

# // Re-introduction to the Optimization of Ship Routing

## How to calculate the hidden ROI of routing

# // Agenda

- // Facts and myths of ship routing
- // What is the value proposition
- // How to calculate the real ROI of routing
- // Route Advisory Pre-plan
- // Real value to Ship Operations
- // Q&A Session



# //Optimum Ship Routing

What is it and why it is important?

**Facts**

**Myths**

# // Optimum Ship Routing

// Practiced since 1952

// Time

// Fuel

// Does it work?

// Yes

// IMO estimates 3% fuel saving

// Over time 1-8 return





# // Optimum Ship Routing

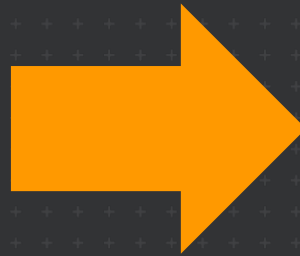
## Vessel Performance Report By-product

- //Analysed performance
- //Benchmark comparison
- //Performance disputes are always commercially settled
- //50/50?



# // What is the value proposition?

## Maximize the financial result of the voyage



**Maximize the Time  
Charter Equivalent**

# // Example of TCE calculation

Colombia - Rotterdam / RV Coal

StormGeo  
Freedom to Perform

CHARTERING

Documents SG

Estimates

Properties

Tasks

Revisions

Estimates

Untitled / SGO-000004

Save Menu Add Cargo Schedule Voyage Reports

Vessel

ACHILLEUS

Ballast Port

ROTTERDAM

TC In Code

50,961

Vessel DWT

10,000.00

Dly Hire/Addr

0.00

DWF %

0.00

Spd Bal/Ldn (kn)

14.00

13.50

Category

Commencing

Completing

Voyage Days

34.2861

Reposition Port

Ballast Bonus

0.00

Opr Type

TCOV

Chtr Specialist

Company

Trade Area

Piracy Routing

Default

ECA Routing

Default

Name

Price

S Bal

S Lad

P Ld

P Dis

Idle

IFO

260.00

30.00

30.00

5.00

5.00

2.50

LSF

0.00

30.00

30.00

5.00

5.00

2.50

LSG

290.00

0.10

0.10

MGO

0.00

Cargoes

N	Cargo	C/P Qty	Unit	Opt %	Opt Type	T	Frt Rate	Lumpsum	Comm%	Charterer	Curr	Exch Rate
1	COAL	50,000	MT	10.00	MOLOO	F	9.0000	0.00	5.00		USD	1.000000

Add New Row

Itinerary

Cargo	Draft/R...	Charte...	Port/D...	Port/D...
Port	Miles	WF%	Draft	Unit
ROTTERDAM		0.00		C
ENGLISH CHANNEL	137	10.00		P
ECA - US 50NM PUERT	3,664	10.00		P
PUERTO BOLIVAR (CO	567	10.00		L
SECA - NORTH SEA	3,965	10.00		P
FNGL ISH CHANNFI	255	10.00		P

Loadline	Salinity	IFO Qty	IFO Prc	LSF Qty	LSF Prc	PortExp	Cargo	L/D Qty	L/D Rate	RU	Spd	SDays	LS SD
Summer Salt	1.025										14.0		
Summer Salt	1.025										14.0	0.41	
Summer Salt	1.025										14.0	10.90	
Summer Salt	1.025					50,000	COAL	50,000	30,000.00	PD	14.0	1.69	
Summer Salt	1.025										13.5	12.24	
Summer Salt	1.025										13.5	0.79	

100,000

IFO	LSF	LSG	MGO
0.016300	0.000000	0.000000	0.002600

Bunker Sensitivit

P&L

All Periods	Estimated
REVENUES	
Freight	450,000.00
Freight Comm.	(22,500.00)
Misc. Revenue	
Total Revenues	427,500.00
EXPENSES	
Bunkers	201,665.51
Port Expenses	100,000.00
Misc. Expenses	
Total Expenses	301,665.51
Voyage Result:	125,834.49
Net Daily (TCE):	3,670.13
RUNNING COST	
Hire	342,861.11
Total Running Cost	342,861.11
Profit (Loss)	-217,026.62
Net Voyage Days	34.29
Daily Profit (Loss)	(6,329.87)
Total/Off hire days	34.29
Port/sea days	5.17 29.12
Breakeven	13.57
Freight Rate (USD/t)	9
Gross TCE	3,670.13
ESTIMATE REMARKS	

