

30th GMI Coal Mines Subcommittee meeting in conjunction with UNECE's 16th Annual Session of the Group of Experts on Coal Mine Methane (3-4 March 2021).



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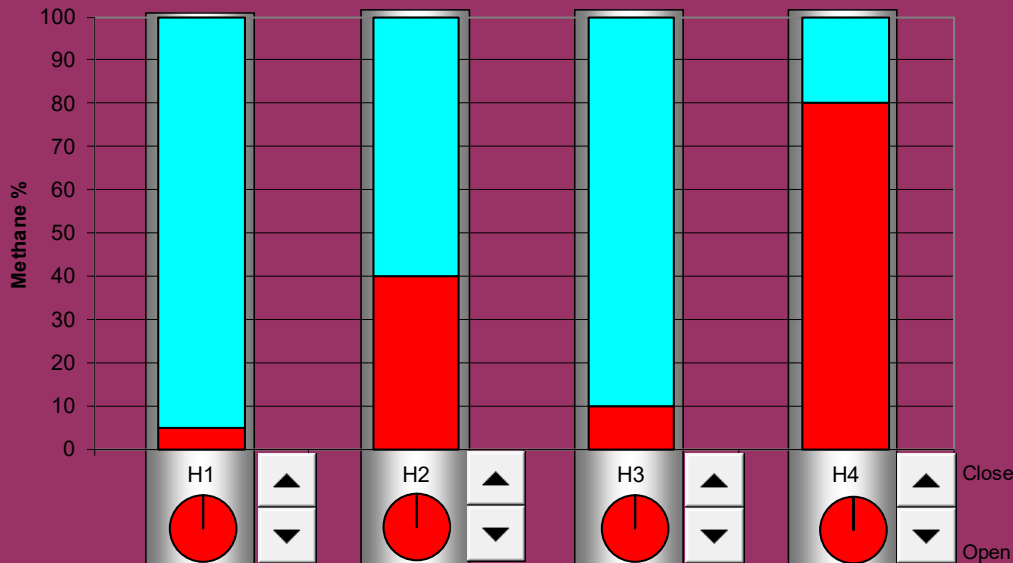
**A Training Simulator for
Management of Underground Methane Drainage Boreholes**
by David Creedy and Jia Baoqiang

Simulator developed by Dr Roy Moreby

Management of Underground Methane Drainage Boreholes – a Simulator

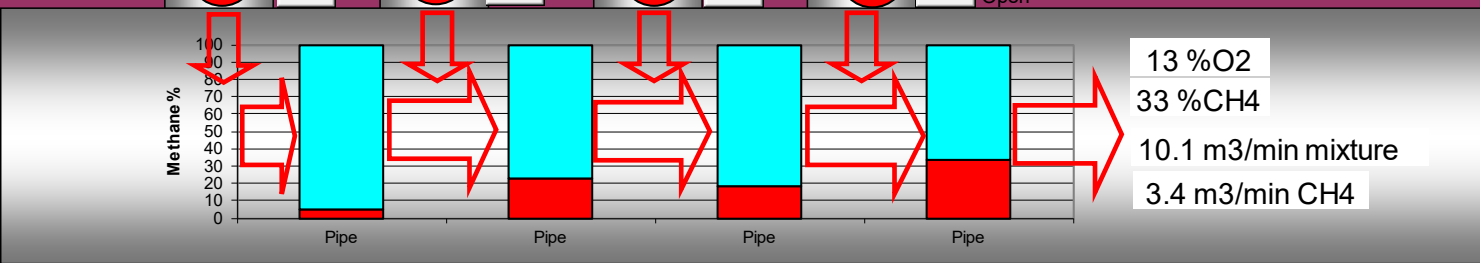
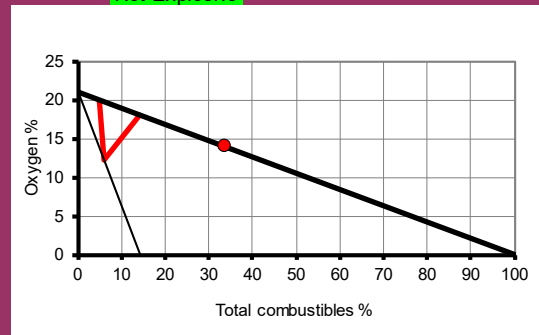
- ❑ Assists training of managers and methane drainage staff at coal mines
- ❑ Developed for use in China to demonstrate how to:
 - Increase concentration of drained CH₄ for safe transport and utilisation
 - Optimise pure methane flow captured
 - Avoid occurrence of explosive mixtures in the methane drainage system
- ❑ Shows need to monitor and regulate **every** cross-measure gas drainage borehole.



