

SCAT System – Systematic Cause Analysis Technique

1. Description of Accident: **A. Injury B. Equipment C. Injury/Equipment D. Near Miss**

2. Evaluation of Loss Potential If Not Controlled (circle one from each category)

Loss Severity Potential: **A. Major B. Serious C. Minor**

Probability of Recurrence: **A. High B. Moderate C. Low**

Frequency of Exposure: **A. Extensive B. Moderate C. Low**

3. Type of Event:

4. Immediate/Direct Cause:

5. Basic/Underlying Cause (s):

Instructions for Use:

This SCAT system, when used properly, will help identify the underlying cause of most incidents that occur in NCDOT. We use this information to track the progress of our Safety Program and to make improvements where our Safety Program is inadequate.

1. Description Of Accident: - This is a brief description of the incident. Please circle one.
2. Evaluation of Loss Potential if not Controlled – This information helps to evaluate the extent an employee is exposed to the hazard. Circle one each of the three categories.
3. Type of Event – This information determines what type of incident occurred. It helps identify incident trends throughout the Division. Please select one from the choices in this field.
4. Immediate/Direct Causes – This information helps determine what acts or conditions contributed to the incident. Enter all that apply.
5. Basic/Underlying Causes – This information helps determine the root cause of an incident or what really caused it to happen. Enter all that apply.

All the above information will help determine why the incident occurred and then we can work to eliminate the hazards that contributed to them and protect our employees.

Type of Event:

1. Struck Against (running or bumping into)
2. Struck By (hit by moving object)
3. Fall from Elevation
4. Fall on Same Level (slip, trip, or fall)
5. Caught In (pinch and nip points)
6. Caught On (snagged or hung)
7. Caught Between or Under (crushed or amputated)
8. Contact With (electricity, heat, toxics, noise, vegetation, insects)
9. Overstress (overexertion, overexposure, ergonomic)
10. Equipment Failure
11. Environmental Release (Chemical, High-Pressure gas, liquid, etc)

Immediate/Direct Cause:

1. Operating Without Authority
2. Failure to Warn
3. Failure to Secure
4. Operating at Improper Speed
5. Making Safety Devices Inoperative
6. Using Defective Equipment
7. Failing to Use PPE Properly
8. Improper Loading
9. Improper Placement
10. Improper Lifting
11. Improper Position for Task
12. Servicing Equipment in Operation
13. Horseplay / Vandalism
14. Under influence of Alcohol/Drugs
15. Using Equipment Improperly
16. Failure to Follow Procedure
17. Inadequate Guards or Barriers
18. Inadequate or Improper Protective Equipment
19. Defective Tools, Equipment or Materials
20. Congestion or Restricted Action
21. Inadequate Warning System
22. Fire & Explosion Hazards
23. Poor Housekeeping / Disorder
24. Noise Exposure
25. Radiation Exposure
26. Temperature Extremes
27. Inadequate or Excess Illumination
28. Inadequate Ventilation
29. Hazardous Environmental Condition
30. Pre-existing Medical Condition

Basic/Underlying Causes

1. Physical or Physiological Stress
 - a. injury or illness
 - b. fatigue
 - c. constrained movement
 - d. exposure to health hazards (temperature/biological)
2. Mental or Psychological Stress
 - a. emotional overload
 - b. confusing/conflicting directions/demands
 - c. preoccupation with problems/frustration
 - d. poor judgment
 - e. slow reaction time
 - f. inattention to surroundings
3. Lack of Knowledge/Skill
 - a. lack of experience
 - b. inadequate orientation/training
 - c. misunderstood directions
 - d. infrequent performance
 - e. inadequate practice
4. Improper Motivation
 - a. improper performance is tolerated
 - b. inadequate reinforcement of proper performance
 - c. inappropriate aggression
 - d. improper attempt to save time or effort
 - e. improper attempt to avoid discomfort
 - f. inadequate discipline
 - g. inappropriate supervisory example
5. Inadequate Leadership and/or Supervision
 - a. unclear or conflicting assignment of responsibility
 - b. improper or insufficient delegation
 - c. giving inadequate policy/procedure/practices/guidelines
 - d. giving objectives, goals or standards that conflict
 - e. inadequate work planning or programming
 - f. inadequate instructions, orientation and/or training
 - g. inadequate identification/evaluation of loss exposures
 - h. lack of supervisory/management job knowledge
 - i. inadequate matching of individual qualifications and job/task requirements
6. Inadequate Tools and Equipment
 - a. inadequate assessment of needs and risks
 - b. inadequate human factors/ergonomics considerations
 - c. inadequate availability
 - d. inadequate adjustment/repair/maintenance
 - e. inadequate removal/replacement of unsuitable items
7. Inadequate Engineering
 - a. inadequate assessment of loss exposure
 - b. inadequate consideration of human factors/ergonomics

8. Inadequate Purchasing
 - a. inadequate specifications
 - b. inadequate communication of safety and health data

9. Inadequate Maintenance
 - a. Inadequate Preventative
 - a.1. assessment of needs
 - a.2. lubrication and servicing
 - a.3. adjustment/assembly
 - a.4. cleaning or resurfacing
 - b. Inadequate Reparative
 - b.1. communication of needs
 - b.2. scheduling of work
 - b.3. examination/inspection of units
 - b.4. part substitution

10. Inadequate Work Standards
 - a. Inadequate Development of standards for:
 - a.1. evaluation of exposures and needs
 - a.2. employee involvement
 - a.3. procedures/practices/rules
 - b. Inadequate Communication of Standards for:
 - b.1. training
 - b.2. reinforcing with signs, color codes and job aids
 - c. Inadequate Maintenance of Standards for:
 - c.1. track of work flow
 - c.2. updating
 - c.3. monitoring use of procedures/practices/rules
 - d. Inadequate Monitoring of Compliance

11. Excessive Wear and Tear
 - a. inadequate planning of use
 - b. improper extension of service life
 - c. inadequate inspection and/or monitoring
 - d. inadequate maintenance
 - e. use by unqualified or untrained people
 - f. use for wrong purpose

12. Abuse or Misuse
 - a. improper conduct that is condoned
 - b. improper conduct that is not condoned
 - c. vandalism

13. Hazard(s) of operation
 - a. job assignment
 - b. job requirements
 - c. external
 - c.1. traffic/POV
 - c.2. non-DOT

