

VOLUME 57 NUMBER 27

JULY 2, 2016

THE KWAJALEIN COURGLASS

THIS WEEK

GARRISON THANKS

JOBWA STICK DANCERS - P 3

PACIFIC GEOGRAPHY

MADE EASY - P 4

ARMY UNDERSEC

SPEAKS AT IMCOM TOWN HALL - P 8

Ebeye children get their bowling and soccer on at the Rich Theater June 25 during a mini fun festival organized by garrison officials to thank Ebeye residents for their Jobwa Stick Dance performance at the theater in April.



Kim Yarnes

INDEPENDENCE DAY 2016: CELEBRATING 240 YEARS OF SERVICE AND SACRIFICE

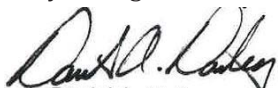
Citizens by birth or choice of a common country, that country has a right to concentrate your affections. The name of American, which belongs to you, in your national capacity, must always exalt the just pride of Patriotism.

—George Washington

Our Founding Fathers came together 240 years ago to proclaim a common ideal: that all Americans are created equal and that they have the right to life, liberty, and the pursuit of happiness. These first citizens risked treason and death to gain the freedom we enjoy today. Since then, our Nation has continually called on its citizens to uphold the legacy of service and sacrifice, and our Soldiers, Civilians and Families answer that call today.

As we observe our Nation's 240th birthday, we ask that you remember the service and sacrifice that previous generations gave to safeguard this Nation. Their extraordinary courage and commitment for the cause of freedom is a debt we repay through our service today.

On behalf of a grateful Nation, we thank each one of you—the Soldiers, Civilians, and the Families of our Total Army team—for your bravery and patriotism defending this great Nation and the ideals, traditions, and liberties that we all enjoy. Army Strong!


Daniel A. Dailey
Sergeant Major of the Army


Mark A. Milley
General, United States Army
Chief of Staff


Eric K. Fanning
Secretary of the Army



FOURTH OF JULY WEEKEND HOLIDAY HOURS

Kwajalein

Emron Lifeguard
CRC
Bowling Center
Golf Course
Country Club
Hobby Shop
Library
Family Pool
Small Boat Marina
Surfway
Surfside Salon
Sunrise Bakery
Ocean View Club
Post Office
AAFES Express
AAFES Pxta
Food Court
American Eatery
Community Bank
Rich Theater
Yuk Theater

Sat. July 2

12:30-3:30 p.m.
8 a.m.-9 p.m.
4-9 p.m.
Sunrise to sunset
4:30-7:30 p.m.
1-6 p.m.
8 a.m.-5 p.m.
1-6 p.m.
8 a.m.-6:30 p.m.
Normal hours
Normal hours
4:30 p.m.-2 a.m.
Closed
Normal hours
Normal hours
Normal hours
Normal hours
Normal hours
Normal hours
7:30 p.m.

Sun. July 3

Noon-4 p.m.
Closed
Closed
Sunrise to sunset
7 a.m.-5 p.m.
1-6 p.m.
Closed
Closed
Closed
8 a.m.-6:30 p.m.
Closed
8 a.m.-2 p.m.
4:30 p.m.-2 a.m.
Closed
Normal hours
Normal hours
Normal hours
Normal hours
Closed
7:30 p.m.
7:30 p.m.

Mon. July 4

11 a.m.-7 p.m.
8 a.m.-4 p.m.
Closed
Sunrise to sunset
7 a.m.-noon
Closed
Closed
Closed
8 a.m.-1:30 p.m.
Normal hours
Closed
4:30-11 p.m.
Closed
10 a.m.-4 p.m.
10 a.m.-4 p.m.
10 a.m.-4 p.m.
Closed
Closed

Tues. July 5

12:30 p.m.-3:30 p.m.
Closed
Closed
Sunrise to sunset
Closed
Closed
Closed
1-6 p.m.
8 a.m.-6:30 p.m.
1-7 p.m.
Closed
4:30-11 p.m.
3-6 p.m.
Normal hours
Normal hours
Normal hours
Normal hours
Closed

