation Administration		26
Federal Rail Administration		26
National Highway Transportation Safety Administration		26
United States Coast Guard		27
FEDERAL COMMUNICATIONS COMMISSION	J	28
FEDERAL AERONAUTICS AND SPACE ADMINISTRATION	F	29

A map showing the location of each of the laboratories is given in Figure 1 (page 59). The codes shown are those described above.

LABORATORY LISTING BY STATE

<u>Code</u>	<u>Name</u>	<u>Zip Code</u>
<u>ALABAMA</u>		
B8	Anniston Army Depot	36201
F9	George C. Marshall Space Flight Center	35812
A85	Maxwell Air Force Base	36112
B38	Missile Calibration Laboratory	35809
B1	U.S. Army Metrology & Calibration Center	35809
B12	95th Service Co.	35809
<u>ALASKA</u>		
E2	AMB-4 Laboratory, FAA	99502
A58	Eielson Air Force Base	99702
A7	Elmendorf Air Force Base	99506
C46	Naval Station, ADAK, AK (FPO SE)	98791
A111	Shemya AFB, AK (APO SE)	98736
<u>ARIZONA</u>		
A54	Davis Monthan Air Force Base	85707
A82	Luke Air Force Base	85309
B33	U.S. Army Electronic Proving Ground	85613
B53	U.S. Army Yuma Proving Ground	85364
A121	Williams Air Force Base	85224
<u>ARKANSAS</u>		
A47	Blytheville Air Force Base	72315
A79	Little Rock Air Force Base	72076
B43	Pine Bluff Arsenal	71611
<u>CALIFORNIA</u>		
F1	Ames Research Center	94035
A45	Beale Air Force Base	95903
A51	Castle Air Force Base	95342
A160	Edwards Air Force Base	93523
A64	George Air Force Base	92392
F2	Hugh L. Dryden Flight Research Center	93523
F4	Jet Propulsion Laboratory	91103
D56	Lawrence Berkeley Laboratory	94720
D57	Lawrence Livermore Laboratory	94550
C21	Long Beach Naval Shipyard	90802
C22	Mare Island Naval Shipyard	94592
A84	Mather Air Force Base	95655
A10	McClellan Air Force Base	95652
C27	MCLB Barstow	92311
C5	Naval Air Rework Facility, Alameda	94501
C32	Naval Air Rework Facility, North Island	92135
C8	Naval Gage and Standards Center, Pomona	91766
C49	Naval Weapons Center, China Lake	93555
C50	Naval Weapons Station, Concord	94520
C53	Naval Weapons Station, Seal Beach	90740
A95	Norton Air Force Base	92409
C57	Pacific Missile Test Center	93042
D58	Rockwell International	91304
B14	Sacramento Army Depot	95813
D7	Sandia National Laboratories Livermore	94550
B47	Sierra Army Depot	96113

<u>Code</u>	<u>Name</u>	<u>Zip Code</u>
<u>CALIFORNIA (Continued)</u>		
D59	Stanford Linear Accelerator Center	94305
A116	Travis Air Force Base	94535
B29	U.S. Army Aviation Engineering Flight Activity	93523
A168	Vandenberg Air Force Base	93437
C1	Navy Primary Standards Department	92135

COLORADO

D22	Bendix Field Engineering Corporation	81502
A81	Lowry Air Force Base	80230
G1	National Bureau of Standards, Boulder	80303
A100	Peterson Air Force Base	80914
B13	Pueblo Army Depot Activity	81001
D6	Rockwell International	80401
B46	Rocky Mountain Arsenal	80022
E20	Transporation Test Center Calibration Lab	81001
A119	USAFA CO	80840

DELAWARE

A55	Dover Air Force Base	19901
-----	----------------------	-------

DISTRICT OF COLUMBIA

A20	Bolling Air Force Base	20332
G2	National Bureau of Standards, Gaithersburg	20234
C2	Navy Primary Standards, East	20374
E42	USCG Oceanographic Unit	20590

FLORIDA

A161	Eglin Air Force Base	32542
G10	Environmental Research Laboratories	33149
D2	General Electric Company	33733
A69	Homestead Air Force Base	33039
F6	John F. Kennedy Space Center	32899
A83	MacDill Air Force Base	33608
C7	Naval Air Rework Facility, Pensacola	32508
C31	Naval Air Rework Facility, Jacksonville	32212
G11	NOAA Research Facilities Center	33152
A166	Patrick Air Force Base ATTN: J. George	32925
A167	Patrick Air Force Base ATTN: R. Schnepf	32925
A117	Tyndall Air Force Base	32403
B50	U.S. Army Tropic Test Center	34004

GEORGIA

C26	Marine Corps Logistics Base	31704
A90	Moody Air Force Base	31601
A176	Robins Air Force Base	31098

HAWAII

A68	Hickam Air Force Base	96853
C10	Pearl Harbor Naval Shipyard	96860
E5	Operations Field Unit, FAA	96853
C25	U.S. Marine Corps Air Station	96863

