



Table Of Contents

Introduction

Chapter 1: The Basics of Every Known Speed Secret

The Dynamometer

When Isn't Bigger Better?

Chapter 2: Primary Point Induction

Air Temperature

Ram Air: the Basics

Practical Density Issues

Significant Pressures and Flow

Element Clogging

Chapter 3: Fuel Delivery Systems

Mixture Ratio

Exhaust Pollutants

Mixture Quality

Carb Function Basics

WOT Calibrations

The Boosters

Idle and Transition Circuits

Acceleration Enrichment

Carbs—How Big?

Carbs Versus Fuel Injection

Chapter 4: Intake Manifolds

Length and Volume

V-8 Intake Manifolds

Tunnel Ram Intakes

Chapter 5: Supercharging

Supercharger Types

Turbos and Centrifugal Turbine Superchargers

Boost Curve Shapes

Supercharger Selection

Superchargers and Built Motors

Getting the Cam Right

Turbo Cams

Fueling System

Chapter 6: Cylinder Heads

Optimizing Cylinder Head Airflow

Valve Shrouding

Practical De-shrouding

Ports

Port Evolution

Cross-Sectional Area

Applied Basic Porting

Wet-Flow Testing

Compression Ratio

Chapter 7: Porting and Flow Testing

Building a Really Trick Low-Cost Bench

Flowing the Exhaust

Porting

Results

Chapter 8: Ignition Systems

Number-One Ignition Goal

The First Step

Plug Cables

Coils

Ignition Timing and Curves

Modified Motor Timing Requirements

Modified Ignition Systems

Expected Results

Chapter 9: Real Camshaft Science

Mechanical Attributes Simplified

Our Hi-Perf Four-Cycle Engine

Airflow Dynamics

Choosing a Cam

Chapter 10: Cam Event Criteria

Overlap

Optimal LCA

Duration

Valve Lift: How Much?

Chapter 11: Valvetrain: The Physical Build

Reading Cam Spec Data

Valvesprings

Tappets

Timing Gears

Cam Timing

Rockers

Chapter 12: The Short-Block Engine

The Block

The Rotating Assembly

Connecting Rods

Pistons

Rings

Lubrication System

Chapter 13: Exhaust Manifolds

Pipe Diameter

Alternative Configurations

Using This Header Tech

Chapter 14: Mufflers to Tail Pipes

Simple Steps to Success

Cats and Mufflers

Muffler Flow: How Much is Needed?

Pressure Waves

Crossover and Balance Pipes

The Ultimate System?

Source Guide

Glossary

Appendices