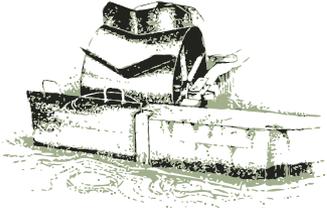




THE DETHRIDGE WHEEL

100 YEARS OF FAITHFUL SERVICE

John Furphy Memorial Lecture:



THE DETHRIDGE WHEEL
100 YEARS OF FAITHFUL SERVICE

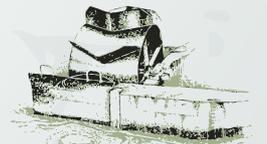
by Peter Fitzgerald



1910 – AT A GLANCE

In Australia:

- 👉 Andrew Fisher elected PM for Second Time
- 👉 Houdini achieves early flying feat
- 👉 Treasury issues own currency over British Pounds



1910 – AT A GLANCE

In Australia:

- ☞ Andrew Fisher elected PM for Second Time
- ☞ Houdini achieves early flying feat
- ☞ Treasury issues own currency over British Pounds

Internationally:

- ☞ George V becomes UK's new King
- ☞ Portugal becomes a Republic
- ☞ Tel Aviv is founded



THE DETHRIDGE FILE



John Stewart Dethridge

- ☞ Born 25 June 1865
- ☞ Died 15 May 1926
- ☞ Married Margaret Robinson in 1895
- ☞ Together raised 11 children



WORKING LIFE

1888



**Joins Department
of Public Works**



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WORKING LIFE

1888



Joins Department
of Public Works

1897



Passes Water
Supply exams



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WORKING LIFE

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Passes Water
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1902



Appointed 'permanent
professional officer'
– oversees Mildura
Irrigation Trust works



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WORKING LIFE

1888



Joins Department
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Passes Water
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1902



Appointed 'permanent
professional officer'
– oversees Mildura
Irrigation Trust works

1903



Named Executive
Engineer for
Goulburn River
works – including
Nagambie Weir
and Waranga Basin



WORKING LIFE

1910



Launches “Dethridge Direct
Measuring Water Meter”

More than 20,000 Dethridge Wheels
in Northern Victorian region alone

Many also set up in other states;
USA; Israel; and Africa



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OTHER USES OF THE DETHRIDGE WHEEL

These include:

- Measure discharges of sewage effluent
- Stormwater
- Drainage
- Diversion of water for fish farming



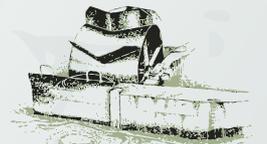
DETHRIDGE WHEEL SPECIFICATIONS

- Dethridge Wheel gives a positive measurement of water volume discharge
- Records flows in megalitres previously in acre-feet
- Wheel drums lasted 15 to 20 years
- Axle 5 years



SIMPLE, EFFICIENT COMPONENTS

- ☞ Wheel cylinder
- ☞ 8 Vanes
- ☞ Spokes
- ☞ Axle
- ☞ Bearings
- ☞ Measuring device



THE DETHRIDGE WHEEL
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TWO MAIN SIZES



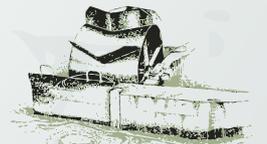
Large Dethridge
Meter Outlet (LDMO):

☞ Delivers 12 megalitres/day



Small Dethridge
Meter Outlet (SDMO):

☞ Delivers 5 megalitres/day



RELIABLE & ROBUST SYSTEM

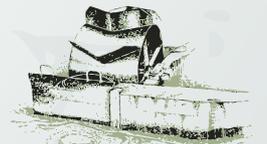
- ➡ Basic design and dimensions remained unchanged for 70 years
- ➡ Only alterations involved introduction of more durable materials and improvements to control gates and counting mechanisms, for example:
 - Steel drums and spokes
 - Sealed pendant counting mechanisms
 - Anthony ball bearings
 - Aluminium gates



RE-INVENTING THE WHEEL

The Dethridge-Long Meter:

- ☞ Aluminium
- ☞ More hydraulically efficient
- ☞ Used 6 vanes instead of 8 vanes
- ☞ Used low maintenance materials



THE DETHRIDGE WHEEL
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“Water Bailiffs should look upon water as ‘Liquid Gold’ and regard any wastage as money and production lost.”

Rivers & Water Supply Commission's
Water Bailiffs Manual – 1963 edition

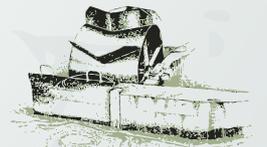


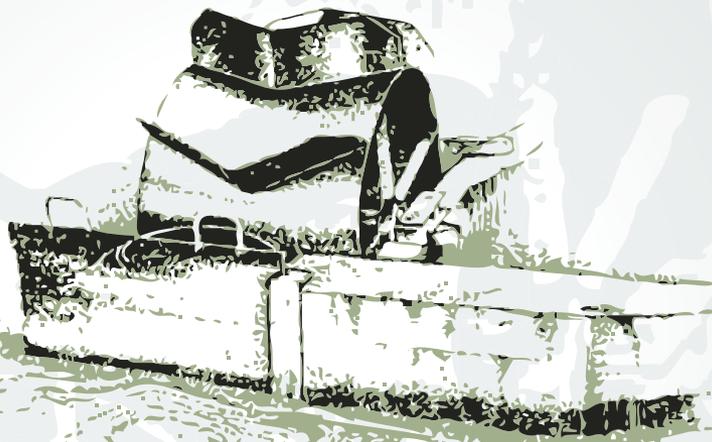


👉 **Electromagnetic Flow Meter —**
Measures change in the magnetic field as water passes through a known pipe area



👉 **FlumeGate measures flow passing**
over the gate tip using upstream water level, downstream water level and gate position as the primary inputs to derive the flow





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