



**University of Žilina**

*Faculty of Operation and Economics of  
Transport and Communications*

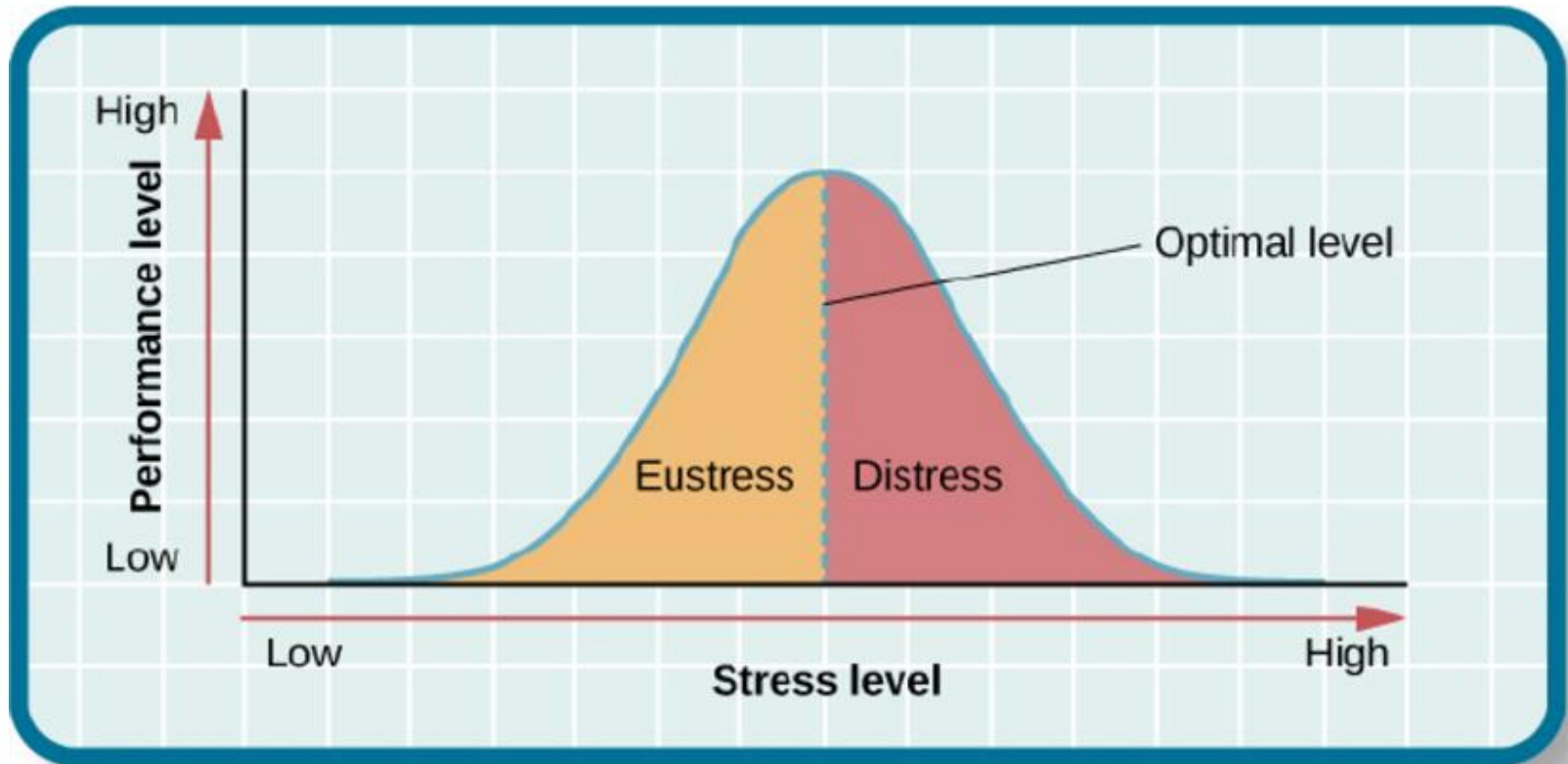
*Air Transport Department*

# The Impact of Somatic Stressors on Pilots

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# Introduction



# Induction and quantification of selected stressors

- **Alcohol** (FAR Part 91 Sec 91.17.- 0.4‰), Alcoscan AL 7000
- **Hypoglycemia** (12 hours without food), Contour Plus One
- **Noise** (Annex 16, Slovak Republic and Government Regulation no. 115/2006, 75 dB), MS 6300 Environment Multimeter



