

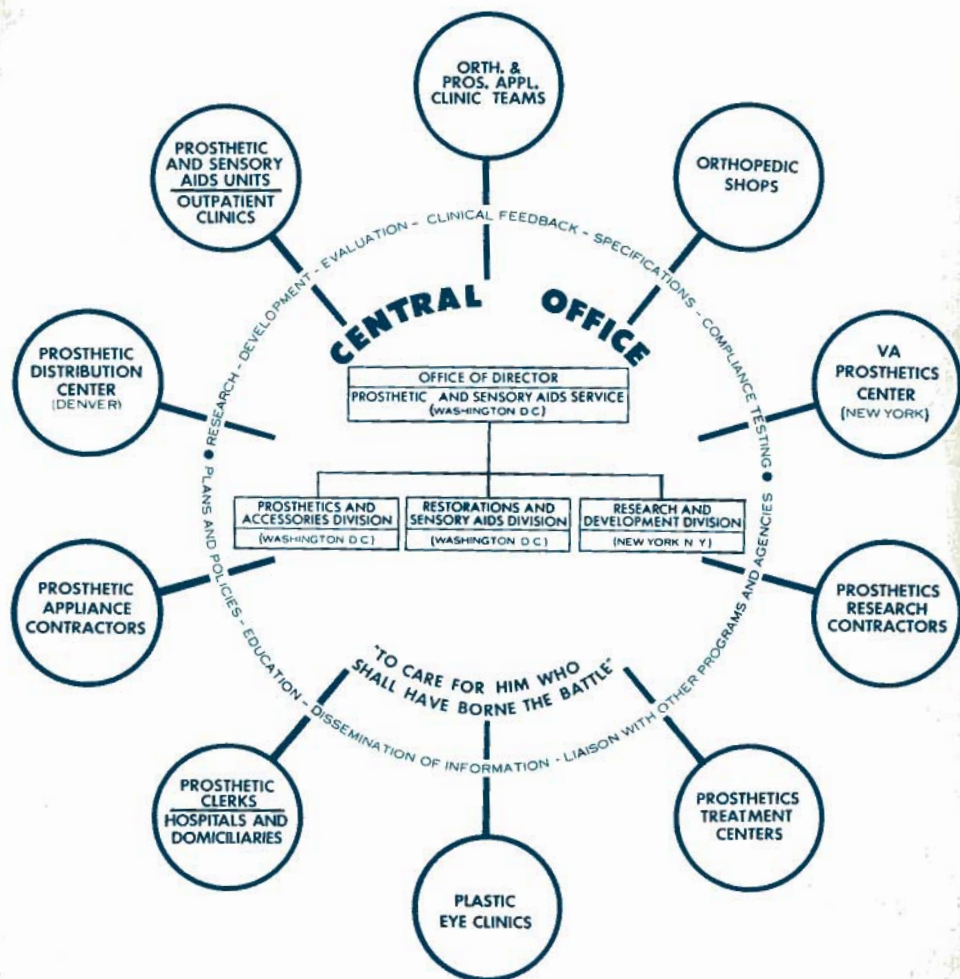
BPR 10-17 SPRING 1972

Bulletin of Prosthetics Research

PROSTHETIC AND
SENSORY AIDS
SERVICE

DEPARTMENT OF MEDICINE AND SURGERY
VETERANS ADMINISTRATION · WASHINGTON, D.C.

PROSTHETICS RESEARCH PROGRAM



DEPARTMENT OF MEDICINE AND SURGERY
VETERANS ADMINISTRATION

BPR 10-17 SPRING 1972

Bulletin of Prosthetics Research

PROSTHETIC AND
SENSORY AIDS
SERVICE

DEPARTMENT OF MEDICINE AND SURGERY
VETERANS ADMINISTRATION • WASHINGTON, D.C.

EDITORIAL BOARD

ROBERT E. STEWART, D.D.S., *Chairman*

WILLIAM M. BERNSTOCK, *Editor*

EUGENE F. MURPHY, Ph. D.

ANTHONY STAROS

EDWARD PEIZER, Ph. D.

