

50 Years of Pipeline Protection

From Granny-Ragging to J-Lay

Picture removed because of size.

Picture removed because of size.

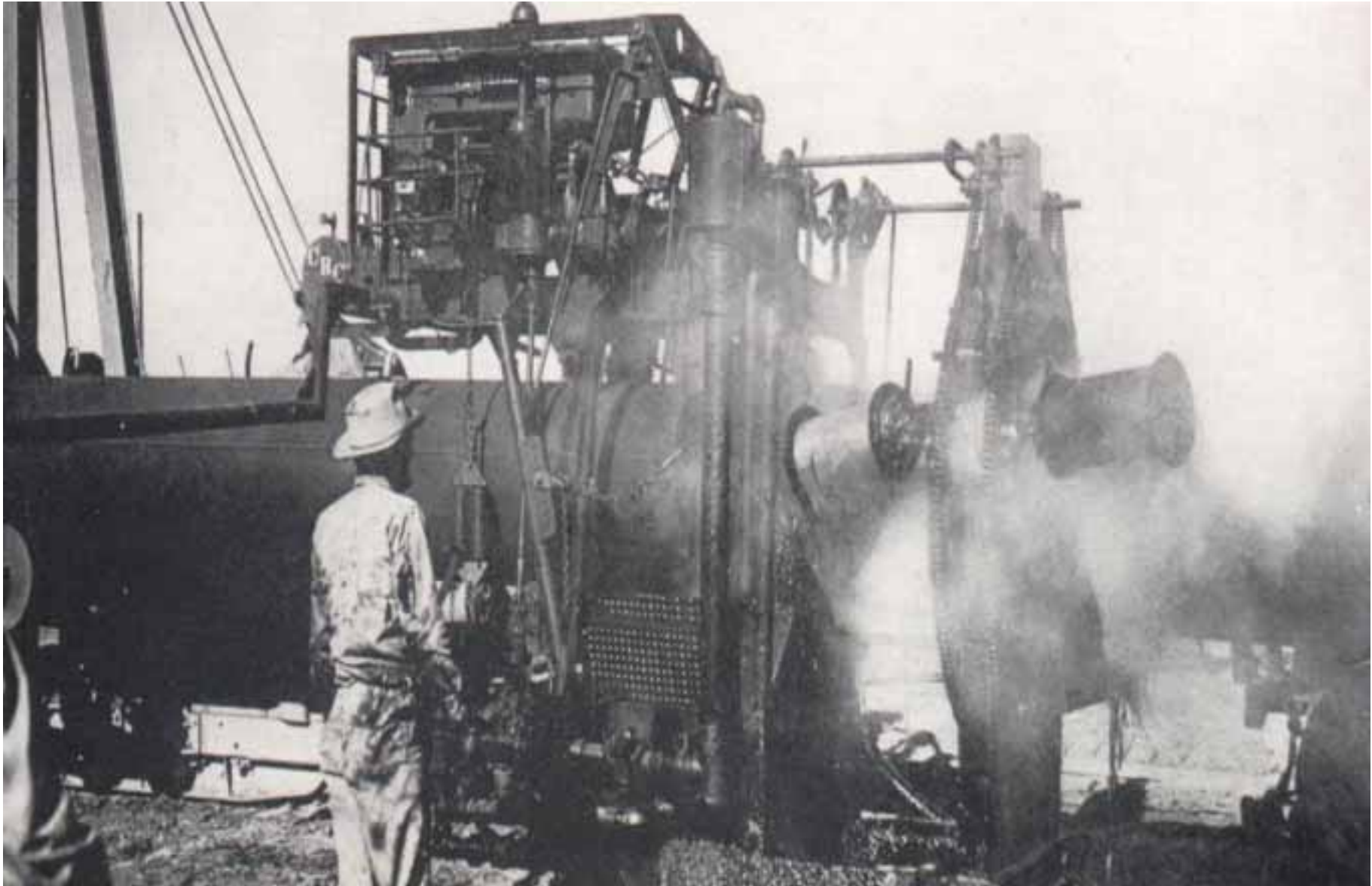
Bamboo pipelines have been used
for pressure service for over
2000 years

Picture removed because of size.

Picture removed because of size.

Picture removed because of size.

Picture removed because of size.



