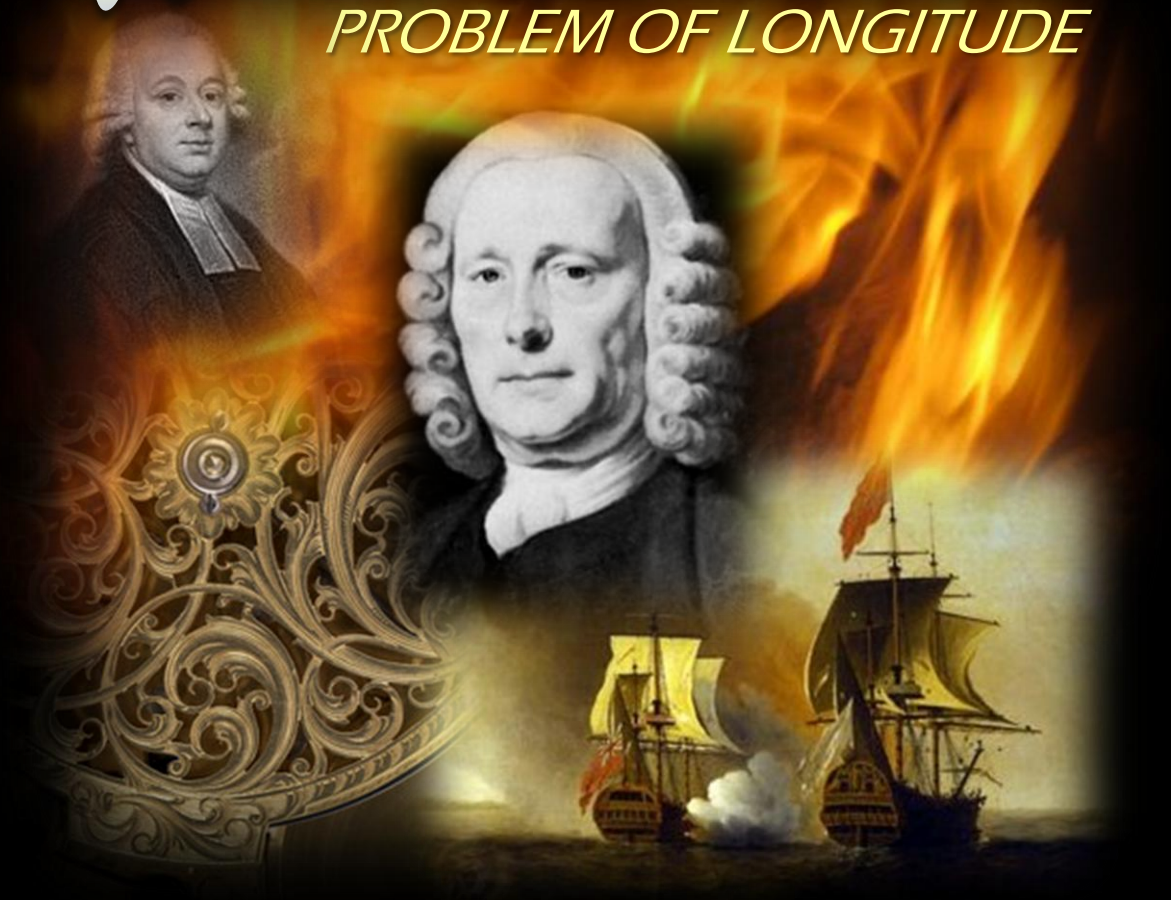
JOHN HARRISON WILLIAM HARRISON NEVIL MASKELYNE RUPERT GOULD

