

# UK FIRST: HELICOPTER MID-AIR SATELLITE RETRIEVAL

QinetiQ-managed MOD Range hosts first UK demonstration of a system to capture returning capsules from space

When leading parachute designer and manufacturer Airborne Systems wanted to showcase its innovative satellite retrieval system to organisations including Lockheed Martin, NASA and the European Space Agency, its aviation services provider PDG Helicopters chose the MOD West Freugh Range – operated by QinetiQ under its Long Term Partnering Agreement (LTPA) with the UK Ministry of Defence.

PDG Helicopters required professional Range services so its client could demonstrate innovative new Mid-Air Retrieval (MAR) technology to guests including Lockheed Martin, NASA, the ESA and UK Space Agency. "Airborne Systems and PDG hope to integrate MAR with the UK National Space Technology Programme, making mid-air retrieval of returning boosters, engines and other payloads a mainstay of the UK programme," says Kurt Hempe, Airborne Systems. "The West Freugh Range enabled us to successfully demonstrate our enhanced technique in the UK."

## UNUSUAL AERIAL ACTIVITY

With PDG providing helicopters and piloting, it had decided to conduct the demonstration inside a Danger Area. The company approached a Range near its headquarters, which declined. PDG already has a long-standing relationship with QinetiQ, who recommended the MOD West Freugh Range on Scotland's southwest coast, operated under the LTPA. The Range provides an Air Danger Area of 750km<sup>2</sup>, a 380km<sup>2</sup> Sea Danger Area and 12km<sup>2</sup> Land Danger Area, plus deployable instrumentation and tracking, along with secure storage for munitions, explosives and other equipment.

However, time scales were short – and while this activity had been done in the US, this was the first time in the UK. "The project needed a rapid turnaround," says Kenny Kirkpatrick, MOD West Freugh. "This included providing QinetiQ's Air Hazardous Activity Scrutiny Panel

## BENEFITS

- Close working relationship
- Significant technical facilities
- Highly experienced personnel
- Flexibility
- Cost-effective delivery
- "Can-do" attitude

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## PDG HELICOPTERS



## CORE BUSINESS

On the day, crews and ground personnel were briefed and knew what was expected, including an in-depth safety briefing by the capturing pilot on procedures, time lines and more. The demonstration was executed successfully.

Ross Waddams of PDG says, "I'm so pleased we used a QinetiQ-managed Danger Area: this is absolutely core business for QinetiQ, providing Range and Test & Evaluation services, and they did a fantastic job. I knew that professionals were in charge of the Range. And when your guests include the ESA and NASA, you want to do it properly and make a good impression. This was also a commercially sensitive activity, and MOD West Freugh is very private and discreet. This demonstration was a great reflection on QinetiQ as a company and what it does best. QinetiQ delivered what we needed: they got it right."

with all the information it needed, and ensure availability of the various competencies to support the activity. We drew on resources and capability central to the LTPA." Three PDG aircraft and crews were involved: one to drop the capsule, the second perform the capture, and the third filming with HD video.

## CHALLENGES AND SOLUTIONS

"This was a novel activity, so we needed to obtain all necessary information required by the AHASP scrutiny panel," says Simon Wheeler, Trials Safety Manager, QinetiQ. "Going through that process rapidly was probably the biggest challenge." With the process involving responding to multiple questions and time running out, PDG Helicopters assured QinetiQ and the other parties that while this was clearly hazardous activity, it was also PDG's activity: "We just needed a safe place: the Range," says Ross Waddam, PDG's Chief Pilot. "QinetiQ's response was, 'We can provide safe airspace and professional facilities for your activity. It's your activity, so how can we help you to make it happen?' QinetiQ got it."

Another challenge was obtaining and checking individual competencies required: within QinetiQ for the Range, and confirming the competencies of the helicopter pilots, people rigging the parachutes, and so on. With West Freugh team already including a project manager, trials manager and trials safety manager, other QinetiQ personnel with notable expertise became involved, including the Deputy Director Aviation – a former test pilot – plus an Air Traffic Management Advisor and Chair of the Hazardous Activity Panel. "This is commercial activity so we have to provide detailed information to the MOD and gain 'Other Works' approval," adds Simon Wheeler, QinetiQ. "Our close relationship meant this was cleared fast. The MOD was confident, through our LTPA relationship, that we'd take care of safety aspects. They trusted us."



**MID AIR RETRIEVAL (MAR) TECHNOLOGY DEMONSTRATION**