# NATIONAL RAIL SYSTEM STANDARD 3

## HEALTH ASSESSMENT OF RAIL SAFETY WORKERS

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PREFACE

National Rail System (NRS) Standard

The objective of this NRS Standard is to provide a generic framework for the management of health assessment of rail safety workers on the National Rail System. It is applicable for all activities associated with operations of the National Rail System and is designed to meet the requirements set out in the relevant legislation and the NZ Transport Agency guidelines.

It should be read in conjunction with other applicable NRS Standards and relevant Safety Cases.

It is generic and specific to users of the National Rail System. The terminology chosen to apply to the National Rail System has been used in this NRS Standard.

Review of National Rail System (NRS) Standards

NRS Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. The user is responsible for ensuring that they are in possession of the latest edition, and any applicable amendments.

Full details of all NRS Standards are available from ONTRACK.

Suggestions for improvements to NRS Standards should be addressed to ONTRACK head office. Any inaccuracy found in an NRS Standard should be notified immediately to enable appropriate action to be taken.
HEALTH ASSESSMENT
OF RAIL SAFETY WORKERS

PART A: ASSESSMENT PROCEDURES AND MEDICAL CRITERIA
FOREWORD

This National Standard for Health Assessment of Rail Safety Workers represents a significant step in the continuous improvement of rail safety in New Zealand.

The National Standard will benefit rail safety workers by helping them maintain sound health and fitness, and will provide for equity and portability of medical certification.

The Standard adopts a risk management approach and reflects contemporary medical knowledge as well as changes in societal values.

The Standard keeps pace with advances in medical knowledge and current understanding of the impact of certain health conditions on safe working performance. Contemporary privacy and anti-discrimination principles have also been taken into account.

The new National Standard is a non-prescriptive, performance-based standard. It consists of the following:

- **Part A - Assessment Procedures & Medical Criteria**
  For use by authorised health professionals. It outlines the procedures for conducting health assessments and provides the medical criteria for judging fitness for rail safety duty.

- **Part B - Guideline for Health Risk Management**
  Provides practical guidance to assist rail organisations to perform health risk assessments for rail safety workers.
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Glossary of Terms

1. **Authorised Health Professional** means a health professional typically with a qualification in medicine or in nursing with a post graduate qualification in occupational health nursing, who has been selected by a rail organisation, on the basis of their compliance with the specified selection criteria, to undertake rail safety worker health assessments.

2. **Around the Track Personnel (ATTP)** means persons required to work on a railway where any aspect of the task they are undertaking is “on or near the track” as defined in definition 12. ATTP excludes any rail safety worker who is classified as a Safety Critical Worker.

3. **Civil Infrastructure** means track formation and drainage (but excluding track, refer definition 31), fixed structures beside, over or under the track, including supports for overhead electric traction equipment, supports for signalling and telecommunications equipment but excluding those equipments.

4. **Competence** means the possession of skills and knowledge and the application of them to the standards required in employment.

5. **Contractor** means a person who is engaged by or on behalf of any body that has been accredited under jurisdictions’ relevant rail safety legislation to provide goods or services to such a body.

6. **Controlled Environment** means a rail workplace where a risk assessment has been performed to identify hazards and implement controls to ensure that any person working in or transiting the area is not placed at risk from moving trains.

7. **Electric Traction Infrastructure** means equipment and systems associated with the supply and reticulation of electricity for traction purposes, but excluding elements of civil infrastructure supporting or otherwise associated with the equipment or systems.

8. **Employer** means a rail organisation that engages a rail safety worker, either as a paid worker or volunteer.

9. **Ensure** means to take all reasonable action insofar as controllable factors will allow.

10. **Mainline** means the line normally used for running trains through and between locations.

11. **May** indicates the existence of an option.

12. **On or near the track** means four (4) metres from the edge of the closest rail when measured horizontally and at any level above or below the rail when measured vertically, unless in a position of safety.

13. **Operator** means the person or body responsible by reason of ownership, control or management, for the provision, maintenance or operation of trains, or a combination of these; or a person or body acting on its behalf.

14. **Organisation** means an owner or an operator or a person or a body that is both owner and operator.

15. **Owner** means the person or body responsible by reason of ownership, control or management, for the construction and maintenance of track, civil and electric traction infrastructure or the construction, operation or maintenance of train control and communication systems, or a combination of these, or a person or body acting on its behalf.

16. **Rail Network** means a system of railways whether interconnected or not.

17. **Rail Safety Worker** is a worker undertaking rail safety and for this Standard includes an employee, contractor, subcontractor or volunteer performing work on a railway system:
• as a driver, second person, trainee driver, guard, supervisor, observer or authorised officer;
• as a signal operator, shunter or person who performs other work relating to the movement of trains;
• in repairs, maintenance, or upgrade of railway infrastructure, including for rolling stock or associated works or equipment;
• in construction or maintenance; or
• any other work that may be included by regulation.

18. **Railway** means a guided system designed for the movement of rolling stock which has the capability of transporting passengers, freight or both on a track together with its infrastructure and associated sidings.

19. **Risk** means the combination of the frequency or probability of occurrence and the consequences of a specified hazardous event.

20. **Risk Analysis** means a systematic use of available information to determine how often specified events may occur and the magnitude of their consequences.


22. **Risk Control** means the process of decision making which involves the implementation of physical changes, standards, policies and/or procedures for eliminating, reducing and/or managing risk.

23. **Risk Management** means the systematic application of management policies, procedures and practices to the tasks of analysing, evaluating and controlling risk.

24. **Rolling Stock** means any vehicle that operates on or uses a railway track, excluding a vehicle designed for both on- and off-track use when not operating on the track.

25. **Running Line** means any line used for the through operation of trains inclusive of mainlines, branch lines, crossing loops and shunting yards.

26. **Safety Critical Worker** means a worker whose action or inaction, due to ill-health, may lead directly to a serious incident affecting the public or the rail network.

27. **Serious Incident** for the purposes of this Standard means an accident or incident that affects the public or the network resulting in:
• the death of a person;
• incapacitating injury to a person;
• a collision or derailment involving rolling stock that results in significant damage; or
• any other occurrence which results in significant property damage.

28. **Shall** is to be understood as mandatory.

29. **Should** is to be understood as non-mandatory, that is, advisory or recommended.

30. **Signalling and Telecommunications Infrastructure** means signalling equipment and telecommunication equipment provided and used as part of the safe working and operating systems of the railway but excluding supports for such equipment.

31. **Track** means the combination of rails, rail connectors, sleepers, ballast, points and crossing and substitute devices where used.

32. **Train** means one unit of rolling stock or two or more units coupled, at least one of which is a locomotive or other self-propelled unit.

33. **Worker** means a rail safety worker as defined in Definition 17.
SECTION 1: ASSESSMENT REQUIREMENTS AND PROCEDURES

1. Overview of the Standard

1.1 Structure of the Standard

The National Standard for Health Assessment of Rail Safety Workers comprises of the following:

Part A - Assessment Procedures and Medical Criteria
Outlines the procedures for conducting health assessments and provides the medical criteria for judging fitness for duty.

It is a practical reference for health professionals authorised by rail organisations to conduct health assessments of rail safety workers and provides:

- clear medical criteria for rail safety worker capability based on available evidence and expert medical opinion;
- general guidelines for managing rail safety workers with respect to their fitness for duty;
- guidance for reporting to rail organisations, including model forms.
- the system of health assessments applied by rail organisations;
- interfaces with other health, safety and human resources initiatives;
- risk categorisation of rail safety tasks and how the health assessment requirements reflect the risks;
- types and frequencies of assessments;
- criteria by which health professionals are authorised by rail organisations.

Part A may also be used by specialist health professionals who may be consulted about a worker’s health assessment, for example, optometrists, psychologists or occupational therapists.

Part B - Guideline for Health Risk Management
Provides practical guidance to assist rail organisations to perform health risk assessments for rail safety workers.

1.2. Purpose

The Standard provides practical guidance for rail organisations to meet their legal obligations under rail safety legislation to ensure the health and fitness of rail safety workers.

This responsibility is an essential part of the rail safety management systems aimed at minimising risks to protect the safety of:
- the public;
- rail safety workers and their fellow workers; and
- the environment.

1.3 Application and Scope

The National Standard for Health Assessment of Rail Safety Workers apply to all rail organisations operating on the National Rail System.

The Standard is intended for use to assess the health and fitness of potential and existing workers to undertake rail safety work.

Whilst the Standard does address individual worker safety on and about the track, it does not cover other occupational health and safety matters such as occupational exposure. It also does not cover fatigue management nor does it include specific requirements for drug and alcohol screening, which is addressed through individual rail organisation policy. Such matters should be managed in conjunction with this Standard and are not superseded by it. The rail organisation must address such issues and integrate them with the health assessments as appropriate.
1.4 How to use the Standard

Part A of the Standard outlines the information necessary for conducting health assessments of rail safety workers. It comprises three sections:

Section 1 - Health Assessment Requirements and Procedures

Section 1 identifies the categories of rail safety workers to undergo assessment as well as the nature and frequency of the assessments and the assessment procedures.

It also outlines the system of authorisation for health professionals conducting assessments and the roles and responsibilities of the employer, worker and health professional.

It is essential that the Authorised Health Professional is familiar with the content of Section 1.

Section 2 – Medical Criteria

Section 2 details the medical criteria for assessing fitness for duty. It comprises:

• Section 2A, medical criteria for Safety Critical Worker Health Assessments (Categories 1 and 2);
• Section 2B, medical criteria for Track Safety Health Assessments (for ATTP in an Uncontrolled Environment Category 3).

The medical criteria in Section 2 are presented in chapters corresponding to body system or disease categories and are arranged alphabetically.

The medical standards provide a core assessment relevant to rail safety work, however specific details may vary between organisations. Matters such as colour vision or musculoskeletal requirements, for example, may be varied appropriate to the risks assessed in an organisation by a specialist in occupational medicine and with full documentation. Specific questionnaires used in the health assessment, such as the Epworth Sleepiness Scale or K10, are validated assessment tools and must not be varied.

Section 3 – Model Forms

Section 3 includes the model forms that may be used in administering the health assessment system.

1.5 Interfaces with Other Health and Human Resources Programs

Health assessments are one aspect of an integrated system aimed at achieving safety on the rail network. The assessments may interface with a range of other health and human resources programs.

The Authorised Health Professional will need to have some understanding of how these initiatives interface in practice. It is the responsibility of the rail organisation to ensure the health professional, where necessary is kept up to date about the organisation’s programs, policies and procedures.

2. Appointing and Authorising Health Professionals

2.1 Who May Perform Health Assessments

The rail organisation should appoint a suitably qualified and knowledgeable health professional to conduct the assessments of rail safety workers (an Authorised Health Professional).

Safety Critical Worker Health Assessments (for Category 1 and 2 workers) must be performed by a medical practitioner. Track Safety Health Assessments (for Category 3 workers) may be performed by a nurse with suitable occupational health qualifications.

Practical on-site tests, such as tests for colour vision, hearing or musculoskeletal capacity, may be performed by a person with appropriate skills and experience. Such a person is not required to be health trained but should work in conjunction with the Authorised Health Professional.
2.2 Criteria for Appointing Authorised Health Professionals

The rail organisation should ensure the Authorised Health Professional meets the selection criteria in Table 1 as a basis for appointment.

The selection criteria focus on the health professional's knowledge and understanding of the rail occupational environment, the risks associated with rail safety work and the corresponding clinical tests to be applied.

Rail organisation personnel are well equipped to make such an assessment. The criteria do not require the rail organisation to assess the health professional's medical knowledge.

The rail organisation may offer assistance to the health professional to meet the criteria. This may be done by providing them with relevant information, a briefing, and/or a site visit and a copy of Part A: Assessment Procedures and Medical Criteria.

3. Privacy Laws

In administering the rail safety worker health assessments rail organisations and examining health professionals must ensure they comply with the Privacy Principles contained in privacy legislation and that health records are managed and stored in line with the relevant legislation.

3.1 Privacy Policy

Rail organisations are required to have a privacy policy for health information. This includes provision for ensuring workers are clearly informed about:

- the purpose for collecting and storing the health information;
- what information will be stored and where;
- the fact that they can access it; and
- to whom the information may be disclosed.
Table 1. Criteria for Selection of Authorised Health Professionals

<table>
<thead>
<tr>
<th>Safety Critical Workers Health Assessments (Categories 1 and 2)</th>
<th>Track Safety Health Assessments (Category 3)</th>
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<tr>
<td>Qualifications and Experience: The health professional must have a qualification in medicine and should have an interest or experience in occupational medicine.</td>
<td>Qualifications and Experience: The health professional should have a qualification in medicine or a nursing qualification with a postgraduate qualification in occupational health nursing. For a medical professional, interest and experience in occupational medicine is desirable.</td>
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<tr>
<td>Rail Industry Knowledge: The health professional should demonstrate understanding of the rail industry environment including work performed and risks involved.</td>
<td>Rail Industry Knowledge: The health professional should demonstrate understanding of the rail industry environment including work performed and risks involved.</td>
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<tr>
<td>The Standard: The health professional should demonstrate working knowledge of Part A: Assessment Procedures and Medical Criteria, including:</td>
<td>The Standard: The health professional should demonstrate working knowledge of Part A: Assessment Procedures and Medical Criteria, including:</td>
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<tr>
<td>- Appreciation of the role of health assessments in ensuring rail safety.</td>
<td>- Appreciation of the role of health assessments in rail safety.</td>
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<tr>
<td>- Familiarity with the risk management approach used to identify the level of health assessment required.</td>
<td>- Familiarity with the risk management approach used to identify the level of health assessment required.</td>
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<tr>
<td>- Familiarity with the tasks in rail operations and with major tasks of Safety Critical Workers.</td>
<td>- Familiarity with the tasks in rail operations and with major tasks of the Around the Track Personnel.</td>
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<tr>
<td>- Knowledge of rail safety worker Risk Categories and the rationale for health assessments applied.</td>
<td>- Knowledge of rail safety worker Risk Categories and the rationale for health assessments applied.</td>
</tr>
<tr>
<td>- Knowledge of and ability to perform the Safety Critical Worker Health Assessment.</td>
<td>- Knowledge of and ability to perform the Track Safety Health Assessment.</td>
</tr>
<tr>
<td>- Understanding of requirements and reporting options for fitness for rail safety duty.</td>
<td>- Understanding of requirements and reporting options for fitness for rail safety duty.</td>
</tr>
<tr>
<td>- Knowledge of the assessment’s administrative requirements, including form completion and record keeping.</td>
<td>- Knowledge of the assessment’s administrative requirements, including form completion and record keeping.</td>
</tr>
<tr>
<td>- Understanding of ethical and legal obligations and the ability to conduct health assessments accordingly, including appropriate communication with the worker and the employer.</td>
<td>- Understanding of ethical and legal obligations and the ability to conduct health assessments accordingly, including appropriate communication with the worker and the employer.</td>
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<tr>
<td>- Understanding of ethical issues in relationships with the treating doctor/general practitioner.</td>
<td>- Understanding of ethical issues in relationships with the treating doctor/general practitioner.</td>
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Interfacing Policies and Programs. The health professional should be able to demonstrate awareness of legislation, policies or programs that might interface with or affect the performance of the health assessment for example, drug and alcohol policy, critical incident management programs, anti-discrimination legislation and privacy legislation.
3.2 Primary Purpose

Only information justifiably necessary to assess fitness for rail safety work should be collected.

Information must only be disclosed for the primary purpose for which it was collected, that is for assessing fitness for rail safety duty.

The rail organisation cannot request an examination outside the health requirements of the worker’s job and cannot provide the examining health professional with information that is not relevant to the health assessment for that job.

3.3 Information Disclosure

Health information should be reported on a need to know basis from a health professional to a rail organisation.

The Authorised Health Professional must not disclose the worker’s clinical records to the rail organisation. The rail organisation needs to know fitness for duty (or any restrictions), not the underlying medical conditions.

Worker/patient consent must be obtained to disclose any health information to a third party unless permitted by law (as with ACC). However a health professional is not prohibited from giving the rail organisation general advice about fitness for duty provided he or she does not refer to the worker’s medical details.

Where an Authorised Health Professional seeks information from a worker’s general practitioner or treating doctor to clarify the worker’s current health status, such communication should occur with the consent of the worker and should be limited to health issues that impact on rail safety.

Where a rail organisation employs the services of a Chief Medical Officer (CMO), the CMO may request a copy of the Health Assessment Record, the Safety Critical Worker Health Questionnaire, or other supporting clinical records from the Authorised Health Professional in order to ensure consistency and quality of health assessments for rail safety workers in the organisation, or to assist management of a particular worker.

3.4 Maintenance and Storage of Information

Information should be kept accurate, up to date and protected from loss and unauthorised use.

For continuity of records, a rail organisation may establish a repository for rail safety worker health records provided that such records are accessible only by Authorised Health Professionals and the Chief Medical Officer.

4. Anti-discrimination Laws

Anti-discrimination legislative requirements must be considered by rail organisations and health professionals when implementing health assessments.

These requirements include:

- Health assessments must focus on inherent job requirements, not peripheral requirements. The risk assessment must guide the health assessment process.
- For certain conditions it may be necessary to demonstrate that the condition prevents the worker from performing the rail safety task, eg through practical tests for hearing or musculoskeletal capacity.
- Any required tests should be valid and the criteria must have a clear rationale. That is, it must be a good predictor of serious illness regarding rail safety.
- If a standard must be met at entry, it should be maintained during employment and examined for periodically.
- If a criterion is not met, an employer should consider reasonable adjustments to the workplace to accommodate the disability.

While public safety considerations take precedence over anti-discrimination, this does not exempt a rail organisation from giving close consideration to discrimination issues.
5. Responsibilities and Relationships

The successful implementation of health assessments for rail safety workers relies on a clear understanding of the various responsibilities as well as effective communication between the individuals/groups involved. Such communication, including management of health records, should be consistent with the provisions of relevant Privacy legislation as discussed in the previous section.

Following is a summary of the responsibilities of the key parties and their interrelationships. Diagram 2 illustrates these relationships and the flow of information that should take place in conducting rail safety worker health assessments.

5.1 Rail Organisations

The rail organisation has a legal responsibility under the relevant transport legislation to ensure systems are in place to protect the safety of the public and the network. This includes a responsibility to ensure that the health and fitness of workers is monitored and does not jeopardise rail safety.

As an employer, the rail organisation has a duty of care under health and safety legislation to the safety of its workers.

The final decision regarding fitness for duty or any restrictions rests with the employer and involves consideration of the advice of health professionals as well as anti-discrimination and retraining issues.

Where possible, to meet anti-discrimination requirements, the employer should accommodate the limitations of the worker’s capabilities due to health issues through strategies such as job modifications, alternative duties or supervision as appropriate.

Rail organisations also have a responsibility to ensure privacy principles are maintained with respect to worker’s personal and health information.

If employing contractors, the employer is required to inform them of their obligations to ensure appropriate health assessment systems are in place for their workers.

5.2 Contractors

Rail organisations are responsible for managing their contractors and ensuring that contractors meet their responsibilities for rail safety worker health assessments.

5.3 Rail Safety Workers

Rail safety workers have a duty of care to themselves and others. Once employed, they should know their job, its implications for safety of the rail network and the public, and the importance of their health and fitness to rail safety.

They have a responsibility to notify the employer of any temporary or ongoing health condition or change in health status that is likely to affect their ability to perform their work safely. They must also comply with any review requirements of a health assessment.

Rail safety workers are also responsible for advising their employer of impairment due to medication.

Rail safety workers may request referral to an Authorised Health Professional if they are concerned about their ability to perform their work safely due to health reasons.

If rail safety workers work for more than one organisation they have a responsibility to ensure each employer is advised about conditions that may affect their safe working ability.

5.4 Health Professionals

Health professionals appointed and authorised by a rail organisation should have demonstrated that they have relevant knowledge and understanding of the rail environment, the associated risks and the Standard.

The Authorised Health Professionals should conduct health assessments in line with the procedures contained in this Part A: Assessment Procedures and Medical Criteria.

The relationship between the health professional and the worker/patient is governed by the ethics of the relevant
health profession and by privacy laws. The relationship differs from the usual doctor-patient relationship because of the involvement of a third party, the employer. The health professional should not provide personal or medical information to the employer, only information regarding work capacity.

The Authorised Health Professional should liaise with the worker’s general practitioner and treating specialists where appropriate to clarify information relating to the worker’s current health status. Such communication should occur with the consent of the worker and should be limited to health issues that impact on rail safety.

The ongoing treatment and management of medical conditions should be the responsibility of the worker’s general practitioner. Authorised Health Professionals should communicate and consult with the general practitioner and other relevant providers to ensure the effective management of the worker’s health.

The Authorised Health Professional may also liaise with the rail organisation’s Chief Medical Officer (CMO), if the organisation has one. The CMO may access workers’ medical records but is bound by privacy considerations and may not communicate medical information to the rail organisation.

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Diagram 2. Relationships in the Implementation of Health Assessments for Rail Safety Workers

![Diagram](image)

6. **Workers Who Require a Health Assessment**

Workers who carry out rail safety work for rail organisations may require a health assessment to determine their health and fitness for duty.

The definition of rail safety worker includes an employee, contractor, subcontractor or volunteer performing work on a railway:

- In a rail operational role or:
- in a rail infrastructure construction or maintenance role;
- in a rail vehicle construction or maintenance role or:
- any other work that may be included by regulation.
6.1 Categorisation of Rail Safety Workers According to Risk

The requirements for health assessments of rail safety workers are determined by a risk management approach.

The methodology for this approach is summarised in Diagram 3. The steps are explained in detail in the Guideline for Health Risk Management.

The employer is responsible for analysing the risks associated with the rail safety work performed in their operations and for assigning a Risk Category to each rail safety worker.

The risk management approach aims to ensure the level of health assessment conducted is commensurate with the risk associated with the tasks performed by the rail safety worker. As the work environment significantly determines the skills required and risk involved, a risk analysis should form the basis of all rail safety worker health assessment decisions.

The key criterion applied in the risk analysis is the extent to which the worker’s health, both physical and psychological, may impact on the safety of the rail network and the public. The nature of the task and the engineering controls available are both considered in the risk assessment. This has led to the establishment of two main Risk Categories:

- Safety Critical Work
- Non-Safety Critical Work

These two main categories are further divided into four Risk Categories overall. They help to define broad physical and psychological health attributes needed for particular rail safety tasks.

6.2 Safety Critical Workers

Safety Critical Workers are defined as those workers whose action or inaction, due to ill-health, may lead directly to a serious incident affecting the public or the rail network.

The health and fitness of these workers, especially their vigilance and attentiveness to their job, is crucial and they are therefore the main focus of this Standard.

Safety Critical Workers’ tasks are those that might affect the safety of the public and the network and are distinguished from tasks that affect only individual safety. They are also distinguished from tasks where skill has the main bearing on rail safety and ill-health is a lesser consideration.

There are two Safety Critical Worker Risk Categories.

High Level Safety Critical Worker (Category 1)

High Level Safety Critical tasks are those where a serious incident affecting the public or the network could result from sudden worker incapacity such as heart attack or blackouts. Single operator train driving on the mainline is an example of a High Level Safety Critical task.
Diagram 3. Definition of Risk Categories for Rail Safety Work

**Rail Safety Worker**

Identify the full range of tasks likely to be performed by the worker and consider the engineering and procedural environment including controls.

For any aspect of the tasks identified, could ill-health lead directly to a serious incident affecting the public or the rail network?

[YES] [NO]

**SAFETY CRITICAL**

For any aspect of the tasks identified, could **sudden incapacity** lead to a serious incident affecting the public or the rail network?

[YES] [NO]

**CATEGORY 1**
High Level Safety Critical Worker
Health requirements:
- No risk of sudden incapacity
- Physical and psychological health

**CATEGORY 2**
Safety Critical Worker (SCW)
Health requirements:
- Physical and psychological health

**CATEGORY 3**
ATTP in Uncontrolled Environment
Health requirements:
- Hearing and vision
- Mobility

**CATEGORY 4**
Others, including ATTP in Controlled Environment
No rail safety specific health requirements

**HIGH LEVEL SCW HEALTH ASSESSMENT**
- Identify risk of sudden incapacity
- Assess overall physical and psychological health
- ± OHS

**SCW HEALTH ASSESSMENT**
- Assess overall physical and psychological health
- ± OHS

**TRACK SAFETY HEALTH ASSESSMENT**
- Assess hearing and vision
- Assess mobility
- ± OHS

**NO SAFETY CRITICAL**

Is the person Around the Track Personnel? i.e. Is any aspect of the tasks identified performed “on or about the track”?

[YES] [NO]

Are all aspects of the tasks identified performed within a declared Controlled Environment?

[NO] [YES]

No rail safety health assessment required.
**Safety Critical Worker (Category 2)**

Safety Critical tasks that are not High Level include those where fail-safe mechanisms ensure sudden incapacity does not affect safety of the rail network but attentiveness is important. For example, in many cases the signalling task is Safety Critical because accurate decision-making and monitoring is important but is not High Level Safety Critical because fail-safe systems ensure the safety of the network in case of worker incapacity.

**6.3 Non-Safety Critical Workers**

Non-Safety Critical Workers are those whose health and fitness will not impact directly on the safety of the public and the rail network. These workers are categorised based on whether their health and fitness will impact on their ability to protect their own safety and that of fellow workers.

Around the Track Personnel (ATTP) is the term used to describe workers who perform Non-Safety Critical tasks on or near the track as defined. Their Risk Category depends on their likely exposure to moving rolling stock.

There are two Non-Safety Critical Worker Risk Categories.

**ATTP operating in an Uncontrolled Environment (Category 3)**

Where ATTP cannot be protected by a Controlled Environment they must have the ability to sense an oncoming train and move quickly out of the way. They are therefore required to have health assessments commensurate with these risks, including appropriate hearing, vision and mobility.

**Other, including ATTP operating in a Controlled Environment (Category 4)**

The risk to ATTP may be reduced by creating a Controlled Environment. Workers in a Controlled Environment do not need to rely on their vision, hearing and mobility to protect them from risk and do not require a health assessment.

Where workers may move between Controlled and Uncontrolled Environments the higher level of risk assessment should be applied.

Category 4 also includes those rail safety workers who do not work on or about the track as illustrated in Diagram 3.

**7. Matching the Level of Health Assessment to Risk Category**

After assigning a Risk Category to the worker, the employer will match the worker to the appropriate level of health assessment before referral to the health professional.

The health assessment requirements for the four Risk Categories for rail safety workers are summarised below.

**7.1 Safety Critical Worker Health Assessments (Categories 1 and 2)**

Safety Critical Workers should undergo a comprehensive physical and psychological assessment at pre-placement, when changing to a position involving tasks of a higher Risk Category and periodically during employment. This is to detect conditions that may affect safe working ability (for example heart disease, diabetes, epilepsy, sleep disorders, alcohol and drug dependence, psychiatric disorders and eye and ear problems).

The assessment comprises a Safety Critical Worker Health Questionnaire and clinical examination. It may also include drug screening depending on the organisation requirements.

**7.1.1 Safety Critical Worker Health Questionnaire**

This self-administered questionnaire collects a general history and helps screen for specific conditions that might affect rail safety task performance. These include:

- sleep disorders (Epworth Sleepiness Scale);
- alcohol dependency (AUDIT Questionnaire); and
- psychological problems (K10 Questionnaire).

The questionnaire is not diagnostic and no decision should be made regarding fitness.
for duty until the clinical examination is complete.

7.1.2 Clinical Examination

The clinical examination assesses the key body systems to identify conditions that might affect rail safety task performance including cardiovascular, neurological, psychological, musculoskeletal and visual systems. Referral for further tests or opinion may be required.

7.1.3 Additional Assessment Requirements High Level Safety Critical Workers (Category 1)

In addition to the components of the Safety Critical Worker Health Assessment, a High Level Safety Critical Worker must have a Cardiac Risk Score assessment to identify their risk of cardiovascular disease and collapse or sudden incapacity from heart attack or stroke etc. Tests include:

- fasting plasma glucose;
- fasting serum cholesterol (total and HDL); and
- resting ECG.

Results are combined with other risk factors such as age, cigarette smoking and blood pressure to calculate a Cardiac Risk Score on which to base predictions.

Other conditions likely to cause sudden incapacity and hence loss of control of Safety Critical Work also need to be carefully assessed, (for example epilepsy, hypoglycaemia, heart block, transient ischaemic attacks, etc) as do conditions which cause inattentiveness such as excessive daytime sleepiness or anxiety states.

7.2 Track Safety Health Assessment (Category 3)

The Track Safety Health Assessment for ATTP (Category 3) comprises eyesight and hearing tests and an assessment to ensure safe mobility around the track.

7.3 Task-specific Requirements

The Risk Categories and matched health assessments provide a general framework for defining health assessment needs. However certain tasks have specific requirements, for example for hearing and/or musculoskeletal attributes.

The rail organisation will identify such requirements and communicate these to the Authorised Health Professional.

7.4 Practical Tests

In some situations a clinical health assessment may need to be supplemented by a practical test to confirm fitness for duty. For example, practical tests for hearing or musculoskeletal capacity may be applied to confirm the worker’s ability to conduct the particular tasks required of them.

Practical tests may be conducted by persons appropriately trained in the test procedure and with experience of the tasks involved, eg a principal driver. Such persons should work in conjunction with the Authorised Health Professional.

Each rail organisation should develop their own procedures and criteria for practical testing based on their system requirements. Principles of practical testing for hearing and musculoskeletal capacity are outlined in this document.

The results of such practical tests are not transferable to other organisations/networks unless the work practices and work environments are very similar.

7.5 Drug and Alcohol Screening

Rail organisations may have established policies relating to Drug and Alcohol screening.

Rail safety workers themselves have a duty not to perform rail safety work whilst impaired by alcohol or drugs.

Pre-placement and/or Change of Risk Category Health Assessments may therefore include a drug screen depending on the rail organisation’s requirements.

Periodic Health Assessments generally do not include a drug screen. However, assessment for drug or alcohol dependence is an aspect of the Safety Critical Worker Periodic Health Assessment.

This document includes guidance and criteria for Authorised Health Professionals
to assess drug or alcohol dependence as well as guidance for managing a situation where acute drug or alcohol impairment is suspected at a Periodic Health Assessment.

8. Types of Health Assessments Required

There are three types of health assessments for rail safety workers as illustrated in Diagram 4. These aim to:

- confirm that a rail safety worker candidate is medically suited to the tasks to be performed;
- periodically monitor the rail safety worker’s health during employment to detect conditions that might affect rail safety; and
- enable a timely response to concerns about the worker’s health.

8.1 Pre-placement or Change of Risk Category Health Assessments

Rail safety workers classified in Categories 1, 2 and 3 require health assessments at pre-placement and before changing to a position involving tasks of a higher Risk Category.

The assessments are aimed at determining a worker’s fitness for rail safety duties and should match the Risk Category of the job they are entering.

Diagram 4 shows how the different types of health assessments work together to support the ongoing fitness for duty for rail safety workers.

8.2 Periodic Health Assessments

Periodic Health Assessments aim to identify health conditions that may affect safe performance of rail safety work. They should be conducted for Category 1, 2 and 3 rail safety workers according to the defined frequencies.

### Category 1 and 2 Safety Critical Workers

- At time of commencement then
- 5 yearly to age 50
- 2 yearly to age 60
- Yearly thereafter

### Category 3: ATTP in Uncontrolled Environment

- At time of commencement then
- at age 40
- 5 yearly thereafter

The frequencies are a minimum requirement based on evidence of rate of age-associated degenerative illness, the increased power of the revised assessment to detect rail safety workers at risk and comparison with local and overseas standards.

Employers may choose to implement more frequent Periodic Health Assessments should the need and rationale be identified.

An Authorised Health Professional may also recommend more frequent assessments for the purpose of health surveillance (ie Triggered Health Assessment), depending on the needs of the individual worker.

Ongoing treatment of medical conditions should continue to be the responsibility of the worker’s general practitioner.

The program of comprehensive Periodic Health Assessments should be maintained even if more frequent Triggered Health Assessments are performed for an individual’s particular condition.

8.3 Triggered Health Assessments

Triggered Health Assessments are conducted in response to incidents or concerns regarding the worker’s ability to perform their job safely. They are likely to address a particular health issue and include scheduled review assessments for conditional fitness for duty (Fit for Duty Subject to Review).
Triggered Health Assessments aim for early intervention and appropriate management of health problems likely to affect safety. They overlay Periodic Health Assessments and help to identify and manage illness of unpredictable and rapid onset. For example, psychological conditions (e.g., anxiety states) are not age dependent and onset patterns are not clearly defined. Therefore they may not be readily identified at a Periodic Health Assessment. Rail organisations should be alert to indicators of ill-health such as recurrent absenteeism, repeated incidents and recent traumatic events, and discuss these with the rail safety worker. This may lead to triggered referral for health or neuropsychology assessment, retraining.
in competencies or referral to the Employee Assistance Program.

