



JUTLAND AND THE ADVENT OF OVER-THE- HORIZON WARFARE

Never Stand Still

A Firepower Perspective

James Goldrick

North Sea - World War 1 period

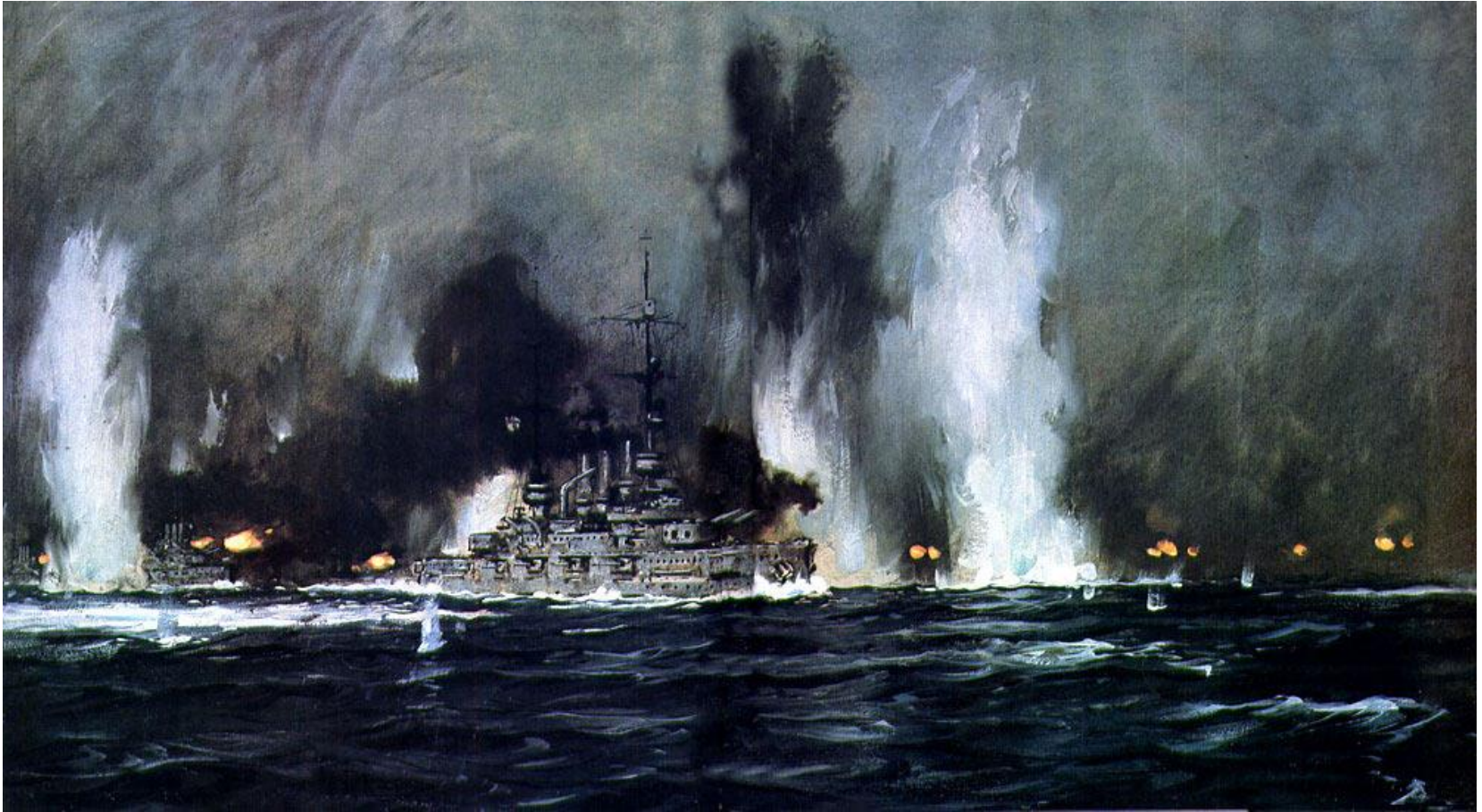
Map by Gordon Smith, please acknowledge www.naval-history.net



**BRITISH
DISTANT
BLOCKADE**



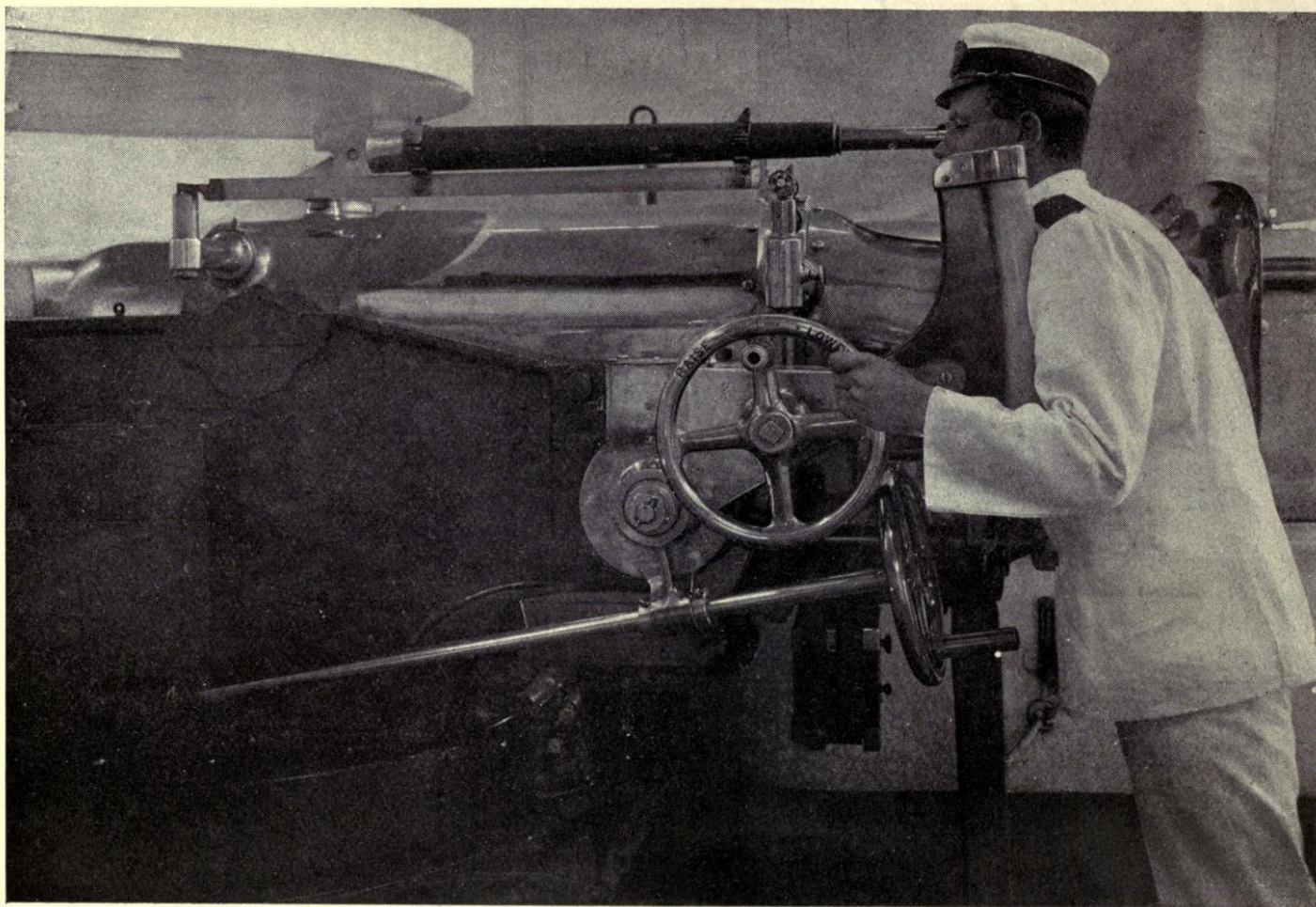
Both target and firing unit are moving (all the time....)



