

Emergency Bailout Procedures for Pilots

Presented by Allen Silver



Allen services all types of emergency parachutes and specializes in bailout training. He has been serving aerobatic & glider pilots worldwide since 1972.



Allen Silver

- FAA Master Rigger & Designated Parachute Rigger Examiner
- Current Chairman of the Parachute Industry Association's Rigging Committee
- Owner of Silver Parachute Sales & Service
- Largest dealer of SOFTIE emergency parachutes by Para-Phernalia
- Manufacturer of S.M.A.K. PAK survival kits & the AcroBelt 5-point safety belt

Actual Bailout

Jan 17 1999

Las Vegas, NV



It is impossible to accurately measure the results of aviation safety. No one can count the accidents pre-vented or lives saved by having the proper parachute and having it maintained by the best rigger you can find.

In the past 5 years, I've had 20 saves...but only 4 were bailouts. The others were problems discovered on the ground such as tools left in parachutes, bent ripcord pins, or harnesses that would have failed.

CHOOSE WISELY!

The life you save may be your own!

Mental Attitude

Attitude Plays a Major Role in Your Survival

1. Keep a confident and positive attitude
2. Know that you can and will bail out if necessary



Believe That Your Parachute Will Save Your Life Regardless of What Others Say

1. Make the bailout decision early and quickly
- ★ 2. Don't ever give up! What didn't work the first time, may work the 2nd, 3rd or subsequent tries
3. Your parachute will open in about 2 seconds. Never leave your chute on the ground because some official said you won't have time to use it.
4. Altitude is your friend.

**Your parachute has low altitude capabilities.
But you don't need to test it!**



Believe That Your Parachute Will Save Your Life Regardless of What Others Say

1. Make the bailout decision early and quickly
 - a) Always have a hard deck where you will bailout
2. Don't ever give up! What didn't work the first time, may work the 2nd, 3rd or subsequent tries
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Practice – Practice – Practice

1. Practice your egress procedures before and after each flight
2. Remember: **Canopy/Door** (if you have one)
Belts
Butt
In That Order!

**Your Parachute
Does NOT Open
On Impact!**



Plan Ahead Before an Emergency Occurs



Keep Your Parachute in Good Condition

- 1. Have your equipment serviced regularly by a qualified rigger**
 - They should be familiar with your type of parachute
 - ★ Check their FAA license for proper ratings, if unsure
 - Are current packing manuals available?
 - Always pull the ripcord and take your chute out of the container before leaving it with the rigger
- 2. Store the parachute properly**
 - Keep in cool, dry, dark place
 - Keep off of the floor

