

5S at Deceuninck North America's Monroe Site: Sustaining and Improving the Gains

5S is the foundation for culture change and continuing improvements.

Cash Powell Jr. and Steve Hoekzema

The management team at the Monroe, OH facility of Deceuninck North America (DNA), formerly Dayton Technologies,¹ has learned that 5S is not just about orderliness, cleanliness, and standardizing work areas. 5S is about changing culture and work habits while establishing the disciplines to develop a new way of thinking.

When Mike Hutfless, DNA's COO, first introduced 5S in 1999, many people expressed concern for the money spent on the process. As a former U.S. Navy officer, Hutfless knew the operational positives of maintaining an organized work environment — an area where associates could immediately locate tools and wouldn't trip over clutter. DNA believes sustaining such a well-organized work environment is the fundamental requirement for ongoing continuous improvements (CI) in other areas of manufacturing.

5S is an essential path on DNA's journey to becoming a world-class organiza-

tion. The disciplines used to organize and properly maintain a work area encompass the same traits needed to make an organization world-class. To emphasize this point, Director of Operations Steve Hoekzema explained, "If both the associates and managers of a company can't remember or don't make it a priority to return a broom or garbage can to its proper location, how can

In Brief

This article describes how associates at Deceuninck North America (DNA) in Monroe, OH, learned that 5S is not just about orderliness, cleanliness, and standardizing work areas. 5S is about changing a culture, establishing the discipline, changing work habits, and developing a new way of thinking. Productivity, safety performance, and other gains resulting from this approach have been significant, as well as the realization that continuing focus on 5S on a daily basis is needed to sustain and build upon these improvements.

they effectively operate millions of dollars' worth of production equipment and continuously improve the operation?"

Organizing for Change

When the Monroe plant began to implement 5S, management understood that once the first four elements of 5S (Sort, Set in order, Shine, and Standardize) were in place, the area would likely return to its historical clutter if a system were not in place to sustain the gains. This is the reason why the fifth "S" (Sustain) is so crucial to the overall success of the program. Think about how many new programs work great for the first month and then fade off after time. Sustaining is the most difficult of the 5Ss. To sustain, in 5S, means keeping the work area at the required levels.

During the first two years of 5S implementation, the Monroe site appointed a full-time 5S facilitator to develop the training standards, train the 250 associates, and facilitate the 5S teams. A cross-functional implementation team developed an audit checklist.

Once a work area becomes ready to be certified, the auditor conducts the certification inspection which consists of 22 items of inspection categorized by each of the 5Ss (see Figure 1). Each work area establishes its own schedule for 5S implementation and readiness for certification. It is prudent to note that a 5S team can move the scheduled due date for certification as long as the team is progressing and the new target date is reasonable.

When the associates in a work area are ready to be certified, the 5S facilitator inspects the area against the standard items illustrated in Figure 1. The audit team conducts a two-hour inspection of the work area. Later that day, the audit report, which includes the audit score, a list of non-conformances, and digital pictures of each non-conformance, is published.

All certification inspections result in at least a few non-conformances. In order to become certified, all that is necessary is to correct the issues listed in the audit. Then a follow-up audit is performed and if all of the issues are corrected, the work area

receives a perfect score and they become 5S certified. A certified work area reflects the hard work of each individual in the area. Certification is an honor for employees involved in this process. In Monroe, a plaque is awarded to the team of the newly-certified area by DNA management during a celebration ceremony, along with gift certificates for the team members. Since the 5S process was started, 23 out of 27 work areas have been certified.

Sustaining the Discipline

Once an area has been certified, it is only the beginning of a journey toward other operational improvements. The process of becoming 5S certified is difficult and requires a lot of effort, but the challenge of sustaining the certification is even greater. Once a work group becomes certified, it is common to hear, "Congratulations! Now comes the hard part."

The foundation of the fifth S (Sustain) is unannounced audits. There is an average of three or four sustaining audits per work area each year. The auditor inspects the work area for the same 22 points on the certification audit in Figure 1. A passing score on a sustaining audit is at least 3.2 out of 4.0 possible points. A sustaining audit report is then sent to the departmental management group and includes pictures of each of the violations. If the work group disagrees with an audit non-conformance, an appeal may be presented to the auditor. If appropriate, the audit score may be modified; however, the 5S auditor makes the final decision on appeals.

