JOHN HARRISON and the PROBLEM OF LONGITUDE

A Seminar Given By KEITH BECHTOL In Association with the SLAC ASSOCIATION OF STUDENT SPEAKERS 25 AUGUST 2010

JOHN HARRISON  WILLIAM HARRISON  NEVIL MASKELYNE  RUPERT GOULD
Night of October 22, 1707
West of the île d’Ouessant
Near the Scilly Isles
Over 2,000 lives lost just off the English coast
Dangers of dead reckoning...
Act 12 of Queen Anne (1714)
• Made mostly of oak (1713)
HI (1730-1735)
H2 and H3 (1737-1759)
“By God, Harrison I will see you righted!”

King George III
Rupert Gould with “H3”
Harrison’s Inventions

- Double Pendulum (H1)
- Roller bearings (Lignum Vitii)
- Grasshopper Escapement (H1)
- Circular balances (H3)
- Bi-metallic strip (H3)
Christiaan Huygens

• Inventor of pendulum clock (1656)
• First attempt at marine chronometer (1673)
  – Balance wheel and spring instead of gravity
Nevile Maskelyne

- 5th Astronomer Royal (1765-1811)
- Transit of Venus from St. Helena (1761)
- Author of “Nautical Almanac”
- Lunar distances or “lunars”
- Member of Board of Longitude
Captain James Cook

- Tested K1 on second and third voyages
Watch Parts

- H1-3: Grasshopper escapement
- H4: modified verge escapement
• 1714 Longitude Act
• John Harrison – Yorkshire Carpenter