

# A Herculean Arrival



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## **CONTENTS**

08 BUILDING A HIGH PERFORMANCE TEAM  
10 OPERATIONAL TIMELINE  
14 READY FOR WORK  
16 TRAINING ON HOME GROUND  
18 MAINTAINING THE DREAM  
22 FURTHER, FASTER, HIGHER  
24 C-130J VS C-130H  
26 A SIMULATED FUTURE  
30 FUTURE FORCE  
32 THE MIGHTY HERCULES  
38 LIKE FATHER, LIKE SON  
40 STANDING ON THEIR SHOULDERS



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# First Words

Chief of Air Force  
Air Vice-Marshal Darryn Webb

It's a privilege to take delivery of a new capability, and the arrival of the C-130J signals an exciting future for the Air Force. While the new fleet looks and smells like a new car, the J model Hercules has been delivering for a couple of decades now, very much an established machine across partner Air Forces.

I can recall like it was yesterday getting a chance to fly them on exchange with the Royal Australian Air Force. I was on a mission in an old C-130E in the middle of the Pacific when we discovered a major crack in the engine mount. A serious problem requiring me to break the bad news to my Commanding Officer back on base – “how do you feel about doing a J model course then”, was his response. “You bet!” was of course mine, and so my two years flying the J model began.

That was 25 years ago, where did that time go? They were early days with the new type, and we were literally developing strategic and tactical transport procedures on the fly, unwitting global leaders in the programme.

There were some exciting moments too as we overcame early software challenges – losing all communication and navigation information along with a few other electrical failures en route from Singapore to Darwin was particularly memorable.

Turned out having power continuously applied for more than 15 hours corrupted the data. Extensive test and development in any new type is clearly a vital process and its great to see, as we fast forward to today, those systems well proven allowing the rapid introduction into service of our latest versions.

Not surprisingly, I am extremely excited to see the next generation of aviators continue the legacy of this unrivalled tactical transport aircraft.

With plenty of horsepower, more boot space, and new sophisticated systems on board, the C-130J will support a greater range of tasks than its predecessor.

I'm also confident those lucky enough to find themselves supporting and operating this new machine will get the same sense of team-based achievement in getting the job done, whatever it is, for many years to come.

# First Words

Air Component Commander  
Air Commodore Andy Scott

At the arrival ceremony for the C-130J I was lucky enough to meet two of the ex-service personnel who took delivery of the C-130H back in 1965. I initially thought of how different this platform would have been to those who came before it noting the C-130H was the largest aircraft operating in New Zealand in 1965!

Although bigger than the H the J can't quite claim that title in 2025, but the new aircraft brings another leap forwards in capability for the Air Force in the improved size, connectivity and additional equipment on the latest generation.

As we talked about the huge step forwards the team took in 1965 many we spoke to felt a little in awe of the team who picked it up and started flying operationally into Vietnam and Antarctica all within the first few months of its arrival.

People may say we can't do that these days as we meet too many rules, however, I would note that it is not the case and the modern airworthiness system we have in place allows that still to happen but in a calculated way.

The new system allows us to understand the risks and mitigations we need to operate safely and that is why I am quite comfortable we will be taking the aircraft to Antarctica, arguably the most dangerous mission we do in peace time, within a few weeks of arrival of the new aircraft.

There is no doubt it will be hard to say goodbye to the C-130H(NZ) for those like me and generations before, who have either flown, fixed or travelled on them over the past six decades, but how good is it to know that what will be replacing them is even more useful, capable and reliable.

I will be the first to admit that when flying I was never too upset with a breakdown somewhere sunny but now I am ACC I know how in demand the platforms are going to be so look forward to the improved service the J should deliver and will be very sceptical the next time I am told they have broken down in Hawaii.





# BUILDING A HIGH PERFORM TEAM



**Ushering a new fleet of aircraft into the Air Force is a job that rarely crops up in the service, but it was a role Wing Commander Gareth Russell was eager to tackle.**



# ANCE

**T**he C-130J Transition Unit (JTU) Commanding Officer said he would have been honoured and proud to be tapped on the shoulder as commanding officer of any unit, let alone one that had the responsibility of bringing a new aircraft in.

“There is a fair amount of trust there,” he said.

“I was fairly well prepared for the role, having been involved in the Pilot Training Capability project that saw the T-6C Texan II introduced into service, and before that the C-130H Life Extension Programme, when we upgraded our legacy C-130H aircraft.”

His career experience has given Wing Commander (WGCDR) Russell an insight on what was involved in starting the unit from scratch.

“Standing up the new unit really motivated me because the question wasn’t, how do you feel about being a commanding officer, it’s how do you feel about being a part of shaping and leading a high-performance team and how do we work together to get the best out of ourselves and each other.”

It helps that WGCDR Russell’s team is highly motivated to make the project succeed.

“The C-130 is such an important platform for New Zealand and has been involved in every major operation, mission and deployment since the 1960s. Everyone understands introducing a new capability has its challenges, but being part of the next evolution and delivering this key capability for New Zealand is pretty amazing.

“JTU will deliver the C-130J capability to No. 40 Squadron as effectively and efficiently as possible to ensure they are resilient and ready to respond to any situation in our challenging geo-strategic environment.”

JTU was established to ensure a seamless capability integration of the C-130J while No. 40 Squadron could maintain uninterrupted output in the service of New Zealand’s interests.

To achieve this, JTU and No. 40 Squadron have had to carefully manage specialist personnel across both units to ensure continued fixed-wing tactical airlift capability while also meeting project milestones.

Once sufficient progress has been made by JTU in terms of the test programme, No. 40 Squadron will become the enduring home of the new C-130J capability.

Until that happens, personnel joining WGCDR Russell’s team have left a gap in No. 40 Squadron, which has been a challenge. He equated it to the introduction of the P-8A Poseidon, which replaced No. 5 Squadron’s P-3K2 Orion fleet.

However, unlike the P-3K2 and the P-8A there will be no capability gap between aircraft types and so the sharing of resources must be closely managed, WGCDR Russell said.

“I don’t see any difference between JTU and No. 40 Squadron. The squadron’s Commanding Officer WGCDR Brad Scott’s team and JTU are working very closely together because we understand that to achieve a successful integration

we need to share resources and build a cohesive team to ensure that all outputs are met.”

The people in JTU were “absolutely phenomenal”, WGCDR Russell said.

“I sometime pinch myself at the quality of people I have the privilege to work with every day. I don’t know why I’m still surprised because this is the organisation we work in.

“We’ve had a very small team to date, essentially Flight Commanders and a Warrant Officer. They have had to balance not having any staff, therefore being the planner and the producer, keeping all the oversight and doing everything themselves.”

