

AIGA 2008 MEETING

Product Vehicle Safety & Accident Prevention



Asia Industrial
Gases Association



FMM MIGMA

Co-organiser:

FMM Malaysian Industrial Gases Manufacturers Group

Driver Training & Certification

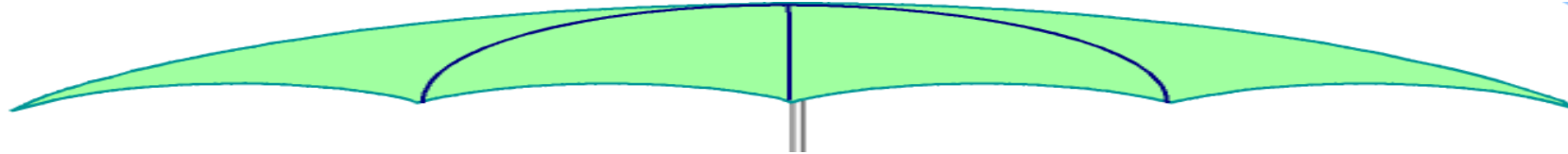
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The Goal of AIGA

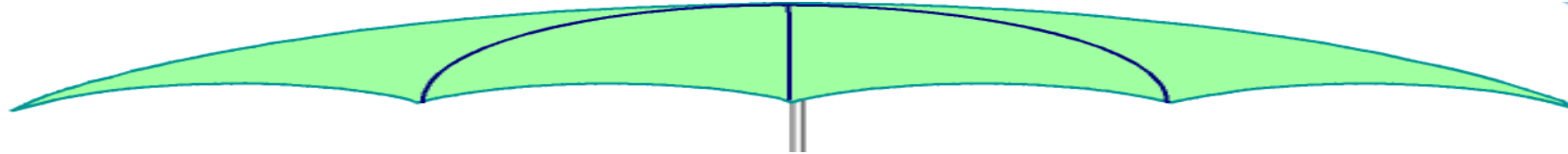
To promote general safety, health, environmental awareness and security so that occupational injuries and illnesses are minimized, environmental damage is avoided, security of hazardous materials is assured and continuous improvement of performance in these areas is achieved.

The Goal of AIGA

Best Practices in Handling Dangerous
and Hazardous Goods and the Safe
Transportation of Our Products



Management Leadership & Accountability
Code of Practice
Risk Assessment & Management
Equipment / Facility Design & Construction
Information & Documentation
Recruitment, Selection, Training & Certification
Operations Integrity & Maintenance of Process
3rd Party Providers
Incident Analysis
Integrity of Operations



Management Leadership & Accountability

Code of Practice

Risk Assessment & Management

Equipment / Facility Design & Construction

Information & Documentation

Recruitment, Selection, Training & Certification

Operations Integrity & Maintenance of Process

3rd Party Providers

Incident Analysis

Integrity of Operations

Driver or Professional Operator?

- Do we employ drivers or operators?
- Do we entrust RM350,000 to anybody?
- Do we instill a sense of pride and responsibility in our people?
- Do we look for short term gains?

Why People Behave The Way They Do

Training does not guarantee that people will do the right thing, or behave appropriately when required

However, we put high reliance on people recalling training and applying it consistently when needed.

Optimism Bias

Optimism bias is the demonstrated systematic tendency for people to be over-optimistic about the outcome of planned actions.

This includes over-estimating the likelihood of positive events and under-estimating the likelihood of negative events.

What Gets In The Way?

- Lapse of memory, did not recall training
- Reaction to events, lack of skills practise
- Pressure/stress, work schedules, inappropriate reward, things on mind
- Taking short-cuts, to get the job done
- Attitudes of others with influence
- Inappropriate reinforcement
- Societal and work place norms - inappropriate culture





Immediate & System Causes



Immediate and System Causes

30% of system causes are related to training – inadequacy of and lack of reinforcement (poor recall)

60% of system causes are poor judgement – related to mental state, including poor reaction time and poor coordination

We Never Have Time To Do Things Properly



But We Always Find Time to Fix Our Mistakes



So What Is The Secret?



The Systematic Approach To Operator Training

The Four “E’S

The Four “E’s”

Ethos

Engineering

Education

Enforcement

What Do The Four E's Achieve?

Right Drivers

- Recruitment and Selection
- Assessment

Right Skills

- Training and Development
- Continuous Assessment

Right Motivation

- Organisation of work, schedules
- On-going oversight
- Reinforcement; reward, recognition, sanction
- Coaching

**Desired
Behaviours**

Selection, Recruitment & Training

- Identification of competencies required
- Whole of job approach needs to be undertaken
- Training is
 - ✓ Initial
 - ✓ Refresher / Monitoring
 - ✓ Remedial

