Try 48/7 Instead of 24/7
By Jim Thompson, Talo Analytic International Inc.

I first got the idea 21 years ago, while driving from Birmingham, Alabama to my home in Cape Girardeau, Missouri. The drive took me through five states in a matter of just a few hours. This led to the question, "How quickly can one travel the 48 contiguous states?" Somewhere along the way, I settled on a solo trip through the lower 48 in seven days as my goal.

Preliminary Research
And so I continued to think and talk about this idea. At the time, Guinness was still collecting records on such events. In the early '90s, for instance, three individuals drove the 48 states in 10 days. However, after studying their trip, it didn't seem noteworthy. The fact that they completed the journey in Toledo, Ohio indicated that they had not put much thinking into the issue—that is an inefficient end to the journey.

My initial planning involved paper maps and colored pencils. Of course, when the Internet and mapping software came along, trip planning became much easier. While researching, I found that 48/7 was not an audacious goal. The record on a motorcycle is 5 days and 12 hours. In fact, this same rider planned his trip so that he ended the 48 states in Washington and then took off for Alaska. He actually did 49 states in 7 days!

Planning for Safety
With such a grueling goal, safety was of paramount importance—both for me, and for everybody else on the road. I made a solemn commitment to my wife and friends that if I got tired, I would stop. I also decided that I needed a few hours in bed every night and a shower when I got up.

So now it was time for the real thing! The trip started at 2 a.m. Friday, April 29, 2005 in Thomasville, Georgia. The vehicle was my trusty 2005 Honda CR-V with all wheel drive, anti-skid technology and less than 8,000 miles on the odometer. Supplies included an extra five gallons of gasoline, motor oil, windshield wiper fluid, tools, jumpers, and two flashlight. Food was stock plenty—$80 worth of high energy bars. My GPS, affectionately nicknamed 'Mabel,' was on the dashboard and ready to go.

Managing Sleep
The whole exercise was one of sleep management, and, when awake, keeping the car moving towards the goal. My plan was this. Each night when I stopped, I programmed Mabel for the next day. This then determined the time for which to set my alarm clock. After I went to sleep, the first time I awakened, I showered and got on the road—no tossing and turning in bed, no snoozing for a few more minutes. I didn't bother to shave. Just a fresh shower, fresh clothes and back on the road. The alarm clock never went off.

Keep Moving
Again, after safety, everything was about keeping the car moving, and all stops were related to either (a) gassing up the car and (b) getting my witness book signed. I tried to plan things so I did both at once. My food was in the car and coffee and soft drinks were purchased on the way. Naturally, no alcohol was consumed during the trip nor any sort of pep pills or stimulants (other than coffee and chocolate covered coffee beans).

There were six nights on the road (hours of sleep at each stop are in parenthesis): Amarillo, TX (5); Salt Lake City, UT (6); Bozeman, MT (5); St. Joseph, MO (7); Chicago, IL (6); Dublin, VA (8). I finished in White River Junction, VT just before midnight on May 5th, 6 days, 21 hours, and 41 minutes after I started. I was never stopped once for speeding and, fortunately, only experienced two hours of rain the entire trip. Average speed for the trip was 53.187 mph (total of 8,279 miles) including sleep time. I took a leisurely two days to drive back home to Atlanta. FF

Jim, 'Mabel', and his trusty steed.

In This Issue
• Shift Scheduling
• Cost-Effective Bearing Repair
• Try 48/7 Instead of 24/7

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Shift Scheduling (cont.)

Schedules: In fact, scientific research has failed to find any major safety differences between companies that operate properly staffed 8- or 12-hour shifts—this is because although you work fewer hours on any given 8-hour shift, you also have fewer days off to get some sleep and recover. If everyone is working huge amounts of overtime, it doesn’t matter whether you’re on an 8 or a 12, health and safety risks have shown to be increased.

Combination 8 and 12 Hour Shift Schedules

What else is there out there? Perhaps the most popular combination schedule is a combination schedule—this is a compromise where you work some 8-hour shifts (usually during the Monday to Friday period) and some 12-hour shifts (usually on the weekend). This gives you more weekend days off, but you’re not always working the longer shift length.

