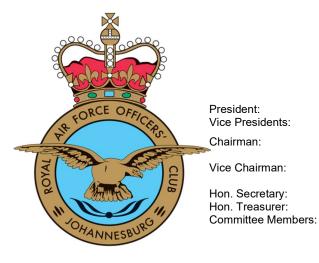
## **ROYAL AIR FORCE OFFICERS' CLUB**

Johannesburg

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# RAFOC REMINISCENCES AND RAMBLINGS - WEEK 184 13th OCTOBER 2023

#### **GREETINGS:**

Stroll on, SA - now a water disaster looms: Widespread water cuts/shortages across Johannesburg... South Africa's Post Office disaster – 400 branches shut down as another state company tanks... Eskom board Chair Mpho Makwana resigns... Buffalo City kisses R350 million goodbye – to solar power... Golden Highway closed due to sinkholes... New laws to restrict the hiring of foreign workers in South Africa... weather warnings for disruptive winds and thunderstorms in Free State and NorthWest... 'We're the elders, we're in control' - Mantashe (Really? Well, now)... Wada shows incompetence is deeply embedded in our ANC administration... Mogoeng Mogoeng: 'I will be president of SA... it's unstoppable, it's inevitable'... Fort Hare's horror 'laptop lynching'... Defence in Meyiwa trial cries foul: DNA on "the Hat" does not match any of the suspects... fire killed six soldiers at Northern Cape Lohatla base... Oscar Pistorius has been eligible for parole since March... a handful of companies keeping eTolls alive... Steinhoff finally scratched off the markets... dramatic end to RWC pool stages: Ireland giving Scotland a lesson - allows S A through to quarter finals vs France. Fiji lost by one point to Portugal get critical bonus point - oust Australia. Argentina survive gutsy Japan to go through... "Bring on 'better' France", say Boks... Springboks will be flying the flag in the quarter finals on Sunday... Protea batsmen excel... SA stores could get more eggs... (what's wrong with cake?)... More new Sandton street names (Heaven help us!)

World holding its breath... Attack that will 'reverberate for generations' World news dominated by Hamas attacks on Israeli civilians, and Israeli reprisals... Gaza a war zone... "Hamas's hatred of Jews mustn't be downplayed"... UK, US and allies offer Israel 'steadfast support' in joint statement... US deploys aircraft carrier group to the Mediterranean in bid to prevent escalation... Russia-Iran axis is fomenting war in the Middle East... why is football silent on the Israel terror attacks? Vietnam tried to hack U.S. officials, CNN with posts on "X"... false war information spreads on "X"(Twitter)... mobs cheering Hamas on streets of Britain have proved Suella right... Jewish kosher restaurant vandalised in London...Thousands dead, homes destroyed in Afghanistan earthquakes... Mariupol: grueling documentary of life inside the besieged Ukrainian city... drones and missiles keep Russian fleet at bay; supplies and trade flowing at ports... "Murderous Putin is sure of his own impunity. He could not be more wrong"... rich countries promised poor nations billions for climate change. They aren't paying... France cynically targets Muslim women - again... Bedbug plague hits

Luton... and fire in parking garage closes Luton Airport... UK Female police officer groped woman after night out... 'third most hated man in New Zealand' to referee All Blacks quarter-final v Ireland... 'Ring of fire' solar eclipse to pass over the U.S. Saturday... Toilet scrolling: bathroom phone use plays havoc with your health...

## **ACROSS THE GLOBE:**



This week, two Typhoon Squadrons have deployed simultaneously to Operation Carson in Poland & Exercise Bersama Lima in Malaysia.

