

## REDUCING THE COSTS OF CONTINUOUS OPERATING SCHEDULES IN TOUGH ECONOMIC TIMES: *4 Key Considerations & 7 Creative Solutions for Immediate Savings*

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### INTRODUCTION

When demand slows and times get tough, virtually every business starts searching for ways to reduce costs. While management teams at continuous 24/7 operations may initially gravitate towards reducing the workforce and/or contracting the number of workdays as the solution to their problem, this line of thinking can lead to disastrous results if not managed properly.

To help our clients successfully navigate through the potential perils of moving away from continuous operations during the current lean market, CIRCADIAN offers 4 key considerations to help you frame the problem and 7 creative strategies to implement the best solution for your operation.

*Note: The following discussion is based on methods to modify a 24x7 continuous operation which is typically comprised of 4 crews that equally share the 168 weekly work hours:  $168 \text{ hours} / 4 \text{ crews} = 42 \text{ average work hours per crew}$ .*

### Four Key Considerations Before Contracting Your Continuous Schedule

**Consideration 1 - The size and complexity of the organization:** In large multi line and or multi facility operations, it may be more prudent and financially beneficial to reduce capacity by rationalizing lines or facilities as opposed to reducing the operations on all lines or facilities across the company. Eliminating older, less efficient lines will help to reduce per unit costs and assist in maintaining profitability.

A less obvious but potentially powerful solution for organizations with well cross trained employees might be to consider reducing output by leveraging your operating lines and equipment first and then if needed leverage your workforce. This is accomplished by maintaining at least a portion of the workforce on the continuous 4-crew schedule and have them operate a variety of operating lines based on the weekly demand. Maintaining some level of continuous operations can provide an "agile balance" that reduces output and still provides the ability to continuously react to customer requests that is otherwise lost when shifts or a crew is dropped to match lower demand.

**Consideration 2 - The magnitude of the reduction needed to match demand:** Although the 40 hour workweek remains the standard or relative "floor" during normal economic times, our experience indicates that in a difficult employment market, most employees, particularly those with seniority, will stay at a job that provides at least 36 hours per week, rather than leave the current employer in hopes of finding another job with a steady 40 or more hours workweek.

Thus, if the reduced operational scenario can sustain a steady six day operation, the organization may be best served by maintaining the integrity of the 4 crew system and having each crew equally share in the reduction in hours ( $24 \text{ hours of operation} \times 6 \text{ days} = 144 \text{ total operational hours} / 4 \text{ crews} = 36 \text{ average hours}$ ). While this would reduce worker pay checks, some of the lost pay might be recoverable since some states have provisions to help offset the difference between full and part time pay through unemployment benefits.

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With 5 production days, or 120 operational hours, the average work hours per week per crew drops to 30 hours. At this point, it is apt to be more beneficial for both the company and the employees to eliminate a crew. The restructured three crew system would have each crew equally share the 120 operational hours thus restoring the 40 hour work week (24 hours of operation x 5 days = 120 total operational hours/ 3 crews = 40 average hours).

If you're faced with having to drop a crew, consider the type of three crew schedule to implement. The natural or conventional decision is generally to contract to a 3 crew, 8-hour schedule having fixed or rotating Day, Evening and Night shifts that operate Monday - Friday and shutdown over the weekend.

If the organization is currently on a 12-hour shift schedule, however, such a move can create substantial upheaval in the employees' personal lives. Therefore, the organization may wish to examine one of the many 24/5, 3-crew, 12-hour systems that can be implemented. This will meet the need to reduce output to 5 continuous operational days, but will also maintain the ability to provide your people with long breaks and long weekends off which are often among the most important attributes of 12-hour shifts to the workforce. The extra days off occur because on any given day only 2 of the 3 crews are required to work to cover the 24 hour period. The 3 crew, 12 hour schedule would have two 36 and one 48 hour week during each 3 week cycle maintaining a 40-hour work week.

**Consideration 3 - The likely duration of the reduced demand:** Under current conditions estimating the length of the down cycle is anybody's guess, but yet is obviously still a key factor in your decision making process, particularly if you are considering eliminating a crew. If the reduced demand is expected to be short lived, say 3-6 months, it is best to maintain all crews because it may be difficult to replace a full crew when demand returns. Furthermore, organizations also need to consider how difficult it is to hire personnel in the local area during the good times. Even in areas that have a sufficient pool of potential employees, a company that becomes known for hiring and then laying-off can become the non-preferred employer in the area.

**Consideration 4 - Employee morale, production and quality of life:** Managerially, the obvious competitive advantage in continuous manufacturing is based on maximizing the utilization of capital intensive equipment and facilities to minimize per unit costs.

Thus, pulling back from a continuous operation not only decreases operational efficiencies through weekly shut downs and start ups, but it can also negatively impact "human factors" efficiencies by disrupting the "team concept" and by potentially reducing employee quality of life through reduction in pay.

