

SAFETY EQUIPMENT

Warbird Owners:

I have been asked to send this letter on to you, the reason is to congratulate someone for a job well done. On Tuesday April 24 we had a fellow T-28 Pilot lose his engine and had to make an emergency landing. Both the pilot and his back seater walked away unharmed. However, the letter goes on to talk about the clothing worn by these individuals at the time. The military spends a fortune designing and testing flight gear for their pilots to wear, flying these same types of aircraft, why is it we fail to heed their warning.

I am sending this out to the T-6/T-28, T-34 and the Red Airforce group. In the T-28's "the guy's" I fly with all wear full equipment, including the mask, When I fly my T-34 I fly with the mask still attached, for my own reasons, I'm not asking T-34 or Yak, Nanchang owners to get O2 masks but I ask and Mark asks that you please think about yourself and the people you take up with you. Michael J. Maloco

To one and all,

Many of you have called me regarding the airplane belly landing event at the Oxnard beach area yesterday. It was not me and I thank you all for your concern. The pilot is an acquaintance of mine, flying the same type of a/c that I own, off of the same air-port I'm based at. I am so happy to report that he and his pax are apparently very well and it was a 'walk away' event. The a/c may be a write off due to landing/ recovery damage. I thank God for their good fortune.

It appears that he used good stick and rudder skills, good decision making to not try to press on to the Oxnard airport (near-est... and oh so close, but not close enough), and flew the a/c until it stopped. It is my understanding only that it appears he was in a two ship formation flight over the ocean offshore the Oxnard/ Ventura area, got a chip light, got grey smoke, got black smoke, people on the ground report seeing two orange flashes with more black smoke (oil flash point/ small oil fire?), the engine started to eat itself. he made a play for Oxnard airport, that wasn't going to happen, and he elected to belly land on a beach area near the surf line, ground reports say there was again orange light/fire in the engine area just prior to his landing, the blades are bent back over the cowling suggesting he was making some sort of power through the touchdown, ground reports say the canopy was closed and then opened after the landing.

That profile could be any one of us (the warbird pilots in this email) and there are surely going to be some 'lessons learned' items to review (not getting the canopy open before the ground strike risk being trapped inside because of twisted canopy rails, etc, etc). The key to me is that this portion of his flight is a review/ lessons learned... not throwing rocks in a glass house... this could be any one of us on our very next flight... and I for one am not going to puff up and say "he shouda, wouldda, couldda done this, or I'd have done that" type of quacking. That's a bunch of bull. He had a real mess on his hands and recovered himself and his pax in about a two minute time frame. I honestly hope I can do that well, and don't have any issue with his recovery. God bless him and well done. However, I do have a deep issue with his initial profile of that flight, and his consistent actions therein: This pilot and his pax appear to have had absolutely no (zero, zip, nada) appropriate and needed flying/ safety/ SAR/life

vest/chutes/personal safety gear on. The news report shows the pilot standing around next to the a/c in a short sleeve shirt, baseball cap, sports pants, and sports shoes. This is his normal flight gear outfit.

When are we, as a warbird pilot/owner community, going to put a stop to this unacceptable situation?!

What we are wearing at take off in warbirds is what we have on when we come back to earth. Period! 'Come back to earth' does not necessarily mean a smooth landing at the airport we planned on. It may mean a belly landing, bail out, or crash. That smooth landing is only a one out of four possibility!

We are flying 40 + year old, war bird a/c and (single) engines in full up tactical flying, over water or other harsh locations that give us the elbow room to fly formation, aerobatics, ACM, or air-show practice. They carry some 200 gallons of av gas, 12 gallons of oil, a few gallons of hyd fluid, and perhaps high pressure O2. That makes for a really neat fire bomb that glides like a brick.

Here is a pilot out over the open ocean, with an engine eating itself up, at least an oil fire, and only 120 seconds until he is out of alt and airspeed... in sport shoes and a short sleeve shirt, with a pax on board in the same shape. Here is a pilot who was an attack pilot in the Navy, and a retired airline captain, with DECADES of formal safety training forced upon him in his profession. Here is a pilot who has never taken all of that training and common sense to heart in flying his warbird, even after direct, specific counsel-ing by myself and other warbird pilots. He has listened to me politely and made it very plain that it was going in one ear and out the other.

He is blessed beyond reason and I wish him well... and away from flying warbirds forever.

