



The World Leader in Tactical Military Bridges





Total focus – total manufacturing capability

WFEL is an established leader in tactical military bridging, supplying 39 armed forces across the world for over four decades.

Our expertise – built on nearly a century of engineering excellence and innovation – includes concept design, prototype manufacture and full scale production of a range of rapidly-deployable, modern bridging systems for use in military and disaster relief scenarios.

We also provide a full package of value-added support services, including training, inspection, maintenance, repairs and spares, both in the field and at our UK-based engineering site in Heaton Chapel, Stockport, where we employ a team of 250 highly-skilled engineers and support staff.

Our in-house research and development capability enables WFEL to provide additional military-grade engineering solutions across the complete spectrum of the defence sector.

As well as being a prime contractor to both the UK Ministry of Defence and U.S Department of Defense, we operate a global sales network through our overseas representatives and work directly with international governments and Non-Governmental Organisations.

DSB | Dry Support Bridge

MGB | Medium Girder Bridge

APFB | Air Portable Ferry Bridge

Engineering Excellence



Top: A 40m Dry Support Bridge (DSB) as used by the US Army in Iraq.

Above: The Air Portable Ferry Bridge (APFB) for light forces that demand mobility and flexibility.

Opposite: Armour crossing a DSB in South Korea.



WFEL – bridges the gap

The world leader in tactical military bridging, WFEL can trace its history back to the Fairey Aviation Company that was founded in 1915 in Hayes, Middlesex.

Needing more capacity to manufacture the Fairey Battle day bomber, Fairey Aviation took over the former National Aircraft Factory No 1 in Heaton Chapel, Stockport in 1935.

Playing a crucial role in Britain's war effort led Air Minister Lord Weir to describe Fairey's factory as 'the finest of its class in the world'. We are proud to be based at the same location with our current production facility still bearing the original hallmark camouflage roof given to key defence targets in World War II.

By the 1970s, our business had diversified into the design and production of tactical military bridging systems.

Today, our bridges are in constant use by 39 armed forces worldwide, not just for military operations, but also to provide support to civilian agencies that require a rapidly and easily deployed gap crossing capability in the immediate aftermath of an emergency.

From Fairey Aviation to Fairey Engineering to Williams Fairey Engineering Limited, our name has evolved over the years. Following a management buyout in 2006, backed by private equity investor Dunedin, which has provided significant investment and support for our continued expansion, we are now known simply as WFEL Limited.

WFEL has come a long way since 1915 and our continued commitment to engineering excellence and innovation has kept us at the forefront of tactical military bridging design and manufacture.



Top: A Double Storey MGB bridging the gap.

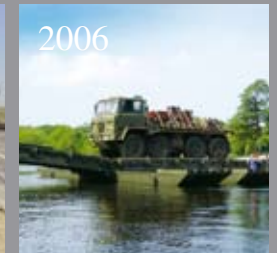
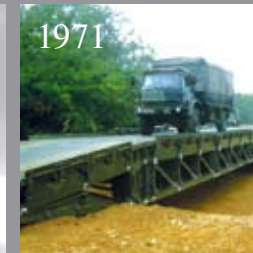
Above: Our bridges are easily transportable and rapidly deployable.



WFEL traces its roots back to 1915. Today, we are a company that provides a variety of defence solutions and we are the established leader in the design and manufacture of tactical military bridging systems for the global defence market.

1915-18 Production of Sopwith 1½ Strutters and development of seaplanes for the RNAS.

1951-56 Development of the Fairey Delta FD1 and FD2 – forerunners of Concorde.



1971 The Medium Girder Bridge (MGB) enters service with the UK military – one of 38 armed forces to subsequently adopt it worldwide.

2003 U.S. Department of Defense deploys M-18 Dry Support Bridge (DSB) in Iraq.

2006 Air Portable Ferry Bridge deployed in Afghanistan.

2007 British Army Royal Engineers use the MGB to construct the first front line crossing since the Malaya Emergency as part of Operation Bataka in Afghanistan.

2008 The world's first land based ski-jump, designed and manufactured by WFEL to be used as the test ramp for the new F-35B Joint Strike Fighter, was shipped to the U.S.

2009 WFEL secures a £17.7m order from the U.S Department of Defense to supply a further tranche of DSB bridging systems.





DSB

Dry Support Bridge

Just eight soldiers and a single launch vehicle can get traffic moving over a 46 metre gap in less than 90 minutes using a Dry Support Bridge (DSB).