<u>Code</u>	<u>Name</u>	<u>Zip Code</u>
<u>IDAHO</u>		
D27	EG&G Idaho, Inc.	83415
A91	Mt. Home Air Force Base	83648
<u>ILLINOIS</u>		
D14	Argonne National Laboratory	60439
A21	Chanute Air Force Base	61868
D16	Fermi National Accelerator Laboratory	60510
D17	New Brunswick Laboratory	60439
B45	Rock Island Arsenal	61299
A107	Scott Air Force Base	62225
<u>INDIANA</u>		
A66	Grisson Air Force Base	46971
C38	Naval Avionics Center	46218
C52	Naval Weapons Support Center, Crane	47522
B36	U.S. Army Jefferson Proving Ground	47250
<u>IOWA</u>		
D13	Ames Laboratory	50011
<u>KANSAS</u>		
A63	Forbes Air Force Base	66620
A87	McConnell Air Force Base	67221
<u>KENTUCKY</u>		
B10	Lexington-Blue Grass Army Depot Activity	40511
C42	Naval Ordnance Station	40214
D43	Union Carbide	42001
<u>LOUISIANA</u>		
A44	Barksdale Air Force Base	71110
A59	England Air Force Base	71301
<u>MAINE</u>		
A80	Loring Air Force Base	04750
<u>MARYLAND</u>		
B25	Aberdeen Proving Ground	21005
F3	Goddard Space Flight Center	20771
J1	Laurel Laboratory, FCC	21045
C37	Naval Air Test Center, Patuxent River	20670
C41	Naval Ordnance Station, Indian Head	20640
G12	NOAA Test and Evaluation Laboratory	20852
C48	White Oak Laboratory	20910
B26	U.S. Army Ballistic Research Lab ARRADCOM	21005
B27	U.S. Army Chemical Systems Lab ARRADCOM	21010
B34	U.S. Army Electronics Research & Development Command	20783

<u>Code</u>	<u>Name</u>	<u>Zip Code</u>
<u>MASSACHUSETTS</u>		
A163	Hanscom Air Force Base	01731
A98	Otis Air Force Base	02542
B37	U.S. Army Materials and Mechanics Research Center	02172
B40	U.S. Army Natick Research and Development Command	01760
<u>MICHIGAN</u>		
A71	K. I. Sawyer Air Force Base	49842
A108	Selfridge ANGB	48045
B48	U.S. Army Tank-Automotive Material Readiness Command	48090
A122	Wurtsmith Air Force Base	48753
<u>MINNESOTA</u>		
A56	Duluth International Airport	55814
<u>MISSISSIPPI</u>		
A53	Columbus Air Force Base	39701
A73	Kessler Air Force Base	39534
F10	National Space Technology Laboratories	39529
<u>MISSOURI</u>		
D1	The Bendix Corporation	64141
A25	Whiteman Air Force Base	65305
<u>MONTANA</u>		
A23	Malmstrom Air Force Base	59402
<u>NEBRASKA</u>		
A96	Offutt Air Force Base	68113
<u>NEVEDA</u>		
D32	EG&G Energy Measurements Group	89119
D33	Holmes & Narver, Inc.	89023
A94	Nellis Air Force Base	89191
D34	Reynolds Electrical & Engineering Co., Inc.	89114
<u>NEW HAMPSHIRE</u>		
A99	Pease Air Force Base	03801
C59	Portsmouth Naval Shipyard	03801
<u>NEW JERSEY</u>		
A88	McGuire Air Force Base	08641
C28	Naval Air Engineering Center, Lakehurst	08733
C51	Naval Weapons Station, Earle	07722
E6	Standards & Calibration Laboratory	08405
B35	U.S. Army Electronics Research & Development Command Technical Support Activity	07703
E40	USCG Electronics Engineering Center	08260

