

## **New Australian Standards – Walking Tracks, Part 1: Classification and Signage, Part 2: Infrastructure Design.**

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### **Abstract**

*The Australian Standard 2156-1978, “Markers and Information Signs for Walking Tracks” is being replaced with a new suite of standards. The first two parts of the standard, Part 1 – Classification and Signage, and Part 2 – Infrastructure Design have completed the rigorous committee stages and are being prepared for print. Part 1 provides protected area managers with a guide to signs and track markers associated with walking tracks. The standards are based on a contemporary risk management approach within the context of the Recreation Opportunity Spectrum. The standard provides for six classes of walking track.*

*Part 2 of the standard specifies requirements for the structural design of walking track structures used to protect natural and cultural assets. It acknowledges the contribution of existing design standards such as AS 1170 SAA Loading Code and the Building Code of Australia and provides additional information for situations where those standards cannot reasonably be applied. These structures include boardwalks, galleries, pedestrian bridges, platforms, barriers, stairways, ladders and stiles. Of particular interest to many designers is the section on safety from falling. This section provides a comprehensive approach to assessing the type of barriers required within the context of the track classification system.*

In common with many landmark projects, the forthcoming Australian Standards on Walking Tracks were the result of a number of groups working away on similar ideas in isolation before being brought together to work on a common solution. This paper brings together my own experiences during 12 years as the Principal Landscape Architect for the Queensland Parks and Wildlife Service and the hard work of the others on the CS/29 committee who have made these standards a reality.

## **Part A - The Factors Behind The Development Of The Standard**

### **Understanding the nature of walking tracks**

My own education process in the design and construction of walking tracks began soon after my appointment as landscape architect to the then Queensland National Parks and Wildlife Service in 1988. The Queensland Forestry Service from which the QNPWS had been born in 1975 had had a proud history of the building and maintenance of graded walking tracks. The building of “modern” walking tracks was initiated on Lamington National Park during 1936 and was originally carried out by Queensland Holiday Resorts Ltd. on a subsidy basis. From 1937-38 the construction of tracks became the responsibility of the Forestry Department.

The extensive network of tracks are still largely in use today in Lamington and Springbrook National Parks in the Gold Cost hinterland, the Whitsunday Islands, the Atherton Tableland and Eungella National Park west of Mackay. In taking up my new role I soon began to be involved in the fixing of various problem components of walking tracks, most of them constructed in the 1960’s and 70’s.

It was clear that the latter day track builders had few of the skills and insight of the earlier generation. A small team, including myself, within QNPWS and the Forestry Service worked together to re-discover these skills through researching the files and interviewing those who had worked on the tracks during the 1950’s. This work, including the re-discovered 13 point specification of the early track builders, became the basis for the QPWS Walking Track Schools curriculum.

### **The consequences of litigation**

The consequences of an upsurge in litigation caught the attention of public land managers across Australia in the early 1990’s. One of the landmark cases which is talked about in any forum on public risk management is the 1987 high Court Case of *Australian Safeway Stores Pty Ltd v Zaluzna* (162 CLR 479).

Mrs Zaluzna entered a Safeway store. The weather was rainy and customers were bring water into the store on their shoes and clothes. Shop employees were engaged in mopping the floor. Mrs Zaluzna slipped on the floor and suffered an injury. The trial judge in the Supreme Court of Victoria found that the moisture on the floor did not constitute an “unusual” danger.

However, his Honour acknowledged that there might be room for different views about such a conclusion and he therefore proceeded to consider the case on the assumption that there was an unusual danger. His Honour found that the mopping-up procedures adopted by the appellant in order to cope with the wet conditions had not been shown to fall short of what was reasonable. He also considered a number of other possible safeguards which it was alleged that the appellant might have undertaken. In the result, his Honour found that the appellant was not in breach of the duty of care that would arise on the assumption he had made. He dismissed the respondent's action.

The matter was eventually taken to the High Court where the court found that the duty which an occupier of land owed to an invitee should properly be seen as the ordinary common law duty to take reasonable care. This would vary with the circumstances of the plaintiff's entry upon the premises but the measure of the discharge of the duty is what a reasonable person would do by way of a response to the foreseeable risk.

The Court took an even harder line in the case of *Nagle v Rottneest Island Authority* (177 CLR 423) and the test moved from what was reasonable to what was foreseeable. However in *Romeo v Conservation Commission of the Northern Territory* [1988] (HCA 5,2.2.1998) the court made a move back towards what was reasonable in the situation.

