

CSI: Titanic

A Forensic Analysis



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Acknowledgements

- Tim Weihs (The Johns Hopkins Univ.)
- Bill Garzke (Chair - SD7 and Gibbs and Cox)
- H.P. Leighly (Univ. of Missouri - Rolla)
- Jim Matthews (DREA) and Bob Brigham (CANMET)
- Stephane Pennec (LP3 Conservation)
- Ed McCutcheon (USCG (Ret.))
- George Tulloch (ex-RMS Titanic Inc.)
- Greg Andorfer (The Discovery Channel)
- Stephanie Ratcliffe (Maryland Science Center)
- Lt. Jeremy Weirich, NOAA Corps
- Matt Russell, Larry Murphy, Dave Conlin, SRC-National Park Service
- Cdr. John Morgenthau, Dep. Chief of Staff, CINCPAC, US Navy
- and many, many others

It all started with a memo . . .

2330

MEMORANDUM OF CALL Previous editions usable

TO: *Bob*

YOU WERE CALLED BY-- YOU WERE VISITED BY--

Mr. Mac Cutton

OF (Organization)

PLEASE PHONE *▶ 530* FTS AUTOVON

301-354-7220

WILL CALL AGAIN IS WAITING TO SEE YOU

RETURNED YOUR CALL WISHES AN APPOINTMENT

MESSAGE *Ship*

World War II - Structure - plates

Morgan Williams - deceased

1944-45 | *work done*

inside test | *Titanic - samples - Coast Guard*

steel - tested

RECEIVED BY	DATE	TIME
<i>Society of Naval Architects</i>		

63-110 NSN 7540-00-634-4018 STANDARD FORM 63 (Rev. 8-81)
Prescribed by GSA
* U.S. GPO. 1990 - 262-080 EPFR (41 CFR) 101-11.6

Historical Background

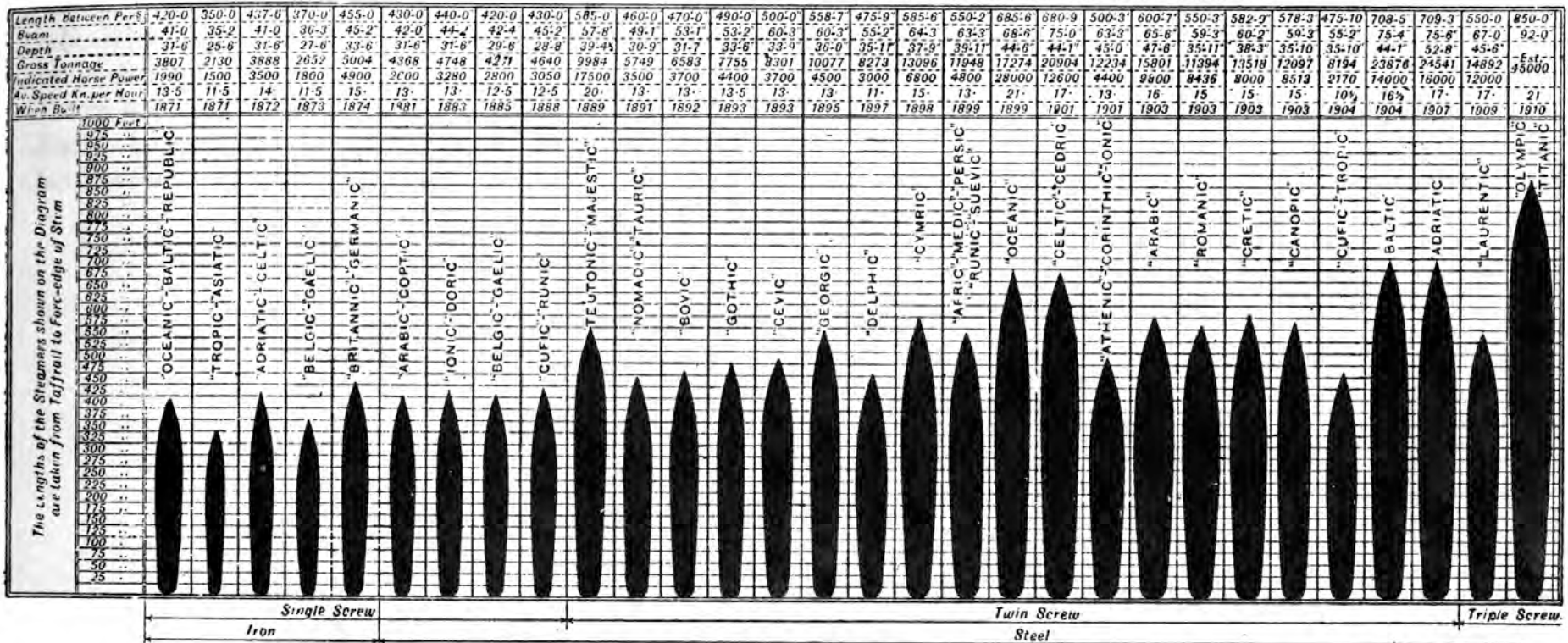
The Olympic-Class Ships



- Olympic (1910), Titanic (1911) and Brittanic (1914)
- 46,000 gross tonnage, 883 feet long, 92 feet wide
- Top design speed = 22.5 knots
- Capacity = roughly 2500 passengers and crew

