

Small Business Aerodynamics



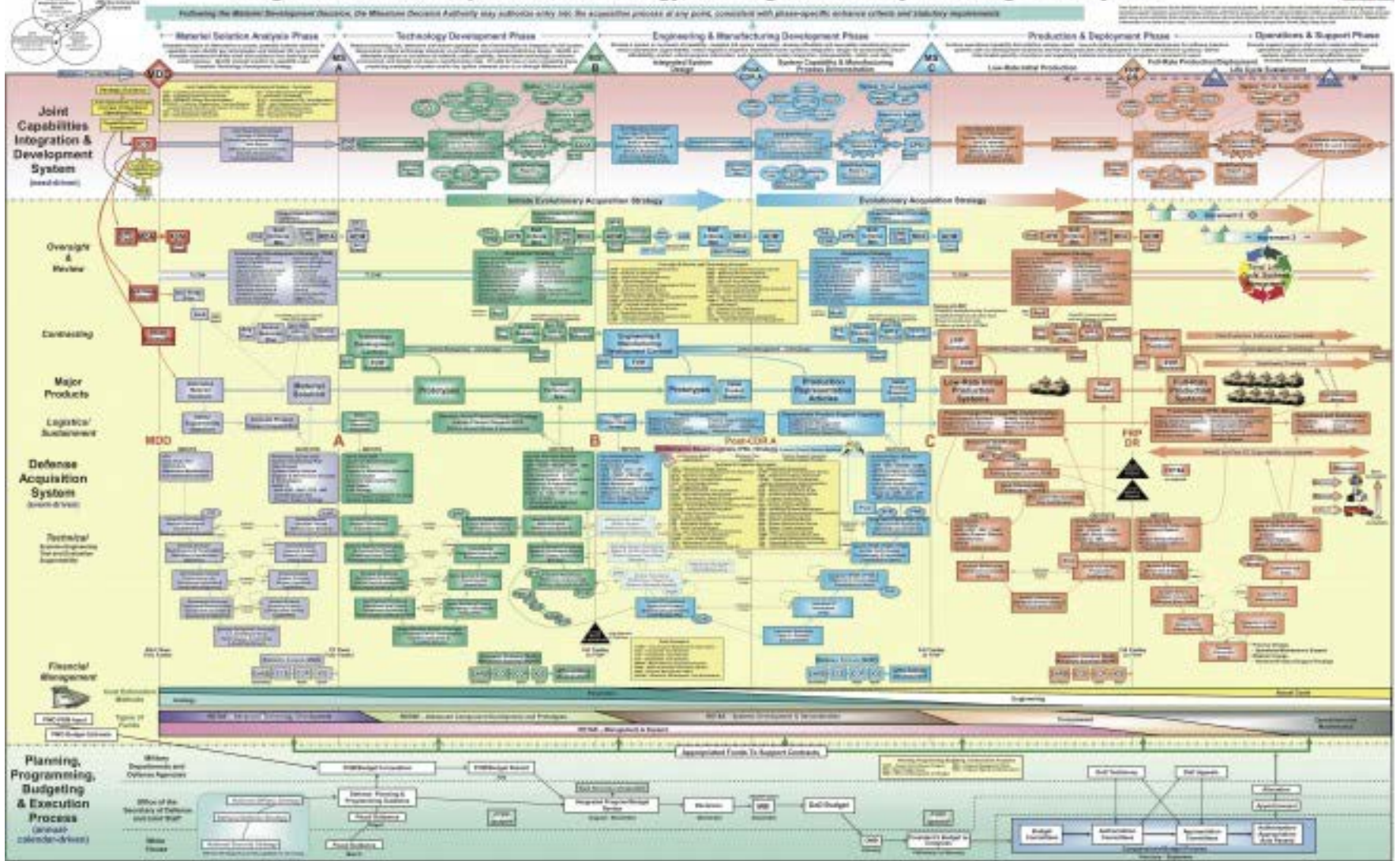
Thinking about Risk

Lou's Power Point Rules



- Keep them simple.
- Use few words.
- Make sure the words are spelled corectly and numbers add up.
- Have a time budget for your slides.
- **DON'T READ THE SLIDES!!**
- If they can't see it, why use it?
- Don't read the slides.
- Don't use Power Point.