THERE ARE NO FIXED REFERENCES

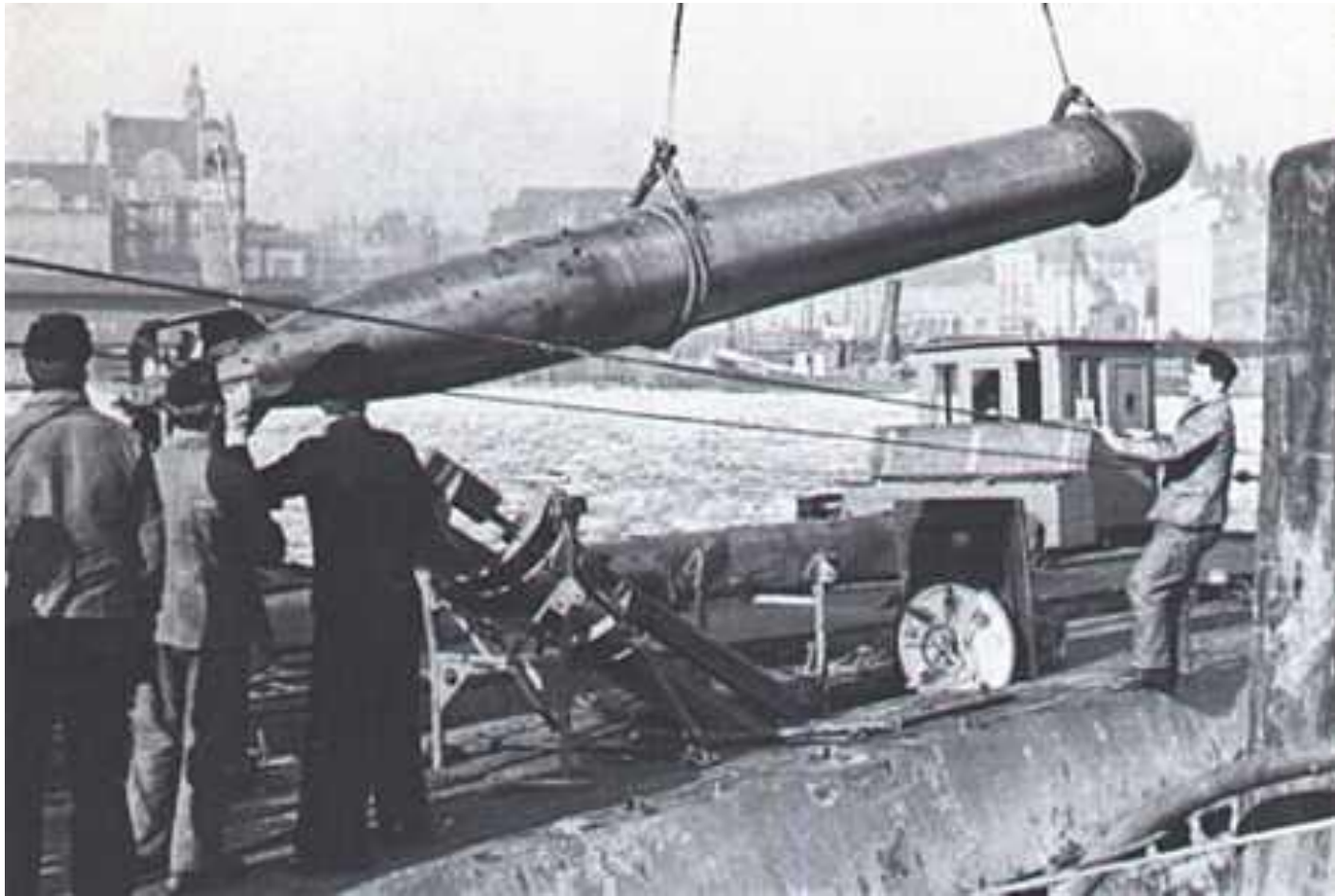


A revolution started 20 years before...