The connection to walking tracks was very clear. If we were to have any hope of defending ourselves in cases of injuries occurring on walking tracks a key component of our defence will be that we are maintaining and inspecting the tracks for hazards in accordance with approved standards. To do this we need a classification standard and Australia wide agreement on inspection regimes for public land managers.

### **A reaction against the possibility of everything being made safe**

In reaction to the outcome of the court cases and an anticipated move to make safe all of the recreational opportunities within public lands, a number of authors wrote of their abhorrence of these moves. One of the best of these was published by Andrew Barnes in *Wild* (Summer 1992) under the title of *Homogenized*. Denis O'Byrne writing in *Overlander* magazine stated "our alienation from the bush has reached a stage where we're losing sight of why it's such a pleasure to go there in the first place".

### **The move to accrual accounting**

The move to accrual accounting by state and federal government in Australia was also a factor in developing classification standards. In order to develop an asset register for the calculation of depreciation and other financial information required for the preparation of a balance sheet, it was necessary to categorise existing assets, including walking tracks, and assign a value to them. In the case of walking tracks the only reasonable way to value them was to calculate a cost per meter for that standard of track and apply this to the length. The value of significant items such as bridges could then be added in.

### **The introduction of the Australian Building Code**

Although not directly impacting on Part 1 of the standard, the move to the Australian Building Code and to performance standards generally in the building and construction industry had a direct bearing on the development of part two.

The design of elements such as bridges and boardwalks along walking tracks relied on the work of park staff using their own ideas and experience or Engineers and allied professionals relying on standards from other jurisdictions which were, in the view of many public land managers, completely inappropriate. For instance, the only standard on pedestrian bridges available is the standard issued by AustRoads for bridges associated with road and highway construction. A bridge built to this specification on a remote walking track four or five hours walk from the nearest entry point is not only difficult to justify in terms of cost but also on performance.

Finding an appropriate standard to be referenced is difficult. In calculating the need for or type of handrails for a boardwalk, a number of standards could be referred to, eg the Building Code, The Stairways and Ladders standard which was intended for industrial and manufacturing installations or even the Playground Equipment Standards, all of which gave differing answers to a specific collection.

In many cases the employees of the land management agencies may be placing their own organisations at risk by using standards such as the housing codes to build major structures. In these cases they will in most cases be inadequate.

## **Part B – Development of the Standard**

### **The development of Australian Standards Committee CS/29**

Early in 1996, the Federation of Bushwalking Clubs of Victoria had written to Standards Australia requesting a review of the existing Standard AS 2156-1978 Markers and Information Signs for Walking Tracks based on concerns they had over the colours being used for the triangular track markers. Standards Australia contacted all of the organisations that had been involved in the original standard and other likely organisations, in order to gauge the level of interest for a review.

Standards Australia is an independent not-for-profit organisation whose primary role is to prepare and publish standards through an open process of consultation and consensus in which all interested parties are invited to participate. There are about 6,000 Australian Standards, maintained by approximately 8,500 voluntary experts serving on a total of 1,600 technical committees. Standards Australia has over 300 full time staff to support these efforts.

A number of public land managers from across Australia assembled at the first national conference of the Outdoor Recreation Council of Australia (Risk Management in the Outdoors) held in Launceston in November 1996. This conference was just after the completion of the investigation into the Cave Creek disaster in New Zealand and Counsel assisting the Inquiry Mr Tony Hughes-Johnson spoke at the conference.

The problems identified by the land managers at that meeting included:

- No consistent standard for describing to the public the ease or difficulty of our walking tracks and associated facilities;
- No consistent standard for management;
- How do we justify our structures or lack of them in remote locations?
- How do we mark remote remote tracks? And
- How do we justify our use of the Recreation Opportunity spectrum to provide remote and wilderness sections within our parks?

At that time we saw a possible solution to these problems in having a national standard for the classification of walking tracks and their associate facilities. It would be used as a common basis for informing the public and for use as a management tool.

The benefits we hoped to achieve included:

- Our visitors would be better prepared;
- We would reduce the number of injuries occurring to our visitors;
- We would be able to present to the courts if required a case for having maintained and inspected the tracks on a reasonable basis and thus reduce our negligence;
- We would avoid having to make all of our tracks equally safe; and
- In the long term it may be possible to have legislation limiting the liability of public land managers once we have shown that we are managing responsibly.

I volunteered on behalf of the public land managers at that conference to write to standards Australia and request that the role of the existing review committee be extended to address these matters.

