

# 1956 PONTIAC SHOP MANUAL

## GENERAL

This shop manual applies on 1956 models and includes all pertinent subject matter published in Service Craftsman News.

## CONTENTS

Arrangement of the material is shown by the table of contents on the right-hand side of this page. Black tabs on the first page of each section can be seen on the edge of the book below the section title. More detailed table of contents precedes each section, and an index is included in the back of the manual.

## BODY—HYDRA-MATIC—AIR CONDITIONING

Detailed information on body service appears in applicable issues of the Fisher Body Service News. Complete information on Hydra-Matic Drive and Air Conditioning is published in separate manuals.

## AIR CONDITIONING CAUTION

*Before attempting any service work requiring the disconnecting of units of the air conditioning system, check the information published concerning air conditioning service. It is extremely important that proper methods and precautions be observed when disconnecting any refrigerant lines or units. Failure to properly perform these operations can result in injury to personnel and the necessity of expensive repair work on the air conditioning system.*

**PONTIAC MOTOR DIVISION**  
GENERAL MOTORS CORPORATION  
PONTIAC 11, MICHIGAN

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## 1956 CAR MODEL IDENTIFICATION

General specifications appear below. Detailed specifications are given on major units at the end of each section of this manual.

Series identification can be made by the car serial number embossed on a metal strip fastened to the left front hinge pillar post which is visible when the left door is open (Fig. 1-1). Information as to body

style, etc., is stamped on a plate attached to the right side of the cowl just under the rear edge of the hood (Fig. 1-2).

Certain publications carry "series" numbers to identify models and others carry sales department names. The following table lists both methods of identification.

<u>Year</u>	<u>Cylinder</u>	<u>Series</u>	<u>Sales Model Name</u>
1956	8	28	Star Chief
1956	8	27	Star Chief Safari
1956	8	27	Eight Seventy (870)
1956	8	27	Eight Sixty (860)

