



AMS CHRONICLE

IPMS DENVER ROB WOLF CHAPTER AUGUST 2018

	<u>2018 OFFICERS</u>	<u>2017 OFFICERS EMAILS</u>
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<u>NEXT MEETING:</u> 06 SEPT 2018 1900	Trash Haulers Cargo and transport (aircraft, vehicles, ships), military or civilian, any scale, any era	Possibly Nats 2018

EDITOR RAMBLINGS FROM THE BUNKER

Another month of lots of stuff going on. Rugby 7s international tournament is this month, US service teams, RAF, British Army, colleges and, of course, the Fijians. Woman's 7 rugby contest in October. WOOT!! Also working the election and teaching my Leningrad class.

I have some future classes in the works, parts of which may show up in a club presentation. I have done the Winter War with Finland 1939-1940 but not the Continuation War 1941-1944. Possible future presentations include Russo-Japanese War 1904-05, Russia in Manchuria 1939 and 1945, and the Russo-Polish War 1919-1920.

I found some car stuff this month. YEA!!!
 Apologies if I missed some pictures this month.

Nikto ne Zabyt
 Nichto ne Zabyto

A NOTE FROM THE PRESIDENT

Hi All, At the last meeting we were sharing tips and techniques and someone, memory fails now who it was, that there was a business that sold acrylic sheets and that it was off Santa Fe somewhere. I found the location with the help of my son who has purchased acrylic from there in the past.

The business is called PlastiCare, 4211 S. Natches Ct., Unit K, Englewood, CO 80110 (ph 303-781-1171). I went on a field trip to look the place over and to see what services they could provide. They had a wide variety of acrylic sheets to choose from, acrylic rods, glue and prepping supplies. You

can also buy scrap by the pound. I picked up a round half inch piece that will work great as a base for one of my models.

I asked about building display cases for models and was told that they have made cases in the past and an example was shown to me that was very well made. The price for any display would be based on the size that you need. I asked about how long it would take to complete a case and was told normally about 2 weeks, but at this time it was taking longer due to a back log of orders.

They have a web site, www.plasticareinc.com but it is currently being updated. It should be available in the next few weeks. They are also working on a case calculator that will allow you to put in the dimensions of the case you want and then provide an estimated cost. The calculator is still under development but should be available in the next few months.

I believe that those that are looking for sheets of acrylic or having a case made PlastiCare should provide another possible resource.

That's all for this month. See you in September.

Bob Pridemore

MONTHLY MESSAGE FROM THE SECRETARY

19 club members attended

Meeting presentation was 'Your Modeling Tips and Tricks'

Contest winner: Henry Jackson

Business Meeting:

- a. Treasurer's report, Bob Nixon
 - i. We have money **(ED NOTE)**
- b. Contest Committee report, Eric
 - i. Did not attend
- c. News Letter report, Wayne
 - i. no update **(ED NOTE I had nothing to say)**
- d. Chapter Communications report, Cliff
 - i. IPMS National organization is updating their website
- e. Old business:
 - i. \$100 was sent the Puerto Rico club
 - ii. \$100 was sent to Nats
 - iii. High Planes contest, 2 award packages were discussed but not approved
 - iv. Hobby Town contest, no date yet
- f. New business:
 - i. Bob P needs help finding speakers for upcoming meetings. This turns out to be a job of the club vice president, John.
 - ii. Bob P needs club members to volunteer for the contest committee.

Mat

...2018 MONTHLY CONTEST THEMES

Month	Theme	Description
January	Under the Red Star	Any subject made in Russia/Soviet Union, in Russian/Soviet markings, any scale, any era. CANNOT be Russian vehicles in another country's marking, such as North Korean MiGs
February	Enter the Dragon	Any DML/Dragon kit. Bring proof (box lid or instructions)
March	Winter Storm Watch	Anything in a winter theme, any scale, any era
April	Club Kit Auction	Get rid of your trash and buy my treasure!
May	Club contest: Crazy 8's	Any subject in any scale where "eight" is a major feature. Examples, F-8 (not F-18), V-8 engines autos, M8 Greyhound, 8th Air Force markings, hull number or race car with an 8, etc.
June	Viva la Revolucion!	Civil wars, insurrections, uprisings, revolutions...you get the idea. Any scale, any era
July	Warrior Class	Any subject named after a class of warrior: chieftain, gladiator, corsair, pirate, commando, centurion, etc. Also, named after any Indian or native tribes. CANNOT be named after a specific warrior, such as a Patton, Sherman, Lee, Montgomery, etc.
August	That's Depressing!	Any civilian subject in any scale in a version and markings appropriate to the years 1925-1945
September	Trash Haulers	Cargo and transport (aircraft, vehicles, ships), military or civilian, any scale, any era
October	SciFi and Fantasy	Any scale, any subject with a science fiction or fantasy theme
November	Better Late Than Never	Any model that would have fit any of the previous 2018 contest themes that you didn't get a chance to finish
December	Cut Throat Gift Exchange	It's better to give than receive, but even better to steal what someone was given!

AUGUST CONTEST



Henry Jackson won this month's theme contest (depression era topics) with this 1/25th '40 Ford built out of the box.

CONTEST WINNER

1940 Ford
Henry Jackson



Cliff Davis brought this Provence Moulage 1/43rd Delahaye 135 S.



Cliff also showed his 1/43rd Talbot Lago 135 S also a Provence Moulage kit.



Henry Jackson modified this 1/25th AMT Impala hardtop into a convertible. The cover for the convertible's top was scratch built as was much of the interior detail. Henry had to extensively modify the windshield frame and add the sun visors.



