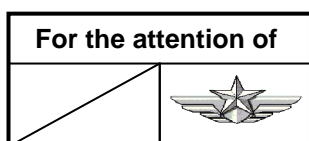


SAFETY INFORMATION NOTICE

SUBJECT: GENERAL

Main safety tips to be applied close to or at VNE



AIRCRAFT CONCERNED	Version(s)	
	Civil	Military
EC120	B	
AS350	B, BA, BB, B1, B2, B3, D	L1
AS550		A2, C2, C3, U2
AS355	E, F, F1, F2, N, NP	
AS555		AF, AN, SN, UF, UN, AP
EC130	B4, T2	
SA365 / AS365	C1, C2, C3, N, N1, N2, N3	F, Fs, Fi, K, K2
AS565		MA, MB, SA, SB, UB, MBe
SA366		GA
EC155	B, B1	
SA330	J	Ba, L, Jm, S1, Sm
SA341	G	B, C, D, E, F, H
SA342	J	L, L1, M, M1, Ma
ALOUETTE II	313B, 3130, 318B, 318C, 3180	
ALOUETTE III	316B, 316C, 3160, 319B	
LAMA	315B	
EC225	LP	
EC725		AP
AS332	C, C1, L, L1, L2	B, B1, F1, M, M1
AS532		A2, U2, AC, AL, SC, UE, UL
EC175	B	
H160	B	
EC339		KUH/Surion

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The purpose of this revision 2 is to introduce the effect of aerology change (especially with terrain shape changes in a mountainous area) and to advise pilots to predict a rapid onset of airspeed.

SUMMARY

MAIN SAFETY TIPS TO BE APPLIED CLOSE TO OR AT VNE
1. DO NOT EXCEED VNE
2. Avoid continuous flight close to or at VNE
3. Avoid abrupt control inputs
4. Avoid excessive maneuvering (bank angle and/or pull up)
5. First of all, reduce speed if maneuvers are needed
6. Reduce speed in turbulence or in areas where the aerology can change rapidly*
7. Avoid flight at VNE close to the ground

* Mountain, canyon...

H/C FLIGHT AT HIGH SPEED

Following several events occurring during high speed flights, reported to Airbus Helicopters, it seems necessary to issue a reminder that great care should be taken when flying near or at the speed limit (VNE). It requires higher situation awareness and the pilot's full attention due to the helicopter's handling qualities near this limit. The following points are not specific to any helicopter type and must be known and understood by flight crews.

A more responsive helicopter

At high speed, the helicopter's longitudinal static and dynamic stability is reduced. The same pilot action on the flight controls to modify the flight path will result in a higher load factor variation.

Caution shall be observed during maneuvering in the pitch axis at high speed, as the load factor may change significantly more rapidly than at average speed.

Higher servo control loads

At high speed, the strong dissymmetry between advancing and retreating blades leads to high loads and stresses in the rotor control chain (pitch rods, swashplates, servo controls).

For helicopters equipped with a single hydraulic system, the combination of high speed and load factor may lead to servo control transparency with feedback loads directly felt on the flight controls.

FLYING CLOSE TO VNE NEEDS TO BE CAREFULLY MANAGED

No. 3093-S-00

H/C DESIGN FOR HIGH SPEED

To increase the pilot's situation awareness and to reduce his workload to maintain the H/C inside the flight envelope, several devices, indications and caution/warning lights have been introduced in the helicopter's man-machine interface:

1. for new generation glass-cockpit type H/C, VNE is directly computed according to external conditions (Hp, OAT) and displayed on the Airspeed Indicator. Moreover, caution messages on the MFD and audio messages via the ICS may warn the pilot,
2. for new and former generation H/C with a dual hydraulic system, a "LIMIT" caution warns the pilot when a defined load factor according to the current speed has been reached,
3. for single hydraulic system helicopters, the servo transparency phenomenon prevents overstressing of the airframe. For a main rotor rotating clockwise, the servo transparency phenomenon results in a roll right and pitch up cyclic stick displacement and collective pitch down tendency. The resulting helicopter reaction (mainly pitch up) helps to reduce speed and rapidly (~2 sec.) move out of the servo transparency range (refer to LS 1648-29-03 & 1649-29-03, SIN 3287-S-67 rev.1).

All the aforementioned devices and indications help to reduce the risk of damaging or overstressing the H/C.

OPERATIONAL REMINDERS FOR HIGH SPEED FLIGHT

Means to avoid flight envelope exceedance at high speed:

- VNE indication,
- LIMIT caution (depending on aircraft),
- limitations and cautions in the Flight Manual (bank angle, flight envelope limits, etc.),
- natural aircraft behavior (vibrations, etc.),
- servo transparency.

Operational precautions at VNE:

- avoid continuous flight at VNE as much as possible,
- flight close to VNE should be conducted with smooth inputs on the controls,
- the time spent close to VNE should be limited, with a return to normal cruise airspeeds as soon as possible, in order to ensure operational margins if maneuvering is required or in case of unexpected rapid air speed increase due to aerology change (mountainous area, canyon...),
- VNE close to the ground (terrain) should be avoided,
- high pitch changes should be avoided close to VNE,
- high bank angles should be avoided close to VNE.

A specific speed limit called VNO (Max. operational speed) may be determined by operators to comply with their operational needs and with the necessary margin to be maintained with respect to the VNE absolute limit.

VNO main dependencies:

- H/C version characteristics,
- type & location of operations,
- logically determined above normal level flight cruise speed,
- avoiding occurrences of "LIMIT" caution (if fitted) in level flight.

Generally, VNO leaves a margin of 5 to 15 knots with respect to the VNE.

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