# // How to calculate the ROI of routing

## Voyage Calculation Simplified

Gross Income (mt intake\*\$)

- Port Expenses

- Bunker Cost

- Misc NB!! Inc Routing Services

= Net Income

Net Income / Voyage Duration (days)

= NET DAILY TCE

	Intake MT	frt \$	
Gross Income	50 000	9	\$450 000,00
Expenses			
Bunkers	786,24	260	-\$204 422,40
Port Expenses			-\$100 000,00
Misc Brokerage		5 %	-\$22 500,00
Total Expenses			<u>-\$326 922,40</u>
Net Income			\$123 077,60

	Voyage Duration	+/- Days
Sea	29,12	
Port	5,17	
Total	<u>34,29</u>	

Net daily TCE

**\$3 589**

Delta for Time Saved

**\$0**



# // How to calculate the ROI of routing

## Voyage Calculation Simplified

Gross Income (mt intake\*\$)

- Port Expenses

- Bunker Cost

- Misc NB!! **Inc Routing Services**

= Net Income

Net Income / Voyage Duration (days)

= NET DAILY TCE

	Intake MT	frt \$	
Gross Income	50 000	9	\$450 000,00
Expenses			
Bunkers	759,24	260	-\$197 402,40
Port Expenses			-\$100 000,00
Misc Brokerage		5 %	-\$22 500,00
Total Expenses			<u>-\$319 902,40</u>
Net Income			\$130 097,60

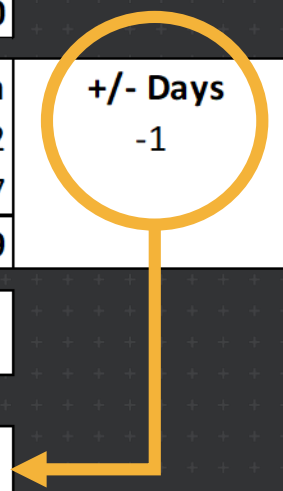
	Voyage Duration	+/- Days
Sea	28,12	-1
Port	5,17	
Total	<u>33,29</u>	

Net daily TCE

**\$3 908**

Delta for Time Saved

**\$10 609**

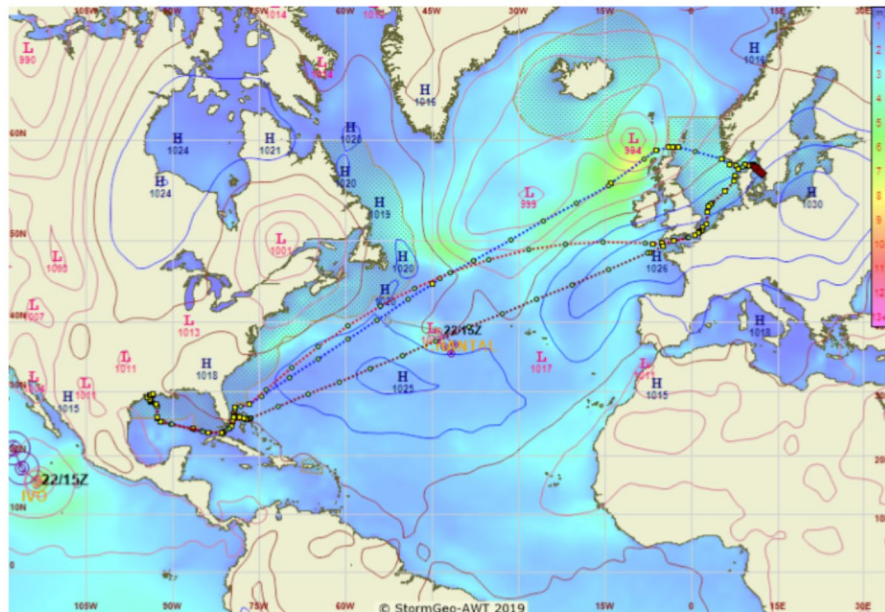


# // How is it done?

## A pre-plan is produced outlining route alternatives

### Voyage Information

Vessel Name :		Reference Number :	
DR Position / Time :	56.8N 11.9E / 23 Aug 0000Z	Power Setting to Produce (KTS) :	12.50
Final Port :	LAKE CHARLES	ETA (UTC) :	2019/09/12 0639 Z
Total Distance (NM) :	5,490.1	Total Time (HRS) :	474.65
IFO Price (\$/MT) :	348	0.1% Fuel Price (\$/MT) :	575