Club prez. Bob Pridemore built this 35th Meng Merkava out of the box.



Figures and vehicles are by Tamiya.



Bob Nixon brought the makings of an SAS diorama. Obviously a work in progress.



Steve Luvane brought this 1/48th Hobby Craft P-16.



Brian Hatak built this 72nd Airfix TSR 2. The kit featured many CMK resin parts, Scale Aircraft metal landing gear and a Quickboost pitot tube.



The CMK interior.



THE PORSCHE 919 EVO JUST OBLITERATED THE NURBURGRING RECORD WITH A 5:19.55 LAP TIME

Porsche's mad prototype has gone around the Nordschleife quicker than anything.

BY [CHRIS PERKINS](#)

JUN 29, 2018



PORSCHE

Last year, I wrote a story about [Stefan Bellof's 6:11.13 Nürburgring lap time](#) set back in 1983 in a Porsche 956. I said it was a record that would remain unchallenged unless Porsche took its 919 LMP1 car to the 'Ring. That's exactly what it's done. Running a 5:19.55 around the famous Nordschleife, the Porsche 919 Evo driven by Timo Bernhard just obliterated the all-time record.



PORSCHE

That's 51.58 seconds faster than Bellof's time, which is almost hard to believe. Onboard footage from Bernhard's lap, which you can see below, doesn't even look like real-life, but it is.

Unlike Bellof's 1983 record, which was set during qualifying for the Nürburgring 1000km, this record saw Porsche rent out the track just for itself with the company using a car not homologated for any

race series. The 919 Evo is the same car that [beat Lewis Hamilton's 2017 pole](#) at Spa Francorchamps earlier this year. It's basically built to set lap records like this. To send off its three-time Le Mans-winning 919 after it was retired from sports-car racing, Porsche threw out the LMP1 rulebook and made a high-downforce, high-horsepower monster.



PORSCHE

Its turbocharged V4 combustion engine has been cranked to produce 720 hp, while an electric motor at the front axle makes 440 hp. With Bernhard on board, the 919 Evo weighs just 1957 lbs, and it makes far more downforce than the version of this car that competed in the World Endurance Championship (WEC) last year. It even makes more downforce than a modern F1 car. WEC regulations prevent the use of active aerodynamics, too, but the 919 Evo has a drag-reduction system, which allow it to hit nearly 230 mph on the final straight on the 'Ring, while still making loads of downforce everywhere else.



PORSCHE

Bernhard, a 37-year-old German who drove for Porsche's LMP1 team in WEC, said that all this downforce forced him to recalibrate what he thought was possible. "I'm pretty familiar with the Nordschleife. But today I got to learn it in a new way," he said in a statement.

And Bernhard has a ton of reverence for the Belgian Bellof, who was killed in 1985 during a race at

Spa. When WEC visited Spa in 2015, Bernhard wore a helmet designed in homage to Bellof's. "For me Stefan Bellof is and remains a giant." Bernhard. "Today my respect for his achievement with the technology available back then increased even more."

BIKE TO THE FUTURE! STUNNING ULTRA-SLEEK TMC DUMONT MOTORCYCLE HAS RECORD-BREAKING 36-INCH HUBLESS WHEELS AND IS POWERED BY AN AIRCRAFT ENGINE

- **The jaw-dropping ride is powered by a roaring 300-horsepower Rolls-Royce aircraft engine from the 1960s**
- **It was designed by the Brazilian ex-Formula One driver Tarso Marques for the 77th Daytona Bike Week rally**
- **The futuristic TMC Dumont was awarded the title 'Best in Show' during the event**
- **Marques designed the wheels to be fixed in a lower section, so the motorcycle appears to be 'floating'**

By [PHOEBE WESTON FOR MAILONLINE](#)

PUBLISHED: 12:02 EDT, 8 August 2018 | **UPDATED:** 13:22 EDT, 8 August 2018

A former Formula One driver has designed an ultra-sleek new motorbike, known as the TMC Dumont, powered by a vintage 300-horsepower Rolls-Royce Continental V6 aircraft engine.

The futuristic ride has 36-inch hubless wheels – 'the largest wheels ever made for a motorcycle' according to the Brazilian creator Tarso Marques.

The wheels are fixed to the base of the rim giving the motorcycle the appearance that it is 'floating' on the road.

Creator Tarso Marques said he has been dreaming about the design for 15 years, which he describes as the 'most expressive event of customisation in the world'.

The motorcycle was built for the 77th Daytona Beach Bike Week rally event in Florida, where it was awarded the title of 'Best in Show' earlier this year.

...



The enormous wheels are made to invoke a reaction in the observer, Marques said. The wheels are fixed in a lower section, so the vehicle appears to be 'floating'

Every aspect of the TMC Dumont was developed and manufactured in Brazil – from the design of the chassis, to the colour and painting of the frame.

Describing his creation as 'the most expressive event of customisation in the world', Marques described the motorbike as the culmination of years of planning.

'It's a special project that I've been dreaming about for at least 15 years. I did not develop it before because it was very difficult to realise it without technological assistance from outside partners', said Marques.

'And I wanted this to be a 100 per cent Brazilian project, without any foreign supplier.'

The enormous hubless wheels are designed to invoke the biggest reaction from the observer, Marques said.

'It is practically impossible to remain indifferent or to not be impacted by the design and form in front of you,' he said.

The wheels, which have no central hub or spokes, are fixed to the lower section of the rim.

This gives the impression the vehicle is 'floating' on the road, the designer claims.

Marques even manufactured the tyres himself – ensuring the entire project was custom-designed.

