

# You have been warned

In the ongoing war against speeding, products that can alert drivers to the fact they are breaking the limit and need to slow down are a useful weapon in the traffic authority's armory. After all, prevention is better than cure

**R**adar-based equipment for speed measurement and display of oncoming vehicle speed, also known as Vehicle Activated Speed Signs (VASS), is increasingly being accepted by both traffic authorities and the general public due to its effectiveness in reducing casualties without massive investment.

This equipment, which is also sometimes referred to as 'friendly radar' (the opposite to radar-based speed offense systems), is perceived by many to be complementary to other existing traffic-calming measures.

A preventive instrument to warn drivers about their actual speed, VASS can incorporate the capability to record traffic data for later statistical evaluation. They can also be programmed to remain permanently 'on' – a warning not to break the posted

limit – or can be set to record the speed of an oncoming vehicle before displaying a flashing image to warn the driver to slow down (so they are only activated if an offense is being committed). However, some field experience shows that such suddenly displayed messages can panic drivers into performing dangerous braking.

With this in mind, drivers need to be alerted to their misdemeanors from a greater distance, so that they have sufficient time to register and comprehend the displayed message and react accordingly by reducing their speed. In terms of the technology required to achieve this, a long-range radar Doppler system, together with an accurate radar signal-processing unit is required, as well as the incorporation of high-bright LEDs set at a suitable viewing angle.

## APPLICATION AND REQUIREMENTS

There are two usage cases – mobile use (transportable and time-limited) and semi-permanent use (fixed to poles).

Transportable VASS, with seven-segment display, generally have an adequate digit size (230mm digit height seems to be established as a quasi standard). Uses for these products include temporary events, construction workzones in urban environments, safeguarding accident sites, and use around schools for speed-reduction campaigns, etc.

There are several requirements for such products, including easy handling, low weight, durability, brightness adaptation to the surrounding light condition, resistance in all weathers and also from theft. The integrated Makrolon front panel helps in some of these requirements.

Semi-permanent VASS with seven-segment display have an adequate numeric size (230mm and 280mm digit height have been established as a quasi standard). These can be used in several locations, such as schools, industrial premises, areas with high accident rates, and pedestrian areas with limited vehicle access.

As well as the requirements listed for transportable VASS, semi-permanent VASS must also be robust against vandalism, be capable of supporting other power sources (such as solar panels), feature push-bottoms and mini LCD for easy and fast setting on site, and often have a carry case.

## CASE STUDY

Sandwell Metropolitan Borough Council in the UK, one of the seven West Midlands Metropolitan authorities, has been using Radarlux-supplied VASS since 2004.

With a road network of 802km and a population of 290,000, Sandwell had previously used the more common methods of engineering, education and enforcement, to help reduce speed and casualties within the borough. Although on target to reach the government's casualty-reduction targets



Lightweight and rugged, the MiniVisor VASS employs the very latest radar and LED technology



⬆ An old-style Radarlux VASS now incorporated into a permanent sign

for 2010, locally agreed stretched targets are proving to be more challenging.

With most engineering 'easy wins' having already been completed, research was undertaken into other cost-effective alternatives, such as 20mph limits with no physical measures, and a VASS initiative.

Initial VASS trials began in 2004 using the original Radarlux sign. Recently, Sandwell has moved to the smaller MiniVisor (co-branded as Tempodis 230/280), which proved to be an improvement over the original which, although big and bold, was harder to mount due to its size and weight.

The MiniVisor is lighter and more compact (reducing the health and safety implications of lifting it into place), has better battery life and uses cutting-edge communication technology for both sign setup and the retrieval of data. In Sandwell, the signs are fitted with GSM modems, which allow for remote access via telephone. Direct contact via Bluetooth is also possible.

In 2005, Sandwell devised a member-approved criteria for the placement of VASS. This was based on the Association of Chief Police Officers (ACPO) speed enforcement guidelines and was an extension of the West Midlands Casualty Reduction Partnership (WMCPRP) selection criteria. These criteria



⬆ MiniVisor benefits from better battery life and cutting-edge communication technology

have raised a great deal of interest from other West Midland authorities, as well as raising interest from leading road safety groups.

Approximately 50 sites have now been identified that meet these criteria, and these are being prioritized on a 'red, green or amber' basis dependant upon the severity of the speeding/accident problem for the site. The authority's 10 MiniVisors will then be rotated around these locations, visiting each for a period of two weeks, at a frequency dependent upon the grading of the severity

of the site. The signs will collect vehicle speeds, allowing the authority's Accident Investigation and Prevention section to analyze the downloaded data and decide what future action to take.

## RESULTS SO FAR

Initial trials have shown a reduction in the 85th percentile speeds, as well as a big reduction in higher vehicle speeds. Once the MiniVisors were introduced the first-generation signs were re-used as fixed signs at historic high-speed sites. These signs now feature permanent mains connections and high-visibility backing boards and have proved to be a great success.

On a 30mph site at Portway Road, Rowley – which had previously recorded an 85th percentile of 41.7mph – the introduction of permanent VASS saw a 9.7mph reduction in the 85th percentile, a 92% reduction in the number of vehicles traveling at 40mph or above towards the sign, and a 75% reduction in the number of vehicles traveling at 35mph towards the sign. Interestingly, a worthwhile reduction in vehicle speeds has also been recorded by vehicles traveling in the opposite direction – i.e. away from the sign. ■

To find out more about Tempodis 230/280, please contact Radarlux Radar Systems by telephoning +49 2171 90930, emailing [info@radarlux.com](mailto:info@radarlux.com), or by visiting the company's website at [www.radarlux.com](http://www.radarlux.com). Further information is also available direct from Sandwell Metropolitan Borough Council by emailing [highways@sandwell.gov.uk](mailto:highways@sandwell.gov.uk)



⬆ A Radarlux MiniVisor in action on a road in the UK – a cost-effective traffic-calming measure