HRP-2
The HRP-2, an improved version of the HRP-1 "Rescuer", with an aerodynamically streamlined all-metal fuselage, was developed for the assault mission of the U.S. Marine Corps. In the earlier tandems, the long distance from the cockpit to the landing gear and center of gravity caused some concern from a piloting standpoint. Thus, the original XHRP-X landing gear was designed with castering wheels to avoid skidding the tires off in case lateral motion was undetected by the pilot. Flight experience, however, showed the pilot could hold the wheels motionless for a vertical landing. The HRP-2 landing gear eliminated the caster feature, which also improved shipboard handling.

The pilot position in the HRP-1 tandem was kept toward the center of gravity because the center of a hover turn was not predictable and if it were at the center of gravity the pilot would be at the end of a large turning radius. This resulted in reduced visibility for the pilot while seated behind the forward rotor. However, from the flight experience of the HRP-1, pilots always turned about their own center, unless it was necessary to keep the c.g. of the helicopter in a fixed position relative to the ground as in a log lift. Thus, the HRP-2 cockpit was put forward of the front rotors and in a side-by-side seating arrangement for better visibility and pilot-copilot coordination.

The light structure relative to similarly size airplane fuselages required thinner skin and stiffened sections to keep the weight down. A stretch milling process developed by Piasecki to make these parts, is now common practice throughout the industry.