SUBORBITAL GUY NORRIS / RENO

Rocketplane aims for suborbital launch in July

Rocketplane will conduct a 25-flight atmosphere test programme with its four-seater XP suborbital spaceplane from January 2007 followed by a July maiden launch.

The 12.8m (42ft)-long XP is a heavily modified Learjet 25 that will take off and land from a conventional runway. It has a maximum take-off weight of 8,720kg (19,200lb) and a thrust requirement of 36,000lb (160kN).

The XP is set for 25 flight tests followed by a planned launch in July

The XP provides 3.5min of weightlessness during its flight. That begins by ascending to 25,000ft using its General Electric CJ610 turbojets, followed by a 3*g* pull-up for a 70° climb after the ignition of its Rocketdyne RS-88 rocket, which will burn for 70s until 150,000ft so the XP coasts to its 330,000ft apogee.

A reaction control system reorientates the XP for a 40-45° re-entry before it starts S-turns to slow down and land at Oklahoma Spaceport.

Speaking at the American Institute of Aeronautics and Astronautics aerospace sciences meeting in Reno, Nevada, Rocketplane's Harry Bakhtiani said: "We will be going back soon to finish up with some small details in the windtunnel." He added that the Oklahoma-based suborbital space vehicle development company is to refine the design in the run-up to a critical design review in a few months.

One design choice has been a coating-based thermal protection system instead of a blanket-based option, following studies with NASA Ames Research Center and tests at the University of Oklahoma. Another option is to add a 70° leading-edge strake to the 7.6m-span delta wing and a V-tail for pitch and directional control.

The wing, which is set at an incidence angle of 2.25°, has been fitted with split elevons for pitch and roll control, and has a dihedral outboard section.