

# FUTURE TRUCKING & LOGISTICS

April 2013

Vol. 01. No. 01

## The Sky Is The Limit Hino SA's 2013 vision



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**Craig Proctor-Parker**

With nine years spent working as a specialist in the SAPS Accident Unit, Craig Proctor-Parker has owned and run a private practise – Accident Specialist – for the past 12 years, where he travels across the country analysing crash scenes and compiling reports for government, corporate and insurance clients. In an exclusive series for Future Trucking & Logistics, he will present valuable analysis relating to commercial vehicle accidents – supported by years of empirical data.



# SA's Deadliest Roads

We know that statistics are available on accidents, although perhaps obtaining these and their accuracy is questionable. However, the most worrying fact is that there does not appear to be a concerted, cohesive and telling use of these statistics to curb the ongoing carnage on our roads, writes Craig Proctor-Parker

Interestingly, much has recently been made in the news about using statistics and mathematical analysis to assist in curbing the Rhino dilemma. Using stats is nothing new; however it seems to have taken a back seat.

To this effect, an interesting paper presented by the Czech Republic's Transport Research Centre in 2009, 'Identification of Accident Location by Use of GPS and Possibilities of its Application' is particularly relevant.

Looking at the stats and GPS position of 108 major accidents involving heavy vehicle accidents – that is any vehicle above 3 500kg – over a period of just over three years for the whole of South Africa, specifically where deaths have occurred, reveals some interesting indicators.

Of the 108 accidents, 46 (42,5%) were of the deadliest, head-on type; 25 (23,1%) were same-direction head-to-rear type accidents and only 4 (3,7%) were single-vehicle type accidents. I should note that I have not identified in these stats which was the 'offending' vehicle: they simply indicate the involvement of heavy vehicles.

Initial analysis does not show any sorely obvious patterns that aren't logical, such as a higher number of major accidents on routes extensively used. It is the specific geographic concentration of accidents that the GPS positions show on these routes which is notable, with a concentration of major accidents identified at the following seven sections (these areas highlighted in the accompanying map):

- the N1 section of approximately 350km between Cape Town and Prince Albert;
- the N6 (R61) section between East London and Aliwal North: with the particular concentration being a 20km section either side of Queenstown;
- the 100km section of the N3 between Durban

- and Howick;
- the 180km section of the N3 between Ladysmith and Estcourt;
- the 180km section of the N2 north of Durban between Tongaat and Matubatuba;
- the 321km stretch of the N4 between Maputo and Emalahleni; and
- the 460km stretch of the N1 between Musina and Pretoria.

Considering these sectors, the most obvious initial factor is that these are all on major routes to major centres. Fatigue on long trips across these sectors is a crucial issue; however the nature of these sectors as all being open-road driving with no separating barriers places the spotlight squarely on the *Head On* type accidents.

Perhaps a centre island is in place, however there are no formal barriers. A reduction in this type of accident alone would therefore see a near 42,5% reduction in fatalities! How that is quantified is a subject on its own, however it is very easily in the hundreds of millions of rands.

As has been highlighted, another factor of reviewing stats and using the GPS positions of accidents allows a far more accurate indication of 'what is going on and where' than the traditional generic location of police station area reference, or perhaps 'N3 South, Howick', or perhaps even by route marker reference.