The Hawaiian shirt, shorts, and flip flop's warbird flying crowd is a nightmare waiting to happen. Beyond the terrible fate that awaits them (and a possible pax) sooner or later- it rushes the demise of warbird flying for us all. The law suits, insurance rate hikes, FAA oversight that follow this nightmare will add to the burden of flying these a/c to the point where they will be put up on monuments.

I have pounded and pounded on this rock (and lived what I preached) forever it seems. I am so sick of hearing 'it's too expen-sive to buy all of that stuff'- 'the NOMEX flight suit/gloves are too hot to wear'- 'the chute is uncomfortable'- 'the helmet makes it look like I'm playing Army'- 'the O2 mask is clammy on my face'- I don't need a visor, I wear sunglasses'- blablablablaba.....

Are there REALLY any of us who think we can sit in a burning a/c and hold our breath so we don't inhale toxic smoke, watch our limbs burn while we try to get it back to earth because we don't have a chute/NOMEX/proper footwear/helmet/mask/vest if over water? Who can say that they could swim to shore from the ocean a mile out (even a 1/4 mile!!) and through the surf line with-out a vest? Who think that those neat sunglasses are going to help protect them in the bird strike through the windscreen event that we all will have one day? Who can last most of a day in the desert waiting for a helo to find them after their bare head smacks the ground and they get dug by the chute in a golf shirt across the rocky ground?

Burns last a life time, sports shoes melted onto feet last a life time, blunt force unprotected head trauma last a life time, a broken face and inhalation of toxic smoke from lack of a mask

and O2 last a life time. The money loss fallout from a pax (or their estate) civil law suit last a life time, the burden it puts on the

I am sick of this. Sick of it.

I submit that you should be also. I submit that warbird pilots/owners formally confront this and halt it. No amount of gear will save a no hope fatal event. ANY gear will help save anything less! I submit that a venue may be through our insurance companies. I want to push them to write policies that mandate a fair, easy to do, established, minimum flight crew safety equipment list or the pol-icy is voided. This will drive the herd into the gear, or out of war-birds. If there are better ideas, now is the time to step up to the plate and get this problem halted. We're out of warbirds if we don't. We must do something that changes the status we are in now.

Any good ideas?

I know this will be passed around and I'll get shot full of holes. I could care less. Be part of the solution or shove it. I know that someone will forward this to the pilot. Go ahead... it's not like I haven't already spoken to him many times about his airmanship decisions. *Please wear the gear. Please.* Mark Mayte

Gentlemen and Ladies, Please take a look at the article which I recently submitted to a US Warbird magazine. Feel free to judge any or all of the points that I have made - I am only human, and am also biased. However I've flown professionally for three different air forces, and have flown with (as a passenger) many others. I've also been involved in a crash (again, as a pax), lost friends and many colleagues, had argu-ments with senior officers about my lack of survival equipment over Iraq and Afghanistan,

SAFETY EQUIPMENT FOR PILOTS

by Mike Jorgensen

Whilst waiting for the school bus one Tuesday morning, my friends were showing off their superior BMX skills, by "bunny-hopping" their bikes over the raised concrete walkway. When it was my turn, I attempted to set a new record by approaching the obstacle as near to Mach 1 as possible, without breaking any near-by residential windows.

Rapidly accelerating, slipstream roared over my head, as I experimented with a new style of pedaling. With my pedals now a blur, and the tyres at a critical temperature over the bitumen and gravel road, I was nearing my "rotate" point, with only another one or two vital pedals required before lifting off. Unfortunately my bare feet gave way and fell to the road, and I thrust my full weight down upon it. Luckily I slowed down, as my left foot jammed, and my toes helped to stop me. Unfortunately I left a layer of toenails, skin and blood on the gravel, and amazingly I gained some gravel in my feet. The ensuing hospital treatment hurt just as much.

I learned a valuable lesson that day, and no, it wasn't that I should give up BMX stunts. They were too much fun. But from then on I wore shoes whenever trying something risky on my bike. Over the years I also understood the benefits of helmets, gloves and other protective clothing, after exchanging bits of skin and blood for knowledge. I was a very slow learner, but I have the scars to prove it.

