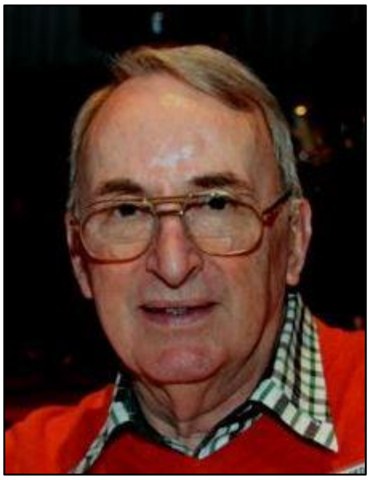
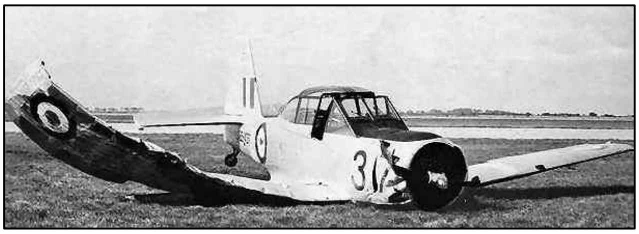
Pedro's Patter.



I left the RAAF in 1973 to join the Department of Civil Aviation (DCA). My final RAAF posting was as Chief Flying Instructor (CFI) at 1 Basic Flying Training School (BFTS) at Point Cook. I had a staff of excellent flying instructors, which made my job relatively easy.

BFTS was a busy outfit back then, with a throughput of 25 students per course supplying Advanced Flying Training School (AFTS) and thence pilots for various squadrons including those feeding the Vietnam effort. Day to day operations were fairly routine. My job was to check students' progress at intervals through the course, and occasionally terminate them from the course if they were not making the grade. The process was known colloquially as a "scrub ride". The worst part of this for me was commiserating with the unfortunate student sitting across from my desk who often burst into tears on receiving the bad news.

I recall a few occasions which were not routine. One of the flying sequences taught to students was a practice forced landing (PFL), where the instructor simulated an engine failure and taught the student how to set himself up for a landing in a paddock out in one of the training areas. At a low level power was applied to climb away and the PFL completed. When considered proficient the student was cleared to carry out the manoeuvre solo. One time I got an urgent call to say a student had actually landed in a paddock near what we called the Werribee satellite, a former war time strip. Grabbing the student's instructor, we got into a jeep and proceeded to what was now a crash site. Not surprisingly the student was in a state of shock. Lined up on his paddock he had frozen, forgot to select full flap and forgot to apply power. The Winjeel had bumped along and run into a ditch, tearing off the undercarriage. It must have been an exciting few minutes. When the aircraft stopped he actually did remember to shut down the engine and climbed out onto the wing. We bundled him into the back of the jeep and later sent maintenance people with a truck out to retrieve the wrecked aircraft.



I nearly had an actual forced landing myself. I was out testing a student. We were over the Bellarine peninsula training area and I gave him a simulated engine failure at about 3,000 feet. He did all his checks and manoeuvring down to 300 feet. I called "taking over" and applied power. The engine failed to respond, making a gurgling noise. I gently nursed it along and finally got climb power.

Another memorable time was when we were given, as a foreign aid program, six Cambodian students none of whom had not only never flown before but whose mechanical experience was limited to riding a bicycle. Pre-flight mass briefings were interesting as, when questioned, the students deferred to the senior member of the group, in the Asian manner. Once airborne, of course, they had to think for themselves which made the instructional task very difficult. Later I used to wonder how they got on in war time situations.

I enjoyed my time at BFTS and put my skills to work in the DCA training work I had been hired to do, this time flying twin turboprop aircraft.

Harry's wife says, "Harry, do these jeans make my backside look like the side of the house?" Harry says, "No, our house isn't blue." Hospital visiting hours are 2.pm-4.pm

Dornier Do 335 Pfeil (Arrow)

The Dornier Do 335 was a German World War II heavy fighter built by the Dornier company. The two-seater trainer version was also called Ameisenbär ("anteater"). The Pfeil's performance was much better than other twin-engine designs due to its unique "push-pull" layout and the much lower aerodynamic drag of the in-line alignment of the two engines. It was Germany's fastest piston-engined aircraft of World War II. The Luftwaffe was desperate to get the design into operational use, but delays in engine deliveries meant only a handful were delivered before the war ended.

