

KEMENTERIAN PERHUBUNGAN BADAN PENELITIAN DAN PENGEMBANGAN PUSLITBANG TRANSPORTASI LAUT, SDP

Masukan Terhadap Laporan Pendahulaun
Penelitian “Basic Design dan Key Plan MCB
untuk Mengurangi Beban Lalu Lintas
Angkutan Jalan Jakarta – Surabaya

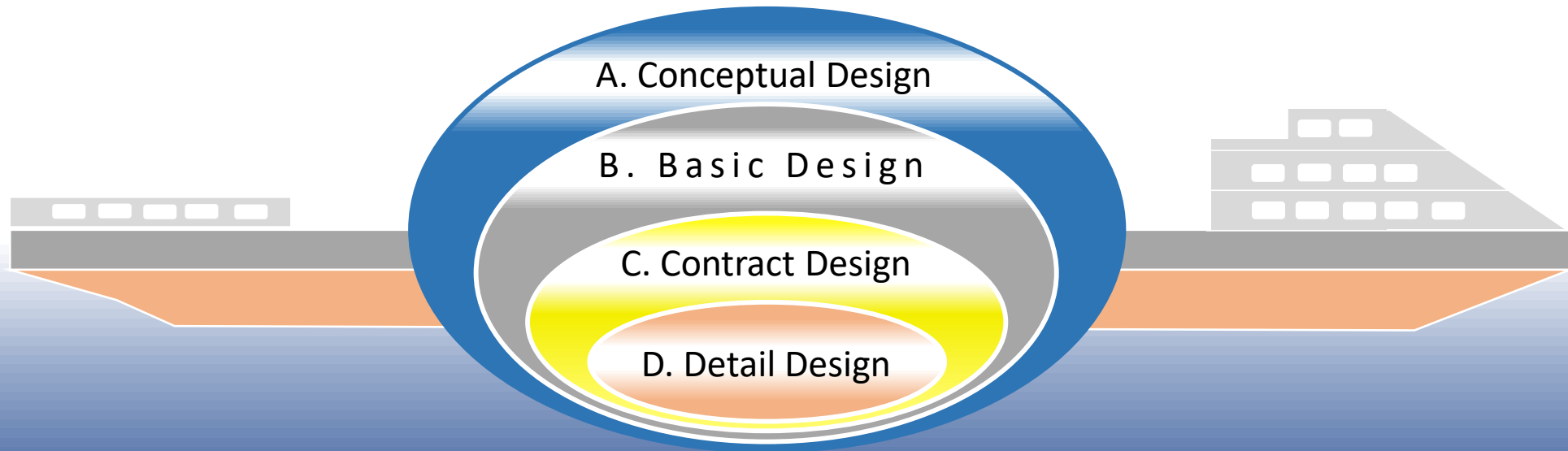


***MOTORIZED CONTAINER BARGE
(MCB) DESIGN PROCESS***
(Syamsul Asri)

Jakarta,
23 April 2019

MOTORIZED CONTAINER BARGE

design process



A. CONCEPTUAL DESIGN

MISSIONS REQUIREMENT

Pay loads :
1000 TEUs

Kecepatan :
≥ 10 knots

- Trayek : T. Priok – T. Perak (519 mil)
- ??? Fasilitas pelabuhan
 - Fasilitas pokok perairan: kolam tambat, kolam labuh, kolam putar, alur pelayaran
 - Container crane
 - DII.