Nowadays in Australia it is compulsory to wear a helmet

rest of the warbird pilots last a life time. The list is a long and bad one.

and have even helped to change a pol-icy here in England. I'm also a civilian commercial pilot. I don't have many overall flying hours, but I've certainly been around the traps in some of the worst areas of the world. I'm much younger than I look :) Many of my friends have had their lives saved simply because this equipment was made mandatory. For some of them (such as was the case in two birdstrike through the canopy incidents), the difference between remaining alive and in control and completely being knocked out and killed was a thin line indeed. Please take a read, take any good points if you find them, and take them on board. And pass this onto your friends and colleagues. I'm not saying it should be mandatory, I'd just like people to really consider their options, and the cosequences of not. As uncomfortable as a hot flying suit might be at 90 degrees OAT, I guarantee that NOT wearing one during a cockpit fire will make you think much differently. Sure, an old nomex suit isn't as good as a new one - but it's 1000 times better than wearing a manmade fibre T-shirt, with meltable underwear under your shorts. Besides, new nomex suits are easily bought - I spent the cash on a new thicker one the night after my crash. You can get thinner ones, light coloured, with a cotton t-shirt underneath, which is even better to retain body fluids under the sun. During survival training (myself in four different countries) we were taught to keep fully covered - even in the Australian desert during the day. Obviously I'm a big believer in making the most out of life, and maximising your chances in case the shit hits the fan.

Yours sincerely,

Mike Jorgensen.

when riding a pushbike. Hopefully some kids won't have to learn things the hard way, as I did.

Next time you go flying, have a good think about what you are wearing. Chances are, you might be wearing shorts on a hot Summer day, with a loud Hawaiian polyester shirt that might dou-bly function as a safety reflector. Having originally learned to fly in a local Cessna 152, I was never educated about the benefits or risks of certain types of clothing. After continuing my flying with the military, I quickly learned that clothing can dramatically increase or decrease your chances of survival.

Now I'm not telling everyone to go out and buy a bulletproof helmet, nomex fire resistant suit, and an ejection seat. The military have good reasons to use this gear on a daily basis. First of all, they want to protect their aircrew. Secondly, they want their aircrew to feel secure. They also tend to push their aircrew and aircraft closer to the limits, in order to make the most of them. A sort of "be all you can be" type of attitude.

When things go wrong in high performance aircraft, they tend to go wrong very quickly. Sometimes for the military aviator, ejection may be the only option. During ejection, your helmet pro-TECTS your skull, the visors protect your eyes, and the mask pro-TECTS your face. The ejection seat has inertia reels to automatical-ly pull your body hard back into the correct posture, and your legs are dragged out from the pedals as the seat rises. Normally the drogue shoot will pull out the main chute at the correct time, and you will gently descend to an exciting reception party at Hugh Heffner's pool. Or alternatively you will land next to the flaming wreckage in the desert, or splash down in the

freezing waters in the middle of nowhere. Your survival will depend to a large factor, on your clothing. Lifejacket, liferaft, gloves, helmet, they all increase your likelihood of survival. How

Dress for the ground, not just for the cockpit. If you do force land in the snow covered mountains, your cockpit heating will no longer protect you. Your comfy woollen slippers will be no good for hiking out to safety, and your shorts will ensure that your legs will quickly turn bluer than the clearest of skies.

If you burn, will your clothing protect you? I've never been on fire, but pilots have been known to leap from their burning aircraft without a parachute. Obviously it's a very unpleasant experience. Some material will melt, and stick to your skin. Stockings are a bad idea too. Even a nomex flying suit will still allow the heat to transfer to your skin, so the secret is utilizing layers. Non-melting layers underneath the fire resistant outer layers help to trap air, and resist the heat. Cotton undergarments will multiply the tolerable heat. Leather boots will help protect your feet better than sneakers. Thin leather flying gloves may enable you to hold the control column for those vital few extra seconds whilst you complete a hurried forced landing whilst on fire.

These are all worst case scenarios, and I don't want to scare anybody, but they are all worth thinking about. Small changes can increase your safety.

If you are doing higher risk flying, such as low level flying, then consider purchasing some specialist high quality clothing as mentioned. "Flightsuits USA" retails all types of aviation protective clothing for the safety conscious among us.

Last year I flew with a formation flying group in California, and I was a guest of CAF pilot Mark Matye. I was relieved when Mark showed me his range of personal safety flying equipment, as I knew that we thought along the same lines, and I enjoyed discussing the benefits of it. The day before our cross country trip, we had a dry run, checking the suitability of our gear in his Trojan, communications, fitting, and location of important items.

