



## Prison Officer Fitness Testing

John Brewer, Kevin Wyld, Sarah Pike and Rachel George

Standards for prison officer fitness were introduced in 2001 as part of the Job Related Fitness Assessment (JRFA). From this point, all new recruits were subject to the JRFA to ensure a minimum standard of fitness for the job, the key element of which was the Multi Stage Fitness Test (MSFT), or 'bleep' test. This study reports on the appropriateness of the minimum fitness levels that have been set and maintained for the MSFT. Of particular interest is whether there is sufficient evidence that the standards are fit for purpose, and whether they comply with the physical demands of the role. Heart rate monitors were used to measure the aerobic demands during the MSFT, as well as participation in routine work-based activities for 135 individual officers in different roles.

### Key findings

- Across 20 HMP sites in a 5 month period, an opportunity sample of 135 prison officers completed their annual 15 metre MSFT up to the minimum standards for band 3 and 4 prison officers, Control and Restraint (C&R) discipline officers, and for C&R advanced officers.
- The 93 prison officers completing the MSFT at the standard minimum level reached an average maximum heart rate of  $173 \pm 14$  bpm. After a period of recovery, the officers subsequently completed a routine shift. Average maximum heart rate was  $137 \pm 21$  bpm during the shift. The fitness level required to complete the MSFT at the standard minimum level exceeded the maximum required for the role.
- For the 21 C&R discipline officers completing the MSFT at the standard minimum level, an average maximum heart rate during the MSFT was reached of  $180 \pm 10$  bpm. This was higher than those achieved in three simulated C&R incidents (average maximums of  $171 \pm 26$  bpm;  $169 \pm 22$  bpm; and  $176 \pm 16$  bpm). These findings indicate that the standard minimum level adequately meets the demands of the C&R discipline officer role.
- For the 21 C&R advanced officers, an average maximum heart rate during the MSFT standard minimum level was reached of  $169 \pm 15$  bpm. This was higher than that achieved in a simulated riot situation (average maximum of  $165 \pm 12$  bpm). These findings indicate that the standard minimum level adequately meets the demands of the C&R advanced officer role.
- These findings support the maintenance of the standard levels set for the MSFT for the tested roles. These levels adequately benchmark the fitness levels required for performing the activities of the prison officer role.

The views expressed in this Analytical Summary are those of the author, not necessarily those of the Ministry of Justice (nor do they reflect government policy).

## Background

After the publication of the National Audit Office report on Managing Sickness Absence in the Prison Service in 1999<sup>1</sup> there was a commitment to improve prison officer fitness. This commitment was supported by the statutory duty, under the Health and Safety at Work Regulations, to risk assess the requirements of the work and to ensure that those undertaking the work were meeting these requirements, including the physical demands of the job. In response to this need the Prison Service established a minimum level of fitness for uniformed staff. This was outlined in the Staff Fitness Strategy in 2001<sup>2</sup>, which included the introduction of a Job Related Fitness Assessment (JRFA) for all new recruits entering the prison service.

All prison officers in bands 3, 4 and 5 (operational / uniform grades) were required to participate in a fitness assessment on an annual basis.<sup>3</sup> The JRFA consisted of 5 main elements: i) the multi-stage fitness test (MSFT) or bleep test; ii) a grip test; iii) a dynamic upper body strength test; iv) a speed agility (running and changing direction) test and; v) the shield test (holding a shield in a functional position). Different pass rates for the JRFA have been set for different operational roles. An adjusted test was also introduced for cases where an occupational health assessment identified an underlying condition that required adjustment to prevent unfairly disadvantaging individual employees.

For the key component of the JRFA, the MSFT, minimum pass level standards were set for operational roles based on the number of shuttle runs completed along a 15 metre track, arriving at each end line in time for a series of audio bleeps. At the end of each level, the time interval between each bleep decreases requiring a faster run to keep in time. For band 3 and 4 prison officers, and for those in Control and Restraint (C&R) discipline officer roles, completing 4 shuttle runs on level 5 (i.e. 5.4 on the bleep test) was the standard minimum level required. For C&R advance officers, completing 2 shuttle runs on level 7 (i.e. 7.2 on the bleep test) was considered the standard minimum level required.

The purpose of this research was to assess:

- the appropriateness of the levels set for the MSFT;
- whether performance on this component is fit for purpose, or recommendations are required to change it.

## Aim

The aim was to establish the physical demands required to perform the prison officer, C&R discipline officer, and C&R advance officer roles – in particular, how adequately the levels set for the MSFT relate to the actual fitness levels required to perform these roles in practice.

## Approach

To examine the physical demands required to perform the prison officer and C&R roles, 20 HM Prison establishments were visited over the course of a 5 month period during 2015, and heart rate measurements were collected from an opportunity sample of 135 prison officers undertaking a range of simulated and routine work-based activities, as well as the 15 metre MSFT (at the standard minimum level). The sample consisted of 93 band 3 and 4 prison officers, 21 C&R discipline officers, and 21 C&R advanced officers. The aim was to examine whether there was an association between the heart rates achieved through the MSFT and the range of activities staff performed within their roles.

