How to Manage Production and Maintenance People for Profit and Results.

In the end it's the people 'on the shopfloor' who have the task of making the products and keeping the machines going which produce the goods that the business sells. If you have the wrong people in the wrong places, if they are under trained and under motivated, then you will not turn the profits that the operation is capable of delivering. You may even have a disaster on your hands with people destroying economic value faster than they make it.

How to get the very best performance from people, developing great attitudes, motivating them to continually strive to improve themselves and their work is what you will learn in this one-day workshop.

CONTENTS

1. Spotting Top Performers and Building Top Teams

This session will help us to understand the part a manager plays in turn their people into productive, supportive individuals and a results-oriented team.

Not everyone works well in a team. Not everyone can be a top performer at a task. But put the wrong person on the wrong job and they will destroy everything that they touch! You need simple 'tools' and principles to identify and recognise when you have a bad mix and when you have a great mix of people.

- **It's all a Matter of Their Competence**

When you have confidence in people's abilities you will give them more opportunities to develop.

- **The Top Performers Ask for More to Do**

- **Test New People to Establish Their Abilities**

Very early on give people straight-forward, not too difficult or critical jobs, to test their attitudes and skills. Give them work where they have to self-manage and then watch how they handle themselves and the task.

- **Ask the Supervisor**

You only really get to know a person's skills, abilities and attitudes when you work with them for some time and they have been exposed to difficulties. Their Supervisor will know whether a person on the crew is the right person for the job.

- **Get a Second Opinion**

Sometimes animosity exists between supervisors and one or more of their people. You need to get another person's opinion to confirm what the Supervisor tells you about one of their people. Often a Supervisor in the group that is serviced by your crew has a good idea of your people's performance.

- **Results Talk**

There is nothing like doing a job successfully to confirm people's competence. When you see people string together a row of successes then you know you have a worthy person.

- **Recognise Top Performance**

Whether an individual or a team, when good work is done tactfully recognise them publicly. It may be a note to them that others are aware of, or a small present given to them in the presence of the team.

- **Let the Team Decide How They Will do the Job.**

To promote self-management get the job work group together and take them through the job asking them how they want to do it. As a manager and engineer you will achieve your work through them and only if they willing want to do the work will it be done well.

Team solutions – finding their own answers to problems – use the Socratic Method and/or Root Cause Analysis method

- **What's in it for me? (WIIFM)**

Multifunctional Teams for Best Performance

The distribution of talent amongst humans is haphazard and, at present, entirely in nature's control. But the selection of talent and skills to create best performing teams can be intentionally controlled. If you want highly able and successful production teams, you will be shown how to make them.

- **Allocation of Talent and Skills is Normally Distributed**

- **Implications for Organisations**

  o   A few really able people; a few really poor; most in-between
  o   People with limited range of skills and abilities in many positions … 'Incompetent'?
  o   Need specifications for job positions including business and inter-personal communication abilities
  o   Need training plans for all persons to learn skills and knowledge to function at higher skill and ability levels
  o   Need performance management and measures for all
  o   Leave people doing what they are really good at doing and reward them in ways other than promotion

- **Addressing the Variation in Individual Abilities Within Work Groups**

  o   Important to have diversity across teams
  o   Identify level of skills and abilities required to perform the business process
  o   Random groups of people contain an unorganised, unplanned mix of skills
  o   Take randomness out of group by selecting people with required abilities and skills

- **Multifunction Team: People Working Together Using Their Best Talents**

  o   Select team members to fulfil a need within the team
  o   Select people who want to work in a team rather than alone. Their previous history tells you what they prefer
  o   Use the right person from the team to suit the situation (Situational Leadership)
  o   Get the able team members to train those less able and help lift everyone toward excellence
  o   Measures for performance improvement of the team that each member contributes to and can influence

- **Create the Right Environment – "Water them and they grow!"**
  (Lee Hecht Harrison HR Consultants)

  - **Appreciate Uniqueness**

- o So employees feel in-synch with their values and life concerns

- **Align Aspirations**

  - o So employees feel passionate about their mission, strategies and work of the organisation

- **Anticipate the Future**

  - o So employee knows their place in the organisation and its future

- **Assess Capability**

  - o So employee knows they are valued by the organisation

- **Accelerate Learning**

  - o Challenge the employee in the job and put them into continuous learning mode

2. 'Goal-Post' Production Management

This session introduces you to the importance of setting aligned-goals for each person and the work group.