The origins of the Do 335 trace back to World War I when Claude Dornier designed a number of flying boats featuring remotely driven propellers and later, due to problems with the drive shafts, tandem engines. Tandem engines were used on most of the multi-engine Dornier flying boats that followed, including the highly successful Do J Wal and the gigantic Do X (below). The remote propeller drive, intended to eliminate parasitic drag from the second engine entirely, was tried in the innovative but unsuccessful Do 14 and elongated, tubular drive shafts as later used in the Do 335 saw use in the rear engines of the

four-engined, twinned tandem-layout Do 26 flying boat.

There are many advantages to this design over the more traditional system of placing one engine on each wing, the most important being power from two engines with the frontal area (and thus drag) of a single-engine design, allowing for higher performance. It also keeps the weight of the twin power plants near, or on, the aircraft centreline, increasing the roll rate compared to a traditional twin. In addition, a single engine failure does not lead to asymmetric thrust and in normal flight there is no net torque so the plane is easy to handle. The choice of a full "four-surface" set of cruciform tail surfaces in the Do 335's rear fuselage design, included a ventral vertical fin–rudder assembly to project downwards from the extreme rear of the fuselage, in order to protect the rear propeller from an accidental ground strike on take-off. The presence of the rear pusher propeller also mandated the provision for an ejection seat for safe escape from a damaged aircraft and designing the rear propeller and dorsal fin mounts to use explosive bolts to jettison them before an ejection was attempted. The canopy atop the cockpit was also jettisoned before ejection.

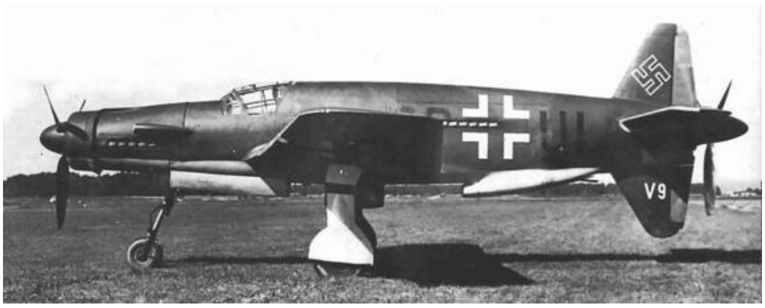
The Dornier Do 335 belongs in the small group of aircraft whose performance puts them at the pinnacle of piston-engine aircraft development because it was one of the fastest aircraft powered by a piston engine ever flown. The Germans claimed that a pilot flew a Do 335 at a speed of 846 km/h (474 mph) in level flight at a time when the official world speed record was 755 km/h (469 mph). It was also able to climb to 8,000 m (26,250 ft) in under 15 minutes. It was powered by two liquid-cooled engines each developing about 1,750 hp. For a fighter airplane, it was enormous: tall enough that a person of normal height could walk beneath it and very heavy at 9,600 kg (21,000 lb) loaded. Serious flaws also plagued the design. The rear engine overheated often and the landing gear was very weak and prone to failure. French ace Pierre Clostermann claimed the first Allied combat encounter with a Pfeil in April 1945. In his book The Big Show (pp. 273–274) he describes leading a flight of four Hawker Tempests from No. 3 Squadron RAF over northern Germany, when he intercepted a lone Do 335 flying at at treetop level. Detecting the British aircraft, the German pilot reversed course to evade and despite the Tempest's considerable low altitude speed, the Royal Air Force fighters were not able to catch up or even get into firing position.

Claudius Dornier had patented the push-pull engine layout in 1937, which was innovative because if offered the power of two engines but less drag and greater manoeuvrability than other twin-engine configurations. The RLM (German Aviation Ministry) wanted to support development of push-pull aircraft but initially only as seaplanes and bombers. By 1942, the Luftwaffe needed multi-role fighters and after submitting a proposal in January 1943 for a

Schnellbomber (fast bomber), Dornier built a prototype Do 335 V-1 (‘V’ for Versuchs or experimental) and the aircraft fighter in September 1943. Following initial testing, the RLM ordered 14 prototypes, ten preproduction aircraft with the suffix designation A-0, eleven production A-1 single-seat aircraft, and 3 A-10 and A-12 two-seat trainers.