To ensure appropriate referrals and transparency in decision-making, the rail organisation should develop and distribute clear referral criteria for Triggered Health Assessments.

Examples of trigger situations include:

**Scheduled Review Assessments (Fitness for Duty Subject to Review)**

Health assessments scheduled for workers assessed Fit for Duty Subject to Review or Temporarily Unfit for Duty Subject to Review are the most common triggered referrals. They are more frequent than standard Periodic Health Assessments to allow for closer monitoring of a health condition. Review intervals are recommended by the Authorised Health Professional.

**Sick Leave and Patterns of Absenteeism**

Workers who have been absent from work due to an injury or illness and who have a condition that may adversely affect their ability to perform rail safety duties, should be assessed for fitness for duty before returning to work, taking account of their rehabilitation plan.

Recurrent absenteeism may also flag the need for referral for health assessment. Sick leave review systems should support and validate such referrals.

**Accident/Incident Patterns**

Accident/incident patterns may indicate worker difficulties or health issues. The rail organisation’s incident investigation and management procedures should consider potential health (including psychological) issues and should require referral for health assessment as appropriate.

**At Worker’s Request**

Workers should report to the employer any illness or health problem likely to affect their ability to work safely, including impairment from medication.

Table 2 summarises the health assessment requirements and types of health assessments for the various Risk Categories of rail safety worker.

### 9. Procedures for Conducting Health Assessments

The administrative, clinical and reporting procedures which should be followed by the Authorised Health Professional in conducting health assessments for rail safety workers are described below.

#### 9.1. Clinical Appointment and Documentation

An appointment for an assessment will be made either by the employer or the worker.

Prior to the appointment the employer will forward to the health professional the relevant forms and documentation. The health professional should not conduct the assessment without the appropriate forms.

Model forms are included in Part 3 of this Volume and include:
- **Health Assessment Request and Report** which will indicate the nature of the worker’s job and the level (eg Category 1) and type (eg Pre-placement) of health assessment required;
- **Safety Critical Worker Health Questionnaire** which the worker should have completed and brought to the appointment; and
- **Health Assessment Record for Health Professional** which guides the clinical examination and provides a convenient standardised template for recording a general assessment of fitness for rail safety duty.
### Table 2. Summary of Health Assessment Requirements for Rail Safety Workers

#### CATEGORY 1 - High Level Safety Critical Worker

Workers performing tasks critical to safety of the rail system and whose action, inaction or collapse, due to ill-health, may lead directly to a serious incident affecting the public or the rail network.

<table>
<thead>
<tr>
<th>Type of Health Assessment Required</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-placement / Change of Risk Category Health Assessments</strong></td>
<td>On commencement and when moving to a position involving tasks of a higher Risk Category.</td>
</tr>
<tr>
<td>Safety Critical Worker Health Assessment including:</td>
<td></td>
</tr>
<tr>
<td>- Safety Critical Worker Questionnaire &amp; history</td>
<td></td>
</tr>
<tr>
<td>- Comprehensive physical and psychological assessment</td>
<td></td>
</tr>
<tr>
<td>- Vision and hearing</td>
<td></td>
</tr>
<tr>
<td>- Drug Screen plus</td>
<td></td>
</tr>
<tr>
<td>- Cardiac Risk Score</td>
<td>Additional health assessments may be implemented to meet OHS requirements.</td>
</tr>
</tbody>
</table>

#### Periodic Health Assessments

| Safety Critical Worker Health Assessment including:       |                                                                                                                                 |
| - Safety Critical Worker Questionnaire & history          | 5 yearly to age 50                                                                                                                                 |
| - Comprehensive physical and psychological assessment    | 2 yearly to age 60                                                                                                                                 |
| - Vision and hearing plus                                | Yearly thereafter                                                                                                                                 |
| - Cardiac Risk Score                                      | Note: Depending on the needs of the worker, Authorised Health Professionals may also recommend more frequent assessments for health surveillance. Ongoing treatment and management of medical conditions should continue to be the responsibility of the worker's general practitioner. |

Additional health assessments may be implemented to meet OHS requirements.

<table>
<thead>
<tr>
<th>Triggered Health Assessments</th>
<th>As determined by circumstances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature of health assessment</td>
<td>will depend on the triggering circumstances.</td>
</tr>
</tbody>
</table>
CATEGORY 3 - Around the Track Personnel operating in an Uncontrolled Environment

Those workers who are required to operate on or about the track but without engineering or administrative controls to protect them from moving rolling stock, and whose action or inaction due to ill-health may endanger their safety or those of work colleagues.

<table>
<thead>
<tr>
<th>Type of Health Assessment Required</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-placement / Change of Risk Category Health Assessments</strong></td>
<td>On commencement and when moving to a position involving tasks of a higher Risk Category.</td>
</tr>
<tr>
<td>Track Safety Health Assessment including:</td>
<td></td>
</tr>
<tr>
<td>• Vision and hearing</td>
<td></td>
</tr>
<tr>
<td>• Mobility</td>
<td></td>
</tr>
<tr>
<td>• Drug Screen</td>
<td></td>
</tr>
<tr>
<td>Additional health assessments may be implemented to meet OHS requirements.</td>
<td></td>
</tr>
</tbody>
</table>

| Periodic Health Assessments                                            |                                                                           |
| Track Safety Assessment including:                                     |                                                                           |
| • Vision and hearing                                                   |                                                                           |
| • Mobility                                                             |                                                                           |
| Additional health assessments may be implemented to meet OHS requirements. |                                                                           |

| Triggered Health Assessments                                           |                                                                           |
| Nature of health assessment will depend on the triggering circumstances. |                                                                           |

Note: Depending on the needs of the worker, Authorised Health Professionals may also recommend more frequent assessments for health surveillance. Ongoing treatment and management of medical conditions should continue to be the responsibility of the worker's general practitioner.

CATEGORY 4 - Other including Around the Track Personnel (ATTP) Operating in a Controlled Environment

Other than those in Categories 1-3

<table>
<thead>
<tr>
<th>Type of Health Assessment Required</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-placement / Change of Risk Category Health Assessments</strong></td>
<td>On commencement</td>
</tr>
<tr>
<td>• Drug Screen</td>
<td></td>
</tr>
<tr>
<td>Additional health assessments may be implemented to meet OHS requirements.</td>
<td></td>
</tr>
</tbody>
</table>

High Level Safety Critical Workers will require an ECG and blood test prior to the appointment. These should be completed in advance and the results forwarded to the Authorised Health Professional directly.

Safety Critical Workers should also bring supporting documentation to a Periodic Health Assessment. The employer will indicate what documentation has been included as relevant to the case.

This should include a copy of the report from the previous health assessment and may include summary reports of sick leave, ACC claims, notifiable incident history (if relevant) and/or indication of a positive alcohol or drug impairment assessment. The Safety Critical Worker should also be asked to bring all medications or a list of their medications to the appointment.

By agreement between the examining health professional and the employer, the worker may be requested to attend for an audiogram prior to examination.

9.2 Facilities and Equipment

The examination room should be well lit, quiet and offer privacy with a nearby toilet. Equipment should include:
• Snellan chart, Ishihara plates (45cm and 70cm acuity tests, or referral to optometrist);
• sphygmomanometer;
• urine test container and dipsticks; and
• lap top/PC for recording data and calculating risk score (optional).

9.3 Orienting the Worker/Patient
To orient and inform the worker about the health assessment procedure:
• exchange normal greetings and names;
• check the ID photo of the person;
• formally explain to the worker the purpose of the health assessment, and that the results will be discussed with them; and
• formally explain Privacy Principles: all clinical and health information will remain confidential and will not be forwarded to the employer without the worker’s consent. The report provided to management will be in functional terms in relation to their fitness to perform rail safety duties.

9.4 Safety Critical Worker Questionnaire
A Safety Critical Worker (Category 1 or 2) attending for a Periodic Health Assessment should bring a completed Safety Critical Worker Health Questionnaire. The assessment should not proceed unless this has been completed.

Review the worker’s responses to the questionnaire. Elicit further information as required.

Calculate scores for various sections of the questionnaire and record the results on the Health Assessment Record for Health Professional. These sections include:
• Epworth Sleepiness Scale (Question 4);
• alcohol AUDIT questionnaire (Question 5); and
• K10 questionnaire (Question 6).

Clarify and discuss aspects of the questionnaire as required to establish history.

Request the person to sign the questionnaire as a truthful statement, then countersign and date.

9.5 Clinical Assessments Relevant to the Worker’s Risk Category
When examining a worker to assess their fitness for duty, the functionality of various body systems should be addressed as outlined in Part 2 of this document.

Additional tests or referral to a specialist may be required if and when clinical examination raises the possibility of potentially significant problems. It may be necessary to contact the treating doctor to clarify information regarding the worker’s health. This must be done with the worker’s consent.

9.6 Safety Critical Workers (Categories 1 and 2)
Health Assessments for Safety Critical Worker (Categories 1 and 2) require assessment of all the following areas, discussed alphabetically.

Alcohol Dependence or Impairment
The main purpose of the health assessment with respect to alcohol is to examine for harmful drinking patterns or alcohol dependence.

Consider the result of the AUDIT Questionnaire (Question 5 of the Safety Critical Worker Health Questionnaire) together with relevant history, and/or clinical signs. If the score is raised (≥ 8) or other clinical findings warrant it, discuss the findings with the worker to determine possible explanations and to agree an approach to management such as baseline biochemistry, or referral to general practitioner or to Employee Assistance Program.

If during a Periodic Health Assessment, the examining health professional identifies apparent acute alcohol impairment, this should be managed according to the specific chapter in Part 2A addressing Alcohol Dependence and Impairment.
In cases where the worker shows impairment they will need to be immediately classed Temporarily Unfit for Duty. If dependency is apparent the health professional will need to make a judgement regarding fitness for duty pending further assessment.

**Cardiovascular**

The cardiovascular examination should include:

- Blood pressure - this may be taken sitting or supine. If blood pressure is \( \geq 150/95 \) it should be repeated after 15 minutes supine;
- Pulse rate;
- Heart sounds;
- Peripheral pulses;
- Cardiac Risk Score (High Level Safety Critical Workers, Category 1 only).

Note worker’s age, whether they are a smoker, blood pressure, ECG results, fasting cholesterol (total and HDL) and fasting plasma glucose. For scoring, see Part 2A, *Cardiovascular Diseases*.

**Chest/lungs and Abdomen**

Chest, lungs and abdomen should be examined, but a genital examination is not required.

**Drug Dependence or Impairment**

Drug screening may be required for Pre-placement/Change of Risk Category Health Assessments or for a specifically referred Triggered Health Assessment. Screening should be conducted in line with *Australian/New Zealand Standard 4308:2001: Procedures for the Collection, Detection and Quantification of Drugs of Abuse in Urine*.

If during a Periodic Health Assessment, the examining health professional identifies impairment which has no apparent medical basis, this should be managed according to the specific chapters in Part 2A addressing Drugs (*Illicit* and *Prescribed or OTC*).

In cases where the worker shows impairment they will need to be immediately classed Temporarily Unfit for Duty. If dependency is apparent the health professional will need to make a judgement regarding fitness for duty pending further assessment.

**Hearing**

If facilities are available, conduct audiometry according to procedures outlined in Part 2A, *Hearing*. Alternatively an audiologist report will be provided with the health assessment request. The hearing threshold level for pure tones is defined as the number of decibels above standard audiometric zero for a given frequency at which the listener's threshold of hearing lies when tested in a suitable sound attenuated environment.

**Neurological/Musculoskeletal**

An assessment of neurological and locomotor function should be aligned with the specific requirements of the worker’s task but will generally involve assessment of the following:

- ability to flex, extend and rotate head;
- ability to raise arms above head by swinging them outwards;
- ability to flex and extend arms and grasp hands; and
- ability to flex trunk to reach about the knees.

The assessment should also involve observation of the worker’s gait and performance of a Romberg Test (patient stands with feet together, then closes eyes).

**Psychological Health**

Consider the result of the K10 questionnaire (Question 6 of the Safety Critical Workers Health Questionnaire) together with other relevant history, clinical signs and accident/incident patterns reported by the rail organisation.

If the score is raised (≥19) or other clinical observations warrant it, discuss the findings with the worker to determine possible explanations such as work stress, domestic crises or endogenous causes, and agree an approach to management of the condition such as referral to general practitioner/psychiatrist or to an Employee Assistance Program.
In some cases the worker will need to be immediately classed Temporarily Unfit for Duty pending further assessment (refer Part 2A, *Psychiatric Disorders*).

### Sleep

Consider the result of the Epworth Sleepiness Scale score (Question 4 of the Safety Critical Worker Health Questionnaire) together with relevant history, clinical signs etc.

If the score is raised (≥16) or other clinical findings warrant it, discuss the findings with the worker to determine possible explanations and agree an approach to management eg referral to general practitioner, or referral to sleep clinic for polysomnography, or letter to management about roster (Fit for Duty Subject to Job Modification), etc. The worker may need to be immediately classed Temporarily Unfit for Duty pending further assessment (refer Part 2A, *Sleep Disorders*).

### Urinalysis

Urine should be tested for protein and sugar.

### Vision

*Visual acuity* is tested with a Snellan chart that includes at least five letters on the 6/12 line, at a distance of 6m (or scaled to 3m). Explain what is required to the worker and ask them to read lines near the top to familiarise them with the chart.

Visual acuity should be measured one eye at a time (monocularly) without correction in the first place. More than two errors in reading the letters of any line is regarded as a failure to read the line.

*Fields.* Sit about 1m from the worker. Ask him/her to look at your nose. Extend your arms to be halfway between you and just within your own field of vision. Ask the worker to indicate to you when they notice your finger movement. Perform this test at 180° right and left, and various other points. Any defect in visual field should lead to referral for detailed assessment.

*Colour Vision* is screened for using Ishihara plates under good illumination. Show the worker the trial plate and explain the test. Then proceed to show the colour plates with numbers, noting any errors. The colour vision standards (“colour vision normal” and “colour vision defective safe”) vary between jobs and the chapter on *Vision and Eye Disorders* should be referred to for specific advice.

### 9.7 Additional Tests and Rail Specific Resources

To further assist in assessment there are some additional tests and rail specific resources to be aware of.

#### Neuropsychological Tests

Neuropsychological tests regarding aptitudes for drivers of trains have been specifically developed for use in recruitment and other situations. They may be used for assessment of drivers who have had injury or illness affecting mental processes to help gauge their recovery and suitability for work. The tests should be applied by a psychologist experienced in their use.

#### Practical Assessment

A worker with borderline impairment may be referred to the employee’s manager or to an experienced internal supervisor/assessor to conduct a practical test. This is particularly relevant to musculoskeletal and neurological impairments. Such an assessment should be arranged through the worker’s management and could be in conjunction with a physiotherapist or occupational therapist if the opinion of such a professional is also needed.

### 9.8 Track Safety Assessments for Category 3

The Track Safety Health Assessment (Category 3) requires assessment of vision, hearing and mobility only. For specific guidance refer Part 2B of this Volume.

### 10. Fitness for Duty Classifications

To assess the fitness for rail safety duty, the results of the health assessment should be
considered in relation to the specific criteria outlined in Part 2 of this Volume.

The various levels of fitness for duty are described below, including reference to the requirements for managing the worker. The Case Studies in Part 3 also illustrate how these levels of fitness for duty are applied in practice.

10.1 Functional Classifications for Reporting

The functional classification of a worker’s fitness for duty are provided below. Note that:

• determinations may be combined; and
• a particular worker may move from one classification to another as you progress through the medical assessment and investigation process.

**Fit for Duty**

This indicates that the person has met all the criteria in the Standard and is to be reviewed in line with the normal Periodic Health Assessment schedule.

**Fit for Duty Subject to Review**

This indicates that the person has not met all the criteria in the Standard, however the condition in question is sufficiently under control that normal duties may be permitted. Continuation of normal duties would be conditional on the person being reviewed more frequently than the Periodic Health Assessment schedule requires (Triggered Assessment). The review period is specified by the Authorised Health Professional.

**Fit for Duty Subject to Job Modification**

This indicates that the person has not met all the criteria in the Standard, but could undertake current rail safety duties if suitable modifications were made to the job. These modifications may include:

• physical changes to equipment;
• changes to rosters, eg to help manage sleep disorders; or
• requirements for the worker to operate under supervision.

Job modifications may not be practicable in various areas of rail safety work. For example, drivers are expected to drive any locomotive for which they are trained and hence proposed job modifications may require discussion with the worker and supervisor.

**Temporarily Unfit for Duty Subject to Review**

This indicates that the worker has not met all criteria in the Standard and cannot perform current rail safety duties at present. However, the condition is anticipated to improve with treatment and the worker will be reviewed to determine fitness status. This differs from ordinary short-term illness causing absenteeism.

Temporarily Unfit for Duty may also be applied in situations where a clear diagnosis has not been made in the case of an undifferentiated illness, for example where a worker is being investigated for blackouts. The Authorised Health Professional should advise about the period for review. A Safety Critical Worker who is assessed as Temporarily Unfit for Duty may be assessed fit for Non-Safety Critical alternative duties.

**Permanently Unfit for Duty**

This indicates that the worker has not met all criteria in the Standard, their condition is permanent and they will not be able to perform current rail safety duties in the future. Normal company policies such as redeployment may be considered.

10.2 Additional Considerations

**Temporary Illnesses**

The Standard does not presume to deal with the myriad of conditions that may affect health on a short-term basis and for which a rail safety worker may be referred for assessment regarding fitness to resume duty. Such conditions may include post-major surgery, severe migraine, fractures to limbs or stress.

Clinical judgment is usually required on a case-by-case basis although the text in
each chapter gives some advice on the clinical issues to be considered.

Undifferentiated Illness

A rail safety worker may be referred with symptoms which could have implications for their job but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made and before the worker and employer can be confidently advised.

Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease which will affect rail safety work.

Generally, a Safety Critical Worker who presents with symptoms of a potentially serious nature, for example chest pains, blackouts, delusional states, dizzy spells and the like, should be assessed Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be assessed as fit for Non-Safety Critical alternative duties.

Complex conditions and conditions not covered in the Standard

Where a worker has a systemic disorder or a number of medical conditions, there may be additive or cumulative detrimental effects on judgement and overall function. For example, there may be a combination of impaired vision, hearing and locomotor dysfunction, or combinations of physical and mental illness and associated medication. If these or other clinical conditions are not adequately covered in Part 2, the health professional should consider:

- The nature of the worker’s tasks and the worker’s capacity to perform the duties safely. The key issue to consider is: could the condition affect vigilance or lead to sudden collapse and thus affect safety of the rail network?
- The modification of tasks or the environment to accommodate a person’s condition without compromising their efficiency or the health and safety of others, or incurring unreasonable expense.

10.3 Specialist Referral

The worker’s condition may warrant referral to a specialist. In such cases the Authorised Health Professional should explain fully the nature of the rail safety tasks involved and the concerns regarding health status. The specialist report should be sent to the Authorised Health Professional, not to the employer.

10.4 Informing and Counselling the Worker

The health professional should advise the worker of the results of the assessment and where relevant, about the ways in which their condition may impair their ability to conduct rail safety work. As part of this process, the worker becomes better informed about the nature of his or her condition, the extent to which he or she can maintain control over it, the importance of regular medical review and the need for medication where appropriate.

Should the worker be found Unfit for Duty, the health professional should take a conciliatory and supportive role while explaining fully the risks posed by the worker’s condition with respect to rail safety work.

10.5 Reporting to the Employer

Should the worker be assessed as Unfit for Duty either temporarily or permanently, the health professional should notify the employer immediately by phone to discuss the implications of the assessment and to allow the employer to make appropriate arrangements. The health professional should not discuss specific clinical information, only recommendations in terms of fitness for duty including any necessary job modifications.

In all cases the health professional should complete the report section of the appropriate Form. This report should not include any clinical information. Only the functional assessment of fitness for duty or otherwise, and any recommendations regarding specialist review or job modifications and the like should be reported to the employer.
The Questionnaire and Health Assessment Record should not be returned to the employer.
11. Record Keeping
Appropriate records should be maintained by the Authorised Health Professional including:

- completed Safety Critical Worker Health Questionnaire;
- completed Health Assessment Record;
- copy of the report form sent to the employer;
- copies of relevant support information; and
- any additional clinical notes.

In addition and in accordance with legislation:

- the worker’s medical records should be made available to them on request;
- the worker’s medical records are subject to confidentiality.

12. Communicating with the Worker’s General Practitioner and Other Health Professionals

The Authorised Health Professional should ensure an ethical relationship with the worker’s general practitioner and other treating professionals, and ensure continuity of care is maintained.

Reference to the general practitioner should be made for ongoing treatment requirements, for management of lifestyle issues and to discuss issues such as medication causing impairment.

The Authorised Health Professional should obtain the worker’s consent if needing to contact the worker’s general practitioner or treating specialist to clarify information relating to the worker’s health condition.

Diagram 5 provides a summary of the process involved in conducting a health assessment for fitness for rail safety duties and illustrates the roles and responsibilities of the various parties.
Diagram 5. Conducting a Health Assessment for Fitness for Rail Safety Duties

**EMPLOYER**
- Requests report on worker’s fitness to undertake rail safety duties.
- Provides worker with Health Assessment Request & Report Form and identifies the type of health assessment to be undertaken (High Level SCW, SCW or Track Safety); and the reason for the assessment (Preplacement, Change of Risk Category, Periodic, Triggered).
- Provides Health Questionnaire to Safety Critical Worker and Health Assessment Record for Health Professional.
- Provides additional information as required including sick leave, critical incident & workers’ compensation history.

**WORKER**
- Presents for pathology/ECG tests as required (High Level SCW).
- Brings all current medication.
- Brings photo ID.
- Completes Health Questionnaire as required (SCW).

**HEALTH PROFESSIONAL**
- Confirms worker identification.
- Reviews SCW Health Questionnaire and other information.
- Undertakes health assessment in accordance with the Assessment Procedures and Medical Criteria.
- Liaises with treating health professional and CMO as required to confirm health status.

**FIT FOR DUTY**
Meets all relevant medical criteria.

**FIT FOR DUTY SUBJECT TO JOB MODIFICATION**
Does not meet all medical criteria, but could work if suitable modifications were made to the job.

**FIT FOR DUTY SUBJECT TO REVIEW**
Does not meet all medical criteria, but could work if condition is sufficiently under control and person reviewed.

**TEMPORARILY UNFIT FOR DUTY**
Does not meet all medical criteria and cannot work at present, but will be reviewed to determine status.

**PERMANENTLY UNFIT FOR DUTY**
Does not meet the medical criteria and cannot perform the job in the future.

**Practitioner completes Health Assessment Report in accordance with findings indicating:**
- whether fit or otherwise (as above);
- recommendations regarding frequency of ongoing review as appropriate;
- recommendations regarding specialist review/referral as appropriate;
- recommendations regarding practical assessment and job modification as appropriate.

**Practitioner also:**
- advises and counsels employee accordingly;
- communicates as appropriate with the employee’s GP and CMO;
- forwards report to employer by phone if situation warrants immediate communication;
- retains copy of report for file together with original of Health Questionnaire and Health Assessment Record.

**EMPLOYER**
- Makes a decision regarding the employee’s fitness for rail safety duties;
- Advises and implements appropriate practical assessment;
- Advises and implements appropriate job modifications;
- Advises and implements appropriate medical reviews;
- Advises and implements re-deployment as required.

**WORKER**
- Attends specialist consultations as required.
- Attends follow-up review appointments as required.
Section 2: MEDICAL CRITERIA

Recent advances in the diagnosis and treatment of various illnesses, combined with the introduction of privacy legislation, have led to substantial revision of the medical standards for rail safety workers.

This section outlines the new medical criteria for assessing fitness for rail safety duty and is arranged in chapters alphabetically according to body system or medical condition. Each chapter provides general information about the condition and its effects on safety, and then provides advice about the medical assessment of the condition. The table in each chapter sets out the criteria to be met for fitness for rail safety duty.

The main focus of this section is on serious conditions that would impact on the ability to perform rail safety work. The criteria emphasise function in relation to the job rather than being based on diagnosis or impairment. Specialist advice may be useful regarding assessment of Safety Critical Workers.
SECTION 2A: MEDICAL CRITERIA FOR SAFETY CRITICAL WORKER HEALTH ASSESSMENTS (Safety Critical Workers Categories 1 and 2)

1. ALCOHOL DEPENDENCE AND IMPAIRMENT

1.1 RELEVANCE TO SAFETY CRITICAL WORK

Alcohol Impairment and Legislative Requirements

Alcohol consumption is well known for the acute effects it has on vigilance and reaction times, and hence increased risk of an error and accident occurring. This has led some rail companies to develop policies aimed at zero blood alcohol when performing rail safety work.

Individual organisation policy will address requirements for testing for alcohol impairment, which may include post incident, reasonable cause and random testing. The Authorised Health Professional should acquaint themselves with the policies in their jurisdiction and the procedures of the organisation for which they provide services.

This Standard supports alcohol policies through the provision of advice to Authorised Health Professionals regarding the management of suspected impairment at the time of health assessment. However specific procedures for drug and alcohol screening are beyond the scope of this Standard.

Harmful Drinking and Alcohol Dependence

In addition to the acute effects of alcohol, prolonged high intake may affect the liver or brain and lead to loss of vigilance. The Safety Critical Worker Health Assessment uses the AUDIT questionnaire to assess drinking behaviour and to indicate the need for further investigation.

1.2 EFFECT OF HABITUAL INTOXICATION ON OTHER DISEASES

Alcohol dependent drivers and workers are a particular concern and are disproportionately represented in (road vehicle) crashes. Prolonged alcohol abuse leads to effects on end organs such as the brain or peripheral nerves or liver, which may lead to further impairment of safety. Persons who are frequently intoxicated and who also suffer from certain other medical conditions are often unable to give their other medical problems the careful attention required.

Alcohol and Epilepsy

Many patients with epilepsy are quite likely to have a seizure if they miss their prescribed medication even for a day or two, particularly when this omission is combined with inadequate rest, emotional turmoil, irregular meals and alcohol. Patients under treatment for any kind of epilepsy are unfit for Safety Critical Work if they are frequently intoxicated.

Alcohol and Diabetes

Patients with diabetes and on insulin have a special problem when they are frequently intoxicated. Not only may they forget to inject their insulin at the proper time and in the proper quantity, but also their food intake can get out of balance with the insulin dosage. This may result in a hypoglycaemic reaction or the slow onset of diabetic coma. Such persons should not perform Safety Critical Work.

Alcohol and Medication

Some medications are incompatible with ingestion of alcohol (for example some sedatives). Where alcohol is thought to be a problem, medical practitioners should advise the patient accordingly and consider alternative medication where available. If the medication is likely to cause any level of impairment, the practitioner must take appropriate steps to restrict involvement in Safety Critical Work while on medication, for example, reporting worker as Temporarily Unfit for Duty while on the medication.

1.3 ALCOHOL AND ILLICIT DRUGS

The use of alcohol in association with a number of ‘recreational’ drugs such as marijuana exacerbates their effect and significantly increases the risk of an error. Therefore where alcohol is thought to be a problem, consideration should also be given to illicit drug use and appropriate steps taken.

1.4 MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS

Medical criteria for fitness for duty are outlined in the table overleaf.

The AUDIT questionnaire should be applied as shown in Section 5 of the Safety Critical Worker Questionnaire and scored as follows:

- Questions 5.1 – 5.8, scores are 0,1,2,3,4, from left to right.
- Questions 5.9 and 5.10, scores 0,2,4, from left to right.
- Thus total maximum score is 40.
A score of eight or more indicates a strong likelihood of hazardous or harmful alcohol consumption. If the score is raised or other clinical findings warrant it, discuss the findings with the worker to determine possible explanations and to agree an approach to management eg, biochemical tests as a baseline, referral to general practitioner or to Employee Assistance Program, etc. In some cases the worker will need to be immediately classed Temporarily Unfit for Duty pending further assessment or Fit for Duty Subject to Review.

Referral to a specialist in alcohol may be considered. Workers with alcohol problems who are not truthful may score lower on their questionnaire than should be the case.

**Alcohol Dependence**: Alcohol dependence is a syndrome the key elements of which are:
- narrowing of the drinking repertoire (every day's drinking is similar to the day before);
- salience of drinking (priority given to maintaining alcohol intake and neglect of previously important work and social activities);
- increased tolerance to alcohol;
- withdrawal symptoms on stopping drinking;
- relief or avoidance of withdrawal symptoms by further drinking;
- subjective awareness of compulsion to drink (impaired control, urges or cravings); and
- reinstatement of drinking after abstinence.

Three or more of the above fit the International Classification of Diseases (ICD) criteria for dependence.

**Binge Drinking**: Binge drinking has been defined as the intermittent consumption of alcohol to intoxication in short periods of time (six standard drinks for a male and four for a female). During binges persons may exhibit behaviour similar to that of problem drinkers and may be considered unfit for rail safety work.

Tests of blood alcohol are not routinely required at Periodic Health Assessment, but biochemical tests for alcohol abuse may be conducted if clinically indicated or if referred for a triggered assessment. The worker should be classified Fit for Duty Subject to Review or Temporarily Unfit for Duty as appropriate to the clinical appraisal.

In the event of a person presenting for a Periodic Health Assessment with evidence of impairment, an assessment of the impairment should be conducted and the person managed as shown in Diagram 6.

**Diagram 6. Periodic Health Assessment – Management of possible impairment due to alcohol or drugs (illicit or prescription/OTC)**

- Is there evidence of impairment?
  - Preliminary Impairment Assessment (speech, eyes, breathing, skin, actions, movements, balance, attitude, comprehension).

- Discuss with worker
  - Is there a medical basis for impairment, ie medical condition causing impairment or prescription/OTC medication taken for a defined purpose.

- Medical basis
  - Classify Temporarily Unfit for Duty.
  - If appropriate, discuss medication with general practitioner/treating doctor in order to resolve impact on employment.
  - If appropriate, refer to relevant chapter for medical conditions.
  - Identify review period.

- If suspect alcohol or illicit drug use:
  - Classify Temporarily Unfit for Duty and advise on report impairment without clear medical basis.
  - Contact employer regarding impairment without clear medical basis and await further instructions from employer.

- No further action (continue with health assessment)
### MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – ALCOHOL

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alcohol Impairment</strong></td>
<td>The criteria for Fit for Duty are not met:</td>
</tr>
<tr>
<td></td>
<td>• If the worker is impaired by alcohol. Refer to Diagram 6 for management.</td>
</tr>
<tr>
<td><strong>AUDIT Questionnaire</strong></td>
<td>If the person has an AUDIT score of 8 or greater the person may be classified Fit for Duty Subject to Review or Temporarily Unfit for Duty while causes are being assessed and managed.</td>
</tr>
<tr>
<td><strong>Alcohol Dependency</strong></td>
<td>The criteria for Fit For Duty are not met:</td>
</tr>
<tr>
<td></td>
<td>• If there is alcohol dependency; or</td>
</tr>
<tr>
<td></td>
<td>• If the worker has a strong history of alcohol abuse and clinical evidence of abuse is limited to biochemical findings without clinical signs.</td>
</tr>
<tr>
<td></td>
<td>Fitness for Duty Subject to Review may be recommended, taking into account the opinion of an appropriate specialist and the nature of the work:</td>
</tr>
<tr>
<td></td>
<td>• If the worker has stopped drinking for a substantial period; and</td>
</tr>
<tr>
<td></td>
<td>• Demonstrates good evidence of insight into the problem; and</td>
</tr>
<tr>
<td></td>
<td>• Is compliant with treatments; and</td>
</tr>
<tr>
<td></td>
<td>• Shows no evidence of end organ damage relevant to Safety Critical Work as specified elsewhere in this Volume.</td>
</tr>
</tbody>
</table>

**Temporary Illnesses.** The Standard does not presume to deal with the myriad of conditions that may affect health on a short to medium term basis and for which the Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis although the text in each chapter gives some advice on the clinical issues to be considered.

**Undifferentiated Illness.** A Safety Critical Worker may present with symptoms that could have implications for their job but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease which will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties.

**Further reading**


2. ANAESTHESIA

2.1 RELEVANCE TO SAFETY CRITICAL WORK

Anaesthesia may affect the ability to perform Safety Critical Work. Post anaesthesia, both physical and mental capacity may be impaired for some time thus affecting a worker’s ability to work safely. This is applicable to both general and local anaesthesia. The effects of general anaesthesia will depend on factors such as the duration of anaesthesia, the drugs administered and the surgery performed. The degree of effect of local anaesthesia on the ability to perform Safety Critical Work is dependent on dosage and region of administration. A further factor to consider is the effects of analgesics and sedatives (refer Drugs – Prescription and OTC).

2.2 MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS

There are no specific criteria regarding fitness for duty following anaesthesia.