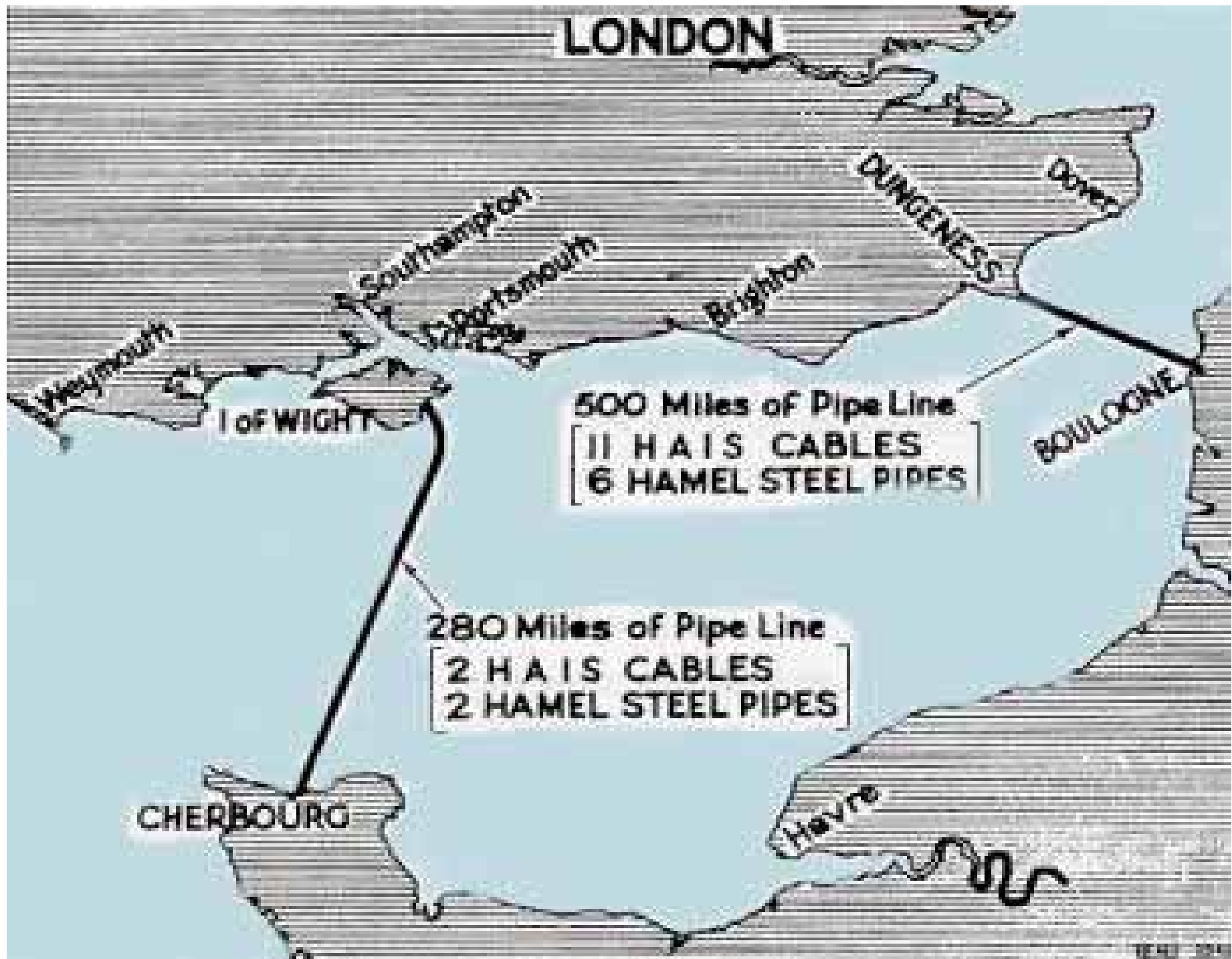
Picture removed because of size.

Offshore Pipelines

In the beginning there was

PLUTO

PipeLine Under The Ocean



LONDON

Weymouth

I of WIGHT

Southampton

Portsmouth

Brighton

DUNGENESS

Dover

BOULOGNE

500 Miles of Pipe Line
11 H A I S CABLES
6 HAMEL STEEL PIPES

280 Miles of Pipe Line
2 H A I S CABLES
2 HAMEL STEEL PIPES

CHERBOURG

Havre

Picture removed because of size.

Picture removed because of size.

Picture removed because of size.



Picture removed because of size.

Picture removed because of size.

If the evolution of our
Pipeline Protection technology
has been so good,

Why do we have so many failures?

Why is there a growing need for
Pipeline Rehabilitation ?

EXTERNAL CORROSION

*Pipelines do not fail -
Unless their coating fails
first*

Picture removed because of size.

Picture removed because of size.

Picture removed because of size.

Picture removed because of size.

Picture removed because of size.

Picture removed because of size.

ALL PIPE COATINGS WORK

AND

ALL PIPE COATINGS FAIL

THE DIFFERENCE IS

US

**OUR ACTIONS WILL DICTATE
SUCCESS OR FAILURE**

PIPELINE REHABILITATION

Modify the environment –
Modify the problem

Picture removed because of size.

Picture removed because of size.

Every pipeline requires
a minimum
of four coating specifications

Main body of the pipe

Field joint

Bends & furniture

Repairs to all of above

What are the primary requirements of these coatings

The ability to stay in adhesion to the substrate, without significant degradation chemically or structural

FOR THE LIFE CYCLE OF THE PIPELINE

How do we achieve this ?

My thanks to the following for assistance with photos,
papers etc:-

John Leeds, David Norman, John Ironside,
John Baron, Frits Doddema, Andrew Palmer,
Dennis Grimshaw and Jan Peter Biersteker