Roi-Namur

AAFES Express
Small Boat Marina
Third Island Store
Outrigger Snack Bar

Outrigger Bar
Post Office
Salon

Normal hours
8 a.m.-6:30 p.m.
Normal hours
11 a.m.-12:30 p.m.
5-10 p.m.
5 p.m.-midnight
*Check facility
*Check facility

Normal hours
8 a.m.-6:30 p.m.
Closed
Noon-2 p.m.
5-10 p.m.
5 p.m.-midnight
*Check facility
*Check facility

Normal hours
8 a.m.-6:30 p.m.
Closed
Noon-2 p.m.
5-9 p.m.
5 p.m.-midnight
*Check facility
*Check facility

Normal hours
8 a.m.-6:30 p.m.
Closed
Noon-2 p.m.
5-9 p.m.
5 p.m.-midnight
*Check facility
*Check facility



We are saddened to report the passing of Evengle Tawoj. He had been a vital part of the Meck Island team for 15 years, where he supported all missions conducted there. He was well liked by his fellow workers and range customers. Evengle enjoyed hobbies such as fishing and diving in his spare time. He is survived by his wife Beka Tawoj, nine children and two granddaughters. He will be greatly missed by his friends and coworkers.

THE KWAJALEIN HOURGLASS

The Kwajalein Hourglass is named for the insignia of the U.S. Army 7th Infantry Division, which liberated the island from the forces of Imperial Japan on Feb. 4, 1944.

The Kwajalein Hourglass is an authorized publication for military personnel, federal employees, contractor workers and their families assigned to U.S. Army Garrison-Kwajalein Atoll. Contents of the Hourglass are not necessarily official views of, or endorsed by, the

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USAG-KA HOSTS JOBWA PERFORMERS FOR SPECIAL THANK-YOU FEST

HOURLASS REPORT

U.S. Army Garrison-Kwajalein Atoll Command staff hosted more than 100 Ebeye residents at the Richardson Theater June 25. Part of the Jobwa Stick Dance group that performed the cultural dance for hundreds of Kwajalein residents April 23 and also at the Festival of Pacific Arts in Guam last month, the Jobwa kids, their elders and family members were invited to a special mini-festival organized by USAG-KA and Kwajalein Range Services' Community Activities department. It was a night of fun with inflatable bounce houses, an obstacle course, lawn bowling, carnival games, face painting, a barbecue dinner, live music by Ebeye's famous Mon La Mike Band and a special showing of DreamWorks Animation's "Kung Fu Panda 3."

"It was our small way of showing our appreciation for the kids and their families for the world class performance in April," said USAG-KA Host Nation Director Maj. Holly Maness, who helped organize the event. "Last Saturday was a great success, and I hear that the kids are still bragging about how much fun they had."

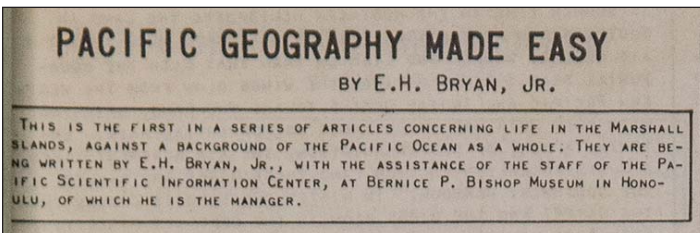
CLOCKWISE FROM TOP RIGHT: Ebeye children get into some bounce house fun. Youth play carnival games. Ebeye guests enjoy a barbecue dinner. USAG-KA Director of Host Nations Maj. Holly Maness paints children's faces. Ebeye's Mon La Mike band jams for the crowd.



