Q4, 2013

What good is the WMCD (Wireless Machine Condition Detector)?

By David Dane

Manufacturing Engineer Technician

MillerCoors

Use of the WMCD is recommended with smaller rotating equipment in a production area that is critical to line performance. Smaller rotating equipment failures can bring a production line to a stop just as easily as large machine failures. Examples being a Conveyor Motor or Gearbox feeding a Packing Machine or Palletizer.

I recommend these steps: Identify all the equipment to be monitored in an area. Map them out in order of Process and tag them with a barcode or RFID tag. Tagging is very important to ensure that the operator is at the correct asset when the data is collected.

Set alarm limits to ISO 10816 recommended alarms for whichever class/size machine that is being monitored

VIBRATION SEVERITY PER ISO 10816						
Machine			Class I small machines	Class II medium machines	Class III large rigid foundation	Class IV large soft foundation
	in/s	mm/s				
Vibration Velocity Vrms	0.01	0.28	good			
	0.02	0.45				
	0.03	0.71				
	0.04	1.12				
	0.07	1.80				
	0.11	2.80	satisfactory			
	0.18	4.50				
	0.28	7.10	unsatisfactory			
	0.44	11.2				
	0.70	18.0				
	0.71	28.0	unacceptable			
	1.10	45.0				

Mark all data collection points so that data is taken at a consistent manner.

Also gather as much data about the assets being monitored and add that to the Frequency properties when setting up your WMCD points. Bearings, Fan and Impeller plus Rotor bars - these can be a big help when troubleshooting a machine that is in alarm.

Set up your @ptitude Inspector software database to Save the FFT data on either every collection or only when in alarm.
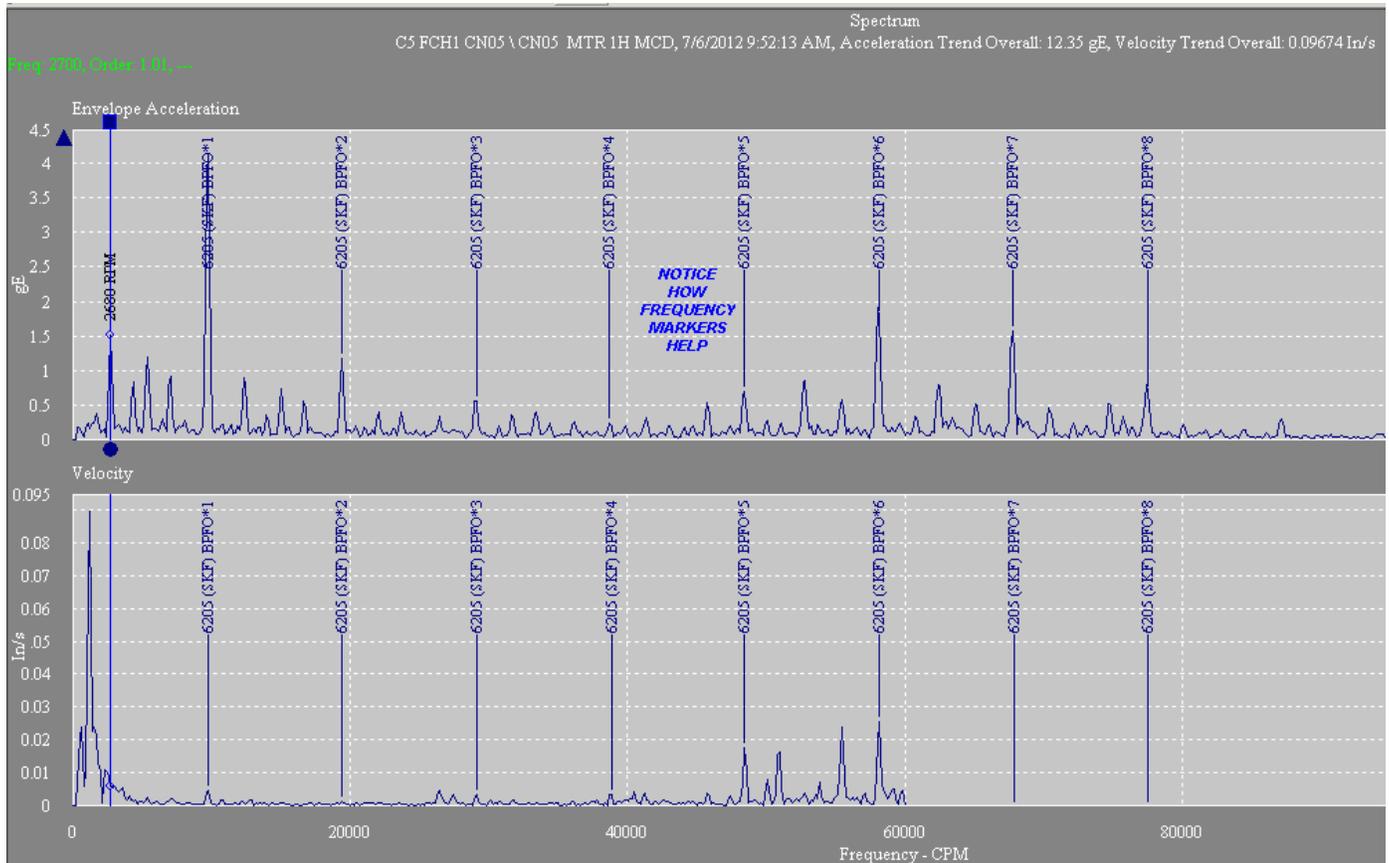
Finds can be trended or notification to replace the asset can be triggered.

So what good has the WMCD done us?

Since January 1, 2012, I have identified for repair or replacement (mostly replacements) more than 80 Motors or Gearboxes in our Packaging area using the WMCD. There are around 1300 assets being monitored with the WMCD in Packaging alone on anywhere from a 30, 60 or 90 day schedule depending on history.

The CMVL 8000 Wireless Machine Condition Detector (WMCD) is an SKF patented, Bluetooth enabled wireless device that captures and transmits temperature, velocity, enveloped acceleration (vibration) and Fast Fourier Transfer (FFT) data to the SKF Microlog Inspector system.