Integrated Defense Acquisition, Technology, and Logistics Life Cycle Management System



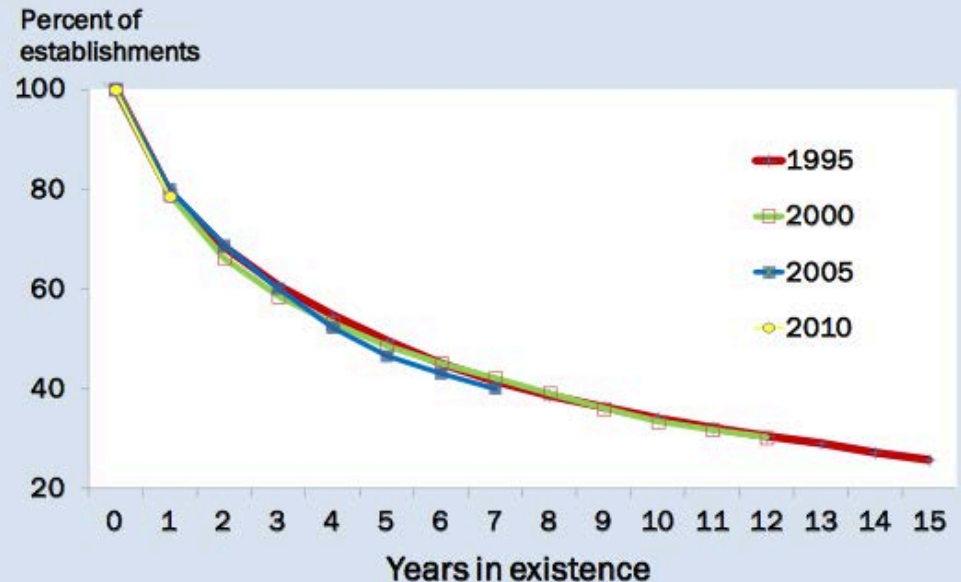
Why Small Businesses Fail: SBA

SBA says 50% fail during first year

- Lack of experience
- Insufficient capital
- Poor location
- Poor inventory management
- Over investment in fixed assets
- Poor credit arrangements
- Personal use of business funds
- Unexpected growth

Small Business Management by Michael Ames

Figure 3: Cumulative Survival Rates for Establishments by Birth Year

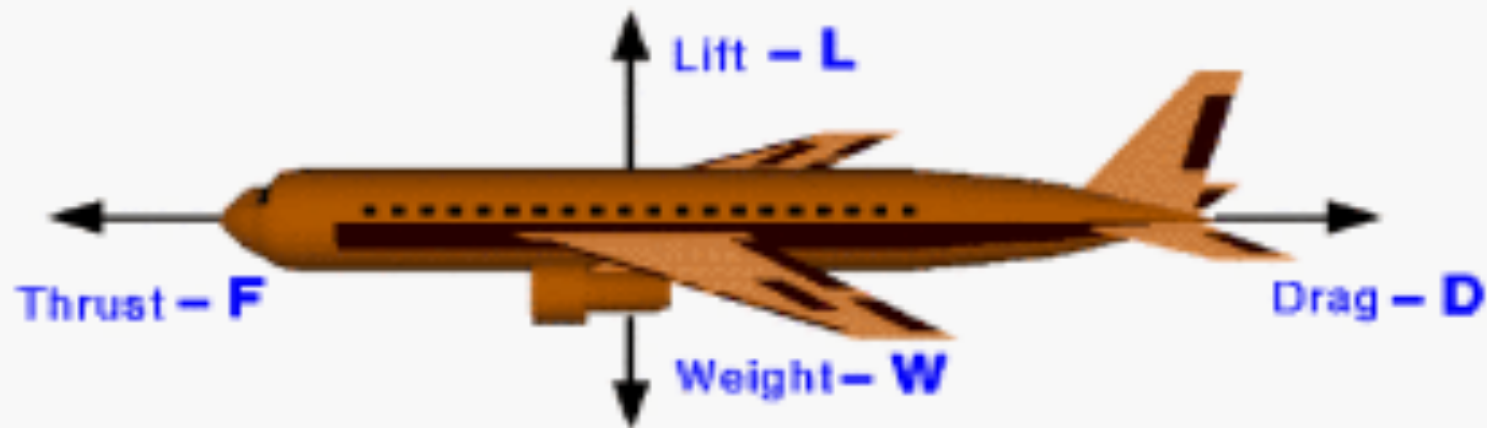


Source: Bureau of Labor Statistics, BED.



Lift to Drag Ratio (L / D ratio)

Glenn
Research
Center



$$\frac{L}{D} = \frac{\text{Lift}}{\text{Drag}} = \frac{C_l (\cancel{.5 \rho V^2 A})}{C_d (\cancel{.5 \rho V^2 A})}$$

High L/D = High efficiency = Long range

High L/D = Large payload = Low fuel usage

Breaking Mach 1



It's not just about power (contracts)



CCA

BUSINESS ADVICE WITH INTEGRITY

Punch through the Barrier!



