

Agricultural Vehicles



An Examiners Guide

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Foreword

Purpose of the guide

1. This document is intended to be used as a guide by VOSA enforcement examiners to assist them in applying suitable standards when conducting roadworthiness examinations on Agricultural vehicles used on public roads.
2. The guide is not intended to include every aspect of a roadworthiness examination; other documents are available for this purpose. The Categorisation of Defects (C of D) is the predominant document available for prohibition standards and criteria.

Why produce a guide?

To improve road safety, by reducing the risk of injuries to road users due to inadequate roadworthiness. To offer guidance to VOSA examiners, allowing them to conduct suitable examinations of this vehicle group.

The roadworthiness of this vehicle type is often found to be below the required standards. An agricultural vehicle can conduct roles which have developed over recent years. Along with many other factors the ability of an off road vehicle to work on a field and then be driven at conventional road speeds over increasing distances has meant there are expanding numbers of subject vehicles in use on public roads and covering larger and larger distances.

The vehicle category does not fall into the Operator Licensing scheme. The roadworthiness standards applied to the vehicles are the most basic relating to construction and use, health and safety, fuel excise and environmental concerns. With this in mind the roadworthiness standards of vehicles as encountered at the roadside are often far below that expected of a HGV due to a lack of investment and perhaps understanding by the industry and vehicle operator. The agricultural vehicle fleet is exempt from an annual test.

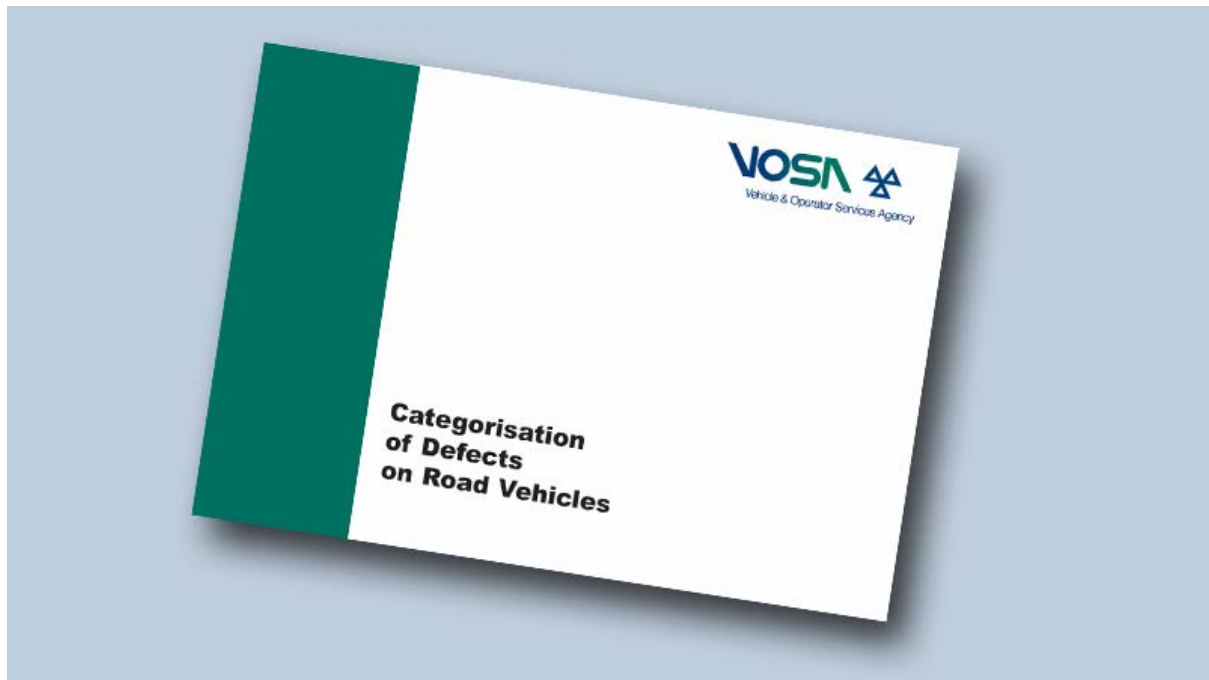
A trailer drawn behind an agricultural vehicle is often the source of more roadworthiness defects than the prime mover.

