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## ExxonMobil's Approach to Human Factors

Tom Theriot

*ExxonMobil Production Company*

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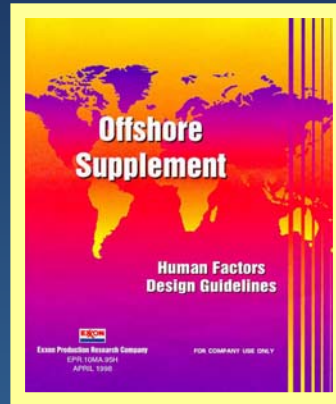
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# ExxonMobil's Approach to Human Factors



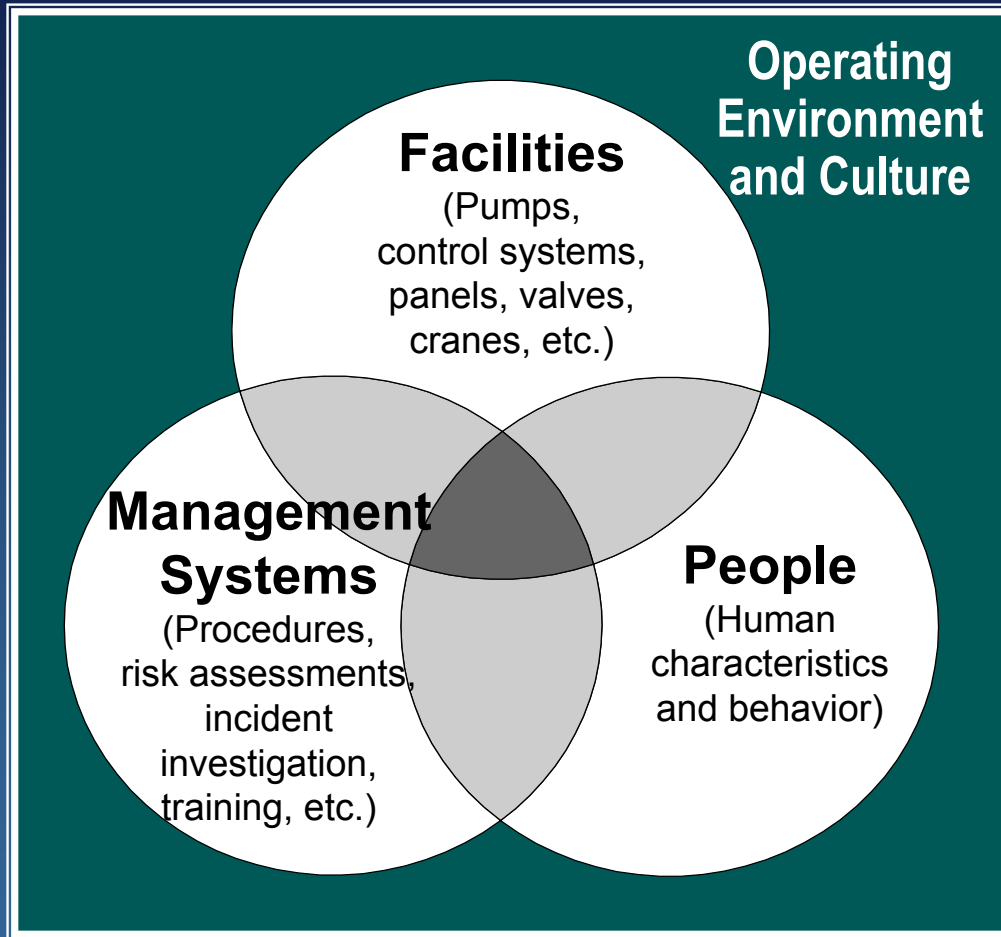
**Second International Workshop on  
Human Factors in Offshore Operations  
April 8-10, 2002**

**Tom Theriot, Manager Safety, Health & Environment  
ExxonMobil Production Company**

# Presentation Outline

- **Definition**
- **Objectives of Human Factors Efforts**
- **Background - Why Human Factors?**
- **Human Factors Spectrum**
- **Corporate Human Factors Strategy**
- **Human Factors Focus Areas**
- **New Human Factors Technology**