In cases of post-operative recovery following surgery or procedures under general or local anaesthesia, it is the responsibility of the anaesthetist to advise patients about the potential effects of the anaesthesia and the need to allow for an appropriate period of physical and mental recovery before resuming Safety Critical Work.

Following minor procedures under local anaesthesia without sedation (for example, dental block), return to work may be acceptable immediately following the procedure.

Following brief surgery or procedures with short acting anaesthetic drugs, the worker may be Fit for Duty after a normal night’s sleep. After longer surgery or procedures requiring anaesthesia, it may not be safe to perform Safety Critical Work for 24 hours or more. Decisions should be made on a case-by-case basis.

Reference:

Lichtor, J., Alessl, R., Lane, B. Sleep tendency as a measure of recovery after drugs used for ambulatory surgery. Anesthesiology 2002;96:878-883
3. CANCER

3.1 RELEVANCE TO SAFETY CRITICAL WORK

Cancer may affect the ability to perform Safety Critical Work. The site and degree of advancement of the cancer is a prime consideration because the cancer may affect various body functions. This is particularly important for cerebral tumours. Refer elsewhere in this Volume for advice regarding other specific organ involvement, for example, liver metastases.

Treatment with opioids, chemotherapy or radiotherapy may present side effects which interfere with an individual’s functional capacity and thus may be incompatible with the performance of Safety Critical Work.

3.2 MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS

Medical criteria for fitness for duty are outlined in the following table.

Cases should be assessed on an individual basis regarding the site of the cancer, the response to chemotherapy and radiotherapy and any side effects. This will also involve assessing the patient’s functional capacity and what medication the patient is taking.

If the tumour involves the brain the patient should not undertake Safety Critical Work, subject to further assessment. Neuropsychological assessment may be helpful in this regard. An assessment by a Principal Driver may also be useful.

**Palliative Care:** Patients with cancer are often prescribed opioids, particularly for palliative care. Safety Critical Workers will require careful individual assessment. (Refer also Drugs – Prescription and OTC).

### MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – CANCER

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer</td>
<td>The effects at the primary site or of metastases are mainly covered by criteria given elsewhere in this Volume.</td>
</tr>
</tbody>
</table>
| intracranial tumours | The criteria for Fit for Duty are not met:  
- If the person has evidence of primary or secondary cancer within the brain.  
Fit for Duty Subject to Review may be recommended, taking into account the opinion of an appropriate specialist and the nature of the work:  
- Three months after successful treatment of the tumour; and  
- If the person is likely to remain stable and physical and mental abilities are judged by the treating specialist to be adequate for safe working.  
Neuropsychologist and Principal Driver assessment may be helpful. |

**Temporary Illnesses.** The Standard does not presume to deal with the myriad of conditions that may affect health on a short to medium term basis and for which the Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis although the text in each chapter gives some advice on the clinical issues to be considered.

**Undifferentiated Illness.** A Safety Critical Worker may present with symptoms that could have implications for their job but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease which will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties.
4. CARDIOVASCULAR DISEASES

4.1 RELEVANCE TO SAFETY CRITICAL WORK

Cardiovascular disease may affect the ability to perform Safety Critical Work due to sudden incapacity such as from a heart attack or an arrhythmia. This is particularly relevant to Category 1, High Level Safety Critical Workers.

Cardiovascular disease may also affect concentration and ability to control machinery due to onset of chest pain or palpitations or dyspnoea, which is relevant to both Category 1 and 2 Safety Critical Workers.

Symptomatic heart disease as well as pre-symptomatic disease needs to be detected. This is made possible through the use of screening tests beginning with the Cardiac Risk Score (see below).

A Category 1 High Level Safety Critical Worker such as a train driver, who is asymptomatic but found to have an increased likelihood of a heart attack on a Cardiac Risk Score, should be assessed more fully than an ordinary patient because of the risks they pose to rail safety.

Cardiovascular disease also may have end organ effects such as on the brain (stroke), vasculature of the extremities, and vision. The relevant chapters should be referred to for advice on assessment of these effects.

4.2 MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS

Medical criteria for fitness for duty are outlined in the tables commencing on page 46.

Standards for chronic disorders are made with the presumption that the disorder is stable and well controlled. If this is not the case, a specialist consultation should be conducted. Fitness for Duty Subject to Review may be recommended after initial assessment by an appropriate specialist.

4.2.1 Cardiac Risk Assessment

Assessment of cardiac risk involves clinical assessment as well as use of the Cardiac Risk Score. Clinical assessment includes the evaluation of information such as:

- symptoms, such as undetermined chest pain;
- family history, such as first degree relatives having cardiovascular events in mid-life;
- past history;
- co-morbidity such as obesity (BMI ≥30), inactivity, obstructive sleep apnoea, depression;
- work factors such as exposure to climatic extremes in course of work, etc.

All information should be used in assessing fitness especially for Category 1 High Level Safety Critical Workers. Clinical judgement may be needed to determine if a person is Fit for Duty, Fit for Duty Subject to Review, or Temporarily Unfit for Duty while being further assessed.

Cardiac Risk Score: for High Level Safety Critical Workers

The health assessment for High Level Safety Critical Workers incorporates the Cardiac Risk Score as a tool for predicting risk of a cardiovascular event, and in particular heart attack, over 5 years. It considerably enhances the power of the assessment to identify workers at risk of sudden incapacity and to guide their management.

The Cardiac Risk Score is based on data from the American Heart Association (Heart to Heart www.med-decisions.com) and has been developed by Civil Aviation Authority (CAA). The score has been adapted to reflect the risks of the rail environment.

The Heart Foundation web site provides a calculator for the score and also shows the reduction in score to be obtained if risk factors are successfully modified. This can assist in worker education.

The Cardiac Risk Score is utilised as follows:

1. Data Collection

Obtain the information for the Cardiac Risk Score calculator as follows:

- age and sex;
- cigarette smoking;
- blood pressure as measured supine;
- ECG - report specifically requiring information regarding presence of left ventricular hypertrophy;¹;
- fasting blood for Total and HDL cholesterol; and
- fasting plasma glucose (level over 7mmol/L is diabetic).

2. Calculation

Calculate the score using Table 3: Coronary Heart Disease Risk Factor Prediction Chart.

3. Stratification and Risk Management

The Cardiac Risk Score is associated with a probability of a cardiovascular event in the next 5-10 years. The higher the score the higher the probability. Therefore management of workers is

¹ Left Ventricular Hypertrophy (LVH)

The Sokolow-Lyon criterion for LVH is met if the amplitude of the S wave in V1 added to the amplitude of the R wave in V5 is greater than 35mm. There are other considerations, with LVH regarded as more severe if there are additional S-T and T wave changes.
determined partly by their risk score and partly by their overall cardiac risk assessment.

- Score ≥32 (probability ≥ 25% in 5 years). Worker is unfit for High Level Safety Critical work. They should be referred for stress ECG and classed Temporarily Unfit for Duty pending results and appropriate management.

- Score 22-31 (probability 11-24% in 5 years). Worker is referred for stress ECG. While awaiting results of ECG the worker may be assessed as Fit for Duty Subject to Review or Temporarily Unfit for Duty depending on overall cardiac risk assessment.

- Score 15-21 (probability 5-9% in 5 years). Worker is assessed for specific risk factors and overall cardiac risk, including obesity, physical activity and family history. The worker may be managed by referral to general practitioner for risk factor modification and/or stress ECG and/or other tests as clinically appropriate. While awaiting results of further investigations the worker may be classed Fit for Duty Subject to Review or Temporarily Unfit for Duty depending on overall assessment. They should be reviewed annually.

- Score <15 (probability <5% in 5 years). Worker assessed regarding overall cardiac risk assessment and managed accordingly including referral to general practitioner as required. They may be classed Fit for Duty or Fit for Duty Subject to Review depending on overall assessment.

**Stress ECG.**

The stress ECG should be conducted using the Bruce protocol. The exercise capacity should be ≥ 90% of the age/sex predicted capacity (Bruce et al 1973).

Where stress ECG is positive or clinical assessment warrants it, referral to a cardiologist should be made for further assessment and advice on management.

**Risk Factors**

Where risk factors are identified eg raised blood pressure, smoker etc, the worker should be referred to their general practitioner and other appropriate programs. The worker should be reviewed annually to monitor management of their risk factor profile. Where hypertension is identified as a risk factor, refer to the section on hypertension.

---

**Diagram 7. Management of Cardiac Risk Score**

```
Calculate Cardiac Risk Score (CRS) and consider overall risk assessment

If CRS ≥ 32
  Assess Temporarily Unfit for Duty
  Refer for stress ECG

If CRS 22 – 31
  Assess Temporarily Unfit or Fit Subject to Review depending on clinical picture
  Refer for stress ECG

If CRS 15 – 21
  Does overall risk assessment warrant ECG?
    YES
      Assess Fit Subject to Review or Temporarily Unfit for Duty
    NO
      Assess Fit for Duty

If CRS < 15
  Do risk factors require modification?
    YES
      Refer to cardiologist
      Manage as appropriate
    NO
      Review as per scheduled Periodic Health Assessment
```

**Effective Date:** 18 November 2010  All printed copies are uncontrolled
Table 3. **Coronary Heart Disease Risk Factor Prediction Chart**

(Civil Aviation Safety Authority)

<table>
<thead>
<tr>
<th>Age (If Female)</th>
<th>Age (If Male)</th>
<th>HDL-Cholesterol</th>
<th>Total-Cholesterol</th>
<th>Systolic Blood Pressure</th>
<th>Other</th>
<th>Pts</th>
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</thead>
<tbody>
<tr>
<td>30 -12</td>
<td>30-2</td>
<td>65-68</td>
<td>3-99</td>
<td>4-30</td>
<td>-2</td>
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<td>4-57</td>
<td>6-70</td>
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<td>113-120</td>
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<td>9-70</td>
<td>3</td>
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<td>14-70</td>
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<td>15-70</td>
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<td>16-70</td>
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<td>21-70</td>
<td>21-70</td>
<td>15</td>
<td>275-287</td>
</tr>
</tbody>
</table>

1. **Find Points For Each Risk Factor**

   - Age (Pts)
   - HDL-Cholesterol (Pts)
   - Total-Cholesterol (Pts)
   - Systolic Blood Pressure (Pts)
   - Other (Pts)

2. **Sum Points For All Risk Factors**

   - Age (Pts)
   - HDL-Cholesterol (Pts)
   - Total-Cholesterol (Pts)
   - Systolic Blood Pressure (Pts)
   - Smoker (Pts)
   - Diabetes (Pts)
   - ECG-LVH (Pts)

   **NOTE: Minus points subtract from total**

3. **Look up risk corresponding to point total**

4. **Compare to Average 10 Year Risk**

<table>
<thead>
<tr>
<th>Probability (%)</th>
<th>Probability (%)</th>
<th>Probability (%)</th>
<th>Probability (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pts 5Yr. 10Yr.</td>
<td>Probability (%)</td>
<td>Probability (%)</td>
<td>Probability (%)</td>
</tr>
<tr>
<td>Pts 5Yr. 10Yr.</td>
<td>Probability (%)</td>
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</tr>
<tr>
<td>Pts 5Yr. 10Yr.</td>
<td>Probability (%)</td>
<td>Probability (%)</td>
<td>Probability (%)</td>
</tr>
<tr>
<td>Pts 5Yr. 10Yr.</td>
<td>Probability (%)</td>
<td>Probability (%)</td>
<td>Probability (%)</td>
</tr>
<tr>
<td>Age Women</td>
<td>Probability (%)</td>
<td>Probability (%)</td>
<td>Probability (%)</td>
</tr>
<tr>
<td>Men</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Effective Date: 18 November 2010**

All printed copies are uncontrolled
Modified from Chart by The American Heart Association, April 2002
4.2.2 Other Cardiovascular Conditions

Suspected Angina Pectoris: Where chest pains of uncertain origin are reported, every attempt should be made to reach a positive diagnosis and the worker counselled in the meantime to restrict his or her Safety Critical Work. Generally it would be wise to classify the person as Temporarily Unfit for Duty until investigations exclude heart disease. If the tests are positive or the person remains symptomatic and requires anti-angina medication for the control of symptoms, the criteria listed for proven angina pectoris apply.

Cardiac surgery may be performed for various reasons including valve replacement, excision of atrial myxoma or correction of septal defects. In some cases this is curative of the underlying disorder. Refer Table 4 on Non-working Periods. In other cases the condition may not be stabilised and hence needs to be individually assessed. All cardiac surgery patients should be advised regarding returning to Safety Critical Work in the short-term as for any other post-surgery patient and may be classed as Temporarily Unfit for Duty.

Deep venous thrombosis may occur in association with surgery or from clotting disorders. A risk to Safety Critical Work occurs if a pulmonary embolus arises. DVT need to be assessed with regard to the likelihood of recurrence over a long period to gauge the impact on fitness for duty. A DVT arising in the course of surgery is unlikely to have impact on fitness for duty because it is self-limiting. Treatment often involves anti-coagulants and this section in the Standard should also be referred to.

Anti-coagulant therapy may be used for disorders of cardiac rhythm, following valve replacement or for deep venous thrombosis to lessen the risk of emboli. However, if not adequately controlled there is a risk of bleeding which, in the case of an intracranial bleed may acutely affect Safety Critical Work. Such workers may only work if well controlled and subject to review.

Hypertension is associated with increased risk of heart attack and stroke which is particularly important in High Level Safety Critical Workers. Assessment of workers with high blood pressure should include end organ damage relevant to safe working, the presence of other risk factors which increase the likelihood of cardiovascular event, and the possibility that treatment may cause hypotension.

Hypertension presents as a spectrum of blood pressures with the highest posing the greatest risk and therefore a graded response is appropriate.

- Workers found to have blood pressure (treated or untreated) consistently greater than 200/110 pose an unacceptable risk and should be classed Temporarily Unfit for Duty and referred for treatment.
- Workers with blood pressure less than 200/110 but greater than 150/95 (treated or untreated) may be classed as Fit for Duty Subject to Review. They should be treated so as to obtain a level of less than 150/95 within 9 months, with 3 monthly review. (The review need not be by a cardiologist). If this is not achieved they should be classified Unfit for Duty. Aggressive treatment may require attention as appropriate, to compliance, weight-loss, decreased alcohol, regular exercise, decrease salt intake, etc.
- Blood pressure less than 150/95 is acceptable but further reduction is to be encouraged. The worker should be classed Fit for Duty Subject to Review.
- Blood pressure less than 140/90 is ideal. Workers who obtain this level only on treatment should be classified Fit for Duty Subject to Review. Workers who are untreated and have this blood pressure should be classed Fit for Duty.

Where causative factors of hypertension have been identified and cured, the worker should initially be classed Fit for Duty Subject to Review but if after adequate follow-up, blood pressure is normal, they may be exempted from review.

Effects of Safety Critical Work on the Heart: A further problem in those who have established ischaemic heart disease is that Safety Critical Work such as train driving causes occasional emotional and sensorimotor arousal leading to a faster heart rate and fluctuation in blood pressure. Such workers may need to respond to emergency which theoretically could trigger angina, or even infarction.

Non-Work Periods: A number of cardiovascular incidents and procedures may impact on short-term Safety Critical Work capacity as well as long-term fitness for duty, for example, AMI or aneurysm repair. Such situations present an obvious risk. The worker should be classified as Temporarily Unfit for Duty and should not undertake Safety Critical Work for the appropriate period, as laid out in Table 4. The recommendations regarding fitness for duty should be considered once the condition has stabilised and work capacity can be assessed per the criteria outlined in this chapter.
### Table 4. Suggested Non-working Periods Post Cardiovascular Events or Procedures

<table>
<thead>
<tr>
<th>Event / Procedure</th>
<th>Minimum non-working period for Safety Critical Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Myocardial Infarction</td>
<td>3 months</td>
</tr>
<tr>
<td>Aneurysm Repair</td>
<td>3 months</td>
</tr>
<tr>
<td>Angioplasty</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Cardiac Arrest</td>
<td>As determined by treating specialist</td>
</tr>
<tr>
<td>Cardiac Defibrillator</td>
<td>N/A</td>
</tr>
<tr>
<td>Cardiac Pacemaker Insertion</td>
<td>1 month</td>
</tr>
<tr>
<td>Coronary Artery By-pass Grafts</td>
<td>3 months</td>
</tr>
<tr>
<td>Deep Vein Thrombosis</td>
<td>As determined by treating specialist</td>
</tr>
<tr>
<td>Heart/ Lung Transplant</td>
<td>3 months</td>
</tr>
<tr>
<td>Pulmonary Embolism</td>
<td>As determined by treating specialist</td>
</tr>
<tr>
<td>Syncope</td>
<td>3 months</td>
</tr>
</tbody>
</table>

### MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – CARDIOVASCULAR DISEASES

#### CONDITIONS

### Acute Myocardial Infarct

**CRITERIA**

The person should not perform Safety Critical Work for at least three months after an AMI.  

The criteria for Fit for Duty are not met:

- If the person has had an acute myocardial infarction.

Fit for Duty Subject to Review may be recommended, taking into account the opinion of a cardiologist and the nature of the work:

- At least 3 months after an uncomplicated AMI;  
- If the clinical history is one of minimal symptoms; and  
- If a Bruce Treadmill Test (or equivalent protocol) is $\geq 90\%$ of the age/sex predicted exercise capacity and thallium or sestamibi scan show no evidence of myocardial ischaemia.  
- If myocardial ischaemia is demonstrated a coronary angiogram may be offered. If that shows lumen diameter reduction of less than $70\%$ in a major coronary branch, and less than $50\%$ in the left main coronary artery, the person may perform Safety Critical Work, subject to annual review.  
- If the result of the angiogram shows a lumen diameter reduction of equal to or greater than $70\%$ in a major coronary branch and less than $50\%$ in the left main coronary artery (or if an angiogram is not conducted), Fit for Duty Subject to Review may be recommended:
  1. If the clinical history is one of minimal symptoms; and  
  2. There is an exercise tolerance of $\geq 90\%$ of the age/sex predicted exercise capacity on the Bruce Treadmill Test (or equivalent protocol); and  
  3. There is no evidence of severe ischaemia, that is, less than 2mm ST segment depression on an exercise ECG and absence of a large defect on a stress perfusion scan; and  
  4. There is an ejection fraction of 40% or over.

The presence of other risk factors should also be considered.

### Aneurysms Abdominal and Thoracic

The person should not perform Safety Critical Work for at least three months post repair.  

The criteria for Fit for Duty are not met:

- If the person has aortic aneurysm, thoracic or abdominal.

Fit for Duty Subject to Review may be recommended, taking into account the opinion of a cardiologist and the nature of the work:

- At least 3 months after repair;  
- If the condition is minor; or
**MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – CARDIOVASCULAR DISEASES (CONT)**

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>CRITERIA</th>
</tr>
</thead>
</table>
| Angina      | The criteria for Fit for Duty are not met:  
• If the person is subject to angina pectoris.  
Fit for Duty Subject to Review may be recommended, taking into account the opinion of a cardiologist and the nature of the work, in the following circumstances:  
1. If a Bruce Treadmill Test (or equivalent protocol) is ≥90% of the age/sex predicted exercise capacity and thallium or sestamibi scan show no evidence of myocardial ischaemia.  
2. If myocardial ischaemia is demonstrated a coronary angiogram may be offered. If that shows lumen diameter reduction of less than 70% in a major coronary branch, and less than 50% in the left main coronary artery, the person may perform Safety Critical Work, subject to annual review.  
3. If the result of the angiogram shows a lumen diameter reduction of equal to or greater than 70% in a major coronary branch and less than 50% in the left main coronary artery (or if an angiogram is not conducted), Fit for Duty Subject to Review may be recommended:  
• If the clinical history is one of minimal symptoms; and  
• There is an exercise tolerance of ≥90% of the age/sex predicted exercise capacity on the Bruce Treadmill Test (or equivalent protocol); and  
• There is no evidence of severe ischaemia, that is, less than 2mm ST segment depression on an exercise ECG and absence of a large defect on a stress perfusion scan; and  
• There is an ejection fraction of 40% or over.  
The presence of other risk factors should also be considered. Where surgery or angioplasty is undertaken to relieve the angina, the criteria listed in the table below apply. |
| Angioplasty | The person should not perform Safety Critical Work for at least four weeks after the angioplasty.  
The criteria for Fit for Duty are not met:  
If the person has had coronary angioplasty Fit for Duty Subject to Periodic Review may be recommended, taking into account the opinion of a cardiologist and the nature of the work:  
• At least 4 weeks after the angioplasty;  
• If the clinical history is one of minimal symptoms; and  
• There is an exercise tolerance of ≥90% of the age/sex predicted exercise capacity on the Bruce Treadmill Test (or equivalent protocol); and  
• There is no evidence of severe ischaemia, that is, less than 2mm ST segment depression on an exercise ECG and absence of a large defect on a stress perfusion scan; and  
• There is an ejection fraction of 40% or over. |
| Anti-coagulant therapy | The criteria for Fit for Duty are not met:  
• If the person is on anti-coagulant therapy.  
Fit for Duty Subject to Review may be recommended, taking into account the opinion of a cardiologist or haematologist and the nature of the work:  
• If the therapy is satisfactory. |
| Arrhythmia | The criteria for Fit for Duty are not met:  
• If the person has a history of recurrent or persistent arrhythmia, which may result in syncope or incapacitating symptoms.  
Fit for Duty Subject to Review may be recommended, taking into account the opinion of a cardiologist, and the nature of the work:  
• If the condition has been cured surgically (for example, Wolff-Parkinson White syndrome); or  
• If the condition has been successfully treated medically for at least three months.  
If the person is taking anti-coagulants refer to anti-coagulants therapy above. |
### MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – CARDIOVASCULAR DISEASES (CONT)

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>CRITERIA</th>
</tr>
</thead>
</table>
| **Cardiac Arrest**             | The non-working period following a cardiac arrest should be determined by the treating specialist.  <br>The criteria for Fit for Duty are not met:  
  - If the person has suffered a cardiac arrest.  
  Fit for Duty Subject to Review may be recommended, taking into account the opinion of a cardiologist and the nature of the work, following an appropriate non-working period, and depending on the cause of the cardiac arrest and response to treatment. |
| **Cardiac Risk Score**         | The cardiac risk score is to be interpreted in the context of overall cardiovascular risk assessment.  
  For details of management refer to the text and Diagram 7.  
  If Cardiac Risk Score is:  
  - 22-31: refer for stress ECG. Whilst awaiting results classify Fit for Duty Subject to Review or Temporarily Unfit for Duty depending on overall risk assessment.  
  - 15-21: refer to general practitioner for risk factor modification or refer for stress ECG if appropriate. Whilst awaiting investigation classify Fit for Duty Subject to Review or Temporarily Unfit for Duty depending on overall risk assessment. Review annually.  
  - <15 assess risk factors and other clinical data and refer to general practitioner as appropriate. Classify Fit for Duty or Fit for Duty Subject to Review depending on overall risk assessment. Review as appropriate.  
  Refer related criteria as required eg hypertension, diabetes. |
| **Cardiac Defibrillator (AICD)** | The criteria for Fit for Duty are not met:  
  - If the person has a cardiac defibrillator implanted for ventricular arrhythmias. |
| **Cardiac Pacemaker**          | The person should not perform Safety Critical Work for at least one month after insertion of a pacemaker.  
  The criteria for Fit for Duty are not met:  
  - If a cardiac pacemaker is required.  
  Fit for Duty Subject to Review may be recommended, taking into account the opinion of a cardiologist with expertise in electrophysiology and the nature of the work:  
  - At least 1 month after insertion of the cardiac pacemaker; and  
  - After consideration of the relative risks of pacemaker dysfunction (see also Cardiac Defibrillator). |
| **Congenital Disorders**       | The criteria for Fit for Duty are not met:  
  - If the person has a complicated congenital heart disorder.  
  Fit for Duty Subject to Review may be recommended, taking into account the opinion of a cardiologist and the nature of the work:  
  - If there is a minor congenital heart disorder such as pulmonary stenosis, atrial septal defect, small ventricular septal defect, bicuspid aortic valve, patent ductus arteriosus or mild coarctation of the aorta; and  
  - There are no other disqualifying conditions. |
| **Coronary Artery Bypass Grafting (CABG)** | The person should not perform Safety Critical Work for at least three months after CABG.  
  The criteria for Fit for Duty are not met:  
  - Following CABG.  
  Fit for Duty Subject to Review may be recommended, taking into account the opinion of a cardiologist and the nature of the work:  
  - At least 3 months after CABG; and |
There is minimal residual musculoskeletal pain after the chest surgery; and
• If the clinical history is one of minimal symptoms; and (cont…)

## MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – CARDIOVASCULAR DISEASES (CONT)

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coronary Artery Bypass Grafting (CABG)</strong> (continued)</td>
<td>• There is an exercise tolerance of ≥90% of the age/sex predicted exercise capacity on the Bruce Treadmill Test (or equivalent protocol); and&lt;br&gt;• There is no evidence of severe ischaemia, that is, less than 2mm ST segment depression on an exercise ECG and absence of a large defect on a stress perfusion scan; and&lt;br&gt;• There is an ejection fraction of 40% or over. The presence of other risk factors should also be considered.</td>
</tr>
<tr>
<td><strong>Deep Vein Thrombosis (DVT)</strong></td>
<td>The non-working period following DVT should be determined by the treating specialist. The criteria for Fit for Duty are not met:&lt;br&gt;• If the person suffers deep vein thrombosis which is liable to recurrence or embolus. Fit for Duty Subject to Review may be recommended, taking into account the opinion of a specialist and the nature of the work:&lt;br&gt;• Following an appropriate non-working period; and&lt;br&gt;• Depending on the cause of the thrombosis and the response to treatment.</td>
</tr>
<tr>
<td><strong>Dilated Cardiomyopathy</strong></td>
<td>The criteria for Fit for Duty are not met:&lt;br&gt;• If the person has a dilated cardiomyopathy. Fit for Duty Subject to Review may be recommended, taking into account the opinion of a cardiologist and the nature of the work:&lt;br&gt;• If the ejection fraction is greater than 40%.</td>
</tr>
<tr>
<td><strong>ECG Changes: Strain Patterns, Bundle Branch Blocks or Heart Block</strong></td>
<td>An ECG is only required if clinically indicated. The criteria for Fit for Duty are not met:&lt;br&gt;• If the person has an electrocardiographic abnormality, for example left bundle branch block, pre-excitation or changes suggestive of myocardial ischaemia or previous myocardial infarction. Fit for Duty Subject to Review may be recommended, taking into account the opinion of a cardiologist and the nature of the work:&lt;br&gt;• If the condition has been cured surgically; or&lt;br&gt;• If the condition has been successfully treated medically for at least 3 months; or&lt;br&gt;• There is an exercise tolerance of ≥90% of the age/sex predicted exercise capacity on the Bruce Treadmill Test (or equivalent protocol); and&lt;br&gt;• There are no other disqualifying conditions.</td>
</tr>
<tr>
<td><strong>Heart Failure</strong></td>
<td>The criteria for Fit for Duty are not met:&lt;br&gt;• If the person has heart failure. Fit for Duty Subject to Review may be recommended, taking into account the opinion of a cardiologist and the nature of the work:&lt;br&gt;• If there is an exercise tolerance of ≥90% of the age/sex predicted exercise capacity on the Bruce Treadmill Test (or equivalent protocol); and&lt;br&gt;• There is an ejection fraction of 40% or over; and&lt;br&gt;• There is a satisfactory response to treatment; and&lt;br&gt;• The underlying cause of the heart failure is considered.</td>
</tr>
<tr>
<td><strong>Heart/Lung Transplant</strong></td>
<td>The person should not perform Safety Critical Work for at least three months post-transplant. The criteria for Fit for Duty are not met:</td>
</tr>
<tr>
<td>• If the person has had a heart or heart/lung transplant. Fit for Duty Subject to Review may be recommended, taking into account the opinion of a transplant cardiologist and the nature of the work.</td>
<td></td>
</tr>
</tbody>
</table>
### MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – CARDIOVASCULAR DISEASES (CONT)

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>CRITERIA</th>
</tr>
</thead>
</table>
| **Hypertension**                 | The criteria for Fit for Duty are not met:  
  - If the person’s sitting blood pressure is consistently 200/110 or greater (treated or untreated); or  
  - If there is end organ damage (cardiac, cerebral, or retinal) which will impair safe working; or  
  - If treatment results in marked postural hypotension or impaired alertness.  
  The presence of other risk factors should also be considered.  
  Persons with blood pressure greater than 200/110 should be classified Temporarily Unfit for Duty until fully assessed and the opinion of a cardiologist obtained.  
  Fitness for Duty Subject to Review may be considered if treatment is satisfactory with blood pressure less than 200/110 over a four week follow-up period.  
  Persons with blood pressure between 150/95 – 200/110 may be classed Fit for Duty Subject to Review at least 3 monthly.  
  A blood pressure of less than 150/95 should be obtained within 9 months.  
  If not the patient should be classed Unfit for Duty.  
  Persons with blood pressure less than 150/95 may be classed Fit for Duty Subject to Review.  
  Persons with blood pressure less than 140/90 who obtain this level only after treatment should be classed Fit for Duty Subject to Review. |
| **Hypertrophic Cardiomyopathy**  | (HCM) The criteria for Fit for Duty are not met:  
  - If the person has Hypertrophic Cardiomyopathy.  
  Fit for Duty Subject to Review may be recommended, taking into account the opinion of a cardiologist and the nature of the work:  
  - If the person is asymptomatic; and  
  - The left ventricular ejection fraction is >40; and  
  - There is an exercise tolerance of ≥90% of the age/sex predicted exercise capacity on the Bruce Treadmill Test (or equivalent protocol) without significant cardiac symptoms or significant ST segment (>2mm) shift; and  
  - An absence of severe left ventricular hypertrophy, a family history of sudden death, or ventricular arrhythmia on Holter testing. |
| **Pulmonary Embolism**           | The non-working period following pulmonary embolism should be determined by the treating specialist.  
  The criteria for Fit for Duty are not met:  
  - If the person has suffered a pulmonary embolism.  
  Fit for Duty Subject to Review may be recommended, taking into account the opinion of an appropriate specialist and the nature of the work:  
  - Following an appropriate non-working period; and  
  - Depending on the cause of the embolus and response to treatment. |
| **Stroke**                       | See Neurological Disorders. |
| **Syncope due to Hypotension**   | (Vasovagal and autonomic dysfunction) The person should not perform Safety Critical Work for at least three months after syncope.  
  The criteria for Fit for Duty are not met:  
  - If the condition is severe enough to cause episodes of loss of consciousness without warning.  
  Fit for Duty Subject to Review may be recommended, taking into account the opinion of an appropriate specialist and the nature of the work depending on:  
  - Identification of the underlying cause; and/or  
  - The institution of satisfactory treatment. |
| **Valvular Heart Disease**       | The criteria for Fit for Duty are not met:  
  - If the person has any history or evidence of valve disease, with or without surgical repair or replacement, associated with symptoms or a history of embolism, arrhythmia, cardiac |

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enlargement (on chest X-ray greater than 16cm), abnormal ECG, high blood pressure; or

- If the person is taking anti-coagulants.  (cont…)

### MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – CARDIOVASCULAR DISEASES (CONT)

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>CRITERIA</th>
</tr>
</thead>
</table>
| Valvular Heart Disease   | Fit for Duty Subject to Review may be recommended noting the criteria specified above in relation to anti-coagulant therapy; or  
                          | - If mitral stenosis is present with echocardiograph evidence of moderate (valve area <1.5cm\(^2\)) or severe stenosis.  
                          | Fit for Duty Subject to Review may be recommended, taking into account the opinion of a cardiologist and the nature of the work:  
                          | - If the person’s cardiological assessment shows mild valvular disease of no haemodynamic significance, and there is no other cardiac condition per this Volume which would render the person unfit to perform Safety Critical Work; or  
                          | - Three months following successful surgery and there is no other cardiac condition per this Volume which would render the person unfit to perform Safety Critical Work. |

### Temporary Illnesses.

The Standard does not presume to deal with the myriad of conditions which may affect health on a short to medium term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis although the text in each chapter gives some advice on the clinical issues to be considered.

### Undifferentiated Illness.

A Safety Critical Worker may present with symptoms which could have implications for their job but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease which will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties.

### Further Reading


Cardiovascular Disease and Driving [www.csanz.edu.au](http://www.csanz.edu.au)


5. **DIABETES**

5.1 **RELEVANCE TO SAFETY CRITICAL WORK**

Diabetes may affect the ability to perform Safety Critical Work due to sudden loss of concentration and loss of ability to control machinery. This is particularly relevant to Category 1 High Level Safety Critical Workers but confusion may also affect judgement that is relevant to both Category 1 and 2 Safety Critical Workers.

Diabetes may affect a person’s ability to perform Safety Critical Work, either through loss of consciousness in a hypoglycaemic episode or from end organ effects on relevant functions, including effects on vision, the heart, the peripheral nerves and vasculature of the extremities particularly the feet.