UNITED STATES OF AMERICA

XI



DEPARTMENT OF TRANSPORTATION • FEDERAL AVIATION ADMINISTRATION

IV NAME

ALLEN ROBERT SILVER

V ADDRESS 123 RIGGER ROAD
CHUTEVILLE, CA

VI NATIONALITY USA

SEX HEIGHT WEIGHT HAIR EYES

Iva D.O.B. 14 JUN 1944

M 65 130 BLACK HAZEL

IX HAS BEEN FOUND TO BE PROPERLY QUALIFIED TO EXERCISE THE PRIVILEGES OF

MASTER PARACHUTE RIGGER

III CERTIFICATE NUMBER 2130616

X DATE OF ISSUE 4 SEP 2003

XIV

Maria C. Blakemore

VIII ADMINISTRATOR



ALLEN ROBERT SILVER

2130616

XII RATINGS

MASTER PARACHUTE RIGGER

BACK; CHEST; SEAT

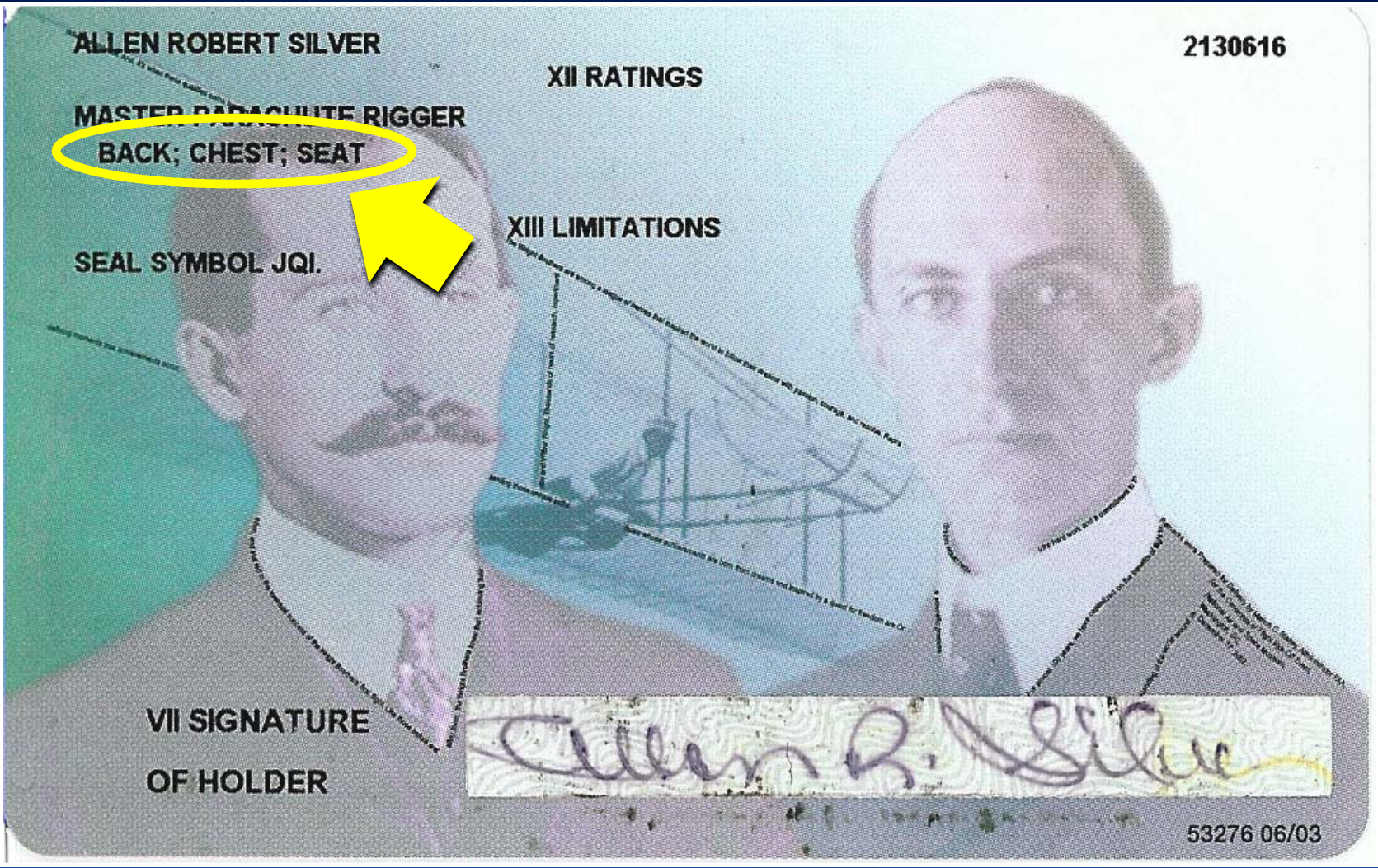
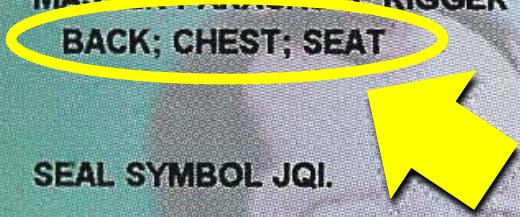
XIII LIMITATIONS

SEAL SYMBOL JQI.

