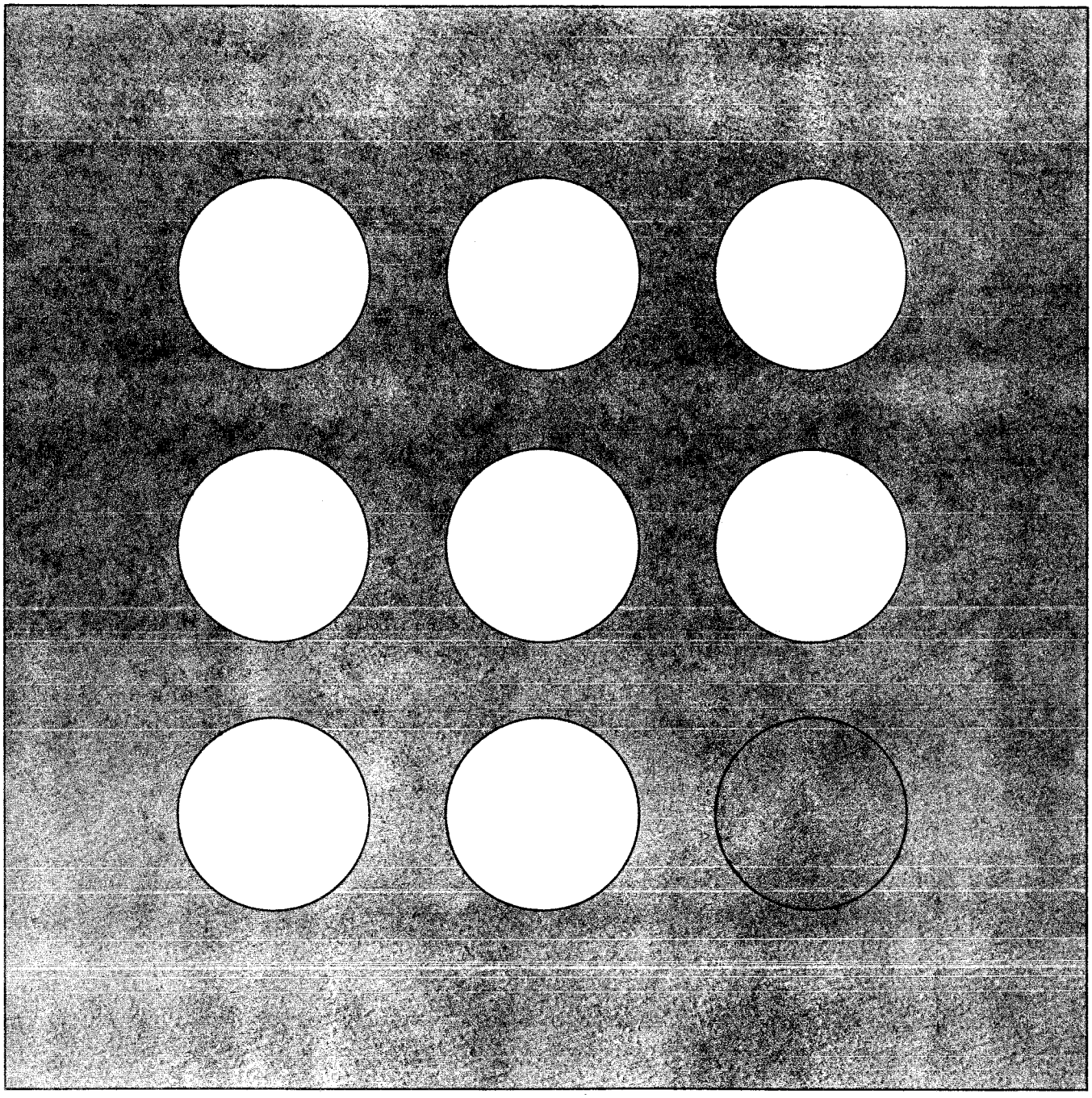
Technic of Operations Review

A management tool to locate and define operational errors



Seek underlying causes of recurring problems/Direct managerial influence to correct causes instead of symptoms/
Gain cooperation and participation

Technic of Operations Review

What is "Technic of Operations Review"?

By the orderly process of TOR analysis, operational errors are located and defined.