Progression of White Star Liners

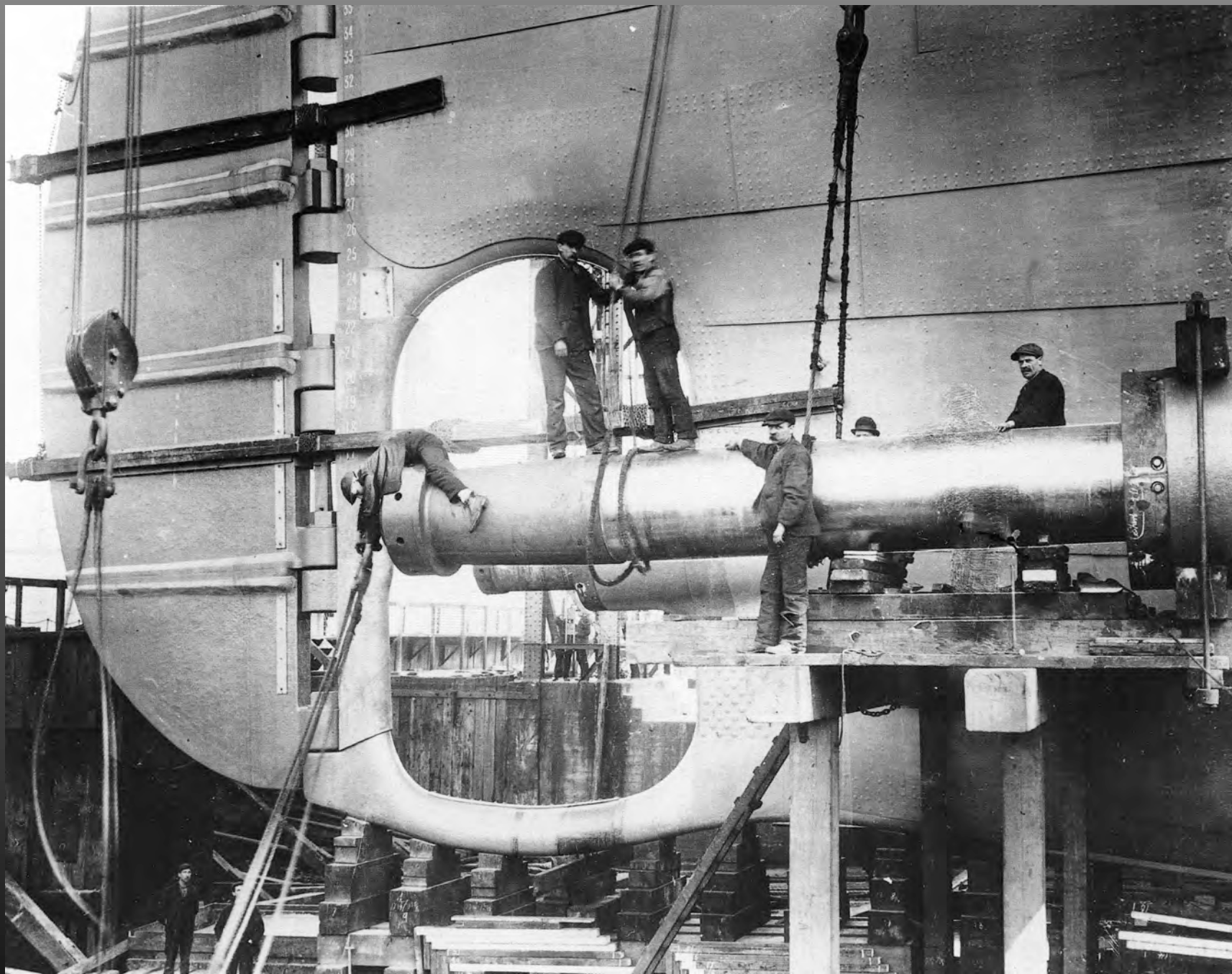
DIAGRAM SHOWING COMPARATIVE SIZES OF VARIOUS TYPES OF WHITE STAR STEAMERS FROM 1871 TO THE PRESENT TIME



