

**CANADIAN ARMY PHYSICAL FITNESS
INDIVIDUAL BATTLE TASK STANDARD**

**FORCE COMBAT
Operations Manual**

1st Edition, 2017

Produced by

PSP Directorate of Fitness (DFIT)

and

Canadian Army Doctrine and Training Centre (CADTC)

FOREWORD

The 1st Edition of this Operations Manual has been prepared to provide instructions and guidance for conducting the Canadian Army physical fitness component of the Individual Battle Task Standard (IBTS).

The Canadian Army (CA), in collaboration with the Canadian Forces Morale and Welfare Services (CFMWS), Directorate of Fitness (DFit), has developed an operational physical fitness IBTS titled and hereafter referred to as FORCE combat which, effective 01 October 2017, constitutes the sole CA physical fitness IBTS for land operations.

As of 01 August 2017, this Operations Manual is the only reference for conducting FORCE combat.

Modifications to this Operations Manual may be made by DFit from time to time and will be forwarded to you accordingly.

It is essential that the evaluation protocols and instructions provided in this Operations Manual be strictly adhered to and administered with care and attention in order to ensure valid and reliable results.

Evaluators must familiarize themselves with the instructions and ensure that each evaluation is conducted in the safest manner and environment possible.

Should you have any questions with the protocols or descriptions found within this Operations Manual you can address them through your chain of command who can contact your Manager, Fitness, Sports & Recreation (or equivalent) or the Directorate of Fitness, Sports and Health Promotion office at DFit-Cphysd@forces.gc.ca.

Signature

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List of Acronyms

Acronym	Definition
ACSM	American College of Sports Medicine
AED	Automated External Defibrillator
BFT	Battle Fitness Test (the unofficial name for the LFCPFS)
BO	Battle Order: Fighting Order 24.5 kg worn throughout CADPAT (not in a small pack) + small pack (10 kg)
CA	Canadian Army
CAF	Canadian Armed Forces
CAIPS	Canadian Army Integrated Performance Strategy
CANFORGEN	Canadian Forces General Message
CFMWS	Canadian Forces Moral and Welfare Services
cm	Centimetre
CMP	Chief Military Personnel
CO	Commanding Officer
CAP3	Canadian Army Performance Triad
CADTC	Canadian Army Doctrine and Training Centre
CMTC	Canadian Manoeuvre Training Centre
CPR	Cardio-Pulmonary Resuscitation
CTC	Combat Training Centre
DAOD	Defence Administrative Order and Directive
DFit	Director of Fitness
DWAN	Defence Wide Area Network
EAP	Emergency Action Plan
FORCE	Fitness for Operational Requirements of CF Employment
FO	Fighting Order: 24.5 kg worn throughout CADPAT (not in a small pack). This includes helmet, weapon, ammo, flashlight, etc., and is considered minimal gear necessary.
HPR&D	Human Performance Research and Development
IAW	In Accordance With
IBTS	Individual Battle Task Standard
ILS	Intermittent loaded shuttle
kg	Kilogram
km	Kilometre

LBM	Load Bearing March (from the original BFT 13 km, 24.5 kg)
LFCPFS	Land Forces Command Physical Fitness Standard
LDA	Land Duty Allowance
m	Metre
MFS	Managers, Fitness and Sports
NBCD	Nuclear Biological Chemical Defense
PPE	Personal Protective Equipment
PSP	Personnel Support Programs
PSTC	Peace Support Training Centre
RSM	Regimental Sergeant Major
SBD	Sandbag drag
SBL	Sandbag lift
WBGT	Wet Bulb Globe Temperature
20mR	20 metre rush
%	Percentage

1 INTRODUCTION

1.1 AIM

This Operations Manual provides guidance and direction on how to administer FORCE combat. All personnel involved in the overall administration of the evaluation will adhere to this manual.

1.2 BACKGROUND

- 1.2.1 In the past few years, the CAF has made great progress embracing personal health and fitness and providing CAF members with the tools and resources to improve their physical fitness. Canadian Forces Morale and Welfare Services (CFMWS), on behalf of the CAF, has designed training, produced incentive programs and distributed educational material across the CAF regarding personal and professional expectations and obligations for CAF members regarding physical fitness. Concurrently, the CA has leaned forward to build upon CAF initiatives and ensure physical fitness within the CA is operationally relevant, achievable, sustainable and effective.
- 1.2.2 The CA launched MISSION: READY with a view to providing CA leaders and soldiers the necessary tools, resources and material to help build and increase CA readiness. A significant aspect of MISSION: READY is the educational material advocating the health benefits of a balanced lifestyle that forms the core of the Canadian Army Performance Triad (CAP3). Physical fitness is a fundamental component of CAP3 and essential to overall readiness and resiliency.
- 1.2.3 “Operational readiness is one of the most critical elements of Personnel Support Programs’ (PSP) mandate. FORCE combat provides an extremely valuable tool for ensuring our members have the most scientifically accurate and relevant evaluation system, in order to prepare them for the physical demands of modern combat operations.” – Commodore Cantelon, Director General Morale and Welfare Services.

In 2008, the CADTC (then LFDTCS) and the Canadian Army requested PSP Human Performance Research and Development (HPR&D) review the relevance of the Battle Fitness Test (BFT) as a fitness objective for the CA. Throughout this work, the physical demands of the BFT were directly measured and determined to be less than that required for Universality of Service, the development of the FORCE Evaluation followed by the entire CAF.

Specific to the CA, from 2008 to 2011, the HPR&D team monitored the physical demands of their training including multiple field data collections from Wainwright to Kuujuaq, an online survey with 851 Army respondents, post-mission interviews with CA members, as well as physiological data collected during three CA urban exercises. The results of this research concluded that 90% of current army operations took place in “built up” or urban environments.

In 2010, the HPR&D worked with the Infantry School in CFB Gagetown to develop an urban operations simulation including a casualty rescue from the third floor in a “town hall” building. The results of that simulation demonstrated that the BFT was not capturing the physical demands of an urban environment operation.

In recognition that the BFT is no longer reflective of current operations, the CA requested PSP HPR&D to advise the CA on a training objective within IBTS to replace the BFT/LFCPFS. There is still an operational need to include a loaded march wearing Battle Order, which CA doctrine indicates even at its minimum ammunition, and water requirements, is more than the originally proposed 24.5 kg load. In addition, there is the need for a simulation of an anaerobic/aerobic activity lasting 5–15 minutes wearing full fighting order (FFO) (Reilly et al., 2011; Reilly et al., 2013a).

A representative loaded march was determined to be 5 km in distance and the load increased to 35 kg to represent the Battle Order ensemble configuration. Following this, a 10 kg small pack is removed and the four tasks that make up the standard FORCE Evaluation; 20 metre rushes (20mR), sandbag lift (SBL), intermittent loaded shuttle (ILS), and sandbag drag (SBD), are performed as a circuit, while wearing Fighting Order (25 kg), which mirrors the energy used in simulated urban operations.

As with every new objective or evaluation, HPR&D performed reliability trials to determine if a learning effect exists and the results of these reliability trials demonstrated that participants reached peak performance by the 3rd or 4th trial, without significant further improvement (Reilly et al, 2016).

In FORCE combat training trials, three (3) months of training allowed participants who were initially unable to perform the assessment to complete it successfully. Training also demonstrated improved performance for participants at the end of every four (4) weeks of training, regardless of gender and including older individuals.

1.3 GENERAL

1.3.1 The FORCE combat procedures contained within this Operations Manual are to be administered to participants by their section/team commanders.

1.3.2 BTS are the criteria by which the Canadian Army evaluates its soldiers. These standards are the fundamental building blocks of collective training and provide the operational measure against which effectiveness and efficiency of collective training is gauged.

1.3.3 FORCE combat was designed to replicate the physical fitness demands of typical CA operational combat-related tasks as exemplified by CA operations conducted in various environments since the year 2000. It consists of a low intensity load bearing component and a short duration higher intensity component.

