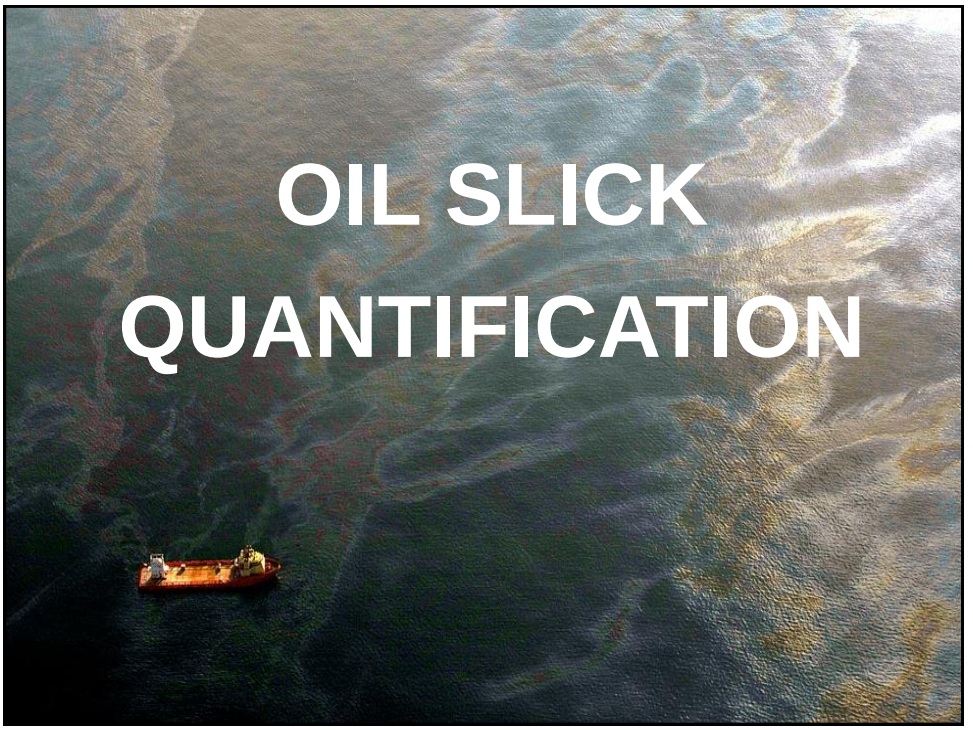
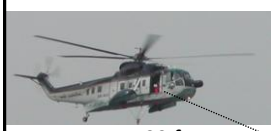


Aerial Spill Observation

1. Locate the slick & note Lat. & Long. of position.
2. Fly along length & width, measuring the distance.
3. Sketch the shape of the oil slick.
4. Record % cover of oil slick using the Bonn Code or ITOPF.
5. Take photos from different angles.
6. Fly beyond the slick areas in case of other oil slick.

Height of Eye



H.E.= 400 ft

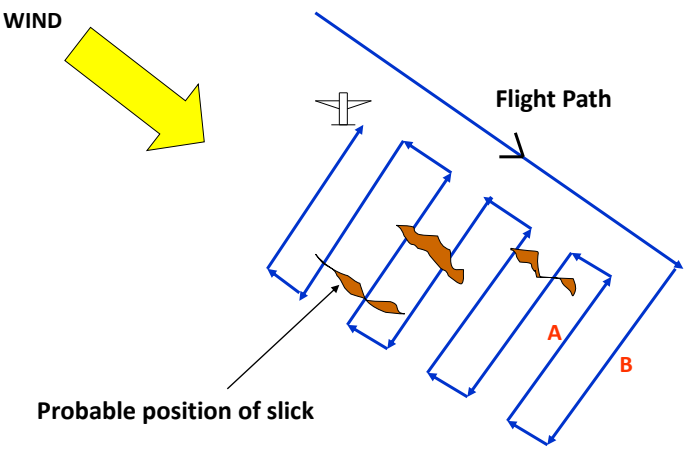
Visible horizon in nautical miles = 1.17 x √400
= 23 n mile

