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The EASA Vortex study demonstrates that the Vuichard recovery is the most efficient recovery technique at the onset of the Vortex Ring State

EASA has published the scientific Vortex study about different recoveries techniques <https://www.easa.europa.eu/en/downloads/141844/en> which was commissioned to ONERA (French aerospace lab). Flight tests were carried out by DGA-EVin Istres (F).

This study compares the efficiency of the Vuichard recovery technique with a newer recovery technique, that involves increasing power with the collective and gain forward speed with the cyclic. Unfortunately, however, the study does not include a comparison with the "traditional" recovery technique, which is still the worldwide standard, where power is reduced with the collective and forward speed is increased using cyclic pitch input. The significantly greater height loss that results when using the traditional recovery technique is thus not taken into consideration in the conclusions of the study. Therefore, no data are available on the significant height loss actually caused by the power reduction in the old recovery technique.

This is regrettable, because it would be a crucial wake-up call for the entire helicopter industry, **meaning that training of the traditional recovery technique should be stopped immediately!**

The study demonstrates that the Vuichard recovery technique <https://youtu.be/HjeRSDsy-nE?si=BVPFyGSCyBvRcqsi> results in the lowest height loss during the onset phase of the Vortex Ring State.

Mr. Vuichard emphasizes that, due to the enormous rate of descent and the associated huge height loss in fully developed VRS, it is crucial to initiate the recovery procedure at the earliest possible stage of the VRS (feeling of a low-G). Otherwise it may be already too late.

He also points out that neither the traditional method, which involves reducing power with the collective, nor the new recovery technique, which involves increasing power with the collective while moving forward with the cyclic, can be used in up to 80% of all operations! This is due to the risk of collisions with obstacles in the escape path, for example during hoist, sling and general operations outside of flat areas.

The Vuichard recovery is the only method that can be used even in all operations including hoist and sling to prevent the VRS from building up, for example when an updraft collapses suddenly.

Moreover, the Vuichard recovery guarantees that (due to the high vertical descent in VRS) the helicopter will remain in almost the same position with a very small lateral movement, since the entire maneuver is conducted vertically, like in a tube.

Mr Vuichard highlights the fact that pilots under high stress can only use a single recovery technique, which is applied reflexively, independently of other conditions. This technique should therefore be effective in all operational environments. The recovery technique that a pilot uses under stress is the one in which he was trained first, even after 20 years of helicopter experience (law of primacy).

Therefore, the “Vuichard Recovery Aviation Safety Foundation” recommends all operators and training organizations to take this human factor into account when choosing which recovery technique to be taught in the pilot training initially.

The “Vuichard Recovery Aviation Safety Foundation” would like to thank EASA, ONERA and DGA-EV for their efforts to improve helicopter safety.



Link to download the foto: https://www.icloud.com/photos/#/icloudlinks/025FHZ3h7RPch2VE_yOwnRDqA

Link to EASA Vortex study: <https://www.easa.europa.eu/en/downloads/141844/en>

Link to the video Vuichard recovery technique: <https://youtu.be/HjeRSDsy-nE?si=BVPFyGSCyBvRcqsi>

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