APAC-Southeast in Sarasota, Florida mixed 250,000 tons in only 12 months

Celebrating the 50th Anniversary of the United States Interstate System

Eubank Asphalt Paving and Sealing has a commitment to the latest technology

Introducing a new easy-to-use website for used equipment: www.AstecUsed.com

YOUR DEPENDABLE SOURCE FOR NEWS ABOUT HMA TECHNOLOGY

PUBLISHED BY ASTEC INDUSTRIES, INC.

VOLUME 11 NUMBER 2 — 2006
Point of View

You can build your own win-win situation with forward-thinking and innovative tools

Hot-mix asphalt producers and contractors quite often find themselves challenged to play a dual role as they plan for the future:

- First, they must focus on how to make their own companies successful so they can survive in a competitive market.
- Second, they must find ways to be good neighbors for the governments, businesses, and families within their communities.

Here at Astec, we speak daily with producers and contractors who are trying very hard to arrange such a win-win story for their future. And we are proud that we are here to provide new asphalt plants that can help them reduce energy costs, increase recycling, and serve as good neighbors.

The win-win success stories can be found almost everywhere in the world:

Fulton Hogan Ltd. is a producer that does business in New Zealand, Australia, and the Pacific Basin. They recently installed a new Astec plant in Auckland, New Zealand…and as a part of their grand-opening ceremony, they planted three young trees to symbolize the environmental qualities of their forward-thinking business strategy.

In the United States, Duval Asphalt Products, Inc. of Jacksonville, Florida and APAC’s Kissimmee, Florida location have received the prestigious NAPA Ecological Award that recognizes asphalt plants for being good neighbors.

These companies—and many others in the industry—are investing good capital to ensure that their plants are environmentally friendly. This is a positive step that benefits both the companies and their communities.

Forward-thinking producers and contractors are also being challenged by today’s high energy costs. And many of them are finding that innovation helps. For example:

- Astec customers are taking advantage of the company’s state-of-the-art burners that will cleanly and efficiently burn multiple fuels. These burners are being supplied with all new plants.
- United Companies of Mesa County (Colorado) is in the process of installing a new-generation Astec coal burner that should reduce the company’s energy costs on the plant by more than 50%.
- Many producers are using Astec plants to increase the recycling of old material as reclaimed asphalt pavement (RAP). Asphalt Paving of Virginia Beach, Virginia averaged 40% RAP in its mixes during a recent 12-month period.

All of these new, innovative concepts are win-win success stories—for our customers and for their neighbors. Meanwhile, here at Astec, we are proud to be an integral part of our asphalt industry’s ongoing effort to be a good neighbor.
"We tend to keep (an Astec plant) for four years or so and then trade it to get a new one. That way, we’re always running state-of-the-art equipment.”
Eubank Asphalt paved the plant area to reduce stockpile moisture: “Anyone in the paving industry understands that moisture can be a big monster.”

For years, Eubank Asphalt maintained its production facilities in Dickson, Tennessee. In fact, the company currently has three HMA plants in that one location. These three plants include one Astec Double Barrel® dryer/mixer rated at 400 tph (363 tonnes per hour), plus two older batch plants—one that is used exclusively for outside sales, and another that is kept on standby as a backup or to handle overflow production. Recently, however, Eubank found that the Dickson facility was hard pressed to keep up with the demand that was coming from the Clarksville area. So they installed a new Astec Double Barrel dryer/mixer facility in that city, as well.

“The new location has worked out very well for us,” said Eubank. “Clarksville is a growing city, and they really needed more HMA-production capacity out there. We had so many jobs in Clarksville and were hauling mix over there from Dickson that we decided to buy a new plant and set it up there.”

Eubank Asphalt is no stranger to purchasing and setting up new HMA plants. Eubank explained that this is part of the company’s goal of producing the highest-
All control operations on the Eubank Asphalt plant take place in an Astec Command III relocatable control center (top photo). The key to the efficient drying and heating is the portable Astec Double Barrel® dryer/mixer plant that is rated at 400 tph (363 tonnes per hour) with a Phoenix® Talon oil/gas burner that includes a variable-frequency blower and fuel pump.

Other state-of-the-art features include infrared temperature sensors that help maintain aggregate and mix quality control. The 530-ton (480-tonne) New Generation Storage System includes two silos with ceramic liners on the cones, spool, and batcher, and two 8-ton (7-tonne) weigh batchers to facilitate truck loading.

Most of the plant’s components are fully portable—including the dryer/mixer, the five-bin cold-feed system, the conveyor system, the horizontal cyclone, the baghouse, and the recycle system that has a Telsmith horizontal shaft impactor. Astec has designed these portable components for easy mobility.

Eubank explained that this portability is important in his strategy to frequently replace his plants with brand-new ones every few years. “If the plants are portable, I can take them down in four or five days and move in another one at the same location and have it running again in a couple of weeks.”

Because of the way he chooses to set up his HMA facilities, Eubank said it can take a little longer to get the new plants online. But this is all for the sake of quality and safety. “I don’t lay any of my wiring on top of the ground,” he said. “We use portable wiring, but we put it inside 6- to 10-in. (15- to 25-cm) waterline pipe. We feed the wiring through the pipe and then lay the pipe underground. It’s a little more expensive to do that, but it pays off in the long run. If we move in another plant, we can pull the old wiring out and pull the new wiring through the plant.”

Another special step Eubank took when setting up the Clarksville plant is our fifth Astec Double Barrel,” said Eubank. “We tend to keep one for four years or so, and then trade it and get a new one. That way, we’re always running state-of-the-art equipment.”

The new plant that Eubank Asphalt purchased for its new Clarksville facility is an Astec 8-ft. (2.4-m) portable Double Barrel dryer/mixer plant that is rated at 400 tph (363 tonnes per hour) with a Phoenix® Talon oil/gas burner that includes a variable-frequency blower and fuel pump.

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Another special step Eubank took when setting up the Clarksville
The Astec Double Barrel dryer/mixer receives the virgin aggregate from the plant's portable five-bin cold-feed system (bottom photo). Each of the bins measures 10 x 14 ft. (3.0 x 4.2 m). This particular plant component is also quickly and easily portable. Notice the triple-axle suspension and the telescoping legs with base plates. After the aggregate has been blended with the liquid asphalt cement, the finished mix is moved to the Astec New Generation Storage System (top photo) that consists of two 265-ton (240-tonne) silos. Both of these silos have electric-blanket heat on the cones and hot-oil heat on the drag. In addition, there are ceramic liners on the cone, the spool, and the batcher. Note also the way the entire production area is paved.

FOR MORE INFORMATION
about Astec stationary, relocatable, or portable HMA equipment,
contact Diane Hunt at Astec:

423-867-4210
Fax: 423-867-3570
E-mail: dhunt@astecinc.com

facility was paving in and around the entire location of the plant.

“We laid about 8,000 tons (7,257 tonnes) of hot-mix around that plant,” he said. “That helps with moisture on the aggregate stockpiles—and anyone in the paving industry understands that moisture can be a big monster. Paving the area also helps cut down on dust. We don’t want any dust at all in our operations. We have paved under all three of our plants in Dickson, too.”

The Clarksville plant went online in 2005 in time to produce mix from October until the end of the paving season. “We had really good results,” said Eubank. “We got it up pretty close to the plant’s rated 400 tph capacity. But when you’re running base mixes, it’s a little bit more difficult to run at full capacity—especially in the fall when everything tends to be wet and needs more drying.”

Eubank added that Astec’s Phoenix Talon burner on the new plant has impressed him, as well. “The burner is a lot quieter,” Eubank said. “We have a silencer on the burner in Dickson (which is not a Phoenix Talon burner), but right now I plan on changing the burner on the Astec Double Barrel plant in Dickson to make it just like the one in Clarksville.”

Overall, Eubank said he has been satisfied with the efficiency of the new Clarksville plant. “We are very pleased with the production and quality of the plant,” he said. “Anyone who is familiar with Astec knows that their product quality is second to none. And their service is even better.”

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The Astec Double Barrel dryer/mixer receives the virgin aggregate from the plant's portable five-bin cold-feed system (bottom photo). Each of the bins measures 10 x 14 ft. (3.0 x 4.2 m). This particular plant component is also quickly and easily portable. Notice the triple-axle suspension and the telescoping legs with base plates. After the aggregate has been blended with the liquid asphalt cement, the finished mix is moved to the Astec New Generation Storage System (top photo) that consists of two 265-ton (240-tonne) silos. Both of these silos have electric-blanket heat on the cones and hot-oil heat on the drag. In addition, there are ceramic liners on the cone, the spool, and the batcher. Note also the way the entire production area is paved.
Contractors in the Gulfport, Mississippi area responded quickly and efficiently to repair and rebuild roads that were damaged by the monstrous storm surge.
It’s easy to underestimate
the sheer force of water and wind.
In its everyday state, the wind
carries a leaf crackling across the
street, musses the hair, or cools
the skin. Water bubbles down a
stream, rolls forward to touch the
sand, or ripples quietly in a lake.
We learn by looking at dramatic
natural features such as the Grand
Canyon that, over a long enough
period of time, wind and water have
the ability to significantly alter the
landscape. But when these basic
elements are driven by the power
of a Category 3 hurricane, the
ability of water and wind to cause
mass destruction takes humanity
by surprise time and again.

It was this kind of sudden and
unavoidable force of nature that
struck the coastlines of Louisiana
and Mississippi on August 29,
2005. Water driven by the wind
formed a storm surge, measuring
as high as 30 ft. (9 m), that crashed
up and over seawalls. Its sudden
force flooded buildings, eroded
sand, ripped up roadways, and
topped trees. When the fury of the
storm subsided, it left in its wake
an infrastructure that lay almost
completely destroyed.

This was the sudden and surpris-
ing impact of Hurricane Katrina.
In the days that followed August
29, the nation’s attention was
drawn mainly to the New Orleans
area as failed levees, flooding, and
a dense human population caused
the situation to continue getting
worse. Long after the storm had
moved inland and faded out over
the central United States, the TV
stations were focused on what
was happening in New Orleans.

Assessing the damage
causeld by Hurricane Katrina
For many of the contractors on
the Mississippi Gulf Coast, the

But most of the nation didn’t see
what was happening on the Gulf
Coast in the Mississippi area:
For the people who live and work
on the Mississippi Gulf Coast, the
losses were devastating. There
was no one to blame but Mother
Nature. And, although there were
not as many TV cameras around
then to document their struggle,
it should be noted now that the
Gulf Coast responded heroically.
Within just a few days, recovery
had begun. Military, federal, state,
and private entities pooled their
resources and moved forward to
begin restoring what had been lost.

