

# Alternative Providers & Satellite Communications For Crisis Management

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Developing an effective Risk Management Plan is an important part of any company.

Organizations in the shipping industry are nowadays more and more concentrate on disaster recovery plans for data and computer hardware but unfortunately they less priority is given to redundancy in communications.

IS failure probability on this era not clear ?



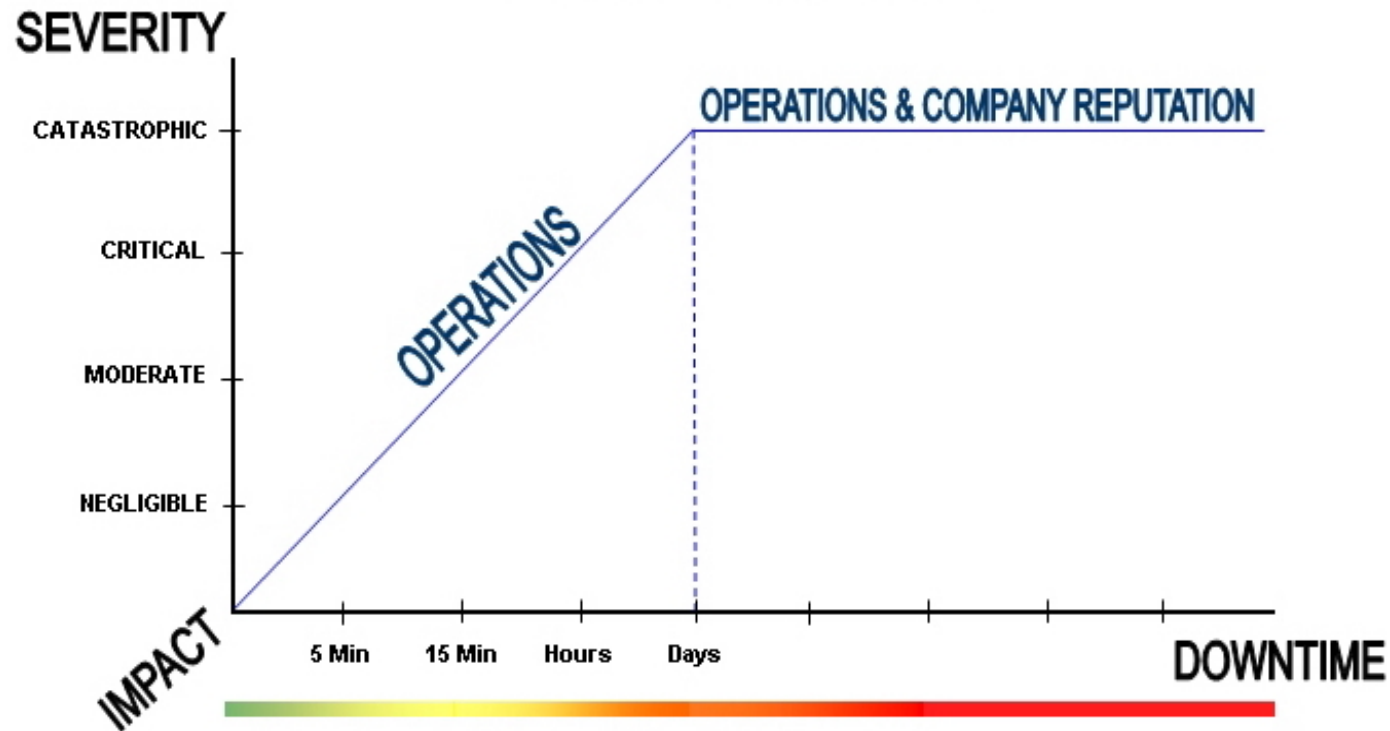
# Understanding How Risk Management Works

Risk is the effect of an event. It is computed from the probability of the event materializing (becoming an issue) and the impact it would have

