

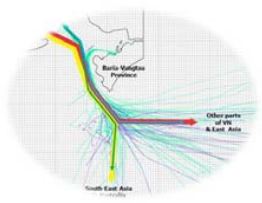
INVESTIGATION OF MARINE TRAFFIC IN THE ADJACENT OF SAIGON - VUNGTAU FAIRWAY TO MANAGE MARINE SAFETY

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Abstract: Saigon-Vungtau fairway is the main and the most important fairway of the major economic areas: Ho Chi Minh City, Dong Nai Province and Ba Ria-Vung Tau Province in Vietnam. In last 5 years, 80% of accidents happened on the fairway were caused by collision and contact/impact. This presentation study on marine traffic investigation in the adjacent of the fairway to find out problems related to marine traffic for improving Marine Traffic Safety Management in this area.

Key words: Saigon-Vungtau fairway, marine traffic statistics, marine traffic survey, traffic routes, traffic congestion.



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1. Research background & research goals

Statistics of marine accidents on Saigon-Vungtau fairway from 2006-2010

Accidents	Year	2006	2007	2008	2009	2010	Total
Collision		12	7	7	7	5	38
Contact/Impact		6	4	1	4	2	17
Grounding & stranding		0	1	0	0	0	1
Fire		2	0	0	0	0	2
Sinking		1	1	1	0	0	3
Others		0	2	1	4	2	9
Total		21	15	10	15	9	70

❖ Accidents caused by collision & contact/impact: 56/70 (80%)

⇒ **This fairway exists problems related to Marine Traffic Safety**

⇒ **Marine Traffic Safety in the adjacent of this fairway should be investigated to find out the problems**

1. Research background & research goals



⇒ Pre-survey in Feb. 2012, found out dis-orderly marine traffic on the fairway -> caused marine traffic congestion

⇒ **Need to investigated deeply about marine traffic in adjacent water of Saigon-Vungtau fairway to solve this matter**

1. Research background & research goals

This research goal

- Collect marine traffic data
- Investigation of marine traffic in research area

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    graph TD
      A[Collect marine traffic data  
Investigation of marine traffic in research area] --> B[Suggest TSS for research area]
      B --> C{Evaluation of safety of TSS  
by simulation to predict  
Safety Effectiveness}
      C --> D{Evaluation of Cost  
Effectiveness}
      D --> E[Implement]
      E --> F{Verification & Evaluation}
      F --> G[GOAL]
      C -- correction --> B
      D -- correction --> E
  
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2. Research area

- Some new deep sea container terminals were operated and some were being built (A)
- Offshore supply base are being enlarged to support the development of offshore operation (B)
- There are 3 fishing ports with a thousands of fishing boats arrive and depart (C)
- Crossing area between Saigon-Vungtau fairway and the two developing fairway: Thi Vai & Song Dinh fairway (D)
- Located in the major economic area: HCM City-DongNai Province and Baria-VungTau Province
- Many collision and contact/impact accidents happen every year

3. Traffic routes

Main traffic route of vessels other than fishing boat

- Route 1 (red):** Other parts of Vietnam and East Asia <-> HoChiMinh City
- Route 2 (yellow):** South East Asia & Australia <-> HoChiMinh City
- Route 3 (blue):** Other parts of Vietnam and East Asia <-> DongNai Province
- Route 4 (green):** South East Asia & Australia <-> DongNai Province
- Route 4 (orange):** Other parts of Vietnam and Offshore <-> Vungtau City

3. Traffic statistics

Route 3:

	Cargo ship	Tanker	Passenger	Others	Total
2007	403	333	1	96	833
2008	423	378	2	62	865
2009	620	399	6	29	1054
2010	965	475	7	18	1465
2011	1359	472	2	29	1862

Number of vessels passed through route classified by TYP

	50-100	100-150	150-200	>200	Total
2007	644	162	24	3	833
2008	610	231	24	0	865
2009	729	223	34	68	1054
2010	823	258	46	338	1465
2011	910	310	46	596	1862

Number of vessels passed through route classified by LOA

3. Traffic statistics

Fishing boats

Fishing boats usually:

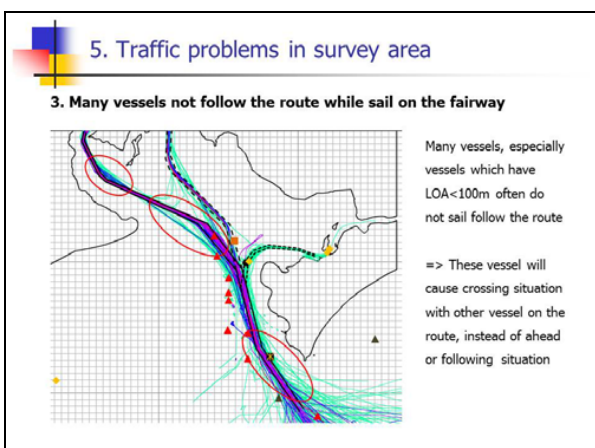
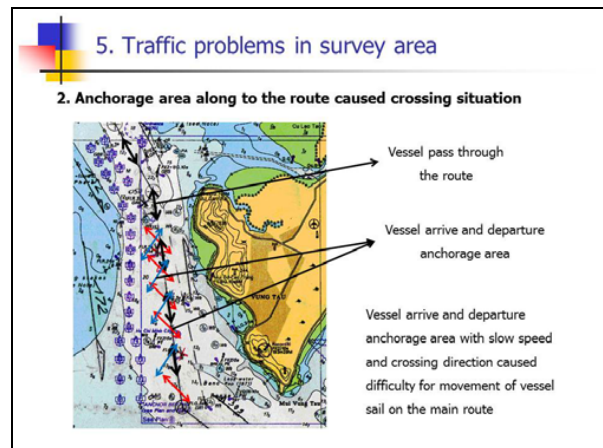
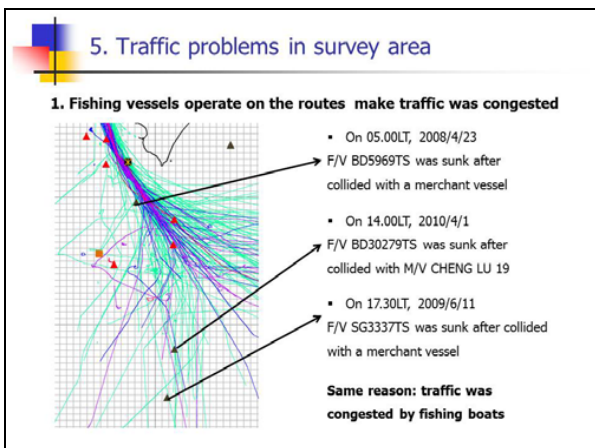
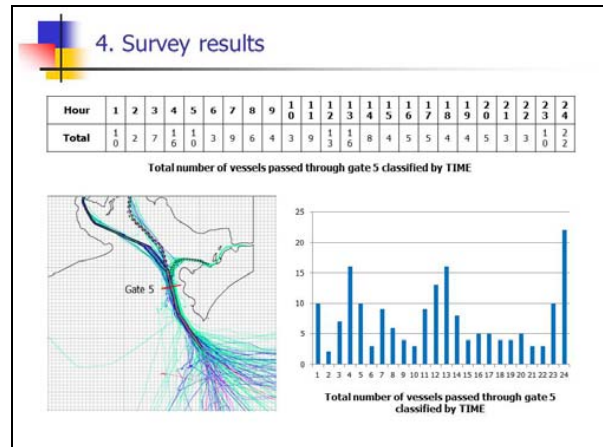
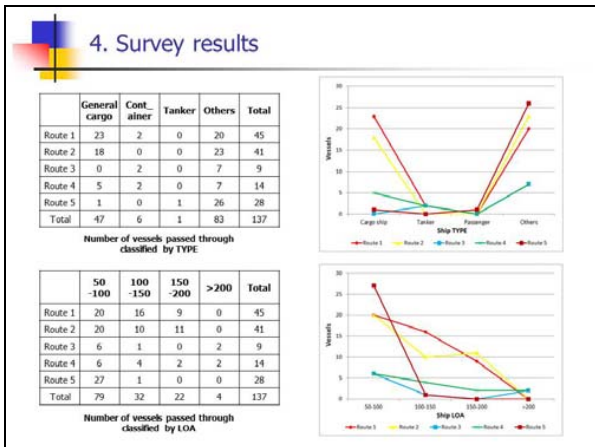
- Depart on 16-19 every month, in lunar calendar. Number of departed vessel about 300-500 vessels/day
- Arrive on 9-13 every month, in lunar calendar. Number of arrived vessel same as departed vessels
- On other days, number of fishing boats passing this area is less than 10

4. Survey results

Vessel's AIS tracks in survey area from 00.00-2012/5/17 to 00.00-2012/5/19

4. Survey results

Statistic of vessel passing through some gates along the main routes



Conclusion

After investigation: statistic data of marine traffic; statistic data of accidents and traffic survey data

Find out 3 problems related to marine traffic which effect to marine safety on the adjacent of Saigon-Vungtau fairway:

1. Fishing vessels operate on the routes make traffic was congested
2. Anchorage area along to the route caused crossing situation
3. Many vessels sail not follow the route cause crossing situation

=> To solve the above matter, the research area must have:

- o a Traffic Separation Scheme
- o and a Traffic Management System