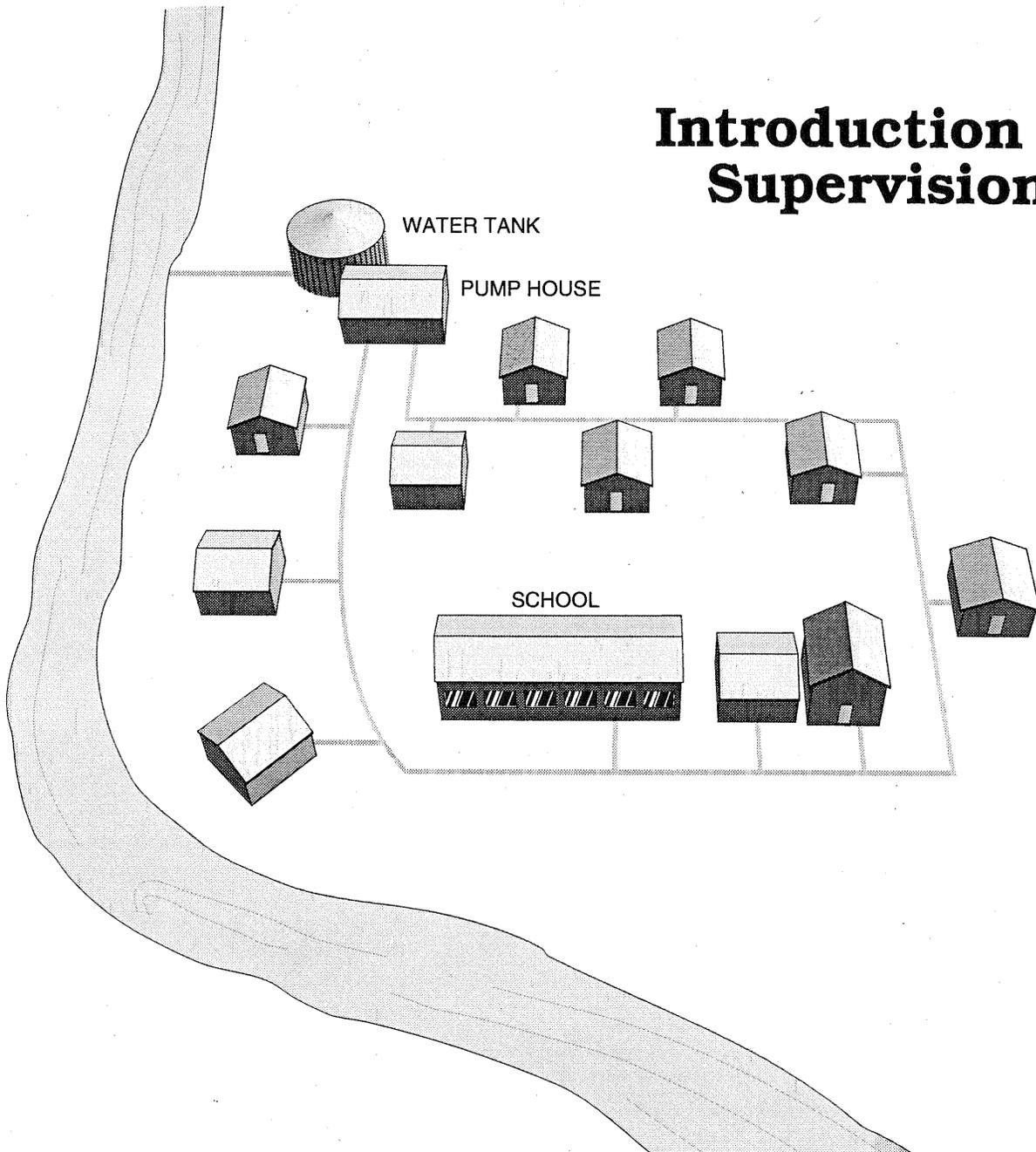


O & M of Small Water Systems

Introduction to Supervision



O & M of Small Water Systems

Funding for Development - Alaska Department of Environmental Conservation.

Development - Skeet Arasmith - Arasmith Consulting Resources Inc., Albany, Oregon.

Graphic Art - Kimon Zentz - Arasmith Consulting Resources Inc., Albany, Oregon.

Review team - Greg McPhee-Village Safe Water, Larry Strain-IHS Office of Environmental Health and Engineering, Linda Taylor-ADEC, Bill Fagan & Kerry Lindley-Department of Environmental Conservation, Jim Ginnaty-SEARHC.

Project Managers - Bill Fagan and Kerry Lindley.

© 1993
ACR Publications, Inc.
1298 Elm Street SW
Albany, Oregon
(503) 928-5211

TABLE OF CONTENTS

Introduction to Supervision

Introduction	2
Responsibility, Authority and Accountability	5
Responsibility	5
Authority	5
Accountability	6
Self Management.....	7
Time Management.....	7
Preventive Maintenance	10
Information Management	16
Working with Others	19
Communication	19
Scheduling Work.....	28
Supervision Tools	30
Delegation.....	31
Problem Solving	34
Meeting Management	40
Conclusion	41
Worksheet	43

INTRODUCTION TO SUPERVISION

WHAT IS IN THIS MODULE?

1. Definitions of supervision.
2. Functions of supervision.
3. How the supervision concept is applied to small systems.
4. Description of the responsibility, authority and accountability elements of supervision.
5. Key components of time management.
6. The maintenance management process.
7. The components and process of communication with customers, workers and management.
8. The process of scheduling work.
9. An introduction to five supervision tools, facilitating, coaching, delegating, problem solving and meeting management.

KEY WORDS

- Accountability
- Authority
- Brainstorming
- Coaching
- Communication
- Delegation
- Facilitating
- Maintenance management
- Mind mapping
- Responsibility
- Superintendent
- Supervision
- Time management

MATH CONCEPTS DISCUSSED

- Prioritization
- Personnel hours

SCIENCE CONCEPTS DISCUSSED

- Meeting management
- Personality styles
- Values
- Communication

SAFETY CONSIDERATIONS

- Providing proper directions

MECHANICAL EQUIPMENT DISCUSSED

- No mechanical equipment discussed in this module

INTRODUCTION TO SUPERVISION

INTRODUCTION

What is a Supervisor?

Supervision¹ is the application of management principals to line and staff employees. Isn't that great. Nice wording, but what does it mean? Well supervision is working more with people than things. A supervisor is the pivotal position between the management of an organization and the workers in the organization.

Why Study Supervision?

In order to accomplish tasks in an organization, we need supervisors. A supervisor is any person who applies management principles to getting work done. Supervising, guiding others and doing "office work" is often not considered "real work." This is because it requires learning how to do new tasks and skills that are different than the tasks and skills necessary to repair a pump, run a backhoe or perform a laboratory test.

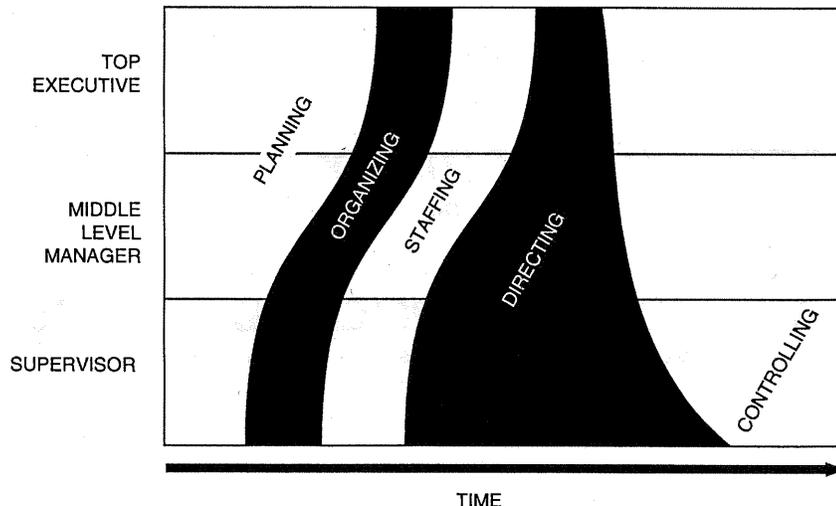
Formal Definition

The formal definition of supervision and a supervisor was provided in the first sentence of this module. It is also said to be getting work done through the cooperation of others.