In Poland, the operational detachment codenamed Op Carson, involves pilots undertaking combat air training with NATO allies Poland, Italy and Spain. This training includes dogfighting against different types of aircraft, and Close Air Support (CAS) training that helps ground forces in combat. This activity went ahead of the Warsaw Security Forum, where ministers from Defence and the FCDO stressed the need to maintain support for Ukraine and keep up the pressure on Russia. In Malaysia, the Typhoons flew nearly 7000 miles with support of the Voyager aircraft to work together in an air defence scenario with partners from Malaysia, Singapore, Australia and New Zealand. These nations form the Five Powers Defence Arrangements (FPDA), which is a defensive military agreement to help maintain security in the region. Whether its flying alongside allies in Poland, or 7000 miles away in Malaysia, our jets are always busy developing strong and enduring international partnerships.





Plenary Session

Wg Cdr Long addresses the group.

The NATO Joint Capability Group for Unmanned Aircraft Systems (JCGUAS) held their Autumn meeting, hosted by the Royal Air Force, in London.

This was the first JCGUAS plenary session where industry partners were integrated within the main plenary discussions. This was also the first meeting where NATO Partner, the Republic of Korea attended in person, reflecting broader global interest. At the meeting the JCGUAS finalised the world's first 'Sense & Avoid' standard for remotely piloted air vehicles. The conference was attended by over 150 delegates representing air, land, maritime, procurement, technology, and operational experts within and beyond the NATO alliance. The JCGUAS seeks to enhance NATO UAS coherence, interoperability, and capability collaboration and reports to National Armament Directors and the NATO Military Committee. With a regular attendance of over 100 personnel, the JCGUAS' focus is standardisation of Uncrewed Aircraft Systems within the alliance, as well as incorporating new and emerging technologies, including autonomy and artificial intelligence, providing exciting opportunities for the RAF and the alliance. "I'm delighted to be hosting the JCGUAS meeting here in London. It is important for the RAF and NATO to have forums such as this to discuss the current and future role of uncrewed aircraft systems and agree standards for their use across NATO." Wing Commander Long, Head of Protector RG Mk1 International Strategy for the RAF. Wing Commander Long also heads the MQ-9B International Cooperative Programme, which is a community of nations that have procured, are in the process of procuring or are actively considering procurement of the MQ-9B (called Protector in the UK). The JCGUAS is the source of technical and operational UAS information for NATO and addresses UAS issues including acquisition design, employment, the demonstration of UAS System capabilities, identification of a common approach to airspace management, complementary use among UAS Categories, operator training and standards, and doctrine including tactics/operational procedures. The Group also looks to enhance and facilitate interoperability, develop a common standard of data transmission, and address the provision for complimentary uses of different fleets, tactics, techniques, and procedures. The overall aim of the group is to improve the operational effectiveness of UAS in NATO and coalition environments by ensuring availability, interoperability, utility, and operational integrity of UAS.

#### **MESSERSCHMITT ME 262:**





Me262

Mark Sugden, Colin Bell, Geri Kraenbuehl,

After a gap of some 78 years the shape of the world's first operational jet fighter has been seen again in British skies. One of the stars of the Royal International Air Tattoo at Fairford in mid-July was the Messerschmitt Me 262 replica operated by Flugmuseum Messerschmitt, on display courtesy of Airbus, whose heritage operation supports the aircraft. This replica is one of five built in the USA in the 1990s and fitted with General Electric CJ610 engines in place of the original Junkers Jumos. Shortly after RIAT, Airbus hosted a fly-past at RAF Coningsby, home of the Company's affiliated unit the Battle of Britain Memorial Flight, when the Me 262 flew in formation with three of its piston-powered contemporaries – the BBMF's Supermarine Spitfire Mk Vb and Rolls-Royce's Spitfire Mk XIX and North American P-51D Mustang. Following the fly-past, a seminar (moderated

in part by Liveryman Ben Griffiths) was held, looking at the Me 262's place in history and comparisons between it and its contemporaries, along with sessions on the challenges of flying aircraft like these now and in the future. The undoubted human star of the day was Liveryman Flt Lt Colin Bell (pictured with Sqn Ldr Mark Sugden, OC BBMF, and Geri Kraenbuehl, Me 262 pilot), at 102 years old the last surviving pilot who encountered the Me 262 in combat. His description of how to evade the German jet fighter in his de Havilland Mosquito by diving to outrun it at low level was memorable, as was his reaction to meeting the type again after 78 years: "I patted it on one side, and hope I never see the damned thing again!" Historian Paul Beaver put the Me 262 further into context by sharing the evaluations of it and its Allied adversaries by the late Liveryman Eric "Winkle" Brown, whose biography of Winkle has just been published and will be reviewed in Air Pilot. (Sent in by Basil Hersov)