## Seven Creative CIRCADIAN Scheduling Solutions for Reducing Costs at Continuous Operations

Based on your responses to the above four considerations, an organization might benefit from implementing one or more of the following seven scheduling and cost cutting initiatives:

**Solution 1 - Scalable schedules:** If the organization has to respond to demand that is routinely fluctuating between 5 and 7 days of production, it could benefit from the implementation of scalable schedules. This unique deployment concept works best with 12 hour schedules.

The general concept is to start with a fully staffed 4 crew system to cover continuous demand. If demand slips to 6 days, two options are available:

1. Reduce all employees to a 36 hour week as described above, or,
2. Maintain employee pay by having those that lost hours through the decreased work week, put in an additional shift on a day they would have been scheduled off. If demand drops to 5 days, drop out two days of production and have employees pick up 2 additional shifts during the remaining operational days. To keep staffing in line, the organization needs to: a) evenly distribute the extra shifts and b) reduce the number of employees on each crew to match the number of additional employees it will pick up by working the extra shifts.

Thus, the scalable system provides a unique means of reducing staff on each of the 4 crews (instead of eliminating an entire crew) while at the same time maintaining a full complement of employees needed to run all operations during the contracted workweek.

When the organization is ready to ramp back up, most will find it much easier and more efficient to add some additional employees to each of the existing four crews than it would be to staff, train, and launch a newly formed 4th crew. In a transition from 4 to 3 crews, or from 3 crews to 4, most companies would not or could not, from a skill set vantage, simply cut a full crew or hire a full crew. Most would have to go through the arduous task of breaking up the existing teams and redeploying them against the revised number of crews. Thus the scalable system can maintain employee work team efficiencies and synergies without the stress caused by leveraging the number of crews utilized to match demand. Finally, reducing crew size provides a real opportunity to increase the overall quality of the workforce by selectively trimming the weakest members of each team.

**Solution 2 - Drop the overtime shifts first:** Because 4 crew continuous schedules average 42 hours per week, they all have some work weeks with 40 or less hours and some with more than 40 hours. To obtain the maximum cost benefit of a reduced work week, make sure that you first remove any shift that will create federal overtime.

**Solution 3 - Drop mid week shifts vs. weekend shifts:** Since the cost of electricity and other utilities are normally higher during "Day" and midweek hours, the organization might gain additional savings by dropping these shifts rather than following the natural tendency to drop weekend shifts. In addition, since contractors are apt to charge straight time rates versus the premiums often charged on weekends and because more suppliers are opened during the week versus the weekend, the mid week outages may also prove to be superior and less costly shifts on which to conduct maintenance.

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**Solution 4 - Utilize Relief Operators to reduce or eliminate built in federal overtime:** An interesting means of reducing payroll on a full continuous schedule is to have a small group of employees commonly called Relief Operators or Shift Breakers work those shifts for your regularly scheduled employees that would have otherwise put them over 40 hours in a given week.

For example, most 4 crew, 8 hour x 24/7 schedules have three 40 hour and one 48 hour week in the standard 4 week cycle. A Relief Operator would work shifts for employees on the 48 hour week thus eliminating the federal built in overtime. Since a different crew would exceed the federal overtime limit each week, the Relief Operator works across all four crews. On the 4 crew, 8 hour example, one Relief Operator can pull one shift for 5 employees on a given week which would give the Relief Operator a 40 hour week and the 5 regular operators would also have 40 hours. Thus, one Relief Operator can eliminate the federal built in overtime for 20 regular employees over a standard 4 week cycle and everyone would work for straight pay.

The same concept can be implemented for 12 hour shifts with some slight modifications. On a 12-hour schedule, half the weeks are normally 48 and half are 36. In a 4 week cycle then, the reduction of one shift on a 48 hour week results in three 36 hour and one 48 hour week for a total of 156 hours/4 weeks = an average of 39 work hours. Since the employee would be paid time and a half for 8 hours during every cycle on the remaining 48 hour week, pay hours are increased by 4 straight time hours thereby maintaining pay at an average of 40 hours per week. (156 regular hours + 4 added hours from overtime = 160 pay hours/4 weeks = 40 average pay hours per week). On a 12-hour schedule, one Relief Operator can optimally eliminate the federal overtime that would normally be incurred by 13 Regular Operators.

The savings are maximized if the organization is capable of implementing the system with current staffing levels.

**Solution 5 - Reduce built in overtime by changing shift start time:** For operations working a typical 4-crew 12 hour shift, one simple way to reduce built in overtime is by changing the beginning of the pay week.

For many operations, it is common to have the beginning of the pay week coincide with the start of a particular shift. For example, if the regular shift start times are 7 a.m. to 7 p.m. for the day shift and 7 p.m. to 7 a.m. for the night shift, most operations will start their pay week on a Sunday or Monday at 7:00 a.m. This results in half of the weeks in the year consisting of 48 hour work weeks and half made up of 36 hour work weeks. The 36 hour weeks are all at straight time (unless policies or agreements provide for premium pay for all or part of the hours). However, the 48 hour work weeks translate into 40 hours of straight time and a minimum of 8 hours of overtime paid at least at time and one half. When averaged over the course of a year, this results in an average minimum pay of 44 hours for each shiftworker.