1.3.4 FORCE combat is conducted as follows:

1.3.4.1 A Load Bearing March of 5 km in Battle Order with C7/C8 rifle, magazines, helmet, frag vest, ballistic plates, and small pack. Total weight is approximately 35 kg divided between 25 kg Full Fighting Order (FFO) and 10 kg small pack.

1.3.4.2 A 5-minute break during which time the small pack will be removed.

1.3.5 The FORCE Evaluation as a circuit is completed as a continuous event with no breaks between individual events while wearing FFO consisting of C7/C8 rifle, magazines,

helmet, frag vest and ballistic plates but without the small pack. All CA soldiers will continue to conduct the annual CAF FORCE Evaluation in support of references CANFORGEN 038/13, Launch of new CAF Fitness Evaluation and CANFORGEN 052/16 CMP 031/16 291304Z MAR 16 CAF Fitness Profile, DAOD 5023-2 Physical Fitness Program; and DAOD 5023-1 Minimum Operational Standards Related to Universality of Service regardless of any other physical fitness evaluations or IBTS.

1.3.6 Effective as of 01 October 2017, the annual FORCE combat is applicable to the following CA team members:

1.3.6.1 Any member of the CAF permanently posted to a CA unit collecting Land Duty Allowance (LDA) will conduct FORCE Combat. This represents our field force who are, and will be operationally fit at all times.

1.3.6.2 Any member of the CAF permanently posted to a CA field force training institution (Combat Training Centre [CTC] Schools, Peace Support Training Centre [PSTC], Canadian Manoeuvre Training Centre [CMTC], and Army Training Centres) will conduct FORCE Combat. This represents the CA professional instructor cadre who will lead by example.

1.3.6.3 Any member of the CA deploying on a planned operation individually or as part of a formed unit will conduct FORCE Combat. The basis of FORCE Combat is operationally relevant physical fitness, which is essential for mission success and personal resiliency.

1.3.6.4 Any member of the CA or any non-CA member for whom FORCE Combat IBTS becomes applicable due to a posting or operational tasking must be afforded the opportunity to complete the FORCE Combat training program after they report for duty at their new unit and before they attempt the IBTS. The FORCE Combat training program is available to anyone via DFit.CA; its completion generally requires no specialized equipment or infrastructure.

1.3.6.5 Members of the Canadian Army Reserve are not mandated to complete the FORCE Combat IBTS unless employed on a Class B or C contract in a position stated in CAO 24-02 paragraphs 8(a) thru 8(c) would oblige them to complete the IBTS in which case paragraph 8(d) will apply.

1.3.6.6 CA members of static organizations with institutional roles and responsibilities that do not typically deploy, such as L1 and L2 HQ, are not mandated to complete FORCE Combat.

1.3.7 FORCE Combat will be considered normal CA IBTS that will be conducted, trained, and delivered at the platoon/troop/section level across the CA. CA section/team commanders will become proficient at leading training and supervising the conduct of FORCE Combat.

1.4 REFERENCES

1.4.1 The following orders, directives, and publications are associated with the CA IBTS Evaluations and this Operations Manual. The following Defence Administrative Orders and Directives (DAODs) can be found on the Defence Wide Area Network (DWAN) at

<http://www.forces.gc.ca/en/about-policies-standards-defence-admin-orders-directives/index.page>.

- 1.4.1.1 CANFORGEN 038/13 CDS 015/13 041728Z Mar 13 - Launch of New CAF Fitness Evaluation.
- 1.4.1.2 CANFORGEN 052/16 CMP 031/16 291304Z Mar 16 - CAF Fitness Profile.
- 1.4.1.3 CANFORGEN 108/17 Comd CA 004/17 291600Z Jun 17 - Promulgation of Canadian Army Orders 24-02.
- 1.4.1.4 DAOD 5023-2 Physical Fitness Program.
- 1.4.1.5 DAOD 5023-1 Minimum Operational Standards Related to Universality of Service.
- 1.4.1.6 CAO 24-02 – Canadian Army Physical Fitness.
- 1.4.1.7 VCDS General Safety Program, Volume 2, Chapter 39.
- 1.4.1.8 PSP Physical Fitness website: DFit.CA (www.dfit.ca).
- 1.4.1.9 4500-1 dated 25 Nov 15, Canadian Army Integrated Performance Strategy (CAIPS).
- 1.4.1.10 Mission: Ready, CAIPS website (www.strongproudready.ca).
- 1.4.1.11 Canadian Army Performance Triad (CAP3) (<http://strongproudready.ca/missionready/en/canadian-army-performance-triad-cap3/>).
- 1.4.1.12 General Safety program – General Safety Standards, Volume 2, Chapter 39.

1.5 REQUIREMENT AND RESPONSIBILITY

- 1.5.1 As directed in CAO 24-02, CA personnel are required to meet the Individual Battle Task Standard (IBTS).
 - 1.5.1.1 Directorate of Military Career Policy and Grievance (DMCPG): The Office of Primary Interest (OPI) for fitness policy covered under DAOD 5023-2, Physical Fitness Program.
 - 1.5.1.2 Canadian Army Doctrine and Training Centre (CADTC): The OPI for the CA Physical Fitness Programs.
 - 1.5.1.3 CFMWS / DFit: On behalf of the CA, acts as the primary advisor on all matters pertaining to CAF and CA physical fitness.
 - 1.5.1.4 Managers, Fitness and Sports (MFS) (or equivalent) and Senior Manager, PSP: Responsive to the needs of the Commanding Officers (COs) by planning and organizing CA physical training programs. They ensure protocols, as

described in the FORCE Program.

- 1.5.1.5 Chain of Command (CoC): The primary responsibility rests with the CoC to ensure that all CA personnel actively participate in a regular exercise program.
- 1.5.1.6 Commanding Officers: Responsible for fitness programs conducted in accordance with CAF policy and Command direction.
- 1.5.1.7 Designated FORCE combat Evaluators:
 - 1.5.1.7.1 PSP Fitness Staff: Responsive to their MFS to effectively assist and advise CAF personnel on the conduct of the FORCE combat Evaluation.
 - 1.5.1.7.2 Designated FORCE combat Evaluators: Responsive to their CoC to effectively conduct the FORCE combat Evaluation.
- 1.5.1.8 Health Care Provider: Advises the CoC on the medical aspects of physical training, including the capability of CAF personnel to participate in the FORCE combat and training programs.

2 FORCE COMBAT ADMINISTRATION

2.1 EVALUATION SCHEDULE

2.1.1 Evaluation schedules/booking procedures will vary by location.

2.2 PRE-EVALUATION INSTRUCTIONS FOR CAF MEMBERS

2.2.1 A minimum of 48 hours prior to FORCE combat being administered, the participant must be informed of the following guidelines, where they should not:

2.2.1.1 Exercise six hours prior to the evaluation;

2.2.1.2 Consume alcohol for at least six hours prior to the evaluation; and

2.2.1.3 Eat, smoke, chew smokeless tobacco, or take stimulants (tea, coffee, energy drinks, pharmaceuticals, etc.) at least two hours prior to the evaluation.

2.2.2 Non-compliance with the above instructions does not necessarily mean IBTS Evaluation postponement; however, participants must be informed that it may have a negative effect on their results.

2.2.3 Dress:

2.2.3.1 Battle Order shall be worn while conducting the 5 km Load Bearing March and Full Fighting Order (FFO) will be worn while completing the FORCE circuit. The specific weight of the equipment is not as important as the actual operational relevance of the equipment. It is normal for minor variations in weight to occur based upon the fact that smaller individuals will have, for example, smaller and lighter boots than will larger individuals.

2.2.3.2 Where equipment is unavailable, a substitution may be required mindful of the intent as noted in 2.2.3.1 above.

2.2.3.3 FFO is ~ 25 kg, worn on the torso and not in a rucksack, and consists of the following equipment:

Table 2-1. Full Fighting Order should be comprised of the following items. Distribution is discretionary (i.e., more water or magazines in substitution of a missing item). Listed here are approximate weights.

