Trials - and how to run them

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Most people who start out in cross country competitions will begin with Road Taxed Vehicle (RTV) trials and progress to Cross Country Vehicle (CCV) trials. The “Entry Level” event, the Tyro Trial is gaining in popularity. See the MSUK National Competition Rules (NCR) Chapter 20 for details on running a Tyro Trial. Some then move on to Competitive Safari or diversify to Team Recovery or Winch Recovery. This article is intended to give some guidance to those competing in RTV and CCV trials driving and to present some guidelines for setting up and running these events. Any variations from this will be publicised by the organising club in their Supplementary Regulations (SRs).

Member clubs of the ALRC hold competition trial events on a regular basis. The information on the dates of these are usually published on that club’s website or newsletterInformation on forthcoming events pages should make reference to event officers, and provide site maps to show how to get to the event which may be at a hard to find farm or a long-lost quarry!

From the vehicle's point of view, the only change you may need to make to a normal road-going vehicle so it can compete in an RTV event will be recovery points front and rear. Most competitors will have tyres more suited to the

terrain, rather than road tyres. Apart from that, practically any vehicle that can pass the MoT should be OK.

There are many other types of competition in which you may participate; the rules for all types of events are shown elsewhere in this handbook.

If you enter CCV events, you will need a roll-cage. See the designs elsewhere in this Handbook. For monocoque vehicles, use the designs shown in the MSUK NCR.

This article explains to the first-time competitor what should be done to prepare a vehicle and what is involved in entering your first trial. For those of you who have competed before, we hope that it will still make interesting reading. This article also includes guidelines for safe course design, driving techniques and marshalling.

The most important things to remember are:-

HAVE FUN, DO IT SAFELY

Part 1, A Guide to Vehicle Preparation

1. THE REGULATIONS.

Before you fill in the entry application form, take a good look at the Vehicle Regulations elsewhere in this Handbook. Regulations in the MSUK NCR also apply. The vehicle regulations govern which class your vehicle will compete in and also lay down safety and eligibility standards. Most road-going vehicles should have no trouble in meeting these requirements. Cross Country Trial vehicles that are not road-legal may need more detailed checking. You may not be allowed to compete if your vehicle fails to pass the scrutineer's examination. There is a sample scrutineering form in the Scrutineering Section of this Handbook which shows the items that will be checked, but unless there is a safety problem, your home-club scrutineer will often suggest that you fix the fault immediately or, if the other competitors agree, at least before the next event. Be sure to fix it before going to another club's event where the scrutineer may not know you or the vehicle. It is very rare for a road-legal vehicle that has been driven to an event to fail at scrutineering. For details of all matters relating to the safety, reliability and eligibility of vehicles, see the Scrutineering section, the Vehicle Regulations and the Roll-cage Regulations elsewhere in this Handbook. The items on those pages may look daunting, but with a little practice, all the checks can be carried out in the time it takes to read them. After all, the scrutineer doesn’t have long to do the same. Officially, the Scrutineer must have at least 6 minutes allocated for each vehicle.

2. EXTERNAL CHECKS.

Check that each wheel is held to the hub by a full set of studs and nuts and also check that the wheels and tyres are not obviously damaged. For RTV

events, the minimum tyre pressure is 22psi, so if you run them at less than this on the road, then you'll have to pump them up a bit before you compete! Check suspension springs are securely in place, or, on an older vehicle, look for broken leaves in the springs and check that shackles and dampers are secure. You may need a tyre lever to check the rubber bushes on coil sprung vehicles. Finally, look at the exhaust system to make sure that it is not about to fall off.

Have a look at the condition of the prop-shafts; give them a good push and pull to see if the splines are worn or the U/Js are sloppy. Bear in mind that regular greasing will greatly extend the life of these items. So grab the grease-gun before you dive underneath.

Next check on the condition of the chassis with particular regard to the area of the recovery points. Any damaged or rusty chassis parts in the vicinity of the recovery points can be dangerous. For everyone's safety, make sure that the recovery attachment points are solid and secure. Note that the lashing rings often found on coil sprung vehicles are NOT sufficient and are often not accessible anyway on a bogged-down vehicle. Recovery rope points should be of a type that allow fairly quick fitting of the rope but should be of a design that will not allow the rope to pull off easily, especially when the pull is from odd directions. Tow balls, pintle fittings and NATO hitches are fine and must be bolted in place with high tensile steel nuts and bolts. Welding can be used to add strength, but welding alone is not acceptable.

