

WEATHER

AREA FIVE-DAY FORECAST

Today	Tomorrow	Wednesday	Thursday	Friday
Mostly cloudy	Mostly sunny	Mostly sunny	Mostly sunny	Partly cloudy
81/64	88/65	88/67	89/69	87/66

MARINE FORECAST Mostly cloudy skies and pleasant today. Winds northwest at 5 to 10 knots. Waves 1 foot or less in bays, 3 to 4 feet in seas.

COMFORT INDICATORS

Sunburn Index: 7
Air Quality: Good
Heat Index: 8 a.m. 67°
 noon 79°
 4 p.m. 81°

Garden Forecast: Mostly cloudy skies with a slight chance of a shower. Decreasing clouds tonight.

ALMANAC

New Brunswick Readings
 Values are for 24 hours ending 7 a.m. yesterday.

Information provided by Rutgers Meteorology Department, Cook College.

Temperatures:
 High 85
 Low 60
 Average 73
 Normal High 84
 Normal low 63
 Normal average 73
 High this month 88
 Low this month 51

Precipitation:
 Yesterday 0.01
 Month-to-date 2.48
 Year-to-date 32.68
 Normal year-to-date 31.28

TIDES

	HIGH TIDES		LOW TIDES	
	A.M.	P.M.	A.M.	P.M.
At Sandy Hook				
Today	6:47	7:12	12:50	1:03
Tomorrow	7:41	8:03	1:42	1:58
Keypoint at Raritan Bay				
Today	6:43	7:08	12:56	1:09
Tomorrow	7:37	7:59	1:48	2:04

SUN AND MOON

Phase	Date
Full	Aug. 20
Last	Aug. 28
New	Sept. 5
First	Sept. 12

Sunset today 7:49 p.m.
 Sunrise tomorrow 6:14 a.m.
 Moonrise today 6:39 p.m.
 Moonset today 4:29 a.m.

LOTTERIES

SUNDAY, AUG. 18

NEW JERSEY
Midday Pick-3: 664
 Straight: \$271.50
 Box: \$90.50
 Pair: \$27

Midday Pick-4: 8665
 Straight: \$3,320.50
 Box: \$276.50

Evening Pick-3: 959
 Straight: \$359
 Box: \$119.50
 Pair: \$35.50

Evening Pick-4: 6602
 Straight: \$2,819
 Box: \$234.50

Jersey Cash 5: 10, 16, 18, 30, 37
 5 of 5 pays \$0
 4 of 5 pays \$625
 3 of 5 pays \$12

NEW YORK
Midday Daily: 522
 Lucky Sum: 9
Midday WinFour: 0383
 Lucky Sum: 14
Evening Daily: 009
 Lucky Sum: 9
Evening WinFour: 8744
 Lucky Sum: 23
Take-5: Late drawing
Pick 10: 13, 16, 27, 31, 32, 37, 38, 43, 44, 45, 52, 59, 61, 63, 64, 67, 69, 70, 71, 75

PENNSYLVANIA
Cash 5: 10, 15, 17, 34, 40
Midday Daily: 180
Midday Big 4: 8542
Midday Quinto: 17752
Evening Daily: 188
Evening Big 4: 3699
Evening Quinto: 31836
Treasure Hunt: 9, 13, 22, 28, 29

SATURDAY, AUG. 17

NEW JERSEY
Midday Pick-3: 655
 Straight: \$289

Box: \$96

Pair: \$28.50

Midday Pick-4: 4308

Straight: \$3,506.50

Box: \$146

Evening Pick-3: 930

Straight: \$233

Box: \$38.50

Pair: \$23

Evening Pick-4: 8495

Straight: \$2,723

Box: \$113

Jersey Cash 5: 6, 28, 31, 34, 38

5 of 5 pays \$0

4 of 5 pays \$948

3 of 5 pays \$14

NEW YORK

Midday Daily: 080

Lucky Sum: 8

Midday WinFour: 9990

Lucky Sum: 27

Evening Daily: 611

Lucky Sum: 8

Evening WinFour: 5516

Lucky Sum: 17

Lotto: 10, 17, 18, 49, 58, 59;

Bonus: 57

Take-5: 1, 10, 16, 30, 36

Pick 10: 1, 4, 5, 16, 17, 21, 22, 28, 31, 32, 48, 49, 51, 57, 61, 65, 72, 73, 78, 79

