

# „Kick the ball and pull the rope“

Basic flying and the modern Pilot ? !

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What do they have in common?



- Even modern aircrafts fly according to basic aerodynamic principles.
- “There are some situations where the automation will protect a pilot, but at the same time a highly automated airplane makes possible other types of errors, so it’s a mixed blessing,” .....”And greater knowledge is required to fly a highly automated aircraft.”

# Highly dynamic and complex scenario

- Handling errors
- Technical failures
- Weather
- Limits of automation
- Combinations of the above
- .....

- We cannot train for every possible scenario
- However.....
- we can expand the pilot's envelope

- ~~Why do they crash?~~
- What do we need to successfully manage such situations?

# Aviate, Navigate, Communicate

- Correct parameters for safe operation
- „Basic Backup“ for the specific aircraft
- Ability to manually fly the aircraft
- Ability to go at least one step back in IFR flying...

Human beings encountering stress and time pressure revert to habit patterns adopted at early stages of the training process or in earlier phases of their professional career.

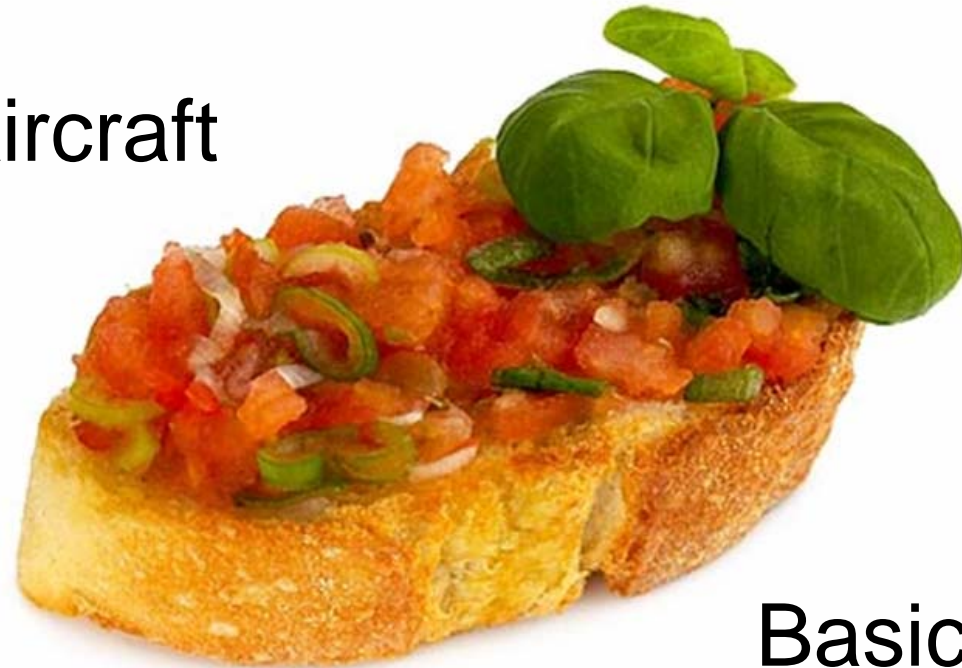


# What is Basic flying?

- Basic Stick and Rudder Skills
- Basic Knowledge
- „Basic Backup“

How do we get there?

Modern Aircraft



Basics

The „Bread and Butter“ approach

The right or best  
ingredients.....

Proper Preparation.....



# The right ingredients..... The Selection

## Goals of Pilot Selection

- Success in initial training
- Success in airline transition
- Success in airline career (including captains training)
- Main goal: Guarantee of a successful career

# Selection Criteria

- Technical Comprehension
- Perceptual Speed and Accuracy
- Instrument Reading
- Logical Reasoning
- Spatial Ability
- Short Term Memory
- Numerical Understanding

# Selection Criteria

- Operational Speed and Quality
- Simultaneous Capacity
- Vigilance and Alertness
- Decisiveness
- Stress Resistance
- Perceptual Speed
- Perceptual Precision and Accuracy
- Spatial Orientation
- Divided Attention

# Additional requirements

- Cooperation
- Conflict Management
- Empathy
- Self-Assessment
- Motivation
- Flexibility
- Reliability/Discipline



# The proper Preparation.....

## .....The Training

- How do we train?
- We have to respect the capabilities and limitations of the human brain

Repetition increases the bandwidth of the nervestrains, the number of braincells involved and hence the speed and accuracy of reactions.