Management Principles

In the formal definition, management principles were described. What are management principles. This is the classic process of dividing supervision and management practices into:

- Planning
- Organizing
- Staffing
- Directing
- Controlling



¹ Supervision - Directing human resources, including the training, appraisal, and disciplining of workers.

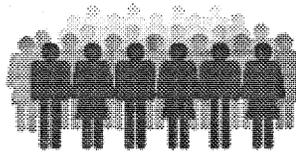
Not a Formal Approach

Because this module is a discussion of the application of these principles and not a theoretical discussion of the supervision or management process, we will not be dividing the material into these areas. Instead we will be discussing the use of these principles in getting work done. One last formal definition, before we leave this area should be attempted, the definition of management.

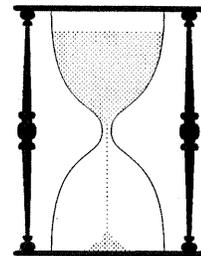
What is Management?

Management is the process used to direct the use of resources to achieve desired results. It is working with others. Notice that the emphasis was on the use of resources. What resources are considered? They include

- People
- Materials
- Time
- Money



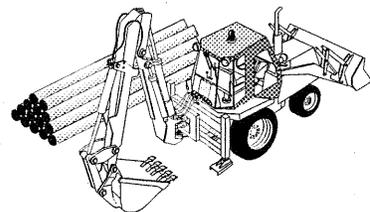
PEOPLE



TIME



MONEY



MATERIALS & EQUIPMENT

In a production area resources would also include space. Of all of these resources people are the most important. Without people to perform the work there is no production.

Supervision and the Small System

If you are the only employee in the water system, then why study supervision? Who are you going to supervise? The single person operation is the most difficult of jobs. The single person responsible for all of a water utility, must wear many hats and one of those is supervisor. They must supervise themselves and on occasion part-time workers. We all must supervise ourselves. The most difficult supervision task of all.

² **Superintendent** - The title commonly used to identify the person in direct responsible charge in a public utility.

Titles of Supervisor

A supervisor in a water system may be called the **superintendent**², chief operator, or supervising operator. In most of the US, the person who is responsible for the general operation and maintenance of a small water system is called the superintendent. Even if there is only one employee. If this person, reports to a city manager, council, board of directors or other elected officials they are called the superintendent. However, in rural Alaska, DEC and PHS have chosen to call this person the "supervising operator." For the sake of this text material we will use the title superintendent.

Community Size

This material is directed to the one or two person crew in communities in rural Alaska with populations of less than 500.

Who Needs Supervision

As was mentioned earlier, we must all supervise self. Beyond that the superintendent will occasional supervise part time workers and vacation replacements or alternates. Supervision is a function or process and not a position.

Importance of Process

Without proper supervision the system will fail and the health of the community can be threatened. Learning supervision skills should allow the one person organization to become more effective, reduce frustration and make the job go easier. The job of superintendent is one of great **responsibility**³. In order to accomplish the job, the superintendent needs the **authority**⁴ and must be accountable for his or her actions.

³ **Responsibility** - The obligation to carry out one's assigned duties to the best of one's ability.

⁴ **Authority** - The power to do or get something done; it may be formal or informal in nature.

RESPONSIBILITY, AUTHORITY AND ACCOUNTABILITY

RESPONSIBILITY

The Process

In order to be responsible for our actions we need to know what we are responsible for. The definition of the area of responsibility can only be defined by your immediate supervisor. This might be the city manager or city council. It is important that there be a clear understanding of what, you as the superintendent are responsible for. Typical areas of responsibility include:

- Operating the system in an efficient manner.
- Performing all operation and maintenance task, that are required, within the limits of equipment, materials and money.
- Developing and adhering to an annual budget.
- Scheduling your work and the work of the alternate or other part or full time workers.
- Communicating completely and frequently with workers, management, customers, and the regulating agencies (DEC).
- Implementing a operation and preventive maintenance program. In most instance the PM program is designed by the designer of the facility. The superintendent is typically responsible for implementing this program and developing and implementing a routine operations program. Routine operations, includes, data collection, sampling, testing and reporting.

Responsibility and Delegation

The one thing that cannot be delegated away is responsibility. We can delegate a task to an individual and hold them responsible for the task, but we are still responsible to see that the task is completed on time and in the correct manner. To say to a manager that a task was not completed because it was delegated to someone else is not an acceptable answer. We are all responsible for those tasks assigned to us, whether we delegate them to another or not.

AUTHORITY

Where Do We Get Authority?

Our authority comes only from our immediate supervisor. This may be the mayor, city manager, administrator or the council. In order to perform the tasks that we are responsible for, we need the authority to use the resources necessary to obtain the desired results. Many supervisors fail to accomplish the results, because they were given the responsibility to get the job done but not the authority to use the resources necessary to perform the work.

Typical Authority

Typically a superintendent should have the authority to:

- Spend a certain dollar amount without obtaining written approval. This is assuming the amount is consistent with the budget and that proper purchasing procedures are followed.
- Hire part-time workers.
- Apply discipline to part time workers and self.
- Coordinate with state and federal officials.
- Coordinate construction projects.
- Order supplies as is necessary.
- Hire consultants to perform tasks that were budgeted.

Required Skills?

When the community is not able to hire an operator who possess these skills at the time of hiring, the authority for many of the tasks described here will remain with the city manager. In these cases the city manager must work closely with the operator in the performance of these activities. At the same time the city manager has the responsibility to train, either directly or indirectly, the operator so that these tasks can be delegated directly to the operator.

ACCOUNTABILITY

What Are We Accountable For

We all must be held accountable for our behavior. This is what we want from others and this is what we should expected from ourselves. In the final analysis we are all accountable to ourselves. On the job we are accountable for our area of responsibility as defined by our supervisor and agreed upon by us.

Customers

We, as the water superintendents, are accountable to our customers for the adequacy and reliability of the water system. This is assuming that we started with a system that is adequate and reliable. Our customers expect the water to be safe, adequate and reliable. Nothing less will do.

Immediate Supervisor

We are accountable to our immediate supervisor. When we do or do not meet their expectations, we are accountable for all of our actions. We cannot lay blame on others, materials or life's problems.

Workers

We are accountable to those we hire to give clear directions, supply them with the resources they need to perform their tasks, give them the authority to get the job done and clearly define our expectations and define their responsibilities.

System

We are accountable to ourselves and those who hire us for the proper operation and maintenance of the system. This includes the identification of problems

and sharing information with those that give us the responsibility about the condition of the system.

Agencies

In many cases, and especially if you are a certified operator, you are accountable to the state regulatory agencies for your actions or inactions that affect the quantity, reliability and quality of the water.

How Do We Survive

All of this may seem a bit overwhelming. However, there are a few simple tools that can help each water superintendent to become more effective, and at the same time, make being responsible and accountable a positive process.

SELF MANAGEMENT

TIME MANAGEMENT

Where to Start

The first step in becoming responsible for our actions is to take control of our time. Someone once said, "control your time and you take control of your life." It is true. But how do you control time.

Events Not Time

First of all, you cannot control time. You can only control events. The basic unit of time is the event. It is events or activities that use our time. If you can control an event or activity, then you have control of time. The key is the control of the event.

How to Control Events

Some things can be controlled and some things cannot. One of the keys to life is determining what we have control over and then work to control those activities or events. Controlling events requires making choices between those things that are important and those things that are not important.

What is Important

Important activities or events are those that get results. Often people focus on activities, "I am really working hard", but not on results. It makes little difference how hard one works if there is no result. It is results that count, not level of effort.

What is Time?

Time is a paradox, it is a natural law. We want more time and yet we have all the time there is. We are responsible for how we spend our own time. There are 1440 minutes a day, no more no less. We each have the same amount. How we choose to spend this time is important. There is always enough time to do the important things, but there is never enough time to do everything. One of the keys is to determine which items are important.

Time as a Resource

Time is a perishable resource, it is always ready to use. If we don't spend it, it is used anyway. If it is perishable then we should not waste it but use it in an effective way. Each of us is responsible for how we use our time.

Who Will Control

One of the interesting things about managing time, is that if you don't manage your time others in your life will manage it for you. This means you are helping them accomplish their goals at the expense of your goals.

Habits

Our normal process of controlling events, and making choices is based on habits. We have developed habits that control our decision making process and thus control our life. If we want to take charge of our life, we need to change our habits. In this text we do not have the time to explore all of your habits. Instead let's deal with processes that are effective in controlling events. As you review these processes you will find that you do not always agree. When this happens, stop and evaluate. Is the disagreement over facts or is the process in conflict with one or more of your habits. If it is in conflict with your habits, evaluate if the habit is effective in getting the results you want.