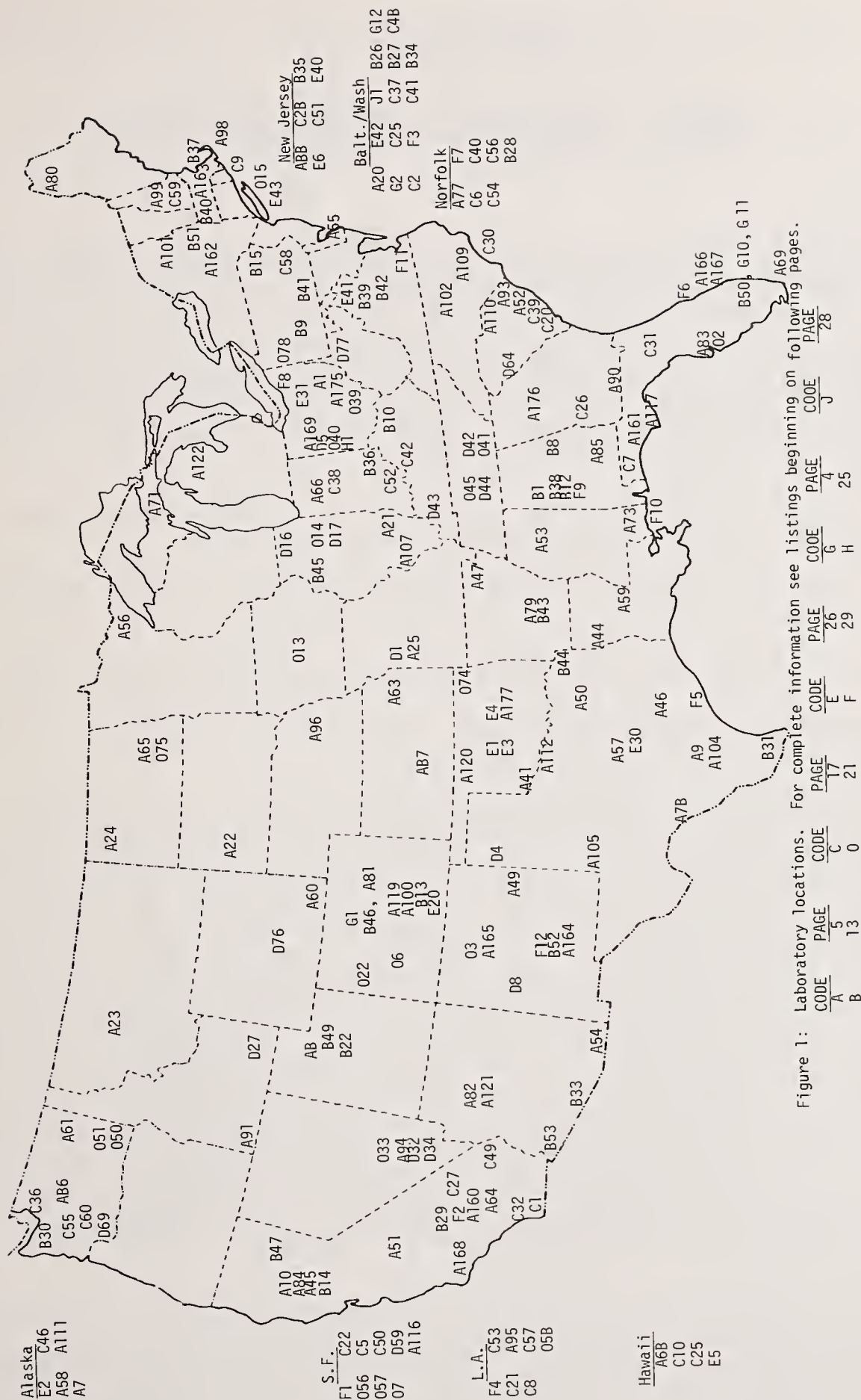
<u>Code</u>	<u>Name</u>	<u>Zip Code</u>
<u>NEW MEXICO</u>		
A49	Cannon Air Force Base	88101
A164	Holloman Air Force Base	88330
A165	Kirtland Air Force Base	87117
D3	Los Alamos National Scientific Laboratory	87545
D8	Sandia National Laboratories Albuquerque	87185
B52	U.S. Army White Sands Missile Range	88002
F12	White Sands Test Facility	88001
<u>NEW YORK</u>		
D15	Brookhaven National Laboratory	11973
A162	Griffiss Air Force Base	13441
A101	Plattsburgh Air Force Base	12903
E43	USCG Supply Center Brooklyn	11232
B51	Watervliet Arsenal	12189
<u>NORTH CAROLINA</u>		
C30	Naval Air Rework Facility, Cherry Point	28533
A102	Pope Air Force Base	28308
A109	Seymour Johnson Air Force Base	27531
<u>NORTH DAKOTA</u>		
A65	Grand Forks Air Force Base	58205
D75	Grand Forks Energy Technology Center	58201
A24	Minot Air Force Base	58705
<u>OHIO</u>		
A1	Air Force Measurement Standards Laboratories	43055
D39	Goodyear Atomic Corporation	45661
F8	Lewis Research Center	44135
D5	Monsanto Research Corporation	45342
D40	National Lead Company of Ohio	45239
A175	Newark Air Force Base	43055
H1	Robert A. Taft Laboratories	45226
E31	Vehicle Research & Test Center	43319
A169	Wright-Patterson Air Force Base	45433
<u>OKLAHOMA</u>		
E1	AAC-835 National Test Equipment Shop, FAA	73125
A41	AltU.S. Air Force Base	73521
D74	Bartlesville Energy Technology Center	74003
E3	Civil Aeromedical Institute	73125
E4	FAA Depot Metrology and Standards Laboratory	73125
A177	Tinker Air Force Base	73145
A120	Vance Air Force Base	73701
<u>PENNSYLVANIA</u>		
B15	Area Calibration Laboratory, Tobyhanna	18466
B9	Army Area Calibration Laboratory, Letterkenney	17201
B41	New Cumberland Army Depot	17070
C58	Philadelphia Naval Shipyard	19112
D78	Pittsburgh Energy Technology Center	15213