Bloom's Taxonomy

SKILL

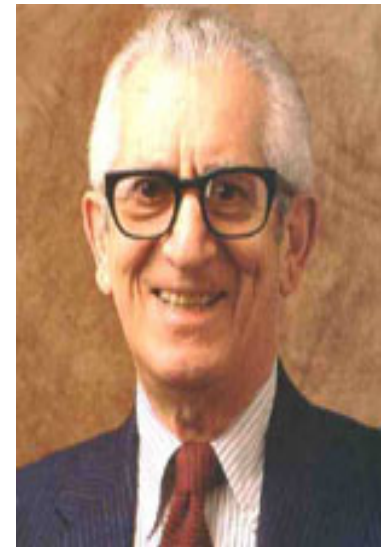
Psychomotor

KNOWLEDGE

Cognitive

ATTITUDE

Affective

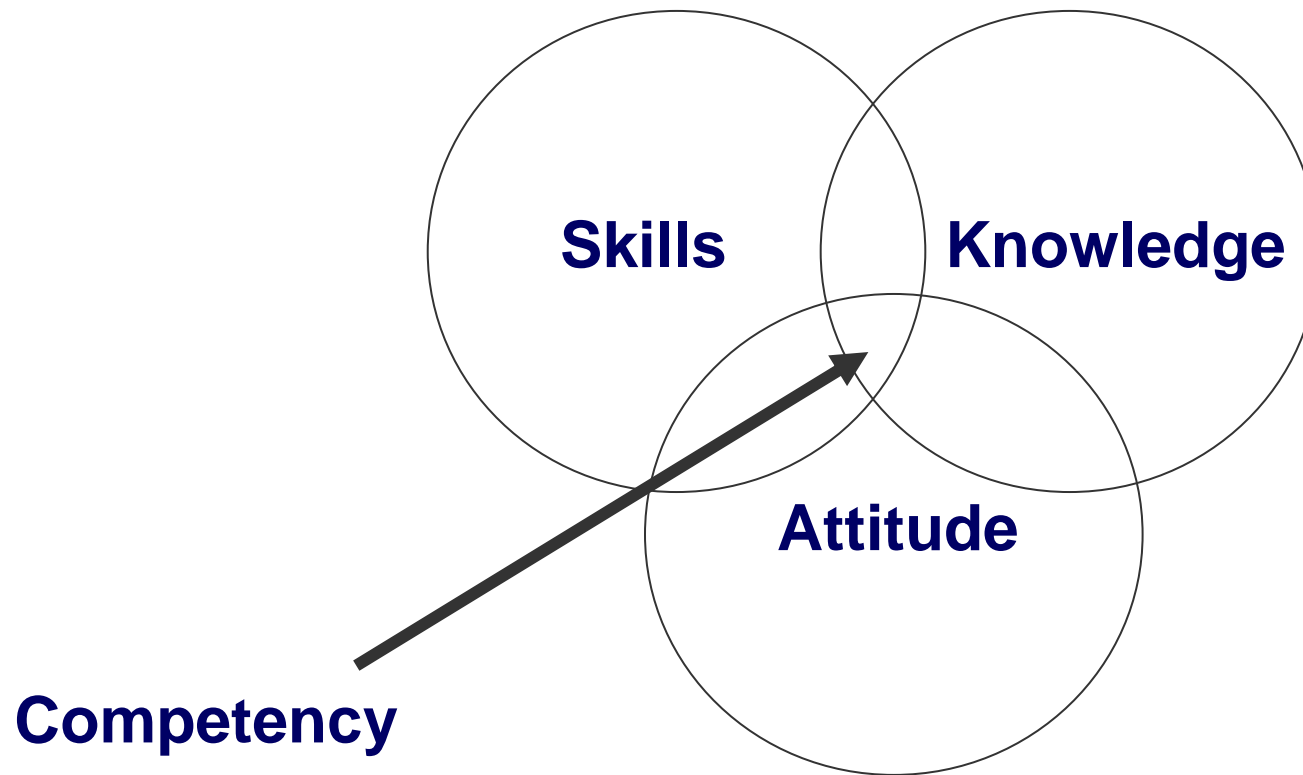


Benjamin Bloom
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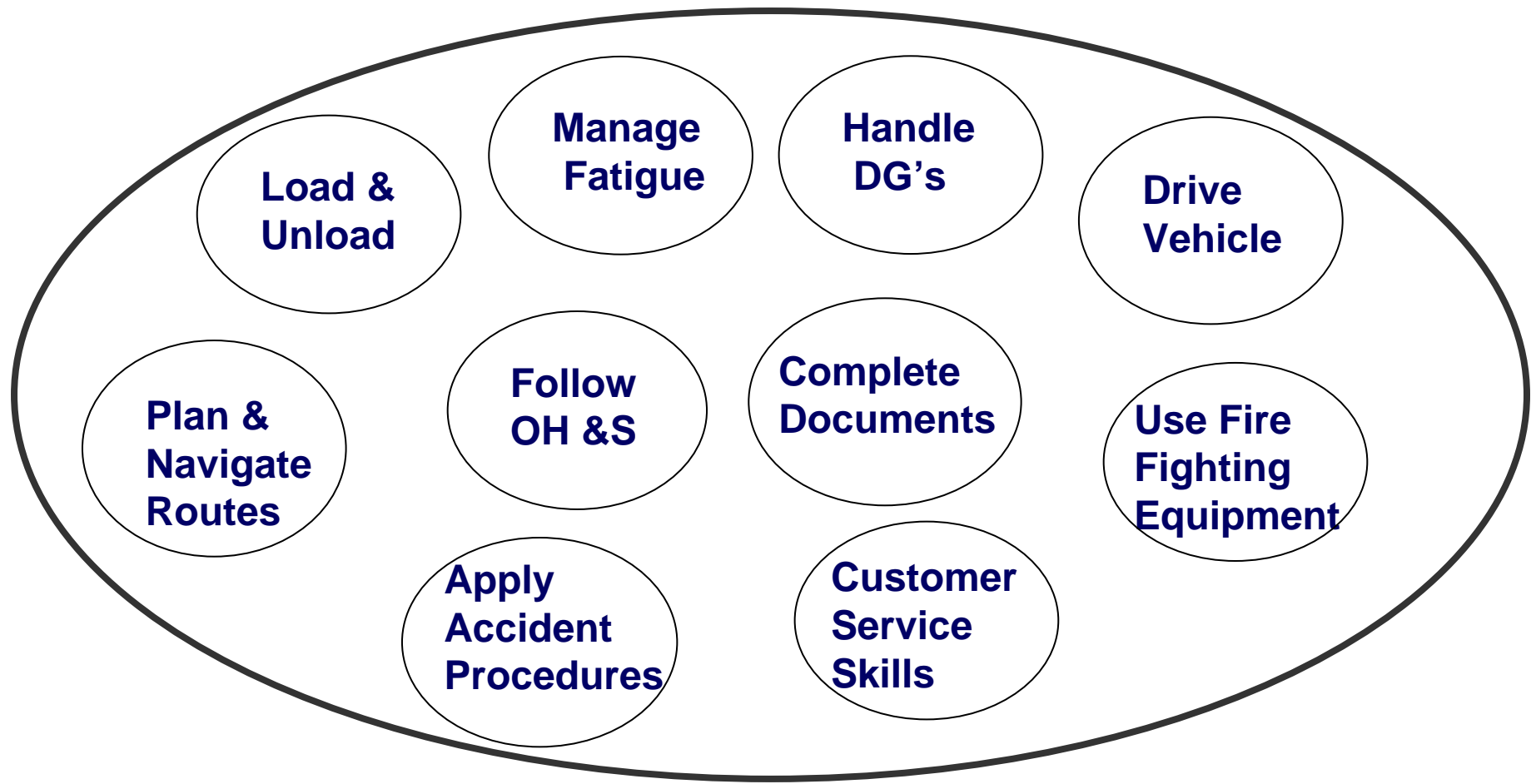
Competency Based Training and Assessment (CBTA)

- Competency standards describe in detail
 - the work and quality of work expected of an individual,
 - they describe what employers must know and do on the job, including expected behaviour
- Standards enable a consistent approach to the training and assessment of staff
- Standards allow for establishment of benchmarks and measurement against industry requirements

Competency Based Training



A Dangerous Goods Operator Competencies



Training Design & Development

- Background
 - Identification of skills
 - Identification of knowledge
 - Identification of mindset / attitude
- International Standards and Best Practice
- Competency Based Training and Assessment (CBTA)

Drive an a Multi Combination Vehicle

Competency Descriptor This competency is designed to provide the participant with the skills and knowledge to drive a multi combination vehicle safely

This includes

- ✓ systematic, safe and efficient control of vehicle functions
- ✓ monitoring of traffic and road conditions
- ✓ management of vehicle condition and performance
- ✓ effective management of hazardous situations

Drive a Multi Combination Vehicle

Elements

- Drive the vehicle
- Monitor traffic and road conditions
- Monitor and maintain vehicle performance

Drive a Multi Combination Vehicle

Element

- ✓ Drive the multi combination vehicle

Performance Criteria

- ✓ Vehicle is started, steered, manoeuvred, positioned and stopped in accordance with traffic regulations and manufacturer's instructions
- ✓ Vehicle lights and indicators are used in accordance with traffic regulations and manufacturer's instructions
- ✓ The vehicle is parked, shut down and secured in accordance with manufacturer's specifications, traffic regulations