Time Management Techniques

One final input on **time management**⁵ techniques. Each book on time management we have read, indicates that the procedures and methods described are "the" answer to time management. We do not believe that is true. This is not about "the" answer, but about "an" answer to time management. The most successful managers of time that we have observed are those individuals who have adapted time management strategies to their own style. That is, they have selected from among the tools those that fit their style, personality and personal taste.

PLACING TASK IN GROUPS

Make a List

One of the successful techniques that is used is to place all of your tasks, need to do and want to do in a list. Some people find it helpful to use several sheets of paper or pages from a flip chart, each one with a heading concerning a major area of concern, (such as, house, water plant, **maintenance management**⁶ system, new construction, improvements, fishing, etc.).

Prioritize

After you have finished listing everything you can think of, the next step is to prioritize the list. What is important is to separate the tasks or activities into what is important and what is urgent. One way is to think about things in three categories (A, B or C). "A" priorities are those things that are urgent and important (get results). "B" category items are those that are urgent but not important, (returning a phone call from a vendor that you did not call, responding to an inquiry from a state agency that does not affect water quality, etc.). "C" priorities are those things that are

⁵ **Time management** - A process of systematically taking control of the events that consume our time.

⁶ **Maintenance management** - A systematic process of planning, organizing, scheduling and controlling preventive and repair maintenance so as to provide a defined level of service at a specific cost.

not important. Unfortunately we spend a great deal of our time doing C's and not A's.

Establish Goals

I know, most material says to start with goals. However, we find that most of us are so inundated with daily activities that we cannot think clearly about goals. So, by writing down all of the "things" (activities, tasks, goals, the important and the urgent) that we can think about first, we clear our mind and allow ourselves to focus on goals.

Use one sheet of paper, write fast and do not evaluate. Write down what you want to accomplish in the next year. Include personal and work related things. Do not get focused on tasks, think about goals. Purchasing an new boat, taking a vacation, improving water quality and meeting reducing customer complaints are all goals.

Objective

If possible define the objectives necessary to meet these goals. What will need to be done, and how will you measure success. For instance, improving water quality by 10% or reducing customer complaints by 20% or purchasing the new boat by August 1 are all objectives. They are measurable. Don't get hung-up on trying to determine if an item is a goal or an objective. The key is to brainstorm, what you want to accomplish and how you will know if you have reached the objective or goal.

To-Do List - Objective

Of each goal or objective, make a list of the activities or tasks that will be necessary to achieve the end result.

Prioritize

Using the A, B, C method described above prioritize the list. Now go back thorough the list. Make everything on the list either an A or C. Either you are going to do them or you are not. So the same thing with the earlier list of routine activities.

Daily To Do List

The next step is to schedule the activities that have been listed. Start with the A's. Use a calendar with large squares or some other space to write activities. Place the activities on the calendar on the days that the you are to work on them, not the day they are due. It is OK to place the due date on the calendar, but you must, to be successful, place on the calendar time to work on the task.

Prioritize

On the calendar or whatever you use for a daily to-do list, prioritize the tasks. Start with the A's. The most important time management tool used today is the daily to-do list.

Reschedule

At the end of each day or week, adjust the calendar. Take things off the calendar that you see you are not going to do, and move unfinished items ahead.

PREVENTIVE MAINTENANCE

Getting Organized

One of the items usually on any operator's list of to-do tasks is preventive maintenance. As a part of construction you may or may not have received a listing of tasks that need to be done on a routine basis. Regardless, most operators find the listing difficult to accomplish, because it is not scheduled. It is not on our daily to-do list. So how do you get PM scheduled into our routine activities. First, lets assume that you **do not** have a listing of PM activities. So how do we get one.

Listing of Assets

Make a listing of all of the assets (equipment) associated with the water system. Pumps, motors, filters, tanks, chemical feed equipment, piping, boilers, heat exchangers, lift stations, wells, intakes, major tools, and, etc. Do not list all of the tools, only the large tools. Do not list all of the components in an electrical panel. Only list the panel and its function.

Listing Task

Make copy of the form on the next page for each major asset, (lift station, well site, boiler, filter, etc.) and list each task that you know needs to be done on a regular basis. Do not list potential repairs, list only those activities that can be routinely scheduled and are repeatable. Examples would include:

- Lubrication of bearings
- Replacement of packing
- Inspecting and cleaning filter media
- Replacing chemical feed pump valves

Frequency

For each task determine the frequency that the task should be completed. This can be easily indicated by using a one letter code for different frequencies. An example of a typical code is:

D = Daily

W = Weekly

M = Month

Q = Quarterly

S = Semi-annually

A = Annually

2 = Every two years

Priority

Next, for each task assign a priority. When you have an alternate performing the work and a crisis appears, it is important that this person be able to determine which PM tasks are high priority and which are not. This process can also be helpful to you when there is

to much to do and not enough time. Select the highest priorities first. A simple priority scheme is the most successful. Here is an example:

1 = Must be done on the day scheduled

2 = Must be done within one week of the date scheduled

3 = Must be done within one month of the date scheduled

4 = Must be done within 3 months of the date scheduled

When

The most important part of this activity is determining when you want the work to be done. For those items that are to be done weekly, determine which day of the week. For those items to be done monthly determine which week and which day of the week. For those items that are completed on a schedule of less than once every month, determine which month, week in the month and day in the week that you prefer to do this work.

Using the Week

In most small systems, the operator wears several hats and is responsible for more than one utility. One effective method of developing a working schedule is to select which days you are going to work on which utility. We realize that some tasks must be done every day, but the weekly, monthly, quarterly and etc.. can be grouped. For instance, you could select Tuesdays to do all weekly water maintenance tasks, Wednesdays to do all weekly wastewater maintenance tasks, the second Thursday of each month to do monthly water tasks and the third Thursday to do all wastewater monthly tasks. The first and third Thursdays could be set aside for annual tasks.

Monday and Friday

Notice that no PM is scheduled on Monday or Friday. This because these days are commonly consumed in small utilities with unscheduled task.

Calendar

Use a calendar to enter all of the important activities that could prevent you from completing PM task. These are personal activities that take you away from the site. Compare the calendar to the task list. Move any conflicting tasks to another date.

List

Make a check list of all of the daily, weekly and monthly tasks. Use the check list to indicate that the task was completed.

Wall Chart

A wall chart such as the one shown in the example below can be used to determine what work is to be done. The chart can be laminated and as tasks are completed they can be marked off with a grease pen. This can be a very satisfying experience.

Computers

If you have a computer, this process can be simplified by using a database to develop the listing. The database allows easy sorting of the data into categories. A technique that has proven successful by the RMW in Southeast is to place this data on a personal scheduler program. The program serves as a good reminder of what is scheduled on a specific date. It allows you to look forward in time and determine if there is any work that will be in conflict with important personal activities.

City of _____
Water Treatment Plant
Preventive Maintenance Schedule

ID #	Equipment	Task
Daily		
102	Differential Pressure Gauge - Basket Strainer	Check and record pressure
106	Pressure Gauge - Between PRV's	Read and record
110	Gauge - discharge from PRV station	Read and record
562	Backwash pump	Read and record discharge pressure
680	High service pumps - header pressure	Read and record
816	Eye wash - Soda Ash System	Inspect, flush
817	Eye wash - Alum Feed System	Inspect, flush

Weekly - Every Monday

202	Alum Bag feeder	Inspect and clean feeder & screen
650	High Service Pump #1	Inspect packing for proper leakage
104	Raw Water PRV #1	Clean Y strainers on pilot valves
660	High Service Pump #2	Inspect packing for proper leakage
670	High Service Pump #3	Inspect packing for proper leakage
108	Raw Water PRV #2	Clean Y strainers on pilot valves
511	Surface wash arms Plant A	Check rotation speed - 6 - 12 rpm
562	Backwash Pump	Inspect mechanical seal for leakage
654	High service Pump #1 - discharge pressure gauge - prior to control valve	Read and record
531	Surface wash arms Plant B	Check rotation speed - 6 - 12 rpm
551	Surface wash arms Plant C	Check rotation speed - 6 - 12 rpm
664	High service Pump #2 - discharge pressure gauge - prior to control valve	Read and record
674	High service Pump #3 - discharge pressure gauge - prior to control valve	Read and record
800	Building	Inspect and clean
900	Grounds	Inspect and clean