A key step toward that recovery
involved the restoration of one of
the most fundamental parts of any
infrastructure—a part that is so
often taken for granted:
The roads.
After a massive debris cleanup by both private contractors and U.S. Navy Seabees from the nearby Naval Construction Battalion Center, the patching, rebuilding, and resurfacing of roadways began. Warren Paving used all of its Roadtec pavers on these jobs, including the Roadtec RP180-10 paver shown in the above photo. The emergency work involved removing broken concrete slabs, rebuilding the roadway to its original profile by filling with sand from the beach, compacting it as much as possible with rollers and even trucks—and then putting down 8 in. (25 cm) of base material, followed by a surface course of 2 in. (5 cm). "We never did do any overlays in any long areas," said Steven Warren. "It was mostly a lot of patches."
Getting the Gulf Coast back online

One quick look around the Mississippi Gulf Coast area would give you an idea of why contractors like Bond Paving had such a sense of urgency in getting their operations back online. Homes and businesses had been destroyed, and there were so many people driven from the area who would not be able to begin the slow process of cleaning up until the roads had been rebuilt.

“The main road that was in very bad disrepair was US Highway 90—or Beach Boulevard—which runs along the edge of the waterline in Biloxi,” said Warren. “That road is an old concrete highway with several overlays on it. It was built on an old seawall. And when a lot of sand washed out from under it, those concrete slabs just fell in. On top of all that, the buckled pavement was covered with debris and sand. In some spots, there was sand over the road 3 or 4 ft. (0.9 or 1 m) deep.

“In addition, there were two major bridges knocked out on Highway 90: the Bay St. Louis Bridge and the Ocean Springs Bridge.”

Immediately after the storm, said Warren, the Mississippi DOT let force-account work to three asphalt contractors in the area to begin work on the almost impassable Highway 90: Warren Paving, Mallette Brothers Construction Company, and Huey Stockstill, Inc. Warren Paving was assigned a segment of road that extended west from the Gulfport-Biloxi city line and ended about one mile inside the city of Pass Christian. The work consisted of opening up two lanes of traffic on the eastbound lanes of Highway 90 so commuters and recovery workers could have a two-way passage.

When Warren Paving had nearly completed the job, Mississippi DOT let another job to the company so they could open up traffic on the north-bound lanes.

“The work consisted of removing the concrete slabs and putting sand from the beach back up on the right-of-way as deep as 10 in. (25 cm). Then, we put about 8 in. (20 cm) of base and 2 in. (5 cm) of surface material on all of those places where we removed the concrete slabs. We never did do any overlays in any long areas—it was mostly a lot of patches.”

Work on Highway 90 also involved other work—such as repairing curbs and storm drains that had been clogged with sand and debris.

“We actually did nothing but hurricane-related work for about three or four months,” said Warren. “And then we were finally able to start some of our other work…”

“Some of the worst things about the Hurricane Katrina recovery is that it is difficult to find anyone to work. Nobody is available to work. For the first two months, it was just like we were living in a third-world country.”

FOR MORE INFORMATION
about Roadtec equipment, call your Roadtec Regional Sales Manager:
800-272-7100
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In spite of hurricane-force winds of about 140 mph (225 kph), Warren Paving’s Astec hot-mix asphalt plant in Biloxi, Mississippi remained intact and virtually undamaged, except for some cosmetic scratches. According to Steven Warren, manager of the Gulfport division of Warren Paving, the plant was up and working within days after the hurricane had passed. During the repair work on US 90, the company produced, transported, and put in place more than 16,000 tons (14,500 tonnes) of hot-mix asphalt.
YOUR FINISHED PRODUCT is the result of mixing several materials—and an unexpected shortage of any one of those key materials can result in a plant shutdown that can be costly on several levels. It is relatively easy to know when you are running short of aggregate: All you have to do is look at the stockpile. But you cannot see with any precision how much liquid asphalt cement (liquid AC) you might have left at any point in time in those metal tanks out there in the yard.

That is why it is important for you to have a general understanding about how the contents of Heatec liquid-AC tanks are measured. And it is also helpful to know that there are several different ways to get those measurements.

**Terminology you need to know**

There are certain terms used when you get into any discussion about measuring the volume of a liquid AC tank in an asphalt plant. Here are some of those terms:

- **Nominal volume** is a term used when referring to the approximate capacity of a liquid AC tank. It is a number that is usually rounded off in thousands of gallons (or thousands of liters)—so it is not an exact indication of how much the tank can hold.

- **Gross volume** is the total amount of space inside a tank. It includes the space occupied by heating coils and the space reserved for overflow control. Consequently, it is not an exact indication of how much can be stored in the tank.

- **Net volume** is the amount of liquid AC that can be stored in the tank. It is equal to the gross volume minus the space that is occupied by heating coils and the space reserved for overflow control.

- **Coil-displacement volume** refers to the space that is occupied by the heating coils.

- **Reserved space** is the amount of space at the top of the tank that is set aside for overflow control. This space also allows for thermal expansion of the liquid AC that is being stored in the tank.

**Different methods for measuring tank content**

It is not easy to determine how much liquid AC is in one of those circular storage tanks out there in your yard. But over the years, the engineers in this business have come up with different ways to determine the amount of liquid AC that exists in a tank.

There are several ways that are commonly used, ranging from a very basic manual method to a sophisticated electronic method. Here are four of them:

- **The Stick Method**—This works with either a horizontal or vertical tank. With this method, you use a tape measure or stick to measure “empty space”—or the distance from the manway at the top of the tank to the surface of the liquid AC (see drawings below). You then subtract that measurement from the inside diameter of a horizontal tank—or from the height of a vertical tank—to arrive at the “asphalt level”. You can then take that

**Horizontal Tanks**

The common terminology for these tanks is shown here. You will need to use these terms to determine the volume of your horizontal tanks.

**Vertical Tanks**

The terminology for vertical tanks is similar to that for horizontal tanks. The main difference is that vertical tanks use “height” as a key measurement, while horizontal tanks use the diameter of the tank.
figure and apply it to the printed Tec-Note chart, “Levels vs. Gross Volumes” to determine how much liquid AC is in the tank.

**Gauge Board**—This method is widely used with vertical tanks. A float inside the tank causes a level indicator (called a “bulls’ eye”) on the gauge board to rise and fall with the level of liquid AC in the tank. This shows the “asphalt level”—or the distance from the bottom of the tank to the level of the liquid AC. That reading can be applied to the appropriate Tec-Note chart to determine the amount of liquid AC that is in the tank.

**Radar Gauge**—A vertical liquid-AC tank can be equipped with a radar device to provide a reading of the distance from the bottom of the tank to the surface of the liquid AC—or the level of the liquid AC. Some people assume that the radar device measures the distance from the top of the AC tank to the surface of the liquid AC, the same way you would measure it with a stick or a tape measure. It does not. Instead, the device uses radar and automatic calculations to provide the liquid-AC level reading. To determine how much liquid AC is in the tank, take the figure calculated by the radar gauge and apply it to Heatec’s printed Tec-Note chart entitled “Levels vs. Gross Volumes.”

**Pressure Transmitter**—This device has been used successfully in measuring fuel levels in tanks, but application to liquid-AC tanks is relatively new. The pressure-sensing unit is mounted near the bottom of the tank to measure the pressure of the liquid AC above it. (Note: This pressure-measuring device is set by Heatec to work with a certain specific gravity and a certain storage temperature for the liquid AC. Deviations in either category can result in an erroneous reading.) Using the transmitter’s readout of the tank’s level, you can refer to Heatec’s Tec-Notes to determine how much liquid AC is actually in the tank. (Note: The device’s readout does not take into account any liquid AC that is stored below the position of the pressure-measuring device.)

**Tips about “Custody Transfer”**

This term usually refers measured amounts of liquid AC that is delivered to your plant site from a terminal. Terminals have highly accurate weighing devices or micromotion metering devices that support custody transfer. The measuring devices in your liquid-AC tanks are not calibrated for the degree of accuracy that is required for custody transfer. As a result, they should not be used for that purpose. The measuring devices in your liquid-AC tanks are intended only to provide you with a good indication of the liquid-AC level at any particular point in time.

**Get to know the facts**

There are a number of variables that must be considered when you are determining the content of a liquid-AC tank. The importance of someone at your plant having this detailed knowledge of your liquid-AC tanks cannot be overstated. Your plant operator needs to have this information so he will know when the tanks are getting low. Heatec provides reference tables to help calculate tank content—but you must first know the size of the tank and the model number before those tables can be used.

**How to get reference tables without a charge**

If you have a Heatec tank and know the size and model number, you can use the calculations and numbers that are provided in these Heatec Tec-Note publications:

**Vertical Tanks**
Publication No. 11-04-148
**Horizontal Tanks**
Publication No. 11-04-149

Both of these documents can be downloaded free as PDF files from the Heatec website. Simply go to...

www.Heatec.com

When you reach the homepage, click on the “Tec-Notes” button—and then click on the image that says “Asphalt Tanks”. A list of documents will appear. Select the one you want and it will download to your computer. Or you can call the numbers listed in the “For More Information” block below and ask for a copy of the proper technical documents.
At one time or another in our lives, most of us have probably experienced an almost magical moment similar to the one described here:

Dawn finally moves in and you find yourself cruising down the road, a long way from home. The steering wheel held steady in one hand, you relax in the driver’s seat as the first light spills across the horizon and onto the American landscape. Yellow and white lines unroll on the perfect black pavement, guiding your vehicle forward effortlessly. The intensity of the light on the horizon grows until finally the bright yellow sun bursts into the sky. The shrouds of fog clinging to the valleys begin to glow chameleon-like as they soak up the color of the sunrise. And that familiar red-white-and-blue shield stands beside the road, confirming that you have chosen the right path.

This year represents the Golden Anniversary of the United States’ Interstate Highway System—which is formally known as the Dwight D. Eisenhower System of Interstate and Defense Highways.

Fifty years after it began in 1956, the Interstate System represents an impressively complex network of highways that total more than 46,773 miles (75,273 km). Today, the Interstate System carries the citizens, the military, and much of the diverse economy of the United States between its wide shoulders.

The quintessential symbol of American freedom

The concept of travel by automobile has been firmly rooted in the American culture since the turn of the 20th Century. For most people in the United States today, getting into a car and driving anywhere they want is not considered a privilege, but a fundamental right. The image of a ribbon of highway stretching across the countryside has been used again and again in both literature and movies. The open road, it seems, has become the quintessential symbol of our American freedom.

