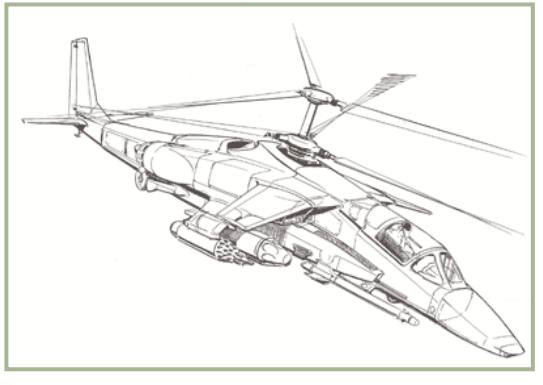
1-2: V-50 mock-up

1-3: V-100 mock-up

By the final stages of the competition in 1969, the Kamov team offered a radically new design designated the V-50 combat helicopter. The aircraft was to have two rotors positioned longitudinally along the fuselage. The two rotors were to rotate counterclockwise in the same plane of motion with the blade synchronization preventing the blades from colliding. The estimated speed was 400 km/h.

In 1975-1976, the V-100 helicopter project was proposed. This aircraft was to feature laterally positioned rotors with a push-type propeller. Both the V-50 and V-100 projects were very daring for that time but both were rejected in the end.

The design of the new Army combat helicopter, designated V-80 (later, Ka-50), began at the Kamov Helicopter Plant in January 1977. The program was run by the head of the design bureau, Chief Designer Sergei Mikheyev, who was later to become Designer General.



1-4: First version of design for the single seat combat helicopter V-80

Various aerodynamic configurations were considered for the future helicopter; however, the choice was made to use the Kamov's coaxial configuration due to its unique advantages. The substantial reduction in the power loss provided a hefty increase in main rotor thrust compared to a single-rotor configuration. This resulted in a higher static ceiling when the same power-level was used to power a coaxial-rotor versus a single-rotor configuration. The aerodynamic symmetry and the lack of cross-linkages within the flight control system helped simplify flying the helicopter. A coaxial helicopter has fewer restrictions on side-slipping angles, angular speeds, and acceleration within the