A typical combination rotating schedule, you work 8-hour shifts during the Monday to Friday period, and two 12’s every other weekend. On average, you work 3-8 hours per week per shift. Surprise, surprise—on average you work 42 hours per week.

It’s rare to find many other shift lengths because they don’t fit well into a 24-hour period. Some facilities (and you’ll have seen this if you’ve ever worked in a food processing plant) work two 10-hour shifts per day, and use the remaining 4 hours for maintenance and cleaning, but that’s about it.

Rotating vs. Fixed Shifts

Okay, that pretty much exhausts shift length, what about rotating or fixed shifts? Most of the pulp and paper industry works rotating shifts—this comes from the fact that they worked a two-crew 12-hour rotating shift system up until union pressure and the Fair Labor Standards Act made the four crew, 8-hour schedule the preferred type. When the change was made, companies chose to stick with the rotating schedule.

Even today, when facilities switch from an 8-hour schedule to a 12, they usually keep rotating shifts if they were working rotating before, and vice-versa. Is there any advantage to one type over the other? Honestly, again it’s down to personal preference—people on fixed shifts may become a little more used to working at just one pressure, but usually they never get the extra chance to get better sleep while on a day shift. Another thing to consider is that if you work fixed night shifts, there’s a good chance you switch back to a day schedule for days off anyway—almost like working a rotating schedule. People on rotating schedules have to constantly switch their body clock, but perhaps do get a better chance to rest when on day shift.

A good compromise is to have slow rotations, where you switch between shifts only every two weeks or so.

Shift Start Times

This update we’ll consider shift start times—ideally this is driven by a compromise between the night and day shifts—when you’re on the night shift it’s best to get home before or soon after the sun rises—this maximizes your chance of getting some good sleep that morning. Equally, you don’t want the day shift starting too early—if the shift starts at 5 a.m. you’ll be leaving home at 4:30 a.m. at the latest, and probably getting out of bed at 3:30 a.m. This means you’ll be getting less sleep than you need and can sometimes suffer from greater fatigue than the night shift. Facilities often choose day shift start times of around 7 a.m. for these reasons.

So there’s a whirlwind tour of shift scheduling—hopefully you know a little more, and if you’re given the opportunity to move to a new schedule, you’ll be able to understand the main differences between the thousands of types of schedules out there. For more information visit www.circadian.com.

The Unexpected

September was a traveling month for the Canavans. During these visits to the West Coast, Atlanta and Philadelphia, we were again reminded of the diverse cultures in this country.

And then we experienced the shock of the devastation in Louisiana and Mississippi, from which it will take years to recover. At times like these the differences disappear and we become one country united to overcome severe adversity.

I know many readers have either lost family or have friends and loved ones in harms way. Many may be in harm's way themselves. Two organizations are equipped to help and I encourage you to make contributions as you are able: The American Red Cross and the Salvation Army.

Gene Canavan

Frontline Focus wants you!

Remember, all it takes is an email to Gene, gcanavan@tappi.org, with a story to tell and you can earn $200 (AND get your name in print!), or call Laura Feix at +1 770 209-7364.

Type 1 paper mill bearings repair: This repair is primarily used to certify a bearing that’s been in storage for a period of time. It involves disassembly, a full inspection and repackaging of the bearing.

Type II paper mill bearing repair: All necessary components are completely polished, such as the bore and raceways; polishing of the outer diameter, bore diameter and width of the bearing; and replacing the rollers. Type III repair is necessary to remove wear or debris indentation.

These classifications of paper mill bearing repair have traditionally been cost effective for bearings with a bore size of 300 mm and greater. However, with larger quantities, some smaller sizes also may be appropriate for repair.

Turnaround time on paper mill repairs can be as short as two to four weeks, depending on the repair type. Short lead times are critical when considering production demands or the availability of new bearings.

Today’s increase in cost-effective-ness along with the availability of refined bearing repair services has fostered a greater understanding of the benefits and value of paper mill bearing repair. Mills that have the opportunity to learn that repaired bearings provide significant cost savings—regardless of the original bearing manufacturer, bearing type of application. FF

For additional information on bearing repair services: Visit www.timken.com/industrialservices, or register for Bearing Training at www.timken.com/training.

