

Newsletter - October 2004

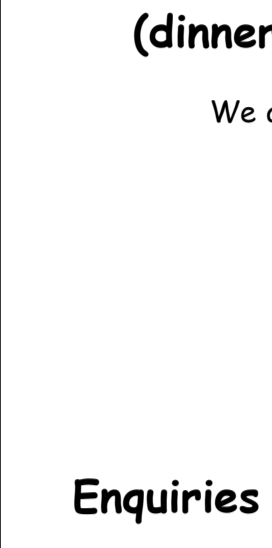


Grant Furzer, Tom Sparkes and Warren Lewis "discussing" causation and remedy for a broken nose retract on Grant's new "Bear", George Ward looks on with interest.

MEETINGS MEETINGS MEETINGS MEETINGS MEETINGS

The next meeting will be held on **Tuesday, 12th October 2004** and the one after that is on **9th November 2004** at **Tennis Cove, Eastern Valley Way, starting at 7.30 pm.**

FROM THE SECRETARY'S DESK



(General Meeting September 2004)
 The National parks have removed the 'Dozer and the fire trails in our area are now ready for emergency vehicles if needed in the coming season. Our field will be available as a staging/refuge for these vehicles if ever needed.
 Well the September working bee was a no show day. A must show working bee is on Saturday 25 September, commencing 9am, because that pile of sandstone fill up near the entrance has to be moved. The gear needed is a couple of box trailers please (of course attached to a vehicle!) and your personal gear of gloves and a shovel. Please be a bee (and not a b.....) the more helpers the easier it is and the quicker flying will be permitted to re-commence.
 Talking of flying, the September meeting resolved to donate \$1000 to the local Bush Fire Brigade and it is intended to present this at the field to the Firey's who will be invited to a free barbecue and to have a go at flying. Several members have volunteered to Buddy box the guys and gals. The BBQ will also be free to members on the day. The date suitable to our guests will be advised on the Club web page.
 Still on the flying theme, (not a surprise in a flying club where our choir and band practice are very poorly attended!), the CFI has reminded us that range checking has been missing of late with some members. We need to remind each other about range checking to ensure not only safe practice but of course the survival of YOUR model. The check needs to be at least 30 metres with the aerial retracted.
 The signs in the pits have been upgraded to the new CASA rules. As has been previously reported it is permitted to take off in a southerly direction from the pilot line with a fixed wing plane BUT that plane must not leave the ground until past the 30 metre boundary (the edge of the uncut grass)
 We all wish Tom Sparkes, David Foster, Garry Welsh and Grant Furzer safe flying at the Shepparton real scale model fly in on 18/19 September. A large contingent of member groups will be there to give moral and large support. I am sure our photographer, Des Kim, will have some interesting shots for a future Newsletter.
 You are reminded to get your Xmas party tickets NOW!!

WRCS CHRISTMAS PARTY
4 pm on SATURDAY
11th December
(dinner served at 6pm, keep your ticket to hand it in!!)

We again are catered for by McGoo's Spit Roast with lots of yummy food.

Adults \$20;
Children 5-12 \$10;
under 5 FREE

Enquiries and Tickets available from Brian Porman and Stefy Grech

Raffle tickets are also available from Brian Porman and Stefy Grech, or by mailing your cheque to:

Brian Porman at 27 Kirkpatrick Street North Turramurra 2074

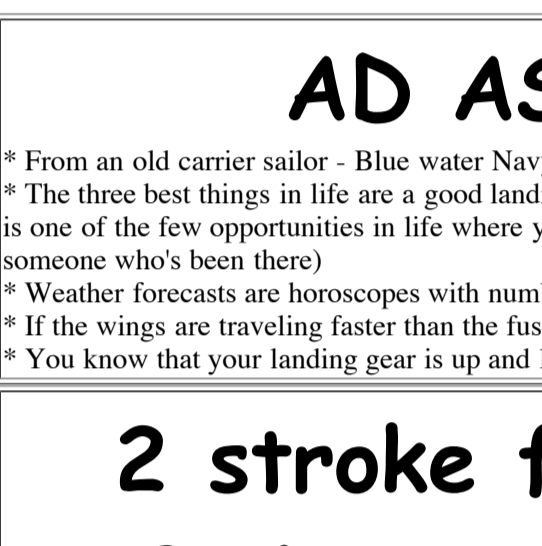
First prize is a pick of:

ARF Piper Tomahawk (77 inch span) or a PICA Cessna 182 kit (86 inch)

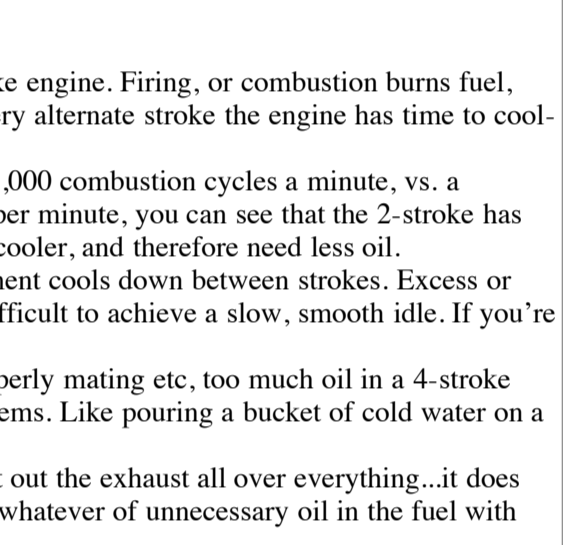
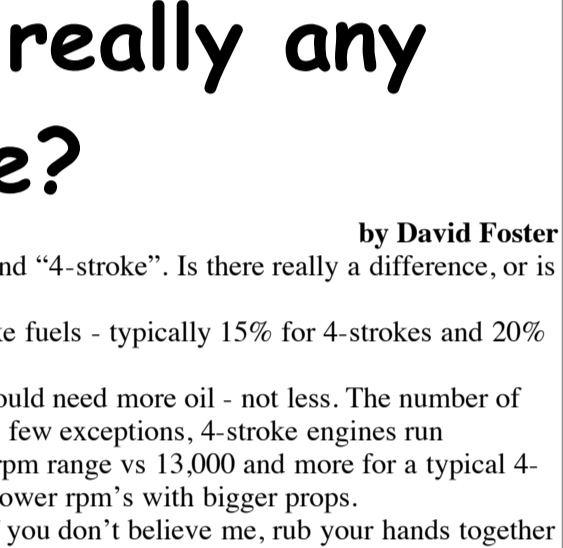
Tickets are \$5 each.

FROM THE STUKA WORKSHOP #3

The only plug left to make is one from which the mould will deliver six undercarriage pants for our three models. The plug will be in two parts. Together with the inverted gull wing the Stuka undercarriage is a distinctive feature so you would reckon our Zirolli plan would be spot on. Right? Well unless he worked from some different drawings, no, wrong!
 Once again the Zirolli plans only give a side view, and no front view, but the overall leg length on the plan is about 35 mm short as measured on the 172 three view drawings. And looking at photographs of the bigger 100 inch Stukas at Bomber Field you can see that those had short fat looking pants.
 I generated drawings of various sections through the side view, and a footprint, from the small three views. As bending and shaping balsa was going to be too hard for me (if only I could emulate George Ward's balsa carving skills!) I purchased some very expensive Klegercell .
 Klegercell is a foam that is currently being used in surf boat building. It is extremely light, easily cut with any blade and leaves practically no dust when sawn or cut, easily sanded, and appears to be able to be glued with any glue including CA. I purchased two, 15 mm thick sheets, each 1200 x300 from a boat builder in Brookvale for \$30!



