

4x4 Familiarisation and Adverse Weather

Risk awareness training for commercial operators of 4wd capable vehicles.

Why are we driving 4x4s?

4x4s will go anywhere....



...won't they?

Deep snow has similar properties to deep mud. This recovery took two hours, with three trained winch operators and a lot of kit.

Avoid!

4x4s are safer....

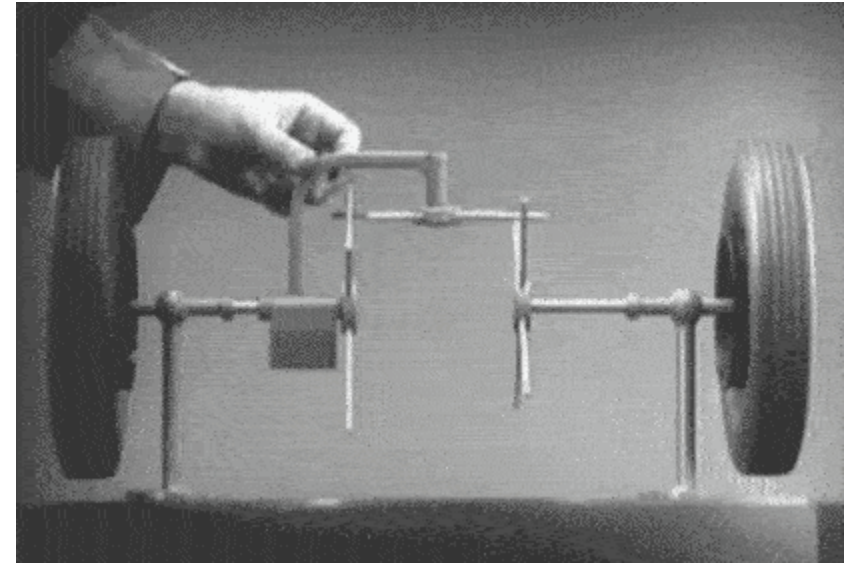
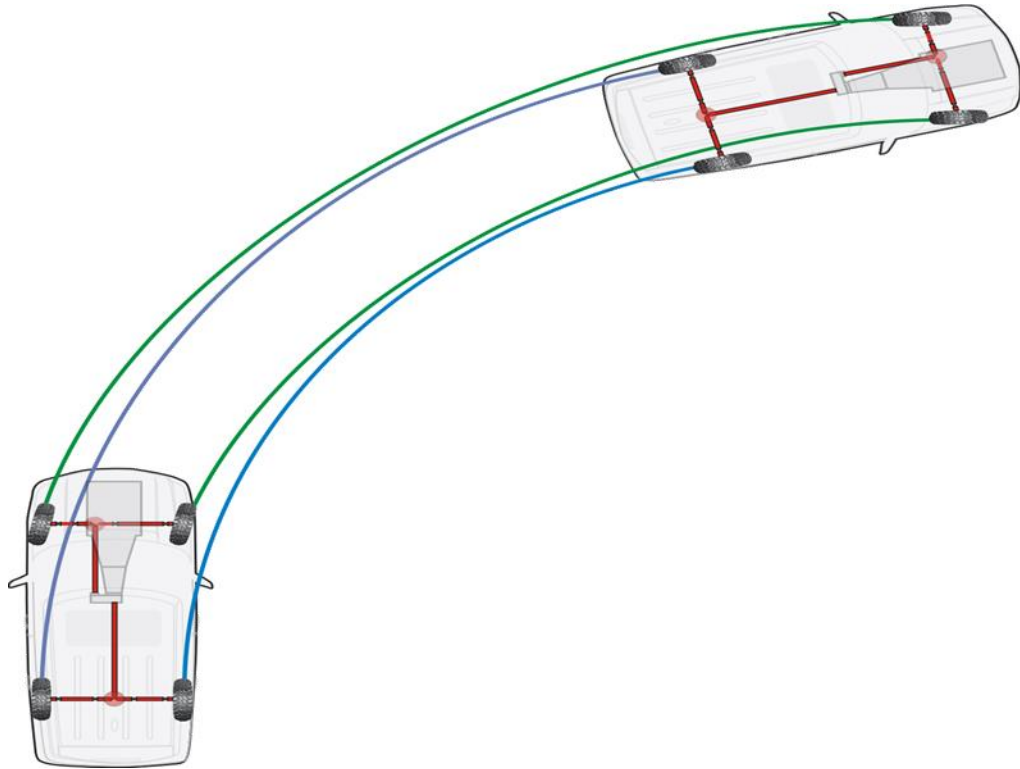
- Figures from Churchill Insurance show that urban 4x4s are involved in 25% more accidents than saloon cars, and do far more damage, with claims costing 30% more.
- The RAC Foundation says: "You could blame some of the higher accident rate for 4x4s on size. Drivers who are new to these cars might not realise how wide they are."
- US Federal traffic data 2003 showed that occupants of SUVs were 11% more likely to die in an accident than people in cars.
- According to the Transport Research Laboratory (TRL), people in small cars are 12 times more likely to be killed than those in a 4x4 when the vehicles collide.