The daily activities of any organization seldom run smooth and straight. Unexpected obstacles — shortages, rejects, delays, accidents, errors, absences, injuries, misunderstandings, a dozen other problems — threaten every step.

As an alternative to endless "fire fighting" for the correction of such obstacles, TOR analysis pin-points the underlying causes as the real target for management action.

Managers see problems not underlying causes

Little hitches and inefficiencies seldom come to the boss' attention — until they snowball into a problem that lands on their desk. Even then, since everyone feels innocent or blames someone else, defensive fear and resentment hamper the search for cause.

TOR analysis centers upon system and procedure, not upon human faults. Emotions are kept out of the picture. Underlying causes, which have been obscured by "stop-gap" corrective action, can be laid bare, both in minor inefficiencies and in major problems.

What you do in a TOR session

Meetings for TOR analysis may be set up on a routine basis, may be included in regularly scheduled supervisory meetings, or they might be called on special occasions to explore a specific incident, misunderstanding, or accident.

Example: An order for 100 machines was received from a good customer. They got them promptly, but not one was equipped with its essential motor.

Example: A long-time customer was lost when an urgently needed shipment arrived, too late, by special truck. Air express would have gotten it there on time — and at less cost — but someone had "followed the rules."

Greater and lesser examples can be found in any organization. Each can teach lessons — lessons that are lost in seeking to fix blame. After everyone sounds off, leaving a residue of uncertainty and resentment no one really knows how it happened, much less how to prevent it in the future. It's charged off as "communications failure," and the lesson is forever lost.

A special TOR session involves a notable incident that everyone knows about. But many lesser incidents teach the same lessons if causes are objectively sought. Your role in TOR analysis is to bring these incidents into the session, describe what you know about them, and participate thoughtfully in the process of TOR analysis.

You are **not** placing blame; you are simply contributing to a guided exploration process. TOR analysis will reveal — not cause for blame — but cause for the problem.

What triggers TOR analaysis

Note any situation or incident which suggests the likelihood of operational error. Accidents and injuries are the easiest to see, but note also those disrupting incidents which we blame vaguely on "lack of cooperation," or "communications failure." The incident may be great or small, for even small incidents can expose the need to deal with underlying causes.

Describe the facts as you know them whenever you observe waste of time, money, or material, and help to expose causes by TOR analysis. TOR sessions can help whenever a group fails to achieve its objectives, or a defined mission backfires, or control data indicate that something is wrong. Especially use TOR analysis when problems snowball into a major loss and the cry goes up to "do something."

The steps of TOR analysis

Whoever knows the most or is the most upset about the incident should briefly describe what happened. By group discussion, get general agreement on the prime cause as the group sees it. This is your starting point.

From this point you **trace** possible underlying causes, rejecting promptly any factors that did not plausibly contribute to the incident. Continue to trace, pressing along rapidly until cross reference numbers repeat themselves.

If your group feels there is also a second starting point — a second proximate cause — start over and trace from that point. It will shortly combine into causes you have already traced.

The **trace** step is now complete. You have exposed six, ten, or a dozen underlying causes and gained hasty insight into your operation. The next step, **"Eliminate,"** will sharpen this hasty insight.

You **eliminate** by considering each probable cause in depth. Your purpose is to eliminate all possibilities except those which truly caused the incident. You ask, "Would the incident have happened anyway if this cause had not existed?" If yes, eliminate it.

State immediate prime cause(s).

Trace underlying TOR factors.

Promptly include factors that possibly helped cause the incident.

Promptly reject factors that obviously don't apply.

Eliminate Reconsider and discuss to eliminate factors which, though they may exist, did not contribute to the present incident.

Seek feasible corrective action.

TOR analysis of accidents

This section, dealing with personal traits, is designed for TOR analysis of accidents and injuries. The common tendency is to concentrate upon personal factors in an accident —often to the exclusion of more important considerations. This Section permits you to assess personal factors, but it then leads your thought into other areas.

In TOR analysis of an accident, use the work sheet to begin tracing from points — one in section 7 and the other in some other section. Assess personality factors in section 7 but also seek some other prime cause. Trace both from these points and complete TOR analysis in the usual manner.