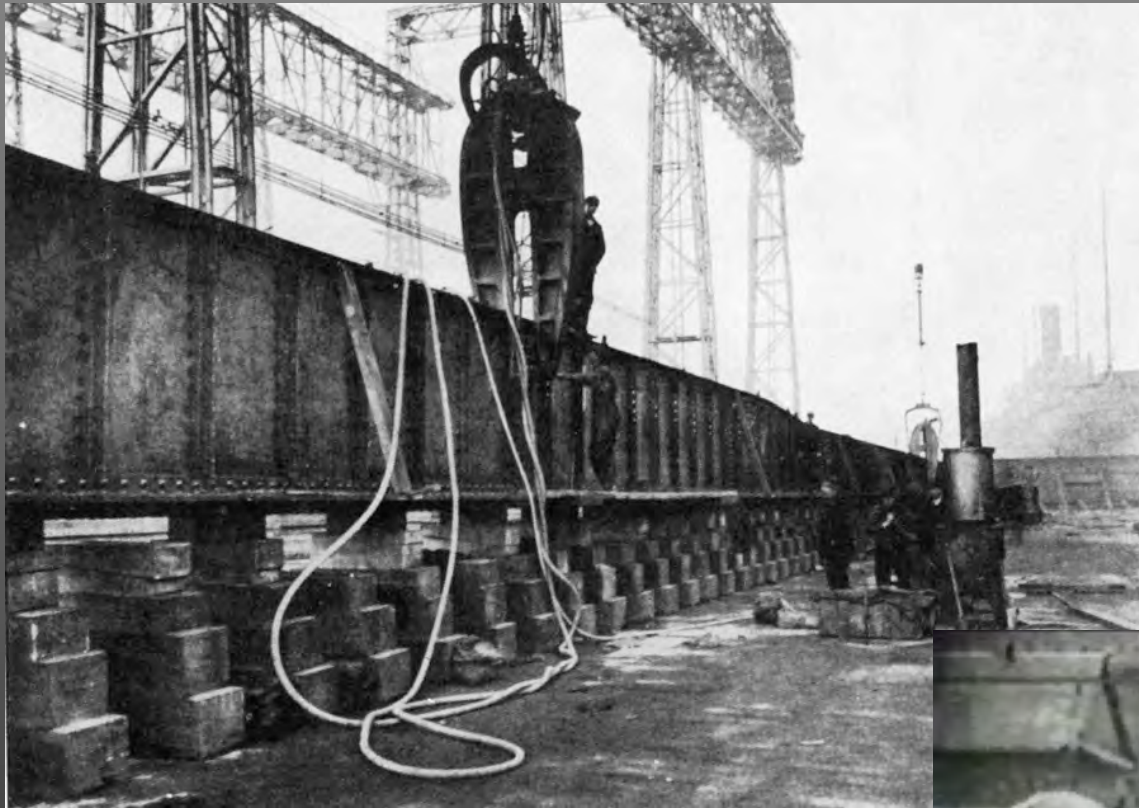
Iron ← | → Steel

↑
Olympic Class

Construction





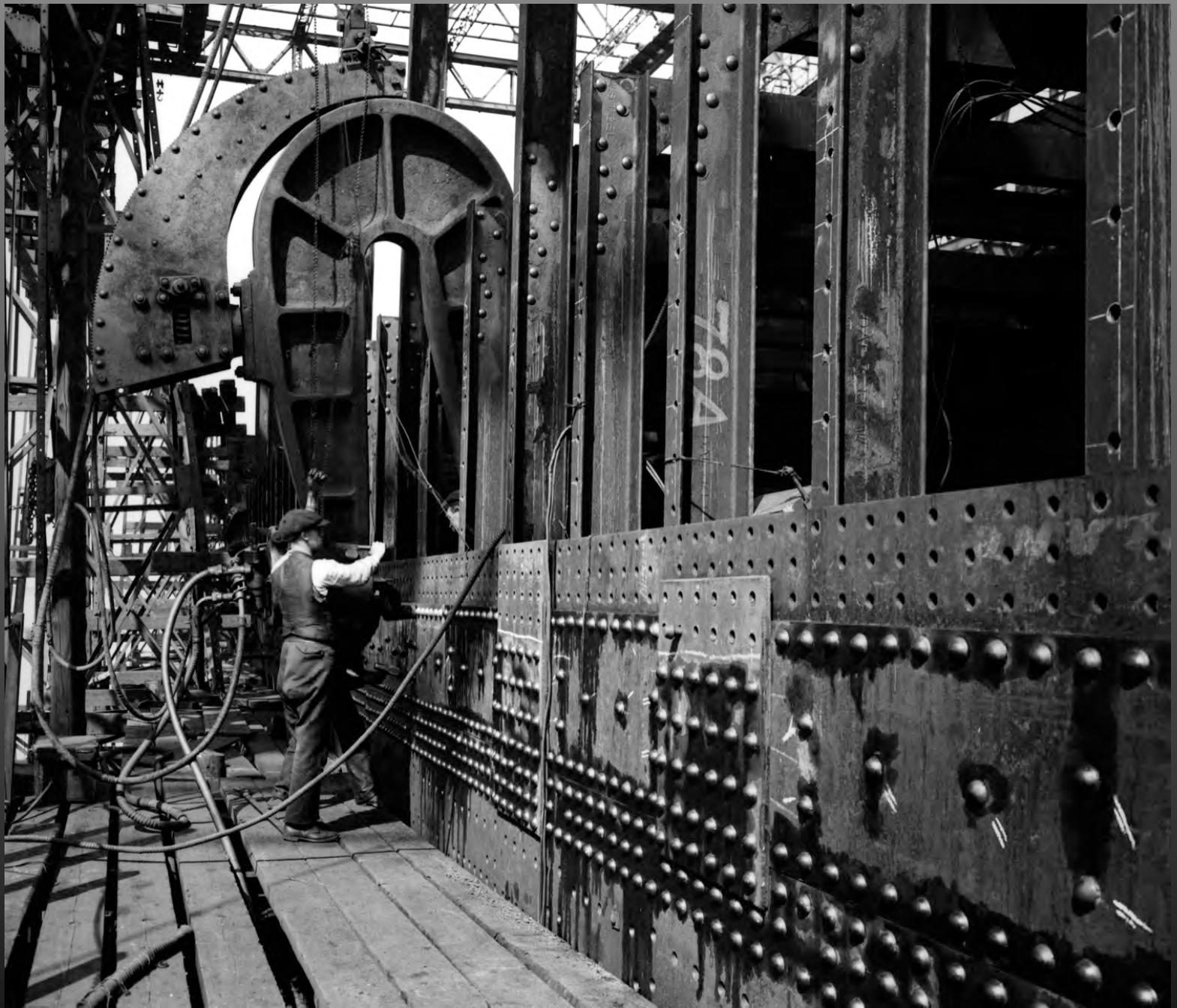


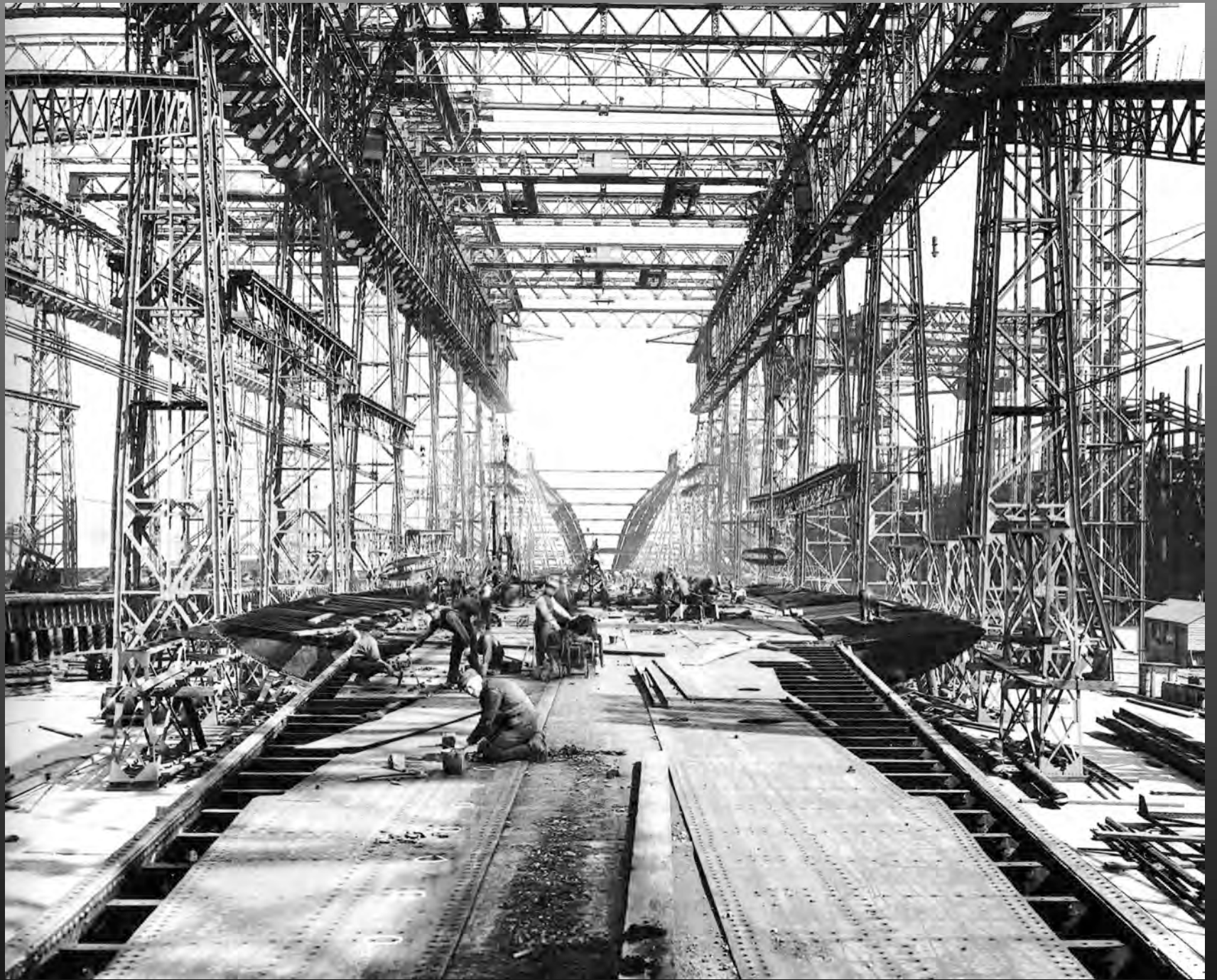
Riveting

