



NATIONAL ASSOCIATION OF AUTOMOBILE MANUFACTURERS OF SOUTH AFRICA

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To: NAAMSA FUEL & EMISSIONS COMMITTEE MEMBERS

SUBJECT: NAAMSA ADVICE REGARDING THE 'TRICKLE' FILLING OF VEHICLES AT FUEL FILLING STATIONS

All modern vehicle fuel tank systems make provision for the expansion of fuel and the control of fuel vapour, not only to prevent fuel wastage but also to restrict potentially harmful fuel vapour loss to the atmosphere. Petrol tends to expand and increasingly give off fuel vapour with time and vehicle operation as it becomes exposed to the higher temperatures within the vehicle compared to the fuel filling station underground storage tanks. Vehicle fuel tanks hence have a larger actual volume than the stated capacity.

The percentage 'expansion' volume varies between vehicle types but is typically in the region of 8% of the stated nominal capacity. Particularly with older vehicles that have a breather system that ultimately vents to atmosphere and do not feature a 'closed loop' fuel vapour recovery system, it is often possible to overfill the fuel tank by persistent 'trickle' filling thus taking up the designed fuel tank 'expansion' volume. At many fuel filling stations in South Africa forecourt attendants appear to feel obliged to fill customer's vehicle fuel tanks to the maximum extent possible.

NAAMSA members advise against the 'trickle' filling of vehicles as it may result in the following -

- a) The unnecessary waste of fuel to the atmosphere during the prolonged filling of the vehicle with fuel cap removed.
- b) The further possible waste of fuel as a result of subsequent fuel expansion in the tank and vapour emission through the fuel tank breather system.
- c) Unnecessary air pollution.
- d) Risk of vehicle paint damage as a result of inevitable spillage of fuel down the bodywork of the vehicle during the trickle filling process.
- e) Unnecessary delays to motorists at fuel filling stations, particularly during peak holiday seasons.

In the absence of specific advice by the vehicle manufacturer, it is recommended that fuel filling should be terminated at the first automatic pump 'shut off' with the fuel filler set at lowest fill rate for the reasons stated above.

Yours truly,

S A Rayner
Chair: NAAMSA Fuels and Emissions Working Group