However, now that trained personnel are returning from the United States, the executive staff are “seamlessly” transferring into a more leadership-focused role, he said.

“It’s been really impressive to observe the integration of two teams initially separated by the Pacific Ocean into one back home in New Zealand.”

Working with the larger team arriving home from the United States was a key milestone for the unit, he said.

“The aircraft are cool and the simulator is cool, but the people and the team are the greatest assets of the whole project from my perspective.

“We’re finally going to be in one place and can truly build that sense of whānau and integrate into the wider base and NZDF community.”

# OPERATIONAL

## SEPT 4

First C-130J lands at Base Auckland

## SEPT 11

Flights to NZ Air Force bases

## SEPT 29

Second and third aircraft arrive

## OCT 6

First international mission to collect RNZN personnel and passengers from Samoa

## LATE OCT/EARLY NOV

Final two aircraft land at Base Auckland

## NOV 25 – DEC 13

Six flights to Antarctica carrying cargo and people

The Air Force's immediate priority is the safe delivery of all the C-130J Hercules to Base Auckland, Air Component Commander Air Commodore (AIRCDRE) Andy Scott says. But from that point on, there will be a high tempo of trials and development flying to ensure all capabilities are signed off and the aircraft can enter service as quickly as possible.

"It's worth calling out the Antarctic flying that we'll do, which will be only two months after the delivery of the aircraft. We're going to put it to one of the harshest environments on the planet and most complex missions.

"We are confident with the platform, we know it can do it, so we need to go and get it tested and authorised so it can carry on the proud legacy of the C-130 Antarctic operations that started in November 1965."

Once the Antarctic test and evaluation flights have been signed off, the fleet will be released to perform any logistics support work around the planet, AIRCDRE Scott said.

"If we successfully fly all five home from America we know it can do long distances and fly international routes and then we do the Antarctic bit, then we know it can do the short, long and complex flights, and everything else sits in the middle."

Search and rescue will be done as part of the second release, he said.

"We have a provision that allows us, when assessing the risk, to do tasking of national significance, of which search and rescue would be one as well as humanitarian aid and disaster relief. If there's a big cyclone in December and we needed to use the J-model, we'd have the ability to use it, even if it hasn't been signed off yet."

Tactical flying trials, development and evaluation will follow early in 2025. Later in the year the aircraft will also be involved in tactical training with partners, either under Exercise Talisman Sabre or one of the other umbrella exercises, such as REFORPAC (Return of Forces to the Pacific), led by the United States, AIRCDRE Scott said.



# TIMELINE

## JAN 31 2025

Aircraft cleared to conduct global air logistic support, including Antarctica tasks

## FEB 2025

Tactical flying training begins

## MAR 2025

The C-130J fleet is incorporated into No. 40 Squadron

## MAR 2025

Search and rescue capability development

## JULY 2025

Exercise Talisman Sabre, Australia

## SEPT 2025

Operational release of all roles for C-130J fleet

“Also looking ahead will be how the squadron uses the new MX20 camera to help with humanitarian aid and disaster relief – like post-disaster reconnaissance. It will be a capability we will be looking to use in the future, alongside setting up a high-speed data link,” he said.

Joint Transition Unit Commanding Officer Wing Commander (WGCDR) Gareth Russell said the trials and development flights were to learn lessons, test procedures, test the crew, and have capability and integration aligned.

Once that is done the DEA(O) (Directorate of Evaluation of Airworthiness (Operating)), an independent auditor, will evaluate a mission and apply test-guards that measure suitability and effectiveness, WGCDR Russell said.

The tactical flying aspect was the largest phase by far, but it needed the building blocks of air logistic support first as that was still the majority of the role, he said.

“It’s big because of the complexity of the missions, not just the individual parts like air drop, personnel parachuting, low-level navigation sorties, but to integrate all of the skills and develop tactics to keep protected from enemy fire and gain proficiency in using the self-protection system.

“So it’s quite an intricate and complex phase, which is why it takes a while to step through.”

**“There is overall excitement about the aircraft. At the end of the year we will have eight C-130s on the flight line, which is unheard of and pretty neat. But what the capability will give us is increased reliability, capacity, payload and distance.”**

*- Air Commodore Andy Scott*











# READY FOR WORK

**As the new C-130J aircraft arrive in the country from their birthplace in Marietta, Georgia in the United States, the C-130J Transition Unit is turning its attention to putting them to work.**

**D**irecting that focus is Operations Flight Commander Squadron Leader (SQNLDR) Adam Palmer.

"I allocate crews to tasks and tasking the aircraft. I also liaise with Joint Forces and our crew to get them allocated, assigned and out the door to do the job and get away on the C-130J when a job comes in," he said.

The first big one is Operation Antarctica, with the aircraft and crews flying to the ice six times over the summer season. After flying the C-130H for his career to date, SQNLDR Palmer said from a command perspective, the mission with the new aircraft will be similar to previous seasons with the H-model, but with fewer crew on board.

The key difference will be the point of safe return, which will be closer to Antarctica, he said.

"We've done initial planning and it is closer, but that's the whole point of the test and evaluation flights – to know for sure what the aircraft can do. It's bigger, we can carry more and we can fly faster, but how much more and how much faster and how much further can we get, is something we still need to test."

Even though the aircraft is larger and heavier than its predecessor, landing in austere environments like Antarctica will feel much like landing the C-130H, he said.

"The Herc is still the Herc – it's still designed as a tactical airlift into short, unprepared strips, so it will still be able to stop easily on the runway."

The next phase, in the first quarter of next year, will be developing the search and rescue capability as it was something training in the United States did not cover. It would include integrating enhanced systems such as the MX20 camera, SQNLDR Palmer said.

"We need to learn what we can do on those systems that we didn't have on the C-130H and how effective we can become with those. There's a fair bit of work goes into that. It will be an interesting change."

The team is also conscious of the high risk weather season that is just around the corner.

"If there is a disaster we have the crews and the aircraft to go and do the job to help in that scenario. It's standard during this season for No. 40 Squadron to be also covering Operation Antarctica and National Contingency work. There might also be some search and rescue."

SQNLDR Palmer said he was looking forward to his role and managing the operational side of the unit.

"I'm also excited about being part of the introduction of the C-130J. I've flown the C-130H for 10 years and to take the operational side of that and what I know and to help shape how we're going to start off on the C-130J and begin the process and journey, is going to be the fun part."

Bringing a new platform on board will always come with challenges though, and in this case the biggest one is the personnel constraints on both the operations and maintenance side, SQNLDR Palmer said.