PENNSYLVANIA

Cash 5: 16, 33, 36, 41, 43

Midday Daily: 066

Midday Big 4: 8361

Midday Quinto: 89071

Evening Daily: 894

Evening Big 4: 2789

Evening Quinto: 88089

Treasure Hunt: 2, 6, 17, 23, 29

MULTISTATE

Powerball: 18, 21, 46, 54, 56;

Powerball: 23

GROWTH

Continued from Page A1

Development. For computer and electronic product manufacturing, the average was \$85,100, and for machinery manufacturing, \$67,200.

Entree to the field is possible with a two-year degree and a certificate or two, according to Robert Lipka, director of customized training solutions at the Center for Business and Technology at County College of Morris.

“With the right skills and some training, you can be making \$50,000 fairly quickly in these kinds of jobs and accelerate up to six figures,” he said. “It doesn’t happen overnight, but it’s a path to a solid income in very reputable companies in a high-tech operation.”

Specifically, the skills gap in New Jersey and Morris County is in mid-level jobs, according to Melanie Willoughby, senior vice president of government affairs for the New Jersey Business and Industry Association.

“You have your engineers at the higher end,” she said. “Then you have your entry-level people who are learning how to become machinists. But there’s also the middle level — the high-tech people who run the machines, read the blueprints, do quality control, and handle the logistics of getting the product out the door. You need a lot of them.”

The multiplier effect of manufacturing is articulated well in “The U.S. Manufacturing Renaissance,” a 2012 report by investment managers Manning & Napier: For every factory job that is added, three to four additional jobs are created in the economy.

“Suppliers, shipping, transportation, material handling, marketing — all of these support services produce other companies,” said John Kennedy, chief operating officer of the New Jersey Manufacturing Extension Program. “If FedEx was shipping nothing, FedEx wouldn’t exist.”

The Advanced Manufacturing Portal, a website showcasing all federal interagency manufacturing initiatives, reports that every dollar spent in manufacturing generates \$1.35 in additional activity.

But all this good news amounts to a silver lining, not a silver bullet, according to Manning & Napier, which cautions that the tailwinds the sector is now experiencing may meet potential headwinds in the future that could derail the rebuilding story. These headwinds could include tariffs on imports that spur trade wars that decrease American ability to export; tight money lending standards; high corporate taxes; and a stronger dollar, which could spur American spending abroad, increase imports, and decrease worldwide demand for American products.

Today, though, manufacturing is growing in New Jersey, according to Willoughby.

“It’s growing in certain



Laser operator Brian Hamilton uses a press brake to bend 3/8-inch armor plates with 100 tons of force at the Army Prototype Integration Facility at Picatinny Arsenal. BOB KARP/STAFF PHOTOGRAPHER

niches, including precision manufacturing (formerly known as tool and die making) and contract manufacturing,” she said. “It’s been growing in the military market because we have a lot of manufacturers here who build for the military.”

Prototypes at Picatinny

A case in point is the 100,000-square-foot Army Prototype Integration Facility at Picatinny Arsenal in Rockaway Township, which employs 135 people who design and make prototype munitions for the Army.

“Prototyping isn’t building things by hand one at a time like a Lamborghini or a Ferrari,” said Stephen Luckowski, chief of material manufacturing and the prototype technology division. “When we build things, we’re thinking about mass production. We make sure a design can be produced anywhere within the industrial base of the United States.”

For instance, the facility created gunner protection kits, needed shortly after Operation Iraqi Freedom began in 2003, to protect soldiers riding atop Humvees, Stryker infantry combat vehicles and Mine-Resistant Ambush Protected, or MRAP, vehicles from insurgents.

At Picatinny, products are designed using computer-aided design software. The CAD models are imported directly into the software of computer numerical control, or CNC, machines on the floor of the factory.

“That way there’s no information lost between us and them,” said Bryan Anderson, a mechanical engineer in the CAD department who also served in Afghanistan. “There’s very little human error enveloped into the system.”

Workers on the factory floor operate laser, milling, bending and welding machines that are activated by the computer programming. It’s in this environment that 41-year-old Brian Hamilton of Wharton found a career for himself. After graduating high school in 1990, he worked as a landscaper for 15 years before starting work on a degree in mechanical engineering technology at County College of Morris.