Even if a work area passes the audit with a score of 3.2 or above, violations are fixed and action is taken to prevent recurrence of any stated violation. If the work area fails three consecutive audits, the area is decertified and must then start over with the certification process. Although decertification does not occur often at the Monroe facility, when it does occur, it is taken very seriously. The team in that work area works quickly to identify the cause of the non-conformances and the corrective actions needed.

Document Title:		Document No.		FRM A-2	
5S AUDIT RECORD		Revision No.	D	Page:	1 Of: 2
Required By:	PRO A-1	Work Area:		Audit Date:	

Audit Type: ☐ Initial Certification ☐ Sustaining ☐ Re-Certification

Auditors:

Name: _____ Name: _____

Workplace Representatives:

Name: _____ Name: _____

5S	Item (Attach detailed audit results)	Rating Method	Rating
1. Sort (Organization)	Distinguish between what is needed and not needed:		
	A. 5S Board is posted in the workarea. Workarea Map, Workarea Audit Scores (KOI Chart), Before & After Pictures and Temporary Storage Contents List. Pre-audit checklist (FRM A-2 and FRM A-3) and workplace design record posted in workarea (for initial certification audits only).	B	
	B. Unneeded equipment, tools, furniture, etc. are present.	A	
	C. Unneeded items in work area are present.	A	
	D. Unneeded inventory, supplies, parts, or materials are present.	A	
2. Set in Order (Orderliness)	A place for everything and everything in its place:		
	A. Correct places for items are not obvious.	A	
	B. Items are not in their correct places.	A	
	C. All modification project items are logged with Facility Engineering.	A	
	D. Height and quantity requirements are not met. Height & quantity limits are not obvious. Items do not exceed quantity limits.	A	
	E. Not all piping is labeled with contents and direction of flow.	A	
	F. Items are setting on the floor that does not need to set on the floor.	A	
	G. Safety violations exist. Attach FRM A-3 (5S Safety Audit Record).	C	
3. Shine (Cleanliness)	H. Aisles are not established or meet minimum width requirements.	A	
	Clean:		
	A. Floors, walls, stairs, and surfaces are not free of dirt, oil, and grease.	C	
	B. Equipment is not kept clean and free of dirt, oil, and grease.	C	
	C. All cleaning supplies can be located within 30 seconds.	A	
	D. Lines, signs, labels etc. are not clean and unbroken.	A	
	E. Storage location lines do not meet policy requirements.	A	
4. Standardize (Adherence)	F. Facility and equipment color requirements are not met.	A	
	Maintain and monitor the first three categories:		
	A. Records showing responsibilities for sort, set in order, and shine are defined and posted in the workarea.	B	
5. Sustain (Self-discipline)	B. Not everyone in the work area knows when, where, and how to perform 5S responsibilities.	A	
	Stick to the rules:		
	A. Records do not exist to show that 5S inspections are performed regularly (daily, weekly, monthly, etc.).	B	
	B. All previous 5S audit deficiencies were not corrected.	B	
		Overall	

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Figure 1. Part 1.

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Rating	
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Rating Method A		Rating Method B		Rating Method C	
Number of Discrepancies	Rating	Result	Rating	Number of Discrepancies	Rating
None	4.0	Pass	4.0	None	4.0
1	3.0	Fail	0	1	2.0
2	2.0			2 or more	0
3 or 4	1.0				
5 or more	0				

RECORD OF REVISIONS

Rev. No.	Date of Issue	Revisions
New	10-09-00	NA
A	10-16-00	Added category numbers and letters for item identification.
B	03/15/02	Added pre-audit checklist to 1A and deleted 4C. Added work area to header.
C	11/22/02	Changed items 2F, 3A, and 3B to a rating method of C. Added rating method C to form to put more emphasis on safety and housekeeping.
D	01/16/04	Revised Item 1A to clarify what is required on a 5S board, added 2C: all modification project items need logged with Facility Engineering, Clarified height and quantity requirements in 2D, Added 3D: Storage location lines do not meet policy requirements, Added 3E: Facility and equipment color requirements are not met and revised 5B to read all previous 5S audit deficiencies were not corrected.

DISTRIBUTION:	Original – Audit file. Copy 1 – Area supervisor.
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Figure 1. Part 2.

5S is a high-profile objective for everyone within DNA's Monroe facility. Management receives and comments on all area audits. These comments praise the positive and clarify the importance of the needed improvements. From a performance standpoint, failure to maintain a 5S certification is an indication that the area is not being led properly and priorities are not clear. Performance reviews include both positive and negative comments about the

work area's 5S performance.