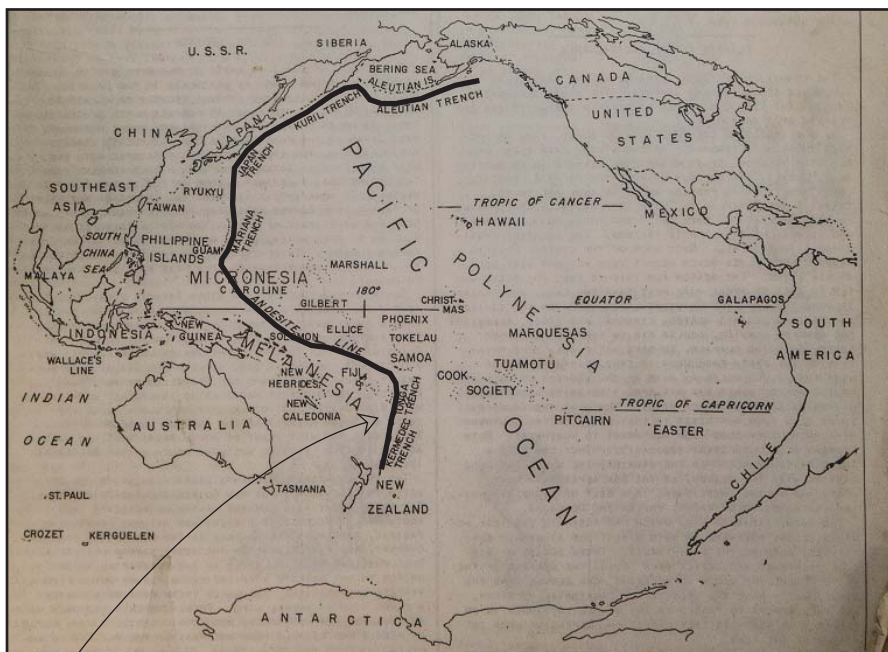
In the mid-1960s, E. H. Bryan, Jr.—then, manager of the Bishop Museum in Honolulu—and his staff at the museum's Pacific Scientific Information Center prepared an in-depth guide to the geography, biodiversity and history of the Marshall Islands and the cultural practices, lifestyles and histories of the Marshallese people. Written specially for Kwajalein Hourglass readers, the 24-part series appeared over the course of two years and was titled "The Marshalls and the Pacific."

Uncovered at the Grace Sherwood Library by staff a few weeks ago, it comprises a literal bounty of professionally-curated essays that take the reader on a profound tour of knowledge on everything from marine shell identification and the etymology of atoll names, to the traditional division of labor in the Marshallese household and explanations on how atolls are formed.

What follows in coming Hourglass issues are excerpts from the timeless "Marshalls and the Pacific" series. Enjoy.



The Pacific Ocean covers about a third the surface of the Earth. It stretches from the Aleutian Islands on the north to the icy shores of Antarctica, a distance of 8,500 statute miles. A little north of the equator, one can sail westward across it from Central America to the Celebes Sea, a distance of 10,500 miles. Water continues to the west, but these shallow seas are not considered to be part of the Pacific. Its western boundary is marked by the eastern shores of a great arc of islands which belong to Asia. From northeast to southwest, these are: the Kurile Islands, Japan, the Ryukyu Islands, Taiwan (Formosa), the Philippines and Indonesia, once called the East Indies.



Andesite Line

Southeast of these are New Guinea and Australia, ending with Tasmania. The Aleutian Islands, from Kamchatka Peninsula to Alaska, mark the northern limit, beyond which is the shallow Bering Sea. The coasts of North, Central and South America form the eastern boundary. The offshore islands are included with the Americas.

As thus defined, the Pacific covers 63.8 million square miles. If the bordering seas were included, the area would be increased to 69.4 million square miles. The surface of the Earth has an area of 197 million square miles, of which 139.5 million square miles are water, with a total volume of 329 million cubic miles. The volume of water in the Pacific is 170 million cubic miles, with another four million cubic miles in the bordering seas. Thus, you can see that more than half (51 and two-thirds per cent to be exact) of the free water on the Earth's surface is in the Pacific, with an average depth of 14,468 feet.