- 3,000,000 wrought iron and steel rivets
- Hand and hydraulically driven
- Total weight = 1,550 tons

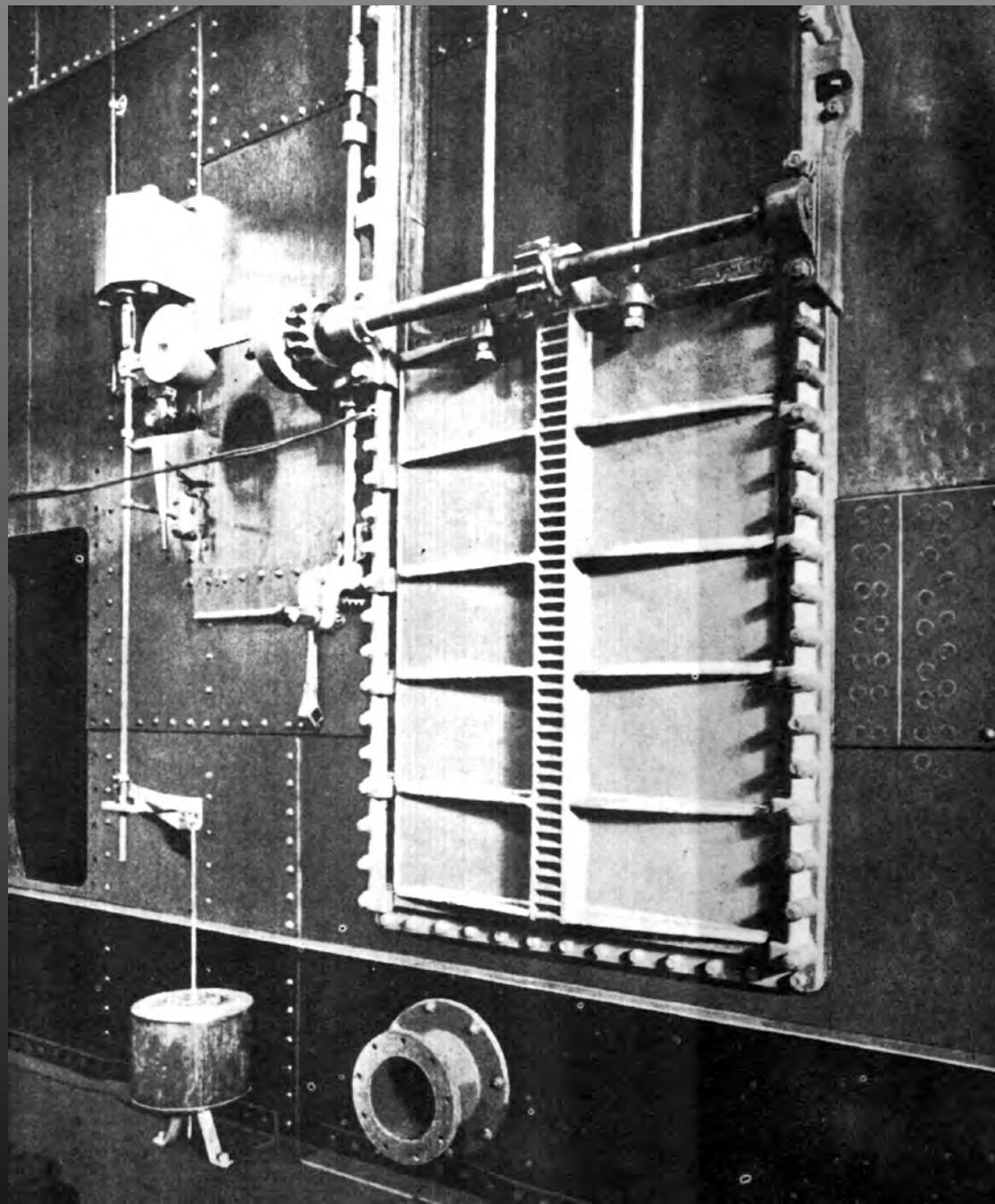


(courtesy Discovery Communications)