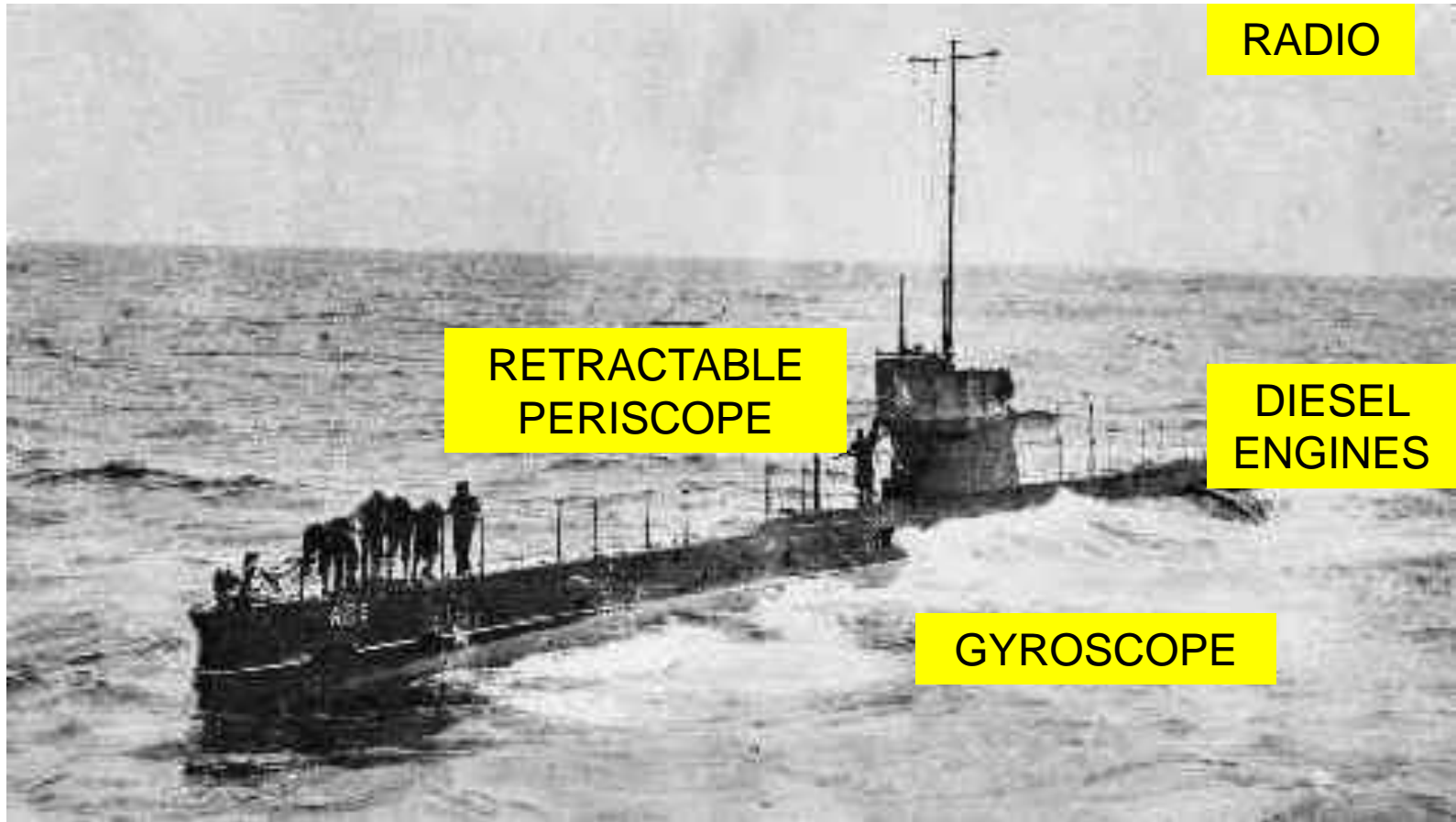


H.M.S. "SCYLLA'S" EXTEMPORISED TELESCOPE SIGHT.

One of the drivers of the revolution...



Which then goes under water....



The Battle Fleet must be 'all arms'...



The Battle Fleet is too big...this is a good day

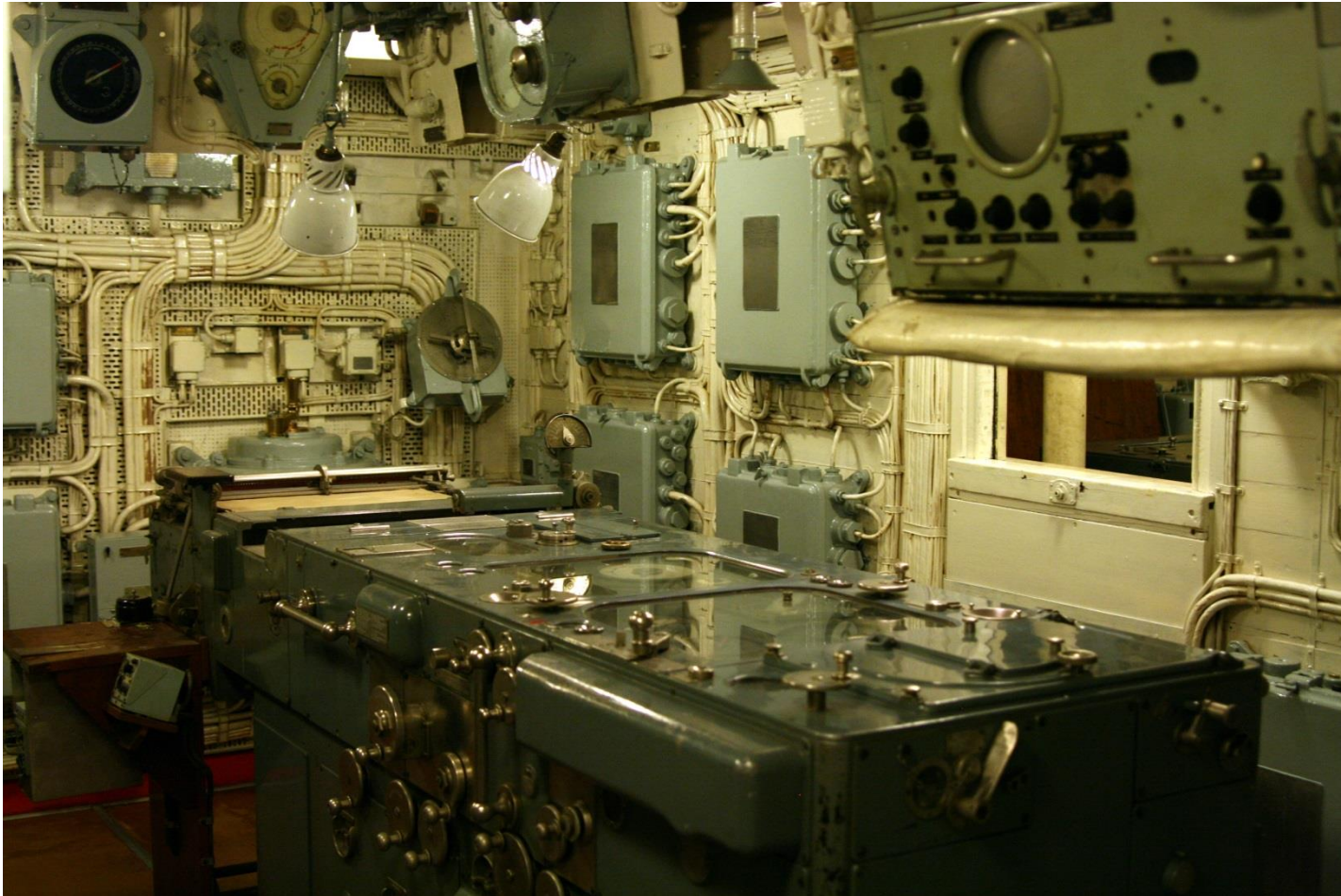


...this is a bad day...there's a ship in this picture...