Photograph 1 shows the start of the process. The distinctive side view of the lower part of the pants is at the top, and this is 150 mm high. In the centre of the photograph the completed upper part of the undercarriage pant may be seen with a curved 2 mm thick balsa section to marry to the underside of the wing. (The curve was achieved using ammonia and a lead weight to preshape the balsa, and then when dry it was glued to the foam with Triton.)
 This upper part of the leg is 50 mm high. The deduced cross section of this part, made in balsa, may be seen on the underside.
 A similar balsa section glued to the top of the main part is some 3 mm undersize of the upper part, so that the lower section can fit inside the upper part to allow for oleo action. [At this stage we are all going with the lighter wire u/c which seemed to work well on the 100 inch models].
 I started using Triton glue to glue foam bits to the main outline shape. Being impatient and not wanting to wait 24 hours I foolishly switched to Liquid Nails.
 Boy did that bugger things as the damned stuff sets too hard to sand and so I switched back to Triton and waited various little bits were added, sanded, added, etc.
 Photograph 2 shows the spak filled lower section, with the balsa section glued at the top, sitting on the drawing of the footprint.
 Photograph 3 shows the two sections coated with Spackfilla and waiting for a final sand. Or should I say for my final sand! No doubt Grant will do more as he undercoats etc prior to preparing the mould.
 And I have asked Grant again to give up some of his fibre glassing secrets as promised in the last article.



AD ASTRA DICTUM

* From an old carrier sailor - Blue water Navy truism: There are more planes in the ocean than submarines in the sky.
 * The three best things in life are a good landing, a good orgasm, and, a good bowel movement. The night carrier landing is one of the few opportunities in life where you get to experience all three at the same time. (Author unknown, but someone who's been there)
 * Weather forecasts are horoscopes with numbers.
 * If the winds are traveling faster than the fuseage, it's probably a helicopter -- and therefore, unsafe.
 * You know that your landing gear is tip and locked when it takes full power to taxi to the terminal.

2 stroke fuels -v- 4-stroke fuels... Is there really any difference?

by David Foster

On the shelves of most hobby shops you'll find fuel labelled "2-stroke" and "4-stroke". Is there really a difference, or is this a big con by the fuel manufacturers to sell you more fuel?
 The main difference is that most 4-stroke fuels contain less oil than 2-stroke fuels - typically 15% for 4-strokes and 20% for 2-strokes.
 * You'd think that because 4-stroke engines have more moving parts they would need more oil - not less. The number of moving parts has nothing to do with it. What is important is that, with very few exceptions, 4-stroke engines run substantially slower than comparable 2-strokes...most in the under 10,000 rpm range vs 13,000 and more for a typical 4-stroke of the same size. They are designed to deliver maximum power at slower rpm's with bigger props.
 The more slowly an engine turns, the less heat it generates from friction. If you don't believe me, rub your hands together slowly, then as fast as you can.
 So...lower rpm's = less heat = less need for oil.
 Four-stroke engines fire every alternate stroke, vs every stroke in a 2-stroke engine. Firing, or combustion burns fuel, which creates heat. Logically it may be deduced that if the engine fires every alternate stroke the engine has time to cool-off a little between combustion cycles.
 Using, for example, a hypothetical 4-stroke engine turning 10,000 rpm = 5,000 combustion cycles a minute, vs. a hypothetical 2-stroke turning 13,000 rpm with 13,000 combustion cycles per minute, you can see that the 2-stroke has 160% more combustion cycles than the 4-stroke. Ergo: 4-strokes remain cooler, and therefore need less oil.
 Because the 4-stroke is only firing every alternate stroke the glo-plug element cools down between strokes. Excess or unnecessary oil constantly dousing the element is going to make it more difficult to achieve a slow, smooth idle. If you're one of those who say, "Too much oil can't hurt anything", you're wrong.
 In addition to causing undue friction in the engine, keeping parts from properly mating etc, too much oil in a 4-stroke fuel is constantly trying to cool a plug element that is already having problems. Like pouring a bucket of cold water on a bloke who is already shivering.) burn...it simply lubricates and goes straight out the exhaust all over everything...it does nothing to help us deliver power. However suppose we replace that 5% or whatever of unnecessary oil in the fuel with methanol which doesn't burn. What do you know...greater top end power.
 The conclusion to be drawn from all this is that a properly blended 4-stroke fuel containing 15% oil will give better all-round performance than a regular 2-stroke oil containing 20% oil in the same engine.
 While it's not actually going to harm anything by running a 2-stroke engine in a 4-stroke engine, don't do it the other way around. It's not going to have enough oil.
 The manufacturers of 4S engines - the most powerful 4-stroke engines available - recommend their engines be run on fuel containing 20% oil. These engines are quite unique in many ways and the manufacturer's recommendations should be followed.