After a few years of 5S implementation, the position of full-time 5S facilitator transitioned into a part-time audit function. This function takes about eight hours a week to audit the already-certified areas and inspect any areas ready to be certified for the first time. To insure the audit system is sustained, there are three trained auditors qualified to conduct the audits and issue the reports.

Beyond 5S

In the beginning, employees believed 5S was simply a housekeeping program. As the process expanded into several departments, the efforts which started with cleaning and organizing a workplace developed into changes in work habits, work discipline, and an overall shift in the culture of the organization. When done properly, the message that 5S promotes is, "If you are going to do something, then think it through with the entire work group, plan it well, and do it right." This cultural shift has laid the groundwork for an endless number of improvements in all areas of the business. Listed below are some examples of the general improvements that have occurred since the implementation of 5S.

Empowerment. As the Monroe site developed the 5S audit procedure, the supervisors in each certified area soon learned that in order to sustain the gains, work assignments had to be documented and communicated. For 5S to be effective, each employee must assume ownership of the program in his or her assigned work area. Employees are responsible for specific line items in the 5S audit standard. In a well-implemented 5S program, everyone understands that 5S is an important part of their job and sustaining actions must be done on a daily basis.

Recently, the site discovered a significant cost savings as the result of 5S. While a few extrusion employees were designing a new work area, they realized that a section of material which was sliced off an extrusion profile could no longer be allowed to just fall on the floor. If allowed to fall on the floor, there was a possibility the pieces might block an aisle, which is a safety rule violation. So they designed a method to collect and reuse this material, which resulted in a daily material savings of more than \$600. One of the 5S team members said, "We tried to do this 20 years ago, but it was never a high enough priority to fix." As this example illustrates, making 5S a priority in your plant will empower people to make operational improvements.

Environment, Health, and Safety.

DNA's Monroe site has not incurred a lost time accident since 5S was introduced. Needless to say, worker's compensation costs have been drastically reduced. DNA believes maintaining discipline and order in the workplace is a strong contributor to their remarkable safety record. As the plant gained experience with the 5S system, such standards as aisle width, standard paint colors for like equipment, ladders and guarding, safety valves, stop buttons, and the like were developed and implemented. John Lakes, a tool maintenance lead, said, "We recently had a small fire in the dumpster. With the work area well marked, it was very clear where the nearest fire extinguisher was located; just look for the red block." Figure 2 is an example of Form A-3 with the safety requirements that must be passed as part of the 5S audit. An area that does not adhere to the safety standards will usually fail the 5S audit.

Quality. DNA's Monroe site has a sophisticated, computerized system for controlling their mixing operation. Cleanliness is essential to the high quality of the PVC-U material. The improvement in compound quality in the Monroe plant has helped save \$3 million in scrap and rework since the implementation of 5S. In addition, since 1999, the accuracy of shipments has improved from 89.0 percent to 98.5 percent. These are just some of the operational benefits that occur when work areas are better organized, and processes are well documented, standardized, and sustained.

Productivity. Before 5S, searching for tools, supplies, and parts was a significant waste of time. Each associate used a personal toolbox, which in some cases was cluttered, unorganized, and contained a collection of different tools. Because many associates had their own favorite tools for equipment adjustments and setup, variation in machine setups and production output occurred. To obtain a standard work and consistent product quality, the tools and their locations had to be standardized across the work area. This was a difficult change for some associates to accept initially because there were a lot of individual

When done properly, the message that 5S promotes is, "If you are going to do something, then think it through with the entire work group, plan it well, and do it right."

Document Title:	Document No.	FRM A-3	
5S AUDIT RECORD (SAFETY)	Revision No.	C	Page: 1 Of: 4
Required By: PRO A-1			

Audit Type: ☐ Initial Certification
☐ Sustaining

Auditors: _____ Date: _____
Name: _____ Name: _____
Name: _____
Workplace Representatives: _____
Name: _____ Name: _____