Game Changer?

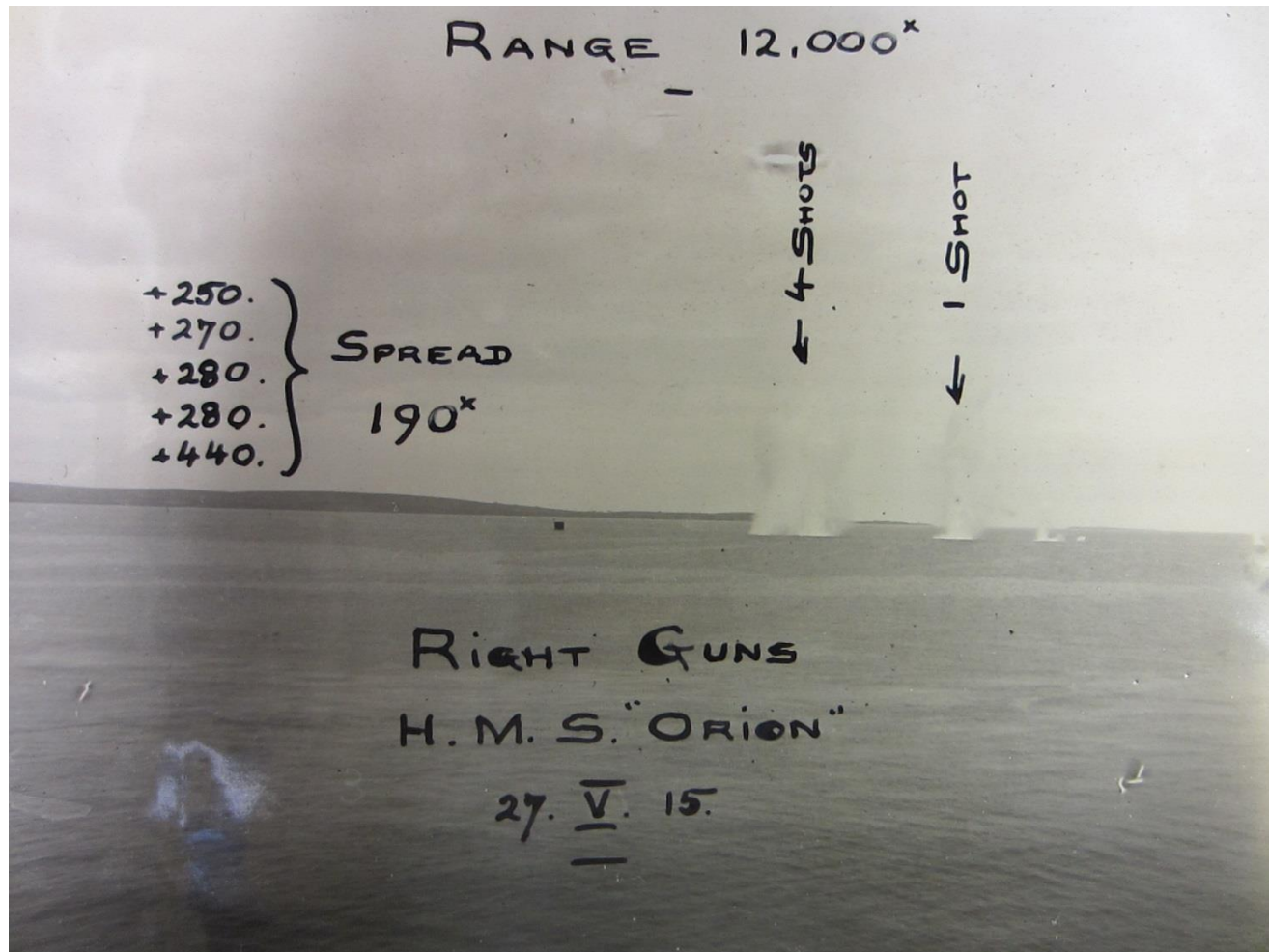


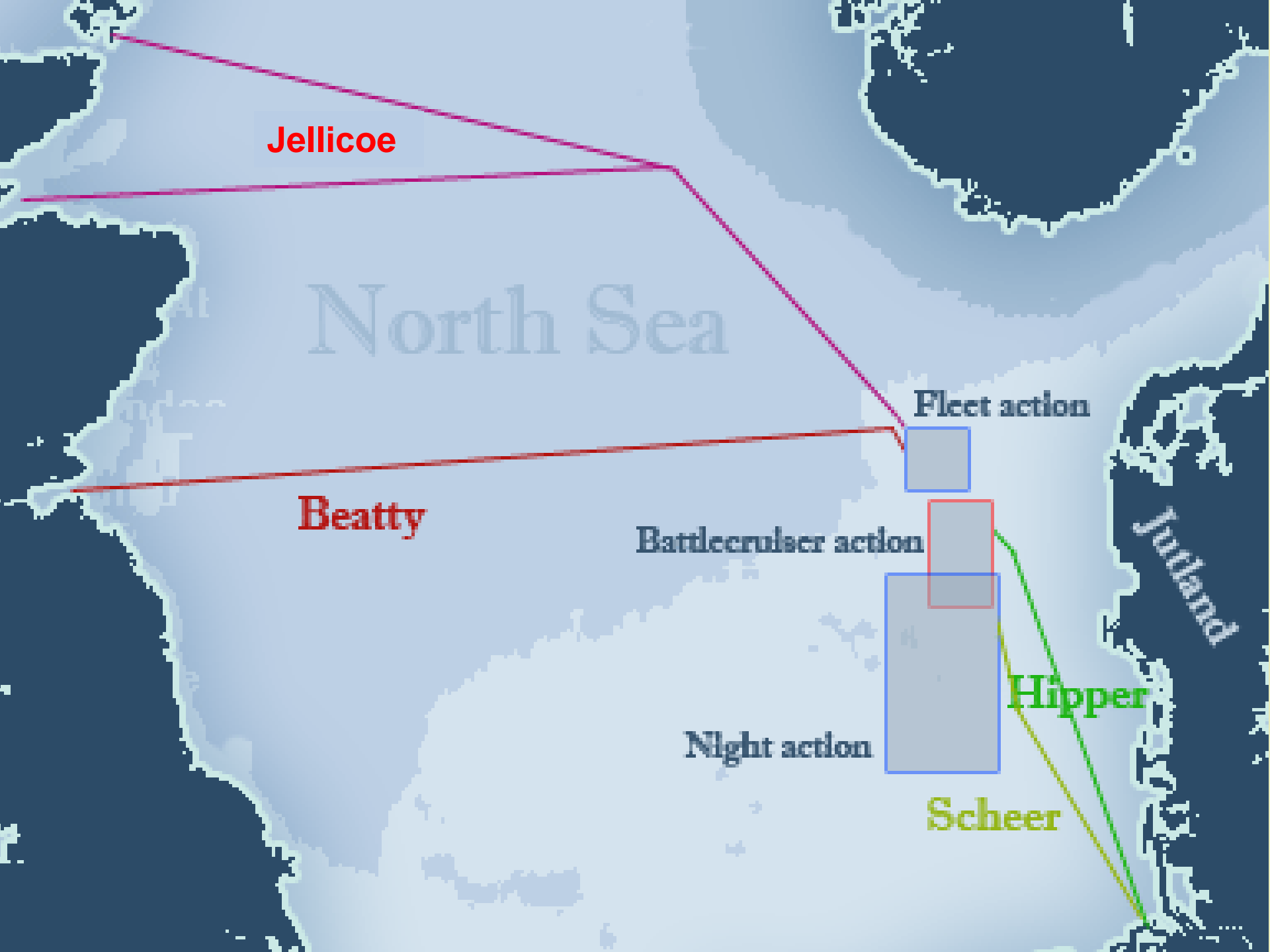


Spotting really matters...