ATTENTION ALL PILOTS

The 30 metre safety exclusion zone is now additionally defined by a white line marked on the northern edge of the flying field in front of the pit area. All flying (including helicopter hovering) must commence after the model is south of the line, that is, on the main flying field. For aircraft this means taking off at a slow walking pace until on the field and for helicopters, carrying the helicopter onto the near edge of the flying field. All models must be flown south of this line at all times except for helicopters hovering in the hovering area east of the pits. Helicopter pilots please ensure you are on the main flying field or at least 30 metres east of the pit fence at any time the blades are turning.
 (Note: The hovering area may be closed on special event days.)

Emergency Safety Alert: Lithium Battery Fires

from MAS Newsletter

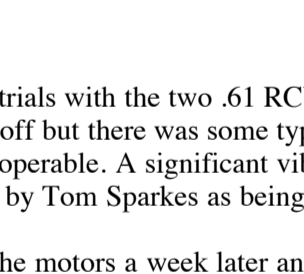
Lithium batteries are becoming very popular for powering the control and power systems in our models. This is true because of their very high energy density (amp-hrs/wt. ratio) compared to Nickel Cadmium (Ni-Cds) or other batteries. With high energy comes increased risk in their use.
 The principal risk is fire which can result from improper charging, crash damage, or shorting the batteries. All vendors of these batteries warn their customers of this danger and recommend extreme caution in their use.
 In spite of this many fires have occurred as a result of the use of Lithium Polymer (Li-Poly) batteries, resulting in loss of models, automobiles, and other property. Homes and garages and workshops have also burned.
 A lithium battery fire is very hot (several thousand degrees) and is an excellent initiator for ancillary (resulting) fires. Fire occurs due to contact between lithium and oxygen in the air. It does not need any other source of ignition or fuel to start, and burns almost explosively.
 These batteries must be used in a manner that precludes ancillary fire.
 The following is recommended:
 * Store and charge in a fireproof container, never in your model.
 * Charge in a protected area devoid of combustibles.
 * Always stand watch over the charging process. Never leave the charging process unattended.
 In the event of damage from crashes, etc., carefully remove to a safe place for at least a half hour to observe. Physically damaged cells could erupt into flame. After sufficient time to ensure safety, damaged cells should be discarded in accordance with the instructions which came with the batteries. Never attempt to charge a cell with physical damage regardless of how slight.
 Always use chargers designed for the specific purpose, preferably having a fixed setting for your particular pack. Many fires occur in using selectable/adjustable chargers improperly set.
 Never attempt to charge lithium cells with a charger that is not specifically designed for charging lithium cells. Never use chargers designed for Ni-Cd batteries.
 Use charging systems that monitor and control the charge state of each cell in the pack. Unbalanced cells can lead to discharging if it permits overcharge of a single cell in the pack. If the battery shows any sign of swelling, discontinue charging and remove them to a safe place—outside—as they could erupt into flames.
 Most important: NEVER PLUG IN A BATTERY AND LEAVE IT TO CHARGE UNATTENDED OVERNIGHT.
 Serious fires have NEVER resulted from this practice.
 Do not attempt to make your own battery packs from individual cells.
 These batteries cannot be handled and charged casually such as has been the practice for years with other types of batteries. The consequence of this practice can be very serious and result in major property damage and/or personal harm.

AMA Safety Committee
 Academy Of Model Aeronautics
 5161 E Memorial Drive
 Muncie, IN 47302

WHAT IS GLOBALISATION?

The answer is Princess Diana's death. You are of course prompted to ask how come?
 Well, an English princess with a Egyptian boyfriend crashes in a French tunnel, driving a German car with a Dutch engine, driven by a Belgian who was drunk on Scottish whisky. (check the bottle before you change the spelling) followed closely by Italian Paparazzi, on Japanese motorcycles; treated by an American doctor, using Brazilian medicines. This story is edited using Bill Gates' technology, using a computer that uses Taiwanese chips, and a Korean monitor, assembled by Bangladeshi workers in a Singapore plant, transported by Indian lorry-drivers, carried on a ship of international convenience manned by Phillipinos, and delivered by Asian illegals.....
 That, my friends, is Globalization.