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

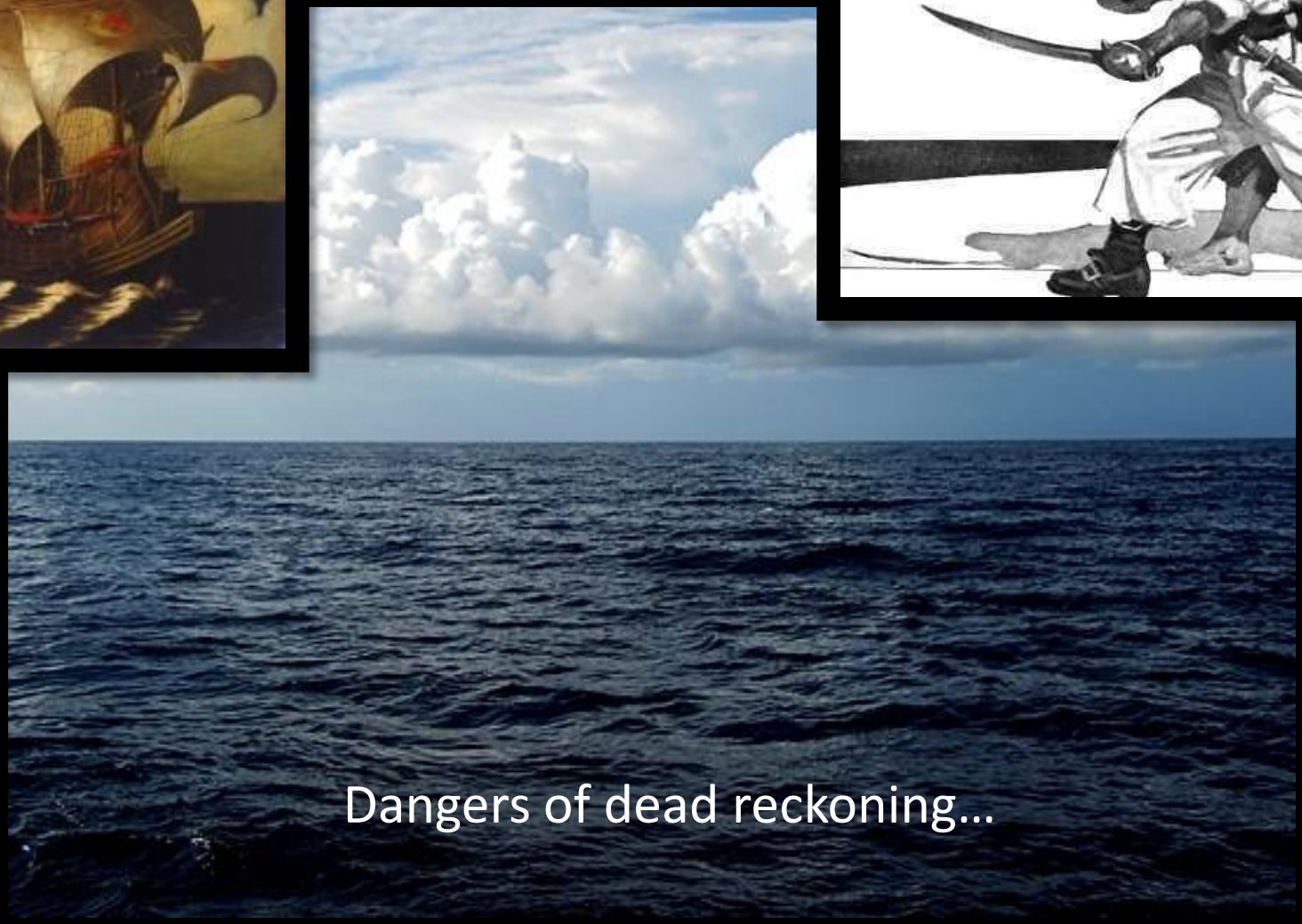
Night of October 22, 1707

~~West of the Ile d'Ouessant~~
