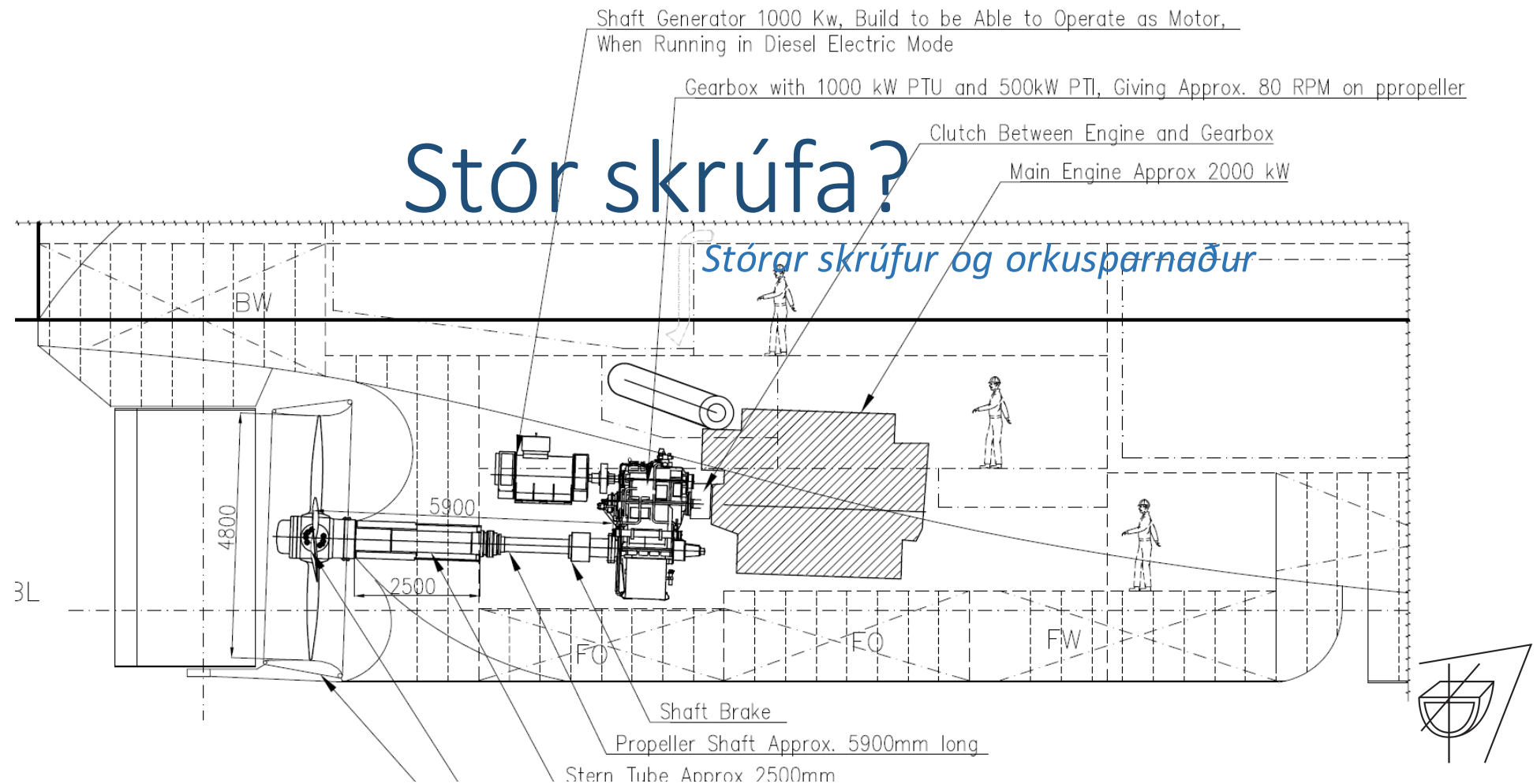
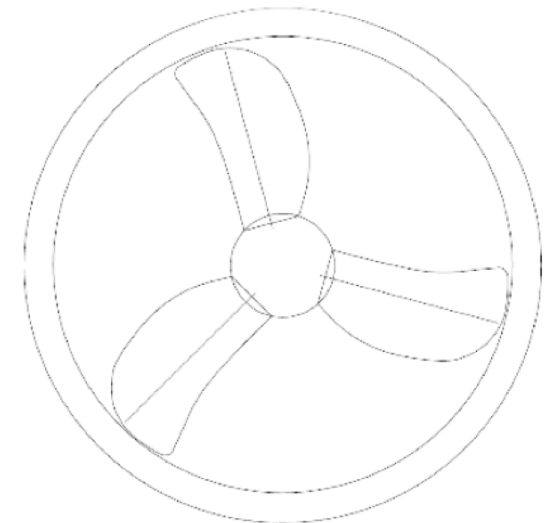
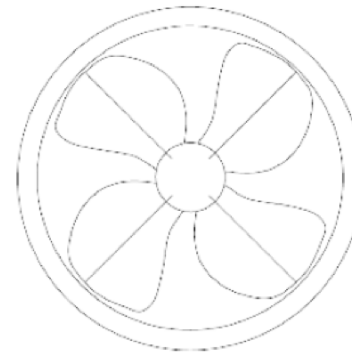
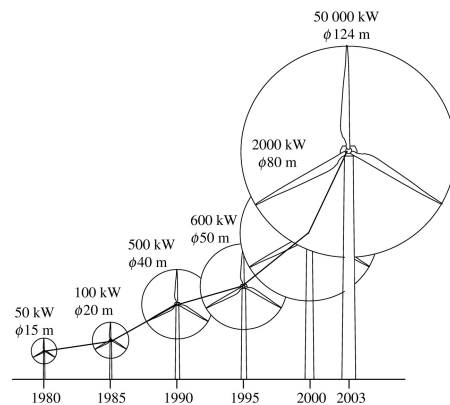