Drive a Multi Combination Vehicle

Learning Outcomes

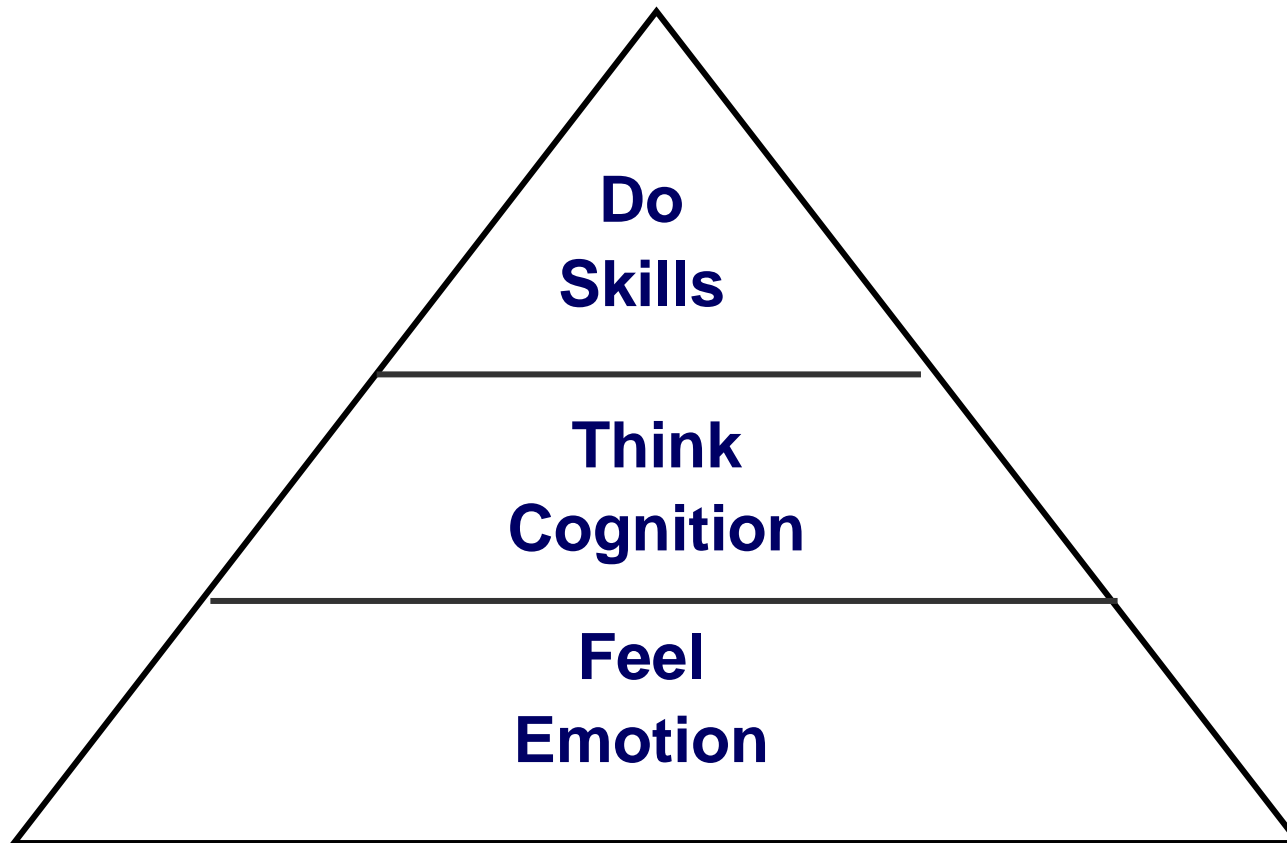
- To operate the vehicle in accordance with traffic regulations and manufacturer guidelines
- To monitor traffic and road conditions so as to provide for the safe operation of the vehicle
- To identify driving hazards and take appropriate action to reduce likelihood of conflicts

Drive a Multi Combination Vehicle

Assessment

- Describe scanning and observation techniques to recognise potential hazards in the driving environment
- Operate the vehicle ensuring compliance with vehicle manufacturer's specifications, traffic legislation and road laws
- Demonstrate defensive driving techniques while operating the vehicle

The Low Risk Training Model



Low Risk Training Outcomes

- Preparing for failure - learning to deal with mistakes and errors
- Objective risk assessment - learning to measure work risks
- Motivating for safety - developing thinking styles that promote safe operations
- Feedback - becoming 'self-critical' about safety performance