Features:

- Wireless data transfer
- Measures and records:
    - Overall machine vibration (velocity)
    - Bearing vibration (enveloped acceleration)
    - Temperature
    - FFT spectral data
- Rechargeable battery
- Rugged design

Database Configuration

By Dave Staples

Controlling the Urge

Chocolate, ice cream, home entertainment, mobile phones, gaming equipment and building your ODR database… What do these all have in common? There is an uncontrollable craving to just dive in and do it, with little thought of the consequences. It is not uncommon to see ODR implementers giving into their urge to start building the equipment hierarchy, or database, so operators can start collecting Operator Driven Reliability (ODR) data as soon as possible. Although the enthusiasm is commendable, it often results in lost time and energy when you have to ultimately rebuild the database, sometimes more than once, right Beth? So before the first piece of information is entered in the @ptitude Inspector software, it is invaluable to get properly organized and gather as much information regarding the assets, including their contribution to the operations processes, reliability history, desired asset performance and desired performance improvements.

Team work

Typically there is a lot of asset knowledge available in a company. The challenge can be finding it. It is best to use a multi-disciplinary team of operations, maintenance and reliability professionals, engineers and planners to gather as much data as possible about the asset. This same team can be used as a resource for information throughout the implementation process.

Maintenance Strategy

Criticality? Failure modes? Repair history? What do you already know about the assets? Take advantage of any rigorous methodologies (TPM, RCM, FMEA, etc…) that were used to develop the maintenance strategy for these assets. Use this information to build the hierarchy. There is big difference between the types of inspections for an asset that is run to failure versus one that is critical to operations.

Current inspection programs

It may be practical to combine ODR inspections with inspections currently performed on the assets. Current inspections could be in place to keep an eye on the process, quality or safety, or may be mandatory for regulatory compliance. Identify those inspections and determine if it makes sense to combine them into common rounds. If combining them makes sense, it is also prudent to make sure those current inspections still have commercial and technical merit. In other words, make sure these inspections are valuable and worth the time to collect them.

Hierarchy and Computerize Maintenance Management System (CMMS) alignment

Another great source for asset information can be the CMMS. Start with the asset registry. Make sure the registry is complete and accurate. Most importantly, make sure that the asset identification nomenclature is the same for both the CMMS and @ptitude Inspector. If the nomenclature differs, it can be like trying to learn two languages for an operator, which results in confusion, inefficiencies, and in worst case, collected data tagged to the wrong asset. Asset names, descriptions and locations should make logical sense. Standardize the hierarchy by process, start to finish and asset

train, drive end to driven. This will standardize how data is collected in the field by the operator. It can be useful to have process flow diagrams (P&ID) handy to help organize this information.

Organizing, reporting, filtering and sorting

Wherever possible, take advantage of standardizing work flow, reporting, filtering and sorting, asset nomenclature, and user profiles. Using database templates for work spaces, assets, and reports helps manage standardization. Structure your hierarchy into as many functional levels that make sense to the process starting at the plant level then broken down to process area, sub-process area(s), and then the asset. This will make it easier to find assets in the hierarchy. Make sure that the asset is located in only one location of the hierarchy.

It is important to understand reporting requirements, since this is typically how key performance indicators are tracked. Based on the report content, asset categories can be captured in the asset fields of the database. Typical examples are asset type (motor, pumps, valve, etc…), manufacturer, frame, size, capacity, flow, configuration, etc… This information is then used to sort, filter and correlate assets into specific reports or work spaces.

Microlog Inspector content

The Microlog Inspector can be a tremendous resource in the field. It can be used to give additional information, be a source of answers to questions, hold detailed instructions, or even request the operator take action. Take advantage of the significant on board memory to store documents like photos, graphics, instructions, and warnings. Network links can also be utilized if the device is used in a Wi-Fi environment. All of this information must also be loaded into the asset database.

In order to make database building as efficient as possible, gather as much information regarding the inspections of measures as possible. Will asset identification technologies be used? Will accessories be used to take measurements? For the validation process, include acceptable ranges, exception and alarm criteria in the database. Try to avoid using short cuts, like "OK/Not OK" or "Satisfactory/Unsatisfactory". These types of inspections can lead to overlooking all the inspections criteria that drives an OK or Not OK result.

In the event of abnormal inspections, provide operator action or feedback. Operator feedback can be in the form of decision support, requesting that additional inspections or measurements that will help automate the fault diagnostic process. Take advantage of conditional nesting of inspections to make collection more efficient. For example if a machine is not running, a smaller set of inspections may only be required as compared to those collected when the asset is operating. Make use of the calculated results for pump and compressor efficiencies, or even costs associated to specific problem, like air leaks.

Data Sharing

Quite often data collected by the operators will be shared with other enterprise applications like process historians or CMMS, which require specific information. This type of data is also entered into the asset database making integration easier.

User's Group Feedback

The SKF ODR community continues to grow. Annually, we get together to share best practices and success stories. This community is also a great source of practical knowledge. Some feedback that was recently shared on database building best practices included, use all capital lettering and common abbreviations, like MTR and PMP. Feedback regarding global values suggested using common messages for coded notes and problem description for work order requests which can be created in the Microlog Inspector.

The best feedback from the User community is to learn from their experiences and sometimes mistakes. If you have interest in sharing your success or lessons learn, we'd be happy to publish your story in the next newsletter or better yet, present it at our next ODR User conference.

Can a derived point be used to calculate motor RPM with the input of frequency from a variable frequency drive?

By Charlie Unfricht
ODR Applications Engineer

During the recent Inspector User Group meeting, a customer asked if a derived point could be used to calculate motor RPM with the input of Frequency from a VFD or Variable Frequency Drive. The answer is a definite yes.

The math is very straight forward. RPM = Motor Base Speed * (Actual Frequency/ 60 Hertz).

Motor Base Speed will need to be obtained from the motor name plate. Actual Frequency is read from the VFD.
60 Hertz is the frequency at which a motor will turn its base speed.