Trailers used are often under manufactured for the use they are put to. This applies to their capacities as well as their construction. Many trailers have had a full life use prior to being adapted and utilised in the agricultural role, but also many are manufactured for the purpose and are well designed and constructed.

The drivers of this vehicle group are often unskilled and very poorly licensed. Investment in driving skills and their experience is very short of HGV standards due to low levels of legislation in this licence area. Drivers often fail to maintain their vehicles and do not appreciate the affects of a poor driver maintenance regime.

Categorisation of Defects (C of D)

The C of D is the dominant and prevailing source of standards for VOSA examiners to impose when conducting roadworthiness examinations of vehicles. This guide has been developed only to assist examiners in reaching logical and balanced decisions in what is a diverse and in depth field of work.



Definitions

Agricultural Motor Vehicle (AMV)

An **AMV** is a motor vehicle which is constructed or adapted for use off roads for the purpose of **Agriculture, Horticulture or Forestry (AHF)** and which is primarily used for one or more of those purposes. Not being a dual purpose vehicle (*Regulation 3 C&U*).

Generally referred to as 'Tractors', the **AMV** will in general have:

- Off road tyres;
- a 3-point linkage at the rear or front;
- a Power Take Off (PTO);
- a hitch constructed to lift and tow a trailer

And **will not** be capable of carrying any load other than miscellaneous equipment.

Note: The same looking vehicle combination may be encountered when used for none **AHF** purposes, this vehicle cannot by definition be an **AMV**. This type of encounter must have an enforcement examination suited to the use the vehicle is being put to on that journey.

Generally the vehicle will be towing a trailer; this combination will be assessed principally to HGV roadworthiness and operator licensing standards.

The image of an operator using a Fast tractor towing a dolly/low loader with an excavator on it for construction use, would not be an AMV, despite it being the same appearance and load a farmer may use if the excavator were to be used on their farmland or on forestry work.

Motor Tractor



A mechanically propelled vehicle which is not constructed itself to carry a load, other than articles, that is to say, water, fuel, accumulators and other equipment used for the purpose of propulsion, loose tools and loose equipment, and the weight of which unladen does not exceed 7370kgs. (Also see **Note 1*** & **2*** immediately below)

Locomotive



A mechanically propelled vehicle which is not constructed itself to carry a load, other than articles, that is to say, water, fuel, accumulators and other equipment used for the purpose of propulsion, loose tools and loose equipment, and the weight of which unladen exceeds 7370kgs.

Note 1*: This vehicle type pulls a trailer and does not support it. Typically a motor tractor would tow a dolly & semi trailer or a balanced trailer neither of which impose a load on the drawing vehicle.

Note 2*: This vehicle type is not an Agricultural vehicle and therefore is not permitted any exemptions from regulations that an AMV may operate under.

DEFINITIONS

Agricultural Trailer (AT)



A trailer which is constructed or adapted for the purpose of **AHF** and which is only used for one or more of those purposes, not being an agricultural trailed appliance or an Agricultural trailed appliance conveyor.

The AT will be capable of carrying goods or burden but not processing it.

Agricultural Trailed Appliance (ATA)



An agricultural trailer which is an implement constructed or adapted;

1. for use off roads for the purpose of AHF and which is only used for one or more of those purposes, and
2. its maximum gross weight is not more than twice its unladen weight

Example: Baling machines, crop sprayer, muck spreader.

Note: An ATA does something with the load rather than merely carry it.

Agricultural Trailed Appliance Conveyor (ATAC)

An ATAC is an agricultural trailer which:

1. Does not exceed 510KGS ULW (the ULW must be indelibly displayed)
2. Has pneumatic tyre fitted to each one of its wheels and;
3. Is designed and constructed for the purpose of conveying one **ATA** or one **AHF** implement.

Example: A specific trailer designed to only convey a combine harvester rotor. No brakes to be fitted.

DEFINITIONS

Pick up hitch:

This is the large hook shaped towing point at the rear of the AMV which is lowered and raised by hydraulic ram. The size of the gap when the hitch is in towing position is critical to prevent inadvertent separation of the vehicle and trailer when in use.

