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## Overview

This NOS is about providing a range of technical support to other workshop colleagues. It includes ensuring technical information is up to date and giving technical advice, instruction and briefings to colleagues.

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## Performance criteria

### You must be able to:

P1 check vehicle technical **information** is up to date and accessible to workshop staff

P2 check colleagues have the correct technical resources to carry out their work

P3 identify any additional resources required correctly and promptly

P4 report any problems affecting the operation of the workshop to your manager promptly

P5 respond to requests for technical help and **advice** promptly and positively

P6 provide colleagues with clear instruction on:

P6.1 product updates

P6.2 technical tasks

P6.3 what the results should be

P6.4 how they should perform tasks

P6.5 the standard that must be achieved

P7 deliver technical instruction and demonstrations in a manner and at a speed that is appropriate to the individual(s) concerned

P8 give on-going technical support and **advice** to colleagues

P9 ensure your support and **advice** is technically accurate and in line with manufacturers' instructions and your organisation's requirements

P10 give colleagues time to consider your response and give further explanation when appropriate, checking they have fully understood

P11 identify and correct mistakes in a way that supports your colleagues' self confidence and praise them when they perform tasks correctly

P12 check the work of colleagues at regular intervals and take prompt action to resolve problems

P13 suggest possible methods for improving the work of colleagues to your manager, when necessary

P14 carry out your checks in a cost effective and efficient manner that is not detrimental to the smooth running of the workshop

## Knowledge and understanding

You need to know and understand:

### Legislative and organisational requirements and procedures

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K1 the legislation and workplace procedures relevant to:

K1.1 health and safety

K1.2 the environment (including waste disposal)

K1.3 appropriate personal and vehicle protective equipment

K2 legal requirements relating to the vehicle (including road safety requirements)

K3 your workplace procedures for:

K3.1 recording fault location and correction activities

K3.2 reporting the results of tests

K3.3 the referral of problems

K3.4 reporting delays to the completion of work

K3.5 gaining up to date technical **information** and repair methods

K4 the importance of working to recognised diagnostic procedures and processes and obtaining the correct **information** for diagnostic activities to proceed and how to formulate and construct your own diagnostic procedures and processes in order for diagnostic activities to proceed

K5 the importance of documenting diagnostic and rectification **information**

K6 the importance of working to agreed timescales and keeping others informed

K7 the relationship between time, costs and profitability

K8 the importance of reporting anticipated delays to the relevant person(s) promptly

### Electrical and electronic principles

K9 electrical and electronic principles including types of sensors and actuators, their application and operation

K10 how electrical and electronic vehicle systems operate, including electrical component function, electrical inputs, outputs, voltages and oscilloscope patterns, digital and fibre optics principles

K11 the interaction between electrical, electronic, mechanical and hydraulic components and systems within a vehicle, including multiplexing

K12 electrical symbols, units and terms

K13 electrical safety procedures

K14 the hazards associated with working on or near high energy electrical vehicle components

### Use of diagnostic and rectification equipment

K15 how to prepare and check the accuracy of diagnostic testing equipment  
K16 how to use diagnostic and rectification equipment for mechanical, electrical, hydraulic/pneumatic and fluid systems, specialist repair tools and general workshop equipment

### **Vehicle system faults, their diagnosis and correction**

K17 how vehicle mechanical, electrical, electronic, hydraulic/pneumatic and fluid systems are constructed and operate  
K18 how vehicle mechanical, electrical, electronic, hydraulic/pneumatic and fluid systems are dismantled, reassembled and adjusted to manufacturers' specifications  
K19 the types and causes of vehicle mechanical, electrical, electronic, hydraulic/pneumatic and fluid system, component and unit faults and failures  
K20 vehicle mechanical, electrical, electronic, hydraulic/pneumatic and fluid component and unit replacement procedures, the circumstances which will necessitate replacement and other possible courses of action  
K21 how to find, interpret and use sources of **information** on vehicle mechanical, electrical, electronic, hydraulic/pneumatic and fluid system operating specifications, diagnostic test procedures, repair procedures and legal requirements  
K22 how to select the most appropriate diagnostic testing method for the symptoms presented  
K23 how to carry out systematic diagnostic testing of vehicle mechanical, electrical, electronic, hydraulic/pneumatic and fluid systems  
K24 how to interpret, evaluate and analyse test results and vehicle data in order to identify the location and cause of vehicle system faults  
K25 how to carry out the rectification activities in order to correct faults in the vehicle mechanical, electrical, electronic, hydraulic/pneumatic and fluid systems