## **NAUGHT FOR YOUR COMFORT:**

The Democratic Alliance (DA) says it is outraged that the South African Police Service (SAPS) spent R75 million protecting delegates of the three-day BRICS summit while ordinary South Africans are left to be murdered, raped, robbed, kidnapped and trafficked 365 days of the year. The BRICS 2023 was held between 22 and 24 August at the Sandton Convention Centre attended by heads of states. Delmaine Christians MP – Member of the NCOP says a total of 5,234 SAPS members were also deployed during the summit and 726 SAPS vehicles were utilized. "The revelation of excessive police resources directed towards securing the BRICS summit were revealed in a parliamentary reply from Police Minister Bheki Cele, just days after news broke that South Africa now ranks 7th in the world out of 193 countries for mafia-style criminal networks and organized crime syndicates. This is according to the 2023 Global Organized Crime Index (GOCI)," MP Christians said. "It is unacceptable that scarce police resources had to be splurged on a controversial event that is used to drive the agenda of the ANC and not address the best interests of South Africans." She argued that the expenditure of the country's policing budget on the summit will not only have little economic benefit for the country but will more likely worsen instability and security issues, given the further expansion of BRICS into authoritarian states with a tendency to operate outside the internationally established rule of law. "Cele and the ANC government's willingness to so easily forego the protection of ordinary citizens and instead transform the incapacitated and underresourced police service into a VIP protection service for delegates from countries that include amongst them mafia-states, is a direct indication of the absolute disregard that the ANC has for the safety and protection of South Africans," she criticised. "For as long as the ANC remains in power, the prioritization of organized international networks will continue to threaten our democracy and our safety," she concluded. (South African)

## **GAZELLE RETIREMENT:**



The Aerospatiale Gazelle is a light single engine helicopter that was originally developed for the French Army as a replacement for the Alouette III. Since its first flight in 1967, over 1,700 have been built and the type has seen service in variety roles from light transport to battlefield scout to attack helicopter and as a trainer.

The Gazelle has seen combat in numerous conflicts and was flown by both sides in the first Gulf War. The Gazelle is still in service with 23 nations today, however it is slowly being replaced by newer types in specialised roles such as the attack helicopter. The UK originally intended to operate a fleet of 250 Gazelles however by the end of 1975 there were 310 on order which was a testament to the versatility of this light helicopter. The Gazelle was operated by all three services in a variety of different roles however the majority saw service with the Army Air Corps. Army Gazelles have served in the Northern Ireland troubles, both Gulf Wars, Afghanistan, Kosovo and the Falkland Islands conflict. Since 2009 only the Army Air Corps have operated the Gazelle and it was announced in 2016 that the type would remain in service until 2025 allowing it pass 50 years in UK service and become the longest serving helicopter in British military service. However, in January 2022 it was announced that the fleet would be retired by March 2024 and replaced by the Airbus Helicopters H135, already operated by the RAF as the Juno. Whilst the Army owns and operate the UK Gazelle AH1 fleet, they are all under the command of Joint Helicopter Command (JHC). The JHC combines all the battlefield helicopters of the Army Air Corps, Royal Navy and RAF under a single military command structure centralised around the Army. The JHC will be sending a pair of Gazelles to appear in this year's Air Tattoo, this will be the final time a Gazelle appears at RIAT in UK military service. (RIAT 2023, with a salute to Eugene Couzyn, who owned one, and treated us to some special trips in the machine...)