The former Formula One driver has not revealed the total cost of the motorcycle, or its top speed.



© Tarso Marques/Cover Images

Describing his creation as 'the most expressive event of customisation in the world', Marques says the vehicle is the culmination of years of planning



© Tarso Marques/Cover Images

Every aspect of the bike was developed and manufactured in Brazil – from painting the frame to the creation of the chassis

TMC DUMONT: WHAT ARE THE KEY FACTS?

The DMC Dumont is powered by a Rolls-Royce engine from the 1960s, which has been restored to former glory.

Before it was incorporated into a futuristic motorbike, the vintage engine is likely to have powered small aircrafts, like the Cessna.

The TMC Dumont is named in tribute to the Brazilian inventor and aviation pioneer Alberto Santos Dumont.

Few details of the concept bike exist, but what is known is the raw power of the engine and the hubless and spokeless wheel design.



+The jaw-dropping ride has a vintage 300-horsepower Rolls-Royce aircraft engine from a 1960s aircraft, most likely a Cessna or something of a similar size

The ultra-sleek motorcycle is made from a combination of carbon fibre, chrome and metal alloys. To make the TMC Dumont, the designers used a variety of methods, including high-performance Romi machining centre machines, Laser Mark and Halter cutting machines, Laser Technology scanners from Faro Technology and Wishbox 3D printers.

The chassis is made from chromium-molybdenum aluminium to provide the strength required to support the weight of the huge engine.

The bike comes fitted with a speedometer, retractable lighting, a four gallon aluminium fuel tank (16 litres) and a two litre oil reservoir (eight litres).

Wheel size: 36-inch diameter

Engine maker: Rolls-Royce

Engine model: Continental flat six

Engine horsepower: 300-horsepower (224 kW)

Official reveal: 77th Daytona Bike Week

The engine was salvaged from an air club in Paraná and required complete restoration.

The name TMC Dumont is tribute to the Brazilian inventor and aviation pioneer Alberto Santos Dumont.

'We had to to open the entire engine and virtually redo it, from refrigeration, fuel pump, to machining of some specific parts', he said.

Marques enjoyed the idea that the bike is so outlandish that people might not believe it could run.



A former Formula One driver has created an ultra-sleek motorbike called the TMC Dumont that is powered by an aircraft engine

'The idea was to make everyone doubt that it was a standard bike, but a prototype', he said.

'And we really got that done. However, one of the rules to participate in the customisation event (Daytona Bike Week 2018) is that the bike must actually run and run normally.

'To everyone's surprise, I made it a point to arrive at the event by driving TMC Dumont.

'And it was very gratifying and fun to see the reaction of people,' he said.

The TMC Dumont chassis is made from chromium-molybdenum aluminium to provide the strength required to support the weight of the huge 300-horsepower Rolls-Royce Continental V6 engine.

The bike also comes fitted with a speedometer, retractable lighting, a four gallon aluminium fuel tank (16 litres) and a two litre oil reservoir (eight litres).

More at <http://www.dailymail.co.uk/sciencetech/article-6039719/Incredible-pictures-ultra-sleek-motorcycle-designed-former-Formula-One-driver.html>

NEW MEMO REVEALS JAPANESE LEADERS' THOUGHTS ON EVE OF PEARL HARBOR

A used bookshop owner in Japan found the memo tucked away in a journal. The document gives the first glimpse into conversation between Emperor Hirohito and Prime Minister Hideki Tojo on the eve of the 1941 Japanese attack on Pearl Harbor.



Eugene Hoshiko/AP

July 30, 2018

By Mari Yamaguchi Associated Press

TOKYO

A newly released memo by a wartime Japanese official provides what a historian says is the first look at the thinking of Emperor Hirohito and Prime Minister Hideki Tojo on the eve of the Japanese attack on Pearl Harbor that thrust the United States into World War II.

While far from conclusive, the five-page document lends credence to the view that Hirohito bears at least some responsibility for starting the war.

At 8:30 p.m. in Tokyo, just hours before the attack, Tojo summoned two top aides for a countdown to war briefing. One of them, Vice Interior Minister Michio Yuzawa, wrote an account three hours after the meeting was over.

"The emperor seemed at ease and unshakable once he had made a decision," he quoted Tojo as saying.

To what extent Hirohito was responsible for the war is a sensitive topic in Japan, and the bookseller who discovered the memo kept it under wraps for nearly a decade before releasing it to Japan's Yomiuri newspaper, which published it last week. Hirohito was protected from indictment in the

Tokyo war crimes trials during a US occupation that wanted to use him as a symbol to rebuild Japan as a democratic nation. Hirohito died in 1989 at age 87 after 62 years on the throne.

"It took me nine years to come forward, as I was afraid of a backlash," said bookshop owner Takeo Hatano, who handled the document carefully as he showed it to Associated Press journalists. "But now I hope the memo would help us figure out what really happened during the war, in which 3.1 million people were killed."

Takahisa Furukawa, a Nihon University expert on wartime history who has confirmed the authenticity of the memo, called it the first detailed portrayal of Tojo and Hirohito just before the attack. Palace documents have confirmed Hirohito's daytime meeting with Tojo on Dec. 7, 1941, but without elaborating.

The memo supports the view that Hirohito was not as concerned about waging war on the US as was once portrayed, Professor Furukawa said. The emperor had endorsed the government's decision to scrap diplomatic options at a Dec. 1 meeting, and his unchanged position the day before the attack reassured Tojo.

Yuzawa's account portrays Tojo as upbeat and feeling a sense of accomplishment after all the required administrative steps for war had been taken and, most importantly, Hirohito had given him the final nod without asking any questions.