Low Risk Driving



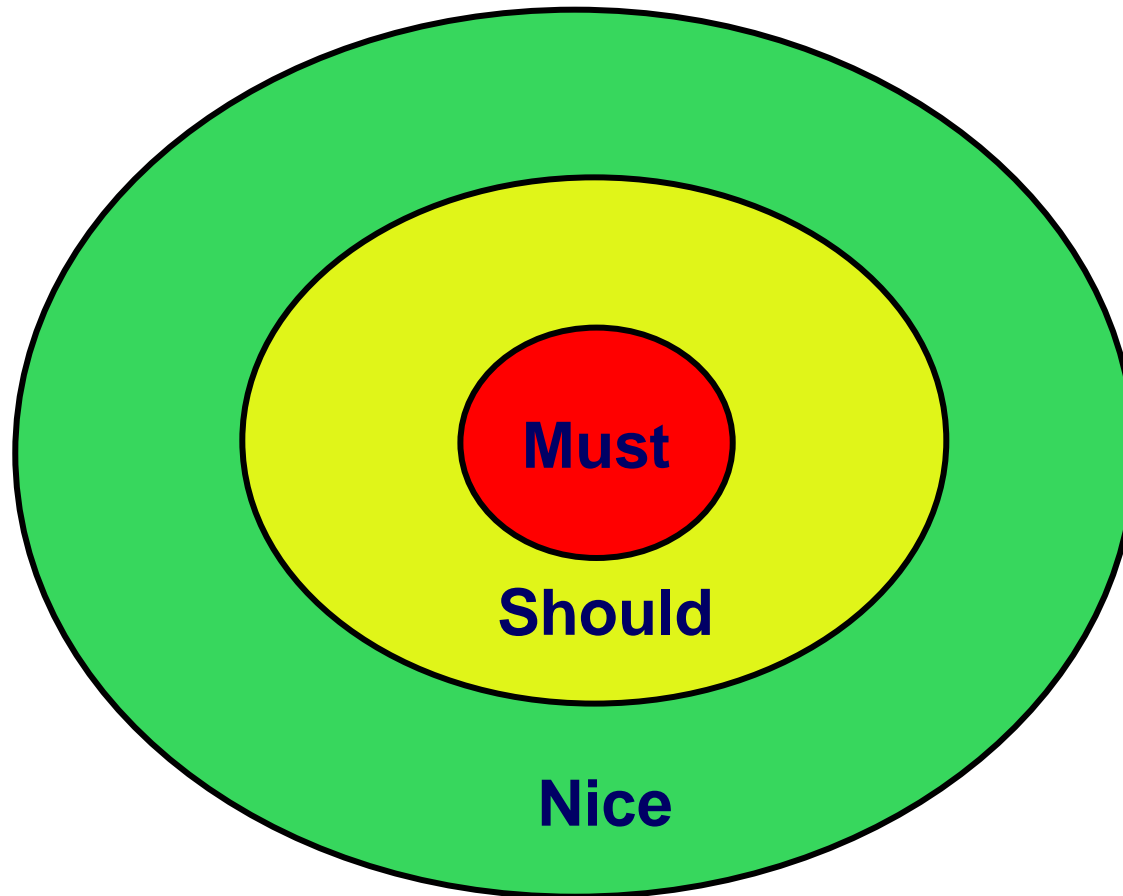
The Training & Certification Process

- Initial
- Refresher / Monitoring
- Remedial

Initial Training

- Conduct Job / Task Analysis
- Identify competencies for whole of job
- Develop or identify standards
- Develop training regime / process
- Develop assessment requirements

The Key To Training Development



Key Players

Driver Trainers / Assessors

Workplace Trainers / Assessors

Work Place Mentors

Supervisors

Initial Training

- Induction Training
 - Sets the standard and expectations
 - Lay foundation of the Four “E’s”
- Provide Buddy / Mentoring of New Operator
 - Provide feedback, re direction and support
 - The often overlooked and under valued “missing link”
- Validation and Certification of “Must Knows”
 - Sign off and issuance of “passport”
 - Set review process and expectations