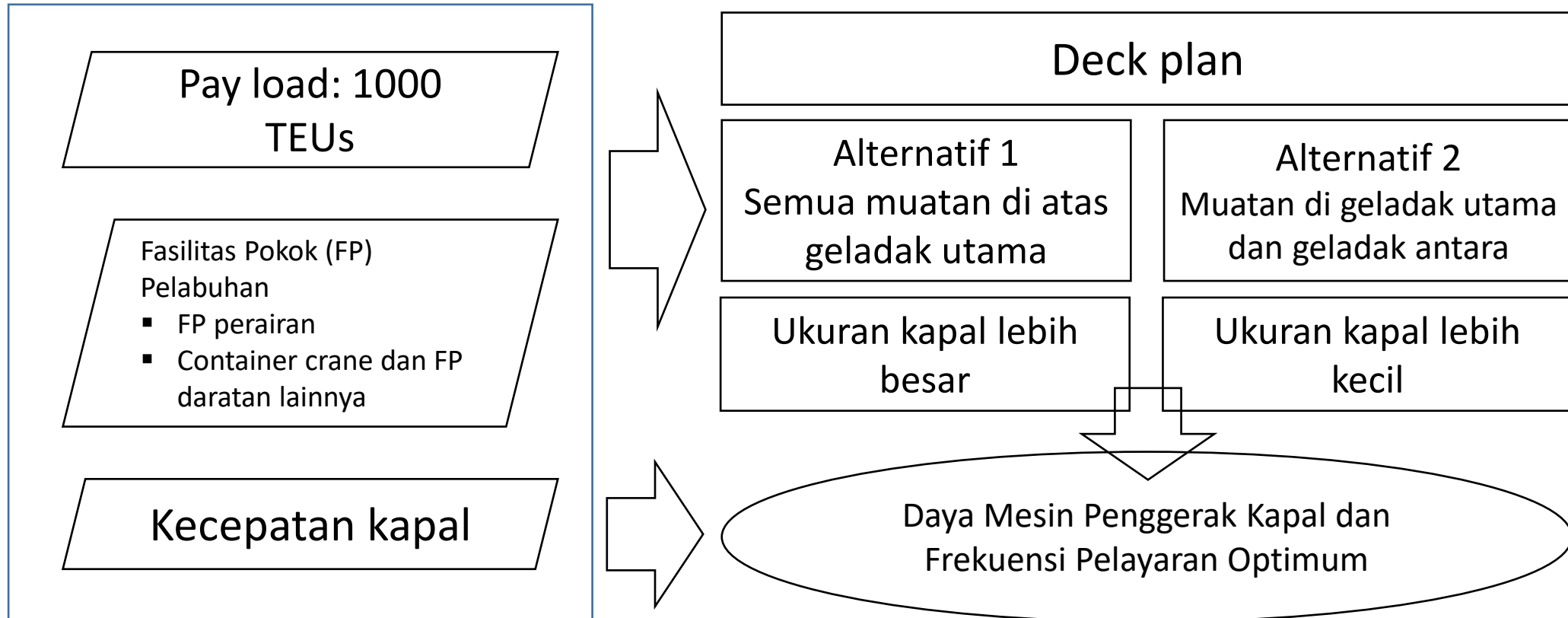
PROPORTIONS & PRELIMINARY POWERING

Ukuran Utama

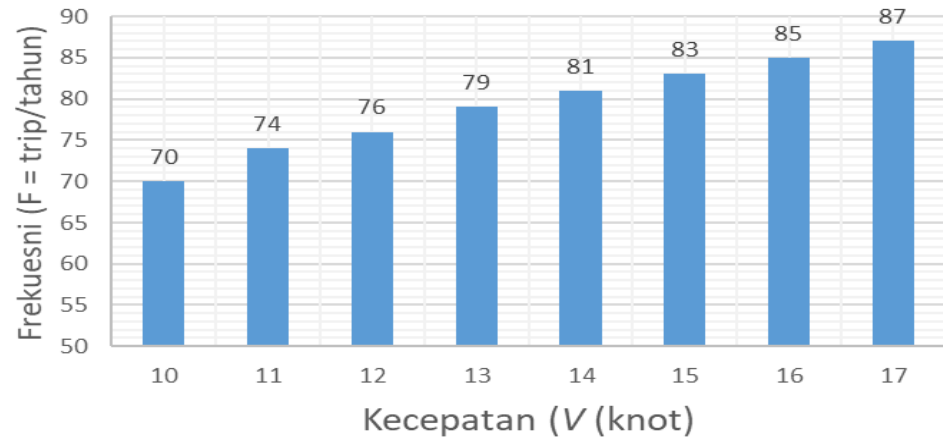
LOA	=	202,585	m.
LD	=	200,527	m.
LWL	=	197,600	m.
LBP	=	190,000	m.
B	=	36,360	m.
H	=	7,926	m.
T	=	4,290	m.



