

**DRAFT AUSTRALIAN  
STANDARD**

**No DR95191**

**EARTH-MOVING MACHINERY  
MULTI-PIECE OFF-HIGHWAY RIMS**

**MAINTENANCE AND REPAIR**

**SPEAKER**

**R. L. SMITH**

**INSPECTOR OF MECHANICAL ENGINEERING  
NSW DEPARTMENT OF MINERAL RESOURCES**

## ABSTRACT OF INVESTIGATION

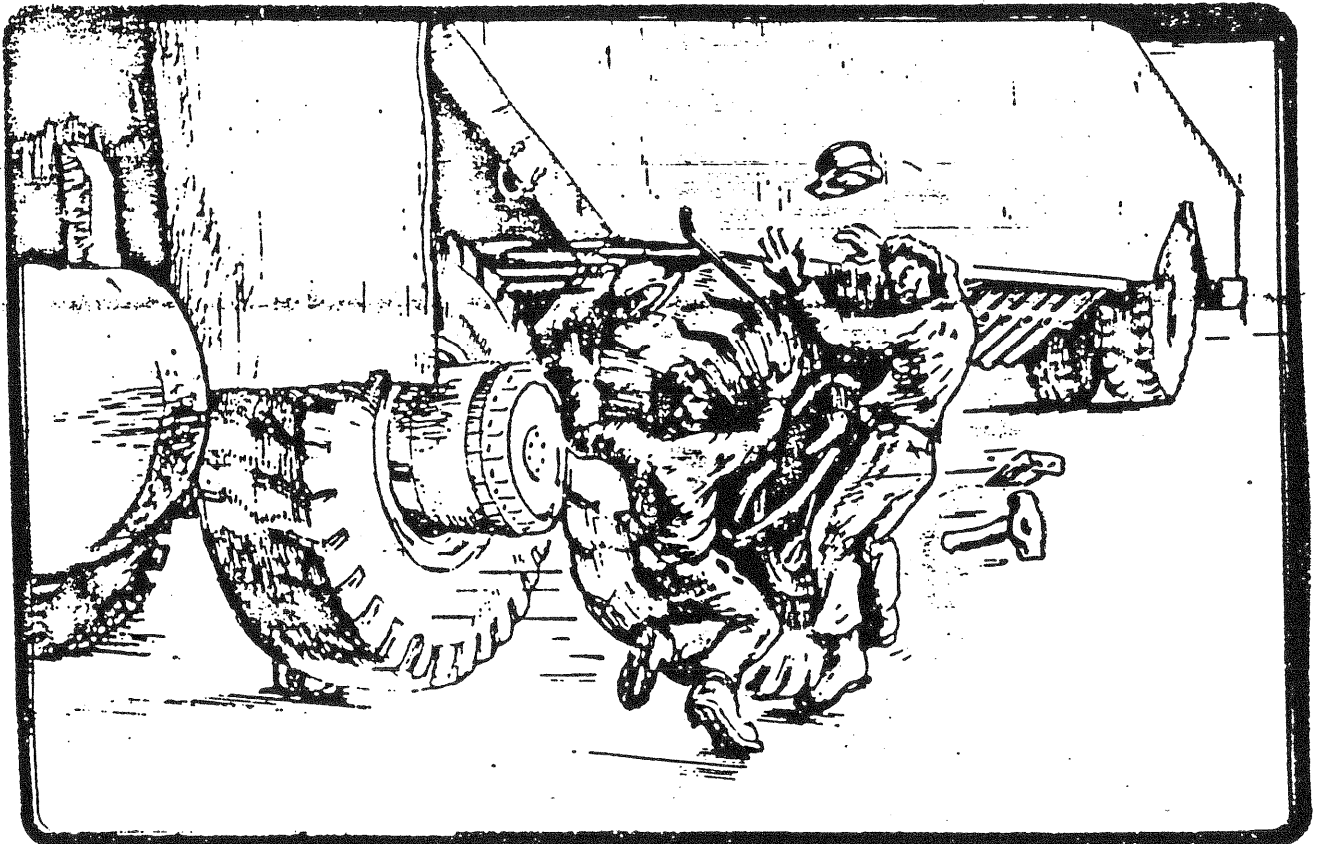
Date: July 19 1988

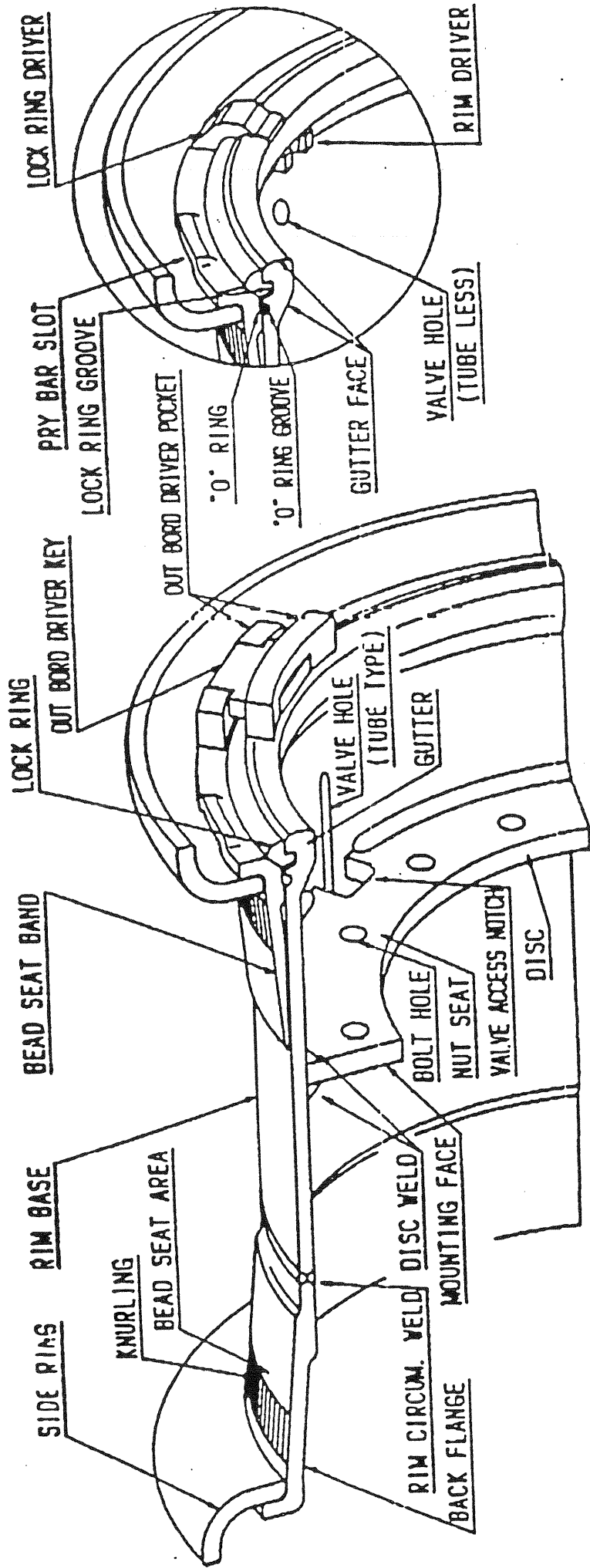
Slide Number: 21 (Fatal Case Number: 28)  
Accident Classification: Exploding Vessel Under Pressure  
Type of Mine: Coal - Surface  
Location:

Age of Victim: 57  
Total Mining Experience: 20 years  
Total Experience this Mine: 6 years 5 months  
Total Experience this Job: 6 years 5 months  
Number Employed at Mine: 100  
Number Working at Time of Accident: 65  
Time of Accident: 9:30 a.m.  
Mining Height: N/A

An accident occurred in the shop area of a mine as three mechanics were attempting to remove a wheel from a 100-ton haulage truck. After five of the eight retaining wedges were removed, a portion of the hub assembly broke due to the air pressure (80-100 psi) in the tire. A violent air pressure release occurred throwing the remaining wedges and a piece of broken hub outward, striking two of the mechanics. One of the mechanics sustained fatal chest injuries and the other mechanic serious head injuries.