VII SIGNATURE
OF HOLDER



53276 06/03



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Pre-Flight Your Parachute

- ✓ Before removing chute, inspect carrying bag for stains or damage
- ✓ Check ripcord pins are seated properly and not bent
- ✓ Is the ripcord secured properly in its pocket?
- ✓ Is the cable housing free of obstructions?
- ✓ Check harness, container, snaps, and Velcro for damage, wear, and dirt

Practice Your Emergency Procedures EVERY TIME YOU FLY

- Practice before and after each flight
- Don't just get out of your aircraft...simulate a bailout

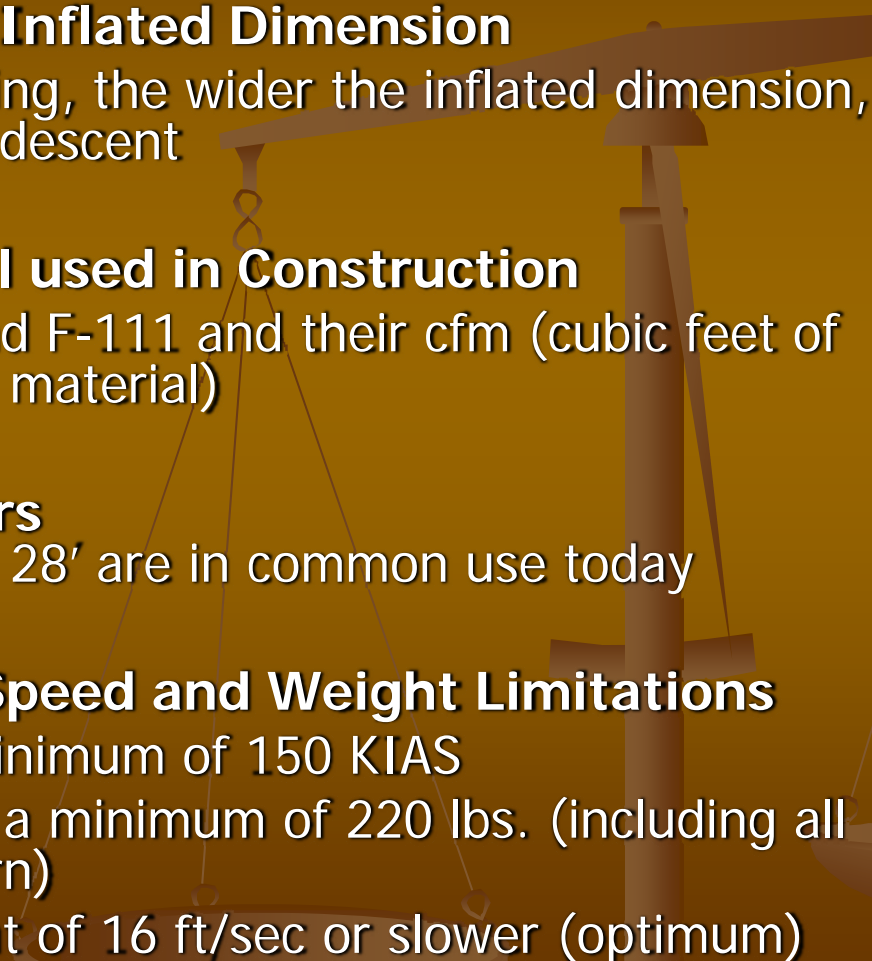
PRACTICE – PRACTICE - PRACTICE

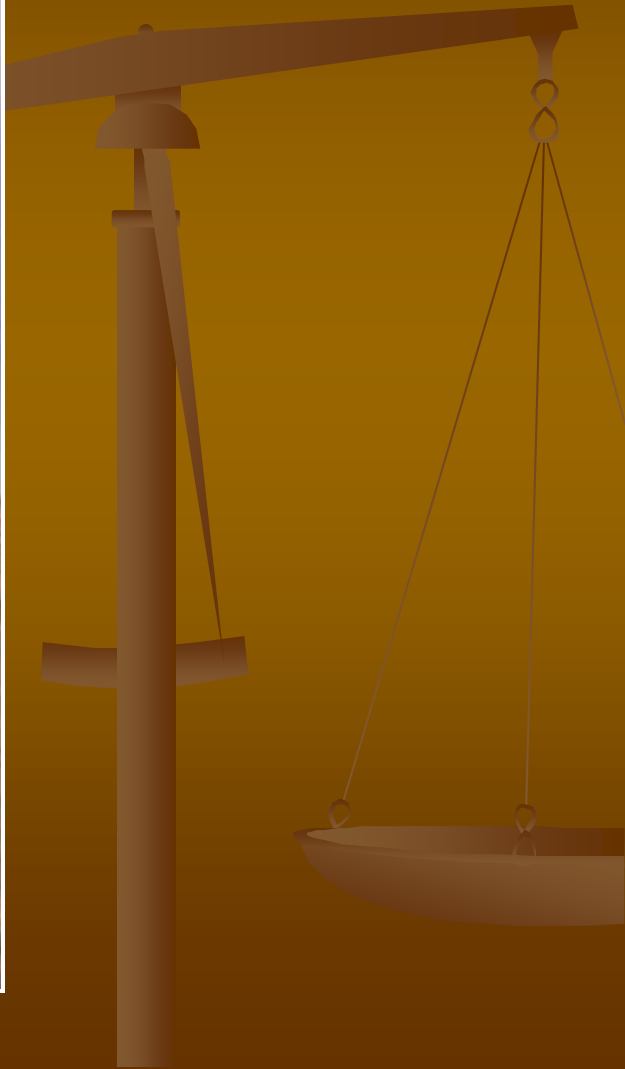
- This could cut your egress time by 50% or more
- Reaction time is faster than thinking about what to do, figuring out how to do it, and then actually doing it

What Makes Similar Parachutes Different?



What Makes Similar Parachutes Different?

- **Line Size and Tensile Strengths**
 - **Line Length and Inflated Dimension**
Generally speaking, the wider the inflated dimension, the slower your descent
 - **Types of Material used in Construction**
1.1 oz, Lo-Po and F-111 and their cfm (cubic feet of airflow through material)
 - **Canopy Diameters**
22', 24', 26' and 28' are in common use today
 - **Manufacturer's Speed and Weight Limitations**
 - Should be a minimum of 150 KIAS
 - Rated to carry a minimum of 220 lbs. (including all equipment worn)
 - Rate of descent of 16 ft/sec or slower (optimum)
- 



Not All Parachutes Are Created Equal

- A smaller chute may come down slower than a bigger one