# Human Factors - Definition



**Human Factors are:**

**the integration and application of scientific knowledge about**

- people
- facilities
- management systems

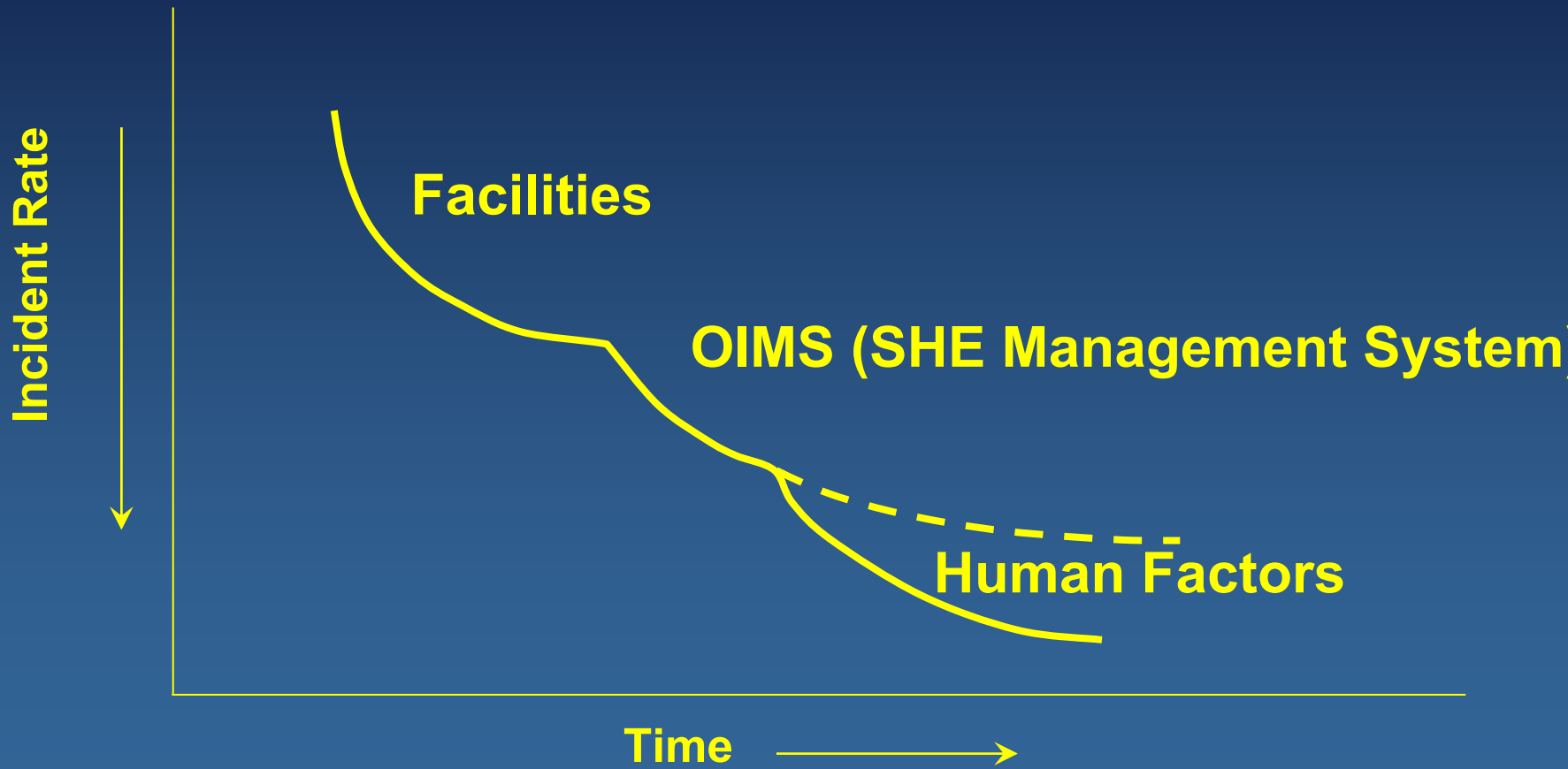
**to improve their interaction in the workplace.**

# Objectives of Human Factors Efforts

- Our goal is to reduce human errors, resulting in . . .
  - safer operations (fewer incidents),
  - fewer production upsets,
  - higher efficiencies, and
  - enhanced quality.

