

D. THE MAGNITUDE OF ARMCO'S PROBLEMS (1958-62):

Chart No. 9/

25 - Fatalities
3 - Permanent total disabilities
209 - Permanent partial disabilities
798 - Temporary disabilities
91,000 - Non-disabling injuries
348,000 - Days lost

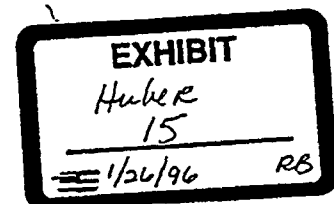
E. THE MAGNITUDE OF KANSAS CITY'S PROBLEMS (1958-62):

Chart No. 10.

~~6 - Fatalities
0 - Permanent total disabilities
54 - Permanent partial disabilities
6 - Temporary total disabilities
21,072 - Non-disabling injuries
76,374 - Days lost~~

SEE ATTACHED DATA

We still have a long way to go before our safety problem is licked.
You, as safety observer, can help.



SAFETY OBSERVER TRAINING OUTLINE

SESSION 2

I. The Nature of Accidents (Chapter 2, Section 4)

A. THE TWO KINDS OF ACCIDENTS:

Chart No. 11

Accidents are unexpected. If we learn what can be expected and that the unexpected can happen, we remove the unexpected.

Personnel Accidents - Key Elements: SAC Pg. 1 CHAP 2

Unexpected occurrence;
Usually a contact;
Interrupts work.

Equipment Accidents - Key Elements:

Unexpected occurrence;
Interrupted Work;
Potential contact.

B. WHY THINKING IN TERMS OF CONTACTS HELPS PREVENT ACCIDENTS:

Chart No. 12

1. Helps recognize potentials;
2. Helps observe for unsafe practices;
3. Helps inspect for unsafe conditions;
4. Helps analyze methods for safety.

C. PRODUCTIVITY LOSSES DUE TO ACCIDENTS:

Chart No. 13

Time: Man hours;
Machine time.

Key man: Skills;
Know-how.

Damage: Equipment;
Materials;
Morale.

D. THE BASIC TYPES OF ACCIDENTS:

NOTE: Discuss thoroughly, with examples given, so that abbreviations are learned, and the types understood.

Chart No. 14

1. SB - Struck by;

Object moving - contacts person with force.

2. CB - Contacted by;

Substance moving - characteristics of substance,
NOT motion, it's injurious.

3. SA - Struck against;

Person in motion - contacts with force.

4. CW - Contact with;

Person contacts - no force - characteristic of
agent is injurious.

5. CI - Caught in;

Person is trapped in an opening or enclosure.

6. CO - Caught on;

Person or clothing caught on protruding object.

7. CB - Caught between;

Two objects - one or both in motion catches person.

8. DLF - Different level fall;

Slip or trip ends up on different level.

9. SLF - Same level fall;

Slip or trip - ends up on same level.

10. EX - Exposure;

Exposure to harmful substance - no force involved.

11. OE - Overexertion;

Excessive strain.

SAFETY OBSERVER TRAINING OUTLINE

SESSION 3

I. The Sources and Kinds of Accident Causes - (Chapter 2, Section 5).

An accident cause is anything and everything that has contributed to the occurrence of an accident.

A. ACCIDENT CAUSES:

Chart No. 15

1. Actions of man himself;
2. Actions of co-workers;
3. Man's physical and mental condition;
4. Defective or unsafe:
Tools, equipment, machines, materials,
buildings, atmosphere;
5. Actions which produced the hazardous conditions.

UNSAFE OR HAZARDOUS CONDITIONS INVOLVING

B. DIRECT SOURCES OF ACCIDENT CAUSES:

ABOUT

Chart No. 16

1. People;
2. Environment.

SEE PG 11 CHAP 2

C. FOUR KINDS OF ACCIDENT CAUSES:

Chart No. 17

1. Direct man causes;
2. Indirect man causes;
3. Direct environmental causes;
4. Indirect environmental causes.

D. TYPES OF UNSAFE ACTS:

An unsafe act is any deviation from a generally recognized safe way of doing a job that may cause or contribute directly or indirectly to an accident.