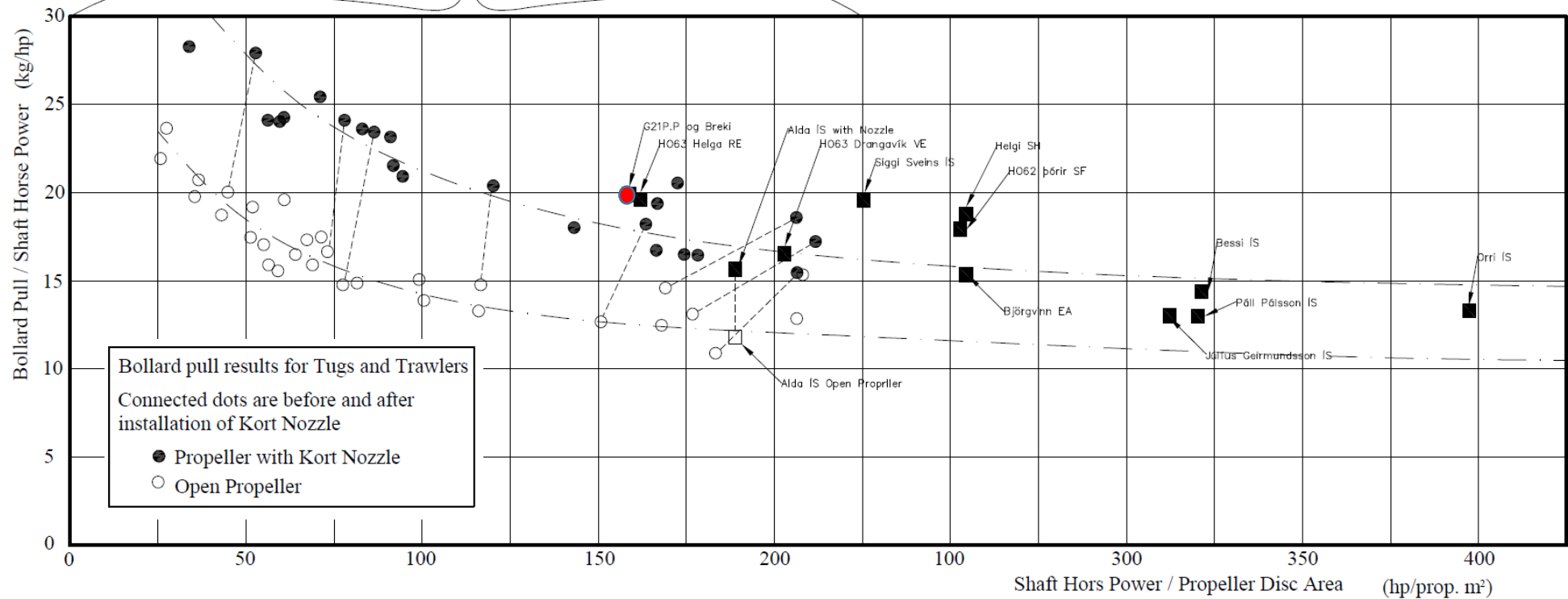
Skrúfublaðið

- Flugvélavængur og vindmillur.
- Ákveðið flatarmál skrófu til að koma aflinu út í sjó.
- Lítið flatarmál, breið blöð.
- Mikið flatarmál, löng blöð.
- Allt að 20-40% minni orkunotkun.