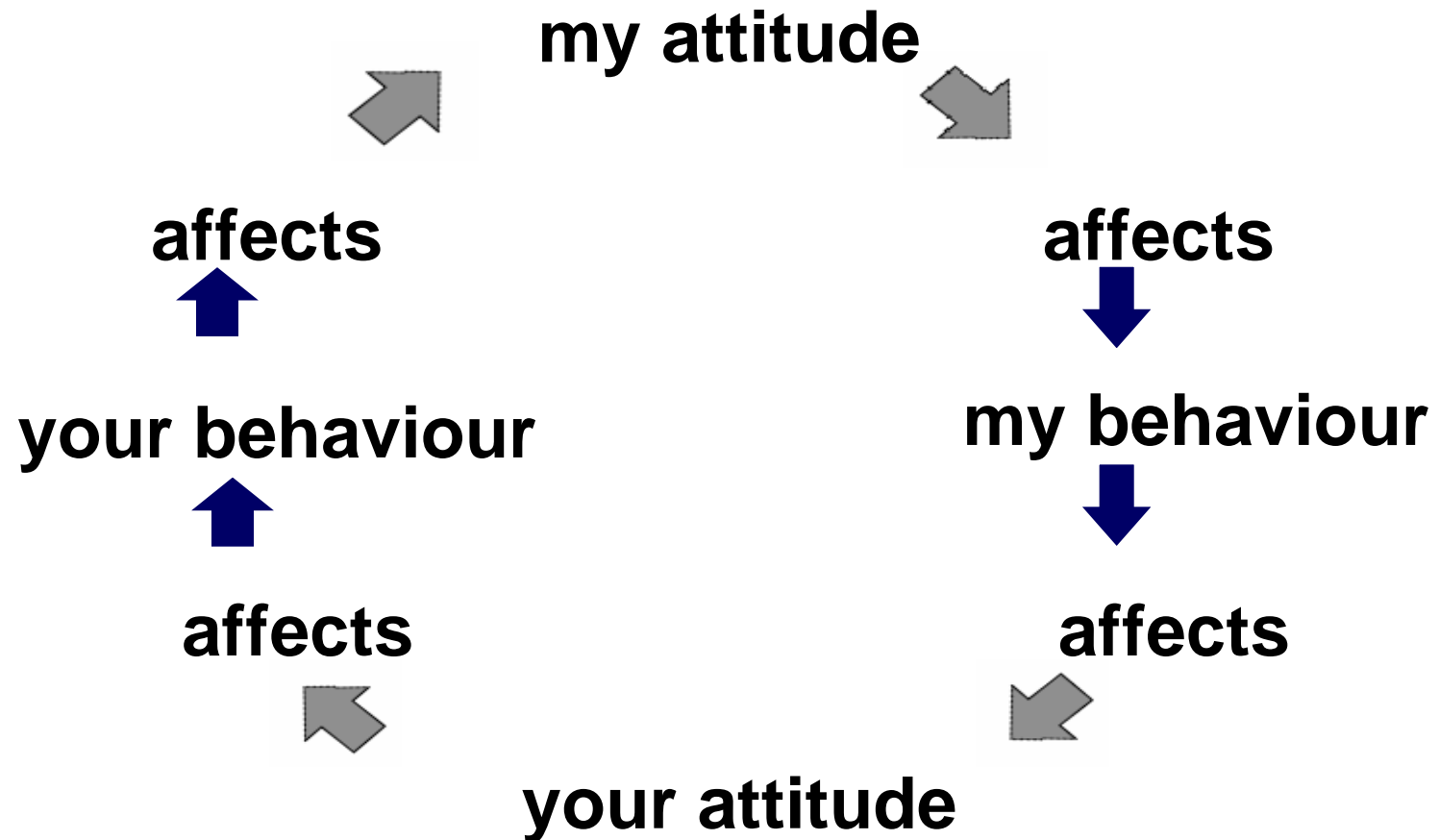
Refresher / Monitoring

- **Scheduling**
 - Needs to be scheduled and monitored
 - Must be scheduled to include activities before and after “factory gate”
- **Conducted by “Subject Matter Expert”**
 - Full time trainer who delivers a load at least monthly
 - A ratio of 1 trainer : 40 operators
 - Conducted at least every 3 months
- **M.B W. A**
 - Reinforces the ethos and values of the company
 - Conducting of Covert and Overt Surveillance Audits

Remedial Training

- Identify Areas of Concern
 - Internal / External Customer Feedback
 - Use tools and mechanisms available to monitor performance
- Training Is Usually
 - Attitudinal
 - Reflective of Pareto's Rule

Mindset and Attitude



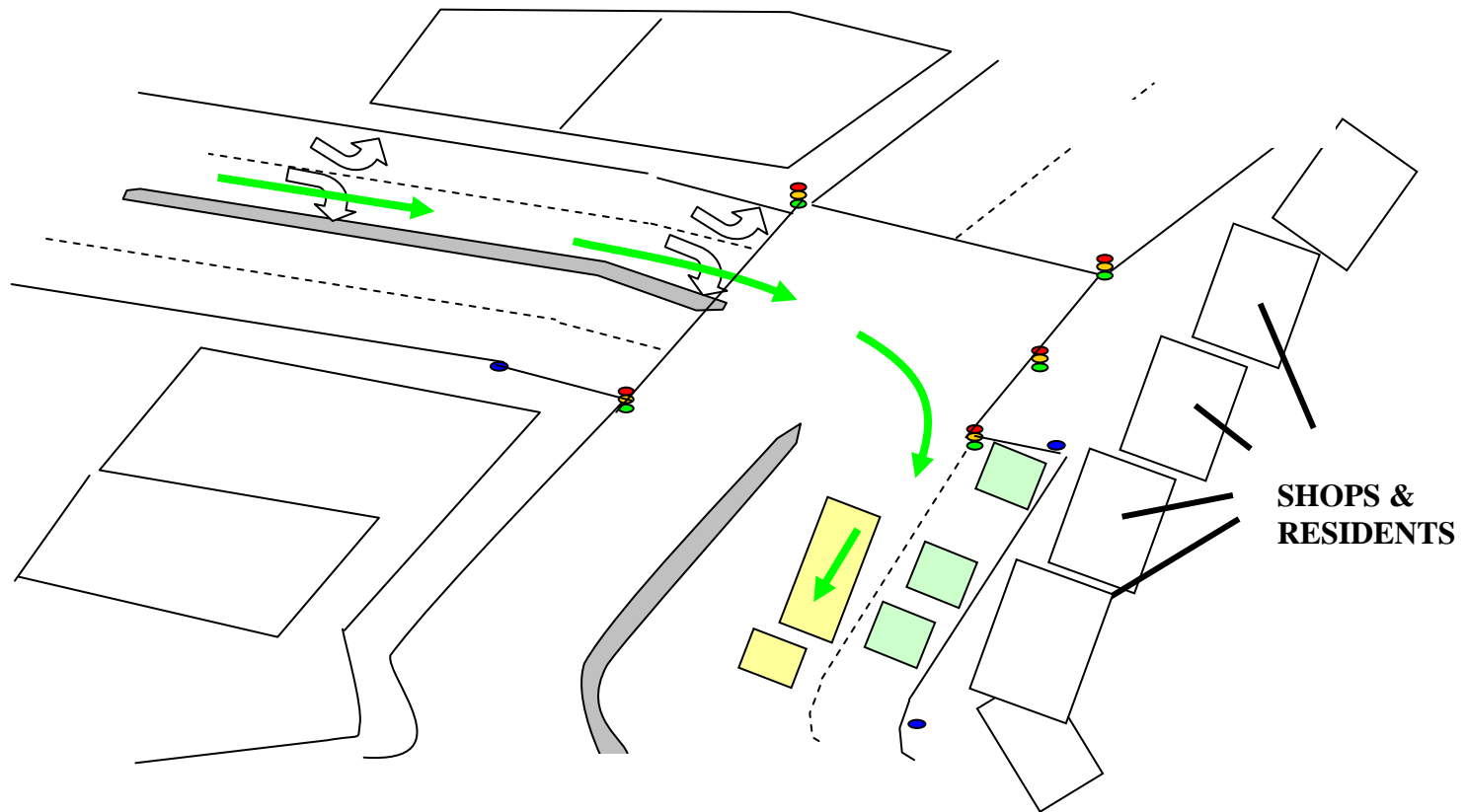
The Players

- Both Multi Nationals
- Strong Safety Backgrounds
- Well Documented Procedures
- Robust Internal / External Audit Regime
- Strict Selection Process for 3rd PP