"We'll have five aircraft but a limited pool of both operators and maintainers to go out and use them and support concurrent lines of activity."

There are still two crews in the States to come back and it won't be until the second quarter next year there will start to be more capacity on the maintenance side to generate those aircraft and then have the number of crews on the operations side to be able to support concurrent activity and concurrent lines of taskings, he said.

"So that's going to be the massive challenge, especially during the high risk weather season. There's the training and development of the crews as well, so we've got to keep that piece going. That's the biggest challenge."

"But, if we get another Cyclone Gabrielle, we'll crack on and do what we did at the start of last year."





“We do what we need to do, it’s the same as what the squadron has done for the past 60 years - we’ll just carry that on with the C-130J, just a bit faster and able to carry a bit more.”

*- Squadron Leader Adam Palmer*





# TRAINING ON HOME GROUND

**Bringing home training for C-130J crews from facilities in the United States to Base Auckland sits with Training Flight Commander Squadron Leader Tim Jones. It's a challenging role that he can't wait to begin.**

**“A**long with being one of the captains on the C-130J, I'll be setting up and implementing the training system that we have in New Zealand. So that's effectively taking the training we received in the States and developing the syllabus and course to set us up for organic training in New Zealand,” Squadron Leader (SQNLDR) Jones said.

The home-grown training is due to begin at the start of 2026. By then there will no longer be any requirement for crews to be trained in the States, rather pilots finishing No. 42 Squadron courses will move straight up to No. 40 Squadron.

“We've got four crews who have completed their training and we've got two more crews in the States now who are due back here in about February.”

The job was “massive” and SQNLDR Jones said he had needed to tackle the complexity of the role.

“The long-term target is getting the organic course in New Zealand, but prior to that we've still got a bunch of training that has to occur for our current crews, which will be simulator sessions in Australia.

“It also includes training the crews who are in the United States now. They'll come back to New Zealand and require some extra New Zealand-specific training. So that means oceanic flights, or some long-range flying operations. They'll also need to be indoctrinated back into flying around the country after a period of being in the States.”

The role offers opportunities to develop a course that can be tailored to the needs of the crew, SQNLDR Jones said.

“The training in America was really great, but to be able to tune it towards how we operate our aircraft is pretty exciting. Eventually the really cool bit will be bringing new people into the C-130J who haven't done the training and taking them through to being effective members of the crew.”

One of his biggest challenges will be balancing his role as a captain and implementing the training programme – especially while the unit isn't fully staffed.

“But that's a challenge that we have to get through. My deliverable is training flight commander, but I'm also initially, one of only three captains on the aircraft, so there will be competing priorities with flying tasks and getting our testing and evaluation finalised on the C-130J. So there's quite a lot of work to do,” SQNLDR Jones said.

But he was looking forward to flying the more powerful aircraft.

“The engines and propellers have a whole lot more power and in simple terms it feels like you have an extra engine compared with the C-130H model. When we're flying on three engines in the C-130J, it's about the same performance as four engines on the H. It's fantastic, the power is amazing.”

The aircraft was “a real evolution”, he said.

“It is very exciting bringing a new platform to New Zealand. Obviously the C-130H has been a hallmark of our Defence Force, so to bring the C-130J in is quite big shoes to fill.

“It is quite a different aircraft. It's easy to see the C-130J model from the outside as just another Hercules, but in fact the way the systems have been developed, it does feel like a very new type of aircraft.”



A woman in a light blue Air Force uniform and a man in a camouflage uniform are standing in front of an aircraft. The woman is on the left, wearing glasses and a name tag. The man is on the right, smiling, with a name tag that reads 'T. CASSELL'. The background is dark, likely the interior of an aircraft.

# MAINTA

# THE DREAM

**The unit's maintenance team is excited about working with its first brand new aircraft in decades.**

# AINING

**S**peaking before the aircraft's arrival, Maintenance Flight Commander Squadron Leader (SQNLDR) Janet Schoutens said her team was busy setting up the maintenance flight.

"It's a big job setting everything up, but it's going well because the team is so positive and engaged and keen. Nobody sees any hurdles."

One of the big differences between the H and J models is the avionics, the aircraft's electrical components. SQNLDR Schoutens said the upgrades make the J model a "different aircraft completely" from its predecessor.

"We have been told by other countries who have done this transition that the worst thing you can assume is the C-130J is just a bigger version of the C-130H, because it is such a big change. There are different engines and different propellers. It's much more advanced." A small team of maintainers will be on board each of the C-130J aircraft as they fly into New Zealand, learning how to fill out the paperwork accepting the aircraft from Lockheed Martin, SQNLDR Schoutens said.

"We've got to transfer what Lockheed Martin maintenance has done into our system. We need to make sure we know what work they have done and more importantly what maintenance they haven't done that we need to do ourselves."

The flights into the country meant the maintenance team had flying hours and maintenance under their belts by the time the planes landed at Base Auckland for the first time.

"This gets it into service faster, which is the priority. It's a lot of work up front and this is where that transfer from Lockheed Martin to us in the maintenance space is very important for us to get right, because we are bringing it straight home and flying it," SQNLDR Schoutens said.

"I'm really looking forward to working with a brand new aircraft – we've never had anything new in Auckland and I've always dealt with old aircraft. Even the 757 people still think it's a new plane, but it's 30 years old and we bought it second-hand.

"This is ours and we're bringing something home for New Zealanders. We have this huge responsibility to look after it and that's really exciting."

For the past 18 months or so maintainers have deployed to Little Rock, Arkansas learning new systems, embedded with the United States Air Force (USAF) squadrons and gaining valuable work experience on their C-130J aircraft.

Avionics technician Corporal (CPL) Oliver McFarlane was one of those who trained with the USAF.

"It's definitely different training in the American squadrons," he said.

"The way they do things takes time to get used to, but once you do, they make sense. There's not really any different way they could work with the squadrons' sheer size and workforce.

"The first time we went to the flight line, there were about 80 Hercules on one flight line. No. 40 Squadron operated five Hercules aircraft so it was an impressive display of USAF capability."

Working on the new aircraft is going to be an exciting change to his role, CPL McFarlane said.

"It's quite capable from what we've seen. The new systems are definitely pretty cool – and it's pretty crazy they are on a Hercules. We've had a little bit of a play around with the camera system – it's very high definition and should be great for search and rescue.

"Once the C-130J arrives I'm looking forward to travelling around the country in it," he said.

CPL McFarlane will be on the first and the last aircraft coming into the country.

"It's a cool aircraft and I'm looking forward to finding out how capable it's going to be. We'll figure it out and push it to its limits."