Approximate Mass	Equipment
3.0 kg	CADPAT clothing (including boots, pants, shirt)
1.5 kg	Helmet
4.7 kg	C7 or C8 rifle (including sling, C79 sight, magazine)
8.0 kg	Fragmentation vest (including front and rear ballistic plates)
4.5 kg	Tactical load bearing vest (including four full magazines, bayonet, 2 x grenades)
2.3 kg	NBCD mask and carrier
1.0 kg	1.0 litre (full) canteen/hydration

2.2.3.4 Battle Order is comprised of FFO and the addition of the small pack. Battle Order will be worn during the 5 km Load Bearing March. It shall weigh approximately 10 kg and represents water, additional ammunition, first aid supplies and mission essential kit. The small pack should not exceed 10 kg.

2.3 EVALUATOR RESPONSIBILITIES

2.3.1 Procurement and maintenance of sandbags for the conduct of the FORCE circuit portion of FORCE combat is a unit responsibility. CADTC, on behalf of the CA, will make every effort to annually procure and push replacement FORCE kits to CA Divisions, but local initiatives may be required in some instances. As this is in support of an IBTS, based upon operational relevance, the purpose of the equipment is more important than its physical appearance.

2.3.2 Local PSP Fitness Staff:

2.3.2.1 PSP kits required for CAF fitness activities should not be used by units to support CA FORCE combat IBTS.

2.3.2.2 A participant who is unsuccessful at meeting the FORCE combat IBTS will consult with PSP in collaboration with their chain of command in order to receive supportive training IAW the FORCE combat training plan(s) available at DFit.CA (www.dfit.ca).

2.3.2.3 Maintaining a neutral spine and proper knee alignment during the lifting movements are extremely important (see Tool 5: Back Injury Prevention for more information).

2.4 ENVIRONMENTAL CONDITIONS FOR THE EVALUATION

2.4.1 Cold or heat can exacerbate the physiological strain of exercise and thus may influence FORCE combat performance. The ideal exterior environmental conditions for

conducting the CA IBTS Evaluation FORCE combat has yet to be determined by evidence-based research. For the current time, it is not recommended to perform FORCE combat at an exterior Wet Bulb Globe Temperature (WBGT) above 19 degrees Celsius as per the interpretation of the VCDS General Safety Program, Vol 2, Chapter 39.

- 2.4.2 It is recognized that ideal environmental conditions may not always be attainable and the greatest risk for heatstroke exists during high intensity prolonged exercise (ACSM, 2014). FORCE combat is different from the BFT in that the fragmentation vest is now worn, which prevents heat loss.

2.5 EMERGENCY PROCEDURES

- 2.5.1 When FORCE combat is properly administered, there are minimal risks to the participant. Nevertheless, the CA in conjunction with their respective location's Standard Operating Procedures will develop an appropriate emergency protocol. In addition, the CA will ensure that:

- 2.5.1.1 All Evaluators are First Aid and Cardio-Pulmonary Resuscitation (CPR) qualified;
- 2.5.1.2 Evaluators have briefed all participants on safety requirements and emergency procedures prior to the start of FORCE combat; and
- 2.5.1.3 The location of the closest Automated External Defibrillator (AED) has been identified, when available.

NOTE: In the event of a physical incident, implement the procedures of your local Occupational Health and Safety Committee.

3 FORCE COMBAT SET-UP

3.1 GENERAL EQUIPMENT

3.1.1 The following are minimal equipment requirements for the conduct of FORCE combat per participant:

Table 3-1. FORCE combat Testing Equipment

Quantity	Equipment
1	25m in length by 3m wide flat floor surface to create a test lane
1	2m wide by 2m high sturdy and flat wall surface Between 3m and 15s from its associated test lane
10	FORCE 20 kg sandbags Spare sandbag, if possible
1	10 kg plate
1	FORCE strap
6	Carabiners
6 minimum 3	Pylons for the first lane Pylons for each subsequent test lane
1	Stopwatch
1	Measuring tape Minimum 10m in length
	Floor tape
1	Clipboard and pen
1	FORCE combat Data Collection Form: Locally produced, see Tool 4

3.2 EVALUATION CENTRE SET-UP

3.2.1 Because FORCE combat is administered by the CA and not PSP, it is recommended that local units consider their units lines and drill halls as possible locations for the circuit portion of the evaluation. Where possible, CA should consider establishing a common testing site for the CA personnel at their location. The ratio for FORCE combat administrators and participant should not exceed one administrator to two participants. If a FORCE combat administrator is supervising more than one participant, the second participant will need to be staggered by at least 15 minutes in order give the administrator time to accompany and escort each participant during the FORCE circuit.

3.2.2 Unique to FORCE combat, test lanes are established for the FORCE circuit portion of

the evaluation. Each participant is assigned to a test lane consisting of a 20 metre long straightaway used for the 20 metre Rushes, Intermittent Loaded Shuttle, and Sandbag Drag separated by no more than a 15 second transit to a Sandbag Lift set-up. This transit may not be obstructed by any hazards or other test lanes.

- 3.2.3 Prior to the administration of FORCE combat, the Evaluator(s) will complete a facility, equipment, and floor/ground inspection to eliminate any tripping/slipping hazards, equipment malfunctions, obstacles, inappropriate surfaces, and general safety risks.
 - 3.2.3.1 A 5 km march route must be established and clearly marked. Particular care should be taken to:
 - 3.2.3.2 Limit elevation changes;
 - 3.2.3.3 Have a consistent and hazard-free march surface; and
 - 3.2.3.4 Adapt to climatic/environmental conditions (i.e., dark pavement should be avoided in high heat and loose ground in the wet).
- 3.2.4 When there is any change that affects the integrity of the sandbags, the Evaluator(s) will calibrate all sandbags to 20 kg and if the difference is more than ± 0.2 kg, the Evaluator(s) will adjust the weight, as per detailed in Tool 1: Sandbag Filling Process and Tool 2: Sandbag Drag Surface Calibration.

NOTE: Surfaces to avoid are asphalt and concrete due to the damage they will cause to the sandbags.

3.2.5 FORCE combat Test Lane Set-up

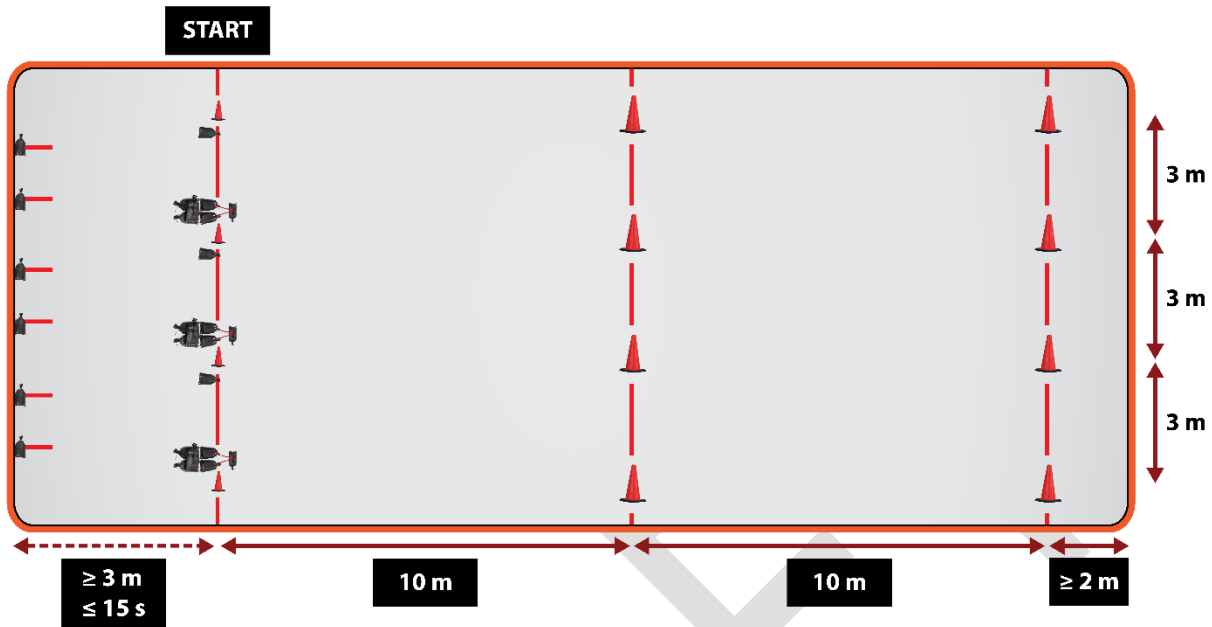


Figure 3-1. FORCE combat test lane set-up

3.2.5.1 Measure a 20 metre course over a flat and hard surface. Each lane should be a minimum of 3 metres wide. On either side of the test lane, place cones at both ends of the 20 metre lane and at the 10 metre mid-point. Where possible, mark each end of the 20 metre lane and the 10 metre mid-point with lines of floor tape. The first test lane requires six pylons to identify the space.