COLUMN 9.9
 (incl. GST)

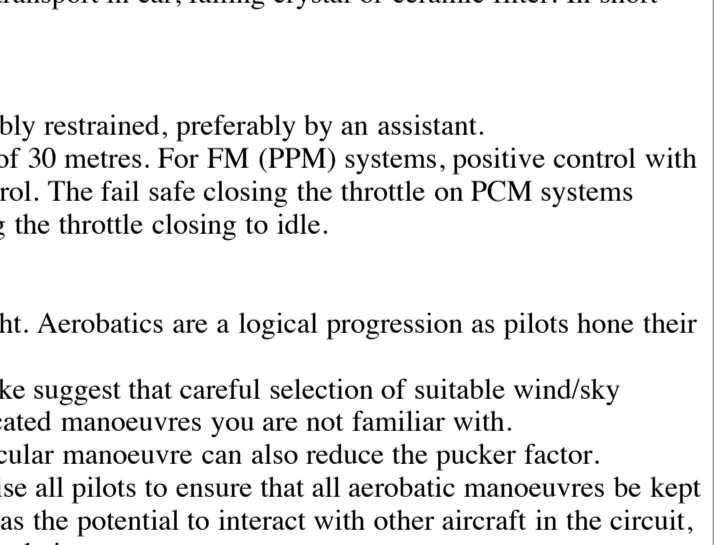
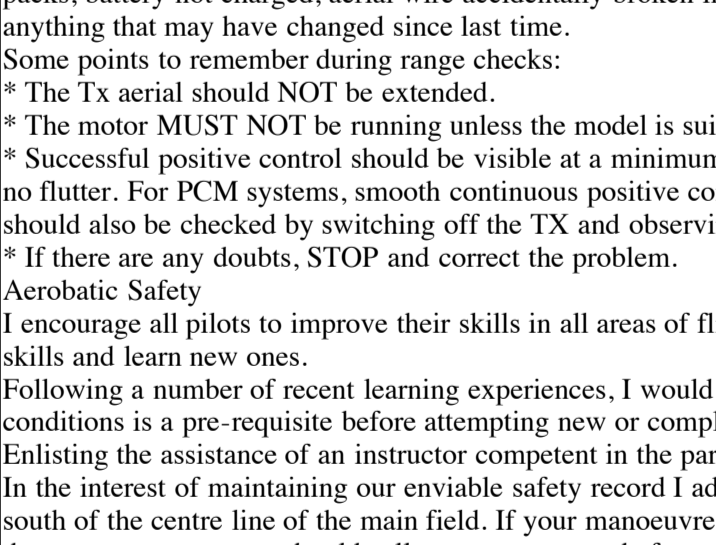


Doug Radford suggests an interesting Web address. Enter the Mustang Model Aircraft Association website at mmaaamodelairplanes.org and then follow the links to "Fun Stuff" and "Calculators". Enough good info to make sure that you even a dumb "clutz" like me may be able to select the right prop.

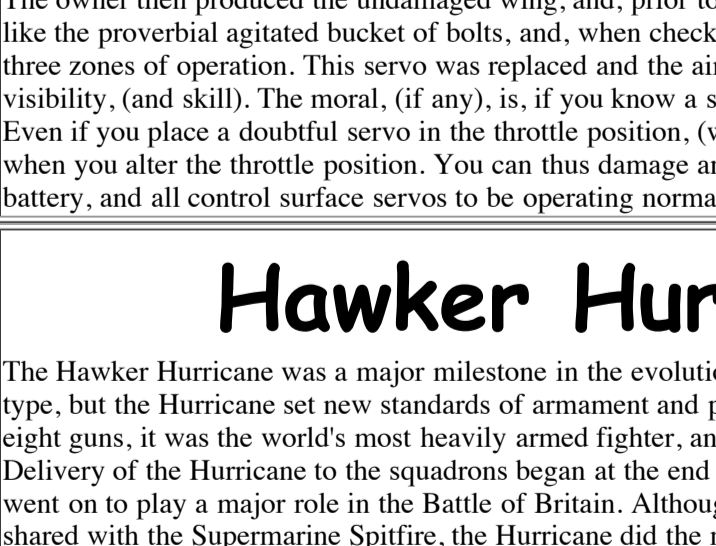
Recent work at the field and the road will have brought about a real improvement in the facilities. Continued work to clear the pampas grass is ongoing and a working bee at the end of September will see the end of this year's maintenance programme.
 Rubbish ... and yes, cigarette butts ... left all over the place has pigarete butts, please remove your rubbish (especially broken prop blades which become projectiles when the mower strikes them).
 Special thanks to Garry Welsh who takes the rubbish left behind by unthinking Members home.