Check that the fuel tank cap is not likely to leak especially when the vehicle is at an odd angle. As vehicles get older, seals start to perish and latches wear out.

3. RECOVERY ROPES.

The preferred recovery rope is 1" / 25mm diameter about 15 feet / 4.5 metres long (or longer) with loops spliced into both ends. Wire ropes and chains are not permitted. Metal shackles should have a minimum pin size of 19mm (3/4”) and only used to attach ropes to vehicles. Soft shackles may be used. The use of metal shackles to join ropes is prohibited.

The rules don't insist that you carry a rope, but it is mentioned in the scrutineering form, so you’ll need one. If **you** get stuck, it should be **your** rope that takes the strain and gets wet and dirty! On the subject of water.....

4. WATERPROOFING.

The method of waterproofing the ignition system tends to be a matter of personal choice. Many people drive their vehicles successfully through quite deep water with no preparation whatsoever. Annoying, isn't it! However, even quite shallow water can splash up into the engine bay and then be thrown about by the fan or fan-belt. This will cause most petrol engines to falter. If you have electric fans, you could fit a cut-out switch on the dash. Most people will

just give their engines a good spray with WD40 just before driving a wet section but this tends to build up a layer of gunge on the leads which in turn can cause ignition problems on its own unless you clean it all off regularly. A good solution is to clean the distributor cap and leads and then seal it and the leads with silicone rubber sealant. A rubber glove over the coil with the wires exiting through the finger tips, sealed with sticky tape, enables the engine to run even when soaked. V8 engines can be particularly difficult to protect. As a last resort, try coating the whole ignition system with Waxoyl, or spray-on motorcycle chain grease; it looks disgusting but it seems to work!

5. SUMMARY

All this may seem like a lot of work but the scrutineer can, and probably will, check everything and more in a matter of a few minutes and with a little practice, so can you. In fact, with the exception of the throttle spring and recovery points, if your vehicle is capable of passing the MoT test then it should pass scrutineering so long as it also has the relevant safety equipment fitted for the event you are entering.

Now that you are sure that your vehicle is fit to compete, fill in the paperwork and submit the entry form along with the fee to the secretary of the meeting. Don't forget that any passenger must also be a paid-up club member. This is for insurance purposes. You may decide to pay on the day, but most clubs charge extra for this. On the subject of paperwork, don't forget your membership card, ALRC Logbook and MSUK competition license if one is required.

Part 2, A Guide to Course design.

Meanwhile, several miles away, a lot of work was going on preparing the course...

6. SETTING UP THE SECTIONS.

The sections for the trial will usually be set-out on the day previous to the event. The group of members doing this must include experienced drivers who have competed many times before. However, you must always make allowance for those competitors who may be driving for the first time. This will apply to Tyro and RTV events as these are the events that will mostly attract inexperienced drivers. Most CCV drivers will have gained experience previously in RTVs. You'll need to make full use of the bumps, ruts, mud pools and hills together with turns to try to prevent competitors from getting a clear round. Test drive each course bearing in mind the types of vehicle entering and whether it's a Tyro, RTV or a CCV trial. Care must be taken to keep vehicles away from trees and boulders; and don't forget the overhanging branches! Take into account the angle of side-slopes which can unnerve the inexperienced, and steep climbs and descents should be reasonably straight. Consider the possibility of overnight rain making a previously grippy surface

become slippery, so if you have included a steep descent, make sure there's nothing in the way at the bottom that a vehicle may slide into.

These ground and obstacle considerations are very important for a Tyro trial and must always be in accordance with the MSUK NCRs Chapter 20 - Cross Country Events.

A quick way of designing a section is to drive a meandering route over a difficult looking area of ground and then put the canes in afterwards. That way you know it's driveable. You can fine-tune the section afterwards. The level of difficulty should gradually increase as you progress through each section – there's no point in putting a very difficult obstacle or an "impossible" turn right at the beginning of the section. This can demoralise competitors and they'll want value for their money, so put any really difficult bits near or at the end! Water is great fun for the competitors and spectators alike but you must take great care that the water does not conceal any serious hazards or any dangerously deep areas. Make sure that there is no risk of a vehicle overturning in deep water and drowning the occupants.