The U.S Army has adopted the DSB as its new tactical bridging system and it has repeatedly proven its value in the field following deployment in the USA, Germany, South Korea and during Operation Iraqi Freedom.

The primary mission of the DSB is to support and maintain the momentum of attack when water and dry-gap obstacles are encountered that exceed the capabilities of assault bridging assets. Its secondary mission is emplacement on main supply routes to the rear of an area of direct combat.

Covering gaps from 22 to 46 metres the DSB offers increased operational flexibility. Well in excess of 100 DSB systems will have been fielded over the next decade.

Specification

Description	Capability
Maximum Clear Gap	46m
Gap Range & Increments	22m to 46m in 6m increments
Military Load Classification (MLC)	Normal 80 (T)/96 (W) at 46m Maximum 120 (W) at 46m
Road Width	4.3m
Bank Heights	Up to +/- 3m
Build Crew	8
Launch Time	Less than 90 minutes

Top: A DSB has a load capacity of up to MLC 120 at 46m.
Right: Spanning a 46m gap in under 90 minutes.
Left: Deployed in Iraq on a main highway.

“The DSB reduces the time and manpower needed to erect a bridge to less than 90 minutes. It provides improved transportability and it allows bridging to be treated as a commodity.”

LTC Tom Svisco, U.S. Army Product Manager for bridging.

“Though the bridge was constructed quickly, it’s no slapdash structure, but a one-lane bridge than can hold 80 tons. The 7th Engineer Company added another lane to the northern bridge using the Army’s new Dry Support Bridge. It took only eight people to assemble. Turning the bridges over to the Iraqi people was one more step towards restoring the economy and security of the region.”

Specialist Robert Woodward, reporting on the Kazer Bridge Restoration in Iraq, in *The Military Engineer* (USA).





MGB

Medium Girder Bridge

The Medium Girder Bridge (MGB) is a classic example of high quality precision military engineering that has stood the test of time.

In operation since 1971, over 500 MGB systems have been acquired by 38 armed forces worldwide. The MGB is constantly in use, and increasingly in demand, for both military and emergency or disaster relief operations.

Significantly enhanced since its initial design, today's MGB has multi-role capabilities. Component interchangeability – on any bridge of any age – continues to make this one of the most versatile bridging systems available.

MGB units are light, easily transported, can be constructed by hand and adapted for most tactical bridging requirements. The system includes piers, pontoons and ferries, all engineered for deployment with minimum manpower.

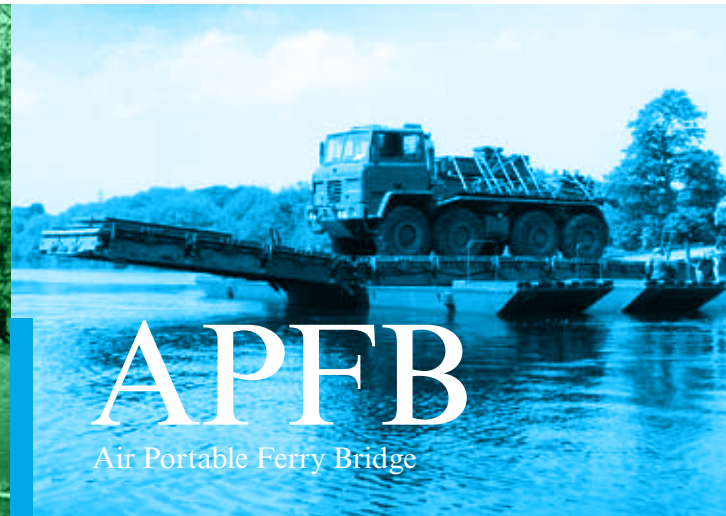
Configurations available

MGB Product	Application
Single Storey	Up to 9.8m span at MLC 70 (T)
Double Storey	Up to 31.1m span at MLC 70 (T)
Double Storey Link Reinforced Set	Up to 49.4m span at MLC 60 (T)
Floating MGB: Single Storey	Up to MLC 60 (T)
MACH (Mechanically Aided Construction by Hand)	For reduced manpower
Multi-Span	Up to 76m span at MLC 70 (T)

Top: Over 500 MGB systems have been acquired worldwide.
Right: A MACH bridge building system allows just nine personnel to build an MGB.