Technic of Operations Review

1 Coaching

Cross Reference Numbers

10 Unusual situation, failure to coach (new employee, tool, equipment, process, material, etc.) 44, 24, 62

11 No instruction. No instruction available for particular situation 44, 22, 24, 80

12 Training not formulated or need not foreseen 24, 34, 86

13 Correction. Failure to correct or failure to see need to correct 42, 20, 30

14 Instruction inadequate. Instruction was attempted but result shows it didn't take 15, 16, 42

15 Supervisor failed to tell why 44, 24, 83

16 Supervisor failed to listen 11, 81

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2 Responsibility

Cross Reference Numbers

20 Duties and tasks not clear 44, 34, 14, 53

21 Conflicting goals 80, 33

22 Responsibility, not clear or failure to accept 26, 14, 54, 82

23 Dual responsibility 47, 34, 13

24 Pressure of immediate tasks obscures full scope of responsibilities 36, 12, 51

25 Buck passing. Responsibility not tied down 44, 26, 55, 60

26 Job descriptions inadequate 80, 86

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Each section contains blank numbers. In your operation, TOR ANALYSIS may reveal factors in addition to those listed, TOR factors special to your organization. Insert these additional cause items under their proper heading, with a cross reference number (or numbers) leading to TOR factors controlling this special aspect.

3 Authority

Cross Reference Numbers

30 Bypassing, conflicting orders, too many bosses 44, 13

31 Decision too far above the problem 36, 83, 85

32 Authority inadequate to cope with the situation 81, 83

33 Decision exceeded authority 20, 26, 14

34 Decision evaded, problem dumped on the boss 36, 14, 85

35 Orders failed to produce desired result. Not clear, not understood, or not followed 40, 46, 13, 15

36 Subordinates fail to exercise their power to decide 26, 12, 83, 85

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4 Supervision

Cross Reference Numbers

40 Morale. Tension, insecurity, lack of faith in the supervisor and the future of the job 15, 56, 64, 80

41 Conduct. Supervisor sets poor example 13, 84

42 Unsafe Acts. Failure to observe and correct 24, 11, 52

43 Rules. Failure to make necessary rules, or to publicize them. Inadequate follow-up and enforcement. Unfair enforcement or weak discipline 25, 36, 12, 52

44 Initiative. Failure to see problems and exert an influence on them 22, 34, 30

45 Honest error. Failure to act, or action turned out to be wrong 10, 12, 15, 81

46 Team spirit. Employees are not pulling with the supervisor 40, 21, 56

47 Co-operation. Poor co-operation. Failure to plan for co-ordination 23, 25, 15, 66

48

49

5 Disorder

Cross Reference Numbers

51 Work Flow. Inefficient or hazardous layout, scheduling, arrangement, stacking, piling, routing, storing, etc. 41, 24, 31, 80

52 Conditions. Inefficient or unsafe due to faulty inspection, supervisory action, or maintenance 21, 32, 14, 86

53 Property loss. Accidental breakage or damage due to faulty procedure, inspection, supervision, or maintenance 43, 20, 80

54 Clutter. Anything unnecessary in the work area. (Excess materials, defective tools and equipment, excess due to faulty work flow, etc.) 44, 36, 80

55 Lack. Absence of anything needed. (Proper tools, protective equipment guards, fire equipment, bins, scrap barrels, janitorial service, etc.) 44, 36, 80

56 Voluntary compliance. Work group sees no advantage to themselves 40, 15, 41

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6 Operational

Cross Reference Numbers

60 Job procedure. Awkward, unsafe, inefficient, poorly planned 44, 32

61 Work load. Pace too fast, too slow, or erratic 44, 51, 63

62 New procedure. New or unusual tasks or hazards not yet understood 43, 44

63 Short handed. High turnover or absenteeism 80, 40, 61

64 Unattractive jobs. Job conditions or rewards are not competitive 81, 46

65 Job placement. Hasty or improper job selection and placement 80, 86

66 Co-ordination. Departments inadvertently create problems for each other (production, maintenance, purchasing, personnel, sales, etc.) 45, 35, 13

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7 Personal Traits

(When accident occurs)