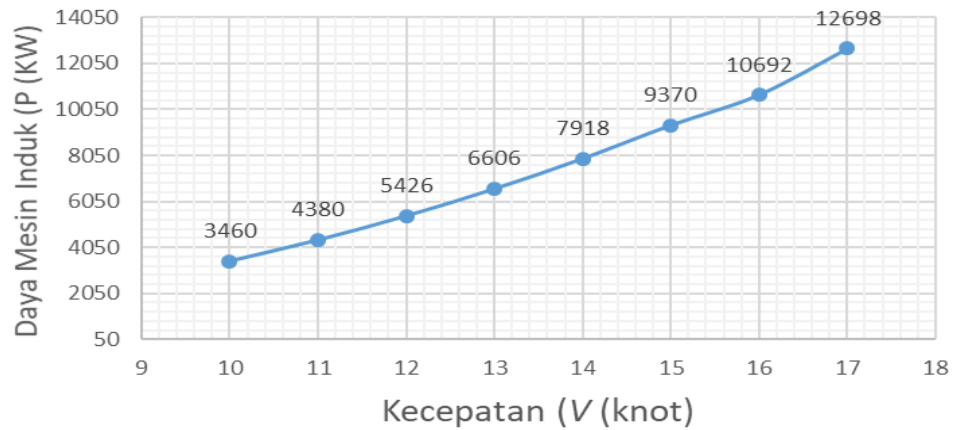
Penajaman analisis yang diperlukan:



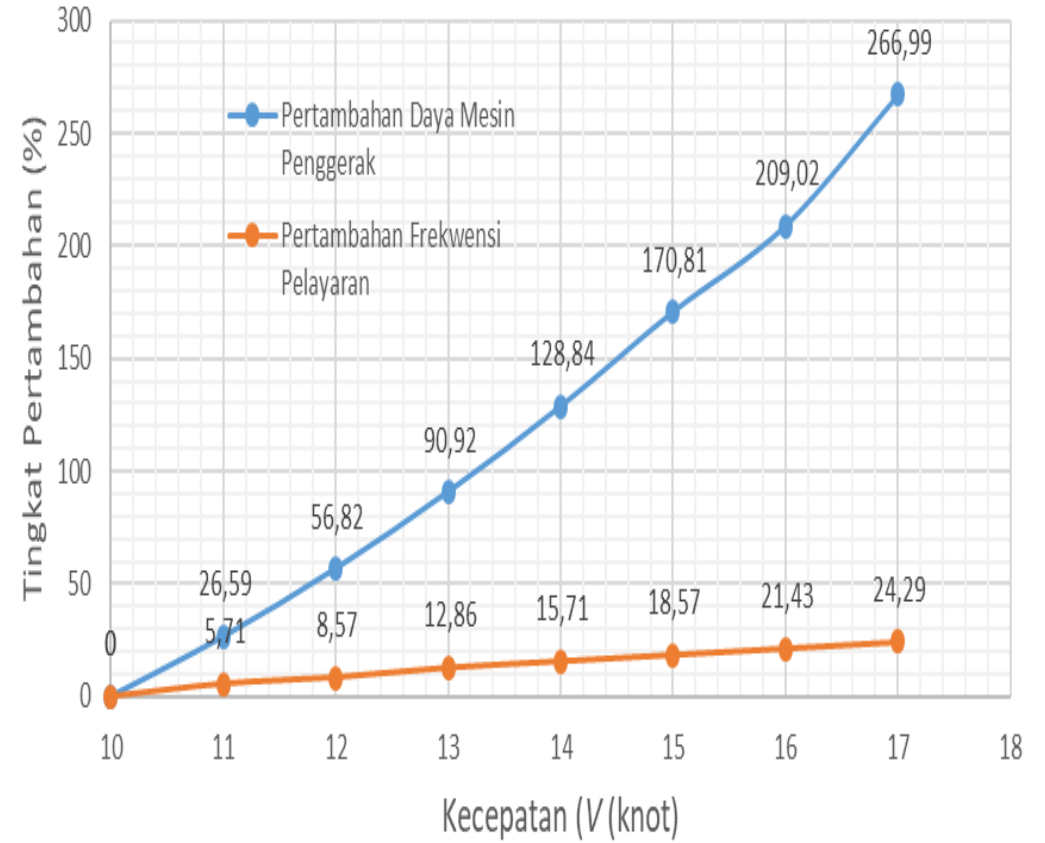
Frekuensi Pelayaran



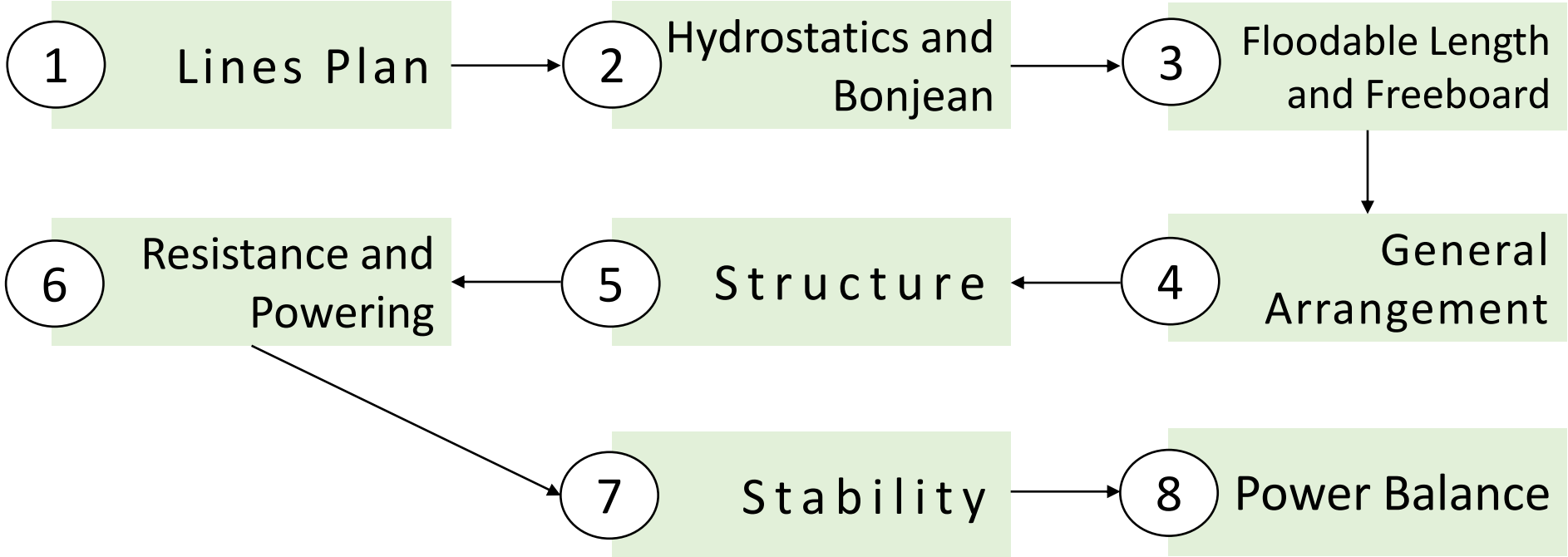
Daya Mesin Induk



Tingkat Pertambahan Daya Mesin Penggerak dan Frekwensi Pelayaran

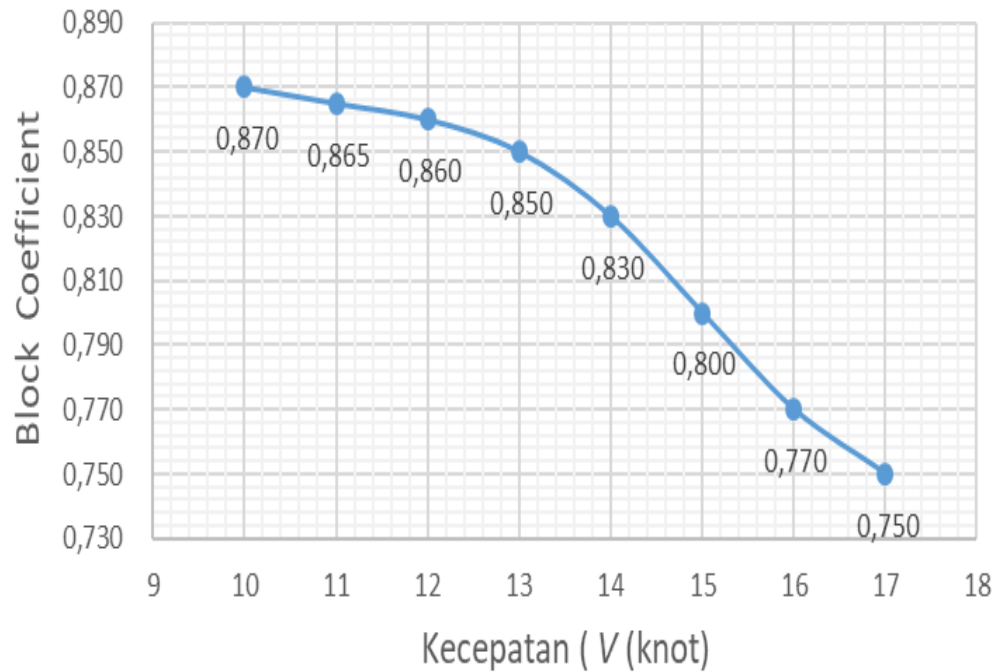


B. BASIC DESIGN