Monthly

First Monday		
865	Emergency Lights	Inspect
First Tuesday		
511	Surface wash arms - Plant A	Lubricate junction of indicator rod and rod bearing
880	Sample Pump	Inspect
650	High Service Pump #1	Lubricate Stuffing Box
531	Surface wash arms - Plant B	Lubricate junction of indicator rod and rod bearing
551	Surface wash arms - Plant C	Lubricate junction of indicator rod and rod bearing
660	High Service Pump #2	Lubricate Stuffing Box
670	High Service Pump #3	Lubricate Stuffing Box

ID #	Equipment	Task
	First Wednesday	
303	Flocculation chamber Plant A	Clean
	Second Monday	
864	Exterior lights	Inspect
	Second Tuesday	
109	Pressure Switch - Raw Water Line	Test - See file for procedure
400	Ball valves on sed basins	Exercise
	Second Wednesday	
313	Flocculation chamber Plant B	Clean
	Third Tuesday	
502	Plant effluent butterfly valve	Exercise
100	Johnson Screen @ Intake	Clean screen & intake chamber
522	Plant effluent butterfly valve	Exercise
542	Plant effluent butterfly valve	Exercise
	Third Wednesday	
323	Flocculation chamber Plant C	Clean
	Third Thursday	
210	Alum Feed System Ball valves	
211, 208, 217		Exercise
	Fourth Monday	
218	Alum Feed Wye strainer	Clean
Annual		
	January	
	First Monday	
683	Discharge Flow meter	Calibrate
800	Inside lights	Inspect
862	Interior lights - Plant	Inspect
863	Interior lights - Lab, Office & Restroom	Inspect
	First Tuesday	
204	Alum Feed Pumps	Change Oil
205	Alum Feed Pumps	Change Oil
204	Alum Feed Pump DC motors	Inspect brushes and commutator
205	Alum Feed Pump DC motors	Inspect brushes and commutator
	First Wednesday	
219	Alum Feed Rotometer	Clean
220	Alum Feed System Calibration Column	Clean
	Second Monday	
651	High Service Pump - Motor #1	Amps, Volts, Megs
	Second Tuesday	
233	LMI Polymer Feed pump 1	Replace Diaphragm & check valves
234	LMI Polymer Feed pump 2	Replace Diaphragm & check valves
	Second Wednesday	
230	Flash mixer on Polymer System	Amperage & Voltage
235	LMI Polymer Feed pump 3	Replace Diaphragm & check valves

INFORMATION MANAGEMENT

Need

One of the frustrations we all feel is the one that goes with trying to find a document that we just know is somewhere at the plant, in the office, at home or, ... We know we have it, we put some it place so we would be able to find it, but now that we need it we have no idea where it is. There is a solution, the solution, is called "Information Management." Information management is the process of managing daily information in a manner that allows easy access and retrieval.

What is Needed

There are a wide variety of ways to store and retrieve information, this is one suggestion that is being used by other operators with a high degree of success. There are five things that are needed; one four drawer file cabinet, 5 to 6 foot high by 3 foot wide by 1 foot deep, book shelf, several 1" and 3" view type notebooks, Rolodex™, and a 4 or 5 foot white board.

THE FILE CABINET

Label the drawers:

- Equipment.
- Information.
- Operations.
- Scheduling.

Equipment

In the equipment file drawers, place hanging files for each piece of equipment. These files can be set up alphabetically by equipment name or type, or by the equipment identification number if one is used. Inside of each hanging folder place the following file folders:

- Manufacturers information - cut sheets.
- O & M manual.
- Spare parts information - including vendor data.

Information

In the drawer marked information, place major alphabetical dividers. Between the dividers place hanging files for each major information category that you wish to keep information on. The following are some suggestions for files.

- Budget - A copy of the existing budget, plus a folder in which to place ideas for next year.
- Water Quality Testing - This should contain the results of the test. A file folder for routine and non-routine samples should be filed. Remember you must keep these files for seven years. One folder for each year will make retrieval much easier.
- Copies of latest regulations by topic, water, wastewater, operator certification, streets, confined space, etc.

- Changes and Ideas.
- Vendors - Use a hanging file, with a file folder for each major vendor you use. This is the place to keep their phone numbers and line cards.
- Spare parts inventory.
- Tools inventory.

Operations

In the operations drawer make hanging folders for at least the following:

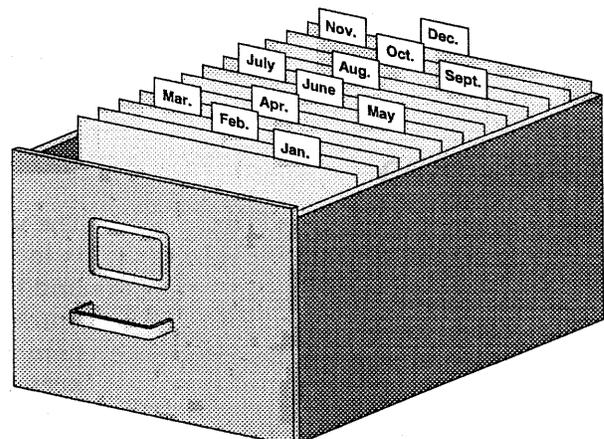
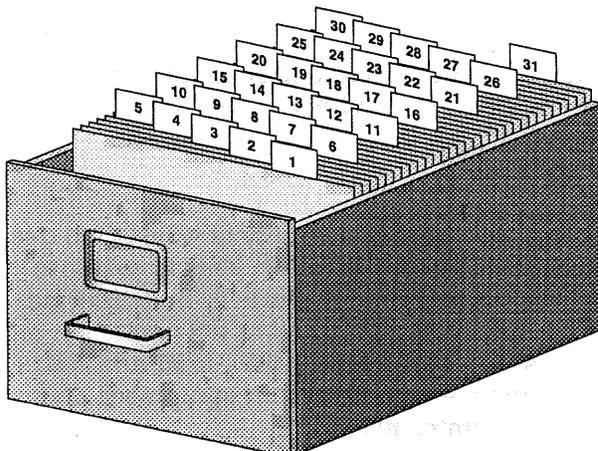
- Completed work orders - by month.
- Backlog of work.
- Packing list.
- Phone numbers.
- Monthly report to DEC - one folder for each year. One folder for each utility (keep water and wastewater reports separate).
- Monthly reports to council - by year.
- Cost information needed for monthly report.
- Operational data reports - by year.
- Copies of purchase orders of materials that have been received.

Scheduling

In the scheduling drawer, make a set of files, one for each month of the year. Make a set of file folders numbered one through thirty one. These files will be used as a tickler file on upcoming tasks.

Example:

Lets say it is the end of the month of July. Select the August file and place the 31 folders in the file. Place any notes, to-do items, state reports or other items that will need to be done in the next 31 days in the appropriate file folder.



When you receive information on when an item is to be completed or you want to make sure that you send in a special water sample, place the notification or a note in the correct months file.

As a day is finished the empty file folder is placed in the next months file. At the end of the month the notes are transferred to the appropriate files and you start all over again.

Other Scheduling Items

Besides the system described above, you should have files folders for:

- Water testing schedule.
- PM schedule.
- Routine operations schedule.

BOOK SHELVES

On one shelf, place all of the manufacturers catalogs and any O & M manuals too large to place in the file cabinet.

On a second shelf, place notebooks for the following:

- Copies of outstanding purchase orders. Make a listing in the front that shows P.O. number, date that it was sent or called to a vendor. If it was a phone PO then list the name of the person that took the order. The date that the material is to be shipped and the method of shipping.
- Work orders in process
- Emergency response plan
- Special DEC information, such as the Surface Water Treatment Guidance Manual

On the third shelf, place all training materials and reference books.

The other shelves are for what ever use seems appropriate.

ROLODEX™

Use

The Rolodex should be used to keep all phone numbers; vendors, DEC, PHS, VSW, DCRA, Regional Health Corps, the lab that you work with, etc..

WHITE BOARD

Use

The white board is used in a variety of ways. One use, is to list materials needed for a job. This is easier to find than little notes. Another use is to note information from a vendor when they call to tell you when an item is to be shipped and how. And a final use is to keep track of temporary settings on equipment and reminders of upcoming activities.