- Choose wisely and ask questions before buying
 - What is the rate of descent with my weight and equipment?
 - What is the chute placarded at? (speed & weight)
 - Do I want a round or ram-air parachute?

Always have a rigger check out any used parachute before buying

BUYER BEWARE!



**You Get What
You Pay For.**

Proper Fit and Adjustment of Your Parachute

**Always don your parachute outside
of the aircraft (WHY?)**

1. I recommend that your chest strap be attached **first**, if you have one
2. Leg straps
3. Other adjustments

**You can fall out of an
improperly adjusted harness**

Major Reasons to Leave Your Aircraft

- Structural failure
- Severe control problem
 - 1) Did you check cables for frays (especially rudder cables)?
- Fire
- Mid-air collision
- Insurance Claim!



When You Decide To Bailout

1. Canopy/Door

- Jettison the canopy or door (if you have one)
- **NEVER** unfasten your safety belts first

2. Belts (Unfasten them)

- What about communication cords?

3. Butt (Get out of Aircraft)

- Claw, crawl or do whatever it takes to get out
Use both hands. Do not take hold of ripcord handle before leaving aircraft.
- Expect your exit to be very difficult
- Get clear of your aircraft before pulling ripcord

Look, Find, Reach & Pull The Ripcord

- Look at the handle when pulling. Never take your eyes off of ripcord, this is the most important thing in your life right now.
- Pull in direction of cable housing, as if your life depended on it
- Always use both hands to pull the ripcord if both are working. There are three correct ways to pull your ripcord
- Color coding ripcord will help locate it quickly