Below you can see an example of this formula in the @ptitude Analyst software
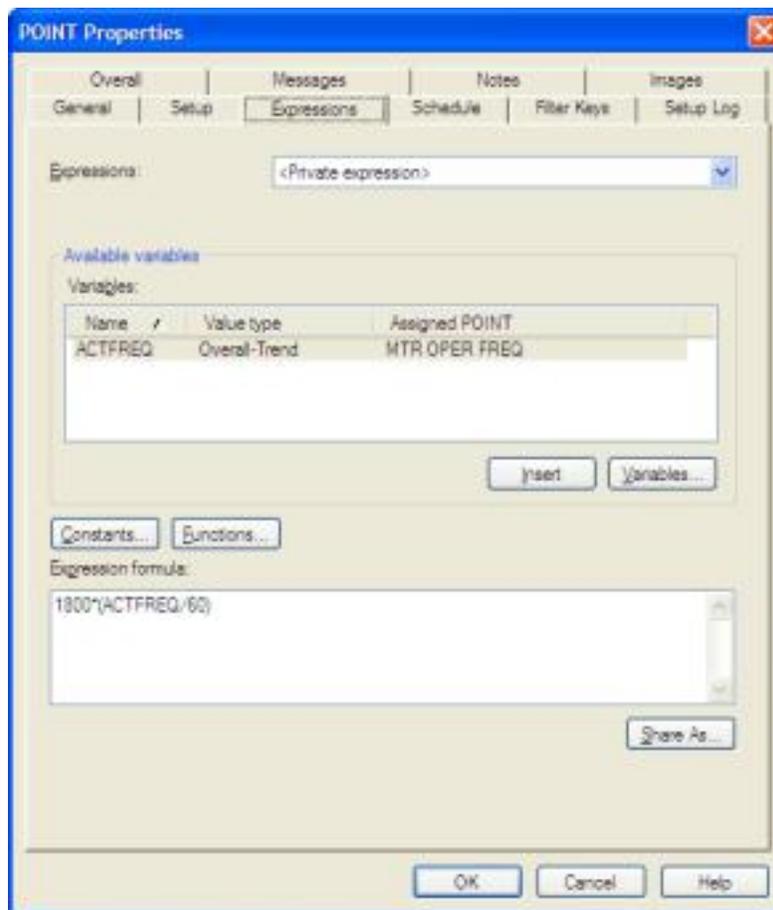
So why would we want to calculate the RPM of a motor as part of our ODR rounds? If Operators are taking WMCD readings and a spectrum has been enabled, you will have condition data, coupled with the speed it is turning, for that particular equipment. Perhaps this is not important to an Operator but it is very helpful information for a Vibration Analyst. When the equipment goes into alarm, the Analyst can pull the spectrum up and overlay the speed and fault frequencies over the spectrum. This key piece of information allows an Analyst to make a more informed decision on the equipments health.

One of the benefits of using the WMCD to collect vibration data is to supplement your Maintenance Engineers' data collection. This should free up some of their time to work on other tasks, such as RCFA's etc.

So what started out as a very simple question about using a derived point to calculate motor RPM, has implications for your Condition Monitoring program as well.

Operator Settings Cheat Sheet

By Travis Bottalico

Supported DAD types

Operator settings can be configured by selecting Customize > Database and selecting the "Operator Settings" tab in the @ptitude Inspector software

When using Microlog Inspector, be sure to select it when configuring operators under the "Supported DAD types" drop down list. This will enable all available options for Microlog Inspector.
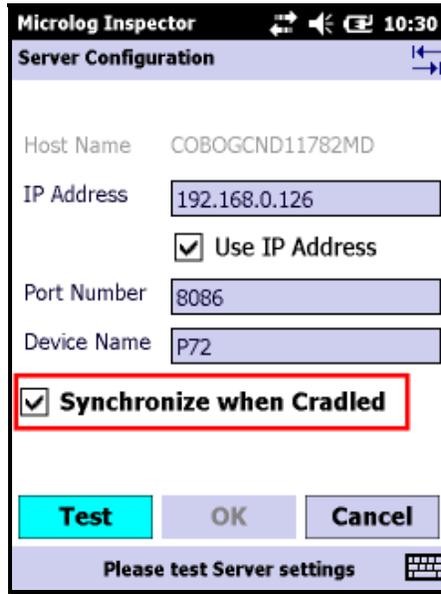

Settings

"Access Level"

This defines what operator has access to in Microlog Inspector. See table below:

|	Admin	Full	Operator	Limited	Review
Synchronize	X	X	X	X	X
View Options	X	X	X	X	X
Review Data	X	X	X	X	X
Database – Backup/Restore	X	X	X	X	X
Collect Data	X	X	X	X	
WMCD Setup	X	X	X		
RFID Setup	X	X	X		
Camera Setup	X	X	X		
Temperature Gun Setup	X	X	X		
External Vibration Sensor Setup	X	X	X		
Database - Reset Measurements	X	X	X		
Database – Reset Profile	X	X	X		
Database – Delete Database	X	X			
Tag Harvester	X	X			
Network Setup	X				

"Automatic Transfer"

Not used in Microlog Inspector, this has been superseded by the operator- independent "Synchronize when cradled" option found in Microlog Inspector *Settings > Network*

"Can Change Password"

Specifies whether a user can (when set to "On") or can't (when set to "Off") change their password. When the setting is "On", a "Password" option is available under Settings. After changing the password, the user should sync immediately, and if using another device later, should sync to ensure the password is updated on the new device.
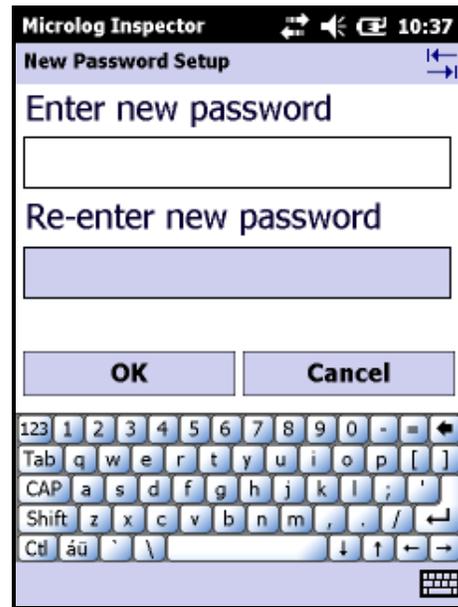
Note: this has no effect on the "Reset password" functionality described later in this article.

