



GENERAL MOTORS NORTH AMERICA
Structure & Safety Integration

September 19, 2003

Jeffrey Quandt, Chief
Vehicle Control Division
Office of Defects Investigation
NHTSA Safety Assurance
Room #5326
400 Seventh Street, S.W.
Washington, D.C. 20590

GM-821

NVS-213bby
EA02-030

Dear Mr. Quandt:

This letter is a follow-up to our meeting on September 11, 2003, regarding manifold over-pressurization (MOP) in certain GM vehicles. During the meeting GM presented new information since its May 16, 2003 response to NHTSA IR EA02-030.

Pursuant to your request, GM is providing the following information that clearly indicates the majority of the MOP events, as reported to GM and NHTSA, are occurring on 1998-1999 model year C-cars. These vehicles contain high electrical content options and are equipped with a Delphi Fuel Pressure Regulator (FPR).

Delphi began producing this FPR with a thinner (33% of 1997 FPR) diaphragm for the start of 1998 vehicle production. During 1998 and part of the 1999 model year FPR production, Delphi addressed manufacturing quality and durability issues associated with the crimping process that caused tears in the FPR diaphragm. Delphi's corrective action that eliminated the diaphragm tears was implemented in January 1999. Accordingly, 38 of the 42 1999 model year C-car MOP events occurred on vehicles produced before January 1999.

When a vehicle has a low battery and does not start when cranked, the crankshaft can rock back, triggering a false crank sensor signal that can lead to a mis-timed spark upon engine restart.

GM has determined that a Delphi FPR with a torn diaphragm can cause an air/fuel mixture to enter the intake manifold through the vent line. This air/fuel mixture can be ignited by a mis-timed spark through an open engine cylinder valve.

Please contact me if you have any questions.

