

At the 4th. Australian and New Zealand Tramways Conference held in Sydney, 1934, Geelong Tramways, State Electricity Commission of Victoria, was represented by the abbreviated "Ge" throughout the listing of replies to a questionnaire sent out by a "Rolling Stock Committee" of the Conference.

A - BRAKES. Geelong advised that their cars had hand brakes & air operated ones. Dead Man's Handle; they named them thus...Hand, Air and Dead Man's Handle. Name used to designate application of:-- Hand Brake..HAND; Air Brake Service..SERVICE AIR; Air Brake Emergency..EMERGENCY AIR; ~~REVERSE & CIRCUIT BREAKER~~..; Reverse & Circuit Breaker out..LAST RESORT; Reverse..ELECTRIC EMERGENCY; Retardation in ft. per sec. per. sec. obtained from each of previous brake applications; no Geelong figures submitted; Percentage braking ratio on hand brake with 100lbs. on handle...50, 92, 25; b/..air brake at average pressure pounds..95, 135, 100; Maximum grade..1 in 10; diameter and stroke of brake cylinder..8" x 8"--8" x 12"; Maximum & minimum air pressures ..75lbs. 60lbs, Birney 70lbs. 50lbs.; Maximum & minimum piston travel.. 6 $\frac{1}{2}$ " 3"; Are Leather or Wabco buckets used.. yes to both; How often are cylinders greased, when necessary - and with what lubricant..Synovia grease; Are dust protectors used on cylinders.. NO; At what pressure is safety valve set..85lbs.; Capacity of air compressor..10 v.ft. per minute; Bar weights.. 1 to 10 = 12 tons, 14 & 15 = 7 tons, 16 to 23 = 14 tons, 24 to 30 = 10 $\frac{1}{2}$ tons; Geelong answered NO to relay valves and their maintenance; Are motorman's valves RIGHT or LEFT HAND.. left hand; Air tests for leakage..audible & visible; Air pipe sizes $\frac{1}{2}$ " $\frac{3}{4}$ " 1"; Lubricant for motorman's valves..D.T.E. light turbine oil; Are single or double pointer gauges used..single; How often are pressure gauges checked..no set period; Air pressure used in calculating brake pressure..Minimum 60lbs. maximum 75lbs; Maximum and minimum total leverage.. hand - max.75/1, min. 38.3/1, Air - max. 9.65/1, min. 5.2/1; Are slack adjusters used, and what kind..Westinghouse Air Auto. on 8 trucks; Type of brake shoe hanger..Universal, spherical; Weight of brake shoes in lbs.,..29, Birney 16; Specification of brake shoes..Cast iron Brinnell 260; Any trouble from wheel slip..Yes; Proportion of shoes scrapped..51%; Experience with gumming of Governor Piston and remedy..Yes--cleaned at intervals; Has it been found advantageous to undercut air compressor motor coms..Yes; Is hand brake rigging inter-connected with service brake rigging..Yes; Are hand brakes used for service stops..NO; Experience with self-lapping valves..Nil; Overhaul and inspection periods for motorman's valves..Overhaul every four months - inspected weekly; Emergency valves..Overhaul every 6 months - inspected every 6 months; Air compressors.. Overhauled yearly - inspected As required; Compressor motors..Overhauled yearly - inspected Monthly; Cylinders..Overhauled yearly - Inspected As required; Air reservoirs..drained weekly; Air governors..Overhauled Yearly - Inspected Monthly; Motor equipment

	W.H.	M.V.	G.E.	Compressors		
Make	225N	307vb.	264a	DH.10	DH.10x	CP25.
HP at 550v	45	55	25			
No in service	34	16	4	26	8	3
Date in service	1912	1925	1924	1928	1925	1924
Bearing type	S1	S1	S1			
Tare of car (tons)	10.5 12	14	7			
No. per car	2	2	2			
Brush	C.6	EG3	GE.D			
" pressure sq. in.	101lbs.	10	10			

TRACTION MOTORS and CONTROLLERS.

Controllers:--

Make	W	W	G.E.
Type	T1F	T1Q	K63g
Manual or Remote	M	M	M
No. in service	34	16	4
Motors per car	2	2	2
HP of motor at 550v.	45	55	25

To the question "ARE armatures wound in own shops?" Geelong replied "Yes".

Insulation of wire..Double cotton covered.

Armature coils were treated by dipping in Armasell varnish No.213.

Insulation of field coil wire was Double Cotton covered.

THE field coils were treated by dipping in Ohmaline varnish.

Armatures were impregnated with Armasell varnish.

Had no experience with "Rockbestos".

Only one Armature shaft has broken in 21 years.

Had no experience with dust proof boxes.

The Commutator binders were linen taped, cotton string and then varnished.

No experience with spiral grooved commutators.

Best make or class of Gear Pinion..Tool steel only used.

Percentage reduction on tooth width of gears & pinions for condemning..Condemned on inspection.

Type of resistance preferred.. Cast grid type.

How are motor connectors fitted - size & strands of motor leads..Bolted terminals..
49/.028 163/.018

No experience with "Bakelite" spindles.

Period of overhaul - (a) Armature (b) Motor carcasses.. (a) 15/18 months, (b) 15/18 mts

Are field coils removed from cases at overhaul..Yes.

Size & breaking stress of Armature binding wire..No. 20 95lbs.