Means of Prevention: Before any work is performed on tires, the tires should be deflated.





MULTI PIECE WHEEL (5 PIECE RIM)



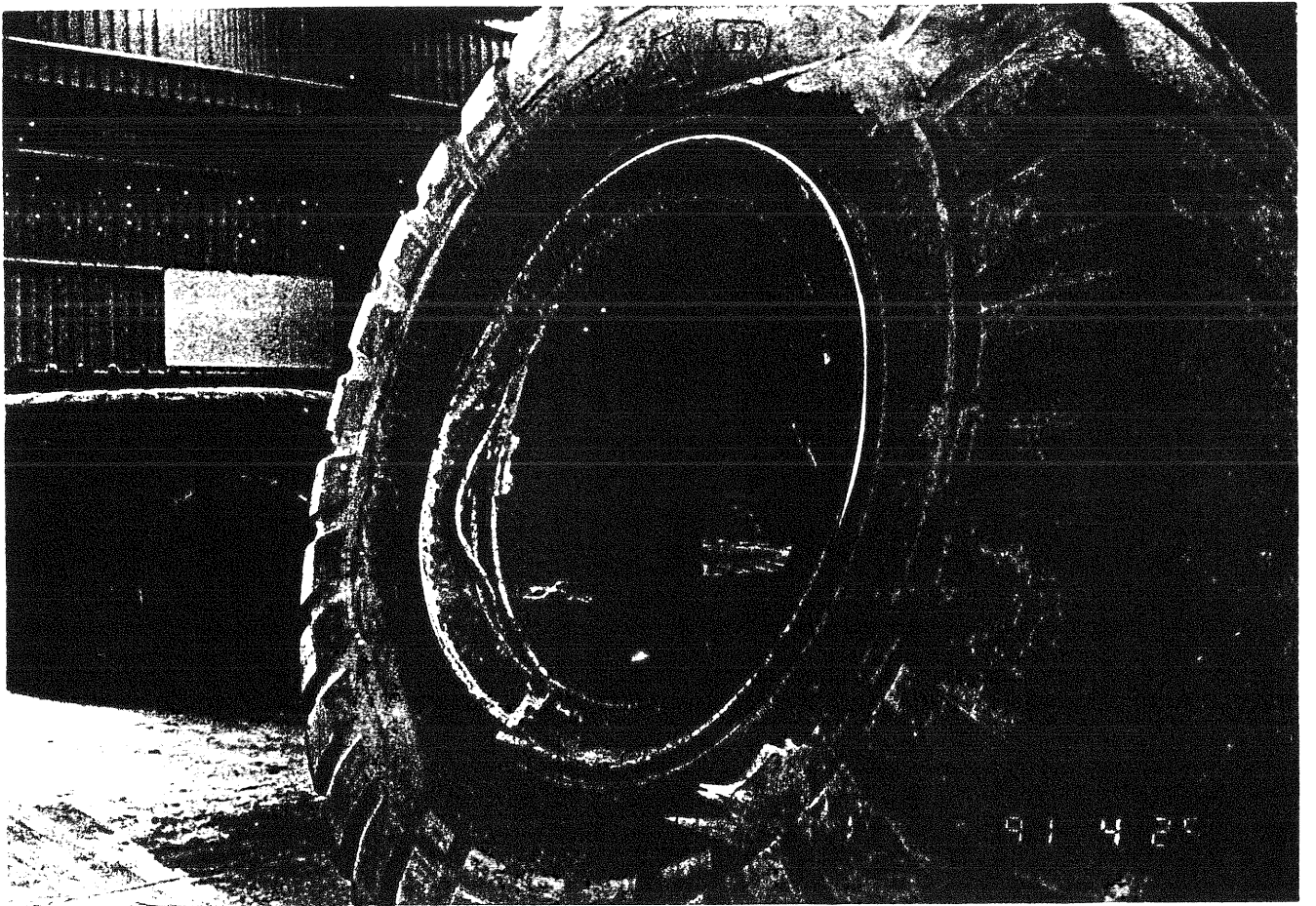
8 Years  
(Singeton Area)