Hitting targets and making deadlines is easy once they are put in front of you. Apply the same practice to workplace tasks and you will see a sudden surge in productivity and efficiency. Once you put-up 'goal-posts' your people will start kicking goals and you will be captaining a winning team.

- **Human Beings are Naturally Goal Oriented**

Give a person a list of things to do and they will do all that they can to do it.

- **'Goal Post' Management Means Giving People a Target to Aim For**

Us Visual Management techniques to guidance

- **Measure 'Goals' with Key Performance Indicators**

Graph performance

KPI's That Change Behaviour

'What get measured and rewarded gets done' is a management truism. If you want new behaviours then introduce measures and rewards that promote those behaviours.

There are five important Key Performance Indicators which you should be using if you want to promote:

- **Operational Excellence in Equipment Utilisation**

  o **Overall Equipment Efficiency (OEE)**

The overall performance of a single piece of equipment, or even an entire factory, will always be governed by the cumulative impact of the three OEE factors:

Availability - Percent of (scheduled production - *reliability*) or (calendar 24/7/365 - *equipment utilization*), that equipment is available for production.

Performance Rate - Percent of parts produced per time frame, at maximum rate OEM rated production speed. If OEM specification is not available, use the best known production rate.

Quality Rate - Percent of good saleable parts out of total parts produced per time frame.

OEE = Availability x Performance Rate x Quality Rate

Example: 50% Availability (0.5) x 70% Performance Rate (0.7) x 20% Quality Reject Rate (results in 80% (0.8) acceptable) = 30% OEE

OEE reveals the six major losses occurring and identifies hidden production plant capacity. The six common losses and their typical causes are:

1. **Equipment Breakdowns and Failures** – The loss of equipment function needed to perform an operation.

    a. Overloading the machine
    b. Loose bolts and nuts
    c. Excessive wear
    d. Lack of oil
    e. Contamination

2. **Set-up and Adjustment** – Time lost during changeover from current product to the next product, or changing the settings during a run.

    a. Removing tools
    b. Finding tools
    c. Attaching new tools
    d. Adjusting new settings

3. **Idling and Minor Stops** – brief stoppages due to 'insignificant' problems.

    a. Parts stuck in a chute
    b. Removing chips
    c. Malfunctioning sensors
    d. Program error

4. **Reduced Speed** – Loss when equipment operates below standard speed.

    a. Machine Wear
    b. Human intervention
    c. Tool war
    d. Overloading machines

5. **Defects** – Time lost to making scrap, doing rework, or managing defective parts.

    a. Manual error
    b. Bad material
    c. Tool breakage
    d. Program error

6. **Start-up and Yield** – Time it takes a machine to 'warm-up' to full production after a period of downtime

    a. Slowly bringing a machine up to speed
    b. Raising environments to set temperature
    c. Running-off excess material
    d. Process related material losses

o   **TEEP**

After viewing the material above, you should be aware of how the OEE formula can help you identify the lack of efficiency in your production process. The next step is to maximize your equipment utilization with Total Effective Equipment Productivity (TEEP). As you strive for World Class productivity in your facility, this simple formula will make an excellent tool for benchmarking your progress.

PPH Goal - The maximum -Parts per Hour- the equipment is capable of running as advised by the OEM.

Total Time – This is the sample time frame to be used. ie: week, month, quarter, or year.

PPH Actual - The total actual number of good saleable Parts per Hour run on the equipment during time frame.

$$TEEP = \frac{(\text{PPH Goal x Total Time})}{(\text{PH Actual})}$$

Example: (2 Parts per Hour (idealistically) x 1 week Total Time sampled (168 hours)) x = (336 parts (idealistically))

then …(336) / 112 parts actually produced in 1 week = 33% TEEP

Where to start with TEEP?

1. Take the OEM specified production rate -

    •   Using OEM specifications and other documentation, you determine the amount of parts your equipment/production should be capable of producing per hour.

2. Decide sample time frame -

    •   Usually 7 days, a month, or a year, and always times 24 hours. (1 week = 168 hours)

3. Record number of good parts per time frame -

    •   Example: You might have calculated theoretically a machine could run 2 parts per hour. But with changeovers, downtime, meetings, etc. you only put out 150 parts on the 168 hour weekly time frame.