WORKING WITH OTHERS

Your Responsibility

As the superintendent, it is your responsibility to set the direction of the O & M portion of the utility. This requires providing leadership for yourself and those you hire to work with you. Above all it requires having a "vision" of the purpose of the utility. Most of the time a simple vision such as, "we want this to be the best operated water system in the region for its size," is enough of a vision. This may seem like trivia, but it is vitally important as a guide in making day to day operating decisions. Once you have a vision you need to communicate it with those that are associated with the water system. This requires **communication**⁷ skills.

COMMUNICATION

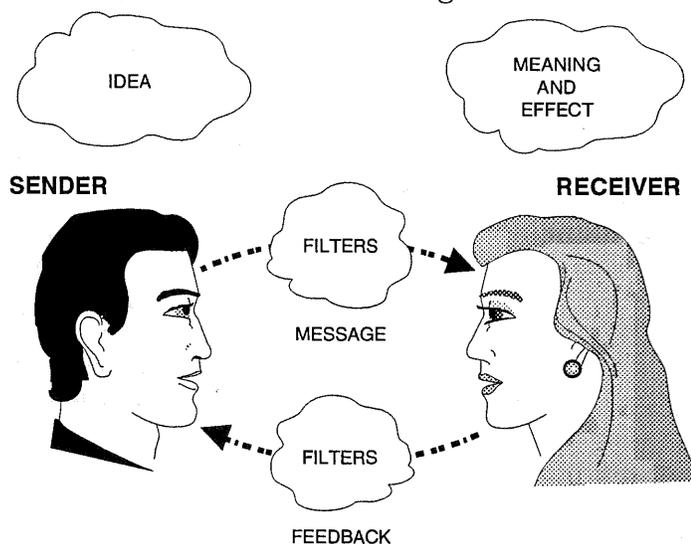
What Is Communication?

Communication is the process of transferring ideas and understanding from one person to another. Notice there are two key components, ideas and understanding. Often we are able to communicate ideas, data, but not understanding. What are some of the tricks that allow people to communicate both ideas and understanding. The first trick is to understand something about the communication process.

Components of Communication

In order for communication to take place there must be four things;

- An idea that needs communicated and is formulated by a sender.
- A sender responsible for sending the idea.
- A receiver to receive the idea.
- Feedback from the receiver to the sender indicating that the idea and understanding was received.



⁷ **Communication** - The transmission of information and understanding from one person or group to another.

Roadblocks

There are a large number of roadblocks that can distort, alter or prevent communication from taking place. The sender and receiver both have filters. The filters are the result of our beliefs, beliefs about what information is needed, what we want to share, what we think the other person already knows and about word definitions, just to name a few. What are some tools that can be used to overcome these filters?

COMMUNICATING WITH WORKERS

Defining Expectations

One tool is to clearly define expectations with those that we work with. Included in the expectations should be:

- What time do we start work, when do we quit, how long is lunch, what time are breaks and how long is a break.
- What is each person responsible for.
- What authority do they have in obtaining the resources needed to complete the job.
- How will they know when the job is completed.
- How many days do you expect this job to take.
- How is personal time to be handled.

Sharing Information

Each of us who work ask three questions of those in responsible charge:

- How am I doing?
- Where am I going?
- What is in this for me?

These questions are usually ask indirectly not directly. Each worker has a desire to know how they and the job at hand fit into the total picture. Share information about why this task is being done, how high a priority it is, what quality of workmanship is required, what are the costs associated with this task, how important is it and when is the expected completion date.

Responsibility

You need to clearly provide information on who is responsible for what parts of the job. What is their responsibility and what is your responsibility. Then clearly what you expect them to do and by when. Tell them how they will know when the job is done correctly. Are there any tests they can run to be sure the job is right?

Feedback

On the job the only way we will know for sure if the communication was correct is by observing the behavior of the individual we communicated with. However, it would be very desirable to determine if there was

understanding communicated along with the information. This can be determined by asking questions. **Do not** ask, "do you understand?". We will all say yes! Instead, ask for specific information, or say something like, "I am not sure that I have provided you the information that you need, would you please feedback what you believe I said."

RESPONSE TO COMMUNICATION

How not Why?

Our individual response to communication with others is based on a number of factors that define who we are. One of those is our personality style. This is a description of "how" we do what we do. It is not a description of who we are but of how we respond to conditions.

William Marston

William Marston in his book on "Emotions of Normal People", categorized normal reactions into four classic categories. These categories are based on a theory that is composed of two continuums. One is how we see the world, favorable or unfavorable. The second is how we respond to the world. Marston says that our response runs along a continuum from active to less active. When these two continuums are put together he was able to divide normal behavior into four categories.

Dominance

One category is called "Dominance." This set of behaviors results from beliefs of an unfavorable environment and an active response. Typical dominate behavior is seen as an idea generator, someone who is bold, quick with decisions and has high ego strength. They are hard to communicate with because they are seldom listening, they are focusing on the next thing they want to say.

Influencing

A second category is called "Influencing." This is a description of behaviors resulting from an active response to a belief in a favorable world. This is the behavior that is typical of the energetic sales person. Influencing behavior is displayed as friendly, outgoing, and wanting to be around people. They are hard to communicate with because they are always talking.

Steady

A third category is called "Steady." This is a description of behaviors resulting from a less active response to a belief that the world is a favorable place. Steady behavior, is portrayed by supportive, friendly, systematic well organized behavior. Individuals portraying steady behavior are easy to communicate with. They listen well and give good feedback.

Compliance

The fourth and final category is called "Compliance." This is a description of behaviors resulting from beliefs of a less active response to a unfavorable world. Compliant behavior, is portrayed as detailed, sensitive, organized, documenting check and double check

behavior. Individuals displaying compliant behavior will ask a lot of clarifying questions in order to be assured that communication is correct. However, they wish to avoid trouble, so if pushed will not respond at all.

Summary

While we are all portions of all of these styles, we all have a dominate style. If we were dealing with four people who had these four dominate styles and we changed all of the office furniture over the weekend, here is how these four might respond;

Dominance - "Looks great, should have done it years ago."

Influencing - "Looks great, let's talk about it over coffee."

Steady - "I was just getting use to it the way it was." (It has been this way for 20 years.)

Compliant - After 10 minutes will ask - "Who gave permission for this change?", and "What is the logic?", "Are you sure this is going to be better?"

Conclusion

As you can see, we are complicated. We each will react to communication in our own way. We each do things for our own reasons, not yours. If we are going to be successful in communicating with others, then we must understand that not everyone sees the world as we see it. We must try to determine how they see the world and then give them the information they need, in order to understand the data.

COMMUNICATION WITH MANAGERS (OR SUPERVISORS)

A manager needs to know the status of the various task that you are working on. They do not like surprises. Provide routine, verbal updates about good news and bad news and suspected problems well in advance. Included in your response to the manager should be information on the quality of the water, the condition of mechanical equipment, personnel status, problems you see for the future and your schedule.

Monthly Report

One of the best ways to communicate regularly with a manager is with a monthly report. A simple one or two page report that summarizes the status of the situation is sufficient. An example is provided below. We suggest that you change this report form to meet your individual needs.

City of _____, PUBLIC WORKS
MONTHLY REPORT

For the Month of _____, 19__ Prepared by _____

Water Consumption Small Well _____ MGD Water Consumption Large Well _____ MGD

Total Water Consumption _____ MGD Average Day _____ MGD

Last Month _____ MGD % Change _____ %

Last Year _____ MGD % Change _____ %

Power Consumption

Large Well house _____ KWH Small Well House _____ KWH

Total Water System _____ KWH

Lift Stations _____ KWH Treatment Plant _____ KWH

Total Wastewater System _____ KWH

Power Utilization

Small Well _____ MG/KWH Large Well _____ MG/KWH

Drinking Water Quality

Bac-T _____ /100mL Avg. Fluoride _____ mg/L

Bac-T Compliance over the last 12 months _____.