Chart No. 18

1. Operating without authority;
2. Failure to secure against unexpected;
3. Unsafe speed;
4. Failure to warn - signal;
5. Removing or making safety devices inoperative;
6. Using defective tools or equipment;

(continued)

7. Using tools or equipment incorrectly;
8. Assuming unsafe position;
9. Servicing or adjusting moving or energized equipment;
10. Riding hazardous moving equipment;
11. Horse play - distracting - startling;
12. Failure to wear safety equipment.

E. HOW UNSAFE ACTS DIFFER:

Chart No. 19

1. The frequency of the act before the accident occurs;
2. The severity of the injury when it happens.

F. REASONS FOR PROMPT CORRECTION:

Chart No. 20

1. Avoid habit formation;
2. Avoid losing respect for the hazard or unsafe practice;
3. Avoid feeling that hazards are over-exaggerated;
4. Avoid feeling of false security.

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SAFETY OBSERVER TRAINING OUTLINE

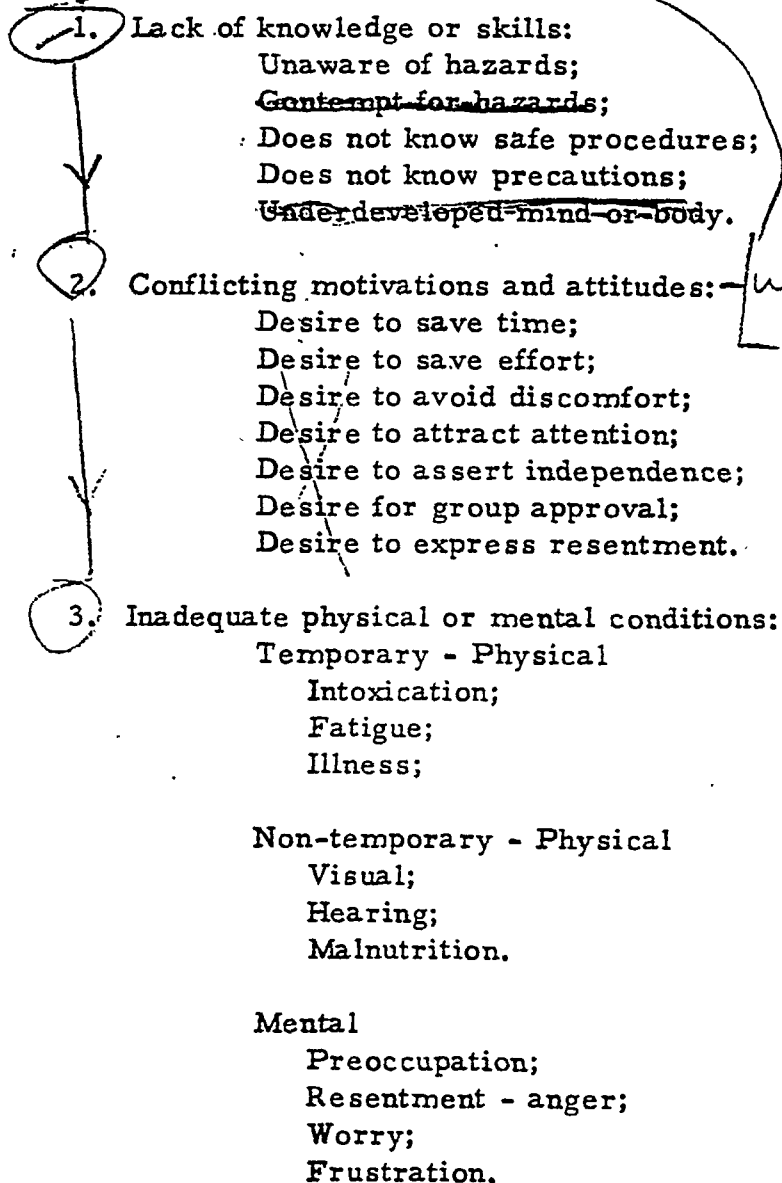
SESSION 4

I. The Causes of Accidents (Chapter 2, Section 6).

A personal factor cause of accidents is any personal characteristic or condition that may cause or influence a person to act unsafely.

