

Analysis of Costa Concordia Incident - Focussed on Safety Side

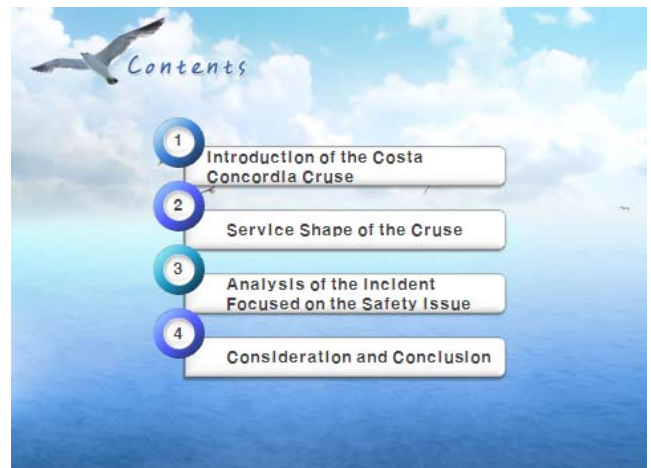
† 윤 대근 · Tumeejargal* · 이 현성** · 김 철승*** · 정 중식****

†, ***, **** 목포해양대학교 국제해사수송과학부 교수

*, ** 목포해양대학교 대학원생

요 약 : 본 논문은 2012년 1월에 발생된 이탈리아 국적 크루즈 선박 Costa Concordia 사고를 분석한 논문으로써, 사고의 발생경위와 원인 및 배경등을 선박운항에 있어서 안전적인 측면에서 분석하고, 이를 토대로 해결방안 및 향후에 일어날 크루즈선박 사고에 대한 대비책을 제시하였다.

핵심용어 : 분석, 안전, Costa Concordia, 선박사고, 여객선



1. Introduction of the Costa Concordia Cruise

1. Port of Registry: Genoa, Italy
2. Launched: Sep. 2, 2005
3. In Service: July 2006
4. Out of Service: Jan. 13 2012
5. Tonnage: 114, 137 GT

Height above waterline: 60m (approximately 85 percent of ship's overall height). Total of 13 passenger decks

Facilities: 1,500 cabins, five restaurants, 13 bars, fitness centre, four swimming pools, giant movie screen, theatre and casino

Lifeboats: Fully enclosed, engines operate even if boat is inverted

Propulsion: "Azpod" thrusters rotate 360° to move ship in any direction

Specifications:

Owner	Carnival Corp.	Allure of the Seas
Gross tonnage	114,500	Statue of Liberty
Length	295m	
Speed	23 knots (43km/h)	
Passengers	3,700	Costa Concordia
Crew	1,100	290m
Cost	€450 million	RMS Titanic
		293m

6. Length: LOA 290.20m
7. Beam: 35.50m
8. Draught: 8.20m
9. Decks: 13
10. Speed: 19.6 Knots (In Service) 23.0 Knots (Maximum)
11. Capacity: 3,780 Passengers
12. Crew: 1,100 (see next slide)
13. Ship Value: 570 M \$

2. Service Shape of the Cruise

1. Costa Cruises (The largest Cruise Operators in Europe): Italian Cruise Line based in Genoa in Italy
2. 1924-1947: Cargo Vessels, 1947-Recent: Full time Cruising
3. Costa Cruises Group is now one of eleven brands operated by Carnival Corp. (Main operating and executive control)
4. The Group operate 15 cruise ships (all Italian Flag)
5. Service Area: Mediterranean, Europe, the Caribbean, the Indian Ocean, the Middle East, South East Asia and South America
6. Concordia express the wish for "Continuing harmony, unity, and peace between European nations"
7. She serviced a weekly cruise in the Western Mediterranean visiting Civitavecchia, Savona, Marseille, Barcelona, Palma, Tunis, and Palermo.