Subject	Questions	Yes	No
1. Aisles	A. Are aisles marked? 29 CFR 1910.22(b)(2)		
	B. Are aisle widths maintained? 29 CFR 1910.22(b)(1)		
	C. Are aisles in good condition? 29 CFR 1910.22(b)(1)		
	D. Are aisles and passageways properly illuminated?		
	E. Are aisles kept clean and free of obstructions? 29 CFR 1910.22(b)(1)		
	F. Are fire aisles, access to stairways, and fire equipment kept clear? 29 CFR 1910.178(m)(14)		
	G. Is there safe clearance for equipment through aisles and doorways? 29 CFR 1910.176(a)		
2. Chemicals	A. Are all hazardous chemicals appropriately labeled? 29 CFR 1910.1200(f)(5); 29 CFR 1910.1200(f)(6)		
	B. Are workers nearby aware of the content of chemical piping systems? 29 CFR 1910.1200(e)(1)(ii); 29 CFR 1910.1200(f)(5); 29 CFR 1910.1200(f)(6)		
	C. Is there a list of hazardous substances used in your workarea? 29 CFR 1910.1200(e)(1)(I)		
	D. Is there a material safety data sheet readily available for each hazardous substance used? 29 CFR 1910.1200(g)(9); 29 CFR 1910.1200(g)(10)		
3. Electrical	A. Do extension cords being used have a grounding conductor? 29 CFR 1910.304(f)(5)(v); 29 CFR 1910.334(a)(3)		
	B. Is sufficient access and working space provided and maintained about all electrical equipment to permit ready and safe operations and maintenance? 29 CFR 1910.303(g)(1); 29 CFR 1910.303(h)(3)		
	C. Are all cord and cable connections intact and secure? 29 CFR 1910.305 (g) (2) (iii)		
	D. Are all disconnecting means legibly marked to indicate their purpose, unless located so that their purpose is evident. 29 CFR 1910.303(f)		
	E. Are flexible (extension) cords and cables free of splices or taps? 29 CFR 1910.305(g)(2)(ii)		

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Figure 2. Part 1.

Document Title:	Document No:	FRM A-3
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Subject	Questions	Yes	No
4. Exits	A. Are exits properly marked? 29 CFR 1910.37(q) ; 29 CFR 1910.37 (H)		
	B. Are exits kept free of obstructions? 29CFR 1910.36(d)(1)		
	C. Are the directions to exits, when not immediately apparent, marked with visible signs? 29 CFR 1910.37(q)(5)(6)		
	D. Are doors, passageways or stairways that are neither exits nor access to exits and which could be mistaken for exits, appropriately marked "NOT AN EXIT" "TO BASEMENT," "STOREROOM," etc.? 29 CFR 1910.37(q)(2)		
5. First Aid	A. Do you have emergency eye wash and shower facilities within the immediate work area where employees are exposed to injurious corrosive materials? 29 CFR 1910.151(c)		
	B. Do you have first-aid kits easily accessible to each work area, with necessary supplies available, periodically inspected and replenished as needed? 29 CFR 1910.151(b)		
	C. Are emergency phone numbers posted where they can be readily found in case of an emergency? 29 CFR 1910.38 (a)(2)(v)(vi)		
6. Flammable/ Combustible Containers	A. Are approved containers and portable tanks used for the storage and handling of flammable and combustible liquids? 29 CFR 1910.106(d)(2); 29 CFR 1910.144(a)(1)(ii)		
	B. Are safety cans used for dispensing flammable or combustible liquids at a point of use? 29 CFR 1910.106(d)(5)(iii)		
	C. Are storage cabinets used to hold flammable liquids, labeled "Flammable—Keep Fire Away"? 29 CFR 1910.106(d)(3)(ii)		
7. Forklift Operations	A. Are all industrial trucks not in safe operating condition removed from service? 29 CFR 1910.178(q)(1)		
	B. Are your forklifts inspected before being placed in service? Inspections should be at least daily, or after each shift, if used around the clock. 29 CFR 1910.178(q)(7)		
	C. Are industrial trucks equipped with flashing lights, horn, overhead guard, and name plate (load limits)? 29 CFR 1910.178(a)(2)		
8. Hazardous Waste Management	A. If your operations generate waste from oil or grease, do you handle it in an approved manner? 40 CFR 279.22		
	B. If your operations generate waste from fluorescent light bulbs, do you handle it in an approved manner? 40 CFR 273.14 (e)		
	C. If your operations generate hazardous waste, do you handle it in an approved manner according to 40 CFR 262		
9. Hearing Conservation	A. Are workers protected from sources of excessive noise? 29 CFR 1910.95(a)		
	B. Is approved hearing protective equipment available to every employee working in noisy (where noise levels exceed 85 dBA) areas? 29 CFR 1910.95(i)(1); 29 CFR 1910.141 (a)(3)		
10. Housekeeping	A. Are work areas clean? 29 CFR 1910.22(a)		
	B. Are mats, grating, etc. used where drainage is needed? 29 CFR 1910.22(a)(2)		
	C. Is the compressed air for cleaning less than 30 psi? 29 CFR 1910.242(b)		

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Figure 2. Part 2.