TRUCKS  
BIGGER -

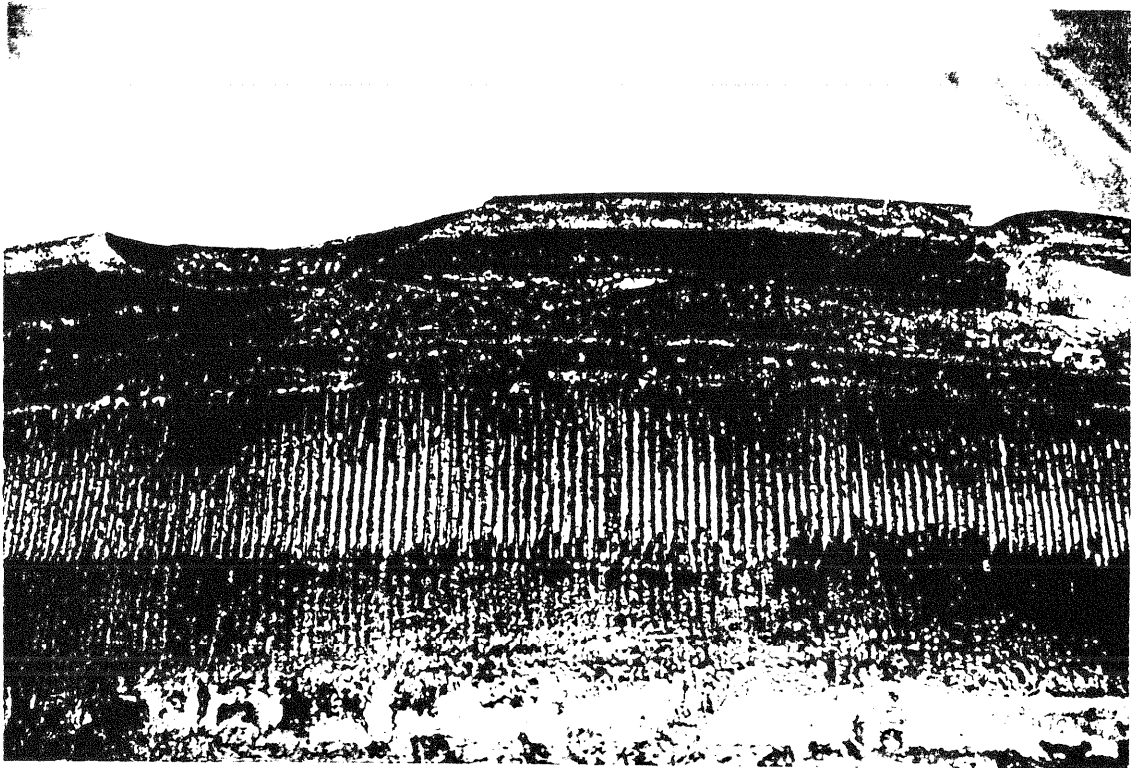
154 MT to 240 MT  
(Shortly 320 MT)