† 주저자 종신회원 dyoon@mmu.ac.kr, *** 교신저자, 종신회원 cskimu@mmu.ac.kr,

**** 공동저자, 종신회원 jsjeong@mmu.ac.kr

3. Analysis of the Incident Focused on the Safety Issue



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Cause and Problem;

- Unfamiliarity with safety installations and practice musters.
- 1 Every crew member with assigned emergency duties shall be familiar with these duties before the voyage begins.
 - 2 On a ship engaged on a voyage where passengers are scheduled to be on board for more than 24h, musters of the passengers shall take place within 24h after their embarkation. Passengers shall be instructed in the use of the life jackets and the action to take in an emergency.
 - 3 All survival craft required to provide for abandonment by the total number of persons on board shall be capable of being launched with their full complement of persons and equipment within a period of 30 min from the time the abandon ship signal is given after all persons have been assembled, with life jackets donned.

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Pre- Accident Record:

On Nov. 22nd 2008, Costa Concordia suffered damage to her bow when high winds at the Sicilian city of Palermo pushed the ship against the dock. No injuries.

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Cause and Problem;

- They have doubled in weight over the past decade, they sit higher in the water and are flatter underneath to enable them to enter more harbours.
To the untrained eye they look top heavy, and with up to 6.000 people on board, they look difficult to evacuate quickly.
- Attention needs to be paid to existing evacuation systems and more innovative systems for abandonment
- The IMO, which regulates ship safety across the world, sets the rules on evacuating ships and providing drills for new passengers, BUT they didn't.

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Cause and Problem;

- Most likely Cause: The captain decided to sail closer to the island to salute some friends and to afford the passengers the wonderful view of this beautiful island and its little port.
- The La Stampa newspaper published a letter from August 2011 in which Porto Giglio's mayor Sergio Ortelli thanked the Concordia's captain for the "incredible spectacle" of a previous close pass.
 - At 21:31 passengers were in the dining hall when there was a sudden, loud bang, which a crew member (speaking over the intercom) ascribed to an "electrical failure". It was about an hour before a general emergency was announced. Passengers were advised to put on their life-jackets. The list created problems in launching the lifeboats.

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Cause and Problem:

- Watertight compartments since the Costa Concordia went down. The theory is that if one side of the hull is breached, the other side can be flooded to keep the ship upright. The big question is then, why didn't it work in this case? The truth is we won't know until the investigation is finished. But,

"Every ship will sink if you make the hole big enough"
by Prof Wilson, University of Southampton

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ISSUES

- The Captain of the ship has been put under house arrest and is expected to be charged with abandoning ship, and manslaughter. It has been reported that he was 'showboating' when he went off his regular course by Giglio Island and steered closely to the shore and became grounded in the rocks.
- Schettino even went as far as to say he "tripped and fell into a lifeboat" which just happened to have other officers from the ship in it. He is denying he abandoned ship on purpose.
- One of crew members tells passengers, "go back to your cabins, everything is OK, we just have a small electrical problem." As it turned out, much of what the passengers were told, was not completely accurate.

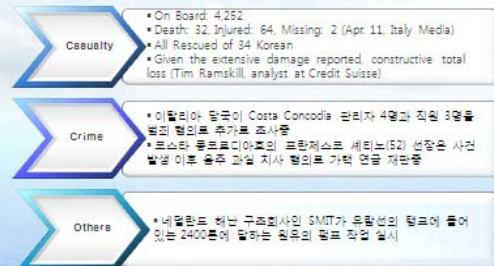
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One of the ship's voyage data recorders (VDRs), which was designed to float, was recovered. On 19 January, all the data storage devices from the ship's control panel, including hard disks, were recovered. One of the hard disks contained videos from cameras located near the control board, which are expected to reveal the movements of the ship's captain and officers. The chief prosecutor received from the Guardia di Finanza a video, taken from their patrol boat, that filmed the ship between 22:30 and 23:10 or at 23:20.

On 3 March, in Grosseto, judges began a hearing open to all survivors, other "injured parties", and their lawyers but closed to the general public and media. Four specialists were ordered to review the VDR data and relate their conclusions at a 21 July hearing. Prosecutor Francesco Verusio had stated that it could be "a month, two months, three months" for evidence analysis, including of recorded conversations on the bridge, to be completed.

4. Conclusion



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