Near the Scilly Isles

Sir Cloudesley Shovell

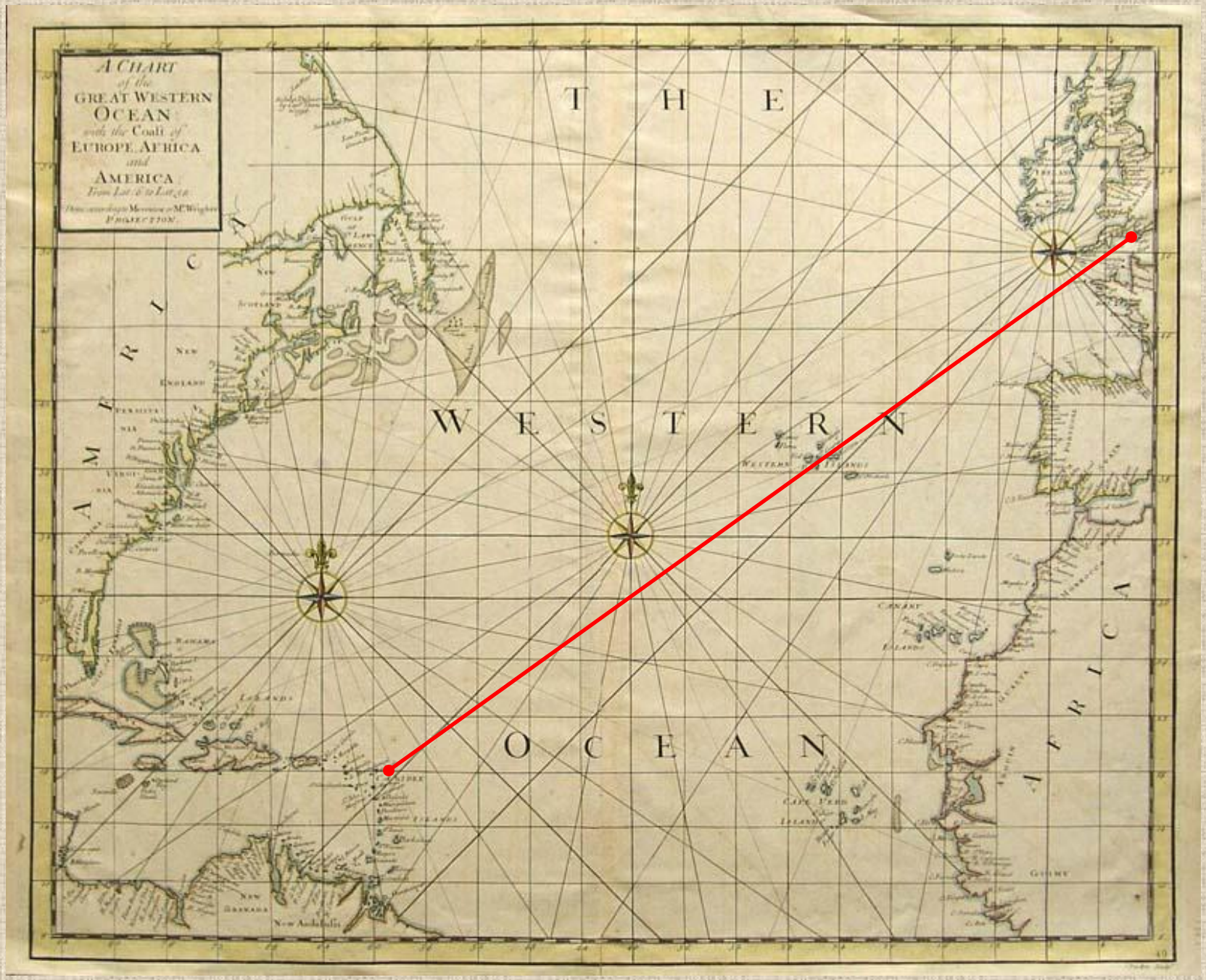
HMS Association

Over 2,000 lives lost