#### **ALL OUT WAR:**





TEL AVIV, Israel - "Israel is in a state of war" after Palestinian militants launched a large-scale surprise attack from the blockaded Gaza Strip on civilian and military targets in Israel early Saturday. Hundreds of people have been killed on both sides, and an unknown number of Israelis have been taken hostage. A new day is now beginning in Gaza and Israel, and it promises more violence, even as a range of countries, from the U.S. to Israel's Arab neighbours, urge the combatants not to escalate the conflict further. But leaders on both sides say they're now at war - and that it won't be over soon. In the first day of attacks and fighting, at least 250 Israelis were killed, and more than 1,000 wounded. More than 230 Palestinians were killed, with nearly 2,000 injured, according to health officials in Gaza. Israel will "reach into every place Hamas is hiding" and turn those locations into ruins, Israeli Prime Minister Benjamin Netanyahu vowed in a late-night TV address. Israel's military is calling up reservist soldiers, reinforcing positions and launching airstrikes on targets in Gaza. Hamas, the Islamist militant group, took control of Gaza in 2007. Anyone in areas where Hamas operates in the Gaza Strip should "leave those places now," Netanyahu said. He added, "Israel will settle the score with anyone who harms them." But for some 2 million Palestinians living in Gaza, leaving Hamas-linked areas isn't so simple. For more than 16 years, the Gaza Strip has been under a blockade by Israel and Egypt that restricts the movement of people and goods in and out of the country. Israeli airstrikes hit central Gaza City Saturday night, levelling a 14-story building that housed Hamas offices, as well as apartments, according to The Associated Press.

The agency reports that Israel gave warning of the airstrike, and no casualties were reported. For more on the history and background to this conflict, see:

https://www.washingtonpost.com/world/2023/10/09/hamas-israel-war-

explainer/?utm\_campaign=wp\_post\_most&utm\_medium=email&utm\_source=newsletter&wpisrc=nl\_most.

## DARK CLOUDS OVER SA FARMS:



Employment levels in South Africa's agricultural sector remained fairly stable in the last quarter, but trouble is on the horizon as the country's economic woes continue to build and weigh on all industries. This is according to the latest sectoral review by the Bureau for Food and Agricultural Policy (BFAP), analysing the results of the latest quarterly labour force survey from Stats SA. The BFAP noted that agricultural employment levels have remained relatively stable, while national employment levels recovered somewhat to pre-pandemic levels in recent months. The number of employment opportunities in the sector increased 2.4% in the second quarter of the year, building on the gains of 5.2% in the first quarter. This means that the sector currently employs around 894,000 workers, a level that is close to surpassing the peak of 920,000 workers recorded in the fourth quarter of 2016. "Farm workers are the most important category within the wider sector and their employment trends largely represent that of the sector as a whole," the BFAP said. Looking ahead, however, the picture is looking a bit darker. Owing to the continued above-inflation minimum wage increases, continued and unrelenting load shedding disruptions, as well as the pressure on profitability in labour-intensive industries, the economic pressures on the agri sector is likely to diminish opportunities to create more jobs, the BFAP said. More likely, these pressures could lead to job losses in the next year or two, it said.

## **TOILET SCROLLING: PLAYS HAVOC WITH YOUR HEALTH:**

Looking at your phone while on the loo isn't just unhygienic. A gastroenterologist has warned it could result in haemorrhoids – or worse. If you're tempted... The average phone screen is said to carry more germs than a public toilet seat.

Name: Toilet scrolling.

Age: At least a decade and a half.

**Appearance:** One of the most dangerous things you can do.

This is either about excessive toilet paper use or... No, it's about people using their phones as they sit on the toilet.

**Gross.** Oh, don't pretend you don't do it. Everyone looks at their phone on the toilet. What else are you going to do? Sit there and consider the cold and unending expanse of the universe? **Good point.** Anyway, it isn't good for you.