The main hazard in Safety Critical Workers with diabetes requiring insulin is the unexpected occurrence of hypoglycaemia.

5.2 **MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS**

Medical criteria for fitness for duty are outlined in the table overleaf.

For diabetes-related end organ damage, for example diabetic retinopathy, see the Vision and Eye Disorders chapter. The presence of diabetes is an important factor in the Cardiac Risk Score for Category 1 Safety Critical Workers (refer Cardiovascular Diseases).

Adequacy of control may be assessed by tests including glycosylated haemoglobin and review of home blood glucose monitoring records.

**Hypoglycaemia**

Hypoglycaemia causing collapse is particularly important in High Level Safety Critical Workers.

A defined hypoglycaemic event relevant to Safety Critical Work is one of sufficient severity to cause impairment of perception, impairment of motor skills or consciousness, or abnormal behaviour. It is to be distinguished from mild hypoglycaemic symptoms such as sweating, tremulousness, hunger and tingling around the mouth which are common occurrences in the life of a person with diabetes treated with insulin and some hypoglycaemic agents.

People with diabetes are trained to aim for normal glucose levels in order to prevent long-term end organ damage due to hyperglycaemia. This presents a challenge for managing workers to minimise risk of hypoglycaemia.

Hypoglycaemia may be caused by many factors including non-compliance or alteration to medication, unexpected exertion or irregular meals. Irregular meals may be an important consideration with long distance operation or those operating on shifts.

Impairment of consciousness and judgement may develop rapidly and result in the loss of control of a train or tram. Loss of awareness of hypoglycaemia (hypoglycaemic unawareness) is an important consideration. People with long standing diabetes can develop unawareness of the early symptoms of hypoglycaemia, especially those individuals frequently experiencing low blood glucose levels. They can progress directly into the more severe stage of brain and nervous system dysfunction, although the changes can be very subtle initially. Individuals who are known to them, such as family members, often recognise the initial stages of a slight mood change or impaired judgement or a little clumsiness as an early hypoglycaemic warning in a person with diabetes treated with insulin.

When a Safety Critical Worker with insulin-dependent diabetes is classed Fit for Duty Subject to Review the worker should keep a diary of blood glucose levels, taking rosters into account, as agreed with the examining doctor - partly so the worker knows they are safe for work and partly so control of their diabetes can be readily checked at their triggered review.

When assessing a worker with insulin treated diabetes an annual report from the person’s general practitioner, or an independent specialist physician or endocrinologist is recommended. The report should include details of general health, indication of satisfactory diabetes control and freedom from severe complications.

The frequency of any mild hypoglycaemic attacks and of any significant hypoglycaemia should be recorded. Hypoglycaemic unawareness may be diagnosed if there is self-metered blood glucose levels of \(<3.0\) on repeated occasions without neurohumoral symptoms. Whenever hypoglycaemic unawareness is suspected specialist review is advisable. Recommendations may include blood glucose awareness training (BGAT), education and changes in management.

It is sometimes important to interview family members, as people with diabetes are often reluctant to admit they have been suffering from hypoglycaemic episodes as they are clearly aware of their significance in terms of their employability. However, such inquiries must be made with the person’s consent. If an individual is subject to lack of awareness of hypoglycaemic symptomatology, then they are unsuitable for working roles in which they are responsible for Safety Critical Work.

The worker who has a defined hypoglycaemic episode or experiences a hypoglycaemic episode whilst working should be classified as Temporarily Unfit for Duty and should not
perform Safety Critical Work until they have been cleared by the specialist.

The worker should also be advised to take appropriate precautionary steps to avoid hypoglycaemic episodes, for example:

- self monitoring of blood glucose levels;
- carrying of glucose whilst working;
- compliance with specified review periods (general practitioner or specialist); and
- cessation of Safety Critical Work should a hypoglycaemic episode occur.

Job modification such as altered rosters to help with stability of control or two person crews may be considered.

### MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – DIABETES

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes controlled by diet alone</td>
<td>A person with Diabetes controlled by diet alone, without severe complications, may perform Safety Critical Work. They should be reviewed periodically regarding progression of the illness.</td>
</tr>
</tbody>
</table>
| Non-Insulin Requiring Type 2 Diabetes Mellitus | The criteria for Fit for Duty are not met:  
- If the person has Non-Insulin Requiring Diabetes Mellitus on oral hypoglycaemic agents or with severe complications.  
Fit for Duty Subject to Review may be recommended, taking into account the opinion of a specialist in diabetes or endocrinology and the nature of the work if:  
- the condition is well controlled and the person is compliant with treatment; and  
- there is an absence of defined hypoglycaemic episodes as assessed by the specialist; and  
- the person has awareness (sensation) of hypoglycaemia; and  
- the person is taking agents that provide the minimum risk of hypoglycaemia; and  
- there is an absence of end organ effects that may affect working per these Standards.  
A person may be classified Fit for Duty Subject to Review pending review by a specialist if there is sufficient evidence that the person is well-controlled, including discussion with the persons treating doctor/general practitioner, with their consent. |
| Insulin-Requiring Diabetes Mellitus (both Types 1 and 2) | The criteria for Fit for Duty are not met:  
- If the person has Insulin Requiring Diabetes Mellitus.  
Fit for Duty Subject to Review may be recommended, taking into account the opinion of a specialist in diabetes or endocrinology and the nature of the work (avoidance of collapse is particularly important in Category 1 tasks) and subject to at least annual review if:  
- the condition is well controlled and the person is compliant with treatment; and  
- there is an absence of defined hypoglycaemic episodes as assessed by the specialist; and  
- the person has awareness (sensation) of hypoglycaemia; and  
- the person is taking agents that provide the minimum risk of hypoglycaemia; and  
- the person maintains a diary of blood sugar levels; and  
- there is an absence of end organ effects that may affect working per these Standards.  
A person may be classified Fit for Duty Subject to Review pending review by a specialist if there is sufficient evidence that the person has diabetes which is well-controlled. This may require discussion with the person’s treating doctor/general practitioner with their consent.  
Fitness for duty subject to job modification, such as altered rosters or two person crews may be considered.  
In the event of a defined hypoglycaemic episode occurring in a person with previously well-controlled diabetes they should be immediately classed Temporarily Unfit for Duty, and should not perform Safety Critical Work for a period determined by a specialist. |
**Temporary Illnesses.** The Standard does not presume to deal with the myriad of conditions that may affect health on a short to medium term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis although the text in each chapter gives some advice on the clinical issues to be considered.

**Undifferentiated Illness.** A Safety Critical Worker may present with symptoms, which could have implications for their job, but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease which will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties.

**References**

NHMRC, Diabetes and driving, Canberra, 1992

**Further reading**


MacLeod, K.M., Diabetes and driving: towards equitable, evidence-based decision-making, Diabetic Medicine, 16(4), 282-290, 1999

6. DRUGS – ILLICIT

6.1 RELEVANCE TO SAFETY CRITICAL WORK

Drug impairment and Legislative Requirements

Many of the physiological effects of illicit drugs are similar to both alcohol and psychoactive prescription drugs. Their usage is therefore likely to cause a significant safety hazard to rail safety work. This is particularly so where illicit drugs are used in combination with prescription drugs or alcohol.

Individual organisation policy generally address requirements for reporting of drug impairment by workers as well as testing for impairment. Testing may include pre-placement testing, “reasonable cause” or triggered testing, or random testing.

This Standard supports alcohol and drug policies through the provision of advice to Authorised Health Professionals regarding the management of suspected impairment at the time of health assessment and the interpretation of drug screen results. However specific procedures for drug and alcohol screening are beyond the scope of this Standard.

The Authorised Health Professional should acquaint themselves with the legislation in their jurisdiction and the procedures of the organisation for which they provide services.

Screening should be conducted in line with Australian/New Zealand Standard 4308:2001: Procedures for the Collection, Detection and Quantification of Drugs of Abuse in Urine.

Effect of Drugs on Safety Critical Work

Illicit drugs are by their nature psychoactive (or psychotropic). This means their detrimental effects in safety terms are not limited to their demonstrated physiological effects on the workers physical skills, but extend to their psychological, or behavioural effects. Those under the influence of these drugs have a higher propensity to behave in a manner incompatible with safe working. This may involve but not be limited to, risk taking, aggression, feelings of vulnerability, narrowed attention and poor judgement.

Information regarding effects of stimulants on risk of accidents mainly comes from road crash data. Stimulant drugs such as amphetamines and cocaine, which produce a heightened sense of well being, uninhibited behaviour, increased aggression and risk taking behaviours obviously have a potential for causing accidents. These drugs have been used to combat fatigue and while they may initially increase alertness and efficiency, their effect is notoriously unpredictable and may be accompanied by marked changes in mood and behaviour. The use of illicit (and licit) stimulants to counteract the effects of fatigue carries with it the risk of fatigue rebound. This is observed when the effect of the drug wears off and is associated with profound sleepiness, which can result in a driver suddenly falling asleep, with obvious consequent risk of accident.

There is little information about Safety Critical Work such as driving and the short or long-term effects of drugs such as LSD, heroin and designer drugs (for example, Ecstasy, Angel Dust), and no information specifically relevant to rail safety. However, the known clinical effects of these drugs indicate that they have adverse effects on driving skills and judgement. Given their significant affect on mood and behaviour, their use is clearly not compatible with Safety Critical Work.

Cannabis can impair psychomotor functions related to safety critical skills and has been shown to have adverse effects on driving skills and judgment.

Methadone abuse is not compatible with Safety Critical Work. However, it is recognised that methadone may be prescribed for narcotic addiction and in some circumstances such persons may be recommended Fit for Duty Subject to Review.

The combination of alcohol with illicit drugs is especially dangerous.

6.2 MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS

Medical criteria for fitness for duty are outlined in the table on page 58.

Careful individual assessment must be made of users working illicit psychoactive drugs. Additional advice from those involved in specialised treatment centres will frequently be necessary and ongoing assessment is likely to be crucial, including blood tests. Patients with ‘dual diagnosis’ in particular may require specialist assessment regarding working.

Users of illicit drugs are unlikely to volunteer information about their condition. This creates a problem in identifying cases of illicit drug use.

The habitual use of illicit drugs is not tolerated in rail safety work. Occasual use of these drugs requires very careful assessment. Some companies may have a policy of counselling or disciplining the worker who is found to have an isolated case of drug use. The health professional should be aware of the organisation’s policy in this regard.

Screening for illicit drugs may be required for Pre-placement or Change of Risk Category Health Assessments depending on local legislative requirements and organisational
practices. Screening may also be required by management at a Triggered Health Assessment. Screening is generally not required as part of Periodic Health Assessments.

If during a Periodic Health Assessment, the health professional has a reasonable belief that the worker may be impaired by a drug (prescribed or illicit), based on observation of abnormal or uncharacteristic signs in relation to speech, eyes, breathing, skin, actions, movement, balance, attitude and comprehension, this should be discussed with the worker.

Where no satisfactory medical basis for impairment is established, (that is a prescription medication or OTC drug taken for a defined purpose, or a medical condition) the worker should be classified as Temporarily Unfit for Duty Subject to Review. Management should be contacted and advised that the person has impairment for which no medical basis could be found. Management will then direct the steps to be taken which may include a drug screen. This is illustrated in Diagram 8.

Interpretation of drug screen results is a difficult area and referral to a doctor who specialises in reviewing positive results may be appropriate in some cases. The most common illicit drug detected is cannabis and its metabolites.

Other illicit drugs such as heroin, cocaine and MDMA are less commonly found on drug screen because of their shorter half-lives and their relatively less common usages. A positive result for morphine on urinary analysis cannot be extrapolated to heroin use.

Diagram 8. Periodic Health Assessment – Management of possible impairment due to alcohol or drugs (illicit or prescription/OTC)

Is there evidence of impairment?
Preliminary Impairment Assessment (speech, eyes, breathing, skin, actions, movements, balance, attitude, comprehension).

YES

Discuss with worker

Is there a medical basis for impairment, ie medical condition causing impairment or prescription/OTC medication taken for a defined purpose.

YES

Medical basis

- Classify Temporarily Unfit for Duty.
- If appropriate, discuss medication with general practitioner/treating doctor in order to resolve impact on employment.
- If appropriate, refer to relevant chapter for medical conditions.
- Identify review period.

NO

If alcohol or illicit drug use suspected:

- Classify Temporarily Unfit for Duty and advise on report impairment without clear medical basis.
- Contact employer regarding impairment without clear medical basis and await further instructions from employer.

NO

No further action (continue with health assessment)
### Medical Criteria for Safety Critical Workers – Drugs – Illicit

<table>
<thead>
<tr>
<th>Condition</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impairment due to illicit drugs</td>
<td>The criteria for Fit for Duty are not met:</td>
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<tr>
<td></td>
<td>• If the worker is impaired by illicit drug/s.</td>
</tr>
<tr>
<td></td>
<td>Refer to Diagram 8 for management.</td>
</tr>
<tr>
<td>I illicit drugs – Use and Dependence</td>
<td>The criteria for Fit for Duty are not met:</td>
</tr>
<tr>
<td>Narcotics, Analgesic abuse, methadone (illicit use), and other illicit drug use</td>
<td>• If there is evidence of illicit drug use or dependence.</td>
</tr>
<tr>
<td></td>
<td>Fit for Duty Subject to Review may be recommended taking into account the opinion of an appropriate specialist and the nature of the work (note: avoidance of sudden incapacity is particularly important in Category 1 tasks):</td>
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<tr>
<td></td>
<td>• For persons who are compliant with treatment for illicit drug addiction (including methadone or buprenorphine medication); and</td>
</tr>
<tr>
<td></td>
<td>• The severity of the addiction(s), the response to treatment and the working requirements are taken into account.</td>
</tr>
<tr>
<td></td>
<td>Fit for Duty Subject to Review may be recommended, taking into account the opinion of an appropriate specialist, and the nature of the work where amphetamines/stimulants are prescribed for a medical condition, for example, ADHD.</td>
</tr>
</tbody>
</table>

**Temporary Illnesses.** The Standard does not presume to deal with the myriad of conditions which may affect health on a short to medium term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case by case basis although the text in each chapter gives some advice on the clinical issues to be considered.

**Undifferentiated Illness.** A Safety Critical Worker may present with symptoms which could have implications for their job but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease which will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties.

**Further reading**


7. DRUGS – PRESCRIPTION AND OVER THE COUNTER (OTC)

7.1 RELEVANCE TO SAFETY CRITICAL WORK

Drug impairment and Legislative Requirements

Studies show that common medications prescribed for a number of illnesses, including anxiety and depression, can affect work performance and increase the likelihood of a rail incident.

Individual organisation policy generally address requirements for reporting of drug impairment by workers as well as testing for impairment. Testing may include pre-placement testing, “reasonable cause” or triggered testing, or random testing.

This Standard supports alcohol and drug policies through the provision of advice to Authorised Health Professionals regarding the management of suspected impairment at the time of health assessment and the interpretation of screening results. However specific procedures for drug and alcohol testing are beyond the scope of this Standard.

The Authorised Health Professional should acquaint themselves with the legislation in their jurisdiction and the procedures of the organisation for which they provide services.

Screening should be conducted in line with Australian/New Zealand Standard 4308:2001: Procedures for the Collection, Detection and Quantification of Drugs of Abuse in Urine.

7.2 GENERAL MANAGEMENT GUIDELINES

In all cases when health professionals are prescribing or dispensing medications (including OTC and alternative medications), they should consider any possible effects on safe working skills and advise the worker on what they should do to avoid impairment. Failure to do so may have medico-legal consequences for the health professional in the event of a rail incident involving the worker.

Prescribing or dispensing of any drug for the first time should be accompanied by a general warning to the worker to be vigilant for responses that may affect ordinary activities including Safety Critical Work. A similar warning should accompany changes in dose, or the addition of other drug treatment.

Problems affecting fitness for rail safety work may arise with short-term use of drugs when the condition being treated does not itself preclude working, for example, drowsiness due to (older generation) antihistamines for hay fever. The subjective effects of the drug should be determined by a test dose before working is attempted.

Legitimate long-term medication for therapy or prophylaxis should not automatically preclude fitness for duty. Many drugs, however can diminish the capacity for safety work in addition to the effects of the disorder being treated. Successful treatment will often increase safety by control of the disorder, for example, effective prevention of seizures. Issues relating to drug treatment of chronic disorders such as epilepsy, psychiatric conditions and diabetes are dealt with in the relevant sections devoted to these diseases.

Workers receiving continuing long-term drug treatment should be evaluated for their reliability in taking the drugs according to directions and their understanding of the possibility that the effect of the drug may be unexpectedly affected by factors such as drug interactions. They should also be assessed for their acceptance that their medicines can have undesired consequences that may affect their ability to work safely.

Combined effects of prescribed and OTC medications should also be considered. When such medicine is prescribed or dispensed, adequate counselling should be provided and labelling requirements complied with.

7.3 MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS

Medical criteria for fitness for duty are outlined in the table on page 61.

Workers are required to take all current medication or a list to the health assessment appointment for the purposes of identifying any potential impact on rail safety work.

Drug screening may be required for Pre-placement or Change of Risk Category Health Assessments depending on local legislative requirements and organisational practices. Screening is generally not required at a Periodic Health Assessment. Most of the psychoactive prescription drugs are not detected on the standard drug tests.

False positive results may occur and will need to be interpreted by the Authorised Health Professional (or by referral to a doctor who specialises in reviewing positive drug tests). This will include interview of the worker regarding potential causes of the positive result. For example, cough and cold preparations usually
contain a mixture of drugs which may be detected on the initial urinary drug screen. Similarly, a positive result for morphine and codeine may result from the ingestion of codeine medication, often available over the counter. A positive morphine result may also result from the ingestion of poppy seeds.

If during a Periodic Health Assessment, the health professional has a reasonable belief that the worker may be impaired by a drug (prescribed or illicit), based on observation of abnormal or uncharacteristic signs in relation to speech, eyes, breathing, skin, actions, movement, balance, attitude and comprehension, this should be discussed with the worker. If a medical basis for possible impairment is established (that is, a prescription medication or OTC drug is being taken for a defined purpose, or a medical condition), the health professional should classify the worker as Temporarily Unfit for Duty Subject to Review and identify a review date. Where appropriate, the worker’s general practitioner may be contacted to discuss the impact of their current treatment on their fitness for duty.

Where there is not a satisfactory medical basis for impairment, (that is a prescription medication or OTC drug taken for a defined purpose, or a medical condition), the worker should be classified as Temporarily Unfit for Duty Subject to Review. The rail organisation should be contacted and advised that the person has impairment for which no medical basis could be found. The rail organisation will then direct the steps to be taken as shown in Diagram 9.

Diagram 9. Periodic Health Assessment – Management of possible impairment due to alcohol or drugs (illicit or prescription/OTC)

- Is there evidence of impairment?
  - Preliminary Impairment Assessment (speech, eyes, breathing, skin, actions, movements, balance, attitude, comprehension).
  - NO
  - No further action (continue with health assessment)
  - YES
  - Discuss with worker
    - Is there a medical basis for impairment, ie medical condition causing impairment or prescription/OTC medication taken for a defined purpose.
    - NO
    - Medical basis
      - Classify Temporarily Unfit for Duty.
      - If appropriate, discuss medication with general practitioner/treating doctor in order to resolve impact on employment.
      - If appropriate, refer to relevant chapter for medical conditions.
      - Identify review period.
    - YES
    - If alcohol or illicit drug use suspected:
      - Classify Temporarily Unfit for Duty and advise on report impairment without clear medical basis.
      - Contact employer regarding impairment without clear medical basis and await further instructions from employer.
### MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – DRUGS – PRESCRIPTION AND OTC

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>CRITERIA</th>
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| Impairment due to prescription or OTC drugs | The criteria for Fit for Duty are not met:  
• If the person is impaired due to the effects of prescription or OTC drugs.  
Refer to Diagram 9 for management. |

**Temporary Illnesses.** The Standard does not presume to deal with the myriad of conditions which may affect health on a short to medium term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis although the text in each chapter gives some advice on the clinical issues to be considered.

**Undifferentiated Illness.** A Safety Critical Worker may present with symptoms which could have implications for their job but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease which will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties.

**References**


**Further Reading**

- British Medical Association website on Driving under the influence of drugs (via [www.bma.org.uk](http://www.bma.org.uk)).
- Victorian Parliamentary Road Safety Committee Report, Effects of Drugs (Other than Alcohol) on Road Safety in Victoria 1996.
## 8. EPILEPSY

### 8.1 RELEVANCE TO SAFETY CRITICAL WORK

Epilepsy may affect the ability to perform Safety Critical Work due to sudden loss of concentration and loss of ability to control machinery. This is particularly relevant to Category 1 High Level Safety Critical Workers but post ictal confusion may also affect judgement that is relevant to both Category 1 and 2 Safety Critical Workers.

Epilepsy is a common disorder with a cumulative incidence of 2% of the population, with 0.5% affected and taking medication at any one time. Fortunately, the majority of cases respond well to treatment with a terminal remission rate of 80% or more. The majority suffer few seizures in a lifetime and about half will have no further seizures in the first one or two years after starting treatment. Some cases may eventually cease medication and in other selected cases surgery has proven beneficial.

Seizures vary considerably, some being purely subjective experiences (for example, some simple partial seizures) but the majority involve some impairment of consciousness (for example, absence and complex partial seizures) or loss of control (for example, focal motor, simple or complex partial or myoclonic seizures). Convulsive (tonic-clonic) seizures may be generalised from onset or secondarily generalised with partial onset. Seizures associated with loss of awareness, even if brief or subtle, or loss of motor control have the potential to impair the ability to perform Safety Critical Work.

Information regarding risk of accidents due to epilepsy mainly comes from road crash data. Estimates of the relative casualty crash risk of drivers with epilepsy compared with other drivers has varied from 1.0 to 1.95, and in one exceptional study 7.0. Around 11% of crashes of drivers with epilepsy are felt to be seizure-related. Reported estimates of the prevalence of epilepsy-related crashes vary between 0.01% and 0.3% of all crashes.

Complex partial seizures without aura, secondarily generalised seizures and generalised tonic-clonic seizures are the types most implicated in road crashes. Simple partial seizures, complex partial seizures with aura and absence seizures are less frequently, and myoclonic seizures are rarely implicated. Other examples include seizures that have occurred only during sleep, some, but not all, simple partial seizures (‘auras’), and seizures that are consistently preceded by a prolonged warning or premonition (provided that full control is retained during the period of such premonitory symptoms). There are also examples where seizures only occur at a particular time of day, especially in the first hour after awakening.

### 8.2 MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS

Medical criteria for fitness for duty are outlined in the table overleaf.

A confirmed diagnosis of epilepsy will mean that the criteria for fit for duty for Safety Critical Work are not met.

It is extremely important that the worker’s specific epilepsy syndrome and seizure types are identified so that an adequate evaluation of the person’s safety can be undertaken (including the risk of further seizures) and the appropriate therapy instituted. Thus any Safety Critical Worker experiencing a seizure or recurrent seizures should be referred to an appropriate consultant for detailed evaluation.

The table recommends seizure-free periods after which resumption of work may be permitted on the advice of a suitably qualified consultant. In considering the recommended seizure-free period, the longer period should generally be applied, but a shorter period may be accepted on the recommendation of a physician experienced in the management of epilepsy. Relevant considerations will include response to treatment, previous seizure frequency, the nature of seizures, the syndromic diagnosis and the patient’s reliability and compliance with treatment. Further considerations are the duties to be performed and the hours to be worked.

In the assessment of worker fitness for duty and ongoing disease management the health professional should take the following into account:

- In order to be classified Fit for Duty Subject to Review the worker must have been free of seizures for the specified period (see medical criteria table overleaf).
- The worker must continue to take anti-epileptic medication regularly when and as prescribed. They should be advised that this is a requirement of their continued ability to undertake Safety Critical Work.
- The worker should be made aware of the impact of fatigue on their condition and should ensure adequate sleep. They should be advised that they must not drive/work if sleep deprived.
- The worker should also avoid other circumstances or the use of substances that are known to increase the risk of seizures eg alcohol.

All Safety Critical Workers who need active management of epilepsy should be under review, including where necessary, at least annual
specialist appraisal. The use of an independent specialist may be considered.

**The Initial or Isolated Seizure:** The occurrence of a seizure in a Safety Critical Worker warrants consultant assessment. The assessment may reveal that the seizure was likely to have been an isolated event, or alternatively a diagnosis of epilepsy may be made. The worker should be classified Temporarily Unfit for Duty until the diagnosis and response to treatment is determined and a decision can be made regarding their fitness for duty.

Where seizures occur only at a particular time of day (for example, in the first hour after awakening) a recommendation may be made regarding Fit for Duty Subject to Job Modification, limiting working to certain hours or circumstances. Workers experiencing such safe or possibly safe seizures must be the subject of consultant review and their assessment must include appropriate documentation of the factors that are important to their safety, and the corroboration of eye witnesses whenever possible.

**Recurrent Seizure:** In the event of a recurrent seizure in a person previously seizure-free and classed Fit for Duty Subject to Review, a consultant review should be obtained. A recurring seizure in a Safety Critical Worker will require immediate suspension from Safety Critical Work.

**Medication Non-compliance:** Where non-compliance with anti-epileptic medication is suspected, drug monitoring may be required where appropriate.

**Medication Withdrawal:** Withdrawal of anti-epileptic medication is usually not compatible with continued Safety Critical Work, unless explicitly recommended and supervised by a consultant specialised in epilepsy.

**Concurrent Conditions:** Where epilepsy is associated with other impairments or conditions, the relevant sections covering those disorders should also be consulted.

<table>
<thead>
<tr>
<th>MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – EPILEPSY</th>
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<tbody>
<tr>
<td><strong>CONDITION</strong></td>
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<tr>
<td>Initial or Isolated Seizures (an isolated seizure is not synonymous with Epilepsy)</td>
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<td>Epilepsy - general requirements</td>
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(continued overleaf)
## MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – EPILEPSY (CONT)

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>CRITERIA</th>
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<tbody>
<tr>
<td><strong>Epilepsy</strong></td>
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<td>- general requirements</td>
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<td>(continued)</td>
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<td></td>
<td>or</td>
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<td></td>
<td>• If the person has epilepsy and is taking anti-epileptic medication; and</td>
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<tr>
<td></td>
<td>• Maintains at least annual review and compliance; and</td>
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<tr>
<td></td>
<td>• Has been seizure-free for five years; and</td>
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<td></td>
<td>• Has had no more than three seizures in the preceding ten years; and</td>
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<td></td>
<td>• The EEG shows no epileptiform activity.</td>
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<td></td>
<td>or</td>
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<td></td>
<td>• If the person has epilepsy and has had surgical treatment; and</td>
</tr>
<tr>
<td></td>
<td>• Maintains at least annual review; and</td>
</tr>
<tr>
<td></td>
<td>• Has been seizure-free for five years; and</td>
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<tr>
<td></td>
<td>• The EEG shows no epileptiform activity.</td>
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<td></td>
<td>or</td>
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<td></td>
<td>Taking into account the duties to be performed and the hours to be worked (with conditions including limited and/or restricted duties):</td>
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<tr>
<td></td>
<td>• If the person has epilepsy and is taking anti-epileptic medication; and</td>
</tr>
<tr>
<td></td>
<td>• Maintains periodic review and compliance; and</td>
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<tr>
<td></td>
<td>• Has been seizure-free for five years; and</td>
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<tr>
<td></td>
<td>• The EEG shows no epileptiform activity.</td>
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<tr>
<td><strong>Epilepsy</strong></td>
<td>Recurrent seizure</td>
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<tr>
<td><strong>Withdrawal of Anti-Epileptic Medication</strong></td>
<td>Withdrawal of anti-epileptic medication is not compatible with continued Safety Critical Work (unless advised by a specialist).</td>
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</tbody>
</table>

**Temporary Illnesses.** The Standard does not presume to deal with the myriad of conditions which may affect health on a short to medium term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis although the text in each chapter gives some advice on the clinical issues to be considered.

**Undifferentiated Illness.** A Safety Critical Worker may present with symptoms which could have implications for their job but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease which will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties.
References


Further Reading


Effective Date: 18 November 2010 All printed copies are uncontrolled
9. **GASTROINTESTINAL AND HEPATIC DISORDERS**

9.1 **RELEVANCE TO SAFETY CRITICAL WORK**

Gastrointestinal and hepatic disorders may affect the ability to perform Safety Critical Work due to metabolic disturbances affecting mental function. However, there is only limited data to support the assumption of a higher crash rate as a result of gastrointestinal and hepatic disorders.

**Hepatic Encephalopathy**

Hepatic encephalopathy describes the spectrum of potentially reversible neuro-psychiatric abnormalities seen in patients with liver dysfunction after other neurological causes or metabolic causes are excluded. The vast majority of patients have established chronic liver disease with signs of chronic liver disease and sometimes those of encephalopathy such as asterixis and the fetor hepaticus.

Working ability will be impaired firstly because of the disturbed diurnal sleep pattern (insomnia and hypersomnia) but further by impaired consciousness with levels of consciousness potentially fluctuating. Impairment may also result from focal neurological signs which occasionally develop in such patients.

Treatment of hepatic encephalopathy is the treatment of the underlying liver disease and reversing of factors that can precipitate encephalopathy.

There is dispute regarding the cognitive function of patients with chronic liver disease and portal hypertension without signs of portal systemic encephalopathy. Two studies have addressed driving motor vehicles in this group of patients and in one study 60% of patients were considered unfit to drive and 25% considered questionable. In a second study of real life driving conditions in Chicago the results in those patients studied were not different from healthy controls.

9.2 **MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS**

Medical criteria for fitness for duty are outlined in the table below.

As a general rule, gastrointestinal disorders should not interfere with a patient’s ability to perform Safety Critical Work. Acute conditions require appropriate advice regarding working but usually have no impact on overall fitness for duty although conditions such as chronic inflammatory bowel disease and stomas will need individual consideration.

The diagnostic pointers to the presence of chronic liver disease include peripheral signs such as muscle wasting, spider telangiectasis and palmar erythema. Signs of hepatic decompensation will include jaundice, ascites oedema as well as the above, while signs of hepatic encephalopathy will include altered mentation, fetor hepaticus and asterixis.

Not to be ignored are the potentially subtle disturbances of mentation that can occur in the absence of overt liver failure. An indication that hepatic encephalopathy is developing might include a disturbed sleep pattern. Patients may also develop fleeting neurological signs such as hemiplegia.

Assessment of workers with chronic liver disease for fit for duty will require referral to a specialist whose predominant interest is liver disease.
<table>
<thead>
<tr>
<th>CONDITION</th>
<th>CRITERIA</th>
</tr>
</thead>
</table>
| **Hepatic Failure** | The criteria for Fit for Duty are not met:  
  • If the person has chronic liver disease and clinical evidence of hepatic encephalopathy.  
  If the person has chronic liver disease and no overt evidence of hepatic encephalopathy they may still have impaired cognitive and motor skills and will need to be assessed on an individual basis by their hepatologist. |
| **Liver Transplants** | The criteria for Fit for Duty are not met:  
  • After a liver transplant.  
  Fit for Duty Subject to Review may be recommended, taking into account the opinion of a specialist and the nature of the work:  
  • Noting the reason for the transplant; and  
  • Taking into account the stability of the transplant and the biochemical and haemodynamic response. |
**Temporary Illnesses.** The Standard does not presume to deal with the myriad of conditions which may affect health on a short to medium term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis although the text in each chapter gives some advice on the clinical issues to be considered.

**Undifferentiated Illness.** A Safety Critical Worker may present with symptoms which could have implications for their job but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease which will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties.

**References**

Consensus statements on the definition of Hepatic Encephalopathy by the International Working Party at the 11th World Congress of Gastroenterology (Vienna 1998).


10. HEARING

10.1 RELEVANCE TO SAFETY CRITICAL WORK

Substantial hearing loss may affect the ability to perform Safety Critical Work due to the inability to communicate or failure to hear sounds indicating a hazard.

There are two main groups of criteria, one for rail personnel using radios for safety critical communications: one for other rail safety workers. Both criteria have similar screening thresholds based on speech frequencies but the subsequent management differs.

Rail Personnel using radio equipment for safety critical communications: Rail personnel work in environments with background noise that varies but may reach up to 85dB. The rail personnel need to hear safety critical radio communication as well as other alarm systems. Binaural hearing is helpful in distinguishing speech in a noisy environment. Most radios in driving cabs and network control facilities can be amplified to help hearing against the background noise but the ability to do this for portable radios is limited.

Because of the variation in workplace noise the standards are not necessarily applicable across all tasks. Individual risk assessments are required in conjunction with a specialist in occupational medicine to determine the appropriate criteria and examinations. However if variation is made from the national medical standard this must be identified on the medical forms and its relevance to portability emphasised to all parties.