Fræðin

Knut J. Minsaas 1965



Þróunin

- Togarar sem komu til Íslands frá Noregi (1970).
 - 2 metra skrúfur
 - 375 snúningar (Wichmann vél)
 - Togspyrna u.þ.b 20 tonn
- Olúkreppa – verð á brennsluolíu margfaldast (1974)
 - Gír á Wichmann vél
 - 2,8 til 3 m skrúfur
 - 200 – 250 snúningar
 - Togspyrna u.þ.b 26-30 tonn
 - 50% aukning
- Af hverju ekki áframhald á þróuninni?
 - Búnaðarframleiðendur
 - Krafa eigenda
 - Of lágt olíuverð

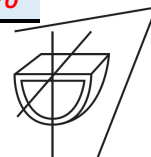


BESSÍ ÍS 410



Skrúfan notar 90% af orkunni

Stern Trawler (Freshfish) 50.7 m			Number of hours		144
Operation	% of Time	Speed, kn.	Hours	Propeller demand, kW	Energy to Propeller, kWh
Sailing to and from fishing grounds	15%	12	21,6	1253	27065
Sailing between fishing grounds	8%	12	11,5	1253	14435
Hauling trawl	4%	0	5,8	537	3093
Shooting trawl	2%	8	2,9	1430	4118
Net handling	8%	0	11,5	360	4147
Trawling	63%	4	90,7	1074	97433
% of Total Energy Utilized					89%