In advance of the 15 metre MSFT, all officers were fitted with a heart rate (HR) monitor set to record their heart rate at 15 second intervals. All officers then undertook a short warm up procedure consisting of light exercise and stretching, before commencing the 15 metre MSFT. Heart rate was measured throughout the test, and the test ceased once 4 shuttles on level 5 (5.4) had been completed for prison officers and those in C&R discipline officer roles, and 2 shuttles on level 7 (7.2) for C&R advance officers. Once the appropriate MSFT standard level was complete, officers were given a reasonable period for recovery to resume resting HR. Data was collected from the heart rate monitors at this point and the monitors were then reset.

Prison officers then commenced a normal shift, while C&R discipline officers and C&R advanced officers undertook a simulated activity relating to the demands of the role, during which heart rate data was continually recorded. For the C&R discipline officers the subsequent session consisted of 3 stimulated control and restraint incidents, for the C&R advanced officers the subsequent session was a simulated riot situation.

The duration for which data were collected in the shift or simulated sessions ranged from approximately 3 to 10 hours. After completing the shift or stimulated activity, the

<sup>1</sup> Managing Sickness Absence in the Prison Service, HC 372. Session 1998-99. April 1999.

<sup>2</sup> HM Prison Service, Staff Fitness Strategy, Order Number 8625. January 2001.

<sup>3</sup> Those officers recruited before 1st April 2001 are not required to complete a fitness assessment, but they are required to complete a one day Control and Restraint (C&R) refresher on the rules, regulations and policies of C&R.

heart rate monitors were removed and the data downloaded. The heart rate data from the MSFT was then analysed and compared with the data obtained from the shift, or the simulated activities.

## Results

The results from examining the HR data is presented below by the different prison officer roles examined.

- Ninety-three officers completed the MSFT up to the minimum standard (5.4) for band 3 and 4 officers. Of these officers, 73 were male and 20 were female. The average maximum heart rate on the MSFT was found to be  $173 \pm 14$  bpm, compared with an average maximum heart rate of  $137 \pm 21$  bpm during the shift. The average heart rate during the entire shift was  $97 \pm 15$  bpm. Indicating a higher rate was achieved during the standard set for the MSFT, than was obtained during the shift.
- Twenty-one C&R discipline officers (18 male, 3 female) completed the MSFT to level 5.4 obtaining an average maximum heart rate of  $180 \pm 10$  bpm. This was higher than the rates obtained in 3 simulated control and restraint incidents (average maximum values of:  $171 \pm 26$  bpm;  $169 \pm 22$  bpm; and  $176 \pm 16$  bpm)
- Twenty-one C&R advanced officers (17 male, 4 female) completed the MSFT up to the minimum standard (7.2). They obtained an average maximum heart rate during the MSFT of  $169 \pm 15$  bpm, this was higher than the average maximum of  $165 \pm 12$  bpm achieved during the simulated riot situation, and higher than the average heart rate achieved during the entire simulated riot situation of  $102 \pm 19$  bpm.

## Limitations

The research for this project was conducted within 20 establishments across the prison estate. Whilst the team ensured that a range of sites and prison officer types were included in the research, it was an opportunity sample and it was not possible to ensure that the sample was representative of the wider prison officer population.

With the practicalities of undertaking testing of busy prison officers in demanding establishments, and with a limited timescale, the design of the methodology and the sampling of officers involved a non-representative selection procedure, limiting the ability to generalise these findings across the prison estate. This means that the results should not be treated with some caution.

To fully represent the roles within the prison estate where fitness testing is mandatory, further research would be required that utilises a random stratified sampling method considering the various roles, gender, age, and other protected characteristics.

## Conclusions

Based on these findings of higher demands on the MSFT to what would be experienced during routine shifts, or activities equated to the prison officer role, there is indicative evidence supporting the maintenance of the minimum levels set for the MSFT for the tested roles.

The recommended MSFT minimum standard levels of 5.4 and 7.2 adequately benchmark the fitness levels required for perform the activities of the prison officer roles. These findings are indicative of the roles tested, and further work would be required for other roles, and for establishing how representative and robust these findings are of the prison officer population as a whole.

*Her Majesty's Prison and Probation Service is committed to evidence-based practice informed by high-quality social research and statistical analysis. We aim to contribute to the informed debate on effective practice with the people in our care in prisons, probation and youth custody.*



© Crown copyright 2018

This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit [nationalarchives.gov.uk/doc/open-government-licence/version/3](http://nationalarchives.gov.uk/doc/open-government-licence/version/3)

Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

First published 2018

ISBN 978-1-84099-815-3

Contact info: [National.Research@noms.gsi.gov.uk](mailto:National.Research@noms.gsi.gov.uk)