"Create work notification"

Specifies whether a user can (when set to "On") or can't (when set to "Off") create a Work Notification. The Work Notifications plugin requires an @ptitude Software license to be enabled. Without this license, this setting is ignored and the option on the device is disabled. If the license is present, the option is disabled on the device until *Work Notifications settings are configured.*

If the license is available and the settings are configured, if this setting is "On" the user can create a Work Notification by clicking on the following icons.
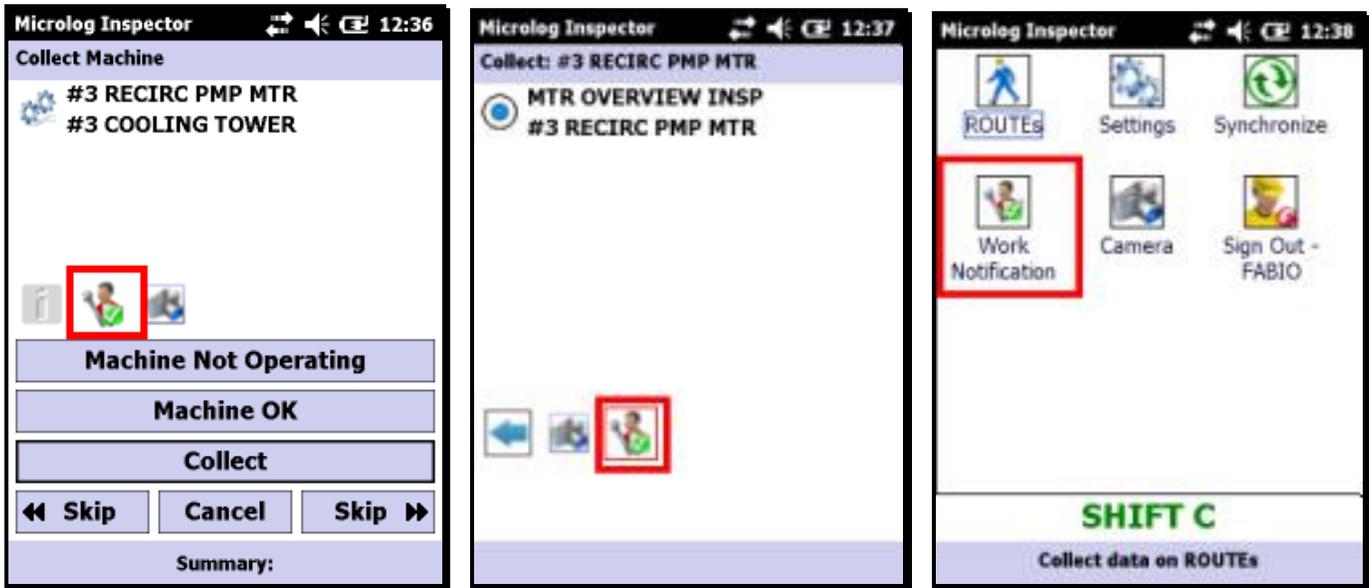
"Data collection time"

Specifies the amount of time in minutes that must have passed between the *last saved measurement* and the *current measurement trying to be saved.* When saving a new measurement, if the last measurement was saved before this time interval has expired, a user will be asked if they want to save the current reading as a new measurement, or overwrite the existing measurement.

For example, with a default "45" minutes, if one was to save two measurements on the same point within 20 minutes, you would get this warning. Pressing "Yes" would overwrite the measurement from 20 minutes ago. Pressing "No" would save the current measurement as a new on.
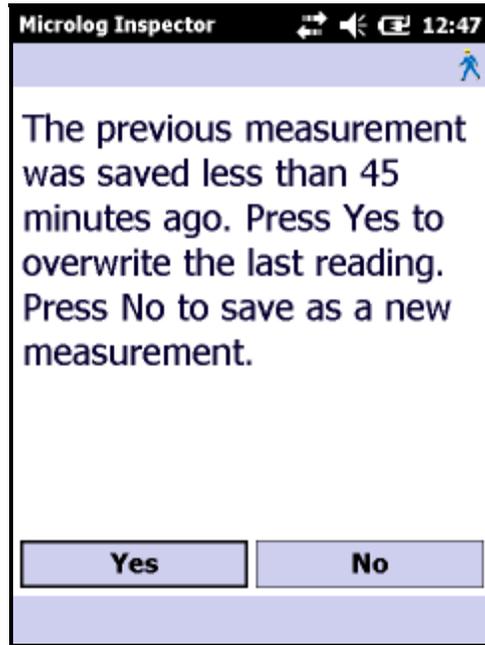
The idea behind this setting is to allow users to overwrite an accidental reading, but prevent doing this on accident. Configuring this setting with "0" disables the setting.

"Default operator password"

This setting is used in conjunction with the "Reset Password" setting. This is NOT the operator's password. This is the password that the operator uses to sign in when their password is reset. The operator would then enter their own password.

For example, after setting this password to "skf" and turning the "Reset Password" setting to "On", the operator would sign in using "skf" and then be prompted to enter their own password. Upon the next sync, they would sign in with their own password they entered.

By default the password is "skf". After modifying this setting, you are asked if you would like to turn the "Reset Password" setting to "On" since this is typical.
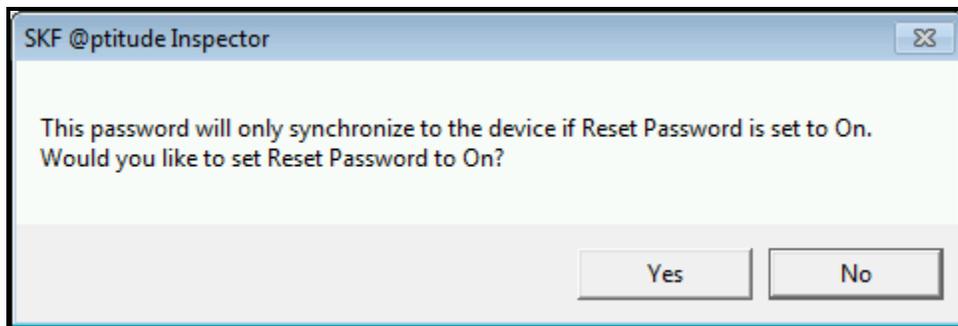
This setting is per *operator*, not a global setting.

"Display mode"

Determines how the ROUTEs display on the device. When configured as "Point Only", the user will not see Sets or Machines. When configured as "Set + Point", the user will not see Machines. When configured as "Machine + Point", the user will not see Sets. When configured as "All", the user will see ROUTEs as they display in the @ptitude software.