But the freedom provided by the Interstate System certainly did not happen by accident. Instead, the Interstate System was born from a combination of foresight and necessity.

Early history of the Interstate System

Most historians agree that the basic catalyst for the Interstate System was the ambition and initiative of one man: President Dwight D. Eisenhower. Long before he became president, Eisenhower had an unforgettable experience traveling across the

On July 7, 1919, the Transcontinental Motor Transport Convoy left Washington D.C. headed for San Francisco. Lt. Col. Eisenhower was one of 39 officers who led 258 enlisted men driving 81 vehicles of various sizes and configurations.
United States by vehicle—but it was an experience that is difficult to imagine by today’s standards.

In 1919, Eisenhower was a temporary lieutenant colonel in the Army. He volunteered to be part of an Army project known as the Transcontinental Motor Transport Convoy. The purpose of the convoy was to move dozens of heavy trucks from Washington, D.C. all the way across the country to San Francisco, California. Along the way, the convoy would demonstrate to the American people the important role that had been played by the Motor Transport Corps in World War I. The convoy would also promote the good-roads initiative, serve as a field test for the unit’s vehicles, and encourage potential drivers and mechanics to apply for military training.

Today, following the most direct route from Washington, D.C. to San Francisco would take about 42 hours and would cover a little more than 2,800 miles (4,506 km). That is, of course, without rest periods, sightseeing, or overnight stops to get some sleep.

But in 1919, it took a little longer than that. In fact, the Coast-to-Coast Motor Transport Train arrived in San Francisco a full 62 days after leaving Washington, D.C. In other words, the convoy’s journey progressed at an average of only 58 miles (93 km) per day.

In the East, large crowds of well-wishers in small towns tended to slow the convoy’s progress. But as they progressed westward, the primitive conditions of many of the roads took their toll on the vehicles. Mechanical problems began almost immediately. The heavy vehicles struggled over narrow, badly rutted, or sandy roads, became mired in deep mud, and slid unexpectedly into ditches. Pontoons were used to carry the Army vehicles across rivers where no bridges existed. At times, Eisenhower wrote, there were portions of the convoy that did not move for periods of two hours or more.

In 1922, the so-called Pershing Map defined the routes that were considered important for national defense. This later became a blueprint for the Interstate System. (Photo courtesy of National Asphalt Pavement Association).

The easy accessibility to the smooth and safe highways of the Interstate system has encouraged personal travel as well as business travel.

Although the convoy did achieve its objective and was successful in making the cross-country trek, the conditions of the roadways made an indelible impression on Lt. Col. Eisenhower. Eisenhower’s experiences during World War II:

If his experiences with the 1919 Coast-to-Coast Motor Transport Train showed Eisenhower how poor road conditions could get, his experiences 25 years later during World War II showed him how good they could be with proper planning.

When Allied forces moved into Germany, they left behind the poor road conditions of surrounding countries and onto the smooth freeways of a German Autobahn that had been built before the war. The unique design of the Autobahn stayed with Eisenhower well into his presidency, when he pushed for a system of highways that would serve the American people, their economy, and their military.

In his memoirs, Eisenhower wrote these thoughts:

A third of a century later, after seeing the autobahns of modern Germany and knowing the asset those highways were to the Germans, I decided, as President, to put an emphasis on this kind of road building. When we finally secured the necessary congressional approval, we started the 41,000 miles (65,983 km) of super highways that are already proving their worth. This was one of the things that I felt deeply about, and I made a personal and absolute decision to see that the nation would benefit by it. The old convoy had started me thinking about good, two-lane highways, but Germany had made me see the wisdom of broader ribbons across the land.

Moving forward through innovation:

Over time, Eisenhower formed a strong vision of the potential for a network of highways in the United States based on the profound impressions that he had.
gathered both close to home and a continent away. His vision incorporated roads that were safe to travel and that were strong and smooth enough to allow the fast and efficient mobilization of the military; roads that could tie together metropolitan areas both commercially and culturally; roads that, in short, would ultimately change the course of life in the United States.

That vision began to become a reality after Eisenhower took office as President of the United States in 1953. Although it took time to build the political support for his plan, the Federal Aid Highway Act of 1956 was finally approved by the Senate and the House, and on June 29, 1956, President Eisenhower signed the act into law.

In addition to laying out the all-important methods of funding for the project, the 1956 Federal Aid Highway Act also mandated a uniform design standard for the new Interstate System. The new highways would take cues from some of the four- to six-lane divided toll roads that had begun to spread across the East after World War II. They would have lower grades, flatter curves, fully controlled access, and the elimination of at-grade highway and railroad crossings.

Unlike the toll roads in the East, however, gas stations and other commercial ventures were to be banned from the Interstate right-of-way. Entrance and exit ramps could only be included if they were part of the original design; otherwise, the location of any new access would need to be approved by the Secretary of Commerce. This concept would ultimately change the way small towns flourished or faltered.

The overall impact on the HMA industry

The approval of the Interstate System also ultimately changed the direction of the hot-mix asphalt (HMA) industry and the various technologies that the industry used for production and paving. After legislation for the Interstate System was approved in 1956, the country had a big job ahead of it: More than 1.6 million acres (647,500 hectares) of right-of-way land would eventually be turned into more than 41,000 miles (66,983 km) of highway, most of it four-lane divided highway.

Much of that work was tackled without delay. Highway statistics show that more than half of the planned Interstate System was built between 1956 and 1966. The road-building industry as a whole responded to this challenging and unprecedented project in an unprecedented manner.

But some of the most remarkable developments occurred in the HMA industry. Indeed, the way the HMA industry quickly adapted and evolved to the challenge meant that as an industry, things would never be the same.

In his recently published book, *Paving the Way: Asphalt in America*, author Dan McNichol made the following observations about relative growth for the concrete and HMA industries in the United States:

> Regardless of the inroads concrete promoters were making on the paving of America’s new Interstate System, business was good for those paving with asphalt. There was a threefold increase in asphalt tonnage produced between 1950 and 1960, going from an estimated 50 million tons [45.3 million tonnes] in 1950 to about 150 million tons [136 million tonnes] 10 years later. Between 1960 and 1970, there was another big jump, a 66 percent increase in total asphalt production. A sudden surge in technology for the HMA industry

The increased use of hot-mix asphalt on American roads went hand-in-hand with a surge in new technology for equipment and processes used by the HMA industry. Because more hot-mix needed to be delivered to the job sites, the trucks used to haul that mix became larger and more durable. Paver equipment saw an increase in capacity, as well, and tough competition between manufacturers quickly improved the design of their pavers and the screeds they used. In the 1970s, pavers up to 36 ft. (11 m) wide were being used to lay down two travel lanes and a shoulder in a single pass.

And then there were the plants that produced the hot-mix asphalt. According to McNichol, in 1951—before the Interstate System was signed into law—15 plants were used to build the New Jersey Turnpike, each producing about 150 tons per hour (135 tonnes per hour). But by 1961—when construction on the Interstate System was moving quickly ahead—"new portable asphalt plants were capable of producing 500 tons per hour... more than a threefold improvement in a short period."

The production capacity of HMA plants was not the only change brought about by the increased demand for paving material. The manufacturers of hot-mix plants also made them more efficient by adding automation capabilities and by making them more easily portable. Faced with growing lines of trucks waiting to haul away the hot-mix asphalt, both producers and manufacturers responded by working to create the technology that would allow the short- and long-term storage of the mix in surge bins and, eventually, storage silos.

An example of a manufacturer responding to customer need

The sophistication of the silos gradually improved over time, as manufacturers added features such as insulation and tight-sealing bottom gates. In his
book *Paving the Way: Asphalt in America*, McNichol tells about one instance of an asphalt manufacturer's response to a customer's problems and how that response resulted in a major change in the state-of-the-art:

As with all new technology, there were some kinks to work out. "Our customers knew the new silos would give them an advantage in winning low-bid work on the new Interstate system," recalled asphalt industry leader Don Brock [of Astec, Inc.]. "So, when one of our first and best customers had a problem, we jumped to get him back on line." In 1967, Brock dispatched himself and his business associate, Gail Mize, from their front office in Tennessee to get a jammed silo in North Carolina working again. The asphalt stored in a 200-ton [181-tonne] silo had become hardened. It was a problem that was eventually resolved with an ingenious liquid-trap-door that made an airtight seal.

Scenarios similar to this example were carried out over and over again in response to the growing demand for new and better technology to meet the challenges of building the Interstate System. It is not an exaggeration to state that the concept and the reality of the Interstate System has had an enormous impact on American life—as much impact, perhaps, as any other single event in the history of the nation.

The easy accessibility to smooth and safe highways encouraged both personal travel (in the form of tourism) and business travel (in the form of trucking). Cities along the Interstate highways experienced substantial growth. And thousands of businesses sprang up to provide products and services that were in one way or another related to the travel on the Interstate System.

The remarkable chain of events sparked by the Federal Aid Highway Act of 1956 seemed to grow without end. It seemed to flow out and across the country like the ribbon of pavement that President Eisenhower had envisioned, touching many parts of American life.