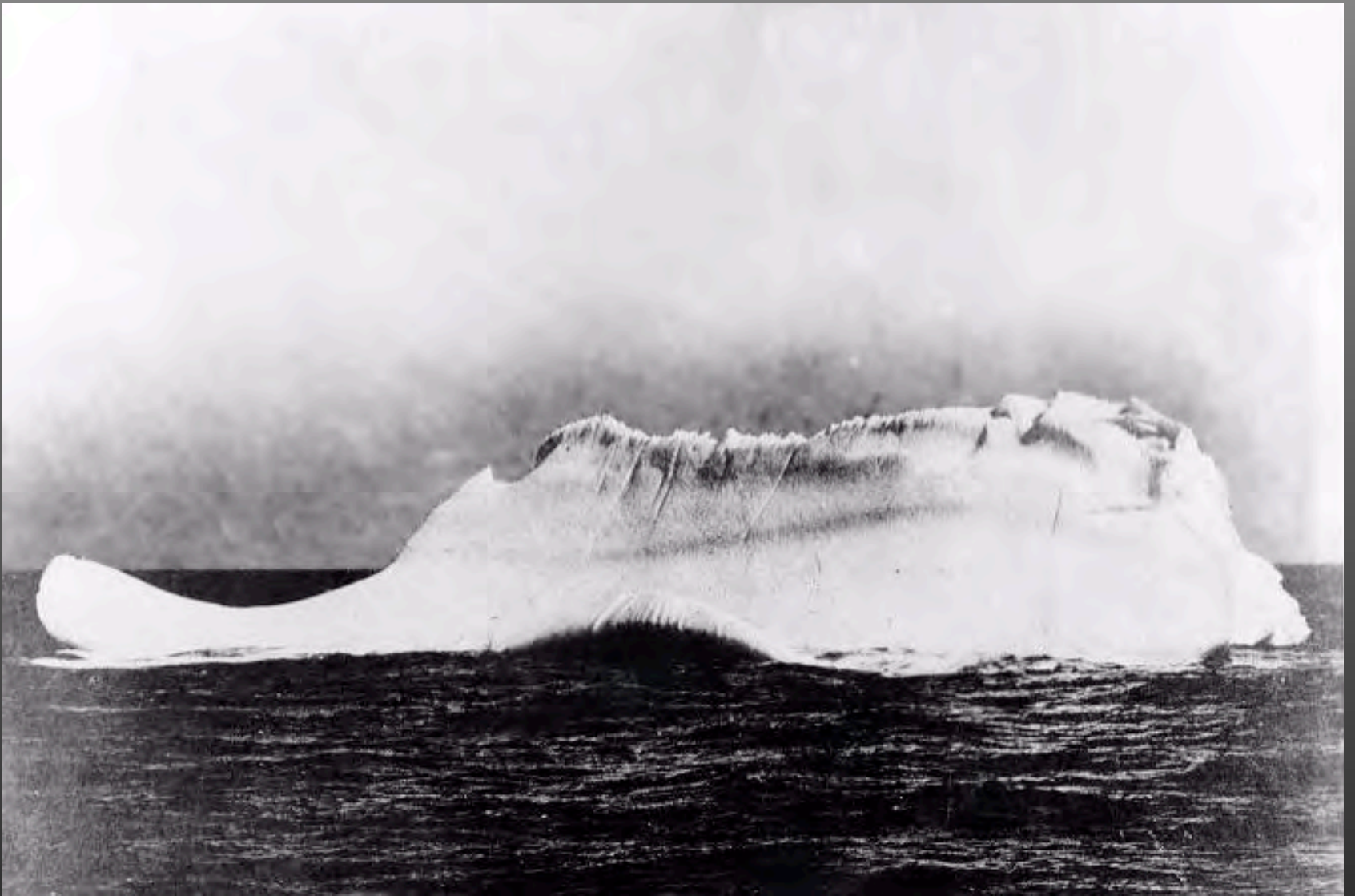












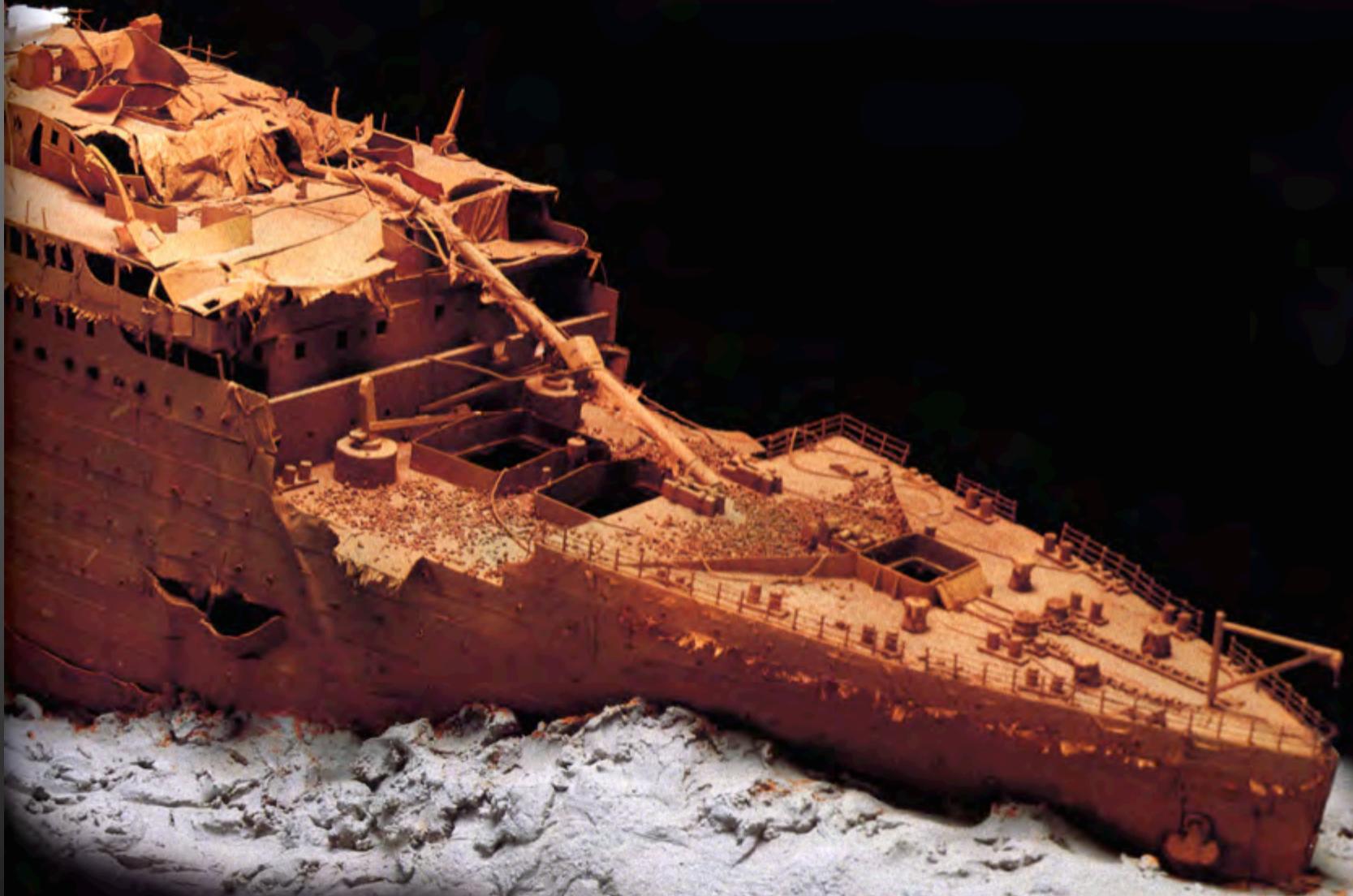
Berg sighted by rescue ship *Mackay Bennett* on April 16th.



Wreck Site:

Latitude : 41 31' N
Longitude : 49 51' W

