



(Refer to the [Short Glossary](#) for the meaning of parameters)

In the Overview Fig. 04 showed how PP/V rose over the years. The re-arranged basic formula for power in the “[General Design](#)” section, which is:-

$$\frac{P}{V} \propto \frac{(BMEP) \times (MPS)}{S}$$

explains how this was the rising product of **BMEP**, **MPS** and **1/S**.

[BMEP is identified here as **BMPP** and MPS as **MPSP** when these quantities are calculated at **Peak Power ( PP)**. For convenience **1/S** is given as **100/Smm** with an appropriate constant of equation].

Figs. 05, 06 and 07 respectively on PP.2 and 3 give the variation of **BMPP**, **MPSP** and **100/Smm** versus date (Fig. 05B on P.2 gives **BMPP** for NA only to a larger scale).

Figures O5 to O7

The following key applies to all Figures:-

**Grand Prix “Car-of-the-Year” (CoY)**

<b>Era</b>	<b>Series</b>	
1 NA	1	Naturally-Aspirated ( <b>NA</b> ), with Tortuous Inlets & Simple Exhausts ( <b>T</b> )
2 & 3 NA	2	<b>NA</b> , with Individual & Tuned Inlets & Exhausts ( <b>I</b> )
1 PC	3	Pressure-Charged ( <b>PC</b> ), by means of Mechanical SuperCharger ( <b>MSC</b> )
2 PC	4	<b>PC</b> , by means of TurboCharger ( <b>TC</b> )
	5	<b>NA(I)</b> , 2005 BMW P85 (not CoY)

**Engine Locations:-** Front-Mounted until end 1958 (except 1936, Mid-Mounted); Mid-Mounted in 1959 and onward.

**Chassis:-** Aerodynamic downforce in 1968 and onward.

NA advances from 1906 to 2000

Over the period of this review, 1906 to 2000 inclusive, the overall NA engine performance changes were:-

	<u>1906</u>	<u>2000</u>	Ratio
	<u>Renault AK</u>	<u>Ferrari 049</u>	
<b>BMPP</b> Bar	5.17	13.57	x 2.63
<b>MPSP</b> m/s	6.00	24.15	x 4.03
<b>100/Smm</b>	0.667	2.415	x 3.62

So the improvement ratio of

<b>PP/V</b> HP/Litre	6.9	265.3	x 38.4
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was the product of:- 2.63 x 4.03 x 3.62.