Avg. Cl₂ _____ mg/L

Number of Water Quality complaints by customers _____

Comments on Water Quality

Waste Water Quality

BOD _____ mg/L TSS _____ mg/L Chlorine _____ mg/L

Comments on Water Quality

O & M of Small Water Systems

Chemicals Used

Water

Chlorine _____ pounds

Fluoride _____ pounds

Comments _____

Wastewater

Chlorine _____ pounds

Comments _____

Personnel Utilization

Water System _____ hrs

Wastewater System _____ hrs

Streets _____ hrs

Landfill _____ hrs

_____ % Preventative Maintenance

_____ % Repair Maintenance

_____ % Normal Operation

_____ % Special Projects

_____ % Training

Problems Resolved

Special Task Status

New Problems Identified

Preventive Maintenance Tasks Not Completed

STP

Sharing Information

A second tool, that is effective in sharing information associated with a problem, proposed change or solution to a problem, is the STP approach. This approach requires condensing the information associated with a situation down to two or less pages. The information is placed into three categories. The first is the situation (S). Describe clearly what is the situation, separate facts from assumptions. Next describe the goal or target (T). What would this situation look like if the problem were solved. What do we want for a solution. The last step is to describe a proposal (P) of how to get from the present situation to the target. The proposal is the bridge between now and the conclusion.

Evaluation

As we attempt to solve problems, we commonly find more than one possible answer. An effective way of evaluating various answers is to use the PMI approach. Discuss the pluses (P), minuses (M) and what is interesting (I) about this solution.

Example

The following two pages were taken from a park and recreation district that was evaluating a major change in its management process.

Sample of STP Process

Topic - Refinement of _____ Management Style

Situation

For the past 7 months a management consulting firm has been working with the Admin-team in an attempt to improve the function of the team. The following conclusions have been reached.

- The team could function more effectively in its present form
- The team members have (collectively) high scores in avoidance of conflict (Thomas-Kilman).
- The use of process skills, problem solving skills and interpersonal skills are only marginally applied during the meetings held by this team.
- The role, responsibilities and authority of the individual members is clear when they are performing their individual jobs but unclear when they are operating as the Admin-team. This results in a great deal of confusion and frustration among the members.
- Confusion is exasperated when the Supt. moves from directive role (as superintendent) to a participatory role (as a member of the group).

A change is indicated in order to make the group more efficient and effective.

Target

Make appropriate changes in the management style of _____ in order to improve the effectiveness and efficiency of the Admin-team.

The expected results associated with this proposal are: Higher quality decisions will be made, Decisions will be made quicker, Greater involvement of staff in decisions will result in greater ownership of the decisions resulting in improved moral.

Proposal

Reemphasize the philosophy that decisions should be made at the appropriate level and the _____ wishes to have a participative team style of management.

Establish Divisional Management Teams for each of the three divisions. Structure these teams in a formal manner so that agenda and action plans flow from the divisions to the Admin-team.

Assign the various tasks now before the Admin-team to their appropriate level.

Establish the use of STP & PMI formats by members of the Admin-team in order to effectively share information with the Admin-team and allow the team to offer constructive input.

Define clearly the roles, responsibilities and authority of each member of the team.
Develop process to resolve issues among the team members in an effective manner.

Sample of PMI Process

Evaluation

Pluses of this proposal:

- Higher quality decisions will be made
- Decisions will be made quicker
- Greater involvement of staff in decisions will result in greater ownership of the decisions, resulting in improved morale
- Utilizes the Admin. review skills of the Team

Minuses of this proposal:

- Requires more meetings
- Requires more written reports
- Requires a change in the existing process. Change normally causes some anxiety
- Other people are being asked to be involved without allowing them input on how they are to be involved

What is **interesting** about this proposal:

- The division managers will have an opportunity to practice their **facilitating**⁸ skills
- The management level in each division will have an opportunity to develop as a team
- This is an opportunity to restructure the way we do things at _____ and thus there is an opportunity to leave the negative of the old ways behind
- This may cause a high level of excitement among the "Staff" as a result of the anticipated high involvement and activity level
- This is an opportunity for "Staff" members to practice their facilitating and presentation skills
- Higher level of ownership of tasks by "Staff"
- More collaborating between divisions

⁸ **Facilitating** - The process of making easier, by finding and breaking down roadblocks.

COMMUNICATING WITH THE CUSTOMERS

Customer Service

In the customer service module we discussed various methods that can be used to effectively communicate with the customers. The key areas of the communication should include:

- Provide the customers with honest information about the quality of the water. Keep the technical data to a minimum.
- Give the customers routine updated information on the condition of the water system and the cost of producing water. Monthly cost in terms of dollars per 1000 gallons is effective information.
- Provide information to the schools and to the customers in general about how water is important to individual as well as community health.
- Make written information containing the customers rules and regulations easily available. Place copies of the written material at the post office, clinic and store.
- Listen carefully and completely to customers complaints and concerns about the water system. Respond honestly to their concerns.

SCHEDULING WORK

Why Schedule

Scheduling your work and the work of extra workers is important to the effectiveness of your operations. A clear written schedule of what is to be done, and when, allows workers to take responsibility for the work to be completed. (Be sure you give them authority to obtain the necessary resources to complete the work.)

Other Reasons

Besides allowing workers to take control of their own direction, scheduling work may allow you to avoid some weather problems. Scheduling and completing the schedule can give a sense of accomplishment. A good schedule that is adhered to assures the reliability and adequacy of the system are maintained.

Workers Needs

Proper scheduling allows workers to select the proper clothing for the job. There is little more frustrating than showing up to the job each day to find out what we are going to do today. Giving advanced notice is a process of treating others with respect.

Materials

Scheduling tasks in the future allows you to identify material needs, and order material in time for them to arrive before the job starts. Ordering early may also reduce shipping cost.

Personal Time

Developing an annual schedule that is updated each month allows you to schedule for important personal time and special events, such as; fishing, hunting, vacations, and whaling.

WHAT TO SCHEDULE

How

Use a large calendar for the year. Place each of the following items on the calendar, or use the 12 month, 30 day file system described above.

Supplies

By determining ahead of time what chemicals, fuel parts and other supplies you need can allow you to work with the suppliers and carriers to group materials and reduce shipping cost. It also reduces the possibility that you will run out of supplies. In most Alaska rural communities, it is desirable to keep at least six months supply of chemicals, fuel and other supplies on hand.

Samples

In order for samples to reach to laboratory within the allotted 30 hours you need to schedule sample collection with the existing flight times. Work with the laboratory ahead of time to make sure they know when samples are being shipped and what tests are to be run.

Major Repair Projects

Obtaining the proper approvals, engineering and materials is essential to completing major repair jobs. The materials should be on hand and all permits and engineering completed before breakup. Schedule the equipment and personnel you will need well in advance.

Personal Time

Include vacation, fishing, hunting or other special events that will take you away from the job or will change the way the job must be done.

PM Activities

The preventive maintenance activities as defined by the PM program must be placed in the schedule.

Routine Operations

Schedule time for data collection, filing, record keeping, ordering and other routine activities. If a specific block of time is not set aside these routine tasks often are not completed until they become a crises.

Budget

If you are responsible for an annual operations budget, set aside time for research and budget development. It is usually best if this task is undertaken in small pieces.

Training

In order to stay current in the industry and to maintain certification, each operator should obtain 1 CEU (continuing education unit, equivalent to 10 hours of classroom activity) each year. Look through the training schedule and schedule training time for yourself and your workers at least six months in advance.

Certification Renewal

Drivers licenses, certification and other certificates and licenses that we hold require periodic renewal. Place these on the schedule as soon as their expiration date is determined.

Reports

Routine reports to DEC, PHS, the manager and council should be placed on the schedule. Schedule time

for the development of the report well in advance of the deadline.

REVIEW OF SCHEDULING PROCESS

At various points in this discussion, information has been provided that can be used in the development of an effective schedule. It makes little difference if you use a large calendar; the 12 month, 30 day file system; to do list; the white board or some other procedure. The important thing is to schedule. Any of these procedures work best if you:

- Start by identifying all of the tasks that need scheduled, make a list.
- Estimate time and materials necessary to do the tasks.
- Give an estimated completion date.
- Check with workers and suppliers to be sure that materials and personnel will be available to perform these tasks.
- Place the information in a schedule. One of the most effective scheduling devices for the small community is the 12 month, 30 day file; a large calendar and the PM wall chart.
- When the schedule is completed, share the information with the manager, council and workers.

SUPERVISION TOOLS

Starting Point

We started this brief discussion on supervision talking about tools that can make the job of supervision easier. Besides the processes discussed above, here are a few tools that other supervisors have found useful.

Facilitating

Facilitating is one of the functions of a supervisor. To facilitate is to make easier. As a supervisor, you can make the job and the days go easier by ordering materials and supplies in with sufficient lead time to allow the workers to perform the task without interruptions.

