



POLICING IRELAND FROM THE AIR GARDA SÍOCHÁNA AIR SUPPORT UNIT

Ireland can be proud of its joint Garda/Irish Air Corps operations. The Garda Air Support Unit (GASU) is as good as any in the world. It is on a par with the best of them in respect of personnel, training, aircraft and equipment, and maintains an ever-closer working relationship with police forces worldwide, writes aviation expert Guy Warner.

Air support units are a well-established feature of modern police work throughout the world, playing an invaluable role giving police on the ground the ability to control operations and maintain communications over a much wider area than previously possible.

An Garda Síochána can lay claim to having a unique position in that the Garda Air Support Unit (GASU) is a joint police and military operation. The aircraft are owned by the Gardaí and manned by police observers, but are flown by Irish Air Corps (IAC) pilots and have military registrations.

Day-to-day command is exercised

jointly by the Commanding Officer of No. 304 Squadron, currently Commandant Philip Bonner and Garda Sergeant-in-Charge Brian Coade. The unit is located at Casement Aerodrome, Baldonnel, to the south-west of Dublin, in a purpose-built facility.

Three aircraft are currently in operation, the first of which was delivered in 1997. Before this date the Gardaí called upon Air Corps aircraft to assist with such tasks as aid to the civil community but no aircraft were routinely tasked or equipped to operate specifically in support of the police.

After several years of intensive study the need was presented to the Irish

Government. The necessary funding was made available and this allowed the purchase of one fixed-wing type, a Pilatus-Britten-Norman 2T-4S Defender 4000, Air Corps Serial No. 254 and one helicopter, a Eurocopter AS355N Squirrel, No. 255.

EYE-IN-THE-SKY ASSET

Over the next few years it became apparent that the money had been invested wisely with regard to airframes and equipment. As the Gardaí on the ground began to realise just what an asset the eye in the sky could be, it also became obvious that the unit had to expand.

Police helicopters generally had developed since 1997 and it was

recognised that the most advanced type then available was another Eurocopter design. Accordingly in 2002 an EC-135T1, No. 256, was delivered, being upgraded to T2 standard in 2006. A further EC-135T2+, No. 272, was purchased in 2007 and replaced the Squirrel.

As regards the mission equipment fitted to each helicopter, both have a thermal imaging (TI) device and a broadcast quality, high magnification digital camera, manufactured by FLIR Systems. Recording of images can be made in digital form and can subsequently be used in court as evidence.

A microwave downlink and the advanced on-board radio suite enhances communications with the ground, as does a loudspeaker system, should the need arise. The roll-out of the TETRA digital communications system across the force in 2010/2011 has added considerably to the efficiency of air-ground radio contact. The helicopters are fitted with moving Skyforce map displays which gives a pinpoint guide to track and location.

They also can illuminate an area with a powerful Nitesun searchlight – 15 million candlepower for 256 and 30 million for 272. The introduction of ITT ANVS 4949 Night Vision Goggle (NVG) capability for all three crew members on 272 in 2008 has been another huge step forward.

GOOD VISUAL ACTIVITY

Comdt Bonner remarked, “NVG gives us good visual acuity in the urban environment, making it much safer when, for example, pursuing a stolen vehicle in poor weather conditions in darkness.”

To which Sgt Coade added, “as many a joyrider has found this out to their dismay”. As they are not prone to blooming (the effect of excess light) these high-spec NVGs operate equally well over a brightly lit city as they do in a dark rural environment, where they supplement the TI.

Comdt Bonner asserts, “the EC-135 is a delight to fly with an instant response time to control inputs due to its rigid rotor head design. It is also a very stable platform. The airframe

The Forward Observer and pilot in 272 over Dublin NVG (Pic: GASU).



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has been designed with a high degree of crashworthiness, which increases the entire crew's sense of wellbeing."

The avionics are carried in a McAlpine-designed pod beneath the fuselage. The EFIS avionic suite fitted to all EC-135s is manufactured by Thales, and is given the name 'Avionic Nouvelle'.