If the schedule being utilized has alternating 36 and 48 hour weeks, a change in the pay week start time can "push" 4 of the overtime hours from the 48 hour week into the 36 hour week. This then creates a week of 40 hours of work at straight pay and 44 hours of work the next week. In rotating shifts, this concept can save 1/2 hour of straight time pay per employee per week, for an average of 43.5 hours of pay. On a fixed shift system having optimized start times for the Day and the Night shift, straight time pay can be reduced by 1 full hour per week for an average of 43 hours of pay.

In both schedule types, the number of hours of production and shift coverage remains at 100%, but the distribution of the built in overtime is reduced. This small change alone can save thousands of dollars each week which can mean the difference between laying-off employees and keeping the workforce in tact.

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**Solution 6 - Reduce built in overtime by converting from 12 hour shifts to 8 hour shifts:** The typical continuous 4 crew, 8 hour schedule has an average of 42 work hours and 43 pay hours while the typical continuous 4 crew, 12 hour schedule has an average of 42 work and 44 pay hours. Thus, a 12 hour schedule costs the equivalent of 1 additional hour per employee per week.

Although a conversion from 12's to 8's can save a substantial amount in payroll, such a change is not recommended without the full understanding and support of the workforce. In fact, such conversions without employee buy-in can easily result in unrecoverable rifts in employee / management relations that often cost the organization more than it gains.

Thus, if such a conversion is being considered, it is vital that the organization take the time and effort upfront to develop and deliver a structured communication plan to all affected employees. In part, the communication must fully review the business justifications for the change. It is further recommended that such a change be temporary. A potential negative situation can be turned into a positive if the organization can allow the employees to determine if they would like to return to a 12 hour schedule once the economy improves, or if they would rather remain on the 8 hour shift as the permanent schedule. The success of such a change can be further enhanced by empowering the employees to select the specific 8 hour schedule to be implemented. Once again, there are a host of 8 hour options from which to choose.

**Solution 7 - Use workforce scheduling software to reduce labor costs by optimizing staffing and scheduling patterns to match fluctuating demand:** In a fully continuous mode, 4 crew systems are designed to have the same number of employees with the same relative skill sets at work 24 hours a day 7 days a week. When a continuous organization has to pull away from such a system, many are not well versed or equipped to create adhoc scheduling and staffing plans that ensure that the proper mix of skills are available when needed. Non traditional scheduling can be further complicated by existing labor and union agreements that often create financial penalties or grievances if the personnel are not scheduled according to seniority or other contractual mandates.

During these times of fluctuating demand some organizations could greatly benefit through the utilization of specially designed scheduling software that allows an organization to explore alternative staffing and shift patterns quickly and cost effectively. Some of the systems currently available are very user friendly and robust. The systems interface with existing HR and Operations databases and also allow for the input of existing call out procedures and other staffing rules. Thus by entering a minimum amount of data (for example in a manufacturing facility the products needed over a period of time) the software can help optimize the manufacturing sequence, by equipment and employee skill set and make sure that the staffing plan is in compliance with the existing labor agreements.

## CONCLUSION

The seven strategies listed above represent some of the targeted and manageable solutions that are available to a continuous operation to help them improve their bottom-line during these tough economic times. If you have any questions on these approaches, or would like to discuss more specifically how these CIRCADIAN scheduling concepts can benefit your organization, please contact us to further explore the possibilities.

## ABOUT THE AUTHOR

**Bill Davis** joined CIRCADIAN as a former client and now serves as Vice President of Operations. He is an industrial safety manager with a broad-based and unique operational background that spans nearly 20 years. This has included production experience at the facility, divisional and corporate levels at International Paper and other leading pulp & paper companies.

Beginning as a shiftworker in the Pennsylvanian steel mills, Bill has held both plant management and corporate safety positions in the paper and specialty board industries. He has extensive experience working with a variety of unions and governmental safety and health regulatory agencies, as well as first-hand experience with high performance & self-directed work environments. His real-world industrial background affords a natural rapport with managers, union representatives and employees at all organizational levels.

## ABOUT CIRCADIAN

CIRCADIAN is the global leader in providing 24/7 workforce performance and safety solutions for businesses that operate around the clock. Through a unique combination of consulting expertise, research, software tools, training and informative publications, CIRCADIAN helps organizations in the 24-hour economy optimize employee performance and reduce the inherent risks and costs of their extended hours operations.

Working from offices in North America, South America, Australia, Europe and Asia, CIRCADIAN experts ensure that over half the Fortune 500, and other leading international companies, improve their competitiveness in the global 24/7 economy. CIRCADIAN's core expertise is the staffing, scheduling, training and risk management of their most vital asset – the 24/7 workforce.

For more information about CIRCADIAN, please visit our website at [www.circadian.com](http://www.circadian.com).

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