Sincerely,

Keith S. Schultz
Engineering Group Manager
Product Investigations

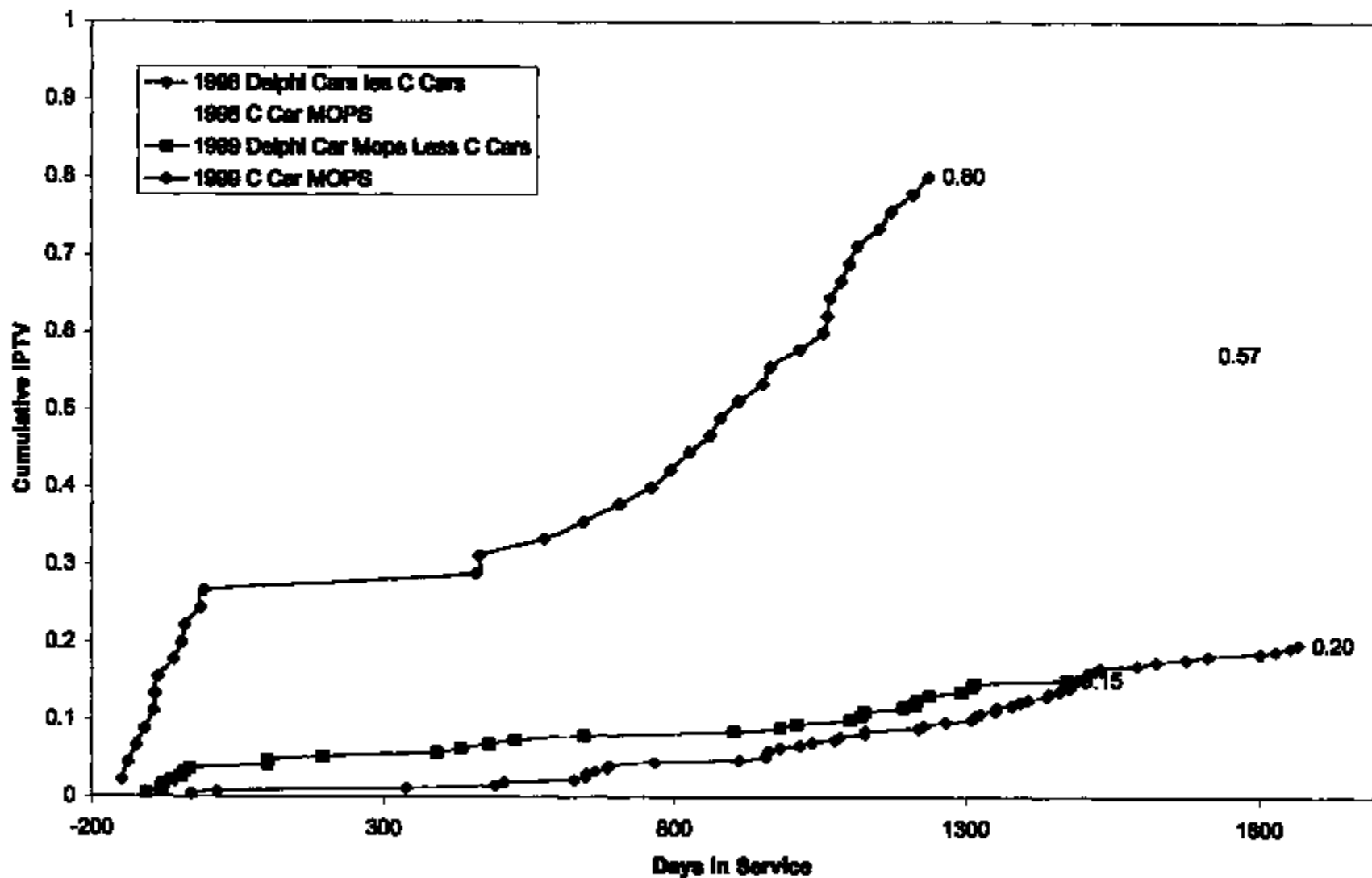
Attachments

Product Investigations

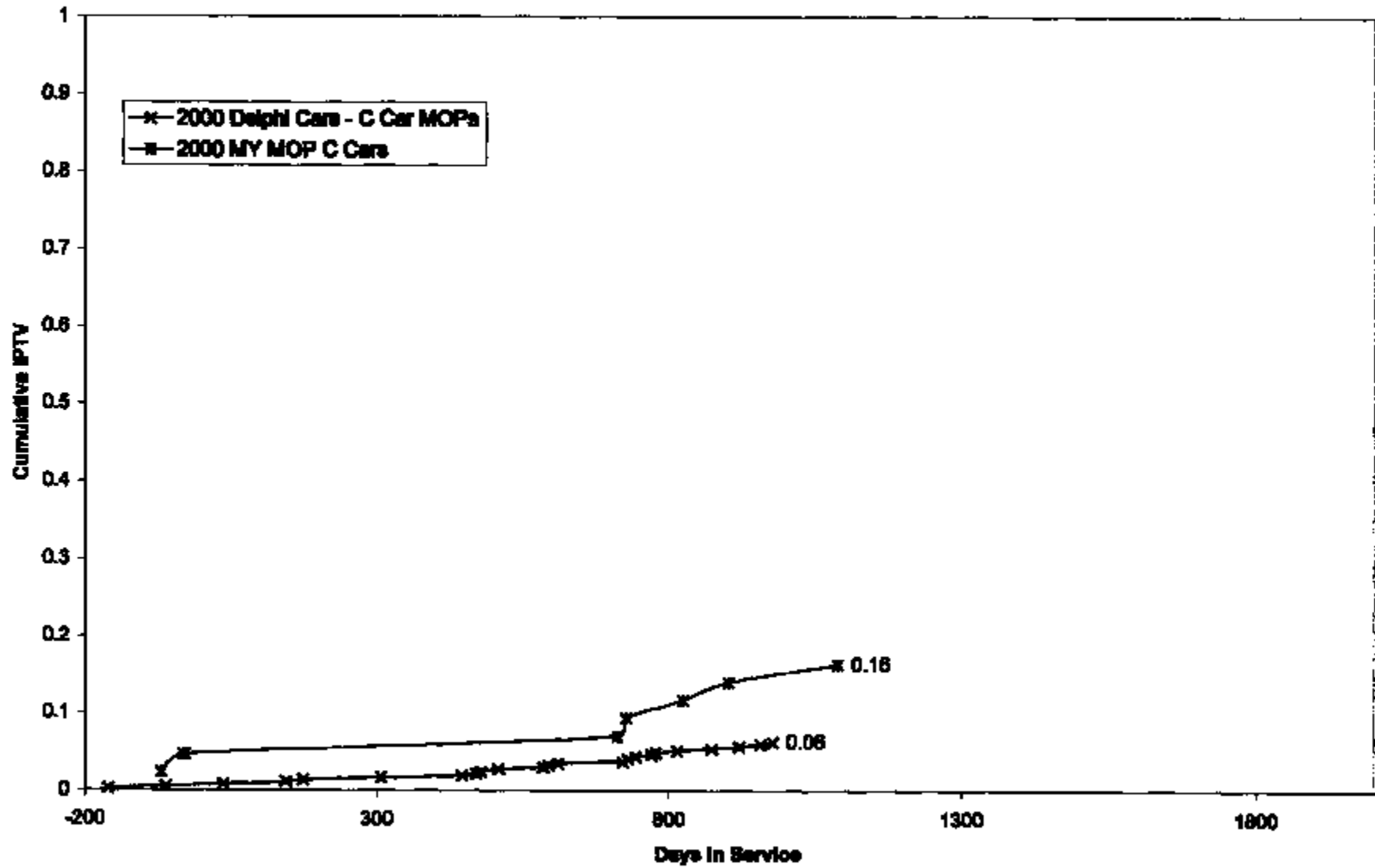
Mail Code: 480-108-304 • 30600 Mound Road • Warren, MI 48090-9055
Phone: (588) 966-8001 • Fax: (586) 847-2318
Quandt MOP Letter.doc



