Back to the Basics to the Future

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MAINTENANCE IMPROVEMENT is AN EXERCISE IN MINDSET

- Mindset PPS

CHANGE IS UNCOMFORTABLE
- DO NOT INVALIDATE THE PAST!!
What is KAZAKHMYYS?

Kazakhmys PLC is an international natural resources company, listed in the UK, with its principal operations in Kazakhstan and the surrounding region.

- Kazakhmys was one of the top 5 performing stocks in London for 2009
- The core business is the production and sale of copper. 8th largest producer in the world.
- Kazakhmys is fully integrated from mining ore through to the production of finished metal.
- The copper division produces significant volumes of other metals as by-products, including zinc, silver and gold.
- Largest power producer in Kazakhstan with >20% market share.
- +65,000 Employees
KAZAKHMYS --- COPPER at a GLANCE

• 20 Copper Mines (including open pit and underground)
• 2 major growth projects—Both funded (Boshekul and Aktogay)
• 10 concentrators
• 2 smelters
• Precious metals refinery
• Sulphuric acid plant
• 3 power plants
• In house railway network
MKM
- Copper fabrication business in Germany

GOLD
- 3 gold mines
- 2 gold projects
- 1 silver project

PETROLEUM
- 602 km² exploration block
LET’S START OFF BY CALLING THE PROFESSION WHAT IT REALLY IS......

MAINTENANCE!!!

IT PROVIDES CLARITY to THOSE WHO HAVE THE MONEY 😊
WHAT IS OUR MOST VALUED ASSET?

- SORRY, IT IS NOT PEOPLE !!!!!!!!

- IT IS THE RIGHT PEOPLE in THE RIGHT PLACES!!!
BREAK OUT OF THE Circle/Cycle of DESPAIR—"Back to Basics" to Break
SO MANY TOOLS, TOO LITTLE TIME!!!
(The Alphabet Soup of “Silver Bullets”)

Lean

5S

CT

PS

TPM

6Sigma

FMEA

RCA

PDM

RCM

SCO

ETC> ETC> ETC>
FACTS of LIFE

FACT– 1

80-20 RULE PREVAILS. **MANY** “SILVER BULLETS” DESIGNED FOR 20% WHO HAVE THE BASICS FUNDAMENTALLY EMBEDDED, NOT THE OTHER 80% OF US.

FACT—2

NO MATTER HOW SEXY IT APPEARS, MANY, IF NOT MOST OF THE TOOLS ARE HEAVILY DEPENDENT ON A FULLY FUNCTIONING, AND BORING, “BASIC MANAGEMENT” SYSTEM

FACT---3

MY NAME IS DALE EKMARK, AND I USED TO BE A THREE LETTER ACRONYM (TLA) ADDICT 😊. I WAS ALWAYS ON THE HUNT FOR THE HOLY GRAIL OF MAINTENANCE. THERE IS NONE…HARD WORK and ENABLING PEOPLE IS THE ANSWER!!!
“...the best performers execute the basics of reliability and maintenance very well, while the average performers just talk about what needs to be done, or work too much on installing new “advanced” systems, forgetting the basics.”

Torbjorn Idhammar
IDCON, Inc
A VISION BASED ON REALITY—A PICTURE OF SUCCESS

THE RIGHT PEOPLE IN THE RIGHT PLACE—80% SUCCESS is PEOPLE-BASED

SAFE BASIC WORK PRACTICES, EXCELLENT HOUSEKEEPING, & CLAIR

LUBRICATION MANAGEMENT AND CONTAMINATION CONTROL

BASIC AND UNWAVERING EXCELLENT MAINTENANCE PRACTICES. (BALANCING-ALIGNMENT-COOLING ETC)

ACCEPT THE “TRUTH”—UNDERSTAND WHERE YOU ARE, NOT WHERE YOU “THINK” OR BELIEVE YOU ARE.