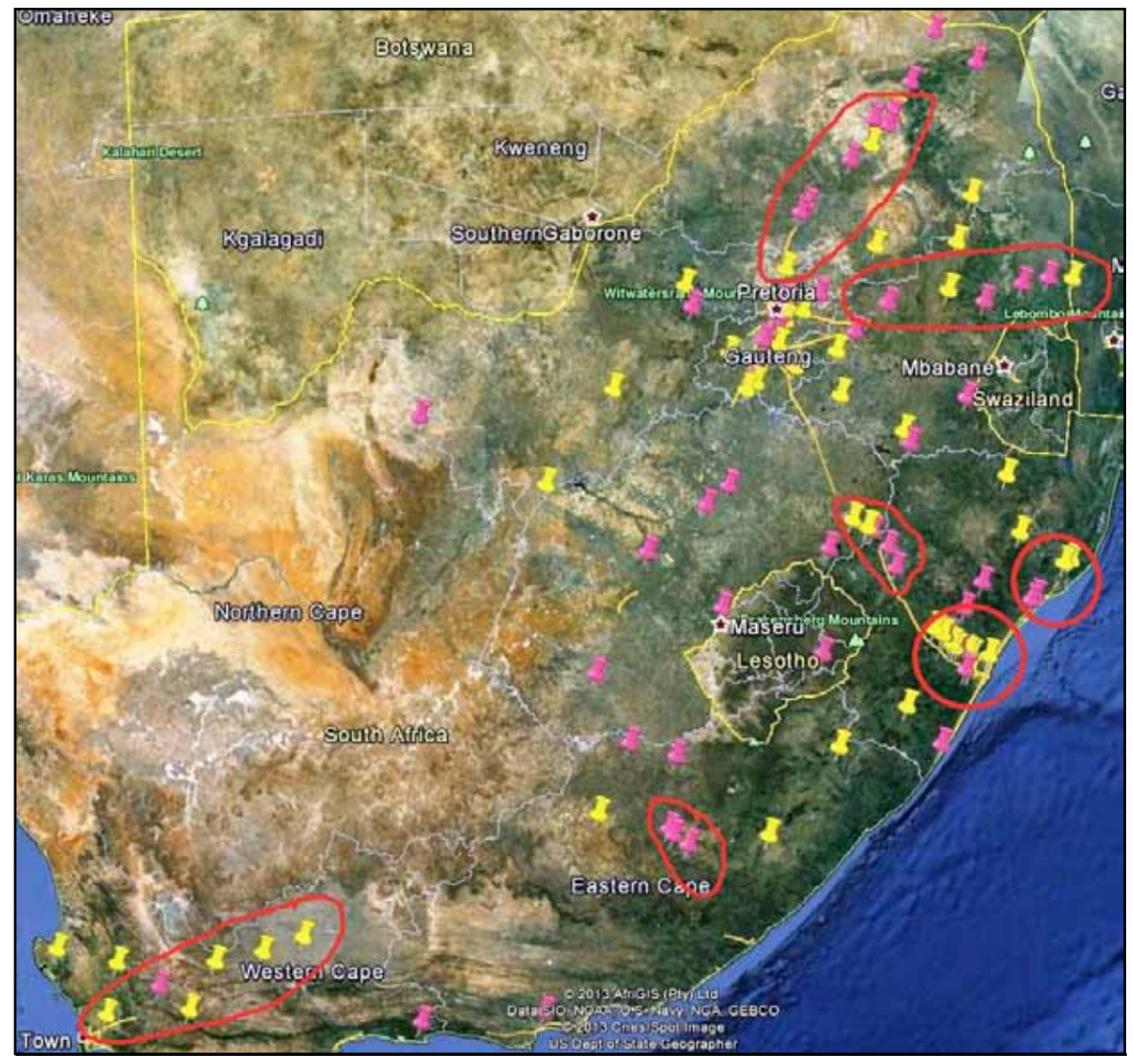
It appears that law enforcement and the Department of Transport have not cottoned onto this, which seems strange, as for many years Accident Reports have had a specific space allocated for such co-ordinates. Likewise, very few companies have implemented this system, even where GPS positioning is available through use of tracking systems of various types.

Traditional GPS systems and even from most cellular phones' GPS positioning is easily located, usually to within a few metres' accuracy. GPS positioning, as easy as it is, is therefore not being used to its potential. Using the GPS system pin-points locations not only of interest for statistical and analytical purposes, but is most importantly available for emergency services' response accuracy.

Somewhat logically, combining the knowledge of specific location of accidents and type of

accident, where we see that the most devastating and major percentage of these are *head on* type accidents, various remedial measures can be considered for the specific location – perhaps the implementation of solid median barriers.

On a slightly more complex level, many trucks fitted with tracking systems allow at least minute-by-minute, some even second-by-second, GPS position tracking. This not only indicates position, almost always allowing a clear indication of speeds and driving style as well.



Seven zones of concentration of major accidents across South Africa, identified by GPS



Although I have used this to assist in the analysis of many accidents, we more often find that where this GPS information is available in such major accident cases, it is not sourced or analysed. Interestingly, there is a local research paper in support of the excellent possibilities of the use of the GPS systems entitled 'Inferring commercial vehicle activities from GPS'.

How does this help us? The issues raised here are but a few of the factors that can be gleaned from analysing the overall stats, when combined with individual crash case studies that include GPS positions – we can already see from this cursory analysis that such information is easily available, easily collated and is helpful to both the authorities and the private sector.

Identifying the geographic areas of concentration allows resources to be pooled to that area: such as specific training to be given to members of the SAPS, Traffic, Medical and Fire services in dealing with major accidents. This also allows strategic backup plans to be formulated for these areas, such as those we see in the form of Freeway Incident Management Plans by the authorities, as well as by private companies.

It is long overdue that the authorities – and here we refer to the municipalities feeding through to the Provincial and subsequently to the National Department of Transport – that are tasked with collating accident statistics begin to include specific data such as GPS positions and that this information is uploaded on their websites for access by all interested parties. Even if registration to the database is required at a fee, this information is of public importance, and can only help in reducing the current devastation.

Authorities or even private companies could use this information to identify positions to create truck stops, or perhaps for companies to formulate proactive plans such as detailed tracking of vehicles on these sectors, or even creating compulsory stops for their drivers before covering these zones to ensure that drivers are rested. Nonetheless, analysing the statistics and in particular the use of GPS factors is but one post-event method of improving on a greater problem which stems from the poor standard of grass roots learner licences, subsequent driver training standards and existing law enforcement.



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