There are a lot of islands in the Pacific, more than 10,000. But they are not evenly distributed, and their combined area is small compared with the great expanse of water which surrounds them. A line drawn diagonally across the Pacific from northern Japan to central Chile would divide the area into two quite dissimilar halves.

In the northeastern portion there are few islands; only the Hawaiian chain rises above the surface of the sea, and the depth is rather uniform. This does not mean that the floor of the ocean is flat. Every oceanographic survey which traverses this region discovers more and more submerged mountains. Some form great ranges; others are isolated seamounts. None reaches the surface at the present time. It is a curious fact that along many stretches of coastline, such as the Aleutian Islands and much of South America, it is deeper near shore than further seaward. These margins of the northern and eastern Pacific are famous as areas of earthquakes and volcanic activity.

In contrast, the southwestern half of the Pacific has many islands, most of them in arcs and archipelagos, situated along ridges or plateaus, separated by troughs of great depth. The greatest depth of all, 37,800 feet, was found in 1960 in the Mariana Trench and named Challenger Deep. Previous to this, the deepest sounding had been 36,058 feet, in the same trench. Other famous deeps include: the Planet Deep, between New Guinea and New Britain (30,865 feet); the Nero Deep, southeast of Guam (32,177 feet); the Ramapo Deep, east of the Bonin Islands (34,626 feet); the Mindanao Deep, east of the Philippine Islands (35,400 feet); and the Kermadec-Tonga Trench (35,567 feet, as of 1957).

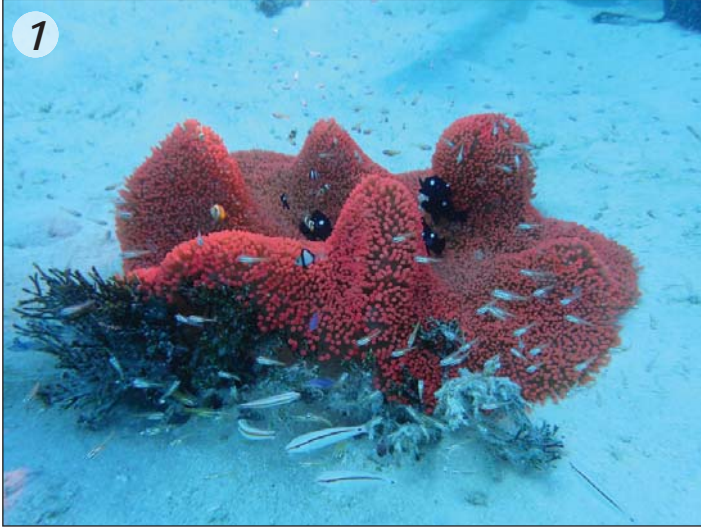
Nearly all of the islands in the central portion of the Pacific lie within the tropics. This area is bounded on the north by the Tropic of Cancer (23 degrees, 27 minutes north). And on the south by the Tropic of Capricorn (23 degrees, 27 minutes south). These are the limits at which the sun can appear to be directly overhead.

All of the islands lying to the east of Fiji and Tonga are the summits of chains or groups of comparatively "young" volcanic mountains which rise abruptly from the floor of the ocean. Many of these have been cut off near

SEE "GEOGRAPHY," PAGE 8

AND THE WINNERS OF THE 2016 PHOTO EXHIBIT CONTEST ARE ...

Category: Junior Photographer



"Red Carpet Anemone"—Katie Anderson



"Birdy"—Jensyn Cole



"Palms in the Sun"—Jensyn Cole

The Kwajalein Hourglass

Category: Open



"Never More"—Lynda Reynolds



"Snorkeling Locations Around the Island"—Bob Gray



"Allon-Moon"—Colleen Furgeson

COMMUNITY CLASSIFIEDS

HELP WANTED

Visit USAJOBS.GOV to search and apply for USAG-KA vacancies and other federal positions.