The sections usually consist of 10 or 12 pairs of canes with each pair forming a "gate" at least 3 metres / 10 feet wide. Canes are usually bamboo but if you have some other suitable "rods" then use those. Don't use thin bendy plastics ones as these can bend in a wind when you have put the tops on. The canes or cane-tops are usually coloured WHITE on the RIGHT and RED on the LEFT. ("White is Right" being easy to remember and "Red to the Left" being the colour coding used by ships and aeroplanes for navigation.) The gates are numbered from 10 or 12 at the start down to 1 at the finish. It should be the ground and not the canes that create the difficulty so use the canes to direct the vehicle to the area of terrain that you want. If you are tight for space, you can make two gates from four canes in a row but you may need to define how far competitors may "loop" between the two. Crossed canes may be used to define the limits. It is up to the Clerk of the Course to define the exact route of the course.

Part 3, The Day of Reckoning.

7. COMPETITION MORNING.

Give your vehicle a final check to ensure that any loose items are secured and that emergency items, like the recovery rope and fire extinguisher, are to hand. An appropriate spare wheel and tyre is required unless SRs (Supplementary Regulations - published with the event details) state otherwise. Check that the oil and water levels are up to the mark since your vehicle will have to work harder today than on the way to work. Preferably, this should be the day ***before*** the event but most people seem to like to rush about on the day!

On arrival, find the signing-on area to let them know you are onsite. Some clubs have electronic signing on which is completed prior to the event and others use paper forms at the event. You MUST check with signing-on that you have completed all necessary actions. This is a legal requirement, and states that you are aware of the rules and are party to the agreement between you and the MSUK, your club and the land-owner. If you have a passenger, he or she must sign on too. Remember that for RTV and CCV trials, only one passenger is allowed in a vehicle on the sections and that neither passenger nor driver is allowed to be a passenger in another vehicle. In Tyro trials, you are allowed to have a carful of people, subject to Tyro rules.

So after a final check that there are no loose heavy items in the vehicle, head for the scrutineer and see if your preparation was good enough. If all is OK, and normally for a road going vehicle it will be, then you are all set to compete. However, if your vehicle does not comply with the regulations for one reason or another, you may be able to rectify any minor problems (you'll often find that other competitors will be willing to help) and then return to the scrutineer for a recheck. Please note that you are not entitled to your money back if your vehicle does not pass scrutineering, but many clubs will give a refund if you ask nicely, but they don't **have** to. If you do have to drop out of the event, please volunteer to act as a marshal. This will go down well!

While waiting for the competition to start, take a final look around your vehicle. If you have freewheeling front hubs, are BOTH locked?, is the centre differential-lock engaged where relevant?, is the gearbox in low ratios? We have seen many people get only a few feet into the first section and then get stuck because they failed to check these.

When the start time arrives, the Clerk of the Course will call all the drivers together for a meeting to explain any special points about the day, such as out-of-bounds areas, deep water holes, dangerous slopes adjacent to the sections, etc. After this, they will lead you to the first section. As mentioned earlier, the Clerk of the Course is the final arbiter as to the route of the section.

8 THE EVENT.

Well, finally, you have arrived at the section and this is where the fun starts. So what is it all about? The object is to drive from start to finish through the gates without stopping or hitting a cane. If any part of the vehicle or its occupants hits a cane or the vehicle stops moving forwards, then a penalty will be awarded depending on far it got or which cane it hit. Long wheelbase vehicles (over 95") are allowed a "shunt", see "Shunts" later on. There is no time limit and no bonus for speed; so a slow and steady approach is usually the best. At the end of the day, the competitor with the lowest score will be the winner. For a detailed explanation of the scoring system, see the section on marshalling later in this article.

All competitors are allowed to "walk the course" before they drive it. This will give them a chance to work out the best route through the section. Listen carefully to what other more experienced competitors are saying and you will probably find that they have spotted a particular hazard that you have missed. Then, if possible, watch a few people attempt the section first, since this will show where the problems are.