The gap at the top of the pickup hitch, if there is a gap, **must not exceed 10mm.**

The thickness of metal on the corresponding towing/hitch eye of the trailer **must not be less than 30mm.**

Definition of a braking system in relation to Agricultural vehicles

This is not a comprehensive list, however a braking system is considered to include the sum of the following aspects:



Application -

Pipe work, connectors, linkages, valves, reservoirs and compressor, accumulators, mechanical levers, footbrake pedal etc

Actuation -

Actuators, hydraulic ram, caliper, slack adjusters, 'S' cams/expanders, ABS components etc

Friction -

Pads, Shoes/linings etc

For a trailer or axle to be considered not to have a braking system the whole of the system must be removed with the exception of brake drums/discs.

If any of the braking system items are fitted they must be maintained and the braking system must operate efficiently, even when the use of the vehicle means brakes are not required.

Neither the driver nor the examiner should be under the impression that a braking system is fitted.

Note 1: For the purpose of Construction & Use (C&U) regulations a brake drum or disc shall be deemed to form part of the wheel and **not** part of a braking system

Speeds of Agricultural vehicles

Application of driven speed criteria

When applying roadworthiness standards to AMV (and trailers attached) the C&U regulations make reference to 'driven speed' in certain circumstances.

When referring to vehicles undertaking AHF roles the speed generally referred to is 20 MPH, in the terms of 'an agricultural motor vehicle which is not driven at more than 20 MPH'.

Note: Throughout the regulations there is no reference to what speed a vehicle 'may be capable of'. In essence this means that despite a vehicle designed and capable of being driven at 40 MPH the examiner must apply the 'below 20 MPH' criteria if no evidence of speed driven is available for the particular journey under examination unless clear evidence is available which states the speed driven on this journey.

What constitutes evidence of speed?

The standards being applied by VOSA examiners relate to 'driven speed' rather than capable speed.

VOSA staff must consider that ultimately the evidence of speed may need to be presented and substantiated in court.

The driven speed of a target vehicle may be observed and recorded prior to the vehicle being stopped at a checksite. It would not be suitable to conduct a retrospective attempt at establishing speed by road test or assessment of vehicle capability as it is the speed driven by the driver, on the journey in question.

Satisfactory evidence of speed driven must be from one of the following processes:

1. Observations of the driver or passenger (who can readily observe the speedometer) of the VOSA Stopping Vehicle travelling close to, on the same road and in the same direction of the target vehicle on a near level road surface. Remaining equidistant from the target vehicle for a distance of at least 2/10 of a mile. The officer(s) must produce a statement to state their observations.
2. An in use Tachograph chart covering the journey under examination, removed from the tachograph of the target vehicle, providing the tachograph system is sealed & suitably calibrated.
3. A suitably qualified Police officer whom provides a statement of evidence.

Note: If reference to speed is to be used, the examiner must be knowledgeable that the speed driven was clearly in excess of the reference speed.

No evidence of speed

The standards applied to a target vehicle in some criteria do relate to speed, if there is no evidence of speed driven available it must be assumed by the examiner that the criteria relating to a lower speed journey should be applied.

Braking regulations

Braking systems of certain vehicles first used after 01 April 1983: Regulation 15 C&U:

Must comply with the braking requirements of ordinary road vehicles, such as air or hydraulic brakes with two line fail-safe systems.

Braking systems of vehicles to which regulation 15 does not apply. Regulation 16 C&U

In summary the following aspects are required:

1. Efficient braking system
2. Brake to apply to at least ½ of wheels
3. Park brake to operate on at least 2 wheels

Maintenance & Efficiency of brakes: Regulation 18 C&U:

18(1): Every part of every braking system and the means of operation thereof fitted to a vehicle shall be maintained in good and efficient working order & be properly adjusted.

18(5): The brakes of every AMV which is first used on or after 01 June 1986 & is not driven at more than 20Mph and of every AT manufactured on or after 01 December 1985 shall be capable of achieving a braking efficiency of not less than 25% when the weight of the vehicle is equal to the total maximum axle weights which the vehicle is designed to have.

Application of brakes of trailers: Regulation 19 C&U:

Where a trailer is drawn by a motor vehicle the driver shall be in a position readily to operate any brakes required by these regulations (C&U) to be fitted to the trailer as well as the brakes of the motor vehicle, unless a person other than the driver is in a position & competent efficiently to apply the brakes of the trailer - except:

1. If the trailer has overrun brakes
2. If the trailer is a broken down vehicle

Trailers drawn by Agricultural Motor Vehicles: Regulation 85(1) C&U:

No person shall use, or cause or permit to be used, on a road a wheeled agricultural motor vehicle which the gross weight exceeds 14,230kgs drawing one or more wheeled trailers if the weight of the drawing vehicle is less than a quarter of the weight of the trailer or trailers, unless the brakes fitted to each trailer in compliance with regulation 15 or 16 are operated directly by the service braking system fitted to the motor vehicle. No more than 35% of the weight is borne by the drawing vehicle.