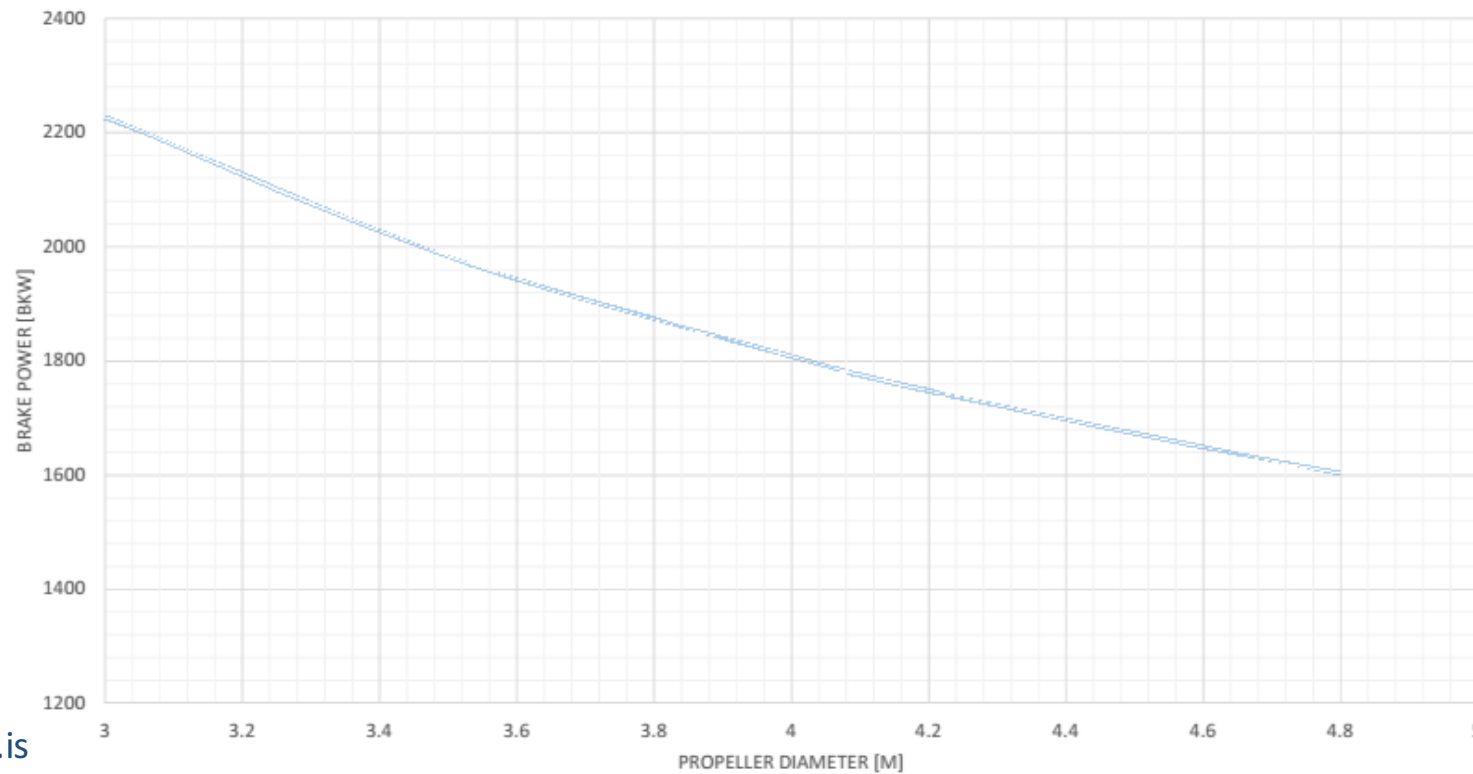


Brake Power for 30 tons towing force at 4 knots.

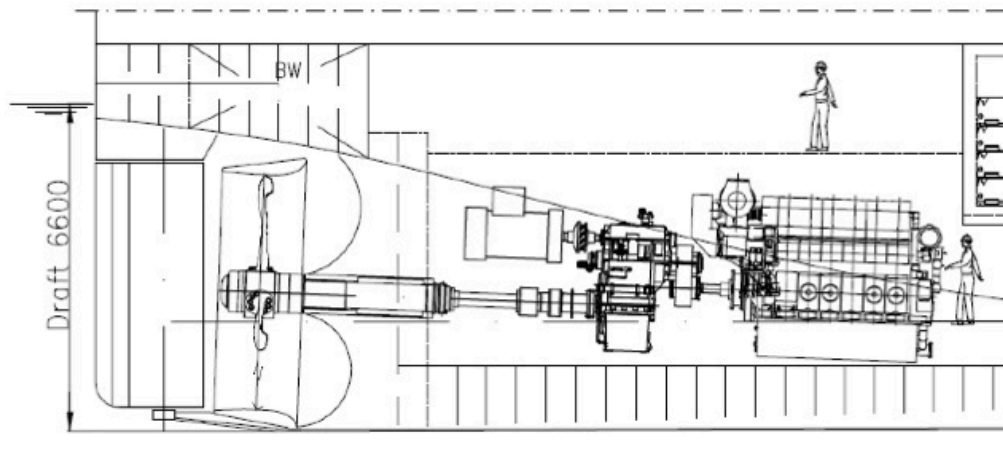
Eta M=0,97 , wake =0,26 , Eta r=1 & thrust deduction t=0,18

Constant rpm operation. Hull resistance of 6 kNat 4 knots is included.

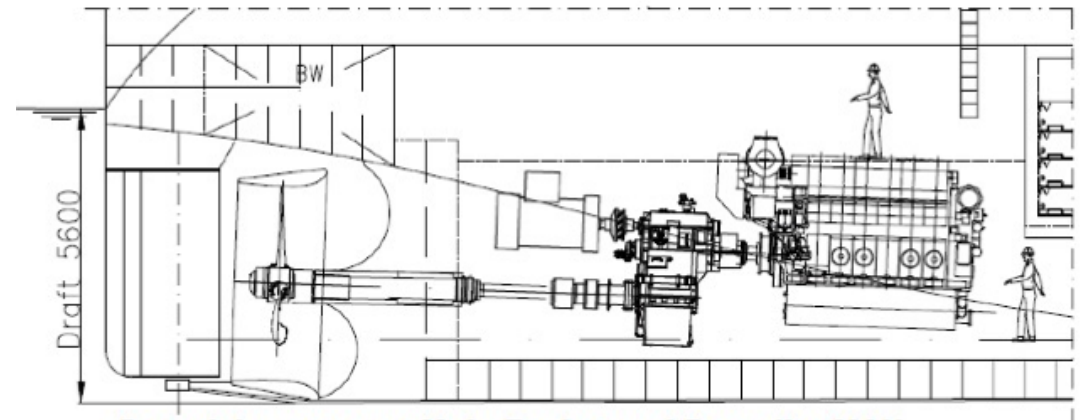
Single screw trawler with nozzle propeller



