

EVERYBODY LEADS

TEAM MEMBERS TALK ABOUT SELF-MANAGEMENT

BACKGROUND NOTES

This is the "inside" story about teamwork and self-regulation, as told by hourly OCAW employees and managers responsible for KV-3, the first semi-autonomous unit designed at Rohm & Haas (Kentucky). (The story of the 10year process to convert the whole plant-site to this new way of working is documented in the companion Modern Times Productions video: "Redesigning Work for Self-Regulation".)

THE "GREENFIELD" DESIGN of KV-3 UNIT:

In 1983, a new unit, KV-3 making plastic additives (which go into shrink wrap, plastic food containers, and molded bottles) was still in the technical planning stages when the area manager decided to consider new ways to organize the work. A team of 10 hourly and salaried employees was formed to research plants with innovative work methods.

The design team included operators, a mechanic, engineer, supervisor, personnel advisor, and an external consultant. They worked full-time, over five months, (August 29, 1983-January 27, 1984), in a trailer beside the site where the new plant was being constructed. Their adjacency to the physical plant symbolized the methodology the team used to design the KV-3 organization--joint optimization of technical and human needs developed through "socio-technical systems analysis".

(For a description of "socio-technical systems analysis", see Work ReDesign:Executive Summary in the Good Reading section of The Modern Times Workplace web site.)

The technical process of KV-3 starts with raw materials (base chemicals, catalysts, soap, and water) pumped into large "kettle" reactors--this "charge-up" or infeed of materials may take an hour. The batch is then "cooked" under pressure within controlled temperatures for several hours. KV-3 includes several different reactors that run simultaneously. The batch from each reactor is eventually transferred as a liquid for processing into powder or pellet form. Part of the technical innovation of KV-3 was to introduce computer-control of this process.

To reinforce employees' understanding of the whole technical process, and to provide maximum flexibility and response capability, the 10-member research/design team proposed a KV-3 organization with a one-rate job structure, and pay-for-knowledge built on 6 skill blocks, starting at raw material handling, and progressing to the various kettle/reactor control functions. It was anticipated that all 6 employees on each of the 4 shift teams would become trained in all the skill blocks to the highest rate, and be able to rotate through all the functions. (This design built on an innovation several years earlier when the company adopted a "compressed rate structure" of A, B, and C operators.)

The KV-3 organization includes virtually all the job functions (such as quality control laboratory testing, packaging, and order-taking) needed to be self-regulating. (In the first KV-3 design, a mechanic was part of each shift team. However, mechanics have since been organized as a sub-unit serving 4 reactor units in the plastic additives business.) Nevertheless, the operating team orders its own raw materials, schedules and conducts quality control, makes, coagulates, and dries its emulsion, packages the product, and ships it. As each shift begins, guided by one of their peers in the week's designated leader role, team members meet briefly to decide who will perform which functions during the 8 hours.

TEAM LEADERSHIP:

Leadership of each KV-3 team is a role, not a fixed position. The role incorporates all the administrative duties previously performed by a shift foreman, except for discipline. Administrative duties include overtime administration, issuing of permits, time cards, spill reports, stores requisitions, production schedules, special lab work requests, and emergency shutdown and evacuation procedures.

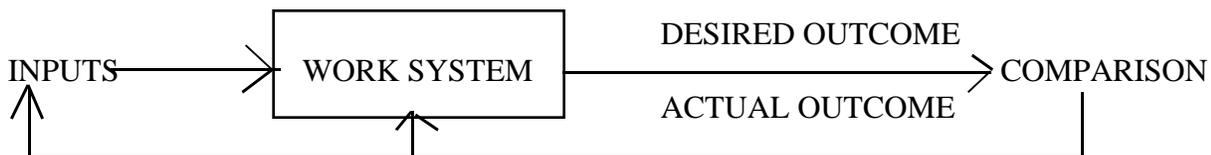
There are also daily operational decision-making responsibilities, for example, work assignments or production process changes, made as much as possible by consensus with other team members, and with the advice of experts (e.g. chemical engineering) as required. At least daily, there are reporting requirements such as running the morning technical review meeting.