<u>Code</u>	<u>Name</u>	<u>Zip Code</u>
<u>RHODE ISLAND</u>		
C9	U.S. Navy Underwater Systems Center	02840
<u>SOUTH CAROLINA</u>		
A52	Charleston Air Force Base	29404
C20	Charleston Naval Shipyard	29408
D64	E. I. du Pont de Nemours & Company	29808
A93	Myrtle Beach Air Force Base	29577
C39	NAVELEXSYSENGCEN Charleston	29406
A110	Shaw Air Force Base	29152
<u>SOUTH DAKOTA</u>		
A22	Ellsworth Air Force Base	57706
<u>TENNESSEE</u>		
D41	Oak Ridge National Laboratory	37830
D42	Union Carbide Corporation, Nuclear Division ATTN: O. H. Howard	37830
D44	Union Carbide Corporation, Nuclear Division ATTN: R. J. Graham	37830
D45	Union Carbide Corporation, Nuclear Division ATTN: D. P. Bryant	37830
<u>TEXAS</u>		
A46	Bergstrom Air Force Base	78743
A50	Carswell Air Force Base	76127
B31	CorpU.S. Christi Army Depot	78419
A57	Dyess Air Force Base	79607
A9	Kelly Air Force Base	78241
A78	Laughlin Air Force Base	78840
F5	Lyndon B. Johnson Space Center	77058
D4	Mason and Hanger-Silas Mason Company	79117
A104	Randolph Air Force Base	78148
B44	Red River Army Depot	75501
A105	Reese Air Force Base	79489
A112	Sheppard Air Force Base	76311
E30	Uniform Tire Quality Grading Facility	76901
<u>UTAH</u>		
A8	Hill Air Force Base	84406
B49	Tooele Army Depot	84074
B22	U.S. Army Dugway Proving Ground	84022
<u>VIRGINIA</u>		
B28	Applied Technology Lab (AVRADCOM)	23604
A77	Langley Air Force Base	23665
F7	Langley Research Center	23665
C6	Naval Air Rework Facility, Norfolk	23511
C40	NAVELEXSYSENGCEN Portsmouth	23705
C54	Naval Weapons Station, Yorktown	23491

<u>Code</u>	<u>Name</u>	<u>Zip Code</u>
<u>VIRGINIA (Continued)</u>		
C56	Norfolk Naval Shipyard	23709
B39	U.S. Army Mobility Equipment Research and Development Command	22060
B42	U.S. Army Night Vision and Electro-Optics Laboratories	22060
E41	USCG Electronics Engineering Laboratory	22310
F11	Wallops Flight Center	23337
<u>WASHINGTON</u>		
D69	Bonneville Power Administration	98666
A61	Fairchild Air Force Base	99011
A86	McChord Air Force Base	98438
C36	Naval Air Station, Whidbey Island	98278
D50	Pacific Northwest Laboratory	99352
C60	Puget Sound Naval Shipyard	98314
B30	U.S. Army Cold Regions Test Center	98733
C55	U.S. Naval Undersea Warfare Engineering Station	98345
D51	Westinghouse	99352
<u>WEST VIRGINIA</u>		
D77	Morgantown Energy Technology Center	26505
<u>WYOMING</u>		
A60	F. E. Warren Air Force Base	82001
D76	Laramie Energy Technology Center	82701

LABORATORIES OUTSIDE THE UNITED STATES

<u>Code</u>	<u>Name</u>	<u>Zip Code</u>
<u>ATLANTIC</u>		
A76	Lajes Field Azores	AP0 NY 09406
C34	U.S. Naval Air Station, Bermuda	FP0 NY 09560
A40	Albrook AFS CZ	AP0 Miami 34001
A114	Thule AB Greeland	AP0 NY 09023
A74	Keflavik APRT Iceland	FP0 NY 09571
A92	Muniz ANGB PR	PR 00914
<u>ASIA</u>		
A42	Andersen AFB Guam	AP0 SF 96334
C33	U.S. Naval Air Station Agana, Guam	FP0 SF 96637
C43	Naval Ship Repair Facility, Guam	FP0 SF 96630
C24	U.S. Navy Calibration Lab	FP0 SE 98764
A89	Misawa AB Japan	AP0 SF 96519
C45	U.S. Naval Ship Repair Facility, Yokosuka, Japan	FP0 SE 98762
A123	Yokota AB Japan	AP0 SF 96328
B11	Army Calibration Laboratory, Korea	AP0 SF 96460
A75	Kunsan AB Korea	AP0 SF 96264
A97	Osan AB Korea	AP0 SF 96570
A72	Kadena AB Okinawa	AP0 NY 96239
C23	Marine Corps Air Station (H), Futema, Okinawa	FP0 SE 98772
A6	Clark AB Phil	AP0 SF 96274
C35	NAVCALAB Cub. Pt. Phil	FP0 SF 96654
C44	Naval Ship Repair Facility, Subic Bay, Phil	FP0 SF 96651
<u>EUROPE</u>		
A62	Feltwell England	AP0 NY 09179
A118	Upper Heyford England	AP0 NY 09194
A5	Bitburg AB GE	AP0 NY 09132
B5	ACRC, Augsburg	AP0 NY 09178
B6	ACRC, Pirmasens	AP0 NY 09138
B7	ACRC, Schwanheim	AP0 NY 09057
A67	Hahn AB GE	AP0 NY 09109
A103	Ramstein AB Germany	AP0 NY 09012
A113	Tempelhof Cent APRT Ger	AP0 NY 09611
A43	Aviano AB Italy	AP0 NY 09293
C29	U.S. Naval Air Facility, Sigonella, IT	FP0 NY 09523
A106	San Vito Dei Normanni, IT	AP0 NY 09240
A48	Camp New Amsterdam AB NE	AP0 NY 09292
C47	Navy Calibration Laboratory, Rota, Spain	FP0 NY 09540
A115	Torrejon AB Spain	AP0 NY 09283
A70	Incirlik CDI Turkey	AP0 NY 09289



APPENDIX I.