- **FLIGHT SIMULATOR ELITE S923 FNPT-** Beech King Air B200  
Twin Engine Turbine Aircraft Configuration

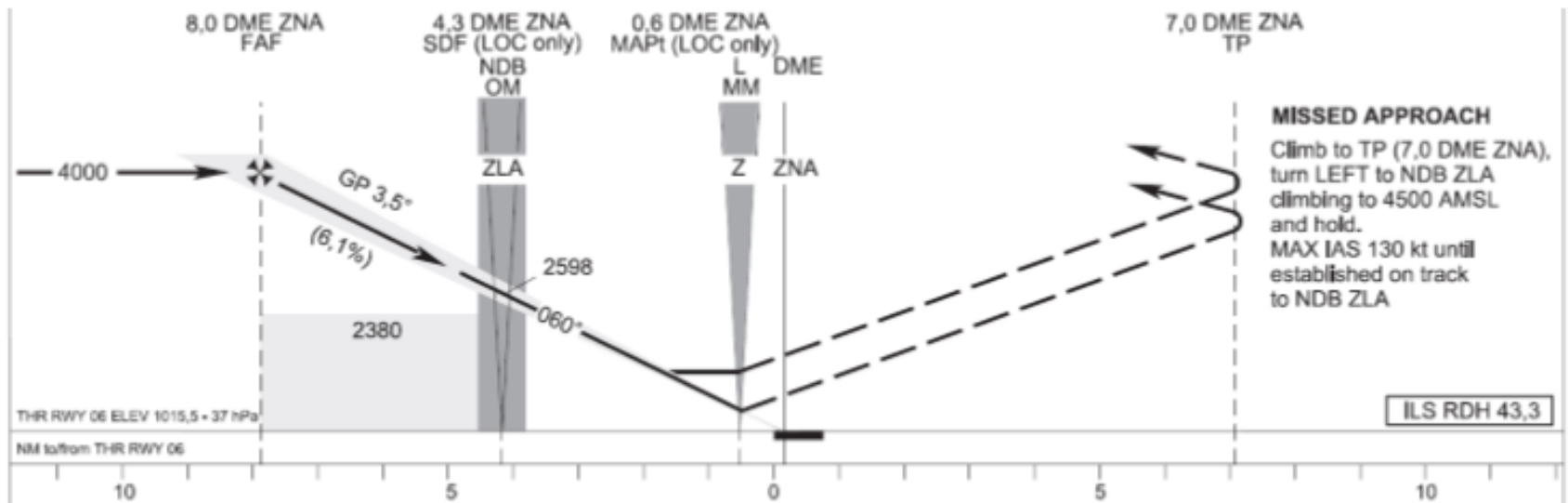


- **PARTICIPANTS-** five pilots from our Air Training and Educational Centre



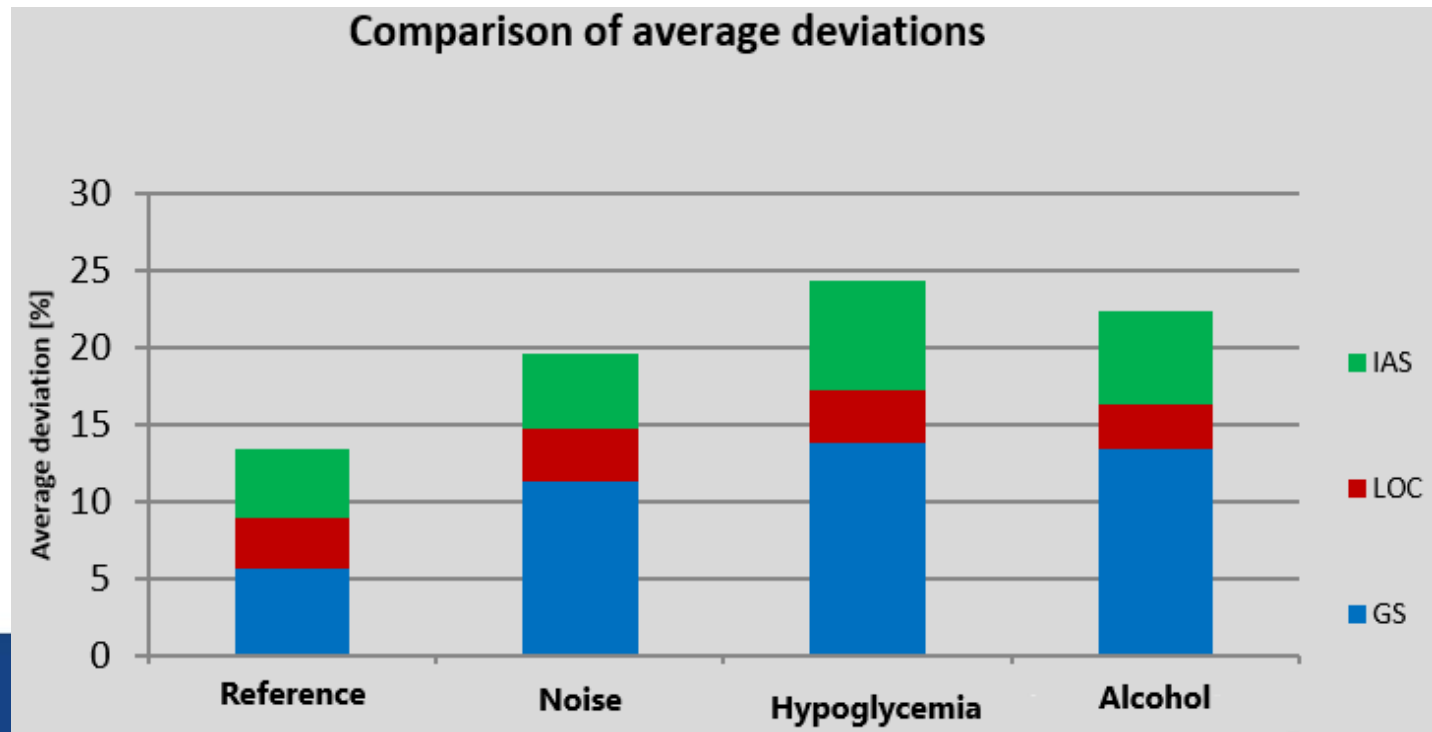
# ■ Flying trajectory

- Precision approach ILS at Zilina airport (LZZI) for RWY 06



# ANALYSIS AND MEASUREMENT RESULTS

- Serial Port Monitor and Microsoft Excel
- Comparison of total mean deviations during approach



# Conclusion

- Tested stressors have a negative impact on piloting precision

Type of measurement	The greatness of the total average deviation
Hypoglycemia	24,28 %
Alcohol	22,33 %
Noise	19,61 %
Reference measurement	13,35 %

- The effect of stressors most influences vertical deviations from the glide path

Flight parameter	Type of measurement				Average deviation of all stressors
	Reference	Noise	Hypoglycemia	Alcohol	
Vertical deviation from the glide path	17,01%	33,84%	41,31%	40,08%	38,41%
Horizontal deviation from the glide path	9,83%	10,4%	10,38%	8,78%	9,85%
Deviation from the indicated airspeed	13,21%	14,58%	21,11%	18,13%	17,94%





# Thank you

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