Why? Because you can give yourself backache by bending over and you've used your pulled-down underwear as a kind of makeshift phone holster? Is this something that you do? If it is, we should have a serious discussion.

**No. I've never done that.** Anyway, it's bad for you in other ways. Obviously there is the hygiene issue. Keeping your phone in your hands while you pee is a recipe for bacteria. The average phone screen, it is said, is dirtier than the average public toilet seat.

**That's no good.** Don't sweat it too much. Everything is dirty in a bathroom. Five years ago, a scientist warned people about "toilet bloom", which is the cloud of invisible germs that explodes out of your toilet whenever you flush. Long story short, if you keep your toothbrush in the bathroom when you flush the toilet, there's a chance you're rubbing faecal particles against your teeth.

So I can keep using my phone on the loo. No, don't! It'll give you haemorrhoids.

**Will it?** Potentially. A gastroenterologist in San Francisco, Dr Saurahb Sethi, has claimed that doing this increases the amount of time you spend on the toilet. This leads to "increased strain on your rectum and anus", which can lead to piles, anal fissures, even rectal prolapse.

How did you hear about this? By watching Dr Sethi's TikTok video.

Right. And where were you at the time? I see where this is going. I was sitting on the toilet.

**And what happened?** Let's just say I am now a leading shareholder in Preparation H, the piles ointment.

Listen, I'm busy. Is it really so bad to watch YouTube on my phone while I hide from my family? There are risks, obviously. But you have to ask yourself one question. Which is worse: the theoretical risk of haemorrhoids or the very real risk of being nagged about mowing the lawn? I'll take my chances on the toilet. Very smart.

Do say: "Using your phone on the toilet is bad for you."

**Don't say:** "Instead, why not try ruining your health by reading a book on the toilet, like the old days?" (*Guardian*)

#### THREE CHEERS FOR THE MAN ON THE GROUND:

Each September, we remember 'the few' but also all those supporting personnel required to enable their success...

Wherever you walk, you will hear people talk, of the men who go up in the air, of the daredevil way, they go into the fray, Facing death without turning a hair.

They'll raise a big cheer and buy lots of beer, for the pilot who's come home on leave, but they don't give a jigger, for a flight mech or rigger, with nothing but "props" on his sleeve.

They just say "Nice day" - and then turn away, with never a mention of praise, for the poor bloody erk, who does all the work, and just orders his own beer - and pays!

They've never been told, of the hours in the cold, that he spends sealing Germany's fate, how he works on a kite, till all hours of the night, and then turns up next morning at eight.

He gets no rake-off, for working 'til take-off, or helping the aircrew prepare, but whenever there's trouble - it's "Quick at the double", the man on the ground must be there.

Each flying crew, could confirm it as true, that they know what this man's really worth, they know that he's part of the RAF's heart, even though he stays close to the earth.

He doesn't want glory, but please tell his story, spread a little of his fame around,
He's just one of a few - so give him his due,
"Three Cheers for the man on the ground"
RAF Wireless Mechanic Eric Sykes (later BBC Comedian) (Sent in by Geoff Quick)

## **CHEERS FOR NOW:**

In the last issue of Ramblings, we mentioned the sense of Gotterdammerung over SA, but this week it was well and truly launched over the Middle East by Hamas terrorist attacks on Israeli civilians... prophetically foretold in Genesis of Hagar's son, the Arab progenitor Ishmael: "He will be a wild donkey of a man; his hand will be against everyone and everyone's hand against him, and he will live in hostility toward all his brothers."... indeed, the only thing that seems to unite the Arabs is their sworn aim of annihilating Israel... even the UN has issued an outright condemnation of the Hamas atrocities... difficult to see a negotiated way forward at this stage... World holding its breath as Israel exacts retribution on Hamas...