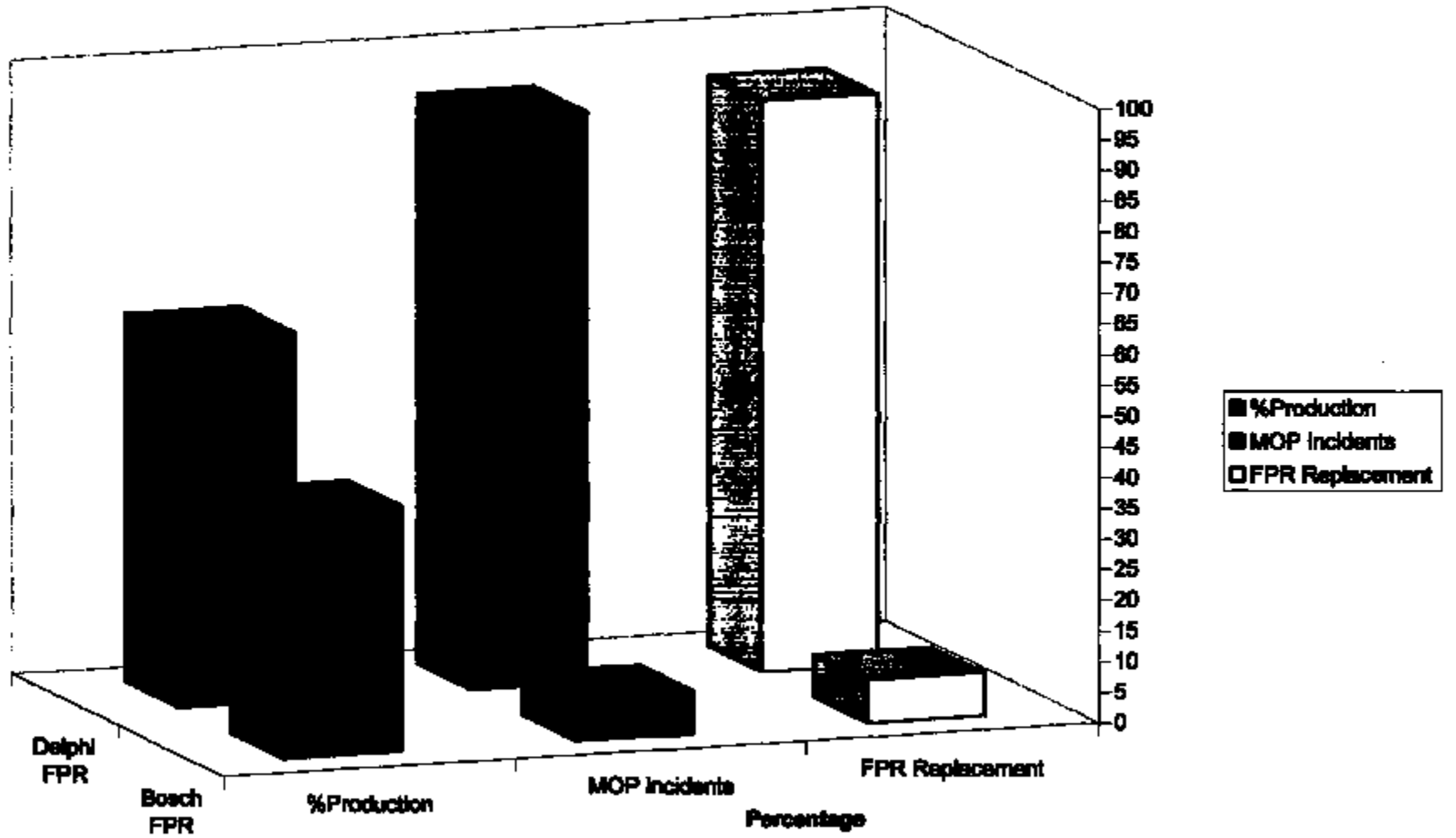
MYs 98/99 - C-car MOPs versus other Delphi FPR MOPS - by Days in Serv & Cum IPTV