When configured as any of the above options in the @ptitude software, the user will not be able to change the setting on the device in Settings > View Options.

If the "Display Mode" option is configured as "User Defined", the user can choose for themselves on the device in Settings > View Options and the preference will synchronize automatically with @ptitude.

"Enable machine not operating"

When this setting is set to "On", the "Machine Not Operating" button is enabled on the Machine collection screen. When set to "Off", the button is enabled.

When this button is pressed, all POINTs for the Machine are skipped and tagged with a "Machine Not Operating" coded note. A non-collection event is also saved.
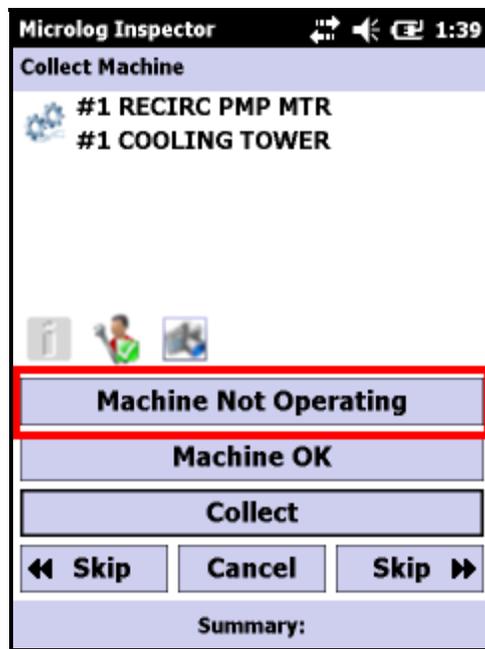
"Enable machine OK"

When this setting is set to "On", the "Machine OK" button is enabled on the Machine collection screen. When set to "Off", the button is enabled.

When this button is pressed, all POINTs for the Machine are skipped and a non-collection event is saved.

"Messaging – end of ROUTE"

When this setting is set to "On", the "End of ROUTE" message is displayed after collecting the last POINT in the ROUTE. When set to "Off" the user is instead returned to the ROUTE screen without the message.

The intent of this setting is to allow one to disable the message if they don't collect data in the same order as the ROUTE appears in @ptitude.
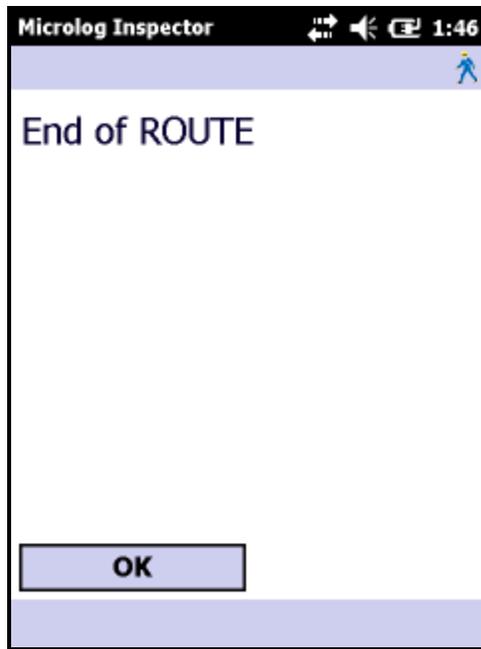
"Messaging – save data as current warning"

This setting is used in conjunction with the "Show previous measurement" setting. When the "Show previous measurement" setting is on, the previous reading is selected as default when the POINT collection screen displays.

If this setting is configured to "On", when attempting to save the last measurement as the current measurement, this warning message displays:
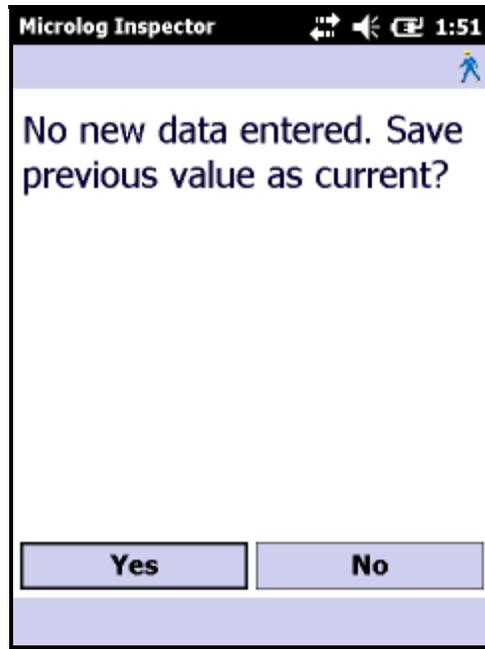
To disable this message and save the previous reading as the current reading by default, set this setting to "Off".

"Messaging – show Sets while collecting"

When this setting is configured to "On", the following screen displays if the user presses "Collect" on the Set when in the ROUTEs screen, or while collecting:

If the setting is configured to "Off", the Sets will still display in the ROUTEs screen (left) but the "Collect Set" screen (right) will be skipped and the user will proceed to the first Machine under the set.

"Messaging – zero acceleration/velocity reading warning"

When using a WMCD (CMVL8000), this setting isn't used.

When using a MCD (CMVL3600), the sensor can return readings of 0 for enveloped acceleration of velocity when the readings are very low. When this occurs, by default the following warning is displayed.
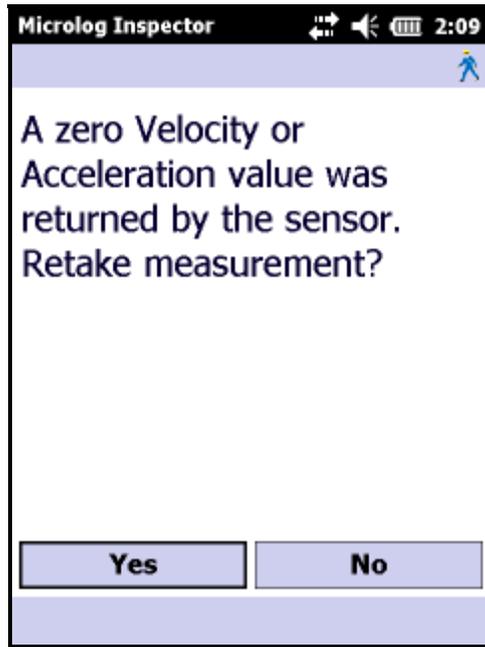

To disable this warning, configure this setting to "Off". The intent of this warning was to prompt the user to retake the reading as a 0 reading is unlikely on an asset and the sensor may not be attached correctly.