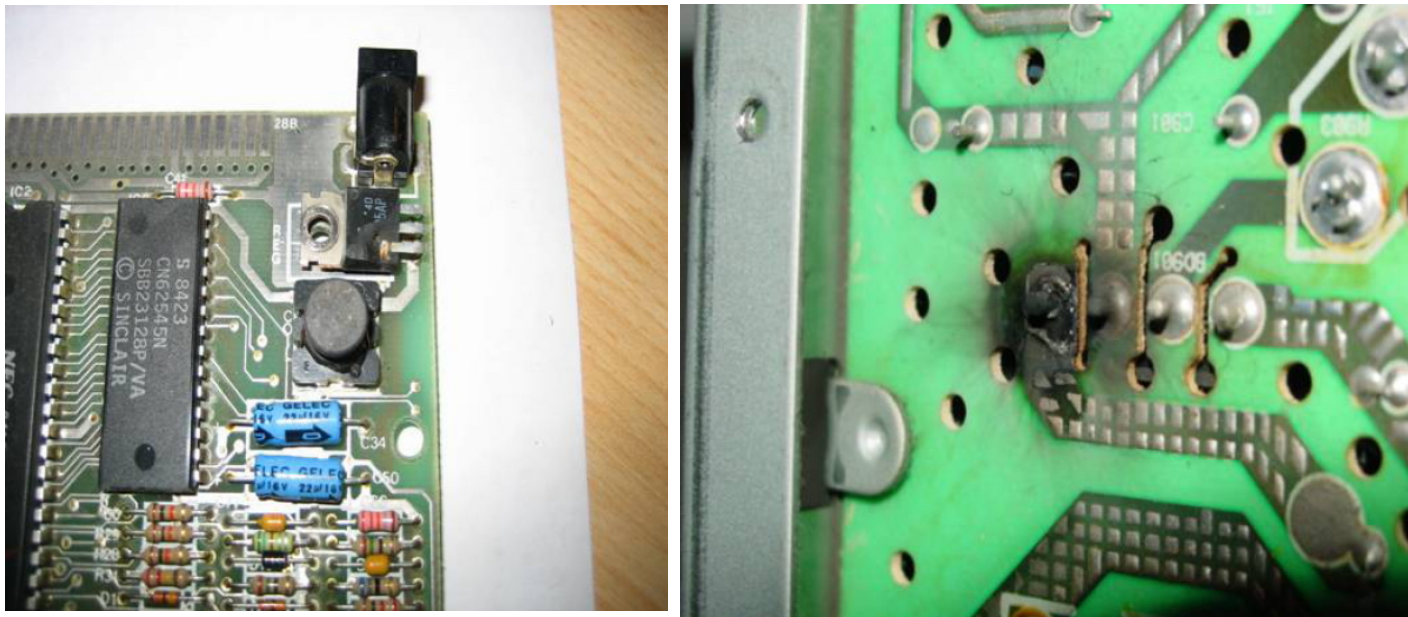
$$\text{Risk} = \text{Probability} \times \text{Impact}$$

			Probability				
			Frequent	Likely	Occasional	Seldom	Unlikely
			A	B	C	D	E
S E V E R E I T Y	Catastrophic	I	Extremely				
	Critical	II	High	High			
	Moderate	III		Medium			
	Negligible	IV				Low	
			Risk Levels				

# Impact Analysis



- What could go wrong and how likely is to happen  
8/2007 Hardware Failure (Explosion!!!)



Voltage Regulator component on Main PBX Board exploded : CPU board replacing time from supplier approximately 3.5 Hours.

Actual Downtime on 9/2007 : 17 Minutes (Component replacement cost from local supplier 1.75 cents)

7/2004 Lost connection with primary provider



Constructions : Connection re-established in four hours and twenty minutes. Cost: Unknown

Actual downtime for Marlow seven minutes. (Immediate switch to backup voice connection)

01/2003 D.O.S (Denial of Service). Telephone providers design networks with approximately 20-40% overflow capabilities.



Unexpected events (minor earthquakes, twisters, social/ sport events /parades) can trigger calls that temporarily flood communication channels (terrestrial and GSM) and deny access to new callers.

Critical Failures Happen exactly when another emergency is in progress.

