

# Getting A Handle On Shop-Floor Information

by:

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## Advanced technology identifies process problems before they become costly.

The overall demands for quality product placed on today's fastener manufacturers by their customer base are increasing at an alarming rate, and it is suspected that doing business with any client will become more demanding in the future. One strategy being adapted by some companies to counteract these tough demands is to install new technology that will automatically provide accurate and meaningful information about current production and identify problem areas. Forward thinking companies that choose to use this new technology will reap the rewards.

One crucial identified area in need of significant improvement is shop-floor data collection. Today, much of the shop-floor production data and downtime information is hand written on a sheet of paper by an operator and then manually entered by another individual into a computer system, or an operator may be required to walk to an input terminal and enter the data himself. A report is then generated for the manager that in most cases is both inaccurate and untimely.

Managers seem to only have information about what happened in their plant yesterday or last week, but they do not have the systems in place to determine what is happening in their plants at the present time. Therein lies the dilemma. Customers, clients or other managers ask questions that demand immediate information, but managers only have information about what happened in the past. It is apparent that manufacturers who automate and collect accurate real time data, process that data and act quickly and effectively in response to the information they gather will dominate the future manufacturing marketplace.

### Advanced Monitoring Made Simple

Process Technologies Group, Inc. (PTG) has recently introduced a new system that specifically addresses many of the current shop-floor data collection inadequacies, the new IMPAX TSS System for Downtime Analysis & Production Monitoring.

The IMPAX TSS System combines state-of-the-art touch screen technology with powerful software utilities to create one of the most flexible stand-alone shop-floor systems available in the industry. Its enhanced display makes all of its advanced features easy to access and use. With just a few keystrokes, an operator or manager can either input data or navigate the system to view uptime and downtime minutes by shift, the exact number of times a downtime code has been entered and the accumulated minutes recorded for each downtime code. Production data, tool life counters and maintenance indicators are also available in the unit. Finally, the TSS unit tracks operator response time to a machine stoppage. Most information is available

in a daily, weekly, monthly and yearly reporting format.

The IMPAX TSS System applies a proprietary set of software modules that analyze input signals from sensors or machine controllers to determine the status and speed of any process. The system will analyze and then display process-critical information pertaining to machine run condition, speed, productivity and efficiency based on actual part production.

In the event of a machine/process stop condition, the IMPAX TSS automatically converts from production monitoring mode to a downtime entry and analysis mode. The operator will be required to select from displayed downtime reasons and enter those chosen via the icons on the touch screen. Failure to do so will prevent the operator from starting the machine. This guarantees that all downtime information is logged and accurate.

### A Testimonial

Process Technologies Group recently spent some time with **ITW Shakeproof Plant Manager Rocky Turner**, who is in charge of an ITW manufacturing facility in Oconomowoc, WI, USA. Three IMPAX TSS Systems were installed on critical thread rolling machines at the end of manufacturing cells. We asked Turner what he felt was one of the main benefits of the IMPAX TSS. Turner said, "The TSS gives us the ability to identify inefficiencies quickly and to document interruptions in production without putting unnecessary burdens on the



**IMPAX TSS System for Downtime Analysis & Production Monitoring (top) working with an IMPAX SK force monitor (bottom)—installed on thread rolling machine at an ITW plant in Oconomowoc, WI, USA.**

# Shop-Floor Information...Continued

<b>STOP</b>		<b>PRESS TO RESPOND</b>		<b>05:13 PM</b>		<b>11/15/02</b>	
MACHINE SETUP	GENERAL MAINTENANCE	WAITING FOR TOOLING	WAITING FOR OPERATOR				
MACHINE ADJUSTMENT	ELECTRICAL REPAIR	WAITING FOR MATERIAL	SCHEDULED SHUTDOWN				
TOOL CHANGE	MATERIAL ISSUES	QC INSPECTION	ORDER COMPLETE				
FEED PROBLEMS	ENGINEERING ISSUES	MEETING/TRAINING	USER DEFINED				
<b>PRESS RESPOND BUTTON AND SELECT REASON</b>							

**IMPAX TSS screen featuring the downtime reasons available to the operator.**

machine operator.”

We also asked Turner if the IMPAX TSS system has helped his plant operate more efficiently, and he replied, “Most definitely. By reviewing our data on a regular basis we were able to determine our leading cause of downtime. Once we determined the cause, we immediately addressed the situation and instituted the proper corrective action. Simply put, our production increased and our downtime decreased.”

## Unequaled System Flexibility

The system is capable of collecting critical process data from virtually any machine that runs in manual or automatic mode. This includes cold headers, thread rollers, stamping presses, screw machines, multi-slides, spring coilers, forging presses, assembly/insertion machines, drills/taps, saws, etc.