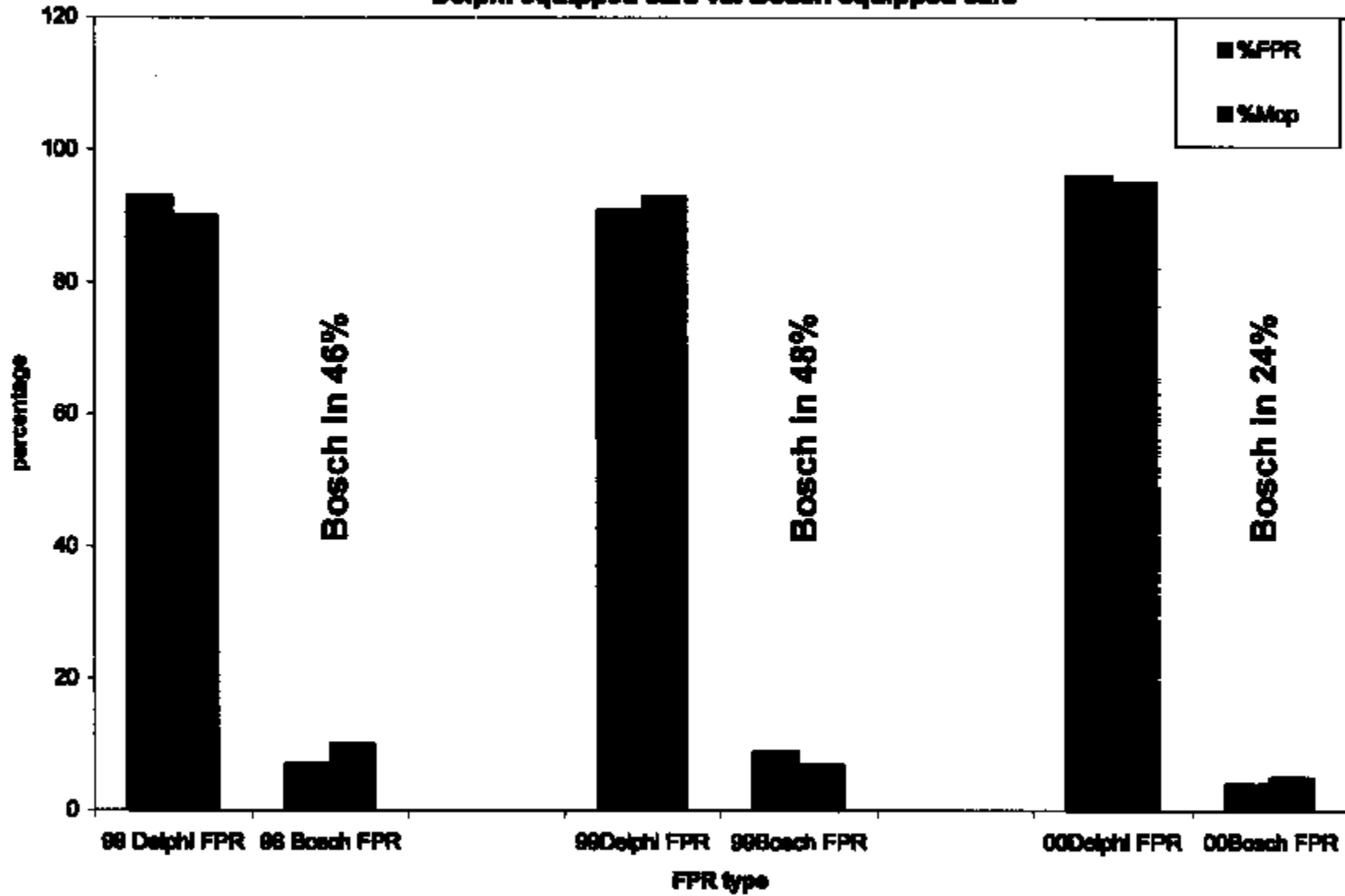
2000 MOPS - C cars versus other Delphi FPR equipped cars