Let's say you start out on a bottleneck machine in your facility (Which is a good choice to start with!). Using the method in the examples above you benchmark a TEEP of a little less than 50%. Then by applying OEE to find your greatest areas of improvement, through changeover, quality, machine reliability improvements, and working through breaks, you now record a TEEP of 74%! That is an excellent Return on Asset and a great improvement to your bottom line.

•   **Speed of Response**

- o   Mean Time To Repair (measured in minutes)

- **Planning Efficiency**

  - o   Work Planned verses Total Backlog Work

- **Work Completed**

  - o   Actual Work Completed verses Total Backlog Work

- **Profitability**

  - o   Value Lost by the Problem/Issue/Failure (DAFT Cost)

- **Trend the Performance Results for All to See**

- **Ask for Improvement – Challenge the Individual/Group How to do Better**

3. Removing 'Unconscious Incompetence' in Tradesmen and Operators

Very Few tradesmen are masters of their craft. Work within each persons limitations and gradually extend their abilities and skills.

'You don't know what you don't know!' If your people are not trained in a task that they are responsible for, they will still try and do the task. Very likely they will do it wrong and waste a lot of time, money and effort. That is why it is so incredibly important to have a structured training plan for every person in the crew. You learn how to get them to improve their job knowledge and introduce them to the best practices to use.

Progress and development is an evolutionary process, not a revolutionary process. Those people that evolve fastest will be more successful in future than those that wait for change to be forced on them. If you want rapid evolution in your operation then learn to develop the skills and knowledge of your people and let those who work with the problems find the best solutions for them.

- **The Most Successful Organisations Are Learning Organisations**

    o Toyota Motor Company

- **Development Plans**

- **Performance Management Discussions**

- **Manager as Coach**

- **Development Centres**

- **High Potential Development Programs**

- **Stretch Projects**

- **Mentoring Opportunities and Programs**

- **Technology Tools**

- **Pay for Performance**

- **Trend Information – Company, Industry, Career**

<u>**Precision Maintenance – An Accuracy Mind-Set**</u>

This is a phylosophy created by Ralph Buscurello from the USA-based Uptime International in the late 1980's. Time and again it has saved companies fortunes in maintenance costs. Now it's fully explained so you can use it too.

Accuracy is Critical

- Shaft parallel alignment to under a hair's width.

- Machine vibration to below standard – balance, transfer isolation

- No soft-foot, no body distortion, no pinched parts on assembly

- Craftsmanship quality

Know the Machine Condition

- Vibration

- Oil

- Wear

- Stresses

- Fatigue

- High temperature

- Identify and use measurable parameters

Assembly, Disassembly and Re-assembly is to Specification

- Develop procedures and check sheets with target, tolerance, proof-test; keep assembly records

- Tolerance standards

- Check and prove all is correct prior assembly

- Test run, check and observe under operating conditions – base level machine condition values are where they should be

Creative Disassembly

- Know what is right to expect – drawings, specifications, component materials

- Measure and record wear; record operating life effects for comparison training and reference

- Identify root cause of the issue

4. Encouragement Management

In this session we learn how to encourage people one-on-one.

Mentoring, coaching, guiding, stewarding, teaching, supporting are the techniques of encouragement management. Taking one person at a time you work with them positively and in controlled conditions to help them become the very best operator or maintainer that they can be. How you conduct yourself face-to-face with your 'student' will make all the difference to how well they do.

- **Use Empathy to Understand Your People**

Take the view that you are one human being helping another human being progress through life.

- **People Learn Best by Making Mistakes**

A strange truth – but our brain is goal-focused and it is only when we are not moving toward the goal that we correct our behaviour. Hence making 'mistakes' that send us 'off course' forces us to learn what to do to get us back 'on course' again. So we learn how to get it right by first being wrong.

Unintended error should never be punished, as it is part of the evolution process for humanity and for individuals. That does not mean to allow error and mistakes; we cannot allow disaster and danger to occur. But it is only through mistakes that we self-correct and get back on the path to our goal.

- **Admonish Not Punish**

Privately

Pre-planned content

Truth with proof

Compassionately

Focused message

Develop a strategy together

Set-up a plan together to resolve the issue

Confirm belief in them

Agree to meet and review progress

5. Start Using Winning Communications

This session covers how to keep people informed so they can play their part in achieving the goal.

It's a lament often heard – 'poor communications'! Now you will learn three ways to stop the 'poor communications' problem. You will be able to get the message across to all levels in the company in ways that they prefer and happily respond too.