### **The development of Part 1 – Classification and Signage**

The initial meeting of Australian Standards Committee CS/29 was held on 12 March 1997 in Sydney. It was attended by representatives from:

- ACT Parks and Conservation Service
- Confederation of Bushwalking Clubs New South Wales
- Federation of Victorian Bushwalking Clubs
- Metal Trades industry Association
- New South Wales National Parks and Wildlife Service
- Parks Australia
- Parks Victoria
- Queensland Department of Environment (Queensland National Parks and Wildlife Service)
- Queensland Department of Natural Resources (Forestry)
- South Australian Office for Recreation, Sport and Racing
- State Forests of New South Wales
- Victorian Police (Search and Rescue)

- Victorian Department of Natural Resources and Environment

Apologies were received from Conservation and Land Management (Western Australia) and the Tasmanian National Parks and Wildlife Service. Both of these organisations were to play a key role in later meetings.

Assistance was received at subsequent meetings by representatives from the Youth Hostels Association of NSW and the Victorian National Parks Association. A number of other organisations participated by providing feedback following release of the public drafts.

It was agreed by all members of the committee that the role of the committee be extended to cover all signs and infrastructure associated with walking tracks and that use of these be tied to a comprehensive classification system. In order to get the discussion started the QNPWS and the TPWS classification systems were tabled. The Queensland system contained 5 classes and the Tasmanian system, seven. Both documents contained many criteria and directions for management and these were all considered in subsequent meetings of the committee. In the end, the committee agreed on six track classes and six critical criteria to describe those classes. Classification of a track is made by considering the least developed of the criterion.

The classifications tables provide an overview statement, the elements for classification and a section on guidance for managers. The range of classifications covers tracks which provide access to wheel-chairs in Class 1 through to what are basically trackless routes in class 6.

The example below shows that there can be a wide range of classifications for each element along the length of a track. The track however, will be classified by the least developed of these elements, in this case the weather, yielding an overall classification of “5”.

	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
Track conditions		←————→				
Gradient	←————→					
Signage	←————→					
Infrastructure		←————→				
Terrain		←————→				
Weather	←————→					

**Figure 1 - Example of application of the classification tables to a particular track**

The classification of the track gives management the option of accepting the class as is, and managing it accordingly, or making changes to the elements which would enable the track to be classified at a more developed level.

Whilst the weather can not be controlled, the opening and closing of the track according to the seasons or weather conditions can be. By managing this, the track could be classified as a three during periods of good weather and five for the rest of the year.

Once the class is known, the information provided in the “Guidance for Managers” can be used as a basis for consistent management of the track. Individual land managers are encouraged to consider these and to write their own management systems that are appropriate to their own conditions and resources. Headings covered include:

- Facilities;
- Management intervention;
- Risk management;
- Track information;
- Usage and group size;
- Publicity;
- Activity registration;
- Route guides; and
- Campsites.

Detailed information is provided for track markers, with a greater range of shapes and colours being recommended for use. An important new section of the standard is the information provided for information signs. The content requirements for a range of signs are provided.

These include:

- Advisory signs;
- Descriptive signs;
- Interpretive signs;
- Regulatory signs; and
- Warning signs.

## **The Development Of Part 2 – Infrastructure Design**

The infrastructure design part of the standard was undertaken by a sub-committee of the CS/29 committee. It consisted of my self as chairman, and representatives from NSWNPWS, CALM, SA Office of Sport and Recreation, Confederation of Bushwalking Clubs New South Wales and the Federation of Victorian Bushwalking Clubs.

The work of the committee was helped considerably by the offer of the Tasmanian Parks and Wildlife Service to extend an existing contract with Gutteridge Haskins and Davey to facilitate a workshop for the committee and write the first draft of Part 2 based on the findings.

The Part 2 document gives design professionals a framework to best match the wide range of situations with appropriate man-made infrastructure. The standard recognises that walking tracks are constructed in environments that are valued by visitors for their natural and cultural qualities. The standard is intended for use by design professionals.

Section two of the standard covers general design considerations such as limit state design, live loads, lateral loading, snow and ice effects, design of supports. The provision of barriers and the type of barriers required are detailed in section three. Five types of barrier design are considered within the context of track classification and the consequences of falling from the structure. Section four provides information on stairs and ladders which are appropriate for walking tracks according to their classification.

Three appendices to the standard provide information on:

- Background information and guidance including suggested management practices;
- Intended design life; and
- Design for light maintenance vehicles.

### **The future development of Part 3 – Symbol Signs**

The next part of the standard is expected to get underway this year. This is a project to standardise and properly test pictogram signs for use by public land managers. Although most organisations have a set of images which they use, very few if any have ever been tested according to safety signage standards. This standard will require agencies to contribute to the cost of testing.