

# Exxon mobil corporation aims and objective engineering essay

[Engineering](#)



March 23, 1989 Exxon Valdez the an oil supertanker owned by Exxon corporation and operate by Captain Joseph Jeffrey Hazelwood was carried 53 million gallons crude oil on board, left from oil terminal Valdez, Alaska heading to Los Angeles, California. Exxon Valdez was run aground on Bligh Reef in Prince William Sound, Alaska. The vessel was traveling outside normal shipping lanes in an attempt to avoid ice. Within six hours of the grounding, the Exxon Valdez spilled approximately 10. 9 million gallons of its 53 million gallon cargo of crude oil. Crude oil spread across Alaska's coastal seas covering 10, 000 square miles, a worse consequence impacted to environment, economy and local population.

## **1. Introduction**

Exxon Mobil, the world's largest publicly traded multinational oil and Gas Company and hold an industry-leading inventory of global oil and gas resources. Exxon Mobil is the world's largest refiner and marketer of the petroleum products. Their chemical company ranks among the world's largest. Exxon Mobil also as Technology Company, they applying science and innovation find better, safer and cleaner ways to deliver the product and energy to world needs. Today Exxon Mobil operates in most of the world's countries and is best known by our familiar brand names: Exxon, Esso and Mobil. [1] [2]

### **1. 1 Exxon Mobil Corporation Aim and Objective**

#### **1. 1. 1 ExxonMobil Aim**

The aim of Exxon Mobil Corporation was committed to be the world's first class petroleum and petrochemical company. As a result, it has to keep

continuously achieve world class financial and operating system result while adhering to the higher standards of business conduct. To achieve Exxon Mobil objective they have fore main categories which is:

1. 2 Shareholders - enhancing the long-term value of the investment dollars entrusted to them by shareholders is the commitment of cooperation. Exxon Mobil was in responsibility to enhance high return to shareholders by running the business profitably and responsibly, and expects shareholders to be rewarded with superior returns. [3]
1. 3 Customers - Success depends on ability to consistently satisfy ever changing the customer preferences. Try to be innovative and responsive, while offering high quality products and services at more competitive prices. [3]
1. 4 Employees - To build on this advantage, they will strive to hire and retain the most qualified people available and to maximize their opportunities for success through training and development. And they try maintaining a safe work environment enriched by diversity and characterized by open communication, trust, and fair treatment. [3]

## **1. 1. 5 Exxon Mobil Developments**

Exxon Mobil development focuses on disciplined investment decisions and industry-leading project execution to deliver superior returns from superior upstream projects. As project scale and complexity increases across industry, ExxonMobil's comprehensive suite of business and project execution tools ensures maximum value is delivered to resource owners and to shareholders. The superior project involved begins with selecting the design and operating concept that will be deliver maximum value over the life of the asset. [4]

Exxon Mobil applies the most cost-effective technology

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and operations management systems to maximize the commercial recovery of hydrocarbons from all of their assets. Through effective reservoir management and thorough depletion planning, they try investing to increase resource recovery, maximize profitability, and ensure optimum long-term field performance. [5]

## **1. 2. Conclusion**

As we have seen the Exxon Mobil is committed to being the world's premier petroleum and petrochemical company, And they focus on safe working environment, expect shareholders to be rewarded with superior returns and provide premium quality product to customer.

## **2. Crude oil and refinery process**

### **2. 1 Origin of crude oil**

Click to enlarge » Figure 1Crude Oil was creating from the remains of animals and plants (diatoms) that lived millions of years ago in a water and land environment before the dinosaurs. Petroleum is a complex mixture of organic liquids called crude oil and natural gas, Crude oil is a smelly, yellow-to-black liquid and is usually found in underground areas called reservoirs. There are many different types of crude oil. It can be light or heavy, referring to density, and referring to its sulfur content. However, in its raw state, crude oil is useless must be refined to make it into useable products. [6]

### **2. 2 Exxon Mobil refining process**

After drilling finished, the drilled well will bring a steady flow of oil to the surface. Crude oil is transported to a refinery by pipeline, ship or both. At the refinery, it is treated and converted into consumer and industrial products.