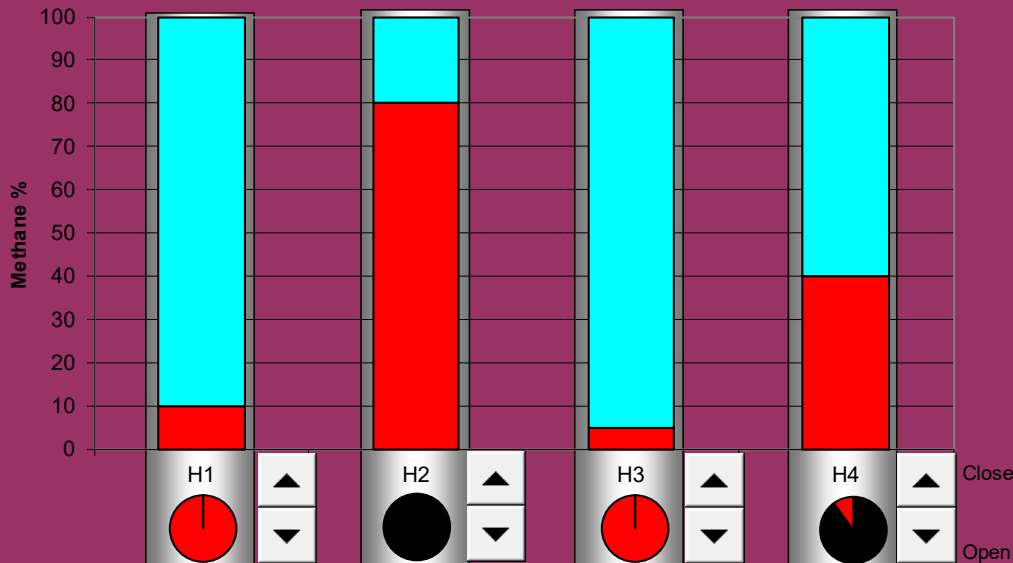


Reset Gas % & open valves

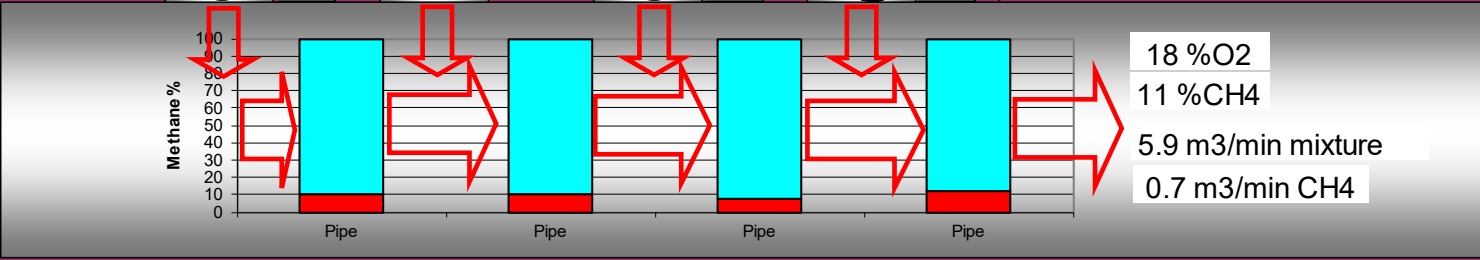
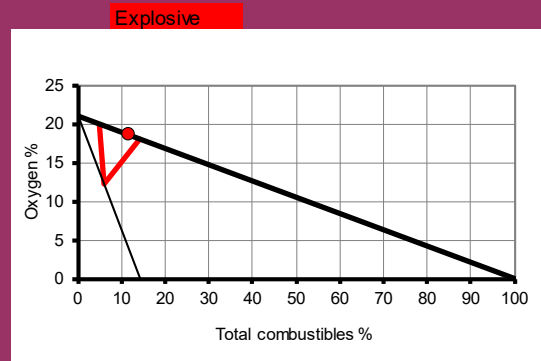
Not Explosive



