Clipper Joins the Reserve Force

Story and Photos by JO1 Mark Faram

The *Clipper* has arrived. No, it's not a Pan Am Clipper that flew in the late 1930s arriving through a time warp. This *Clipper* is the Navy's new C-40A transport. The only thing it has in common with its historic namesake is the manufacturer, Boeing.

Inset, RAdm. Totushek talks with Boeing's David Spong at the rollout in Seattle, Wash., where the C-40A *Clipper*, above, made its debut.

During a 9 September ceremony at Boeing Field in Seattle, Wash., the first new Navy aircraft to bear the name *Clipper* was rolled out in front of several hundred visitors. This newest edition to the Navy's inventory will eventually replace the Naval Reserve's aging fleet of C-9 and DC-9 *Skytrain IIs.*

"Close to 25 percent of our C-9s are more than 30 years old," said Rear Admiral John B. Totushek, Commander of Naval Reserve Forces. "The *Clipper* will take over their mission of providing all of the Navy's intra-theater medium and heavy airlift." With a greater range and larger payload capacity, more efficient engines and state-of-the-art avionics and cockpit equipment, the C-40A represents a significant boost in capability over the C-9.

The *Clipper* is a version of Boeing's next-generation 737-700, the 737-700C, modified with a large cargo door and the strengthened wings and landing gear of the 737-800. Five aircraft have been ordered; a sixth aircraft was funded in the FY 2001 budget.

The Naval Reserve currently has seven squadrons that operate its 27 C-9 and DC-9 aircraft, and the Marine Corps operates two C-9s of its own. The oldest of these aircraft are 12 DC-9s that were purchased secondhand from various airlines in the early 1980s and then converted to fit the Navy's needs. A large cargo door was

added to each aircraft, which made it possible to convert from a passenger to a cargo configuration easily or to have a mix of both.

Fifteen C-9s were built for the Navy in the 1970s, the last of them purchased during the early 1980s just as McDonnell Douglas was shutting down its production line. In the early mid-1990s, when the oldest C-9 was approaching 30 years of service life, the Navy started to look for a replacement.

Upgrading the aging *Skytrain II* airframe with new engines and avionics was considered, "but then we'd have new equipment in a 30-year-old airframe," said Commander Vic Van Heest, Branch Head for Naval Reserve Air Logistics. "That didn't make sense." The Navy also wanted to increase the range of its logistics aircraft to make nonstop flights from such places as Hawaii to Japan and back to the United States, as base closures had eliminated previously available refueling stops. In addition, tougher noise controls being instituted in many locations in Europe and the United States further limited the usefulness of the C-9. A new aircraft was needed to take Navy air logistics forward.

Congress approved funding for the first four aircraft in 1997. The 737-700 design was chosen based on the success of the 737's reliable airframe in service since 1967. In addition, decision makers provided wording in the law that would eventually allow the Navy to sell some of its DC-9s to commercial carriers to help offset the costs. To help the Navy keep the C-9s up to snuff during the transition, many of them are receiving upgraded cockpits and avionics that will make them safer and more viable until they are replaced.

The C-40A is able to carry 121 passengers or 40,000 pounds of cargo, compared with 90 passengers or 30,000 pounds for the C-9. In addition, the maximum range for the *Clipper* is approximately 1,500 miles more than the C-9. The redesigned wings of the C-40A are stronger and have an advanced-technology airfoil that provides greater efficiency in flight. Under the wings, its General Electric CFM-56 engines are very fuel efficient and quiet.

Even after many upgrades, C-9s still have an analog cockpit, but the *Clipper* has a fully digital "glass" cockpit that will allow for future growth. The cockpit is also fitted with a heads-up display, allowing pilots to keep their eyes up and outside in low-visibility approaches. One major improvement is the C-40A's navigation system based on satellite global positioning, which will aid in approaches to airports in Third World countries with older, less reliable ground systems.

The cargo area in the C-40A will be available in three variations: all passenger with a capacity of 121, all cargo with a carrying capability of eight pallets totaling 40,000 pounds, and a combination rig that will allow for 70 passengers and three pallets. In this mode, the cargo compartment is sealed to protect passengers and crews from the potential danger of hazardous cargo.

The 737-700 is assembled from 375,000 parts, which could be a nightmare for the Navy's supply system if required to purchase and order spares for the fleet. But, according to Cdr. Van Heest, "We will be able to partner with private industry—airline and cargo carriers—to purchase parts under a Contract Logistics Supply system. A pool of parts will be created that all partners can access quickly, and this will lower costs because we won't have to stock millions of dollars of parts." But this is for parts only, he added, "it is not contract maintenance. We'll still have our Navy personnel maintaining these aircraft."

The first *Clipper* has been certified by the Federal Aviation Administration, much like civilian cargo and passenger aircraft. Because this is a commercial-off-the-shelf aircraft, and because the value for potential resale is higher, it made sense to accept FAA certification.

The first C-40A will be delivered in April 2001 to Fleet Logistics Support Squadron (VR) 59, NAS JRB Fort Worth, Texas. Delivery of the first four aircraft to VR-59 is planned for completion by August 2001. The squadron ceased operating C-9s on 1 October and began transition training. Although limited operations will begin shortly after delivery of the first aircraft, VR-59 will not be fully operational until April 2002. The fifth aircraft, scheduled for completion in June 2002, will go to VR-58, NAS Jacksonville, Fla., along with one of VR-59's *Clippers*. VRs 59 and 58 will operate three and two aircraft, respectively, until more are procured. Eventually, each squadron will have four C-40As. At that time, a third site will be selected to receive *Clippers*.

Although the Naval Reserve believes that a one-for-one replacement of the C-9 is the best way to continue to accomplish the Navy's medium- and heavy-lift mission, plans have not been finalized. A study is underway to determine future needs, and aircraft buys will be based on those results.

No matter what the number turns out to be, the new *Clipper* has the right stuff to perform the Navy's logistics mission well into the future.

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C-40A Specifications

Length:	110' 4" (33.63 m)
Height:	41' 2" (12.55 m)
Span:	112' 7"
Max. takeoff weight:	171,000 lb
Fuel capacity:	6,875 gal
Engines:	Two General Electric CFM56-7
Thrust (max. sea level static):	24,000 lb each
Cruise speed:	0.78 to 0.82 Mach
Max. altitude:	41,000'
Max. range:	3,800 nm
Max. load:	121 passengers or 40,000 lb