Dornier selected two Daimler-Benz DB-603 V-12 cylinder engines to propel the four different versions of the Do 335. Each inverted V12 aircraft engine displaced 44.5 litres (2,670 cu in) and weighed 910 kg (2,006 lb). Unlike conventional twin-engine aircraft with wing-mounted engines, the Do 335 would not yaw sharply to one side if one engine failed and single-engine flying speed remained respectable at about 620 km/h (345 mph). Pilots reported exceptional flight performance in acceleration and turning radius and docile handling with no dangerous spin characteristics. In an emergency, however, the pilot could detonate explosive bolts and jettison the rear pusher three-blade propeller and dorsal fin to increase the chances of successfully bailing out using the pneumatic ejection seat. When fired, the seat pushed the pilot away from the aircraft with a force of 20 Gs.

Dornier finished building as many as 48 Do 335 airplanes and another nine or so were under construction when the war ended. One of many plans issued by the RLM called for Dornier to build 310 Do 335s by late 1945. Although several pre-production aircraft were issued to combat conversion units about 10 months before the war ended, no pilots flew Do 335s in combat. Only one example of the first production version Do 335A-1 left the Dornier line at Friedrichshafen just before the war ended. It was armed with one 30 mm MK-103 cannon (70 rounds were carried) firing through the propeller hub and two 15 mm MG-151/15 cannon (200 rounds per gun) firing from the top cowling of the forward engine. The aircraft was also equipped to carry an internal bomb load of 500 kg (1,100 lb).



After the war, US pilots ferried two Do 335s to Cherbourg in France for shipment to the USA aboard the British aircraft carrier HMS Reaper, along with other captured German aircraft and equipment for technology evaluation. Following U. S. Navy testing from 1945-48, the navy transferred one of the Do 335 to the Smithsonian's National Air Museum in 1961. The other Do 335 was left to deteriorate in the open. In 1974 the Smithsonian returned theirs to Oberpfaffenhofen, Germany, where the Dornier company preserved and restored the airplane in 1975. Dornier craftsmen, many of them factory employees since World War II, were surprised to find still attached to the aircraft the explosive bolts designed to blow off the tail fin and rear propeller. Dornier displayed the preserved airplane at the May 1976 Hannover Airshow, and then moved the artefact to the Deutsches Museum in Munich until the aircraft was returned to the Paul E. Garber Facility in the US for storage in 1986. It is the sole surviving example of the aircraft.

D

General characteristics:

Crew: 1, pilot
Length: 13.85 m (45 ft 5 in)
Wingspan: 13.8 m (45 ft 1 in)
Height: 4.55 m (15 ft)
Wing area: 38.5 m² (414 ft²)

Empty weight: 7,400 kg (16,314 lb)
Max. take-off weight: 9,600 kg (21,164 lb)
Powerplant: 2 × Daimler-Benz DB 603A 12-cylinder inverted engines, 1,750 PS (1,287 kW, 1,726 hp) each

Performance:

Maximum speed: 765 km/h (474 mph)

Service ceiling: 11,400 m (37,400 ft)

Armament:

1 × 30 mm (1.18 in) MK 103 cannon (as forward engine-mounted Motorkanone)

2 × 20 mm MG 151/20 cowl-mount, synchronized autocannons
Up to 1,000 kg (2,200 lb) bombload

If you see someone doing a crossword today, walk up and say “7 up is lemonade.”

Global Warming.

Guess what? The earth is getting warmer. Arctic ice is melting. And there is a good chance it won't stop warming in our lifetime. People will not be willing or even know what it takes to stop it and nobody knows at this point how much warming will occur. It's not the end of the world, despite what some people claim and it is definitely happening, despite what other people claim.

The average surface temperature on earth rose about 1 degree (C) in the 1900's. By 2100, it is expected to go up another 1½ to 6 degrees (C).

The big question, to which no-one knows the answer is WHY??