Cross Reference Numbers

70 Physical condition. Strength, agility, poor reaction, clumsy, etc. 44, 26, 65

71 Health. Sick, tired, taking medicine 44, 24, 65

72 Impairment. Amputee, vision, hearing heart, diabetic, epileptic, hernia, etc. 44, 24, 65

73 Alcohol. (If definite facts are known) 80

74 Personality. Excitable, lazy, goof-off, unhappy, easily distracted, impulsive, anxious, irritable, complacent, etc. ... 44, 13

75 Adjustment. Aggresive, show off, stubborn, insolent, scorns advice and instruction, defies authority, antisocial, argues, timid, etc. 44, 13

76 Work habits. Sloppy. Confusion and disorder in work area. Careless of tools, equipment and procedure 44, 13

77 Work assignment. Unsuited for this particular individual 42, 65

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8 Management

Cross Reference Numbers

80 Policy. Failure to assert a management will prior to the situation at hand 24, 81, 83

81 Goals. Not clear, or not projected as an "action image" 83, 86

82 Accountability. Failure to measure or appraise results 36

83 Span of attention. Too many irons in the fire. Inadequate delegation. Inadequate development of subordinates 12, 86

84 Performance appraisals. Inadequate or dwell excessively on short range performance 20,65

85 Mistakes. Failure to support and encourage subordinates to exercise their power to decide 36, 33

86 Staffing. Assign full or part-time responsibility for related functions 66

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To illustrate TOR analysis

List the number of each TOR factor (cause item) which applies and immediately list under it the cross reference items. To illustrate, suppose that #35 is accepted as the prime cause.

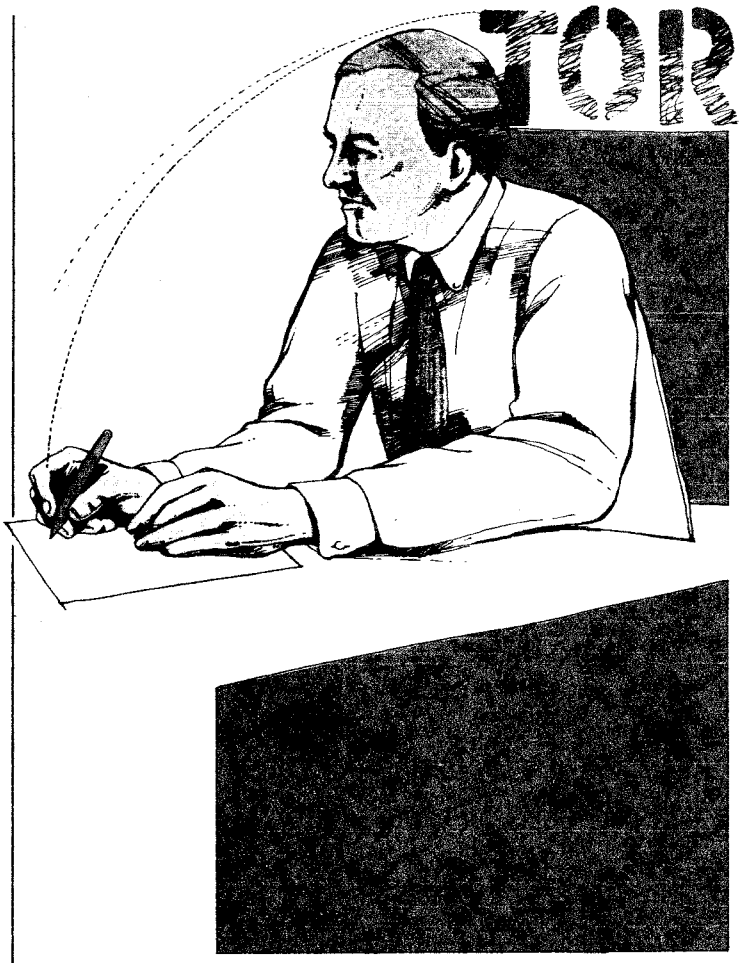
35 Orders ~~40 Morale~~ ~~46 Team~~ 13 Correction 15 Tell Why	Brief discussion rejects #40 and #46, but #13 and #15 seem to apply, producing cross reference to six additional items.
~~42 Acts~~ 20 Duties ~~30 By Passing~~ ~~44 Initiative~~ ~~24 Pressure~~ 83 Span	Brief discussion rejects four items, but #20 and #83 produce cross reference to another six items.
~~44~~ ~~34 Decision~~ 14 Instruction ~~53 Prop. Loss~~ ~~12 Training~~ ~~86 Staffing~~	You have already considered and rejected #44. Discussion rejects all but #14, which cross references to three additional items.
~~15~~ ~~16 Listen~~ ~~42~~	You have previously considered #15 and rejected #42. And a brief discussion rejects #16. The **trace** step is complete.