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[7] Three major refinery processes change crude oil into finished products: • Separation, • Conversion and • Purification.

### **2. 2. 1 Separation**

Separation is used to separate the hydrocarbons in crude oil into fractions based on their boiling points. Separation is undergoing in a series of distillation towers, with the bottom product from each tower feeding the next level depended the hydrocarbons in crude oil into fractions based on their boiling points. The heated crude oil is fed into the bottom section of the tower. [8] Components that are still liquid at this elevated temperature become the tower's bottom product. And components are in vapor form rise up the tower through a series of distillation stages. The temperature decreases as the vapors rise through the tower and the components condense. The separated components will vary according to the characteristics of the crude oil. Figure 2

### **2. 2. 2 Conversion**

The unfinished product specified category of the crude oil group had been separated according to the characteristics of the crude oil, than the next step being processed which it called Conversion. The conversion processes are so important due to too much heavy oil and too little petrol. [9] The primary purpose is to convert low valued heavy oil to high valued petrol or to make gasoline, cracking and rearranging molecules adds value to the products. The Fluidized Catalytic Crackers (FCCs), Cokers and Hydrocrackers function are used to Converting heavier hydrocarbons to lighter hydrocarbons can be compared to cutting a link on a steel chain to make two

smaller chains. The example for thermal cracking of dodecane ( $C_{12}H_{26}$ ) is a big hydrocarbon was present in heavy oil fraction. The boiling point of dodecane was  $216^{\circ}C$  which it cannot use as petrol. The cracking process gives smaller hydrocarbon molecules which is heptane ( $C_7H_{16}$ ) and pentene ( $C_5H_{10}$ ) having lower boiling point at  $98^{\circ}C$  and  $36^{\circ}C$  respectively can use as petrol. [10] $Heat + C_{12}H_{26} = C_7H_{16} + C_5H_{10}$  Thermal Cracking + dodecane = heptanes + pentene The heaviest material in the refinery is Vacuum Tower Bottoms or " resid". If leave to cool down till room temperature, it would become a solid. In Australia resid is sold into the paving asphalt market or used as a blend component in fuel oil.

### **2. 2. 3 Purification**

When the crude oil has been through separation and conversion, a similar with Hydro-cracking purification process called Hydro-treating will be the last step. In Hydro-cracking process unfinished products are contacted with hydrogen under heat and high pressure in the presence of a catalyst, producing Hydrogen sulfide and Hydro-desulfurization product. [11]

### **2. 3 Conclusions**

Exxon Mobil's safe, modern refinery and petrochemical technology can easily transform crude oil into thousands of useful products.

### **3. The areas lead the oil spill and pollution.**

Within six hours of the grounding Bligh reef, the Exxon Valdez spilled approximately 10. 9 million gallons of its 53 million gallon cargo of crude oil. [12]The following factors were cases the oil spill.

### **3. 1 The Exxon Mobil Management**

Beginning of cargo trip the tanker already facing multiple issue, include as Exxon Shipping Company they failed to provide sufficient crew, leading crew excessive workload. Coast Guard tanker inspections in Valdez were not done; due to its staff had been reduced and the crew was rushing to leave Valdez with load of oil. [13] [14]

### **3. 2 Human error**

Captain Joe Hazelwood was drunk and sleeping at his bender below deck, leave the tanker control by third mate, and the tanker was sailing outside the normal sea lane to avoid icebergs thought to be in that area.

### **3. 3 Radar system**

Actually this case can avoid if third mate had look at his radar the Damaged Raycas radar system the management knew about the radar system was left broken and disabled for more than a year before the disaster, and Exxon management knew it. In Exxon they just consider too expensive to fix and operate. [15]

### **3. 4 Lack equipment and Natural Environment**

According to an M. I. T. course entitled " Software System Safety" by Professor Nancy G. Leveson [16] included The Exxon Mobil didn't install state-of-the-art iceberg monitoring equipment, although they had promised. The worse was lack of available equipment and emergency respond team so the spill cleanup impaired attempts to contain and recover the spilled oil. However the Bligh Reef in Prince William Sound, Alaska was hided the grounding risk under seawater.