Document Title:	Document No:	FRM A-3
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Subject	Questions	Yes	No
	D. Are work surfaces kept dry or are appropriate means taken to assure the surfaces are slip-resistant? 29 CFR 1910.22(a)(2)		
	E. Are all spilled materials or liquids cleaned up immediately? 29 CFR 1910.141(a)(3)(ii)		
11. Lockout	A. Is all machinery or equipment capable of movement, required to be de-energized or disengaged and locked out during cleaning, servicing, adjusting or setting up operations, whenever required? 29 CFR 1910.147(c)(1); 29 CFR 1910.147(c)(2)(I)		
	B. Are correct lockout/tagout procedures in use? 29 CFR 1910.147(c)(4); 29 CFR 1910.147(d); 29 CFR 1910.147(e)		
	C. Are suspended loads or potential energy (such as compressed springs, hydraulics or jacks) controlled to prevent hazards? 29 CFR 1910.147(d)(5)		
12. Machine Guarding: General	A. Are rotating or moving parts of equipment guarded to prevent physical contact? 29 CFR 1910.212(a)(1); 29 CFR 1910.219 (F)		
	B. Are all moving chains and gears properly guarded? 29 CFR 1910.219(f)(1); 29 CFR 1910.219(f)(2)		
	C. Are machinery guards secure and so arranged that they do not offer a hazard in their use? 29 CFR 1910.212(a)(2)		
13. Machine Guarding: Portable Power Tools	A. Are grinders, saws, and similar equipment provided with appropriate safety guards? 29 CFR 1910.243(a)(1); 29 CFR 1910.243(c)(1)-(4); 29 CFR 1910.243(e)(1)(I)		
	B. Are power tools used with the correct shield, guard, or attachment recommended by the manufacturer?		
14. Machine Guarding: Stationary Equipment	A. Is fixed machinery provided with appropriate safety guard to prevent injuries to the operator and other employees resulting from point of operation, in-going nip point, rotating parts, flying chip, and spark hazards? 29 CFR 1910.212 (a)(1)		
	B. Are foot-operated switches guarded or arranged to prevent accidental actuation by personnel or falling objects? 29 CFR 1910.217 (4)		
	C. Is there a power shut-off switch within reach of the operator's position at each machine? 29 CFR 1910.213(b)(1)		
	D. Are fan blades protected with a guard having openings no larger than ½ in., when operating within 7 ft of the floor? 29 CFR 1910.212(a)(5)		
15. Personal Protective Equipment	A. Are all employees required to use personal protective equipment (PPE) as needed? 29 CFR 1910.132(a)		
	B. Is PPE functional and in good repair? 29 CFR 1910.132(e)		
	C. Are all employees required to use personal protective clothing and equipment when handling chemicals (gloves, eye protection, respirators, etc.)? 29 CFR 1910.132(a)		
16. Extinguishers	A. Are appropriate fire extinguishers mounted, located, and identified so that they are readily accessible to employees? 29 CFR 1910.157(c)(1)		
	B. Are all fire extinguishers inspected monthly and serviced annually, and noted on the inspection tag? 29 CFR 1910.157(e)		

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Figure 2. Part 3.

Document Title:	Document No:	FRM A-3
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Subject	Questions	Yes	No
17. Walkways	A. Are pits and floor openings covered or otherwise guarded? 29 CFR 1910.22(c); 29 CFR 1910.23(a)		
18. Compressed Gases	A. Are compressed gases properly stored and used? 29 CFR 1910.253(b)(1)–(5)		
	B. Are compressed gas cylinder storage rules (Dayton Technologies Facility Engineering Drawing 100023) posted in the storage area?		
19. Work Environment	A. Are all work areas adequately illuminated?		
	B. Are combustible scrap, debris, and waste stored safely and removed from the work site promptly? 29 CFR 1910.141(a)(4)(ii)		

DISTRIBUTION: Original – Audit file. Copy 1 – Area supervisor.