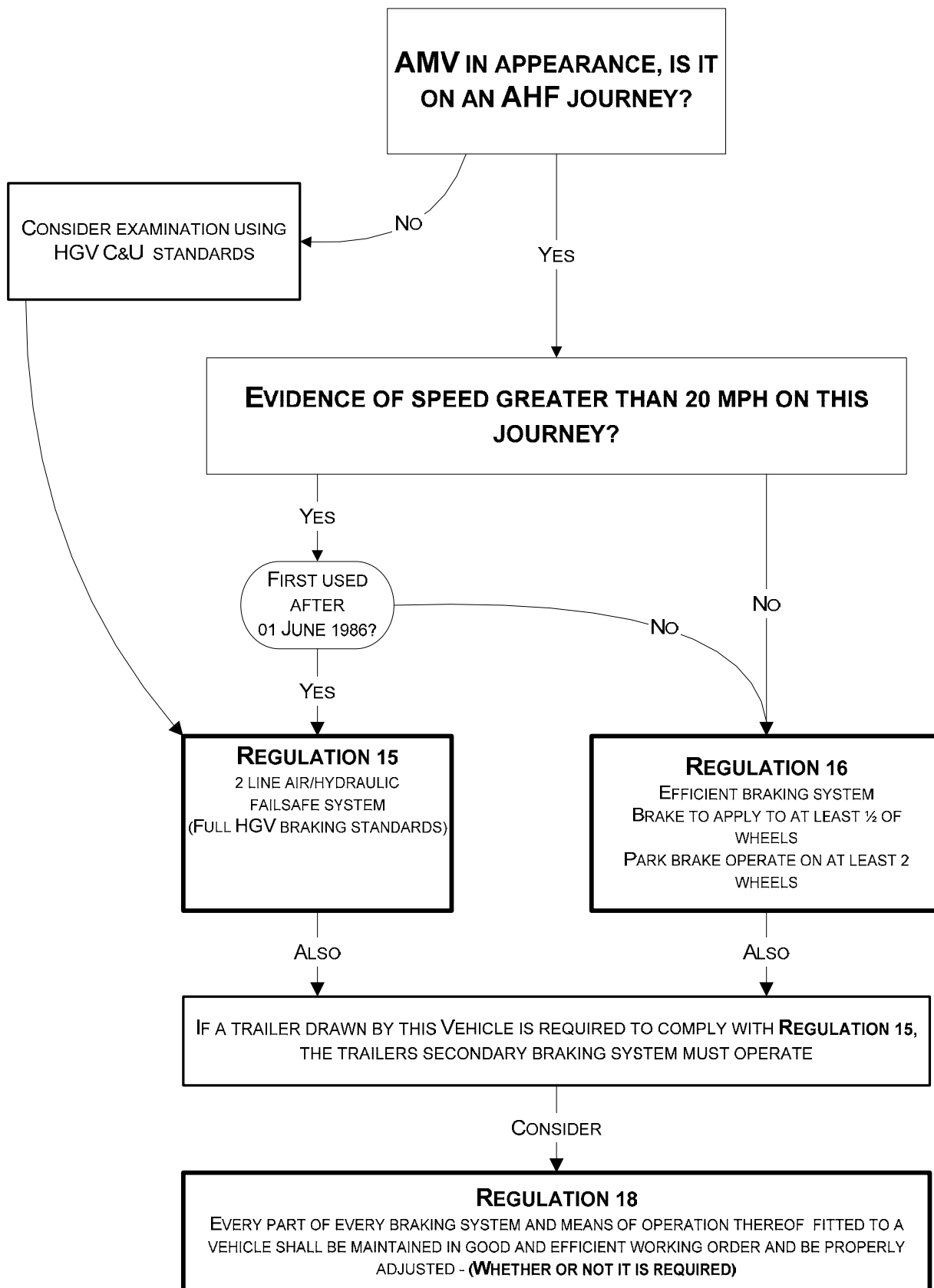
Leaving trailers at rest: Regulation 89 C&U:

When a drawn trailer is detached, no person shall cause or permit the trailer to stand on a road unless at least one of the wheels of the trailer is prevented from revolving by the setting of the brake or the use of a chain, chock or other efficient device.

