

A.S.T.R.O. Meeting - held Friday January, 9 2009 at 8:00 p.m. Clarence Gardens.

CHAIRPERSON Opened the meeting and welcomed those present
Special welcome to large number of visitors
Special thanks to ladies for organisation of supper
At ASTRO Christmas Function

This meeting scheduled for Guest Speaker

GUEST SPEAKER Mr Ian Modistach (Engineer)
Topic – THE STERLING ENGINE

OVERVIEW The Sterling Engines use a gas. Same amount of gas moved around from one part of the engine to another. Modern Sterling Engines use hydrogen as working fluid – H₂ can pick-up and dump very quickly. Helium is next best for Stirling Engine. Phillips Corp had efficiencies of up to 40%. Swash plate. Demo engine was built from plans from Popular Science (magazine).

Invented in 1816 – Robert Sterling motivated by wanting to make the perfect thermodynamic cycle.

Why did steam prevail over Stirling engine –

- (1) 50 years jump start
- (2) Hard for Stirling Engine to be shut down
- (3) One man could run several engines
- (4) Fire did not have to be located next to engine
- (5) Steam is self starting
- (6) Steam engines are very intuitive

However, advanced Sterling Engines about double the output. Sterling Engine works on ‘pressure’ but Stirling Engine is more of a thermal engine. Modern materials better suited to Sterling Engine i.e. stainless steel. Well made Sterling Engine is quiet

Dutch (Phillips) did very brilliant work.

Phillips commercialised engines as cryogenic – liquid nitrogen air liquefier. Used H₂ as working fluid.

Modern application – Beal engine - free piston engine (3 pistons), no crankshaft. Future – sealed capsules that pick up on waste heat from any source.

Sterling Engines in submarines- 800C is mean running temp. (>temp is more efficient)

Website – Solar ponds Alice Springs = salt water driving engines since 1978.

Whisper Gen \$20,000 commercially available Sterling Engine – involved in self-cleaning filters for rainwater industry.

Sterling Engines were once used for dental drills.

Phillips had a rhombic drive – absolutely vibration free. Can achieve perfect balance with swash plate engine. Ericsson engine.

Cobdogla has a Humphries engine – callums are apron. 10 feet diam. ASTRO website has article on Humphries engine

INVENTIONS

Tony R Showed device with manometer (700 = 1 atmosphere – mercury, water – 15 psi, 100 kpa)

OTHER ITEMS

- Andrew** **Booking of hall for ASTRO – All OK except for April which will be 3rd Friday of month (due to Good Friday)**
- Michael** **Listened to Coast to Coast program (USA) How to make moonshine (alcohol) for running a car. – website www.alcoholcanbeagas.com**
- Chris** **Converting the hydraulic principle into electricity**
- Peter** **Toyota Lattice – 100 km < 7 litres LPG (4 cylinder LPG)**
- Bob** **Will give \$200 to Chris to construct his hydraulic principle**
- Ashley** **Yearly auction February Meeting – bring along your junk for ASTRO**
The Crash Course by Chris Martenson – www.martenson.com
- Chris** **A new design hydrogen fuel system consumes 1/7 of the amount of hydrogen. Combustion starts in the injector. Pressurised H₂ can be retrofitted as per LPG. Complete conversion kit. HADJI.**

Ian Modistach

PLEDGE – \$10,000 for 2% share of Profit – for anyone who can demonstrate a self-contained, closed circuit, over-unity device with no external connections. Offer is open for 1 year with an account with Assist Finance.

ATTENDANCE **Members attended on the evening**

NEXT MEETING – AUCTION & INVENTIONS NIGHT

CLOSE **- 10:20 pm followed by Supper**