INFORMATION SHEET 21

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# MINING TIMBER

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From 1896 to 1953 nearly all the coal produced from the Collie coalfields was excavated from deep mines. For every tonne of coal brought to the surface about 0·03 m³ of timber were taken underground to support the tunnels which were created. Today approximately two-thirds of Collie coal comes from open cut mines, but mining timber supplies for deep mines is still an important feature of forestry at Collie. It enables small-sized trees unsuitable for saw logs to be used for mining timber, thus giving a greater production of timber from State forests.

At one time, 13 underground mines operated in the Collie area, requiring almost 15 000 m³ of timber per year. Today, with only one deep mine operating, the annual intake is about 3 000 m³. At the peak of the deep mining era, 40 cutters operated in the bush, now seven men supply mining timber to Western Collieries' deep mine. Four cutters, two truck drivers and one loader driver.

The thickness of the Collie coal seams vary from 0·1 m to 12 m but the average seam is approximately 2·4 m. These seams lie in a basin dipping rather sharply at the sides and flattening in the centre. Mining commences by establishing a main tunnel or drive into the dipping coal strata, then working laterally and longitudinally, leaving a honey-combed maze of tunnels interspersed with pillars or large blocks of unmined coal. As the tunnels proceed, timber is brought down from the surface to support the roof.

The function of the timber is debatable. Some consider that it directly supports the overburden above the tunnel, others claim that it merely keeps the laminates of coal left in the roof tightly pressed together, so as to form a beam, which, with the timber allows a safe working condition. Timber is also reported to give loud cracking sounds when under maximun stress, which acts as a warning to miners.

**Names and sizes of mining timber used in Collie coal mines**

| *Name* | *Length in metres* | *Cross section size in millimetres* |
|---|---|---|
| Split props | 2·4 to 3·0 | 125 × 125 |
| Round props | 2·4 to 3·0 | 100 to 150 crown diameter |
| Slabs | 3·0 | 75 × 225 |
| Lids | 0·6 | 50 × 150 |
| Sleepers | 1·5 | 100 × 150 |
| Laths | 1·8 to 3·0 | 50 × 150 |

**The use of mining timber**

Mechanisation requires a wide tunnel working space to allow passage of such items of equipment as mechanical loaders and bob cats. The timbers used are slabs, lids, split and round props.

Round props are used in the construction of rubber belt conveyors and occasionally on the floor to prevent the bogging of the rubber tyred loaders.

The slabs are set as a beam against the roof and across the tunnel and are supported by a prop at each end. The slab is wedged tightly by tapered lids and in some cases prevented from rolling off its supports by cupping the prop, a practice known as "collaring". A slab supported by two props is known as a set. In main tunnels sets are at 0·45 m centres but in subsidiary workings at 1·2 to 1·5 m centres.

Laths or slabs are wedged between sets against the roof to prevent fretting, should the roof need this precaution. Close spacing of sets in main tunnels is necessary because they are kept open for many years and are subject to frequent vibrations. Also, as many of them are used for walkways they are required to have an added safety factor.

Subsidiary workings, if not required for return airways, are closed once fully extracted. Some of these, if beneath improvements such as roadways or buildings, are subject to regular inspections and have to be re-timbered in the event of failure or decay. However, either split or round jarrah rarely commences to break down in less than two years and, on average, heartwood lasts for more than 15 years. Many timbers in the Stockton mine which were erected over 30 years ago were still decay-free, even in the sapwood.

