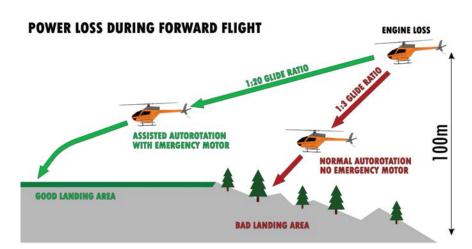
## HYBRID ASSISTANT SYSTEM A REVOLUTION IN HELICOPTERS SAFETY

"Out of 8.436 helicopter accidents, 2.408 occurred because of the loss of engine power and about half of them were result of fuel exhaustion. [...] Such statistics clearly emphasize the need for better helicopters designs with adequate single engine out performance."

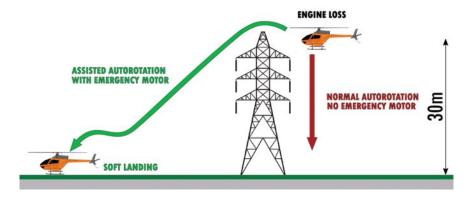
Gordon Leisham,

"Principles of helicopters Aerodynamics"

The Hybrid Assistant System provides the power needed to perform a safe landing in case of engine failure. The electric motor and the control electronics ensure the availability of 90hp to the main transmission. The automatic intervention is managed by the electronics and helps the pilot in the execution of the autorotation from the first instant until the landing. A digital display provides real time system informations to the pilot.



### **POWER LOSS DURING HOVER**



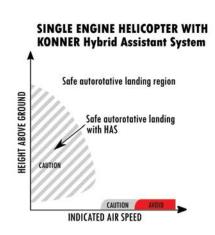
Konner's Hybrid Assistant System (HAS) represents a milestone in the history of helicopter safety and development. The same reliability of a multi-engine helicopter can now be achieved on small, single-engine ones with greatly reduced costs and maintenance. Even more a new layer of safety against power losses caused by fuel exhaustion allows to obtain unparalleled reliability levels.

Moreover the HAS can provide additional power in the event of very high thrust requirements, increasing the maximum take off weight, performance, MOA, maximum rate of climb and maximum operating temperature.

### **COMPARISON OF AVOID REGIONS CURVES**

# Safe autorotative landing region Safe autorotative landing not possible AVOID INDICATED AIR SPEED





### 90 HP FOR SAFETY

The HAS operates thanks to a single high torque electric motor that is capable of automatically delivering up to 90hp of additional power. Since the assistant intervention is fully automatic, HAS will provide the necessary lift to safely escape a power loss caused either by engine malfunction or fuel exhaustion, meaning more time and range to the pilot to perform a safe landing. This result can be obtained thanks to the netwest technologies in the fields of brushless electrical motors and high energy density batteries, that Konner has exploited to the highest degree.

HYBRID ASSISTANT SYSTEM



### **KONNER Srl**

Via Fratelli Solari, 18 | 33020 Amaro (UD) Italy Phone +39 0433 468234 | Fax +39 0433 94307 info@konnerturbine.com www.konnerhelicopters.com

**COORDINATES**46° 22′ 12.05″,N 13° 4′ 50.80″ E