"Numeric range protection"

When set to "On", values above or below a POINT's full scale and minimum scale respectively will not be allowed to be saved and will be given the following warning when attempting to do so.
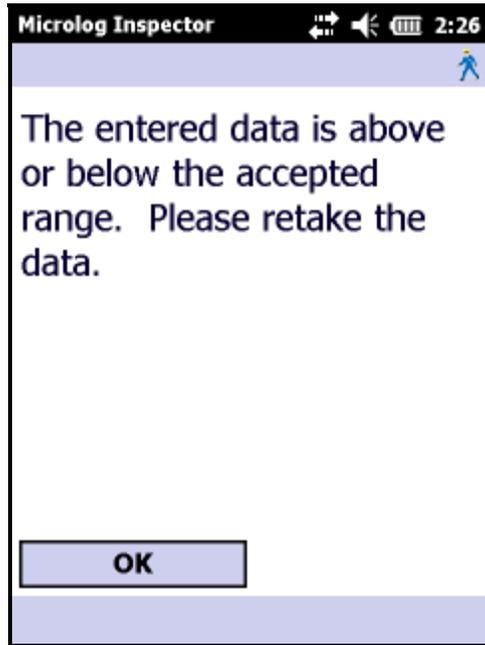
When set to "Off", the user will still be warned that the value attempting to be saved is above or below the full or minimum scale, but can save the measurement.
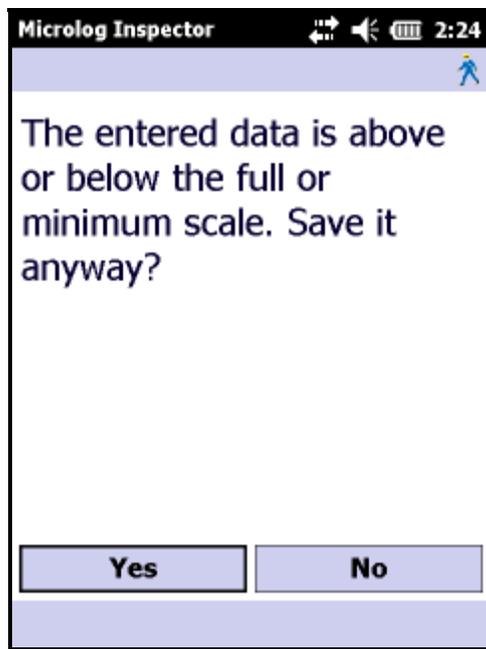
"Reset password to default"

This setting is used in conjunction with the "Default operator password". When set to "On", after synchronizing and attempting to sign in to Microlog Inspector, the operator will be required to enter the "Default operator password" and then enter a new password. After synching this setting is automatically reset to "Off.

This setting is per-operator and not global.

"ROUTE filter"

When configured to "Show All", all POINTs/Machines will display on the device regardless of their data collection activity schedule. When set to "To Be Collected", only POINTs/Machines that are currently scheduled to be collected as defined by their compliance data collection activity schedule will be displayed, and all other POINTs/Machines will be hidden.

When configured as any of the above options, the user will not be able to change the setting on the device in Settings > View Options.

If the "ROUTE filter" option is configured as "User Defined", the user can choose for themselves on the device in Settings > View Options and the preference will synchronize automatically with @ptitude.
When the setting is set to "To Be Collected", a filter icon displays in the ROUTE screen on the device.

"Scan and go to first POINT"

When a Machine has a location tag assigned to it and this setting is "Off", after scanning the location tag the user jumps to the Machine collection screen.

If this setting is "On", after a user scans the location tag associated with a Machine, they will instead jump directly to the Machine's first POINT.

This is useful when using location tags with barcodes/RFID/etc. and not using the "Machine Not Operating" or "Machine OK" options.

"Scan required to collect"

When this setting is configured to "On" and a Machine or POINT has a location tag assigned to it, the user must scan the location tag before being allowed to collect data on the Machine or POINT.

This is useful to prevent collecting data on the wrong asset if using location tags.

"Show previous measurement"

When this setting is configured to "On", the POINTs last measurement will be displayed by default. This setting is used in conjunction with the "Messaging – save data as current warning" setting, which will display a warning or not when attempting to save.

This setting does show previous vibration readings, but will not accept the previous reading as current since this is invalid for vibration readings (unlike a gauge that doesn't change when the process hasn't changed…)

"Verification mode"

This setting determines when the Review screen should show after collecting data. When set to "Always", the Review screen always displays after saving a measurement. When set to "On Alarm", the Review screen will display after saving a measurement only if the measurement is in alarm (for vibration readings, any of the three measurements). When set to "Never" the Review screen never displays after collecting data.

The Review screen can always be accessed from the ROUTEs screen by selecting a POINT and selecting the "Review" option.

"View FFTs"

This setting determines whether or not the FFT icon displays in a vibration POINT review screen. When set to "On" the user can access the Spectrum Plot by clicking the FFT icon, assuming the vibration POINT is configured to collect and save FFT readings. When set to off, the icon is not available.
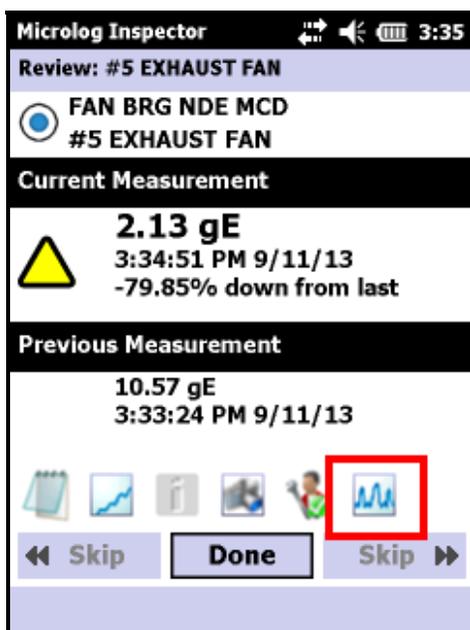
"View work notification history"