Many clubs arrange a running order to give each driver a chance to drive a section first - whether they want to or not! If this is the case, then you will be called to the start line by the marshal, but after a couple of sections you will soon remember which vehicle you are following and will get yourself to the start line as the previous driver sets off. Eventually it will be your turn to drive the course and you will start by sitting in your vehicle with a front wheel on the start line at the start gate. Make sure your seat belt is tight, as anything that helps you to remain sitting in your seat will give you just that little bit more control over the vehicle.

9. DRIVING THE SECTIONS.

The gear you will probably use most often for trials driving will be 2nd low, although some prefer 1st low. Try one of these two first.

Trying to explain exactly how to drive a trials section is basically impossible, since you will learn more in your first trial than could be explained in a thousand pages. Remember to keep your thumbs outside the steering wheel rim as the steering can easily kick back if you hit a bump or a hole. This risk is less with power-steering but thumbs have still been sprained. Technically, driving the section is a matter of trying to steer a course through the canes whilst balancing the vehicle's speed and momentum required to cross the ground, against the available engine power and grip of the tyres. But we guarantee that it is a lot more fun than reading that last sentence. Your route will, in most cases, be a natural curve joining the gates. You may ‘loop’ away from this natural line at the discretion of the Clerk of the Course, but vehicles must never cross their tracks between any two consecutive gates. The size of any loop can be restricted by 'crossed-canes' placed to define the boundary of the course. Touching these canes carries a penalty equal to the next gate. If you drive around them, then you will be deemed to have left the course and penalties equal to the next gate will be awarded. If the vehicle is damaged to a point where it is unsafe or no longer complies with scrutineering parameters, a penalty will be applied equal to the gate number reached. So if, for example, a bumper end is bent right back or broken off, the damage must be repaired before the vehicle can continue in the competition.

Most importantly, remember to obey the marshal's instructions as a failure to do so can incur penalties.

10. UPS & DOWNS

If you come to a halt for any reason on a reasonably level surface, there should be no further hazard. However, if you fail to reach the top of a steep ascent, getting back down again backwards is not without its problems. With a manual transmission, select reverse and, keeping your feet off the brakes and throttle, reverse down the slope letting the engine do the braking. With an automatic gearbox, DO NOT select reverse immediately but select 1st on a 3-speed or 2nd on a 4-speed and release the brakes. If the vehicle rolls gently backwards down the slope, you can control the speed with varying amounts of throttle. If the vehicle doesn't move backwards, then the slope isn't so steep and reverse gear should be safe to use. It all depends on the steepness of the slope and the amount of grip. Practice this somewhere safe.

When going down steep hills forwards, the most important thing to remember is to keep your feet off the clutch and brake pedals; just let the engine do all the braking with the aid of 1st or 2nd low. Some late vehicles have a Hill-Descent Control electronic system to control this type of manoeuvre - make use of this if you have it. If you have an automatic gearbox then try reverse gear or use your brakes. This 'wrong gear' technique with automatics works well even though it sounds wrong. Restrict this type of operation to less than 30 seconds at a time or overheating of the gearbox may occur.

11. SHUNTS

Those of you driving a long wheelbase vehicle (over 95" wheelbase) are allowed one stop-reverse-recommence (known as a shunt) per section only when you fail to negotiate a tight turn. The shunt may not be used when you fail an ascent. This can be taken at the driver's discretion and the intention to do this must be announced BEFORE coming to an involuntary halt. You may do this on condition the stop was intentional and not as a result of difficult terrain or a stalled engine! The driver must shout "SHUNT" to the nearest marshal just before coming to a halt to indicate this manoeuvre is about to carried out. Then reverse, making sure that you keep at least one wheel inside the boundary of the course and that you don't reverse into any canes or you will score penalty points. See marshalling section for scoring details. Then continue forwards around the section. Remember that if you get stuck whilst performing a shunt, you may not make several attempts to get started again. It is no good shouting "Shunt" after the vehicle has stopped moving (in a mudhole for example) or when you have gone the wrong way and left the boundary of the course, since the marshal will rightly say that the vehicle had come to an involuntary halt or that you went the wrong way.