Gunnery – on a good day





Jellicoe

North Sea

Fleet action

Beatty

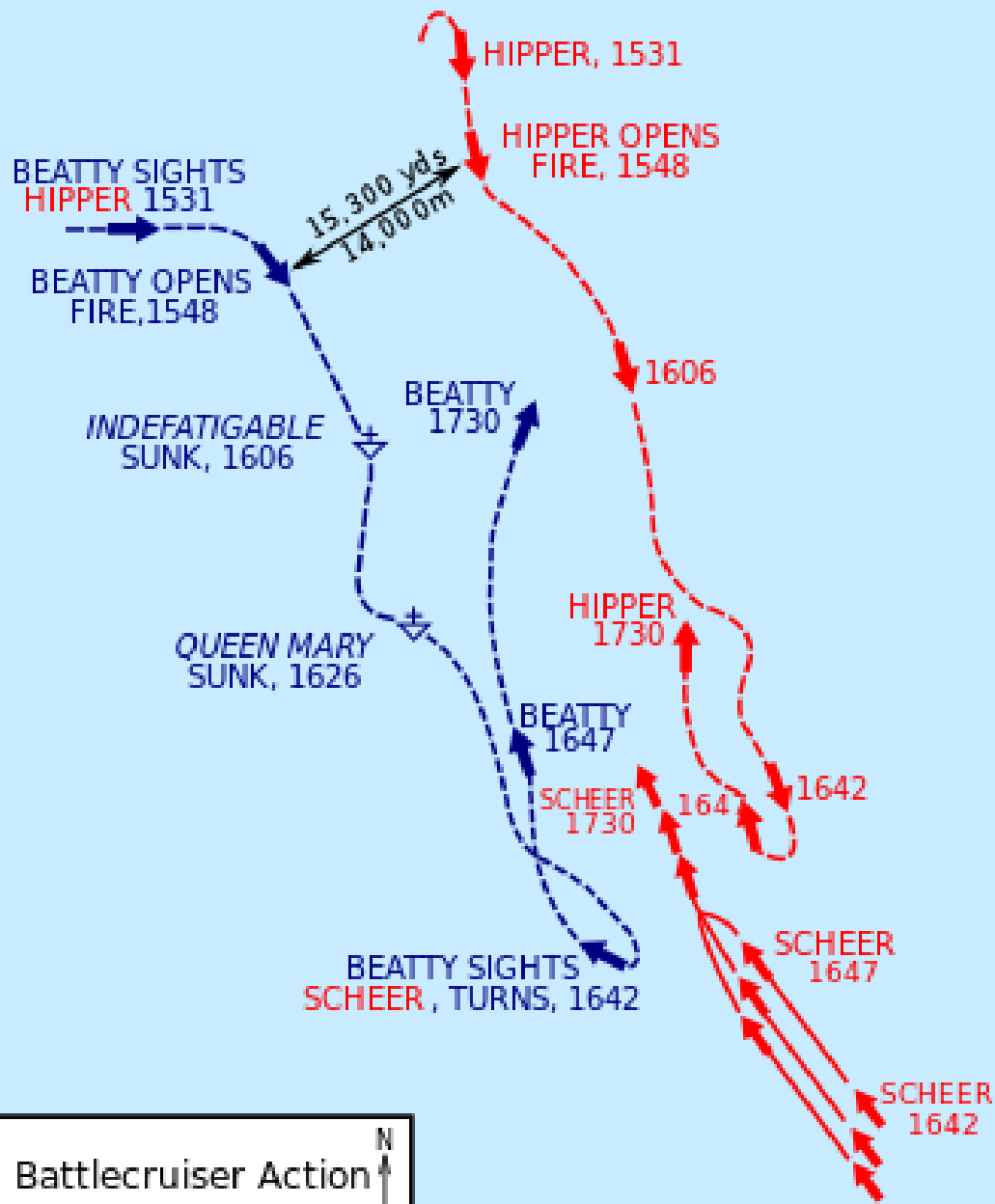
Battlecruiser action

Jutland

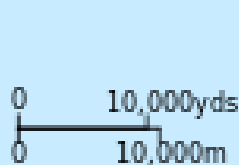