just off the English coast



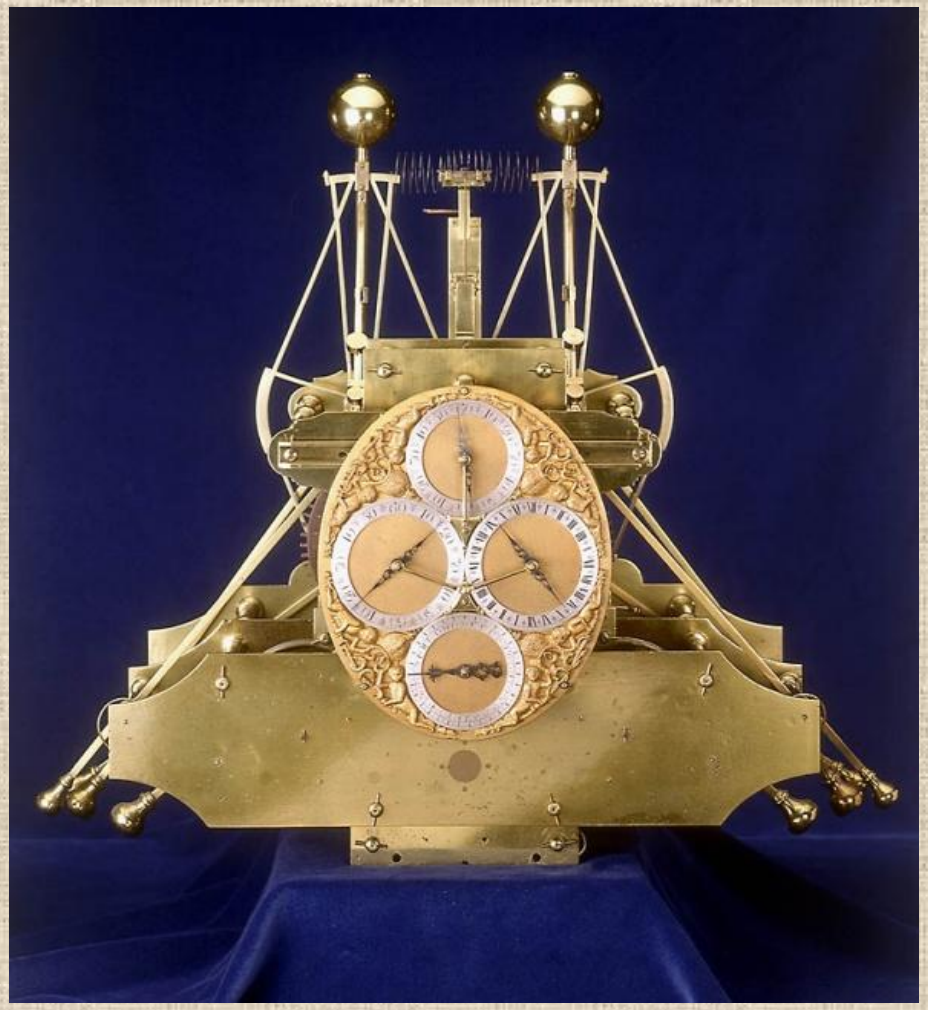
Dangers of dead reckoning…

Act 12 of Queen Anne (1714)