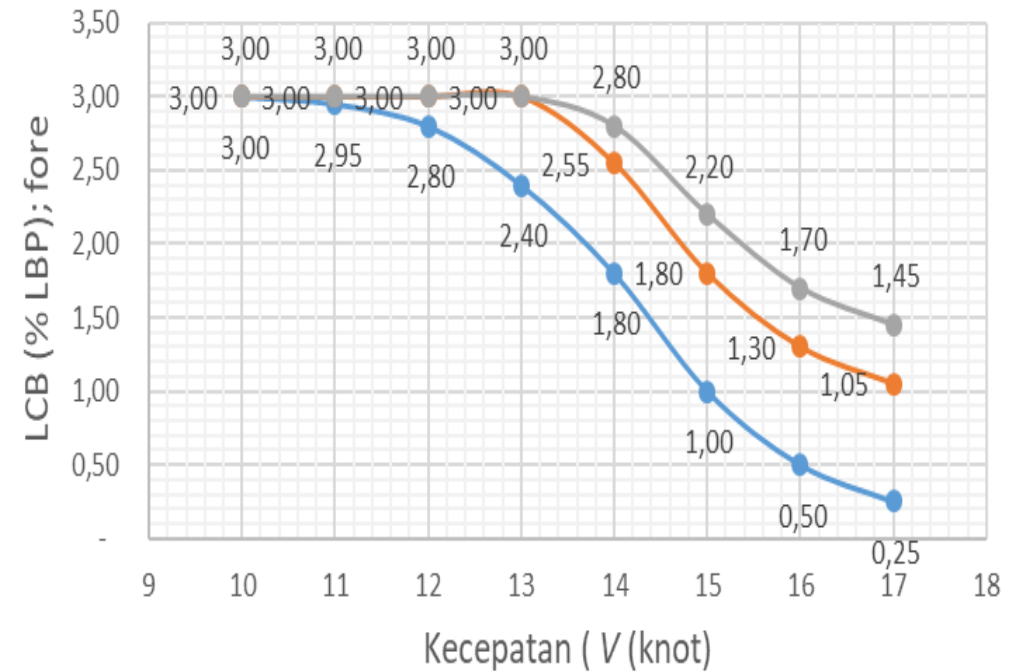


LINES PLAN

Block Coefficient



Longitudinal Centre of Buoyancy (LCB)



FLOODABLE LENGTH AND FREEBOARD

Kebocoran

Floodable Length

- Trans. Bulkead
- Long. bulkhead

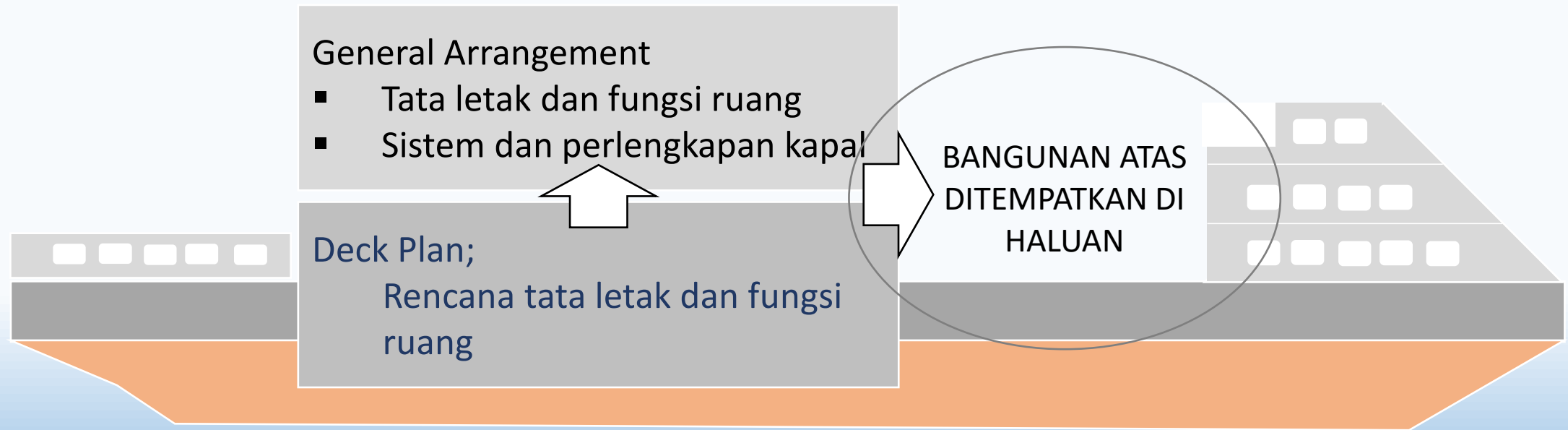
FREEBOARD (FB/B)