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### **3. 5 Conclusion**

As a result cases oil spill and pollution, the main factor was Exxon Mobil management they save money and didn't identify the risk. By right should fix and repair the radar system.

### **4. The consequences of all the hazards of the oil spill disaster.**

In the 1989 spill, crude oil spread across Alaska's coastal seas covering 10,000 square miles, a worse consequence impacted to environment was not enough wave action to mix the dispersant with the oil in the water.

According to most observers, too little and too late. The action to contain the spill was slow to get going. Within a week, currents and winds pushed the slick 90 miles from the site of the tanker, out of Prince William Sound into the Gulf of Alaska.

#### **4. 1 Environment Impact**

More marine sea life and birds died than other oil spill. The Exxon Valdez spill killed nearly ten times many birds as any other U. S. or European oil spill.

The spill occurred at the beginning of the region's most biologically active season and killed an estimated 250,000 seabirds, 144 bald eagles, 4,400 sea otters, 300 seals, and 20 whales, as well as destroying billions of salmon and herring eggs. [17]

#### **4. 2 Ecosystem impact**

Ecosystem impacts were so severe that, 18 years later, only 10 out of 26 species have recovered from oil spill damages Harm to birds from chronic effects and decreased reproduction continues to the present. Controversial



clean-up methods, including the use of pressurized hot water on the beaches and shorelines, contributed to the damage by destroying microorganisms and plankton that form the ecosystem's foundation.

### **4. 3 Local Economic Impact**

The short term Exxon Valdez oil spill of the local economic impact to recreational sport fishing, estimate losses based on the impacts of the spill on sport fishing activity. The directly impact on the number of anglers, the number of sport fishing trips, the areas fished, the species fished for, and the length of these trips. Number vacation visitor decreased traffic in the spill-affected areas due to lack of available visitor services. The service sector worker was seeking high-paying spill clean-up jobs.

### **4. 4 Cost Impact**

The Exxon Valdez accident occur Exxon Mobil took responsibility for the spill, resulting sent over 4. 3 billion USD for the accident, included compensatory payment, cleanup payment, settlement and fines.

### **4. 5 Conclusion**

The oil spill occur serious impact to environment and ecosystem, should took more than 20 years to recover from the oil spill to normal natural environment.

## **5. The improvement of management system to prevent the oil spill.**

After the oil spill happened Exxon Mobil had been took action in changing and improve their management system to prevent oil spill happen again. The following action had been taken to from management system.

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## **5. 1 The changing of management system**

For the tanker management had been modified tanker routes to avoid ice-berg, implement more effective periodic assessment of vessels and facilities and applied new technology vessel navigation. The staff management had been implement drug and alcohol testing for sensitive position, restricted safety-sensitive position to staff without history of substance abuse and strengthened training activity for vessel captain and pilot. [18]

## **5. 2 Improvement of oil spill response capability**

ExxonMobil founding worldwide response team and employee for involve every major oil spill response, extensive oil spill drills at various ExxonMobil locations around the world and applied new spill-detecting technology. [18]

## **5. 3 Conclusion**

The improvement and changing in ExxonMobil management system can be effective to prevent and response to oil spill happen.

## **Summery**

Exxon Mobil, the world's largest publicly traded multinational oil and Gas Company and hold an industry-leading inventory of global oil and gas resources. But Exxon Mobil management they save money and didn't identify the risk. By right should fix and repair the radar system. And causes crude oil spread across Alaska's coastal seas covering 10, 000 square miles, a worse consequence impacted to environment. The improvement and changing in ExxonMobil management system should effective to prevent and response to oil spill happen. Hopefully all areas affected can be recovered as soon as possible and return to nice and natural environment.

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