The system comprises of two multifunction LCD displays providing all necessary flight and navigation information. Each screen is capable of displaying a variety of information and in the event of one screen failing, the information can be called up on the remaining screen. Also incorporated within the design are a further three LCD displays called the CAD and VEMD.

The CAD (Caution and Advisory) consists of one screen, which will automatically display any warnings and/or cautions associated with the aircraft. These warnings/cautions require the pilot to acknowledge them and are accompanied by an aural warning.

The VEMD (Vehicle Engine Management Display) makes up the two remaining screens and shows all the important power and temperature parameters and also electrical and hydraulic information.

All engine power, temperature and engine speed parameters are encompassed in one display called the FLI (First Limit Indicator). This means the pilot only needs to watch one indication to see how the engines are performing.

ADVANCED DIGITAL AUTOPILOT

They are fitted with an advanced digital autopilot, which gives them the ability to be flown single pilot IFR. Hands off modes include heading, altitude, airspeed, vertical speed and navigation hold, and instrument approaches can also be flown by the autopilot. There is also a Trimble GPS fitted, which can be coupled to the autopilot.

The pilot also has a Honeywell Sentinel Multifunction Display with a moving map and TCAS (Traffic Alert and Collision Avoidance System) and the ability to download



The EC-135 (Serial No 256) on sky patrol over Dublin City (Pic: GASU)

waypoints from the GPS. The EC-135 is powered by twin Turbomeca Arrius 2B2 engines which give a combined power output of 900KW.

The FADEC (Full Authority Digital Engine Control) automates all stages of operation from the start phase to fuel and power management in flight and remaining engine protection in the event of engine failure. Manual pilot over-ride is possible in the event of FADEC malfunctions.

The later acquisition, 272, has the advantage over 256 in that it has a higher all-up weight limit (allowing sufficient fuel for about an extra 15 minutes duration). It also has the NVG mode modification, an automatic function engaging below 55 kts giving three per cent extra rotor speed in the hover, upgraded FLIR and the more powerful

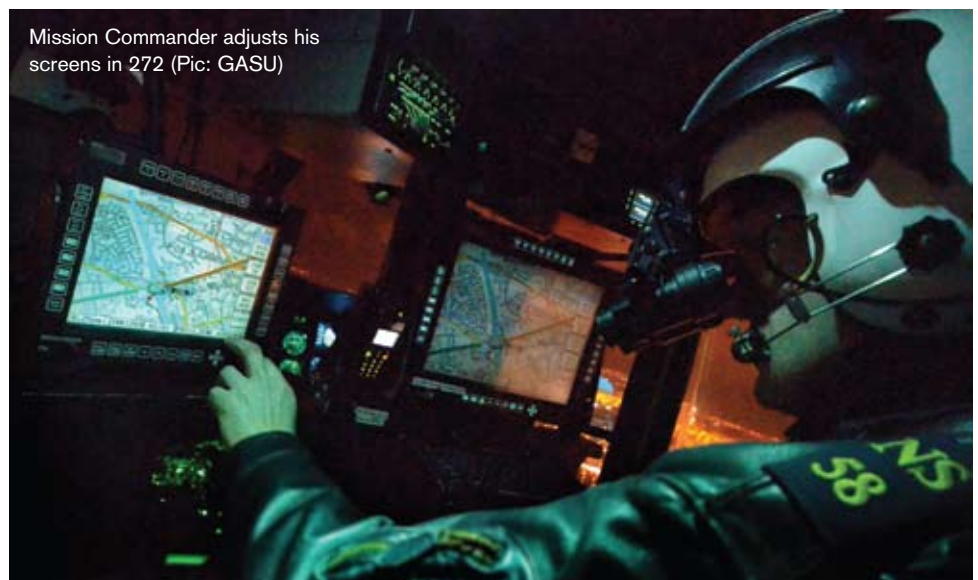
Nitesun.