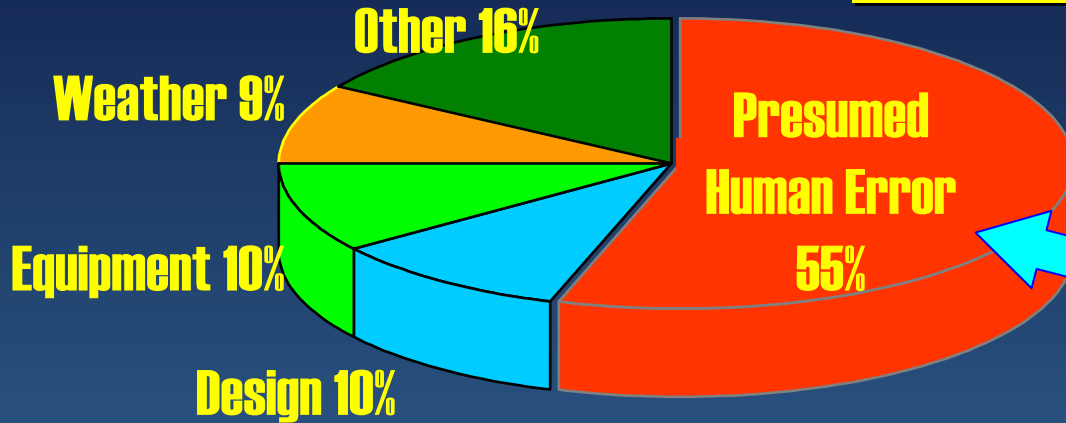


# Incident Performance Improvement History



# Why Are We Working on HUMAN FACTORS?

## Incident Causal Factors



These are the incidents addressed by "human factors"

### Implemented Hardware Solutions

- Protective Systems
- Added Safety Factors
- Reduced Operator Interventions

### Pursued Traditional Approaches

- Training
- Motivation Campaigns
- Discipline for Violators

### Implemented SHE Management Systems (OIMS)

- Management Leadership
- Risk Assessments
- Procedures
- Incident Investigations