In the back of his T-28, there was even a first aid kit tied down in a prominent, easy to reach position. As we were flying into the desert, we prepacked a number of water bottles into our flight suit leg pockets and we drank a whole bottle before leaving. We met and flew with a number of other pilots, flying Trojans, Texans, Mustangs, even a Skyraider, and I was happy to see most of them similarly equipped. Sure, we looked like a bunch of old military aviators about to fly a military aircraft out into the desert, and we were. Not military perhaps, but we were just as human as the next military pilot, subject to the same survival issues.

During a number of recent civilian flights, I was asked to wear the pilot's spare headset. However I insisted on wearing my helmet, due to the nature of flying that we were doing. This included close formation photo work, and low level flying. One of the pilots complained about the discomfort factor of his helmet. However I insisted I would still wear mine. Thankfully he used his as well. You must get this professionally fitted, and regularly adjusted. Complain about the discomfort, it can be fixed.

One photo flight that I was a passenger in, ended with a heavy landing, broken undercarriage, and we slid to a very prompt stop, with the propeller chewing up the grass runway. My first such event in 15 years of aviation. Luckily we didn't flip

many of us fly with this attached to us during our cross country navigation exercise in a Piper Cherokee?

over, and we were both safe. However I felt much better during that very short episode as I was protected as well as could be. My harness was locked and tight, I had a layer of cotton under my flying suit, leather gloves on my hands, and a new helmet protecting my head.

By no means did it guarantee my survival, but if the situation turned nastier, it could only help. Believe me, I actually thought about all of that during the few seconds of disaster. This will hurt, but with this gear on I just might make it, I thought, as I just hung on and waited for the inevitable.

Of course, dressing like this is not always practical, especially in Summer, or when carrying your family and friends on a cross country trip. Minimize the risks, and at least think about what you can do for the safety of all on board.

If you do find yourself in a survival situation, then consider the following priorities: Protection, Location, Water and Food. For the most part, they should be applied in that order of priority, but flexibility should also be considered.

Protection: Protect yourself from the elements (swim, get shelter or shade). Apply first aid.

Location: Ensure that you can do anything to increase your chances of being found. Prepare signal fires, fix the radio, write a big SOS sign in the sand.

Water: Keep well hydrated, and conserve your water output (ie sweating). If it's Summer, then consider working only at night.

Food: You should live for three weeks without food. It is the lowest priority. Don't eat if you do not have adequate supplies of water, because your body uses water to digest and process food. You will simply dehydrate quicker if you do.

Falling off my bike only sent me to hospital on a few occasions. Aeroplanes can hit the ground a whole lot harder, in much nastier locations. Increase your chances of survival by dressing appropriately. Who cares if you look like you're on your way to a fancy dress party? It's better than suffering from the effects of an accident.

Mike Jorgensen is a current military pilot, and he has undergone survival training by the military in Australia, New Zealand, Fiji and England. He believes that aircrew should do all they can to maximize their survivability, especially since many of the methods and equipment are easy, and cheap, when compared to human life. Whether you fly warbirds, aerobatic machines, helicopters, GA, or even ultralights, please consider what you wear and what you take up with you.

Hi, all,

Wow, I was in the southeastern corner of Colorado, totally out of comm, and come back to all this!

A couple of quick thoughts: I fly where Ed Holetting flew frequently. The CA coast is essentially mountains going into the sea with the narrowest of beaches. Where he put it down is just off Ventura and Oxnard, both pretty decent size towns with lots of buildings. Usually lots of people on the beach, although not this time of the year. Great flying and some luck (had he been a few miles further west or had there been peeps on the beach, he would have had to put it in the water and the outcome likely

would have been different).

I recognize that inflight attire is a personal matter. Let me relate a story I heard first hand from the guy who had the experience; many of you know him, but since he is not telling it, I'll not say who he is: Pilot departed an airport in his T-28 with a back-seater. Just after takeoff, smoke in the cockpit. Pilot had no helmet, no mask, no Nomex. Smoke made breathing impossible. So, he opens canopy. Really had no choice, since breathing is one of those mandatory things for us humans. Unfortunately, that feeds fire O2 big time. Now he has more smoke, flames, burning sensation, and still not much breathing. Only thing to do, is put it

Moral: He wears nomex and helmet and mask and breathes O2. (Very minor point: Nomex fire resistant properties do not decline with washing). To make a further case for breathing O2, I had a small experience that made an impression.