"If His Majesty had any regret over negotiations with Britain and the US, he would have looked somewhat grim. There was no such indication, which must be a result of his determination," Tojo is quoted as saying in the memo. "I'm completely relieved. Given the current conditions, I could say we have practically won already."

His optimism was misplaced. The Pearl Harbor attack killed nearly 2,400 US servicemen and caused major damage to the US Pacific Fleet. Within months, however, the tide was turning. Tojo was blamed for prolonging the war after it was clearly lost, leading to the US atomic bombings of Hiroshima and Nagasaki in August 1945. He was later executed as a Class-A war criminal.

Tojo, whose administrative skills and loyalty had won Hirohito's trust, was made prime minister just two months before the Pearl Harbor attack and served in the post for most of World War II.

Furukawa said Tojo's remarks in the memo about his relief at completing the preparations for war support evaluations of him as a good bureaucrat but not a visionary leader. More decisive leadership might have ended the war earlier, he said.

"Tojo is a bureaucrat who was incapable of making own decisions, so he turned to the emperor as his supervisor. That's why he had to report everything for the emperor to decide. If the emperor didn't say no, then he would proceed," Furukawa said. "Clearly, the memo shows the absence of political leadership in Japan."

Yuzawa wrote in the memo that he was "moved and honored to get involved in war preparations at the time of a crucial event that would determine the fate of the Imperial state." He was later promoted to interior minister but turned critical of Tojo's leadership and was dismissed from the Cabinet over a policy difference.

"He is a man of passion and loyalty," Yuzawa wrote of Tojo in a notebook he kept. "But he is so narrow-minded and he has no philosophy as a political leader."

Mr. Hatano, a longtime acquaintance of some of Yuzawa's descendants, received the notebook and other items from the family when they wanted to make room in their apartment. He found the memo folded in half inside the notebook about a year later.

"When I recognized the date, Sunday, Dec. 7, 1941, I knew it was something special," he said. He examined it repeatedly to try to make sense of the handwriting and archaic language. "Then I spotted references to the emperor and Prime Minister Tojo."

HOW ONE MAN FLED EUROPEAN WAR, ONLY TO EXPERIENCE CUSTER'S LAST STAND

By: Randy Tucker



War clouds loomed for central Europe. It's a familiar scene over the past century for trouble to brew on the border separating France and Germany. But this was the first time, and the tension came soon after Germany unified in 1870.

Otto von Bismarck did the impossible in unifying nearly a thousand little city-states, principalities, and mini-kingdoms into what was to become modern Germany.

On paper, the French were heavily favored. The French Army was equipped with the 11mm Chassepot, the first breech loading rifle taken in military service by the French. Its rate of fire, eight to 15 rounds per minute depending on the user, was far superior to the muzzle loading rifles it replaced. With a range of 1200 yards and a muzzle velocity of 1345 feet per second (fps), it was a formidable weapon.

The Germans had a much more established, but lesser-quality weapon in the Dreyse Needle Gun, first designed by Johann Nikolaus von Dreyse in the 1820s and perfected for use by the Prussian military in 1848.

Acorn shaped in 15.4 mm, the Dreyse shot a huge bullet. Its rate of fire was only six rounds per minute, and at a muzzle velocity of 1000 fps, it was effective to just 600 yards.

Both weapons used waxed paper cartridges, ignited by a sharp "needle like" firing pin that penetrated the paper and set off a percussion cap inside.

But the small arms of the opposing armies would not settle this fight. The French troops were better equipped but Bismarck's artillery, dominated by the Krupp three-kilogram breech loading cannon, which was the difference in a quick Prussian victory.

Not every newly unified German citizen was flushed with patriotic fervor, however. The vision of a German nation brought fear to surrounding countries and to citizens within the newly formed German state as well.

Charles Windolph was one of those frightened citizens. One of the first acts of Bismarck's new government was to draft men for service in the Franco-Prussian Army. Windolph had no desire to serve; he was a dreamer and imagined a better life in the paradise of the American West.

In 1870, Windolph caught a ship across the Atlantic and arrived in New York City a few weeks later full of dreams and hopes for a new prosperity. The harsh reality of Gotham City inundated by millions of people just like Windolph made for a tight job market. With no money and no way West, he unsuccessfully searched for work and eventually enlisted in the American Army.

In one of those strange twists of fate, the thing Windolph had so adamantly tried to avoid found him.

June 25, 1876 brought Windolph's foray into military service full-circle. Pinned down on a cliff above a giant village of unified Cheyenne and Sioux above a small creek in modern-day Montana, Windolph was an eyewitness to the Battle of the Little Big Horn.

Windolph served with Major Marcus Reno along the Greasy Grass, as Native Americans call the area. With most of Reno's forces killed or wounded, the fate of Windolph and the remaining soldiers of the 7th Cavalry seemed inevitable. Only an assault by General George Custer on the other end of the village saved the men from impending annihilation.

Windolph spent the most harrowing night of his life listening to what he thought were war songs and victory celebrations coming from the village below. What he was actually hearing was the mourning song of Lakota and Cheyenne women over the loss of their husbands, sons, and fathers in the battle.

Reno's command escaped early the next morning.

Windolph had upended his life to avoid firing the Dreyse and escape returning fire by the Chassepot, only to find himself carrying a Springfield model 1873 rifle for an army whose language he didn't speak well. The Springfield was similar in performance to the Chassepot with a .45-70 cartridge, a range of 1000 yards, and with a nearly equal muzzle velocity of 1350 fps.