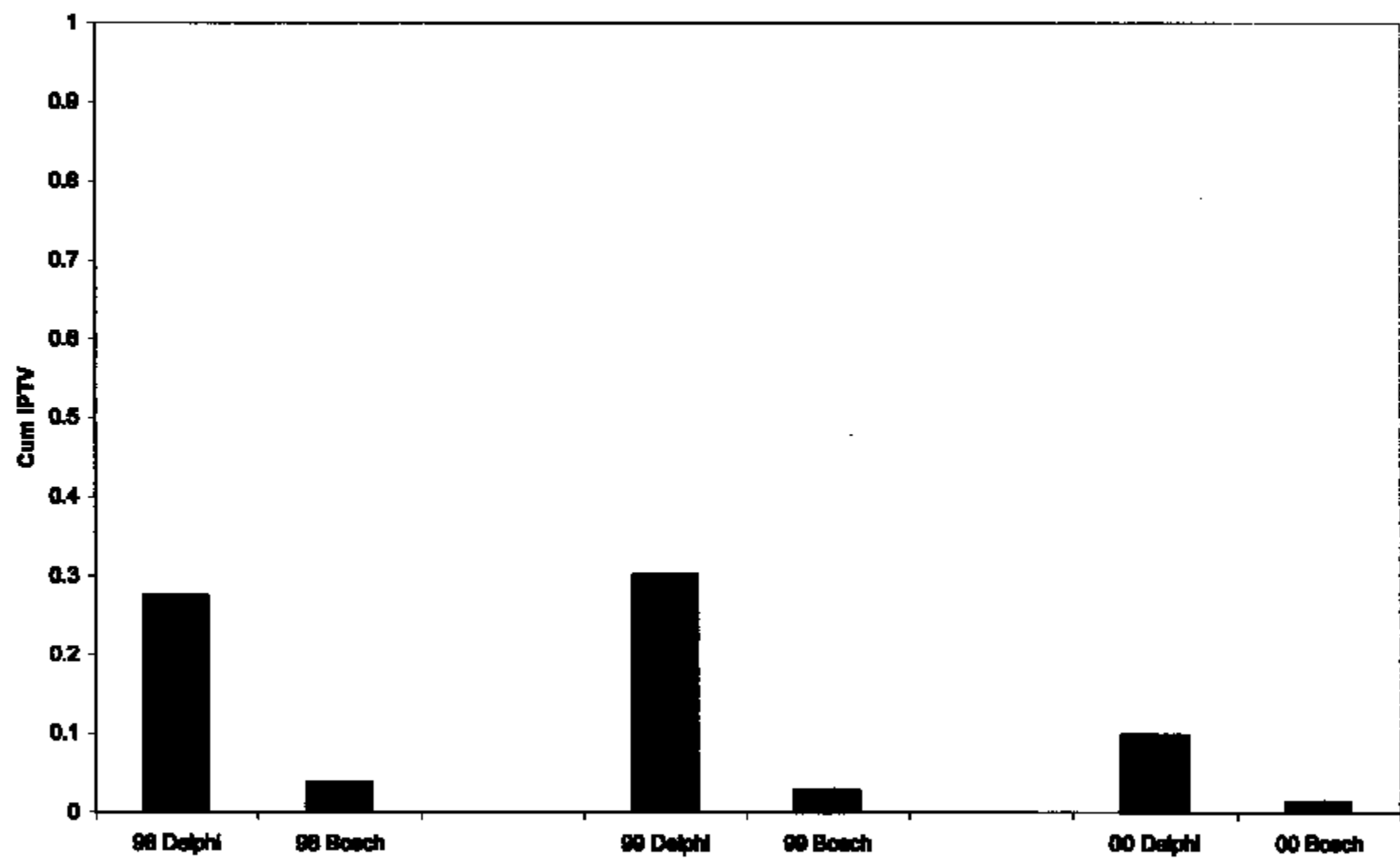
MOP and FPR replacement as % of Production - Delphi vs. Bosch 1998 - 2008