Flow charts for AMV & trailer brake requirements

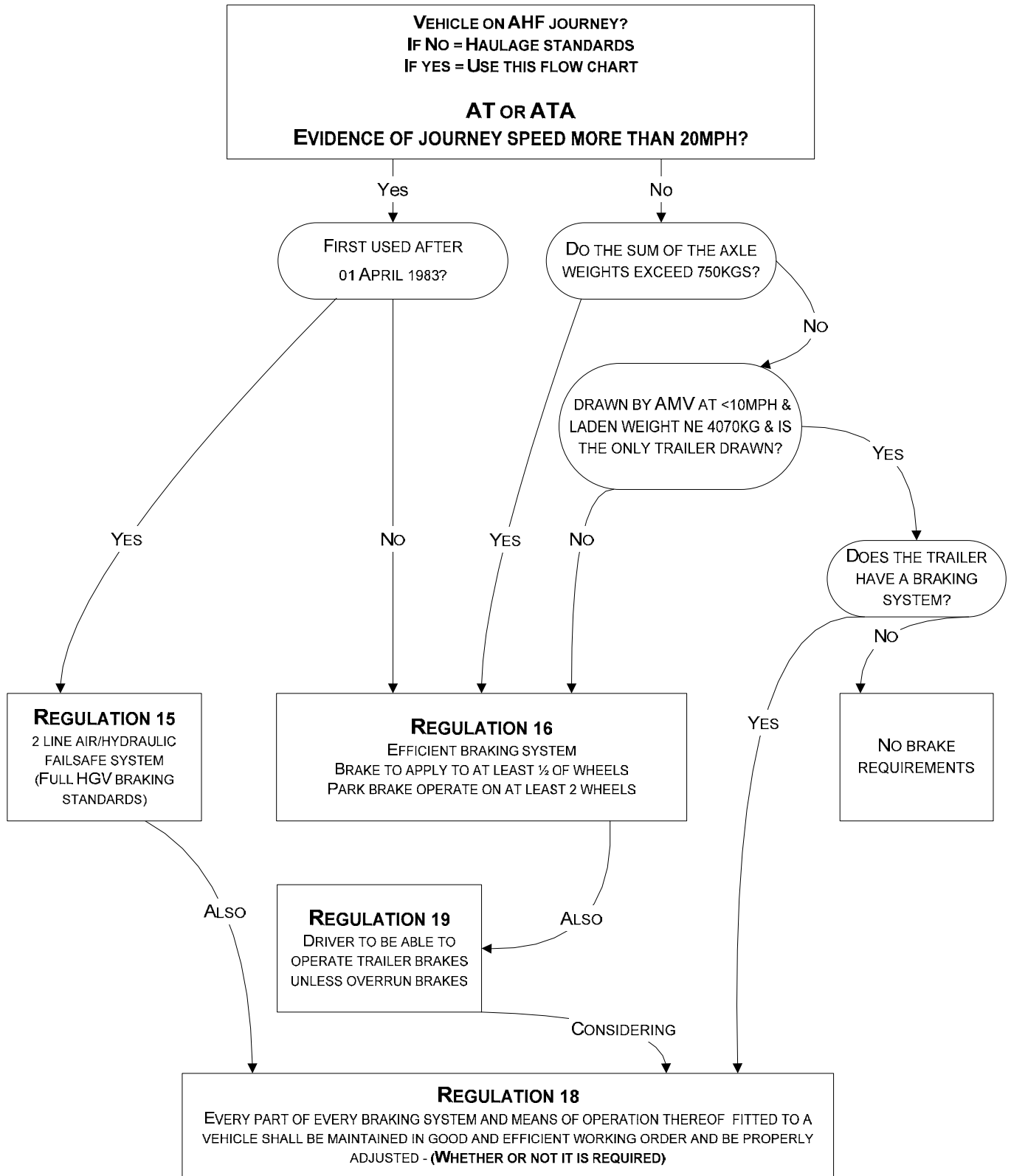
The following pages contain flowcharts which could be used to guide the examiner in establishing system requirements and apply the correct standards to assess a braking system on a subject vehicle/trailer.