The officers fighting around Windolph carried the 1873 Colt Army six-shooter firing a .44 caliber rim fire cartridge with a few scattered personal Smith and Wesson Model 3 revolvers in .45 caliber.

The Sioux and Cheyenne weren't nearly as coordinated in their armaments.

Archeologists have discovered 45 different firearms used by the Native Americans at the battle. Pistol cartridges in a wide variety of calibers tell a different story of Indian armament than the Hollywood version of the battle, and arms, spent bullets, and cartridges found after the battle indicated rifles ranging from smoothbore muskets to state-of-the-art Henry and Winchester repeating rifles.

Windolph left the army as soon as his initial enlistment expired. He lived until 1950, the oldest surviving U.S. soldier at Custer's Last Stand.

Randy Tucker is a retired history teacher and freelance writer from western Wyoming. He has a lifetime of experience in farming, ranching, hunting and fishing in the shadow of the Wind River Mountains. Contact him at ratucker@wyoming.com.

WW1 A7V IN AUSTRALIA



What can we possibly learn from the archaeological study of a World War I battle tank? Quite a lot, it turns out, when the attention is devoted to a rare German-built A7V Sturmpanzerwagen tank known as Mephisto.

The tank was originally collected as a war trophy by a Queensland based battalion in July 1918, brought to Brisbane the following year and now [held by Queensland Museum](#). One hundred years to the month since its recovery, it is the last of its kind in the

On close inspection it is clear that this metallic monster is in far from pristine condition and covered in battle damage. Mephisto saw a lot of action during the battle for [Villers-Bretonneux](#) in northern France a century ago.



The A7V Sturmpanzerwagen Mephisto in transit at the Ipswich Railway Works Museum. Michael Westaway, Author provided

Investigation of war relic

The story of the tank is now told in a new publication, *Mephisto: Technology, War and Remembrance*, that recounts its history and technological development, and places it in the context of the so-called “War to end all wars”.

Together with our colleagues, we have attempted to reconstruct something of Mephisto’s role in its final battle.

To make sense of various gunshot and shrapnel impacts, the Queensland Police and Ballistic Bomb Blast Unit and the Defence Science & Technology Group (DSTG) provided their technical skills to help explain the damage to the tank.

It became clear that a large amount of small arms fire was thrown at the vehicle in an attempt to halt its advance. There is evidence of very close-quarter fighting, with several attempts to disable the vehicle.

The QP Ballistics team identified a .303 armour piercing round wedged in the armour next to a machine gun port. It seems that a soldier was attempting to disable one of Mephisto’s eight machine guns by shooting its water jacket.



Queensland Police ballistics measuring the trajectory and angle of an armour piercing round fired at one of Mephisto's eight maxim machine guns. Michael Westaway, Author provided

A series of well-aimed, short machine gun bursts were fired at one of the tank's exhaust ports. Much of the damage occurred on the left side of the tank which from reconnaissance photos taken after the battle show the position of the allied trenches located parallel to the tank.

There is also evidence of a larger-calibre weapon that was brought into use against the tank, perhaps a French 37mm weapon, which simply ricocheted off Mephisto's thick armour.



Large calibre impact strikes on Mephisto, possibly made by a French 35mm gun. Queensland

Museum, Gary Cranitch, Author provided

Further research is required to clarify the exact meaning of the use of this larger-calibre weapon. Initial work by DSTG has reconstructed the angle the tank rested in when it finally became stuck when it ran into a shell crater.

Close combat with a tank

Very close fighting was associated with the vehicle, and the battle damage reveals something of the terror that the defending English soldiers must have endured on the morning of April 24, 1918. The destruction of the vehicle was revealed by QP bomb blast experts. Two different explosions were recorded in the twisted armour of the forward compartment of the tank.

Historical evidence has suggested that the German crew set off a charge to disable their vehicle, but the primary impact appears to have burst through the roof, the force bending the heavy steel support beams downward.

This blast created something of a chain reaction, and would have generated a temperature of between 3,000°C and 4,000°C. It initiated a further explosion by igniting any munitions still within the tank.

The perfect impression of one of Mephisto's own 57mm shells is blasted through the floor plating next to the main forward gun.

In turn, this projectile hit the ground beneath Mephisto, sending shrapnel back up through the plating on the underside of the tank. This generated several impacts in the metal directed back inside the forward compartment.



The damage to the forward compartment of Mephisto can be seen here, taken during the conservation treatment after the 2011 Brisbane floods. Michael Westaway, Author provided

The conclusion that can be drawn from this study is that a fusillade of small arms fire was hurled at Mephisto as it trundled, at speeds never more than 6–8mph (9-13kmh), towards the Allied positions at Villers-Bretonneux and Monument Wood.

As much of the damage is recorded on the left side of the tank it is probable that most of the impacts occurred during this final assault and not at its previous action at St Quentin. The tank sat for three months in No Man's Land and continued to receive small arms and shrapnel damage while it was disabled.

A lasting legacy of war

A study such as this by no means rewrites our understanding of the conflict, but as the sole surviving A7V, this battered artefact does provide unique insights into the events that took place on the battlefields of Europe 100 years ago.

Investigating artefacts in this manner transforms them. They become something more than just a curious object from the past, and indeed can emerge as an important, silent witness to historic events.

