



Aircraft Survival

Presented by Irene Arnold

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Seminar Series

PMA

◇ The key to survival is:

Positive
Mental
Attitude

• You will have to deal with many issues: Being alone, Darkness, strange Noises. Think it through, adjust your mindset to “it is all right and I will be all right” and you will be fine.

• Your brain is your best asset.

• If you think you will make it – you probably will!

Data from Rescue Center

- **Average time to get rescued**

- IFR Flight Plan: 4 hrs
- VFR Flight Plan: 38 hrs
- No Flight Plan: 3.25 days

- **Survival Rate**

- IFR & VFR: approx. 44%
- No Flight Plan: approx. 22%

* Flight-following = IFR flight plan for finding you!

A desert landscape at sunset or sunrise. The sky is a gradient of orange and red, transitioning to a dark purple and blue at the top. A crescent moon is visible in the upper right corner. The foreground is a dark silhouette of a desert landscape with various cacti, including saguaros and cholla.

STOP

Stop
Think
Observe
Plan

Survive!

- **3 days without water**

- Drink when thirsty!
- Drink 2X what you think you need to
- If your urine is dark, you need more water

- **3 weeks without food**

- Digesting food takes water



4 Basic Needs

Medical

Shelter

Signalling

- Fast burning fire
 - Keep your tinder and wood dry
 - Add green vegetation for black smoke
 - Tires/oil all burn with black smoke
- Mirror

Water

Survival Pack

- **Buy at store complete**
- OR**
- **Make your own (best choice)**
 - Pack for Your needs
 - Know what is in it
 - Pack for
 - Time of year
 - Terrain you will be flying over

Our Plane's Survival Gear

- Tent
- Tarp
- 2 Sleeping bags
- ThermoRest Pads
- Flashlight
- Black trash bags

- Tie-down ropes and 7 pegs

- Food

Jerky, Candy, Granola

- Strobes

- 2 FULL canteens (water, Nigel!)

- "Survival Kit"

Our Plane's Survival Kit

- ◇ Leather and string to make tools out of rocks and sticks
- ◇ Fish hooks and line
- ◇ Aluminum foil (mirror)
- ◇ Insect repellent stick
- ◇ Pieces of red cloth (bait)
- ◇ Chap stick
- ◇ Condom (canteen)
- ◇ Water purifying pills
- ◇ Wire
- ◇ Knife sharpener
- ◇ Cotton (fire kindling)
- ◇ Water-proof matches
- ◇ Needles
- ◇ Bandages and ointment
- ◇ 1st Aid Kit
- ◇ Razor blade
- ◇ Knife
- ◇ Whistle
- ◇ Compass
- ◇ Alum tape
- ◇ String sack
- ◇ String saw
- ◇ 2 emergency blankets
- ◇ Safety pins
- ◇ Candles
- ◇ Strip of rubber
- ◇ Batteries
- ◇ Holy Book
- ◇ Toilet Paper
- ◇ Cylume Lightstick
- ◇ Tea/coffee
- ◇ Disinfectant
- ◇ Raisens