12. COMPLETING THE SECTION.

If you succeed in reaching the last gate on a section, note that you have to get only one hub through the 1 gate and then stop to score zero. So if it looks as though you are about to hit a cane if you continue through the gate, then STOP. The same applies to all gates, in fact. So if you are half way through

and you think you might hit a cane, then stop there and save a point. That one point may make all the difference at the end of the day. Once you have stopped, particularly if you are trying for the ‘hub through’ technique, then let the marshal know that this is what you intended. You will usually then be able to continue the section just for the experience or back away to save breaking the cane. Check with the marshal that this is OK to do.

13. AT THE END OF THE EVENT.

The first thing to do is to offer to assist in clearing up the competition area. Remember those who were there the day before setting it all out. Gather the canes and other markers, fire extinguishers, etc. and return them to the equipment officer (if there is one). This kind of help always goes down well with the organisers. The Secretary of the Meeting and others will be working out the scores, so this assistance will take some of the workload from their shoulders. Whilst waiting for the results to be worked out, it is a good idea to clean the muck from the lights, number plates and wheel arches of your vehicle. A poke around with a stick is useful to remove the worst of the mud before you drive home on the public roads.

Eventually all the drivers will gather for the results. There is a well known saying amongst the habitual trialers as follows:- "New drivers will often win prizes at their first competition because they didn't know that what they just did was impossible But whatever happens, we hope that you will have enjoyed it enough to have another go at future events. Finally, make sure you thank the organisers of the event. Behind the scenes, they will have been sending off permit applications, writing for land-owner’s permission and organising all sorts of documentation for days or even weeks prior to the event. If you’re new to competitions, you probably didn’t even realise all this was happening. Several keen types will also have been at the site on the previous day setting it all up. So step forward and say “Thank you”. It will be appreciated.

Part 4, A Guide to Marshalling

14. INSTRUCTIONS TO MARSHALS FOR TRIALS

GENERAL.

a. On arrival, go to signing-on and collect an armband or tabard so that the competitors know who you are. If you have not signed on digitally, you will need to do it on the day.

b. If you see a vehicle incur a penalty, ensure that the marshal marking the score sheet knows of its value as he may not have seen the incident. Call the penalty out loud enough for the driver to hear.

AT THE START LINE.

a. Have a quick look at the vehicle to see that it has not suffered damage to a point where an unfair advantage my be obtained. If the vehicle is

damaged to a point where it is unsafe or no longer complies with scrutineering parameters, point this out to the driver and inform him/her that the damage must be repaired before the vehicle can continue in the competition.

b. Instruct the driver to line up the vehicle with the leading hub vertically above the start line. The vehicle may be on the skew if the driver wishes. See sketches A and B.

c. Check that all of the vehicle occupants are strapped in and that the doors appear to be securely closed.

d. Ensure that the section is clear of people, other vehicles, etc. before allowing the driver to start. Award maximum penalties (the number of gates) if he is unable to start for any reason when asked to start.

e. Check that all competitors have driven the section before moving on to the next.

3. ON THE COURSE.

a. The object is for the vehicle to complete the section non-stop (except for one shunt for long wheelbase vehicles). Non-stop means without stopping or hitting a cane. If a vehicle stops, award penalty points equal to the gate it is *approaching*.

b. Note that contact with a gate cane with any part of the vehicle or its occupants means that you should award a penalty. Don't let competitors try to convince you that certain parts of the vehicle don't count, e.g. mirrors or roof or even the passenger's elbow! Remember that penalties are scored by a long wheelbase vehicle even if they hit a cane while reversing for their shunt.