I lead a flight of 8 T-28s to Prescott a couple of years ago. I landed, got off the runway, and watched as the rest of the flight landed. I smelled something funny, sort of looked around, didn't see anything amiss, and concluded that since Prescott, AZ is an old mining town, maybe that was just how it smelled. The flight recovered, lined up behind me, and I started the taxi. Just about then, the smell got a little more intense, and I noticed smoke. Then more smoke came pouring up through the floorboards. I was taxi-ing at normal speed and had the canopy open. Even with the canopy open, I almost immediately began to choke and cough. I could not believe how acrid and enveloping the smoke was. I yelled something to the tower, pulled mixture, hit the master, and rolled off the taxiway onto a side ramp. As the airplane was rolling to a stop I unbuckled, and jumped onto the wing.

It turned out it was my aux hydraulic (i.e. Darton) pump that burned up (why it was on is another story). There was no flame, and the flight behind me did not even see any smoke. They were mystified as to why Lead suddenly turned into a dead end ramp and jumped out his airplane. Point is that even in an open canopy, meltdown of electrical cable/pump casing paint situation, in reality not a huge amount of smoke, I had a very difficult time breathing. I cannot imagine what it would be like in the air with the canopy closed and no quick way out other than jumping.

Moral: Smoke in a closed canopy is incredibly deadly and fast working. Highly recommend breathing O2. Gives us time to think and try to do something to address the problem. I would make the case for guys who fly over water to wear a survival vest with inflatable flotation, EPIRB or similar, radio, strobe, mirror, etc. Or guys who fly alone anywhere at least have some of this stuff (i.e. EPIRB or similar, handheld transceiver, mirror, for those of us who cross very large and empty deserts, water, etc.) in our flightsuit pockets or pockets in the chute (I believe Strong, for example, can build pockets into the chute pack for these items). All this stuff is just like insurance: we will probably never need it, but if we ever need it, and don't have, well, it would be pretty awful, and we'd feel really silly as we choked, burned, or drowned to death but for a few bucks and the relatively minor inconvenience or putting it on.

Ken Karas

OK, From the Navy perspective. In Pensacola the six months at Student Naval Flight Surgeons School, we spent four months in class studying all aspects of aviation safety. This included

down. Luckily, it is a rural area not like the areas that surround most of the airports most of us use and he puts it into a field. Unfortunately, there is a big ditch in the field. Airplane hits ditch at a good clip, flips on its back, and the fuselage sort of cracks open. Back seat guy has broken back, and manages to crawl out. Front seat guy is actually pretty unconcerned, because he is unconscious. Head hit glare shield and it both scalped him and knocked him out. Bad thing is airplane is burning, although he doesn't really know it. But, then, he wakes up, upside down, bleeding, burning, choking, yuk. Manages to get out through broken fuselage and survives to tell the story.

"Cockpit Lethality and other issue that made a crash/forced landing survivable. The two main issues were head injury and fire. Head injuries occur when the pilots head hits the panel, and the helmet offers good protection from this injury. The slower the forced landing and of course being under control are BIG factors. Also in FAA studies it has also been shown that if the front seat occupants had had head protection the injuries would have been survivable.

A simple bicycle helmet would have made the difference. Of course this is for controlled landings/ditches. A smoking hole is not included in this.

Fire, it is amazing how many pilots survive the landing just to burn while unconscious. So the helmet could be a big factor in GA accidents, since they have much lower landing speed even in power off situations. NOMEX does help but thick natural fabrics do offer some protection, as shown in Navy ships in WW-2 that requiring long sleeve shirts and pants offer some protection as compared to the British sailors who could wear shorts! NATOPS 3710 also states that natural fibers (Cotton/wool) are allowable in some aircraft. It is the synthetics that flash and melt to the skin!

So, wear a helmet you fly a war bird! It looks cool and you can get glasses with bayonet ear pieces. Use long sleeve clothes or NOMEX and good shoes. If you are on fire BAIL OUT!