And if you take a look around as you travel the Interstate Highway System today, you should notice one unquestionable fact:

That remarkable chain of events is continuing even today. ▲▲▼

**Interstate Highway System Trivia**

**Official Name:**
Dwight D. Eisenhower National System of Interstate and Defense Highways

**States with Most Interstate Miles:**
Texas—17 routes, totaling 3,233.45 miles (5,204 km)
California—25 routes, totaling 2,455.74 miles (3,952 km)
Illinois—23 routes, totaling 2,169.53 miles (3,492 km)
Pennsylvania—22 routes, totaling 1,759.34 miles (2,831 km)
Ohio—21 routes, totaling 1,572.35 miles (2,530 km)

**States with Most Interstate Routes:**
New York—1,674.73 miles (2,696 km), 29 routes
California—2,455.74 miles (3,952 km), 25 routes
Illinois—2,169.53 miles (3,492 km), 23 routes
Pennsylvania—1,759.34 miles (2,831 km), 22 routes
Ohio—1,572.35 miles (2,530 km), 21 routes

**Longest Interstate Routes:**
I-90—Seattle, WA to Boston, MA: 3,020.54 miles (4,861 km)
I-80—San Francisco, CA to Teaneck, NJ: 2,999.54 miles (4,866 km)
I-40—Barstow, CA to Wilmington, NC: 2,555.40 miles (4,112 km)
I-10—Los Angeles, CA to Jacksonville, FL: 2,460.34 miles (3,959 km)
I-70—Cove Fort, UT to Baltimore, MD: 2,153.13 miles (3,465 km)

**Shortest Two-Digit Interstate Routes:**
I-73—Emery, NC to Greensboro, NC: 12.27 miles (19.7 km)
I-97—Annapolis, MD to Baltimore, MD: 17.62 miles (28.4 km)
I-99—Bedford, PA to Bald Eagle, PA: 53.00 miles (85.3 km)
I-19—Nogales, AZ to Tucson, AZ: 63.35 miles (101.9 km)
I-66—Strasburg, VA to Washington, D.C.: 74.80 miles (120.4 km)

**North-South Transcontinental Routes:**
I-5—San Diego, CA to Blaine, WA: 1,381.29 miles (2,223 km)
I-15—San Diego, CA to Sweetgrass, MT: 1,433.52 miles (2,307 km)
I-35—Laredo, TX to Duluth, MN: 1,568.38 miles (2,524 km)
I-55—New Orleans, LA to Chicago, IL: 964.25 miles (1,552 km)
I-65—Mobile, AL to Gary, IN: 887.30 miles (1,428 km)
I-75—Miami, FL to Sault Ste. Marie, MI: 1,786.47 miles (2,875 km)
I-95—Miami, FL to Houlton, ME: 1,919.74 miles (3,090 km)

**Total Miles:**
46,837 miles (75,377 km) (2004)

**Interchanges:**
14,750 (approximate)

**Bridges:**
55,512 (as of December 2004)

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**HOW TO GET A COPY OF PAVING THE WAY: ASPHALT IN AMERICA**

A new history book, *Paving the Way: Asphalt in America*, tells the story of asphalt, but it does more. By intertwining the account of this familiar substance with the social and cultural history of the US, it also shows how our road network has shaped our economy and the very fabric of our lives.

The book begins with the first network of hard-surfaced roads, those built by the Roman Empire. It takes the reader on trips across the country with Eisenhower's legendary 1919 convoy, down Route 66, through the National Parks, and along Pennsylvania Avenue in Washington, D.C. Along the way, the reader meets colorful characters including McAdam in the 18th century, the Asphalt Tycoon at the end of the 19th century, and the Warren family at the beginning of the 20th century.

With the 50th Anniversary of the Interstate Highway System being celebrated in 2006, this book is very timely. The 304-page hardbound book is published by the National Asphalt Pavement Association and is available at $25 per copy on NAPA's website at [www.hotmix.org](http://www.hotmix.org). You can also order by calling the toll-free order line at 888-468-6499.
FREE TECHNICAL LITERATURE has been available for decades from various members of the Astec Industries family of companies. One of the companies—Astec, Inc.—has been an industry leader in developing these technical papers and distributing them to hot-mix asphalt (HMA) producers and contractors. A library of technical literature exists and it is frequently supplemented by new documents.

Now, there is another new addition to that library: T-127—Milling and Recycling. This 32-page technical paper covers the topic of reclaimed asphalt pavement (RAP) in detail, explaining where it can be obtained, how it can be processed, and how it can be properly converted to become an economical mix ingredient in HMA.

Milling and Recycling was co-written by J. Don Brock, chairman of the board for Astec Industries, Inc., and Jeff L. Richmond, Sr., president of Roadtec, Inc.

Here are some edited excerpts from the introduction to the paper:

Many people associate the term “recycle” with material that is not as good as new. They consider it to be poor-quality, used material. Because of this misconception, reclaimed asphalt pavement—or RAP—has been treated like a waste product. Very little time or money has been spent to process RAP since it is not considered to be valuable. In reality, any recycle product is worth what it replaces, and its value can be enhanced if the material is processed and treated just like virgin material.

The benefits of treating RAP the same way you treat virgin aggregate:

When a virgin crusher-run aggregate is processed through a screen, it can be separated into as many as three different sizes of product. Here, the run has been separated by a triple-deck screen into 4 x 0, 0.375-in. x 4 (9.53 x 4.75 mm), and 0.5 x 0.375 in. (12.7 x 9.53 mm).

Reclaimed asphalt pavement (RAP) can be treated the same way as virgin aggregate. Here, a stockpile of 0.5-in. minus (12.7-mm minus) material has been separated into the same three sizes as the virgin crusher-run aggregate in the illustration to the left.
be separated into three sizes. The RAP is now more valuable than the comparable virgin aggregate since the RAP contains liquid AC.

If we could take a pile of RAP, physically extract the liquid AC, and then screen the aggregate into three piles of clean rock, a 30,000-ton (27,215-tonne) pile of RAP with 6 percent liquid AC would produce approximately 28,200 tons (25,582 tonnes) of clean aggregate plus 420,000 gal. (1,590,000 L) of liquid AC, enough liquid to fill 70 transport trailers. Considered in these terms, RAP has significant value and should no longer be considered a secondary material.

After realizing the value of RAP, two additional points should be considered. First, the rock in RAP is the same age as rock just coming from a quarry. Similarly, the liquid AC is the same age whether it comes from an oil well or from recycled roads.

The second point is that recycled aggregate and liquid AC have the same value as the virgin material they replace, but only when the RAP is processed into the same sizes and shapes as the original virgin material.

Approximately 600 million tons (545 million tonnes) of hot-mix asphalt (HMA) are produced in the United States each year. In relation to the current population, this equals approximately 2 to 2.5 tons (1.8 to 2.3 tonnes) of mix per person per year.

Industry sources also estimate that the nation’s roads have in place 18 to 20 billion tons (16.3 to 18.1 billion tonnes) of asphalt stretching over 2.3 million miles (3.7 million km). Many of these surfaces are in need of repair, and the asphalt must be removed to correct deformities. The removal of these surfaces generates a potentially valuable resource for HMA producers: RAP.

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**MORE TECHNICAL PAPERS FROM THE ASTEC LIBRARY:**

(Some papers are available in more than one language. Please specify language when ordering.)

- **T-103** Oxidation of Asphalt
  How to prevent problems that are caused by oxidation. *(English, Chinese, Russian, or Spanish.)*

- **T-114** Asphalt Content
  A guide to a diagnostic system that helps you find the most likely cause for errors in asphalt content. *(English or Spanish.)*

- **T-116** Light Oils in Asphalt
  Explains the emission of light oils from asphalt, the reason for their presence, and potential solutions. *(English.)*

- **T-117** Segregation: Causes and Cures
  Explains things that can occur during the design, production, and placement of HMA that can result in mix segregation. *(English, Chinese, or Spanish.)*

- **T-119** Dryer/Drum Mixer
  Explanation of the concept of the dryer/drum mixer. Traces the evolution of the concept and provides a brief analysis of the various equipment. *(English, Chinese, Portuguese, Russian, or Spanish.)*

- **T-120** From Roofing Shingles to Roads
  The marketing and environmental potentials of recycling roofing shingles. *(English.)*

- **T-121** Baghouse Fines
  Examines all aspects of fines, from the process that is used to determine gradation to the methods used to convey fines to the baghouse. *(English or Spanish.)*

- **T-123** Pavement Smoothness
  Describes the benefits of good highway maintenance, as well as the principles of smooth paving. *(English or Spanish.)*

- **T-125** Evolution of Thermal Remediation
  Discusses the development of thermal-radiation technology as well as the proper procedures, equipment, and safety concerns. *(English.)*

- **T-126** Productivity
  Ways to improve efficiency by making small changes in operation procedures, utilizing new techniques, or investing in modifications. *(English.)*

- **T-127** Milling and Recycling
  Explores the benefits of milling old road surfaces. This paper also details the potential cost savings of using reclaimed asphalt pavement (RAP) in a mix. *(English or Spanish.)*

- **T-129** Stockpiles
  Outlines the financial and production advantages of placing stockpiles on a paved, sloped surface. *(English.)*

- **T-130** Longitudinal Joints: Problems and Solutions
  The technology of longitudinal joint construction and compaction. *(English.)*

- **T-132** Aggregate Drying: Theory and Practice
  Discusses the practice of using heat to dry virgin aggregate in parallel-flow batch-plant dryers and drum-mixers. *(English.)*

- **T-134** Temperature Segregation
  Describes temperature segregation, what causes it, and how it can be eliminated. Includes a number of infrared photos that demonstrate the temperature differential that can exist in the mats behind several kinds of pavers. *(English or Spanish.)*

- **T-135** Hot-Mix Asphalt Trucking
  How trucking can contribute to cost build-up. Offers suggestions on how to control or even reduce trucking costs. *(English.)*

- **T-137** Performance-Related Testing with the Asphalt Pavement Analyzer
  How testing can help by predicting the rutting-, fatigue-, and moisture-susceptibility characteristics of an asphalt mix. *(English or Spanish.)*

- **T-139** Baghouse Applications
  Explains the basics of how a baghouse works. This paper explores various dust-removal systems, and outlines proper procedures. *(English.)*

- **T-141 and T-142** Noise at Hot-Mix Asphalt Plants
  An in-depth look at the basics of acoustics and the different methods of noise control. There are two versions: The T-142 version is recommended for any person interested in the detailed, scientific aspects of noise and its control at HMA plants. The T-141 version presents the material in a more informal manner. *(English.)*

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**HOW TO ORDER FREE TECHNICAL PAPERS FROM ASTEC:**

Just select one or more of the papers shown here. Then call this number and ask for Diane Hunt:

**423-867-4210**

Fax: 423-867-3570 • E-mail: dhunt@astecinc.com
THERE'S ONLY SO MUCH

that can be done to save an old stretch of failing highway, particularly when it was originally paved using Portland cement concrete (PCC). In years past, one of the methods of rehabilitating such a roadway was to apply an overlay of hot-mix asphalt (HMA). But in many cases, this proved to be only a short-term fix because the cracks in the PCC slab would eventually spread upward to the HMA course, causing reflective cracking—and additional deterioration of the roadway.

Since the early 1990s, however, a number of departments of transportation have successfully utilized a technology that is called rubblization. Initially, using the word rubblization would cause a few raised eyebrows or quizzical looks. But in the recent past, the technique has been used on so many different state roads, US highways, and Interstates that the term is now very familiar.

Rubblization is the process of fracturing concrete into relatively small pieces—usually 2 to 6 in. (5 to 15 cm) in size—and leaving the pulverized material in place as base material before rebuilding the roadway with HMA.

A project of this kind is currently underway on a 12-mile (19.3-km) stretch of US Highway 41 in southwestern Indiana, a route that parallels the state's western border while taking motorists from western Kentucky all the way to Chicago, Illinois.