Are they even four wheel drive?

- In normal driving mode, many 4x4s will only guarantee drive to ONE wheel
- Even when '4wd' is selected, this may only give you TWO wheel drive

Differentials:



Locking differentials:

- In 2wd, or with a centre differential unlocked, many 4x4s will only guarantee drive to one wheel
- By choosing 4wd, or locking a centre differential, both traction and engine braking will be guaranteed to both axles
- Some vehicles allow axle differentials to be locked, guaranteeing that both wheels on the axle will turn at the same speed, regardless of grip differences

Locking differentials:



- Differentials are essential for accurate steering. By locking them (or in a vehicle without a centre differential, choosing 4wd) we compromise our ability to steer.
- Locking axle differentials exacerbates this problem and should only be used as a last resort, to avoid getting stuck at low speed, or to help you get unstuck!
- When grip is good, unlock differentials and select 2wd if possible

Twice the traction?

- Only when traction aids are engaged (diff-locks/traction control)
 - Twice the traction doesn't mean twice the braking
 - Twice the traction doesn't mean twice the steering ability
-
- **Improving traction will get us moving, but it won't help us stop or steer!**

What do you drive?

Find out what features your vehicle is fitted with.



Anti-lock Braking Systems (ABS)



Traction Control (TC)



Electronic Stability Control (ESC, ASC, DSC etc)



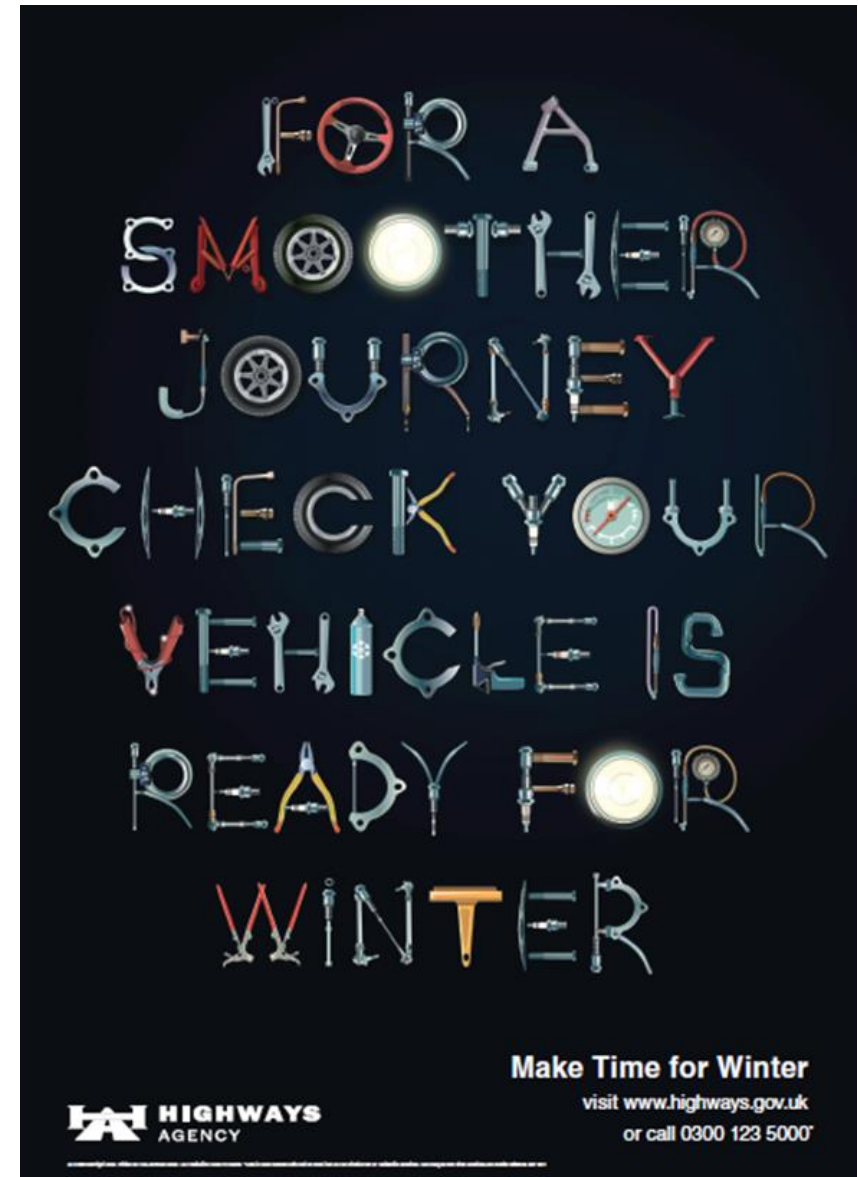
The Seven Ps:

- Planning
- Preparation
- & Practice
- Prevents
- Poor
- Performance

(We're not allowed to mention the seventh P. Or where it should go!)