Prof. Manfred Spitzer, Neurologist and Brain Researcher

Don't hurry training,  
    braincells need time to connect

.....and proper sleep  
.....the brain reorganises itself while we sleep

---> the consolidation phase

...to achieve perfection requires even more time



Training takes time.....

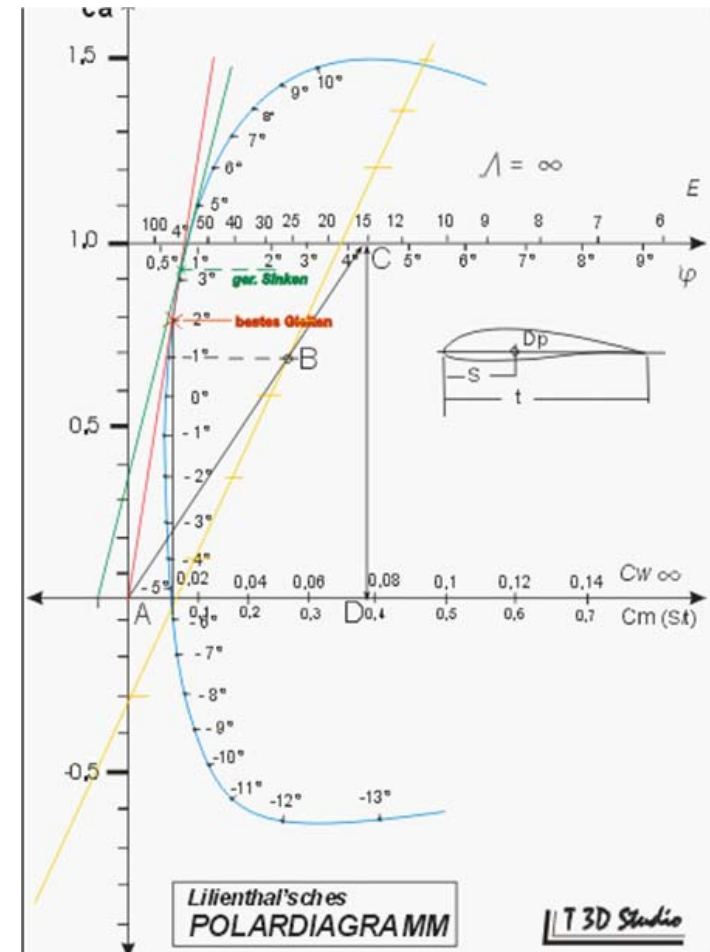
# Basic Stick and Rudder

- Take offs, approaches, landings
- „approaching the limits..“(Stalls, upsets)
- Basic coordination
- Coordinated turns, climbs, descends
- Correlation of pitch and power
- Flying Solo
- Basic IFR (Holding pattern, NDB/NDB, LOC backcourse etc...)
- .....



# Basic Knowledge....

- Aerodynamic principles
- Aircraft Basics
- Navigation principles
- Aviation Weather
- .....



# „Basic backup“

- Other automation modes
- Pitch/Power values
- Fallback options, Pattern, „high and low key“, raw data
- .....



Use it or lose it



Musicians practise their whole life to become and  
remain perfect

If I don't play piano for one day, I feel it.

If I don't play for two days, the critics will notice it.

If I don't play for three days, the audience will hear it.

Wladimir Horowitz

- Thorough level training in initial training (knowledge and skills)
- Ample amount of recurrent training
- Always train to proficiency
- Use of proper tools to conduct the training

- Sufficient time in real aircraft to allow the brain to develop the necessary synapses
- Adequate simulators for the respective training
- Properly trained and selected training personnel
- Adequate time to reach the respective level

**We fly Aircrafts – not Simulators !**



Make sure that doesn't happen.....

It's great that we  
invest in  
technology.....

.....but we need to  
invest in humans  
too.



The International Federation of Air Line Pilots' Associations

# IFALPA



**Sixty years working for the  
highest level of air safety  
Worldwide**