Facilitating - Politics

Someone once said, politics starts in the third grade. The point is that all organizations include political actions and inactions. One of the best ways to facilitate work is to insulate workers from the politics that impact your position. Insulate them by not allowing the political decisions to affect their work or allow your outward behavior to display your concern over political decisions.

Coaching

One of the other major responsibilities of the supervisor is to take on the role of coach. As a supervisor, you are responsible to teach workers new jobs, to counsel them when they are not performing properly and to discipline them when performance is not adequate.

Discipline

None of us like to discipline. One of the important rules for when and when not to discipline is found in understanding components of poor performance. If poor performance is the result of competency (ability, skill, knowledge) then discipline is not called for. If poor performance is a result of willingness then discipline is called for quickly and to the point.

DELEGATION

Definition

Delegation⁹ is the process of assigning work to others, not your work but the work that they should be performing.

Reason for Delegation

Delegation allows people to find out what work they are responsible for and to then complete that work. It clarifies responsibility and authority. It is the process that must be used to get work done.

Difficulty with Delegation

One of the largest difficulties that supervisors face in delegating is not wanting to turn loose of a task because they are afraid it will not be done as they would do the task. It is true, it will probably not be done exactly as you would do it. However, it may be done better.

Delegation and Accountability

One of the other problems that prevents us from delegating, is what we perceive as the lack of **accountability**¹⁰. When a task is assigned, we must ask if the individual knows their responsibility and if they accept that responsibility. Remember, it makes little difference how hard we work on a task, what is important is obtaining results. A tool that has proven effective in the clarification of responsibility is the responsibility matrix described below.

Delegation Process

The method and amount of a task that is delegated to a worker is based on the workers degree of readiness to perform the task. This degree can be divided into two components, competence and willingness. The actions required by you, the supervisor, based on the degree of readiness can be placed in four simple categories:

- Directing - telling what needs to be done, how to do it and when
- Supporting - Telling how to do it and asking for feedback
- **Coaching**¹¹ - Asking how they are going to do the task and being available for help
- Delegating - Assigning the task

⁹ **Delegation** - The downward transfer of formal authority from one person to another.

¹⁰ **Accountability** - The responsibility to answer for use of formal or informal authority and personal behavior.

¹¹ **Coaching** - The individual action of a one person to support another in the process of learning a task.

Example

As an example, let's assume that you have hired a new alternate and you wish them to perform the chlorine residual test. Taking them from not knowing how to perform the task to being able to delegate the task directly, follows these four steps.

1. To start with all of us with a new job have a high degree of willingness and low competence. We want to do the job but do not know how. The proper process is to be "directing," tell the person what needs to be done, show and then allow them to do the test.
2. Providing that step one went well. The next time you intend for the person to perform the test use "supporting," behavior. Tell them that the test is to be done, review the procedure and ask for feedback. At this point the person's competency has improved but there willingness has dropped. The job is more difficult than they expected.
3. At the next stage you are ready for some "coaching" behavior. Suggest that it is time to do the test. Ask the person to review with you the steps. Tell them to let you know if there is a problem and to report back at the conclusion of the test. At this stage the competence has improved greatly, however, the willingness goes up and down. The person believes they should know how to do this task, but find that they occasionally have difficulties.
4. Assuming all other steps have gone well, the person's readiness is in the final stage. They are highly competent and have a high degree of willingness. At this point the work can be assigned directly.

Responsibility Chart

To use this chart, place the tasks or jobs along the bottom of the chart. Place the people involved along the side. All tasks that an individual is involved in received a dot where the task and people lines intersect. When a person is responsible for the outcome of the task, a circle will be placed around the dot. There should only be one dot with a circle for each task. To many bosses foul up the job.

PROBLEM SOLVING

Normal Activities

As a result of normal activity, each supervisor is called upon to solve problems. Often the solutions are explored with one or more other people. This interaction with others can make the problem solving process difficult. Below are four tools that have proven beneficial to others when solving problems with groups.

DEFINING THE SITUATION

Background

When faced with a problem, most individuals and groups attack the problem by jumping straight into suggesting solutions. This only generates activity and seldom gives good solutions. The best solutions typically come from a more analytical approach. Start by analyzing the situation.

Analyze the Situation

The easiest approach to this is to take one piece of paper (or flip chart) and write a brief description of the situation at the top. Divide the paper down the middle. Write Facts on one side and assumptions on the other. Start writing down the facts and assumptions. If there is an argument over which column to use, do not let it persist. Just write the item across the line and proceed.

The Situation	
Facts	Assumptions

Advantage

One of the advantages that the process has is the clarity of facts and the open acknowledgment of assumptions. It is important to point out that when there is a disagreement over facts, or a solution turns out to be wrong because the facts were not correct, this can be corrected by research. However, disagreement over assumptions is a value base and cannot be resolved by research. Disagreement over assumptions can be resolved by developing more than one scenario utilizing conflicting assumptions.

Redefine

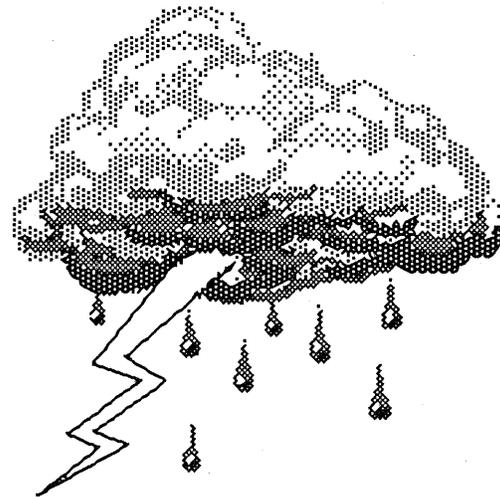
Once you have gathered a substantial portion of the

facts and acknowledged the assumptions you should redefine the problem. Is the problem still the same as when you started? You are now ready to go into one of the more traditional approaches, such as **brainstorming**¹² in order to develop a solution.

BRAINSTORMING PRINCIPALS

Description

Brainstorming is a process that can be used by one or more individuals to explore an idea, solution or condition. The following are seven basic steps to successful brainstorming.



1. Defer all judgment of ideas until it is time to evaluate.
2. You are after quantity, not quality.
3. Encourage "freewheeling". Wild ideas can often lead to good ideas.
4. It is all right to "hitch hike" on existing ideas also called "Cross Fertilization".
5. Evaluation of an idea should not include the name of the person who suggested the idea. If you can, it is best to wait at least 24 hours between idea generation and idea evaluation.
6. Analyze ideas and identify one to try.
7. Evaluate the try.

HOW TO DO BRAINSTORMING WITH A GROUP

Background

Brainstorming is a handy method for helping a group to tap its own resources in a short period of time. By keeping in mind the principals listed above and the following ideas, you can keep your brainstorming sessions productive and rewarding.

¹² **Brainstorming** - A group effort at generating ideas and alternatives.

- Make the topic, goal, problem clear. Write it down on something - blackboard or flip chart. Don't use a normal writing pad, even if there are only two of you.
- Use the survey technique to make sure everyone has agreed to brainstorm this item.
- Review the principals of brainstorming. Yes, even if you have done it a thousand times.
- Record all suggestions. Write down serious as well as silly contributions.
- Write down exact words of the contributor or get their agreement to change the wording.
- Move rapidly from one item to the next. Do not allow evaluation.
- Any discussion must be brief and only for clarification of meaning and not the worth of the idea.
- Use the survey technique to encourage all members to participate.
- Encourage freewheeling.
- Have a different person record than is facilitating the meeting.
- Set a time limit or number of ideas limit. Usually 10 to 20 minutes is enough.
- Sort the ideas into categories.
- Use some technique to select one idea to evaluate. Look at it from several angles:
 - List facts and assumptions
 - List positive, negative and interesting points
 - Discuss the impact on resources
 - Discuss how the solution will look
- Select a solution and one alternative.
- After evaluation, develop an action plan and make assignments.

DIAGRAMS & MIND MAPPING

DIAGRAMS

Description

Diagrams and pictures can be useful tools in helping to solve problems that have many aspects. Making a diagram that attempts to show the relationships of various components allows both the left and right hemispheres of the brain to work, both in the production and interpretation of the diagram. Including simple drawings of components in the diagram can be extremely helpful in jogging the subconscious.