Joe Madrid, asphalt superintendent for Rieth-Riley Construction, Inc., the company assigned this design-build project, described the project as a challenge that has many complicating factors. The contractor is tackling 12 miles (19.3 km) of four-lane divided highway that includes 4- and 10-ft. (1.2- and 3-m) shoulders, four ramps, plus numerous turn lanes, county-road accesses, and quite a few private driveways.

“There’s nothing easy about it,” said Madrid in a recent interview. “When you are doing a design-build project, you have to be
very careful about your project scheduling. We have four ramps—at two different intersections of streets—and we get a seven-day closure on those; otherwise we go into some substantial penalties. We have worked seven days a week, and some nights, just to get everything done."

Madrid said the first step in the project is rubblizing the old concrete surface, a phase that is being handled by a subcontractor using specialized truck-mounted and self-propelled rubblizers. The fractured concrete is left in place so it can be used as base material for the HMA courses. Rieth-Riley Construction then moves in to put down 11.75 in. (29.8 cm) of HMA: a 4-in. (10-cm) base course, a 2.75-in. (7-cm) open-grade course, a 3.5-in. (9-cm) intermediate course, and a 1.5-in. (3.8-cm) surface course.

In order to make the project more manageable, Rieth-Riley Construction split the work on the 12-mile (19.3-km) jobsite into four phases. Phase One called for the closure of approximately half the distance of the two southbound lanes (rerouting traffic onto the northbound lanes) while the crews rubblized the existing pavement and then placed all of the HMA up through the intermediate lift. They repeated this process on the remaining half of the southbound lanes during Phase Two. Those two phases of the project were completed in early December 2005. The company followed the same process on the northbound lanes in two additional phases.

According to Madrid, the final step on the project will include placing the surface course on both the north- and southbound lanes. Madrid noted that the project will utilize a lot of asphalt. "In the first half of the project, we put down about 200,000 tons (181,436 tonnes) of HMA," he said. "For the last half, plus the surface course for both directions of the highway, we'll require another 230,000 tons (208,652 tonnes).

"We're using a 400-tph (365-tonnes-per-hour) Astec hot-mix plant to produce the mix, but our paving crew could easily use more than that. We could be putting down up to 600 tph (544 tonnes per hour)."

All of that hot-mix is being placed by equipment purchased from the Mobile Asphalt Paving Group of Astec Industries, Inc. The HMA is fed to a Roadtec RP-195 paver with a Roadtec Shuttle Buggy® MTV (material transfer vehicle). The Roadtec paver is equipped with a Carlson screed that can be extended to 24-ft. (7.3-m) when the width of the work area allows.

As with any project that pushes the envelope with high levels of production, Madrid said that the quality of the crew makes all the difference between smooth operation and potential problems. "We were putting a lot of strain on the screed back there," Madrid said. "And it's tough. You have to have good men working behind the paver watching that thing if you're going to get the best quality."

Madrid added that once the old concrete has been rubblized and converted into solid, compacted base material, the paving project is really fairly straightforward for an experienced contractor using the right equipment. "Once you get past the rubblization part, it is really a fairly easy paving job," he said. ▲▲▲
The technology continues to grow for producers of hot-mix asphalt (HMA) and the paving contractors who use it. And as the technology evolves, it becomes ever more important for executives within those companies to understand how the industry is affected. This is especially important if the executive is responsible for critical buying decisions.

To help people who make those decisions on a regular basis, Astec hosts Executive Seminars each year. In February 2006, decision-makers from the HMA industry were invited to visit Astec’s headquarters in Chattanooga, Tennessee. During their visit, participants were taken on guided tours of the Astec and Heatec manufacturing facilities. The executives attended workshops that outlined current trends in HMA technology, and they had the opportunity to talk one-on-one with the people who work to develop, engineer, and build that equipment.

The Astec Executive Seminar provides an excellent learning opportunity. The seminars will be held again in early 2007.

FOR INFORMATION about the Astec’s Executive Seminars, call Diane Hunt at Astec: 423-867-4210
Fax: 423-867-3570 • E-mail: dhunt@astecinc.com
An Astec Executive Seminar is a two-day venture into the technology and application of state-of-the-art hot-mix asphalt production equipment.

**Above left**—Small groups of the seminar attendees are taken on guided tours of the manufacturing facilities of Astec and Heatec.

**Above right**—A number of informative audio-visual presentations are viewed in the comfortable Astec training center to supplement the printed material that is given to all attendees.

**Left**—Most executives who attend the seminars are impressed with the scale and quality of the Astec and Heatec manufacturing facilities. After having an opportunity to talk with the workers on the production lines, many attendees have said that the most impressive part of their visit was the pride of craftsmanship that is evident throughout the factory.

**Above**—The guided tours provide the attendees with up-close views of how the Astec and Heatec equipment is crafted and assembled.
ONE LOOK AT THE NUMBERS
should say it all: Astec’s 2006 Advanced Customer Schools sold out, producing the highest attendance ever for the program.

This record rate of participation clearly shows that the customers who buy products from the Astec family of companies are looking to get the most out of their hot-mix asphalt production facilities—and they understand that the Astec Advanced Customer Schools are the best way to do just that.

The Advanced Customer Schools are held in January and February of each year. Most of those who attend are skilled employees of HMA producers—the men and women who direct the plants or who are responsible for their day-to-day operation. Attendees have the opportunity to work directly with instructors from Astec and Heatec, getting first-hand knowledge about the latest advances in HMA technology, as well as hands-on experience with that technology.

During the course of the schools, the instructors present in-depth information about all phases of HMA production. They actively instruct attendees on how to keep their equipment running longer, how to preserve the value of the equipment, and how to protect the owner’s capital investment.

In 2005, Rick Worth, customer school and education coordinator for Astec, introduced more hands-on classes to the curriculum. The news about the effectiveness and success of those hands-on classes apparently spread across the country, contributing to the rise in attendance in 2006.

“We have a truly unique school,” said Worth. “We give customers the type of training they want—including tips and techniques they can use in the field—and we teach them in two ways: by using both our training simulators and our actual equipment components.”

Some of the break-out sessions that are offered during the school cover topics such as burners and burner controls, trunnions, storage systems, conveyor belts, weigh bridges, environmental systems, blending controls and calibration, and troubleshooting.

In addition, the curriculum includes one half day that focuses on heating technology. These classes—which are presented by Heatec—include such things as Tips for Lowering Heating Costs, Trouble-shooting Heaters; Controls on Heaters and Preheaters; and Asphalt Tanks, Pumps, and Strainers.

The Advanced Customer Schools are held at the Astec Industries headquarters in Chattanooga, Tennessee. All attendees are given a special VIP guided tour of the Astec and Heatec manufacturing facilities. These tours give attendees the opportunity to talk directly with the people who build the equipment, and see their skilled craftsmanship at work.

Planning for the 2007 Advanced Customer Schools is already underway. Those interested in participating in the 2007 school should act now to ensure that they secure their own seat in the Astec and Heatec classrooms—because the schools next year will be even better than this year!”
According to survey feedback, managers and operators of hot-mix asphalt (HMA) plants thoroughly enjoyed themselves during the 2006 Advanced Customer Schools at Astec’s headquarters in Chattanooga, Tennessee.

If you have never been to one of these schools, maybe you should. After all, it isn’t anything at all like going to some history class in high school. The instructors here are practical, down-to-earth people who have spent their lifetimes working and learning about hot-mix asphalt production equipment. They talk your language...and give you information you can use.

Some of it is classroom lectures. Some of it is hands-on applications of the things you have learned. Some of it takes place inside the manufacturing bays of Astec and Heatec where you can see how things are made. And some of it takes place outside. After all, where else can you watch a burner work?

(Photos continue on the next page)
ADVANCED CUSTOMER SCHOOLS

The photos on this page (and the two previous pages) should give you an idea of what happens at Astec Advanced Customer Schools.

The enrollment for the 2006 Advanced Customer Schools filled up fast—and rose to record levels. It is expected that the 2007 school schedule will also be very much in demand. So if you would like to participate—or if you would like to have someone in your company participate—it might be a good idea to at least start gathering the necessary information.

Here are the contact numbers you will need to get started...

FOR INFORMATION
about the 2007 Advanced Customer Schools,
call Rick Worth, Astec’s Education Coordinator:

423-867-4210
Fax: 423-867-4636 • E-mail: rworth@astecinc.com
A MOBILE SCREENING PLANT tends to prove its true value when you move it around from time to time to tackle different jobs at different job sites. You might even begin to think of it as being like the Energizer Bunny. Here is a good example of that mobility:

There is a Fold ‘n Go® screening plant in Alabama that has been moved at least seven times in the year and a half that the company has been operating it. According to Darrin Heatherly, president of Good Hope Contracting Company, Inc., they move it whenever they need it—and they have gotten used to moving it.

“We’ve moved it quite a bit since we got it,” said Heatherly. “And it is really very easy to move. That’s one thing we like about it. A lot of times, somebody will sell you something and say it’s portable...and it turns out that it’s not. But with our Fold ‘n Go mobile screening plant, we can have the whole thing ready to move in just 20 minutes. From operational to ready to move: 20 minutes.”

When asked how long it takes to set it up and get it running again at a new location, Heatherly just smiled. “Oh, another 20 minutes, maybe. Actually, all you have to do is back it up, set it down, put the conveyors in place, and it’s ready to go. It’s all self-contained, so it is very easy to start up.

“Moving the equipment is the easy part,” Heatherly said. “Actually, it takes longer to clean off the loose aggregate—so you don’t drop any when you’re going down the road —than it does to get the Fold ‘n Go ready to move!”

Serving the north-central part of Alabama
Good Hope Contracting specializes in road construction and asphalt paving. The company has been in business for about 36 years and currently maintains headquarters in Cullman, Alabama. They consider their primary market area to be a 10-county area in the north-central part of the state.

“My father started the business in 1970,” said Heatherly. “Today, we have two companies: Good Hope Contracting is our construction, asphalt-production, and asphalt-paving company. And the company that runs our quarries is Blount Springs Materials. We’ve grown quite a bit in the last 10 or 15 years. At the present time, we have about 250 employees.”
There are five quarry operations that are owned and operated by Blount Springs Materials: three are producing limestone, one is producing sandstone, and another is where the company makes a sand conglomerate or so-called “manufactured sand” from the native soft sandstone.

Good Hope Contracting operates four hot-mix asphalt (HMA) plants, including a new Astec Double Barrel® dryer/mixer plant that was purchased about a year ago.

From screening RAP to screening sandstone fines
The mobile screening plant—a Fold ‘n Go 2612V—was purchased about a year and a half ago from Astec Mobile Screens of Sterling, Illinois. According to Heatherly, they originally bought the plant with the intention of screening the reclaimed asphalt pavement (RAP) that they were milling up during some of their road-reconstruction and resurfacing projects.