Other rail safety workers. Workers who work in yards or near the mainline without using radio communication need to be able to hear a warning sound from warning devices for their own safety. The hearing standard has been set with a wide margin of safety to allow for adverse environmental conditions and the worker facing away from the train.

Note: workers who are at any time working directly on the track should be regarded as functionally deaf and blind. A hearing standard for their safety is not appropriate and they require suitable track protection. Also this hearing standard and testing should not be confused with the requirements for audiometric monitoring required by OHS regulations for noise-exposed workers.

10.2 MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS

Medical criteria for fitness for duty are outlined in the table on page 71. Compliance with the criteria should be initially assessed by audiometry and if the criteria are not met a practical test may be arranged.

Practical tests of hearing may be considered for rail personnel who fail the assessment. However, the test is not intended to imply any relaxation of the standard for hearing. Railway activities may differ with respect to the hearing requirements because of the nature of equipment and tasks. Therefore, it is not sensible or safe to apply a uniform practical test.

The following points outline the principles of conducting a test. Tests should be conducted by persons knowledgeable of the work.

Principles of Practical Hearing Tests

- The noise in the work environment may range up to 85dB. It is essential that the radio user be able to detect and hear radio communications and warning alerts. Hearing aids may be used in the test (but see above).
- The test should be based on the ability of the subject to hear typical safety critical information likely to be transmitted on the radio-communication system. This test will need to be developed in conjunction with experienced task practitioners and hearing experts.
- A control subject should be selected. Their hearing should be confirmed to be normal such as a warning alarm or detonators. In addition modern hearing aids may have directional microphones which facilitate hearing speech when facing a person and help exclude background ‘noise’. However, forward directional microphones would adversely affect ability to hear speech from a speaker positioned behind them, or warning alarms sounded from behind.

All hearing aids amplify sound and if this is already loud may contribute to noise induced hearing loss (NIHL). Workers with a cochlear implant will generally have difficulty with speech recognition in occupational background noise. A hearing aid or cochlear implant may also suddenly malfunction.

For these reasons, hearing aids or cochlear implants generally should not be used in rail safety work. Exemptions may be made by an ENT surgeon based on careful consideration of the job requirements in relation to the type of hearing aid or cochlear implant and a practical test.

Hearing Aids and Cochlear Implants.

Hearing aids, particularly modern (digital) ones present particular problems in the rail industry. Modern aids have the ability to recognise speech patterns and to screen out non-speech noise which helps the user understand speech, but diminishes the ability to hear important ‘noise’
on a recent audiogram to be a valid control. (Some personnel lose hearing due to noise induced hearing loss or other causes and are not valid controls).

- The subject and control operate in the work environment which then simulates a range of typical workplace activities.
- The test involves a series (~20) of typical instructions and a few emergency instructions being communicated over the radio system, intended to simulate typical conditions.
- The subject must obtain a score similar to the control to pass.
- If the subject passes they may be permitted to operate in environments that have similar noise levels and that utilise a radio communication system similar to that on which they were tested. They require a further practical test to be permitted to operate in environments with substantially different noise levels and communication systems.
- Subjects should be classed as “Fit for Duty Subject to Review” and their audiogram reviewed periodically. If there is appreciable deterioration, the practical test should be repeated.

**Other workers.**

Workers + and others who are around the track require hearing for their own safety and should meet the criteria as set above.

### MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – HEARING

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<tr>
<th>CONDITION</th>
<th>CRITERIA</th>
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| Hearing – Rail personnel using radio communication for safety critical communications. | Compliance with the Standard should be initially assessed by audiometry without hearing aids or use of a cochlear implant. The criteria for Fit for Duty are not met:  
  - If the person has an unaided average hearing threshold level of equal to or worse than 40dB in the better ear. (Average hearing threshold is the simple average of pure tone air conduction thresholds at 500, 1000, 2000 Hz in each ear).  
  Fit for Duty Subject to Review may be recommended, taking into account the opinion of an ENT specialist, the nature of the work and successful completion of a practical test (refer text for details of requirements of a practical test).  
    - The ENT Specialist should have regard to:  
      1. The hearing levels in each ear, and  
      2. The nature of the relevant background occupational noise; and  
      3. The nature of the duties of Safety Critical Workers including efficient and reliable use of communication devices, including mobile phones and radio-communication devices, and the need to reliably detect emergency alarms against background noise.  
    - Refer to text regarding use of hearing aids.  
    - Cochlear implantees should be assessed on an individual basis by an ENT surgeon with consideration of the characteristics of the implant including the risk of sudden device failure, the nature of the relevant background noise, and the nature of the duties of Safety Critical Workers including efficient and reliable use of communication devices, including mobile phones and radio-communication devices, and the need to reliably detect emergency alarms against background noise. A practical test must be passed. |
| Hearing - Others                               | Refer criteria for Track Safety Assessment (ATTP), PART 2B. |
Temporary Illnesses. The Standard does not presume to deal with the myriad of conditions which may affect health on a short to medium term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis although the text in each chapter gives some advice on the clinical issues to be considered.

Undifferentiated Illness. A Safety Critical Worker may present with symptoms which could have implications for their job but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease which will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties.

References

'Hearing Disorders and commercial motor vehicle drivers' compiled by the University of Pittsburgh, March 1993.


11. HIV / AIDS

11.1 RELEVANCE TO SAFETY CRITICAL WORK

HIV/AIDS may affect the ability to perform Safety Critical Work due to impairment of mental function or other affects on the body. The human immunodeficiency virus (HIV) is highly neurotropic and may cause neurological effects which impact on Safety Critical Work ability. However, the advent in recent years of highly active antiretroviral therapy (HAART) for patients has had a significant impact on their prognosis and their well-being. As a result, there has been a substantial reduction in neurological sequelae particularly AIDS dementia and progressive multifocal leukoencephalopathy (PML) so the risks when performing Safety Critical Work are greatly reduced.

If the disease progresses to AIDS then various organs relevant to working may be affected, such as the eyes.

11.2 MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS

Safety Critical Workers who are HIV positive or have AIDS and are under treatment may be recommended for Fit for Duty Subject to Review, providing they meet the criteria set out in this Volume for end organ damage which may arise as a complication of the disease, for example, vision.

References


12. METABOLIC AND ENDOCRINE DISORDERS (Excluding Diabetes)

12.1 RELEVANCE TO SAFETY CRITICAL WORK

Metabolic and endocrine disorders may affect the ability to perform Safety Critical Work due to effect on mental function or other organs of the body. Metabolic or endocrine disorders (Addison’s Disease, Adrenal or Cushing’s Disease, Hyperthyroidism, Hypothyroidism, Parathyroid Disease, Phaeochromocytoma, Pituitary Disorders, Insulinoma) can cause many symptoms ranging from generalised asthenia, localised muscle weakness, spasm to tetany, sudden episodes of dizziness or unconsciousness. 

Unless controlled by adequate treatment, workers so afflicted may pose an increased safety risk.

12.2 MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS

There are no specific criteria regarding fit for duty for metabolic and endocrine diseases. Because of the diverse manifestation of these conditions, each person will require individual assessment.

If there is a real risk of acute loss of control then the criteria would not be met. A recommendation may be made for Fit for Duty Subject to Review dependent on stability of control of the condition and an appropriate specialists opinion obtained.

Specific defects which may be associated with an endocrine disorder may also need evaluation, for example, effects on visual field from pituitary tumours or exophthalmos in hyperthyroidism.
13. MUSCULOSKELETAL DISORDERS

13.1 RELEVANCE TO SAFETY CRITICAL WORK

Substantial musculoskeletal disorders may affect the ability to perform Safety Critical Work due to the inability to adequately control machinery and perform bodily movements as required. Most Safety Critical Workers require soundness of limbs, neck, back and good balance, although the specific requirements vary depending on the task. For example, typically:

- Driving requires good musculoskeletal capacities to:
  - sit and drive the train using arms and legs;
  - walk about the train on uneven track;
  - join heavy couplings, bend and check bogies; and
  - enter and exit the cab to/from the ground in an emergency.

- Shunting requires good musculoskeletal capacity to:
  - move over uneven ballast/track;
  - rapidly board/alight trucks or carriages;
  - open or close stiff, large coupling mechanisms; and
  - switch points.

- Train Controlling requires only limited musculoskeletal capacity. Controllers typically work in an indoor environment and do not have to access the track. They require musculoskeletal capacity to work with computer screens and keyboards, paper records and telephones.

The musculoskeletal requirements of a job should be provided to the Authorised Health Professional as part of the request for health assessment.

13.2 MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS

Medical criteria for fitness for duty for Safety Critical Workers are outlined in the table overleaf.

It is not possible to detail all the tasks of Safety Critical Workers and the musculoskeletal criteria to be met in this Standard. Desirably the Authorised Health Professional should be acquainted first hand with the job or at least be provided with the task analysis so as to conduct the examination with insight when matching demands and musculoskeletal capacities. An organisation may develop its own standards appropriate to the risk assessment of a job and with advice from an occupational physician.

The aim of a health assessment is to detect those workers who would benefit from job modification. However, modification to cabs and other equipment is usually difficult because drivers need to rotate between locomotives.

In many cases a functional assessment of a driver by a Principal Driver (in conjunction with an Occupational Therapist if necessary) may be helpful.

The driver should wear any prosthesis prescribed during an assessment by a Principal Driver.

The musculoskeletal activities which are needed for Safety Critical Work as identified in the task analysis for the workers job should be carefully considered. The following examination may apply for a typical driver or guard, but would not apply to typical controllers (see above).

**Disability of Cervical Region:** Good head movement is important to support good fields of vision. Workers with severe neck pain and very reduced mobility including that arising from wearing soft collars or braces should be classified as Temporarily Unfit for Duty and should not perform Safety Critical Work for the duration of their treatment. Some loss of neck movement is allowable if the driver’s cab is fitted with adequate outside mirrors. In the case of permanent disability, the criteria may not be met.

**Disability of Thoracolumbar Region:** Workers with severe pain and reduced mobility of the thoracolumbar region, including those required to wear a brace or body cast that severely limits mobility, should be classified as Temporarily Unfit for Duty and should not perform Safety Critical Work for the duration of their treatment. In the case of permanent disability, the criteria may not be met.

**Arthritis:** Painful joints may arise due to inflammatory or degenerative arthritis. Workers who have persistent pain and marked reduction in range of movement in shoulders, elbows, wrists, hands, hips, knees, ankles or feet may not meet the criteria. A driver may be assessed by a Principal Driver.

**Post Surgery Including Joint Replacement:** Workers should generally not perform Safety Critical Work for six weeks post major orthopaedic surgery. A Principal Driver’s opinion may be obtained where appropriate if there is ongoing limitation of function.

**Balance:** Agility of movement requires good balance which is assessed using the Romberg test. (Also refer Vestibular Disorders chapter).
### MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – MUSCULOSKELETAL DISORDERS

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<th>CONDITION</th>
<th>CRITERIA</th>
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| Musculoskeletal Disorders        | The musculoskeletal activities which are needed for Safety Critical Work as identified in the task analysis for the workers job should be carefully considered.  

The criteria of Fit for Duty are not met:  
• If the ability to perform the activities needed for Safety Critical Work is inadequate.  

Fit for Duty Subject to Review or Subject to Job Modification may be recommended, taking into account the opinion of a specialist or therapist and/or Principal Driver, and the nature of the work. A practical assessment may be helpful. |
| ATTP (Category 3) requirements   | Musculoskeletal criteria for the Track Safety Assessment (Around the Track Personnel, Category 3) are included in PART 2B.                                                                                     |

**Temporary Illnesses.** The Standard does not presume to deal with the myriad of conditions which may affect health on a short to medium term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case by case basis although the text in each chapter gives some advice on the clinical issues to be considered.

**Undifferentiated Illness.** A Safety Critical Worker may present with symptoms which could have implications for their job but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease which will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties.
14. NEUROLOGICAL DISORDERS (Excluding Epilepsy and Syncope)

14.1 RELEVANCE TO SAFETY CRITICAL WORK

Neurological disorders may affect the ability to perform Safety Critical Work due to the affect on mental function or the loss of control of other parts of the body.

At present only limited evidence can be cited about the incidence of accidents across a given population of Safety Critical Workers such as drivers suffering from a neurological disorder. However, it is very likely that symptoms which are common to many neurological conditions, such as potential spontaneous loss of consciousness, confusional states, impairment of muscular power and coordination are deleterious to Safety Critical Work. 

Sudden incapacity, such as from a transient ischaemic attack is particularly relevant to Category 1 High Level Safety Critical Workers.

14.2 MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS

Medical criteria for fitness for duty are outlined in the table overleaf.

The worker with a neurological disorder must be assessed to determine whether the sum of symptoms and signs, being physical, mental and behavioural is compatible with Safety Critical Work.

Any impairment of consciousness or awareness, or the presence of confusion or loss of visual fields or vertigo, is usually incompatible with Safety Critical Work. Muscular power and coordination should be adequate to undertake work safely.

If the health professional is concerned about a worker’s ability to work safely, the opinion of an experienced internal supervisor/assessor or neuropsychologist may be helpful.

Dementia and Other Cognitive Impairments: The person should not perform Safety Critical Work if there is significant impairment of memory, visuospatial skills, insight or judgement or if there are problematic hallucinations or delusions. Baseline and periodic review are required as most forms of cognitive impairment and dementia are progressive. If unsure in the case of a driver, refer to a manager for further assessment. Referral to a neuropsychologist may be helpful in cases of cognitive impairment.

Intellectual Impairment: Persons with intellectual impairment are not suitable for Safety Critical Work. Persons with minor degrees of impairment should be identified by selection (neuropsychological) tests at time of recruitment. Usually this is not a medical or health assessment matter.
Workers who have had minor head injuries should not perform Safety Critical Work immediately afterwards. The occurrence of persisting functional disturbances requires careful assessment to determine fitness for duty. This may include neuropsychological testing and assessment where appropriate by a experienced internal supervisor/assessor as well as referral to a neurologist.

**Migraine and Recurrent Headache:** Attacks of migraine and recurrent headache are common and may impair a person’s ability to concentrate and to work safely. Workers who suffer migraine and recurrent headaches should have their symptoms and treatment reviewed. A plan of management for an attack occurring at work should be discussed and agreed with their supervisor as necessary. Provoking factors such as shift work, lighting and noise may need attention. In severe cases, Fit for Duty Subject to Review may be recommended.

### MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – NEUROLOGICAL DISORDERS

<table>
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| Berry Aneurysms and other vascular malformations of the brain | The criteria for Fit for Duty are not met:  
- If the person has a berry aneurysm or other vascular malformation.  
Fit for Duty Subject to Review may be recommended, taking into account the opinion of an appropriate specialist and the nature of the work:  
- After consideration of the risk and the benefits of any treatments. |
| Cerebral Palsy (See also Neuromuscular and/or Cognitive Disorders) | The criteria for Fit for Duty are not met:  
- If the capacity to perform Safety Critical Work is impaired due to musculoskeletal or cognitive or neurological causes.  
Fit for Duty Subject to Review may be recommended, taking into account the opinion of an appropriate specialist and the nature of the work, and:  
- The severity of the disabilities; and  
- The interaction between multiple disabilities; and  
- The response to treatments;  
- Suitable job modifications, where practical; and  
- The result of an assessment by a Principal Driver or equivalent depending on the job. |
| Dementia and other cognitive impairments | The criteria for Fit for Duty are not met:  
- If the person’s dementia or cognitive impairment is confirmed.  
Fit for Duty Subject to Review may be recommended, taking into account the opinion of an appropriate specialist and the nature of the work, and:  
- The cause of the condition and likely response to treatment; and  
- Any appropriate neuropsychological tests; and  
- The result of an assessment by a Principal Driver or equivalent depending on the job. |
| Head injury (Acquired brain injury) | The criteria for Fit for Duty are not met:  
- If the person has had head injury causing chronic functional disturbances.  
Fit for Duty Subject to Review may be recommended, taking into account the opinion of an appropriate specialist and the nature of the work, and:  
- The result of neuropsychological testing; and  
- The result of an assessment by a Principal Driver or equivalent depending on the job (see also Cognitive Impairment); and  
- Other disabilities that may impair Safety Critical Work per this Standard. |
| Migraine | See text. |
| Neglects (While patient perceives, does not respond) | The criteria for Fit for Duty are not met:  
- If there are neglects present. |
### MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – NEUROLOGICAL DISORDERS (CONT)

<table>
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<tr>
<th>CONDITION</th>
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| **Neuromuscular conditions** *(MS, Parkinson’s Disease, Peripheral Neuropathy)* | The criteria for Fit for Duty are not met:  
- If the person has Parkinsonism, multiple sclerosis, degenerative peripheral neuropathy, progressive muscular dystrophy or any other severe neuromuscular disorder. 

Fit for Duty Subject to Review may be recommended, if the disability is limited to minor effects on Safety Critical Work, taking into account the opinion of a neurologist or rehabilitation specialist and the nature of the work, and:  
- The response to treatments; and  
- The result of an assessment by a Principal Driver or equivalent depending on the job; and  
- Modifications to the job, where practical. |
| **Stroke** | The criteria for Fit for Duty are not met:  
- If the person has had a stroke. 

Fit for Duty Subject to Review may be recommended, taking into account the opinion of an appropriate specialist and the nature of the work:  
- If the stroke was caused by a condition that has now been satisfactorily treated. Satisfactory recovery from the stroke, including perceptual deficits, must also be demonstrated.  

Cases of berry aneurysm should be referred to an appropriate specialist. |
| **Transient Ischaemic Attacks** | The criteria for Fit for Duty are not met:  
- If the person has had two or more transient ischaemic attacks. 

Fit for Duty Subject to Review may be recommended, taking into account the opinion of an appropriate specialist and the nature of the work (avoidance of sudden incapacity is particularly important in Category 1 tasks):  
- If the aetiology of the attacks has been identified; and  
- The underlying cause removed; and  
- The person has had a six-month period free of attacks. |

### Temporary Illnesses. The Standard does not presume to deal with the myriad of conditions which may affect health on a short to medium term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis although the text in each chapter gives some advice on the clinical issues to be considered.

### Undifferentiated Illness. A Safety Critical Worker may present with symptoms which could have implications for their job but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease which will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties.

### Further reading

- Lipski, P.S., *Driving and dementia: a cause for concern*, Medical


15. PREGNANCY

15.1 RELEVANCE TO SAFETY CRITICAL WORK

In normal circumstances, pregnancy should not be considered a barrier to Safety Critical Work. However, conditions that may be associated with some pregnancies should be considered regarding their effect on Safety Critical Work. These include:

- fainting or light-headedness;
- hyperemesis gravidarum;
- hypertension in pregnancy; and
- post caesarean section.

Caution regarding performing Safety Critical Work may be required depending on the severity of the symptoms and the expected effects of medication.

15.2 MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS

There are no specific criteria regarding fitness for duty for pregnancy. Each person will require individual assessment based on the considerations above.

Gestational Diabetes: If the diabetes occurs only in pregnancy, it should not impact on fitness for duty.

Post-natal Depression: A Safety Critical Worker with post-natal depression will require individual assessment regarding the severity of the condition in relation to the job. (Refer also Psychiatric Disorders).
16. PSYCHIATRIC DISORDERS
See also Neurological Disorders, Alcohol Dependence and Impairment and Drugs - Illicit.

16.1 RELEVANCE TO SAFETY CRITICAL WORK
Psychiatric disorders may affect the ability to perform Safety Critical Work due to effects on mental function. Safety Critical Work is a complicated psychomotor performance which depends on fine coordination between the sensory and motor systems. It is influenced by factors such as arousal, perception, learning, memory, attention, concentration, emotion, reflex speed, time estimation, auditory and visual functions, decision-making and personality. Complex feedback systems interact to produce the appropriate coordinated behavioural response. Anything that interferes with any of these factors to a significant degree may impair Safety Critical Work ability. For example, inattentiveness due to a mixture of anxiety arising from a chronic domestic situation and some medications may contribute to accidents. Train drivers have a particular risk in the course of their work due to people suiciding on railways. These incidents are usually managed through a critical event management program within an organisation. However, such events when recurrent may lead to reactive depression and anxiety.

16.2 MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS
Medical criteria for fitness for duty are outlined in the table overleaf.
Substantial anxiety/depression affects up to 10% of the adult population. This has lead to the introduction of the K10 screening tool to detect severe cases of this common condition.

Screening for anxiety/depression – Use of the K10 Questionnaire
The K10 questionnaire is included in the Safety Critical Worker Questionnaire. It should be applied and interpreted as follows:
1. Each question is scored as follows:
   - All of the time: 5
   - Most of the time: 4
   - Some of the time: 3
   - A little of the time: 2
   - None of the time: 1
2. The values are then summed. If the total is nineteen (19) or greater (or other clinical observations warrant it) discuss the findings with the patient. Determine possible explanations such as work stress or domestic crises or endogenous causes and agree an approach to management of the condition eg referral to general practitioner/psychiatrist or to Employee Assistance Program, marital or financial counsellor, etc.

3. Persons with raised K10 scores (19 or greater) may be classed Temporarily Unfit for Duty or Fit for Duty Subject to Review while the causes are being assessed and managed.

The K10 is used by kind permission of Professor Gavin Andrews of the Clinical Research Unit for Anxiety and Depression of the University of New South Wales. Further information about the K10 is available at www.crufad.unsw.edu.au

Other psychiatric conditions
Persons with any substantial mental illnesses (whether acute or chronic) should not perform Safety Critical Work, although recommendation of Fit for Duty Subject to Review may be considered in some circumstances on the recommendation of a treating psychiatrist.

An acute episode of mental illness (for example, psychosis, acute mania or panic attack) poses a substantial risk. Such an episode in a Safety Critical Worker would mean the criteria for fitness for duty are not met and the person should be classed Temporarily Unfit for Duty pending further assessment.

Some medications for mental illness may affect Safety Critical Worker alertness and coordination. However, the use of more modern drugs with less side-effects (especially antipsychotics) may improve compliance and therefore reduce symptoms. There may need to be a trial period of the medication when the person should be classed Temporarily Unfit for Duty.

Dementia and Other Cognitive Impairments: The person should not perform Safety Critical Work if there is significant impairment of memory, visuospatial skills, insight or judgement or if there are problematic hallucinations or delusions. Baseline measures and periodic review are required as most forms of cognitive impairment and dementia are progressive. If unsure in the case of a driver, refer to a Principal Driver for further assessment. Referral to a neuropsychologist may be helpful in cases of cognitive impairment.

Personality Disorder: Persons with personality disorders often show disregard for social values and rules. They are unsuitable for Safety Critical Work. Persons with unsuitable personality traits/attitudes should be identified by selection (neuropsychological) tests at time of recruitment. Usually this is not a medical or health assessment matter.
Neuro-development Disorders: Specialist advice should be sought regarding Safety Critical Workers who have complex conditions such as ADHD or Tourette’s Syndrome.

Where a mental health condition is associated with epilepsy or illicit drug use, the relevant section should also be referred to.

### MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – PSYCHIATRIC DISORDERS

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<tbody>
<tr>
<td><strong>K10 Score</strong></td>
<td>If the person has a K10 score of 19 or greater the person may be classified Temporarily Unfit for Duty or Fit for Duty Subject to Review while the causes are being assessed and managed.</td>
</tr>
</tbody>
</table>
| **Psychiatric disorders** | The criteria for Fit for Duty are not met:  
  • If the person has an acute or chronic psychosis, whether schizophrenic, bipolar (manic or depressive phase) or other depressive psychosis; or  
  • If the person has a personality or psychiatric disorder with features such as aggression or violence which are hazardous to Safety Critical Work; or  
  • If the person is taking psychoactive drugs which will impair Safety Critical Work performance on a long term basis; or  
  • If the person’s judgement or perceptual, cognitive or motor function is affected by mental disorder (for example, ADHD); or  
  • If the examining doctor believes that there is a significant risk of previous psychotic condition relapsing.  
Fit for Duty Subject to Review may be recommended, taking into account the opinion of a psychiatrist and the nature of the work:  
  • If the condition is well controlled and the person is compliant with treatment over a substantial period; and  
  • The person is taking medication that minimises the risk of cognitive or other side effects that might affect Safety Critical Work; and  
  • Considering the results of any appropriate neuropsychological tests; and  
  • Considering the result of an assessment by a Supervisor / Assessor, or equivalent depending on the job, if appropriate. |

Temporary Illnesses. The Standard does not presume to deal with the myriad of conditions that may affect health on a short to medium term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis although the text in each chapter gives some advice on the clinical issues to be considered.

Undifferentiated Illness. A Safety Critical Worker may present with symptoms that could have implications for their job but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease which will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties.

Further reading


17. **RENAL FAILURE**

17.1 **RELEVANCE TO SAFETY CRITICAL WORK**

Renal failure may affect the ability to perform Safety Critical Work due to metabolic disturbances affecting mental function.

**Chronic Renal Failure**: Potential impact from chronic renal failure on the performance of Safety Critical Work can result from:

- The metabolic consequences of uraemia itself (the risks associated with the secondary complications of chronic renal disease and its treatment, in particular cardiovascular problems, labile hypertension, post dialysis hypotension, cramp, volume overload, congestive cardiac failure, and accelerated atherosclerosis); or

- The underlying cause of the chronic renal failure (e.g., 25% of dialysis patients have diabetes mellitus, a disease with its own risks of impairing Safety Critical Work including retinopathy which is commonly associated with diabetic nephropathy).

There are described abnormalities in psychophysical ability in stable dialysis patients which may be relevant to working safely. Dialysis treatment has improved significantly in the twenty years since the only relevant literature was published, and erythropoietin therapy has resulted in the disappearance of anaemia. There is no detailed recent literature on the functional ability of chronic renal failure/dialysis patients in relation to working safely, and no firm evidence based recommendations can be made.

17.2 **MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS**

Medical criteria for Fitness for Duty are outlined in the table overleaf.

The renal condition most commonly relevant to a fitness for duty assessment is chronic renal failure. Chronic renal failure may be ‘end stage’ requiring treatment by dialysis or kidney transplantation, or less severe renal failure, which has not yet progressed to end stage.

While mild chronic renal failure is not usually associated with significant symptomatic or functional impairment, late stage chronic renal failure (Glomerular Filtration Rate (GFR) approximately <20% of normal), although not ‘end-stage’, may have some of the clinical impairments seen in dialysis treated end stage renal failure patients.

Successful kidney transplantation reverses most of the metabolic or functional impairment of chronic renal failure, including those likely to be relevant to the task, and (after the initial post operative recovery) persons with kidney transplants who have good renal function are not regarded as impaired from a Fit for Duty point of view.

The initiation of dialysis treatment is associated with some metabolic and cardiovascular adjustment and may be associated with increased functional impairment. It is considered prudent to avoid performing Safety Critical Work for the first few treatments or weeks of treatment, but after this individually variable period, most patients achieve a reasonable symptomatic or functional state, which is maintained by ongoing dialysis treatment.

The combination of the subtle cognitive impairment, probably present in most patients with advanced chronic renal failure, together with co-morbidities associated with renal failure and dialysis, suggests a conservative, or restrictive approach in the high-risk situation of Safety Critical Work.

Proteinuria is a reliable marker for chronic renal disease. In an elderly population, the cause of proteinuric renal disease (e.g., diabetes or ischaemic vascular disease) may be the more relevant factor in impairment.

**Acute Renal Conditions and Recurrent Acute Conditions**: Glomerular disease in the absence of severe renal failure or hypertension, and recurrent urinary tract infection do not have any associated risk.

**Renal Calculus Disease, with Renal Colic**: is a condition that can cause acute severe pain, which could, in some instances severely impair Safety Critical Work. After a first stone episode, the risk of recurrence is only 14% at one year and 35% at five years. Most episodes of colic will commence with some milder prodromal symptoms, sufficient to allow a train driver to stop or a flagman to radio for help, and there are no published data supporting a risk for Safety Critical Work such as driving from calculus disease. The risk from recurrent calculi is, therefore, considered to be remote and differs from the situation with aeroplane pilots, for whom the option of immediately landing is not available.
MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – RENAL FAILURE

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>CRITERIA</th>
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</thead>
<tbody>
<tr>
<td>Renal Failure</td>
<td>The criteria for Fit for Duty are not met:</td>
</tr>
<tr>
<td></td>
<td>• If the person has end-stage renal failure (requiring dialysis) or advanced predialysis renal failure (GFR &lt;20% of normal).</td>
</tr>
<tr>
<td></td>
<td>Fit for Duty Subject to Review may be recommended, taking into account the opinion of a renal specialist and the nature of the work:</td>
</tr>
<tr>
<td></td>
<td>• If the person’s condition is stable with limited co-morbidities per this Volume.</td>
</tr>
</tbody>
</table>

Temporary Illnesses. The Standard does not presume to deal with the myriad of conditions that may affect health on a short to medium term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis although the text in each chapter gives some advice on the clinical issues to be considered.

Undifferentiated Illness. A Safety Critical Worker may present with symptoms that could have implications for their job but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease which will affect Safety Critical Work. Generally workers presenting with symptoms of a potentially serious nature should be classified Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties.

References


### 18. RESPIRATORY AND SPEECH DISORDERS

#### 18.1 RELEVANCE TO SAFETY CRITICAL WORK

Respiratory and speech disorders may affect the ability to perform Safety Critical Work. This is partly because considerable exertion may be required to work safely and in other circumstances normal blood gases are required to enable vigilance to be maintained and appropriate decisions made.

Clear speech is required for communication particularly by radio-communication systems regarding normal operating as well as emergency situations.

#### 18.2 MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS

Medical criteria for fitness for duty are outlined in the following table.

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laryngectomy and Tracheostomy</td>
<td>The criteria for Fit for Duty are not met:</td>
</tr>
<tr>
<td></td>
<td>- Post laryngectomy or tracheostomy.</td>
</tr>
<tr>
<td></td>
<td>Fit for Duty Subject to Review may be recommended after practical assessment such as with phones or radio-communication devices, etc.</td>
</tr>
<tr>
<td>Long-term Oxygen therapy</td>
<td>The criteria for Fit for Duty are not met:</td>
</tr>
<tr>
<td></td>
<td>- If the person has unstable disease requiring oxygen therapy.</td>
</tr>
<tr>
<td>Respiratory Failure</td>
<td>The criteria for Fit for Duty are not met:</td>
</tr>
<tr>
<td></td>
<td>- If the person has severe respiratory failure.</td>
</tr>
<tr>
<td></td>
<td>Fit for Duty Subject to Review may be recommended, taking into account the opinion of a respiratory physician, and the nature of the work:</td>
</tr>
<tr>
<td></td>
<td>- After consideration of the severity of the person’s condition and the likelihood of control of the failure.</td>
</tr>
<tr>
<td>Thorocotomy</td>
<td>The criteria for Fit for Duty are not met:</td>
</tr>
<tr>
<td></td>
<td>- Post thorocotomy for at least 4 weeks as determined by the treating surgeon.</td>
</tr>
</tbody>
</table>
**Temporary Illnesses.** The Standard does not presume to deal with the myriad of conditions that may affect health on a short to medium term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis although the text in each chapter gives some advice on the clinical issues to be considered.

**Undifferentiated Illness.** A Safety Critical Worker may present with symptoms that could have implications for their job but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease which will affect the Safety Critical Worker. Generally, workers presenting with symptoms of a potentially serious nature should be classified Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties.

**References**

19. SLEEP DISORDERS

19.1 RELEVANCE TO SAFETY CRITICAL WORK

Excessive sleepiness during the day, which manifests itself as a tendency to doze at inappropriate times when intending to stay awake, can arise from many causes and is associated with an increased risk of accidents.

A number of medical sleep disorders may cause excessive daytime sleepiness, including the sleep apnoea syndromes (obstructive sleep apnoea, central sleep apnoea and nocturnal hypoventilation), periodic limb movement disorder, circadian rhythm disturbances (for example, advanced or delayed sleep phase syndrome), some forms of insomnia and narcolepsy. Such sleep disorders may affect the ability to perform Safety Critical Work due to sleepiness per se and/or altered blood gases and hypoxia affecting mental function.

Information about risk of accidents due to sleep disorders mainly comes from road crash data. Studies have shown an increased rate of motor vehicle accidents two to seven times that of control subjects in those with sleep apnoea. Studies have also demonstrated increased objectively measured sleepiness while driving (electro-encephalography and eye closure measurements) and impaired driving simulator performance in sleep apnoea patients. This performance impairment is similar to that seen due to illegal alcohol impairment or sleep deprivation. Drivers with severe sleep disordered breathing (respiratory disturbance index greater than 34) may have a much higher rate of accidents than those with a less severe sleep disorder.

Those with narcolepsy perform worse than control subjects on simulated driving tasks and are more likely to have accidents. Increased sleepiness during the daytime may also occur in otherwise normal people and may be due to:

• prior sleep deprivation (restricting the time for sleep);
• poor sleep hygiene habits;
• irregular sleep wake schedules (eg rosters); or
• influence of sedative medications including alcohol.