**"The overall plane is an upgrade in pretty much every way. The avionics especially are completely different and the mechanical side seems to be mostly similar with upgrades where needed."**

*- Corporal Oliver McFarlane*

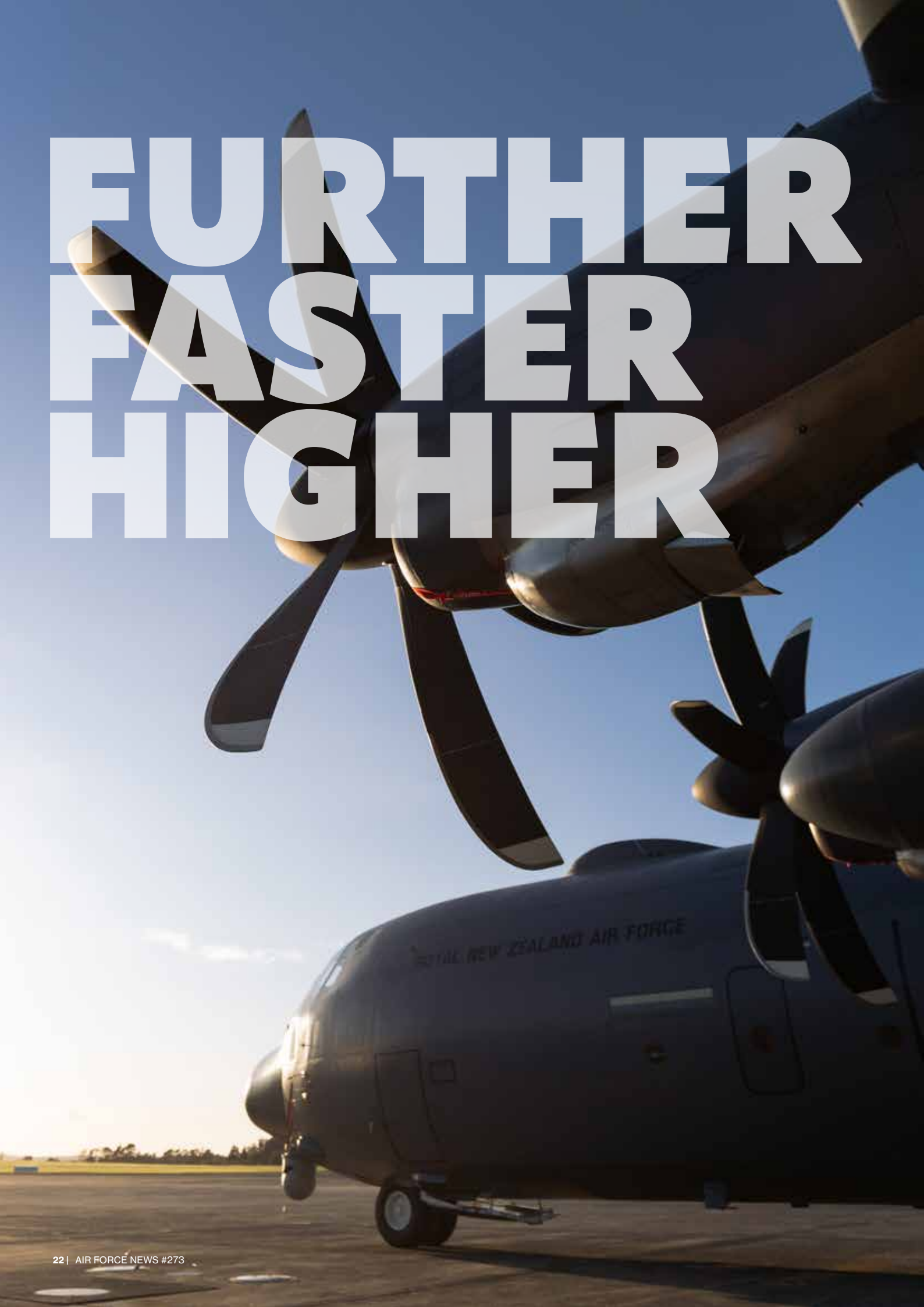
WARNING-  
KEEP CLEAR  
APU EXHAUST







# FURTHER FASTER HIGHER



## The best thing to replace a Hercules is another Hercules. They are built to transport heavy cargo, troops and equipment, and operate from short or makeshift airstrips.

**T**he C-130J Hercules will continue the mahi of its predecessor and while the role will be the same, the new model has some key advantages.

"I describe it as an upgraded Toyota Hilux. It's got much stronger engines and more efficient propellers and high tech computers, but fundamentally it's still a pick-up truck and that's what it's designed to do," C-130J trials and development manager Squadron Leader (SQNLDR) Luke Flemington said.

"Although it flies further, faster and higher, it's still the same basic shape. The flying control system and the aerodynamics are still the same, so it's not a radical departure from what we know and love with the C-130H."

### PROPELLERS

There are six curved propellers instead of the four rectangle-shaped blades on the H-model, which are more aerodynamically efficient. The greater surface area extracts more power out of the engine and the design reduces drag and makes them more responsive.

"You get more response quicker, so you can accelerate faster. They are lighter, because they are made out of carbon fibre and they have a leading edge of titanium as opposed to the solid metal ones of the H model, which are a lot heavier," SQNLDR Flemington said.

"When you have a straight blade and get up to a certain speed the tips approach the speed of sound and you get compressibility issues with a shock wave forming off the tips, which creates a lot of drag. What has been achieved by curving the blades on the J-model mitigates that problem."

### ENGINES

There are two key things about the engines that makes them better, SQNLDR Flemington said.

"One is that the propeller isn't physically connected to the main engine, like the old aircraft where everything is mechanically linked. The only link between the propeller and the engine is essentially a free gas-turbine, which results in less mechanical wear and tear. The turbine spins in the gas efflux out of the engine and drives the propeller through the gearbox."

The second is that they are FADEC-controlled (full authority digital electronic control), he said.

"The computer interprets what you do with the lever in the cockpit and controls the fuel flows, pressures and temperatures inside the engine, the blade angle, and speed of the propeller. Whereas in the old Herc, there are twice as many engine levers. In the C-130J it's really simple, it's just one lever per engine and it can go from idle to max thrust as fast as you like and you don't have to worry about over-torquing or over-stressing the engines."

### AIR LOADMASTER SYSTEM

Air loadmasters working on the C-130H were required to use a slide rule to calculate the weight and balance, "which is pretty archaic", SQNLDR Flemington said.

"Now they enter into a computer the data regarding how heavy a load is and what its position is and the computer will calculate the weight and balance. This allows loadmasters to plan, construct and build their loads and understand the implications of where they're putting cargo. And it's much quicker.