5 n mile

H.E.=16 ft

Visible horizon in nautical miles = 1.17 X square root Ht of eye

Typical Flight Plan



Spot spillage: wind nil to very light

Thick
Medium
Thin
Wind

Spot spillage: medium wind

Spot spillage: strong wind

Flowing spill: light wind, parallel wind and current

Flowing spillage: medium wind, non-parallel wind and current

Thick
Medium
Thin
Wind
Current

The Bonn Agreement Oil Appearance Code

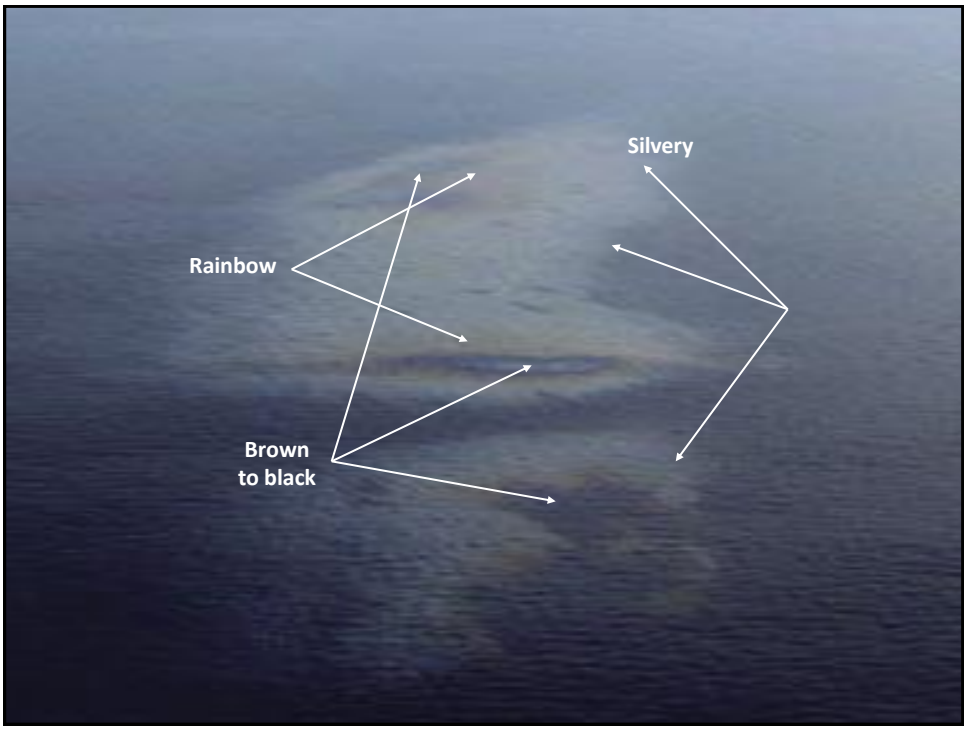
Code	Description - appearance	Layer Thickness Interval (µm)	Litres per km^2
1	Sheen (silvery / grey)	0.04 – 0.30	40 - 300
2	Rainbow	0.30 – 5.0	300 - 5000
3	Metallic	5.0 - 50	5000 – 50,000
4	Discontinuous true oil colour	50 - 200	50,000 – 200,000
5	Continuous true oil colour	> 200	> 200,000

Five levels of oil appearances are distinguished in the above table. For operational reasons grey and silver have been combined into the generic term 'sheen'

Guide to the relation between the appearance, thickness and volume of floating oil

	Oil type	Appearance	Approximate thickness	Approximate volume m^3/km^2
	Oil sheen	silvery	> 0.0001 mm	0.1
	Oil sheen	Rainbow like	> 0.0003 mm	0.3
	Crude and fuel oils	Brown to black	> 0.1 mm	100
	Water-in-oil emulsions	Brown / orange	> 1 mm	1000

Source: ITOPF



Purpose: To estimate the amount of floating oil at sea surface.