Cost-Effective Bearing Repair

By Barclay Simmons, Application Engineer, The Timken Company

Repairing paper mill bearings is not a new concept. It’s a precise science refined over many decades to provide superior results. As expertise and new technology continue to increase the reliability, and performance of bearings, repair has proven to be a cost-effective alternative for mills.

Benefits of bearing repair

Paper machine manufacturers typically design bearing applications that establish an appropriate prediction for service life. Bearings often deviate from these expectations due to contamination, inadequate lubrication or misalignment. Often, paper mill bearings that don’t reach their intended service life can be repaired to original specifications. A quality repair program produces 50%-90% savings compared to discarding and replacing bearings.

Another value-added benefit of paper mill bearing repair is the use of damage analysis to identify corrections that may prevent future problems.

When to repair your bearings?

Typically, any paper mill bearing can be repaired unless the bearing has experienced heavy thermal tempering or spalling damage. Bearings that have minor wear and debris denting are excellent candidates for repair. Bearing manufacturer sales and service engineers are good resources to help determine the viability of repair for paper mill bearings.

A regular visual inspection is the first step in deciding if a bearing needs repair. Early detection of a problem through routine checks can save you unnecessary downtime and expense. Carefully review the following criteria to determine the need for repair:

- Is the bearing near, or has it exceeded its suggested life expectancy?
- Has the bearing’s operating temperature exceeded 200°F (90°C)?
- Has the bearing been exposed to excessive vibration?
- Has the bearing experienced sudden changes in lubrication or in lube temperature?

Understanding the repair process

At Timken, a damaged bearing is reviewed to determine a plan of action to return the bearing back to manufacturer’s specifications. This process allows mills that participate in the assessment to make a sound financial decision about bearing repair or purchase options.

The first step is for the paper mill bearing to undergo a thorough cleaning and inspection. Once the bearings are determined repairable, a repair type is selected.

Type 1 paper mill bearing repair:

Type II paper mill bearing repair:

Type III paper mill bearing repair:

Standard for bearings that have been in service long enough to have visible evidence of wear and stress—the process includes regrinding of the raceways; polishing of the outer diameter, bore diameter and width of the bearing; and replacing the rollers.

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“to provide timely technical information to the operating sector of the industry”

www.tappi.org/npt2
Shift Scheduling (cont.)

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Even today, when facilities switch from an 8-hour schedule to a 12, they usually keep rotating shifts if they were working rotating before, and vice-versa. Is there any advantage to one type over the other? Honestly, again it's down to personal preference—people on fixed shifts may become a little more used to working just at night, but usually they never get the extra chance to get better sleep while on a day shift. Another thing to consider is that if you work fixed night shifts, there's a good chance you switch back to a day shift schedule for days off—almost like working a rotating schedule. People on rotating schedules have to constantly switch their body clock, but perhaps do get a better chance to rest when on day shift.

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Well, this editorial wasn't at all what I'd planned to write. But life has a way of changing things unexpectedly. Thanks Sally, for writing the article on dealing with change in the last issue. It helped me. I hope it helped you.

American Red Cross: www.redcross.org
Lifesouth Community Blood Centers: www.lifesouth.org
Salvation Army: www.salvationarmyusa.org

Gene Canavan

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Turnarounds on paper mill repairs can be as short as two to four weeks, depending on the repair type. Short lead times are critical when considering production demands or the availability of new bearings.

Today’s increase in cost-effectiveness along with the availability of refined bearing advisory services and a better understanding of the benefits and value of paper mill bearing repair, Mills that haven’t previously learned that repaired bearings provide significant cost savings—regardless of the original bearing manufacturer, bearing type of application. FF

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Duke Brown performs a final build up of a taper bearing. This involves measuring the bearing in order to set the lateral clearance.

Gene says:
What are you and your fellow employees doing to help the community? Tell us about your mill’s charitable work in your neighborhood and we’ll put it in the special “Focus on Giving” December issue.

