1.1 OVERVIEW

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Space Shuttle Requirements

The space shuttle system consists of four primary elements: an orbiter spacecraft, two solid rocket boosters (SRBs), an external tank (ET) to house fuel and oxidizer, and three space shuttle main engines (SSMEs). The shuttle can transport payloads into near Earth orbit 100 to 312 nm above the Earth. Payloads are carried in a bay 15 feet in diameter and 60 feet long. Major system requirements are that the orbiter and the two SRBs be reusable.

The orbiter has carried a flight crew of up to eight persons. The nominal mission is 4 to 16 days in space. The crew compartment has a shirtsleeve environment, and the acceleration load is never greater than 3 g’s. In its return to Earth, the orbiter has a crossrange maneuvering capability of about 1,100 nm.

Space Shuttle Statistics