3.2.5.2 Each subsequent contiguous test lane requires an additional three pylons.

NOTE: You can use any colour tape to identify the lines, as long as it contrasts with the background.

3.2.5.3 Lay a 20 kg sandbag behind the start line beside one of the pylons marking the edge of the test lane.

3.2.5.4 Check the tie on the sandbag's "pigtail" to ensure it is tight and will not come loose during the evaluation.

3.2.5.5 Assemble a sandbag drag set-up (Figure 3-2) and place the sandbags in the test lane so that the front pair of sandbags is aligned with the start line and beside the opposite cone to the single sandbag from 3.2.5, above. The front pair of sandbags is always dragged with the tie side "pigtails" facing towards the participant.

- 3.2.5.5.1 Use four oval carabiners to secure the four dragging sandbags together by the eyelets.
- 3.2.5.5.2 Connect the outside eyelets of the front sandbags by looping the carabiner through the eyelets of the rear sandbags.
- 3.2.5.5.3 Connect the inside eyelets of the sandbags by crisscrossing the carabiners in order to stop sideways movement.
- 3.2.5.5.4 Feed the 3 metre strap around the handle of the sandbag that will be carried, so that the length of both ends is 1.54 metres.
- 3.2.5.5.5 Secure the ends of the straps to the carabiners and the handles of the two first sandbags that the participant will drag.



Figure 3-2. Sandbag Drag Kit Set-up

3.2.6 Sandbag Lift Set-up

- 3.2.6.1 A 2 metre wide by 2 metre high sturdy and flat wall surface, a minimum of 3 metres and a maximum of a 15 seconds transit from the start line of the FORCE combat test lane is required.
- 3.2.6.2 At a height of 1.0 metre, tape a 1.83 metre long line parallel to the floor.
- 3.2.6.3 At 0.25 metre from either end of the 1.83 metre horizontal line, place two lines extending upwards 1.54 metre from the floor. Extend those lines to the floor to a minimum of 1.0 metre from the wall.

NOTE: You can use any colour tape to identify the lines, as long as it contrasts with the background.

- 3.2.6.4 Check the ties on the sandbag's "pigtails" to ensure they are tight and will not come loose during the evaluation.

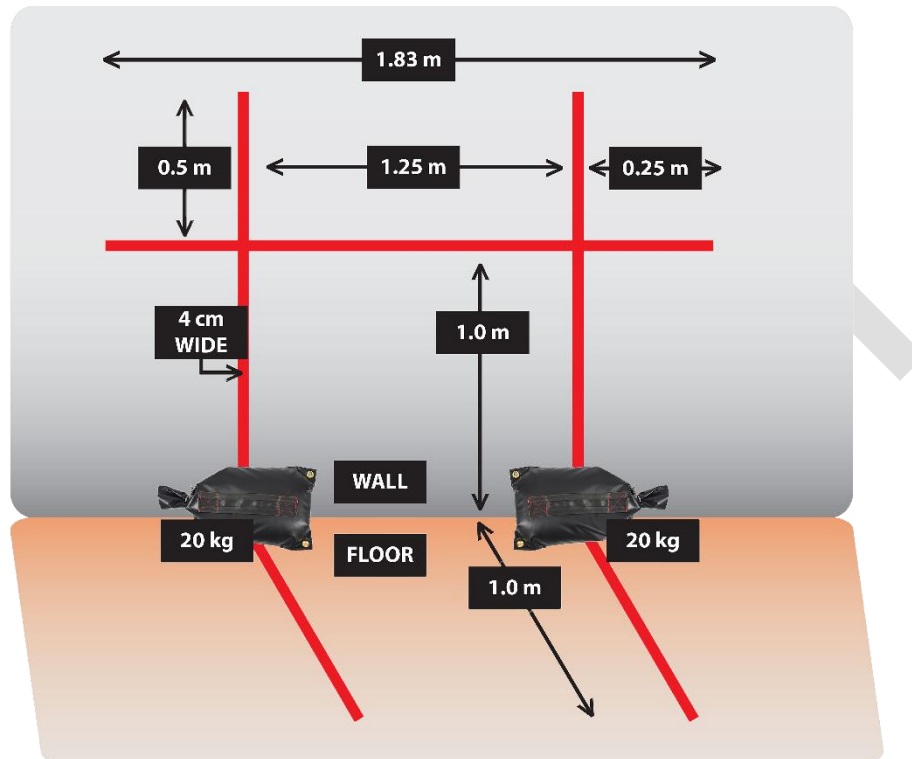


Figure 3-3. Sandbag Lift Station Measurements

4 FORCE COMBAT PROCEDURES

4.1 OVERVIEW

Typically, the training and execution of FORCE combat will be at the section/team level. PSP staff are available for support and expertise but the expectation is the CA Chain of Command owns and is responsible for training and execution as per normal IBTS. A video and manual depicting the conduct of FORCE combat will be available at the PSP Physical Fitness Website: DFit.CA (www.dfit.ca).

4.1.1 FORCE combat shall be conducted as follows:

- 4.1.1.1 Upon arrival, participants will be instructed on the requirements of FORCE combat.
- 4.1.1.2 Participants will be weighed in wearing their CADPAT, boots, helmet, fragmentation vest with plates, tactical vest and have their weapon – all of which should total 25 kg above their body mass. If not, they should add supplemental weight to the tactical vest. Of note, the specific weight of the equipment is not as important as the actual operational relevance of the equipment. It is normal for minor variations in weight to occur based upon the fact that smaller individuals will have, for example, smaller and lighter boots than will larger individuals.
- 4.1.1.3 After weighing the participant with FFO (25 kg), next weigh the small pack – this should weigh a total of 10 kg inclusive of the bag.

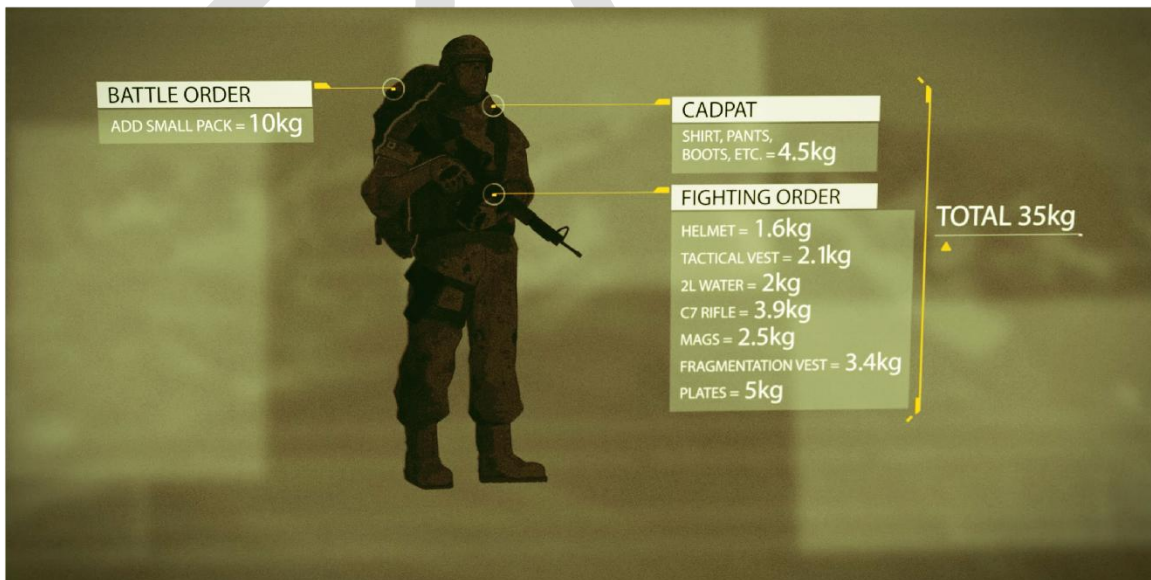


Figure 4-1. Battle Order

- 4.1.1.4 A 5 km Load Bearing March will be done in no more than 60 minutes, but not

less than 50 minutes. All equipment noted at 2.2.3 shall be worn. The purpose of this time bracket is to impose a realistic pace of movement but prevent “racing” that could lead to injury.