"It also gives them control of the enhanced cargo handling system, so the locks that hold the pallets in place are electronically controlled from the loadmaster's station, which gives them far greater control during airdrops."

### AIR MOVEMENTS

As part of the project a software programme was purchased called ICODES, which is an electronic planning tool that the movers and the loadmasters can use before they even get to the airplane.

"It allows them to plan and construct and build loads and have it all calculated before the plane arrives. And when it does, it makes the work more efficient because everything is pre-positioned ready to be loaded onto the aircraft, with weights and balances already calculated," SQNLDR Flemington said.

### FLIGHT DECK

The C-130J's computer system has meant two roles, the navigator and engineer are no longer necessary. The change means a slight increase in workload for pilots, but the system carries the bulk of the mahi.

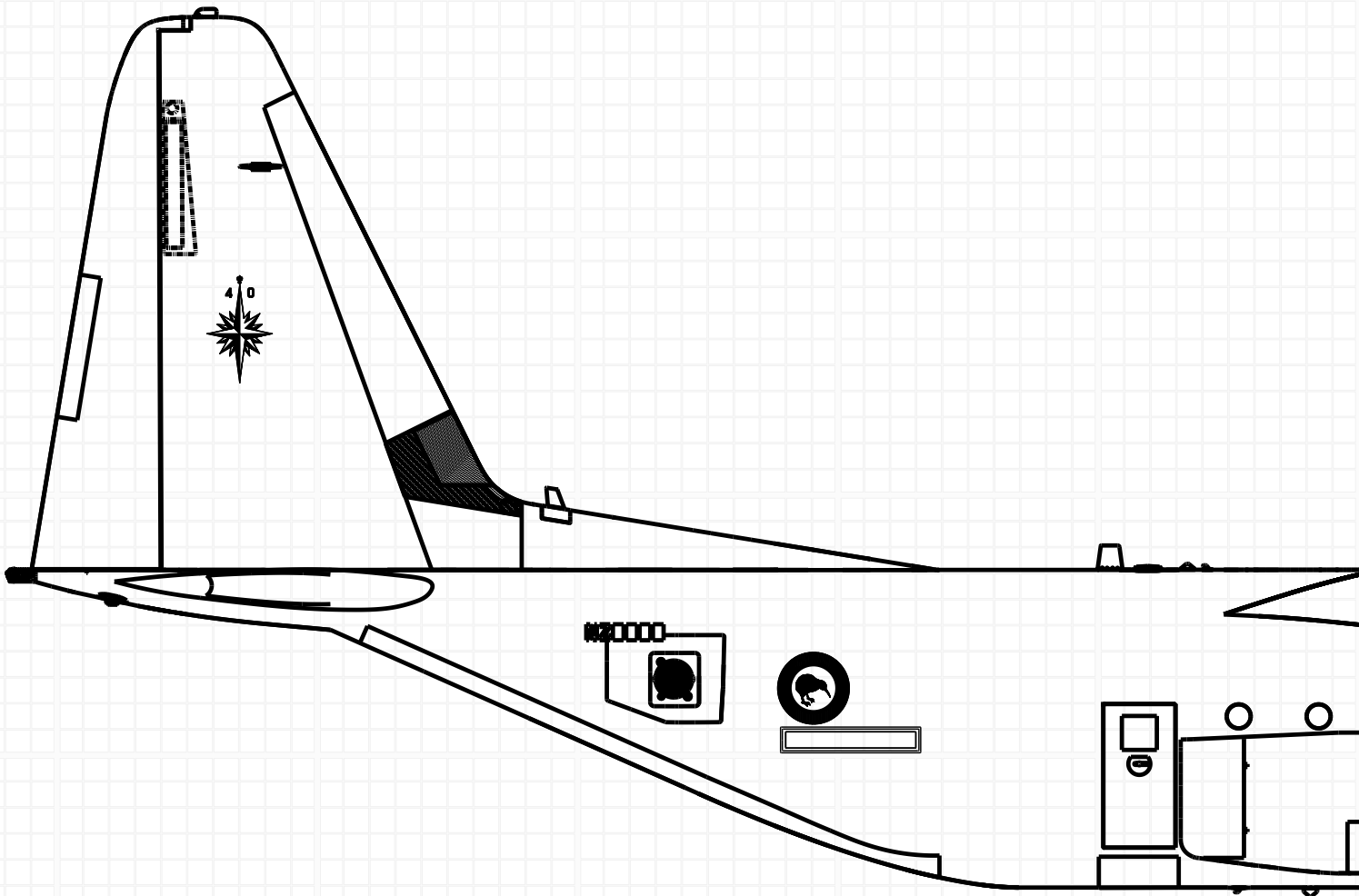
"Also, the navigation systems are phenomenal. We've got both military and civilian GPS as well as inertial ad radio navigation, which provides a blend of solutions, which is extremely accurate. It makes navigating around the world and doing precise mission tasks much easier," he said.

"Part of that involves the pilots' heads-up display (HUD). The C-130J is one of the only aircraft in the world that has a HUD as the primary flight instrument. Most aircraft that have HUDs also need a primary flight display on the lower screens. That means the C-130Js have more screen space for tactical information and navigational information or systems information. Lockheed Martin achieved quite a clever thing by certifying it like that."

