

## 8.0 FUTURE 747 DERIVATIVE AIRPLANES

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Several derivatives are being studied to provide additional capabilities for the 747.

Near term seating capacity growth has been accomplished by the 747-300 with the stretched upper deck. Additional seating capacity could be obtained by conventional body extensions or by upper deck extensions. A 31-foot body stretch with a partial stretched upper deck could provide an increase of 150 passengers over the 747-200. Studies have verified that body length increases up to 50 feet are technically feasible. Landing gear wheel base would be modified accordingly. Full-length extension of the upper deck is an alternate method of increasing seating capacity. This could provide 650 total seats without increasing overall body length. Double deck configurations with moderate body extensions could provide mixed-class seating capacities in excess of 700.

Where current range capability can be traded for increased payloads, existing maximum gross weights will suffice and no wing dimensional changes are necessary. Where range must be maintained with substantial payload increases, gross weights close to 1,000,000 lb are possible with new-generation wings, with a corresponding increase in wingspan of up to 60 ft. As airplane weight and size increase, planned thrust growth of current engines will provide takeoff performance equal to or better than that of current models, and the required pavement thickness can be controlled by changes in landing gear configurations.

The 747SP vertical tail rises 2 ft higher than that of the basic 747. Future growth versions of the 747 could require tail height increases of up to 8 ft, depending on body length, engine size, and more outboard engine placement resulting from the increased wingspan.

The above discussion covers 747 growth "possibilities." Whether and/or when these or other possibilities are actually built is entirely dependent on future airline requirements. In any event, impact on airport facilities will be a consideration in configuration and design.