You Be The Judge

- Some three weeks prior to incident, driver was assessed by driver trainer who recorded:
 - ✓ Knowledge of procedures was excellent
 - ✓ Skills were well developed and compliant
 - ✓ Attitude was questionable
- Vehicle Management System was not reviewed each day because “they” were too busy

You Be The Judge



THE FIRE









THE AFTERMATH







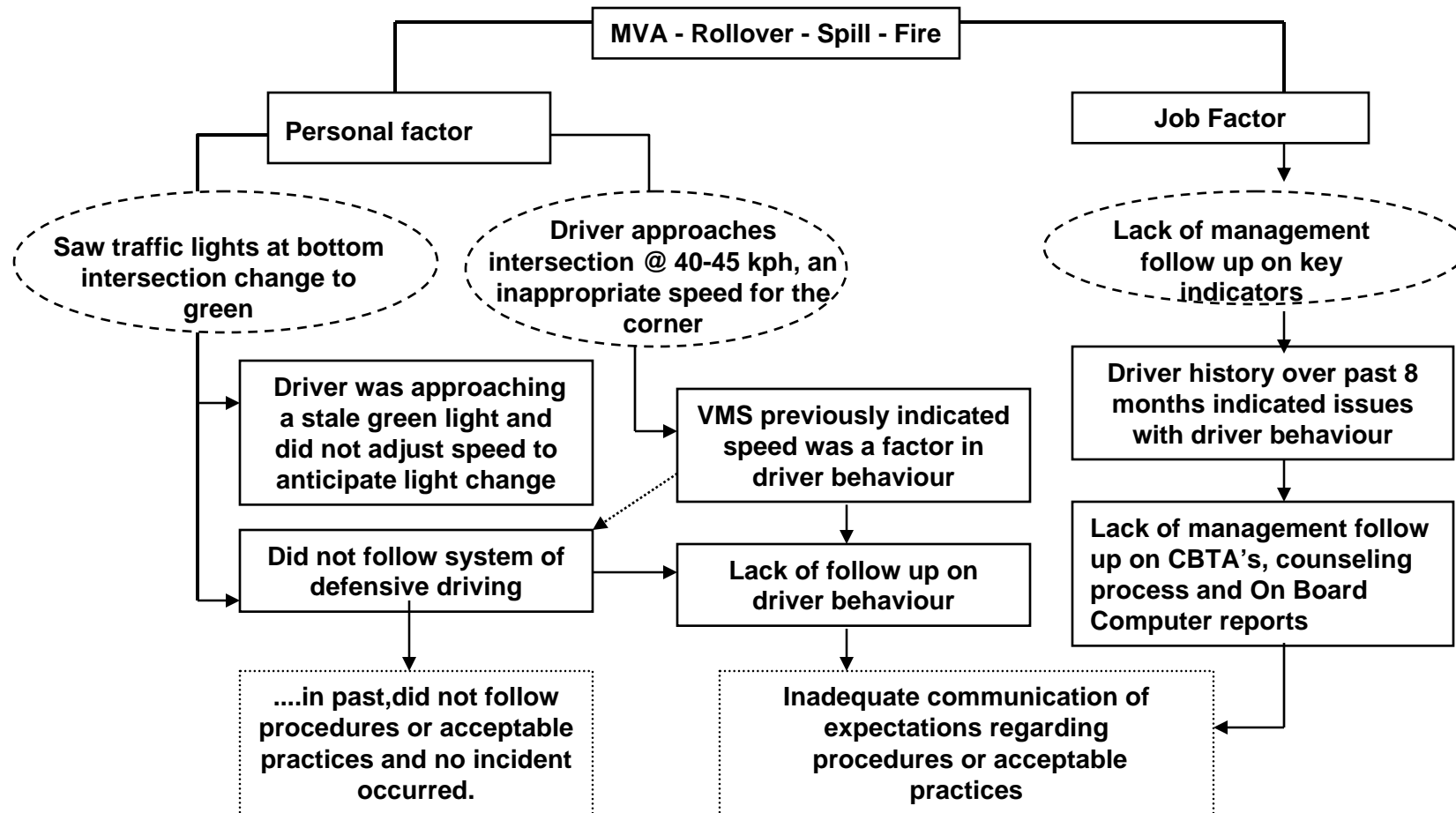
THE CLEAN UP







Causal Flow Chart

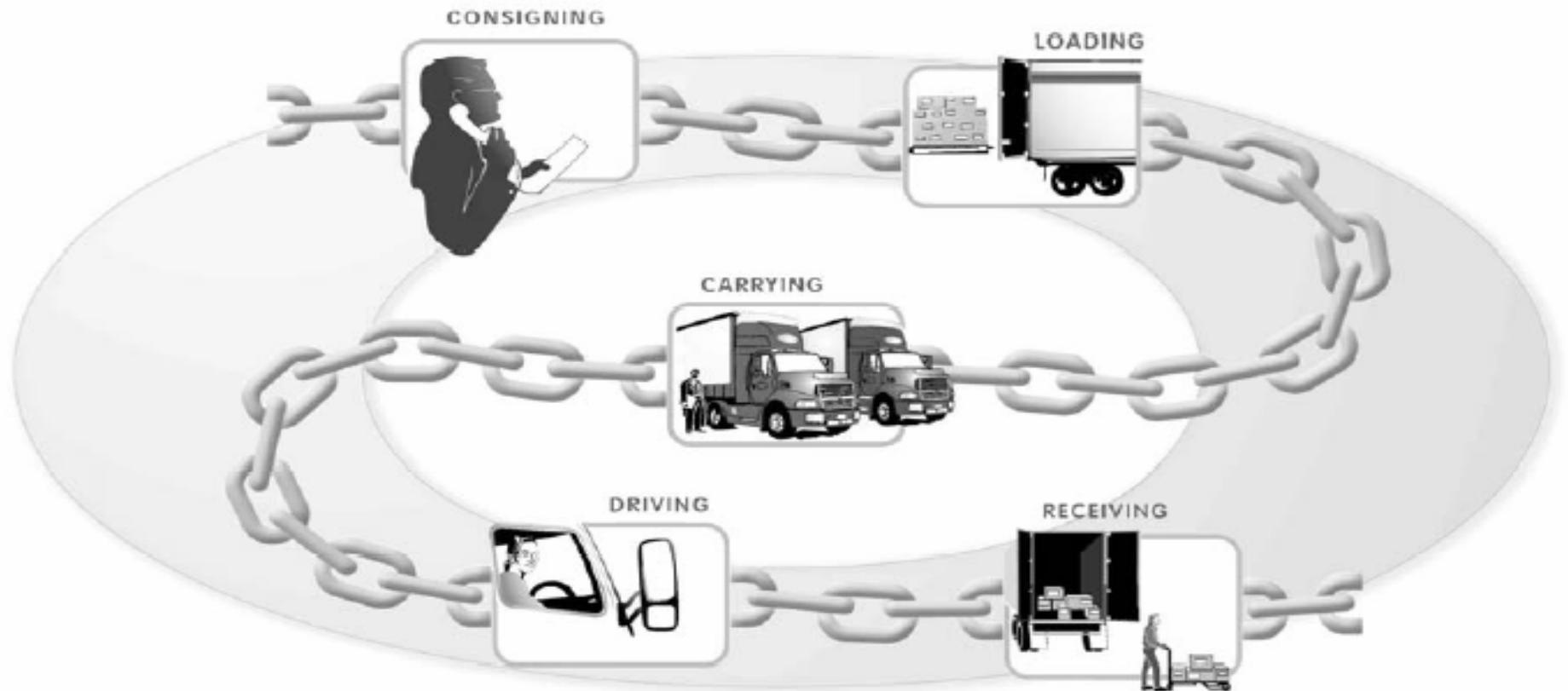