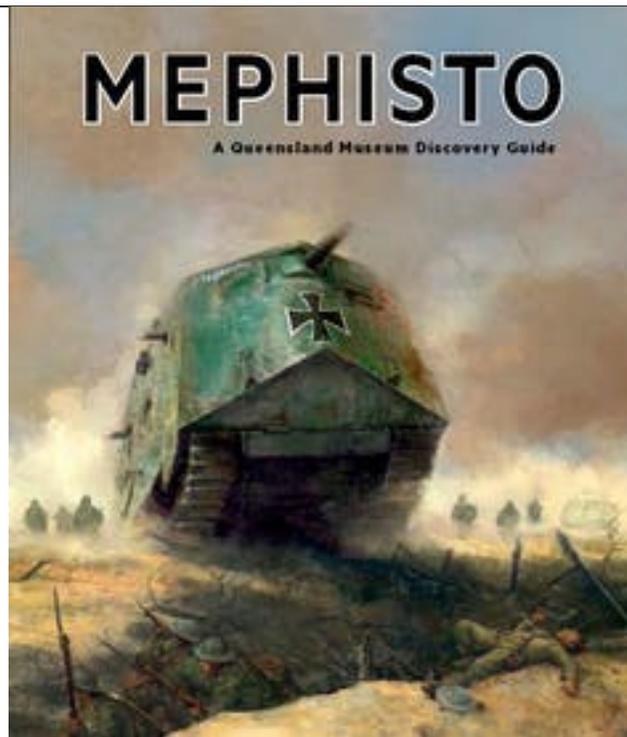
A tangible object such as Mephisto, in trying to make sense of the battle damage to the vehicle, transcends the insights revealed in the pages of written history.

It highlights the horror of trench warfare and provides first-hand accounts of how the British infantry tried to stop an enemy tank.

Mephisto is a rare and important example of developing military technology in the early 20th century. As the last surviving German tank from the First World War it will once again be on display at Queensland Museum from November 11, 2018.



Side profile view of Mephisto at the 5th Tank Brigade's Demonstration Ground at Vaux-en-Amienois. Queensland Museum, Author provided



[Mephisto: Technology, War and Remembrance](#), written by Greg Czechura and Jeff Hopkins-Weise, published by Queensland Museum. Price A\$59.95

THE FT-17 TANK, THE PRECURSER OF THE MODERN TANK.

I remembered seeing a story when I was little and I would read the comic "combat", it usually had stories of Sgt Rock, there was a story about the French resistance using these little WWI tanks to attack "La Boche" in support of the D-Day Landings. I thought it was a made up story, perhaps it was but the tank was actually real. I saw one while I was in Germany and visited a museum I think in Sinsheim Germany.

The tank is a resilient and devastating war machine, and a key element in many conflicts throughout the 20th and 21st centuries. To break the deadlock of trench warfare in the western front during the WWI, the concept of tank battle was developed. Britain and France simultaneously and separately developed the first tanks during the WWI.

The name 'tank' was adopted for the British 'land ships' in 1915 to maintain the secrecy of the armored vehicles. In an effort to fool the enemy spies, British army propagated the myth that they had been building 'mobile water tanks'.

The world saw tanks in battle for the first time on September 15, 1916, when British Army deployed these armored land ships during the Battle of the Somme. Throughout 20th century, tanks have played a dynamic role for the army and it has seen fierce and devastating action.

It is a strong mobile weapon platform with a large caliber rotating cannon capable of preventing enemy vehicles from advancing. From the the Battle of the Bulge in WWII to the 1981 Battle of Dezful during the eight year long Iran-Iraq war, tanks performed as the most significant offensive weapons around the world.

Following the fall of France in 1940, the country's development of armored vehicles was suspended

for a period that lasted throughout WWII.

France probably had the best tank designs in Europe before the War, but it was reduced to the puppet state of Vichy France after occupation by the Germans.

The French Renault FT was among the most influential and revolutionary tanks in history. Following the very poor performance of the French Schneider CA-1 tank at General Neville's April 1917 offensive at Berry Au Bac, Colonel Estienne, the designer of the CA-1 tank gave his full support for the development of a technically more advanced tank, a task which was borne by the Renault Automobile Company.



The Renault was also called FT-17 as a factory code for tank projects run by the Renault Automobile Company. Louis Renault, the famous car maker and owner of the Renault Automobile Company, had begun designing a tank that had a realistic power-to-weight ratio, better agility, speed and trench crossing ability. The tank was also to be cheaper to produce, and easier to maintain.

Before then, he had declined involvement in any tank-making project, but after meeting with his friend, Col. Estienne, he would later take interest in the challenge and began his design. Although his design offered much more promise than the heavy, Schneider CA-1 and Saint-Chammond tanks, it faced some challenges with production.

At that time, the French were undecided about whether to use a large number of small tanks or a small number of large tanks such as the Char 2C—just like the British who had performed well with heavy tanks at the Battle of Somme.



Abandoned FT-17 somewhere in France 1940



Abandone

d Renault FT-17 Light tanks 1940

With the intervention of Colonel Estienne, the French government made two large orders in April and June 1917, for tanks based on the specifications of the Renault prototype. Renault was now able to proceed with production of the Renault FT. Only 84 tanks were produced initially, but before the Armistice, about 2,697 tanks were manufactured.

The Renault FT weighed 6.5 tons and had a power-to-weight ratio of 5 hp/ton. Its main armament comprised a Puteaux SA 1918 37mm gun or a Hotchkiss machine gun within a fully rotating turret. It was the first tank ever to use a fully rotating turret.



In 1920, Brazil received a total of 12 brand new FTs from the Delaunay-Belleville factory in France. Six were fitted with a Berliet tower and armed with a 37mm Puteaux cannon. Five were fitted with an octagonal tower and armed with a 7mm Hotchkiss machine-gun and one model without a rotary turret for communications only. One of these surviving tanks with a 7mm Hotchkiss is now on display at Museu Militar Conde de Linhares (Count Linhares Military Museum) at Rio de Janeiro, Brazil. The Renault FT had a speed of 5 mph and used a rear engine configuration. It had space for only a crew of 2 – the driver and commander who also served as the turret operator. It had a modified Holt chassis which enabled it to have a good grip of any terrain. To deal with trenches a rear tail was fixed to the Renault FT which gave balance. Although lightly armed, the Renault FT's turret made it quite versatile and efficient in many conditions.

