

# CONTENTS

## Part 1 — FUELS

Introduction .....	1
Compression and Fuels .....	2
Selecting Fuel for Gasoline Engines .....	4
Octane Ratings .....	4
Gasoline Additives .....	6
Selecting Fuels for LP-Gas Engines .....	9
Selecting Fuels for Diesel Engines .....	10
Diesel Fuel Characteristics .....	12
Storing Gasoline Fuels .....	16
Storing Diesel Fuels .....	21
Storing LP-Gas Fuels .....	24
Test Yourself .....	25

## Part 2 — LUBRICANTS

Introduction .....	27
Engine Oils .....	28
Producing Oils .....	29
Engine Oil Ratings .....	30
SAE Viscosity .....	31
API Service Ratings .....	32
U.S. Army and Engine Maker's Ratings .....	35
Contamination of Oil .....	37

Oil Additives .....	41
Mistaken Ideas About Engine Oils .....	41
Special Oils for Off-the-Road Engines .....	43
Summary: Selecting Engine Oils .....	44
Storing And Handling Engine Oils .....	45
Gear Oils .....	46
Hydraulic and Transmission Fluids .....	49
Lubricating Greases .....	53
Test Yourself .....	54

## Part 3 — COOLANTS

Introduction .....	55
Parts of Liquid Cooling System .....	56
Development of Liquid Cooling .....	56
Water as a Coolant .....	57
Antifreezes .....	57
Warm Weather Conditioning of System .....	62
Preventing Leaks .....	62
Preventing Corrosion and Deposits .....	65
Flushing and Cleaning the System .....	65
Water Pump and Fan Lubrication .....	66
Stopping a Hot Engine .....	66
Summary: Coolants .....	66
Test Yourself .....	67