Insufficient sleep (less than five hours) is strongly related to accident risk.

These factors may increase the severity of sleep disorders and result in more severe sleepiness in workers with sleep disorders.

Fatigue is a major cause of road accidents and rail by extrapolation. Sleepiness and sleep disorders are one important aspect of managing the risks of fatigue. Fatigue programs typically involve attention to rosters and sensible financial rewards, as well as education about the importance of sleep, sleep hygiene including adequate facilities for sleeping, and advice on diet and alcohol use and medication.

Treatment of obstructive sleep apnoea with nasal continuous positive airways pressure (CPAP) has been shown to reduce daytime sleepiness and reduce the risk of accidents back to control levels. CPAP has also been shown to improve driving simulator performance to control levels. Mandibular advancement splints have also been used to treat obstructive sleep apnoea. While they reduce daytime sleepiness and improve vigilance, studies have not been performed to assess whether they reduce motor vehicle accident rates.

It is important to distinguish sleepiness (the tendency to fall asleep) from fatigue or tiredness, which is not associated with a tendency to fall asleep. Many chronic illnesses cause fatigue without increased sleepiness.

Sleep Apnoea

Sleep apnoea is present on overnight monitoring in % of adult women and % of adult men. Sleep apnoea syndrome (excessive sleepiness in combination with sleep apnoea on overnight monitoring) is present in % of women and % of men. Some studies have suggested a higher prevalence in (transport) drivers. (LOE-III-2)

Obstructive sleep apnoea involves repetitive obstruction to the upper airway during sleep, precipitated by relaxation of the dilator muscles of the pharynx and tongue, and/or narrowing of the upper airway, and resulting in cessation (apnoea) or reduction (hypopnoea) of breathing.

Central sleep apnoea refers to a similar pattern of cyclic apnoea or hypopnoeas caused by oscillating instability of respiratory neural drive, and not due to upper airways factors. This condition is less common than obstructive sleep apnoea and is associated with cardiac or neurological conditions or may be idiopathic. Hypoventilation associated with chronic obstructive pulmonary disease or chronic neuromuscular conditions may also interfere with sleep quality causing excessive sleepiness.

Sleep Apnoea Assessment: Common indicators of the possibility of sleep apnoea include habitual snoring during sleep, witnessed apnoeic events, falling asleep inappropriately (particularly during non-stimulating activities) and feeling tired despite adequate time in bed. Poor memory and concentration, morning headaches and insomnia may also be presenting features. The condition is more common in men and with increasing age.
19.3 MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS

Determining sleepiness is a clinical decision. Subjective measures include tools such as the Epworth Sleepiness Scale\(^\text{40}\), which is incorporated into the Safety Critical Worker health assessment.

**Use of the Epworth Sleepiness Scale (ESS):**

The ESS is scored by summing the numeric values in the boxes in the questionnaire; the maximum possible is \(8 \times 3 = 24\).

A score of 0 to 10 is within the normal range.

Mild to moderate self reported sleepiness (Epworth Sleepiness Scale score of 11 to 15) may be associated with a significant sleep disorder, although the degree of increased risk of sleepiness-related (motor vehicle) accidents is unknown.

Scores of 16 to 24 are consistent with moderate to severe sleepiness and are associated with an increased risk of sleepiness related motor vehicle accidents (odds ratio 15.2)\(^\text{1}\). (LOE-III-2)

If the score is raised (>15) or other clinical findings warrant it, discuss the findings with the worker to determine possible explanations such as rosters or sleep disorders and agree an approach to management eg referral to general practitioner, or referral to sleep clinic for polysomnography, or a letter to management about rosters, etc. In most cases the worker will need to be immediately classed Temporarily Unfit for Duty pending further assessment.

Objective measures of sleepiness include the maintenance of wakefulness test (MWT) and multiple sleep latency test (MSLT). Excessive sleepiness on the maintenance of wakefulness test is related to impaired driving performance\(^\text{2}\).

**General Recommendations for Sleep Apnoea, Narcolepsy or Other Sleep Disorder:** Any worker with unexplained daytime sleepiness while working or having an off-duty motor vehicle accident potentially caused by sleepiness, or an ESS Score of 16 to 24 (consistent with moderate to severe sleepiness) should be classed Temporarily Unfit for Duty pending review and considered for referral to a sleep disorders specialist for assessment.

All workers suspected of having, or found to have, sleep apnoea or other sleep disorders should be warned about potential impact on Safety Critical Work. General advice should include:

- minimising unnecessary working at times when normally asleep;
- allowing adequate time for sleep;
- avoiding working after having missed a large portion of their normal sleep;
- avoiding alcohol and sedative medications; and
- resting if sleepy.

The Safety Critical Worker is responsible to:

- avoid working if they are sleepy;
- comply with treatment including management of lifestyle factors;
- maintain their treatment device;

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\(^{40}\) The Epworth Sleepiness Scale is under copyright to Dr Murray Johns 1991-1997. It may be used by individual doctors without permission, but use on a commercial basis must be negotiated. It is included in the Safety Critical Worker Health Assessment Questionnaire.
- attend review appointments; and
- honestly report their condition to their treating physician.

Safety Critical Workers who are diagnosed with obstructive sleep apnoea syndrome and require treatment should have annual review by a sleep specialist to ensure that adequate treatment is maintained. For workers who are treated with CPAP it is recommended that they should use CPAP machines with a usage meter to allow objective assessment and recording of treatment compliance. Appropriate referral to an ENT surgeon should be made. Assessment of sleepiness should be made and objective measurement of sleepiness should be considered (maintenance of wakefulness test and/or multiple sleep latency test), particularly if there is concern regarding persisting sleepiness or treatment compliance.

### MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – SLEEP DISORDERS

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>CRITERIA</th>
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</table>
| **ESS Score** | The criteria for Fit for Duty are not met:  
- If the person has a ESS score of 16 or greater.  
The person will be classified Temporarily Unfit for Duty while the causes are being assessed and managed. |
| **Sleep Apnoea** | The criteria for Fit for Duty are not met:  
- If the person has established sleep apnoea syndrome (sleep apnoea on a diagnostic sleep study and excessive daytime sleepiness) with moderate to severe sleepiness, until treatment is effective.  
- If there is a history suggestive of sleep apnoea in association with severe daytime sleepiness, until investigated and treated. Severe sleepiness is indicated by frequent self reported sleepiness while working, motor vehicle crashes caused by inattention or sleepiness or an Epworth Sleepiness Scale Score of 16 to 24. (LOE-III-2)  
Fit for Duty Subject to Review may be recommended, taking into account the opinion of a specialist in sleep disorders, and the nature of the work:  
- For those with established sleep apnoea syndrome (sleep apnoea on a diagnostic sleep study and excessive daytime sleepiness) who are on satisfactory treatment. (LOE-IV)  
- Consideration should be given to how long-distance drivers will comply with treatment such as CPAP. (LOE-III-2) |
| **Narcolepsy** | The criteria for Fit for Duty are not met:  
- If narcolepsy is confirmed. (LOE-III-3)  
Fit for Duty Subject to Review may be recommended, taking into account the opinion of a specialist in sleep disorders, and the nature of the work, after the following requirements are met:  
- A clinical assessment has been made by a sleep physician or neurologist; and  
- Cataplexy has not been a feature in the past; and  
- Medication is taken regularly; and  
- There has been an absence of symptoms for six months; and  
- Normal sleep latency present on MWT (on or off medication). (Expert Opinion) |
| **Other causes of excessive daytime sleepiness** | See guidelines in text |
**Temporary Illnesses.** The Standard does not presume to deal with the myriad of conditions that may affect health on a short to medium term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis although the text in each chapter gives some advice on the clinical issues to be considered.

**Undifferentiated Illness.** A Safety Critical Worker may present with symptoms that could have implications for their job but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease which will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties.
References

1. Fatigue Expert Group Options for Regulatory Approach to Fatigue in Drivers of Heavy Vehicles in Australia and New Zealand, February 2001, NRTC.

Further reading


Effective Date: 18 November 2010   All printed copies are uncontrolled
20. SYNCOPE / BLACKOUTS

20.1 RELEVANCE TO SAFETY CRITICAL WORK

Unpredictable, spontaneous loss of consciousness is incompatible with Safety Critical Work. Syncopal/blackout episodes may arise from various causes including:

- cardiac (for example, arrhythmias, flow obstruction);
- hypotension due to inappropriate vasodilation (for example, vaso-vagal faints, autonomic system disorder);
- neurogenic (for example, epilepsy, transient ischaemic attacks);
- metabolic (for example, hypoglycaemia); or
- psychiatric (for example, hyperventilation, psychosomatic states).

Determination of the cause of syncope/blackout may be difficult and require extensive investigations and referral to several specialists.

20.2 MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS

Medical criteria for fitness for duty are outlined in the following table.

Some of these conditions are temporary (for example, fainting in hot weather) and do not impact on fitness for duty. However, in the event of an unexplained episode of syncope/blackouts consideration must be given to discontinuation of Safety Critical Work until the cause is ascertained and treated.

Where a firm diagnosis has been made, the criteria appropriate to the condition should be referred to in this Volume. For recurrent syncope/blackouts which is not covered elsewhere in this Volume refer to the table below.

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>CRITERIA</th>
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| Syncope   | The worker should not perform Safety Critical Work for six months following unexplained syncope/blackouts, although a shorter period may be advised by an appropriate specialist. The criteria for Fit for Duty are not met:  
  - If the person suffers from unheralded recurrent syncope/blackouts which do not respond to treatment. |

Temporary Illnesses. The Standard does not presume to deal with the myriad of conditions that may affect health on a short to medium term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis although the text in each chapter gives some advice on the clinical issues to be considered.

Undifferentiated Illness. A Safety Critical Worker may present with symptoms which could have implications for their job but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease which will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties.
21. VESTIBULAR DISORDERS

21.1 RELEVANCE TO SAFETY CRITICAL WORK

Vestibular disorders may affect the ability to perform Safety Critical Work due to their affect on balance. Safety Critical Working ability is dependent on the normal functioning of the vestibular mechanism to sense movement and position and may be impaired by defects in balance.

Vestibular disorders may vary between symptomatic and asymptomatic with little warning. Vestibular malfunction can occur suddenly and with sufficient severity to make safe driving or other Safety Critical Work impossible. It is often accompanied by nystagmus, which compounds the disability. In addition, drivers need to be able to enter and exit the cab to and from the ground in emergency situations and require balance to do so. All Safety Critical Workers need to walk and in emergency to run, along ballast and other uneven surfaces and require good balance.

21.2 MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS

Medical criteria for fitness for duty are outlined in the following table.

Generally, those who suffer from unheralded attacks of vertigo are not fit for Safety Critical Work.

Vestibular function should be clinically assessed by using a simple Romberg test, which is also required for neurological function. A pass requires the ability to maintain balance while standing with shoes off, feet together side by side, eyes closed and arms by sides, for thirty seconds.

The opinion of an otorhinolaryngologist may be sought.

Subsequent to an initial attack of vertigo due to acute labyrinthitis (deafness and vertigo), there may be further recurrence of vertigo for up to twelve months. Given that there are no pre-emptory symptoms, a sudden inability to work safely may eventuate. The person should not perform Safety Critical Work while symptoms persist.

In cases of acute neurolabyrinthitis (syn. vestibular neuronitis, viral infection of the vestibular nerve) which causes nystagmus and vertigo, recurrence of symptoms can present for many years despite treatment. This makes it quite difficult to isolate a given phase of the condition where symptoms deleterious to an individual’s fitness for duty may be present. In confirmed Meniere’s disease, vestibular malfunction and nystagmus can occur despite treatment. The natural history is of progression in the affected ear associated with increasing hearing loss until in the extreme total loss of vestibular function and partial loss of cochlear function in the affected ear.

**Benign paroxysmal positional vertigo (BPPV):** Generally patients with BPPV will not have symptoms in the upright position. However, workers with BPPV and symptoms in the upright position should not perform Safety Critical Work such as climbing ladders while symptoms persist and should be free of symptoms and signs for two months before resuming Safety Critical Work.

<table>
<thead>
<tr>
<th>MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – VESTIBULAR DISORDERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONDITION</td>
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<tr>
<td>Vestibular Function</td>
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</table>
The functional ability to perform Safety Critical Work such as drivers entering/exiting the cab in an emergency.

**Temporary Illnesses.** The Standard does not presume to deal with the myriad of conditions that may affect health on a short to medium term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis although the text in each chapter gives some advice on the clinical issues to be considered.

**Undifferentiated Illness.** A Safety Critical Worker may present with symptoms that could have implications for their job but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease which will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties.

**References**


22. VISION AND EYE DISORDERS

22.1 RELEVANCE TO SAFETY CRITICAL WORK

Good vision is essential to Safety Critical Work as visual information is crucial to operating machinery and walking about as required by rail safety work. Any marked loss of visual acuity or visual field will diminish an individual’s ability to work safely. A worker with a significant visual defect may fail to detect another train or member of the public and will take appreciably longer to perceive and react to a potentially hazardous situation.

The identification and correct interpretation of colour signals is also necessary for the safe operation of trains as railway signals are an essential part of the safe operating systems.

The following descriptions of rail safety jobs illustrate typical colour vision requirements. Risk assessments of the colour vision requirements of jobs are required and should be done in conjunction with a specialist in occupational medicine to determine the appropriate classification and hence examination. Where variations are made from the Standard they should be identified to all parties because they have implications for portability. The full details on risk assessment for jobs is given in Part B Guideline for Health Risk Management but the guidance on colour vision is shown in Diagram 10.

Locomotive Engineers, Remote Control Operators undertaking mainline running and other Rail Personnel qualified as Second Person or mainline piloting must be able to demonstrate the ability to recognise colour signals. Positional cues are not always available as signal lights may operate from a single lens signal; lights from a signal may have no background or illumination at night to help their identification; there may be dazzle from a low sun behind the signal; and red lights may be shone from a lantern in emergency situations requiring rapid reaction. Combinations of red/yellow/purple/green signals are used to inform the train crew of a safe speed and routing.

Signallers (including Handsignalmen) are required to rapidly and accurately identify all signal lights in the event of signal failure occurring.

Shunters need to identify all signal colours although in terminals the trains they are guiding are generally moving slowly. An examiner must ask if the shunter has qualifications that include signal observations in a mainline environment. If so, the same requirements apply as for Train Drivers.

Signal repairers need to recognise all signal colours at a distance from a single lens signal to check correctness of their repairs and to ensure safety of the network. However they are not under time pressure to read the signal.

Diagram 10. Evaluation Process for Colour Vision

<table>
<thead>
<tr>
<th>Is accurate response to “reds” essential for rail safety? (need to distinguish red/yellow/green/purple)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO</td>
</tr>
<tr>
<td>Is there sufficient redundancy in safety systems that failure to recognise red will not affect safety (eg. positional cues of traffic lights or of semaphore arms, 2 drivers always present, speed is always low, etc)?</td>
</tr>
<tr>
<td>YES</td>
</tr>
<tr>
<td>Requires ‘Colour Vision Defective Safe’</td>
</tr>
</tbody>
</table>

22.2 MEDICAL CRITERIA FOR SAFETYCRITICAL WORKERS

Medical criteria for fitness for duty are outlined in the table on page 100.
There may be a degree of flexibility allowed at the optometrist’s or ophthalmologist’s discretion for individuals who barely meet visual criteria but who are otherwise alert, have normal reaction times and good muscular coordination.

The important aspects of vision in relation to Safety Critical Work are:
- visual acuity;
- visual fields; and
- colour vision.

**Visual acuity**

For the purposes of this Standard, visual acuity may simply be defined as the best obtainable vision with or without glasses or contact lenses. Visual acuity should be measured with one eye occluded and without correction. If correction is normally used when working then vision should be retested with corrective lenses and the corresponding results recorded. Acuity should be tested using an appropriate visual acuity chart (Snellen chart or equivalent). Alternative charts (for example, Landolt Ring, tumbling E) may be used for persons who cannot read English characters EXCEPT when reading English characters is a role specific task requirement.

The visual acuity standard can be met with or without corrective spectacle lenses or contact lenses. Persons who require glasses to perform duties should be classed as Fit for Duty Subject to Review and reviewed at an appropriate time interval depending on the underlying condition. If workers meet the criteria with corrective lenses they should be able to be passed by the Authorised Health Professional without reference to an ophthalmologist, optometrist or general practitioner. In appropriate circumstances a referral may be made.

In the case of corneal surgery, corneal pathology or a cataract, acuity should be assessed with a dilated pupil in the presence of a glare source.

It is not required that workers carry spare sets of glasses at work. However persons who wear contact lenses must carry a spare set of glasses in case a foreign body enters the eye (so requiring removal of the lens).

**Visual fields**

Adequate visual fields are important for Safety Critical Work and peripheral vision is particularly important in certain common driving tasks, such as use of side mirrors (which are important for monitoring the integrity of the train). Visual fields may be reduced as a result of head trauma, brain tumour, stroke or cerebral infarction.

Visual field losses also occur in eye diseases such as retinitis pigmentosa, a not uncommon inherited degeneration of the retina that causes significant visual field loss by the age of 30. Conditions such as glaucoma, optic atrophy, retinal detachment and localised retinal or choroidal infection can also reduce visual fields. Good rotation of the neck may also be necessary to ensure adequate overall fields of vision, but this requirement will vary depending on the particular driving task. (Refer to Musculoskeletal Disorders).

Visual fields may be initially screened by confrontation. Any person who has or is suspected of having a visual field defect should be referred for expert assessment by an optometrist or ophthalmologist. As a minimum, a central (30 degree) visual field should be measured using an automated static perimeter (Humphrey Field Analyser, Medmont M700, Octopus). If the automated perimetry (on repeat) suggests that the criteria for fitness for duty are not met then Goldman or Esterman perimetry should be performed.

Binocular vision is required for all Safety Critical Work. Controllers who require only a limited field of vision may be exempted.

**Colour vision**

Diagram 11 on page 99 summarises the testing procedures for the levels of colour vision.

Colour vision should be screened using Ishihara plates; two or more errors/12 plates is a fail. No colour lenses or sun glasses should be used when testing.

Workers who fail the Ishihara screening test do not meet the criteria. A small number of false positives (incorrect ‘fails’) occur with the Ishihara test. Therefore fails may be referred to a colour vision clinic for confirmation of their status. If found to be colour vision normal (ie false positive) they may be classed Fit for Duty. If found to be a true fail they may be offered other tests as specified and/or a practical test. A practical test is the preferred method for final assessment of doubtful colour vision, because it assesses a specific phenotype in relation to a specific signal system.

**Rail Personnel required to accurately identify signals** who fail the Ishihara test may be referred to a colour vision clinic for confirmation of their status. Those found not to have normal colour vision may be offered a practical test. Practical tests of colour vision may be considered for drivers (and others) who fail the assessment. However the test is not intended to imply any relaxation of the standard for colour vision. Activities can differ in important details regarding signal identification requirements. Therefore, it is not sensible or safe to apply a uniform practical test. The following notes outline the principles of conducting a test within a particular railway. The test should be conducted by persons knowledgeable of the work.

**Principles of Practical Tests for Colour Vision**

- Crewing a typical train (~80-100km/hr) and interpreting signals requires a person to be “Colour Vision Normal”, which is defined as less than 2 errors/12 plates on an Ishihara test. Persons who fail may be offered a practical test using the following principles:
The test should be based on the ability to read a variety of "multiple aspect" signals typical of those encountered on the system. The test will need to be designed by experienced supervisors / assessors in conjunction with colour vision experts.

The test should be conducted at the maximum distance a would be expected to interpret the signals. The maximum distance is required as a proxy for poor visibility in rain, glaring sunshine, etc. The test should be conducted by day and by night.

A control subject should be selected. Their colour vision status must be known to be "Colour Vision normal" based on a recent Ishihara test, so they are a valid control.

The test subject and control should be briefed on the test.

The test involves a series of random showings of at least 10 signals at a frequency and duration designed to simulate the requirements of the system.

The subject must obtain a score similar to the control to pass.

If the subject passes they may be permitted to drive only on the operating system for which they have passed the practical test. If they wish to drive on another system, a practical test for that system must be conducted.

In the event of a Signal Passed at Danger (SPAD) the driver may be required to repeat the test.

If the person has another eye disorder (eg impaired acuity), that condition should be carefully monitored.

**Train controllers / Signal Box Controllers** who work with multicolour screen-based equipment need to distinguish colours such as red, magenta, blue and green which may be difficult for dichromats. They should be screened with Ishihara plates; two or more errors/12 plates is a fail. Fails may be referred to a colour vision clinic for confirmation of their status and subsequently tested by Farnsworth D15 test. Alternatively those who fail the Ishihara test may be directly tested with Farnsworth D15. The Farnsworth D15 test should be applied three times. A pass is two or more correct trials which identifies "Colour Defective Safe B". An incorrect trial is two or more errors on the test. Those who fail may be offered a practical test following the principals stated above.

**ATTP** do not require colour vision testing.

**Other eye conditions**

**Dark Adaptation:** Health professionals may wish to recommend restrictions on workers who appear to meet the visual criteria in the clinical setting but may, in certain environments have extreme difficulty. Examples of such restrictions might be daylight driving only, where certain disorders or diseases such as retinitis pigmentosa can cause poor night vision, or distance and/or speed restrictions.

**Progressive Eye Conditions:** Workers with a progressive eye condition such as cataract, glaucoma, diabetic retinopathy, optic neuropathy and retinitis pigmentosa should be counselled that their eye condition will or may progress to a stage where they are no longer able to work. They should be encouraged to consider making lifestyle changes in anticipation of not being able to work. Their vision should be monitored regularly. Because persons with cataract suffer loss of contrast sensitivity and greater sensitivity to glare, they may have more difficulty seeing when working than is indicated by their visual acuity.

**Short-term Eye Conditions and Eye Treatments:** Persons whose vision is temporarily disturbed by a short term eye condition or an eye treatment should be counselled not to perform Safety Critical Work for a specified time or to limit their work during this time. This includes temporary patching of any eye, the use of mydriatics or drug known to affect vision, and after eye surgery. They should be classed as Temporarily Unfit for Duty.

**Congenital and Acquired Nystagmus:** The criteria for visual acuity must be met and any underlying condition fully assessed.

**Diplopia:** Workers suffering from all but minor forms of diplopia generally are unsafe to drive. Any person who reports or is suspected of experiencing diplopia should be referred for expert assessment by an optometrist or ophthalmologist. They should be classed as Temporarily Unfit for Duty pending review.
Diagram 11. Colour Vision Requirements and Testing for Rail Safety Workers

<table>
<thead>
<tr>
<th>Risk Assessment</th>
<th>Test</th>
<th>Determination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour Vision Normal</td>
<td>ISHIHARA TEST</td>
<td>Fit for Duty (Colour vision normal)</td>
</tr>
<tr>
<td></td>
<td>Fail ≥ 2 errors/12 plates</td>
<td>Fit for Duty only on system tested</td>
</tr>
<tr>
<td></td>
<td>Colour Vision Clinic (Optional)</td>
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<tr>
<td></td>
<td>NORMAL</td>
<td>Practical test</td>
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<td></td>
<td>FAIL</td>
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<tr>
<td></td>
<td>NOT NORMAL</td>
<td></td>
</tr>
<tr>
<td>Colour Defective Safe A</td>
<td>ISHIHARA TEST</td>
<td>Fit for Duty (Colour Defective Safe A)</td>
</tr>
<tr>
<td></td>
<td>Fail ≥ 2 errors/12 plates</td>
<td>Fit for Duty only on system tested</td>
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<td></td>
<td>Colour Vision Clinic (Optional)</td>
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<td></td>
<td>NORMAL</td>
<td>Practical test</td>
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<td></td>
<td>PASS</td>
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<td></td>
<td>NOT NORMAL</td>
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<tr>
<td>Colour Defective Safe B</td>
<td>ISHIHARA TEST</td>
<td>Fit for Duty (Colour vision normal)</td>
</tr>
<tr>
<td></td>
<td>Fail ≥ 2 errors/12 plates</td>
<td>Fit for Duty only on system tested</td>
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<td></td>
<td>Colour Vision Clinic (Optional)</td>
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<td>NORMAL</td>
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<td>PASS</td>
<td></td>
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<tr>
<td></td>
<td>NOT NORMAL</td>
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</table>
### MEDICAL CRITERIA FOR SAFETY CRITICAL WORKERS – VISION AND EYE DISORDERS

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>CRITERIA</th>
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<tbody>
<tr>
<td><strong>Acuity</strong></td>
<td>Visual acuity should be measured one eye at a time (monocularly), without correction in the first place. Acuity should be tested using a standard visual acuity chart (Snellen chart or equivalent) that includes at least five letters on the 6/9 and 6/18 lines. Alternative charts (for example, Landolt Ring, tumbling E) may be used for persons who cannot read the alphabet. More than two errors in reading the letters of any line is regarded as a failure to read the line. &lt;br&gt;The criteria for Fit for Duty are not met: &lt;br&gt;- If the person’s visual acuity is worse than 6/9 in the better eye; or &lt;br&gt;- If the person’s visual acuity is worse than 6/18 in either eye. &lt;br&gt;Fit for Duty Subject to Review may be recommended: &lt;br&gt;- If the standard is met with corrective lenses; and &lt;br&gt;- After consideration of the stability of any underlying disorder. &lt;br&gt;Fit for Duty Subject to Review may be recommended, taking into account the opinion of an ophthalmologist or optometrist, and the nature of the work: &lt;br&gt;- If the person’s vision is worse than 6/18 in the worse eye, provided that the visual acuity in the better eye is 6/9 or better (with or without corrective lenses); and &lt;br&gt;- After consideration of the nature of any underlying disorder. &lt;br&gt;In cases of latent nystagmus made manifest by the occlusion of one eye for the purpose of testing, a binocular visual acuity of 6/9 is acceptable if the visual acuity of the better eye is below 6/9 with occlusion of the fellow eye. The same minimum standard of vision in the worse eye applies.</td>
</tr>
<tr>
<td><strong>Colour vision</strong></td>
<td>These standards may be varied subsequent to a risk assessment of the network and on advice of a specialist in occupational medicine. &lt;br&gt;<strong>Locomotive Engineers, Remote Control Operators undertaking mainline running and other Rail Personnel qualified as Second Person or mainline piloting</strong> &lt;br&gt;Colour vision should be screened using Ishihara plates; two or more errors/12 plates is a fail. &lt;br&gt;The criteria for Fit for Duty for drivers are not met: &lt;br&gt;- If the person is not Colour Vision Normal, that is, does not pass the Ishihara test. &lt;br&gt;Personnel who fail the Ishihara test do not meet the criteria, but may be further assessed for confirmation at a colour vision clinic. &lt;br&gt;<strong>Rail Personnel responsible for train / shunt movements within a terminal and signal repairers:</strong> &lt;br&gt;Colour vision should be screened using Ishihara plates; two or more errors /12 plates is a fail. Shunters, flagmen and signal repairers who fail the Ishihara test should be tested with Farnsworth Lantern and those who pass are Fit for Duty. &lt;br&gt;The criteria for Fit for Duty for flagmen, shunters and signal repairers are not met: &lt;br&gt;- If the person is a protan or deutan as determined by the Farnsworth Lantern test (ie they must be Colour Defective Safe A). &lt;br&gt;<strong>Train controllers / Signal Box Controllers:</strong> &lt;br&gt;Colour vision should be screened using Ishihara plates; two or more errors /12 plates is a fail. They should be further tested using Farnsworth D15 test. &lt;br&gt;The criteria for Fit for Duty for a train controller are not met: &lt;br&gt;- If the person consistently fails the Farnsworth D15 test (ie they must be Colour Defective Safe B). &lt;br&gt;<strong>Heritage and tourist train drivers:</strong> &lt;br&gt;Colour vision should be screened using Ishihara plates; two or more errors /12 plates is a fail. Heritage and tourist train drivers who fail the Ishihara test should be tested by Medmont C100 and those who are protans are not Fit for Duty, those who are deutans should be tested with Farnsworth Lantern and those who pass are Fit for Duty. &lt;br&gt;The criteria for Fit for Duty for historical train drivers are not met: &lt;br&gt;If the person is not Colour Defective Safe A, that is, a protan or deutan as determined by the Farnsworth Lantern test.</td>
</tr>
</tbody>
</table>
CONDITION | CRITERIA
---|---
Diplopia | The criteria for Fit for Duty are not met:
- If the person experiences any diplopia (other than physiological diplopia) when fixating objects within 20° of the primary direction of gaze.

Night blindness (Dark adaptation) | No specific criteria. Refer general management guidelines in text (Paragraph 22.2 – Dark Adaptation).

Visual Fields | Visual fields may be initially screened by confrontation. Any person who has or is suspected of having a visual field defect should be referred for expert assessment by an optometrist or ophthalmologist. Central visual fields should be measured using an automated static perimeter (Humphrey Field Analyser, Medmont M700, Octopus). If the automated perimetry (on repeat) suggests that the criteria for fitness for duty are not met then Goldman or Esterman perimetry should be performed.
The criteria for Fit for Duty are not met:
- If the person has any visual field defect; or
- If the person is monocular (see text).
Fit for Duty Subject to Review may be recommended, taking into account the opinion of an ophthalmologist or optometrist, and the nature of the work:
- If the binocular visual field has an extent of at least 140° within 20° above and below the horizontal midline; and
- If the person has no significant visual field loss (scotoma, hemianopia, quadrantanopia) that is likely to impede work performance; and
- After consideration of the stability of any underlying disorder.

ATTP (Category 3) | For vision criteria for Track Safety Assessment (Around the Track Personnel, Category 3) refer PART 2B.

Temporary Illnesses. The Standard does not presume to deal with the myriad of conditions that may affect health on a short to medium term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis although the text in each chapter gives some advice on the clinical issues to be considered.

Undifferentiated Illness. A Safety Critical Worker may present with symptoms that could have implications for their job but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease which will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties.
References

Colour Vision
5. Owsley C., Vision impairment and driving Survey Ophthal. 43, 6 May Jun 1999.

Visual Fields

Further reading


SECTION 2B: MEDICAL CRITERIA FOR TRACK SAFETY HEALTH ASSESSMENTS (Around the Track Personnel, Category 3)

Rail safety workers who work on or near the track but not in a Controlled Environment require a Track Safety Health Assessment. The medical criteria are described in the table overleaf and general considerations are described below for the key aspects of the assessment. Note that workers who access the track receive Track Safety Awareness training on a regular basis, which is another key aspect of their ability to protect their own safety and that of fellow workers.

**Frequency of Assessment:**
The Track Safety Health Assessment for Category 3 (ATTP not in a Controlled Environment) assessment should be conducted:
- At time of commencement and before changing to a position involving tasks of a higher Risk Category;
- At age 40;
- and five yearly thereafter.

It is essential that workers are advised that if they incur serious injury or illness to their eyes, hearing or limbs, they should report to their supervisor for a Triggered Health Assessment.

**Hearing:**
There are appreciable risks from moving trains, which can be surprisingly quiet even at high speed so the ability to hear a train horn is important. The standard has been set with a wide margin of safety to allow for adverse environmental conditions and the worker facing away from the train. (Refer also chapter in Part 2A Hearing).

*Note:* workers who are at any time working directly on the track should be regarded as functionally deaf and blind. A hearing standard for their safety is not appropriate and they require suitable track protection. Also this hearing standard and testing should not be confused with the requirements for audiometric monitoring required by OHS regulations for noise exposed workers.

**Mobility:**
There must be sufficient soundness of limb to permit rapid movement away from a train. (Refer also chapter in Part 2A Musculoskeletal Disorders).

**Vision:**
Full visual fields and good acuity are important to sense an oncoming train.

There are no requirements for colour vision unless the specific task requires it. (Refer also chapter in Part 2A Vision and Eye Disorders)

**Alcohol and drugs:**
Individual organisation policy will address requirements for testing for alcohol or drug impairment, which may include “reasonable cause” testing and random testing.

Screening for illicit drugs may be required for Pre-placement or Change of Risk Category Health Assessment depending on organisational practices. Screening may also be required by management at a Triggered Health Assessment. Screening is generally not required at Periodic Health Assessment.

The Track Safety Assessment does not include specific criteria for drug and alcohol impairment but Authorised Health Professionals are expected to manage suspected impairment at the time of health assessment as part of the interface between these assessments and drug and alcohol controls.

If during a Periodic Health Assessment, the health professional has a reasonable belief that the worker may be impaired by alcohol or drugs (prescribed or illicit), based on observation of abnormal or uncharacteristic signs in relation to speech, eyes, breathing, skin, actions, movement, balance, attitude and comprehension, this should be discussed with the worker.

Where no satisfactory medical basis for impairment is established, (that is a prescription medication or OTC drug taken for a defined purpose, or a medical condition) the worker should be classified as Temporarily Unfit for Duty Subject to Review. Management should be contacted and advised that the person has impairment for which no medical basis could be found. Management will then direct the steps to be taken which may include a drug screen. (Refer also chapters in Part 2A, Alcohol Dependence and Impairment, Drugs – Illicit, Drugs – Prescription and OTC).