A. CAUSES OF UNSAFE ACTS:

Chart No. 21



[WHY A MAN DOES
SOMETHING?]

B. TYPES OF UNSAFE CONDITIONS:

Unsafe conditions are any conditions of tools, equipment, machinery, materials, structures or other elements of a man's environment that may cause or contribute to an accident.

Chart No. 22

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1. Inadequate guards and devices;
2. Inadequate warning devices.
3. Fire and explosion hazards;
4. Unexpected movement hazards;
5. Poor housekeeping hazards;
6. Protruding object hazards;
7. Close clearance - congestion;
8. Atmospheric conditions;
9. Arrangement - storage;
10. Defective tools and equipment;
11. Poor illumination;
12. Noise.
13. Hazardous personal attire.

C. SOURCES OF UNSAFE CONDITIONS:

Chart No. 23

1. Production workers;
2. Maintenance workers;
3. Designing and engineering;
4. Purchasing practices;
5. Normal wear and tear;
6. Abnormal wear and tear;
7. Lack of preventive maintenance.

SAFETY OBSERVER TRAINING OUTLINE

SESSION 5

I. The Results of Accidents (Chapter 2, Section 7). - *Direct & Indirect*

A. TYPES OF DIRECT RESULTS OF ACCIDENTS:

Chart No. 24

1. No results; - *No Injury*
2. Minor injury;
3. Major injury;
4. Property damage.

B. HEINRICH'S RATIO:

When a major accident happens, the chances are that the same accident has occurred 29 times, producing a minor injury, and another 300 times producing no injury.

*330 TIMES
1 MAJOR
29 MINOR
300 NO INJURY*

Chart No. 25

- 1 - Major
- 29 - Minors
- 300 - No injury

C. INDIRECT RESULTS OF ACCIDENTS:

Chart No. 26

To Workmen:

1. Loss of earnings;
2. Family disruption;
3. Normal activity disrupted;

To Company:

1. Injury costs;
2. Productivity loss;
3. Property damage;
4. Lowered morale;
5. Community relations hurt;
6. Customer relations hurt.

II. Principles and Procedures for Establishing Accident Causes (Chapter 3, Section 8).

Principles are the guidelines or what has to be done to have an effective accident prevention program;

Procedures are the tools which put the principles to work. They spell out how to do it.

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Session 5
Page -2-

A. PRINCIPLES OF ACCIDENT PREVENTION:

Chart No. 27

- 1. Establish both the potential and actual causes of accidents
- 2. Eliminate both the potential and actual causes of accidents.

B. PRINCIPLES FOR DETECTING POTENTIAL CAUSES:
WHENHOW TO FIND OR DETECT CAUSE

Chart No. 28

- 1. Detect all unsafe conditions promptly;
- 2. Identify all sources of unsafe conditions; *W/L POST*
- 3. Detect all unsafe practices promptly;
- 4. Identify all personal factor causes.
IDENTIFY WHY MAN WORKS UNSAFELY

C. PROCEDURES FOR DETECTING POTENTIAL CAUSES:
UNSAFE CONDITIONS

Chart No. 29

- 1. Foreman ~~Observer~~ inspections; *FOREMAN INSTRUCTIONS*
- 2. Assigned area inspections;
- 3. Superintendent inspections;
- 4. Administrative-Management inspections;
- 5. Safety Department inspections;
- 6. Specialist's inspections;
- 7. Inter-departmental inspections; - *CENT. SAF. Comm. - HOUSEHOLD COMM.*
- 8. Employee ~~Management Team~~ inspections;
- 9. Employee ~~Observer~~ inspections;
- 10. Inter-Plant inspections.

D. PROCEDURES FOR DETECTING UNSAFE PRACTICES:

Chart No. 30

- 1. Job Safety Analysis;
- 2. Foreman ~~Observer~~ observations;
- 3. Safety Department observations;
- 4. Employee Representative observations.

E. PRINCIPLES FOR DETECTING ACTUAL CAUSES:

Chart No. 31

The basic tool or procedure that activates these principles is the accident investigation.

- 1. Establish all contributing conditions;
- 2. Determine all causes of contributing conditions;
- 3. Establish all contributing actions;
- 4. Determine all causes of contributing actions.