Parachute Deployment Time

- **Canopy must be Fully Open in 3 Seconds or Less to be Certified by the FAA**
- **Average Opening Time is only 2 Seconds**
- **Once Open, That's as Slow as You'll Ever Go**
 - If you're 6" off the ground, you just got very lucky
- **Loss of Altitude Will Vary According to Your Aircraft's Attitude and Trajectory**
 - Opening time is constant
 - Altitude loss will vary



Under an Open Canopy



1. Thank God

2. Your Number “1” Priority is to Miss Life Threatening Obstacles

- Turn your canopy with steering handles or rear risers only
- Below 200’ make minor turns unless you need to miss a life threatening obstacle

3. Face Into the Wind for Landing, if Possible

4. Forward Speed of Your Canopy

- Average is 5mph
- Determines your landing site
- Average glideslope is between 45 and 60 degrees, in whatever direction you are drifting

No Wind

Canopy Forward Speed = 5 mph ←

Ground Speed = 5 mph



Wind = 5 mph 

Canopy Forward Speed = 5 mph 

Ground Speed = 0 mph



Wind = 10 mph




Canopy Forward Speed = 5 mph



Ground Speed = 5 mph (backwards)



Wind = 10 mph 

Canopy Forward Speed = 5 mph 

Ground Speed = 15 mph



Prepare For Landing

A. Keep Eyes on Horizon

B. Feet and Knees Tight Together

1. Absorb most of landing on balls of your feet
2. Don't anticipate landing and raise legs

C. When You Touchdown, Tuck in Your Chin and Elbows

1. Get out of your harness quickly to prevent being dragged in high winds.

D. If Being Dragged and You Cannot Get Out of the Harness

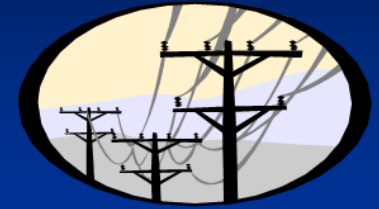
1. Collapse the canopy by climbing hand-over-hand up no more than one or two lines (side by side) towards the skirt of the parachute

Be Prepared.... We don't know where you're going to land...in the trees? Rocks? Sand? Is the wind 0 mph or is it blowing 20+mph? Will there be someone there to hand you a cold beer???

**YOU MAY GET INJURED ON LANDING I DON'T KNOW,
BUT THE ALTERNATIVES ARE NOT SO KIND
WITHOUT YOUR PARACHUTE**

Problem Landing Areas

A. Powerlines – Avoid At All Costs



B. Tree Landing

1. Feet and knees together, protect head and neck
2. Do not grab branches until stopped



C. Water Landing – Wear Flotation Gear

1. Make sure it's not under harness
2. Inflate prior to entry into water
3. **Do Not Ever** get out of harness prior to touching water
4. Swim away from parachute to prevent entanglement



Other Elements of a Successful Bailout

- **Wear a Helmet for Protection**

- Quick release on communication cord (this could prevent entanglement with deploying parachute)

- ★ ■ **Wear Nomex Clothing and Gloves**

- Replace when worn out

- **Carry a S.M.A.K. PAK Survival Kit**

- Mounts outside your parachute on the harness or inside on the right front riser
 - Contents: Hook Knife, Mirror, Whistle, & Fire Starter

- **Canopy Breaker**

- **Slide Back or Jettison Canopy During an Off Field Landing**

- **Make Sure Escape Handles Work Properly**

- **All Survival Items MUST be Carried on You**

- **Name Other High Tech. Items that are Available:**

- 1. ?

- 2. ?

Thanks Allen
Doug James



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- **Name Other High Tech. Items that are Available:**
 1. ?
 2. ?

Safely Back on Earth

A. Spread out Parachute
to Be Seen by Rescuers

1) What happens to my used parachute?
Can it be packed and used again?

B. Use Your Survival Equipment
to Summon Help

C. Congratulate Yourself on a Job Well Done



**THE MOST IMPORTANT
THING TO REMEMBER
IF YOU BAILOUT...**

Buy your rigger a bottle of their choice!

I prefer wine (NO screw lids please!)



Would your group like a seminar? They are affordable. Please feel free to call or e-mail.

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