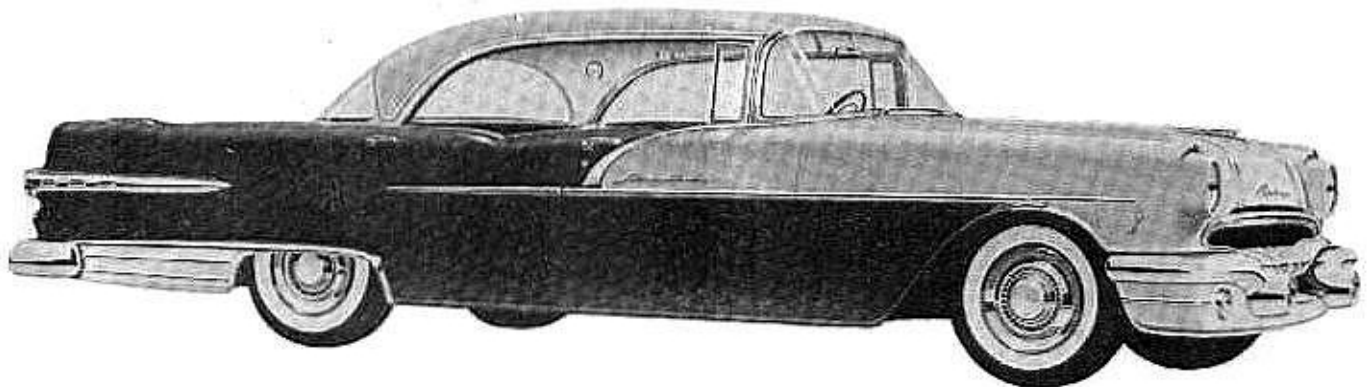


Fig. 00-1 1956 Star Chief 4-Door Catalina, Series 28

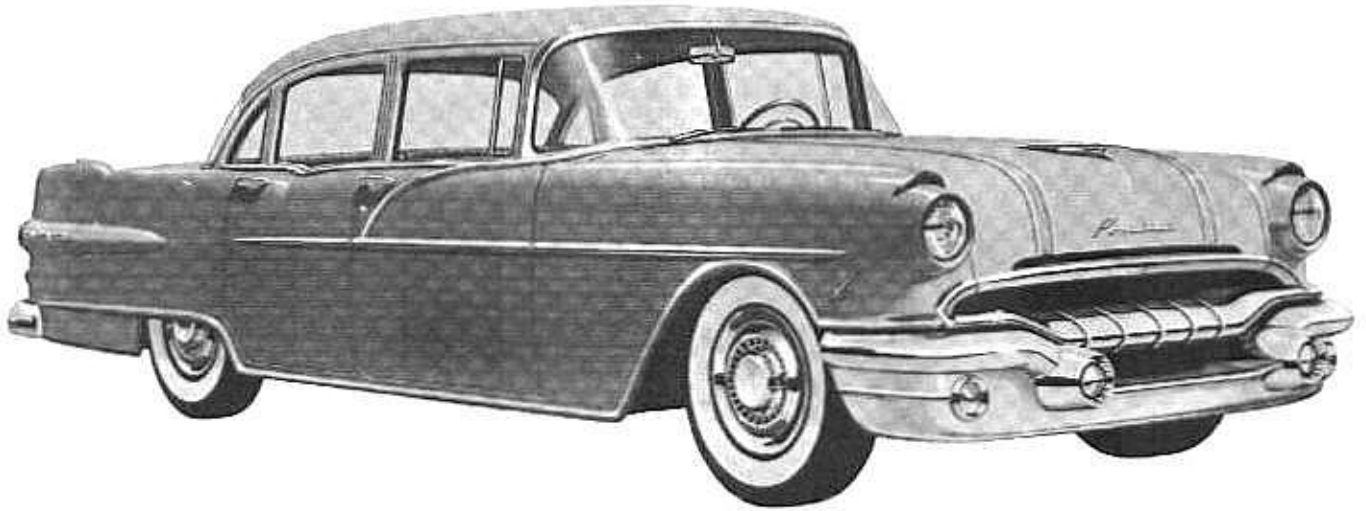


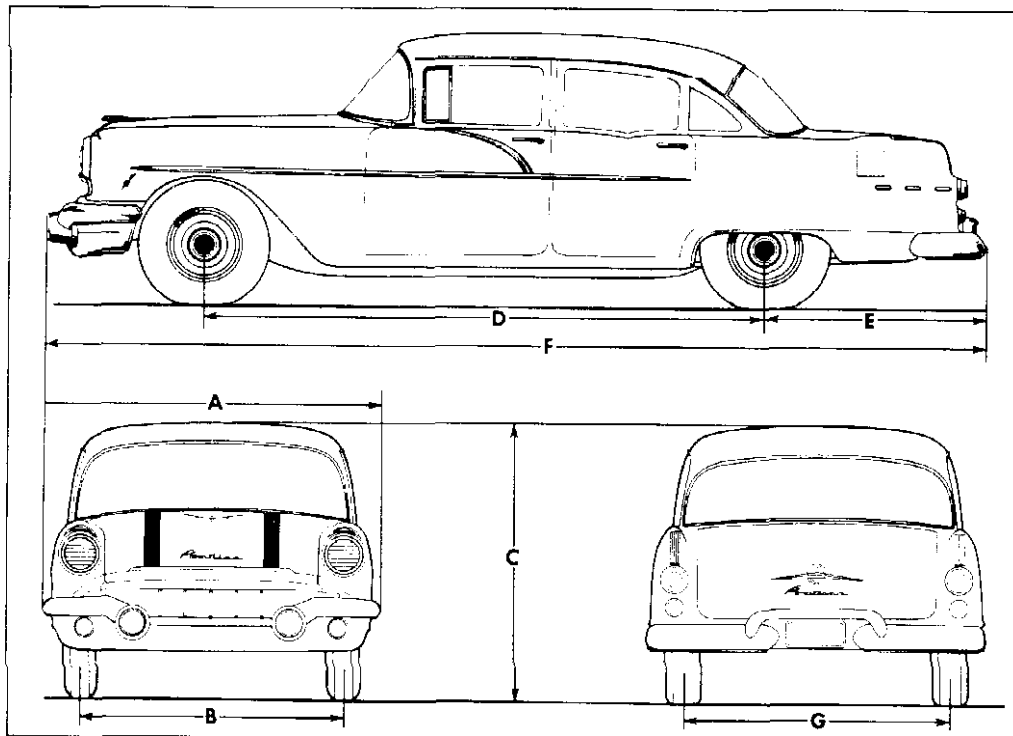
Fig. 00-2 1956 4-Door Eight Seventy (870), Series 27



Fig. 00-3 1956 2-Door Eight Sixty (860), Series 27

**GENERAL SPECIFICATIONS**

<u>DIMENSION</u>	<u>KEY</u>	<u>28 SERIES</u>	<u>27 SERIES</u>
<b>Over-All Length</b>			
All except station wagon	F	212.6"	205.6"
860 and 870 station wagon	F	—	206.0"
Star Chief station wagon (Safari)	F	—	206.7"
<b>Width (Maximum)</b>	A	75.1"	75.1"
<b>Height (with Passengers)</b>			
Four-Door Sedan	C	60.5"	60.5"
Convertible Coupe	C	59.0"	—
Catalina Sedan	C	59.0"	59.0"
Catalina Coupe	C	59.1"	59.1"
860 and 870 station wagon	C	—	61.0"
Star Chief station wagon	C	—	59.6"
<b>Wheelbase (Nominal)</b>	D	124"	122"
<b>Tread</b>			
Front	B	58.66"	58.66"
Rear	G	59.05"	59.05"
<b>Turning Circle</b>			
Curb to Curb		42'11"	42'5"
Wall to Wall		45'5"	44'11"
<b>Road Clearance (Minimum) (7.10 Tires)</b>		6.7"	6.7"
<b>Overhang (Rear)</b>			
All except station wagon	E	53.5"	48.5"
860 and 870 station wagon	E	—	48.9"
Star Chief station Wagon (Safari)	E	—	49.6"