FLOW CHART: AMV BRAKING REQUIREMENTS



AT & ATA BRAKING REQUIREMENTS

FLOW CHART: AT & ATA BRAKING REQUIREMENTS



PICK UP HITCH

The gap at the top of the pickup hitch, if there is a gap, **must not exceed 10mm**.
 The thickness of metal on the corresponding towing/hitch eye of the trailer **must not be less than 30mm**.

Tyres

Condition & maintenance of tyres Regulation 27 C&U:

Pneumatic tyres must be maintained in such a condition as to be fit for the use which the vehicle or trailer is being put & must not have a defect which might cause damage to the road surface, or damage to persons in or on the vehicle, or other persons using the road. (No tread depth required although all other tyre standards apply - bulges, cuts, inflation etc).

Above 20mph = Pneumatic tyres in accordance with HGV standards (Categorisation of Defects applies).

Lamps

Front position lamps	Required – Matching pair, coloured white
Rear Position lamps	Required – Matching pair, coloured red
Direction indicator	First used before 01 April 1986 or unladen weight not exceeding 255Kgs – Not Required Otherwise – Matching pair, coloured amber
Stop lamps	First used before 01 April 1986 or maximum speed less than 25Mph – Not required Otherwise – Two required, one each side, coloured red
Rear retro reflector	Two required coloured red
Dipped beam headlamps	First used before 01 April 1986 or maximum speed <15Mph – Not required Otherwise matching pair, coloured white or yellow

Note 1: If the vehicle is required to comply with Regulation 15 C&U braking requirements, the vehicle must also comply with lighting requirements the same as conventional goods vehicles/trailers.

Note 2: If lamps are fitted even though not required, they must comply with requirements of Road Vehicle Lighting Regulations

Suspension

No suspension requirements if the vehicle is not driven above 20MPH.

Springs & Resilient material: Regulation 22 C&U

ULW less than 4070kgs:

A wheeled AMV with pneumatic tyres which the unladen weight does not exceed 4070kgs– No suspension requirement.

ULW more than 4070kgs:

If unladen weight exceeds 4,070kgs and driven >20mph - Full suspension is required

Every motor vehicle and every trailer shall be equipped with suitable and sufficient springs between each wheel and the frame of the vehicle.

C&U Regulation 100: – Avoidance of danger: 100(1)Maintenance & use of vehicle so as not to be a danger

If suspension components are fitted regardless as to whether they are required, they must not present a risk of injury or be in a dangerous condition. A motor vehicle, every trailer drawn thereby and all parts and accessories of such vehicle and trailer shall at all times be in such condition, and the number of passengers carried by such vehicle or trailer, the manner in which any passengers are carried in or on such vehicle or trailer, and the weight, distribution, packing and adjustment of the load of such vehicle or trailer shall at all times be such, that no danger is caused or is likely to be caused to any person in or on the vehicle or trailer or on a road

Steering: Maintenance of steering gear C&U Part II, D, Regulation 29

All steering gear fitted to a motor vehicle shall at all times while the vehicle is used on a road be maintained in good & efficient working order and be properly adjusted.

Mirrors:

Reg 33 C&U: Mirrors

1. Any mirror which is fitted to a vehicle shall, whether or not it is required to be fitted, shall comply with the requirements.
2. Each mirror shall be fixed to the vehicle in such a way that it remains steady under normal driving conditions;
3. Each exterior mirror on a vehicle fitted with windows and a windscreen shall be visible to the driver, when in his driving position, through a side window or through the portion of the windscreen which is swept by the windscreen wiper;
4. Where the bottom edge of an exterior mirror is less than 2 m above the road surface when the vehicle is laden, that mirror shall not project more than 20cm beyond the overall width of the vehicle or, in a case where the vehicle is drawing a trailer which has an overall width greater than that of the drawing vehicle, more than 20 cm beyond the overall width of the trailer

Note: All vehicles driven at more than 20MPH shall be fitted with a suitable mirror to the offside, an interior mirror may be fitted if it affords a view to the rear.

Glossary of terms

Term	Meaning
AMV	Agricultural Motor Vehicle
AT	Agricultural Trailer
ATA	Agricultural Trailed Appliance
ATAC	Agricultural Trailed Appliance Conveyor
MT	Motor Tractor
Loco	Locomotives
C of D	Categorisation of Defects
C & U	Construction and Use
AHF	Agriculture Horticulture Forestry