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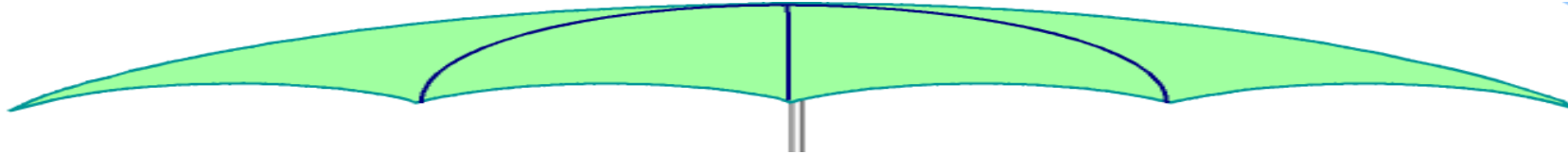
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Training Responsibility

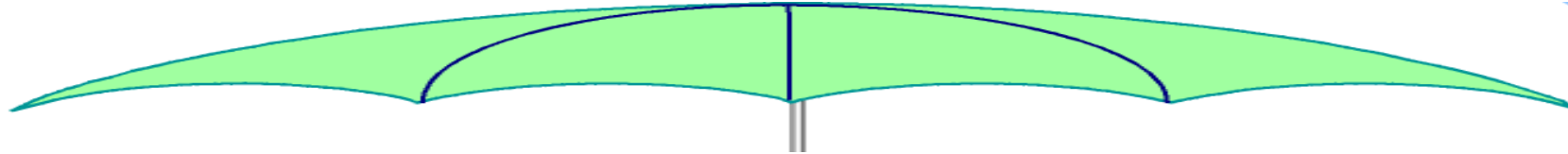


Operator Training & Certification

- Identify competencies and standards required
- Develop training and assessment process
- Monitor and manage operator inputs and outputs



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Questions ?