Our next <u>Ladies Lunch</u> will be on Friday 10 November, 12h30 for 13h00 at Wanderers... we will lay wreaths at the Wall of Remembrance before lunch, as has been our practice. Price remains R250 per head and we request you to pay by EFT to our account - Nedbank - Melrose Arch - Br: 19 66 05 - Account 19 66 278 063. Use your name and "November Lunch" as reference, please... Please also note that we are committed to pay for the number of meals booked.

We look forward to having the incoming UK Defence Adviser as our guest and speaker, subject to confirmation and the "exigencies of the Service" Bring your Ladies and guests along to mark Remembrance day in convivial company.

Look forward to seeing as many of you as possible...

## **TAILPIECE**



## THE ANC'S REACTION TO A 1993 FUEL PRICE HIKE

"The ill-considered and uncaring decision to increase the petrol price only confirms the NP government does not have the interests of the majority of South Africans, who are poor and struggling desperately to make ends meet, at heart. If the government persists in pressing ahead with these indefensible price hikes, they will be inviting a similar reaction to that when VAT was increased. Now is the time for them to establish the tradition of a government that cares for and consults with its citizens". (16 September 1993; ANC Statement; "ANC demands suspension of petrol price increase")

#### ANYONE SEEING THE IRONY?

is is South Africa Like us on Facebook













Well...just had another "friend" delete and block me on FB....guy is from France. We where talking about sports history. He asked me "who won the first Tour de France." Apparently the 5th Panzer Division was not the correct answer.







## CRICKET IS QUITE SIMPLE





Gaza has no electricity, no petrol and is being bombed daily.

In South African, we call this Wednesday.

15:41 · 2023/10/10 from Earth · **37,8K** Views





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#### "THE INSANITY THAT SURROUNDS US"

The following was post via e-mail on 11 September this year. The author is unknown, but they are important thoughts (some with humour) to share with all. Relates mainly to USA, but pertinent to all around the globe...

- Why is it when archaeologists find human remains; they always determine that they are either male or female and none of the other hundreds of genders?
- Why is it that so many are more outraged that Brittney Griner was stuck in Russia, than they were about Americans being stranded and murdered in Afghanistan?
- How is it that the Government can't control gasoline prices... but the weather is something they can fix?
- We're churning out a generation of poorly educated people with no skill, no ambition, no guidance, and no realistic expectations of what it means to go to work. Mike Rowe.
- If kids knew what they wanted to be at age eight, the world would be filled with cowboys and princesses. I wanted to be a pirate. Thank goodness nobody took me seriously and scheduled me for eye removal and peg leg surgery. Bill Maher
- Why were we told to lower our AC usage on hot days to prevent overwhelming the electric grid while simultaneously being told to trade in our gas cars for electric vehicles?
- Why is cancelling student debt a good idea? Does it make sense to reward people who do not honour their financial commitment by taxing the people who do?
- Does it make sense to cut off oil from an ally and buy it from an enemy who calls for your death?
- Are we living in a time where intelligent people are silenced, so that stupid people won't be offended?\*
- Is this the description of America, to date the bastion of Western civilisation : "Andy has left town and Barney is in charge"?
- Why is talking sexually in the workplace considered sexual harassment to adults... but talking about sexuality to children K-3 at school is considered education?
- Who else had a 'Ministry of Truth"...Hitler...Goebbels...Stalin?.
- Eliminating the production of 500,000 American barrels of oil a day to buy 500,000 barrels a day from Russia is simply... well, colossally stupid.
- I saw a movie where only the police and military had guns; it was called "Schindler's List."
- If your electric car runs out of power on the interstate, do you walk to a charging station to get a bucket of electricity?
- Why are we running out of money for Social Security and Medicare and not for welfare, illegals and free college?