The forward Garda Observer sits in the left-hand seat and operates the TI and the video camera, both of which are mounted in a ball on the nose of the helicopter. The rear Garda Observer, who is the designated Mission Commander, sits behind the pilot on the right-hand side on a Martin-Baker swivelling seat and is in control of the moving map display and the communications suite.

Therefore, he has responsibility for appreciation of the whole picture. The onus is on him to decide the steps necessary for task fulfillment.

CREW RESOURCE MANAGEMENT

The density of radio traffic from all sources can be quite daunting. The



Mission Commander adjusts his screens in 272 (Pic: GASU)

sensors provide a considerable range of information, while at the same time a constant external watch must be maintained both as regards the surrounding airspace and on the ground below. If the workload becomes too high for any particular crew member then they can share it, in order to concentrate fully on their own prime task for a while.

Crew Resource Management (CRM) is a very important feature of ongoing training, development and discussion. Comdt Bonner stressed that close co-operation and teamwork is required from all three crew members. "As the aircraft commander, the pilot is ultimately responsible in the air for flight safety and Air Traffic Control matters, which is no easy task in the Greater Dublin Area as there is a lot of traffic both fixed-wing and helicopters," he added.

However, as a very experienced GASU pilot, Captain Oisín McGrath pointed out, there is more to the job than flying the helicopter. "On a dark, damp winter's night over Dublin, with a lowering cloudbase and a moisture-laden atmosphere, 272 was called to the robbery of a convenience store.

"We were advised by a Garda over TETRA that a getaway car had made off in a certain direction. I was assisted in navigating directly to the scene by the local knowledge of Forward Observer, Garda Shane Cooke (who had been a beat policeman in that area of Dublin before joining the GASU).

"Through my NVG, I spotted an

individual acting suspiciously close to the abandoned car. I passed this information to Shane so that he could track the suspect with the camera and TI as he ran across some parkland and into a house.

"The Mission Commander, Garda Enda Dwyer, could watch this on his screen and immediately communicated the information to nearby ground units via TETRA, leading to the rapid detention of the suspect for questioning. This is typical of the type of co-ordination between pilot and police crews and use of equipment necessary for our operation."

UPGRADED DEFENDER

The third aircraft, the Defender, No. 254, is a substantially upgraded version of the famous Islander, with an enlarged wing and lengthened fuselage. The GASU's aeroplane was the first Defender off the production line after the prototype.

It has greater range and longer endurance than the helicopters and can operate from any of Ireland's regional airports and airfields. Its crew will typically comprise a pilot and two or three Garda Observers, depending on operational requirements.

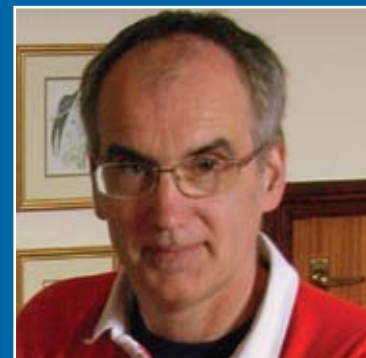
Sgt Coade commented, "With its ability to loiter at very slow speeds and remain airborne for approximately four hours, fuel and weather factors considered, it allows great flexibility and is a very important platform for a wide variety of police tasks. Its main use is for pre-planned overt or covert missions, the majority of which are IFR (Instrument

ABOUT THE AUTHOR

With a life-long interest in aviation Guy Warner is the author of more than 20 books and booklets on aviation, past and present, and has written a large number of articles for magazines in Ireland, the UK and the USA.

He also reviews books for several publications, gives talks to local history societies, and has appeared on TV and radio programmes, discussing aspects of aviation history.