“Screening RAP was about all we used it for during the first year,” said Heatherly. “And we moved it around quite a bit. But recently, we have been using it ...at our sandstone quarry (to make) manufactured sand.”

A versatile and productive tool
for material screening
Heatherly said they still use the Fold ‘n Go from time to time to process RAP. “We generate our own RAP stockpiles,” he said, “from the patching that we do and our work on city streets and highways. We take the millings and haul them back to stockpile them for future use. When we get ready, we can bring in the Fold ‘n Go screening plant and process the RAP to the sizes we need. Production rates vary of course, depending on what we’re screening. But 100 tph (90 tonnes per hour) is not unusual.

A Fold ‘n Go mobile screening plant at Good Hope Contracting Company was originally purchased as a tool to screen and process the company’s reclaimed asphalt pavement (RAP), as seen in these photos. Recently, however, the Fold ‘n Go plant has proved its value by moving to another task: helping the company process fines material in a sandstone quarry to turn out “manufactured sand”. By doing this, the company is able to avoid a 50-mile (80-km) haul that would have been necessary if the sand for the job was coming from one of the company’s other quarries.

FOR MORE INFORMATION
about the wide range of products offered by Astec Mobile Screens,
contact Ron Earl at Astec Mobile Screens:
800-545-2145
Fax: 815-626-6430
E-mail: sales@AstecMobileScreens.com

The Fold ‘n Go 2612V mobile screening plant has worked out really well for us,” said Heatherly. “In our opinion, it is a good machine. It is affordable. It is very dependable. It is easy to work on and easy to do the maintenance. And we’ve had really good support from the people at Astec Mobile Screens.

“Perhaps most important, however, is what the people who run our Fold ‘n Go screening plant—the operator and the guy who feeds it with the loader—think about it. It’s a very user-friendly piece of equipment. And they say that they really like it.”

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“Screening RAP was about all we used it for the first year. But recently, we have been using it ... at our sandstone quarry (to make) manufactured sand.”

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HOT-MIX MAGAZINE 33 VOLUME 11, NUMBER 2
Shopping for used equipment is much quicker and easier with the new user-friendly website offered by Astec Used Equipment.

The last time you were looking for used equipment, you probably did one or more of the following: (A) You looked in the classified-advertising section of industry magazines; (B) You checked out the colorful brochures that used-equipment companies mail to you once in awhile; (C) You called a salesman and asked him what was available.

Well, this is a new age...The Age of the Internet...where you can instantly find out what is available that you might find useful to your business.

And now, Astec Used Equipment has taken this convenience to an even more convenient level with its new informative and user-friendly website: www.AstecUsed.com.

The company's old used-equipment website has been restructured and upgraded to make it quicker and easier to use. You can find the type of used equipment you are looking for in a matter of seconds...literally. That’s how logical and organized this new website is...even for those who do not spend a lot of time surfing the Internet.

We invite you to check out www.AstecUsed.com the next time you’re sitting at your computer. You don’t have to be in the market for used equipment. Just drop in for a visit...and take a free tour of the best used-equipment website in the industry!

FOR MORE INFORMATION about Astec Used Equipment, contact Larry Wagner:
423-867-4210
Fax: 423-867-4636 • E-mail: lwagner@astecinc.com
HERE’S HOW QUICK AND EASY IT IS TO USE

1. To get started shopping for used equipment, all you have to do is sign on the Internet and enter the website address: www.AstecUsed.com.

2. Scroll down the equipment list (see the image on the left-hand page of this article) until you find a category that is of interest to you. The equipment is listed alphabetically for your convenience. Here is the entire list, from top to bottom: Batch Plants; Drum Plants; Additive Silos; Augers; Baghouses; Belt Feeders; Belt Samplers; Burners; Control Centers; Controls; Conveyors (Asphalt); Conveyors (Aggregate); Crushing—Miscellaneous; Cyclones; Drag Conveyors; Drums; Dust Screws; Fans; Heaters; Miscellaneous; Pug Mills; Recycle Equipment; Screens (Asphalt);

3. Pick your equipment category and click on that word. Let’s say you are interested in shopping for a used batch plant. Click on “Batch Plants” (as shown by the arrow here).

4. You will see something like what is shown above: Photos of the previously used batch plants that is currently available for sale by Astec Used Equipment.

5. Pick one you would like to know more about and click on its photo. You will get a page that shows you a range of photos of that batch plant, along with a description.

6. If you would like to see any of the photos in a larger format, just click on the small one and that photo will move to the dominant size and position on the page.
When you say “Florida,” most people probably tend to think about warm weather, sunny skies, and sandy beaches. But for hot-mix asphalt (HMA) producers in Florida, the temperate climate doesn’t mean comfortable vacations. It means keeping your paving crews and equipment working nearly 365 days a year. And when you put in that much time, you need to know your equipment can handle that kind of year-round activity—and that the equipment’s manufacturer will be there to back you up with fast, quality service any time you happen to need it.

The Southern Florida Division of APAC-Southeast, Inc., with headquarters in Sarasota, Florida, serves six very active counties on the west side of Florida: Manatee, Sarasota, DeSoto, Charlotte, Lee, and Collier—plus Miami-Dade County on the east side. The company currently operates six HMA plants in Florida: two in the Sarasota area, three in the Fort Myers and Naples area, and one in the Miami area.

In an effort to maintain the latest technology and the best efficiency in its plants, APAC-Southeast installed a new Astec relocatable Double Barrel® dryer/mixer plant in the Sarasota area in April of 2005. And in the spring of 2006, the company was in the process of installing another new Astec Double Barrel dryer/mixer in the Naples area. That newest plant will be the fourth Astec plant the company has in operation.

The newer Astec plant in Sarasota has been operating for a little more than a year now. According to Steve Ayers, area manager for the Southern Florida Division of APAC-Southeast, the plant has been essentially a problem-free workhorse during its first full year of operation.

“Since we work 12 months a year down here in southern Florida, the plant has been running every day. There is hardly any downtime at all,” said Ayers. “We run about 250,000 tons (226,796 tonnes) of hot-mix per year.”

The relocatable Double Barrel dryer/mixer HMA plant has an 8-ft. (2.4-m) drum and a Phoenix® burner that can use gas or No. 2 oil. The dryer/mixer’s burner is also equipped with a heavy-oil conversion kit.

“One of the things I like most of all about this plant is the new Phoenix burner,” Ayers said. “We are using No. 5 fuel oil for the burner, but we have experimented with blended fuel to help us improve the overall efficiency. It’s operating very well now.”
When asked what he especially likes about the Phoenix burner, Ayers quickly listed two main points: “It’s very quiet. That’s one thing. And the second thing is, we like the fuel efficiency,” he said. “The burner really is quiet. Even when you stand next to it when it’s running, you can’t hear it at all. It didn’t used to be that way with hot-mix asphalt plants.”

“And as far as fuel efficiency is concerned, it seems like the new burner is a little bit more efficient. We are still experimenting with the costs.”

The new HMA production facility in Sarasota is also outfitted with a relocatable recycle system that operates with a Telsmith horizontal shaft impactor that efficiently crushes reclaimed asphalt pavement (RAP) so it can be used in the company’s daily mixes. Bob Pritchard, plant superintendent for the Southern Florida Division of APAC-Southeast, said that the plant makes efficient use of RAP.

“We typically average about 30% RAP in our mixes,” said Pritchard. “It depends on the specifications for the job, of course—but some of our mixes run even higher percentages than that. I’ve seen us put as much as 48% RAP in a base-material mix where the workability wasn’t as important.”

In order to deal with the various mixes that the plant produces on a daily basis, the new Sarasota facility is equipped with an 800-ton (725-tonne) New Generation Storage System that includes four 200-ton (181-tonne) hot-mix silos. Each silo features electric blanket heat on the silo cones, as well as ceramic liners on the cones and batchers. Two scales are available for truck load-out.

“We do a lot of FOB work for other contractors in the area, so we usually dedicate at least one or two of our storage silos to those mixes,” said Ayers.

With regard to maintaining control of the operation, Pritchard said that the view from the plant’s relocatable Command III Control Center makes operating the plant an enjoyable experience. “Astec did a good job with positioning the silos, and on laying out the tank farms and the cold-feed bins,” he said. “You have good visibility up there.”

Ayers agreed that the ease in operation is one of the primary benefits of the plant.

“The plant operator and plant foreman like it,” he said. “Plus, the customers like the mix quality.”

Serving those customers, obviously, is the number-one objective for any HMA producer. So that is why, when asked what he likes about the new Astec plant—and all the company’s Astec plants in general—Pritchard placed an emphasis on the service that is provided by Astec, the manufacturer of the equipment.

“I don’t care whose equipment you buy; you’re going to have some problems with it,” said Pritchard. “So service is a big part of your investment with any kind of equipment. You have a lot riding on that plant every day. If you have a little problem but you can’t get somebody to help you get it fixed—then you’ve got a big problem!”

“One of the more important things about Astec, in my opinion, is that they are very, very cooperative and helpful. They say, ‘You’ve got a problem, we’ll take care of it!’ And they do. I’m very pleased with their service.”

FOR MORE INFORMATION
about Astec stationary, relocatable, or portable HMA equipment, contact Diane Hunt at Astec:

**423-867-4210**
Fax: 423-867-3570
E-mail: dhunt@astecinc.com

The Astec Double Barrel dryer/mixer plant that was installed in April 2005 by the Southern Florida Division of APAC-Southeast in Sarasota, Florida features a control center that offers excellent sightlines to the production facility’s key components (photos top to bottom): a six-compartment cold-feed system; the 8-ft. (2.4-m) Double Barrel plant that is rated at 400 tph (363 tonnes per hour); and the four Astec 200-ton hot-mix storage silos. Over the course of its first year in operation, the Sarasota plant produced more than 250,000 tons (226,796 tonnes) of hot-mix. This figure was due partly to the plant’s productivity and partly to the fact that there is no real seasonal down-time in southern Florida.
KEEPING YOUR COMPANY at the top of its game means being willing to make a few strategic adjustments whenever and wherever they might be needed. If your hot-mix asphalt (HMA) production equipment is growing old—or is perhaps even on the verge of being outdated—then sometimes the best option is to replace it completely.

But perhaps such a drastic move is not necessary. Maybe you only need to change one specific part of the plant: the controls. Maybe a state-of-the-art upgrade in that one area will bring you back to the top of your game.

If you choose that route for HMA-facility improvement, it is very important to remember one thing: Although the original production equipment came from a certain manufacturer, that does not mean that your controls upgrade must come from the same company.