Depth = 12,600 feet
Pressure = 6000 psi

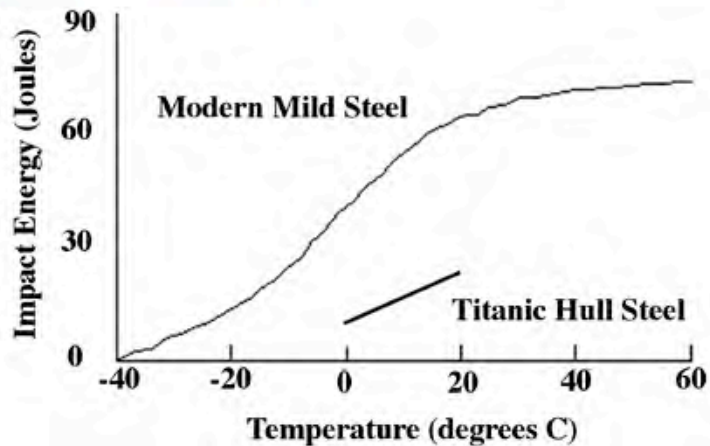


Metallurgy



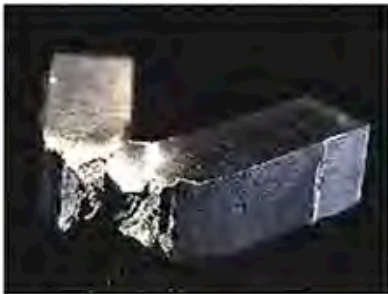
Samples Tested in Canada (1991)

Ken KarisAllen (DREA)
Bob Brigham (CANMET)