Using Photos

When available, actual photos placed on a table top or bulletin board can have a significant impact. This process works best if you are able to postpone the decision and allow the subconscious to work. As you feel moved, you can rearrange the photos and make notes. All of this will help lead you to some solutions that can be evaluated and implemented.

MIND MAPPING

Description

Mind mapping¹³ is a relatively new process that uses the strength of both halves of the brain. The process utilizes the advantages of diagramming and the advantages of systematic processing. The process works like this:



1. Obtain a large sheet of paper (20" x 30" or so) and several colored pens.
2. Lay the paper on a table. In the center, draw a rough diagram of a problem or item that you want to explore.
3. When an idea comes to mind, take one of the colored pens and draw a spoke out from the drawing. Under the spoke, write a word that describes the idea.

¹³ **Mind mapping** - A group brainstorming process, in which each person is allowed write their ideas on a common sheet of paper.

4. If you get an associated idea, draw a branch from the spoke and label it.
5. If you get an entirely new idea, use a different color and start a new spoke.
6. Continue branching and starting new spokes until you have exhausted the ideas.
7. Enhance the drawing by placing drawings at appropriate points and connecting items that are similar on different branches.

STP APPROACH

Description

This approach is discussed from different perspectives in two other portions of this text; "Communicating with managers," and "Defining the Situation," the following is a review of these previous steps and a condensing of the procedure into a problem solving tool.

S - Analyze the Situation

The easiest approach to defining the situation is with a flip chart as described above in the "Defining the Situation" section.

T- Set the Target

Once the situation has been defined you are ready to on to the target, the goals and objectives. Set one or two goals at most. Then establish not more than three objectives for each of these goals. (Some groups can work on up to six objectives at a time, but typically this is the maximum.) Be careful here, the individual or group must focus on goals and objectives and not actions. For instance, in a typical survival exercise some groups describe that their goal is to walk out to civilization. This is an action and not a goal or objective. What are they attempting to accomplish by walking out? This is the goal or objective. Once the group has decided on the goals and objectives they are ready to develop a plan.

Finding the Solution

Often by the time the goals and objectives are developed a solution is obvious. However, this is not always the case. When the solution is not obvious, the group needs to do the following:

- Brainstorm possible solutions to meet the objectives above.
- Place the solutions into categories.
- Select 1 to 3 to evaluate.
- Evaluate the impact of these solutions.

Evaluating the Solution

During the evaluation phase we suggest that you divide the impact into three categories.

P - What are the pluses of this solution.

M - What are the minuses of this solution.

I - What is interesting about this solution.

Notice that this approach avoids any person taking on the "devils advocate" role and placing themselves in opposition to the group. To do so will reduce the effectiveness of the group.

P- Plan

The last step is developing a plan. - The plan is the bridge between the situation and the target. The plan is how we implement the solution. What is our plan "B" if our solution does not work out?

MEETING MANAGEMENT

Why Meetings

Meetings are a way of life in our society. It is one of the major ways we get work done. However, many meetings are not successful and waste the time of the participants. Here are a few suggestions for making small group meetings more successful.

Agenda

Almost all successful meetings start with a written agenda. We all want to know what is going to happen at the meeting. Once an agenda has been developed, share it, with all who will be attending. Share the agenda far enough in advance so that the participants can prepare themselves to be productive at the meeting.

Misunderstands

It is very common to have disagreements between the participants of a meeting. If you are the meeting facilitator, here is a tool that can help resolve these conflicts.

- Stop the discussion.
- Using a flip chart or paper, get each person to define their facts and assumptions about the item of disagreement.
- Ask what each one wants from the discussion.
- Seek a compromise.
- Ask each person involved if they can support the conclusion. If they cannot support the conclusion, then a solution was not reached.

Facts and Assumptions

When there is a disagreement between two or more people based on facts, the solution is to research the facts and determine which facts are true and which are not. When there is a disagreement over assumptions, there may be no solution. Assumptions are usually based on values and all of the research in the world will not normally cause us to go against our values, our belief system.

Commitments

As decisions and time lines are reached in the meeting, go around the group and determine if each person is agreeable. Time lines and commitments should be written down and shared with each member of the group.

Summarize

At the conclusion of the meeting, summarize the results, time lines and decisions agreed upon. Review any commitments people made to provide information, or complete specific tasks before a set deadline.

CONCLUSION

The preceding has not been an in-depth analysis or study of the theory, practices and procedure of supervision. However, the procedures and processes discussed are all taken from successful supervisors working in the public works field. If you apply these tools to your job, we are sure that they will make your life as a supervisor easier.

INTRODUCTION TO SUPERVISION

WORKSHEET

1. Getting work done through others, is an informal definition of _____.

- _____ a. Leadership
- _____ b. Time management
- _____ c. Maintenance management
- _____ d. Supervision
- _____ e. Delegation

2. Management is the process used to direct the use of _____ to achieve desired results?

- _____ a. Money
- _____ b. People
- _____ c. Resources
- _____ d. Others
- _____ e. Equipment

3. The one thing you can delegate but not get rid of is _____.

- _____ a. Authority
- _____ b. Money
- _____ c. Job title
- _____ d. Position
- _____ e. Responsibility

4. Being _____ is taking responsibility for ones own actions.

- _____ a. Authoritarian
- _____ b. Accountable
- _____ c. Directing
- _____ d. Desirable
- _____ e. Efficient

5. Where does our authority to use the resources to get a job done come from?

- _____ a. Boss
- _____ b. Customers
- _____ c. Workers
- _____ d. PHS
- _____ e. DEC

O & M of Small Water Systems

6. We cannot control time but we can control _____.
- _____ a. Life
 - _____ b. The situation
 - _____ c. Events
 - _____ d. People
 - _____ e. Time increments
7. Important activities are those that get _____.
- _____ a. Done
 - _____ b. Done first
 - _____ c. Placed first on the to-do list
 - _____ d. Results
 - _____ e. Finished within the time allotted.
8. Items that would receive an "A" priority in a daily to-do list would be those that...
- _____ a. are urgent
 - _____ b. are important
 - _____ c. are urgent and important
 - _____ d. are not important
 - _____ e. are a crises
9. In order to be effective, once a to-do list is completed the next thing that must be done is to _____.
- _____ a. Get the work done
 - _____ b. Divide the list into work that can be done and work that must be delegated
 - _____ c. Determine the amount of time and supplies needed for each task
 - _____ d. Prioritize the list
 - _____ e. Break the list into logical groups based on urgency
10. The importance of a PM listing on a wall chart or calendar is it allows us to _____ the work.
- _____ a. Schedule
 - _____ b. List
 - _____ c. Identify
 - _____ d. Understand
 - _____ e. Display

11. What is the main advantage of an effective information management system?

- a. It keeps our life neat and orderly
- b. Other people see us as organized
- c. Information has a place to be stored
- d. Information is easily retrievable
- e. Everything has a place, and there is a place for everything

12. Communication is the process of transferring _____ and _____ from one person to another.

- a. information and ideas
- b. thoughts and data
- c. ideas and information
- d. direction and understanding
- e. information and understanding

13. In the STP process of communicating ideas or problem solving, what is the definition for the "S."

- a. Sender
- b. Situation
- c. Sudden
- d. Safeguard
- e. Sales

14. We will only know if our communication is effective if we....

- a. Ask for feedback
- b. Get the response in writing
- c. Use a verbal contract
- d. Observe behavior
- e. Determine the personality style of the person

15. Which items below should go on an annual schedule?

- a. When to order chemicals
- b. When to order fuel
- c. PM task
- d. Fishing
- e. Vacations

16. To make easier, the short definition of what supervision tool?

- a. Coaching
- b. Delegations
- c. Facilitating
- d. Discipline
- e. Time management

17. When a job is delegated to another, we should give them the _____ and the _____ to complete the job.

- a. Time and money
- b. Authority and responsibility
- c. Accountability and time
- d. Direction and support
- e. Focus and vision

18. Discipline should be used only ...

- a. When a person is late for work
- b. When the problem is competency
- c. When the problem is understanding the work
- d. When the problem is repeated
- e. When the problem is willingness

19. A process of brainstorming with a group, where each person gets to write down their ideas in a loose format on a large sheet of paper is called what?

- a. Paper brainstorming
- b. Brainstorming
- c. Mind mapping
- d. Diagramming
- e. STP & PMI approach

20. An _____ is essential to most successful meetings.

- a. Agenda
- b. Agreement
- c. Disagreement
- d. STP approach
- e. Antagonist