“The build was delayed several times by traffic congestion from the 3rd Infantry Division that was moving towards Baghdad. The night was without natural illumination. Soldiers were navigating with night vision goggles and the limited number of chem-lights. Twice, chemical alerts put soldiers in MOPP 4 conditions for 45 minutes each time. All the time the unit was also building a Medium Girder Bridge... which was emplaced by dawn.”

Cpt. Steven J. Thompson, Commander, 299th Engineer Company (Multi-Role Bridge), U.S. Armed Forces on crossing the Euphrates River during the battle over Objective Peach.



APFB

Air Portable Ferry Bridge

The Air Portable Ferry Bridge (APFB) was deployed on operations for the first time in 2006.

It was originally designed to meet the British Army's requirements for a bridging system for light forces in roles which increasingly demanded mobility and flexibility. In simple terms it is a 'golf bag' of equipment from which parts are selected for the role it is to play, be that bridging wet or dry gaps or for use as a ferry with a MLC of 35 (T/W).

The APFB is a modular system that can be transported rapidly and easily by land, sea and air using its own fold-away trailers, pallets or ISO containers. It can be assembled by troops or trained civilians making it an ideal selection for use in disaster relief or military operations conducted by fly forward forces.

Although new in concept the APFB is based on the highly successful Medium Girder Bridge with the two systems sharing many features.

Specification

	APFB Fly Forward	APFB Overbridge	APFB Reinforced	APFB Ferry
Maximum Gap	14.5m	14.5m (excl. ramps)	29.2m	Free ranging
Width	4m	4m	4m	4m
Military Load Classification	35	35	35	35
Build Crew	1 NCO +12	1 NCO +12	1 NCO +24	2 NCO +14



“The ferry bridge has an impressive new capability and I was certainly pleased to have had the chance to be one of the first people to get their hands on one.”

Lance Corporal Gort, 59 Indep Cdo Sqn, reporting for *The Sapper Magazine* (UK).



Clockwise from top: The APFB can be used to bridge both wet and dry gaps; transportable over land, sea or air; built by hand in a few hours without heavy lifting plant.



Engineering excellence



Top: A WFEL designed DSB launching system on a U.S Army Oshkosh vehicle.

Above: The WFEL aluminium welding school.

Since 1915, WFEL has been a pioneer of engineering excellence and innovation across the defence sector in both land and air systems.

Today, our engineering capabilities include concept design, technical analysis, prototype manufacture, structural testing and manufacturing development through to high quality full scale production.

In addition to our range of military bridges, we design, manufacture and integrate our Dry Support Bridge launching systems onto a range of different tactical transport vehicles.

WFEL is also the sole supplier of specialist consumable steel tie bars used in the UK's 14 advanced gas cooled nuclear reactors.



Support services

WFEL provides a full package of value-added support services for all of our bridging systems, anywhere in the world.

Bespoke training services ensure military personnel can:

- use the latest building techniques, to deploy bridges rapidly;
- avoid equipment damage or failure;
- carry out basic maintenance and repairs;
- follow correct safety drills and site discipline.

The WFEL Inspection Team is available to examine user holdings of our equipment and provide detailed reports with recommendations on spares holdings, repairs, training and maintenance to ensure all equipment is, and remains, 'fit for role'.

Our dedicated maintenance service is provided worldwide by a team of highly experienced technical engineers and WFEL is committed to providing full after sales support tailored to suit customer needs.

With our products continually updated to incorporate advances in design and user feedback, customers are immediately notified of product upgrades.



Top: A WFEL team trains troops in South Korea.

Above: Military personnel are trained in every aspect of using WFEL bridging systems.



The World Leader in Tactical Military Bridges

WFEL Limited
Heaton Chapel
Stockport, Cheshire
SK4 5BB England

Tel: +44 (0)161 975 5700
Fax: +44 (0)161 431 3575

info@wfel.com
www.wfel.com

**For more information on our range
of products for use in civilian disaster
and emergency relief operations
visit www.wfel.com**

About WFEL

WFEL has supplied equipment and support to 39 armed forces across the world for over four decades. Our expertise – built on nearly a century of engineering excellence and innovation – ranges from concept design to full scale production of rapidly deployable, modern bridging systems for use in military and disaster relief and emergency scenarios. We also provide a full package of value-added support services including training, inspection, maintenance, repairs and spares, both in the field and at our UK based engineering site in Heaton Chapel, Stockport.