- I just got a full tank of gas for \$22. Granted, it was for my lawn mower, but I'm trying to stay positive.
- There is a coin shortage. America is officially out of common sense.
- If an 18-year old isn't mature enough to own a firearm, then they surely aren't mature enough to vote, and maybe five-year old kids aren't mature enough to "change" their gender.
- Why is a youngster below 18 being frowned upon to be taught how to shoot & handle firearms safely? Surely, if a woman is equipped to be a 'prostitute', it doesn't mean she'll become one.
- Want to stop drunk drivers from killing sober drivers? Ban sober drivers from driving. That's how your idiotic, Democrat anti-constitutional gun control and COVID lockdowns work.
- Sign in Texas: DON'T VOTE FOR WHAT YOU FLED in your former blue state!\*
- Nobody called it "Toxic Masculinity" when we were saving the world.
- Mice die in mouse traps because they do not understand why the cheese is free. Just like today's Democrat socialism.
- The most powerful Government's on earth can't stop a virus from spreading... but they say they can change the Earth's temperature if you pay more Carbon Tax.
- If you don't want to stand for the national anthem, perhaps you should give your legs to a Veteran who lost his, so a real man can stand in your place.
- If socialism is so good and capitalism is so bad... then why in hell aren't the caravans heading to socialist Venezuela?

History is not there for us to like or dislike. It is there for us to learn from. And if it offends you, even better... because then you are less likely to repeat it. It is not anyone's to erase... it belongs to all of us.\*

## UKRAINE EXPLOSIVE DIY DRONES GIVE AN INTIMATE VIEW OF KILLING:





ZAPORIZHZHIA REGION, Ukraine - The unblinking eye of the Ukrainian surveillance drone spotted attractive prey - eight Russian soldiers entering a fortified, well-camouflaged dugout.

Inside a darkened trench a few miles away, Ukrainian soldiers of the 47th Separate Mechanized Brigade's strike drone company got to work. A pilot tightened the plastic blades of his hand-built machine, strapped a fuel bomb to its belly and lifted off. Through a pair of goggles, the operator, call sign Sapsan, piloted the drone across the scarred battlefield in southern Ukraine, gliding the craft toward his target. Such first-person view, or FPV, drones — fast, highly maneuverable and relatively cheap craft flown by an operator wearing a headset receiving the drone's video feed in real time — are now the predominant attack drone in Ukraine. They are filling a gap left by a shortage of Western artillery rounds and precision weapons, soldiers said, and their ability to carry heavier explosives has made them the preferred tool for destroying tanks in some units, allowing a pilot to strike weak points like engines and tracks with rapier precision. Sapsan means peregrine falcon, and as his synthetic raptor approached its target, a navigator huddled next to him. "You can carefully fly around," the navigator said. "See if there is a way in." Then, a breakthrough: a hole leading inside the dugout, perhaps three feet tall and three feet wide. Sapsan drew nearer. Indicators in his headset flashed low-battery warnings. "The wind," Sapsan said, cursing. "Come on, work for us." The war in Ukraine is the world's first full scale drone conflict, and FPV drones, first used in substantial numbers earlier this year, are bringing it to a new level. Though more difficult to fly than other drones that drop munitions, Russian and Ukrainian soldiers are mobilizing fleets of them. FPV cameras create bleak images that are destined to go viral: the last oblivious seconds of soldiers' lives, war machines set ablaze, and trick shots plunging through open windows. It is captured on low-fidelity video reminiscent of VHS — an advantage, soldiers say, because the analog signal resists electronic jamming better than digital feeds. Perhaps most important for Ukraine's asymmetric fight against Russia — a far bigger, better-armed enemy — FPV drones are bargain-bin projectiles. Fashioned by hand from a few hundred bucks of material, they can annihilate million-dollar equipment. "It's a revolution in terms of placing this precision guided capacity in the hands of regular people for a tiny fraction of the cost of the destroyed target," said Samuel Bendett, a drone expert at the Centre for Naval Analyses, a policy institute based in Arlington, Va. "We're seeing FPV drones strike a very precise spot, which before was really the domain of very expensive, high-precision guided weapons. And now it's a \$400 drone piloted by a teenager." Bendett likened the use of FPV drones to the iconic Star Wars scene when Luke Skywalker fires a proton torpedo into an exhaust port to destroy the Death Star. "This is what we're actually seeing happen right now," he said.