THOMAS E. KNOX, D.D.S.

Managing Editor: Rhoda Beiser

Medical Consultants: Alan G. Smith, M.D.; Gustav Rubin, M.D.

Editorial Consultants: Earl A. Lewis; Frank A. Witteck; Howard Freiburger

Editorial Assistant: Carol A. Ross

Illustrators: John Beagles; Phillip S. Carson

Photographers: William J. Romahn, Jr.; Berdell Franklin; Theodore Zier

Researcher: Thomas R. Langan

The *Bulletin of Prosthetics Research* is a publication of the Prosthetic and Sensory Aids Service, Department of Medicine and Surgery, Veterans Administration. The opinions expressed by contributors are their own and are not necessarily those of the Veterans Administration. Address correspondence to Editor, *Bulletin of Prosthetics Research*, Research and Development Division, Prosthetic and Sensory Aids Service, Veterans Administration, 252 Seventh Ave., New York, New York 10001.

Library of Congress Catalog Card No. 66-60273.

Distribution: CO: (00) (001) (10) (10A) (10E1) RMD
SS (121 B) (1) (11A1) (11A3) (11F) (111) (12)
SSD (113) (117) (118) (121) (122) (126)
(15) (151) (152) 1 ea.
FLD: HA, DO, OC, OCRO in varying quantities
EX: P, DL

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price \$1.25
Stock Number 5100-0060

CONTENTS

Articles	Page
Editorial—Prosthetics and Orthotics—Today and Tomorrow— <i>S. Fishman</i>	1
An Electric Arm Orthosis— <i>H. R. Lehneis and R. G. Wilson, Jr.</i>	4
Toward Acoustic Standards for Powered Assist Devices— <i>P. H. Newell, Jr., A. M. Sherwood, A. B. Wilson, Jr., and G. L. McDaniel</i>	21
Development and Evaluation of Externally Powered Upper-Limb Prosthesis, Summary of Research Project Activities, July 1971—December 1971— <i>W. Seamone and G. Schmeisser, Jr.</i>	33
Transferring Load to Flesh—Part III. Analysis of Shear Stress— <i>L. Bennett</i>	38
Experience with Endoskeletal Prostheses for Lower Extremities— <i>J. H. Zettl</i>	52
Guidelines for Measurement of Amputation Stump Length— <i>C. A. Ross</i>	67
Cosmetic Hand Cover for a Hook— <i>G. Rubin and D. F. Gearhart</i>	83
Encapsulation, Measured by a Simple Work Interest Score, As a Predictor of Prosthetic Adjustment in Amputees— <i>S. A. Weiss, S. Fishman, and F. Krause</i>	88
Amputations and Prostheses in Primitive Cultures— <i>L. W. Friedmann</i>	105
The Geriatric Amputee "Sans Teeth, Sans Eyes, Sans Taste—Sans Everything"— <i>D. Caine</i>	139
Orthoplast-Isoprene: Its Uses in Certain Splints and Shin Guards— <i>L. Cerullo</i>	148
Guidelines for Developing an Alphabet to Synthesize Spelled Speech— <i>M. Metfessel and C. Lovell</i>	154
Optical Magnification for Subnormal Vision: Historical Survey— <i>L. Sloan</i>	177

Articles—Continued	Page
Night Viewing Goggles for Night-Blind Travelers— <i>T. P. Coursey, D. L. McGowan, and L. E. Apple</i>	191
Summary of Activities of the Committee on Prosthetics Research and Development for the Period July 1, to December 31, 1971	195
 VA Prosthetics Center Research	
Report— <i>A. Staros and E. Peizer</i>	202
 Highlights of Other VA Research Programs	
Prosthetics—Edited by <i>E. F. Murphy and W. M. Bernstock</i>	234
Sensory Aids—Edited by <i>H. Freiburger</i>	248
 Departments	
Notes and News	269
Recent Patents	277
Publications of Interest	280
Calendar of Events	285
Sensory-Aids Excerpts from BPR 10-17 on Tape Cassettes	286
Cumulative Contents	287