- 4.1.1.5 Immediately following the Load Bearing March, there will be a five minute break during which the small pack shall be removed.
- 4.1.1.6 Immediately following the five minute break, participants will conduct the normal FORCE circuit while wearing all equipment noted at 2.2.3.



Figure 4-2. Full Fighting Order

- 4.1.1.7 The FORCE combat circuit is a continuous timed event in which each of the four (4) events are completed without any pause. The time starts at the start of the 20 metre Rushes and ends once the Sandbag Drag is completed. The order shall be 20 metre Rushes, Sandbag Lift, Intermittent Loaded Shuttle, and finally Sandbag Drag. The rifle will be carried during the 20 metre Rushes and will be slung for all other events.
 - 4.1.1.7.1 The goal is to complete the FORCE combat circuit. Individual events within the circuit are not timed and there are no breaks between events.

Table 4-1. FORCE combat test order

Task	Standard	Dress
5 km Load Bearing March	50–60 minutes	35 kg Battle Order as listed at 2.2.3.4 and Figure 4-1
Mandatory rest period	5 minutes	25 kg Full Fighting Order as listed at 2.2.3.3 (Table 2-1 and Figure 4-2
FORCE circuit: <ul style="list-style-type: none"> • 20 metre Rushes • Sandbag Lift • Intermittent Loaded Shuttle • Sandbag Drag 	Completion 15 minutes or less	25 kg Full Fighting Order as listed at 2.2.3.3 (Table 2-1 and Figure 4-2

4.1.2 All CA team members will conduct FORCE combat training prior to attempting FORCE combat for the first time and will be medically fit.

4.2 INFORMATION BRIEFING

4.2.1 Before the warm-up and movement preparation, the FORCE combat Evaluator(s) will provide a clear explanation of each task using the provided scripts (see section 5). The Evaluator will also provide an overview highlighting the prescribed 5 km route, ideal technique, the mandatory rest requirement of five minutes, the Emergency Action Plan (EAP), and provide an opportunity for participants to ask questions about the evaluation.

4.2.2 During the explanation, an assistant (if available) will demonstrate each task as mentioned in the scripts. The assistant demonstrating the tasks must be physically capable of precisely conducting each evaluation protocol while:

4.2.2.1 Maintaining a neutral spine and proper knee alignment during the movements (see Tool 5: Back Injury Prevention for more information);

4.2.2.2 Conducting the task at an appropriate pace for demonstrating a protocol; and

4.2.2.3 Maintaining various isometric positions within the protocol for explanatory purposes.

4.2.3 The demonstration will include a minimum of:

4.2.3.1 40 metres of the 20 metre Rushes;

4.2.3.2 Four Sandbag Lifts;

4.2.3.3 One Intermittent Loaded Shuttle; and

4.2.3.4 10 metres of the Sandbag Drag.

4.3 EVALUATION PROCEDURES

4.3.1 5 km Load Bearing March Protocol:

- 4.3.1.1 Participants will conduct a 5 km Load Bearing March along a pre-established and clearly marked route. This route should limit elevation changes and have a consistent and hazard-free march surface.
- 4.3.1.2 The 5 km Load Bearing March will be completed in Battle Order, as listed at 2.2.3.4, in a time of between 50 and 60 minutes.
- 4.3.1.3 Participants will carry their weapon in low ready for the duration of the Load Bearing March and the 20 metre Rushes. The weapon will be slung for all other events.
- 4.3.1.4 Participants will not wear a musical device while conducting the FORCE combat (i.e., MP3 player, earphones/buds, or carrying a speaker).
- 4.3.1.5 Participants will wear their helmet at all times during FORCE combat. During the 5 minute rest period, the helmet may be removed for cooling purposes.

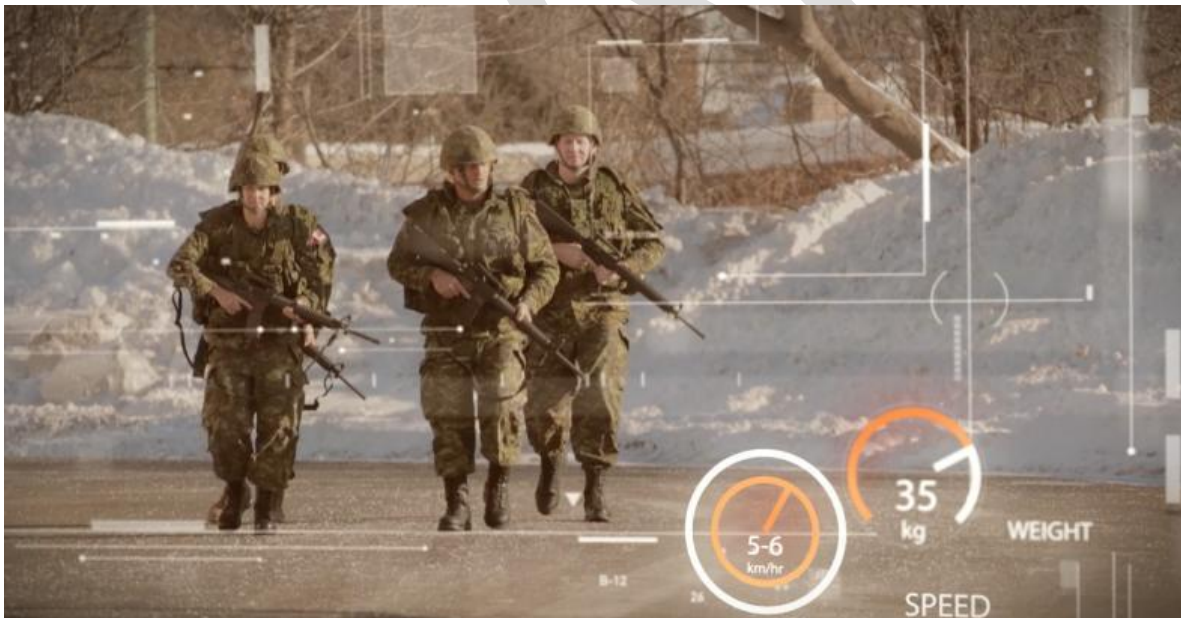


Figure 4-3. Load Bearing March Demonstration

4.3.2 Mandatory Rest Period:

4.3.2.1 Following the 5 km Load Bearing March, the Evaluator starts a 5 minute timer for the rest period. The participant shall remove their 10 kg small pack and rest/recover before preparing for the 20 metre Rushes.

4.3.2.2 The participant should use this time to rehydrate after the march.

4.3.2.3 With sufficient time to transit to the start line of the 20 metre test lane, the Evaluator will prompt the participant that the rest period has elapsed and direct them to their test lane.