Severe instability can occur at transonic speeds. Shock waves move through the air at the speed of sound. When an object such as an aircraft also moves at the speed of sound, these shock waves build up in front of it to form a single, very large shock wave. During transonic flight, the plane must pass through this large shock wave, as well as contend with the instability

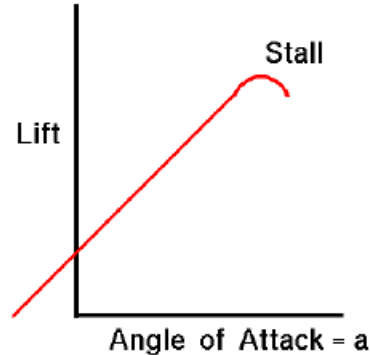
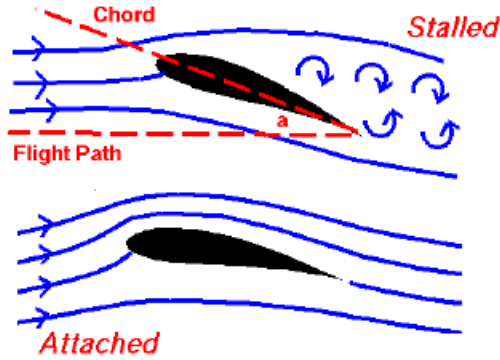
caused by air moving faster than sound over parts of the wing and slower in other parts.

Stall is BAD



Inclination Effects on Lift

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For small angles, lift is related to angle.

Greater Angle = Greater Lift

For larger angles, the lift relation is complex.

Included in Lift Coefficient

Why Stalls Happen

- Loss of Lift
- Loss of Power
- Too much Drag
- Too much Turbulence
- Too Heavy



Loss of Lift



Loss of Power



Rules of the "Road"

- 🐔 Road Runner cannot harm the Coyote except by going "beep, beep".
- 🐔 No outside force can harm the Coyote -- only his own ineptitude or the failure of Acme products.
- 🐔 The Coyote could stop anytime -- IF he was not a fanatic.
(Repeat: "A fanatic is one who redoubles his effort when he has forgotten his aim." —[George Santayana](#)).
- 🐔 No dialogue ever, except "beep, beep" and yowling in pain.
- 🐔 Road Runner must stay on the road -- for no other reason than that he's a roadrunner.
- 🐔 All action must be confined to the natural environment of the two characters -- the southwest American desert.
- 🐔 All tools, weapons, or mechanical conveniences must be obtained from the Acme Corporation.
- 🐔 Whenever possible, make [gravity](#) the Coyote's greatest enemy.
- 🐔 The Coyote is always more humiliated than harmed by his failures.
- 🐔 The audience's sympathy must remain with the Coyote.



Controlling Drag



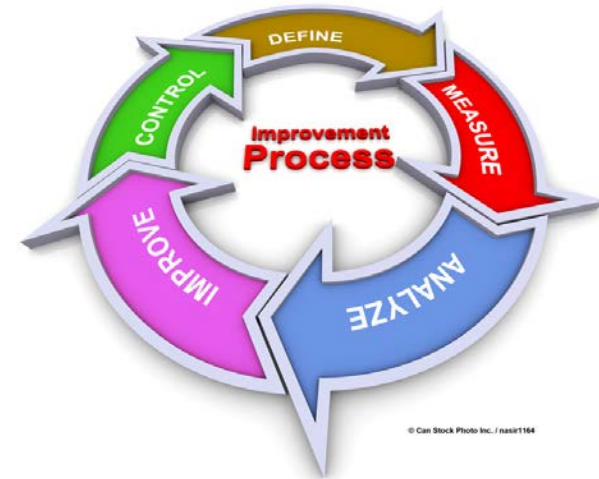
Doing too many things



Overhead increases



Wrong Busload



Poor/No Process

Too Much Turbulence



?



Notes for Aerodynamics for Small Businesses

Thrust/Power

- Contracts
- Business Development
- Strong proposals
- Organizational Structure
- Purpose {Strategy}
- Availability of capital
- Proprietary IC

Lift

- Small business status
- Reputation in the marketplace
- Performance
- Contract vehicles (different from awarded contracts)
- Security Clearances
- Industry organizations
- Mentor-Protégé
- Joint ventures/Teaming
- Thought Leadership

Drag

- Overhead
 - Office space
 - Too many people
- Lack of process
- Wrong people on the bus
- Doing too many things—lack of focus
- Bad of No Bid Decision process
- Out of date web sites

Weight

- Lack of delegation
- Too many proposals
- Paperwork
- Too much process
- Too many people
- Poor pricing strategies
- Overkill on infrastructure
 - Accounting systems/software
 - Research services
 - Physical space
 - SCIF

Turbulence (things not in your control.....think about DD175 Wx forecast...always have an alternate)

- Budgets
- Slow acquisition process/ FAR /DFAR regs
- Bad client or contracting officer
- Competition
- Protests

What's not here???

- Luminaries/Expert Panels
- DELTEK
- Booths at trade shows
- As on FedNews Radio or Metro