Prepare the Vehicle

- Check tyre tread and pressures
- Minimum ½ tank of fuel
- Check coolant, brake, oil and screenwash levels
- Check lights and wipers
- Know your recovery points
- De-ice and remove snow before every journey



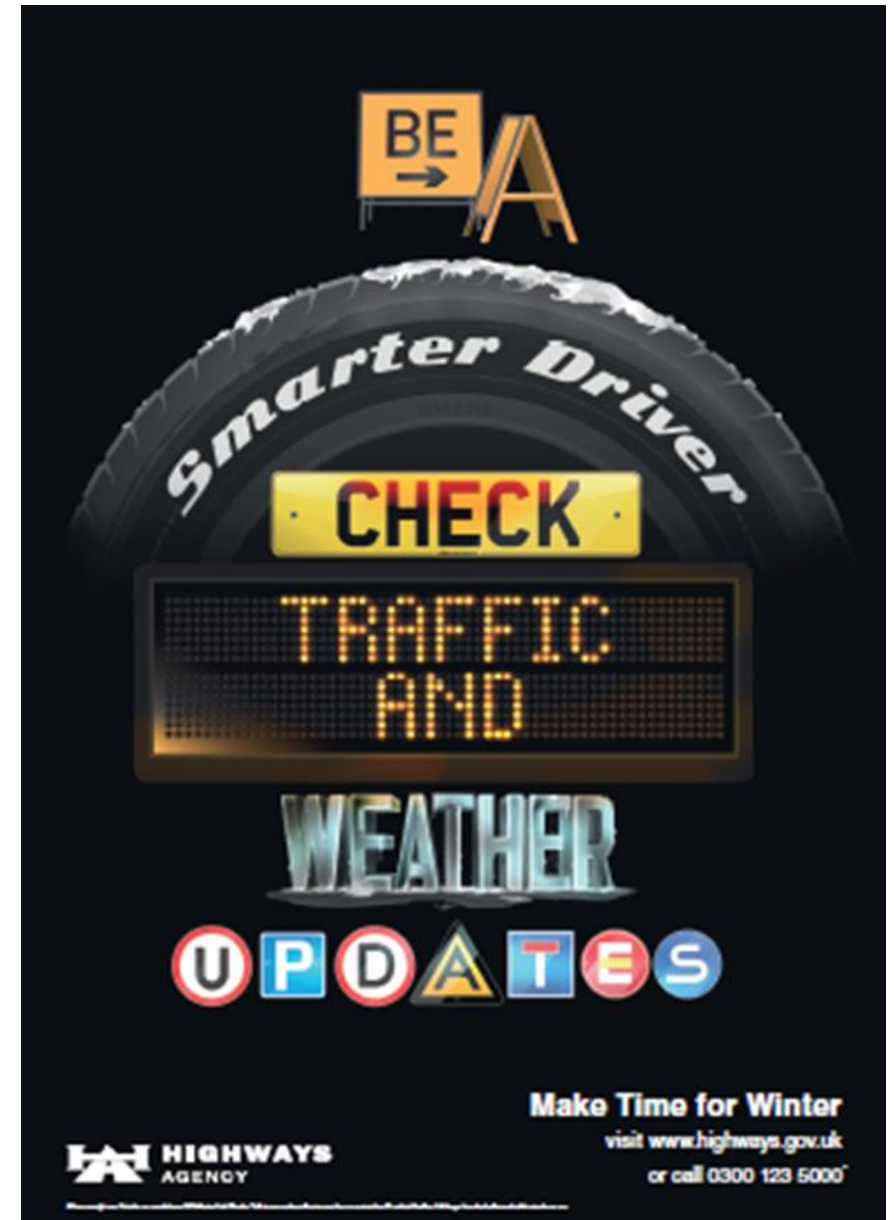
Pack your emergency kit

- Ice scraper/de-icer
- Torch and sunglasses
- Food and drink
- First aid kit
- Warm (Hi-vis) clothing and footwear
- Sleeping bag/blankets
- Mobile phone and charger
- Credit card for hotel!