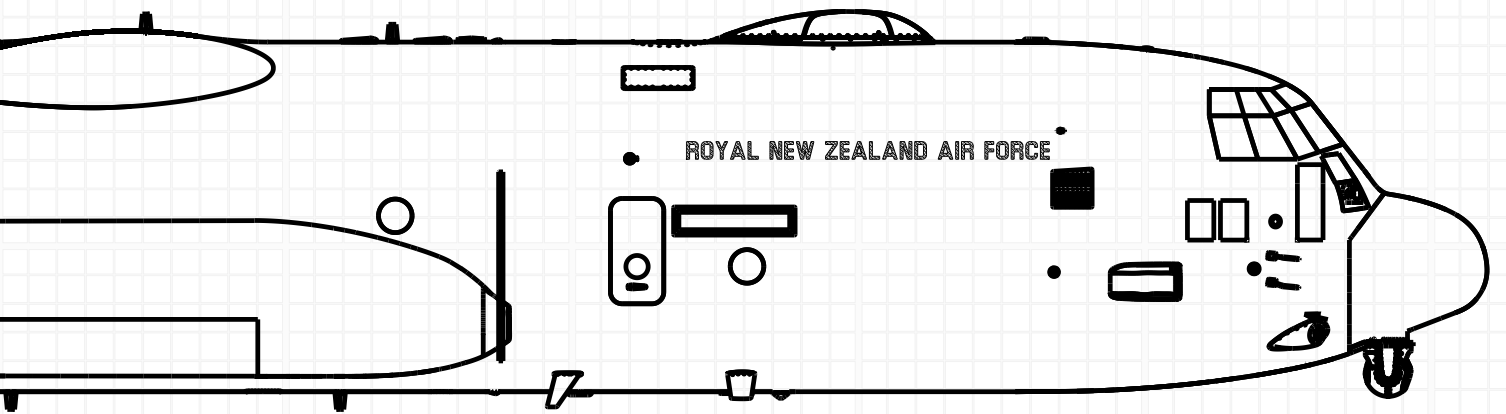


L O C K H E E D M A R T I N

# C-130J Hercules



<b>C-130J Hercules</b>   C-130H Hercules		<b>COMPARISON</b>
<b>CRUISING SPEED</b> <b>675km/hr</b>   593km/hr	<b>MAXIMUM PAYLOAD</b> <b>21 Tonnes</b>   18.1 Tonnes	<b>LENGTH</b> <b>34.4m</b>
<b>POWER PLANT</b> <b>Four Rolls-Royce AE 2100D3 engines</b>   Four Allison T56-A		



n | 29.0m

**WINGSPAN**

**40.41m** | 40.41m

**HEIGHT**

**11.85m** | 11.66m

A-15 engines

# A SIMULATED FUTURE



**A** simulator with a life-sized replica cockpit of the C-130J Hercules has been built and will be shipped from its home in Tampa, Florida to Base Auckland. The simulator will be a game-changer for training our aircrews.

The cockpit was built in Montreal, Canada, before being shipped to Florida for installation of equipment, software and visuals. It is part of the Government's \$1.5 billion deal with the United States Government to supply the fleet aircraft, along with spare parts and crew training.

Squadron Leader (SQNLDR) Mel Fieldes said there was now some engineering verification testing being completed before it is dismantled, ready for shipping to Base Auckland.

"We anticipate the simulator will be on base next year," she said.

The addition to No. 40 Squadron means the unit will be able to increase its flexibility for training.

"In the past No. 40 Squadron was limited to only attending overseas simulators, which limited the amount of training hours that could be conducted outside of the aircraft. It means we can do a lot more training in the simulator than we have done on the C-130H.

"The vast majority – about 90 per cent of our training – can be done in the simulator rather than in the aircraft," SQNLDR Fieldes said.

Having the simulator located on the base offers several advantages, including reduced costs from a decrease in aircraft training hours, which in turn leads to improved environmental outcomes and lower carbon emissions.

"The pilots have always completed standard emergency training in the simulator overseas, but it means all our role training can also be done in the sim here."

The close proximity of the equipment means the crews don't need to travel for the training and if any unexpected missions come up, they can prepare for them easily, she said.

"If an Antarctic winter rescue or a new operating environment arises, the crew can utilise the simulator for training before deployment. This flexibility allows them to refresh their skills and become familiar with the environment, making it incredibly helpful when facing new challenges."

The simulator is capable of training crews in all aspects of flight, including formation flying, search and rescue missions and it can simulate the aircraft's defensive systems.

"Having the crew refresh and 'work up' in the simulator before deployment will be incredibly beneficial for any operational theatre."

There is also a potential future capability for distributed mission training, where the simulator can be networked into virtual training exercises with other countries, SQNLDR Fieldes said.

"Multiple simulators network together and perform a virtual exercise. So that's quite a cool new thing for the future."

The building the simulator will be housed in on the base has been assessed for technical completion, she said. The construction of the building is complete, we're just waiting on the final approvals to use it now."

In order to accommodate the simulator, the building is nearly 16 metres high and the tilt slab walls are constructed with 730 tonnes of concrete.







SELCAL AK-FR

LARGE

LAND

PILOT SEAT





# TRAINING ON A MAJOR SCALE

**S**ergeant (SGT) Emma Porritt is about two months into her C-130J Hercules air loadmaster training at a high-tech facility in the United States. She tells *Air Force News* the class sizes are small, but the air base is supersized and it's an experience of a lifetime.

At Little Rock Air Force Base, Arkansas, Sergeant (SGT) Porritt is part of the C-130J Aircrew Training System (JMATS), which trains loadmasters, pilots and all the maintenance crew. SGT Porritt is in a class with one other Kiwi and an instructor.

"The facilities are incredible. There are multiple flight simulators. They've got fuselage trainers and some of them are complete aircraft inside and out.

"You can do everything on those that is required for a task: pre-flight, loading, unloading and raising and lowering the landing gear. There's also a maintenance building that has broken down parts of aircraft, so you can see the mechanics behind them," she said.

SGT Porritt's instructors have thousands of hours of experience and have flown in the E, H and J-models of the C-130, which gives them an awareness of the differences they encounter.

"The course we're on is designed for initial loadmaster students. Most students are fresh into the United States Air Force with no prior experience.

"It's quite an anomaly that my colleague and I are coming into this course with nearly 1000 hours each, but they're quite good about recognising our experience, tailoring the training to us, and going over the systems that are new or different for us," SGT Porritt said.

She started her loadmaster training on the C-130H in 2021 and is now learning how much more modern the J-model is with its computerised system.

"The slide rule system I'm used to is quite archaic compared to what the rest of the world was doing. The J-model's method is intuitive, but it's helpful to have that knowledge of going from three-dimensional to two-dimensional and understanding how it works and where those numbers come from," she said.

The C-130H's cargo handling system is mechanical, with a handle and a chain that moves the locks in and out of the pallets along the cargo compartment.

"On the C-130J it's all electronically controlled from the same computer that you put the weights in. So that's a nice change.

"The aircraft itself is a bit longer, which comes with the introduction of bending moments alongside centre of gravity calculations. There are definitely a few more things to think about, but we have technology to help us out."

Living on base in housing similar to our bases' married quarters, SGT Porritt said the scale was far larger compared to home, with about 1000 houses in the area.

"The base is overwhelming initially – far larger than any base at home. There's a supermarket, small mall, food court, gas stations and large gym. The flight line runs from A to Z, 1 to 5, so parking for about 130 aircraft.

"It's massive. Everyone drives here as it takes five to 10 minutes to get from one side of base to the other. You could go days without leaving, as everything you need is here. The facilities are incredible."

Working with the Americans had been a highlight, SGT Porritt said.

"Everyone has been welcoming. The instructors have been really great. It is a training system, so it's different to if we were attached to a squadron, which the Kiwis had been previously. But so far a great experience for us."

Set to finish the course in February, SGT Porritt is looking forward to working with the Air Force's newest asset.