KRS and Chugach listings for on-island jobs are posted at: Kwajalein, Roi-Namur and Ebeye Dock Security Checkpoint locations; outside the United Travel Office; in the Roi Terminal/Post Office; at Human Resources in Bldg 700 and on the "Kwaj-web" site under Contractor Information>KRS>Human Resources>Job Opportunities. Listings for off-island contract positions are available at www.krsjv.com.

Community Services Administrative Assistant II HR Req.# K051755 Provides administrative and program support for KRS Community Services and the community at large. Adheres to company Policies, Procedures, Values, Covenants, and Business Ethics. Must have excellent communication skills, computer skills, and the ability to multitask. For more information contact the KRS Human Resources Office, Bldg #700 at 54916.

Mail Clerk Financial HR Req. #K051750 Provides mail processing for incoming and outgoing packages. Must be a US citizen and be able to work 32 hours and handle registered mail and rotate to Roi. Must be eligible to obtain a secret clearance. Must be able to physically lift/push/handle items up to 70 lbs. Flexible schedule to work early mornings, mid-day and evenings. For more information contact the KRS Human Resources Office, Bldg #700 at 54916.

COMMUNITY NOTICES

Fourth of July Baggo Tournament Register June 21- July 2. Tournament July 4, 3 p.m., near the main

pavilion at Emon Beach. Cost is free. Two-person teams. To register, call Derek at 51275.

Kwajalein Golf Association's Red - White - Blue 4 Person Scramble. Monday, July 11. Event benefit the Folds of Honor Foundation. Shotgun start at 10 a.m. Open to all golfers. Cost \$30 per person. \$CASH prizes and lunch after the tournament. Email Deb Crawford: debra.b.crawford@lmco or Carmel Shearer: carm1022@yahoo.com to register.

Summer Fun Dodgeball Tournament. Register July 12 - 22. Tournament play July 26-30. Cost is \$50 per team. Six players at a time, same female/male ratio between teams. To register call Derek at 51275.

Summer Fun Skate Night. Friday, July 15, at the CRC Gym. 5:30-6:30 p.m. Family Skate; 6:30-7:30 p.m. ages 10 and up. Roller skates or inline skates may be worn (no skateboards). Questions? Call Derek at 51275.

Participants Needed for the Annual Roi Coconut Race on July 17, 2016, at the Surf Shack. Come have some fun on Roi. \$20 donations per each coconut registered. Registration begins at 12:30. Race time is at 2:00.

Safely Speaking: We do a lot of things that can cause injury every day, but don't. We become complacent and don't even think about the how we put ourselves in the line of fire. Protect yourself by: looking for the hazard, eliminating, or controlling it, and use best practices to minimize it.

E-talk: The 2015 Water Quality Report is now available to all USAG-KA residents; it contains important information about the drinking water at USAG-KA.

CRC NEW HOURS OF OPERATION—EFFECTIVE JUNE 28.

Tuesday - Saturday

5-8 a.m. - Room 7 available for certified group exercise class instruction. Please make a reservation.

8 a.m.-9 p.m. - Facility open for general public use. Please make a room reservation.

9 p.m.-midnight - Facility access available for the gym through the Provost Marshall's Office. Stop by the Security Desk, or call 54445.

Sunday

6 a.m.-midnight - Facility access available for the gym through the Provost Marshall's Office. Stop by the Security Desk, or call 54445.

Monday

5-8 a.m. - Room 7 available for certified group exercise class instruction. Please make a reservation.

8 a.m.-4 p.m. - Facility open for general public use. Please make a room reservation.

4 p.m.-midnight - Facility access available for the gym through the Provost Marshall's Office. Stop by the Security Desk, or call 54445.

*Reservations can be made by contacting the Recreation Office at 5-1275 or the CRC Office at 5-2491.