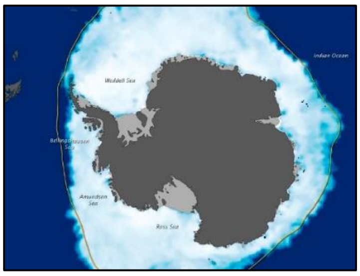
We hear a lot about sea level rise too, but that has not been much of a problem to date, in spite of photos of eroded beaches and houses washed into the ocean. In the past 100 years, sea level rose 7 or 8 inches. By the year 2200, sea level is expected to rise somewhere between 4 and 30 inches. Sea level is expected to keep rising over the next few centuries. Beaches have been eroding and filling since there have been beaches.

If all the northern ice in ice caps and glaciers (on land) did melt, it would cause a sea level rise of about 220 feet. It will also take well over a thousand years for this to happen.

Here's an interesting graph about the earth's water distribution. It doesn't have much to do with global warming but it's pretty interesting.

Sea ice coverage in the Arctic has been decreasing by about 12% per decade for the past 2-3 decades. In September 2015, the annual minimum, the Arctic sea ice coverage was about 2/3 of the 1979-2000 average. Since the Arctic ice cap is floating, it does not affect sea level much when it freezes or melts – it actually lowers the sea level.

You can now take a boat or ship across north of North America and Russia (in the late summer). As in recent years, northern shipping routes opened up last summer. The Northern Sea Route opened by mid-August 2015 and was still open as of the end of September. The southern "Amundsen Route" of the Northwest Passage, through the straits of the Canadian Arctic Archipelago, opened for the fifth year in a row. Overall, sea ice in the wider and deeper northern route through Parry Channel reached a record low.



But! Another question which needs answering is, why, if the northern ice is retreating, is the Antarctic ice growing? In the *Journal of Glaciology*, a group of NASA researchers from NASA's Goddard Space Flight Centre in Maryland, reported that satellite data shows that as a whole, Antarctica has been gaining, rather than losing mass during the past two or more decades. The mass gains, according to the study, are mainly from increased snowfall in the continent's interior, particularly across the East Antarctic Ice Sheet and they are just barely more than enough to offset the sea level rise impacts from the melting occurring in the West Antarctic and Antarctic Peninsula.

Unfortunately, most media outlets, and in particular the ABC and heaps of Climate Change zealots seem to have an agenda to promote only one side of the argument when in reality, there are two completely opposing arguments when it comes to climate change, though you wouldn't know it. No one argues that the climate is changing, even blind Freddy can see that, where the argument lies is WHY it is changing.

The ABC and the zealots blame CO_2 but that has been disproved many many times. There have been times when the CO_2 levels were miles higher than they are today – and the earth was cooler. There have been times when the CO_2 levels were lower and the earth was hotter. A sceptical person could be forgiven for thinking someone is making a lot of money in promoting the CO_2 cause!!!

Here's an interesting video arguing the other side.

4WD V's AWD – what's the difference??

CAR TECHNOLOGY SPOTLIGHT

When shopping for a car, you often hear the terms "four-wheel drive" (4WD) and "all-wheel drive" (AWD) thrown around, frequently interchangeably. If you aren't a boorish car nerd you may not know that these two terms aren't interchangeable. They actually refer to very different systems, which can produce radically different results. So just what is the difference and why should it matter to you?

Four-Wheel Drive

Let's start with the old-school version. 4WD, sometimes also referred to as Four by Four, or 4×4, is typically used on off-road vehicles – or at least vehicles with off-road pretensions. Power goes from the engine to what is known as a transfer case. This snarl of gears splits power between the front and rear axles so that maximum torque is going to each wheel, it's a tried and true system but it does have some problems.

When the transfer case splits power evenly, it ensures that each wheel turns at the same speed. This is deeply problematic when doing things like turning. You see, for a car to make a turn, the inside wheel has to turn more slowly than the outside wheel, which is covering more ground, actually, all four wheels turn at different speeds. If the vehicle can't do this, the inside wheel loses traction and it spins freely. This, as you might be able to guess, isn't great for moving forward efficiently.

There are a couple of ways that modern 4WD systems get around this. For starters, most modern 4WD systems are only on when you activate them. This can be done electronically or by using that weird secondary lever that usually sits forgotten next to your coffee cup. That way, you can use 4WD at low speed in snow or mud, but enjoy the drivability of regular two-wheel drive in normal conditions.