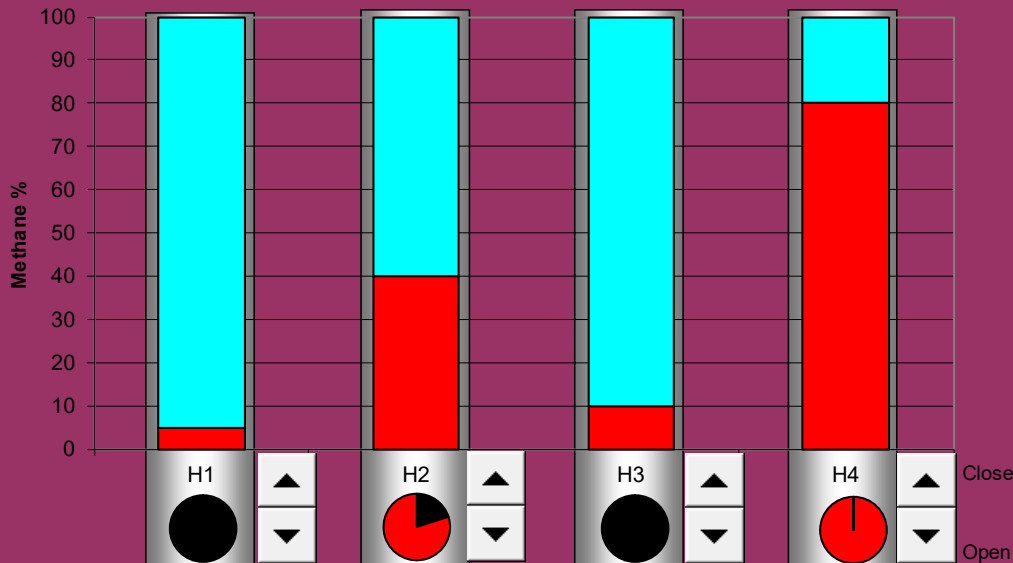
All regulator valves fully open <35% CH₄



Reset Gas % & open valves

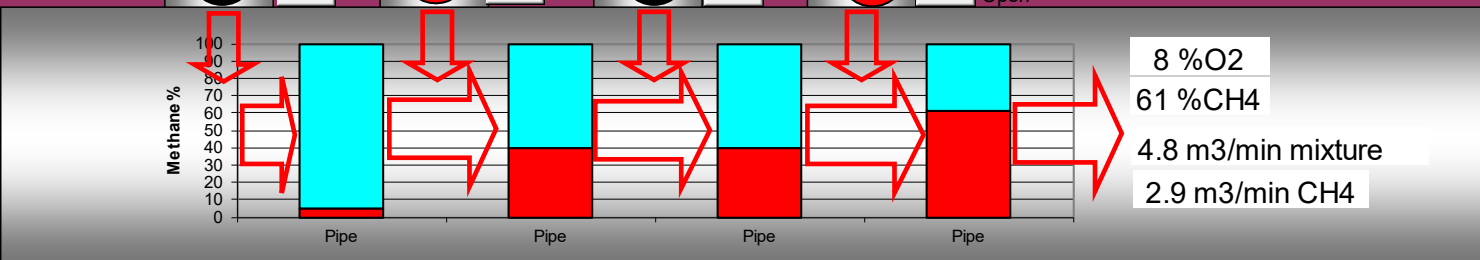
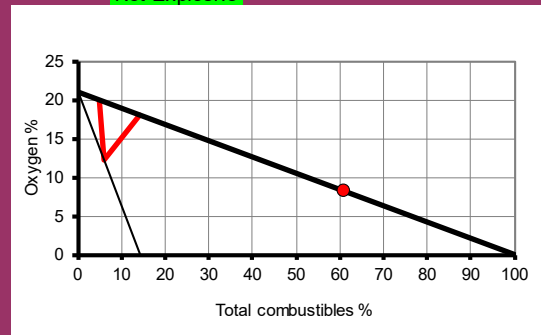