Any experience in Motor Leads breaking..Yes - overcome by cleating to restrain movement.

Any special slotting device used..No.

TRACTION LAMPS & LIGHTING.

Class of socket..Bayonet - Voltage..240 - 110. Current in Amps..0.25 & 0.27. Clear or frosted..Clear. Any special type..Traction. Type of shade..8" and 10" opal shades. Method of lighting..All in series - 5 in series & 3 in series. Light switch..GE8984. Light fuse..Combined switch and fuse. Any experience with Bakelite holders..No. Most suitable headlamp..Clear glass. Special lenses or reflectors..reflectors. Are special lamps used..No. Theft of lamps..No. Experience with gas filled lamps..Yes, O.K. Features for standard lamp..No. Any rear lighting..No. Periodic inspection - lamps, Weekly and overhaul; lamp switches..Weekly and overhaul; lamp fuses..Weekly & overhaul; lamp, headlights..Weekly and overhaul.

Coverings for roofs, floors and seats.

Materials for roof coverings..? Overhaul & paint..Patch and paint. Any preparation on roof prior to covering..Lead paint and stop.

Materials for floor covering..Slats and Malthoid. Most suitable floor covering..Jarrah slats. Overhaul and repair methods..New slats & new Malthoid. Approximate life..slats 4 years. Materials used for Seat coverings..Rattan & slats. Most suitable seat coverings..slats. Life..not known. Are spring seats used..No. What is used for glazing packing..Felt and putty.

Destination Signs.

Are front signs used..Yes. Are side signs used..Yes. Do all cars carry all signs..Yes.

Fabric used for rolls..Voluna Cloth. How are signs printed..Hand painted. Width of sign roll..Front - 24", 36", 42"; side 24". Length of sign roll..13'6". 9'. Depth of lettering..4" on 24; 5½" on 36; 6" on 42; Side 3". Are coloured signs used..No. Are coloured lights used..Yes. Are route Nos. shown..No. How are signs lit..Chiefly behind. How are signs added to..Extra roll length. Are signs hemmed..No.

Bearings and Lubrication.

Armature bearings, type..Hoyts I C E. Oil..Texaco 744. Oil addition..¼ pint. Interval between oilings..2 weeks. How packed..Waste. Suspension bearings, type..Hoytes I C E. Oil..Texaco 744. Oil addition..¼ pint. Interval between oilings..2 weeks. How packed..Waste. Axle box, type..Hoytes I C E. Make of oil..Texaco 744. Oil addition ½ pint. Interval between oilings..6 weeks. How packed..Waste. ~~XXXXXX~~ Gear grease used..Ironsides Gear Shield. Experience with bituminous Compound..Ironsides O.K. Any anti-friction bearings used..No. Is used oil reconditioned..No. Is packing waste reconditioned..Washed in kerosine and oil. Is axle life affected by Journal wear..Not to any extent. Spun bearings..No. Cadmium bearings..No.

Tyres.

Diameter of tyres in use (nominal)..33" and 26"; (actual)..33" and 26". Scrapping diameter..29/30" and 23". Material..BSS 101. Are Australian satisfactory..Yes. Profile..Parallel. Shrinkage..0.031" 0.026". Are worn flanges prevalent..Yes. Prevention..Aligning trucks and close limits of horns. Are treads flat..Not to any extent. Prevention..Abrasive shoes. Are Sorbitic tyres used..No. Are rail profiles alike..No. Any treatment of rails..No. Percentage of grooved rail in use..82%. Are rail and tyre profiles alike..No.

Car cleaning and renovation.

How often are trams washed..Weekly. Cleaning agent..None. Mechanical agents used..No. Is waxing done..No. Are windows polished..Weekly (chamois). Cleaning agent.. "BON-AMT" now and then. Is renovation on mileage or monthly basis..Overhaul 4 years. Touch up 2 years. What varnish is used..Taubman's L52 undercoat; Dockers finish. Is spray painting done..Biturine under floor. ~~XXXX~~

Trolley gear, etc.

Type of wheel..fixed. Outer diameter..5 7/8". Root diameter..4½". Weight including bush..5¾ lbs. Metal composition..Cu. 89 Sn. 10.5 Ph. .5. Are wheels specially balanced..No. Metal in bush..Same as wheel. Diameter of spindle..5/8" hollow. Lubrication..Graphite and petrol jelly. Any wheel flats..Seldom. Prevention..Inspect and turn. Any ball bearings..No. Length of pole..13'. Maximum height pole can reach if rope breaks..22' 6". Pressure on wire, 18 lbs. Height of trolley-wire at suspension point..19' 6". Are retrievers used..Catchers on Birney cars. Opinion of same..O.K. Is trolley wire lubricated..No. Any slides or shoes..No. Inspection of trolley-gear..twice weekly.

MISCELLANEOUS.

Staff outside..One man always available in Depot. Checking system..Rosters and reports
Any rusting compound used..No. Are cars elliptical springs lubricated..No. System of
sand box filling..Labourers with buckets. Any device used to reduce radio interference
..No. Steps to prevent noise..Supervision. Are fire extinguishers carried on cars..
No. Are lifting jacks carried on cars..One per car.(5 tons). Most suitable metal for
road gongs..Cast steel. Towing device used to move disabled cars..Drawbars. Are steps
covered with non-slip material..Steel and mason treads.