Djúprista



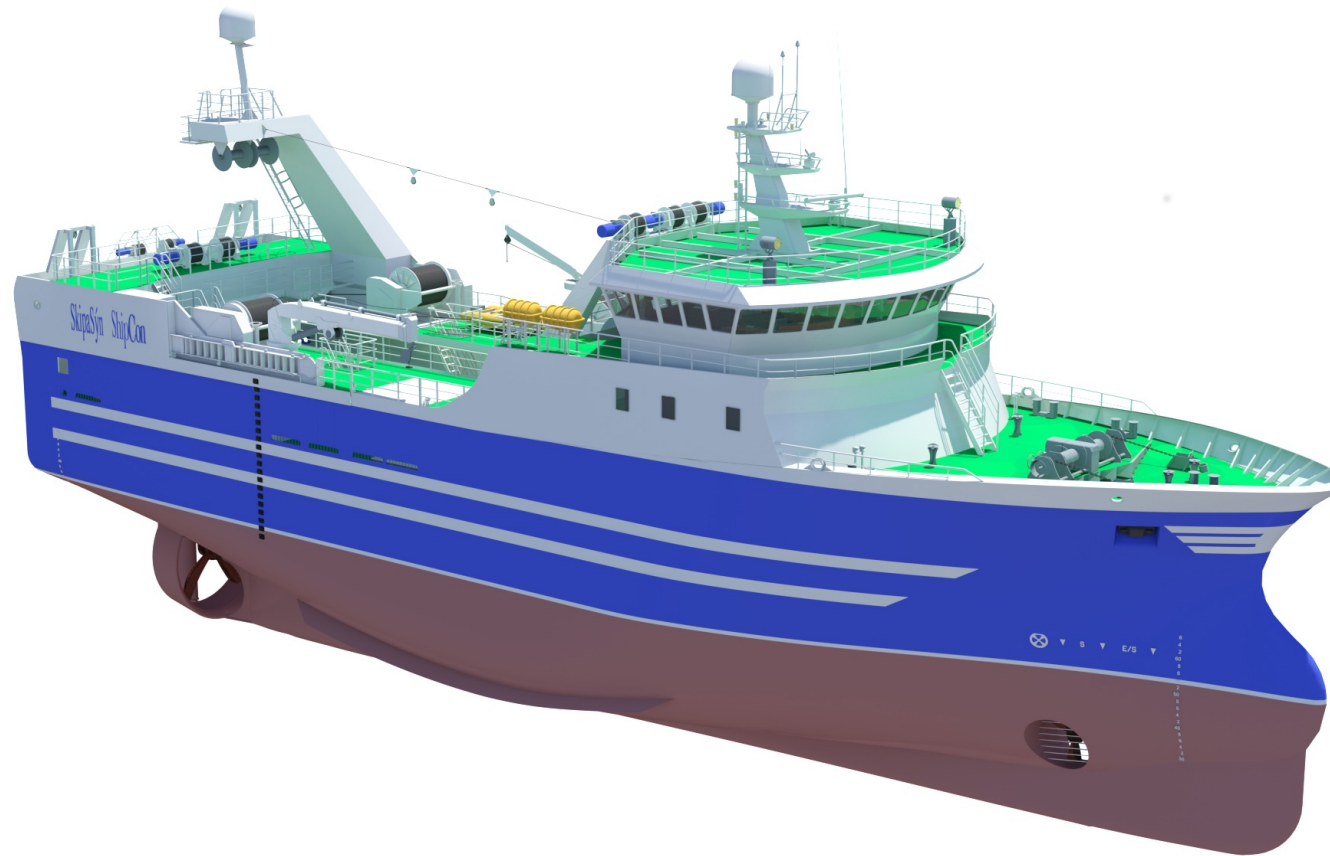
**Propulsion system: Main Engine and Propeller MAN
Propeller Diameter 4,7m.**



**Propulsion system: Main Engine and Propeller MAN
Propeller Diameter 3,6m.**



Ávinningur – 50,7 m togara



MDV 1 - Immanuel



„Super“ Propeller

P50128
(Mv. Breki VE and Mv. Páll Pálsson ÍS)

Skrúfustærð afstæð

In order to maximize the efficiency of the propeller the diameter has to be as big as possible. The new ship has a propeller that is 4,7m in diameter and delivers pull is over 20 kg per hp of main engine, they have 45 % more delivered pull per hp than the vessels they replace, resulting in corresponding energy savings. In addition, using 45% less energy to pull, the new vessels can tow two boats simultaneously, which increases fishing capacity to over 60-80%.



3 m diameter

180 cm



4,7 diameter



Takk fyrir!

www.skipasyn.is