Data collection and analysis is also made easy with the IMPAX TSS. Stand-alone TSS units collect the data on the plant floor and can be viewed by an operator, supervisor or manager at any time. If the IMPAX TSS units are networked, data is automatically transferred into a PC database for viewing purposes or further analysis and report generation. Numbers of IMPAX TSS Systems can be daisy chained in a network configuration. In addition, limited information can be sent from a PC to an IMPAX TSS System.

Process Technologies Group is well aware of today’s business environment. Once a company is successful in their quoting process and receives a purchase order, it is seldom allowed a price increase throughout the life of the part. While you can’t raise your price, the IMPAX TSS can raise your level of awareness. The IMPAX TSS system will help your company identify problem areas and stay competitive and profitable for many years to come. Take advantage of this new technology today. To learn more about the IMPAX TSS and other PTG products, visit them at [www.impaxptg.com](http://www.impaxptg.com).

**Company Profile: Process Technologies Group, Inc. (PTG)** is a designer and manufacturer of process monitors, piezo-electric force sensors and data collection software. PTG, and **Schwer+Kopka GmbH** of Germany have cooperated to create **IMPAX-SK Technologies**. This venture produces monitors which use a proprietary high-speed digital signal processor-based system and provide revolutionary software features.

<b>RUN</b>		<b>IMPAX DAILY UPTIME &amp; DOWNTIME</b>		<b>04:57 PM</b>		<b>11/15/02</b>	
SHIFT 1 UT	1	SHIFT 1 DT	1				
SHIFT 2 UT	1	SHIFT 2 DT	1				
SHIFT 3 UT	1	SHIFT 3 DT	1				
DAY UT	1	DAY DT	1				
<		SYSTEM		COUNTERS		>	

**IMPAX TSS screen featuring accumulated uptime and downtime by shift.**

	Daily Minutes			Weekly Minutes			Monthly Minutes			Yearly Minutes		
	Up	Down	Resp.	Up	Down	Resp.	Up	Down	Resp.	Up	Down	Resp.
Shift 1	390	400	35	2290	600	210	11400	3000	1050	119700	31500	11025
Shift 2	390	600	45	1800	800	270	8000	5400	1350	114020	25720	10280
Shift 3	390	190	20	2380	720	120	10900	3800	600	117200	39750	10560
Total	1040	400	100	6240	2400	600	31200	12000	3000	327600	97410	31560

  

	Daily Percentages			Weekly Percentages			Monthly Percentages			Yearly Percentages		
	Up	Down	Resp.	Up	Down	Resp.	Up	Down	Resp.	Up	Down	Resp.
Shift 1	79%	21%	7%	79%	21%	7%	79%	21%	7%	79%	21%	7%
Shift 2	62%	37%	1%	62%	37%	1%	62%	37%	1%	62%	37%	1%
Shift 3	79%	25%	7%	79%	25%	7%	79%	25%	7%	79%	25%	7%
Total	74%	26%	7%	74%	26%	7%	74%	26%	7%	74%	26%	7%

**IMPAX TSS Reporting System screen showing uptime, downtime, and response time.**

Machine Name	Total Scheduled Time	Required Downtime	Net Available Time	Daily Downtime	Operating Time	Availability Percent	Daily Parts Made	Ideal PPM	Performance Efficiency Percent	Total Defects	Quality Percent	Overall Equipment Effectiveness
Sample M4	1200	120	1080	300	800	81.48%	200000	250	99.91%	25	99.99%	74.06%
Unused	1200	120	1080	320	760	70.37%	150000	250	78.95%	25	99.89%	55.54%
Unused	1200	120	1080	250	830	76.86%	175000	250	84.34%	100	99.84%	64.78%
Unused	1200	120	1080	275	855	74.54%	180000	250	94.41%	215	99.89%	70.25%
Unused	1200	1080	315	785	70.83%	165000	250	86.27%	75	99.96%	61.08%	
Unused	1200	120	1080	310	770	71.30%	180000	250	83.12%	30	99.98%	59.25%
Unused	1200	120	1080	280	780	73.16%	180000	250	96.20%	48	99.97%	70.35%
Unused	1200	120	1080	250	830	78.85%	187000	250	90.12%	200	99.89%	69.19%
Unused	1200	120	1080	200	880	81.49%	210000	250	95.45%	115	99.92%	77.71%
Unused	1200	120	1080	300	780	72.22%	180000	250	92.31%	95	99.95%	66.63%

**IMPAX TSS Reporting System screen showing Overall Equipment Effectiveness.**