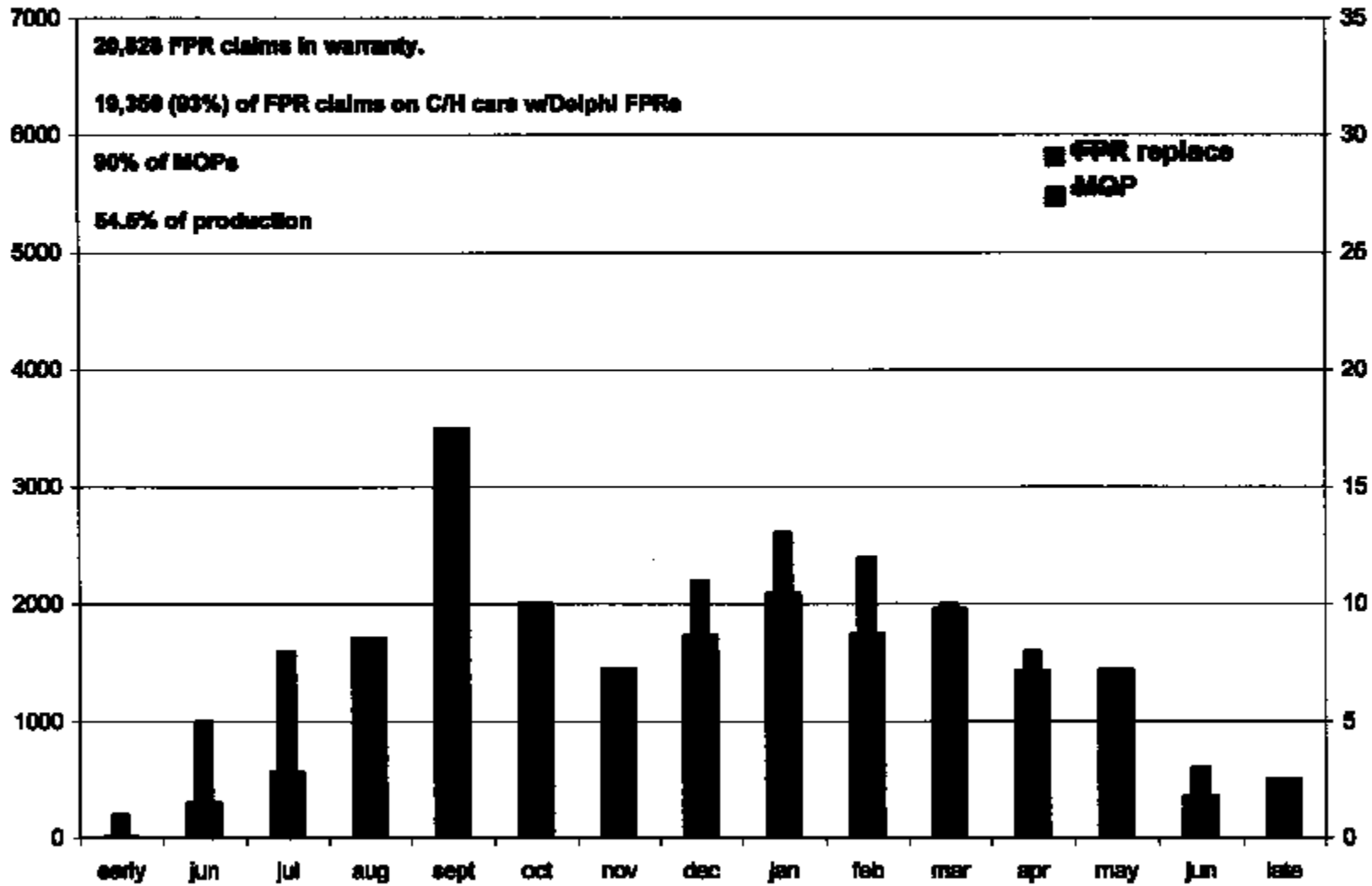
**FPR Replacement and MOP incidents - MYs 1998, 1999, 2000
Delphi equipped cars vs. Bosch equipped cars**