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SAFETY OBSERVER--TRAINING OUTLINE

SESSION 6

I. Preventing Struck By and Contacted By Accidents (Chapter 4, Section 10).

A. SITUATIONS WHICH RESULT IN SB NORMALLY MOVING OBJECT ACCIDENTS:

Chart No. 32

1. Those which permit man to get into the path of the object;
2. Those which permit man to be in the path when it moves unexpectedly;
3. Those where normally moving objects stray from path.

B. GENERAL AND SPECIFIC SOLUTIONS TO SB NORMALLY MOVING OBJECTS ACCIDENTS:

Chart No. 33

General Solutions:

1. Make it unnecessary or impossible to enter path;
2. Increase awareness of path;
3. Place signals on moving objects;
4. Emphasize - "Stand clear of path"

Specific Solutions:

1. Install cross-over or under;
2. Place barriers;
3. Mark path;
4. Illuminate;
5. Install warning devices;
6. Install guards;
7. Eliminate blind corners;
8. Remind frequently

C. GENERAL AND SPECIFIC SOLUTIONS FOR UNEXPECTED START UP OR MOVEMENT ACCIDENTS:

Chart No. 34

General Solutions:

1. Make it impossible for object to move by accident;
2. Require those who cause movement to signal and clear path;
3. Keep others out of area.

(continued)

Chart No. 34 (continued)

Specific Solutions:

1. Make use of locking or tagging;
2. Make use of blocking or tying;
3. Use start-up signals;
4. Use warning signals;
5. Make clearance checks;
6. Put up barriers;
7. Install guards;
8. Emphasize: "Anything capable of moving will move -- sometime!"

D. GENERAL AND SPECIFIC SOLUTIONS FOR PREVENTING OBJECTS FROM LEAVING THEIR NORMAL PATH:

Chart No. 35

General Solutions:

1. Reduce likelihood of mechanical or electrical failure;
2. Reduce likelihood of operator failure;
3. Assume that it will happen and act to protect.

Specific Solutions:

1. Use qualified operators - train;
2. Have physical examinations;
3. Check operator fitness;
4. Check for recklessness;
5. Make equipment inspections;
6. Use traffic barriers;
7. Use guards;
8. Emphasize caution - alertness.

E. SITUATIONS WHICH RESULT IN SB NORMALLY STATIONARY ACCIDENTS:

Chart No. 36

1. Transporting objects;
2. Storing, piling, positioning objects;
3. Using or handling objects manually;
4. Working overhead.

F. WAYS TO PREVENT SB ACCIDENTS IN MATERIAL OR EQUIPMENT TRANSPORTING SITUATIONS:

Chart No. 37

1. Establish and abide by safe load capacities;
2. Use correct equipment;
3. Use correct/securing devices;
4. Use mechanically sound equipment;
5. Establish and abide by safe speeds;
6. Wear personal protective equipment;
7. Emphasize caution - "Out from under" - "Off to side."

G. WAYS TO PREVENT SB ACCIDENTS IN STORING PILING AND POSITIONING SITUATION:

Chart No. 38

1. Establish and use safe methods;
2. Select safe location;
3. Inspect materials;
4. Use protective barriers;
5. Use personal protective equipment.

H. WAYS TO PREVENT SB ACCIDENTS USING TOOLS, MATERIALS AND EQUIPMENT MANUALLY:

Chart No. 39

1. Use right item for the job;
2. Inspect before use;
3. Inspect regularly;
4. Emphasize safe manner of use;
5. Emphasize and use caution:
 - Firm grip;
 - Awkward holds;
 - Greasy gloves;
 - Too heavy loads.

I. WAYS TO PREVENT SB ACCIDENTS WHEN WORKING OVERHEAD:

Chart No. 40

1. Barricade or rope off;
2. Place temporary signs;
3. Use look-out men.

SAFETY OBSERVER TRAINING OUTLINE

SESSION 7

I. Preventing (CB) Contacted By Accidents (continued) (Chapter 4, Section 10).

A. SITUATIONS PRODUCING CB ACCIDENTS:

Chart No. 41

1. Manual handling of injurious materials;
2. Repairing and servicing equipment containing injurious materials;
3. Mechanical failure in equipment containing injurious materials.