K26 your workplace policy and procedure for:

K26.1 work carried out under warranty  
K26.2 liaising with manufacturers and outside agencies  
K27 the relationship between test methodology and the faults repaired – the use of appropriate testing methods  
K28 how to make cost effective recommendations for rectification

### **Personal Skills**

K29 how to give straightforward presentations on technical matters  
K30 how to file and store technical **information**  
K31 how to instruct colleagues and demonstrate tasks clearly and correctly  
K32 how to conduct effective checks of your colleague's work  
K33 how to choose the best action to take when work is not in line with requirements  
K34 how to discuss colleagues' work with them in a way that will encourage them to be positive and not lead to conflict  
K35 how to give **advice** and **guidance** in a way that is appropriate to the colleague you are supporting

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K36 how to recognise a training need

K37 what might happen if you undermine colleagues' self confidence when correcting mistakes

K38 the importance of liaising with your manager when evaluating others' work and giving feedback

K39 the importance of continuous development and learning

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## Scope/range

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\*1. Information, advice\*\* and **guidance** may be about any of the following:

- 1.1. mechanical fault finding
- 1.2. electrical fault finding
- 1.3. electronic fault finding
- 1.4. hydraulic/pneumatic fault finding
- 1.5. customer handling
- 1.6. road testing
- 1.7. time
- 1.8. tools
- 1.9. equipment
- 1.10. materials
- 1.11. technical information

**2. Operating specifications** include:

- 2.1. limits
- 2.2. fits
- 2.3. tolerances

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## Glossary

*This section contains examples and explanations of some of the terms used but does not form part of the standard.*

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*Manufacturers:*

**Examples include vehicle and original equipment manufacturers.**

*Methods for improving the work of colleagues:*

**Examples include further training, on-the-job coaching, giving people more appropriate responsibilities.**

*Problems:*

**Examples include equipment, tool and material shortfalls and faults; requirements for new resources; lack of technical information; staffing or workload problems; training needs etc.**

*Support and advice:*

**Examples include demonstrations, instruction and briefings**

*Technical information:*

**This could be hard copy, electronic information or verbal advice.**

*Vehicles:*

**These can be any of the following – light vehicles. Additionally, these vehicles may be SI, CI, Hybrid, Electric or Alternative fuel vehicles.**

*Alternative fuel:*

**This is defined as any type of fuel that may be used to power an internal combustion engine, examples would include LPG, bio ethanol etc.**

## VEHICLE AREAS -

*Engine area:*

**Engines, cooling systems, electronic ignition, petrol fuel injection, diesel fuel injection, engine management systems, starting and charging systems.**

*Transmission and driveline area:*

**Clutch assemblies, clutch operating systems, manual gear boxes, automatic gear boxes (including electronic control), drivelines and hubs and final drive assemblies.**

*Chassis or Frame area:*

**Suspension systems, assisted steering systems, non-assisted steering systems, braking systems, ABS/traction control, wheels and tyres, stability systems, bodywork and related areas.**

*Electrical area:\**

**Body electrical systems (including wiring harnesses, lighting systems, auxiliaries, CANBUS systems, fibre optics, vehicle condition and monitoring, comfort and convenience, alarm systems),**

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supplementary restraint systems (SRS), heating and air conditioning systems, climate control, communication equipment, navigation systems and entertainment equipment.



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