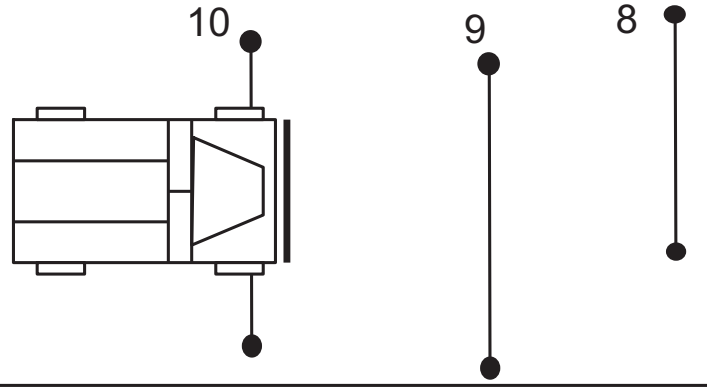
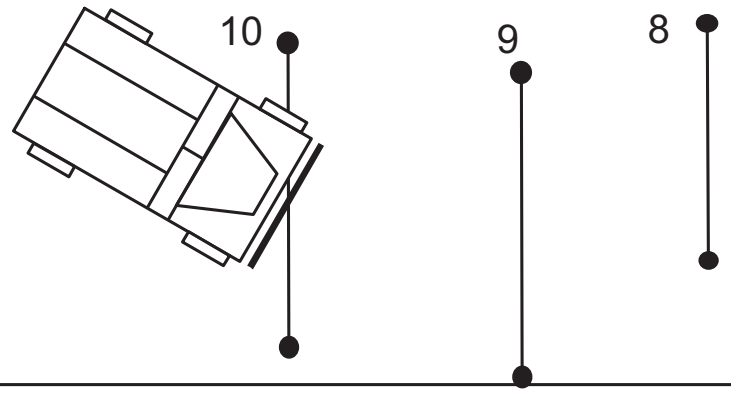
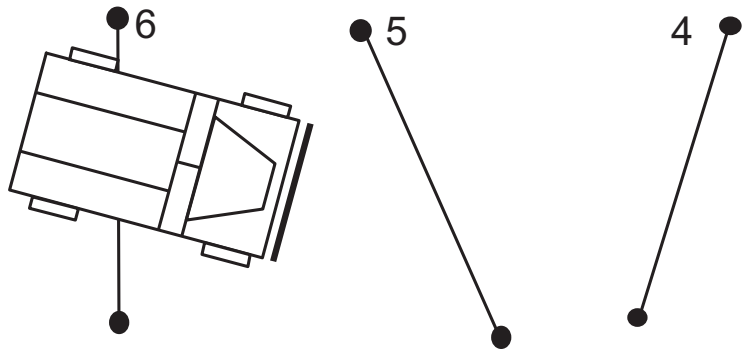
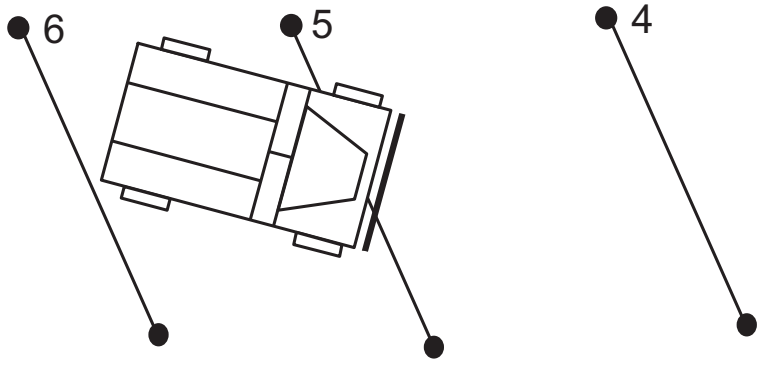
c. Only the first penalty incurred is recorded on the score card unless a non-standard system is in use. Examples of penalties are shown in sketches C to H.

d. In theory, the course is bounded by imaginary lines joining the canes but this doesn't necessarily prove that the course can be driven between these lines. It doesn't always work out in practice; for instance if two gates are formed by four canes in a row then the course will have no width. Often, a pair of crossed canes are positioned to "stretch" or extend the boundary. Touching these carries the penalty of the next gate. If the competitor drives around them, then he will be deemed to have left the course and penalties equal to the next gate will be awarded. Sometimes, due to the terrain, competitors may "loop" at the discretion of the Clerk of the Course, but vehicles must never cross their tracks between any two consecutive gates.

4. CLEARING THE SECTION.

Award a clear round (zero penalties) only if the vehicle stops with one or more hubs across the finish line without having hit any canes or receiving any penalties earlier in the section.