Check and stay safe

- Check routes online for delays, incidents and problems
- Check the weather along your route, and the forecast
- File a journey plan, to include expected time of arrival
- Know how lone working systems work, and that the right people know where you're going.
- Know where you are!
(GPS/Maps)



The Fatal Four



1.
INAPPROPRIATE
SPEED



2.
DRIVER
DISTRACTIONS
Most commonly
mobile phones



3.
LACK OF
SEAT BELT



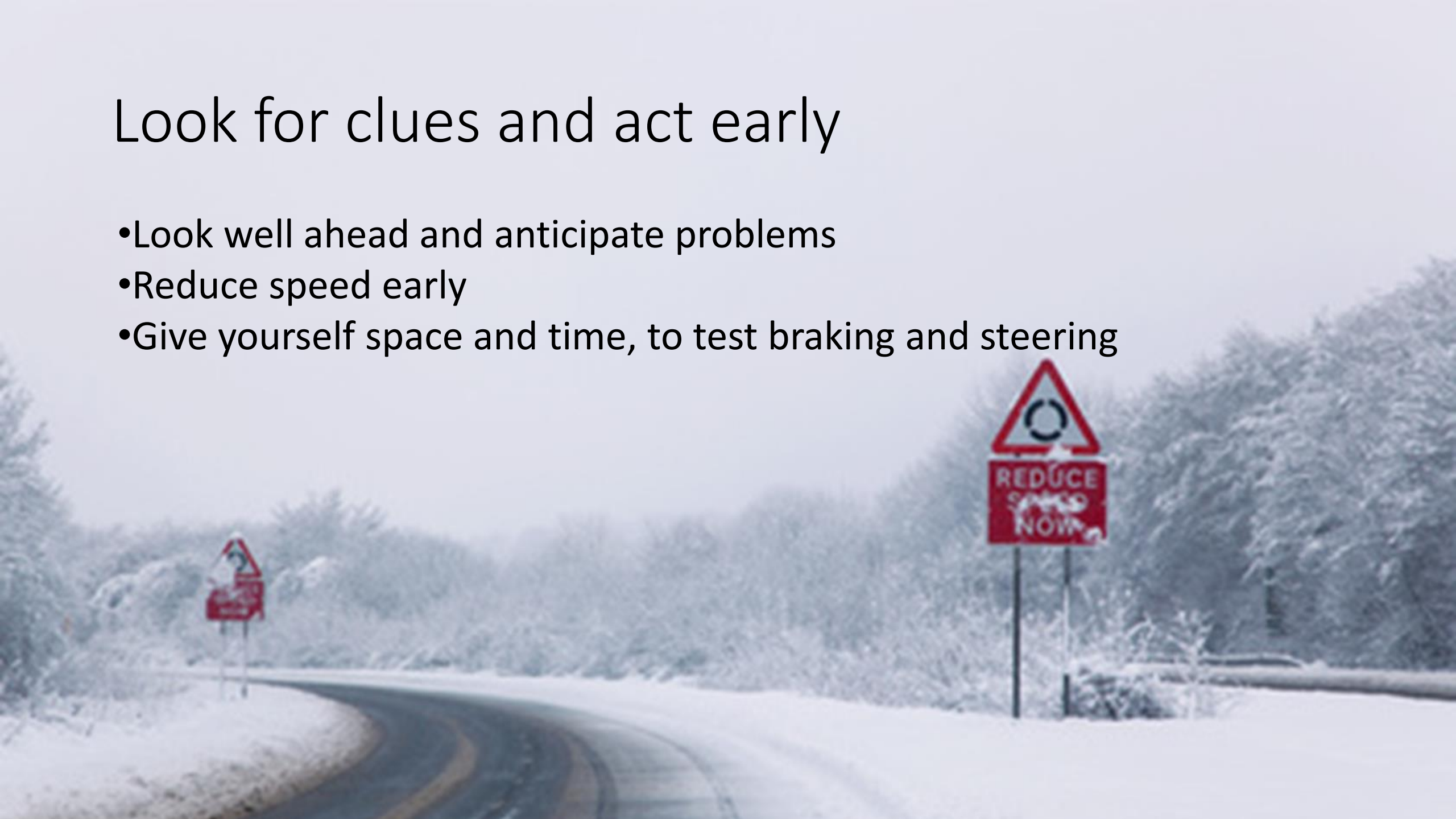
4.
ALCOHOL OR
DRUG IMPAIRMENT

Driving in winter conditions can be extremely tiring – it takes every bit of your concentration.

Despite your best efforts, things may still go wrong.

Look for clues and act early

- Look well ahead and anticipate problems
- Reduce speed early
- Give yourself space and time, to test braking and steering



Maintain stability

- Avoid late and harsh braking
- Plan for a smooth line through hazards
- Separate steering from braking and acceleration
- Know about other road users and their intentions



Understand the capabilities and, more importantly, the *limitations* of your vehicle.



Always have a plan B.



A white van with red and yellow hazard stripes, viewed from the front quarter angle. The van is parked on a paved surface with a grassy area and trees in the background.

The most effective method of risk reduction is by elimination.

If a journey is not entirely necessary -

AVOID IT!