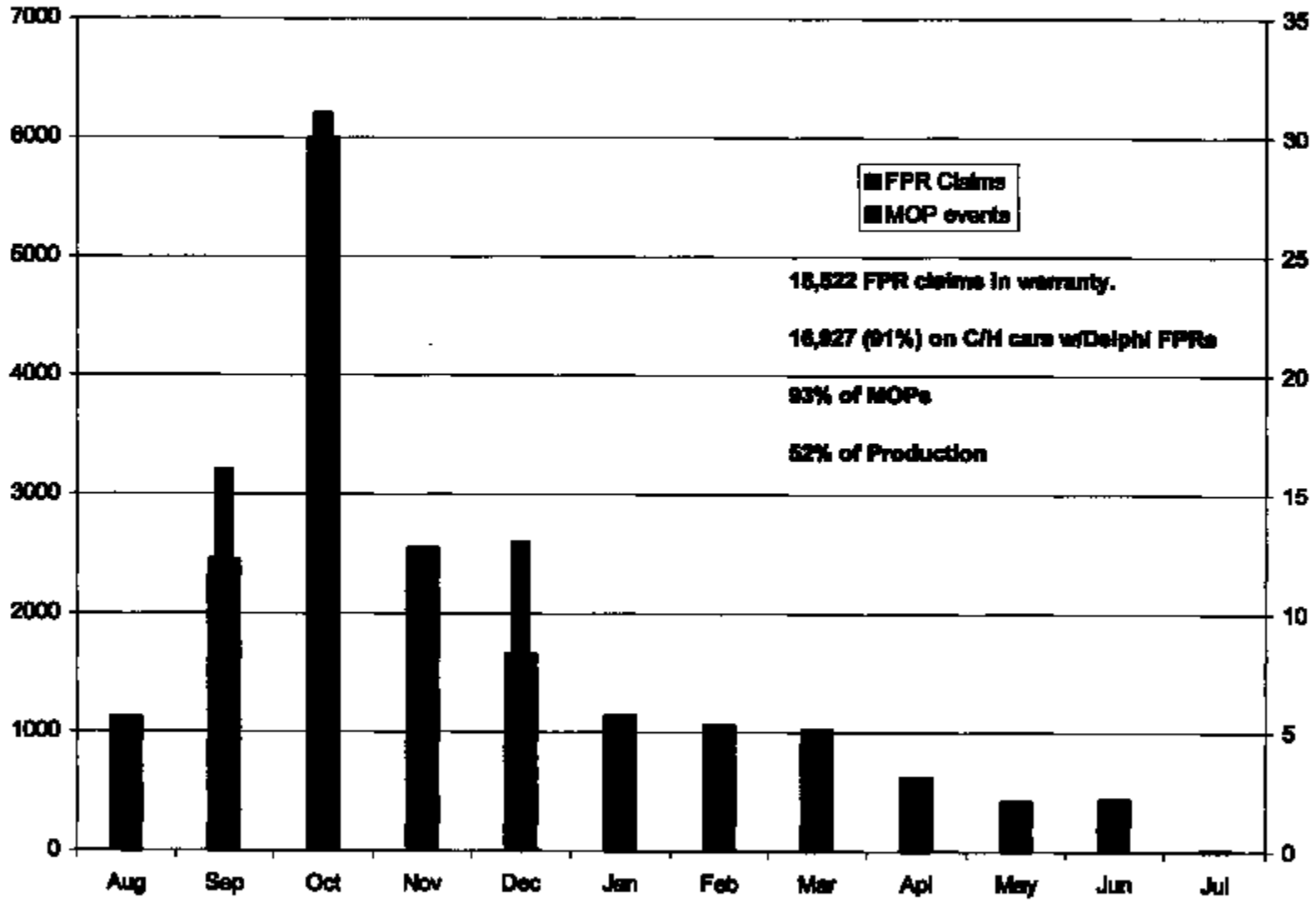
MYs 98-00 - MOP IPTV - Delphi FPR equipped vs. Bosch