There were no means of communication between the turret operator and driver because of the very noisy interior, so a kind of “kicking code” in the back, shoulder or head was used by the turret operator to command the driver.



Captured FT tanks in German service in Serbia (World War II)

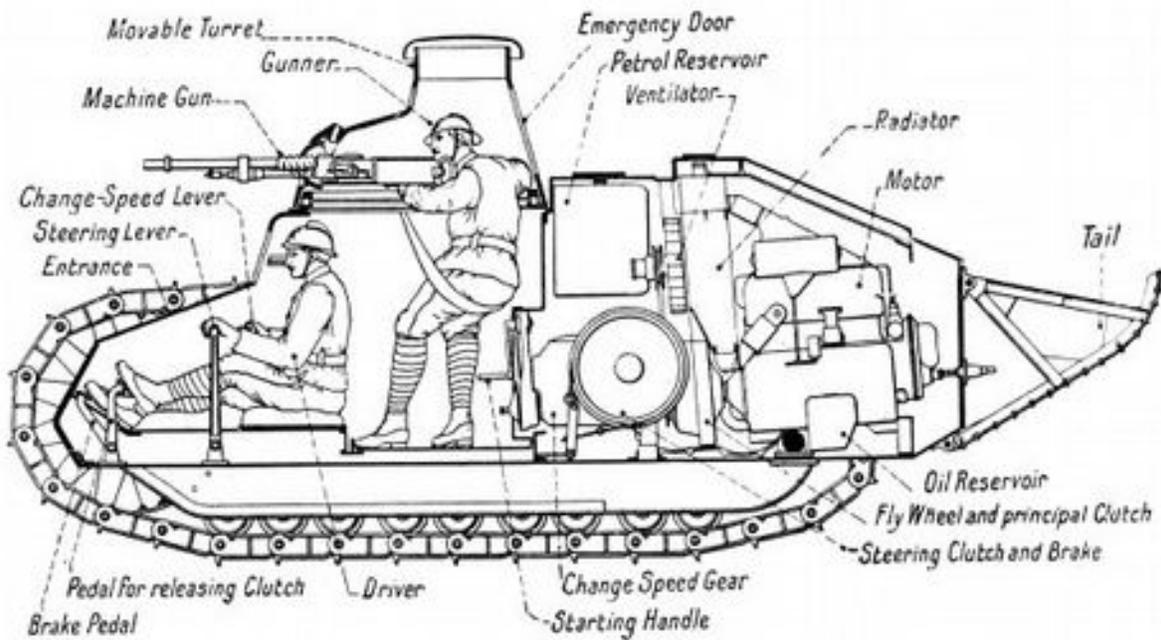
The small FT, without doubt, was a success during its first missions in the World War irrespective of its initial flaws such as radiator fan belt and cooling system problems. Several Renault FTs were involved in all major offenses of the Western front units, with about 4356 engagements featuring the FTs. About 746 FTs were lost in all.

The first operational unit to use the Renault FTs was the 1st Battalion De Chars Legers, on February 1918.

The Americans, soon after the war also developed their own version of the FT-17.



Crew locations shown with panels open



DIAGRAMMATIC SECTION OF A FRENCH LIGHT (OR "MOSQUITO") TANK.

Diagram of internal Layout of French Renault FT-17 Char Mitrailleuse "Mosquito" Tank, 1918.



FT 17 Panzerkampfwagen 17R 730(f)



Renault FT-17 color photo, somewhere in France 1940



RENAULT FT17 tank (1918), in front of the entrance of the Armistice museum in Rethondes Compiègne, Oise, France.



Two German soldiers posing with a tank FT-17 1940



US Army operating FTs on the Western Front, 1918

STEALTHIER TANKS ARE ON THEWAY

BY JOHN WATTS SENIOR FELLOW, ATLANTIC COUNCIL CHRISTIAN TROTTI

Several tech trends will make tomorrow's tanks harder to spot — and that may have strategic implications.

Truly game-changing technology does not develop in isolation. It results from the [convergence of multiple trends](#) and usually the combination of multiple technologies.

For example, today's social-media platforms did not arise from internet connectivity alone. Rather, they evolved iteratively over multiple generations of technological development, incorporating the miniaturization of digital cameras, the increase in portable computing power of smartphones, and advances in cellular connectivity.

In that context, a cluster of technological trends may be converging to produce a potentially transformative battlefield capability: "stealth tanks." This concept is [not new](#) and there is no certainty that these new technological developments will fully scale or prove operationally effective. But as these technologies develop they hint at possibilities that warrant serious discussion about their potential application to armored vehicles, as well as their operational and politico-

strategic implications.



By “stealth,” we do not mean invisibility. Rather, it is a collection of technologies designed to reduce an object’s observable signature, thereby making detection more difficult. Even if temporary or incomplete, stealth provides a significant tactical advantage. [Aircraft](#) achieve stealth through a decreased radar cross section which incredibly complicates detection.

For a tank to be “stealthy,” its key observable qualities must be masked or concealed. Specifically, tanks are loud and emit substantial heat. Therefore, constructing a “stealth tank” would necessitate the reduction of these signatures, resulting in a quieter tank with a low infrared, or IR, signature.