PMTE PROJECT BACKGROUND

The Precision Measuring and Test Equipment (PMTE) Project was initiated after the Government Accounting Office (GAO) studied the Federal Government's management and use of PMTE and concluded that there is a lack of intra-agency and inter-agency coordination and planning. This lack of coordination and planning has, in some cases, resulted in unnecessary expenditures for duplicate facilities. The GAO also found that agencies are not making use of available commercial laboratory services, but are building up in-house capability instead.

As a result of these findings, the Office of Management and Budget (OMB) asked that the NBS take the following actions:

- Assume the lead for coordinating improvements in the management and use of PMTE.
- Assist agencies as necessary to identify areas for improvement.
- Recommend to OMB such actions as are needed to improve the management and use of such equipment.

The PMTE Project was established at NBS to respond to this request. The overall objective of this program is to coordinate improvements in the management and use of PMTE within the Federal Government. To this end, the Project has undertaken tasks in several areas in order to improve the communications and exchange of information among individuals and facilities involved in the management or use of PMTE. (1) It has published "PMTE UPDATE", a newsletter distributed to interested parties throughout the Federal PMTE community. This newsletter is designed to provide timely information on new developments, publications, and meetings, to describe successful strategies of PMTE management and use, and to provide a forum for discussing issues of current interest to the community. (2) It has organized and chaired quarterly meetings of the Interagency PMTE Committee which allows representatives from Federal agencies an opportunity to exchange information on PMTE problems and successes. (3) It has encouraged and assisted other agencies to promote communications within their agencies by co-hosting workshops to improve interactions in PMTE areas.

The PMTE Project has also awarded a contract to study the use of alternatives to out-of-service equipment calibrations for economy and measurement quality assurance and control in the Federal Government, and the optimization of calibration recall intervals and algorithms for PMTE.

It is hoped that these studies will identify particularly effective existing technologies and management techniques that can be adopted for use in Federal agencies.

Interagency cooperation is also being encouraged by the PMTE Project in the area of transferring manpower slots between agencies in order that resources might be used more efficiently and effectively.

The PMTE Project is in the process of gathering information on terms and definitions commonly used in conjunction with metrology and calibration within the Federal Government. These terms will be listed in a publication which will include a preferred definition of each term, as well as other definitions currently being used. This effort is intended to encourage and promote unity in the use of terms throughout the measurement community in order that communications between agencies in the Federal Government can be more precise and meaningful.

APPENDIX II.

CATEGORY DESCRIPTIONS

In order that the user of this catalog may better interpret the laboratory capabilities as indicated by the categories in Section IV, the following examples are given. They are intended only to indicate the type of measurement to be included in each category and are not to be considered an all-inclusive listing.

1. ELECTRICAL - DC/LF

DC Voltage	AC Voltage (low freq.)
DC Voltage ratio	AC Current (low freq.)
DC Current	Capacitance
Resistance	Inductance
2. ELECTRICAL - RF/MICROWAVE

AC Voltage	Capacitance
AC Voltage ratio	Inductance
AC Current	Reflection coefficient
Phase Angle	RF power
Attenuation	Laser power
3. MAGNETICS, DIELECTRICS

Magnetic field	
Magnetic material properties	
Dielectric material properties	
4. TIME & FREQUENCY

Time	
Frequency	
5. MASS, FORCE, DENSITY

Mass	Acceleration
Density	Shock
Force	Vibration
Torque	
6. DIMENSIONAL, OPTICS, SURFACES

Length	Refractive index
Inside diameter	Optical lens evaluation
Roundness, concentricity	Optical alignment
Angle	Flatness
Volume	Surface roughness
Thread	Hardness
7. ACOUSTICS, SOUND, NOISE VIBRATION

Acoustics	
Sound pressure level	
Microphone sensitivity	

- | | | |
|-----|--|---|
| 8. | LIQUID & GAS FLOW
Liquid flow
Gas flow | Hydraulics
Air speed |
| 9. | HUMIDITY
Relative humidity
Absolute humidity | |
| 10. | TEMPERATURE
Temperature | |
| 11. | PRESSURE, VACUUM
Pressure
Vacuum
Altimetry | |
| 12. | IONIZING RADIATION, RADIOACTIVITY
Alpha, Beta, and Gamma measurements
Neutron measurements
X-ray exposure | |
| 13. | MEDICAL INSTRUMENTATION
EKG portable recorders
EKG strip chart recorders
Defibrillators | |
| 14. | AUTOMATED MEASURING EQUIPMENT
Commercial automated calibration systems | |
| 15. | MATERIALS & PRODUCTS TESTING
Concrete
Building materials
Paper | Rubber
Structures |
| 16. | CHEMICAL ANALYSIS
Spectrophotometry
Gas chromatography
Spectrophotofluorometry | pH test
Water pollution
Air pollution |
| 17. | RADIOMETRY AND PHOTOMETRY
Luminous intensity
Total irradiance
Color temperature
Brightness temperature | Solar radiometry
Optical density |

APPENDIX III.