UNDERSTANDING OF THE PF-CURVE

FOCUS ON A SIMPLE WORK MANAGEMENT SYSTEM
  WORK IDENTIFICATION
  PLANNING
  SCHEDULING
  EXECUTION
ENABLING THE VISION TO BE ACHIEVED

Safe, Reliable and Prosperous Organization ‘Our Picture of Success’

“Enabled” by doing “things” right
80% Effort Required
Leadership or People Based Enablers

“Achieved” by doing the right “things”
20% of the Effort
Management and Technical Solutions

MISSION
What we do, for whom & what drives us

CULTURE
What we believe to be true
What we value

STRATEGIES
Key Areas where we need to achieve a Result

TEAMs
Able & Willing to work together towards common goals

GOALS
Specific targets in each key result area

PEOPLE
Able & Willing to do the required tasks

TASKS
Day to day activities to achieve the goals

“Enabled” by doing “things” right
80% Effort Required
Leadership or People Based Enablers

Assume something needs to change

Assume relationships needed

Assume people do tasks

Siokos - EDN
THE RIGHT PEOPLE!!!!
GENERAL ELECTRIC APPROACH TO CHANGE--CAP

Q x A = E

Technical Strategy

Team/Organization/Cultural Strategy

* Quality times Acceptance = Effectiveness

Business Results
Q X A = E

Q = Quality of Solution (Technical)
A = Acceptance of Solution
E = Effectiveness of Solution

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<th>Q (Techie)</th>
<th>A (People!)</th>
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Housekeeping. A clean shop means there is less dirt, dust and grit to get into components or to be transferred.

Proper parts handling and storage. Keep components packaged until they are ready to install, and store them.

Hydraulic hose assembly and storage cleaning. Clean and cap hoses and tubes. Clean the inside of each hose.

Oil storage and transfer. Equip both oil and diesel fuel storage tanks with desiccant breathers to keep dirt and

Filter changing. Always meet oil and filter change intervals. Carefully remove used filters to ensure that

Operation and maintenance. Make sure equipment is inspected daily for leaks and fix immediately if any

Particle counting. The human eye can’t see most of the dirt that damages machine systems—and it doesn’t
HOUSEKEEPING AT Alumbrera Mine Workshop--Argentina
UNDERGROUND OPPORTUNITY FOR IMPROVEMENT
LUBRICATION MANAGEMENT AT MUSSELWHITE MINE—ONTARIO, CANADA
Old Greaser Method

570 Level

500 Level

150 Level

670 Level
Six New Underground Grease Stations
Getting Started - The 5 S Housekeeping System
CONTAMINATION CONTROL

- Stored horizontal bungs at 3 and 9 o'clock reduces ingress of moisture and air from breathing.
- Rain caps for oil drums not in storage or delivered for use in plant.
Apply BASIC Principles of C.L.A.I.R.

- Clean
- Lubricate
- Adjust
- Inspect
- Repair

(Note—Usually associated with operator performed maintenance however principles should be applied across the board)
IDENTIFY AND ACCEPT THE TRUTH!!!---A LOW “SCORE” is NOT NEGATIVE-CONSIDER IT AN OPPORTUNITY TO IMPROVE !!!!
FUNDAMENTAL MANAGEMENT SYSTEM—THE FOUNDATION
Welcome to Jwaneng Mine, Where We Passionately Mine Diamonds!
MAIN TREATMENT PLANT IMPROVEMENT
- Weekly Shutdowns Reviewed by Teams and Bottlenecks Eliminated.
- UPTIME and Stability of Plant Improved Significantly
- Additional Revenue of $200,000,000 realized by minimal investment
- Mine Total Revenue is $2.2 Billion/year after improvement.
- Profit Margin is .85 to .9.

PEOPLE and BASICS---NOT Technical Solution.
GOOD LUCK and THANKS FOR THE OPPORTUNITY TO SHARE WITH YOU!!!