This setting determines whether or not a user can access the Work Notification history when using the Work Notifications plugin. When this setting is "On", the "Historical WNs" button is enabled, and when the setting is "Off" the button is disabled.
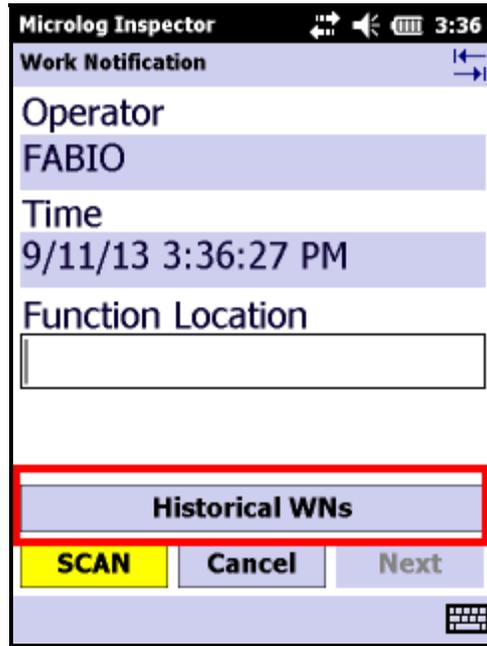
Software Consolidation and the Benefits of Platform Simplification

By Robert Kauffman,
@ptitude software Product Line Manager

To maintain a competitive edge in today's fast changing business environment, enterprises need to deliver products and services faster than ever. They need to enhance customer experiences; they need to process immense amounts of data and synthesize it into actionable information that helps them to make the best possible decisions that drive up productivity just to stay ahead of the competition.   Many companies are already doing this on a daily basis with tools and software from SKF that form a framework that you are building your condition monitoring and reliability programs around.

But, for all that you do, sometimes there is another department or another group that works side-by-side your teams, using different systems; sometimes for very similar tasks. They are gathering data into software systems that don't share data or allow you and your team to collaborate as effectively or as proactively as possible. To solve this problem, companies are finding that consolidating, unifying and integrating or eliminating some of the different software packages can be a productivity boost and business best practice that can improve productivity on many levels of the organization.

Do you run multiple reliability software platforms in your facility with overlapping functionality? Are you finding that management is asking you to do more with less? Are you finding it harder to train new employees on the numerous systems and applications that are required to get the job done? If you are like most of the customers that we work with, there is a constant need to automate and simplify every aspect of your production environment to drive efficiency in your operations. If you look around, are there any opportunities to consolidate and take advantage of the existing features of a package that you already own? If you can, there are savings that can be had in training, IT support, ongoing support plans with multiple vendors, ongoing licensing fees per user, and on and on.

SKF had this in mind when designing @ptitude Monitoring suite – a software package designed to host all your asset health data, no matter how data is collected or from which enterprise system it originated. It has the ability to collect and host data from various inspections programs (ODR, basic care, lubrication, quality, HSE, regulatory, fire equipment, TPM, mechanical), portable and on-line PdM programs, provided the data is collected by an SKF device. With the use of OPC connect, Modbus, or other application interfaces, data can be shared between @ptitude suite and other enterprise application like data historians and computerized maintenance management systems.

The benefits include higher productivity, greater corporate agility, and faster response to market dynamics. Although most companies can't fully consolidate systems due to production demands, supply chain dynamics, and the realities of complex businesses, standardization is a valuable goal. By consolidating on a single reliability system, you can help enable design and component reuse in a way that leverages shrinking resources and promotes better collaboration among your teams.

Recently we visited a company using a software and handheld route application to manage their lubrication rounds. This software was incremental to the investment that they had already made into the SKF Microlog Inspector and SKF @ptitude Inspector software packages. This package was used in a different department, and although the software ran on the same physical handheld device as the SKF Microlog Inspector, there were incremental costs and complexities that could outweigh the slight differences and features of running the two specialized applications.

Did you know that the SKF @ptitude Inspector and the SKF Microlog Inspector can perform most of the functions that expensive stand-alone lubrication programs offer? By being a bit creative, you can extend the usefulness and reach of the product that you already own, and provide support beyond the traditional Operator Driven Reliability programs that you are used to.

If you are like most of our customers, you have probably already done all that you can to minimize the number of lubrications that you use in your facility, in an effort to reduce complexity and the number of SKU's that you have to stock and manage. This is an important first step in optimizing your lubrication program. The next step is managing the application of lubrication so that there is consistent and proper levels applied at the right time.

The SKF Microlog inspector portable devices can be programmed to create custom lubrication routes that can be collected based on a single type of lubrication. This can be done with the feature called Filter Keys that is included in the POINT setup tab of the SKF @ptitude Inspector software. By taking advantage of this feature and adding data into this field when the POINT is created, it can later be used to create a ROUTE that can be designated for lubrication in the SKF @ptitude Inspector software. This ROUTE can include only POINTs that are specific to that lubrication, or it can be combined with a other inspection POINTs to maximize the steps through the plant. This would allow you to group points by lubricant in the handheld into a logical group that can be assigned to someone to complete on a defined schedule. Once completed, the lubrication tasks will then provide data into the same SKF system that you already use to track your operator collected reliability data in the SKF @ptitude Inspector software.

By reassigning or reorganizing some of applications and maybe even some of the labor in your facility, you can begin to gain valuable efficiencies and begin to consolidate data into a more useful and shared environment. This could free up a number of resources and allow them to take on other projects that are short staffed or in need of attention.

SKF helps pulp mill eliminate unpredicted failures for an entire year

Since it started using the SKF Automated Diagnostic System in 2006, Canada's Zellstoff Celgar has also protected its bottom line from an estimated $6.5–7.5 million in unplanned downtime-related losses.

Located some 600 kilometers east of Vancouver in British Columbia, Zellstoff Celgar is one of the largest, most modern continuous process pulp kraft mills in North America. Every year it produces about 500,000 air-dried metric tons of woodpulp and generates over 400,000 MWh of renewable energy. In 2012, Celgar did both without a minute of unplanned downtime, by using almost 70 SKF tools and technologies to monitor 856 critical assets.