0,10
0,08
0,06
0,04

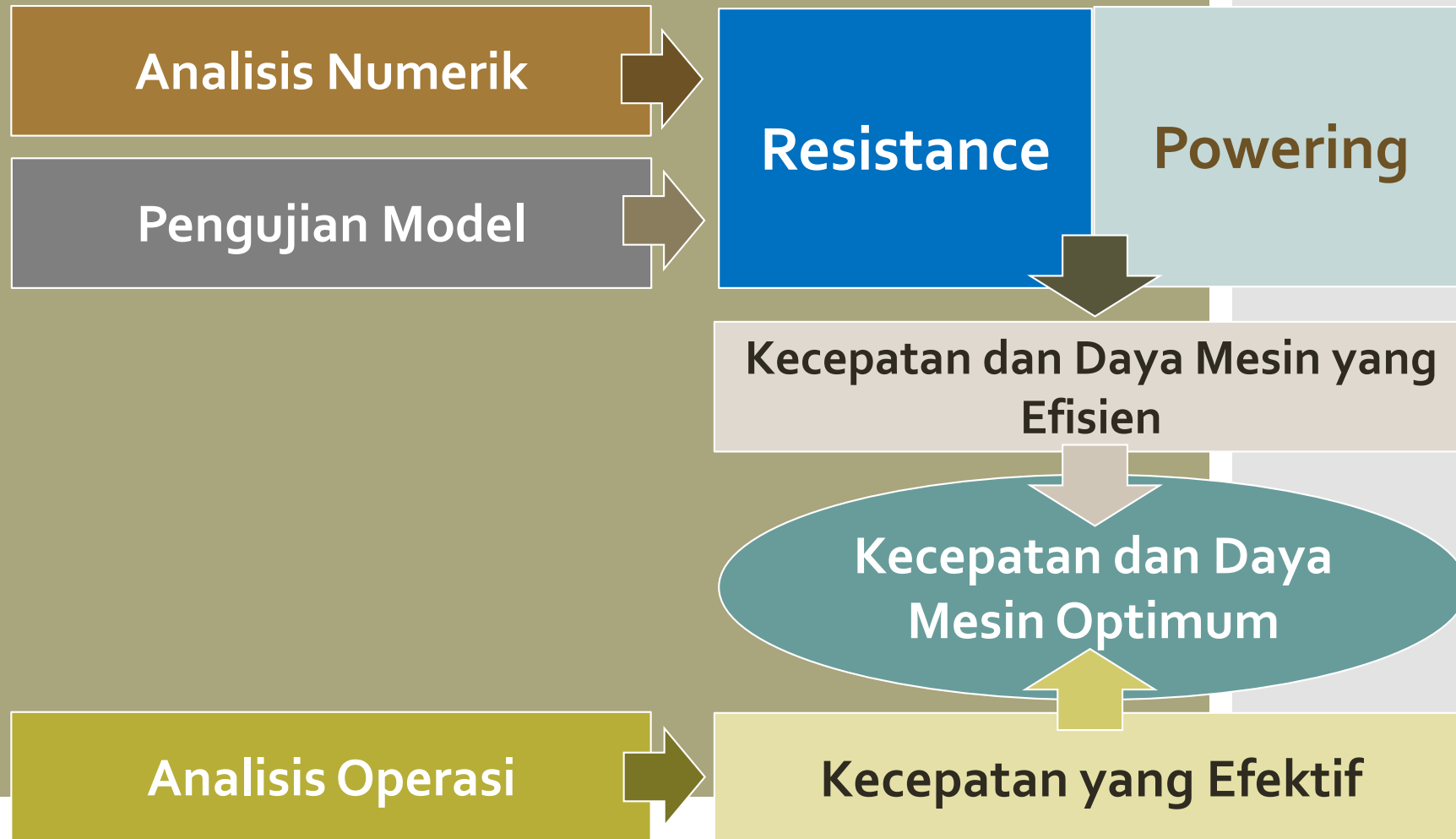
- Limiting KG lebih besar
- Lengan stabilitas maksimum lebih besar; perubahan tidak pada $FB/B > 0,08$
- Rentang stabilitas dan tinggi metasetra lebih kecil
- $FB/B < 0,06$; Z pada $\varphi < 25^\circ$;
- $B/T > 2,5$; Z boleh pada $\varphi \geq 15^\circ$;