1. RECORD OF REVISIONS

Rev. No.	Date of Issue	Revisions
New	10-09-00	NA
A	10-16-00	Added category numbers and letters for item identification.
B	05-23-01	Added electrical panel marking and compressed gases categories.
C	03/15/02	Combined items 6A and 6D. Deleted item 10B, 12B, 12C, and 15D due to redundancy.

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Figure 2. Part 4.

preferences for using their own tools. However, the associates in each work area were involved in deciding what tools should be a standard issue and where they should be located. Including employees in the decision-making process allowed the program to gain acceptance and work more effectively.

Today, the guideline for accessibility of necessary tools, parts, or supplies in each work area is the item should be within a 30-second walk of the work area. At each machine, the toolbox contains only the tools for that machine and all extraneous tools are removed. For common tools such as brooms and shovels, a shadow peg board was placed in each work area, creating a standard location for that item.

It is common in industry to realize a productivity savings of ten percent by eliminating the search for tools. This plant has shown an overall employee productivity improvement of 23 percent since 1999. Hoekzema said that the specific savings associated with 5S improvements are not calculated because the benefits are so obvious they will eventually end up on the bottom line.

Standard Work, Visual Systems, and TPM

Standard Work. Developing standard work is a key element in the implementation of lean methodologies. Writing the standards for 5S organization in each area

and assigning responsibilities for maintaining the standards are the first steps toward implementing standardized work. The unannounced audits monitor and provide an incentive to maintain the gains. Audits, though, would be a waste of time and effort if the standards for 5S were not in place and being practiced daily.

When a non-conformance occurs in a work area, the approach toward developing standard work is outlined below:

1. Ask whether the process or specification was well-documented. If the answer is, "No," then the documentation will be written or corrected as needed. Everyone is then trained on the new document(s).
2. If the process was well-documented and communicated, then the manager must decide whether retraining or discipline is appropriate for the non-conformance.

This process ensures that the standardization of the workplace is continually expanded and improved. When a better way is discovered, the documentation is changed, training occurs, and the operational benefits start the next day. This illustrates how standardized work can not only sustain the improvements but also provide a platform for continuous improvement.

Visual Systems. When the 5S system was initially implemented, eliminating unneeded tools and other material was part of the first S, Sort. The Second S, Set In Order, involved labeling drawers, organizing supply inventories, and creating shadow boards for housekeeping tools. This is a simple, systematic way of identifying a place for everything needed in a work area. Some work groups even identify the location of the wall clock with a label that says, "Clock." Any unneeded tools were removed from the area as there is no longer an assigned place for them. Another side benefit of these visual systems is training new associates becomes much easier and more effective.

As part of the certification standard, bulletin boards are also placed in each area. These bulletin boards include before and after pictures of the area, 5S audit scores, and a standard work area map. Over time, this bulletin board has led to posting daily

and monthly productivity and quality performances, shipment performances, and other operational data. This information is current and is part of the visual systems program of plant management.

Total Productive Maintenance (TPM). Monroe's TPM program was implemented in 2004 and is still in the process of growing into other areas of the company. The disciplined work habits learned in the 5S process help expedite the TPM process. For this reason, all work areas become 5S-certified before chartering an organized TPM team.

Summary

The 5S process that began at DNA's Monroe site in 1999 continues to be the foundation for continuous improvement. This process helped facilitate a cultural shift and the teamwork required for the journey to world class. With 5S as their foundation, the sky is the limit for Deceuninck North America's world-class initiatives.

Editor's note: Employees at DNA's facility in Monroe, OH hosted a tour during AME's October 2004 Annual Conference.

Cash Powell Jr. is associate director, University of Dayton Center for Competitive Change. He is a member of the editorial board of Target, and a member of the board of directors of the Dayton APICS Chapter.

Steve Hoekzema is Director of Operations at Deceuninck North America's extrusion plant in Monroe, OH.

Footnote

1. Effective January 1, 2005, Dayton Technologies' Monroe facility officially changed its name to Deceuninck North America (DNA). This change is a result of the purchase of former industry competitor, Vinyl Building Products, which has facilities in Little Rock, AR and Oakland, NJ. These Deceuninck facilities have supplied high-quality extrusions to vinyl window and door fabricators across North America for more than 35 years. Deceuninck Group, located in Belgium, is the parent company of Deceuninck. They are a worldwide leading manufacturer of vinyl window systems and profiles for the construction industry, operating 23 subsidiaries, both production and sales, throughout Europe, North America, and Asia.