Beginning Tuesday, July 5 the hours of operation at both Post Office locations will be temporarily reduced. Contact Kim Yarnes at 5-3331 with any questions, comments, or concerns.

Kwajalein Post Office	
Temporary Reduced Hours	
Monday	11:30am – 3:30 pm
Tuesday & Thursday	3:00 pm – 6:00 pm
Wednesday	11:30 am – 1:30 pm
Friday	Closed
Roi Post Office	
Temporary Reduced Hours	
Wednesday	8:00 am – 4:00 pm
Wednesday (Parcel Pick-up Only)	4:00 pm – 6:00 pm
Thursday	Closed
Friday	8:00 am – 4:00 pm
Friday (Parcel Pick-up Only)	4:00 pm – 6:00 pm
Saturday	Closed
* All hours are for finance window and parcel pick-up availability unless specifically noted	

Captain Louis S. Zamperini Dining Facility

*MENU CURRENT AS OF JUNE 30

LUNCH

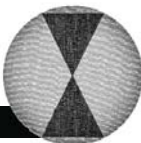
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	July 9
Boneless chick. w/ salsa	Memphis spare ribs	Fried chicken	Baked meatloaf	Mexican casserole	Sloppy Joes	Pizza
Nacho beef	Blackened chicken	Chili cheese dogs	Garlic roast chicken	Jerk chicken	Citrus roast chicken	Pasta carbonara
Nacho chips and cheese	Lyonnais potatoes	Corn bread	Mashed potatoes	Red beans and rice	Roasted potatoes	Vegetarian medley

DINNER

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	July 9
Caprese chicken	Sliced roast beef	Pork adobo	Flank steak	Lasagna	Salisbury steak	Beef ragout
Fettuccini	Three cheese tortellini	Chicken stir-fry	BBQ chicken	Garlic bread	Fish du jour	Chicken nuggets
Beef stew	Mashed potatoes	Parslaid potatoes	Scalloped potatoes		Mashed potatoes	Egg noodles

HERO OF THE WEEK

HOURLASS REPORT



USAG-KA's Hero of the Week is Child Development Center Lead Teacher Carmen Jeadrik. A long-time teacher at the pre-school and daycare center, Carmen celebrates 20 years of service to the young people of Kwajalein this week. Her work is integral to the everyday functions of the facility and the quality of care each child attendee receives day in and day out throughout the year. The best aspect of her job?

"I like to play with the children. Listen to their stories," she says. "I learn a lot from them. Now that my kids are grown up, I miss that. They keep me going."

A resident of Ebeye, Carmen has a husband named Carl and six children, two of which live on Ebeye and four of which live in Hawaii.



U.S. Army photo by Jordan Vinson

SUN-MOON-TIDES

	SUNRISE SUNSET	MOONRISE MOONSET	HIGH TIDE	LOW TIDE
SUNDAY	6:35 a.m. 7:12 p.m.	5:03 a.m. 5:55 p.m.	3:12 a.m. 4.6' 3:38 p.m. 3.6'	9:40 a.m. -0.4 9:32 p.m. -0.4
MONDAY	6:35 a.m. 7:12 p.m.	6:01 a.m. 6:53 p.m.	3:55 a.m. 4.8' 4:22 p.m. 3.7'	10:23 a.m. -0.7' 10:15 p.m. -0.5'
TUESDAY	6:35 a.m. 7:12 p.m.	6:59 a.m. 7:49 p.m.	4:36 a.m. 4.9' 5:02 p.m. 3.7'	11:03 a.m. -0.7' 10:54 p.m. -0.5'
WEDNESDAY	6:35 a.m. 7:12 p.m.	7:56 a.m. 8:42 p.m.	5:15 a.m. 4.8' 5:40 p.m. 3.7'	11:41 a.m. -0.7' 11:32 p.m. -0.4'
THURSDAY	6:36 a.m. 7:12 p.m.	8:51 a.m. 9:31 p.m.	5:52 a.m. 4.7' 6:17 p.m. 3.6'	12:17 p.m. -0.5' -----
FRIDAY	6:36 a.m. 7:12 p.m.	9:42 a.m. 10:17 p.m.	6:27 a.m. 4.4' 6:53 p.m. 3.4'	12:09 a.m. -0.2' 12:52 p.m. -0.3'
JULY 9	6:36 a.m. 7:12 p.m.	10:32 a.m. 11:01 p.m.	7:02 a.m. 4.0' 7:31 p.m. 3.2'	12:45 a.m. 0.1' 1:27 p.m. 0.0'