Clothing

Wear enclosed footwear

Never fly wearing synthetics

they burn and melt onto you

but they are great in survival pack

Layer Clothes

Cover your neck and head

40% of heat loss/gain from this area

Wool retains some warmth when wet

Hypothermia

Low Core Body Temperature

First Signs

Shivering

Loss of Muscle Control

Mood Changes

Severe

Possibly NO Shivering

Just Want to Sleep

Think They are Fine





Hypothermia Treatment

Stop Further Heat Loss

Dry Clothes

Cover Head and Neck

Get Shelter

Rewarm Slowly

WARM, not HOT liquids

Hints for Survival

Finding water: Winter

Dig a hole

Put a can or cup in hole

Cover loosely with black trash bag

Poke a hole in trash bag above can

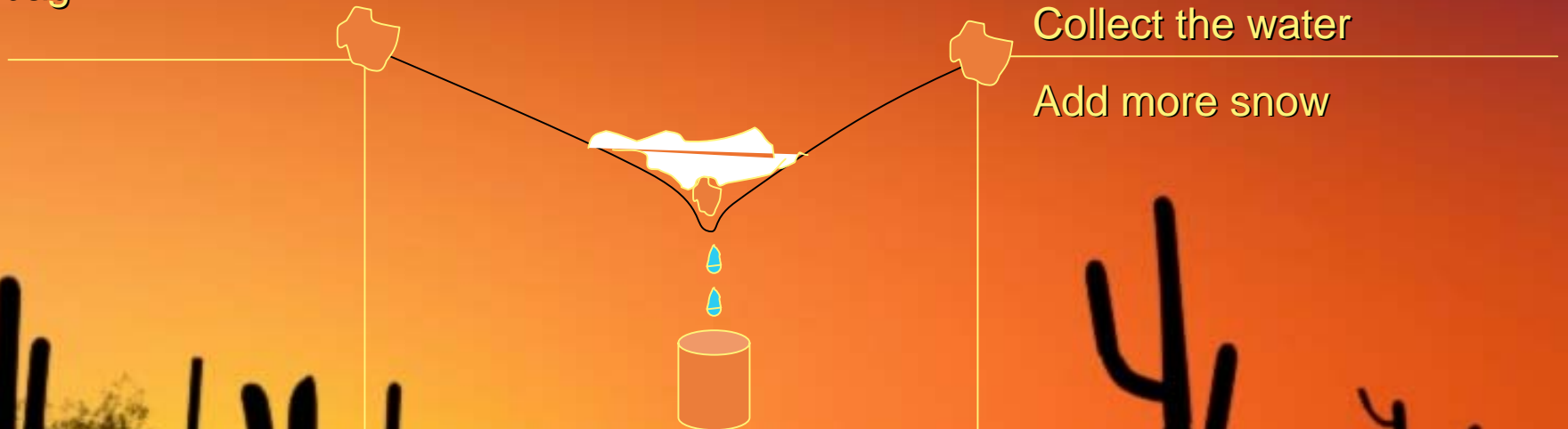
Put a rock to weight bag right over can

Fill depression with thin layer of snow (protect the snow from wind)

As snow melts in the sun

Collect the water

Add more snow



Hints for Survival

Finding water: Summer

Dig a hole

Put a can or cup in hole

Surround can with green vegetation

Cover hole loosely with black trash bag

Put a rock to weight bag right over can

As the sun heats the plants they will "sweat"

Sweat condenses onto bag and falls into the can

Collect the water at night

Add more plants



Hints for Survival

Finding water: Summer2

Find young, bushy sapling

Cover top with black trash bag and seal to trunk using rope

Weight one corner of bag so it hangs over your can

Cut a small hole in that corner

As the sun heats the plant it will “sweat”

Sweat condenses into bag and falls into the can

Collect the water at night

*Go Ahead,
you draw it.*

GGKetell





Hints for Survival

Finding South

Hold your analog watch horizontally

Align the hour hand so that it is pointing to the Sun

South will be pointed to by the line that bisects the narrow angle between the current hour and 12.

This method only works

in the Northern Hemisphere

between 6am and 6pm (otherwise you are finding North)

If the watch is set to True local time (without variation for summer daylight saving & ignoring conventional time zones that do not match real time)

http://physicalsciences.ucsd.edu/news_events/QA/qa_122204.htm

Hints for Survival

Finding North

Stand a stick in the ground pointing straight up

Mark the end of the shadow with a "W" or a pebble

Wait at least 15 minutes (an hour is better)

Mark the end of the shadow with a "E" or a pebble

Stand with you left foot on the "W" (first pebble) and your right foot on the "E" (second pebble)

You are now facing North

This method works any time of day at any latitude

U.S. Military Survival Training

Survival Uses For Aircraft Parts

from <http://www.faa.gov/fsdo/lincoln/planetalk/SEPT99.htm>

- ◇ AIR FILTER - fire starter since it's usually made of paper and is impregnated with oil - highly flammable
- ◇ ALUMINUM SKIN - reflector for warmth from a fire, signaling device, splint, snow shovel, saw blade
- ◇ BATTERY- signaling with aircraft lights or radio, fire starter
- ◇ BATTERY BOX - stove or cooking container
- ◇ CHARTS/MAPS - stuff inside clothing for insulation; don't burn them since you may need them for navigation if it becomes inevitable that you need to walk to rescue
- ◇ COMPASS - direction indicator
- ◇ CONTROL CABLES - binding for shelter, splints
- ◇ DOORS - shelter, windbreak
- ◇ ENGINE COWLING - shelter, water collection, windbreak, fire platform
- ◇ MAGNETOS - fire starter
- ◇ ENGINE OIL AND GAS - fire starter and fuel for fire, makes black smoke for signaling
- ◇ FABRIC SKIN - fire starting material and fuel, water collection
- ◇ FUEL CELLS - melt snow on black surface, burn for black smoke, lay out on ground for signals
- ◇ HOSES - siphoning fuel from tank
- ◇ INNER TUBES - canteen, elastic binding material when cut in strips, black smoke when burned
- ◇ INSIDE FABRIC - water straining or filter, clothing or coverings, bandages, fuel for fire
- ◇ LANDING LIGHTS, STROBES, ETC, - signals when used with battery, lights at night, reflective surfaces for signaling when the battery dies
- ◇ NOSE CONE/SPINNER - bucket; container for sand, oil, and fuel; scooping tool, pot for cooking, funnel

Survival Uses For Aircraft Parts

<http://www.faa.gov/fsdo/lincoln/planetalk/SEPT99.htm>

- ◇ OIL FILTER - burn for black smoke
- ◇ ROTATING BEACON LENS - drinking cup
- ◇ RUGS - ground pad, insulation, clothing or warm covering
- ◇ SEATS - sleeping cushions, back brace for spinal injury, insulation, ground pad, sponge rubber for neck support
- ◇ SEAT BELTS - binding material, slings, bandages
- ◇ TIRES - black smoke when burned
- ◇ VERTICAL STABILIZER - shelter support, fire platform
- ◇ WINDOWS - cutting tool
- ◇ WINGS - windbreak, shelter supports, overhead shade, platform for fire, water collector, signaling device; if the aircraft is intact, blankets or plastic tarps draped over the wings and secured to the ground make an excellent tent
- ◇ WINGTIPS - drip collection and water carriers
- ◇ WIRING - binding and rope, starting fire with battery
- ◇ WOODEN WING STRUTS, BRACES, OR PROPS - fire starter and fuel