Uptime

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National Network for Pulp and Paper Technology Training

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Preliminary Research

Though I continued to think and talk about this idea. At the time, Guinness was still collecting records on such events. In the early ’90s, for instance, three individuals drove the 48 states in 10 days. However, after studying their trip, it didn’t seem noteworthy. The fact that they completed the journey in Toledo, Ohio indicated that they had not put much thinking into the issue—that is an inefficient place to end the journey. My initial planning involved paper maps and colored pencils. Of course, when the Internet and mapping software came along, trip planning became much easier. While researching, I found that 48/7 was not an audacious goal. The record on a motorcycle was 5 days and 12 hours. In fact, this same rider planned his trip so that he ended the 48 states in Washington and then took off for Alaska. He actually did 49 states in 7 days!

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With such a grueling goal, safety was of paramount importance—both for me, and for everybody else on the road. I made a solemn commitment to my wife and friends that if I got tired, I would stop. I also decided that I needed a few hours in bed every night and a shower when I got up.

So now it was time for the real thing! The trip started at 2 a.m. Friday, April 29, 2005 in Thomasville, Georgia. The vehicle was my trusty 2005 Honda CR-V with all wheel drive, anti-skid technology and less than 8,000 miles on the odometer. Supplies included an extra five gallons of gasoline, motor oil, windshield wiper fluid, tools, jumpers cables, an axe, shovel and two flashlights.

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By Alex Kerin, Senior Consultant, CIRCADIAN

The Myths Of Shift Scheduling

What kind of shift schedule do you work? If you’ve only worked in one or two mills, then chances are you’ve only worked one of the many types out there. Equally, there’s a pretty good chance that you’re working a rotating 8 hour shift, just like most paper mills in North America. In this article, we’ll discuss the multitude of possible schedules out there, some of the myths that surround them, and their pros and cons.

Myth #1: The Ideal Schedule

Let’s get straight to the point. The greatest way away from there is no ‘ideal’ schedule that will work for every mill. From an operational standpoint, the different boil-out, wire and felt changeout requirements and other maintenance routines mean that one shift schedule pattern won’t work for every mill. There’s also another reason—not all of us want the same things from our work schedules. For example, some of you may find working 12-hour shifts too taxing compared to 8-hour shifts, or perhaps you prefer Saturdays off to attend a religious service.

This is an important point to understand. There are many shift schedules that can be used to match a facility’s operational need— but the ‘ideal’ one for a specific facility is the one that matches the operational requirements and the preferences of the majority of the employees.

8 Hours vs. 12 Hours

That said, how do you go about choosing a schedule? First let’s consider the main differences between an 8-hour shift and a 12-hour shift—the first is obvious, 12-hour days are four hours longer, but the upside is that you work fewer days per week and per year. Apart from more days off, you also commute to work less often, saving time, gas money, and wear and tear on your vehicle. However, on the days you work you can achieve less outside of work—with only 12-hours off, that’s enough time for commuting, eating, sleeping, and not much else. The schedule pattern is best demonstrated by showing typical 8- and 12-hour schedules (these are just examples – there are many different 8- and 12-hour schedules).

Myth #2: Fewer Employees Needed with 12 Hour Shifts

You can immediately see the greater amount of yellow days off for the 12-hour schedule, but on average you work the same number of hours per week. This is another important myth to bust—because you work the same number of hours, the same number of employees are needed. It’s sometimes assumed that if a company switches to 12-hour shifts they can somehow get by with fewer employees—absolutely not true.

A typical 8-hour rotating schedule (Northern Swing), you work 7 days straight, get 48 hours off (get off at 3 p.m. Sunday, return 3 p.m. Tuesday), work 7 evenings, get 48 hours off, work 7 days get 96 hours off. On average you work 42 hours per week.

A typical 12-hour rotating schedule (called the EOWEO – Every Other Weekend Off), you work 2 day shifts, get 72 hours off (get off at 7 p.m. Tuesday, return 7 p.m. Friday), work 3 nights, get 72 hours off, work 2 days get 96 hours off, and so on. On average you work 42 hours per week.