Here are two examples of control-system retrofits that were made by Astec for non-Astec plants.

Retrofit #1: Replacing 20-year-old controls

Several years ago, Woodworth and Company, Inc. of Tacoma, Washington recognized that the controls on its older Cedarapids HMA production facility were growing outdated and, over time, had become fairly unreliable. Tim Shearer, operations manager for Woodworth and Company, said the plant was originally installed in 1985, but about ten years later it underwent a major redesign. “When it was purchased, it was a parallel-flow plant, and that’s when the controls were put in,” said Shearer. “Later on, it was upgraded from a parallel-flow to a counter-flow plant. But when they did that, they didn’t upgrade the plant’s controls. So we began developing issues with 20-year-old controls don’t look like a “RETROFIT”
old wiring that had been exposed to the weather, along with system changes and other things."

To correct this, Woodworth and Company opted to completely revamp their control system. The key component in that upgrade was a TC2000 control system from Astec. This PC-based control system is designed for process control in continuous-flow and batch production. It features two computers and monitors, plus a third computer that can be added to maintain control over silo-loadout operations. The system offers flexibility because its standard software module can be enhanced by a number of other modules. And because it works on a Windows platform, most current PC users will find the interface environment to be quite familiar and easy to learn.

Woodworth and Company made what could be considered a gutsy move by installing its brand-new control system in May—one of its peak production months.

"Unless we had done it in July, our timing couldn't have been any worse than doing it in May," said Shearer. But he quickly pointed out that the installation actually went remarkably fast. "We took every piece of wire off the plant, installed all new junction boxes, and the people at Astec were very accommodating about that. Two years later, they still are, in fact."

Retrofit #2: Controlling a "mosaic" plant
An HMA production facility in Dallas, Georgia that is operated by the Georgia Division of APAC-Southeast, could be described as a "mosaic" plant: As Danny Jackson, superintendent with APAC-Southeast, explained, the facility is made up of a variety of components that the company already owned. "The silos are Gencor," said Jackson. "The cold-feed bins are Cedarapids. The baghouse is from Estee. The drum is from Bowers Fabrication. And the liquid-AC tanks are from Heatec. Putting a plant together from spare parts and pieces that you just have sitting around can really save you a lot of money. Of course, then you have to get a control system that will let you operate those different parts in a productive way."

About a year ago, when they began putting together this "mosaic" plant, they completely removed all of the wiring and all of the existing controls. They put in new wiring and installed a new, retrofit Astec TC2000 control system. According to Jackson, service technicians from Astec Controls performed the entire installation. "The guys from Astec Controls were here to help us get all the wiring and circuits put together so they would work with the new Astec TC2000 control system," he said. "After it was all installed," Jackson continued, "there were a few kinks that needed to be ironed out. But you can expect that sort of thing with a major retrofit that involves equipment from several different manufacturers. Fortunately, the Astec Controls technicians were on top of it every step of the way."

The end result in both of these case studies? A retrofit control system can help you get back to the top of your game.

FOR MORE INFORMATION
about Astec's new or used equipment
for plant upgrades or rehabilitation, call Diane Hunt at Astec:
423-867-4210
Fax: 423-867-3570
E-mail: dhunt@astecinc.com

Standing inside the control house at Woodworth and Company's Tacoma, Washington HMA-production facility, you probably wouldn't guess that the setup runs a plant with some 10-year-old and other 20-year-old components. But, as a matter of fact, it does.
reduce
YOUR FUEL COSTS

The rising cost of fuel weighs heavily on the minds of hot-mix asphalt (HMA) producers today. Fuel costs have always been a necessary and unavoidable expense, but at one time—about 35 years ago, for example—most producers really did not worry much about how much fuel they were burning. Back then, fuel ran about $0.10 per gallon. Yes, it was a necessary and unavoidable expense, but it was also tolerable. It was easier then to turn a blind eye toward the wasteful use of fuel.

Since the 1970s, fuel prices have fluctuated constantly. Many times the rise in prices presented only a temporary monetary setback for producers before the numbers eventually fell again. But with each cycle of price fluctuations, the increase became larger and the eventual decrease was smaller.

In the last few years the pace of these cycles has quickened. In July 2000, a barrel of crude oil cost $15. Today, the price of a barrel of crude oil has surpassed $70. These rising prices now have producers taking a second look at the kind of fuel they are using to power their HMA facilities. But many of our industry experts suggest that producers should also be looking at where they can conserve that fuel so they can use it more efficiently.

Here are 12 basic things that producers should think about when they decide that it is time to start reducing their overall fuel costs:

With the cost of fuel approaching record high levels, HMA producers are looking for realistic, effective ways to cut their overall fuel costs. Here are some solid tips that work:

1. **Track moisture content**

In most HMA production facilities, the dryer burner is the biggest consumer of energy. The heat from the burner flame is used for two basic functions: (1) removing moisture from the aggregate and (2) heating the rock material itself.

It takes about the same amount of energy to dry aggregate that has a moisture content of 5% as it does to adequately heat aggregate that is already dry. If your aggregate has a moisture content that is higher than 5%, it must stay in the dryer longer in order to remove that extra moisture. When this happens, you are heating the aggregate longer than would be necessary if the moisture content was lower.

Knowing how much moisture is in your aggregate is essential, because only when you have this number can you work to reduce it.

Ironically, many producers know precisely how much fuel they are using, yet they do not have a good handle on the moisture content of their aggregate. Fortunately, this problem can be easily remedied by regularly using a belt sweeper that can automatically take a real-time sample of your aggregate so that it can be analyzed in order to determine the moisture content.

2. **Drain moisture away**

It has already been shown that moisture in the aggregate is the enemy of efficient fuel usage. For that reason alone, efficient stockpile management may be the best friend of efficient fuel usage.

To keep moisture content low, one good method is to grade the area where aggregate is stored to a 6% slope, and then pave that stockpile area. This solution solves two potential problems:

First, the weight of aggregate, over time, will cause an unpaved stockpile area to sink, thus creating a reservoir under the aggregate. A paved area will not succumb to the weight of the aggregate.

Second, storing the aggregate on a paved, 6% grade will allow rainwater and accumulated moisture in the aggregate to continually drain away, thereby substantially reducing the moisture content.

3. **Keep moisture out**

Another way to reduce moisture content in aggregate is to keep it out altogether. This can be done by storing aggregate in covered stockpiles. This might seem like an expensive step to take. But when you consider the fact that a large part of the United States receives 30 to 60 in. (76 to 152 cm) of rain each year, it begins to make sense. Where aggregate is not protected from rainfall, all that water ends up draining through the stockpile.

A producer in an area that tends to average 80 in. (203 cm) per year covered his stockpiles and had impressive results: The average moisture content for aggregate in his area is about 6%, but his is consistently at 1.3%.

Keep in mind that even when the stockpiles are covered, they still need to be sloped and paved in order to drain moisture that is inherently in the aggregate before it is stored under a roof.

4. **Use the proper fuel**

Once you have taken steps to cut the moisture content of the aggregate as much as possible, the next step is to select the best fuel for your operation. When deciding between natural gas, fuel oil, or waste oil, be sure to look at the...
As an HMA producer, you are probably looking for ways to reduce your fuel costs. Hopefully, these twelve tips will provide a start for the creative minds in your company.

5. Burners and natural gas
One of the benefits of natural gas is that it is a relatively easy fuel to burn. This feature makes it a good choice for plants operating under very strict emissions codes. The drawback to this fuel, though, is the fact that it is very expensive and, even worse, can be very easy to waste unless the producer is diligent about maintaining the right settings on the plant's equipment.

Fortunately, on the new pre-mix burners, such as the Phoenix® burner from Astec, the natural gas enters the burner through approximately 1,000 tiny nozzles where the burner pre-mixes the fuel with oxygen before it reaches the ignition area. A process of this kind makes pre-mix burners very fuel-efficient and reduces the amount of NOx and CO that is created in the process.

6. Burners and fuel oil
The key to efficiently burning fuel oil is to burn it quickly. In order to do this, the fuel oil must be atomized into extremely small droplets—almost in the form of a vapor. There are two ways to achieve this fuel "vapor": pressure atomization and air atomization.

Problems can arise when using pressure atomization because the process requires a very small opening in the nozzle—which can sometimes result in clogging from contamination.

With air atomization, there can be a larger opening in the nozzle. This avoids the potential downtime for maintenance that the pressure atomizers require. You should take a second look at the efficiency of your burner if it uses air atomization, however. Older burners tend to provide lower amounts of air pressure compared to the newer compressed-air type burners that are on the market today. For example: The new Astec Whisper Jet® and Phoenix® burners use compressed air to atomize the fuel into very small droplets, resulting lower emissions and cleaner burns.

7. Save money with waste oil
There are some savings, of course. But the potential savings that are offered by purchasing waste oil can easily be overshadowed by potential problems that may arise when using this fuel. On the other hand, if a producer is aware of these issues, they can be avoided.

The key to using waste oil is understanding that it will differ from batch to batch, with the quality being largely dependent on the source. Some waste oil on the market may contain a number of undesirable contaminants such as metal, chlorine, or sulfur. Because of this, the preheating and heating systems on the HMA plant need to be equipped with strainers on unloading pumps leading into the tanks, plus strainers on the lines leading to the pump that supplies the burner. Because waste oils can contain water that will settle to the bottom of the storage tank, supply lines to the burner should be located at least 6 to 12 in. (15 to 30 cm) above the bottom of the tank.

One other key consideration in successfully and efficiently using waste oil is proper preheating. Waste oils need to be heated to lower their viscosity so they will atomize properly. Achieving the proper viscosity before sending waste oils through the burner is essential to avoid serious maintenance issues at the atomizer and in the baghouse. In many cases, waste oils must be above 200°F (93°C) in order to achieve the proper viscosity.

In the 1980s, Astec and another equipment manufacturer began offering coal burners as an alternative to the growing cost of oil. With time, the oil prices receded and producers discontinued their use of coal to power their plants.

But now that oil prices have once again reached uncomfortably high levels, coal-burning plants may again offer a chance for producers.

(Continued on Page 43)

You can reduce the moisture in your aggregate supply substantially by building a special structure that will totally cover the stockpiles and the cold-feed bins. If aggregate stockpiles are not protected in this way, the natural rainfall will simply collect in the aggregate, with the excess draining away.

One of the ways a producer can reduce fuel consumption is to move to the newer technology of compressed-air burners. The new Astec Whisper Jet® and Phoenix® burners, for example, use compressed air to atomize the fuel into very small droplets. This results in cleaner burns and lower emissions.
to cut their fuel costs by using a less-expensive fuel source.