MORE FROM THE WORKSHOP

Grant Furzer seen in his garage workshop with the 4 metre "TU 95 Bear". The size was dictated by the diameter plastic pipe that was available (150mm) for the fuselage mould!



A few days after the pictures were taken Grant tried the first taxiing trials with the two .61 RCV 's (two dummy motors). There was apparently plenty of power as the model looked set to lift off but there was some type of open circuit from the "i4C circuit control switch to the receiver so the four flaps were not operable. A significant vibration on one motor that actually caused the needle valve to wind in was eventually identified by Tom Sparkes as being caused by an eccentric prop washer in the plane at right angles to the flight direction.
 With a David Foster only puffer Grant reset the washer and ran the motors a week later and then did some more taxiing practice only to snapp the nose leg. Flight tests to ready the model for certification and then final detailing will have the model ready for September Scale Day.



CFI Corner

by George Atkinson



In my last CFI corner I talked briefly about safety as an attitude. Following on that theme, it is important to identify who is responsible for safety. Is it the CFI? Is it the Committee members? Is it the general members? Is it the guests and visitors?
 The answer is all of the above. We are all responsible.
 It doesn't matter who you are, if you see something you feel is a potential safety issue, you are encouraged to discuss with the person involved and/or the Committee or CFI. I am especially interested in constructive feedback on any safety related matter. It is not possible to legislate attitude, however, working together we can effect positive changes that will benefit us all.
 Range Checks - Every Model - Every Day
 Many of you are already completing comprehensive range and model checks before you fly. This not only checks if your model is ready and safe to fly, it checks if it is ready and safe to fly with other pilots and models. Range checks can help to find defects in your model or radio gear before you take off. Including, but not limited to, things like failing battery packs, battery not charged, aerial wire accidentally broken in transport in car, failing crystal or ceramic filter. In short anything that may have changed since last time.
 Some points to remember during range checks:
 * The Tx aerial should NOT be extended.
 * The motor MUST NOT be running unless the model is suitably restrained, preferably by an assistant.
 * Successful positive control should be visible at a minimum of 30 metres. For FM (PPM) systems, positive control with no flutter. For PCM systems, smooth continuous positive control. The fail safe closing the throttle on PCM systems should also be checked by switching off the TX and observing the throttle closing to idle.
 * If there are any doubts, STOP and correct the problem.
 Aerobatic Safety
 I encourage all pilots to improve their skills in all areas of flight. Aerobatics are a logical progression as pilots hone their skills and learn new ones.
 Following a number of recent learning experiences, I would like suggest that careful selection of suitable wind/sky conditions is a pre-requisite before attempting new or complicated manoeuvres you are not familiar with.
 Enlisting the assistance of an instructor competent in the particular manoeuvre can also reduce the pucker factor.
 In the interest of maintaining our enviable safety record I advise all pilots to ensure that all aerobatic manoeuvres be kept south of the centre line of the main field. If your manoeuvre has the potential to interact with other aircraft in the circuit, then as a courtesy, you should call your manoeuvre before you do it.
 I welcome all positive discussion on these and other subjects.

