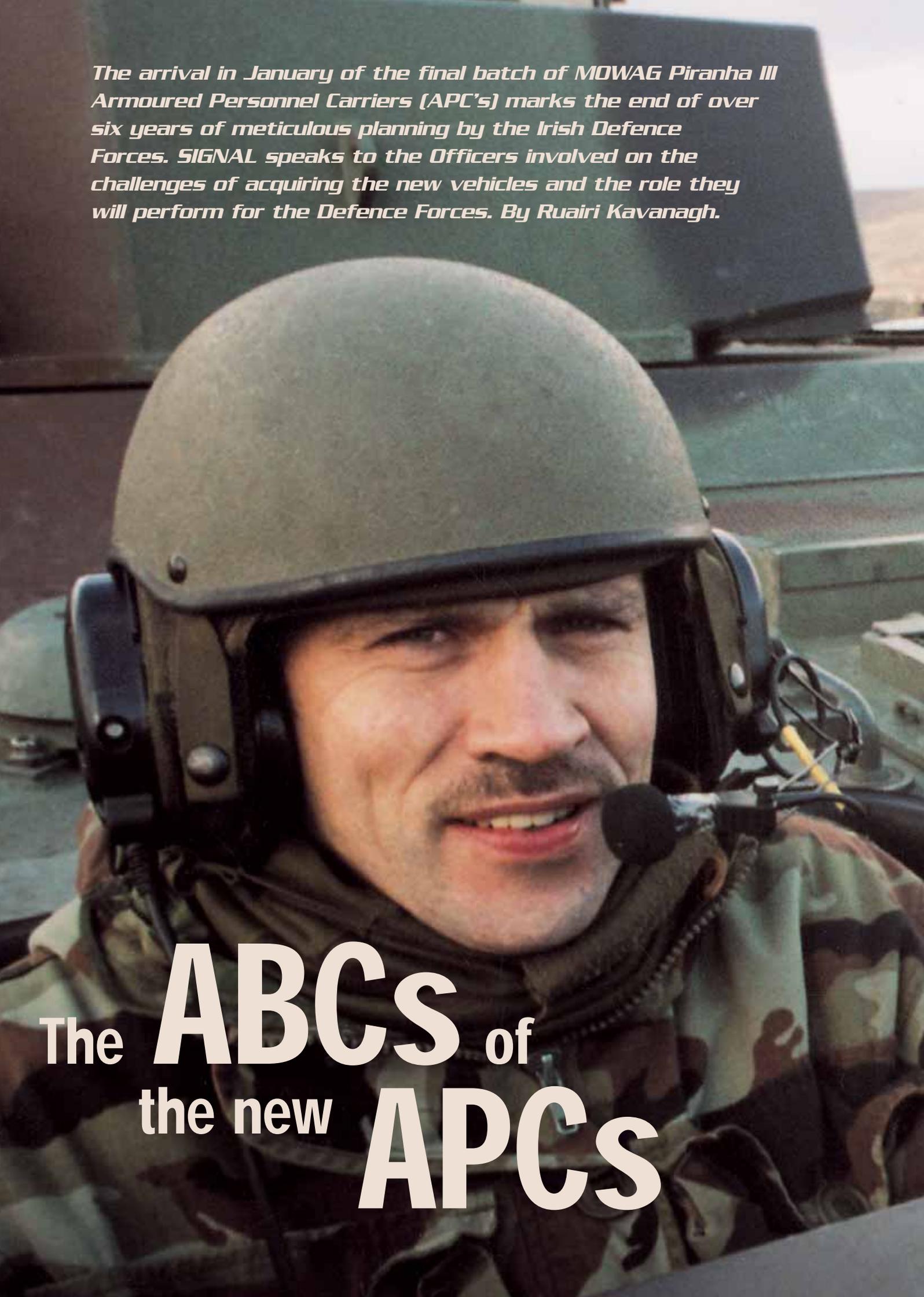


*The arrival in January of the final batch of MOWAG Piranha III Armoured Personnel Carriers (APC's) marks the end of over six years of meticulous planning by the Irish Defence Forces. SIGNAL speaks to the Officers involved on the challenges of acquiring the new vehicles and the role they will perform for the Defence Forces. By Ruairi Kavanagh.*



