# Popular Science Monthly

Mechanics and Handicraft ® Popular Science ®

Robert P. Crossley Editor

JAMES M. LISTON Executive Editor Senior Editors

KENDALL W. GOODWYN Managing Editor

ROBERT P. STEVENSON Director, Products and Projects HOWARD JENSEN Art Director

Alden P. Armagnac, Wallace Cloud Everett H. Ortner, Joan Steen Automobile Editor Devon Francis

Electronics and Technical Editor Hubert Luckett

Photography Editor Robert L. Hering Boating Editor

Home Workshop Editor Sheldon M. Gallager West Coast Editor Wesley S. Griswold

Associate Editors Frank Dorr, Herbert O. Johansen Alex Markovich Ruth Westphal

Editorial Assistants
Eleanor Crapullo (Chief)
Jeanne Cox, Anna Dallas
Barbara Weisheit

Art Editors Herbert Anthony

Associate Art Editor Richard I. Meyer

Art Associates Robert Martin, Kenneth Buddington

Art Production Manager Henry W. Kazmirowski

Photography Robert D. Borst

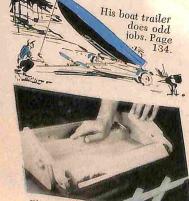
JOHN R. WHITING, Executive Vice-President and Publisher 

February 1963

Cover photograph by Robert D. Borst



Fly with PS to the edge of space in the incredible X-15. Page 78.



The

tast

Luc

you

( A. T. C

Fluting and reeding on a table saw? Easy as pie with this jig. Page 138. POPULAR SCIENCE FEBRUARY 1963

## PHOTOGRAPHY

First report on amazing Polaroid color: Color Photos in 60 Seconds · 61

### SPACE AND AVIATION

The Incredible X-15.78 Strato II: Sky-High, Starry-Eyed · 86 Wernher von Braun on Space • 92 Plane Hurls Bomb from Tail · 118

#### CARS AND DRIVING

What's New in the 1963½ Cars • 65 Detroit Goes Back to the Races • 74 New for Your Car · 171

# SCIENCE AND INVENTIONS

The Truth About Brain Drugs • 70 How to Survive a Blizzard in a Car · 83 Snowplow, Go Home! • 98

# ELECTRONICS

How to Choose the Right Mike · 152 Back Talk on Your House Wiring · 155 New Transistor Stereo Amp Kit · 174

The Sergeant Shoots Off · 101 "American Kids Can Take It!" · 106 I Rode with the Avalanche Patrol • 112 Copyright © 1963 by Popular Science Publishing Co., Inc. All rights reserved

#### HOME AND SHOP

A Homemade Tile Cutter • 120 Belt Disk Sander-a Tool to Own • 122 Tips for the Home Shop • 137 Doing Lathework on a Table Saw • 138 Desk Set for a Youngster • 142 Metalworking Tips • 143 How to Anodize Aluminum • 144 Four Special Jobs for a Saber Saw • 148 Automatic Turning for Your Lathe • 168 Trick Drive Speeds Up Saber Saw • 170 New in Home Improvement • 172

#### BOATING

Two-Man Underwater Cubmarine • 84 Mississippi Steamboat on the Thames • 96 New Way to Save an Old Boat • 127 Trailer Does More Than Haul a Boat • 134 What's New in Boating • 167

#### AUTO REPAIRS

Hints from the Model Garage • 179 Gus Tackles a Wee Bit o' Scotch • 182

#### PICTURE NEWS

1902 Antique Car Race Re-enacted • 83 Sporty New Walk-Through Scout • 84 Uphill Skiing-on an Escalator • 91 New Vespa Hides Its Spare • 95 Wood Chopper Moves In on Logs • 96 Newest Game—Space Ball • 110

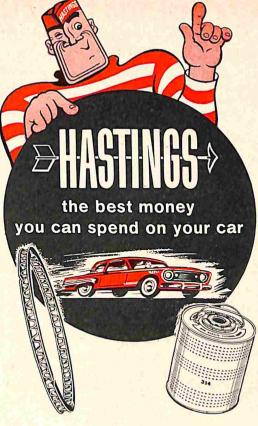
#### SHORT CUTS AND TIPS

Winter Job for a Barbecue • 131 Hothouse in a Cellarway • 131 A Low-Cost Magazine Rack • 142 Repair for a Leaky Water Tank • 147 Adding Rear-Seat Comfort to a Car • 151 Pull Saw Cuts to Obstructions • 158

#### EVERY MONTH

PS Readers Talk Back • 6 The March of Science • 15 Getting Ahead • 24 Detroit Report • 56 90, 60, 30 Years Ago in PS • 58 I'd Like to See Them Make • 100 New Ideas from the Inventors • 104 Wordless Workshop • 132 Shop Talk • 188

Printed in U.S.A.



# HASTINGS PISTON RINGS

#### Stop Oil Pumping Get new car power and

performance from your present car with Hastings Piston Rings . . . motor-engineered exclusively for replacement. Your Hastings re-ring job will pay for itself in oil and gas savings!

#### HASTINGS OIL FILTERS Keep Oil Clean

The only filter made with DENSITE-a super-filtering material that keeps oil visibly clean and free of abrasives from one filter change to the next. Hastings is your best bet, too, in air, diesel fuel and gasoline filters.



#### CASITE ADDITIVES Make Your Car Run Better

Tune-Up frees sticky valves, rings, \$1.25. Motor Honey quiets engines. \$1.30. 3-C stops hydraulic lifter noises, \$1.50. Smooth-Seal stops transmission leaks, jerks and jars,

\$1.95. Leak-Stop stops cooling system leaks, \$1.00. Stop-Rust inhibits rust and neutralizes acids, \$1.00. Results guaranteed or double-your-money-back.

Ask Your Service Man for Hastings Products

HASTINGS MANUFACTURING COMPANY HASTINGS, MICHIGAN

FEBRUARY 1963 Popular Space Wern Space Wern Science On a Monthly

**Answers to Your Space Questions by Wernher von Braun** 

How to do lathework on a table saw

FIRST LOOK AT '631 CARS

Detroit Goes Rack to the Races

Vintage Magazines for Special People

To see how this picture turned out, see page 61...

NEW! All A

MIN 81 578004FEB0