2016 FOURTH OF JULY CELEBRATION AT EMON BEACH

SCHEDULE OF EVENTS

3 p.m. Baggo Tournament
3:30 p.m. Bike decorating and July Fourth Fashion Show at the kayak shack
3:45 p.m. Bike parade down Emon Beach
4 p.m. Opening Ceremony
4:15-5:30 p.m. Inflatables, carnival games, crafts, food sales, cash bar
4:30 p.m. Waterpalooza—Kwajalein's largest water balloon fight ever!
5:30 p.m. Tommy Rocker Live
7 p.m. Tommy Rocker encore performance

Questions? Call Community Activities at 53331.

HAPPY INDEPENDENCE DAY

Café Roi							*MENU CURRENT AS OF JUNE 30
LUNCH							
<i>Sunday</i>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>	<i>July 9</i>	
Roasted cornish hens	Chopped BBQ sand.	Jamaican patties	Turkey/cheese sand.	Roast beef sandwich	Salmon cakes	Kalua pork	
Hamburger steak	Egg and cheese sand.	Southwestern roast beef	Pork chops	Roasted turkey	Cuban sandwich	Fish sandwich	
Au gratin potatoes	Tater tots	Eggs migas	Wild rice	Stuffing	Vegetable quiche	Veggie fried rice	
DINNER							
<i>Sunday</i>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>	<i>July 9</i>	
Enchilada casserole	BBQ chicken	Caribbean seafood	Charred pork chops	Fried chicken	Mongolian Grill Night	Hamburgers	
Chicken chimichangas	BBQ spare ribs	Curry	Huli huli chicken	London broil	Noodles/rice	Chicken chili	
Borrocho beans	Baked beans	Islander's rice	Baked potatoes	Mashed potatoes	Egg rolls	Tater tots	

UNDER SECRETARY OF ARMY PARTICIPATES IN WORLDWIDE IMCOM TOWN HALL

EXTERNAL REPORT

By Jade Fulce, IMCOM Public Affairs

FORT SAM HOUSTON, TEXAS, June 28, 2016 — The U.S. Army Installation Management Command hosted a worldwide town hall with the Under Secretary of the Army Patrick Murphy via teleconference Jun. 28.

More than 70 garrisons connected to

the town hall and employees were able to stream it live online.

In his opening remarks, Lt. Gen. Kenneth Dahl, the IMCOM commanding general, said he asked Murphy to speak directly to the 58,000 civilians in the IMCOM workforce about transformations in the Army during an office call about a month ago.

"It was great for me to hear it," said Dahl. "But you really need to hear it and you

need to hear it from your senior civilian leadership," he told the world-wide audience.

Wherever possible, IMCOM leaders invited soldiers and civilians to gather in theaters and conference rooms to participate. Where that wasn't available a live stream was provided so employees could watch from their desks.

"I want to talk to the Army team," said Murphy. "The Army team is 1.3 million strong with 1 million Soldiers and 300,000 civilians. We are one team, one fight... My job is to fight for the Army."

Murphy emphasized the Army's number one priority is readiness, which meant being ready to fight tonight.

"We have to be ready to go," he said "That readiness is at an individual level, installation level and Army as an institution. We are all part of that readiness."

Murphy also said the Army has to do more with less. The Army has \$100 billion than it did five years ago, so every dollar counts. He stressed everyone has to make sure we are not wasting that money.