The **ABCs** of  
the new **APCs**

## The Background

Three officers with key roles to play in the procurement process were Commandants Tom Aherne, Dave Goulding and Frank Lawless. “The APC procurement process has its genesis in 1995,” explains Tom Aherne, “when a submission was made to the Director of Operations and the General Staff by the Director of Cavalry (DCav). The content of the submission was the state of the Panhard APC fleet, which was at that time comprised of vehicles about 25 years old that were really beyond any operational use. Essentially, the Director of Cavalry was pointing out to the General Staff that we needed to do something about the situation because the required standards were not being met.”

“In general terms, why do we need APCs?” asks Comdt. Aherne. “The Efficiency Audit Group was set up by the government to examine certain government departments, among them the Defence Forces. This group recommended in its report, inter alia, that a conventional all-arms combat force should be retained by the Defence Forces. The use of this phraseology is important in this context, to provide a credible deterrent and credible response to armed aggression and to provide a flexible structure to carry out all roles assigned by government. This was important for the Defence Forces because the Group could have said that there was no need for a conventional combat force.”

Flowing from the EAG report, priority was given to the provision of armoured vehicles. “The recommendations were consistent with the concept of a ‘light, infantry-based, highly mobile force capable of rapid deployment,” says Tom Aherne. “The government’s decision was that they accepted in principle the conclusions of the report and they acknowledged the need for major reform of the Defence Forces. This came in the form of the Defence Forces Review Implementation Plan (DFRIP), unanimous in its support for a highly mobile, infantry-based, rapid deployment force.”

The Defence Forces derived from these recommendations the need to provide protection, mobility and firepower for its personnel. “This was deemed essential,” he explains. “APCs are recognised as essential by military forces throughout the world. The modern soldier is now regarded as a scarce and expensive resource. It is necessary to protect this soldier. Modern-day society also demands this level of security in the form of ballistic and anti-mine protection.” According to Tom Aherne, the Defence Forces could not credibly meet its responsibilities or protect its personnel satisfactorily without APCs. “In 1996, the General Staff decided to withdraw all 4HD-engined Panhard APCs that had been in service for over 25 years, and centralise them in B Company, 3 Infantry Battalion in the Curragh.”

## The Procurement Process

In 1995, a board of officers was convened by the Chief of Staff. Among the tasks given to this board was to look at the future of APCs in the Defence Forces, examine the current and future organisation of an APC unit, and to broadly define user trials and evaluation standards. Having accepted their report the Board were directed to refine the used requirement and the evaluation process. Then a second APC board was convened whose terms of reference were to identify the most suitable vehicle for the Defence Forces and to define detailed user trials and specific technical evaluation. They were also to consider APC variants - by which I mean variations of the standard troop-carrying model such as command, control and communications (C3) vehicle, which is part of any APC unit, an armoured ambulance and a repair and recovery variant. Following the second APC Board report a Policy and Procurement Group and a Project Team (PT) were established. The Policy and Procurement Group was chaired by contracts branch in the Department of Defence and had three military members: the then Assistant Chief of Staff (Support), the project manager of the Project Team, and a representative from the Strategic Planning Office in the Chief of Staff’s Branch. It was a joint military and civilian working group that would carry the APC programme forward. This was the largest procurement project ever undertaken by the Defence Forces, and it was a learning curve for all of us as nothing of this scale had ever been done before.

The request for proposals (RFP) was issued in April 1998 and listed the critical and desirable criteria and outlined a compliance matrix to which any potential vehicle must comply. By the closing date of 27th May 1998 twelve tenders had been received. Comdt. Frank Lawless was a key figure in this stage of the process.

"Within the government procurement and tendering process there are different levels. The Request For Information (RFI) is the first official level, where traders and businesses are asked for information. The second is the Request For Proposals (RFP) where we outline in more detail what our actual requirements are. The third element is requesting selected companies to formally tender (RFT)." At the RFP stage, the document has no legal significance.

The critical criteria sought in the RFP were based on the functional characteristics of an armoured vehicle. The functional characteristics of an armoured vehicle are referred to as the design triangle: made up of protection, mobility and firepower.