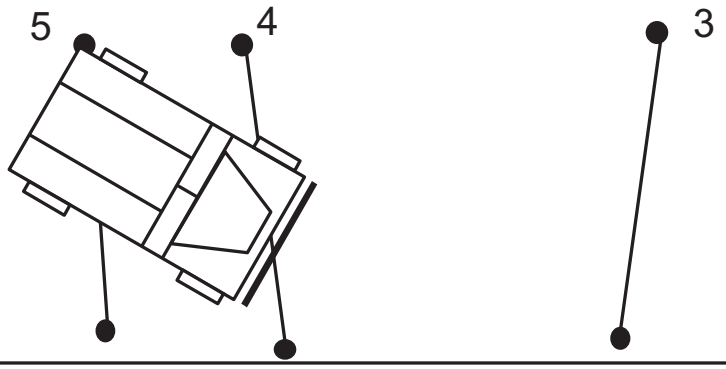
15. EXAMPLES OF SCORING

SKETCH A Acceptable start position	
SKETCH B Acceptable start position	
SKETCH C Vehicle has stopped between 5 and 6. Penalty = 5	
SKETCH D Leading hub of stopped vehicle is between 5 & 4. Penalty = 4	

SKETCH E

Leading hub of stopped vehicle is between 4 & 3 but has hit cane 5.

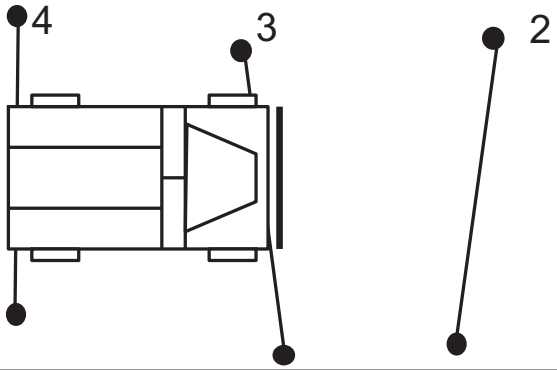
Penalty = 5



SKETCH F

Vehicle has stopped with bumper between 3 & 2 but leading hub is between 4 & 3.

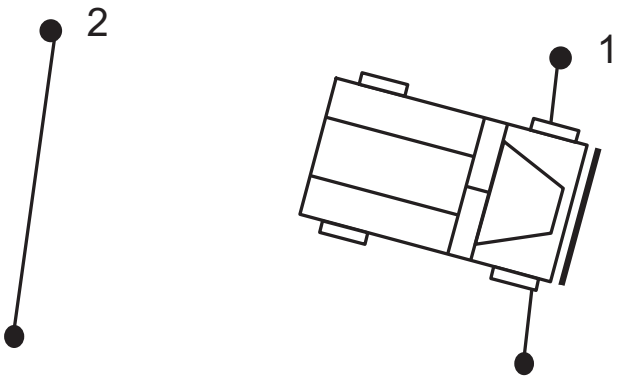
Penalty = 3



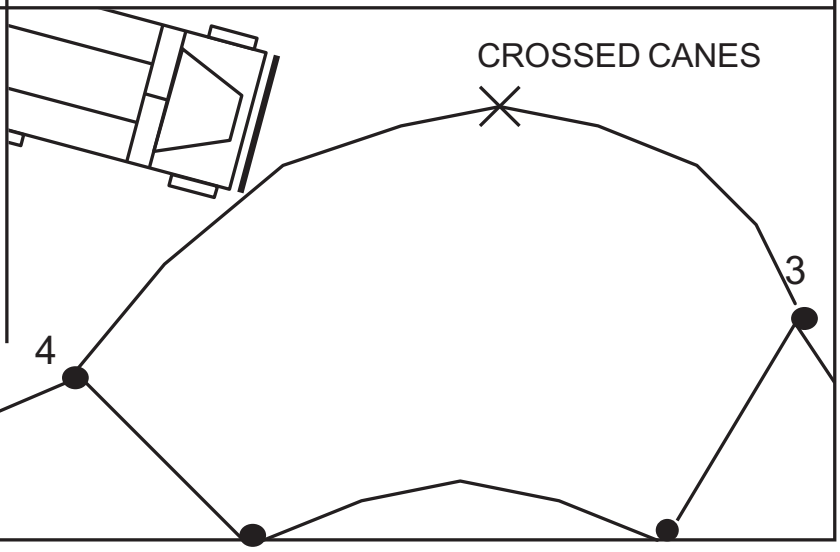
SKETCH G

Vehicle has stopped with one hub on or just over finishing line.

Penalty = 0



SKETCH H

Vehicle has gone outside course boundary during shunt or has simply gone too wide between gates 4 & 3 despite the boundary being extended by crossed canes.

Penalty = 3