

The largest component of the NAS is the ARTCC. Each ARTCC covers thousands of square miles encompassing all or part of several states. ARTCCs are built to ensure safe and expeditious air travel. All Centers operate 7-days a week, 24-hours a day, and employ a combination of several hundred ATC specialists, electronic technicians, computer system specialists, environmental support specialists, and administrative staff. Figure 2-6 is an example of the Boston ARTCC. The green lines mark the boundaries of the Boston Center area, and the red lines mark the boundaries of Military Operations Areas (MOAs), Prohibited, Restricted, Alert, and Warning Areas.

The primary means of controlling aircraft is accomplished by using highly sophisticated computerized radar systems. In addition, the controller maintains two-way radio communication with aircraft in his or her sector. In this way, the specialist ensures that the aircraft are separated by the following criteria:

- The controllers can accomplish this separation by issuing instructions to the pilots of the aircraft involved. Altitude assignments, speed adjustments, and radar vectors are examples of instructions that might be issued to aircraft.

A map of the Eastern United States, including parts of Canada and the Atlantic Ocean. Major airports are marked with black dots and labeled with their IATA codes. Red lines and boxes highlight specific flight routes and areas of interest. The highlighted areas include the Northeast corridor (BOS, LGA, EWR, PHL, DCA), the Washington area (DCA, BWI, PIT, ORD), and the New York area (LGA, EWR, PHL, BGR, BHB). Other airports shown include PQI, PLB, BTV, SLK, AUG, BGR, BHB, RUT, LEB, PWM, PSM, MHT, ITH, ELM, BGM, ALB, ORH, BOS, BDL, PVD, WYB, ACK, EWR, LGA, PHL, HPH, ORD, AVP, ZNY, ABE, RDG, MDL, and NS.

The strips, one for each en route point from which the pilot reports his or her position, are posted on a slotted board in front of the air traffic controller. [Figure 2-7] At a glance, he or she is able to see certain vital data: the type of aircraft and who is flying it (airline, business, private, or military pilot), aircraft registration number or flight number, route, speed, altitude, airway designation, and the estimated time of arrival (ETA) at destination. As the pilot calls in the aircraft's position and time at a predetermined location, the strips are removed from their slots and filed. Any change from the original flight plan is noted on the strips as the flight continues. Thus, from a quick study of the flight progress board, a controller can assess the overall traffic situation and can avoid possible conflicts.



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