Of the two, heat is the greatest concern, as most targeting systems use IR. Recent research on ion-soaked [graphene](#) sheets provides an exciting possibility. This thin and simple material can shield an object’s thermal signature and even match the surrounding temperature if actively manipulated. Applied to the surface of a tank, graphene sheets could eliminate or significantly reduce a tank’s IR signature.

If this concept effectively scales up, of which there is no certainty, it may be simpler and more cost-effective to implement than [current options](#) for IR camouflage. IR sensors are ubiquitous among modern militaries and many antitank missiles like the American [FGM-148 Javelin](#) are IR-guided. Masking a tank’s IR signature would therefore make it difficult to both detect and target them with precision munitions.

Advancements in electric vehicles may also contribute to stealth by reducing noise and heat. Currently, a team of defense contractors, including SAIC and Lockheed Martin, is working to construct the first U.S. electric tank prototype; two demonstration vehicles are expected to be built [by 2022](#). Moreover, the U.S. has expressed interest in [military vehicles](#) which [generate their own electricity](#).

While [battery weight is a problem](#) for electric vehicles—especially for energy-intensive tanks that would require substantial battery power—the U.S. could consider a “[series hybrid](#)” approach like the original [Chevrolet Volt](#) or a “parallel hybrid” approach like diesel submarines. This would require a careful balancing requirements against battery weight and simplicity.

DON'T MISS

Passive stealth is fine, until you need to fire a round and thereby reveal your position. But even here, there are several options for retaining the advantage of stealth. (Of course, “jockeying” and defensive maneuvering to avoid detection and [counter fire](#) is, and will remain, a fundamental skill for tank drivers.) In the medium term, advanced networks and sensors, combined with emerging robotics, could create a “gun buggy” model similar to preliminary [F-35 operational concepts](#). In this case, “stealth tanks” would refrain from firing themselves and instead direct remote autonomous platforms to deliver ordinance. These platforms would serve as organic mobile artillery and indirect fire support in a network-centric approach to warfare, allowing the coordinating tank to remain undetected.

In the longer term, there is the possibility of stealthier weapons. Miniaturization and tactical application of early-stage advanced weapons, like [directed energy](#) or [rail guns](#), have great potential if they develop sufficiently and overcome their current limitations, such as energy requirements. Directed energy would be truly stealthy in that it bears no visual or audible profile, but it is unlikely to be as destructive as rail guns. An ideal model might involve using both in a co-axial arrangement.

If these technologies are brought together to enable comprehensive stealth for military ground vehicles, the key benefit would be survivability. By evading detection, “stealth tanks” would be much less vulnerable and therefore could gain greater flexibility on the battlefield, opening opportunities for greater [operational unpredictability](#).

This concept of “stealth tanks” bears significant politico-strategic implications. Greater survivability reduces political risks and could result in lighter and faster designs that might allow easier deployment, enabling more regular application of that capability. If stealth technology enabled the development of more survivable lighter and faster tanks, they could add firepower to [Stryker](#) brigades, be employed in a wider range of operational tasks, and even contribute to special operations and hybrid conflicts.

Despite the apparent advantages, there are limitations to the implementation of this technology. Significant electrical power is central to enabling most of the technology needed for stealth, but the weight and efficiency of batteries will be a limiting factor. That said, increasing adoption of commercial electric vehicles will likely accelerate developments in this area, and reducing the fuel requirements of the current armored fleet would have significant strategic and operational implications in and of itself.

All of aspects of this concept would need thorough testing to explore the opportunities, risks, and limitations of stealthy ground vehicles. However, the convergence of individually interesting, though not obviously significant, technological advancements has the potential to revolutionize one of the most critical facets of land warfare. Comprehensive stealth would have wide-ranging implications for future operating concepts and strategic decision-making. Although decades will pass before anyone truly understands these implications, it is imperative to begin conceptualizing a reality where “stealth tanks” stalk the future battlefield. **D**

A WORLD WAR TWO SIGN WARNING AIRCRAFT NOT TO DROP BOMBS ON NEUTRAL IRELAND HAS BEEN EXPOSED BY A FIRE.

<http://www.dailymail.co.uk/news/article-6026607/Give-sign-Wartime-signal-revealed-gorse-fire-Co-Wicklow.html>

The sign reading EIRE was spotted by a Garda Air Support Unit crew in Co Wicklow. It was one of many made with stones to tell World War Two planes they were above Ireland. This helped American aircraft navigate to Britain and also warned Britain's enemies not to drop their bombs on a neutral country.



A World War Two sign warning aircraft not to drop bombs on Ireland has been exposed by a fire



The signs helped American planes navigate on their way over Ireland to the UK
The sign in Bray Head is made entirely of stone, and was made visible due to a large gorse fire that took place on the headland two weeks ago.
The Defence Forces Air Corps were helping emergency services extinguish the fire when they noticed the sign from above.
A Gardai spokesman said: 'The signs themselves are quite common on the west coast but unusual on the east.'
'The Air Corps helped put the fire out and then the Garda helicopter, which we fly, noticed the sign emerging from the past.'



The sign reading EIRE - which means Ireland - was spotted by a Garda Air Support Unit crew in Co Wicklow



It was one of many made with stones to tell World War Two planes they were above Ireland. Up to 150 tonnes of stone were used in some of the 83 signs dotted around the coast of Ireland. At the request of the United States air force a nearby lookout post was added, turning the signs into air navigation aids.

This helped American bomber pilots navigate across the Atlantic.



The sign in Bray Head is made entirely of stone, and was made visible due to a large gorse fire that took place on the headland two weeks ago