Hipper

Night action

Scheer



Battlecruiser Action
1530-1730, 31 May

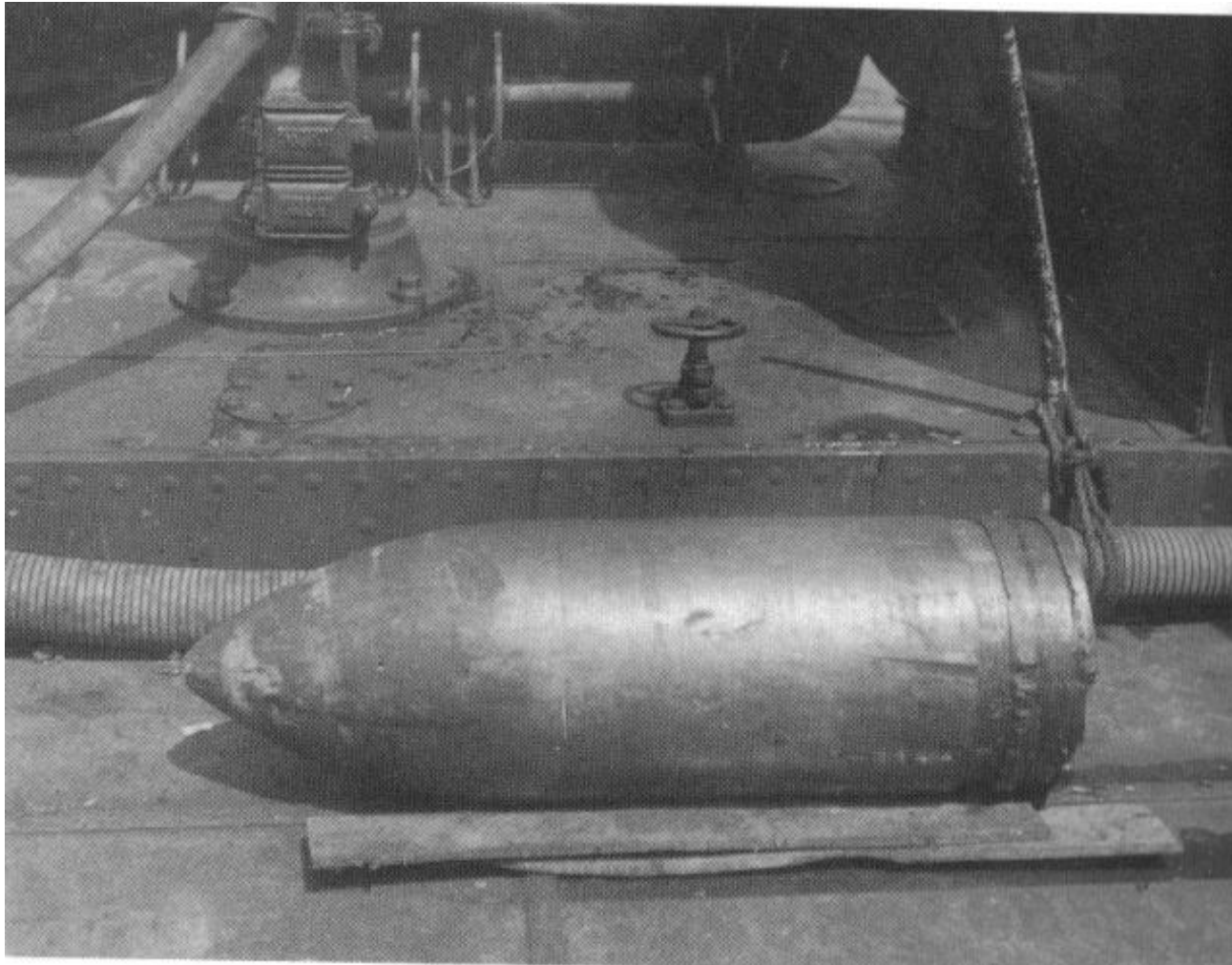




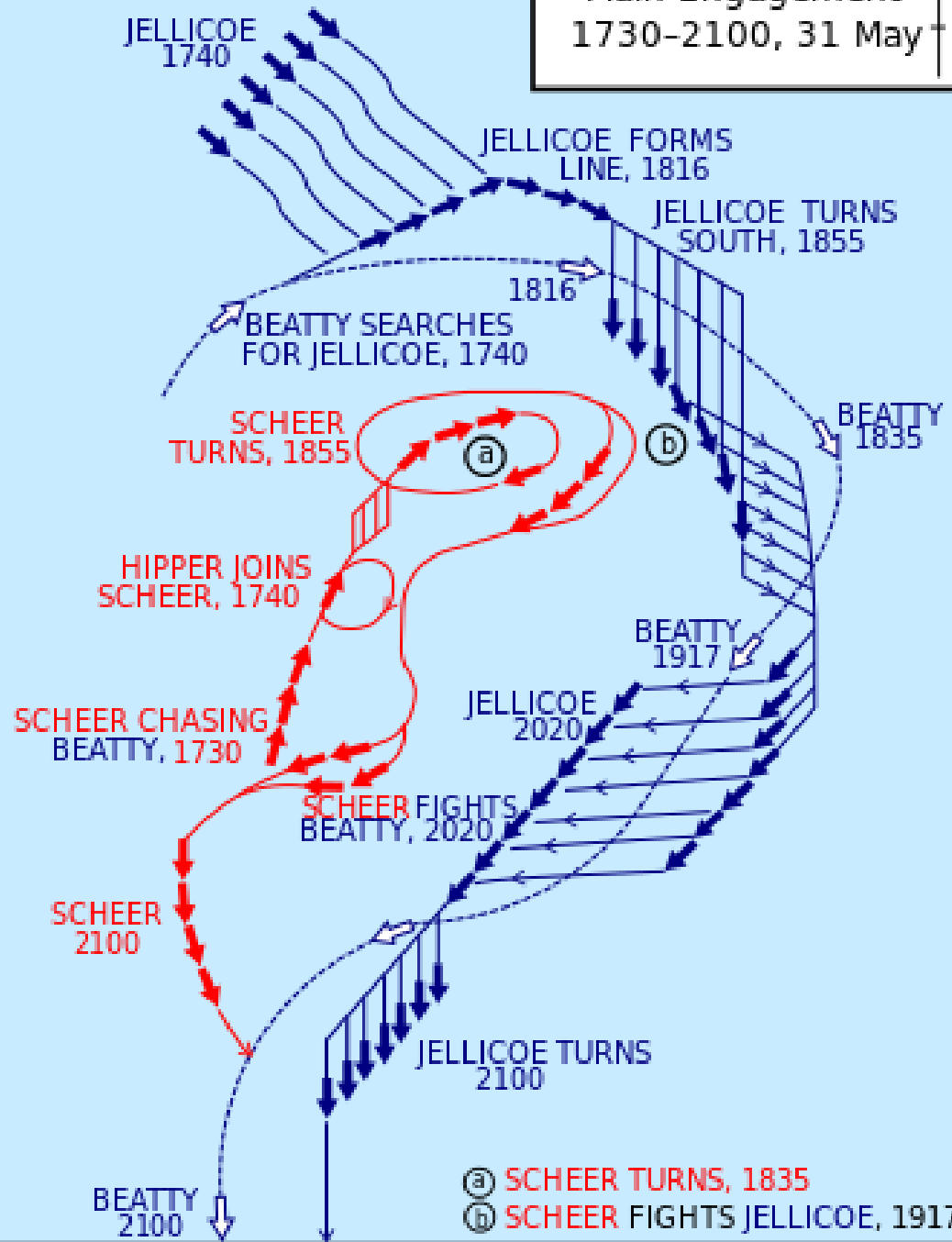
Inside a Turret..(a German one)