OTHER INFORMATION SOURCES

1. National Conference of Standards Laboratories

The National Conference of Standards Laboratories (NCSL) is a continuing, nonprofit, laboratory-oriented organization which promotes cooperative efforts toward solving the common problems faced by standards laboratories in their organization and operation. It was established in 1961 under the sponsorship of the National Bureau of Standards. Its membership consists of academic, scientific, industrial, commercial, and government laboratories concerned with measuring physical quantities, calibrating standards and instruments, and developing standards of practice. It provides liaison with technical societies, trade associations, and educational institutions interested in these activities.

NCSL pursues its goals through joint voluntary action. It holds conferences and workshops, collects and disseminates information about current practices, prepares source material for preferred technical procedures, determines pertinent statistical information related to measurement standards and calibration activities, and helps laboratories to arrange measurement agreement audits.

NCSL prepares and distributes "A Directory of Standards Laboratories" which lists member and other standards laboratories. Each laboratory listing includes the laboratory address, name and telephone number of a point of contact, and an indication of the capabilities of the laboratory. Although the majority listed are private laboratories, also included are some Federal and State government laboratories.

The NCSL directory and membership lists may be obtained from:

NCSL Secretariat
c/o National Bureau of Standards
Attention: L. Kenneth Armstrong
Boulder, CO 80303
(303) 497-3787

NCSL information is also available from the NBS
Office of Measurement Services.

2. Government-Industry Data Exchange Program

The Government-Industry Data Exchange Program (GIDEP) is a cooperative effort to save time and money by making maximum use of existing knowledge. The program allows exchange of technical data

essential in the research, design, development, production, and operational phases of the life cycle of systems and equipment.

The program is centrally managed and funded by the Government. Its participating organizations are the United States Army, Navy, Air Force, Marine Corps, Defense Supply Agency, General Services Administration, National Aeronautics and Space Administration, Department of Energy, and the National Security Agency, as well as the Canadian Department of Defense and hundreds of industrial organizations.

Participants in GIDEP have access to the four major data banks listed below. Proper use of these data banks can help improve quality and reliability and reduce costs in the development and manufacture of complex systems and equipment.

- Engineering Data Bank
- Failure Rate Data Bank
- Metrology Data Bank
- Failure Experience Data Bank

Participation requirements or additional information about GIDEP may be obtained from:

Director
GIDEP Operations Center
Corona, CA 91720
(714) 736-4677

U.S. DEPT. OF COMM. BIBLIOGRAPHIC DATA SHEET		1. PUBLICATION OR REPORT NO. NBS SP 546	2. Gov't Accession No.	3. Recipient's Accession No.
4. TITLE AND SUBTITLE Catalog of Federal Metrology and Calibration Capabilities 1980 Edition			5. Publication Date September 1980	
			6. Performing Organization Code	
7. AUTHOR(S) Kathryn O. Leedy			8. Performing Organ. Report No.	
9. PERFORMING ORGANIZATION NAME AND ADDRESS NATIONAL BUREAU OF STANDARDS DEPARTMENT OF COMMERCE WASHINGTON, DC 20234			10. Project/Task/Work Unit No.	
			11. Contract/Grant No.	
12. SPONSORING ORGANIZATION NAME AND COMPLETE ADDRESS (Street, City, State, ZIP) Same as above.			13. Type of Report & Period Covered Final	
			14. Sponsoring Agency Code	
15. SUPPLEMENTARY NOTES Supersedes NBS SP 546, 1979 Edition Library of Congress Catalog Card Number: 80-600149 <input type="checkbox"/> Document describes a computer program; SF-185, FIPS Software Summary, is attached.				
16. ABSTRACT (A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here.) This publication lists Federal laboratories involved in metrology and calibration. Included is the name of a person at each laboratory to contact for more information as well as the laboratory telephone number and address. The capabilities of each laboratory are indicated in a tabular listing by agency. To provide geographical distribution, the laboratories are listed by States. In addition, the laboratories are shown on a map by coded number. Other references are described.				
17. KEY WORDS (six to twelve entries; alphabetical order; capitalize only the first letter of the first key word unless a proper name; separated by semicolons) Calibration; Federal Government; laboratory; measurement; metrology; precision; test equipment.				
18. AVAILABILITY <input checked="" type="checkbox"/> Unlimited <input type="checkbox"/> For Official Distribution. Do Not Release to NTIS <input type="checkbox"/> Order From Sup. of Doc., U.S. Government Printing Office, Washington, DC 20402, <input type="checkbox"/> Order From National Technical Information Service (NTIS), Springfield, VA, 22161		19. SECURITY CLASS (THIS REPORT) UNCLASSIFIED	21. NO. OF PRINTED PAGES 69	
		20. SECURITY CLASS (THIS PAGE) UNCLASSIFIED	22. Price \$4.00	