4.3.3 20 metre Rushes Protocol:

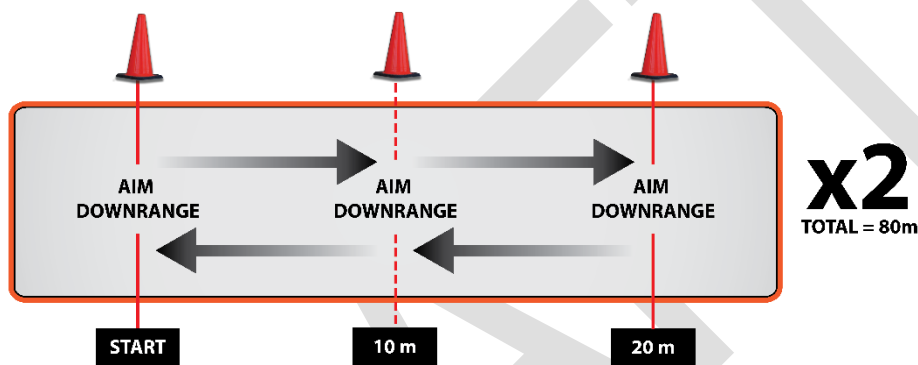


Figure 4-4. 20 metre Rushes Distances

4.3.3.1 The participant starts by lying on the floor in the prone position at the start line of the 20 metre course. The participant lies facing the opposite end, with their shoulders and hands behind the start line. The participant is encouraged to point their C7/C8 downrange.



Figure 4-5. 20 metre Rushes Prone Position Demonstration

4.3.3.2 Once both the Evaluator and the participant are ready, a 3 second countdown is started by the Evaluator who counts aloud "3, 2, 1, GO". On the "GO"

command, the Evaluator starts the stopwatch and the CA Personnel gets up off the floor and moves to the 10 metre line with their C7/C8 in low ready.



Figure 4-6. 20 metre Rushes Low Ready Movement Demonstration

- 4.3.3.3 At the 10 metre line, the participant touches one foot on or over the line.
- 4.3.3.4 The participant then gets down into the prone position, perpendicular to the line, with shoulders facing forward on or behind the line, chest on the ground, and hands on their C7/C8.
- 4.3.3.5 Once in the prone position, and perpendicular to the line, the participant is encouraged to point their C7/C8 downrange, although this is not a requirement.
- 4.3.3.6 The participant must then get up and move another 10 metres to the 20 metre line with their C7/C8 in low ready. At the 20 metre line, the participant touches one foot on or over the line.
- 4.3.3.7 The participant then gets down into the prone position, perpendicular to the line, with shoulders facing forward on or behind the line, chest on the ground, and hands on their C7/C8.
- 4.3.3.8 Once in the prone position, and perpendicular to the line, the participant is encouraged to point their C7/C8 downrange, although this is not a requirement.

- 4.3.3.9 The participant then gets up, turns around, and moves back to the 10 metre line. The participant repeats steps 4.3.3.3 through 4.3.3.8 a total of four times until they have covered 4 x 20 metres.
- 4.3.3.10 When the participant's foot is on or crosses over the 20 metres line after completing 80 metres, the participant slings their C7/C8 and moves as quickly as possible to the Sandbag Lift station of the FORCE circuit.

4.3.4 Sandbag Lift Protocol:

- 4.3.4.1 Immediately upon arriving at the Sandbag Lift station, the participant slings their C7/C8 and faces the wall so that the line on the ground is positioned between both feet. They then pick up the first sandbag with two hands and lift the sandbag to touch the midline on or above the intersecting lines at 1.0 metres above the ground. If the sandbag is not horizontal when it touches the wall, the bottom of the sandbag must clear the 1.0 metre line on the wall.
 - 4.3.4.1.1 The participant may lift the sandbag using the “pigtail”.
 - 4.3.4.1.2 The participant may not lift the sandbag using the straps or metal eyelets.



Figure 4-7. Sandbag Lift Demonstration

- 4.3.4.2 Once the participant touches the sandbag's midline on or above the intersecting lines on the wall, they can release the sandbag and let it fall to the floor.
- 4.3.4.3 The participant then shifts sideways so that the other line on the ground is positioned between both feet.
- 4.3.4.4 The participant picks up the second sandbag and touches the sandbag's

midline on or above the intersecting lines on the wall before releasing it and shifting sideways back to the first vertical line and the first sandbag.

- 4.3.4.5 The participant must not throw the sandbag at the wall. They must have contact with the sandbag when it touches the wall. The participant is permitted to set the sandbag down at any point to rest. However, their recorded time will continue to elapse during this time.
- 4.3.4.6 A total of 30 lifts are required before the participant progresses to the Intermittent Loaded Shuttle station. Improper lifts will not count and the Evaluator will count lift repetitions aloud for the participant.
- 4.3.4.7 When the participant releases the sandbag after the 30th proper lift, they return to their 20 metre lane for the Intermittent Loaded Shuttle station of the FORCE circuit.

4.3.5 Intermittent Loaded Shuttle Protocol:

- 4.3.5.1 Immediately upon arriving back at the start line, the participant, with C7/C8 still slung, picks up the single sandbag and proceeds at a walk (one foot must remain in contact with the floor at all times) the length of the 20 metre test lane.



Figure 4-8. Intermittent Loaded Shuttle Demonstration 1

- 4.3.5.2 The participant then turns around the pylon at the end of the 20 metre lane

and returns back to the start line.

- 4.3.5.3 The participant must place at least one foot on or over the start line before dropping the sandbag behind the line (outside the 20 metre test lane).



Figure 4-9. Intermittent Loaded Shuttle Demonstration 2

- 4.3.5.4 If the participant does not place at least one foot on or over the start line, they must immediately return to touch or cross the start line before continuing. If the participant drops the sandbag inside the 20 metre zone, they must immediately pick up the sandbag and drop it behind the start line. They must meet these requirements in order to complete this protocol.
- 4.3.5.5 The participant must not throw the sandbag.
- 4.3.5.6 Once the participant has dropped the sandbag past the start line, they must perform an unloaded trip to the opposite end of the 20 metre course and return to the start line.
- 4.3.5.7 The participant alternates loaded and unloaded shuttles for a total of five sets (each set equals the combination of one loaded shuttle and one unloaded shuttle) and covers a total distance of 400 metres.
- 4.3.5.8 The participant is permitted to set the sandbag down at any point to rest. However, their recorded time will continue to elapse during this time.
- 4.3.5.9 The participant can carry the sandbag using any safe carrying technique including the use of the straps or “pigtail”.

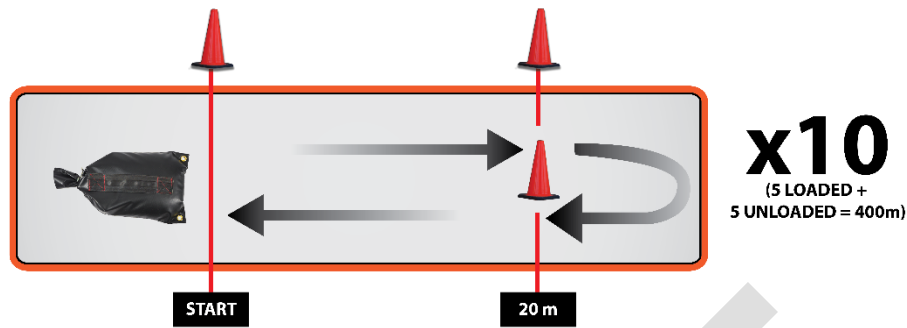


Figure 4-10. Intermittent Loaded Shuttle Distances

4.3.5.10 Running or doubling is permitted during the unloaded trips ONLY.

4.3.5.11 After completing the 400 metres of the Intermittent Loaded Shuttle, the participant will touch the start line of the test lane with their foot and then immediately pick up the “carry” sandbag of the drag set-up.

4.3.6 Sandbag Drag Protocol:

4.3.6.1 With the C7/C8 slung, the participant positions the “carry” sandbag in a cradle carry (hands underneath, fingers may be laced or crossed) and adjusts the sandbag in their arms to ensure that the straps from the “carry” sandbag are pointing downwards. The participant then walks backwards until the straps are taut.



Figure 4-11. Sandbag Drag Demonstration 1

4.3.6.2 The participant then starts to drag the sandbags and must continue without purposefully stopping until they have completed the 20 metre drag.

- 4.3.6.3 If the participant falls or loses control of the “carry” sandbag before completing the 20 metre drag, they are to re-establish the body position from 4.3.6.1 and continue the Sandbag Drag from their current location.
- 4.3.6.4 Once the main body of the first row of “dragging” sandbags crosses the 20 metre finish line, the Evaluator calls “Clear” and stops the stopwatch.