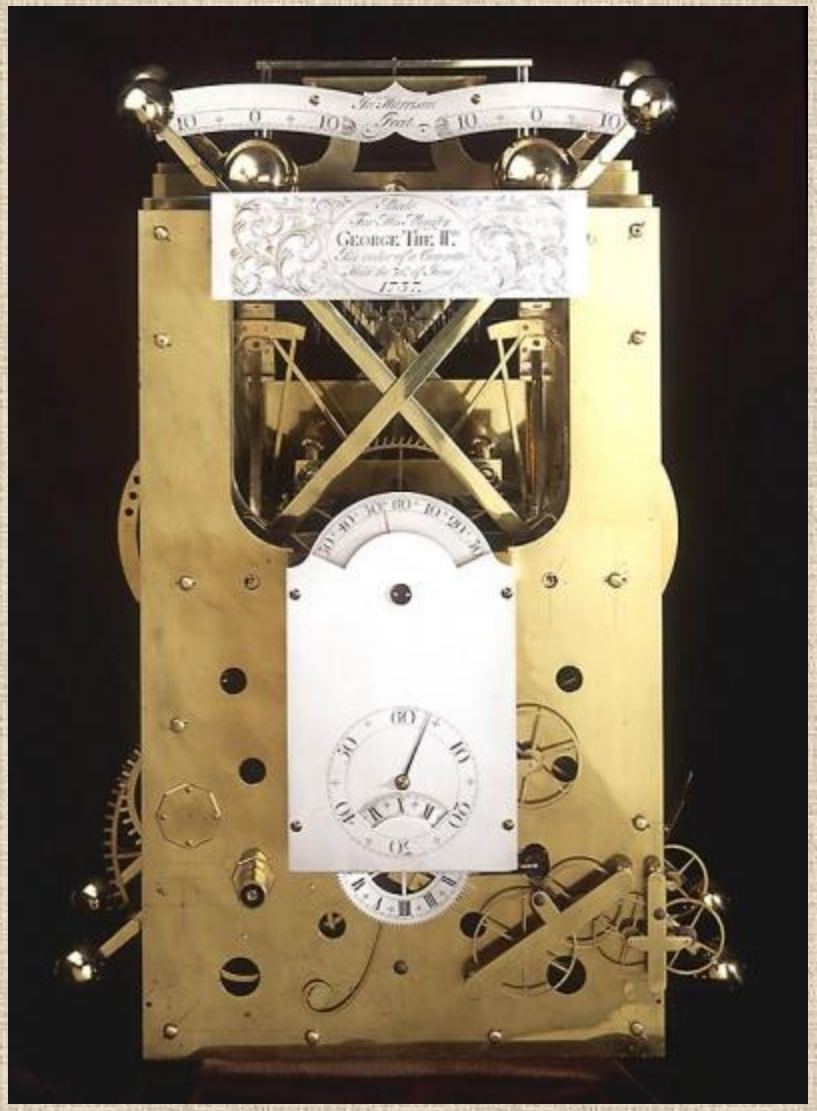

A CHART
of the
GREAT WESTERN
OCEAN
with the Coasts of
EUROPE AFRICA
and
AMERICA
PROJECTION.
THE
WESTERN
OCEAN
AMERICA
AFRICA
NEW
ENGLAND
NEW
GRANADA
CANARY
ISLANDS
CAPE VERD
ISLANDS
GUINEA

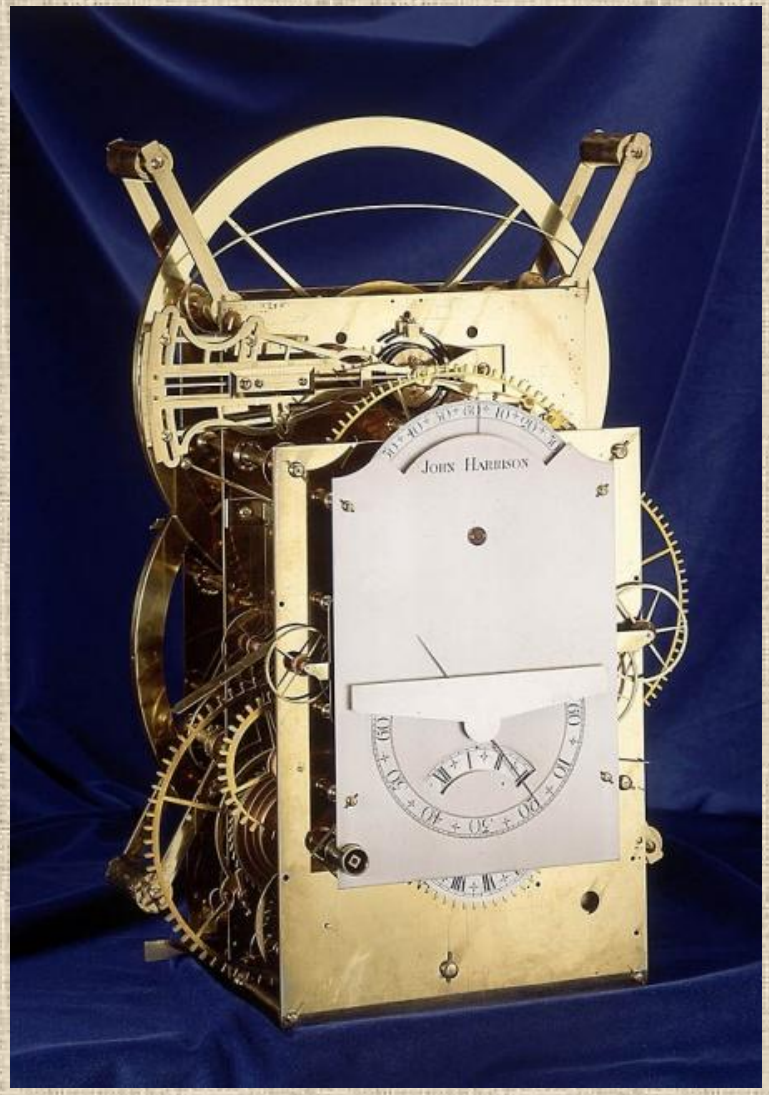
- Made mostly of oak (1713)

