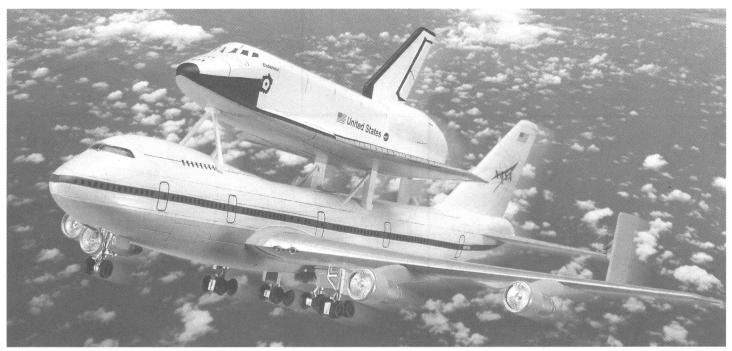


BOEING 747 WITH SPACE SHUTTLE

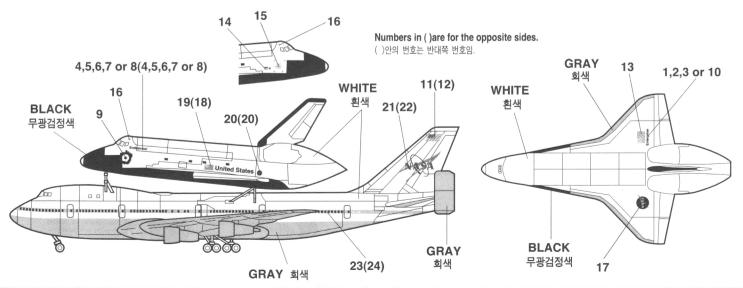


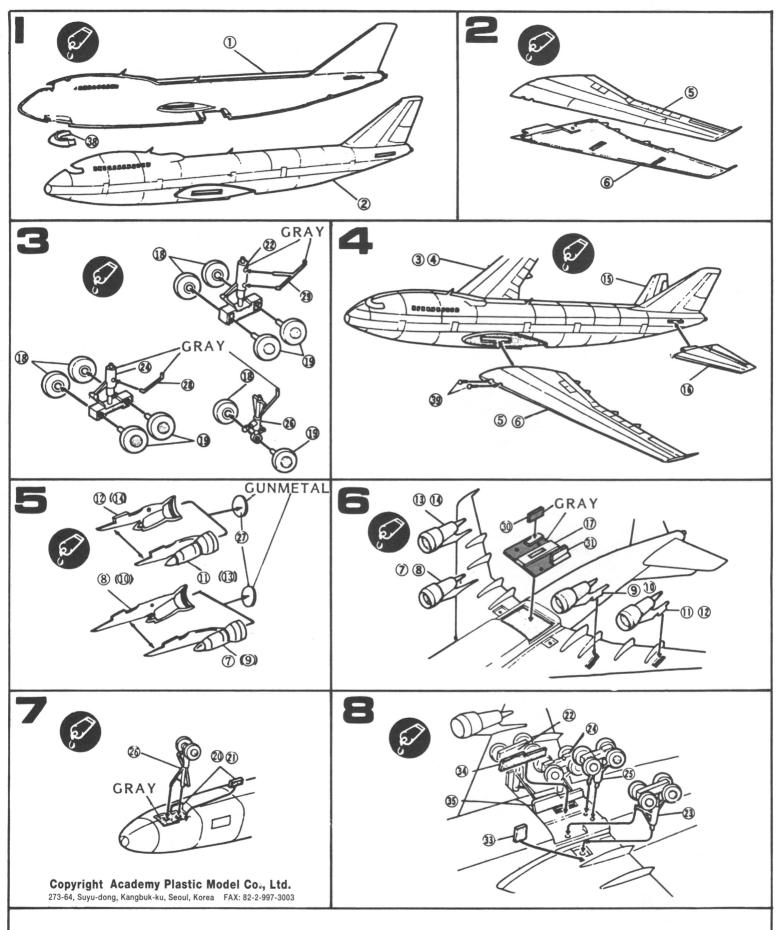
Although the Space Shuttle can travel faster and farther than any other aircraft yet flying, unless it is on a space voyage, it must depend on other means of transportation just to get from one side of the country to the other. Since it must use such large external boosters to place it into the air, it is not feasible to launch the shuttle for less than orbital flight. To provide for "local" hops, NASA obtained a giant Boeing 747 airliner from American Airlines, and altered it to carry the shuttle in a special cradle mounted to the fuselage. In addition, a pair of vertical stabilizers was installed to increase the stability of the 747 during the captive flights, and to provide the necessary vertical surface for safe flight in the event the shuttle collided with the 747's large tail fin.

The 747 was specifically modified for the initial flight testing of the spaceship. To determine the flight characteristics of the shuttle, it was mounted th the airliner and carried to altitude. During captive flights, in which the shuttle remained attached to the 747, the controls and other systems were tested as the pair cruised over Edwards Air Force Base. Eventually, the shuttle was carred aloft and released as the 747 went into a shallow dive, and the spacecraft was flown back to Edwards on its own, the final proof of its aerodynamic ability.

The shuttle, which is about the size and weight of a medium jet airliner, is secured to the cradle after being lifted by a hoist. To reducd the drag caused by the exposed rocket engines, a streamlined shroud is attached to the rear of the shuttle. Although it cannot provide any of its own power for the flight, the lifting characteristics of the shuttle design is utilized. The pilots report that the flight characteristics of the 747, even with such a large object attached to its back, are basically the same as in normal configuration.

ENGLISH	FRENCH	GERMAN	SPANISH	ITALIAN
WHITE	BLANC	WEISS	BLANCO	BIANCO
YELLOW	JAUNE	GELB	AMRILLO	GIALLO
RED	ROUGE	ROT	ROJO	ROSSO
BLUE	BLEU	BLAU	AZUL	BLU
GRAY	GRIS	GRAU	GRIS	GRIGIO
GUNMETAL	METALLIC	METALLIC	METALICO	METALLICO
GREEN	VERT	GRUN	VERDE	VERDE
SILVER	ARGENT	SILBERN	PLATA	ARGENTO
BLACK	NOIR	SCHWARTZ	NEGRO	NERO

















Repeat operation Répéter l'opération Vorgang wiederholen Repitir la operacion Ripetere Repitir a operação Herhalen