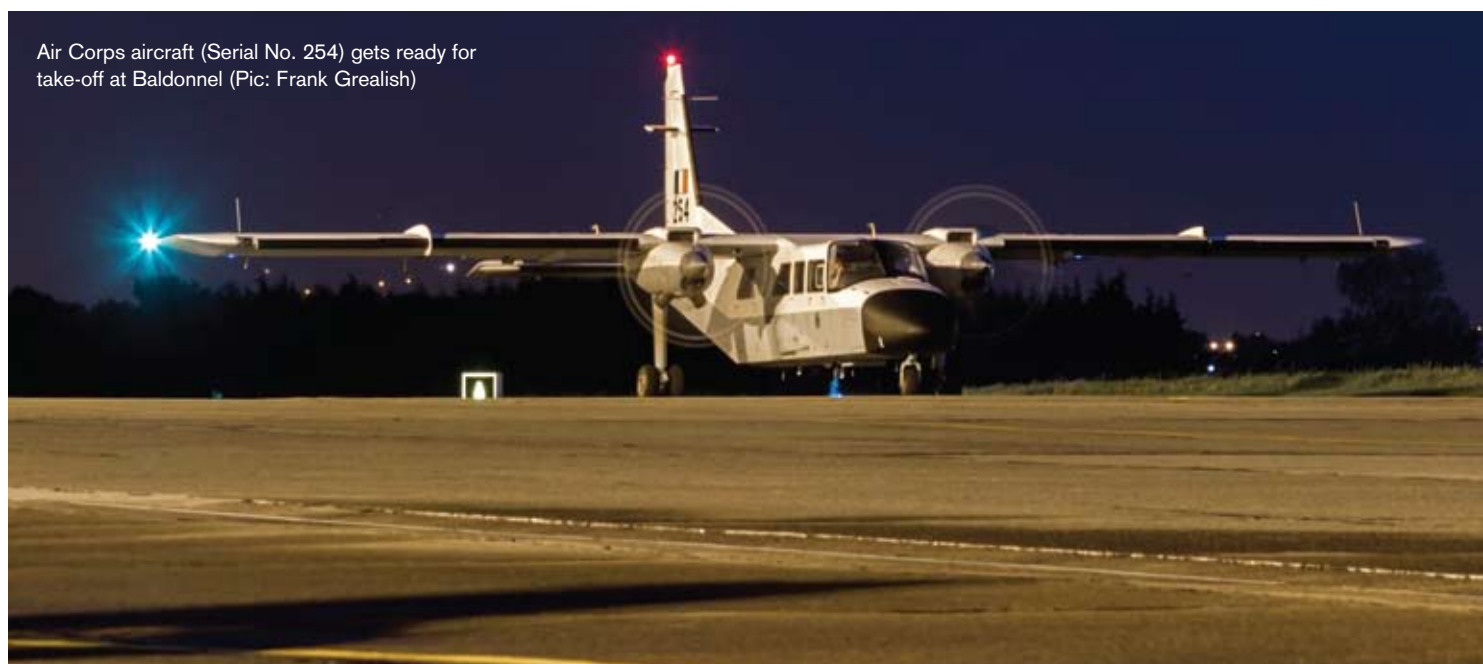
The retired schoolteacher and former civil servant from Carrickfergus, Co. Antrim, Warner is a graduate of Leicester University and later Stranmillis College.



Flight Rules)."

Whereas the helicopters can respond within two minutes of a call received, the Defender will be ready within ten minutes. It is powered by two Allison 250-b17F/1

Air Corps aircraft (Serial No. 254) gets ready for take-off at Baldonnel (Pic: Frank Grealish)



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engines, capable of producing 400 Shaft horsepower at Maximum Take-Off Power and Maximum Continuous Power.

The aircraft will normally cruise at 140 kts and can loiter at 80-85 kts with flaps at the take-off position. Onboard systems from a pilot's perspective include the Bendix/King KFC 325 Autopilot and Flight director installation which interfaces with the Bendix/King KAS 297C Vertical Speed and Altitude Preselector installation.