For a large, continuous process pulp mill, it's an unheard of achievement. Pulp production requires numerous pumps, motors, mixers, gearboxes, agitators and rolls. Most of the assets are very large, rotate very slowly, and rely on variable frequency drives. If just one piece of equipment goes down unexpectedly, so does production, for a potentially long and costly interval.

All of these factors make pulp mill equipment hard to monitor and maintain. So how did Celgar manage to run 856 such assets with no unpredicted, unplanned downtime, for a full year?

SKF

On the path to predictive maintenance

It all started when Dragan Trivanovic joined Celgar as the mill's Predictive Maintenance Manager in 2006. He immediately put several SKF Microlog data collector/analyzers into the hands of his maintenance technicians. Previously a Reliability Manager with a mining and metals company, Trivanovic had wide experience and success using SKF condition monitoring solutions.

His maintenance team started integrating the Micrologs into their daily maintenance routines, beginning a multi-year effort to use SKF technologies to reduce unplanned downtime and improve process management.

By 2009, Celgar was using 51 SKF Multilog WMx monitoring units linked together to form a wireless, online monitoring system. Each WMx unit collects key vibration, speed, temperature and bearing condition data, then automatically uploads it for viewing, alarm evaluation, and analysis into the SKF @ptitude Decision Support system.

SKF @ptitude Decision Support is key

This dedicated decision support software is what would ultimately enable the mill's unprecedented uptime. SKF @ptitude Decision Support links a range of data sources including ERP and EAM/CMMS to facilitate accurate and timely decision-making and work order notification. Replacing labor-intensive data analysis, SKF @ptitude Decision Support provides an automated process that identifies the probability of specific faults within an asset or process and then recommends corrective actions.

By 2011, Celgar had also started an Operator Driven Reliability (ODR) program using SKF Microlog Inspector handheld units, and had outfitted its turbine generators and wood room chippers with dual monitoring/ protection systems. In all, the mill was capturing more than 250,000 data points per day. Without SKF @ptitude Decision Support, analyzing such a mountain of data then communicating corrective actions almost instantaneously would have been impossible. With the system, the mill was able to save several million dollars in unplanned downtime costs in just one incident.

Unprecedented uptime and savings

Powered by SKF @ptitude Decision Support software, an SKF Multilog DMx on-line system monitoring Celgar's newest turbine generator detected a failing bearing, allowing the mill to correct the problem before catastrophic failure occurred. The fix prevented severe damage to the turbine rotor, which would have required a 60-day outage and wait for replacement parts, with a staggering revenue loss of $6 million, plus repair costs.

Looking to improve upon its record of running 856 critical assets with zero unplanned downtime for a year, Celgar is already planning its next SKF condition monitoring hardware additions: 4 more SKF Multilog IMx-M online monitoring /protection systems for its lime kiln.

SKF condition monitoring tools and technologies
- Reduce or eliminate unplanned downtime
- Increase productivity and profitability
- Reduce maintenance and ownership costs
- Improve process management
- Achieve a more sustainable operation
- Extend asset lifecycles

skf.com

SKF Technical Support Self-Help Portal – Inspector Training Videos

By Kacey Newman, Technical Support Group

There are several Microlog Inspector training videos available for download in the SKF Technical Support Self-Help Portal. This article provides links to just some of the videos that are available for download. Click on the links below to view the videos!

- *Installing SKF Microlog Inspector on a Windows Mobile Handheld Device*

- *Registering a SKF Microlog Inspector Handheld with @ptitude Analyst*

- *Data Collection and the Split View in SKF Microlog Inspector*

- *Temperature Guns and SKF Microlog Inspector*

There are more videos than the ones listed here that can be found if you browse the TSG Portal under Inspection Systems / Data Managers / Microlog Inspector . If you are a customer with a current Product Support Plan (PSP), or an SKF employee you may access the entire library of videos by logging in at the home portal page. If you have not yet registered for access to the secure portal and wish to do so, click here or else send an e-mail to kb-administrator@skf.com and request a username and password.

Don't forget to check out the mobile site on your Android or Apple mobile device!

The importance of history in troubleshooting

Changes to the motor, damper settings, or isolation springs may be cause of the sudden change in machine behavior.

In many cases, excessive vibration represents the symptom of a problem, and not the source. Often, a seemingly unrelated change to the machine, process, or maintenance activity may be the real root cause of the problem. While it is tempting to grab the vibration analyzer tools and start taking measurements, a well-disciplined troubleshooter will first meet with operators, process engineering, plant engineering, and maintenance to determine when the problems started and what may have changed that coincides with the change in machine behavior. A change in product flow rates, temperatures, pressures, or viscosity, a recent realignment, an impeller change, a motor replacement, a change in lubricants or lubrication, or previous correction attempts may be the exact cause of the current vibration or reliability problem. However, these changes are often overlooked or dismissed when the most apparent problem is excessive vibration. Vibration and reliability specialists recommend a history review in reverse chronological order – what changed, why was it changed, and did the machine behavior change at the same time? This review is best conducted before a single measurement is taken. While reviewing the history from 30 days is often suggested, progressive facilities have found that asking what has changed in the last 24 hours reveals the problem. Gather all data first and don't dismiss anything – especially when it is assumed that "it can't be that". In many cases, it is often found that "what can't be" the cause is exactly what's wrong. Do you have the history of your machinery available for review?

The WI205 **Vibration Troubleshooting for Reliability** course teaches the student a troubleshooting approach that will improve the chances of a successful diagnosis and correction. Manufacturers today are under tremendous pressure to provide the highest possible quality at the lowest possible cost. Therefore, achieving maximum machine reliability is critical. The profitability of all manufacturers is reliant on the skills of its personnel and how employers' and industry support these personnel to fulfill their potential. To help you achieve maximum value and best practices out of your Inspector, SKF offers several training options with courses from introductory to advanced, available at public classes or at your site.

SKF courses focus on enhancing the efficiency of plant machinery and equipment assets, which are the very heart of the production process. The course portfolio follows a blended learning approach using an array of methodologies such as e-learning, classroom, practical exercises and on-site mentoring to reach the learning objectives.

If you have a specific training requirement, please contact your local SKF representative who will be happy to discuss your requirements. Or visit SKF.com – Services / Customer Training