1. The Communication Plan

- Literally a listing/table of who to inform, how they will be informed, when they will be informed, what they will be informed about, frequency of communications.

- Pass around for review and input by significant others.

- Set regular scheduled meetings.

6. The Communication Content

- Audience – culture, attitudes, age, background, mixed sex, mixed political views, religions, etc

- Summary/Overview - key issues, effects they have, cost impacts, short and long term consequences, proposal to address issues, why proposals are worthy,

- Body – research findings, original thinking, implications drawn from the research and original thinking, tables, charts, pictures.

- Leave details out but advise they are available if required.

- Conclusion – recap findings and their implications, required actions that result, associated costs.

- Dramatise to capture attention – provide examples, get audience involved in a demonstration.

- Socratic questioning of audience to get them to realise what they need to do.

- Speaking engagements – practice 6 times all the way through. Do not learn by rout, but know the topic so well you come across as comfortable to talk about what you are saying.

3. The Communication Feedback

- Ask the audience questions to confirm their take-up. Such as "If you had to ... what would you do in-light of the new information you now know? In other words, knowing that … what would you do?"

- Get discussion going - ask audience for their thoughts on the key issues and gradually expand their view by questioning.

6. Finding and Keeping the Best People

Studies by human resources consultants found that it costs a company three time a persons' annual salary every time they need to be replaced. When you employ someone you need them to stay with your organisation for a long time. Discover what you need to do to attract the right people, and keep them happily working for you. It has got almost nothing to do with what you pay them!

- **It's Not About the Money**

Lee Hecht Harrison research results (renown human resources consultants with Global presence) show that people stay with a company for the following reasons:

1.   Positive, flexible environment (73%)
2.   Integrate business goals with career development (69%)
3.   Satisfying work (67%)
4.   Focus on top people (65%)
5.   Involve employees in decisions (51%)
6.   Tailor retention efforts (50%)
7.   Offer multiple paths for advancement (46%)

They join your company for these reasons:

1. Opportunities for advancement (93%)
2. Capable, well respected management (87%)
3. Flexible work hours (87%)
4. Employee participation in decision making (67%)
5. Challenging / stretch job responsibilities (60%)

- **Do They Have The Skills You Need?**

Look for a history of performance.

Test their knowledge base. Ask for examples

- **Will They Fit the High Performance Culture You Want?**

Conduct Attitudinal tests

Look for examples from the past where they showed the right attitude

Drive past their house (best is ask to visit their home) and look how they care for their own possessions

7.   Accuracy Improving SOPs

Discover a simple technique overlooked by most writers of standard operating procedures (SOP) which automatically, as if by magic, turn the average employee into a top practitioner in their job. With this simple accuracy improving device built into tasks you will be sure of the right outcomes, you will train people to be top performers in half the time and your people will be known for great results!

The Accuracy Controlled Enterprise –Quality Made Easy

The removal of defects and failures from business processes is the final frontier for controlling unplanned production stoppages. Seemingly random events that combine to cause a breakdown can now be controlled with a new methodology - ACE.

- **Definition of Quality**

o *Quality is short term.* It is the degree to which a commodity meets the requirements of the customer at the start of its life. In manufactured products quality comes from its design definition and manufacturing accuracy.

o *Quality is design specification driven*

o *Quality is measured at start of life* – percent passing specification

o *Quality is observable* - the number of rejects from production

- **The Importance of Quality Systems**

   o Meet customer satisfaction

   o Remove process variation

   o Standardise manufacturing approach

   o Detect non-conformance – identify defects against standard

   o Measure performance to compliance

- **Why Quality Systems Don't Work in Most Operations**

   o Installed for the wrong reason   – To meet ISO 9000 demands from customers

                                           - For marketing purposes

                                           - To satisfy senior management initiative

                                           - Because competitor had one

   o Not ingrained into the culture – quality is seen as someone else's domain

   o No training system to lift people to the necessary level of skills and knowledge

   o No quality manager who's prime duty is to own the system and make it work

- o Original system documentation falls out of date and becomes irrelevant
- o Not set-up as a self-sustaining system that automatically operates.
- o No CEO and Executive Manager involvement

- **Can Quality Results be met without a 'Quality System'?**
  - o Quality aim is repeatable consistency to design specification
  - o Design specification is a target
  - o The target specification is built into the operating procedure
  - o Variation is controlled by use of tolerance around the target.
  - o Conformance is achieved by measuring if commodity is within specification
  - o Quality can be achieved without a 'quality system'

- **Error-Proofing (Poka Yoke) Operating Procedures**

If all work done by operators and maintainers is to the approved standard operating procedures there should be no cause of errors. But most SOPs are written by the wrong people and confuse readers so much that they don't know when they are no longer following instructions. Error proofing SOPs is the removal of causes of defects and failures from business processes. It is the new frontier for controlling unplanned production stoppages. Seemingly random events that combine to cause a breakdown need to be controlled with poka yoke methodology.