F.E. LOADERS  
BIGGER -

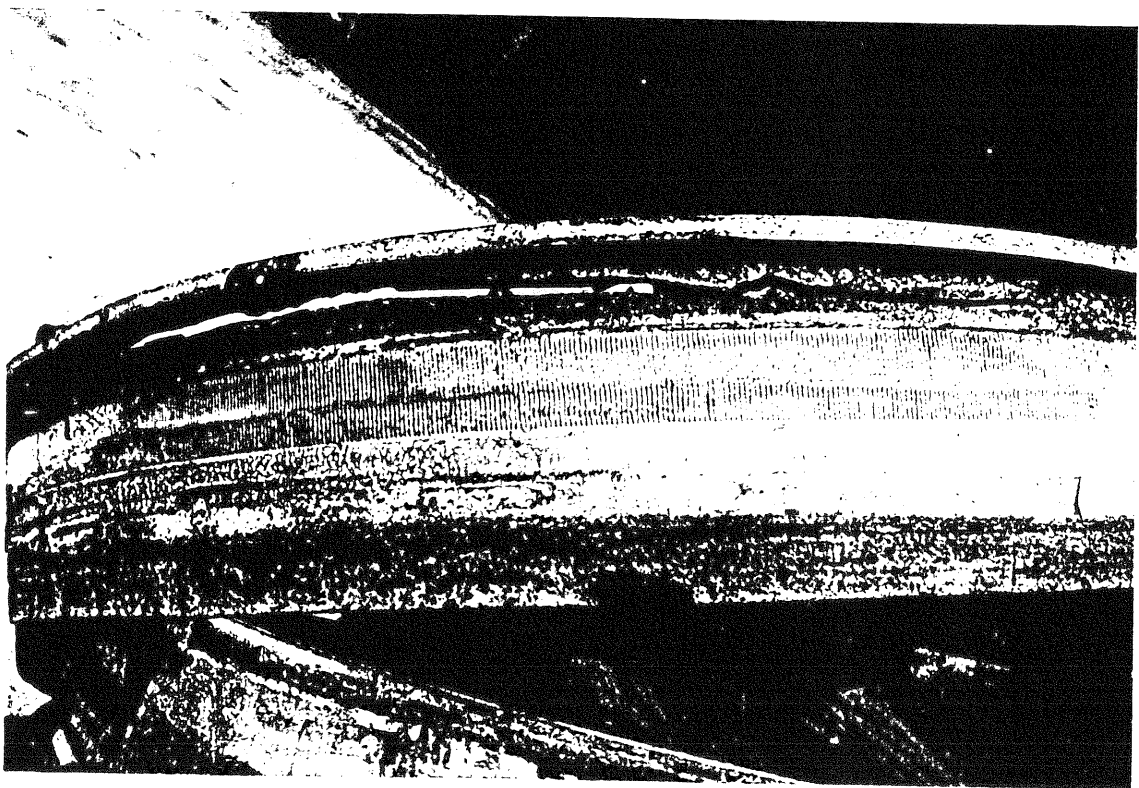
12 cm to 28 cm



CLASS A - SCRAP

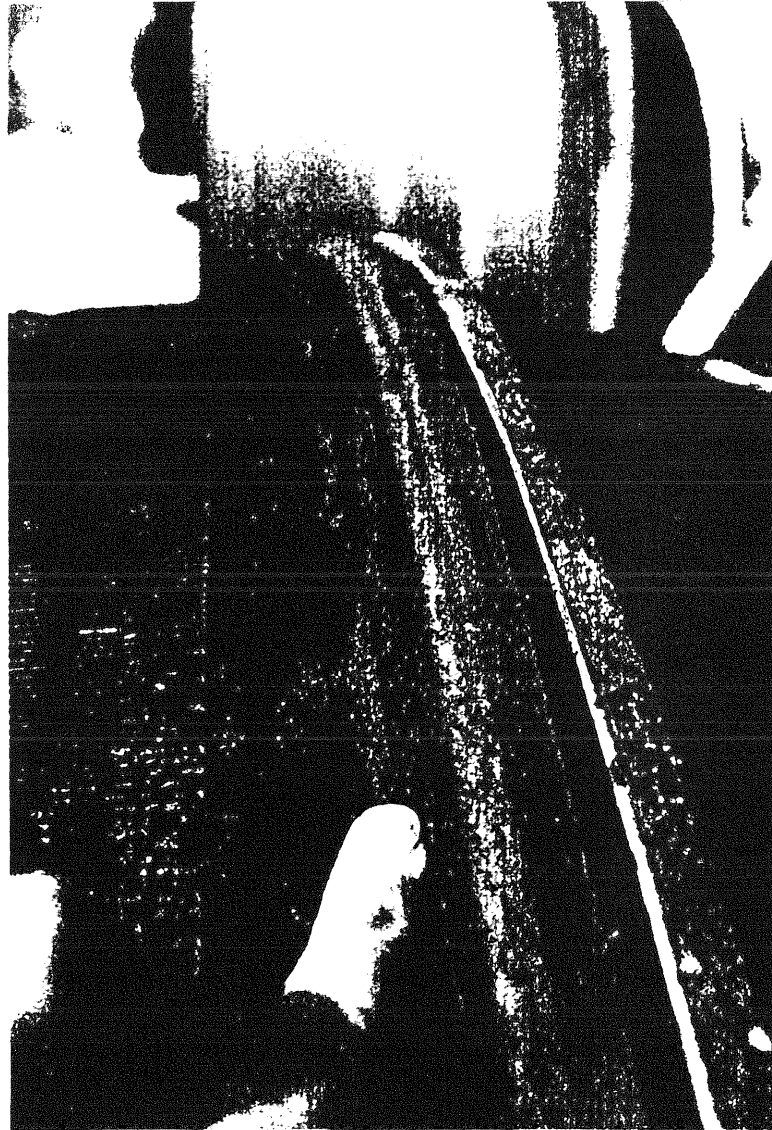


BEAD SEAT BAND FRACTURE  
(A PIECE COMPLETELY BROKEN OUT)

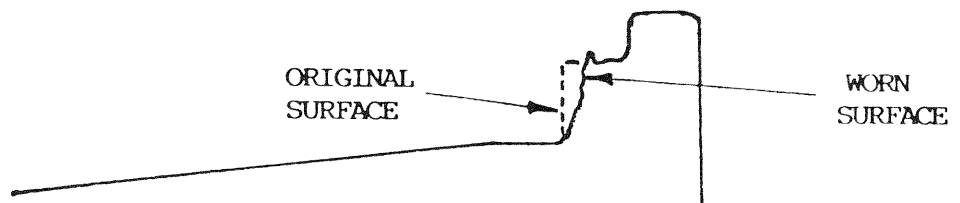


BEAD SEAT BAND FRACTURE

CLASS A - SCRAP



BACK SECTION WEAR AND DISTORTION



The back section to flange interface is worn and distorted to such a degree that proper flange support cannot be achieved.