There is also a Bendix/King RDR 2000 Digital Weather Radar. There are two EFIS units. A KMC 321 Mode Controller allows operation of the Flight Control System. Also to aid en-route navigation there is a Bendix/King KLN 90B TSO GPS. Anti-icing and de-icing equipment are, of course, standard. The mission equipment is broadly similar and complementary to that carried by the helicopters.

GASU CONTROLLERS

Turning to personnel, the GASU is controlled at the top with respect to policy by the Garda Commissioner, and by the General Officer Commanding of the, Air Corps.

Senior staff with direct responsibility for the GASU are the Superintendent Operational Support Unit, and the Air Corps' Chief of Air Operations. As noted previously, management of the unit on base is in the hands of the Garda Sergeant-in-Charge and the Air Corps' Commandant.

There are 20 Air Observers (three Sergeants and 17 Gardaí). The 14 pilots, all of whom are either Captains or Lieutenants excluding the Commandant I/C, are all members of No. 3 Operations Wing. Maintenance of the aircraft is in the hands of the Air Corps in respect of the Defender.

As regards the EC-135s this is contracted out to a dedicated on-site team from Airbus Helicopters (UK). The aircraft fly on average a total of about 2,000 hours per year, so in order to maintain the maximum level of availability possible, the maintenance schedule has to be carefully programmed and requires a great deal of dedication from those responsible.

ELIGIBILITY TO JOIN GASU

To be eligible to apply to join the GASU as an Air Observer requires the candidate to



View over Dublin City by night from the 272 – this aircraft can go anywhere in the country day or night. (Pic: GASU)

have served five years as a Garda. After a paper sift of applications each candidate then undergoes an aviation medical and visits the GASU to learn more about the work and to see if they actually enjoy flying in a rather more challenging environment than most would have experienced previously.

There then follows a two-week pre-selection course at the Garda College which consists of individual and team exercises, as well as a range of tests to determine suitability, including some abseiling, which certainly sorts out those with a fear of heights.

An interview board determines the final selection, those who pass then fill the vacancies on the next Air Observers' Course at Baldonnel, which lasts six weeks. It covers such topics as familiarisation with the aircraft, role and equipment, navigation, health and safety procedures. Next comes a two week Aircrewman Course with the Air Corps on the EC-135P2s of 302 Squadron, in which basic military airmanship is learned.

The next stage is to join the team and fly operational missions with an experienced partner and so work up to becoming a fully effective Air Observer. Excellent communications skills are vital, not only in the air but also on the ground. All candidates must use their own initiative, not only to make decisions but be able to justify them coherently.

This is particularly important when receiving a telephone call asking for GASU support. An assessment has to be made — can the GASU assist? If it is decided that the task would not be appropriate for the GASU then that decision has to be explained carefully.

The aim is to assist Gardaí on the

ground whenever possible, to encourage requests to be made for participation but not discourage further requests if it is decided that GASU support cannot be given on a particular occasion. Both Shane Cooke and Enda Dwyer agreed that, "all of this requires maturity, confidence, clear thinking and sound professional judgement, allied to the experience provided by several years on patrol on the street."

The level of requests for the GASU has steadily increased over time as its effectiveness has been proven. The pool of pilots is drawn from within the ranks of the Air Corps for a tour of duty of two years or more and the GASU is regarded as a stimulating and challenging flying environment. Pilots are selected primarily on their previous experience on twin engined aircraft, and night flying experience.

EQUAL PARTNERSHIP

Sgt Coade noted that the doctrine of an equal partnership between the Garda and the Air Corps was a vital element in the success of the GASU, as was the harmonious dovetailing of personalities in a fast moving and often stressful operational environment.

"We have to shift gear rapidly from sitting in the crew room having a cup of tea, to being airborne in two minutes to a call-out and potentially within a very few minutes more working at high tempo," he said.

If at any time during a mission any one member of the crew feels that the margins of flight safety are in danger of being compromised then the well-publicised unit rule of 'Three to go, one to say no' is applied.