Specific requirements and procedures for drug and alcohol screening are beyond the scope of this Standard. The Authorised Health Professional should acquaint themselves with the procedures of the organisation for which they provide services.
## MEDICAL CRITERIA FOR TRACK SAFETY HEALTH ASSESSMENT

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>CRITERIA</th>
</tr>
</thead>
</table>
| **Hearing**                | Compliance with the Standard should be assessed by conducting audiometry, without aids in the first place. The hearing threshold level for pure tones is defined as the number of decibels above standard audiometric zero for a given frequency at which the listener's threshold of hearing lies when tested in a suitable sound attenuated environment. It is the reading on the hearing level dial of an audiometer that is calibrated according to Australian Standard AS 2586-1983. The criteria for Fit for Duty are not met:  
  • If the worker has an unaided average hearing threshold level of equal to or worse than 40dB in the better ear. (Average hearing threshold is the simple average of pure tone air conduction thresholds at 500, 1000, 2000 Hz).  
  Fit for Duty Subject to Review may be recommended, taking into account the opinion of an ENT specialist and the nature of the work:  
  • If a practical test is passed (refer text for details page 70).  
  • Refer to text (page 70) regarding use of hearing aids.  
  Fit for Duty Subject to Job Modification may be considered, for example if the worker is to be escorted at all times when around the track. |
| **Musculoskeletal Disorders** | The criteria for Fit for Duty are not met:  
  • If chronic pain or restriction of joint movement or amputation of the lower limbs interferes with the ability to rapidly move from an oncoming train.  
  Fitness for Duty Subject to Periodic Review may be recommended, taking into account the opinion of a specialist and the nature of the work:  
  • If the condition is adequately treated.  
  Fitness for Duty Subject to Job Modification may be considered, for example if the person is to be accompanied at all times when around the track. |
Vision

Acuity

Visual acuity should be measured one eye at a time (monocularly), without correction in the first instance. Acuity should be tested using a standard visual acuity chart (Snellen chart or equivalent) that includes at least five letters on the 6/9 and 6/18 lines. Alternative charts (for example, Landolt Ring, tumbling E) may be used for persons who cannot read the alphabet. More than two errors in reading the letters of any line is regarded as a failure to read the line.

The criteria for Fit for Duty are not met:
• If the person's visual acuity is worse than 6/9 in the better eye; or
• If the person's visual acuity is worse than 6/18 in either eye.

Fit for Duty Subject to Review may be recommended if:
• The standard is met with corrective lenses; and
• After consideration of the nature of any underlying disorder.

Fit for Duty Subject to Job Modification may be considered, for example if the worker is to be escorted at all times when around the track.

NOTE: It is not required that workers carry spare sets of glasses at work. However workers who use contact lenses should have a set of glasses for use lest a foreign body prevents use of contact lens.

MEDICAL CRITERIA FOR TRACK SAFETY HEALTH ASSESSMENT - CONT

CONDITION

CRITERIA

Vision

Visual Fields

Visual fields may be initially screened by confrontation. Any worker who has or is suspected of having a visual field defect should be referred for expert assessment by an optometrist or ophthalmologist. Visual fields should be measured using an automated static perimeter (Humphrey Field Analyser, Medmont M700, Octopus). If the automated perimetry suggests that the criteria for Fit for Duty are not met then Goldman or Esterman perimetry should be performed.

The criteria for Fit for Duty are not met:
• If the person has any visual field defect; or
• If the person is monocular.

Fit for Duty Subject to Review may be recommended:
• If the binocular visual field has an extent of at least 140° within 10° above and below the horizontal midline; and
• If the person has no significant visual field loss (scotoma, hemianopia, quadrantanopia) that is likely to impede work performance; and
• After consideration of the nature of any underlying disorder.

Fit for Duty Subject to Job Modification may be considered, for example if the person is to be accompanied at all times when around the track.
Section 3: MODEL FORMS

The following model forms support the consistent application of the Health Assessment Standard nationally and should not be modified other than to incorporate particular administrate requirements of rail organisations.
1. Safety Critical Worker Health Assessment

1.1 Request and Report Form

The Request and Report form is the key means of communication between the rail organisation and the Authorised Health Professional.

The form is used as follows:

1. **Part A**: The employer completes PART A, encloses copies of relevant supporting information (eg. previous Health Assessment Report, sick leave summary, relevant worker’s compensation reports or critical incident reports) and a copy of the Health Professional Record (Form 1.3), and forwards them to the Authorised Health Professional.

2. **Part B**: Upon completion of the assessment, the health professional completes PART B of the form, retains a copy and returns the original form to the employer.

3. **Part C**: The employer completes PART C of the form to indicate the action taken as a result of the assessment.
**Safety Critical Worker Health Assessment REQUEST AND REPORT FORM**

**IMPORTANT INFORMATION**

To the Employer

- Please complete all relevant details in PART A of the form including:
  - Personal details of the worker/applicant.
  - Appointment details.
  - A description of the rail safety duties to be performed by the worker/applicant (or attach Job Description or Task Risk Assessment).
  - The Risk Category determined by the tasks and therefore the level of assessment (Category 1 or 2).
  - The type of assessment requested (eg. Pre-placement, Change of Risk Category, Periodic, Triggered).
  - The pathology tests required (High Level Safety Critical Worker only).
  - Audiometry requirements.

- Additional forms and information to be issued with this request include:
  - Health Assessment Record to be completed and retained by the Authorised Health Professional.
  - Any additional information relevant to the assessment including copies of previous Health Assessment Report, relevant workers compensation reports, critical incident history and sick leave record.

- On receipt of the completed Health Assessment Report:
  - Complete PART C and take action as appropriate.

To the Health Professional

- You are requested to conduct a health assessment to assess the worker’s fitness for rail safety duties according to the details provided in PART A of this form and according to Part A of the National Standard for Health Assessment of Rail Safety Workers.

- You must sight photo identification of the worker/applicant (eg Rail Safety Worker's Card, driver's licence).

- Please perform the assessment, complete PART B of this form and return to the worker’s employer according to instructions noted in PART A, within 7 days of the assessment, OR should the worker be assessed Unfit for Duty, please contact the employer immediately by phone so that appropriate rostering changes may be made.

- Category 1 High Level Safety Critical Workers are required to present for fasting cholesterol (total and HDL), fasting glucose and an ECG for Pre-placement, Change of Risk Category and Periodic Health Assessments. Results will be forwarded to you directly.

- Both Category 1 and Category 2 Safety Critical Workers are required to have audiometry for Pre-placement, Change of Risk Category and Periodic Health Assessments. This will be arranged separately if audiometry facilities are not available at your practice.

- You may need to contact the worker’s/applicant’s nominated doctor to discuss conditions that may affect their fitness for rail safety work. Such contact should be made with the worker’s signed consent.

- Details of the examination should be recorded on the enclosed Health Assessment Record. This record is confidential and should be retained by you, not returned to the employer. The employer’s Chief Medical Officer (if they have one) may contact you for more information regarding the worker’s condition.

- For more detailed information about the conduct of health assessments for rail safety workers see Part A of the National Standard for Health Assessment of Rail Safety Workers.
### PART A – Employer to complete

#### 1. Worker/Applicant Details

<table>
<thead>
<tr>
<th>Family Name:</th>
<th>First Names:</th>
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<th>Company:</th>
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<table>
<thead>
<tr>
<th>Employee No:</th>
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#### 2. Rail Organisation Details

<table>
<thead>
<tr>
<th>Supervisor/contact:</th>
<th>Date of request:</th>
<th>Phone:</th>
<th>Facsimile:</th>
</tr>
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</table>

Account and report to be sent to Supervisor at the following address (Please insert postal address or fax number):

#### 3. Health Assessment Appointment Details:

<table>
<thead>
<tr>
<th>Doctor/Practice:</th>
<th>Address:</th>
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<table>
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<tr>
<th>Phone:</th>
<th>Facsimile:</th>
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<tr>
<th>Appointment Date:</th>
<th>Time:</th>
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#### 4. Description of Duties (or see attached Job Description or Task Risk Assessment):

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#### 5. Supporting information relevant to the assessment (tick information provided):

- Previous relevant Health Assessment Report(s)
- Relevant sick leave for last 12 months (number of days, not details):
  - 
- Relevant ACC history
- Relevant Critical Incident episodes
- Positive Drug and Alcohol Assessment Reports
- Record of involvement in serious rail safety incidents
- Other (specify):
  - 

#### 6. Type of Assessment required:

- Pre-placement / Change of Risk Category Health Assessment
- Periodic Health Assessment
- Triggered Health Assessment (specify reason):
  - 
- Drug Screen
- Other (specify):
  - 

#### 7. Risk Category/Level of Assessment:

- Category 1 (High Level Safety Critical Worker)
- Category 2 (Safety Critical Worker)

Specific Health Requirements:

- Colour vision
  - Normal
  - Colour Defective Safe A
  - Colour Defective Safe B (SBE)

- Hearing
  - Driver
  - Non Driver / Other

Musculoskeletal (note specific requirements):
  - 

#### 8. Tests Ordered:

- Cardiac Risk Assessment (Category 1 only)
- Fasting Cholesterol (total and HDL)
- Fasting Plasma Glucose
- Resting ECG
- Drug Screen

Pathology ordered from:

- Audiometry (Category 1 and 2)
  - Audiometry ordered from March 2004
**Worker/Applicant Name:**

**Employee No.**

**Date of birth:**

**Date of Request:**

### PART B – Health Professional to complete

I have sighted the worker’s Rail Safety Worker Card

Number __________________

OR

I have sighted the worker’s/applicant’s photo ID (eg driver’s licence, passport)

Number __________________

I certify that I have examined the worker/applicant named in accordance with the medical standards contained in the National Standard for Health Assessment of Rail Safety Workers, Part A: Assessment Procedures and Medical Criteria and in my opinion the worker/applicant is (tick appropriate box):

- **Fit for Duty** – Meets all relevant medical criteria.
- **Fit for Duty Subject to Review** – Does not meet all medical criteria, but could perform rail safety work if the condition is sufficiently under control and worker is more frequently reviewed than prescribed under periodic review.
- **Fit for Duty Subject to Job Modification** – Does not meet all medical criteria, but could perform current rail safety work if suitable modifications were made.
- **Temporarily Unfit for Duty Subject to Review** – Does not meet all medical criteria and cannot perform current rail safety tasks but may perform alternative tasks. May return to full duty pending improvement in condition, response to treatment, confirmed diagnosis of undifferentiated illness.
- **Permanently Unfit for Duty** – Does not meet the medical criteria and cannot perform the job in the future.

### Drug Screen Results (if required):

### Health Professional Details (stamp acceptable):

- **Name:**
- **Phone:**
- **Facsimile:**
- **Practice address:**
- **Signature:**
- **Date of Assessment:**

### PART C – Employer to complete on receipt of Assessment Report

Action taken as a result of Health Assessment:

- **Job modification (details):**
- **Triggered review (indicate period):**
- **Periodic Health Assessment scheduled (details):**
- **Redeployment (details):**
- **Drug Assessment (details):**
1.2 Worker Notification and Health Questionnaire

This form contains the notification to the worker and the Safety Critical Worker Health Questionnaire.

The self-administered questionnaire is a screening tool to help identify conditions that might affect the performance of Safety Critical Work. The questionnaire is not a diagnostic tool and no decision can be made regarding the worker’s fitness for duty until the full clinical examination is performed.

The Authorised Health Professional may need to guide or assist with completion of the questionnaire if literacy or cultural background presents a barrier to self-administration by the worker. The health professional will also need to review the answers with the worker to ascertain relevant detail.

Dishonest completion of the questionnaire may be an issue. Workers are required to sign the completed questionnaire in the presence of the Authorised Health Professional and the health professional should countersign.

The form is used as follows:

1. **Part A:** The employer requests that the worker/applicant sign the front of the form to indicate that they have read and understood the statements concerning the health information to be provided. The employer completes PART A including appointment details and instructions to the worker/applicant.

2. **Part B:** The worker/applicant completes PART B and presents to the Authorised Health Professional. The worker/applicant signs the form as a true statement and the health professional countersigns.

3. The employer discusses the results with the worker/applicant. The form is retained by the health professional and filed in the workers medical record.
# Safety Critical Worker Health Assessment

## WORKER NOTIFICATION AND HEALTH QUESTIONNAIRE

**IMPORTANT INFORMATION**

To the Worker/Applicant,

- You are required to attend a health assessment as a condition of your employment, to assess your fitness for undertaking rail safety work.
- The health assessment must be completed by (date)________________________ to ensure that you are able to carry out normal duties.
- Complete the enclosed questionnaire BEFORE ATTENDING THE APPOINTMENT and provide it to the examining health professional. The bottom of the questionnaire must be signed by you in the presence of the examining doctor.
- Take glasses, hearing aid or any other aids required for Safety Critical Work to the appointment.
- Take all medication that you are currently taking to the appointment or a list of such medications.
- Take photo identification with you to the appointment.
- If you are a High Level Safety Critical Worker (Category 1) you will be required to have a blood test as part of your assessment. So as to get a true reading of your blood sugar and cholesterol (total and HDL) you should not eat for a minimum of 8 hours (and no longer than 14 hours) before your blood test appointment. You may drink water but should not take sweetened drinks.

**What happens if the examining doctor finds a problem with your health?**

If the examining doctor finds or suspects something is wrong with your health that you did not know about, they will ask your permission to inform your own doctor. The examining doctor will not treat any medical condition but will give you a letter to take to your own doctor.

If the doctor finds that you do not meet all relevant medical criteria, your supervisor at the rail organisation(s) will discuss with you the appropriate action to be taken. This may include:

- modification of the duties that you undertake for that railway organisation; and/or
- scheduling of a further review, tests or specialist referral.

**DISCLOSURE OF HEALTH INFORMATION – PLEASE READ CAREFULLY AND SIGN TO INDICATE YOUR UNDERSTANDING OF HOW YOUR HEALTH INFORMATION IS REPORTED, STORED AND ACCESSED**

The details of your health assessment will remain confidential and will only be reported to your employer in terms of your fitness for duty. The examining doctor retains all detailed medical papers including your questionnaire responses, test results and the completed record of clinical findings. The examining doctor sends the completed ‘Request and Report Form: Safety Critical Worker Health Assessment’ directly to the referring rail organisation indicating your fitness or otherwise for duty.

Where your employer utilises the services of a Chief Medical Officer (CMO), the CMO may request a copy of the examining doctor’s clinical report and test results to aid in the management of your health in relation to your work. The CMO must maintain the confidentiality of the records and ensure they are not made available to, or discussed with any other person within the rail organisation.

Other than the above, no information will be disclosed to any other person or organisation without your written permission, except where:

- a notifiable disease is diagnosed which must, by law, be reported;
- a report is subpoenaed by a court of law; or
- the rail safety regulator (or another person) is required to conduct an inquiry into a railway accident or incident.

You have the right to access your health records including those held by the Authorised Health Professional and the CMO (if relevant) and the reports held by the rail organisation.

**WORKERS DECLARATION**

I, ____________________________________ (Print Name) certify that I have read and understood the above statement concerning the health information provided herein.

Signature: ______________________________________

Date: ________________________________

---

**FOR PRIVACY REASONS THE COMPLETED FORM SHOULD BE RETAINED BY THE AUTHORISED HEALTH PROFESSIONAL AND NOT RETURNED TO THE RAIL ORGANISATION (other than the Chief Medical Officer if requested)**
PART A1 – Employer to complete

1. Worker/Applicant Details
   - Family Name: [Family Name]
   - First Names: [First Names]
   - Company: [Company]
   - Location: [Location]
   - Employee No: [Employee No]
   - Date of birth: [Date of birth]

2. Rail Organisation Details
   - Supervisor/contact: [Supervisor/contact]
   - Date of request: [Date of request]
   - Phone: [Phone]
   - Facsimile: [Facsimile]

3. Health Assessment Appointment Details
   - Doctor/Practice: [Doctor/Practice]
   - Address: [Address]
   - Phone: [Phone]
   - Facsimile: [Facsimile]
   - Appointment Date: [Appointment Date]
   - Time: [Time]

4. Tests ordered (Category 1 only):
   - Pathology: Fasting Cholesterol - Total and HDL (Category 1 only)
     Location and appointment time: [Location and appointment time]
   - Pathology: Fasting Plasma Glucose (Category 1 only)
     Location and appointment time: [Location and appointment time]
   - Other: Resting ECG (Category 1 only)
     Location and appointment time: [Location and appointment time]

5. Other Tests ordered (Category 1 & 2):
   - Pathology: Audiometry (Category 1 and 2)
     Location and appointment time: [Location and appointment time]
   - Other: Drug Screen
     Location and appointment time: [Location and appointment time]

PART A2 – PATHOLOGY REQUEST

Please accept this form as a referral for this employee/applicant to undertake fasting glucose and lipid pathology (total cholesterol and HDL) screening.

Please fax the results of the pathology to the Authorised Health Professional at the address in section (3) above.

Please forward the account to the rail organisation contact at the address in section (2) above.

Pathology Service to complete:

- [ ] I have sighted the worker’s Rail Safety Worker Card  
  Number: __________________________  

- [ ] I have sighted the worker’s / applicant’s photo ID (driver’s licence or passport)  
  Number: __________________________

Signature: ___________________________  
Date of pathology attendance: _____/____/____

Name: ___________________________ (print)  
Phone: ___________________________

Pathology address: ____________________________________________________________

Effective Date: 18 November 2010  All printed copies are uncontrolled
### PART B - SAFETY CRITICAL WORKER HEALTH QUESTIONNAIRE—Worker to complete

This questionnaire must be completed in order to help assess your fitness for Safety Critical Work. Please answer the questions by ticking the appropriate box or circling the appropriate response. If you are not sure, leave the question blank and ask the examining health professional what it means. The health professional will ask you more questions during the assessment.

#### 1. Are you currently being treated by a doctor for any illness or injury?  

<table>
<thead>
<tr>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
</table>

#### 2. Are you receiving any medical treatment or taking any medication (prescribed or otherwise)?  

*(Please take any medications with you to show the doctor)*  
Please note brief details:

- ............................................................................................................................................
- ............................................................................................................................................
- ............................................................................................................................................
- ............................................................................................................................................

#### 3. Have you ever had, or been told by a doctor that you had any of the following?  

<table>
<thead>
<tr>
<th>NO</th>
<th>YES</th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
</table>

- 3.1 High blood pressure
- 3.2 Heart disease
- 3.3 Chest pain, angina
- 3.4 Any condition requiring heart surgery
- 3.5 Palpitations/irregular heartbeat
- 3.6 Abnormal shortness of breath
- 3.7 Head injury, spinal injury
- 3.8 Seizures, fits, convulsions, epilepsy
- 3.9 Blackouts or fainting
- 3.10 Migraine
- 3.11 Stroke
- 3.12 Dizziness, vertigo, problems with balance
- 3.13 Double vision, difficulty seeing
- 3.14 Colour blindness
- 3.15 Kidney disease
- 3.16 Diabetes
- 3.17 Neck, back or limb disorders
- 3.18 Hearing loss or deafness or had an ear operation or use a hearing aid?
- 3.19 Do you have difficulty hearing people on the telephone (respond YES if you require a hearing aid)?
- 3.20 Do you smoke or have you ever been a smoker?
- 3.21 Have you ever had, or been told by a doctor that you had a psychiatric illness or nervous disorder?
- 3.22 Have you ever had any other serious injury, illness, operation, or been in hospital for any reason?
- 3.23 Do you use illicit drugs?

#### 4. Please tick the box ‘NO’ or ‘YES’ in response to the following:

<table>
<thead>
<tr>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
</table>

- 4.1 Have you ever had, or been told by a doctor that you had a sleep disorder, sleep apnoea, or narcolepsy?
- 4.2 Has anyone noticed that your breathing stops or is disrupted by episodes of choking during your sleep?

**Epworth Sleepiness Scale**

4.3 How likely are you to doze off or fall asleep in the following situations, in contrast to feeling just tired? This refers to your usual way of life in recent times. Even if you haven’t done some of these things recently try to work out how they would have affected you. Use the following scale to choose the most appropriate number for each situation:

- 0 = would never doze off
- 1 = slight chance of dozing
- 2 = moderate chance of dozing
- 3 = high chance of dozing

<table>
<thead>
<tr>
<th>Situation</th>
<th>Chance of Dozing (0 to 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.3.1</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>4.3.2</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>4.3.3</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>4.3.4</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>4.3.5</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>4.3.6</td>
<td>Sitting and talking to someone</td>
</tr>
<tr>
<td>4.3.7</td>
<td>Sitting quietly after a lunch without alcohol</td>
</tr>
<tr>
<td>4.3.8</td>
<td>In a car, while stopped for a few minutes in the traffic</td>
</tr>
</tbody>
</table>
5. (AUDIT Questionnaire) Please circle the answer that is correct for you:

<table>
<thead>
<tr>
<th>Question</th>
<th>(0)</th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>How often do you have a drink containing alcohol? (If Never, go to question 6)</td>
<td>Never</td>
<td>Monthly or less</td>
</tr>
<tr>
<td>5.2</td>
<td>How many drinks containing alcohol do you have on a typical day when you are drinking?</td>
<td>1 or 2</td>
<td>3 to 5</td>
</tr>
<tr>
<td>5.3</td>
<td>How often do you have six or more alcoholic drinks on one occasion?</td>
<td>Never</td>
<td>Monthly or less</td>
</tr>
<tr>
<td>5.4</td>
<td>How often during the last year have you found that you were not able to stop drinking once you had started?</td>
<td>Never</td>
<td>Monthly or less</td>
</tr>
<tr>
<td>5.5</td>
<td>How often during the last year have you failed to do what was normally expected from you because of drinking?</td>
<td>Never</td>
<td>Monthly or less</td>
</tr>
<tr>
<td>5.6</td>
<td>How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?</td>
<td>Never</td>
<td>Monthly or less</td>
</tr>
<tr>
<td>5.7</td>
<td>How often during the last year have you had a feeling of guilt or remorse after drinking?</td>
<td>Never</td>
<td>Monthly or less</td>
</tr>
<tr>
<td>5.8</td>
<td>How often during the last year have you been unable to remember what happened the night before because you had been drinking?</td>
<td>Never</td>
<td>Monthly or less</td>
</tr>
<tr>
<td>5.9</td>
<td>Have you or someone else been injured as a result of your drinking?</td>
<td>No</td>
<td>Yes, but not in the last year</td>
</tr>
<tr>
<td>5.10</td>
<td>Has a relative or friend, or a doctor or other health worker been concerned about your drinking or suggested you cut down?</td>
<td>No</td>
<td>Yes, but not in the last year</td>
</tr>
</tbody>
</table>

6. (K10 Questionnaire) Please tick the answer that is correct for you:

<table>
<thead>
<tr>
<th>Question</th>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
<th>None of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>In the past 4 weeks, about how often did you feel tired out for no good reason?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.2</td>
<td>In the past 4 weeks, about how often did you feel nervous?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.3</td>
<td>In the past 4 weeks, about how often did you feel so nervous that nothing could calm you down?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.4</td>
<td>In the past 4 weeks, about how often did you feel hopeless?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.5</td>
<td>In the past 4 weeks, about how often did you feel restless or fidgety?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.6</td>
<td>In the past 4 weeks, about how often did you feel so restless you could not sit still?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.7</td>
<td>In the past 4 weeks, about how often did you feel depressed?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.8</td>
<td>In the past 4 weeks, about how often did you feel that everything was an effort?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.9</td>
<td>In the past 4 weeks, about how often did you feel so sad that nothing could cheer you up?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.10</td>
<td>In the past 4 weeks, about how often did you feel worthless?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Worker’s Declaration (in presence of health professional):

1. ____________________________________________________ (Print Name)

certify that to the best of my knowledge the above information supplied by me is true and correct

Signature of worker: ________________________________

Signature of health professional: ________________________________

Date: _____/_____/

IMPORTANT: For privacy reasons, the completed questionnaire MUST NOT be returned to the employer (other than to the Chief Medical Officer if requested).
1.3 Record for Health Professional

The Health Assessment Record for Health Professionals is a tool that guides the health assessment process. It provides a standard format for recording the results of the assessment, which should then be filed by the Authorised Health Professional in the worker/patient’s medical history.

The form should be used as follows:

1. **Part A:** The employer completes PART A, and includes the form with the Request and Report Form (Form 1.1) and forwards to the Authorised Health Professional.

2. **Part B:** The health professional records the results of the clinical examination in PART B and retains the form in the worker’s medical record. The form also includes provision for the worker/patient to provide signed consent for the health professional to contact their treating doctor.

3. The completed Health Assessment Record is not to be forwarded to the employer for reasons of privacy. The Authorised Health Professional should summarise the results in terms of fitness for duty on the Request and Report Form (Form 1.1).
## PART A – Employer to complete

### 1. Worker/Applicant Details

<table>
<thead>
<tr>
<th>Family Name</th>
<th>First Names</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employee No</th>
<th>Date of birth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 2. Rail Organisation Details

<table>
<thead>
<tr>
<th>Supervisor/contact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date of request</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phone</th>
<th>Facsimile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3. Health Assessment Appointment Details

<table>
<thead>
<tr>
<th>Doctor/Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phone</th>
<th>Facsimile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Appointment Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## PART B – Examination Record – Health Professional to complete

### 1. Cardiovascular System:

#### 1.1 Blood Pressure (repeat if necessary)

<table>
<thead>
<tr>
<th>Systolic</th>
<th>mm Hg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diastolic</th>
<th>mm Hg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 1.2 Pulse Rate

- Regular
- Irregular

#### 1.3 Heart Sounds

- Normal
- Abnormal

#### 1.4 Peripheral Pulses

- Normal
- Abnormal

#### 1.5 Calculation of Cardiac Risk Score (High Level SCW examination only). See Cardiovascular chapter for scoring.

<table>
<thead>
<tr>
<th>Data</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age/sex</td>
<td></td>
</tr>
<tr>
<td>Smoker: Y/N</td>
<td></td>
</tr>
<tr>
<td>Blood Pressure (systolic)</td>
<td></td>
</tr>
<tr>
<td>ECG (left ventricular hypertrophy)</td>
<td></td>
</tr>
<tr>
<td>Fasting cholesterol – TOTAL – HDL</td>
<td></td>
</tr>
<tr>
<td>Fasting plasma glucose (diabetes)</td>
<td></td>
</tr>
</tbody>
</table>

### 1.5 Cardiac Risk Score (cont)

Other clinical considerations (refer section 4.2 Cardiovascular Disease) eg symptoms, family and past history, co-morbidity, work conditions:

- ____________________________________________
- ____________________________________________
- ____________________________________________

### 2. Musculoskeletal / Neurological:

#### 2.1 Cervical spine rotation

- Normal
- Abnormal

#### 2.2 Back movement

- Normal
- Abnormal

#### 2.3 Upper Limbs

a) Appearance:

- Normal
- Abnormal

b) Joint movements:

- Normal
- Abnormal

#### 2.4 Lower Limbs

a) Appearance:

- Normal
- Abnormal

b) Joint movements:

- Normal
- Abnormal

#### 2.5 Gait

- Normal
- Abnormal

#### 2.6 Romberg’s Test (A pass requires the ability to maintain balance while standing with shoes off, feet together side by side, eyes closed and arms by sides, for thirty seconds):

- Normal
- Abnormal

(cont)....
3. Chest/Lungs: Normal □ Abnormal □

4. Abdomen (liver): Normal □ Abnormal □

5. Hearing, if required (Audiometry results):

<table>
<thead>
<tr>
<th></th>
<th>0.5 kHz</th>
<th>1.0 kHz</th>
<th>2.0 kHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Left</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. Vision:

6.1 Visual Acuity

<table>
<thead>
<tr>
<th></th>
<th>Uncorrected</th>
<th>Corrected</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>L</td>
<td>R</td>
</tr>
<tr>
<td>L 6'</td>
<td>L 6'</td>
<td>L 6'</td>
</tr>
</tbody>
</table>

Are contact lenses worn? No □ Yes □

6.2 Visual Fields (Confrontation to each eye):

Normal □ Abnormal □

6.3 Colour vision, if required (Ishihara: ≥ 2 errors/12 plates is a fail)

Pass □ Fail □

9. Alcohol: Audit Questionnaire

(Record results from Question 5 of the Health Questionnaire)

<table>
<thead>
<tr>
<th>Question</th>
<th>Score</th>
<th>Question</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q 5.1</td>
<td></td>
<td>Q 5.6</td>
<td></td>
</tr>
<tr>
<td>Q 5.2</td>
<td></td>
<td>Q 5.7</td>
<td></td>
</tr>
<tr>
<td>Q 5.3</td>
<td></td>
<td>Q 5.8</td>
<td></td>
</tr>
<tr>
<td>Q 5.4</td>
<td></td>
<td>Q 5.9</td>
<td></td>
</tr>
<tr>
<td>Q 5.5</td>
<td></td>
<td>Q 5.10</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL SCORE:

10. Psychological Health:

10.1 K10 Questionnaire

(Record results from Question 6 of the Health Questionnaire)

<table>
<thead>
<tr>
<th>Question</th>
<th>Score</th>
<th>Question</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q 6.1</td>
<td></td>
<td>Q 6.6</td>
<td></td>
</tr>
<tr>
<td>Q 6.2</td>
<td></td>
<td>Q 6.7</td>
<td></td>
</tr>
<tr>
<td>Q 6.3</td>
<td></td>
<td>Q 6.8</td>
<td></td>
</tr>
<tr>
<td>Q 6.4</td>
<td></td>
<td>Q 6.9</td>
<td></td>
</tr>
<tr>
<td>Q 6.5</td>
<td></td>
<td>Q 6.10</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL SCORE:

10.2 Is attitude, speech and behaviour appropriate? No □ Yes □

11. Medications:

(Record details of medications from Question 2 of the Health Questionnaire)
RELEVANT CLINICAL FINDINGS AND ACTION

Note Comments on any relevant findings detected in the questionnaire or examination, making reference to the requirements of the Standard.

Patient Consent (if required to consult with general practitioner or other treating doctor)

I, ____________________________, print name

☐ give  ☐ do not give (please indicate) permission for the examining health professional to contact my treating doctor(s) to discuss or clarify information relating to my current health status

Signature of worker/applicant: ___________________________________________

(1) Name of Doctor: ____________________________  (2) Name of Doctor: ____________________________

Phone: ____________________________  Phone: ____________________________

IMPORTANT:

For privacy reasons, the completed Health Assessment Record must not be returned to the rail organisation (other than to the Chief Medical Officer, if requested, who must maintain confidentiality). Please retain in the worker’s health record.
2. Track Safety Health Assessment

2.1 Request and Report Form

The Request and Report Form for the Track Safety Health Assessment is used as follows:

1. **Part A**: The employer asks the worker/applicant to sign the front of the form to indicate that they have read and understood the statements concerning the health information to be provided. The employer completes PART A, encloses a copy of the Health Assessment Record for Health Professionals (Form 2.2) and forwards to the Authorised Health Professional.

2. **Part B**: Upon completion of the assessment, the health professional completes PART B of the form, retains a copy and returns the original form to the employer.

   The health professional also completes the Health Assessment Record (Form 2.2) and retains it.

3. **Part C**: The employer completes PART C of the form to indicate the action taken as a result of the health assessment.
THE COMPLETED FORM SHOULD BE RETURNED TO THE RAIL ORGANISATION

CONFIDENTIAL

Track Safety Health Assessment
REQUEST AND REPORT FORM
### To the Health Professional
- You are requested to conduct a health assessment to assess the worker's/applicant's fitness for rail safety work in accordance with the National Standard for Health Assessment of Rail Safety Workers.
- Please perform the assessment, complete PART B of this form and return to worker’s supervisor according to the instructions in PART A.
- Should the worker be assessed Unfit for Duty please contact the employer immediately so that appropriate rostering changes may be made.
- Details of the assessment should be recorded on the enclosed Track Safety Health Assessment Record form. This record is confidential and should be retained by you, not returned to the employer. The employer’s chief medical officer may contact you for more information regarding the worker’s condition.
- For more detailed information about the conduct of health assessments for rail safety workers see the National Standard for Health Assessment of Rail Safety Workers.

### To the Employer
- Please complete all relevant details in PART A of the form including:
  - Personal details of the worker/applicant
  - Appointment details if appropriate
  - Description of the rail safety duties to be performed by the worker/applicant
  - Type of assessment requested.
- Upon receipt of the completed Health Assessment Report from the examining health professional, please complete Section C indicating the action taken, and ask employee to complete Part D as required.

