1. CMA CGM Fleet

- 410 Container Carrier Vessels, Owned and Chartered, from 200 m to 400 m long,
- Vessels on Regular Lines: calling ports each week at the same day/time, according to Terminal bookings

2. An Economical and Ecological Challenge

Fuel Cost for CMA CGM: 5 Billion USD/year

- 2010: 440 USD/Ton
- 2012: 724 USD/Ton

Typical CC Vessel
- 250 Tons/Day at 23 Kts
- 80 Tons/Day at 18 Kts

Slow Steaming, Super Slow Steaming
Fuel Routing

1. **Slow Steaming**

- Optimizing Fuel
- Constant Load Engine
- Constant Speed on Water
- Current Factor
- Weather Factor

2. **Constraints for scheduling**

- Ops Constraints
  - Terminal Windows
  - Draft, Tide, Under Keel Cl.

- Geographical
  - Straits, Channels, Traffic System
  - Piracy, Emission Control Areas, Whales Areas

- Vessel
  - Stability conditions
  - Minimum Load Engine
  - Engine Unusable range

- Weather
  - Waves height and direction
  - Swell period (Parametric Rolling)

**Recommendations of**
- Route
- Calm Sea Speed

**Fuel Budget**

**New Time of Arrival?**
Daily Route Monitoring

Seasonal Statistics ➔ Rhumb Line/Great Circle ➔ Limited Risk Additionnal Distance Buffer Time

- Optimum Routing means Deviation for - Weather - Current
- Risk for Captains/RTA - Routing Operator responsibility?
- Confidence Level on Global Forecasting - Data - Routing
- On board Permanent check of GAP Forecasted/Actual Current
What we Do

- Fuel Consumption (Tons)
- Distance (nm)

Graph showing relationship between voyage time and fuel consumption/distance.
What we receive
Forecasting along a Track
Daily Vessel Report

Message: Sent (lt) 08/01/12 07:20 Time zone (hh:mm) +08:00 Master name CAPT. V CHARI Email “CMA CGM BIZET” <master.A8VP5@globeemail.com>

Vessel : 9222302 / CMA CGM BIZET call sign A8VP5 security level 1
Line : ECSA / East Coast South America
Route : SEAS / Asia South America East Coast
Voyage : AA666E
Daily time (lt) : 08/01/12 12:00
Position (lat / long) : 06 18 N / 095 19 E
Distance done (NM) : 405

Average speed (Kt) : 17,84
Distance since SOSP (NM) : 4314
Speed since SOSP (Kt) : 18,28
RPM : 64,4
MCR : 21,67
SLIP : 9,5
SLIP (Theorical distance-distance Done)

Speed instruction : ECO
Set RPM : 65
Next port : MYPKG / PORT KELANG
TimeShift next port : +08:00
Distance to go (NM) : 432
ETA (lt) : 09/01/12 15:00
RTA (lt) : 09/01/12 15:00

Course (Degree) : 107
Wind (Beaufor/Dir) : 3 / NE
Sea (Douglas / Dir) : 3 / NE
Current (Kt / Dir) : 1 / E
Swell (m / Dir) : 1 / NE
Sea temperature (degree) : 29
ROB (ton) : HSFO 1482 DOGO 177,1
Consumption M/E (ton) : HSFO 72,3
Consumption AUX/E (ton) : DOGO 0,1 Master remarks: 1.DO O.1 MT IS USED FOR INCINERATOR. 2.PRESENT SPEED MAINTAINED AT 17.5 KTS WITH INTENTION TO REDUCE TO SAFE MANOEVRING SPEED OF 12-13 KTS UPON ENTERING MALACCA STRAITS TSS AND MAKE GOOD ETA 09TH/1500.

Capt. CAPT. V CHARI
Master CMA CGM BIZET
E-mail: "CMA CGM BIZET" <master.A8VP5@globeemail.com>
TO: MASTER/CMA CGM LA SCALA
FM: AWT

THE FOLLOWING IS BASED ON VOYAGE FROM PUSAN TO SEATTLE TO MEET DESIRED ARRIVAL TIME SEATTLE 16 MAR, 02Z BASED ON DEPARTURE PUSAN AT 03/06 1200Z

- SUGGEST POWER SETTING TO PRODUCE: 20.7 KTS IN CALM SEAS
- APPROXIMATE DISTANCE TO GO: 4625 NM
- APPROXIMATE TIME REMAINING: 230 HOURS
- AVERAGE WEATHER FACTOR: -0.5 KTS
- AVERAGE CURRENT FACTOR: 0.2 KTS
- AVERAGE SPEED OVER GROUND: 20.1 KTS

- BASED ON LATEST FORECAST, SUGGEST MAINTAIN THIS POWER SETTING THROUGHOUT THE VOYAGE RECOGNIZING THAT SPEED WILL DECREASE AS WEATHER INCREASES, ALL AS SAFE NAVIGATION PERMITS

1. WEATHER: SEE LATEST WEATHER DATA VIA YOUR BON VOYAGE SYSTEM:

FORECAST WIND(D/BA/SEA) SWELL(D/HT/PD) SIGWV(D/HT)
06/12Z WNW/5/2.0M WSW/1.0M/8S WNW/2.0M
07/00Z WNW/4/1.0M WNW/2.0M/8S WNW/2.0M
07/12Z W/5/2.0M WSW/2.5M/8S WSW/3.0M
08/00Z W/4/1.0M W/1.5M/SS W/1.5M
08/12Z SE/4/1.0M SSW/2.5M/9S SSW/2.5M
09/00Z SE/4/1.0M N/2.5M/11S N/2.5M
09/12Z E/5/2.0M NNE/2.5M/11S NNE/3.0M

2. ROUTE RECOMMENDATION: AS SAFE NAVIGATION PERMITS, DIRECT ABEAM ERIMO SAKI VIA TSUGARU KAIKYO THEN RL 50N 165W, GC STRAIT OF JUAN DE FUCA DIRECT SEATTLE

REASON: ROUTE IS EXPECTED TO CLEAR WEST THEN SOUTH OF HEAVIER CONDITIONS ASSOCIATED WITH A LOW PRESSURE SYSTEM FORECAST TO LIFT NE-WARD THROUGH THE WEST INTO THE CENTRAL PACIFIC AS YOU EXIT TSUGARU KAIKYO. LATER, ROUTE POSITIONS VESSEL NORTH OF HEAVIER CONDITIONS AND MORE FULLY DEVELOPED SWELL EXPECTED TO ACCOMPANY EAST OCEAN LOW PRESSURE SOUTH OF 50N DURING THE LONG RANGE OUTLOOK.
Thanks for your Attention
- Any Question?