Hamilton was hired in

2007 through a CCM work co-op program to do contract work for Jet Industrial Electronics. He wound up at Picatinny, where he now operates several CNC machines in the prototype facility. Recently he finished his degree.

“I love my job. It’s different things every day, except when I’m running production,” Hamilton said. “But the prototype work is all very interesting. I get to use 3-D modeling software and AutoCAD software.”

“My salary is decent. I make about \$50,000 a year. As a technician operating the machines, the most I can get up to is about \$90,000,” he added. “But if I continue to broaden my horizons with the engineering, I can do better. An engineer can make six figures.”

Engaged to be married, he is now house hunting with his fiancée, who has two children.

There are many initiatives underway to keep and grow manufacturing jobs like Hamilton’s here in New Jersey and to train more workers to do them.

Since 2010, when Gov. Chris Christie took office, the New Jersey Economic Development Authority has invested more than \$175 million in financing and incentives to help 16 manufacturers in Morris County alone. The assistance saved 3,514 jobs that were at risk of leaving the state, according to agency spokesperson Erin Gold.

“It’s also expected to leverage more than \$465 million in private investment and create nearly 2,260 new jobs and more than 2,065 construction jobs,” she said.

Training

When it comes to training for such jobs, many avenues of opportunity are emerging.

Under the direction of Lipka, the Center for Business and Technology at CCM helps companies recruit and/or train new employees for the workplace in many sectors, including manufacturing. The center worked extensively with General Electric’s Aviation’s Electromechanical Actuation Division in Whippany, which recently was sold to TransDigm Group.

“We set up a six-month training program to get their new employees integrated and acclimated to the working environment from basic skill levels right up to advanced training,” Lipka said. “We covered everything from math skills and blueprint reading and some measurement courses to computerized manufacturing processes training. It was a combination of training we did, plus on-the-job

LEARN MORE

Explore the world of manufacturing employment:

» Center for Business and Technology at County College of Morris, for businesses interested in “upskilling” their employees: www.ccm.edu/cbt or 973-328-5185.

» College Consortium for Workforce and Economic Development, for unemployed people interested in federally funded training in fabricated metals: <http://njworkforce.org>.

» Federal Advanced Manufacturing Portal, for anyone wanting to learn more about federal initiatives related to manufacturing: www.manufacturing.gov.

» ManufactureNJ Week, October 2013: For people interested in working in manufacturing, write for information at www.manufacturenj.org/contact.

» State of New Jersey Talent Networks, for anyone wanting to explore the state’s eight talent networks: <http://jobs4jersey.com/jobs4jersey/businesses/talent>.

training once they got into the GE working environment.”

To engage high school-age students, the New Jersey Business and Industry Association is promoting career and technical high schools, also known as vocational-technical schools, as a path for students coming out of middle school, according to Willoughby.

“We’re also working to bring mechatronics — courses that combine mechanical and electronics skills — to New Jersey career and technical schools,” she said. “This course of study teaches students the basic skills they need to work for a manufacturer so a company can hire students right out of high school. Mechatronics is very prominent in Pennsylvania.”

ManufactureNJ, one of eight state-funded talent networks, works to educate people about the positives in a manufacturing career. It is hosted by the New Jersey Institute of Technology.

“We want to attract younger people who are, in droves, not choosing this as a career,” said Gale Spak, associate vice president of NJIT’s Division of Continuing Professional Education. “We also are looking to help transition men and women out of work from other sectors in New Jersey to come into this sector.”

Additionally, Manufac-

See **JOB5**, Page A4

Today In History

Today is Monday, Aug. 19, the 231st day of 2013. There are 134 days left in the year.

1807: Robert Fulton’s North River Steamboat arrives in Albany, two days after leaving New York.

1812: The USS Constitution defeats the British frigate HMS Guerriere off Nova Scotia during the War of 1812, earning the nickname “Old Ironsides.”

1848: The New York Herald reports the discovery of gold in California.

1934: A plebiscite in Germany approves the vesting of sole executive power in Adolf Hitler.

1942: During World War II, about 6,000 Canadian and British soldiers launch a disastrous raid against the Germans at Dieppe, France, suffering more than 50 percent casualties.

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