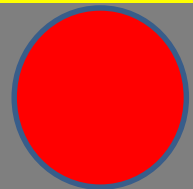
A German shell (on a British ship)



Main Engagement
1730-2100, 31 May



Jellicoe's circle of average visibility



Concentration of Fire requires ***Coordination of Manoeuvre...***

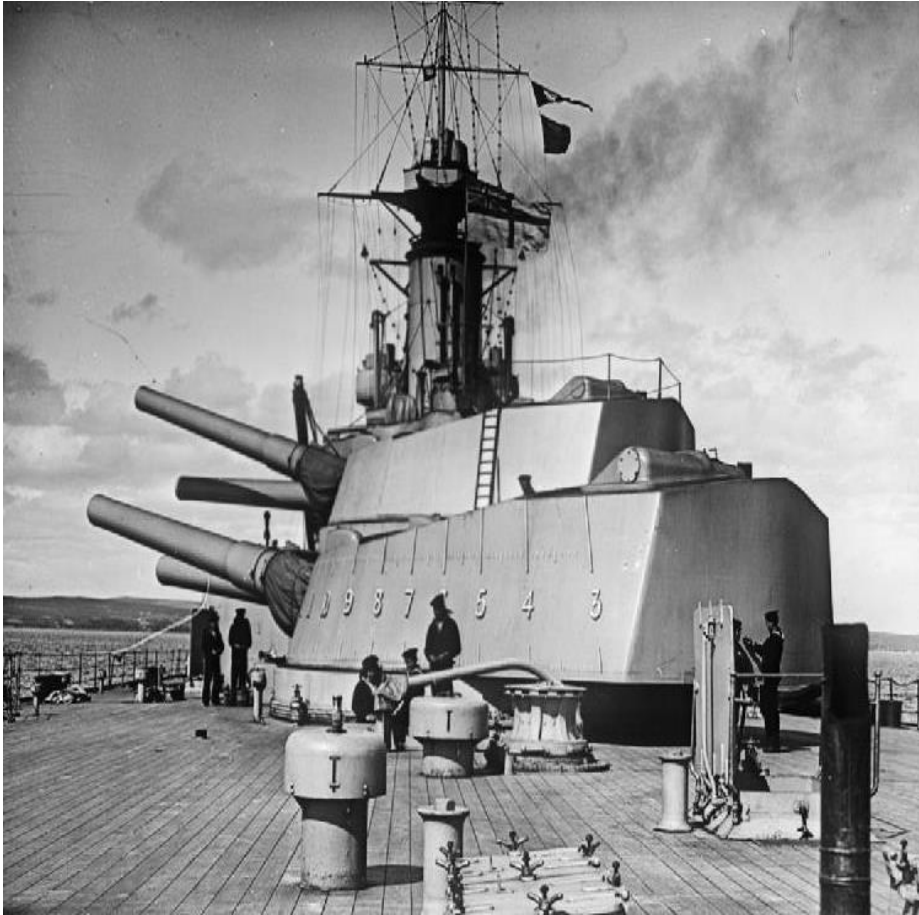


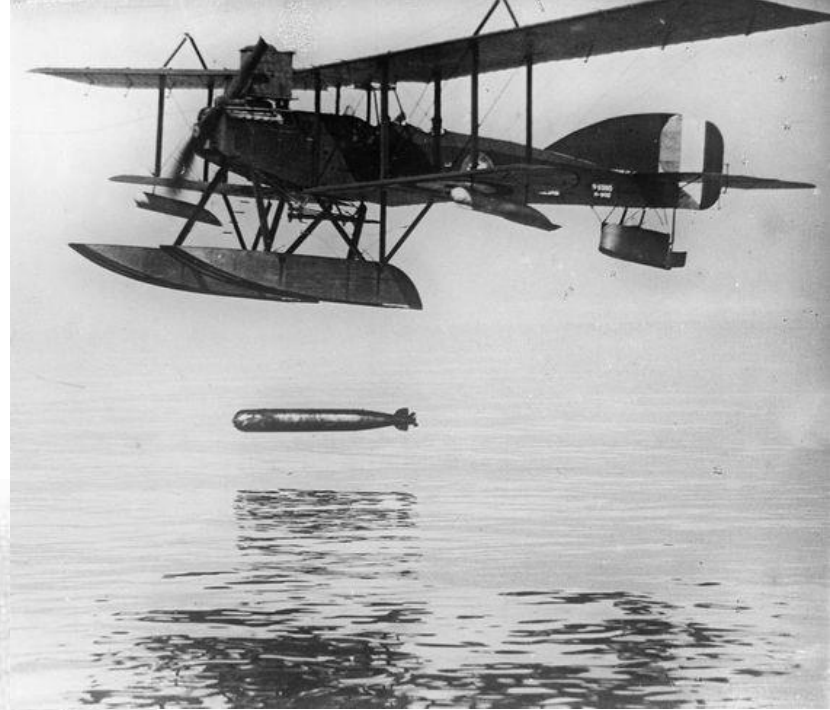
Photo # NH 89154 HMS Erin with a kite balloon, 1918