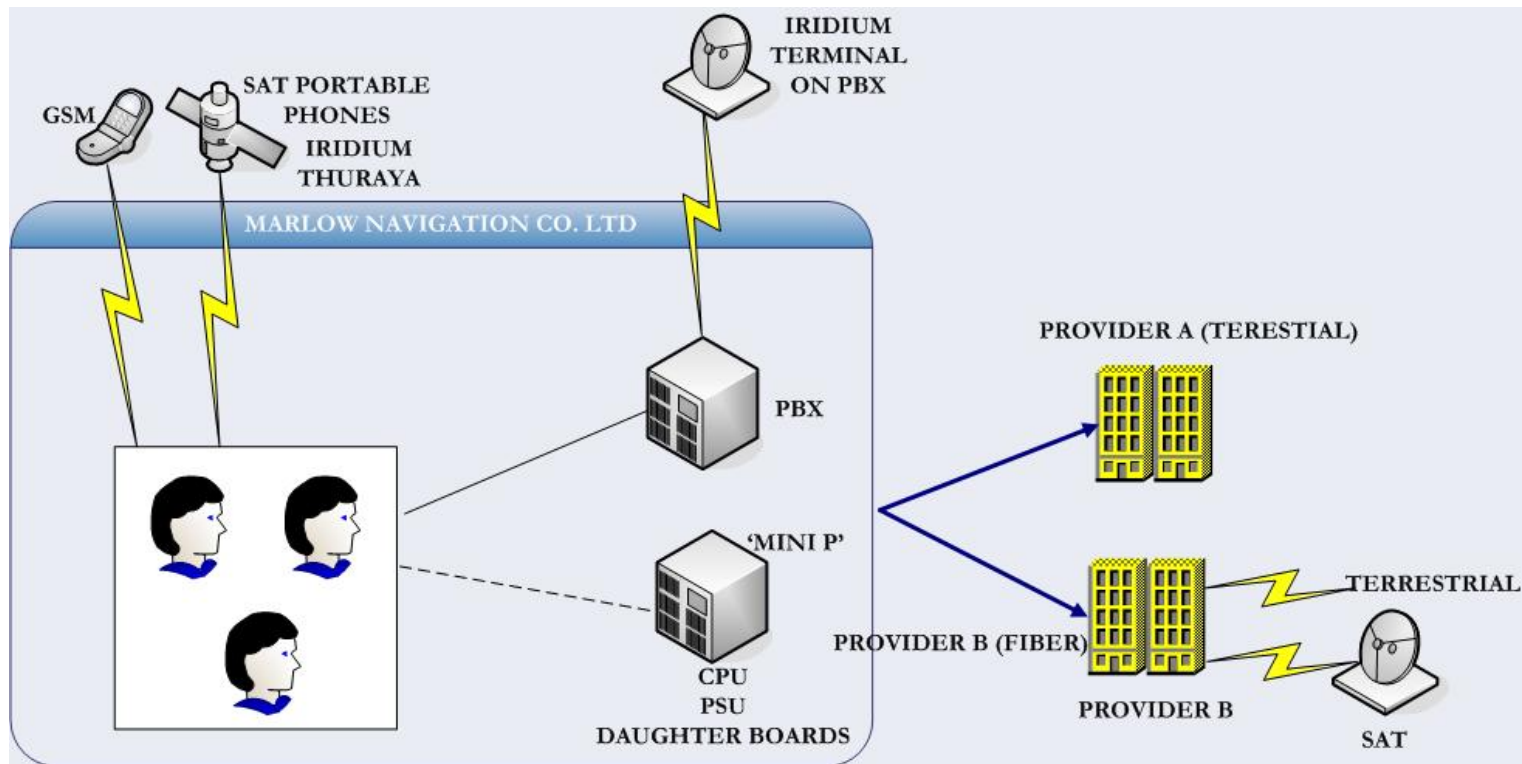
## **Murphy's Law**

Old Translation : Anything that can go wrong will go wrong.

Correct Translation : If there is a worse time for something to go wrong, it will happen Then.

# Contingency

- How can you reduce the impact (and by how much).



**Available Model:** 9505A

**General Characteristics:**

Weight: Under 375g

Continuous Talk Time: 2,4 hours

Standby Time: Up to 24 hours

**Data Transmission:**

2400 bps data rate correspond to 1MB per hour.

**Call per minute:**

Iridium to Anywhere: \$0.95/Min

Iridium to Iridium: \$0.65/Min

*Marine Package:* \$1870

**Coverage:**

Provides global communications coverage via a network of 66 LEO's .



**Available Model:** SO2510, SG2520, Hughes 7101, Hughes 7100.

**General Characteristics:**

Weight: Under 375g

Continuous Talk Time: 2,4 hours

Standby Time: Up to 24 hours

**Voice:**

9600 bps

**Data Transmission:**

9600 bps data rate corresponds 4MB an hour.

**Call per minute:**

Call to other Thauraya phones: \$1.35

Call to Iridium: \$3

Call to Immarsat: \$5.50

Call to any destination: \$1.25



- Redundancy on hardware components

- Backup providers (this also encourages competition and controls prices)



- Alternative technology between your company and providers (copper , fiber optics , GSM)
- Satellite technology can be connected directly to your terrestrial PBX and can be accessed by any phone within the organization
- Handheld Satellite Phones can keep you connected while on the move.



- Voice Over I.P. technology is pushing PBX systems away replacing them with computers and software. (see critical updates , vulnerabilities , software bugs , viruses and hackers, etc)
- More and more Mobile phones now days come with common operating systems, for example, Windows mobile , Symbian etc. Lets write a software that spreads it self and calls the phone provider every 2 minutes (Denial Of Service attack)
- Broadband Internet on Vessels !!!!
- UNKNOWN Threats.



The former U.S. Secretary of Defense Donald Rumsfeld discussed unknown unknowns on February 12, 2002

# **Thank You Very Much**

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