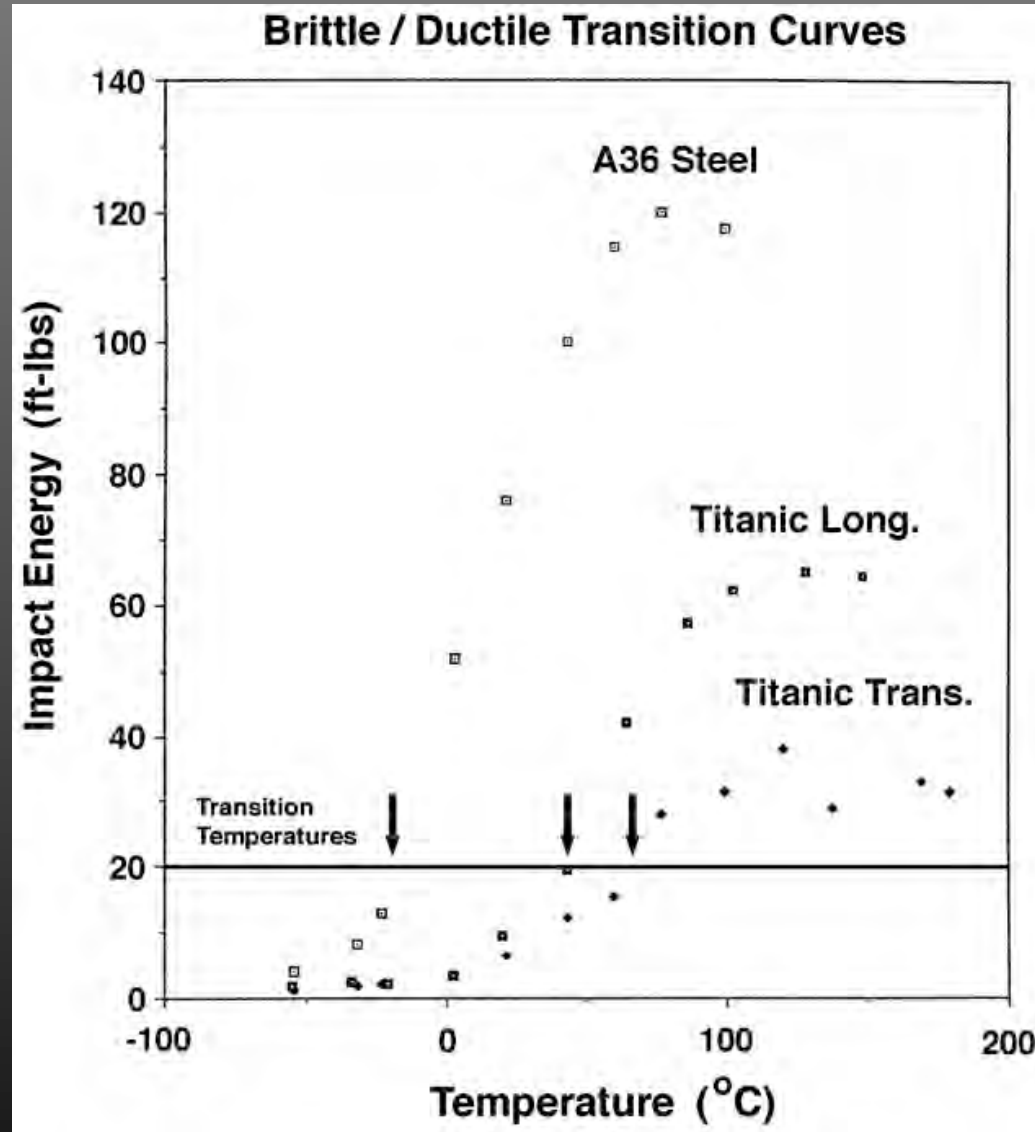


The “Brittle Steel Theory”

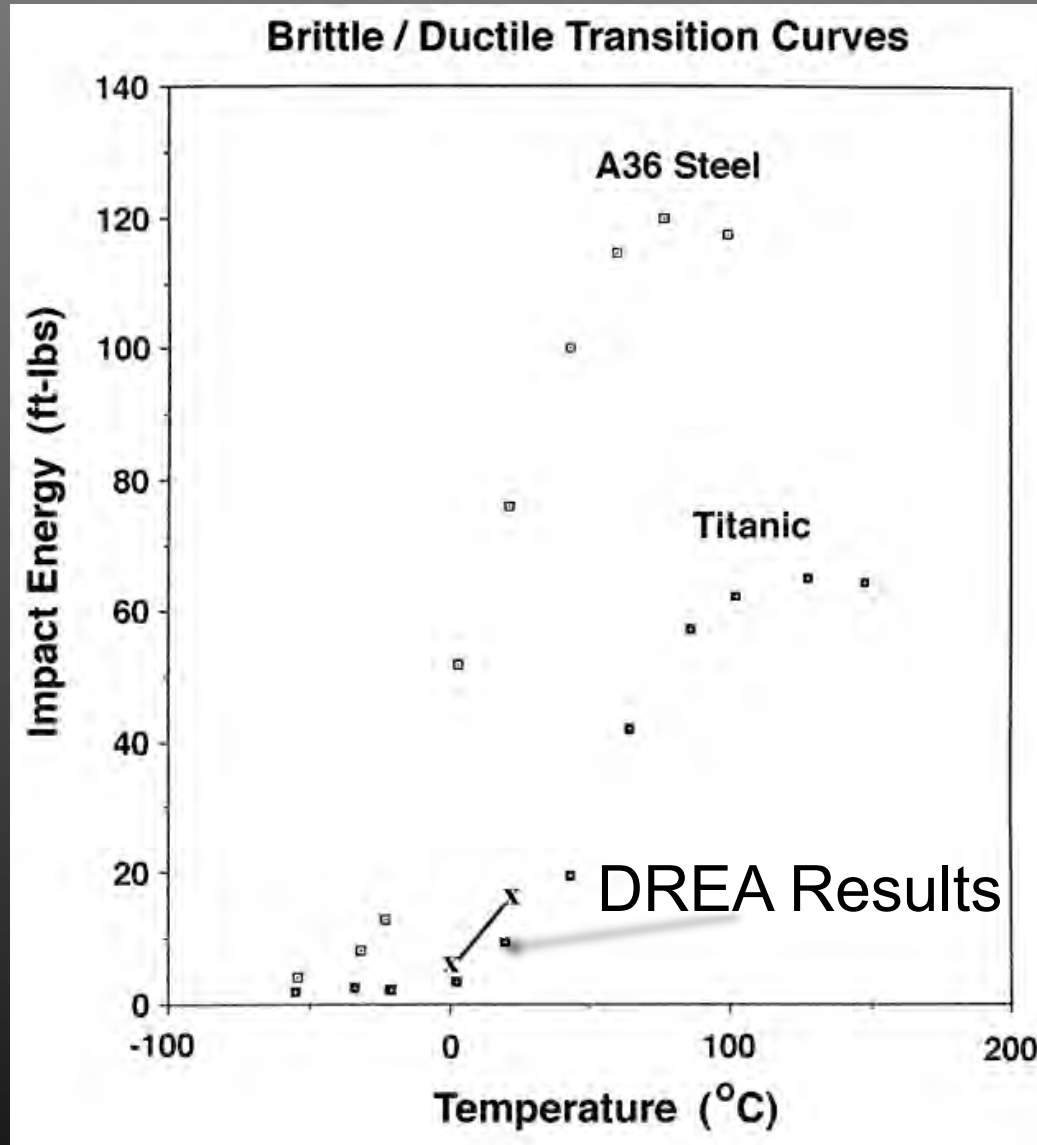
- Steel “brittle as glass at ice water temps
- Iceberg “shattered plates”
- Widespread press coverage