"I can't wait to be doing what we were already doing, but getting out a bit further into the world and utilising the platform we have. Integrating with other nations will be quite good – using the same technology as them.

"It's similar to what Australia has, so hopefully we will have a closer relationship with their Hercules squadron – having that interoperability with them will be fantastic."



# THE MIGHTY HERCULES

**B** | AIR FORCE MUSEUM OF NEW ZEALAND  
**Y** | DAVID KING, COMMUNICATIONS MANAGER





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**A little over 60 years ago, the RNZAF made a bold decision to invest in a new transport aircraft built by American manufacturer Lockheed. It turned out to be easily one of the best buying decision our Air Force ever made.**

In 1962 the RNZAF was at a crossroads. Its fleet of transport aircraft, made up of Bristol Freighters, Hastings and Douglas DC-6 aircraft were all powered by World War II-era piston engines and were ageing fast.

That year Air Vice-Marshal (AVM) Ian Morrison took over as Chief of Air Staff, and he set about rebuilding the service. He did not hold back in his assessment of the task.

“We must have an Air Force that is clear in its aim, purposeful and confident about its future,” he told personnel.

“We have been in a trough – a low in our fortunes. We have not spelled out strongly enough the lasting truth – that nothing can move unless the air is secure.”

AVM Morrison declared the three basic roles of the RNZAF were to be strike, maritime reconnaissance and air transport. Each was of equal priority.

He was a huge fan of the new turboprop-powered Lockheed C-130 Hercules and was convinced that re-equipping with the versatile transporter had to be a priority.

His vision was for them to replace not only the transport fleet, but the World War II-era Sunderland flying boats as maritime patrol aircraft as well. However, an RNZAF delegation went to the United States to assess the Lockheed P-3 Orion aircraft. Since its introduction, the Orion had quickly built a reputation as the world’s finest anti-submarine and maritime reconnaissance aircraft.

**LEFT TO RIGHT**

AVM Ian Morrison

FGOFF Phil Tighe-Umbers flying during the Gulf War, 1991

The first C-130H Hercules to fly to Antarctica, 1965



AVM Morrison listened to the advice and adjusted his preference. He asked the Government for funding to re-equip with Hercules as transports and Orions for maritime duties, forming a combined fleet of formidable aircraft to meet the air transport and maritime surveillance challenges the RNZAF faced.

Cabinet was persuaded and in 1963 the first three Hercules, and spares, were ordered for £13.5 million. The aircraft started life as C-130E models but were modified midway through production to be able to handle more powerful Detroit Diesel Allison T-56-A-15 engines. This meant the RNZAF's Hercules became the first C-130H export models to roll off the production line.

No. 40 Squadron's first three Hercules arrived in April 1965, and No. 5 Squadron's five Orions soon followed, making their first appearance in 1966.

AVM Morrison had pulled off what was arguably the best aircraft modernisation decision in the RNZAF's history, with the Hercules and the Orion going on to deliver incredible service and value for money for almost six decades.

The Hercules performed extraordinary service from the start.

They arrived at Whenuapai in April 1965 and by July they were transporting New Zealand's troops to Vietnam. In October that year the first RNZAF Hercules landed on the ice in Antarctica – just six months after coming into service.

A young Flight Lieutenant named Gordon Ragg landed Hercules NZ7003 at Whenuapai at the end of its long delivery flight from the United States in April 1965. Almost 60 years later, he recalls taking delivery of a brand-new aircraft with its "new car smell" was one of the highlights of his long Air Force career.

"It was also adaptable, powerful, strong, reliable, enormously capable and versatile – and a superb pilot's aircraft."

Two years later it was decided the Hercules were so good that another two were needed, and these were delivered in January 1969 completing the fleet of five (NZ7001–NZ7005).

In those early years of service, they achieved many firsts, becoming the first RNZAF aircraft to visit mainland China and the Soviet Union during the Cold War. Gordon Ragg flew the first one into Germany since World War II.



They were also at the forefront of New Zealand service in Pakistan, Bangladesh, and Cambodia in the 1970s. This was just the beginning, and in the decades since the RNZAF's Hercules have been to most parts of the globe. They have delivered troops, cargo and humanitarian aid into conflict and disaster zones as diverse as the first Gulf War in Kuwait to the 2004 Indian Ocean earthquake and tsunami.

They were equally at home landing on ice as they were on coral, muddy landing strips or international runways.

But as good as the design was, keeping the aircraft serviceable for 60 years has not been easy, and they have required constant upgrades. In 1972-73 the first significant upgrade saw the replacement of their wing centre sections in Georgia.

This was followed in 1981 with an outer wing panel refurbishment, and a further life extension programme started in 2005. This included structural refurbishment and new avionics which extended their service life out to 2025.

Mr Ragg says the key to the Hercules' ongoing success was its versatility. From the start it proved it could operate anywhere from the ice of Antarctica, across the Pacific and in desert environments, on any number of roles. It was the right size for New Zealand's requirements anywhere in the world.

"The greatest testament to its suitability for the RNZAF is the fact that the best replacement for a C-130 after 60 years is another C-130. I don't think Ian Morrison could have imagined how successful it would be. I certainly would not have thought that it would still be flying 60 years later."

**“It was simply superb – it was the Queen of the skies for us. It was a jump in technology and it could fly higher, further, faster and could carry more.”**

**- Gordon Ragg**









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# LIKE FATHER LIKE SON

**Chief of Air Force Air Vice-Marshal Darryn Webb followed in his father Dale's footsteps in joining the Air Force and piloting C-130H Hercules. The aircraft left an indelible mark on them both.**

**A**s the fleet of C-130J Hercules start touching down in Auckland, the pair reminisce about their times in the aircraft's predecessor.

Squadron Leader (rtd) Dale Webb enlisted in the Air Force in 1965 and by the time he converted on the C-130H Hercules, New Zealand was embroiled in the Vietnam War.

"It was clearly a war zone. It was the first war in the world that was conducted under the scrutiny of TV and it really made a significant difference to how the war was fought. Mums and dads at home saw it on TV. It was a revolution. It significantly affected people's attitudes to the conflict.

"I'll never forget flying home coffins. It was the only war that everybody who was killed, if their family wished, were flown home. It makes you realise what it's about."

The H-model itself was "a joy to fly", Mr Webb said.

"I had previously been flying the venerable and equally legendary C-47 Dakota, from World War II. But the significant step up in technology and capability, for a young pilot at that stage, was kind of awesome. It was an airplane that flew so nicely – which I'm sure it still does.

"There were so many things we did, so many places we went to, you just felt you were at the cutting edge of what was happening in the world. It was very much a high point of my life in that respect – what I was flying and what we were doing."