Stabilitas

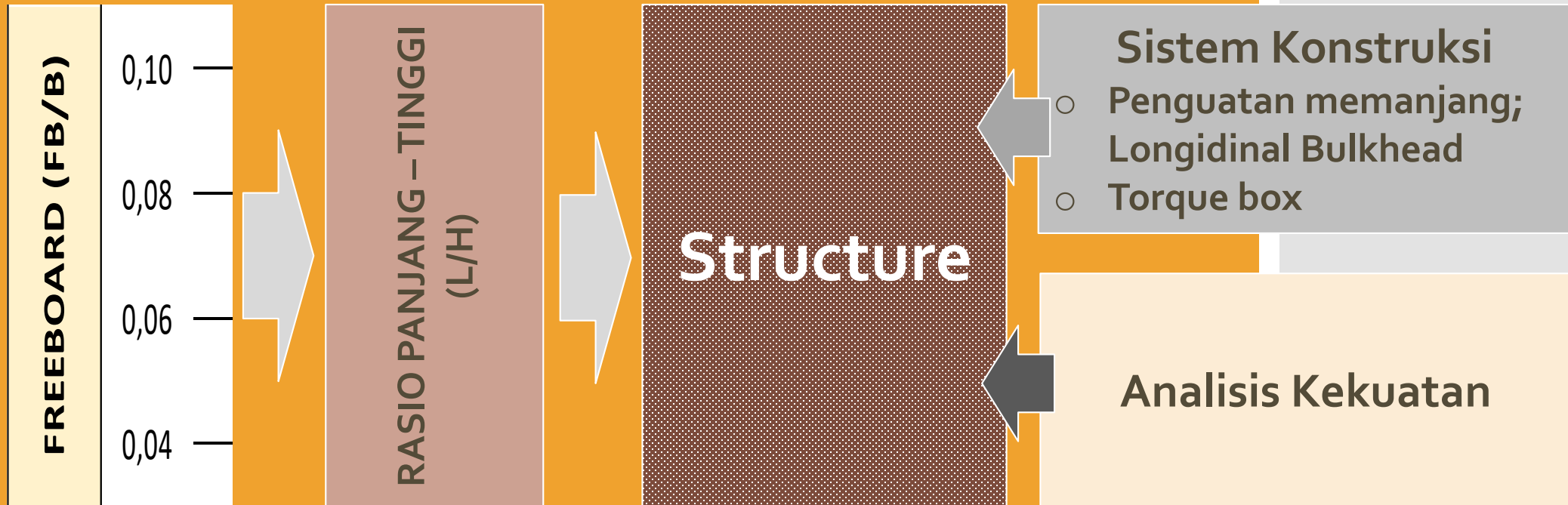
ARRANGEMENT



RESISTANCE AND POWERING



STRUCTURE



STABILITY

MCB;
Muatan di atas
geladak, KG
besar

Stability

- = f (ukuran bentuk, KG actual)

Preliminary Stability

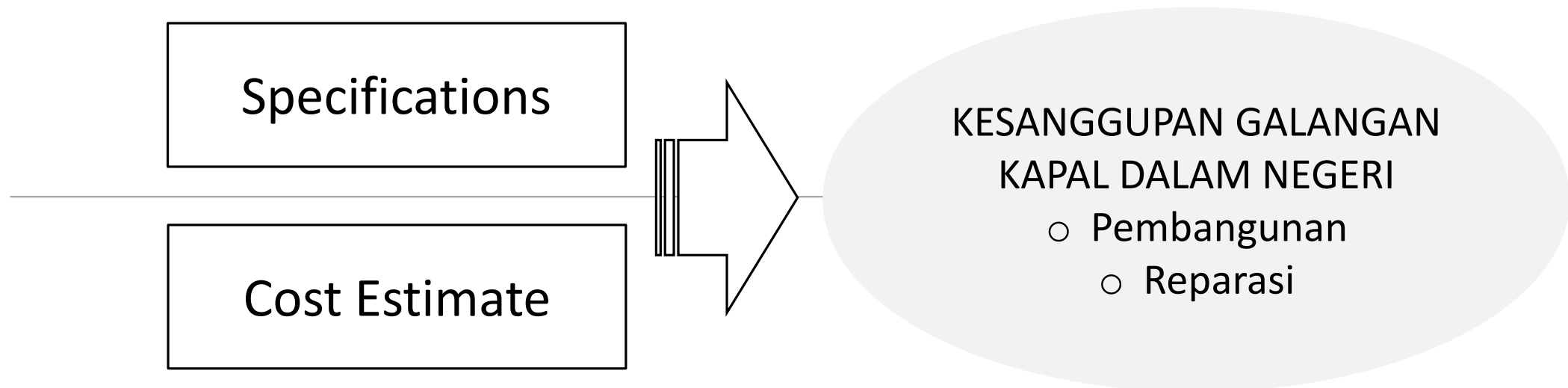
- = f (ukuran, bentuk, FB)
- Limiting KG