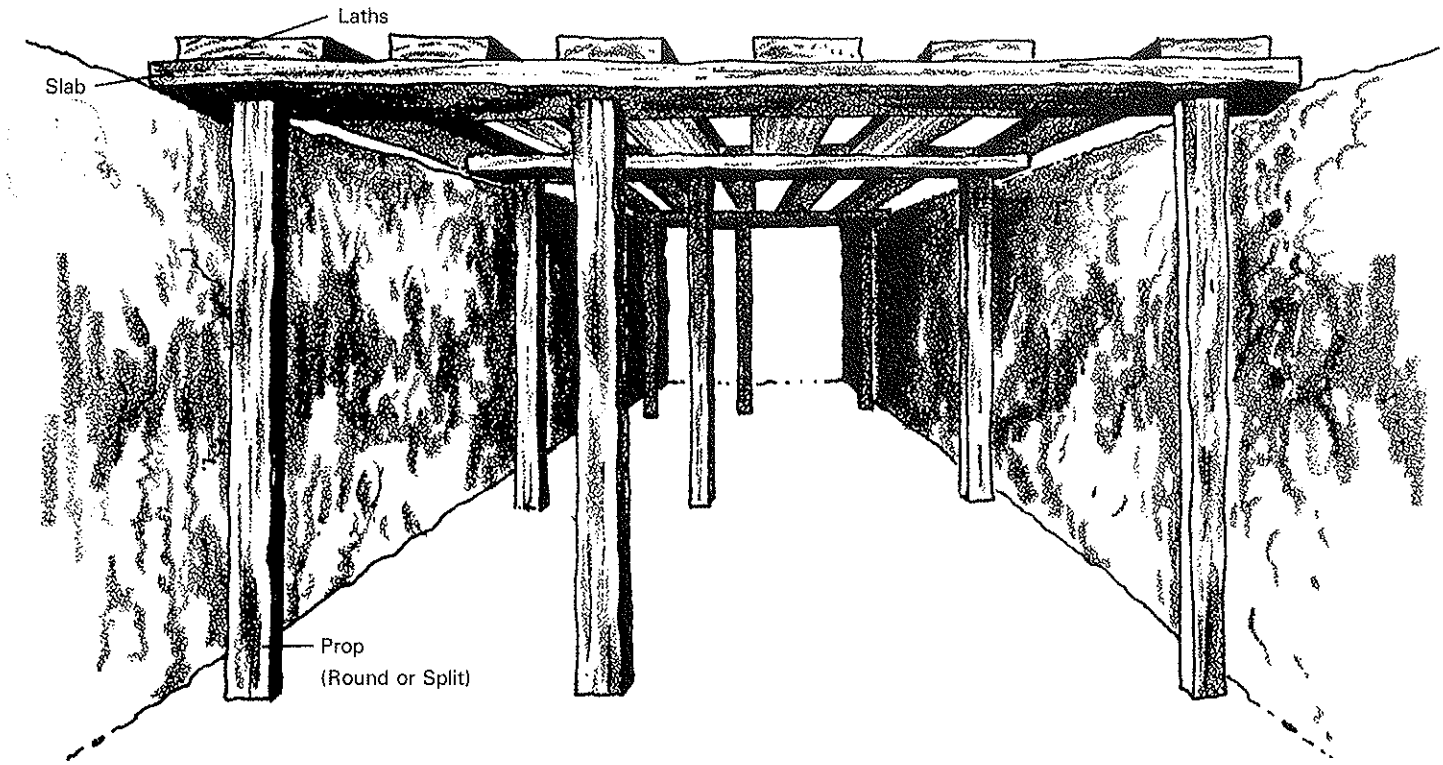
In current day workings, round props are used more frequently than split, in the order of 95 per cent round and 5 per cent split.

**Harvesting mining timber**

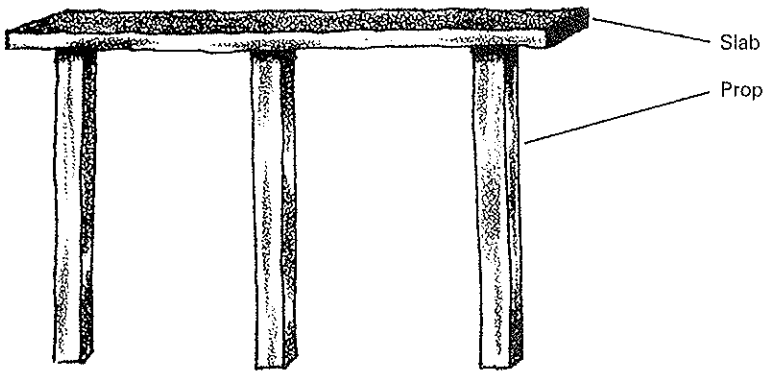
Mining timber is supplied to the mines by contractors employing piece work cutters, known locally as "prop cutters". Prop cutters provide their own tools, i.e. chainsaws, axe, falling wedges, splitting wedges and hammer.

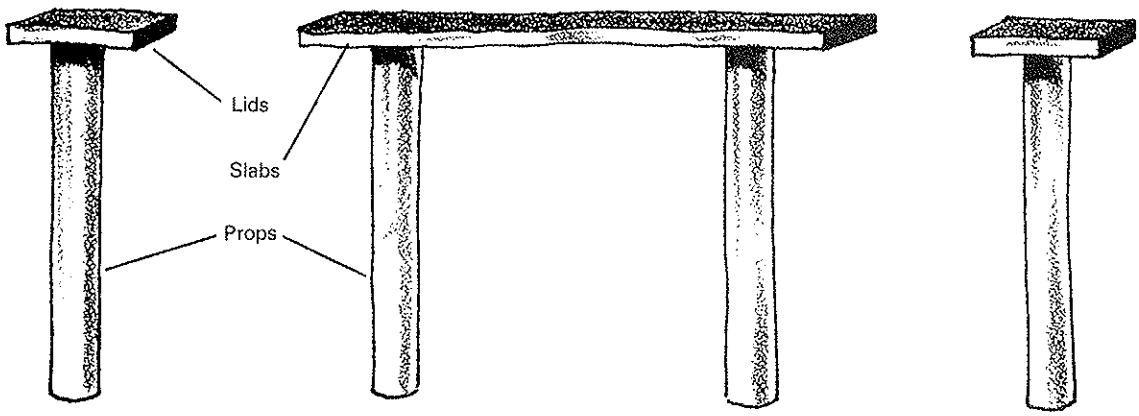
Cutters are allocated specific blocks to work in and trees to be removed are first tree-marked by a forester. After felling all bark is removed and the various timber pieces are hand loaded on to seven tonne trucks. A tractor is used to pull the felled prop from the stump to a landing where the truck is loaded. In the past the bush operation was restricted to forest areas in which it was possible to drive a conventional truck to within easy reach of each felled tree.

## MINING TIMBER IN MAIN TUNNELS




## VARIOUS COMBINATIONS OF *SETS* OF MINING TIMBER

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