Figure 4-12. Sandbag Drag Demonstration 2

4.3.7 Recording and Reporting:

- 4.3.7.1 Evaluators are responsible for recording the participant’s 5 km Load Bearing March and FORCE circuit time in minutes and seconds.
- 4.3.7.2 If the participant is unable to begin the FORCE circuit because they either did not complete the 5 km Load Bearing March between 50 and 60 minutes or withdrew during the 5 minute rest period, the Evaluator will record “DNS” for “Did Not Start”.
- 4.3.7.3 If the participant starts the FORCE circuit but is unable to complete the circuit for any reason, the Evaluator will record both the time that the participant withdrew and “DNF” for “Did Not Finish”.
- 4.3.7.4 Times will be recorded by units using the form found in Tool 4 of this document. The participant’s completion is to be submitted to HRMS or Monitor Mass so that it reflects CA personnel IBTS status. The Unit Training Staff shall complete this.
- 4.3.7.5 In addition to the data collection reporting tool used to capture the IBTS operationally ready personnel, there should also be a locally developed tool for

collecting information on training conducted and equipment concerns. There is a requirement for data collection to access validation.

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5 FORCE COMBAT SCRIPTS

5.1 WELCOME

- 5.1.1 Evaluator(s) will welcome the participant as follows:
- 5.1.1.1 Welcome to your FORCE combat evaluation. This annual physical fitness check constitutes an IBTS and replaces the LBM.
 - 5.1.1.2 During the LBM there will be a safety vehicle following behind the last marcher. If you encounter a problem, you are asked to move over to the right-hand side of the road and remove your small pack. In the event of an emergency, while conducting the FORCE combat we will use the closest exit to safely evacuate the building.
 - 5.1.1.3 If you have any injuries, please inform an Evaluator before you begin.
 - 5.1.1.4 If you need to use the restroom during your Evaluation, please inform an Evaluator so they are aware.
 - 5.1.1.5 The FORCE combat is made up of three main components.
 - 5.1.1.6 The first is a 5 km Load Bearing March, wearing Battle Order, to be done in no more than 60 minutes but not less than 50 minutes. The purpose of this time bracket is to impose a realistic pace of movement but prevent “racing” that could lead to injury. For FORCE combat, Battle Order is defined as Full Fighting Order plus a small pack weighing 10 kg and represents water, additional ammunition, first aid supplies and mission essential kit. I will define FFO momentarily. You will carry your weapon in low ready for the Load Bearing March. You are permitted to drink freely.
 - 5.1.1.7 Immediately following the 5 km Load Bearing March, there will be a five minute break during which you can remove the small pack, and you will be encouraged to drink water. You may remove your helmet for cooling purposes.
 - 5.1.1.8 Immediately following the five minute break, you will perform the FORCE Evaluation as a continuous circuit, while wearing your FFO of 25 kg.
 - 5.1.1.9 The circuit is a continuous, timed event and time starts at the start of the 20 metre rushes and ends once the sandbag drag is completed. The order shall be 20 metre Rushes, Sandbag Lift, Intermittent Loaded Shuttles, and finally Sandbag Drag. You will carry your rifle in low ready during the 20 metre rushes and then it will be slung for the remainder of the circuit.
 - 5.1.1.10 The goal is to complete the FORCE combat circuit in a continuous manner with no more than 15 seconds between events for transition. There is a 15 minute limit to complete the FORCE combat circuit, and unlike the FORCE test, individual events are not timed.

5.1.1.11 FFO is 25 kg and can consist of the following equipment:

- CADPAT clothing to include boots, pants, shirt;
- Helmet;
- C7/C8 rifle, sling, C79 sight, magazine;
- Fragmentation vest with front and rear ballistic plates;
- Tactical load bearing vest with four full magazines, bayonet, 2 x grenades;
- NBCD Mask and Carrier; and
- Full 1.0 litre Canteen/hydration.

5.1.1.12 Where equipment is unavailable, a substitution may be required mindful of the operational intent.

5.1.1.13 Before you start the 5 km Load Bearing March, we will weigh you in your Full Fighting Order. If needed, we will adjust your load to meet the 25 kg requirements based on your self-reported body weight.

5.1.1.14 We will then add your day bag and adjust its weight to be 10 kg.

5.2 5 KM LOAD BEARING MARCH

5.2.1 The Evaluator(s) will describe the 5 km Load Bearing March to the participant as follows:

5.2.1.1 In your Battle Order, you will conduct the 5 km Load Bearing March along a pre-established and clearly marked route in 50 to 60 minutes. This route has been selected to be consistent and hazard-free.

5.2.1.2 You will carry your weapon in low ready.

5.2.1.3 You cannot wear headphones or ear buds while performing the FORCE combat.

5.2.1.4 During the 5 minute rest period, you may remove your helmet for cooling purposes.

5.3 20 METRE RUSHES

5.3.1 The Evaluator(s) will describe the 20 metre Rushes to the participant as follows:

5.3.1.1 You must cover a total distance of 80 metres with your weapon in low ready.

5.3.1.2 Running or doubling is authorised for this activity.

5.3.1.3 You will start by lying on the floor in the prone position at the start line of the 20 metre test lane facing the opposite end, with your shoulders and hands behind the start line. You are encouraged to point your C7/C8 downrange.

- 5.3.1.4 Once both you and your Evaluator are ready, a 3 second countdown is started by the Evaluator who counts aloud “3, 2, 1, GO”. On the “GO” command, the Evaluator will start the stopwatch and you will get up off the floor and move to the 10 metre line with your C7/C8 in low ready.
- 5.3.1.5 At the 10 metre line, you will touch one foot on or over the line.
- 5.3.1.6 You will then get down into the prone position, perpendicular to the line, with shoulders and hands facing forward on or behind the line, and your chest on the ground.
- 5.3.1.7 Once in the prone position, and perpendicular to the line, you will point your C7/C8 downrange, although this is not a requirement.
- 5.3.1.8 You will then get up and move another 10 metres to the 20 metre line. At the 20 metre line, you will touch one foot on or over the line.
- 5.3.1.9 You will then get down into the prone position, perpendicular to the line, with shoulders and hands facing forward on or behind the line, and your chest on the ground.
- 5.3.1.10 Once in the prone position, and perpendicular to the line, you will point your C7/C8 downrange, although this is not a requirement.
- 5.3.1.11 Then you will get up, turn around, and move back to the 10 metre line. You will repeat the sequence until you have covered the 80 metres of two down and back trips.
- 5.3.1.12 When your foot is on or crosses over the 20 metre line after completing 80 metres, you will sling your C7/C8 and move as quickly as possible to the Sandbag Lift station of the FORCE circuit.

5.4 SANDBAG LIFT

- 5.4.1 The Evaluator(s) will describe the Sandbag Lift to the participant as follows:
 - 5.4.1.1 Immediately upon arriving at the Sandbag Lift station, sling your weapon and face the wall so that the line on the ground is positioned between your feet. You will then pick up the first sandbag with two hands and lift the sandbag to touch the midline on or above the intersecting lines at 1.0 metre above the ground. If the sandbag is not horizontal when it touches the wall, the bottom of the sandbag must clear the 1.0 metre line on the wall. You can lift the sandbag using the “pigtail” but not the strap or the metal eyelets.
 - 5.4.1.2 Once you touch the sandbag’s midline on or above the intersecting lines on the wall, release the sandbag and let it fall to the floor.
 - 5.4.1.3 You will then shift sideways so that the other line on the ground is positioned between your feet.
 - 5.4.1.4 Pick up the second sandbag and touch the sandbag’s midline on or above the

intersecting lines on the wall before releasing it and shifting sideways back to the first vertical line and the first sandbag.

- 5.4.1.5 You must not throw the sandbag at the wall. You must have contact with the sandbag when it touches the wall.
- 5.4.1.6 A total of 30 good lifts are required before you can move on to the Intermittent Loaded Shuttle station. Improper lifts will not count and the Evaluator will count each good repetition.
- 5.4.1.7 After the 30th good lift, you will return to the 20 metre lane for the Intermittent Loaded Shuttle station of the FORCE circuit.
- 5.4.1.8 The Intermittent Loaded Shuttle is completed with your C7/C8 still slung.