### To the Worker: DISCLOSURE OF HEALTH INFORMATION – PLEASE READ CAREFULLY AND SIGN TO INDICATE YOUR UNDERSTANDING OF HOW YOUR HEALTH INFORMATION IS REPORTED, STORED AND ACCESSED
The details of your health assessment will remain confidential and will only be reported to your employer in terms of your fitness for duty. The examining health professional retains all detailed medical papers including your test results and the completed record of clinical findings. The health professional sends only the completed Request and Report form directly to the referring railway organisation indicating your fitness or otherwise for duty. Where your employer utilises the services of a Chief Medical Officer (CMO), the CMO may request a copy of the examining health professional's report to aid in the management of your health in relation to your work. The CMO must maintain the confidentiality of the records and ensure they are not made available to, or discussed with any other person within the rail organisation. Other than the above, no information will be disclosed to the employer or any other person or organisation without your written permission, except where:
- a notifiable disease is diagnosed which must, by law, be reported to the State authorities;
- a report is subpoenaed by a court of law; or
- the rail safety regulator (or another person) is required to conduct an inquiry into a railway accident or incident.

You have the right to access your health records including those held by the Authorised Health Professional and the CMO (if relevant) and the reports held by the rail organisation.

### WORKER’S DECLARATION
I, ________________________________________________________________________ (Print Name)
certify that I have read and understood the above statement concerning the Health Information provided herein.

Signature: __________________________ Date: __________________________

---

**Effective Date:** 18 November 2010  
**All printed copies are uncontrolled**
## PART A– Employer to complete

### 1. Worker/Applicant Details

<table>
<thead>
<tr>
<th>Family Name:</th>
<th>First Names:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company:</td>
<td></td>
</tr>
<tr>
<td>Location:</td>
<td></td>
</tr>
<tr>
<td>Employee No:</td>
<td>Date of birth:</td>
</tr>
</tbody>
</table>

### 2. Rail Organisation Details

**Supervisor/contact:**

**Date of request:**

**Phone:**

**Facsimile:**

Account and report to be sent to Supervisor at the following address (Please insert postal address or fax number):

### 3. Health Assessment Appointment Details

**Health professional:**

**Address:**

**Phone:**

**Facsimile:**

**Appointment Date:**

**Time:**

### 4. Description of Worker’s Duties (or attach Job Description or Task Risk Assessment)

### 5. Type of Assessment requested

- Pre-placement / Change of Risk Category Health Assessment
- Periodic Health Assessment
- Triggered Health Assessment (specify reason): ___________________________________________________________________________
- Drug Screen / Review results
- Screen-Based Equipment Examination
- Other (specify): ___________________________________________________________________________

### 6. Tests Ordered

- **Drug Screen**
  
  Location (if differs from Health Assessment Appointment details):
  
- **Audiometry**
  
  Location (if differs from Health Assessment Appointment details):
### PART B – Health Professional to complete

<table>
<thead>
<tr>
<th>Fit for Duty – Meets all relevant medical criteria.</th>
<th>Fit for Duty Subject to Review – Does not meet all medical criteria, but could perform current rail safety work if the condition is sufficiently under control and worker is more frequently reviewed than prescribed under periodic review.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have sighted the worker’s Rail Safety Worker Card</td>
<td>I certify that I have examined the worker/applicant named in accordance with the medical standards contained in the National Standard for Health Assessment of Rail Safety Workers, Volume 2: Assessment Procedures and Medical Criteria</td>
</tr>
<tr>
<td>Number __________________________ OR</td>
<td>and in my opinion the worker/applicant is (tick appropriate box):</td>
</tr>
<tr>
<td>I have sighted the worker’s/applicant’s photo ID (eg driver’s licence, passport) Number __________________________</td>
<td>Local doctor referral</td>
</tr>
<tr>
<td></td>
<td>Conditional on corrective lenses</td>
</tr>
<tr>
<td></td>
<td>Conditional on hearing aid</td>
</tr>
<tr>
<td></td>
<td>Other condition (specify): __________________________</td>
</tr>
<tr>
<td></td>
<td>_______________________________________________</td>
</tr>
<tr>
<td></td>
<td>_______________________________________________</td>
</tr>
<tr>
<td></td>
<td>_______________________________________________</td>
</tr>
<tr>
<td></td>
<td>Review at this practice</td>
</tr>
<tr>
<td></td>
<td>DATE: __________________________________________</td>
</tr>
<tr>
<td></td>
<td>Specialist referral</td>
</tr>
<tr>
<td></td>
<td>Local doctor referral</td>
</tr>
<tr>
<td></td>
<td>Company Medical Officer referral</td>
</tr>
<tr>
<td></td>
<td>Laboratory tests</td>
</tr>
<tr>
<td></td>
<td>This certificate is valid until: __________________________</td>
</tr>
<tr>
<td></td>
<td>_______________________________________________</td>
</tr>
<tr>
<td></td>
<td>_______________________________________________</td>
</tr>
<tr>
<td></td>
<td>_______________________________________________</td>
</tr>
</tbody>
</table>

### Fit for Duty Subject to Job Modification – Does not meet all medical criteria, but could perform current rail safety work if suitable modifications were made.

**I recommend the following job modifications:**

- _______________________________________________
- _______________________________________________
- _______________________________________________

### Temporarily Unfit for Duty Subject to Review – Does not meet all medical criteria and cannot perform current rail safety tasks but may perform alternative tasks. May return to full duty pending improvement in condition, response to treatment, confirmed diagnosis of undifferentiated illness.

**I recommend the following in terms of management and review:**

- _______________________________________________
- _______________________________________________
- _______________________________________________

### Permanently Unfit for Duty – Does not meet the medical criteria and cannot perform the job in the future.

**I recommend the following in terms of management and review:**

- _______________________________________________
- _______________________________________________
- _______________________________________________

**Drug Screen Results:**

**Health Professional Details (stamp acceptable)**

<table>
<thead>
<tr>
<th>Name:</th>
<th>Phone:</th>
<th>Facsimile:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Practice address:**

**Signature:**

**Date of Assessment:**

**PART C – Employer to complete on receipt of Assessment Report**

**Action taken as a result of Health Assessment:**

- Job modification (details): _______________________________________________
- Triggered review (indicate period): _________________________________________
- Periodic Health Assessment scheduled (details): ____________________________
- Redeployment (details): _________________________________________________
- Drug Assessment (details): _______________________________________________
2.2 Record for Health Professional

The Track Safety Health Assessment Record for Health Professionals is a tool to help guide Authorised Health Professionals with the health assessment process.

It provides a standard format for recording the results of the health assessment which should then be filed in the worker's medical history.

The completed Health Assessment Record is not to be forwarded to the employer for reasons of privacy.

The health professional should summarise the result in terms of fitness for duty on the Request and Report Form (Form 2.1).
# Track Safety Health Assessment

## Record for Health Professional

## PART A – Employer to complete

### 1. Worker/Applicant Details

<table>
<thead>
<tr>
<th>Family Name:</th>
<th>First Names:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company:</td>
<td></td>
</tr>
<tr>
<td>Location:</td>
<td></td>
</tr>
<tr>
<td>Employee No:</td>
<td>Date of birth:</td>
</tr>
</tbody>
</table>

### 2. Rail Organisation Details

<table>
<thead>
<tr>
<th>Supervisor/contact:</th>
<th>Date of request:</th>
<th>Phone:</th>
<th>Facsimile:</th>
</tr>
</thead>
</table>

### 3. Health Assessment Appointment Details

<table>
<thead>
<tr>
<th>Health Professional:</th>
<th>Address:</th>
<th>Phone:</th>
<th>Facsimile:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appointment Date:</td>
<td>Time:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## PART B – Examination Record – Health Professional to complete

### 1. Medical History (tick appropriate box)

<table>
<thead>
<tr>
<th>Serious Illness</th>
<th>Difficulty with vision?</th>
<th>Difficulty with hearing</th>
<th>Difficulty with walking?</th>
<th>Mental Illness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes  No</td>
<td>Yes No</td>
<td>Yes No</td>
<td>Yes No</td>
</tr>
</tbody>
</table>

### 2. Vision:

#### 2.1 Visual Acuity

<table>
<thead>
<tr>
<th>Uncorrected</th>
<th>Corrected</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>L</td>
</tr>
<tr>
<td>6/</td>
<td>6/</td>
</tr>
</tbody>
</table>

Are contact lenses worn?  No ☐ Yes ☐

#### 2.2 Visual Fields (Confrontation to each eye):

Normal ☐ Abnormal ☐
3. Musculoskeletal / Neurological:

3.1 Cervical spine rotation
- Normal □ Abnormal □

3.2 Back movement
- Normal □ Abnormal □

3.3 Upper Limbs
a) Appearance: Normal □ Abnormal □
b) Joint movements: Normal □ Abnormal □

3.4 Lower Limbs
a) Appearance: Normal □ Abnormal □
b) Joint movements: Normal □ Abnormal □

3.5 Gait
- Normal □ Abnormal □

3.6 Romberg’s Test (A pass requires the ability to maintain balance while standing with shoes off, feet together side by side, eyes closed and arms by sides, for thirty seconds):
- Normal □ Abnormal □

4. Hearing (Audiometry results):

<table>
<thead>
<tr>
<th></th>
<th>0.5 kHz</th>
<th>1.0 kHz</th>
<th>2.0 kHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Left</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Drug Screen:
_______________________________________________
_______________________________________________
_______________________________________________

Comment on any relevant findings detected in the Health Assessment, making reference to the requirements of the Standard.

Patient Consent (if required to consult with general practitioner or other treating doctor)
I, _____________________________________________ print name

☐ give   ☐ do not give (please indicate) permission for the examining health professional to contact my treating doctor to discuss or clarify information relating to my current health status.

Signature of worker/applicant: _________________________________________________________________

Name of Doctor: _________________________________________________________________

Phone: _________________________________________________________________

IMPORTANT: For privacy reasons, the completed Health Assessment Record must not be returned to the employer. It should be retained in the patient record.
3. **Task Risk Assessment**

The Task Risk Assessment is a template form designed to guide the process of risk assessment of rail safety tasks and serve as a documentation of the conclusions of task assessment.

The completed form is recommended as an inclusion with the information provided to the examining health professional and it supports a clearer understanding of the tasks performed by the worker and the matching health requirements.

A detailed explanation of the processes involved in health risk assessment and completion of the Task Risk Assessment Template is included in Part B *Guideline for Health Risk Management.*
### Rail Safety Worker Risk Assessment Template

**RAIL SAFETY WORKER TASK:**

**PARTICIPANTS**

**ASSESSMENT RECORD:**

<table>
<thead>
<tr>
<th>Worksite Inspection</th>
<th>Date:</th>
<th>Completed by:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Job Description</th>
<th>Date:</th>
<th>Reviewed by:</th>
</tr>
</thead>
</table>

**CONTEXT:**

**ACTIVITIES AND WORKING CONDITIONS:**

**HEALTH ATTRIBUTES:**

*Health attributes relating to the safety of the rail network:*

*Health attributes relating to the safety of the rail worker (OHS):*

**ENGINEERING AND PROCEDURAL ENVIRONMENT:**

**RISK ANALYSIS AND CATEGORISATION:**

<table>
<thead>
<tr>
<th>Category</th>
</tr>
</thead>
</table>

HEALTH ASSESSMENT REQUIREMENTS:

NATIONAL STANDARD FOR HEALTH ASSESSMENT OF RAIL SAFETY WORKERS

PART B: GUIDELINE FOR HEALTH RISK MANAGEMENT
1. Introduction
It is recommended that Rail organisations establish systems and procedures to ensure rail safety workers receive the appropriate level of health assessment as outlined in this part of the Standard.

The systems and procedures should be based on a risk management approach so that the level and frequency of rail safety worker health assessments correspond with the risks associated with the tasks they perform.

1.1 Purpose and use of the Guideline
Rail organisations should perform their own risk assessments of rail safety work in their own operating environment and apply health assessments accordingly.

This *Guideline for Health Risk Management* provides a methodology for:
- performing risk assessments of rail safety tasks;
- assigning Risk Categories for health assessment purposes; and
- identifying any specific health requirements relevant to rail safety tasks.

The Guideline includes:
- an overview of the Risk Categories and matched health assessment provisions
- a step-by-step guide to the risk assessment of rail safety tasks and the health attributes needed for the tasks;
- guidance for identifying health assessment requirements for specific tasks, such as colour vision;
- a Risk Analysis Template for use within the rail organisation.

Rail safety work may also have specific occupational health and safety risks associated with it, for example, noise or manual handling. These are outside the scope of this document and should be managed as required by relevant occupational health and safety regulations.

2. Health Risk Management for Rail Safety Work
A risk management approach forms the basis for all health assessment decisions to ensure the type of health assessment matches the risks associated with different rail safety work.

The aim of the health risk management process is to:
- identify what could go wrong in the case of physical or psychological ill-health;
- assess the consequences; and
- establish appropriate controls for the risks associated with ill-health.

The health risk management process focuses on a consideration of the extent to which the worker’s physical and/or psychological health could contribute to a serious incident on the rail network that may result in:
- the death of a person;
- incapacitating injury to a person;
- a collision or derailment involving rolling stock that results in significant damage; or
- any other occurrence which results in significant property damage.

A further consideration is the extent to which the worker’s health affects their own safety and that of fellow rail safety workers. Health assessments are one approach to treating the risk of serious incidents and the risk to individual safety, thus a mix of engineering, administrative and health assessment measures is likely to be required.

Therefore, in determining the health assessment requirements of rail safety workers it is important to take into account the operational and engineering environment, since overall risk management significantly determines the human attributes that are required for safety.
Health assessment standards cannot be simply set at the highest level for safety’s sake. They must be set and applied carefully to match the risks associated with the tasks to be consistent with anti-discrimination and privacy laws.

3. Risk Categorisation and Matched Health Assessments

The health risk management approach is based on categories of risk which help to define broad physical and psychological health attributes needed for particular rail safety tasks. The approach also helps with identification and monitoring of task-specific requirements.

The health assessment system is based on a risk analysis of rail safety work and categorisation of risk which is in turn based on considering the key question:

*For any aspect of the tasks identified, could ill-health lead directly to a serious incident affecting the public or the rail network?*

This process is illustrated in Diagram 1.

Two main Risk Categories are defined:
- Safety Critical Work
- Non-Safety Critical Work

These two main categories are further divided resulting in four Risk Categories overall.

**Safety Critical Workers**

Safety Critical Workers are those whose action or inaction, due to ill-health, may lead directly to a serious incident affecting the public or the rail network. The worker’s physical and psychological fitness to carry out their job is crucial. There are two Risk Categories for Safety Critical Work:
- High Level Safety Critical Work (Category 1)
- Safety Critical Work (Category 2).
Diagram 1: Definition of Health Risk Categories for Rail Safety Work

Rail Safety Worker
Identify the full range of tasks likely to be performed by the worker and consider the engineering and procedural environment including controls.

For any aspect of the tasks identified, could ill-health lead directly to a serious incident affecting the public or the rail network?

YES

NON-SAFETY CRITICAL

Is the person Around the Track Personnel? ie Is any aspect of the tasks identified performed “on or about the track”?

YES

CATEGORY 1
High Level Safety Critical Worker (SCW)
Health requirements:
- No risk of sudden incapacity
- Physical and psychological health

CATEGORY 2
Safety Critical Worker (SCW)
Health requirements:
- Physical and psychological health

CATEGORY 3
ATTP in Uncontrolled Environment
Health requirements:
- Hearing and vision
- Mobility

CATEGORY 4
Others, including ATTP in Controlled Environment
No rail safety specific health requirements

For any aspect of the tasks identified, could sudden incapacity lead to a serious incident affecting the public or the rail network?

YES

S A F E T Y  C R I T I C A L

RISK CATEGORY

HEALTH ASSESSMENT

High Level SCW Health Assessment aims to:
- Identify risk of sudden incapacity
- Assess overall physical and psychological health
- ± OHS

SCW Health Assessment aims to:
- Assess overall physical and psychological health
- ± OHS

Track Safety Health Assessment aims to:
- Assess hearing and vision
- Assess mobility
- ± OHS

No rail safety health assessment required.
Rail safety tasks are High Level Safety Critical if sudden worker incapacity such as a heart attack or blackout could result in a serious incident affecting the safety of the public or rail network. Single operator train driving on the mainline is an example of a High Level Safety Critical task (Category 1).

Safety Critical tasks which are not High Level include those where fail-safe mechanisms ensure sudden incapacity does not affect safety of the rail network. For example, in many cases a signalling task is Safety Critical (Category 2) but not High Level Safety Critical because fail-safe systems ensure the safety of the network in case of worker incapacity.

To ensure sound physical and psychological health, the health assessments for Safety Critical Workers (Category 1 and 2) require a comprehensive physical and psychological assessment. This involves a clinical examination and completion of a detailed questionnaire.

The assessments aim to detect conditions that may affect safe working including heart disease, diabetes, epilepsy, sleep disorders, alcohol and drug dependence, psychiatric disorders and eye and ear problems.

High Level Safety Critical Workers (Category 1) are required to undergo additional assessment for their risk of sudden incapacity. This involves a Cardiac Risk Score assessment which is a screening tool to determine their risk of a cardiovascular event.

**Non-Safety Critical Workers**

Non-Safety Critical Workers are those whose health and fitness will not impact directly on the safety of the public and the rail network. These workers are categorised based on whether their health and fitness will impact on their ability to protect their own safety and that of fellow workers.

Around the Track Personnel (ATTP) is the term used to describe workers who perform Non-Safety Critical tasks on or near the track as defined. Their Risk Category depends on their likely exposure to moving rolling stock.

There are two Non-Safety Critical Worker Risk Categories:

- ATTP operating in an Uncontrolled Environment (Category 3);
- Other, including ATTP operating in a Controlled Environment (Category 4).

Category 4 also includes those rail safety workers who do not work on or about the track as illustrated in Diagram 1.

A Controlled Environment is defined as a rail workplace such as a siding, rail yard or workshop environment where a risk assessment has been performed to identify hazards and where controls are implemented to ensure that any person working in or transiting the area is not placed at risk from moving trains.

When analysing the risk to ATTP and classifying the tasks into Categories 3 or 4, the features of a “controlled environment” need to be carefully considered regarding their adequacy.

Where ATTP cannot be protected by a Controlled Environment they must have the ability to sense an oncoming train and move quickly out of the way. They are therefore required to have health assessments commensurate with these risks, including hearing, vision and mobility (Category 3, Track Safety Health Assessment).

Note: workers directly working on the track should be regarded as functionally deaf and blind and require appropriate protection.
Workers in a Controlled Environment do not rely on their vision, hearing and mobility to protect them from risk and do not require a rail safety health assessment (Category 4), but they may require some form of assessment to meet the Health and Safety requirements of the job.

Where workers may move between Controlled and Uncontrolled Environments the higher level of risk assessment should be applied.

Irregular visitors to the track, such as office workers, are not generally classified as ATTP. When they do visit the track their safety should be ensured by other means, for example by escort.

The Risk Categories and matching health assessment requirements are summarised in Table 1.

### Table 1. Summary of Health Assessments for Risk Categories

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Health Assessment Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category 1</strong></td>
<td><strong>Safety Critical Worker Health Assessment</strong> including:</td>
</tr>
<tr>
<td>High Level Safety Critical Worker</td>
<td>- Safety Critical Worker Health Questionnaire and history</td>
</tr>
<tr>
<td></td>
<td>- Comprehensive physical and psychological assessment</td>
</tr>
<tr>
<td></td>
<td>- Vision and hearing</td>
</tr>
<tr>
<td></td>
<td>- Drug Screening</td>
</tr>
<tr>
<td></td>
<td>Plus</td>
</tr>
<tr>
<td></td>
<td>- Cardiac Risk Score</td>
</tr>
<tr>
<td><strong>Category 2</strong></td>
<td><strong>Safety Critical Worker Health Assessment</strong> including:</td>
</tr>
<tr>
<td>Safety Critical Worker</td>
<td>- Safety Critical Worker Health Questionnaire and history</td>
</tr>
<tr>
<td></td>
<td>- Comprehensive physical and psychological assessment</td>
</tr>
<tr>
<td></td>
<td>- Vision and hearing</td>
</tr>
<tr>
<td></td>
<td>Drug screening</td>
</tr>
<tr>
<td><strong>Category 3</strong></td>
<td><strong>Track Safety Health Assessment</strong> including:</td>
</tr>
<tr>
<td>Around the Track Personnel (Uncontrolled Environment)</td>
<td>- Vision</td>
</tr>
<tr>
<td></td>
<td>- Hearing</td>
</tr>
<tr>
<td></td>
<td>- Mobility</td>
</tr>
<tr>
<td><strong>Category 4</strong></td>
<td>Drug Screening</td>
</tr>
<tr>
<td>Other than those in Categories 1-3 including Around the Track Personnel in Controlled Environment</td>
<td></td>
</tr>
</tbody>
</table>
4. Steps for Health Risk Management

4.1 Preparatory Considerations
This section provides a step-by-step guide to performing a risk assessment of rail safety work and identifying health assessment requirements.

A template to guide collection and documentation of relevant data about the task risk analysis, health attributes and risk categorisation is also provided.

The rail organisation should ensure that the process and rationale for the health assessment requirements of its rail safety workers is transparent. The completed template would comprise appropriate documentation about the risk management processes for audit purposes.

A completed template about the risks and health attributes needed for rail safety tasks would also be informative for the Authorised Health Professional conducting the health assessments.

An effective risk management process will generally involve communication between the responsible manager and the workers who perform the tasks.

The process should also draw on appropriate expertise. Involvement of the Authorised Health Professional at the risk analysis stage will help identify necessary health attributes for a task. In turn, the health professional is likely to develop a sound understanding of the work and associated risks.

When completing a risk assessment it is important to state clearly the reasons why a task was so categorised. This may have legal significance in the future. The name of the person who made the assessment should be recorded.

The rail organisation should establish a procedure to ensure that the health risk management process and effectiveness of risk control strategies are kept under review.

As a minimum, review should occur whenever there are changes to work practices or engineering controls.

4.2 Risk Management Steps

4.2.1 Step 1: Context
The first step is to establish and describe the context in which the health risk management process will be performed. This includes relevant legislative requirements, organisation policies and procedures and the business and operational environment.

*Legislation & National Rail Safety Standards (NRSS)*
The relevant legislation & NRSS documentation forms a foundation for general risk management for rail safety work. It also determines the definition of rail safety worker and thus the scope of an organisation’s health risk management process.

*Business Environment*
Identification of the business environment in which the organisation operates also helps to establish the risk management framework.

For example:
- urban passenger train operations;
- freight operations, including dangerous goods;
- infrastructure maintenance or construction;
- tourist and heritage train operations.
Policies and Procedures
The health risk management process should be consistent within the general risk management framework of the rail organisation. The organisation's policies and goals for rail safety should be considered to help define the criteria for deciding whether a risk is acceptable or not, and to determine the appropriate mix of engineering, administrative and medical control measures for treating risk.

Operational Environment and Systems
The broad operational systems which support the management of risk in the organisation are also an important contextual consideration. Considerations may include:
- the type of safe-working systems;
- train protection systems,
- the maximum speed of operation.

4.2.2 Step 2: Identify Rail Safety Tasks
After defining the broad context of health risk management the next step is to identify and document all rail safety tasks performed within the organisation. These tasks will be the focus of the health risk management process that will seek to:
- identify what could go wrong in the case of ill-health;
- assess the consequences; and
- establish appropriate controls for the risks associated with ill-health.

The initial focus of the analysis should be on tasks, not on formal job classifications or grades. This is because workers are often required to be multi-skilled and perform various tasks within one job. Once tasks have been analysed, the analysis may then be applied to multi-skilled positions, with the highest risk task determining the level of health assessment required.

For the purposes of this Guideline:
- a job is the aggregation of tasks that go to make a (multi-skilled) position eg. driver;
- tasks are the work required to be done eg. driving a Freight train, driving a passenger train; and
- activities are the units of work done in carrying out the task eg scanning the track, moving controls, etc. when driving.

4.2.3 Step 3: Analyse Tasks
After identifying all rail safety tasks, each task should be examined to establish the specific activities that make up that task. This may involve:
- a review of relevant job descriptions;
- on-site visits to discuss tasks with rail safety workers and observe the activities that comprise the tasks as well as the conditions under which the activities are performed; and
- identifying activities performed infrequently in response to an emergency situation.

This step should also identify working conditions associated with the task, as these may also be relevant to the health requirements, for example:
- shift work;
- working in extremes of heat and cold; or
- terrain etc.

4.2.4 Step 4: Identify Local Safety Controls
The nature of the operational and engineering environment will in part determine the human attributes that are required for safety. This includes the operational and/or engineering controls which are intended to mitigate the risk associated with the task. The next step therefore is to
identify and assess the impact of the local safety controls on the rail safety task being analysed. For example:
• safe working rules;
• lock-out procedures;
• fail-safe systems;
• numbers of personnel in the working environment; and
• vigilance devices.

**Controlled Environment**
The determination of a Non-Safety Critical Worker, ATTP Category 4 depends on whether the work is performed in a Controlled Environment.

When analysing the risk to ATTP, the features of a “Controlled Environment” need to be identified and their adequacy carefully considered. The essential requirement of a Controlled Environment is that it must protect workers from moving rolling stock.

In rail workplaces such as sidings, rail yards or workshops controls may include:
• provision of lock out and/or warning devices;
• barrier segregation from running lines; or
• permit to work.

These may be supplemented as identified by risk assessment by:
• warning signage;
• special instructions;
• use of designated pathways and/or access/transit routes; and/or
• supervision.

For special works, a running line may also be assessed as a Controlled Environment in certain circumstances, for example in the case of:
• complete possession of all sections of track in the vicinity, including parallel lines;
• “Non-train day” on isolated historical railways with no active parallel running lines.

In all instances consideration needs to be given to rolling stock and track machinery movements associated with the works.

**4.2.5 Step 5: Evaluate Health Requirements**
Once all activities comprising a task and the relevant working conditions and local controls are identified, the next step is to perform an evaluation to identify the health attributes necessary to perform the activity.

Health attributes should be clearly identified so that the impact of loss of these functions can be assessed in the next risk analysis step.

Examples of this evaluation process may include:
• scanning the track requires visual acuity;
• detection of colour signals requires normal colour vision (Diagram 3 illustrates the evaluation process that might be applied for colour vision);
• use of radio-communications against noise in a cab requires adequate hearing;
• ability to continually monitor track or inspect rolling stock requires alertness and vigilance (A distinction in attributes may be made between the constant vigilance required in a prolonged monitoring situation to detect an uncommon ‘signal’ such as when driving or conducting preventive maintenance of rolling stock, and the normal attention to detail required for any job such as work by a competent skilled tradesman);
• ability to move onto or off rolling stock requires mobility (soundness of arms, legs and back).
4.2.6 Step 6: Risk Analysis and Identification of Risk Category
The previous steps provide the necessary inputs to perform an analysis of the health risks of each task, ie. the nature of the activities, the local safety controls and the health attributes required to perform the tasks. A combined consideration of all these factors enables the consequences of ill-health to be identified and assessed. A category of risk can then be applied.

It is important in the risk analysis to differentiate between risks posed by ill-health as distinct from lack of competency, which should be addressed through other control measures such as training and initial worker selection.

This risk analysis is best conducted in conjunction with persons knowledgeable about the tasks in question and the existing control measures.

**Categorising Safety Critical Work**
The first consideration in the analysis is whether the task is Safety Critical or not. This is identified by applying the test:

*For any aspect of the tasks identified, could physical or psychological ill-health lead directly to a serious incident affecting the public or the rail network?*

This question is posed in the context of existing control measures such as vigilance systems, fail-safe mechanisms etc.

The test implies that physical conditions such as an amputated leg, diabetes or cardiovascular disease should be considered as well as causes of substantial cognitive impairment such as psychiatric or sleep disorders. Tasks that could be affected by such ill-health are classed as “Safety Critical” tasks and these tasks are said to be performed by “Safety Critical Workers” (SCW); the remaining tasks are categorised as Non-Safety Critical.

Safety Critical tasks are subdivided by applying a further test:

*For any aspect of the tasks identified could sudden incapacity lead to a serious incident on the rail network?*

Again this question is posed in the context of existing control measures and with a consideration of the likelihood of a serious incident resulting from worker incapacity. The test leads to a subdivision of Safety Critical tasks into “High Level Safety Critical Workers” and “Safety Critical Workers” as described earlier in the Guideline.

**For example: Road-Rail Vehicle driver.** A road-rail vehicle has a sole driver, travels at up to 80km/hr and has a vigilance control but requires the driver to stop at level crossings. The task is considered Safety Critical because the driver’s continued vigilance is necessary to ensure appropriate control of the vehicle to ensure the safety of the rail network. In the event of sudden incapacity (eg a heart attack) just prior to a level crossing, the vehicle may enter the crossing before stopping. However the likelihood of collapse occurring in the few hundred metres before a crossing is remote and therefore the risk is analysed as low (SCW Category 2). This contrasts with the driver of a track tamper machine with a settable throttle and without vigilance control where collapse of a sole operator could lead to a large machine progressing out of control and therefore the risk is analysed as high (Category 1).

**Categorising Non-Safety Critical Work**
Non-Safety Critical work is assessed in a similar way, resulting in allocation to Category 3 or 4 based on a consideration of the health requirements for maintaining safety of the worker and fellow rail safety workers, and the adequacy of measures to create a Controlled Environment.
When analysing the risk to ATTP and classifying the tasks into Categories 3 or 4, the method and adequacy of a Controlled Environment need to be carefully considered regarding their adequacy.

When completing a risk assessment it is important to state clearly the reasons why a task was so categorised. This may have legal significance in the future. The name of the person who made the assessment should be stated.

### 4.2.7 Step 7: Risk Control

The health risk categorisation performed in Step 6 is the basis of referral to a matched health assessment. However an important interim step is to consider the other treatment options that might be introduced to mitigate the risk, such as additional administrative or engineering controls.

Table 2 summarises the familiar hierarchy of control measures that may be applied to control safety risks.

Both elimination and isolation control the hazard itself. They are, therefore, more effective in reducing risk than controls which reduce the likelihood of the hazard.

If practicable, minimisation controls are generally preferred to health assessments as they provide more definitive protection. Such improvements should be implemented where possible and the task re-evaluated in terms of the health risk.

<table>
<thead>
<tr>
<th>Table 2: Summary of Hierarchy of Control Measures</th>
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<tr>
<td>Elimination</td>
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<tr>
<td>Permanent solution should be attempted in the first instance</td>
</tr>
<tr>
<td>Isolation</td>
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<tr>
<td>Replace hazard or environmental aspects by one of lower risk</td>
</tr>
<tr>
<td>Minimisation</td>
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<tr>
<td>Lowest level of control</td>
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### 4.2.8 Step 8: Identify Health Assessment Requirements

After determining the final Risk Categories of rail safety worker tasks, the health assessments are matched to the categories, ie Category 1 are required to have a High Level Safety Critical Worker Assessment; Category 2 are required to have a Safety Critical Worker Assessment and Category 3 are required to have a Track Safety Health Assessment.

In addition to these general requirements, workers may have specific assessment requirements depending on the nature of their tasks. These will have been identified in Step 5. For example:

**Colour Vision**

Specific criteria for colour vision are not described in the requirements for the general categories of assessment. Depending on the result of the task identification for colour vision in Step 5 a specific colour vision test may be required. For example, a solo train driver will require Normal Colour Vision in order to detect red/green in a variety of signal presentations and at high speed. A shunter on the other hand may require Colour Defective Safe vision, as there is not a requirement to interpret signals at speed.

**Musculoskeletal requirements**

The standard health assessment for both Category 1 and 2 Safety Critical Workers requires soundness of arms, legs and back, and balance (Romberg Test). This should cover most situations in rail workers but the health assessment may be varied depending on the result of the task evaluation and on expert medical advice.
For example a Train Controller may not need use of legs, whereas a rolling stock maintainer requires considerable agility to move and inspect trains.

**Occupational Health & Safety**
Workers may also be required to have appropriate OHS examinations for specific hazards such as noise, asbestos or hazardous substances.
## Rail Safety Worker Risk Assessment Template

### Rail safety worker task:
State task under review

### Assessment Record:

<table>
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### Context:

Briefly state the nature of the business and operating environment

### Activities and Working Conditions:
Describe the activities that make up the task and the working conditions under which the worker may need to operate

### Health Attributes:

**Health attributes relating to the safety of the rail network:**

State the health requirements to fulfill the various activities

**Health attributes relating to the safety of the rail worker (OHS):**

### Engineering and Procedural Environment:
Describe local safety procedures

### Risk Analysis and Categorisation:

State the categorisation of the task and give reasons

### Specific Health Assessment Requirements:

State the type of medical examination recommended

### Authorisation:
I authorise this risk assessment for use and attest that it was developed according to the requirements of the Standard for Health Assessment of Rail Safety Workers

<table>
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<tr>
<th>Name &amp; Position</th>
<th>Signature:</th>
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COMMENTS AND/OR INQUIRIES
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