Intact Stability

Damaged Stability

Petunjuk
Pemuatan

C. CONTRACT DESIGN



D. DETAIL DESIGN

HULL AND STABILITY

- | | | | |
|----|----------------------------------|----|--|
| 1 | General Arrangement | 11 | Superstructure & Deck House |
| 2 | Midship Section | 12 | Long. Strength L > 65 m |
| 3 | Construction Profile | 13 | Lines Plan |
| 4 | Shell Expansion | 14 | Cargo securing manual |
| 5 | Transverse & Long. Bulkhead | 15 | Stowage and Lashing Arrangement |
| 6 | Fore & After Construction | 16 | Shaft Bracket / Skeg (Mana yg aplicable) |
| 7 | Hatch Construction & Closing arr | 17 | Stability Booklet |
| 8 | Rudder & Rudder Stock | 18 | NDT Plan |
| 9 | Main Engine Foundation | 19 | Welding Schedule |
| 10 | Container Stack Foundation | 20 | Cathodic Protection |

MACHINERY

- 1 Engine Room Lay out
- 2 Fuel Oil System
- 3 Air Pipe, Filling, Sounding System
- 4 Lubricating Oil System
- 5 Bilge , Ballast and Fire System
- 6 Fresh Water System
- 7 Cooling System
- 8 Shafting Arrangement
- 9 Propeller Shaft & Stern tube
- 10 Steering Gear System
- 11 Propeller

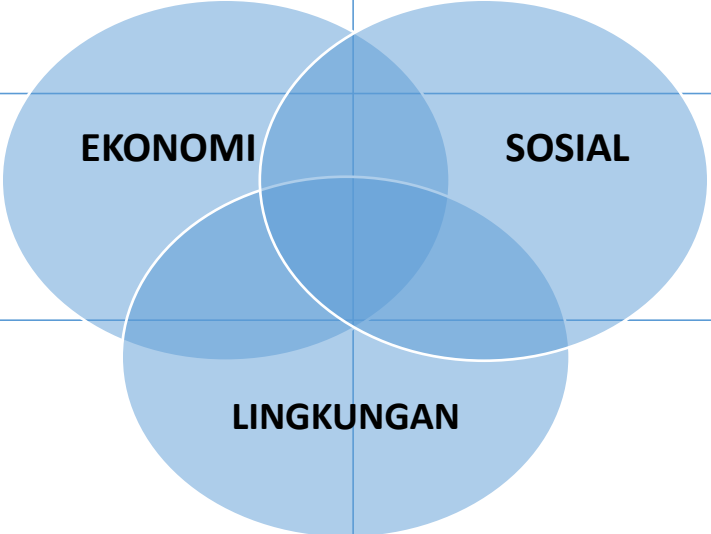
ELECTRICAL

- 1 Wiring Diagram
- 2 Main Switch Board
- 3 Power Ballance Calculation

STATUTORI

- 1 Safety Plan
- 2 Fire Plan

PENILAIAN EKONOMI

		ANGKUTAN LAUT	ANGKUTAN DARAT
MANFAAT	Pemilik <ul style="list-style-type: none">○ Investasi○ Tingkat keuntungan		
	Masyarakat <ul style="list-style-type: none">○ Lapangan kerja○ Kelancaran distribusi○ Tarif		
	Negara <ul style="list-style-type: none">○ Investasi dan pemeliharaan infrastruktur○ Penerimaan negara		
DAMPAK LINGKUNGAN			

Cerima kasih