H1 (1730-1735)



H2 and H3 (1737-1759)

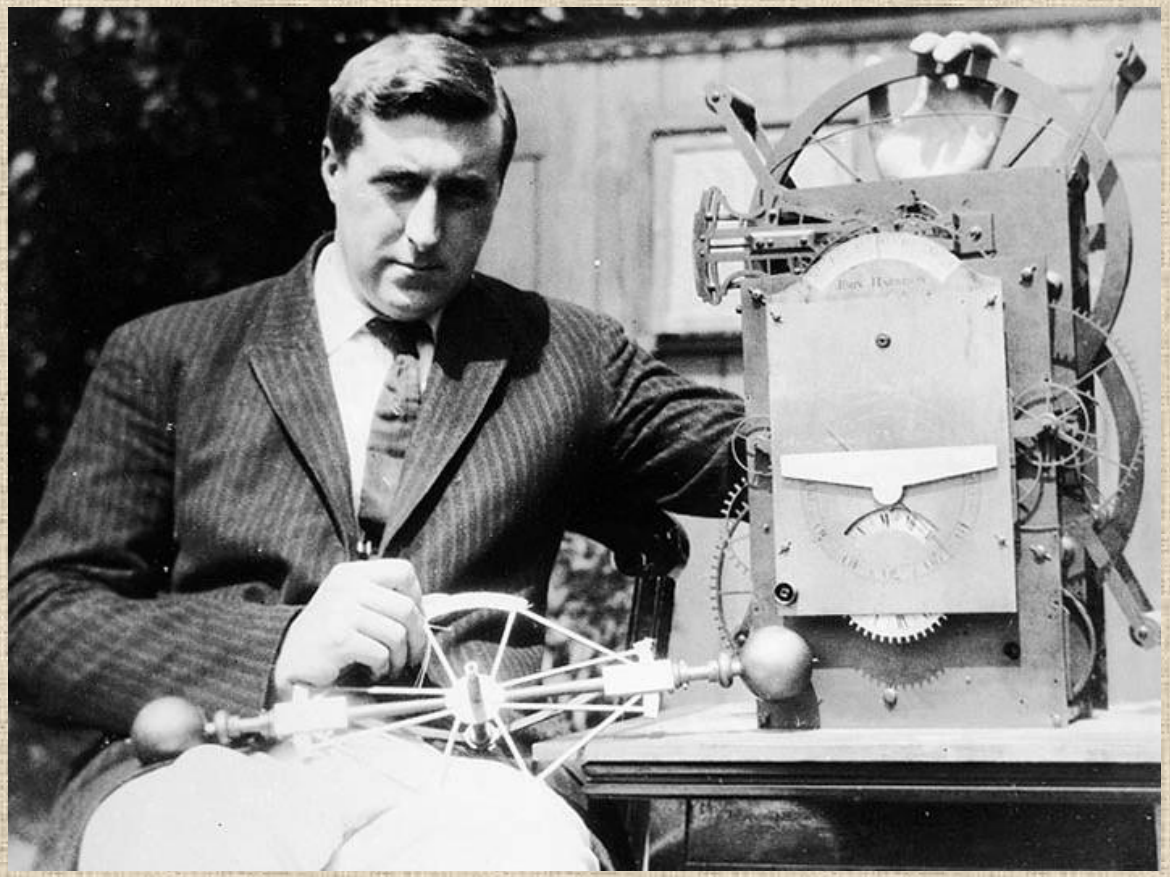




60
10
20
30
40
50

“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

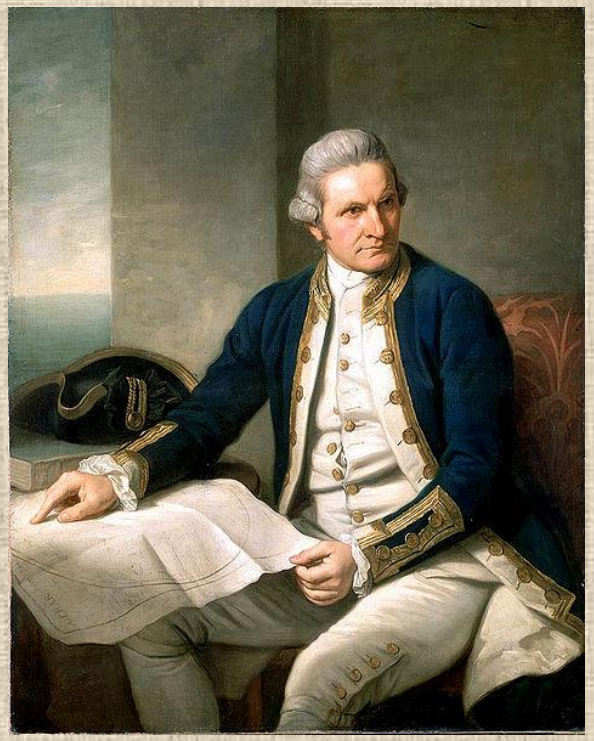
- Inventor of pendulum clock (1656)
- First attempt at marine chronometer (1673)
  - Balance wheel and spring instead of gravity