Different teams handle this leadership role differently. In the extreme case, some teams tend to rely on one individual (most of the time) to perform all the tasks--this can simply re-create the old foreman role as a new "hourly boss". Much more common at Rohm and Haas (Kentucky) is the practice of regular (often, weekly) rotation of this role among all permanent team members.

In the KV-3 team featured in "Everybody Leads", there was regular rotation of most components of the leadership role (e.g. morning meeting reports), with some very specific duties (e.g. overtime administration) performed on a steady basis by one or two individuals.

SELF-REGULATION:

Work, like other systems is capable of "self-regulation" through feedback (comparing actual vs. desired outcomes), that informs adjustments in the nature of inputs and/or in the operation of the internal process of the system itself. KV-3's team leadership and job structure enables feedback to be obtained directly by the operators who can regulate/adjust the inputs or the process themselves.



In order to apply this concept of self-regulation, the KV-3 design team identified the involvement that the team would need to have in planning of maintenance, raw material inventories, customer relations, and production schedules. Correspondingly, information systems (and some mini-labs) needed to be redesigned to ensure operators received immediate feedback on measures of actual performance including unit efficiency sheets, batch cycle times, inventories, SPC charting, and customer reports.

FLEXIBILITY & RESPONSE CAPABILITY:

The training of operators in multiple functions "inside" and "outside" the control room has enabled team members to support each other when an individual work station is under extreme pressure. In effect, the team is able to move its resources to where the work is most critical to be done. And most importantly, a set of expectations exists that everyone will help out because the "whole unit is our job"--there are no part-jobs that individuals "own" separately.

Rotation among work stations (kettle operations vs. packaging, for example) does provide variety and potential ergonomic relief, but its main purpose in this team structure is to help operators maintain currency in the full scope of their (multi-functional) "job".

TRAINING REQUIREMENTS:

The design proposed for KV-3 was clearly going to require more training than the conventional (one person-one job) structure in the other units. The stated intention was for all the KV-3 team members to become trained in all 6 skill blocks. In addition, there would be training required to inform team members for all their leadership tasks.

For the redesign of existing units at Rohm and Haas (Kentucky), where there were already people employed in specific positions, design teams identified the skills and knowledge held by each current employee, as well as the amount of training time likely required for each employee to achieve qualification in the other functions within the team. For example, person A may be qualified to operate kettles E and F, but would need 3 weeks to upgrade themselves on kettle G, and another week to re-train at packaging, plus 1 week of training in administrative duties. As part of the design proposal, such a detailed training plan gave the steering committee a clear indication of the training impacts.

MANAGEMENT / TECHNICAL SUPPORT SYSTEMS:

The Unit Coordinator or Team Manager was designed to be the first-level of management for the team. Duties included:

- coordination between the team/unit and area management (for other units within the business)
- information link to the business environment
- responsibility for overall unit performance and conditions
- responsibility for maintaining team interactions (within the unit)
- final evaluation of team member qualifications.

The Temporary Team Coordinator (TTC) was to function as co-decision maker with the team leader, reporting to the Unit Coordinator/Team Manager. There was to be a progressive delegation of administrative duties to the team from this ex-foreman, usually over an 8-month to a year-long period. During this time, the TTC was expected to function as a "coach" who works himself out of one job into a new job, e.g. Training Coordinator, Customer Service Representative.

Not in KV-3 (a new facility to which employees posted as their chosen option), but in some redesigned units, area management did make a subsequent decision to re-assign a Temporary Team Coordinator back into a unit for a limited period to help the team recover its performance. However, this was always a temporary assignment only.

RESULTS:

Seven years after start-up (when this video documentary was compiled), KV-3 had achieved some extra-ordinary performance in quality and unit costs.

Grievances were also reduced to an insignificant level, and absenteeism and employee turnover were almost non-existent.

To have experimented with KV-3 as a self-regulating work unit, at the same time that new automated control systems were introduced along with other innovative technology was a huge risk, and also a tremendous opportunity. Without disturbing the stability of the existing operations, KV-3 provided a demonstration to both the skeptics and the optimists, as to what might be gained from a higher level of employee involvement in the business. There were significant technical difficulties in the first year, and pressure applied to shut down the experiment, but plant management persevered, and the employees of KV-3 proved they could do the job--"the whole job".