Eliminate! Tracing underlying causes in this situation leaves you with six TOR factors (35, 13, 15, 20, 83, 14). Probe further into these. Eliminate further if the situation would have happened anyway. Use this discussion to sharpen the insight your TOR group has gained, and to begin thinking about corrective action.

Seek feasible correction action.

A problem correctly defined is half solved. TOR analysis helps you to locate and define operational errors but it does not produce a pat answer. Those participating in a TOR session see how each depends on the other, realize how futile it is to blame other supervisors, understand better how to work together, gain new insights into complex operations. A TOR session is training in itself.

Sometimes the only feasible action is a summary made by the manager conducting the session. Sometimes a series of TOR sessions will sharply define training needs. The search for feasible corrective action is indeed a search, but a search in which all participate, in which all see the problems and all see they have tasks to do.



How to conduct a TOR session

TOR analysis is conducted by a manager seated with his subordinate supervisors, or by a department supervisor seated with his subordinate foremen. Though it can be used to explore problems within one department, perhaps greater results are attained if the TOR group represents interdepartmental functions.

Successful TOR sessions depend first on the selection of participants. In a smaller operation nearly all department heads report to the company manager or president. This is a natural grouping — a manager and his subordinates — where TOR sessions reach naturally into all interdepartmental relationships. In larger and more complex organizations TOR groups should be selected in keeping with the organizational structure. Its thorough use might require several groups at different echelons, in which the TOR leader at one echelon would be a participant in a TOR group at a higher echelon.

TOR sessions can also be conducted by personnel managers or by training directors. Such staff people might achieve good training results, but they are at least one step removed from effective managerial action and follow-up. Consider this fact in terms of your purpose in conducting a TOR session.

Why have a TOR session? The last thing any organization wants is another meeting. On the other hand, some organizations have few supervisory management meetings, or feel those they do have tend to be aimless or that their meetings fail to get at their problems. Some organizations have continuous training activities into which TOR analysis can fruitfully fit. Others may want TOR sessions in the absence of other training.

All organizations have operating errors stemming from obscure underlying causes which TOR analysis helps to expose. The typical operating error, since its causes are obscure, is met with the defense of fear and emotion rather than objective search for understanding. TOR analysis changes this climate. Emotions stay cool when supervisors trace a number sequence instead of defending themselves. Thought centers on the system of doing things and the group gains insight, enabling them to do things better.

Sometimes a summary of the points explored is the only action that needs to be taken. Here the manager must keep cool; if TOR sessions turn into a "Chew-out," frankness vanishes. Sometimes the search for feasible action requires more that a summary and can be quite frustrating. Though TOR analysis exposes areas where action is needed, it doesn't propose facile solutions.

Continued TOR sessions begin to build a pattern to guide management action. For example, incidents tend to fall into categories.

1. Departure from normal procedure.
2. Normal procedure exists but it failed to produce desired results.
3. No routine procedure exists.
4. Interdepartmental incidents in which causes exist in several departments, or several suffer from the results.
5. Incidents totally within one department.
6. Incidents triggered outside the company (i.e. supplier).

After a few TOR sessions, you will move more quickly to the point of seeking feasible action. Recurring factors will become more apparent. Feasible action and effective managerial influence will also become more apparent. Meanwhile, the problems explored, the insights gained, and the training in TOR analysis are in themselves an influence for change and improvement.

Periodic use of TOR analysis may be deep or shallow, depending upon need to:

1. Develop team co-ordination by supervision to solve problems and achieve goals.
2. Develop rounded supervisory competence in the absence of specialized staff help.
   - Expose and define training needs.
   - Orient newly appointed supervisors.
3. Deal with fundamental causes of recurring problems.
4. Cope with expanding and fast-changing conditions.