Estimate floating oil

= slick area(km^2) x app. volume(m^3/km^2) x slick%

= oil in m^3

Guide to the relation between the appearance, thickness and volume of floating oil

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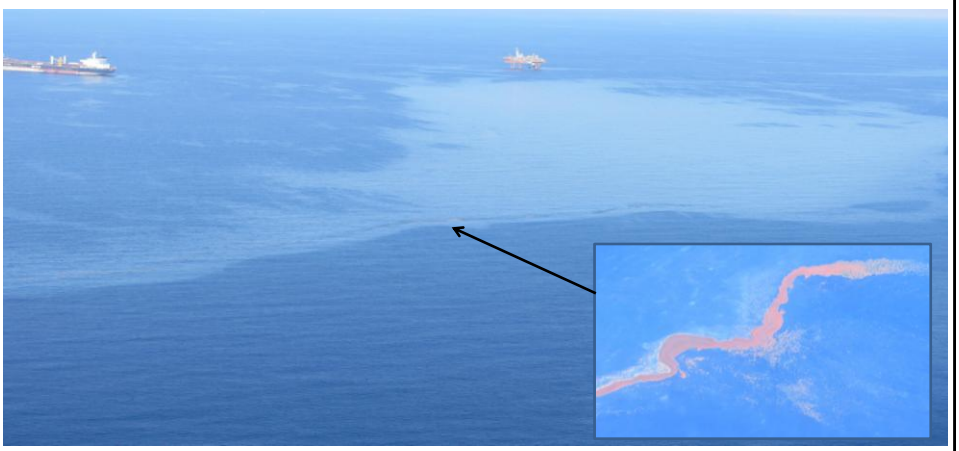
Source: ITOPF

Scenario



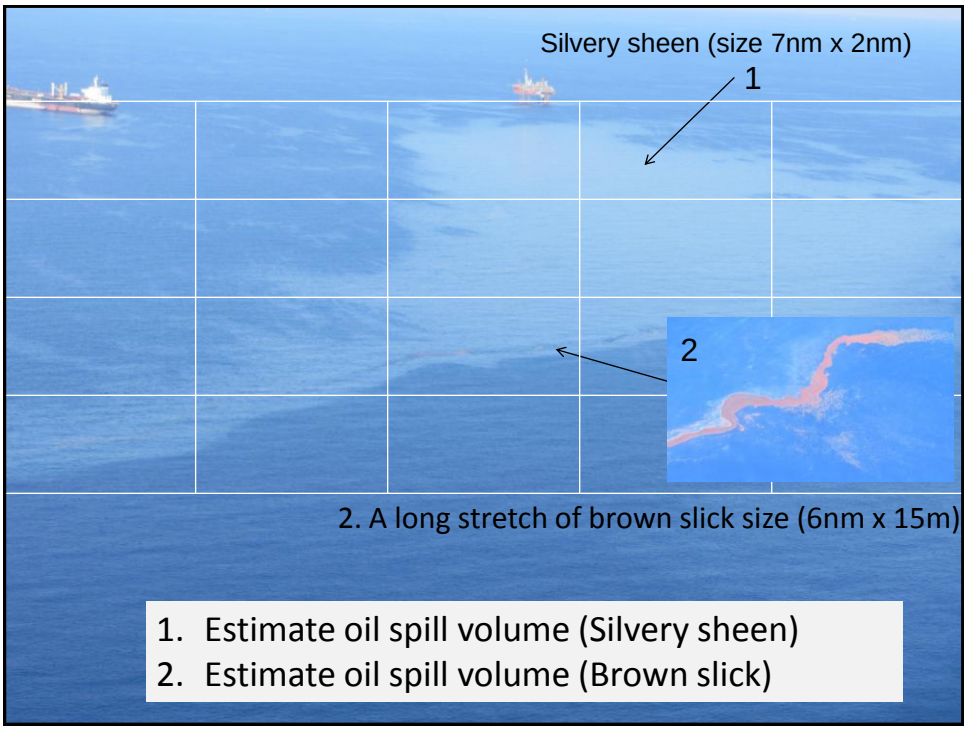
An oil slick was sighted near your company's platform. You conducted an aerial survey and observed the oil patch to be fresh crude oil of a ***silvery sheen*** and ***brown slick*** colour.

Exercise

You are provided with this sketch and information below. Quantify the volume of the oil patch.

1. Silvery sheen
   Dimension : L= 7nm ; W= 2nm
   Coverage: 50%

2. A long stretch of brown slick area
   Dimension : L= 6nm ; W= 15m
   Coverage: 25%



Estimation

Conversion Table	
1 km^2	= 6.2898 m^3
1 nm	= 1.8520 Km
1m^3	= 6.2893 bbl
1 barrel	= 158.984 litres

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