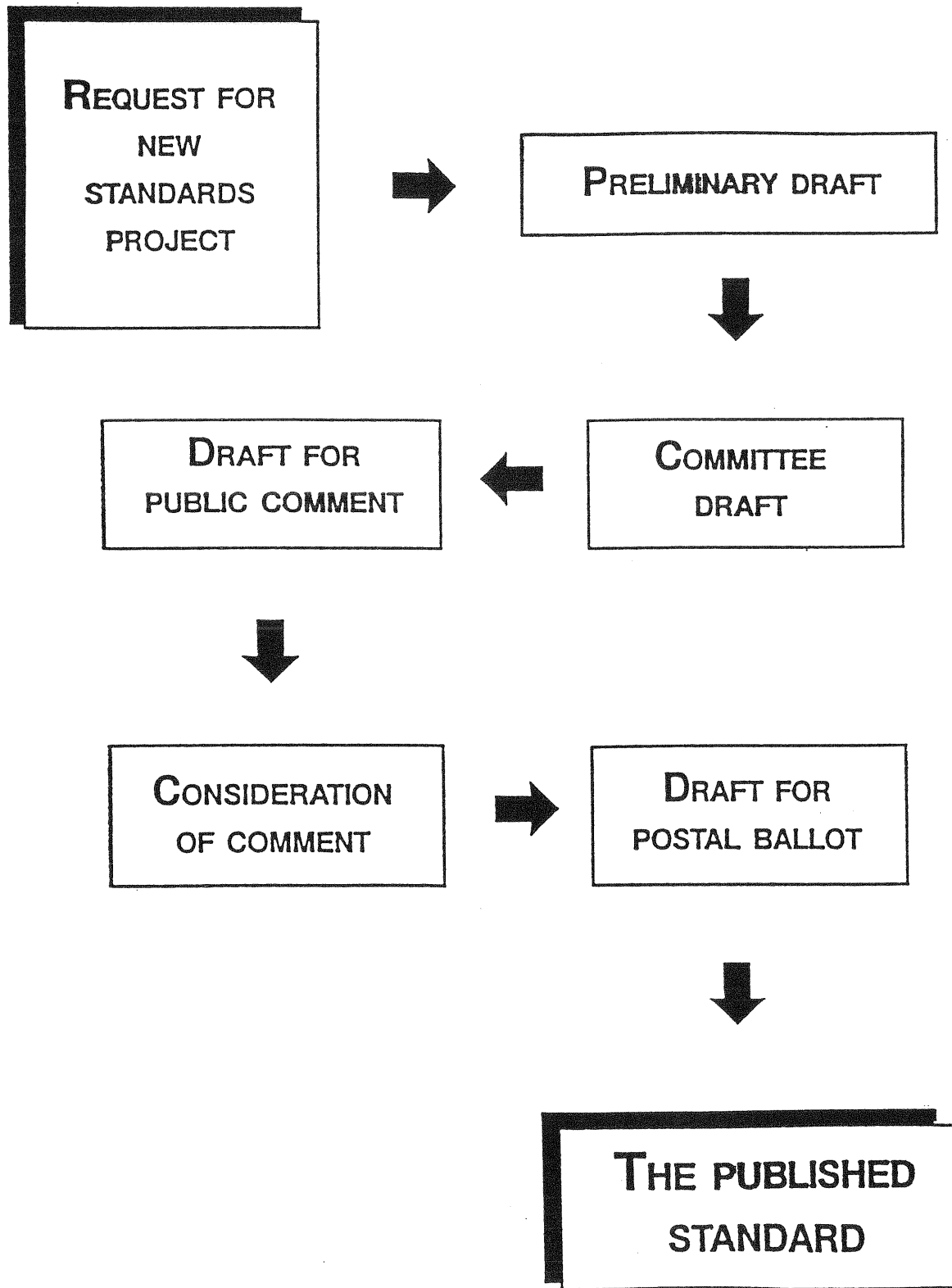




## PURPOSES SERVED BY STANDARDS

- Facilitating technical communication
- Establishing elements of order in a market
- Providing a basis for national and international uniformity
- Providing acceptable standards for safety
- Reducing the time and effort of design
- Compatibility of systems and components
- Reducing variety and cost of stock
- Protection of the environment
- Defining the key elements in quality assurance

# STANDARDS AUSTRALIA



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experts in their respective  
fields, serve on committees**

*Volunteers represent:*

- Government departments
- Commercial, retail, trade unions and consumers
- Research, academic and testing organizations
- Professional bodies
- Manufacturing, industry

## **COMMITTEE REPRESENTATION**

Construction and Mining Equipment Association of Australia.

Department of Defence.

Department of Energy and Minerals, VIC.

Department of Mineral Resources, N.S.W.

Department of Mineral Resources, QLD.

Department of Primary Industries Queensland Forest Service.

Earthmovers and Contractors Association of QLD.

Rural Water Corporation VIC.

Safety Institute of Australia.

State Forest of N.S.W.

Telstra

Tractor and Machinery Association of Australia.

Waterboard Sydney - Illawarra - Blue Mountains.

Workcover Authority of N.S.W.

Additional interests participating in preparation of **Standard:**

Earth-moving Machinery Tyre Manufacturers.

Earth-moving Machinery Users.

Rim and Wheel Manufacturers.



STANDARDS AUSTRALIA

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Australian Standard

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Earth-moving machinery - Multi-piece  
off-highway rims - Maintenance and repair

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