**RELATION OF SPEED TO RPM**

CAR SPEED MPH	REAR WHEEL RPM		ENGINE RPM							
			AXLE RATIOS-TIRES							
			3.08		3.23		3.64		3.9	
	7.10	7.60	7.10	7.60	7.10	7.60	7.10	7.60	7.10	7.60
10	122	120	377	370	395	388	445	438	477	469
20	245	241	754	741	790	777	891	876	954	939
30	367	361	1130	1112	1185	1170	1336	1314	1431	1408
40	489	481	1507	1482	1581	1555	1781	1752	1908	1877
50	612	602	1884	1853	1976	1943	2226	2190	2385	2346
60	734	722	2261	2224	2371	2332	2672	2628	2862	2816
70	856	842	2638	2594	2766	2721	3117	3066	3340	3285
80	979	963	3014	2965	3161	3109	3562	3504	3817	3754
90	1101	1083	3391	3336	3556	3498	4008	3942	4294	4224
100	1223	1203	3768	3706	3951	3887	4453	4380	4771	4693

**DATA**

Tire Size	7:10-15	7:60-15
Rolling Circumference	86.32"	87.76"
Rolling Radius	13.74"	13.97"
Generator to Engine Ratio		
(2 7/8" Pulley: Std.)	2.47:1	2.47:1
Fan to Engine Ratio (Std.)	.88:1	.88:1
Fan to Engine ratio (with		
Air Conditioning)	.94:1	.94:1

AXLE RATIO	N/V RATIO*	
	TIRE SIZE	
	7:10-15	7:60-15
3.08	37.7	37.0
3.23	39.5	38.8
3.64	44.5	43.8
3.9	47.7	46.9

\*N=engine rpm: V=car speed, mph

## ENGINE DETONATION OR SPARK KNOCK

There are three principal factors affecting combustion knock. These are (1) octane rating of the gasoline, (2) combustion chamber deposits and (3) timing of the ignition spark.

### OCTANE RATING OF THE GASOLINE

The octane rating of a gasoline is the index of its knocking tendency. The octane rating of gasolines available throughout the country varies with different fuel refiners, and also varies when going into different areas of the U. S. Most refiners offer a Premium and a Regular grade of fuel. The variation in fuel octane throughout the country is so great that the Regular fuel octane in some areas is nearly as high as Premium fuel in other areas. (High altitude sections of the U. S. are excluded in this comparison as their octane values are usually low.)

Other than the fact that heavy knocking produces power loss in an engine, the octane rating of the gasoline will affect nothing in the operation of the car except the knocking tendency of the engine. Under conditions of slight or no knock, and all other things being equal, the octane rating of a fuel will not change starting ability, fuel economy, accelerating ability, idling characteristics or vapor locking tendencies.

The 1956 Pontiac V-8 engine at 8.9:1 compression ratio is designed to operate without knock on Premium fuels with a basic spark setting of 5° B.T.C. Any retard of the spark from the basic 5° setting will produce a loss in power and under no circumstances should the spark be retarded later than 0° T.C. as these settings will produce serious power loss and promote engine overheating.

### COMBUSTION CHAMBER DEPOSITS

Combustion chamber deposits are the result of the burning of fuel and lubricating oil in the chambers. Fuel and oil are primarily organic\* chemical compounds known as hydrocarbons. Several metallic and inorganic compounds are included in both the fuel and oil as additives to produce finished products which better satisfy the requirements of the engine. The resultant deposits are composed of the residues

of all these various compounds, both organic and inorganic. Different makes of fuel and oil have different kinds and proportions of these additives.

The rate of accumulation and the nature of the deposits, therefore, are affected by the composition of the base fuel and oil and the nature of their additives. Another important factor affecting rate and nature of deposits is the type of driving, with fast driving producing the minimum of deposits and moderate and slow driving causing heavier deposits. The car that is frequently driven at high speeds rarely knocks due to combustion chamber deposits, but the slower schedules, either from driver preference or enforced by road and traffic conditions, may form knock-producing deposits in the chambers. It is permissible to retard ignition timing to 0° T.C. to reduce or eliminate knock due to deposits, but some performance will be sacrificed. If a setting later than 0° T.C. is required to eliminate objectionable knock, the combustion chamber deposit must be removed.

If carbon is to be removed by scraping, care should be taken not to damage valve seats. Carbon can also be removed without disassembly by a device such as the "Head-On Carbon Blaster".

### TIMING OF THE IGNITION SPARK

The correct timing for the 1956 Pontiac V-8 engine is 5° B.T.C. This setting will be ideal for the great majority of cars. Settings greater than 5° B.T.C. may produce spark knock and will tend to make a rough idle. Power and fuel economy will not be noticeably improved. In cases where objectionable spark knock is evident at a setting of 5° B.T.C., it is permissible to retard to 0° Top Center. A moderate performance loss will occur at the retarded setting and retard later than 0° T.C. will produce an excessive loss in power and promote engine overheating. Under no circumstances should the timing be set later than 0° T.C.

See page 12-25 for timing procedure.

\*Organic compounds have their origin in plant or animal life. Inorganic elements and compounds are of inanimate origin, such as metals, stone, etc.