	MAIN	ALT-1	ALT-2
<b>SPEED &amp; CONSUMPTION</b>			
<b>BALTIC SEA ECA1</b>			
Daily 0.1% Fuel (MT)	28.20	28.20	28.20
Calm Sea Speed (KTS)	12.50	12.50	12.50
<b>NON-ECA</b>			
Daily IFO (MT)	28.20	28.20	28.20
Calm Sea Speed (KTS)	12.50	12.50	12.50
<b>NORTH AMERICA EC ECA</b>			
Daily 0.1% Fuel (MT)	28.20	28.20	28.20
Calm Sea Speed (KTS)	12.50	12.50	12.50

<b>REMAINING VOYAGE DATA</b>			
Remaining Dist (NM)	5,490.1	5,708.7	5,847.8
Remaining Time (HRS)	474.65	480.67	482.37
Wx Factor (KTS)	-0.61	-0.33	-0.21
Cu Factor (KTS)	-0.32	-0.29	-0.16
Total ME Cons (MT)	557.71	564.78	566.78
ΔTotal ME Cons (MT)	-	7.07	9.07
IFO Cons (MT)	472.39	447.79	449.61
ΔIFO Cons (MT)	-	-24.60	-22.78
0.1% Fuel (MT)	85.32	116.99	117.17
Δ0.1% Fuel (MT)	-	31.67	31.84

<b>COST SUMMARY</b>			
IFO Cost (US\$)	164,391	155,832	156,466
0.1% Fuel Cost (US\$)	49,062	67,270	67,371
Total Cost (US\$)	213,453	223,102	223,837
ΔTotal Cost (US\$)	-	9,648	10,384

# // Operational Phase

## Voyage is in Progress

- // Regular updates
- // 24/7 Global Support
- // Human intervention
- // Safety

## Crew Onboard

- // Good to know we got your back

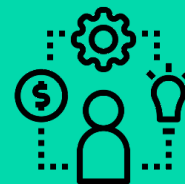
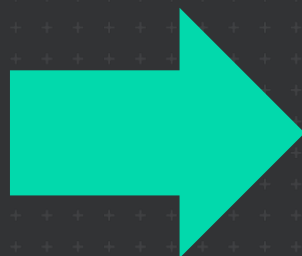




# // What is the value proposition?

Maximize the financial result of the voyage

**StormGeo**  
Freedom to Perform



**Actionable  
Information**

# // Onshore Operations

## Constant Updates

- // Push email updates
- // FleetDSS dashboards
- // Speed/consumption performance
- // ETA next port
- // Relevant alerts
- // Weather conditions
- // Brobs