Regarding protection, specific protection levels for light-armoured vehicles are defined by international military standards. In terms of mobility, the Defence Forces were looking for a diesel engine and a certain type of performance suitable for the role the vehicle is expected to play. In terms of firepower, the

Defence Forces listed in general what weaponry they wanted fitted to the APC. "At this point our criteria were quite general so as to allow a broad range of companies to reply," explains Frank Lawless.

### The Next Step

Replies from the 12 interested companies were inputted into the compliance matrix

In February 1999, Restricted Tender Documents (RTDs) were issued to the two successful companies: two vehicles, the Austrian Steyr Pandur and the Swiss Mowag Piranha III, were deemed to meet the requirements.

The two companies, Steyr and Mowag, were required to produce vehicles for trials. "The trials for the vehicles themselves were con-

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## The Defence Forces derived from these recommendations the need to provide protection, mobility and firepower for its personnel

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that had been formulated, and analysed for compliance or non-compliance. We would then either reject or accept them there and then. The compliance matrix is a general formula that the Defence Forces have compiled to help control equipment purchases.

Adds Tom Aherne: "With many manufacturers you had to constantly clarify what exactly they were telling you, some manufacturers may have felt that they met all the requirements in the compliance matrix, while the project team might not have been entirely satisfied."

ducted between April and June 1999, a very busy time," remembers Tom Aherne. "Several teams were assembled to oversee the trials. The first was technical and end user evaluation team, which involved assessment by our technical experts on how the vehicle could be maintained and repaired. The end user unit, B Company 3 Infantry Battalion, then analysed how the vehicle should fit our existing tactical doctrine and operational practices. In preparation for the trials process the Project Team visited Denmark, whose Armed Forces had purchased the Mowag



Comdt Tom Aherne during a training exercise with the new APCs in the Glen of Imaal.

Pirhanha, and Belgium who had purchased the Steyr Pandur. After we returned from our overseas visits a series of trials using existing Panhard SISU APCs were set up,” says Comdt. Aherne. The evaluations were formulated using test conditions and standards, i.e. the test that was being evaluated, the conditions in which the test was to be undertaken and the standards to be reached. This helped give focus to the trials. The analysis of results of these trials showed that we in fact produced too much information for ourselves and dealing with that information was a challenge in itself. Observations made during this trial process were clearly defined to withstand examination and scrutiny and had to clearly establish the role of the

## The Training

Concurrent with the entire procurement process there was also a group within the Defence Forces whose job it was to examine the training implications of all of this in line the Defence Forces Review Implementation Plan (DFRIP). As mentioned earlier, when the procurement process was being carried out there was a parallel structure in place to look at the implementation plans for the new vehicles. This report was published in August 1999 and its objective was to identify options and make recommendations on all issues associated with the introduction of new vehicles. Comdt. Dave Goulding, Chief Instructor of the NCO Training Wing (NCOTW) who was a member of this board

team had to look at best international practise for APCs.

We also had to examine deployment and how to do it sensibly, above all to avoid ‘penny packeting’, that is having small numbers of vehicles in different locations around the country. The rationale for this is that they have to be kept together in a big enough force so you can actually train as a ‘unit’ with them. The organisation and equipping of an APC unit was another important element. We had to look at the structure of the light infantry units versus that of mechanised infantry units – which is the term associated with infantry deployed in wheeled armoured vehicles. The issue of relationships between command and staff was vital in the training planning process in order to organise and delegate training for the various training programmes needed to bring units to an operationally competent level. The supporting infrastructure was the third pillar of this study. For example, the location of training facilities, vehicle repair workshops cross-country driving testing areas and the garaging of the vehicles all had to be explored and solved.”

When these issues were clarified, the project team again looked abroad for existing expertise. These visits took place throughout the procurement process. The first visit was in 1998 to Catterick in the UK where officers and NCOs of a British Army Mechanised Battalion briefed them.

“While they didn’t have the same Mowag Piranha APCs that the Defence Forces were getting,” recalls Dave Goulding

**In a region that is already volatile, recent world events have had a major effect on tensions in the Middle East.**

vehicle supplier during the trials, so that the trials could be conducted in a fair and impartial manner. The time for analysing and reviewing the trials was something that a significant and adequate amount of time had to be devoted to by the project teams. For example, we would be testing and evaluating for four days out of five, it was important that you took the fifth day to analyse the information so that all information was fresh to the teams and also to ensure accurate and fair evaluation.”