Comdt Bonner regards continuation training as being absolutely vital, "starting with the mandatory de-brief after every mission in an open and honest no-blame culture". He further asserts that NVG training 'never stops', with internal NVG training supplemented by annual proficiency checks carried out by the US company, Aviation Specialities Unlimited.

He has recently qualified as an NVG instructor. Another key component is Line Oriented Flight Training (LOFT) carried out yearly in the level D, full-motion EC-135 simulator at Airbus Donauwörth.

"We aim for realism in each two-hour session, testing command ability, decision-making skills and CRM. The first 30 minutes can be spent relatively quietly on a typical GASU task over a city. Then we add in some complicating factors, for example lowering weather or operational pressure from the ground but not throwing in random (and rarely occurring) technical faults, which we can test on other simulator sessions.

"Simulator training is one the cornerstones of safe flight operations, allowing pilots to push their own limits and allowing supervisors to assess their capabilities and ensure a safe standard is maintained."

He lays great stress on telling new pilots that their job is to assist the Gardaí, "you are responsible for the safe conduct of the flight, this must not be compromised in any way by mission fixation. You are in a highly privileged but responsible position in that you authorise your own flights, the cost for this is constant vigilance."

DIRECT SUPPORT ROLE

The prime task of the GASU surveillance is in direct support of Garda officers on the ground. The work is very varied and can range from searching for suspects, missing persons or property to the pursuit of vehicles, the containment of crime scenes, support to public order units, the policing of major events, ceremonies or protests and aerial photography.

Garda officers spread out over a wide area can be kept in touch with changes on the ground as a situation develops and appropriate direction or guidance can be given. There is also a capacity to carry trained police dogs onboard for special operations and/or quick dispatch around the country if required.

Garda Observers can, of course, make arrests if required, which has been

very useful; on occasions a helicopter has landed in a remote area and the Garda Observers have disembarked to arrest and detain a suspect until the arrival of ground units.

The GASU's availability for immediate dispatch, coupled with the modern high-tech equipment, means it can also be a vital asset for the emergency services, as was seen over Bray Head at Christmas 2014 when assisting the Wicklow Mountain Rescue Team. The aircraft are available for callout on a 24-hour basis.



The pilots work a 12-hour shift, while the observers have a ten-hour shift.

All aircraft can be tasked for operations anywhere within the Republic, though by the very nature of its size (a quarter of the Republic's population), the Greater Dublin Area takes up a great percentage of the work.

However, the GASU receives calls for assistance from all over the 26 counties; 256 can take on tasks by night within 80 miles of Dublin on designated routes while 272 can go anywhere in the country day or night.

Secure refuelling facilities are available at Shannon Airport in the west and at numerous other army barracks and airfields.

For a pre-planned mission a military fuel bowser can be deployed if required. Detachments away from Baldonnel can be maintained for several days. Tasks can be handed over in the air, between any of the aircraft.

CLOSE WORKING RELATIONSHIPS

The GASU remains quietly satisfied that a continuous overwatch was maintained during the visits by the Queen and the US President to Ireland in 2011.

The major challenges facing the Garda Síochána today are obvious – organised crime, smuggling of drugs, cigarettes, diesel fuel, other drug-related offences, the increasing diversity of population in Ireland, a faster moving world, with policing in general going beyond national boundaries.

To this end the GASU maintains an ever-closer working relationship, not only with the Police Service of Northern Ireland (PSNI) and other UK forces, but also many in the EU, the USA and beyond. The creation of the Criminal Assets Bureau (CAB) in Ireland has proven to be a template for many other countries to follow.

Ireland spends its money wisely, it invariably buys the best available and is second to none in regard to the professionalism and dedication of its operatives.

Ireland can be proud of its joint Garda/IAC operations. The GASU is as good as any in the world and is on a par with the best of them in respect of personnel, training, aircraft and equipment.

**The author extends his thanks to Garda HQ and Brigadier General Paul Fry, GOC Air Corps, for authorising his visit and indeed to all those mentioned here.*