B. WAYS TO PREVENT CB ACCIDENTS IN MATERIAL HANDLING SITUATIONS:

Chart No. 42

1. Eliminate manual handling;
2. Use safer substitute materials;
3. Use only approved containers;
4. Use better designed containers;
5. Use personal protective equipment;
6. Inspect containers;
7. Establish and use safe methods;
8. Identify contents.

C. WAYS TO PREVENT CB ACCIDENTS IN EQUIPMENT REPAIR OR SERVICE:

Chart No. 43

1. Use safe opening-up procedure;
2. Lock-out or tag;
3. Wear personal protective equipment;
4. Give pre-job instruction;
5. Identify:
 Lines with color;
 Valves with tags.
6. Purge lines.

D. WAYS TO PREVENT CB ACCIDENTS CAUSED BY PRESSURE EQUIPMENT FAILURES:

Chart No. 44

1. Use only safe procedures;
2. Repair minor leaks promptly;
3. Inspect equipment regularly.

II. Preventing Struck Against, Contact With, and Caught In, On and Between Accidents. (Chapter 4, Section 11).

A. SITUATIONS PRODUCING SA ACCIDENTS:

Chart No. 45

1. Temporary positioned protruding objects;
2. Permanently positioned objects requiring extra effort to avoid;
3. Cramped and congested areas;
4. Application of great manual effort.

B. WAYS TO PREVENT SA ACCIDENTS INVOLVING PROTRUDING MOVEABLE OBJECTS:

Chart No. 46

1. Use boundary markings;
2. Inspect walk and work areas;
3. Illuminate;
4. Use warning devices;
5. Rope off;
6. Use caution - "Walk - don't run." "Look before leap."

C. WAYS TO PREVENT SA ACCIDENTS INVOLVING PROTRUDING FIXED OBJECTS:

Chart No. 47

1. Eliminate when designed or installed;
2. Check new installations;
3. Correct obstacle conditions;
4. Use attention-getting devices.

D. WAYS TO PREVENT SA ACCIDENTS DUE TO CRAMPED OR CONGESTED QUARTERS:

Chart No. 48

1. Use good housekeeping habits;
2. Improve storage areas;
3. Improve equipment lay-out;
4. Clean house periodically.

E. WAYS TO PREVENT SA ACCIDENTS DUE TO APPLYING GREAT MANUAL PRESSURE:

Chart No. 49

1. Prevent "sticker" conditions;
2. Show how to handle "stickers" safely;
3. Change methods requiring great "push-pull" exertion;
4. Inspect tools and equipment before use;
5. Use the right tool for the job;
6. Use "controlled" force.

III. Preventing Contact With (CW) Accidents (Chapter 4, Section 11).

A. SITUATIONS PRODUCING CW ACCIDENTS:

Chart No. 50

1. Working with or on electrically-charged equipment;
2. Working with or near hot materials or equipment;
3. Working with chemicals or handling containers.

B. WAYS TO PREVENT CW ACCIDENTS DUE TO WORKING ON OR NEAR ELECTRICAL EQUIPMENT:Chart No. 51

1. Work only where authorized to work;
2. Check with experienced men;
3. Insist upon de-energizing;
4. Insist upon locking-out;
5. Use protective equipment;
6. Cover exposed areas with insulation;
7. Use ground insulating mats;
8. Use barriers;
9. Develop respect for voltage;
10. Assume part is energized until checked;
11. Ground all electrical equipment.

C. WAYS TO PREVENT CW ACCIDENTS DUE TO WORKING WITH OR NEAR HOT OBJECTS:Chart No. 52

1. Install guards;
2. Post warning signs;
3. Use precautions - "Feel for heat" "Maintain distance"

D. WAYS TO PREVENT CW ACCIDENTS WHEN WORKING WITH OR HANDLING CHEMICALS:

Chart No. 53

1. Promptly clean up spills;
2. Use protective equipment;
3. Take prompt action after contact.

SAFETY OBSERVER TRAINING OUTLINE

SESSION 8

I. Preventing Caught In, On and Between Accidents (Chapter 4, Section 11).

A. SITUATIONS PRODUCING CI ACCIDENTS:

Chart No. 54

1. Working in areas with only one entrance - enclosures;
2. Exposure to small openings;
3. Working in tight places.

B. WAYS TO PREVENT CI ACCIDENTS WHEN WORKING IN SINGLE-ENTRANCE ENCLOSURES:

Chart No. 55

1. Use inside opening doors;
2. Use look-outs -- outside;
3. Block or tie exit covers;
4. Post warnings.

Small Openings:

1. Inspect periodically;
2. Use barriers;
3. Improve illumination.

Tight Places:

1. Select small man for the job;
2. Use pre-entry precautions;
3. Eliminate hazard if the job is repetitive;
4. Ask for aid.

C. SITUATIONS PRODUCING CO ACCIDENTS:

Chart No. 56

1. Stationary projecting objects;
2. Moving projecting objects.

D. WAYS TO PREVENT CO ACCIDENTS WHERE STATIONARY PROJECTIONS ARE INVOLVED:

Chart No. 57

1. Avoid creating the hazard;
2. Make regular housekeeping inspections;
3. Eliminate permanent projections;
4. Guard permanent projections;
5. Use contrasting high visibility paints;
6. Use safe personal attire;
7. Use carrying methods in order to see.

E. WAYS TO PREVENT CO ACCIDENTS WHEN MOVING PROJECTIONS ARE INVOLVED:

Chart No. 58

1. Shut down machines for servicing;
2. Use lock-outs;
3. Establish and use safe start-up procedures;
4. Guard moving parts;
5. Eliminate projections;
6. Inspect equipment regularly;
7. Use safe personal attire;
8. Keep safe distance.

F. SITUATIONS PRODUCING CB ACCIDENTS:

Chart No. 59

1. Normally moving object approaching a stationary object;
2. Two normally moving objects approaching each other;
3. Normally stationary object caused to move toward a stationary object.

G. WAYS TO PREVENT CB ACCIDENTS INVOLVING STATIONARY - NORMALLY MOVING OBJECTS:

Chart No. 60

1. Install cross-over - under;
2. Install barriers;
3. Install guards;
4. Mark path of travel;
5. Improve illumination;
6. Install warning devices;
7. Block or tie down;
8. Lock-out or tag;
9. Use start-up signals;
10. Use pre-start-up checks;
11. Operate only if qualified;
12. Have physical examinations;
13. Make equipment inspections.

H. WAYS TO PREVENT CB ACCIDENTS INVOLVING TWO NORMALLY MOVING OBJECTS:

Chart No. 61

1. Install guards;
2. Shut down before service or repair;
3. Lock-out;
4. Emphasize apparel hazards.

SAFETY OBSERVER TRAINING OUTLINE

SESSION 9

I. Preventing Falls, Overexertion and Exposure Accidents (Chapter 4, Section 12).

A. WAYS TO PREVENT SLIP AND FALL ACCIDENTS:

Chart No. 63:

1. Inspect floors;
2. Use non-skid floors;
3. Clean up spills promptly;
4. Correct source causes of chronic spots;
5. Wear safe shoes;
6. Illuminate;
7. "Look Where Walking" caution.

B. WAYS TO PREVENT TRIP AND FALL ACCIDENTS:

Chart No. 64

1. Place items in storage facilities;
2. Use disposal equipment;
3. Clean up during and after work;
4. Inspect - good housekeeping;
5. Illuminate.

C. SITUATIONS PRODUCING DIFFERENT LEVEL FALL ACCIDENTS:

Chart No. 65

1. Working above ground or floor level;
2. Working at or around large ground or floor openings.

D. WAYS TO PREVENT DLF ACCIDENTS IN OVERHEAD SITUATIONS:

Chart No. 66

1. Inspect equipment before using;
2. Position equipment safely;
3. Inspect equipment periodically;
4. Learn safe use of equipment;
5. Use toe boards - rails;
6. Use safety belts or nets.

E. WAYS TO PREVENT DLF ACCIDENTS WHEN WORKING AROUND FLOOR OPENINGS:

Chart No. 67

1. Use barriers;
2. Use warning devices;
3. Use safety look-out man;
4. Use safety belts;
5. Use false bottoms.