



FULL ASTERN—USS King ran 60 minutes in full reverse gear Friday off Port Angeles at a speed many ships could not reach in a forward gear. At

left, atop gun turret, is seen portion of "queen's crown," newly installed antenna for ship's electronic brain computer.

SHE PASSES TESTS

The King Is a 'Queen'

By DEE NORTON

The King is a queen, a very racy, proud female with plenty of masculine muscle.

Her brains come from a number of electronic, digital computers, the latest the navy has devised.

Her muscle comes from the highest pressure, highest temperature boilers ever made, a soda pop machine full of Terrier missiles for aircraft and a box of ASROC weapons for submarines.

UNDER Comdr. Melvin E. Bustard, the guided-missile frigate USS King (DLG 10) slid its 512-foot hull back into PSNS Saturday evening after successfully completing final machinery trials.

Her three-day trial period was cut to two by "some of the thickest darn soup" Commander Bustard had ever seen. This prevented showing off the brains in a tracking drill with three aircraft.

But the two days saw her pass all navy propulsion requirements . . . Sea water mixing with lubricating oil in the engine room failed to flunk the King.

TOP SPEED is classified information. But her cutter type bow knifed through Strait of Juan de Fuca waters at more than 30 knots, and that despite some minor trouble with forced-draft air blowers for the boilers.

"Even then we still had a third of the throttle left," said Commander Bustard happily.

"She's a real greyhound." This he said after the King had pulled a "crashback" from full ahead to full astern, and surprised a tanker by nearly passing it backwards. This was at the end of a full-power run for four

hours. After running full tilt in reverse for one hour, the King went full ahead with a slam. The smiling captain likened "the queen" to wedging a Cadillac V8 into a Corvair. "Only six ships in the navy can do it that fast."

IT HAS 85,000 shaft horsepower and displaces, at full load, 5,600 tons. Much weight was saved by the plentiful use of aluminum. The entire superstructure is aluminum, plus ladders, tables, chairs and similar items.

"The queen's crown" is a "really wierd" wire antenna also resembling an old-style office wastebasket. It is mounted forward, atop the single five-inch gun turret and is only one of

many antennas. Others have been dubbed "bedsprings" and "scoop" and "that darn thing."

The last is the most recent and drew interest by rattling hard enough to break four welded joints during the trials. One officer said, "I just wonder if they (navy designers) haven't tried to see just how much of that stuff they can hang on her."

THE NUMEROUS antennas serve just as numerous radar sets. These, with sonar and radio receivers, feed information to the NTDS — naval tactical data system.

If the delicate electronic brains successfully make the adjustment from concrete skyscrapers to pitching warships, they probably will be added to most major floating fortresses.

NTDS allows the King to "replace many others so far as processing tactical information," Commander Bustard said.

It reduces to millionths of a second time previously needed to plot approaching radar and sonar contacts. It automatically assimilates and evaluates all information about a contact's speed, distance, height, size and identity.

Then it tells what would be the most effective countermeasure. It does everything but make the final decisions. Computers are transistorized and each has a 32,000-word memory. And each word is a jumble of 30 bits of information.

Any one of the King computers takes incoming information and after few sweeps of a radar beam, flashes "blips" on the computer screen showing a contact's course. Previously, the blips were grease-pencilled on the screen.

SLICING south through Puget sound on the way home Saturday, the King came near a sailboat race. Each craft was assigned an identifying name and the computers fed data on them. The computers fired right back with the time and place of each one's closest approach to the King.

"That would have taken 200 per cent longer with the old system," Commander Bustard said, even

with the most highly skilled and efficient combat crews.

Bearing, course and speed information is relayed to the bridge where a crewman writes it on an edge-lighted plastic board. It is updated repeatedly, giving officers a complete and continuous flow of highly useful knowledge on "what's out there."

The brain heralds the arrival of pushbutton naval warfare. One officer shuddered when asked "how many buttons do you have on board." Commander Bustard said he believes one man "could fight the ship by pushing buttons."

Buttons sprout everywhere, from the many internal and external communications systems to the computers, which have more than 80 pieces, to the Terrier "missile house" aft.

The surface-to-air weapons are stored in a circular style resembling soda pop dispensers used several years ago.

IS THE KING a good ship?

"The King, she is the greatest ship in the navy," Commander Bustard said emphatically. She turned in the highest marks ever made by a guided-frigate during shakedown trials in May.

"A great deal of the credit goes to the pride and care PSNS workers took in putting her together. They have been extremely successful," Commander Bustard said.

"I want very badly to stay with her," he added. Commander Bustard is being considered for promotion to captain and he said the King may rate a captain when she goes on duty in the western Pacific.

THE QUEEN will show her unclassified wares Saturday for the families of the men who built her. Sunday the townspeople are invited to take a last look before she ups anchor for a final check of the forced-draft blowers and efforts to keep salt water from mixing with lubricating oil.

The crown will glint in sun on Dabob bay for a few days and then leave home for good Oct. 4 en route to San Diego, more than three and a half years after the keel was laid in PSNS.



COMMANDER BUSTARD Praises Work on Ship