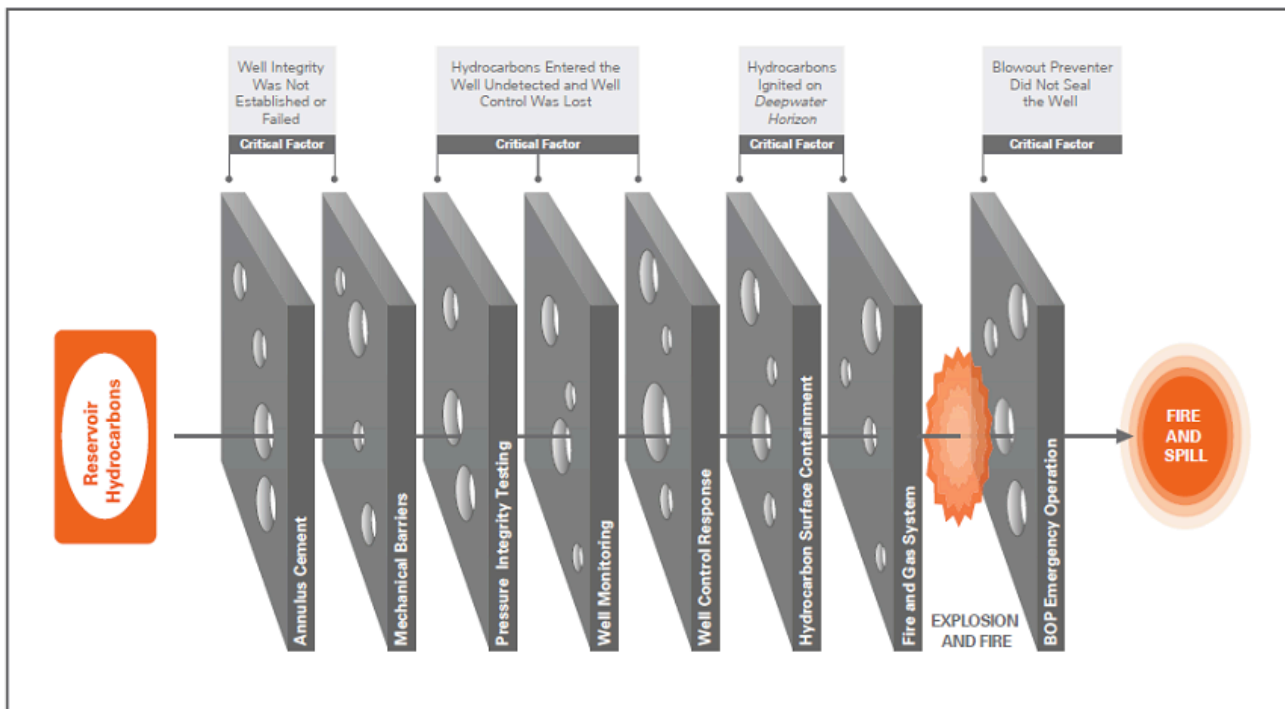


BP Gulf of Mexico disaster (20-04-2010)

Broken barrier- and TRIPOD analysis



The BP investigation report (8 September 2010) of the Horizon disaster shows that eight safety barriers have been broken. See the picture below. This broken barriers have been used for a Tripod analysis.



Underlying Factors ref. BP (Latent Failures):

- Responsibilities not clear
- Competence of leaders not adequate
- Procedures and Engineering instructions problematic
- Risk Management and MOC procedure not adequate
- Several procedures not adequate
- HAZOP practice not good
- SIL concept (IEC 61511) not implemented
- BP in company knowledge of Blow-out Preventers (BOP) insufficient
- Practice of emergency planning and drilling not adequate.

The barrier concept

Incidents occur because one or more safety barriers have been broken. That concept is published by James Reason, perfectly described in his book: '[Managing the Risks of Organizational Accidents](#)'. He describes how the underlying factors should be addressed. He introduced the term 'Latent Failures' in the organization. That is the basis for the TRIPOD method (www.tripodincidentanalysis.com). From experience, SSC know that TRIPOD is a powerful tool to help address the Latent Failures and to make a step change in Safety. From the lessons learned.

On the basis of the BP report, SSC performed a TRIPOD analysis, with the same 8 broken barriers. The Latent Failures mentioned above show the underlying organizational problems of BP. The Tripod analysis diagram [below gives an insight on the Tripod reasoning from broken barriers to latent failures](#) in the organisation. [You will find the BP reports here.](#)

Tripod Analysis of the BP Horizon disaster (for illustration/ training purposes)