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

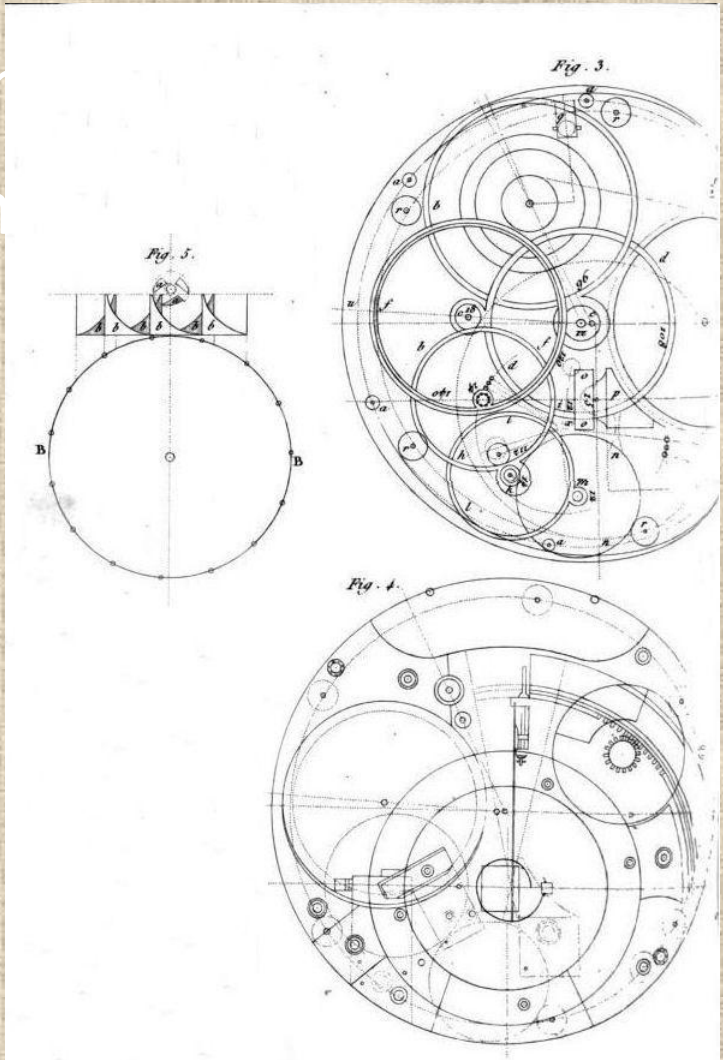
Captain James Cook

- Tested K1 on second and third voyages



Watch Parts

- H1-3: Grasshopper escapem
- H4: modified verge escapen



- 1714 Longitude Act

- John Harrison – Yorkshire Carpenter