

Institute of **Physics**

LONDON AND SOUTH EASTERN BRANCH REMS SECTION

Winter At Home Thursday 16 January 2003

Come along to the one of two meetings in the year when there is room for all of us to meet and talk, at the IoP Headquarters in 76, Portland Place. Guests are most welcome. The timetable is not set in stone, but the speakers are booked. There will be coffee or tea to start things off. The talks will begin soon after 11.00am and there will be lunch, and tea as well, to stimulate conversations and questions.

The programme for the day is:

10.30-11.00	Arrival and coffee
11.00-11.15	Mini AGM, REMS finances and future programme
11.15-12.30	Felix Weinberg; "Old Flames and the Burning Issues of Today"
12.30(+)-14.00	Lunch
14.00 prompt -14.30	Shirley Bateman; Vacuum physics in flight simulation
14.30 -15.15	Tony Manning; The Longitude Problem
15.15 - 16.00	Ian Wilson; Tales from the Civil Defence Bunker
16.00 - 16.15	Wash-up and any additional AGM matters
16.20	Tea and disperse.

Synopsis of the talks:

Felix Weinberg: Based on a Royal Institution Discourse given some time ago, the talk will cover combustion (pre)history, responses to pressures of finite fuel resources and concern about the environment, all in terms of the underlying physics - highlighting optical and electrical aspects of flames.

Shirley Bateman; How do you use vacuum physics in flight simulation? In a simulator, the picture seen is relayed via an optical system to a pilot who is sitting inside an exact copy of the cockpit of an aircraft or helicopter. Vacuum thin films processes were used in the simulator's optical probe and mirror systems. The talk will illustrate how a pilot initially saw a very dim picture of the terrain or runway and that the advancement of thin film technology improved the light throughput of the whole system to the pilot's eye.

Tony Manning; The talk will give a brief history of why mankind needed to navigate, early methods of doing so and explaining (for the benefit of guests rather than our full members, who should know why) why longitude was such a problem, and then how John Harrison came to design the ships chronometer. If time (and technology) permits extracts from the Greenwich Observatory video, which explain the operation of the Harrison clocks in detail, will be shown.

Ian Wilson; From nerve-gas, via flash-bang times, to fall-out and mass casualty triage -- some recollections of ABCD (atomic, biological, chemical defence) in the UK, USA, USSR, etc. from a county scientific intelligence officer whose duty it was to advise an autocratic Controller of both civilian and military resources and services.