Dan Serrato, CAPT FS USN, VAW-77, NAS ALANTA

Gentlemen,

I apologize for the delayed response, as I'm currently on a work trip. I absolutely agree with Mr. Matye's recommendations regarding personal life support equipment. However, I would like to reply to some specific points.

I whole heartedly concur that safety equipment is a personal choice. However, warbirds pilots make up the smallest percentage of general aviation and as such, subject ourselves to the most scrutiny. When a Cessna goes down it is referred to by the media simply as a "plane."

When a warbird of any type is involved in an incident "An ex-military planes crashed." along with all the negative connotations and stereotypes that accompany those of us who operate military equipment.

When a pilot believes a mishap involving his aircraft only affects himself and his assets, he is dead wrong. Whether an L-4 or a P-51 crashes, it is a warbird, insurance rates and public oversight increase accordingly. All the worse if a fatality is involved.

In the case of safety equipment, a pilot's life can be saved or prolonged long enough to egress a stricken aircraft if he/she is wearing safety gear.

As for the comment that an old used flight suit provides no thermal protection, this is an incorrect statement. A Nomex garment no matter how many times it has been laundered will pro-

vide at least “10 seconds to burn”. It will be hot, but your skin won’t melt. At the very least, it won’t melt to your skin as will the nylon/polyester outfits and flip flops that have been recently seen on some pilots. If nothing else, find a cotton shirt, pants and leather shoes to fly in. I will accept the risk of overheating during every flight by proper preparation, in lieu of the one in a thousand chance I will live the rest of my life a grotesque monster from burns. One only needs to view an aviation burn victim once to for-ever be a proponent of safety gear.

There are a myriad of reason pilots refuse to wear safety equipment varying from ignorance, fear of being accused of play-ing “Army”, to defiance from being “bullied.” In actuality, when you strap on your ex-military aircraft, you are already deeply committed to “playing Army”, and all the responsibility associat-ed with it. If you are skilled and responsible enough pilot to oper-ate a warbird in the envelope for which it was originally designed, then you should probably be prepared to wear the same equipment as the pilots who originally flew them. I have an extensive digital library of visual aids promoting the pros and cons of personal safety equipment if any of you would like to conduct research of your own.

Michael Rutledge
Flight Lead, U.S. Army Special Operations Command
Aviation Safety officer
Aviation Life Support Equipment Officer

I’m having a hard time believing this is a point of debate I’m sure glad I had an O2 mask both times my cockpit filled with smoke in my T28, could barely see the smoke was so noxious...would not have been able to breath period...just whip-ping the canopy open before I determined I didn’t have a cockpit fire would have been a mistake I’m sure glad that Air Force viper pilot flying in that back of my Dad’s P-51 had his helmet, mask and visor on the day he got a face full of pelican

If you can only afford one piece of safety equipment, I would recommend purchasing a quality helmet. If you have to dead stick an aircraft (onto a beach) or any other unimproved surface, your biggest hazard other than fire, is blunt head trauma. I can recite several accident reports where an occupant survived the inflight emergency, only to be impaled by a dash-mounted compass, or at the very least incurred a severe concussion by impacting cockpit equipment. All the worse if you receive head trauma and your egress is delayed from a burning aircraft.

doing 300 knots.. his flying career would have likely been over due to pelican bone and canopy fragments in his eyes and face....

This is America and you are somewhat free to do what you want. Indeed safety gear is only one aspect of risk minimization involved in operating military/ex -military aircraft. I am firm believer in stacking the deck in ones favor in all aspects of doing this stuff..training, maintenance,gear and the all encompassing good judgment. It may be a personal freedom issue to our dis-senter, but unfortunately it reflects on all of us and MY personal freedom to operate warbirds when the FAA and/or the insurance industry shut us all down because of too many accidents due to lack of good judgment.

I figure the military has just a little experience in the area in question and sets a pretty good example. Imagine a Navy, Air force, Army or Marine pilot showing up at their squadron to fly in some Cessna-wear...

Those of us civilians like Mark and I who fly with the military would not think of showing up attired in anything but nomex and related safety accouterments...I don’t think much more needs to be said about putting a passenger in one of these airplanes ill equipped in any fashion, (gear training etc)

I’m a 100% behind Mark on this one....

Alan Anders

PS If your Nomex gets to hot, I’ve installed an AC system in my Spad: Place a bottle of water in the cockpit and pour some down the inside of your flight suit until a comfortable temperature is achieved.