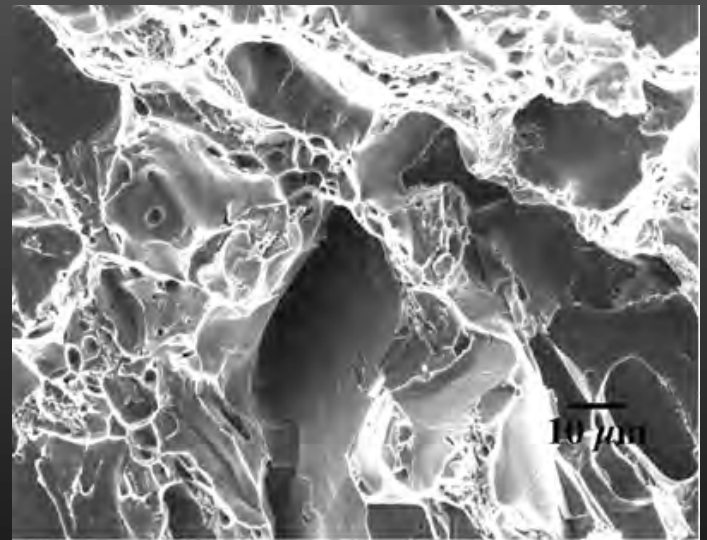
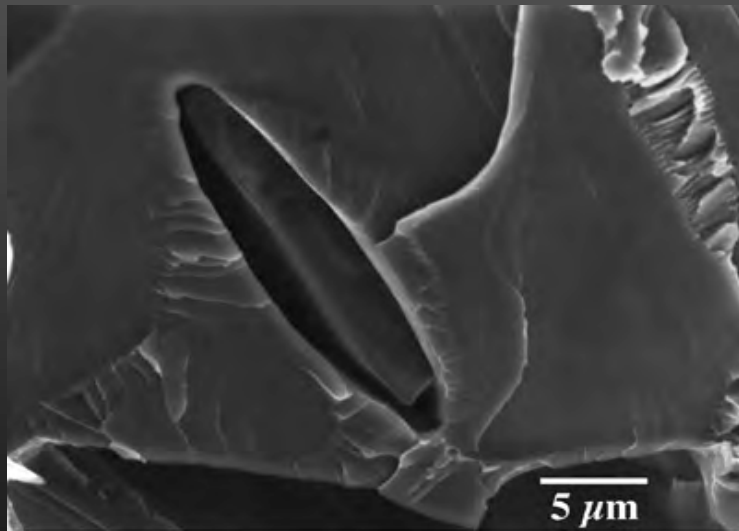
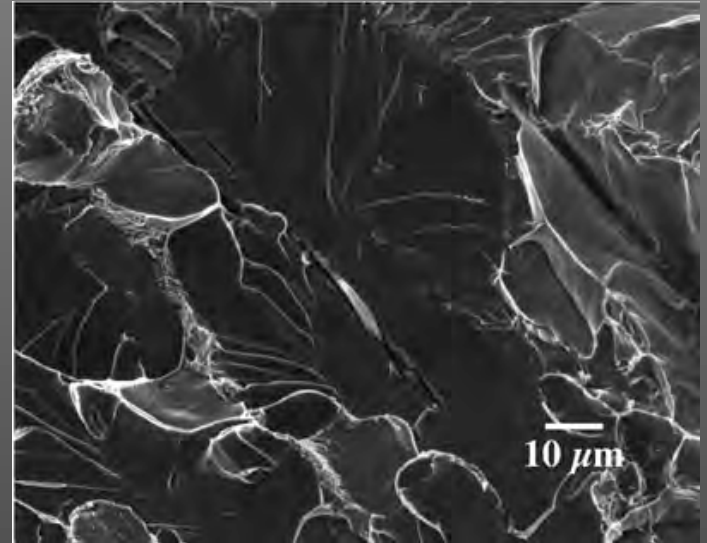
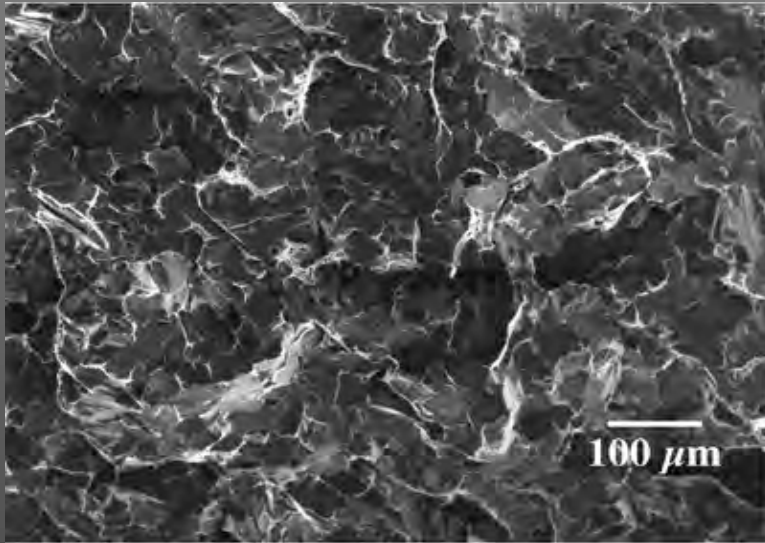
Results from H.P. Leighly (Univ. of Missouri - Rolla)



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Fractography from Charpy Bars at 0° C.



Other Evidence Cited by Matthews