***BUT PEOPLE STILL MAKE ERRORS***

***WE MUST ADDRESS "WHY?"***

# The Human Factors “Spectrum”

**Workplace Design**

**Equipment Design**

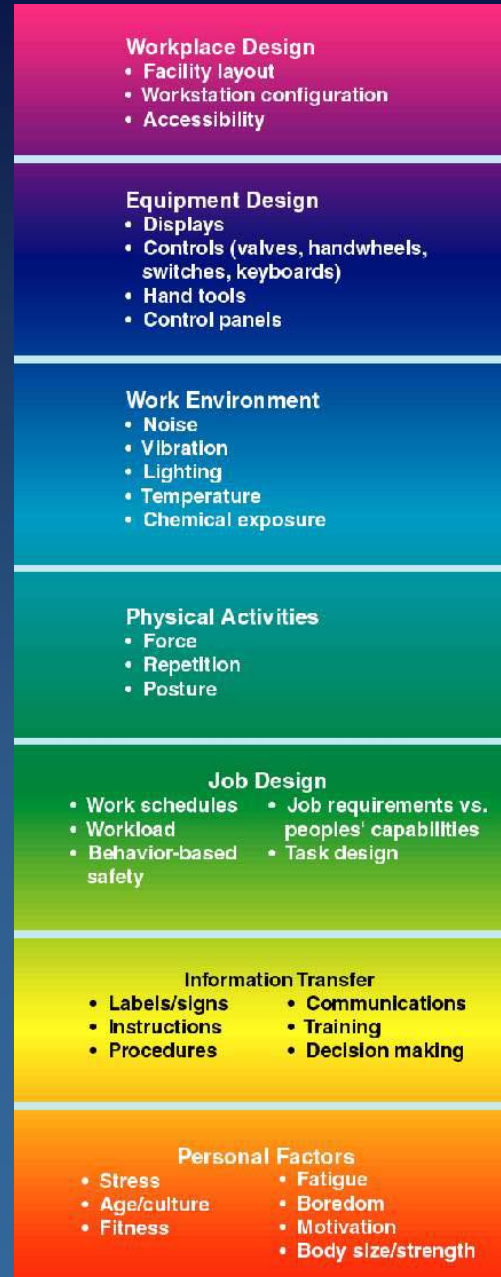
**Work Environment**

**Physical Activities**

**Job Design**

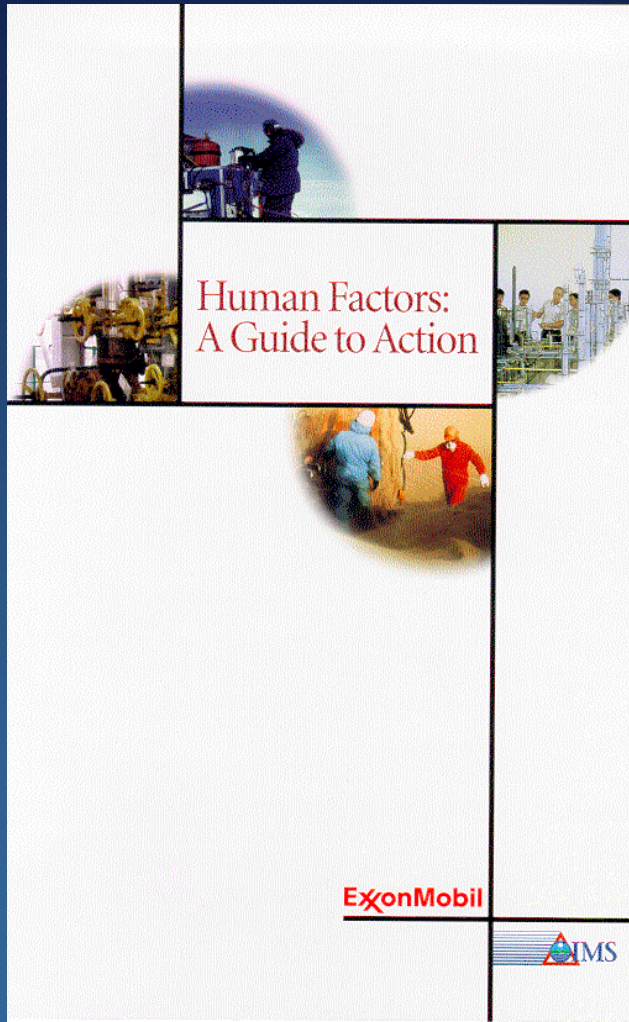
**Information Transfer**

**Personal Factors**





# ExxonMobil's Human Factors Strategy

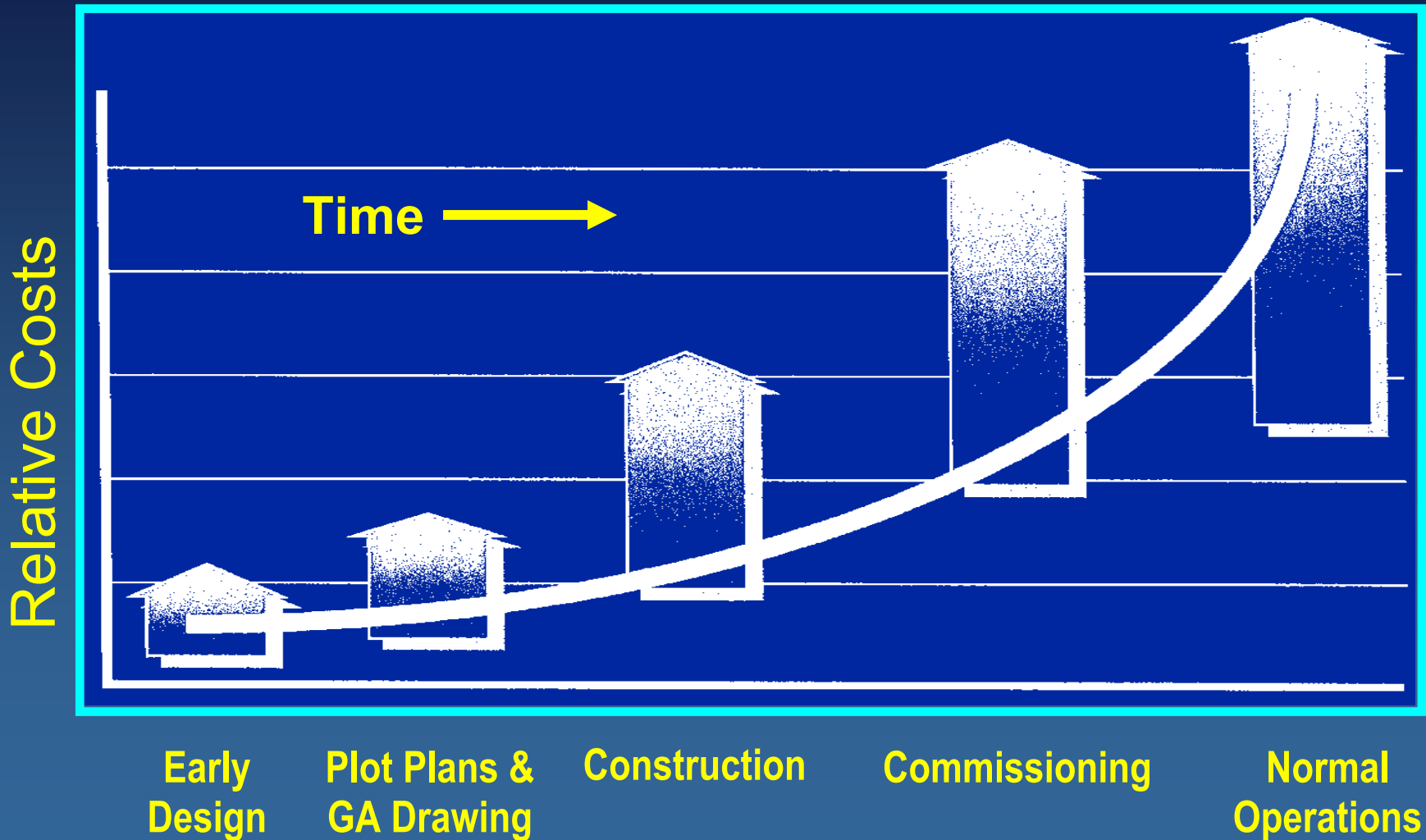


- **HF efforts are driven by specific needs/opportunities for improvement**
- Improvements are sustained by building HF into existing Management Systems, Engineering Standards, and Operating Practices
- **Effective HF resources and tools are provided to aid implementation**
- Roles and responsibilities for HF are clearly defined; management leadership key
- **Results are evaluated and shared to enhance benefits and effectiveness**