With regard to the weighting of the award criteria, obviously some things would be weighted higher than others. The weighting favoured the end-user, those who would be using the vehicle in an operational capacity. The final stage in the process was the writing of the report that was submitted to the Minister for Defence in September 1999. The model that was finally decided on was the MOWAG Piranha III, made in Switzerland.

A contract was signed in November 1999 for the purchase of 40 Mowag Piranha III 8x8 APCs in four variants: 34 troop carrying APCs, 4 Command Control and Communication (C3) variants, and 1 ambulance together with an initial quantity of special tools and spare parts. The contract also allows that “the Department may purchase up to 40 APCs in addition to the vehicles already contracted.”

explains: “All training for the new APCs took place in the Defence Force Training Centre (DFTC) in the Curragh. We also had to look at developing a five-year plan to carry out an analysis of our training and how it could be improved. Training areas, as in where and how we would test these APCs, also had to be identified and prepared. Simulation equipment also had to be researched and obtained and the project



*Preparing for a training exercise inside one of the new APCs.*



*The new MOWAG Piranha III in training.*

we were nonetheless able to learn from them in terms of best international practice and current teaching and doctrine, which was of assistance. The next step was for the Project Team to get 'hands on experience'. Our troops underwent this in 1999 in the UK where members of the user unit in the Curragh took part in a British Army training exercise and their report was crucial in shaping our own tactics, techniques and procedures."

There was also a high level steering group in existence throughout the APC procurement process whose role was to coordinate all the various elements and make the project work. One of their tasks was to find a country with similar vehicles to the Mowag

used and how their simulation exercises were run. It was a valuable trip for us in terms of the lessons that we learned." Prior to the delivery of the first vehicles the final step in the planning and training process was end user training. Comdt. Tom Ahern: "In this case the end user training took place in B Company 3 Infantry Battalion.

The first phase was work-up training, or training which needed to be completed in the unit in order to receive new equipment. The vehicles started to arrive in June of 2001 so work-up training started in October 2000 and that went on for about eight months before the vehicles arrived. There also had to be training in Switzerland in the production plant for the technical crews, such as fitters

involved with since October 2001, training the various elements of the APC crews. The training for the dismounted element is based on the training manual devised by Dave Goulding and the expertise of others.

Currently, MOWAG APCs are deployed with the Irish peacekeeping forces in Eritrea (UNMEE) where they have been a welcome addition to the peacekeeping effort.

### FEATURES OF THE MOWAG PIRANHA III

- Add-on armour kits for different protection levels
- Mine protection kit
- Self-recovery winch with 8 t pulling capacity (drum or capstan type)
- Air-conditioning system with approximately 10 kW cooling capacity
- Arctic heater kit for operations below -40° Celsius
- NBC protection kit (overpressure or collective face mask system)
- Amphibious kit for rough seawater operations
- Fire and explosion suppression system
- Various weapons stations and communication systems
- Customer tailored configurations
- Multiplex electrical system (BITE)
- Height-adjustability of hydro-pneumatic suspension system
- CTIS (Central tyre inflation system)
- ABS (Anti-locking brake system)

### The issue of relationships between command and staff was vital in the training planning process.

Piranha, and who spoke English. The Canadian Army had a vehicle which was similar but not the same. A small group was sent over there, to Gagetown Combat Training Centre, the Director of Infantry (D Inf) Col. Martin Coghlan, Comdt. Dave Goulding and Comdt. Sean O'Keeffe. "We looked at how their training was conducted," says Comdt. Goulding, "how their units were organised, we studied their tactical deployment procedures, techniques and tactics. We also examined the simulation training they

and ordnance personnel."

The MOWAG training started in February 2001 and went on until May, most of that being technical training. When the APCs arrived, one of the first things to be done was the conversion of existing APC instructors which took about ten weeks.

When this was complete, these instructors then began the training of other B Company personnel and personnel from other units of the Defence Forces. This is what the Defence Forces have been primarily