# // Onshore Operations

**StormGeo**  
Freedom to Perform

Fleet DSS

Map

Alerts

Tools

Overview

My Vessels



Route Request

SmartWatch ▾

Emissions ▾

Performance ▲

Info Board

Commercial Score

Fleet

Leg Summary

Anonymous

## Info Board

Landing Page



Departments

Vessels

Select Options ▾

Select Options ▾

View

Toggle Groups On/Off



Vessel Details



Performance



BROB at Arrival



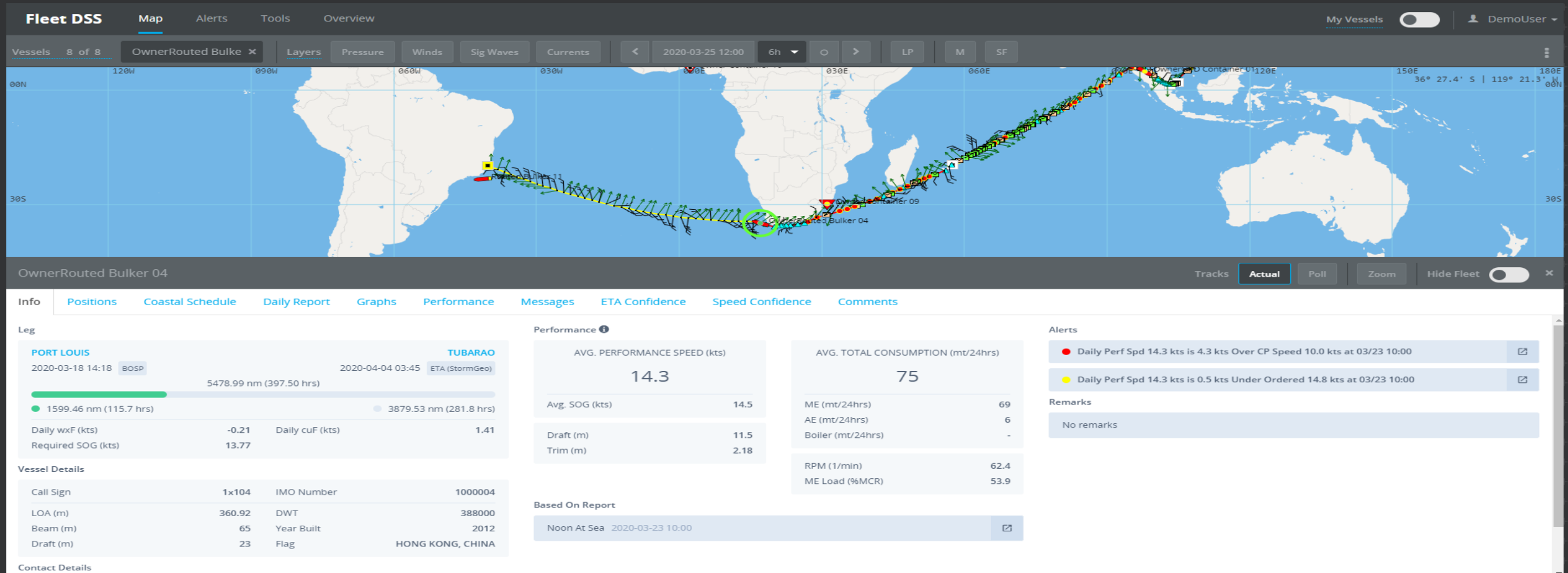
Gain/Loss

Vessel Name	Last Report	Vessel Details		Last Daily Performanc...				Alerts	Last Daily FO Consumpti...			Last Daily DO Consumptio...			Next Port	ETA by Master (UTC)	Next Port ETA by StormGeo (UTC)	BROB at Arrival (mt)			
		Vessel DWT	Email Vessel	Order...	Perfor...	Δ (kts)	Good Wx Day (y/n)		Ordered	Actual	Δ (%)	Ordered	Actual	Δ (%)				HS FO	LS FO	HS DO	LS DO
OwnerRouted Bul	2020-03-25 11:10	388000	✉	10.00	14.75	4.75	N	●		80.83					TUBARAO	2020-04-03 16:00	2020-04-03 23:45	Fri	3752	328	
Routed Container	2020-03-24 12:30	142020	✉		2.56		Y	●		5.39			8.05		SINGAPORE	2020-04-07 17:00	2020-04-06 09:46	Mon		3541	368



# // Onshore Operations

StormGeo  
Freedom to Perform



# // Conclusion

**Can you quantify the ROI of Routing?**

**How is it quantified?**

- // ROI report – route related savings
- // Performance / deficiency report (VPR)



# // ROI Report

## Route Related Savings

### Deficiencies Summary 2019

#### Figures applied

Ifo	\$400	\$600		
Mgo				
Fuel consumption for ROI analysis	25 mt/days			
Hire level for ROI avge Baltic	\$7,900	\$9,800	\$19,300	\$14,900
<b>Baltic Timecharter averages</b>				
<b>2019</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
BSI	\$10,000	\$8,485	\$12,511	\$10,763
BPI	\$7,007	\$9,521	\$16,014	\$11,717
BCI	\$8,739	\$11,508	\$29,364	\$22,184
Newcastmax	\$10,924	\$14,385	\$36,705	\$27,730
Vlocs	\$10,050	\$13,234	\$33,769	\$22,512
Aframax	\$20,000	\$9,000	\$14,000	\$40,000

#### Deficiency Summary

# of routes	305	289	339	281
\$ invoiced	\$173,736	\$164,844	\$193,230	\$159,885
Quarterly deficiencies	\$808,545	\$570,845	\$1,326,880	\$1,207,069
<b>Balance</b>	<b>\$629,809</b>	<b>\$406,001</b>	<b>\$1,133,650</b>	<b>\$1,047,184</b>

#### ROI Summary

# of routes w identified savings	90	79	90	78
Time saved / Days	69	48	40	138
Fuel saved / MT	1732	1206	1010	3455
<b>Sum Fuel and Time in USD</b>	<b>\$1,240,399</b>	<b>\$955,246</b>	<b>\$1,183,783</b>	<b>\$3,440,999</b>

### Grand Total ROI and Deficiencies Identified 2019

**\$10 728 766**

### Total Deficiencies Identified 2019

**\$3 908 339**

### Total ROI Identified 2019

**\$6 820 427**



# // Thank you

## Interested in learning more?

## Please don't hesitate to contact us!

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