The type of coal typically found in the eastern United States, which sells for about $60 per ton, has a heating value of 12,000 Btu per pound. Based on this type of coal, 12 lb. (5.4 kg) of coal will provide approximately the same heating value as one gallon of fuel oil. If the coal costs $60 per ton, that equals $0.36 per gallon for the same amount of energy.

With improved technology in burners and grinding equipment, coal could become a dominant source of fuel for HMA plants.

Insulate preheating lines
Any surface that is hot and needs to stay hot should be insulated. Adding insulation to liquid-AC lines, hot-oil lines (including valves, strainers, and flanges), pumps, and preheaters is a key way to avoid throwing away money used for heating. Consider this point:

Even a well-insulated liquid-AC heater will consume about 200 gal. (757 L) of fuel each day. The burners on hot-oil heaters require the use of gas or No. 2 fuel, which currently costs more than $2 per gallon. That equates to about $400 per day in daily fuel cost. Because a system such as that operates seven days a week, the potential total weekly bill for fuel is $2,800.

Insulating piping, heaters, and preheaters is a simple way to keep costs as low as possible.

Use variable frequency drives
Most plants do not operate at full capacity all the time. In fact, many plants may run at half capacity the majority of the time.

Using variable-frequency drives on the burner blower, fuel pump, and exhaust fan will ensure that those components do not unnecessarily run at their full capacity.

Keep heat in the drum
As more producers increase the amount of RAP in the mixes they are producing, the potential for losing heat through the shell of the drum also increases. When running virgin mix, shell losses only average about 6% of the total fuel consumption. But when RAP is added to the mix, shell losses can increase 15%.

Avoiding this loss of energy is simple if your facility is operating an Astec Double Barrel® dryer/mixer.

With this design, heat lost from the shell in the inner drum is captured by the outer drum and the energy is further used in the process of producing asphalt.

Therefore, a plant with a Double Barrel dryer/mixer will use 15% less fuel—or produce 15% more mix—than a counter-flow plant.

REDUCE YOUR FUEL COSTS
(Continued from Page 40)

lower the mix temperature
Raising the temperature of the mix by just 50°F (28°C) results in an 11% increase in the amount of fuel that is burned by the plant.

By properly storing the aggregate, carefully measuring the amount of moisture, and ensuring that the burner is working efficiently with the right kind of fuel, a producer should be able to keep the temperature of the mix as low as possible—and yet still produce a quality product.

As the nation—and the world—continues to face increasing costs for crude oil and fuels that are derived from oil, HMA producers will find themselves becoming more and more alert to ways they can reduce their fuel costs.

Hopefully, these twelve tips will provide a start for the creative minds in those companies.

Astec companies roll out new technology at World of Asphalt
The World of Asphalt 2006 Show and Conference, held March 12-16 in Orlando, Florida, hosted some of the newest technology available from members of the Astec Industries family of companies. At Astec’s indoor display, visitors had the opportunity to view the acclaimed small-scale display model of the company’s hot-mix asphalt production equipment line. And Roadtec used the conference as an opportunity to showcase its new paving and milling equipment that facilitates the latest trend in HMA roadbuilding: close-coupled paving. Roadtec also revealed additional details about its new soil stabilizer, a product that is slated for introduction in late Summer 2006. World of Asphalt is held annually, except for CONEXPO-CON/AGG years.
New state-of-the-art manufacturing facility for Astec burners promises to double production

Astec recently announced that construction has begun on a brand-new manufacturing facility for the company's line of burners. The use of the new 9,752 sq. ft. (906 m²) facility, designed around lean manufacturing principles, is expected to reduce manufacturing costs while improving productivity and quality. The new burner shop integrates all operations for burner production into one self-sufficient facility. Burners will move from preparation to assembly cells to painting with minimal time loss. By cutting wasted steps and unnecessary man hours, Astec expects to double burner production. ▲▲

Roadtec’s Eagle screeds extend productivity and quality for hot-mix asphalt paving professionals

A number of unique features are offered by the Eagle 8 and Eagle 10 screeds from Roadtec that allow paving contractors to save time while improving the quality of their final product. Among these unique features are the screeds’ rear-mounted extensions. Unlike traditional front-mounted extensions, the Roadtec Eagle screed extensions spread out from the sides behind the main screed, promoting optimal material flow to the outer edges of the mat. The extensions are outfitted with heat and vibration and move on dual guide tubes with greaseless Teflon® bushings. To learn more, contact your Roadtec regional sales manager at 800-272-7100. ▲▲

Used equipment for sale: A new catalog from Astec

Astec recently released the Spring 2006 edition of its catalog for used equipment. The 16-page catalog includes full-color photos of used equipment made by a variety of manufacturers, plus a special expanded classified section. To download a PDF of the catalog, go to: www.astecused.com ▲▲

Technical paper now available for download

Heatec recently made its technical paper T-133, titled Heating, Mixing and Storing Modified Asphalt (shown above) available as a free download from their website. The paper includes details about using polymer-modified asphalt cement. To get the paper, go to Heatec’s website: www.heatec.com ▲▲

Technical info on Heatec website now searchable

Heatec recently added a search function to its website. The feature makes it easier than ever to access the company’s online library of technical information. More than 400 pages of Heatec’s website are indexed, including 50-plus technical documents (termed “Tech-Notes”), as well as service, parts, and product information. Visitors can locate the search window directly on the Heatec home page—or click the “Search” button on the left side of the site: www.heatec.com ▲▲

Asphalt Institute debuts new design software

The Asphalt Institute recently introduced SW-1 Asphalt Pavement Thickness Design. The software provides pavement-thickness design that is based on the familiar Asphalt Institute methods. It integrates the design for highways, streets, parking lots, airports, and industrial facilities. And the program runs on typical Microsoft Windows operating systems. A free trial version of the software can be downloaded at: http://www.asphaltinstitute.org/ thicknessdesignsw/ ▲▲
Improved rubber-track paver from Roadtec offers smooth ride and increased maneuverability
Roadtec recently showcased its largest rubber-track paver, the RP-195, at the 2006 World of Asphalt in Orlando, Florida. This new paver system provides the largest footprint in its class, which is key to its excellent traction and flotation. Rubber-coated, oscillating front bogies provide even pressure along the track footprint. A hydraulic tensioning system assures constant band traction and increased maneuverability. With the weight evenly distributed over a larger area, the RP-195 provides a smooth ride and does not disturb fragile base courses. To learn more, call your Roadtec regional sales manager: 800-272-7100.

Notes from the Hot-Mix Magazine news wire:
Astec display wins national award—The 1/8-scale replica of an Astec hot-mix asphalt plant that attracted so much attention from attendees at the March 2005 CONEXPO/CON-AGG in Las Vegas—and, more recently, at the 2006 World of Asphalt in Orlando, Florida—has also been recognized with an award by a national trade publication. In its March 2006 issue, Exhibitor Magazine announced that the display was worthy of one of its “All-Star Awards”. Astec’s in-house advertising department designed the extremely detailed replica to fit into a 10,000 sq. ft. (929 m²) booth.

Website receives industry recognition—In recognition of the fact that the Internet continues to become a staple for those seeking information, Astec Industries recently updated its website to make it a valuable tool for those in the road-construction industry. This effort was recently recognized by the National Asphalt Pavement Association (NAPA) when the organization awarded Astec’s website top honors in the associate member category of the NAPA Outstanding Website Competition. To see some of the new features at the website, you can visit Astec’s website at www.astecinc.com.

New system helps keep trucks cleaner—Astec Parts recently agreed to sell and install the SpraySaver® Automatic Truck Body Lubrication System from CAL Technologies. The system helps save time and money by minimizing truck downtime, better controlling the amount of release agent used, and creating a safer workplace. Electronic sensors automatically activate spray mechanisms which coat the vehicle prior to load-out. To get more information, contact your Astec Parts Sales Representative at: 800-251-6042.

Astec Underground announces new dealership that is located in Long Branch, New Jersey
The broadest and most complete line of underground construction solutions in the industry is now available from Astec Underground North Atlantic, a new dealership operated by Astec Underground, located in Long Branch, New Jersey. The dealership will offer products from Astec, American Augers, and Trencher. To learn more, contact Keith Kology at the North Atlantic dealership: 732-403-8500.

As demand for milling machines increases, Roadtec models offer numerous exclusive features
Since the first milling machines appeared on road-construction sites in the 1970s, these specialized machines have evolved to become highly reliable and much cheaper to operate. Add to that the fact that reclaimed hot-mix asphalt is now very desirable and recyclable, and you will find that milling machines are an even more valuable asset to a paving contractor today than ever before. Roadtec is the only manufacturer offering milling machines in either three-track or four-track versions, and the only manufacturer to provide two spray bars in the cutter-drum housing for better dust control and tool cooling. The Roadtec milling-machine line includes the RX-500, the RX-700, and the RX-900. These models range from 500 to 950 hp and can mill a half lane or a full lane in one pass. To learn more, contact your Roadtec regional sales manager at 800-272-7100.
Members of the Astec Parts Department sales team offer a combination of experience and enthusiasm

Astec recently announced additions to its parts sales team. Leaving his position on Competitive Parts Sales on the West Coast, Greg Painter will now take on new responsibilities with Astec Parts as sales representative for the Northeast region. Ron Flanagan has been named a regional sales manager with Competitive Parts Sales, covering the South Central region. He has 20 years of experience in equipment sales, eight of which have been with Astec. Before moving to his new position, Flanagan was a regional manager in the Major Sales Division. In January of this year, Tony Martin joined the Astec Parts Department as sales manager for the Western region. Martin travels to customer plant sites to provide them with replacement parts on an as-needed basis. His years of experience with hot-mix asphalt plants have taken him from England to Pennsylvania to the West Coast. Frank Fuentes recently joined the Astec team as the Competitive Parts sales manager in the Mountain region. Fuentes is a retired military man with more than 17 years of experience in the mining and construction industries.

Roadtec looks to streamline production with current manufacturing-facility expansion project

By employing some “lean manufacturing” principles, Roadtec aims to increase productivity at its manufacturing facility in Chattanooga, Tennessee. The company recently broke ground on a 56,000 sq. ft. (5,202 m²) expansion, slated for completion by mid-summer 2006. The added space (illustrated in yellow, below) will allow the addition of several state-of-the-art pieces of heavy manufacturing equipment, including a new Whitney 4400, two new brake presses, and new burn tables. An additional paint booth, complete with a computerized paint-monitoring system, will also be part of the expansion.