A CAUTIONARY TALE.

by George Ward

I was recently asked to re-build/refurbish a fuselage nether region after an unscheduled arrival. Not a huge job ... replace a damaged elevator ... re-hinge as required, and provide/ fit Balsa stabilizer inserts for the replacement hinges, then re-spray to match original colours.
 The owner was asking the usual question: "Why the sudden loss of control?" The servos were removed from the fuselage as was the receiver, battery, and the switch/harness. The receiver was tested, (sensible action after any bingle), and, although no major fault was found it was re-tuned to frequency and a range check the subject of a variable with Tx antenna retracted was obtained.
 The fuselage servos were all tested with a digital servo tester and the switch/harness subjected to the field with frequency vibration test. Again, no fault found. This was now head scratching time. (being careful to avoid splinters in the process). The owner then produced the undamaged wing, and, prior to bolting it on I checked the wing servos. One servo showed like the proverbial agitated bucket of bolts, and, when checked on the oscilloscope showed a huge spike and feedback in three zones of operation. This servo was replaced and the aircraft can now be safely flown to the limit of the owner's visibility, (and skill). The moral, (if any), is, if you know a servo to be dodgy, replace it!
 Even if you place a doubtful fly in the throttle position, (we all do it), it may well cause interference/loss of control when you alter the throttle position. You can thus damage an aircraft yet the Shed Post Mortem could well show the Rx, battery, and all control surface servos to be operating normally.

Hawker Hurricane Mk I

The Hawker Hurricane was a major milestone in the evolution of British fighter planes. Monoplanes weren't new to the type, but the Hurricane set new standards of armament and performance in one stroke. When it appeared in 1935, with eight guns, it was the world's most heavily armed fighter, and it was Britain's first to exceed 300mph.
 Delivery of the Hurricane to the squadrons began at the end of 1937, and in 1940, the plane went on to play a major role in the Battle of Britain. Although much of that glory must be shared with the Supermarine Spitfire, the Hurricane did the majority of the defensive work.
 There were 32 Hurricane squadrons in the battle (compared to 19 Spitfire squadrons), and the Hurricane's simple structure enabled damaged aircraft to be repaired more quickly. Its easy-maintenance features also reduced turnaround time.
 Design of the Hurricane began in January 1934, as a private venture by the Hawker Aircraft Company when Sidney Camm became aware of a new 910hp Rolls-Royce engine that was being developed. Camm sought to design a new monoplane to capitalize on this advanced engine, which was later ordered into production as the famous "Merlin."
 Previous Hawker fighters had all been biplanes, and the new Hurricane was a prime example of a transitional design. The details of the fuselage, tail, and radiator of the monoplane closely resembled those of the biplanes, but its major difference was the fitting of a metal-frame, fabric-covered monoplane wing that contained an inward-retracting landing gear. In September 1934, Hawker showed drawings of the new design (which used two nose guns and one gun in each wing) to the Air Ministry. An official specification was written to cover the design, and on January 10, 1934, a contract for a prototype was awarded.
 During construction, the armament was revised to use eight .303-rifle-caliber machine guns that were entirely enclosed in the thick wing.
 The prototype flew on November 1, 1935, and demonstrated a high speed of 315mph at 16,200 feet (5,000 meters). Production orders followed for a total of 3,759 Hurricane Is, and later models brought the total number of Hurricanes to 14,557.
 Early production Hurricanes were fitted with 1,030hp Merlin II engines that drove two-blade, fixed-pitch, wooden propellers, but these were soon replaced with variable-pitch, three-blade metal units.
 During the production of the Mark I, the Hurricane adopted several significant state-of-the-art improvements. The wing structure was changed to all-metal; constant-speed propellers were adopted, and armor for the pilot and fuel tanks was added.
 The appearance of the 1,280hp Merlin XX engine with a two-stage supercharger resulted in the major Hurricane model-the Mark II-which had many variants, mostly in the arrangement of armament. Two different wings were built, one for 12 .303 guns (Mark IIB) and the other for four 20mm cannon, plus hand points for up to 500-pound bombs (Mark IIC). The Mark IIA had the original eight-gun wing, the Mark IID had two 40mm cannon that were mounted below the wing.
 As a fighter, the Hurricane was generally surpassed by the German Messerschmitt 109. As the Hurricane was improved, so was the 109. The Hurricane was outclassed as an interceptor fighter by mid-1942, but with the new wing and heavier armament, it became a highly successful low-level fighter-bomber and tank buster.