Murphy also said that IMCOM is a true partner in what the Army is trying to do and appreciates what we do for the Army Team.

Employees had an opportunity to ask questions and learn what the Army leadership is planning for the Army's future following his comments. The questions ranged from transformation, Soldier for Life, and public/private partnerships to telling the Army's story.

He encouraged everyone to follow him on social media and to connect with the American public through it.

"We have to do a better job of telling the Army story," said Murphy. "Every single one of us are a recruiting officer. We should be asking ourselves what we are doing to talk about the Army to our sons and daughters - our nieces and nephews."

The town hall ended with Murphy thanking the workforce for everything that they do.

IMCOM employee Alfreda Arnold thought that it was "a wonderful thing" that Murphy was able to take time out of his schedule and bring some light to the issues that are going on with the Army.

Melissa Sturgeon, the IMCOM deputy director for operations, said it was great seeing and hearing Murphy on the teleconference because it demonstrated his passion for the Army.

"It is nice to see that level of enthusiasm and that energy applied to leading the Army," said Sturgeon. "That make us more excited to do our job and it was obvious that he values our command."

"GEOGRAPHY," FROM PAGE 4

sea level and capped by limestone reefs with low, sandy islets. More will be said about these in chapter 4, titled "What is an Atoll?" A few of the limestone-topped islands have been elevated by great Earth forces to form raised limestone islands. The volcanic summits of the rest have been weathered to form good soils which support luxuriant vegetation when climatic conditions permit. In the western Pacific, especially in the southwest, there are islands composed of much older rocks. In them fossils have been found, estimated by geologists to be at least a hundred million years old. Islands of similar or greater age occur all the way to the south-eastern curve of Asia. So closely are some of these islands spaced, and so shallow is the ocean between them, that geologists have been led to believe that in the past there may have been an extension of Asia southeastward as far as Fiji or perhaps Tonga. This great landmass has been called the "Melanesian continent." It may never have formed a continuous landmass. In fact, definite gaps in it, such as at the Wallace Line, which marks the boundary between two major associations of plant and animal life, are known to exist. At least, in former epochs, land was much more extensive and continuous across this great area than today and could have made possible the movement of plants and animals. Today this expanse of ancient land is broken up into numerous islands. More recent volcanic activity and reef building organisms, both plant and animal, have added more land. In chapter 3 the present division into island groups will be noted, and portions will be described.

It is an interesting fact that the boundary between the area of ancient land and region of younger volcanic islands to the east follows a series of very deep troughs along much of its length. Some geologists call this the "Andesite Line," others the "Sial Line." Its location and the names of the deeps it follows are shown on the accompanying map.

An important fact about the Pacific areas is the small amount of land in relation to the great expanse of seas. A tabulation of Pacific island groups, to be given in chapter 3, will give the area of each. Summarizing the approximate totals here, for comparison, we have: Polynesia, 10,000 square miles of land; Micronesia, 1,200; Melanesia, 60,500; and New Zealand and nearby islands, 105,000—with a total of 176,700 square miles of land. Dividing this by 63,800,000 square miles of ocean (without its bordering shallow seas) we get 0.00277—or about one-quarter of one percent of land. If we were to add the shallow seas, we also would have to add the land in them. The latter (in round numbers) would add the square miles of land area as follows: New Guinea, 310,000; Indonesia 733,500; the remainder of Borneo, 75,600; the Philippine Islands, 114,000; Taiwan, 13,900; Ryukyu Islands, 1,300; Japan, 147,700; Sakhalin, 28,600; and the Kurile Islands, 4,000—a total of 1,429,100 square miles. Adding this to the Pacific islands would bring the land area up to 1,605,800, which divided by 69,400,000 square miles of water would give a proportion of 0.0231 or 2.31 percent land to water—nearly ten times as much as the oceanic islands to the Pacific which surrounds them.

Next week, we finish up Pacific Geography Made Easy and move into chapter two: Man Comes Into the Pacific.