The other, more refined 4WD systems are activated with buttons or switches, rather than a rudimentary lever, and include multiple settings for the 4WD system. These systems usually have a 4WD 'High', which splits power less evenly and allows what's called 'limited slip' between the inside and outside wheels. This corrects the locked, spinning inside wheel problem to a point. Typically, however, High 4WD is recommended only up to around 60 mph. Flip these into ‘Low’, and they act much the same as old, locked systems.

4WD Pros:

- Best traction in off-road conditions
- Can be turned off to improve fuel economy
- Proven, rugged technology

4WD Cons:

- Adds weight and complexity to cars
- Can’t be used in all conditions
- More expensive than two wheel drive models.

All-Wheel Drive.

All-Wheel Drive is a much more recent innovation, and, as you might expect, much more complicated. It appears in everything from supercars with out-of-this-world performance like the Audi R8 to family crossovers and SUVs like the Volvo XC90. The biggest difference between 4WD and AWD is that an AWD drive system is on all the time. Well, mostly. But we’ll get to that, as there are two types of all-wheel drive: mechanical and electronic.

The most common way of accomplishing a capable, mechanical AWD system is by using three differentials. A differential is a box of gears that can take power from the transmission and split it at different levels between two wheels or the front and rear axles. In AWD this system works to get power to the wheels with the most traction by splitting power between the front and rear axles on the centre differential and the individual wheels by way of the front and rear differential.

This is useful either in slippery conditions when different wheels might be getting different amounts of grip from moment to moment. AWD isn’t quite as robust as 4WD and it can’t match the same levels of traction in extremely low-speed off-roading that the older 4WD systems provide, but it does have some clear advantages. On normal paved roads, some AWD systems deliver power to the front wheels only but when the computer detects that the front wheels are spinning faster than the rear ones, ie: when in sand or mud or on wet grass, the computer immediately sends power to the rear wheels too.

In the godfather of all AWD systems, Audi’s Quattro, all torque redistribution was done mechanically. Quattro allowed Audi to dominate rallying for nearly a decade. But heaven help you and your bank account if it went wrong. Audi should have included instructions on how to file for bankruptcy in its owner’s manual. These days, computers are involved in most AWD systems. Sensors on each wheel monitor traction, wheel speed, and several other data points hundreds of times a second. An ECU dictates where power is sent and to which wheel depending on which wheel has the most grip.

This type of system, usually called torque vectoring, appears on everything from the Subaru WRX to the Rav-4 these days. Torque vectoring has allowed massive improvements in handling and inclement weather capability.

AWD Pros:

- Provides increased grip and control under all road conditions.
- Gives sportier handling and traction to a broader range of cars.
- Works all the time.

AWD Cons:

- Reduces Fuel Economy.
- Increases the weight and complexity of vehicles.
- Not as good in extreme off-road conditions.

As the pros and cons show, your four-wheel drive system decision depends on what you need the system for. If you plan on using your vehicle really off-road and often, 4WD is definitely the best bet. If you're really keen on wheelin', though, you probably already knew 4WD was your only option. For most people, however, AWD makes more sense. In the sort of winter road conditions that most drivers experience, or if you just want that occasional trip up the beach, it's nice to have a drivetrain, like a modern AWD system, that responds instantly without the driver having to toggle any switches. In addition, most vehicles featuring AWD tend to have better weight distribution, which also aids in traction.

The reality is that for many drivers, you don't need either. If you live in an area that doesn't get real wintery weather, you probably would only notice the difference a couple of times a year, unless of course you drive like a lunatic.

Here's some video that explains it.

The Neppy's final voyage.

Kev Rosser sent us these pics of Neppy 277 which, as Kev says, "is sadly, being sawn into 3 metre lengths for transport South. Becks of Mareeba (FNQ) have sold it to the Queensland Air Museum in Caloundra on the Sunshine Coast where it will be joined up again, bogged, painted and then put on display.

This Neptune stopped flying in 1977, the year my daughter was born".

J


I miss being the age I was when I thought I would have my life together by the time I was the age I am now!
Life as I see it~feel it~
Live it~ Welcome to it!

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