

Innovation of carriage systems to meet modern technology

Soldier Modernisation talks to Glenn Nelson, of Crossfire Australia, about their best of class carriage equipment

Soldiers are often required to carry equipment and supplies on their body during military training and operations. Depending on the characteristics of the load, carriage on some parts of the body can be more comfortable or efficient than carriage on other parts of the body. Load-carriage systems like backpacks, shoulder straps and belts can enhance comfort and efficiency if these systems are designed with an understanding of the general principles and problems associated with human load carriage. Well-designed carriage systems can enhance the likelihood of mission accomplishment by reducing localized stress and fatigue, thus minimizing performance decrements and injuries. A lack of understanding of load-carriage principles and/or the use of inadequate or badly designed carriage systems can have harsh consequences. There are numerous examples in which heavy loads directly or indirectly resulted in reduced performance, unnecessary deaths and disastrous engagements.

So how can we mitigate these problems, whilst ensuring that the modern carriage system can be interlinked and work in conjunction with modern vest systems, whilst adding to the lethality of the modern soldier, in any terrain?

A company whose experience is based on exploratory equipment would be a good start, as Glenn Nelson COO of Crossfire states:

"Crossfire builds the best load-bearing equipment in the world. We build for those in our community who inspire us, those men and women with a job to do. We build with the best materials available, and the most durable construction methods that exist, so that you know anything bearing the Crossfire brand will support you regardless of task, season, weather or terrain. Our objective simply is to design and manufacture world-class personal load bearing equipment and apparel. Any product bearing the Crossfire doesn't happen by accident, they're not born in a sterile design studio. They're built on 40 years of back country, operational, engineering and quality assurance experience. Our inspiration comes from hard won experience and from end users. Heritage and past history doesn't mean a great deal unless you remain adaptive and innovative."

So what products are being innovated by Crossfire for the Modern Warfighter and in use by Special Forces? We review some of their newest products from a complete range and their main key points.

DG1 'Spitfire' Assault Pack, a 28 litre MOLLE compatible or worn as a standalone. Available in Multicam (MC) or Ranger Green (RG). Constructed in abrasion-resistant 500 denier CORDURA®

- Main pocket (468 cu. in.) with internal mesh hydration pocket accommodates up to 100 oz. Any standard reservoir
- Two external side pockets (63 cu. in.)
- Daisy chain running around 50% of bag provides adjustability for securing to multiple points, including Multi-Purpose Chest Rig
- Three different bite-valve/antenna ports
- Rhodesian, Plate Carrier, and belt order compatible
- Web dominator for routing hydration hose, left or right shoulder
- Four channels allowing for jacket or poncho attachment
- Fully adjustable/removable shoulder straps and chest strap



DG1 'Spitfire' assault pack

- Can be attached MOLLE direct to plate carrier or CIRAS vest. Removable stiffener. Total carrier weight 2.45 lbs.
- Beaver tail compartment allowing the fit of a helmet with nods, clothing, etc.
- Six point compression straps with quick release buckles
- Solid Velcro® panel for placement of placard, 1" Velcro® name placard
- Front external utility pocket , Front clam shell pocket (37 in)

DG3 'Wildcat' and DG3 AW 'Wildcat' Patrol Pack

The DG3 Patrol Pack is built on the famous DG16 frame, it is a little shorter and straight-sided. It has the same strength, tuned flex and ventilation.

Features:

- DG3 tuned flex polymer frame;
- Our world's best laminated and contoured shoulder harness;
- CF exclusive bug out buckles, safe and positive QR;
- Lumbar pad and detachable hip wings;
- Triple pocket contoured removable (Grab Bag) top lid to secure bigger loads;
- Centre zip access for light loads;
- MOLLE in CF exclusive scallop style is faster to use;
- Zipper access for radio and antenna;
- Two removable internal pockets;
- Side slots for long items;
- Dual compression straps;
- Hydration pouch;
- Helmet carrier

These packs are designed to incorporate equipment, allowing different technology to be utilized on vest systems, this helps with weight dispersion and a greater ability to power manage and carry. Already in use by varied militaries and military units.



DG3 'Wildcat' patrol pack

The DG16 and DG16 AW Packs

Designed around the 20 inch DG Frameset the 85 litre.

DG16 Shoulder Harness: The harness arms are laminated from multiple layers of speciality, expensive materials. Plastic plate reinforcements distribute heavy loads, memory foams to customise to the user. Shoulder straps are shaped

and tapered to work over CBA and smoothly transfer load away from the brachial plexus nerve group. The whole shoulder harness yoke assembly can be quickly extended up or retracted down with three height settings built into the webbing attachments.

Shoulder Release: It is our belief that any pack which uses a 25mm plastic side release buckle as a load element is not fit for service. Such a culpable object should be recalled and destroyed before it injures the user. Such buckles were never intended for heavy, load-bearing use. They can release or break inadvertently, slewing the fully loaded pack and wrenching the spine. The DG16 shoulder harness uses reliable, strong yet easy-to-release-under-load military-proven buckles. Because we really do care.

Hip Belt System: Choose the set up according to personal preference and type of rig. There are three plug-in adjustment levels for the padded components so they can be tuned to back length, set high to clear a belt rig, or set low to hip load. Or remove hip fins and use lumbar loading.

DG16 Pack Bag: Military long-range volume, single compartment bag with lower access configurable as double-compartment bag by fastening the built-in divider shelf in the horizontal position.

Multiple access options:

- top access via resistance-free, easily operated, double-draw-cord throat (use of metal eyelets eliminated)
- top access via horizontal radio/hydration tube zip above frame side radio access via long vertical zips with interlocking cover flaps – both sides
- wide bottom access via fold-out zipped gusset
- Fully open at back hydration bladder pouch and radio attachment IAS panel, fitted with necessary webbing straps
- EVA foam sandwich base panel virtually eliminates abrasion wear
- Weight-saving IAS/MOLLE Crossfire 20/30 webbing bands on all available external surfaces
- ET front pouch and lower side pouches (all Hypalon reinforced internally, both faces)
- Side IAS on separate panels
- Face full compression strap system – side, bottom and over-throat
- Internal lower bag compression strap system
- Detachable helmet attachment web net fitted to back panel
- All crucial side-release buckles field-replaceable in seconds.

The DG16AW adds two 34 litre Top loaded side mounted stash pouches that are removable and compressible. Incorporated into the frame are two PULK Loops. All critical openings and attachment points are elongated to allow easy opening whilst double gloved.

DG AW Day Pack Lid, both the DG3 and DG16 AW share the ability to run a detachable 28 litre day pack lid instead of the standard lid. ■

For more information:

crossfire.com.au | www.crossfirepacks.com

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