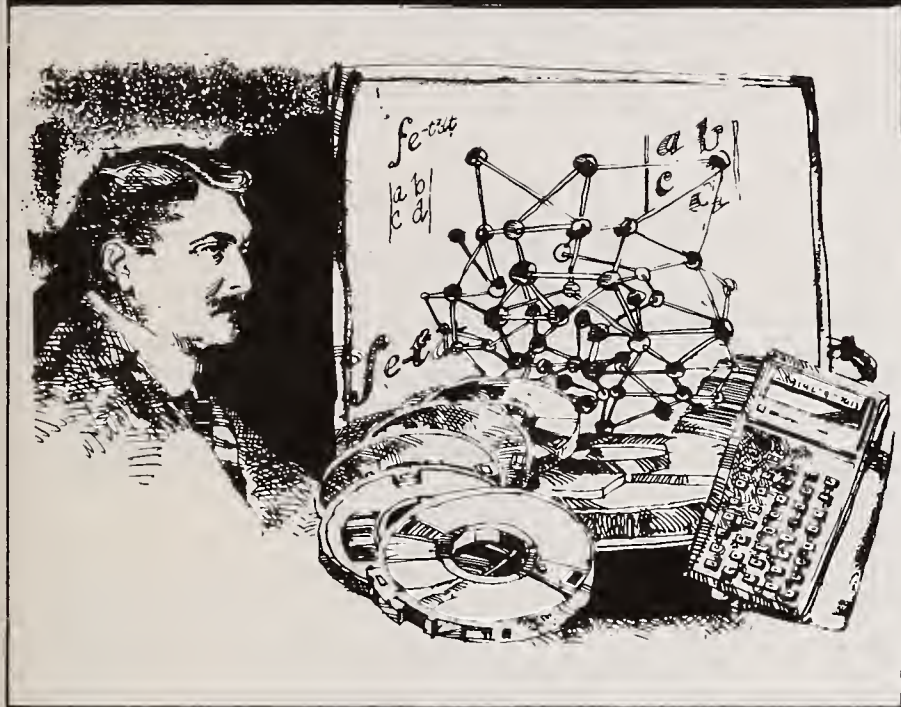
USCOMM-DC

JOURNAL OF RESEARCH

of the National Bureau of Standards



U.S. DEPARTMENT OF COMMERCE



Subscribe now— The new National Bureau of Standards Journal

The expanded Journal of Research of the National Bureau of Standards reports NBS research and development in those disciplines of the physical and engineering sciences in which the Bureau is active. These include physics, chemistry, engineering, mathematics, and computer sciences. Papers cover a broad range of subjects, with major emphasis on measurement methodology, and the basic technology underlying standardization. Also included from time to time are survey articles on topics closely related to the Bureau's technical and scientific programs. As a special service to subscribers each issue contains complete citations to all recent NBS publications in NBS and non-NBS media. Issued six times a year. Annual subscriptions: domestic \$13.; foreign \$16.25. Single copy, \$3. domestic; \$3.75 foreign.

- Note: The Journal was formerly published in two sections: Section A "Physics and Chemistry" and Section B "Mathematical Sciences."

NBS Board of Editors
Churchill Eisenhart,
Executive Editor (Mathematics)
John W. Cooper (Physics)
Donald D. Wagman (Chemistry)
Andrew J. Fowell (Engineering)
Joseph O. Harrison (Computer Science)
Howard J. M. Hanley (Boulder Labs.)

Subscription Order Form

Enter my subscription to NBS Journal of Research at \$13. Add \$3.25 for foreign mailing. No additional postage is required for mailing within the United States or its possessions. (SJRA—File Code 2N)

Send Subscription to:

Name-First, Last

Company Name or Additional Address Line

Street Address

City

State

Zip Code

(or) COUNTRY

Credit Card Orders Only

Total charges \$ Fill in the boxes below.

Credit Card No.

☐ VISA

☐ MasterCard

Expiration Date
Month/Year

☐ Remittance Enclosed. Domestic: Check or money order. Foreign: International money order, draft on an American or Canadian Bank, or by UNESCO coupons, Made payable to the Superintendent of Documents.

☐ Charge to my Deposit Account No.

MAIL ORDER FORM TO:
Superintendent of Documents
Government Printing Office
Washington, D.C. 20402

PLEASE PRINT

NBS TECHNICAL PUBLICATIONS

PERIODICALS

JOURNAL OF RESEARCH—The Journal of Research of the National Bureau of Standards reports NBS research and development in those disciplines of the physical and engineering sciences in which the Bureau is active. These include physics, chemistry, engineering, mathematics, and computer sciences. Papers cover a broad range of subjects, with major emphasis on measurement methodology and the basic technology underlying standardization. Also included from time to time are survey articles on topics closely related to the Bureau's technical and scientific programs. As a special service to subscribers each issue contains complete citations to all recent Bureau publications in both NBS and non-NBS media. Issued six times a year. Annual subscription: domestic \$13; foreign \$16.25. Single copy, \$3 domestic; \$3.75 foreign.