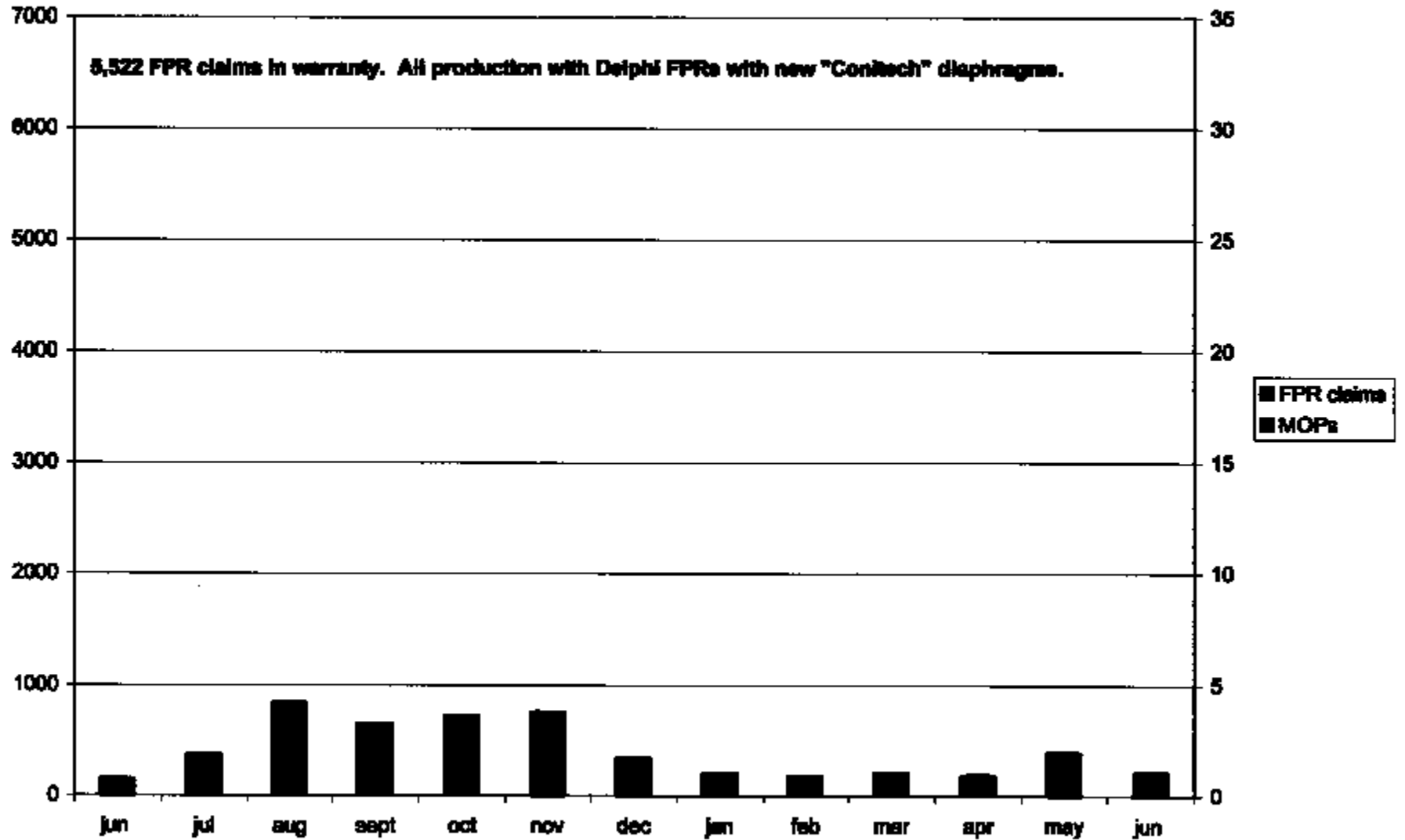
MY 98 Fuel Pressure Regulator Replacement J5580 and MOP events - By Month of Build



MY 99 Fuel Pressure Regulator Replacement J5560 and MOP events - By Month of Build



MY 01 Fuel Pressure Regulator Replacement J5580 and MOP events - By Build Month



Conceptual Diagram

The Fuel Pressure Regulator's Place in the Engine System