**THE HIGHER THE OBSERVER
CAN BE, THE MORE INFORMATION
YOU CAN GET**

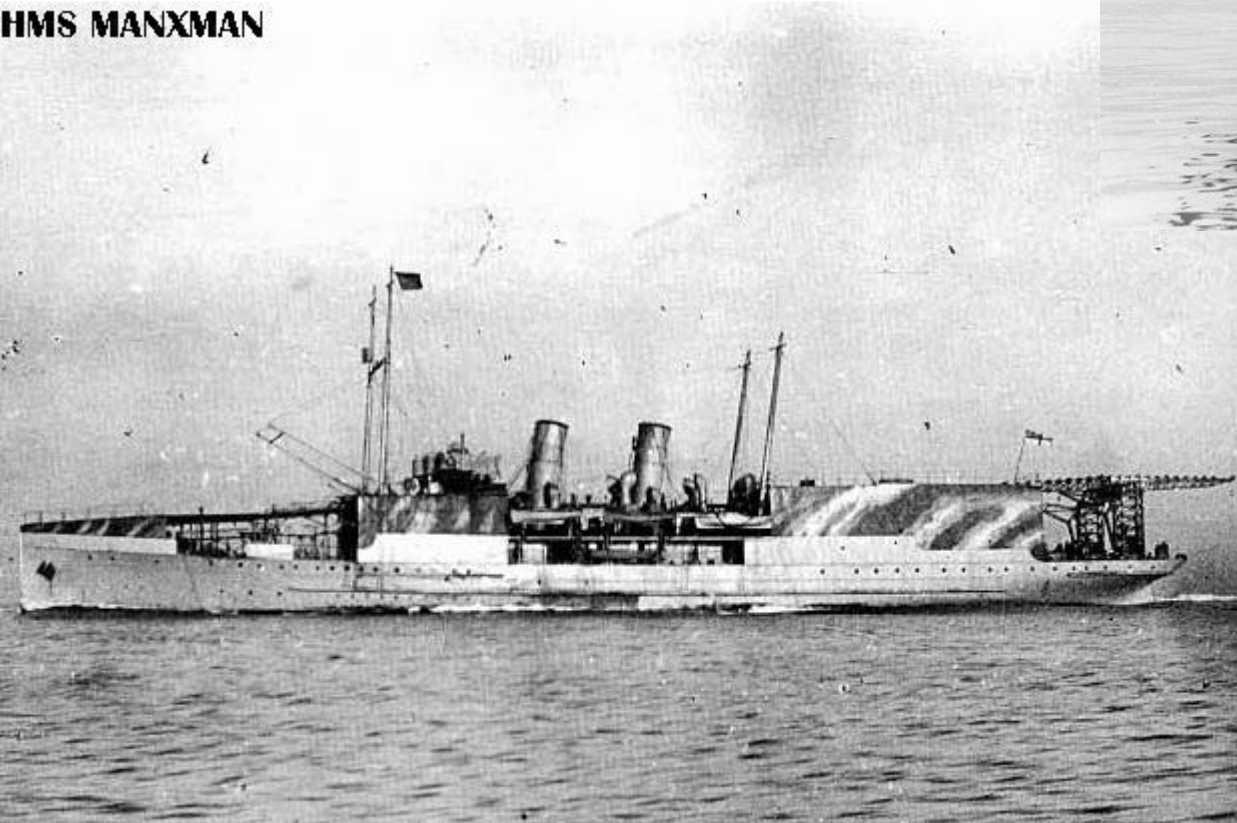


H.M.S. ERIN.
Navy.

More aviation...



HMS MANXMAN



How do you create a naval air strike capability?



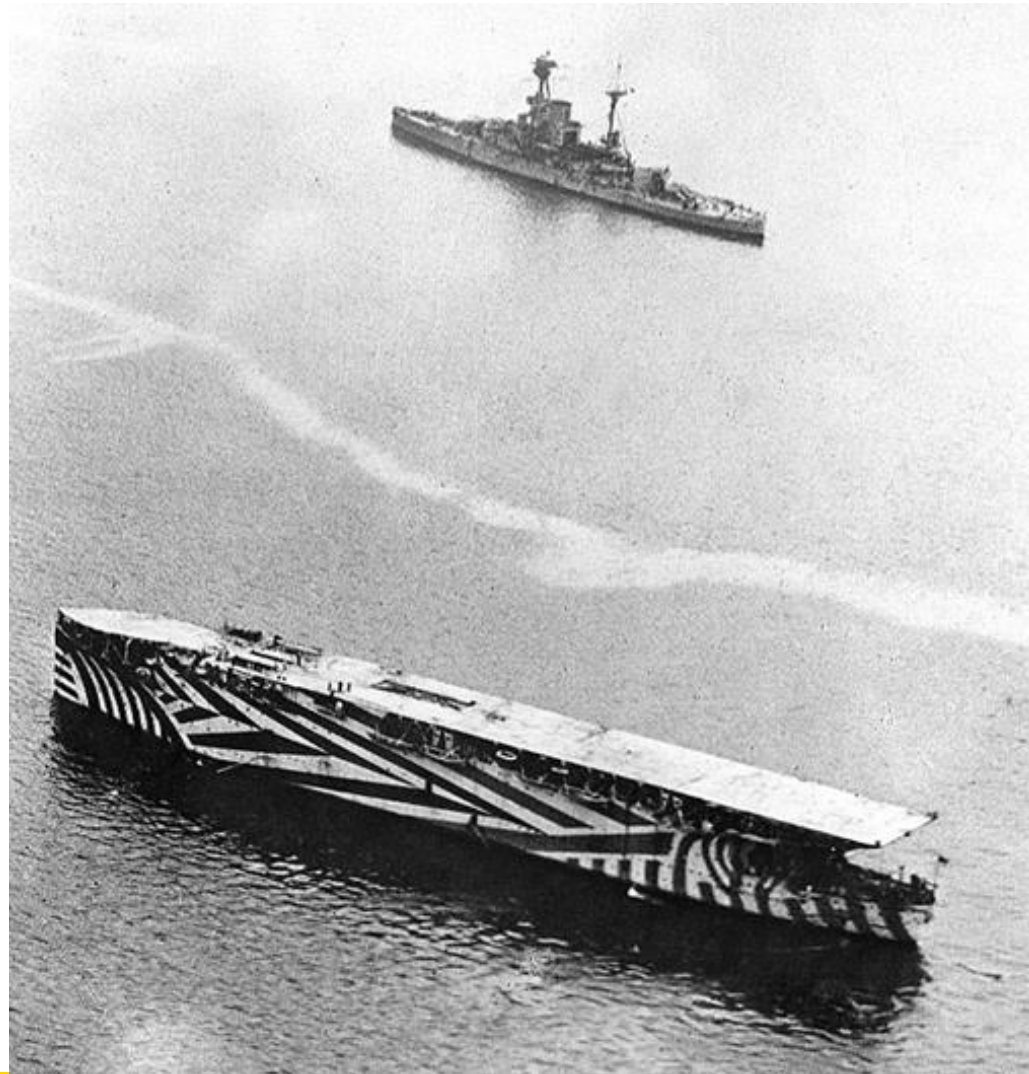
The K Class: Direct Fleet Support



AND THEN YOU
GET...THE 'M'
CLASS....



October 1918....



The 'Amiens Gun'



WAS AT JUTLAND!