5.5 INTERMITTENT LOADED SHUTTLE

- 5.5.1 The Evaluator(s) will describe the Intermittent Loaded Shuttle to the participant as follows:
 - 5.5.1.1 You must cover a total distance of 400 metres with your weapon slung. A total of 10 shuttles, alternating between five return lengths with the sandbag and five return lengths without.
 - 5.5.1.2 To start, you can pick up and carry the sandbag using any safe technique including the straps or “pigtail”.
 - 5.5.1.3 When carrying the sandbag, you must walk. This means that you will have one foot in contact with the floor at all times. You will place at least one foot on or over the start line before dropping the sandbag behind the line (outside the 20 metre zone).
 - 5.5.1.4 You must not throw the sandbag.
 - 5.5.1.5 Once you have dropped the sandbag past the start line, you must perform an unloaded trip to the opposite end of the 20m course, travel around the cone, and return back to the start line.
 - 5.5.1.6 Running or doubling is authorised for this activity for the unloaded trips ONLY.
 - 5.5.1.7 You are permitted to set the sandbag down at any point to rest. However, your recorded time will continue to elapse during this time.
 - 5.5.1.8 After you touch or cross the line for the last time, you will be directed to the Sandbag Drag.
 - 5.5.1.9 The Sandbag Drag is completed with your C7/C8 still slung.

5.6 **SANDBAG DRAG**

5.6.1 The Evaluator(s) will describe the Sandbag Drag to the participant as follows:

- 5.6.1.1 With your C7/C8 still slung, you will pick up the “carry” sandbag in a cradle carry (hands underneath) and adjust the sandbag in your arms to ensure that the straps from the “carry” sandbag are pointing downwards. You will then walk backwards until the straps are taut.
- 5.6.1.2 You must not use the “carry” sandbag handles or straps to drag the sandbag.
- 5.6.1.3 You must move backwards and must drag the sandbags to the opposite end of the 20 metre course. Once the main body of the first row of “dragging” sandbags crosses the finish line, the clock will be stopped and the time recorded.

6 OUTILS

6.1 TOOL 1 – SANDBAG FILLING PROCESS

NOTE: As recommended by Preventative Medicine, please avoid the use of sand containing silica (silicon dioxide). Workplace Hazardous Materials Information System (WHMIS) classifies silica as D2A – Very Toxic (Carcinogenicity). The health hazards associated with this product include cancer through chronic inhalation, respiratory irritation, damage to lungs through prolonged or repeated inhalation, and eye irritation.

Please ensure that the sand you purchase and use to fill the sandbags is “playground” sand, and free of silica. Request a Safety Data Sheet (SDS) or Material Safety Data Sheet (MSDS).

We recommend that you take time to inform yourself and your staff on the implications of silica by using the following links:

About Silica: http://www.ccohs.ca/oshanswers/chemicals/chem_profiles/quartz_silica.html

WHMIS 2015 – Safety Data Sheet:

https://www.ccohs.ca/oshanswers/chemicals/whmis_ghs/sds.html

Globally Harmonized System (GHS): <http://www.ccohs.ca/oshanswers/chemicals/ghs.html>

Should you have any questions or concerns on this topic, please contact your local Preventative Medicine Advisor.

Complete the following steps to properly fill the FORCE sandbags:

1. Insert the plastic inner sleeve into the black outer sleeve;
2. Place 20 kg of playground sand (see note above) inside the plastic inner sleeve;
3. Weigh the sandbag with a calibrated floor scale. The weight must be 20 kg, plus or minus 0.2 kg;
4. Remove the air from the plastic inner bag;
5. Twist the top of the plastic inner bag and seal it with duct tape; and
6. Feed the rope through the loops and tie off the sleeve tightly.



6.2 TOOL 2 – SANDBAG DRAG SURFACE CALIBRATION

SANDBAG DRAG

1. This component of the FORCE Evaluation has a strong predictive relationship with the common operational task of extricating a casualty from a vehicle. The performance standard is based on this predictive relationship and equates to safely removing a CAF personnel of average weight.

Research

2. Dragging four sandbags across a foam mat surface requires a minimal force of 330N (33.6 kg / 75 lbs) and is linked with the performance standard for the Vehicle Extrication task of an 86 kg (~190 lb) casualty rescue. Various sandbag configurations have been tested to ensure 330N is maintained across the most common indoor testing surfaces.

Approved Surfaces

3. To be appropriate for a valid FORCE Evaluation, the chosen surface should be clean, dry, hard, flat, smooth, and uniform across a 25 m section. Hardwood gym floors, polished concrete floors, rubber cushioned flooring, vinyl tile, taut vinyl mats and rubberized tracks have all been tested and approved for use with minor weight modifications to ensure a consistent drag force.

Adjustments

4. Additional weight may need to be added to achieve the required drag force. The force required to move the sandbags is much less than the weight added and therefore adding full sandbags and / or 10 kg Olympic plates should be sufficient for all approved surfaces.

Surfaces to Avoid

5. Carpets, rough concrete, asphalt, grass, and ceramic tile have not been approved because the force is too variable or causes significant damage to the sandbag's fabric.
6. Alternative options are being researched and additional suggestions will be considered.

Additional Variables

7. In addition to selecting an appropriate testing surface, Evaluators need to be aware of the other factors that could significantly influence the physical demand of the drag.
 - a. Temperature / humidity
 - b. Degradation in the sandbag or floor surface
 - c. Peeling floor tape
 - d. Water leaks or spills
 - e. Uneven floor surface

Scale

8. The Heys xScale Luggage Scale is the approved calibration tool for the FORCE evaluation sandbag drag.

Calibration

9. Prior to each FORCE evaluation session, the sandbag drag task must be calibrated. Complete the following steps to ensure proper calibration:
 - a. A visual check of the evaluation area;
 - b. Verify that the Heys xScale Luggage Scale is in good working order and accurately measures the weight of a 20 kg sandbag (compare values with calibrated sandbag weighing scale);
 - c. Ensure the sandbags used for the drag have been calibrated to a weight of 20 kg (+/- 0.2 kg) and are properly connected to one another, as outlined in **Chapter 3: FORCE combat Set-Up**;
 - d. Hook the Heys xScale to the red straps that connect the sandbags;

NOTE: The carrying sandbag is not attached during the calibration of the sandbag drag.



- e. Drag the sandbags **SLOWLY** (i.e., the bags should barely move) while holding the Heys xScale 1 metre from the ground until you obtain a stable reading;

NOTE: The image below shows how to hold the Heys xScale. You must use the two-handed method. Ensure the link, which attaches the scale hook to the scale, is straight when using the scale. If not, this will adversely affect the calibration process.



- f. Ideally, the Heys xScale will beep once a stable signal has been detected;
- g. To accurately replicate the minimum drag force required for a valid FORCE Evaluation, the Heys xScale screen should read **33.6 kg (+/- 1 kg)**; and
- h. Record the measurement on **Tool 3 – Calibration Log**.

NOTE: Environmental conditions, such as high humidity, and/or continued, repetitive use of the drag equipment, such as the evaluation of large groups, may have an effect on the calibration. In these instances, the lead Evaluator may be required to recalibrate the SBD during the evaluation to ensure that every participant is evaluated under the same conditions.

Record Keeping

10. Keep a record of all calibration measurements, weather conditions, surfaces used and any adjustments for official FORCE evaluations using the above mentioned **Tool 3 – Calibration Log**.

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6.4 TOOL 4 – DATA COLLECTION FORM

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Formulaire de Résultats FORCE combat Results Form

Participant 1	<p><u>SN / NM</u></p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px;"></td><td style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px;"></td><td style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px;"></td><td style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px;"></td><td style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px;"></td><td style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px;"></td><td style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px;"></td><td style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px;"></td><td style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px;"></td><td style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px;"></td></tr> <tr><td style="border: 1px solid black; 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6.5 TOOL 5 – BACK INJURY PREVENTION

UNDER DEVELOPMENT

DRAFT