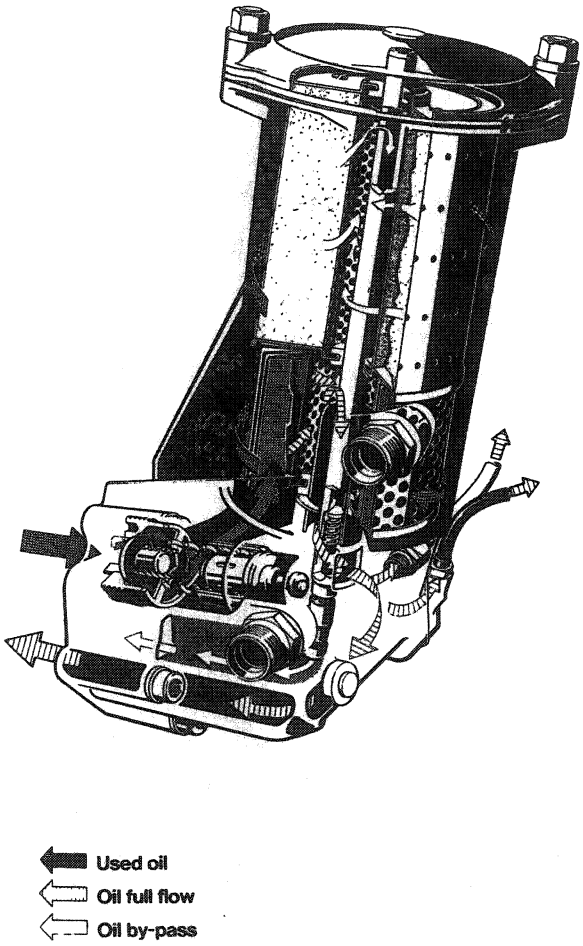

Fig. 23 - Oil filter flow pattern at low temperature

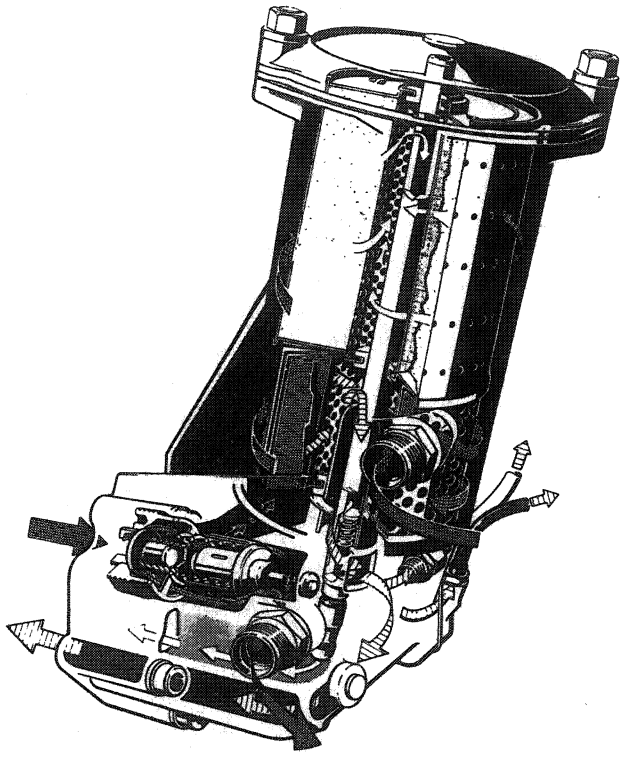

Fig. 24 - Oil filter flow pattern at high temperature

during idle. The behavior of the governor was adapted to these changed plunger characteristics.

The kinematic and hydraulic characteristics of the injection system in conjunction with a corresponding lay-out of the aneroid controls the necessary quantity of fuel without boost pressure both at sea-level and at high altitudes to the corresponding values of the NA-engine. From this baseline, the fuel quantity is increased as the boost pressure rises up to a certain maximum value, so that under transient conditions the same air excess ratio as in the NA-engine is obtained resulting in similar smoke characteristics. A further increase in boost does not result in a corresponding increase in fuel quantity, so that in a thermodynamically ideal fashion a higher air excess ratio is maintained and controlled, which has an additional positive effect on smoke.

Fig. 27 displays this relationship in the form of a fuel rack control map with and without boost, at various altitudes, as a function of engine speed. It was thus possible to develop a system which permits optimum utilization of

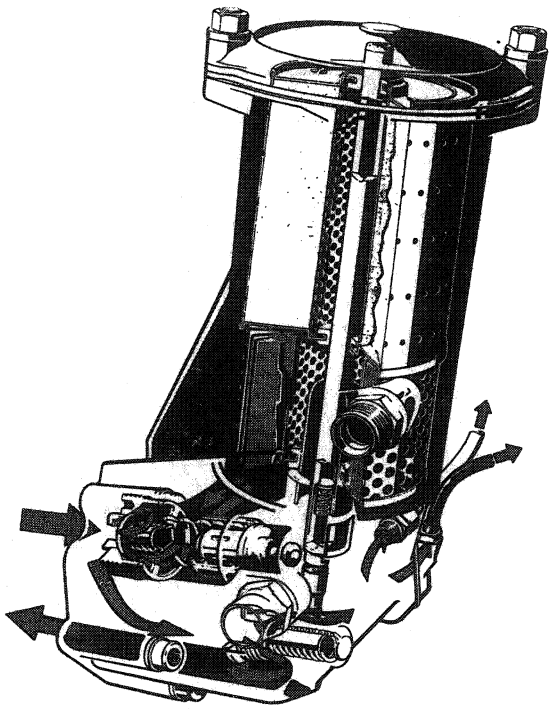

Fig. 25 - By-pass flow pattern in case of contaminated oil filter