## Human Factors Focus Areas

- **Design of New Facilities**
- **Risk Assessment**
- **Incident Investigation**
- **Training**
- **Drilling**
- **Application in Existing Operations**

# The Cost of Using Human Factors in Design

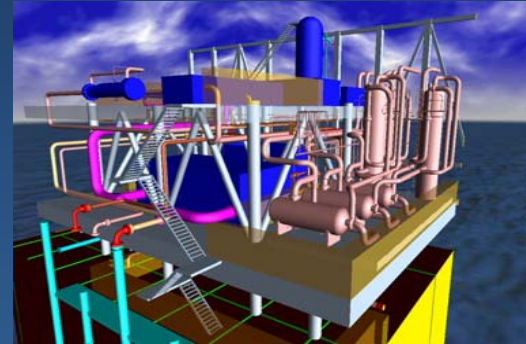


# New HF Technology Applications

- **ExxonMobil research organizations identify new HF technology/tools through:**
  - leveraging off other industries (e.g., aviation, nuclear, aerospace)
  - obtaining input from operating/project organizations

## 3D CAD Projects

- Incorporate HF considerations (access, spacing, valve location) into 3D CAD models
- Create guidance document for designers



## Automated Control Systems

- Develop standards for control system interfaces (screen design, alarms, displays, etc.)