Badly regulated – explosive mixture in the pipeline

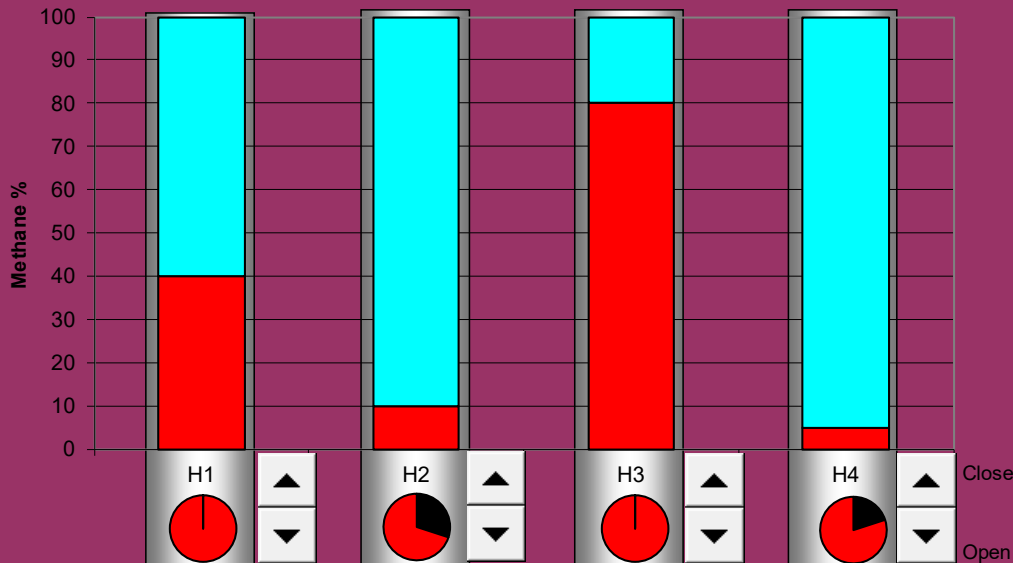


Reset Gas % & open valves

Not Explosive

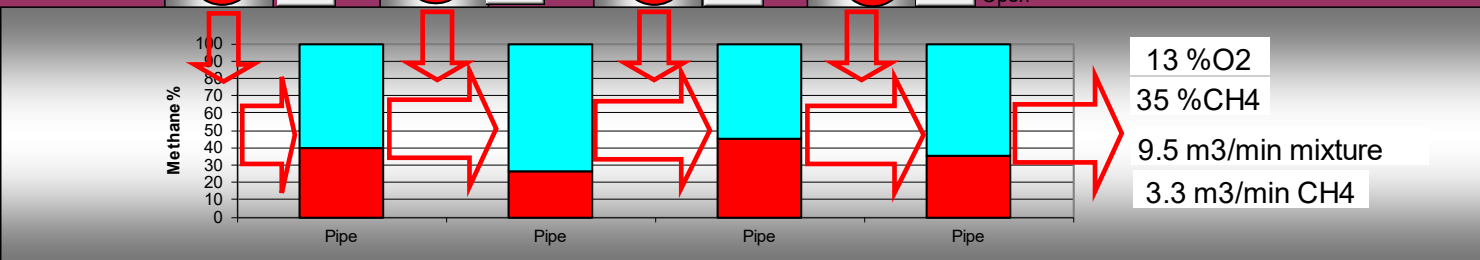
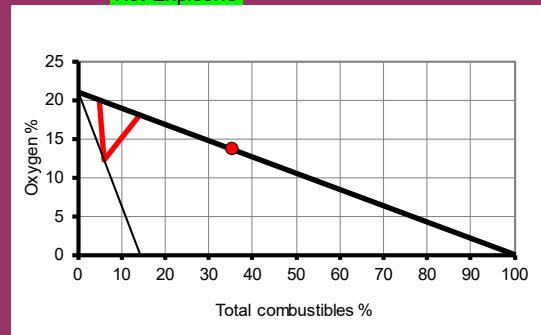


Maximum methane concentration achievable



Reset Gas % & open valves

Not Explosive



Maximum pure flow obtained when CH₄ regulated to 35%



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