NOTE: The Journal was formerly published in two sections: Section A "Physics and Chemistry" and Section B "Mathematical Sciences."

DIMENSIONS/NBS—This monthly magazine is published to inform scientists, engineers, business and industry leaders, teachers, students, and consumers of the latest advances in science and technology, with primary emphasis on work at NBS. The magazine highlights and reviews such issues as energy research, fire protection, building technology, metric conversion, pollution abatement, health and safety, and consumer product performance. In addition, it reports the results of Bureau programs in measurement standards and techniques, properties of matter and materials, engineering standards and services, instrumentation, and automatic data processing. Annual subscription: domestic \$11; foreign \$13.75.

NONPERIODICALS

Monographs—Major contributions to the technical literature on various subjects related to the Bureau's scientific and technical activities.

Handbooks—Recommended codes of engineering and industrial practice (including safety codes) developed in cooperation with interested industries, professional organizations, and regulatory bodies.

Special Publications—Include proceedings of conferences sponsored by NBS, NBS annual reports, and other special publications appropriate to this grouping such as wall charts, pocket cards, and bibliographies.

Applied Mathematics Series—Mathematical tables, manuals, and studies of special interest to physicists, engineers, chemists, biologists, mathematicians, computer programmers, and others engaged in scientific and technical work.

National Standard Reference Data Series—Provides quantitative data on the physical and chemical properties of materials, compiled from the world's literature and critically evaluated. Developed under a worldwide program coordinated by NBS under the authority of the National Standard Data Act (Public Law 90-396).

NOTE: The principal publication outlet for the foregoing data is the Journal of Physical and Chemical Reference Data (JPCRD) published quarterly for NBS by the American Chemical Society (ACS) and the American Institute of Physics (AIP). Subscriptions, reprints, and supplements available from ACS, 1155 Sixteenth St., NW, Washington, DC 20056.

Building Science Series—Disseminates technical information developed at the Bureau on building materials, components, systems, and whole structures. The series presents research results, test methods, and performance criteria related to the structural and environmental functions and the durability and safety characteristics of building elements and systems.

Technical Notes—Studies or reports which are complete in themselves but restrictive in their treatment of a subject. Analogous to monographs but not so comprehensive in scope or definitive in treatment of the subject area. Often serve as a vehicle for final reports of work performed at NBS under the sponsorship of other government agencies.

Voluntary Product Standards—Developed under procedures published by the Department of Commerce in Part 10, Title 15, of the Code of Federal Regulations. The standards establish nationally recognized requirements for products, and provide all concerned interests with a basis for common understanding of the characteristics of the products. NBS administers this program as a supplement to the activities of the private sector standardizing organizations.

Consumer Information Series—Practical information, based on NBS research and experience, covering areas of interest to the consumer. Easily understandable language and illustrations provide useful background knowledge for shopping in today's technological marketplace.

Order the above NBS publications from: Superintendent of Documents, Government Printing Office, Washington, DC 20402.

Order the following NBS publications—FIPS and NBSIR's—from the National Technical Information Services, Springfield, VA 22161.

Federal Information Processing Standards Publications (FIPS PUB)—Publications in this series collectively constitute the Federal Information Processing Standards Register. The Register serves as the official source of information in the Federal Government regarding standards issued by NBS pursuant to the Federal Property and Administrative Services Act of 1949 as amended, Public Law 89-306 (79 Stat. 1127), and as implemented by Executive Order 11717 (38 FR 12315, dated May 11, 1973) and Part 6 of Title 15 CFR (Code of Federal Regulations).

NBS Interagency Reports (NBSIR)—A special series of interim or final reports on work performed by NBS for outside sponsors (both government and non-government). In general, initial distribution is handled by the sponsor; public distribution is by the National Technical Information Services, Springfield, VA 22161, in paper copy or microfiche form.

BIBLIOGRAPHIC SUBSCRIPTION SERVICES

The following current-awareness and literature-survey bibliographies are issued periodically by the Bureau:

Cryogenic Data Center Current Awareness Service. A literature survey issued biweekly. Annual subscription: domestic \$35; foreign \$45.

Liquefied Natural Gas. A literature survey issued quarterly. Annual subscription: \$30.

Superconducting Devices and Materials. A literature survey issued quarterly. Annual subscription: \$45. Please send subscription orders and remittances for the preceding bibliographic services to the National Bureau of Standards, Cryogenic Data Center (736) Boulder, CO 80303.

U.S. DEPARTMENT OF COMMERCE
National Bureau of Standards
Washington, D.C. 20234

OFFICIAL BUSINESS

Penalty for Private Use, \$300

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF COMMERCE
COM-215



SPECIAL FOURTH-CLASS RATE
BOOK