  - o 'Go – No Go' proof testing

- **The Accuracy Controlled Enterprise System**
  - o 'Target, Tolerance, Test'

- **Accuracy Control is Easier and Cheaper than Quality Control**
  - o Once in the procedure it becomes a the procedure user's responsibility
  - o Self-sustaining as it is a job requirement
  - o No longer needs a separate quality manager
  - o Less involvement from line-managers and supervisors
  - o Focus becomes system quality improvement not task quality control

8. Getting Input, Commitment and Belief from the Team

Achieving high production output depends on people working in teams in a spirit of cooperation, support and mutual desire for excellence. What makes the difference in building high performing teams full of dedicated members? What makes one team excel and another 'snail-pace' along? The important 'people factors' makes the difference between the companies who are at the top in an industry and those who aren't.

A Mission to Achieve

Clear Direction

Their Ideas Seen as Valuable and Contributing to Success of the Mission

Involvement in Decision-making

Clear Directions

Understand their Personal Role

See Value for the Organisation in What the Team is Doing

See Value for the Organisation in What They are Doing

Team Members Connect, Respect and Complement Each Other

Managers and Supervisors Mix Easy with the Team

Personal Growth Opportunities

      5 Year training plan for each individual – include both technical and interpersonal

Recognition for Contribution

9.   A Little Leadership Does Wonders!

The leader provides focus, direction and encouragement. These qualities are part of virtually everyone's character and it means that most people have what it takes to be a leader. What is necessary for achievement is that in every situation a leader must be present. It does not need to be the same person. The really great organisations recognise that the right leader changes, depending on the situation, and have developed techniques to let the right leader step forward at the right time.

- **Effective Leadership**

Lee Hecht Harrison research results say the successful leaders:

1.   Inspire people to follow a vision

2.   Align people with the vision

3.   Hold people responsible and accountable for results

4.   'Walk the talk' as a leader

5.   Demand high performance teams

6.   Create values-driven organisations

7.   Think strategically, act specifically

Effective Leadership behaviours are:

1 Create a Vision Conservative, Innovative, Technical, Self, Strategic	**4 Follow Through** Control, Feedback
2 Develop Followers Persuasive, Outgoing, Excitement, Restraint	**5 Achieve Results** Management Focus, Dominant, Production
3 Implement the Vision Structuring, tactical, Communication, Delegation	**6 Team Playing** Cooperation, Consensual, Authority, Empathy

Situational Leadership

"This view of leadership emphasizes the interaction between the leadership **style** of an individual and the features of the **environment** he or she is operating in. Situational leadership theories differ in whether they view leadership style as relatively fixed or as something which can be fairly readily adjusted by the leader to 'fit' the situation. If leadership style is seen as fixed then it follows that leaders are more effective in some environments than others. Increasing effectiveness would mean changing the environment rather than changing leadership style."

10. Supervisors – Their Roles In Winning Operations and Management Teams

For reasons of corporate governance and management effectiveness most organisations appoint a Supervisor, or similar role, to be in-charge of a shift crew. This person is the 'gateway' for both upwards and downwards communication in the organisation. That person has a huge influential position over both the crew members and the managers in the department. Learn about the importance of selecting supervisors, their on-going development and establishing a close working relationship with them that will pay rich dividends for all in future.

The 'Gate Keepers'

Mostly they Are on the Company's 'Side', Loyal to the Company

Intelligent, Competent in the Duties of their Charges

They are Better able to See Their People's View Point than a Manager Would

Honest, Up-front with the Truth

Separates Work from Personal

Want to Learn more about Doing their Job Well

Provide training both technical in their discipline and organisational systems

They Control the Work Team Priorities

They Influence the Work Team Emotions.

Treat Them as Equals to Show Respect

Get their input on decisions.

Ask what they would do and do it.

Ask them to Explain the Company Position to their Work Group

11.   Your Continual Improvement

What will you do to become better with people skills; with business skills; with engineering skills?