Recently Mr Webb had the chance to have a flight in one of the C-130H aircraft.

"It looked, smelt and everything about it was just the same. The quality of the maintenance of Air Force technicians has to be pretty impressive that an aircraft that was built 60 years ago still looks, flies, smells the same as it did when it was new. That's legendary in that respect."

While the new J-model is an upgraded and improved version, it was still a reliable Hercules, he said.

"It's very much like William the Conqueror's axe, it's just a new handle and a new head. But when it's the axe that works so well and no other one works so well, why would you change?"

"I guess the young pilots today will be feeling very much like I did when I stepped into my first Hercules."

Air Vice-Marshal (AVM) Webb said growing up with a dad who flew Hercules influenced his future career.

"He didn't talk much about some of his career, and maybe there's a generational gap there. For example I didn't really know that much about his flying to Vietnam until not that long ago.

"Over that period, regrettably, it seems there was no public recognition for the contribution made by our people. Things have certainly changed since."

Looking back on his own career, AVM Webb can count a number of conflict zone deployments, including Somalia, Afghanistan and Iraq.

"I went to Somalia, barely 21-years-old and we landed on the Mogadishu airfield in the middle of a monsoon – a very dangerous environment. We were ill-prepared in many respects and I came back thinking we could do better than that."

In his deployment to the Middle East, where he was flying into Afghanistan and Iraq, AVM Webb said the tempo was high and he flew about 240 hours in two months.

Delivering two ambulances to Khost airfield, in Afghanistan near the border of Pakistan, landing on a short, crushed rock landing strip, he didn't shut down the aircraft.

"It was all go – helicopters flying around with underslung guns, vehicles racing around, it was a real high tempo war zone."

AVM Webb enjoyed flying the C-130H just as much as his father.

"It's an aeroplane that's got great power, it's manoeuvrable and it's versatile so you can do all sorts of things with it. It's got a crew complement of five or six of your mates working together to get something done. Job satisfaction is always very high."





In a one-month period AVM Webb was performing low-level tactical flying training around the country, heading away for a long-haul international flight and deployed on a mission to Antarctica.

He was also deployed to the 2004 Boxing Day tsunami.

“We were the first ones flying into Aceh Province and saw the devastation. There were hundreds of dead bodies. Coconut palms were flattened like matchsticks, fishing boats were up on big stone mosques and there was stuff everywhere. As we flew in and out over the following weeks, the smell became something else.”

AVM Webb welcomes in the new Hercules with mixed emotions.

“We get ourselves attached, perhaps foolishly, to things like aeroplanes. But the J will be great. It’s still going to be a Hercules for New Zealand just as its predecessor had been for nearly 60 years.

“Nearly every significant activity that the Defence Force does around the world involves a C-130, directly or indirectly, so we need to get it busy straight away. The team is onto it and a new exciting legacy of C-130 operations is about to begin.”

# STANDING ON THE FIELD SHOULD







**T**wenty-one personnel brought home the first three C-130H Hercules in April 1965. Of those crew members, four are still alive today.

Former navigator Wing Commander (rtd) Bob Howe was part of that number and says it's "something to ponder on".

He, along with another surviving original crew member, former loadmaster Sergeant (rtd) Kevin Sturgeon were invited to the welcome ceremony of the first C-130J Hercules at Base Auckland last month.

The pair joined politicians and senior Air Force leaders on a flight in the new Hercules over Auckland following the ceremony.

Reminiscing about bringing the C-130H aircraft to New Zealand from Lockheed Martin's Marietta, Georgia premises nearly 60 years ago, Mr Howe said he was asked to be on the crew by the Chief Air Staff, Air Vice-Marshal Ian Morrison.

"I was absolutely delighted and amazed at the time," he said.

"No families came with us. We were all male in those days too. Times have changed these days and that's good. It was a big adventure."

After training at Sewart Air Force Base in Tennessee for four months the crew travelled to Matrietta, took the brand-new aircraft on a training flight and started the journey home, via California, Hawaii and Fiji.

The aircraft was an engineering marvel compared with the aircraft Mr Howe and Mr Sturgeon had been flying in – the Bristol Freighter, Hastings – which were restricted to flying no higher than 10,000 feet because they weren't pressurised.

"We went from the Freighter doing about 150 knots to the Hastings doing about 180 knots to a DC6 doing about 210 knots, to the Herc, which could get up to about 320 knots. We were also able to fly up to 30,000 feet, fly much faster and catch the winds when they were right for us and a lot more room to move about."

Flying in the C-130J was a step up again, Mr Howe said.

"There were big differences in supply dropping, which was the guts of what we were doing. The navigator would need to pre-calculate the drop on a piece of paper, work out the speed of the drop, the weight of it, what the wind was doing, have a photograph of the drop zone, and sort out the route.

"You worked on the paperwork before you left and had to re-work it as you were going. So it was a hell of a job for a navigator in an aircraft cockpit. But now, it's all done by computer, which takes in all the variables before the flight and the computer re-does it again for you in flight on the basis on any change in the wind or the loads that will be dropped out," he said.

"The other changes are in the updated navigational equipment with GPS used predominantly and an infra-red camera and landing aids. So it's in those areas where there's most of the changes."

Otherwise, Mr Howe said the view sitting in the hold was just as it had always been.

"When I was working on No. 40 Squadron at one time we had ex-WWII personnel visiting us and reliving their days. That made me think how long it had been for my career – we thought we were modern. We all stand on each other's shoulders as the next lot comes along."

Mr Sturgeon said he'll never forget picking up the C-130H Hercules in 1965.

"It was an exciting time, we were the first Air Force in the world to have the C-130Hs, before the Americans. The Lockheed Martin factory had 38 acres under one roof where they built the aircraft.

"Getting into the plane for the first time was quite spectacular. The first of this particular model had the latest advances in it and we had superb crew – I'd put our crew up against anyone in the world, even though we're a tiny nation."

Arriving in Wellington, the crew were met by Prime Minister Keith Holyoake and other dignitaries.

"Flying it back to the base was special because it was the most modern aircraft we'd had since the war. A brand new one at that. After that they brought in the P-3 Orions and various other second-hand aircraft."

After seeing and flying in the C-130J, Mr Sturgeon said he was impressed.

"It was certainly a lot more swept up than what we had. We used skate wheels – sheets of roller skates that were tied to the floor – to put the load on to eject vehicles and loads out the back. Now they're built into the floor and you just flip them over. We had to move everything manually with pry bars and grunting.

"I'll be watching the news closely for any news on the new Hercules, I know it's going to do a great job."