## The rise of FPV (First Person View) drones



FPV drones are arguably the most DIY weapon in Ukraine's crowdfunded war. Brimming with Chinese-made components, they are assembled by volunteers or by units themselves. The drones are built for obliteration, and look it. Power cables flare from their top. Explosives are secured with plastic zip ties. A pilot typically works with a navigator, and a second team flying a surveillance drone to capture the larger view. FPV drones often miss more often than they hit, crews said, with failures resulting from electronic jamming or batteries dying. The drones have a roughly nine-mile range, depending on payload size. Drones designed to crash into targets are known as one-way, or selfdetonating, drones. The United States has provided Ukraine with similar but expensive models in relatively small numbers, and these are not new to conflict. When the war shifted predominantly to an artillery fight last year, both Ukraine and Russia began favouring smaller tactical drones. Troops fixed grenades and smaller explosives to quadcopters, like the popular DJI Mavic, and rigged them, like tiny bombers, to drop directly over targets. The concept worked for a time but was unsustainable, soldiers said. Off-the-shelf tactical models can cost more than \$2,000. Analysts estimate Ukraine consumes thousands of drones a month. Those drones also cannot carry much. Mavics can haul about a pound of explosives, said Senior Lt. Yuri Filatov, the drone systems chief commander of the 3rd Separate Assault Brigade. That is roughly a hand grenade — enough to kill a soldier but not destroy vehicles. Filatov's brigade has found that FPV drones could carry the warhead of a rocket-propelled grenade, a readily available antitank weapon. Their introduction, he said, has even lessened the need for more expensive weapons like the US - provided Javelin.

"FPV drones have become the main antitank weapon," Filatov said, including against T-90s, which are among Russia's most modern tanks. In one day alone, they destroyed four tanks, he said, while soldiers kept at a safe distance. "As we use more drones," Filatov said, "we are losing fewer people."

## Prepping for drone warfare

Before dawn on a recent morning in the Zaporizhzhia region, soldiers of the 47th drone strike company chain-smoked cigarettes and chugged energy drinks as they loaded boxes of drone components and antennas into a pickup truck. The company's chief sergeant, a bearded former DJ with the call sign Legion, got behind the wheel and sped toward the front. With techno music from Legion's past life as a soundtrack, the truck skimmed by the torched shells of armoured vehicles. The turret of a U.S.-supplied Bradley, destroyed by a mine, lay upside down in scattered trash. Washington Post journalists accompanied the drone team — Legion, pilot Sapsan, and navigator Actor — on a day-long mission near the liberated village of Robotyne. The objective: sow chaos on Russian lines as their comrades fought to retake ground, trench by trench. In keeping with military rules, the soldiers are being identified only by their call signs. Heavy Russian glide bombs shook the ground in the distance as the team put up antennas and readied a Starlink satellite internet terminal. Enemy detritus on the floor — fragments of Russian uniforms and discarded rations showed enemy soldiers once occupied the position. Sapsan dug into a box of parts to ready the day's sorties. Mad scientists in the brigade produce some components; 3D printers churn out boxes to protect circuit boards, which the unit assembles by hand. Others tinker at workstations to unlock ways to make the drones fly farther and carry more. Sapsan built each drone on-site, with various charges for different targets. Fragmentation munitions to hit foot soldiers. RPG warheads to destroy vehicles. For dugouts, thermobaric charges release fuel aerosol that creates a harder and longer concussive blast, which is violently efficient in a confined space.

Read the full article, with videos and pics, at: <a href="https://www.washingtonpost.com/world/2023/10/04/fpv-drone-ukraine-russia/">https://www.washingtonpost.com/world/2023/10/04/fpv-drone-ukraine-russia/</a>